

Electronic Products for electrical panels

2014 edition



UNI EN-ISO 9001



UNI EN-ISO 14001

WARNING If not specified, the technical data in this catalogue are typical and measured at 25°C (77°F), 230 Vac, Unom, Vdc and rated current; ripple is measured at 20 MHz with probe connected to 0.1 μ F. The technical data in this catalogue are typical and are not binding for Cabur and may be modified without prior notice, simply for production or improvement and/or evolution reason. Please contact our technical-commercial offices for any relevant confirmation or updates. For more informations visit our web site www.cabur.eu.

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• Terminal blocks for electrical boards

Terminal blocks for electrical panels, polyamide screw-clamp and spring-clamp terminal blocks, control terminal boards, high-current terminal boards, mobile terminal blocks, distribution terminal boards, 12-pole polyamide terminal boards

• Electronic products for electrical boards

power supplies, analog modules, relay modules, signal converters

• Connection systems for photovoltaic plants

Connectors, tools, cables, brackets for mounting of photovoltaic panels, string boxes, control units, monitoring systems, surge protection devices, diodes, fuse-holders

• Industrial marking systems

printing systems, tags and accessories for wire and terminal block identification, tags for contactors and buttons, modular strips for distribution panels, panel identification tags, labels and signboards



If you wish to receive complete and updated technical documentation on Cabur products, please send a request using the dedicated form that you can download

online on the www.cabur.eu website
<http://www.cabur.eu/documentations>

or just fill in, and send the form below

PLEASE SEND ME THE COMPREHENSIVE TECHNICAL DOCUMENTATION

Surname _____ Name _____ Function _____

Company Name _____ Field of activity: ☐ Distributor ☐ Installer ☐ Panel Builder ☐ Other

Address _____ Town _____ Postcode _____

Telephone _____ Fax _____ E-mail _____

The data provided will be stored and used by Cabur srl in both paper and electronic form, both directly and through a reliable service provider, safely and with attention to privacy. At any time, you may exercise your rights pursuant to Italian Legislative Decree no. 196/2003, by writing to the data manager at the following address: Cabur srl, with offices in Altare (SV), Località Isola Grande 45 - Italy. I authorize the use of my data in accordance with Italian Legislative Decree no. 196/2003, as amended, for:

- The provision of goods and services (necessary to send documentation)
- Statistical profiles and processing
- Sending commercial communications
- Communication of data to agencies and partner companies

YES <input type="checkbox"/>	NO <input type="checkbox"/>
YES <input type="checkbox"/>	NO <input type="checkbox"/>
YES <input type="checkbox"/>	NO <input type="checkbox"/>
YES <input type="checkbox"/>	NO <input type="checkbox"/>

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Shortly after its foundation, back in 1952, Cabur became a leading manufacturer of electrical panel terminal blocks, by focusing on installers' needs and providing leading edge technical solutions that, in some cases, would become popular in the industry.

In particular, in our product design and manufacturing, we have pioneered a quality focus on raw materials, functionality, reliability over time, and respect for the environment. That is the reason why Cabur was granted Class 1E (Equipment for Nuclear Power Generating Stations) qualification as early as in 1985 and, in addition, the ISO 9001/UNI-EN 29001 (Quality) and ISO 14001 (Environment) certifications, as well as compliance to Atex standards for "Ex e" installations on the most important terminal block lines. The quality of Cabur products and services has been acknowledged by several international certification institutes.



UNI EN-ISO 14001



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The headquarter

In 2006 Cabur invested in an advanced 15.000 sqm production site in Altare (SV). By doubling the production surface and increasing the staff with the recruitment of new people enabled the company to rationalise the production processes, logistics, and sales, and increase their efficiency. Cabur develops and produces a wide range of products for the electric and electronic industry, based on its own projects, which are well known for their reliability even in extrem deployment conditions and are produced to satisfy the various and complex needs of installator and end users.

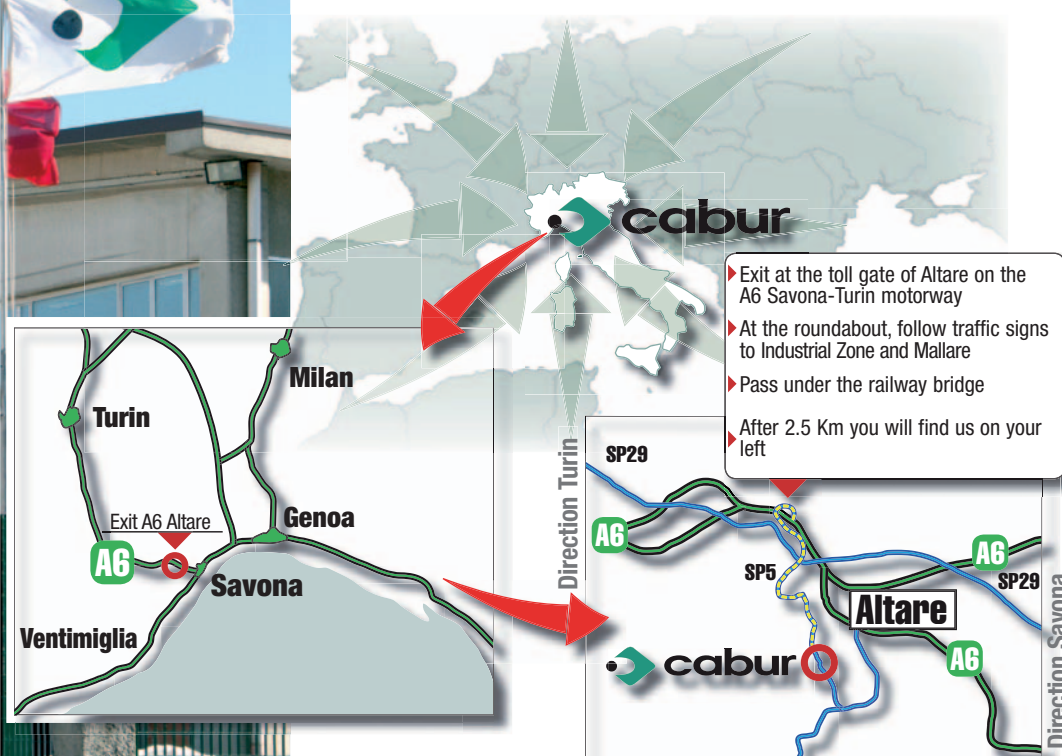


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Product range

With over 60 years of experience, Cabur develops and produces, by its own designs, a wide range of products for the electrical industry, providing the best in working conditions, in terms of operability and reliability.

Current production of:

- Terminal blocks for electrical boards
- Electronic products for electrical boards
- Installation products
- Products for photovoltaic installations
- Industrial marking systems

Fully meets users' varied and complex installation needs.

Our varied and diversified production represents the optimal synthesis of Cabur's long experience as partner of Italy's most important Industries and Research Laboratories, combined with foreign activities and collaboration, always with the aim of pinpointing and meeting users' installation needs.

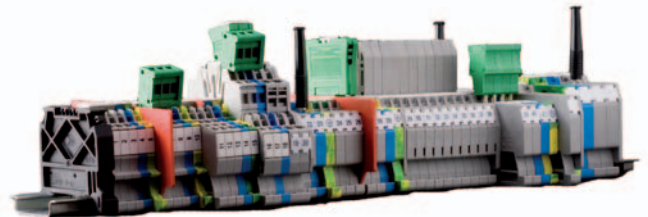
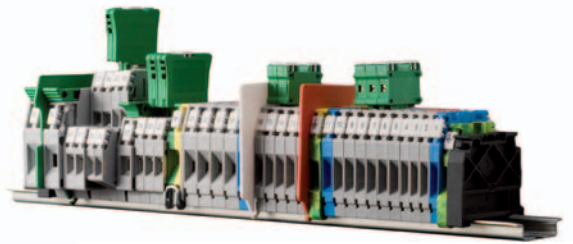


In addition to terminal blocks, Cabur product offering features a full range of electronic products for electric panels for plant and machine automation and process control. These products are designed for an easy deploy and for easy material management, thanks to the use of innovative and leading-edge technology.



Highestmass produced quality

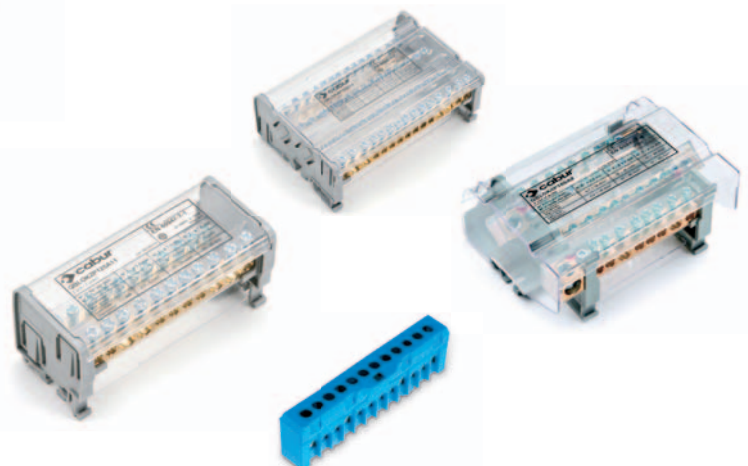
We guarantee top performance of our contacts and maximum flexibility of connection solutions. A full range of standard products for automation panels is available at all major Wholesalers. Full support is provided by Cabur sales force both in Italy and in over 30 countries abroad, as well as by our Engineers, in order to provide our clients with the best installation solutions.



In particular as a result of a specific planning decision, products in our "standard" series are designed to meet the fundamental requirements of the most severe installation conditions and environments, thus avoiding to produce special product series for specific applications. This kind of planning has determined a clear qualitative improvement in the entire production, as well as a more streamlined and simplified product management, first of all to the advantage of the Distribution, which can guarantee to final Clients the most efficient service.



The line of products for industrial marking completes the range with innovative printing solutions, labels for wires, terminal blocks and buttons, tags and modular strips for distribution boards.



The new www.cabur.eu web site

On our web site, our customers and industry operators can always get up-to-date information on new products and sales offers.

The data sheets of all Cabur products, including the items in this catalogue, are available online in electronic format, with a completely renewed data base structure, that can be consulted by its index or queried with an advanced research engine.

Moreover, on our web site you can:

- ask our specialists for technical information and application advice
- contact our sales staff and ask them for estimates
- download manuals and other technical literature
- get access to quality and compliance certificates
- look at our latest sales literature
- ask for free catalogues and brochures
- ... and much more.

By this newsletter, Cabur communicates also via e-mail its main innovations and commercial activities to all those who apply for it through the registration form.

In conclusion, Cabur web site (www.cabur.eu) is the ideal tool to get real time information and contacts with our company.

www.cabur.eu

Real time information on our company, products, and certifications



In order to be promptly updated about the availability of new technical and commercial documentation, please register on the site and join the newsletter service.

Quality and Environment

ISO 9001 CSQ Certification

Until recently, Cabur "Quality" was simply recognised through the appreciation of its customers. This has allowed the company to become a leader in Italy in the design, production and distribution of "terminal blocks for electrical panels" and, more recently, to extend its products offering to the segment of "electronic products" with recognised reliability levels in both Italian and foreign markets. Obviously, this cannot be the result of improvisation, but of a constant organisation process begun back in 1985 with the definition and implementation of a Quality Assurance Programme based on ANSI N 45.2 (referred to the particularly severe nuclear environment) that has involved the entire structure of the Company and has made each function and worker responsible for quality standards. Since 1995, CSQ (international institute for the certification of business quality systems) has certified the Quality system designed and adopted by Cabur. The Quality system refers to the most complete and severe standard amongst UNI EN ISO 9000 series defining the requirements for Total Quality in Companies, that is ISO 9001, including the activities of Product Design, Development, Manufacturing and Customer Service. After the issue of the new Edition of the Standard (ISO 9001:2008), the whole Quality System has been revised and renewed to be fully compliant with the new regulations.



UNI EN-ISO 9001



ISO 14001 CSQ Certification

In its continuous improvement process, CABUR has adopted an environmental management system since 2001, obtaining the international CSQ UNI EN 14001 recognition.

This goal represents a guarantee given of the respect Cabur has for the surrounding environment as well as a demonstration of the adoption of environmental safeguard rules and, additionally, a pledge for constant ecological improvement.

This kind of Certification is still quite uncommon in Italy; Cabur has nevertheless been able to achieve and add it to its corporate philosophy, which is always aimed at the anticipation, rather than to the passive adaptation, of those needs that are becoming more and more urgent and global. Environment is undoubtedly one of these issues and, anticipating many other companies, not only in Italy, Cabur firmly decided to adopt a system that monitors and prevents environmental risk, inherent to every stage of its manufacturing process. Operational procedures and other paper documentation were unified and harmonised with the running Quality Assurance System and the manual, becoming of both Quality and Environmental Management, is now a complete reference point. The Quality Assurance and Environmental Management Department is at your complete disposal to provide any further information and/or clarification on the entire Quality / Environment System and Customer Service. Cabur can provide you with a copy of both CSQ and EQNET certificates, or with a copy of the Quality and Environmental Management manual.



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Standards and directives

The 2011/65/CE Directive



Directive 2011/65/CE, known as RoHS 2, sets limits to the use of specific dangerous materials, listed in Annex II of the Directive, in electric and electronic devices.

The Directive applies exclusively to devices included in the following categories, as listed in attachment 1, i.e.:

1. Large appliances
2. Small appliances
3. IT and telecommunication appliances
4. Consumers' appliances
5. Lighting appliances
6. Electric and electronic tools.
7. Toys and devices for hobbies and sports
8. Medical devices
9. Monitors and control instruments, including industrial monitoring and control instruments
10. Vending machines
11. Other electric and electronic devices not listed in the above categories

Cabur Products' compliance to RoHS Directive

Products like terminal blocks and connectors are not considered electric or electronic appliances; nevertheless, in consideration of the needs of those Customers deploying these products into appliances and devices which are subject to the Directive, Cabur has decided to review its production to make it RoHS compliant.

From 2006, with the introduction of the former 2002/95/CE Directive, we have been disposing of non-compliant items, completely eliminating – wherever possible – the dangerous material and substances listed in Annex II from components in our production, with a Zero Tolerance mindset. Those materials remain in limited quantity, well below the limits set by the Directive, only in those components that cannot be efficiently and effectively produced with available alternative technological solutions.

Further information and updates are always available on www.cabur.eu.

Our staff is available for further details both on our products and on the application of the RoHS Directive.

CE Marking



All products in this catalogue meet all EU applicable standards when the catalogue was printed. Therefore, all required CE markings are placed on the products and on all product related documents.

Do not hesitate to contact our staff for any further information and/or explanations on Reference Standards. Cabur Customer Service can provide you with certificates of compliance to Reference Standards, type approvals, and CE markings.



Cabur power house

Continues to renew and expand its range of power supplies for use in industrial automation and control of processes and systems, improving product performance and technology to meet the needs created by the continuing changes in applications and regulations.

QUALITY AND SAFETY: Cabur was the first Italian company to obtain UL508 Industrial Control Equipment certification for industrial automation processes and Hazardous Location Class 1 Div. 2 for processes in dangerous areas, as well as to have been certified as conforming to the Directives on Electric Safety. It also has been EMC certified by an accredited laboratory. All of these are indispensable for the CE certified label.

INNOVATION AND RESEARCH:

- 1997 - Cabur is the first Italian company to produce switching power suppliers for Din-rail with 90-264Vac/110-340Vdc universal input.
- 2001 - Cabur is the first Italian company to produce high efficiency power supplies with resonant technology (the 20A three-phase dissipates only 36W compared with over 75W for our competitors at the time).
- 2009 - With the new generation of power supplies in the catalogue, Cabur has further improved performance using "Synchronous Rectifier" technology, which reduces power dissipation and operating temperature to the minimum, an indispensable factor in minimizing the size of the power supplies, which are the smallest on the market. The lifespan of a power supply is halved by every +10°C increase in operating temperature. Hence, reducing operating temperature is fundamental to endurance and reliability, two objectives that can be achieved only by using circuit technology and next generation components. Thanks to this combination, Cabur has achieved output of over 94% (the new 20A three-phase dissipates only 28W, compared to the 50-75W in heat dissipation found in other products currently on the market).

HIGH OVERLOAD CAPACITY: the new power supplies have an overload capacity of over +50% for 5 seconds or for several minutes (please see the technical data), while maintaining stable output voltage even under these conditions.

SYSTEM COMMUNICATIONS: all the CSF, CSG, and CSW Series models are provided with "intelligent" alarm contacts that commute when the output voltage drops below -10% of the nominal value. This allows the controls to activate automated or emergency procedures to reduce machine stoppage, production losses, and the risk to safety.

TOTAL PROTECTION: all models are provided with output protection against overload short circuiting, overtemperature, and overvoltage, both for input and output. Input for the three-phase models includes the Active Surge Suppressor – Inrush Current Limiter, which avoids malfunctioning in the case of overvoltage generated by commutation of loads or malfunctions on industrial networks, where the value can reach 3-4 times the network voltage, with a duration of 1.3ms (Regulation VDE-0160), which can be destructive for the input components. This increases reliability, especially in networks subject to power surges and power malfunctions.

SHORT CIRCUIT and overload protection: this serves to protect the power supply from malfunctions due to overloading and overheating of the components. This function can be designed by starting with different application needs, with varying practical results and costs. In automated applications, the operating conditions and the nature of the loads can vary greatly and are only partially known to the power supply designer. Power suppliers for automated processes need to meet a number of requirements. They need to be protected from overcurrent, but at the same time they need to be able to supply loads which call for a high peak current, working at temperatures of at least 45° C, according to regulations, and sometimes higher, in critical ventilation situations and guaranteeing high reliability and acceptable costs.

The overcurrent protection must support the high peak currents required by loads such as filament lamps (cold, they make a short circuit), capacitive loads such as dc/dc converters and filter condensators (when these switch on they are seen as a short-circuit for a few tenths of a ms) or inductive loads (engines in dc, electromagnets, etc.) which at peak require currents from 5 – 30 times their nominal power. Frequently, all these loads must be started up at the same time. The peak current must be provided for a sufficient duration to "start" the load, which can go from a few tenths of a ms up to 5s.

With high power power supplies, which power various loads protected from overcurrent, the capacity to provide overcurrent is indispensable to guarantee selectivity in protection interventions. This is because it allows the fuse of the malfunctioning load to be "burned" before the electronic protection of the power supply intervenes, disconnecting the output and hence the entire system.

ELECTRONIC OVERLOAD POWER SUPPLY PROTECTION CAN BE OBTAINED USING VARIOUS TECHNIQUES:

- switch off the output as soon as possible: this is cost effective but doesn't allow for either start up of heavy loads nor for protection selectivity for various loads.
- constant power protection: if the allowed overload is sufficiently high, it is possible to start up heavy loads. However, if the condition continues, the power supply will continue to operate in overload and with a high thermal stress level. Hiccup protection: combines the advantages of the techniques described above, while limiting the disadvantages because it allows over +50-100% of the overload for at least 5 seconds, and then switches off output for a longer break. In this way, the peak power necessary for heavy load peaks is obtained while component heating is decreased, as they can cool off during the break. Hiccup protection with high overcurrent output, for durations from 200 ms to over 5 sec., has been proven to satisfy the new requirements established by the Machinery Directive EN 60204-1.

Real operating temperature: the operating temperature range for all Cabur models is between -20 and +50°C at full load without derating (see technical data), certified in accordance with the rigorous UL508 standard. The project takes into consideration the ambient temperature, allowed overcurrent, and overcurrent duration when determining component size, and is always more than the 45°C required by the standards for electric panels. Ambient temperature is a fundamental reference parameter, because this influences not only performance, but also component operating temperature and power supply duration.

HOLD UP TIME: this is the time in which the power supply output supplies nominal voltage at nominal load. This performance is important because it limits the cases in which machine/system stoppage can occur due to voltage "holes" in the network. EMC standards establish that Hold Up time must be at least 10ms. For all Cabur power supplies, Hold Up time is greater than that required by the official standards, which ensures better operational consistency in networks with frequent voltage holes.

MTBF: this figure should be taken with a care, because it is the result of theoretical calculations that are easy to manipulate. For example, if we know that the mortality rate for 25 year old men is 0.1%/year, the resultant MTBF, calculated in accordance with SN29500 – IEC 61709, would be 800 years. Obviously, this result is highly unrealistic. The significant piece of information is the "life expectancy," which for men averages about 75 years – less spectacular but more realistic. The same reasoning can be applied to electronic products for which, in accordance with the calculation methods, we can use an MTBF of 750,000 hours (85 years), or a life expectancy of about 70,000 hours (7.9 years, on average). The second estimate is less optimistic, but is without doubt closer to reality. As a consequence, data published regarding MTBF must be interpreted based on the credibility of the calculation methods used. In addition to the values according to SN 29500, Cabur has also chosen to declare those according to the MIL HDBKn217F standards, which are much stricter.

CUSTOM POWER SUPPLIES: Cabur designs and produces "custom" power supplies on request to meet the requirements of regulations and the high demanding applications. Furthermore our laboratory offers technical documentation and the measures which prove the conformity of the products with the directives on Electric Safety and Electromagnetic Compatibility, besides the necessary technical support to define the product characteristics on the basis of the client's needs and our own experience.

THE ENVIRONMENT AND ROHS CONFORMANCE: Cabur was one of the first Italian companies to obtain the International Environmental Certificate UNI EN ISO 14001, certified by CSQ for ecologically compatible treatment of all the materials used in our production.

General Notes

PARALLEL AND REDUNDANT PARALLEL CONNECTION: all Cabur power supplies can be connected in parallel to combine the power of two or more power supplies. In addition, models that already include an output separation diode (ORing diode) are available for use with redundant parallels (please see the related item in the catalogue). We recommend adjusting the outputs of all the power supply units to the same voltage (tolerance ± 50 mV), applying the same calibration load, before connecting them in parallel. We also recommend using power supply units of the same model. If it is necessary to connect two power supplies without internal diodes in redundant parallel, the connection must be completed as in fig. 1.

CONNECTION IN SERIES: all Cabur power supplies can have their outputs connected in series to double the voltage (see fig. 2) or to obtain dual voltage output, for example with ± 12 V or ± 24 V (see fig. 3). We recommend that you use power supplies of the same model and an anti-parallel diode, of an appropriate size to resist the maximum current of the power supply.

POWER SIGNAL OK: this is found on all CSF, CSG, and CWS models. The 1A/30Vdc contact commutates when output voltage falls below the threshold of -10% of nominal voltage, in the case of a short circuit on the output line or an overload that exceeds the specifications, or due to network failure.

100-340Vdc POWER SUPPLY: available for certain models (please see technical data), which respect the following:

- power supply of 110...127 Vdc, reduces output current by 25%
- min. voltage allowed 100 Vdc, max 340 for single phase, 280...775 Vdc for single/two-phase, 564...775Vdc for three-phase (please see technical data)
- respect input polarity as indicated in the instructions.

Note for power supplies with secondary input from a transformer

INSULATION: this series of power supply units is not insulated.

TYPE OF USE: they are suitable for use in PELV (one pole of the Protective Extra Low Voltage earthed) and SELV (Safety Extra Low Voltage, no pole earthed). The transformer used must have double or reinforced isolation in accordance with CEI 14.6 / EN 60742.

In the case of use in PELV circuits, only earth one pole of the 24 Vdc of the power supply unit.

In the case of use in SELV circuits, do not earth the input earth terminal.

Earthing one pole of the secondary of the transformer and the 24Vdc of the power supply would damage the power supply.

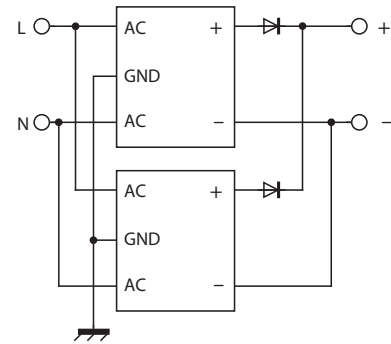


figure 1

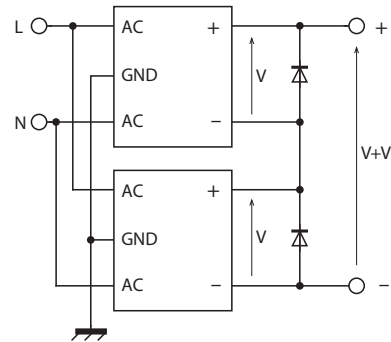


figure 2

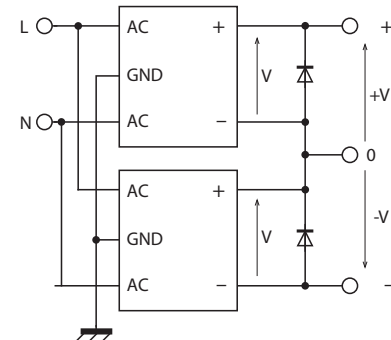


figure 3

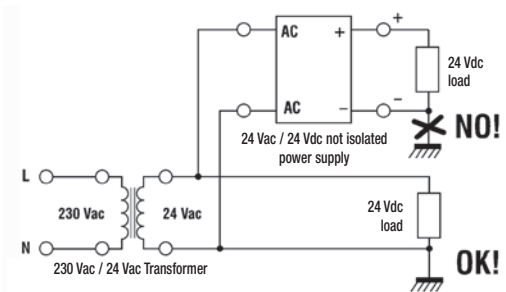


figure 4

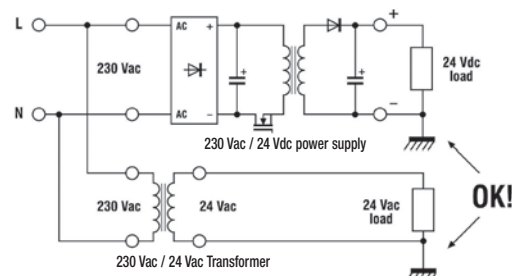


figure 5

Power supply quick selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

Single-phase switching power supply - Cool Power series

Output voltage	Output current	Input voltage	Notes	Type	Cat. No.	Page
10...15 Vdc	1.5...1 A	90...264 Vac / 100...320 Vdc	(1) (8) (9)	CSF30B	XCSF30B	22
12...15 Vdc	6 A	90...264 Vac / 100...345 Vdc	(1) (7) (8) (9)	CSF85B	XCSF85B	23
12...15 Vdc	16 A	120 Vac / 230 Vac	(2) (7) (8)	CSF240B	XCSF240B	25
24 Vdc	1.2 A	90...264 Vac / 100...320 Vdc	(1) (9)	CSF30C	XCSF30C	22
24 Vdc	3.5 A	90...264 Vac / 100...345 Vdc	(1) (7) (9)	CSF85C	XCSF85C	23
24 Vdc	3.5 A	90...264 Vac / 100...345 Vdc	(1) (6) (7) (9)	CSF85CP	XCSF85CP	23
24 Vdc	5 A	90...264 Vac / 100...345 Vdc	(1) (7) (9)	CSF120C	XCSF120C	24
24 Vdc	5 A	90...264 Vac / 100...345 Vdc	(1) (6) (7) (9)	CSF120CP	XCSF120CP	24
24 Vdc	10 A	120 Vac / 230 Vac	(2) (7)	CSF240C	XCSF240C	25
24 Vdc	10 A	120 Vac / 230 Vac	(2) (6) (7)	CSF240CP	XCSF240CP	25
24 Vdc	20 A	120 Vac / 230 Vac	(2) (6) (7)	CSF500C	XCSF500C	27
48 Vdc	2.5 A	90...264 Vac / 100...345 Vdc	(1) (6) (7)	CSF120DP	XCSF120DP	24
48 Vdc	5 A	120 Vac / 230 Vac	(2) (6) (7)	CSF240DP	XCSF240DP	25
48 Vdc	10 A	120 Vac / 230 Vac	(2) (6) (7)	CSF500D	XCSF500D	27
72 Vdc	3.5 A	120 Vac / 230 Vac	(2) (6) (7) (8)	CSF240G	XCSF240G	26
72 Vdc	6.7 A	120 Vac / 230 Vac	(2) (6) (7) (8)	CSF500G	XCSF500G	28

Single-phase switching power supply - Easy Power series

Output voltage	Output current	Input voltage	Notes	Type	Cat. No.	Page
24 Vdc	3.5 A	90...264 Vac	(1)	CSL85C	XCSL85C	31
24 Vdc	5 A	90...264 Vac	(1)	CSL120C	XCSL120C	32
24 Vdc	10 A	120 Vac / 230 Vac	(2)	CSL240C	XCSL240C	33
24 Vdc	20 A	230 Vac	-	CSL481C	XCSL481C	34

Single-phase switching power supply - Domotic Power series

Output voltage	Output current	Input voltage	Notes	Type	Cat. No.	Page
5...15 Vdc	3...1.5 A	90...264 Vac / 100...345 Vdc	(1) (8) (9)	CSD30E	XCSD30E	18
±12...±15	0.6 A	90...264 Vac / 100...345 Vdc	(1) (8) (9)	CSD30F	XCSD30F	18
12 Vdc	1.2 A	90...264 Vac / 100...315 Vdc	(1) (9)	CSD15B	XCSD15B	17
12...15 Vdc	3.5...3 A	90...264 Vac / 100...345 Vdc	(1) (8) (9)	CSD50B	XCSD50B	19
24 Vdc	0.6 A	90...264 Vac / 100...315 Vdc	(1) (9)	CSD15C	XCSD15C	17
24 Vdc	1.2 A	90...264 Vac / 100...345 Vdc	(1) (9)	CSD30C	XCSD30C	18
24 Vdc	3 A	90...264 Vac / 100...345 Vdc	(1) (9)	CSD70C	XCSD70C	20

Single phase, 2-phase and 3-phase switching power supply - Universal Power series

Output voltage	Output current	Input voltage	Notes	Type	Cat. No.	Page
12...15 Vdc	8...7 A	1-2x 230-400-500 Vac	(1) (3) (7) (8) (9)	CSW121B	XCSW121B	36
12...15 Vdc	16...15 A	1-2-3x 230-400-500 Vac	(1) (3) (4) (7) (8) (9)	CSW241B	XCSW241B	37
24 Vdc	5 A	1-2x 230-400-500 Vac	(1) (3) (7) (9)	CSW121C	XCSW121C	36
24 Vdc	10 A	1-2-3x 230-400-500 Vac	(1) (3) (4) (7) (9)	CSW241C	XCSW241C	37
24 Vdc	20 A	1-2-3x 230-400-500 Vac	(1) (3) (4) (7) (9)	CSW481C	XCSW481C	38
48 Vdc	2.5 A	1-2x 230-400-500 Vac	(1) (3) (6) (7) (9)	CSW121DP	XCSW121DP	36
48 Vdc	5 A	1-2-3x 230-400-500 Vac	(1) (3) (4) (6) (7) (9)	CSW241DP	XCSW241DP	37
48 Vdc	10 A	1-2-3x 230-400-500 Vac	(1) (3) (4) (7) (9)	CSW481D	XCSW481D	38
72 Vdc	3.3 A	1-2-3x 230-400-500 Vac	(1) (3) (4) (6) (7) (8) (9)	CSW241G	XCSW241G	37
72 Vdc	6 A	1-2-3x 230-400-500 Vac	(1) (3) (4) (7) (8) (9)	CSW481G	XCSW481G	38

Power supply quick selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

3-phase switching power supply - Triple Power series

Output voltage	Output current	Input voltage	Notes	Type	Cat. No.	Page
24 Vdc	20 A	3x 400-500 Vac	(4) (7)	CSG481C	XCSG481C	40
24 Vdc	20 A	3x 400-500 Vac	(4) (7)	CSG500C	XCSG500C	41
24 Vdc	30 A	3x 400-500 Vac	(4) (7)	CSG720C	XCSG720C	42
24 Vdc	40 A	3x 400-500 Vac	(4) (7)	CSG960C	XCSG960C	43
24 Vdc	100 A	3x 400-500 Vac	(4) (6) (7) (8)	CSG2401C	XCSG2401C	44
48 Vdc	10 A	3x 400-500 Vac	(4) (6) (7)	CSG500D	XCSG500D	41
48 Vdc	15 A	3x 400-500 Vac	(4) (6) (7)	CSG720D	XCSG720D	42
48 Vdc	20 A	3x 400-500 Vac	(4) (6) (7)	CSG960D	XCSG960D	43
48 Vdc	50 A	3x 400-500 Vac	(4) (6) (7) (8)	CSG2401D	XCSG2401D	44
72 Vdc	6.7 A	3x 400-500 Vac	(4) (6) (7) (8)	CSG500G	XCSG500G	41
72 Vdc	13.3 A	3x 400-500 Vac	(4) (6) (7) (8)	CSG960G	XCSG960G	43
72 Vdc	33 A	3x 400-500 Vac	(4) (6) (7) (8)	CSG2401G	XCSG2401G	45
170 Vdc	14 A	3x 400-500 Vac	(4) (6) (7) (8)	CSG2401R	XCSG2401R	45

Power supply with IP65 protection degree

Output voltage	Output current	Input type	Input voltage	Notes	Type	Cat. No.	Page
24 Vdc	5 A	single-phase	90...264 Vac / 100...345 Vdc	(1) (7) (9)	CSF565	XCSF565	29

Power supply with input from transformer

Output voltage	Output current	Input type	Input voltage	Notes	Type	Cat. No.	Page
1.2...24 Vdc	1.5 A	from transformer	9...26 Vac	(5) (8)	CL1R	XCL1R	51
1.2...24 Vdc	5 A	from transformer	9...26 Vac	(5) (8)	CL5R	XCL5R	51

Filtered power supply with not stabilised output

Output voltage	Output current	Input type	Input voltage	Notes	Type	Cat. No.	Page
12...24 Vdc	1 A	from transformer	9...20 Vac	(5)	AR1	XAR1	52
12...24 Vdc	6 A	from transformer	9...20 Vac	(5)	AR6	XAR6	52

DC/DC isolated converter

Input voltage	Output voltage	Output current	Notes	Type	Cat. No.	Page
12 Vdc	24 Vdc	5 A	(9)	CSA120BC	XCSA120BC	46
12 Vdc	48 Vdc	2.5 A	(9)	CSA120BD	XCSA120BD	46
24 Vdc	12...15 Vdc	7 A	(8) (9)	CSA120CB	XCSA120CB	46
24 Vdc	24 Vdc	5 A	(9)	CSA120CC	XCSA120CC	46
48 Vdc	12...15 Vdc	8 A	(8) (9)	CSA120DB	XCSA120DB	47
48 Vdc	24 Vdc	5 A	(9)	CSA120DC	XCSA120DC	47
110 Vdc	24 Vdc	10 A	(6) (7) (9)	CSA240FC	XCSA240FC	48

(All single phase wide range power supply can be feed at 110 Vdc)

Note

- (1) wide range single-phase input
- (2) double range single-phase input
- (3) two-phase input
- (4) three-phase input

- (5) input from a secondary of a transformer
- (6) redundant version
- (8) with failure contact (power good)
- (8) with adjustable output
- (9) DC/DC converter

Modular switching power supply CSD series

DOMOTIC POWER

Single phase switching power supplies with output power up to 70W for civil and industrial automation applications.

The housings have the standard dimensions for installation in DIN modular panels, and are **optimized for the deployment in the field of building automation**. The high performance and compact size make them an excellent solution for low-depth electrical panels.

The high efficiency and low dissipated power save energy and increase the life of the components.

Suggested uses

- Applications in industrial automation
- Applications in civil automation
- General applications in systems fit into small remote panels

Main features

- The 90...264 Vac and 110...370 Vdc input makes them suitable for use on all power supply lines.
- These power supplies are Insulation Class 2, thus they don't require grounding, which reduces costs and times during installation into remote panels, surveillance and monitoring systems.
- Their high efficiency reduces energy consumption and working temperature and allows their use in small panels.
- Their backup power allows the supply of continuous current at least +50% above the rated value ensuring safety and reliability.
- Dimensioned power supply and surge protection supplying breakaway starting currents 150% above the rated value required by heavy loads.
- Thermal protection prevents faults caused by prolonged overload at high ambient temperatures.
- Their internal components' high efficiency and excellent ventilation offer small dimensions and IP20 protection against accidental contacts in compliance with IEC529.



Compact size

Ideal solution for electrical panels with low profile

Short circuit and overload

Designed to provide load start up current required by medium loads

Power boost

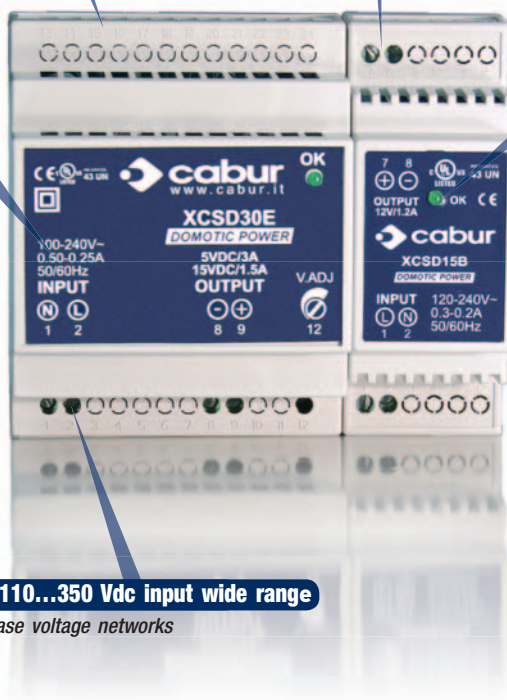
The output power supplied reaches up to 130% of the rated value

High Efficiency

Designed to save energy and reduce working temperature

90...264 Vac and 110...350 Vdc input wide range

Suitable in single phase voltage networks



Single-phase switching power supply 120-230 Vac output power 15 W

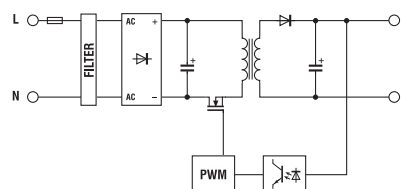
- Single-phase input 90...264 Vac and DC 100...315 Vdc
- Short circuit, overload, over temperature, input overvoltage protections
- Isolation Class 2, no grounding needed
- Compact dimensions
- Suitable for applications in SELV and PELV circuits



NOTES

- The depth dimension includes the DIN rail clamp.
- (2) Over 50°C (122°F) apply a derating: C version: -0.015 A/°C;
B version: -0.03 A/°C.
- (3) Overload and short circuit current depends on the total line resistance

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 0.6 A
- Output 24 Vdc 0.6 A redundant version
- Output 12 Vdc 1.2 A
- Output 48 Vdc 0.3 A

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ nominal iout (Uin 120 / 230 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time @ In (Uin 120 / 230 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 120 / 230 Vac)
- Dissipated power (Uin 120 / 230 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

Cod. XCSD15C

CSD15C

Cod. XCSD15B

CSD15B

120-230 Vac (range 90...264 Vac / 100...315 Vdc)

47...63 Hz

0.3 A / 0.16 A ± 10%

< 5 A

> 0.6

T 1 A replaceable

circuit breaker: 2 A - C characteristic - fuse: T 2 A

24 Vdc ± 1%

—

0.6 A @ 50°C (2)

1.08 A (3)

—

< 1%

≤ 30 mVpp

>12 ms / >20 ms

12 Vdc ± 0.5 Vdc

—

1.2 A @ 50°C (2)

2.16 A (3)

—

< 1%

≤ 30 mVpp

>12 ms / >20 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED

—

possible
possible with external ORing
diode

—

possible
possible with external ORing
diode

>85% / >87%

2,5 W / 2,2 W

-20...+60°C, with derating over 50°C / over temperature protection (2)

3 kVac / 60 s SELV output

class 2 without PE connection

class 2 without PE connection

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>750'000 h acc. to SN 29500 / >250'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² fixed screw type

UL94V-0 plastic material

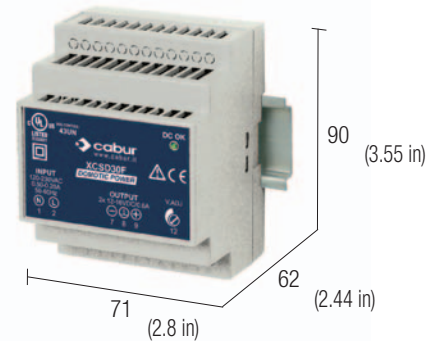
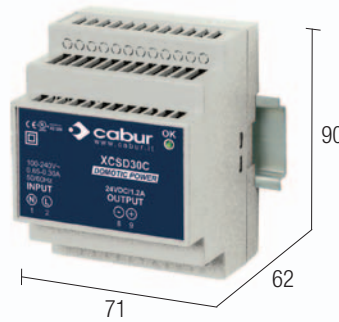
130 g (5.12 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Single-phase switching power supply 120-230 Vac output power 30 W

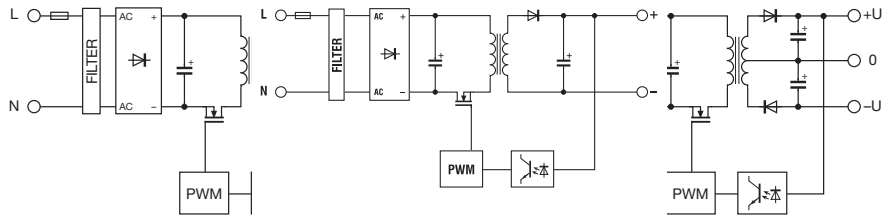
- Single-phase input 90...264 Vac and DC 100...345 Vdc
- Short circuit, overload, over temperature, input overvoltage protections
- Isolation Class 2, no grounding needed
- Compact dimensions
- Suitable for applications in SELV and PELV circuits



NOTES

- The depth dimension includes the DIN rail clamp.
- (2) Over 50°C (122°F) apply a derating: C and F versions: -0.03 A/°C; E version: -0.08...-0.04 A/°C.
- (3) Overload and short circuit current depends on the total line resistance.
- (4) Output current depends on the output voltage: 3.3A @ 5Vdc, 2A @ 9Vdc, 2.2A @ 12Vdc, 1.5A @ 15Vdc.

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 1.2 A
- Output 24 Vdc 1.2 A redundant version
- Output 5...15 Vdc 3.3...1.5 A
- Output ±12...±15 Vdc 0.6 A

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ nominal lout (Uin 120 / 230 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time @ In (Uin 120 / 230 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 120 / 230 Vac)
- Dissipated power (Uin 120 / 230 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

Cod. XCSD30C

CSD30C

Cod. XCSD30E

CSD30E

Cod. XCSD30F

CSD30F

120-230 Vac (range 90...264 Vac / 100...345 Vdc)

47...63 Hz

0.55 A / 0.28 A ± 10%
< 13 A

0.45 A / 0.25 A ± 10%
< 13 A

0.4 A / 0.2 A ± 10%
< 13 A

> 0.6

T 2 A replaceable

circuit breaker: 3 A - C characteristic - fuse: T 3.15 A

24 Vdc ± 1%

5...15 Vdc

±12...±15 Vdc

—

5...15 Vdc

±12...±15 Vdc

1.2 A @ 50°C (2)

3.3...1.5 A @ 50°C (2)(4)

2x0.6 A @ 50°C (2)

1.6 (3)

4 A (3)

>2x0.8 A (3)

—

—

—

< 1%

< 1%

< 1%

≤ 50 mVpp

≤ 50 mVpp

≤ 50 mVpp

>30 ms / >60 ms

>50 ms / >100 ms

>50 ms / >100 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED

—

—

—

possible

possible

possible

possible with external ORing diode

possible with external ORing diode

possible with external ORing diode

>85% / >87%

>87% / >89%

>87% / >89%

5,1 W / 4,3 W

4,0 W / 3,4 W

1,6 W / 1,3 W

-20...+60°C, with derating over 50°C / over temperature protection (2)

3 kVac / 60 s SELV output

class 2 without PE connection

class 2 without PE connection

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>750'000 h acc. to SN 29500 / >250'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² fixed screw type

UL94V-0 plastic material

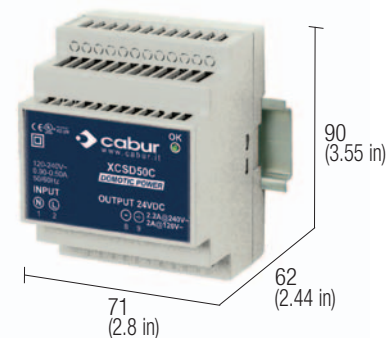
200 g (7.06 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Single-phase switching power supply 120-230 Vac output power 50 W

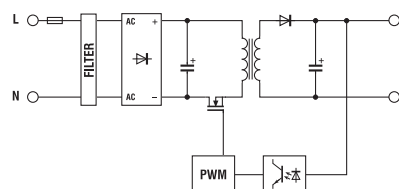
- Single-phase input 90...264 Vac and DC 100...345 Vdc
- Short circuit, overload, over temperature, input overvoltage protections
- Isolation Class 2, no grounding needed
- Compact dimensions
- Suitable for applications in SELV and PELV circuits



NOTES

- The depth dimension includes the DIN rail clamp.
- (2) With 100...127 Vdc input voltage, constant output power and $T_a > 45^\circ\text{C}$, the output current must be derated by 25%
- (3) Over 50°C (122°F) apply a derating:
C version: $-0.06\text{ A}/^\circ\text{C}$; B version: $-0.085\text{ A}/^\circ\text{C}$.
- (4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 2.2 A
- Output 24 Vdc 2.2 A redundant version
- Output 12...15 Vdc 3.5...3 A
- Output 48 Vdc 1.1 A

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ nominal lout (Uin 120 / 230 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time @ In (Uin 120 / 230 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection
- Redundant parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 120 / 230 Vac)
- Dissipated power (Uin 120 / 230 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

Cod. XCSD50B

CSD50B

120-230 Vac (range 90...264 Vac / 100...345 Vdc) (2)

47...63 Hz

0.9 A / 0.5 A $\pm 10\%$

< 15 A

> 0.6

T 2 A replaceable

circuit breaker: 3 A - C characteristic - fuse: T 3.15 A

12...15 Vdc

12...15 Vdc

3.5...3 A @ 50°C (3)

4.37...3.75 A (4)

< 1%

$\leq 50\text{ mVpp}$

>20 ms / >40 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED

—

possible

possible with external ORING diode

>85% / >88%

7.9 W / 6.1 W

$-20\ldots+60^\circ\text{C}$, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

class 2 without PE connection

class 2 without PE connection

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>750'000 h acc. to SN 29500 / >250'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² fixed screw type

UL94V-0 plastic material

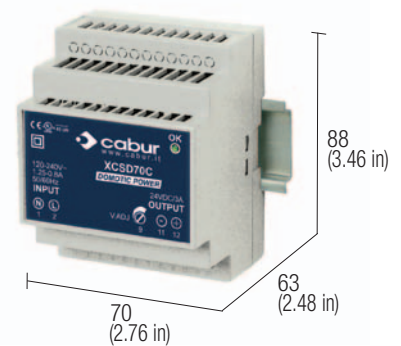
200 g (7.06 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Single-phase switching power supply 120-230 Vac output power 70 W

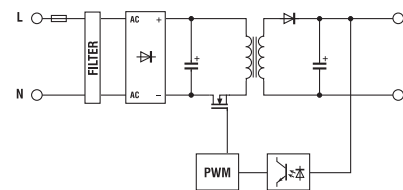
- Single-phase input 90...264 Vac and DC 100...345 Vdc
- Short circuit, overload, over temperature, input overvoltage protections
- Isolation Class 2, no grounding needed
- Compact dimensions
- Suitable for applications in SELV and PELV circuits



NOTES

- The depth dimension includes the DIN rail clamp.
- (2) With 100...127 Vdc input voltage, constant output power and $T_a > 45^\circ\text{C}$, the output current must be derated by 25%.
- (3) Over 50°C (122°F) apply a derating: C version: $-0.15\text{ A}/^\circ\text{C}$.
- (4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 3 A
- Output 24 Vdc 3 A redundant version
- Output 12...15 Vdc 5...4 A
- Output 48 Vdc 1.5 A

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ nominal lout (Uin 120 / 230 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time @ In (Uin 120 / 230 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 120 / 230 Vac)
- Dissipated power (Uin 120 / 230 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

Cod. XCSD70C

CSD70C

	-		
		-	
			-

120-230 Vac (range 90...264 Vac / 100...370 Vdc) (2)

47...63 Hz

1.25 A / 0.8 A $\pm 10\%$

< 15 A

> 0.6

T 2 A not replaceable

circuit breaker: 4 A C characteristic - fuse: T 3.15 A

24 Vdc

24...27.5 Vdc

3 A @ 55°C (3)

4 A (4)

—

< 1%

$\leq 60\text{ mVpp}$

>15 ms / >30 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED

—

possible

possible with external ORing diode

>87% / >89%

10,8 W / 8,9 W

$-20...+60^\circ\text{C}$, with derating over 55°C (3)

3 kVac / 60 s SELV output

class 2 without PE connection

class 2 without PE connection

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>750'000 h acc. to SN 29500 / >250'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² fixed screw type

UL94V-0 plastic material

250 g (8.82 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Switching power supply CSF series

COOL POWER

DIN-rail single phase switching power supplies, specifically designed for applications in industrial automation panels and process control panels. They can deliver +60% to +80% of the nominal current for a sustained period keeping the output voltage constant; the alarm contact is controlled by a voltage threshold, and it switches when the voltage drops under 90% of the rated output value.

Thanks to these features and to the numerous international certifications, this series of power supplies allows engineers to meet all the requirements of the new EN 60204-1 Machinery Directive, to enable the protection devices connected to the output to trigger quickly, safely and above all selectively, thus ensuring continuity of service to the other parts of the system.

Suggested uses

- Applications in industrial automation requiring high levels of efficiency and reliability
- Applications requiring selectivity of surge protection devices on DC lines.
- Application in machinery automation requiring high levels of reliability in terms of control and safety voltage
- Applications in process control
- Heavy duty uses
- Applications in civil automation

Main features

- The 90...264 Vac and 110...370 Vdc input makes them suitable for use on all power supply lines.
- Threshold alarm contact warning when the voltage drops 90% below the rated value.
- Versions with integrated Oring diode for redundant parallel connections, avoiding the use of external devices and reducing dimensions and installation costs.
- Their high efficiency reduces energy consumption and components' operating temperature allowing their use in small panels and under severe ambient conditions.
- Their backup power allows the supply of current and voltage at least +60-80% above the rated value for a few minutes ensuring safety and reliability.
- The output voltage may be adjusted and the output is protected against the input of surges coming from the DC line and caused by inductive loads.
- The output is equipped with double electronic protection devices preventing dangerous voltages which may damage powered components in the event of internal faults.
- Thermal protection prevents faults in the event of prolonged overloads at high ambient temperatures.
- Their design ensures excellent ventilation to internal components, small dimensions and IP20 protection against accidental contacts in compliance with IEC529.
- Thanks to their high efficiency and excellent ventilation, they are the smallest devices available on the market.

Extremely compact dimensions

They are among the smallest on the market, optimising the use of space in the panel without compromising performance

Power boost

The output power reaches 120% of the nominal value for several minutes, up to 160% during an overload, and up to 300% in the event of a short-circuit, to enable the protection devices connected to the output to trigger quickly, safely and selectively, without the use of additional modules

Short circuit and overload

Designed to provide load start up current required by heavy loads

High Efficiency

Designed to save energy and reduce working temperature

90...264 Vac and 110...350 Vdc input wide range

Suitable in all single phase supply voltage networks

Integrated smart alarm contact

Activated when output voltage decreases below 90% of rated value

Special power supplies for engines in DC, Brushless, and relative drives

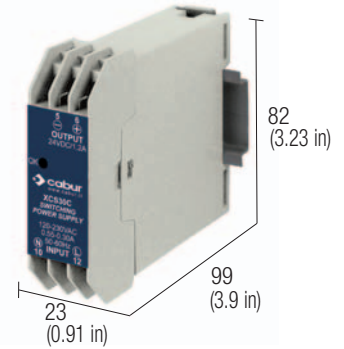
New 48Vdc and 72-85Vdc models have been introduced, designed to reliably power engines in DC. They:

- Supply peak power equal to even 4-5 times the nominal current, which is required by the engine during the peak phase
- Have an output stage protected from overvoltage generated by the engines and drives during braking, which could otherwise cause malfunctions or cause the power supply to lose control over output voltage stability
- Provide output voltage at 48Vdc, and 72-85Vdc. By increasing the voltage of the engine power supply, the same power can be obtained at lower current, with notable advantages for performance, engine construction, cables, and drives.



Single-phase switching power supply 120-230 Vac output power 30 W

- Single-phase input 90...264 Vac and DC 100...320 Vdc
- Short circuit, overload, over temperature protection
- Isolation Class 2, no grounding needed
- Compact dimensions
- Suitable for applications in SELV and PELV circuits

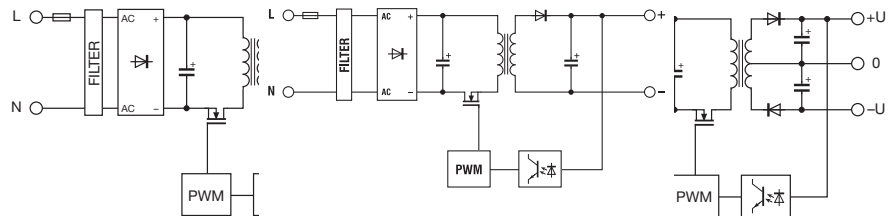


NOTES

The depth dimension includes the DIN rail clamp.

- (1) Version available upon request; for information call our sales department, local agent or representative
- (2) With 100...127 Vdc input voltage, constant output power and $T_a > 45^\circ\text{C}$, the output current must be derated by 25%
- (3) Over 50°C (122°F) apply a derating: C version: $-0.03\text{ A}/^\circ\text{C}$; B version: $-0.038\text{ A}/^\circ\text{C}$; F version: $-0.013\text{ A}/^\circ\text{C}$
- (4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 1.2 A
- Output 10...15 Vdc 1.5 A
- Output $\pm 12 \dots \pm 15\text{ Vdc}$ 0.5 A

Cod. XCSF30C

Cod. XCSF30B

Cod. XCSF30F

CSF30C (1)

CSF30B (1)

CSF30F (1)

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ nominal lout (Uin 120 / 230 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

120-230 Vac (range 90...264 Vac / 100...320 Vdc) (2)

- 47...63 Hz
- 0.55 A / 0.3 A $\pm 10\%$ | 0.35 A / 0.2 A $\pm 10\%$
- < 25 A
- > 0.60
- T 1,25 A not replaceable
- circuit breaker: 2 A - C characteristic - fuse: T 2 A

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time @ In (Uin 120 / 230 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection
- Redundant parallel connection

24 Vdc $\pm 1\%$

12 - 15 Vdc

$\pm 12 \dots \pm 15\text{ Vdc}$

10...15 Vdc

$\pm 12 \dots \pm 15\text{ Vdc}$

1.2 A @ 50°C (3)

1.5...1 A @ 50°C (3)

0.5 A @ 50°C (3)

1.4 A (4)

1.7...1.2 A (4)

0.8...0.6 A (4)

—

—

—

< 1%

$\leq 50\text{ mVpp}$

>10 ms / >30 ms

hiccup at the overload limit with auto reset

"DC OK" green LED

—

possible

possible with external ORing diode

GENERAL TECHNICAL DATA

- Efficiency (Uin 120 / 230 Vac)
- Dissipated power (Uin 120 / 230 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

>86% / >87%

4.7 W / 4.3 W

$-20 \dots +60^\circ\text{C}$, with derating over 50°C (3)

3 kVac / 60 s SELV output

class 2 without PE connection

class 2 without PE connection

EN50178, EN61558, EN60950, IEC950, UL508, UL60950

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>750'000 h acc. to SN 29500 / >250'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² fixed screw type

UL94V-0 plastic material

140 g (4.94 oz)

vertical on rail, allow 10 mm spacing between adjacent components

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

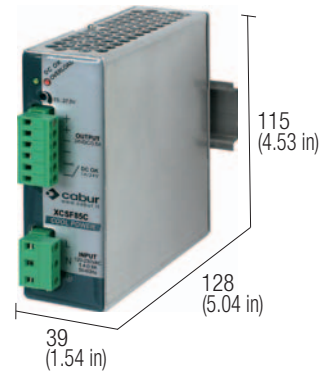
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Single-phase switching power supply 120-230 Vac output power 85 W

- Single-phase input 90...264 Vac and DC 100...345 Vdc
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- Failure contact for Uout -10%
- Compact dimensions
- Suitable for applications in SELV and PELV circuits



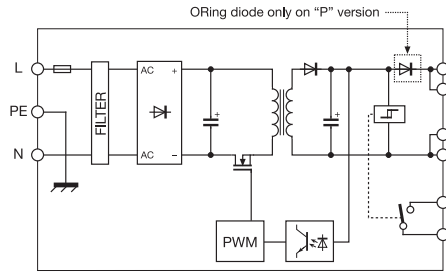
CE CB
scheme



NOTES

- The depth dimension includes the DIN rail clamp.
- (2) With 100...127 Vdc input voltage, constant output power and $T_a > 45^\circ\text{C}$, the output current must be derated by 25%
- (3) Over 45°C (113°F) apply derating: CSF3-CSF3P: $-0.06\text{ A}/^\circ\text{C}$ for version C, CP and CPH; $-0.10\text{ A}/^\circ\text{C}$ for version B
- (4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.
- (5) Available ATEX version (II3G Ex nA nC IIC T4 Gc X), for order adds "-EX" to the code, example XCSF85C-EX.

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 3.5 A
Output 24 Vdc 3.5 A redundant version
Output 12...15 Vdc 6 A
Output 48 Vdc 1.8 A

INPUT TECHNICAL DATA

- Input rated voltage
Frequency
Current @ nominal lout (Uin 120 / 230 Vac)
Inrush peak current
Power factor
Internal protection fuse
External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time @ In (Uin 120 / 230 Vac)
Overload / short circuit protections
Status display
Alarm contact threshold
Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 120 / 230 Vac)
Dissipated power (Uin 120 / 230 Vac)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

Cod. XCSF85C

Cod. XCSF85CP

Cod. XCSF85B

CSF85C

CSF85CP

CSF85B

120-230 Vac (range 90...264 Vac / 100...345 Vdc) (2)

47...63 Hz

1.6 A / 0.9 A $\pm 10\%$

< 20 A

> 0.65

T 2 A replaceable

circuit breaker: 4 A - C characteristic - fuse: T 4 A

24 Vdc

23...27.5 Vdc

3.5 A @ 50°C (3)

6 A for >30 s

with Uout > 90% Un (4)

10 A for 50 ms (4)

< 1%

$\leq 70\text{ mVpp}$

>20 ms / >70 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED

21.6 Vdc

possible

possible with external ORing diode

factory provided with internal ORing diode

12...15 Vdc

12...15 Vdc

6 A @ 50°C (3)

9 A for >30 s

with Uout > 90% Un (4)

10 A for 50 ms (4)

< 1%

$\leq 30\text{ mVpp}$

>15 ms / >60 ms

possible with external ORing diode

>86% / >90%

14 W / 10 W

-20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

1.5 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508, UL60950

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 3

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium

400 g (14.12 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

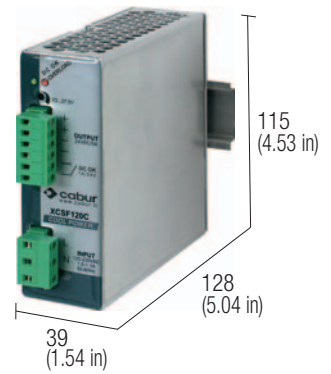
Single-phase switching power supply 120-230 Vac output power 120 W

- Single-phase input 90...264 Vac and DC 100...345 Vdc
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- Failure contact for Uout - 10%
- Compact dimensions
- Suitable for applications in SELV and PELV circuits



(5)

CE CB
scheme



NOTES

- The depth dimension includes the terminal blocks and the DIN clamp.
- (2) With 100...127 Vdc input voltage, constant output power and $T_a > 45^\circ\text{C}$, the output current must be derated by 25%
- (3) Over 45°C (113°F) apply a derating $-0.08\text{ A}/^\circ\text{C}$ for version C, CP and CPH; $-0.12\text{ A}/^\circ\text{C}$ for version B; $-0.05\text{ A}/^\circ\text{C}$ for version DP;
- (4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.
- (5) Available ATEX version (IIIG Ex nA nC T4 Gc X), for order adds "-EX" to the code, example XCSF120C-EX.
- (6) article available till seal-out

VERSIONS

- Output 24 Vdc 5 A
- Output 24 Vdc 5 A redundant version
- Output 12...15 Vdc 7 A
- Output 48 Vdc 2.5 A

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ nominal lout (Uin 120 / 230 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time @ In (Uin 120 / 230 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection

Redundant parallel connection

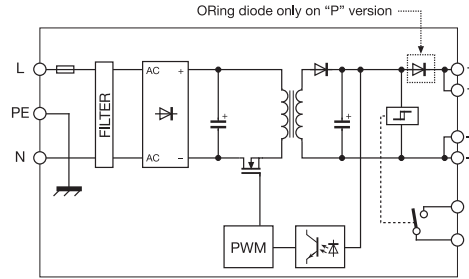
GENERAL TECHNICAL DATA

- Efficiency (Uin 120 / 230 Vac)
- Dissipated power (Uin 120 / 230 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

BLOCK DIAGRAM

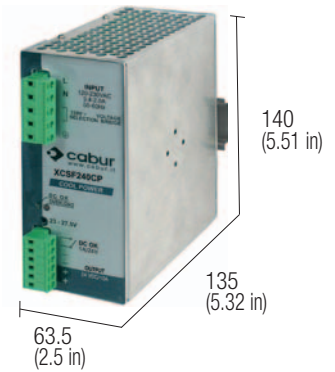


Special version for DC motors

Cod. XCSF120C	Cod. XCSF120CP	Cod. XCSF120B	Cod. XCSF120DP
CSF120C	CSF120CP	CSF120B (6)	CSF120DP
120-230 Vac (range 90...264 Vac / 100...345 Vdc) (2)			
47...63 Hz			
1.9 A / 1.1 A $\pm 10\%$			
< 20 A			
> 0.65			
T 3.15 A replaceable			
circuit breaker: 4 A - C characteristic - fuse: T 4 A			
24 Vdc	12...15 Vdc	12...15 Vdc	48 Vdc
23...27.5 Vdc	12...15 Vdc	12...15 Vdc	45...55 Vdc
5 A @ 45°C (3)	7 A @ 45°C (3)	7 A @ 45°C (3)	2.5 A @ 45°C (3)
8 A for >30 s with 90% Un (4)	8 A for >30 s with 90% Un (4)	8 A for >30 s with 90% Un (4)	8 A for >30 s with 90% Un (4)
15 A for 50 ms (4)	15 A for 50 ms (4)	15 A for 50 ms (4)	7.5 A for 50 ms (4)
< 1%	< 1%	< 1%	< 1%
$\leq 30\text{ mVpp}$	$\leq 40\text{ mVpp}$	$\leq 40\text{ mVpp}$	$\leq 30\text{ mVpp}$
>17 ms / >72 ms	>24 ms / >80 ms	>24 ms / >80 ms	>16 ms / >81 ms
hiccup at the overload limit with auto reset / over temperature protection			
"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED			
<21.6 Vdc	<10.8 Vdc	<10.8 Vdc	<43.2 Vdc
possible	possible	possible	possible
possible with external ORing diode	factory provided with internal ORing diode	possible with external ORing diode	factory provided with internal ORing diode
>86% / >90%	>85% / >89%	>85% / >89%	>86% / >90%
19 W / 13 W	21 W / 15 W	21 W / 15 W	20 W / 13 W
-20...+60°C, with derating over 45°C / over temperature protection (3)			
3 kVac / 60 s SELV output			
1.5 kVac / 60 s			
0.5 kVac / 60 s			
EN50178, EN61558, EN60950, IEC950, UL508, UL60950			
EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11			
>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F			
II / 3			
IP 20 IEC 529, EN60529			
2.5 mm ² pluggable screw type			
aluminium			
400 g (14.12 oz)			
vertical on rail, allow 10 mm spacing between adjacent components			
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB			

Single-phase switching power supply 120-230 Vac output power 240 W

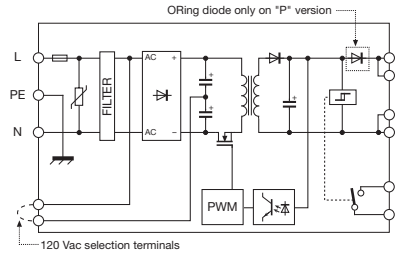
- Single-phase input 120 and 230 Vac
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- Failure contact for Uout -10%
- Compact dimensions
- Suitable for applications in SELV and PELV circuits



NOTES

- The depth dimension includes the terminal blocks and the DIN clamp.
- (2) Double input selectable with external jumper, DC supply allow only between 300 and 345 Vdc
- (3) Over 45°C (113°F) apply a derating: -0.17 A/°C for version C, CP and CPH; -0.27 A/°C for version B; -0.08 A/°C for version DP;
- (4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.
- (5) Available ATEX version (II3G Ex nA nC IIC T4 Gc X), for order adds "-EX" to the code, example XCSF240C-EX.

BLOCK DIAGRAM



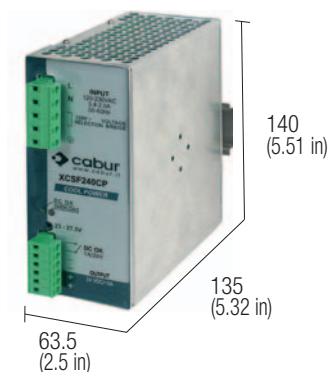
Special version for DC motors

VERSIONS	
Output 24 Vdc 10 A	
Output 24 Vdc 10 A redundant version	
Output 12...15 Vdc 16 A	
Output 48 Vdc 5 A redundant version	
INPUT TECHNICAL DATA	
Input rated voltage	
Frequency	
Current @ nominal Iout (Uin 120 / 230 Vac)	
Inrush peak current	
Power factor	
Internal protection fuse	
External protection on AC line	
OUTPUT TECHNICAL DATA	
Output rated voltage	
Output adjustable range	
Continuous current	
Overload limit	
Short circuit peak current	
Load regulation	
Ripple @ nominal ratings	
Hold up time @ In (Uin 120 / 230 Vac)	
Overload / short circuit protections	
Status display	
Alarm contact threshold	
Parallel connection	
Redundant parallel connection	
GENERAL TECHNICAL DATA	
Efficiency (Uin 120 / 230 Vac)	
Dissipated power (Uin 120 / 230 Vac)	
Operating temperature range	
Input/output isolation	
Input/ground isolation	
Output/ground isolation	
Standard/approvals	
EMC Standards	
MTBF @ 25°C @ nominal ratings	
Overvoltage category/Pollution degree	
Protection degree	
Connection terminal	
Housing material	
Approx. weight	
Mounting information	
MOUNTING ACCESSORIES	
Mounting rail type according to IEC60715/TH35-7.5	
Mounting rail type according to IEC60715/G32	

Cod. XCSF240C	Cod. XCSF240CP	Cod. XCSF240B	XCSF240DP
CSF240C	CSF240CP	CSF240B	CSF240DP
120 - 230 Vac (range 90...132 Vac / 185...264 Vac / 300...345 Vdc) (2)			
47...63 Hz			
3.5 A / 1.8 A ± 10%			
< 35 A			
> 0.6			
T 6.3 A replaceable			
circuit breaker: 10 A - C characteristic - fuse: T 10 A			
24 Vdc	12...15 Vdc	48 Vdc	
23...27.5 Vdc	12...15 Vdc	45...55 Vdc	
10 A @ 45°C (3)	16 A @ 45°C (3)	5 A @ 45°C (3)	
15 A for >30 s	24 A for >30 s	7.5 A for >30 s	
with Uout >90% Un (4)	with Uout >90% Un (4)	with Uout >90% Un (4)	
>25 A for 400 ms (4)	>25 A for 400 ms (4)	>25 A for 400 ms (4)	
< 1%	< 1%	< 1%	
≤ 50 mVpp	≤ 50 mVpp	≤ 50 mVpp	
>30 ms / >60 ms	>30 ms / >60 ms	>30 ms / >60 ms	
hiccup at the overload limit with auto reset / over temperature protection			
"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED			
21.6 Vdc	10.8 Vdc	43.2 Vdc	
possible	possible	possible	
possible with external ORing diode	factory provided with internal ORing diode	possible with external ORing diode	factory provided with internal ORing diode
>88% / >90%	>85% / >85%	>89% / >89%	
32 W / 27 W	42 W / 42 W	28 W / 28 W	
-20...+60°C, with derating over 45°C / over temperature protection (3)			
3 kVac / 60 s SELV output			
1.5 kVac / 60 s			
0.5 kVac / 60 s			
EN50178, EN61558, EN60950, IEC950, UL508, UL60950			
EN61000-6-2, EN61000-6-4, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11			
>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F			
II / 3			
IP 20 IEC 529, EN60529			
2.5 mm² pluggable screw type			
aluminium			
920 g (32.48 oz)			
vertical on rail, allow 10 mm spacing between adjacent components			
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB			

Single-phase switching power supply 120-230 Vac output power 240 W

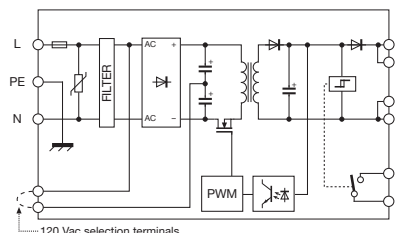
- Single-phase input 120 and 230 Vac
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- Failure contact for Uout -10%
- Compact dimensions
- Suitable for applications in PELV circuits



NOTES

- The depth dimension includes the terminal blocks and the DIN clamp.
- (2) Double input selectable with external jumper, DC supply allow only between 300 and 345 Vdc
- (3) Over 45°C (113°F) apply a derating: -0.17 A/°C for version C, CP and CPH; -0.27 A/°C for version B; -0.08 A/°C for version DP;
- (4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.
- (5) Version CSF240G is not suitable for SELV applications

BLOCK DIAGRAM



Special version for DC motors

Cod. XCSF240G

CSF240G

VERSIONS

Output 72 Vdc 3.5 A redundant version

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ nominal Iout (Uin 120 / 230 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

- 120 - 230 Vac (range 90...132 Vac / 185...264 Vac / 300...345 Vdc) (2)
- 47...63 Hz
- 3.5 A / 1.8 A ± 10%
- < 35 A
- > 0.6
- T 6.3 A replaceable
- circuit breaker: 10 A - C characteristic - fuse: T 10 A

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time @ In (Uin 120 / 230 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection
- Redundant parallel connection

- 72 Vdc
- 72...85 Vdc
- 3.5 A @ 50°C (3)
- >13.8 A for >30 s with Uout >90% Un (4)
- >25 A for 400 ms (4)
- < 1%
- ≤ 50 mVpp
- >30 ms / >60 ms
- hiccup at the overload limit with auto reset / over temperature protection
- "DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED
- 64.8 Vdc
- possible
- factory provided with internal ORing diode

GENERAL TECHNICAL DATA

- Efficiency (Uin 120 / 230 Vac)
- Dissipated power (Uin 120 / 230 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

- >89.5% / >89.5%
- 28 W / 28 W
- 20...+60°C, with derating over 45°C / over temperature protection (3)
- 3 kVac / 60 s not SELV output (5)
- 1.5 kVac / 60 s
- 0.5 kVac / 60 s
- IEC950, EN60950, UL508
- EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11
- >500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F
- II / 3
- IP 20 IEC 529, EN60529
- 2.5 mm² pluggable screw type
- aluminium
- 920 g (32.48 oz)
- vertical on rail, allow 10 mm spacing between adjacent components

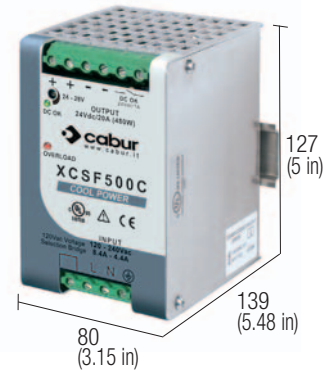
MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Single-phase switching power supply 120-230 Vac output power 500 W

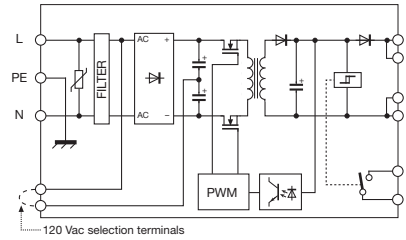
- Single-phase input 120 and 230 Vac
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- Compact dimensions
- Suitable for applications in SELV and PELV circuits
- Failure contact for Uout -10%



NOTES

- The depth dimension includes the DIN rail clamp.
(2) Double input selectable with external jumper.
(3) Over 45°C (113°F) apply a derating: C version: -0.34 A/°C for version C; -0.17 A/°C for version D;
(4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.

BLOCK DIAGRAM



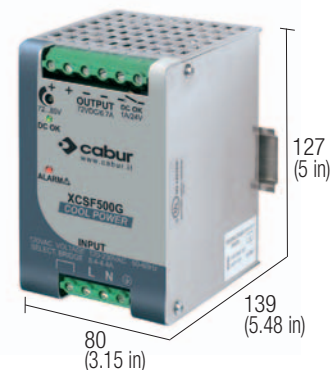
Special version for DC motors

VERSIONS	
Output 24 Vdc 20 A	
Output 24 Vdc 20 A redundant version	
Output 12...15 Vdc 40 A	
Output 48 Vdc 10 A redundant version	
INPUT TECHNICAL DATA	
Input rated voltage	
Frequency	
Current @ nominal Iout (Iin 120 / 230 Vac)	
Inrush peak current	
Power factor	
Internal protection fuse	
External protection on AC line	
OUTPUT TECHNICAL DATA	
Output rated voltage	
Output adjustable range	
Continuous current	
Overload limit	
Short circuit peak current	
Load regulation	
Ripple @ nominal ratings	
Hold up time @ Iin (Iin 120 / 230 Vac)	
Overload / short circuit protections	
Status display	
Alarm contact threshold	
Parallel connection	
Redundant parallel connection	
GENERAL TECHNICAL DATA	
Efficiency (Iin 120 / 230 Vac)	
Dissipated power (Iin 120 / 230 Vac)	
Operating temperature range	
Input/output isolation	
Input/ground isolation	
Output/ground isolation	
Standard/approvals	
EMC Standards	
MTBF @ 25°C @ nominal ratings	
Overvoltage category/Pollution degree	
Protection degree	
Connection terminal	
Housing material	
Approx. weight	
Mounting information	
MOUNTING ACCESSORIES	
Mounting rail type according to IEC60715/TH35-7.5	
Mounting rail type according to IEC60715/G32	

Cod. XCSF500C		Cod. XCSF500D	
-	CSF500C	-	CSF500D
120-230 Vac (range 90...132 Vac / 185...264 Vac) (2)			
47...63 Hz			
4.1 A / 2 A ± 10%			
< 25 A with electronic limiter			
> 0.75 with PFC			
—			
circuit breaker: 16 A C characteristic - fuse: T 15 A			
24 Vdc		48 Vdc	
24...28 Vdc		45...55 Vdc	
20 A @ 45°C (3)		10 A @ 45°C (3)	
30 A for >5 s		15 A for >5 s	
with Uout >90% Un (4)		with Uout >90% Un (4)	
>50 A for 5 s (4)		>50 A for 5 s (4)	
< 0.5%		< 0.5%	
≤ 50 mVpp		≤ 50 mVpp	
>12 ms / >20 ms		>12 ms / >20 ms	
hiccup at the overload limit with auto reset / over temperature protection			
"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED			
21.6 Vdc		43.2 Vdc	
possible		possible	
factory provided with internal ORing diode		factory provided with internal ORing diode	
>92% / >92%		>92% / >92%	
42 W / 42 W		42 W / 42 W	
-20...+60°C, with derating over 45°C / over temperature protection (3)			
3 kVac / 60 s SELV output			
1.5 kVac / 60 s			
0.5 kVac / 60 s			
EN50178, EN61558, EN60950, IEC950, UL508			
EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11			
>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F			
II / 2			
IP 20 IEC 529, EN60529			
4 and 6 mm² fixed screw type			
aluminium			
1,3 kg (45.89 oz)			
vertical on rail, allow 10 mm spacing between adjacent components			
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB			

Single-phase switching power supply 120-230 Vac output power 500 W

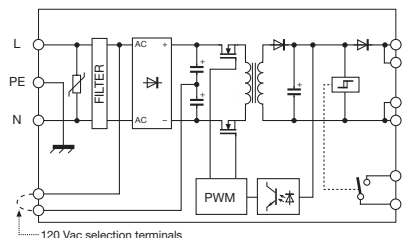
- Single-phase input 120 and 230 Vac
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- Compact dimensions
- Suitable for applications in PELV circuits



NOTES

- The depth dimension includes the DIN rail clamp.
 (2) Double input selectable with external jumper.
 (3) Over 45°C (113°F) apply a derating: C version: -0.34 A/°C for version C; -0.17 A/°C for version D;
 (4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.
 (5) Version CSF240G is not suitable for SELV applications

BLOCK DIAGRAM



Special version for DC motors

Cod. XCSF500G

CSF500G

VERSIONS

Sortie 72 Vdc 6.7 A redundant version

INPUT TECHNICAL DATA

Input rated voltage
 Frequency
 Current @ nominal Iout (Iin 120 /230 Vac)
 Inrush peak current
 Power factor
 Internal protection fuse
 External protection on AC line

120-230 Vac (échelle 90...132 Vac / 185...264 Vac) (2)

47...63 Hz

8.4 A / 4.4 A ± 10%

< 35 A

> 0.67

circuit breaker: 16 A C characteristic - fuse: T 15 A

OUTPUT TECHNICAL DATA

Output rated voltage
 Output adjustable range
 Continuous current
 Overload limit
 Short circuit peak current
 Load regulation
 Ripple @ nominal ratings
 Hold up time @ In (Iin 120 / 230 Vac)
 Overload / short circuit protections
 Status display
 Alarm contact threshold
 Parallel connection
 Redundant parallel connection

72 Vdc

72...85 Vdc

6.7 A @ 50°C (3)

>10A for >5 s with

Uout >90% Un (4)

>20 A for 400 ms (4)

< 1%

≤ 100 mVpp

>30 ms / >35ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED

<64.8 Vd

possible

factory provided with internal
 ORing diode

GENERAL TECHNICAL DATA

Efficiency (Iin 120 / 230 Vac)
 Dissipated power (Iin 120 / 230 Vac)
 Operating temperature range
 Input/output isolation
 Input/ground isolation
 Output/ground isolation
 Standard/approvals
 EMC Standards
 MTBF @ 25°C @ nominal ratings
 Overvoltage category/Pollution degree
 Protection degree
 Connection terminal
 Housing material
 Approx. weight
 Mounting information

>92% / >92%

42 W / 42 W

-20...+60°C, with derating over 45°C / over temperature protection (3)

3 kVac / 60 s SELV output (5)

2 kVac / 60 s

0.7 kVac / 60 s

IEC950, EN60950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11
 >500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

IP 20 IEC 529, EN60529

4 and 6 mm² fixed screw type

aluminium

1,3 kg (45.89 oz)

vertical on rail, allow 10 mm spacing between adjacent components

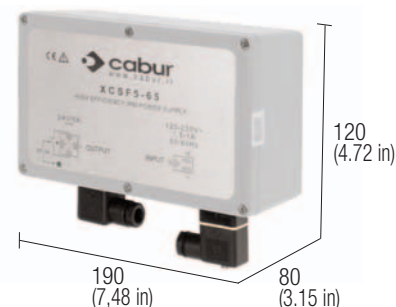
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
 Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Single-phase switching power supply 120-230 Vac IP65 protection degree

- Single-phase input 90...264 Vac and DC 100...345 Vdc
- Short circuit, overload, over temperature, input and output overvoltage protections
- Suitable to be mounted directly on the machinery frame, don't require any protective enclosure
- IP65 pluggable screw connectors
- Suitable for applications in SELV and PELV circuits

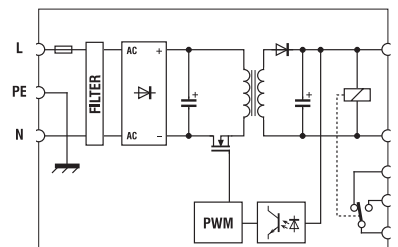


NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

- (1) With 100...127 Vdc input voltage, constant output power and $T_a > 45^\circ\text{C}$, the output current must be derated by 25%
- (2) Overload and short circuit current depends on the total line resistance.
- (3) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 5 A

Cod. XCSF565

CSF5-65 (3)

INPUT TECHNICAL DATA

Input rated voltage
Frequency
Current @ nominal lout (U_{in} 120 / 230 Vac)
Inrush peak current
Power factor
Internal protection fuse
External protection on AC line

120-230 Vac (range 90...264 Vac / 100...345 Vdc) (1)

47...63 Hz

1.8 A / 1 A \pm 10%

< 20 A

> 0.7

T 3.15 A replaceable

circuit breaker: 4 A - C characteristic - fuse: T 4 A

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time @ I_n (U_{in} 120 / 230 Vac)
Overload / short circuit protections
Status display
Alarm contact threshold
Parallel connection
Redundant parallel connection

24 Vdc

23...27.5 Vdc

5 A @ 60°C

8 A (2)

—

< 1%

≤ 50 mVpp

>10 ms / >20 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED / "DC OK" alarm contact

—

possible

possible with external ORing diode

GENERAL TECHNICAL DATA

Efficiency (U_{in} 120 / 230 Vac)
Dissipated power (U_{in} 120 / 230 Vac)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

>86% / >90%

18,6 W / 12,6 W

−20...+60°C / over temperature protection

3 kVac / 60 s SELV output

1.5 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² IP65 pluggable screw connectors

aluminium

1.9 kg (67.02 oz)

vertical on rail or panel mounting by means of screws

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Switching power supply CSL series

EASY POWER

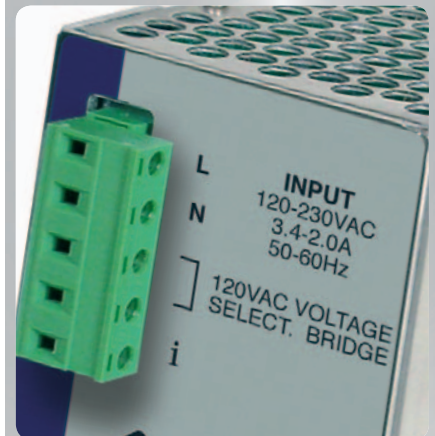
Single phase DIN rail power supplies for general applications in automation and installation. **With particularly high quality / price ratio**, these products are ideal and convenient for applications where loads do not require high peak currents. They can deliver over +50% of nominal current for a sustained period, keeping the output voltage stable and ensuring continuity of supply to the system. **With these features, this range of power supplies enables designers to meet the requirements of the Machinery Directive, EN 60204-1**, allowing the protection devices connected to the output to trigger quickly, safely and selectively, thus ensuring continuity of service to the other parts of the system.

Suggested uses

- Applications in civil automation
- General applications in the installation of systems

Main features

- Equipped with 120 - 230 Vac input, they are suitable for use in all single-phase networks.
- Their high efficiency reduces energy consumption and components' operating temperature allowing their use in small panels and under severe ambient conditions.
- Backup power +50% above the rated voltage ensuring safety and reliability.
- The output voltage may be adjusted and is protected against the input of surges caused by inductive loads on the DC line and is equipped with double electronic protection devices preventing damages to powered equipment in the event of internal faults.
- Short-circuit, overload and thermal protection devices prevent faults in the event of prolonged overloads at high ambient temperatures.
- Their design ensures excellent ventilation to internal components, very small dimensions and IP20 protection against accidental contacts in compliance with IEC529.
- Compared to other products having similar power and costs, they offer higher performances, functions and reliability.



Adjustable output voltage

Protected against the input of surges coming from the DC line and caused by inductive loads

Power boost

The output power reaches 120% of the nominal value for several minutes, up to 150% during an overload, and up to 300% in the event of a short-circuit, to enable the protection devices connected to the output to trigger quickly, safely and selectively, without the use of additional modules

Short circuit, overload and thermal protections

Avoids failures caused by overload at high ambient temperatures

Extremely compact dimensions

They are among the smallest on the market, optimising the use of space in the panel without compromising performance

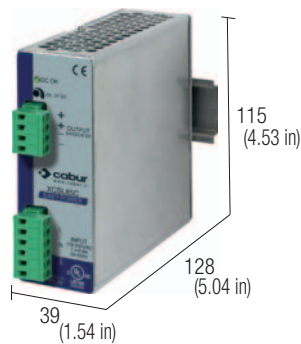
High Performance

Reduces energy consumption and reduces the working temperature of the components and allows use in small panel and in heavy environmental conditions



Single-phase switching power supply 120-230 Vac output power 85 W

- Single-phase input 90...264 Vac
- Short circuit, overload, over temperature, input and output overvoltage protections
- Suitable in civil automation and general applications in the installation of systems
- Suitable for applications in SELV and PELV circuits



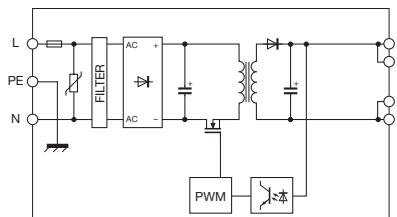
NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

(3) Over 45°C (113°F) apply a derating of -0.06 A/°C

(4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 5 A

Output 24 Vdc 5

Cod. XCSL85C

CSL85C

INPUT TECHNICAL DATA

Input rated voltage

Frequency

Current @ nominal lout (Uin 120 /230 Vac)

Inrush peak current

Power factor

Internal protection fuse

External protection on AC line

OUTPUT TECHNICAL DATA

Output rated voltage

Output adjustable range

Continuous current

Overload limit

Short circuit peak current

Load regulation

Ripple @ nominal ratings

Hold up time @ In (Uin 120 / 230 Vac)

Overload / short circuit protections

Status display

Alarm contact threshold

Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

Efficiency (Uin 120 / 230 Vac)

Dissipated power (Uin 120 / 230 Vac)

Operating temperature range

Input/output isolation

Input/ground isolation

Output/ground isolation

Standard/approvals

EMC Standards

MTBF @ 25°C @ nominal ratings

Overvoltage category/Pollution degree

Protection degree

Connection terminal

Housing material

Approx. weight

Mounting information

120-230 Vac (range 90...264 Vac)

47...63 Hz

1.6A / 0.9 A ± 10%

< 20 A

> 0.65

T 2 A replaceable

circuit breaker: 4 A - C characteristic - fuse: T 4 A

24 Vdc

23...27.5 Vdc

3.5 A @ 45°C (3)

5,5 A for >30 s with Uout >90% Un (4)

9 A for 50 ms

< 1%

70 mVpp

>20 ms / >70 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED

—

possible

possible with external ORing diode

>86% / >90%

14 W / 10 W

-20...+60°C, with derating over 45°C / over temperature protection (3)

3 kVac / 60 s SELV output

1.5 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11 >400'000 h acc. to SN 29500 / >100'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium and stainless steel

400 g (14.10 oz)

vertical on rail, allow 10 mm spacing between adjacent components

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

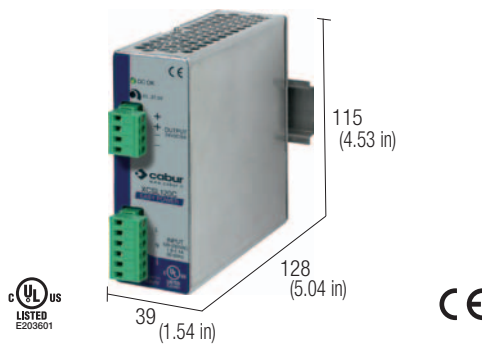
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—

Single-phase switching power supply 120-230 Vac output power 120 W

- Single-phase input 90...264 Vac
- Short circuit, overload, over temperature, input and output overvoltage protections
- Suitable in civil automation and general applications in the installation of systems
- Suitable for applications in SELV and PELV circuits



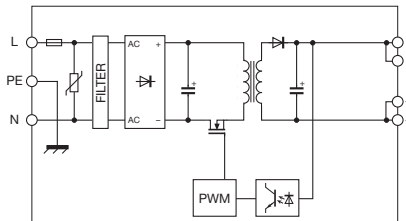
NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

(3) Over 45°C (113°F) apply a derating of -0.08 A/°C

(4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 5 A
Output 24 Vdc 5 A

Cod. XCSL120C

CSL120C

INPUT TECHNICAL DATA

Input rated voltage
Frequency
Current @ nominal lout (Uin 120 /230 Vac)
Inrush peak current
Power factor
Internal protection fuse
External protection on AC line

120-230 Vac (range 90...264 Vac)

47...63 Hz

1.9 A / 1.1 A ± 10%

< 20 A

> 0.65

T 3.15 A replaceable

circuit breaker: 4 A - C characteristic - fuse: T 4 A

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time @ In (Uin 120 / 230 Vac)
Overload / short circuit protections

24 Vdc

23...27.5 Vdc

5 A @ 45°C (3)

8 A for >30 s with Uout > 90% Un (4)

13 A for 50 ms (4)

< 1%

30 mVpp

>17 ms / >72 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED

—

possible

possible with external ORing diode

GENERAL TECHNICAL DATA

Efficiency (Uin 120 / 230 Vac)
Dissipated power (Uin 120 / 230 Vac)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings

>86% / >90%

19 W / 13 W

-20...+60°C, with derating over 45°C / over temperature protection (3)

3 kVac / 60 s SELV output

1.5 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11
>400'000 h acc. to SN 29500 / >100'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium and stainless steel

400 g (14.10 oz)

vertical on rail, allow 10 mm spacing between adjacent components

MOUNTING ACCESSORIES

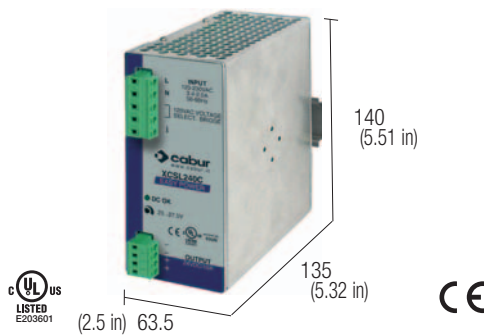
Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—

Single-phase switching power supply 120-230 Vac output power 240 W

- Single-phase input 120 and 230 Vac
- Short circuit, overload, over temperature, input and output overvoltage protections
- Suitable in civil automation and general applications in the installation of systems
- Suitable for applications in SELV and PELV circuits



NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

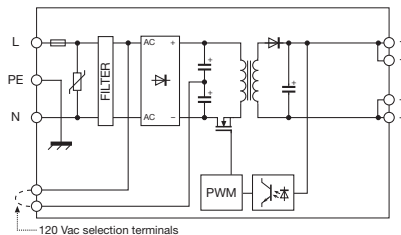
(2) Double input selectable with external jumper.

(3) Over 45°C (113°F) apply a derating of -0.17 A/°C

(4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.

(5) Version available after September 2011

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 10 A

Cod. XCSL240C

CSL240C (5)

INPUT TECHNICAL DATA

Input rated voltage

Frequency

Current @ nominal lout (Uin 120 /230 Vac)

Inrush peak current

Power factor

Internal protection fuse

External protection on AC line

120–230 Vac (range 90...132 Vac / 185...264 Vac) (2)

47...63 Hz

3.5A / 1.8 A ± 10%

< 35 A

> 0.6 / >0.85

T 6.3 A replaceable

circuit breaker: 10 A - C characteristic - fuse: T 10 A

OUTPUT TECHNICAL DATA

Output rated voltage

Output adjustable range

Continuous current

Overload limit

Short circuit peak current

Load regulation

Ripple @ nominal ratings

Hold up time @ In (Uin 120 / 230 Vac)

Overload / short circuit protections

24 Vdc

23...27.5 Vdc

10 A @ 45°C (3)

15 A for >30 s with Uout > 90% Un (4)

>25 A for 400 ms

< 1%

50 mVpp

>30 ms / >60 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED

—

possible

possible with external ORing diode

GENERAL TECHNICAL DATA

Efficiency (Uin 120 / 230 Vac)

Dissipated power (Uin 120 / 230 Vac)

Operating temperature range

Input/output isolation

Input/ground isolation

Output/ground isolation

Standard/approvals

EMC Standards

MTBF @ 25°C @ nominal ratings

>88% / >90%

32 W / 27 W

-20...+60°C, with derating over 45°C / over temperature protection (3)

3 kVac / 60 s SELV output

1.5 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11 >400'000 h acc. to SN 29500 / >100'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium and stainless steel

920 g (32.48 oz)

vertical on rail, allow 10 mm spacing between adjacent components

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

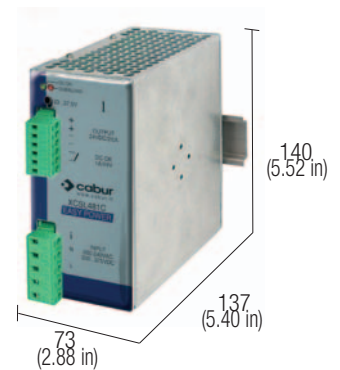
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—

output power 480 W Single-phase switching power supply 230 Vac

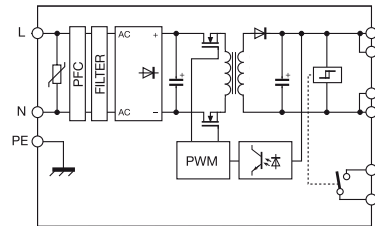
- Single-phase input 230 Vac
- Short circuit, overload, over temperature, input and output overvoltage protections
- Suitable in civil automation and general applications in the installation of systems
- Suitable for applications in SELV and PELV circuits



NOTES

The depth dimension includes the terminal blocks and the DIN clamp.
(3) Over 45°C (113°F) apply a derating of about 16 W/°C
(4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 20 A

Cod. XCSL481C

CSL481C (5)

INPUT TECHNICAL DATA

Input rated voltage
Frequency
Current @ nominal lout (Uin 120 / 230 Vac)
Inrush peak current
Power factor
Internal protection fuse
External protection on AC line

230 Vac (range 187...264 Vac) (2)

47...63 Hz

- / 2 A

<20 A

> 0,95

circuit breaker: 6 A - C characteristic - fuse: T 6,3 A

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time @ In (Uin 120 / 230 Vac)
Overload / short circuit protections
Status display
Alarm contact threshold
Parallel connection
Redundant parallel connection

24 Vdc

23...27.5 Vdc

20 A @ 45°C (3)

28 A (4)

50 A for 0,3 s

< 1%

≤ 100 mVpp

- / >20 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED

21,6 Vdc

possible

possible with external ORing diode

GENERAL TECHNICAL DATA

Efficiency (Uin 120 / 230 Vac)
Dissipated power (Uin 120 / 230 Vac)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

- / >92%

- / 42 W

-20...+60°C, with derating over 45°C / over temperature protection (3)

3 kVac / 60 s SELV output

2 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>400'000 h acc. to SN 29500 / >100'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium and stainless steel

1 kg (35.27 oz)

vertical on rail, allow 10 mm spacing between adjacent components

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Switching power supply CSW series

UNIVERSAL POWER

DIN rail switching power supplies with universal input 185 ... 550 Vac single phase, 2-phase and 3-phase applications in industrial automation and process control. The input circuit technology makes them immune to surges caused by failures in the 3-phase networks with neutral wire, increasing application reliability. Compared to single-phase power supplies, **this series has a higher reliability in industrial environments**. The input circuit uses components with an operating voltage of 900 V, more resistant to voltage peaks present in industrial networks, than the components used in single phase power supplies. The capability to operate from 185 to 550 Vac allows for installations in both single-phase 230V and 3-phase 400V networks.

Suggested uses

- In single or 3-phase systems requiring great flexibility
- Applications in industrial automation and process control
- Heavy duty uses
- Applications in civil automation

Main features

- The wide-range input 185...550 Vac may be supplied single-phase 230...240 Vac, 2-phase 208 Vac and 2-3-phase 400...500 Vac ensuring excellent adaptability to AC networks and enabling to get rid of the isolating transformer.
- The 2-phase and 3-phase input enables to reduce dimensions, wiring, installation costs and space inside the panel.
- They enable to get rid of the transformer for adapting to power voltages.
- Versions with DC OK alarm contact.
- Their high efficiency reduces energy consumption and components' operating temperature allowing their use in small panels and under severe ambient conditions.
- Great backup power allowing to supply at least + 50% above the rated voltage for 5 seconds ensuring safety and reliability.
- The output voltage may be adjusted and is protected against the input of surges on the DC line and is equipped with double electronic protection devices disconnecting output in the event of internal faults.
- Dimensioned short-circuit and overload protection supplying breakaway starting currents 150% above the rated value required by heavy loads; thermal protection prevents failures in the event of prolonged overloads at high ambient temperatures.
- Their design ensures excellent ventilation to internal components, very small dimensions and IP20 protection against accidental contacts in compliance with IEC529.
- Thanks to their high efficiency and excellent ventilation, they are the smallest devices available on the market.

185...550 Vac wide range input

Connectable in 230 or 240V single-phase lines, in 208 2-phase lines, 400 or 500 V 2-3-phase lines for the maximum adaptability to the AC lines, by removing the isolation transformer

Power boost

The output power reaches 120% of the nominal value for several minutes, up to 150% during an overload, and up to 250% in the event of a short-circuit, to enable the protection devices connected to the output to trigger quickly, safely and selectively, without the use of additional

2-phase input

Saves space, wiring, installation costs

High Performance

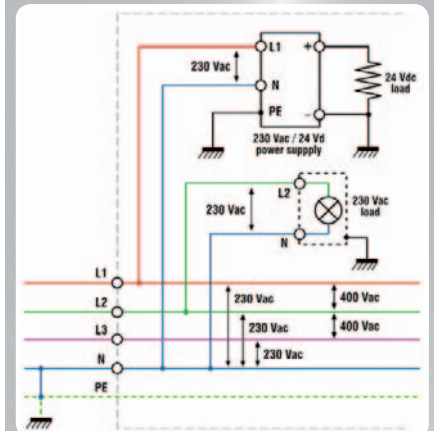
Reduces energy consumption and the operating temperature of the components and allows installation in small panels

Increased reliability in industrial environments

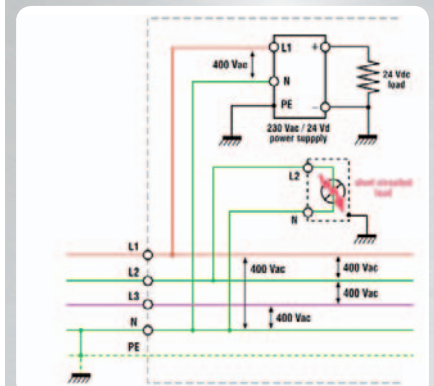
The input circuit uses components with a voltage of 900 V, more resistant to voltage peaks typical in industrial networks

Greater reliability

Compared to single-phase power supplies, this Series is more reliable in industrial applications. The input stage uses components with 900 V operating voltage, which are more resistant to voltage peaks in industrial power lines compared to components used in single-phase supplies, whose operating voltage is 550V in high-quality power supplies, but often 400...450 V in low-cost products. Being able to work from 185 to 550 Vac, these power supplies are immune to power failures; at 230 Vac input (L1-N), when another device connected to L2-N goes short, the neutral rises up to approx. 400 Vac and the input is supplied phase/phase until the protection is activated, which takes place - at best - in 300 ms; this is one of the most common causes of damages to 230-Vac single-phase power supplies in industrial applications. Another example of faults in 230-Vac single-phase devices powered between phase-neutral is due to the disconnection or accidental interruption of the panel's neutral from the system's neutral: failing to return to the neutral point, the neutral rises up to phase voltage applying approx. 400 Vac to single-phase loads, inevitably damaging the system.



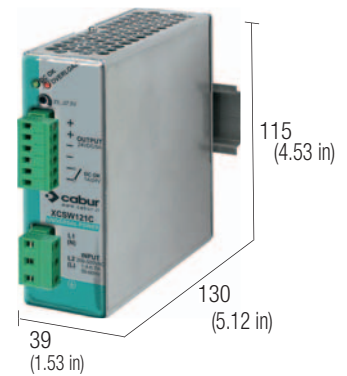
Typical application with 3-phase network and neutral. The latter is used to obtain a 230-Vac voltage in order to supply power to loads (in the example, a simple bulb) and power supplies.



A simple short-circuit on the load causes a rise in the neutral's potential, all the devices connected to it will be powered between two phases, i.e. with a value of approx. 340...400 Vac instead of 230 Vac.

1 or 2-phase switching power supply 230-400-500 Vac output power 120 W

- Single-phase and 2-phase input 185...550 Vac
- High reliability and immunity against over voltage due to failures on AC line
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits

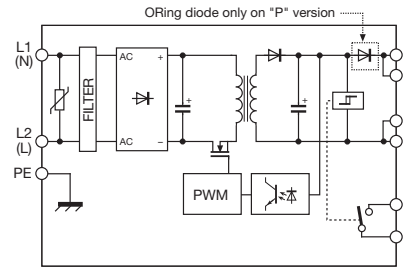


NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

- (1) Version available upon request; for information call our sales department, local agent or representative
- (2) 550 Vdc max for UL508
- (3) Over 50°C (122°F) apply a derating of about 3 W/°C
- (4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 5 A
- Output 12...15 Vdc 7 A
- Output 48 Vdc 2.5 A redundant version
- Output 72 Vdc 1.5 A redundant version

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ Iout max. (Uin 230 / 400 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time (Uin 230 / 400 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection
- Redundant parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 230 / 400 Vac)
- Dissipated power (Uin 230 / 400 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

Cod. XCSW121C

CSW121C

Cod. XCSW121B

CSW121B

Cod. XCSW121DP

CSW121DP (1)

1-2x 230-400-500 Vac (range 187...550 Vac / 270...725 Vdc) (2)

47...63 Hz

1.1 A / 0.55 A

< 20 A

> 0.65

—
circuit breaker: 2x 6 A C characteristic - fuse: 2x T 4 A

24 Vdc

24...27.5 Vdc

5 A (3)

7.5 A for >30 s

with Uout >90% Un

14 A for 0.4 s (4)

< 1%

≤ 100 mVpp

>20 ms / >80 ms

21.6 Vdc

possible

possible with external ORing diode

12...15 Vdc

12...15 Vdc

8 A @ 12 Vdc / 7 A @ 15 Vdc

10 A for >30 s

with Uout >90% Un

20 A for 0.4 s (4)

< 1%

≤ 100 mVpp

>20 ms / >80 ms

10.8 Vdc

possible

possible with external ORing diode

48 Vdc

45...55 Vdc

2.5 A (3)

3.75 A for >30 s

with Uout >90% Un (4)

14 A for 0.5 s (4)

< 1%

≤ 100 mVpp

>20 ms / >80 ms

68 Vdc

possible

prepared with diode internal ORing

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED

>86% / >88%

20 W / 16 W

>84% / >86%

20 W / 17 W

>86% / >86%

20 W / 20 W

−20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

2 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium and stainless steel

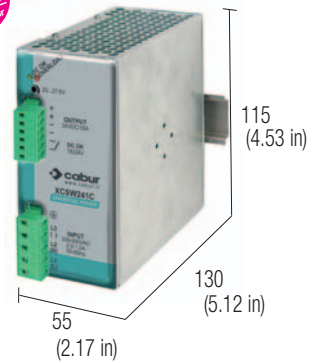
600 g (21.18 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

1, 2 or 3-phase switching power supply 230-400-500 Vac output power 240 W

- Single-phase, 2-phase and 3-phase input 185...550 Vac
- High reliability and immunity against over voltage due to failures on AC line
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits



NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

- (1) Version available upon request; for information call our sales department, local agent or representative
- (2) 550 Vdc max for UL508
- (3) Over 50°C (122°F) apply a derating of about 3 W/°C
- (4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.
- (5) Version CSW241G is not suitable for SELV applications

VERSIONS

Output 24 Vdc 10 A
Output 12...15 Vdc 16...15 A
Output 48 Vdc 5 A redundant version
Output 72 Vdc 3.3 A redundant version

INPUT TECHNICAL DATA

Input rated voltage
Frequency
Current @ Iout max. (Uin 230 / 400 Vac)
Inrush peak current
Power factor
Internal protection fuse
External protection on AC line

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time (Uin 230 / 400 Vac)
Overload / short circuit protections
Status display
Alarm contact threshold
Parallel connection
Redundant parallel connection

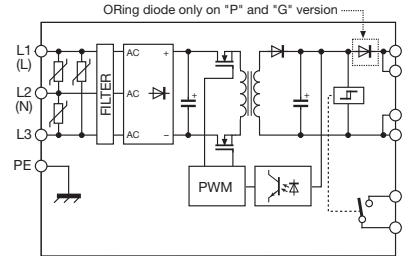
GENERAL TECHNICAL DATA

Efficiency (Uin 230 / 400 Vac)
Dissipated power (Uin 230 / 400 Vac)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

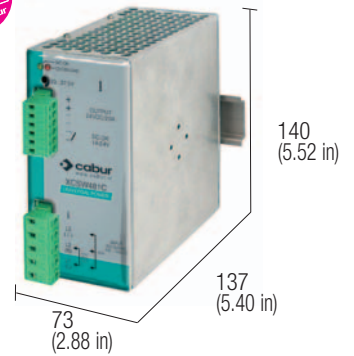
BLOCK DIAGRAM



Cod. XCSW241C	Cod. XCSW241B	Cod. XCSW241DP	Cod. XCSW241G
CSW241C	CSW241B	CSW241DP (1)	CSW241G (1) (5)
1-2-3x 230-400-500 Vac (range 185...550 Vac / 270...770 Vdc) (2)			
47...63 Hz			
2 A / 1 A			
< 20 A			
> 0.65			
—			
circuit breaker: 2-3x 6 A C characteristic - fuse: 2-3x T 6.3 A			
24 Vdc	12...15 Vdc	48 Vdc	72 Vdc
24...27.5 Vdc	12...15 Vdc	45...55 Vdc	72...85 Vdc
10 A @ 50°C (3)	16 A @ 12 Vdc / 15 A @ 15 Vdc	5 A @ 50°C (3)	3,5 A (3)
15 A for >6 s with Uout >90% Un (4)	20...18 A for >6 s with Uout >90% Un (4)	6 A for >6 s with Uout >90% Un (4)	5 A for >6 s with Uout >90% Un (4)
38 A for 0.5 s (4)	34 A for 0.5 s (4)	18 A for 0.5 s (4)	13 A for 0.5 s (4)
< 1%	< 1%	< 1%	< 1%
≤ 100 mVpp	≤ 100 mVpp	100 mVpp	≤ 100 mVpp
>15 ms / >100 ms	>15 ms / >100 ms	>15 ms / >100 ms	>15 ms / >100 ms
hiccup at the overload limit with auto reset / over temperature protection			
"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED			
21.6 Vdc	10.8 Vdc	43.2 Vdc	64.8 Vdc
possible	possible	possible	possible
possible with external ORing diode	possible with external ORing diode	factory provided with internal ORing diode	factory provided with internal ORing diode
>91% / >92%	>89% / >90%	>91% / >92%	>92% / >93%
24 W / 21 W	22 W / 20 W	24 W / 21 W	22 W / 19 W
-20...+60°C, with derating over 50°C / over temperature protection (3)			
3 kVac / 60 s SELV output (5)			
2 kVac / 60 s			
0.5 kVac / 60 s			
EN50178, EN61558, EN60950, IEC950, UL508			
EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11			
>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F			
II / 2			
IP 20 IEC 529, EN60529			
2.5 mm² pluggable screw type			
aluminium and stainless steel			
1 kg (35.3 oz)			
vertical on rail, allow 10 mm spacing between adjacent components			
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB			

1, 2 or 3-phase switching power supply 230-400-500 Vac output power 480 W

- Single-phase, 2-phase and 3-phase input 185...550 Vac
- High reliability and immunity against over voltage due to failures on AC line
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits

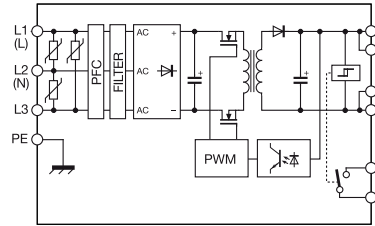


NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

- (1) Version available upon request; for information call our sales department, local agent or representative
 (2) 550 Vdc max for UL508
 (3) Over 45°C (113°F) apply a derating of about 16 W/°C
 (4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.
 (5) Version with 72 V output is not suitable for SELV applications

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 20 A
Output 12...15 Vdc 40 A
Output 48 Vdc 10 A
Output 72 Vdc 6 A

INPUT

Input rated voltage
 Frequency
 Current @ Iout max. (Uin 230 / 400 Vac)
 Inrush peak current
 Power factor
 Internal protection fuse
 External protection on AC line

OUTPUT TECHNICAL DATA

Output rated voltage
 Output adjustable range
 Continuous current
 Overload limit
 Short circuit peak current
 Load regulation
 Ripple @ nominal ratings
 Hold up time (Uin 230 / 400 Vac)
 Overload / short circuit protections
 Status display
 Alarm contact threshold
 Parallel connection
 Redundant parallel connection

GENERAL TECHNICAL DATA

Efficiency (Uin 230 / 400 Vac)
 Dissipated power (Uin 230 / 400 Vac)
 Operating temperature range
 Input/output isolation
 Input/ground isolation
 Output/ground isolation
 Standard/approvals
 EMC Standards
 MTBF @ 25°C @ nominal ratings
 Overvoltage category/Pollution degree
 Protection degree
 Connection terminal
 Housing material
 Approx. weight
 Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
 Mounting rail type according to IEC60715/G32

Cod. XCSW481C

CSW481C

Cod. XCSW481D

CSW481D

XCSW481G

CSW481G (1) (5)

1-2-3x **230-400-500 Vac** (range 187...550 Vac / 250...725 Vdc) (2)

47...63 Hz

2.2 A / 1 A

<20 A / <40 A

> 0.95

circuit breaker: 2-3x 6 A C characteristic - fuse: 2-3x T 6.3 A

24 Vdc

23.3...27.5 Vdc

20 A @ 45°C (3)

28 A for >5 s
 with Uout >90%Un (4)

50 A for 0,3 s (4)

< 1%

≤ 100 mVpp

>20 ms / >20 ms

21.6 Vdc

possible
 possible with external ORing
 diode

48 Vdc

45...55 Vdc

10 A @ 45°C (3)

14 A for >5 s
 with Uout >90%Un (4)

25 A for 0,3 s (4)

< 1%

≤ 100 mVpp

>20 ms / >20 ms

43.2 Vdc

possible
 factory provided with internal
 ORing diode

72 Vdc

72...85 Vdc

6 A @ 45°C (3)

9 A for >5 s
 with Uout >90%Un (4)

12 A for 0,3 s (4)

< 1%

≤ 100 mVpp

>20 ms / >20 ms

64.8 Vdc

possible
 factory provided with internal
 ORing diode

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED

>92% / >92%

42 W / 42 W

>92% / >92%

42 W / 42 W

>91% / >91%

42 W / 42 W

-20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output (5)

2 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium and stainless steel

1 kg (35.3 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Switching power supply CSG series

TRIPLE POWER

DIN-rail 3-phase switching power supplies specifically designed for applications in industrial automation control panels.

They can deliver over +50% of the nominal current for a sustained period keeping a stable output voltage.

The alarm contact is controlled by a voltage threshold and it switches when the voltage drops below 90% of the rated value.

Thanks to these features and to the numerous international certifications, this series of power supplies allows engineers to meet all the requirements of the new EN 60204-1 Machinery Directive, to enable the protection devices connected to the output to trigger quickly, safely and selectively, thus ensuring continuity of service to the other parts of the system.

Suggested uses

- Applications in machinery automation requiring high levels of reliability in terms of control and safety voltage
- In applications requiring selectivity of surge protection devices on DC lines
- Applications in industrial automation
- Heavy duty uses

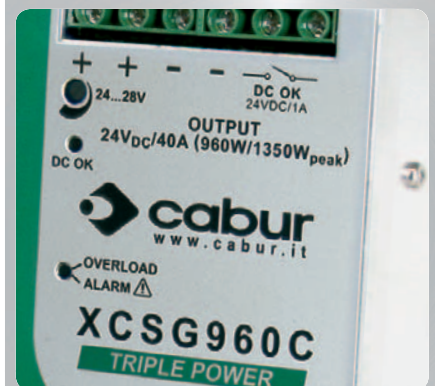
Main features

- Equipped with 340...550 Vac / 507...770 Vdc, they are suitable for use on all power lines.
- Their high efficiency reduces energy consumption and components' operating temperature allowing their use in small panels and under severe ambient conditions.
- Great backup power allowing to supply at least + 50% above the rated voltage for 5 seconds, keeping output voltage constant and ensuring safety and reliability.
- The output voltage may be adjusted and is protected against the input of surges on the DC line and is equipped with double electronic protection devices preventing damages to powered components in the event of internal faults.
- Dimensioned short-circuit and overload protection supplying breakaway starting currents 150% above the rated value required by heavy loads.
- Thermal protection prevents faults in the event of prolonged overloads at high ambient temperatures.
- Their design ensures excellent ventilation to internal components, very small dimensions and IP20 protection against accidental contacts in compliance with IEC529.

Special power supplies for engines in DC, Brushless, and relative drives

New 48Vdc, 72-85Vdc, and 110-180Vdc models have been introduced, designed to reliably power engines in DC. They:

- Supply peak power equal to even 4-5 times the nominal current, which is required by the engine during the peak phase
- Have an output stage protected from overvoltage generated by the engines and drives during braking, which could otherwise cause malfunctions or cause the power supply to lose control over output voltage stability
- Provide output voltage at 48Vdc, and 72-85Vdc. By increasing the voltage of the engine power supply, the same power can be obtained at lower current, with notable advantages for performance, engine construction, connection wires, and drives.



Integrated smart alarm contact

Activated when output voltage decreases below 90% of rated value

Extremely compact dimensions

They are among the smallest on the market, optimising the use of space in the panel without compromising performance

Power boost

The output power reaches 120% of the nominal value for several minutes, up to 150% during an overload, and up to 250% in the event of a short-circuit, to enable the protection devices connected to the output to trigger quickly, safely and selectively, without the use of additional modules

Very high efficiency

Designed to save energy and reduce the working temperature

Wide range

The widest range on the market, with power ratings from 120 to 2400W and output voltages of 24, 48 and 72 V, for uses including powering special motors

New active electronic ASSIL protection

3-phase networks can cause reliability problems for electronic devices due to various phenomena. Simple activation of a protection or the commutation of a load can generate holes in the network and voltage peaks whose size depends on several variables.

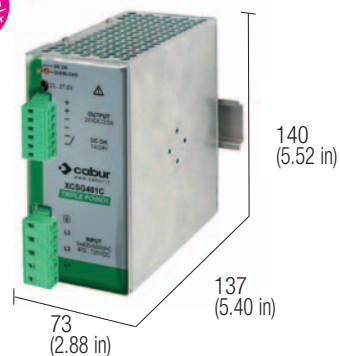
These damaging phenomena are governed by the VDE0160-2 standard and cannot be resolved using traditional passive protections (varistors, NTC).

The solution is the active ASSIL circuit (Active Surge Suppressor and Inrush Current Limiter). A power semi-conductor "opens" the DC side in less than 0.1 ms in the case that voltage exceeds 750V, preventing damaging voltage peaks from reaching the convertor's MOSFET.

The protection circuit also serves to actively limit the inrush current, which allows for precise coordination of the overcurrent protections, as well as eliminating undesirable bursts which can occur when the network returns to its nominal value after a voltage hole.

3-phase switching power supply 400-500 Vac output power 480 W

- 3-phase input 340...550 Vac or 2-phase with derating
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits



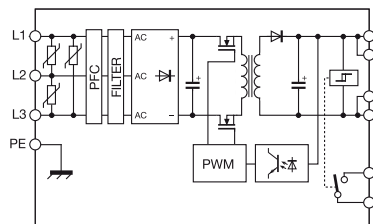
NOTES

The depth dimension includes the DIN rail clamp.

(3) Over 50°C (122°F) apply a derating of about 6 W/°C

(4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 20 A

Output 12...15 Vdc 40 A

Output 48 Vdc 10 A

Output 72 Vdc 6 A

INPUT TECHNICAL DATA

Input rated voltage

Frequency

Current @ Iout max. (Uin 400 / 500 Vac)

Inrush peak current

Power factor

Internal protection fuse

External protection on AC line

OUTPUT TECHNICAL DATA

Output rated voltage

Output adjustable range

Continuous current

Overload limit

Short circuit peak current

Load regulation

Ripple @ nominal ratings

Hold up time (Uin 400 / 500 Vac)

Overload / short circuit protections

Status display

Alarm contact threshold

Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

Efficiency (Uin 400 / 500 Vac)

Dissipated power (Uin 400 / 500 Vac)

Operating temperature range

Input/output isolation

Input/ground isolation

Output/ground isolation

Standard/approvals

EMC Standards

MTBF @ 25°C @ nominal ratings

Overvoltage category/Pollution degree

Protection degree

Connection terminal

Housing material

Approx. weight

Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Cod. XCSG481C

CSG481C (5)

3x 400-500 Vac (range 340...550 Vac)

47...63 Hz

1,2 A / 0,8 A

<40 A

> 0,95

circuit breaker: 3x 6 A C characteristic - fuse: 3x T 6,3 A

24 Vdc

23,3...27,5 Vdc

20 A @ 45°C (3)

28 A for >5 s with Uout

>90%Un (4)

50 A for 0,3 s (4)

< 1%

≤ 100 mVpp

>50 ms / >50 ms

hiccup at the overload limit with auto reset / over temperature protection (3)

"DC OK" green LED / "DC OK" alarm contact

21,6 Vdc

possible

possible with external ORing diode

>93% / >92%

36 W / 42 W

-20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

2 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

4 mm² fixed screw type

aluminium

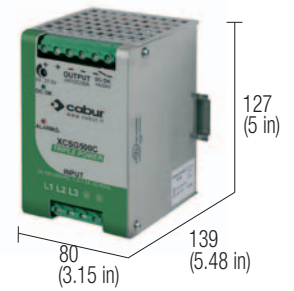
1 kg (35.3 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

3-phase switching power supply 400-500 Vac output power 500 W

- 3-phase input 340...550 Vac or 2-phase with derating
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits
- Input protected by ASSIL circuit (Surge Suppressor and Inrush Limiter)

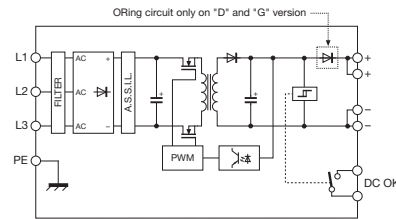


NOTES

The depth dimension includes the DIN rail clamp.

- (1) Version available upon request; for information call our sales department, local agent or representative
- (3) Over 50°C (122°F) apply a derating of about 6 W/°C
- (4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.
- (5) Version CSG500G is not suitable for SELV applications

BLOCK DIAGRAM



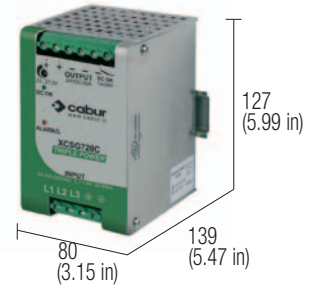
Special version for DC motors

Special version for DC motors

VERSIONS	Cod. XCSG500C		Cod. XCSG500D		Cod. XCSG500G	
Output 24 Vdc 20 A	CSG500C					
Output 12...15 Vdc 40 A			—			
Output 48 Vdc 10 A redundant version			CSG500D (1)			
Output 72 Vdc 6.7 A redundant version					CSG500G (1) (5)	
INPUT TECHNICAL DATA						
Input rated voltage	3x 400–500 Vac (range 340...550 Vac)					
Frequency	47...63 Hz					
Current @ Iout max. (Uin 400 / 500 Vac)	1 A / 0.6 A					
Inrush peak current	< 35 A					
Power factor	> 0.75 with PFC					
Internal protection fuse	—					
External protection on AC line	circuit breaker: 10 A characteristic - fuse: 3x T 10 A					
OUTPUT TECHNICAL DATA						
Output rated voltage	24 Vdc		48 Vdc		72 Vdc	
Output adjustable range	24...28 Vdc		45...55 Vdc		72...85 Vdc	
Continuous current	20 A @ 50°C (3)		10 A @ 50°C (3)		6.7 A @ 50°C (3)	
Overload limit	>30 A for >5 s with Uout >90% Un (4)		>15 A for >5 s with Uout >90% Un (4)		10 A for >5 s with Uout >90% Un (4)	
Short circuit peak current	>60 A for 5 s (4)		>30 A for 5 s (4)		>20 A for 5 s (4)	
Load regulation	< 0.5%		< 0.5%		< 1%	
Ripple @ nominal ratings	≤ 100 mVpp		≤ 100 mVpp		≤ 100 mVpp	
Hold up time (Uin 400 / 500 Vac)	>15 ms / >30 ms		>15 ms / >20 ms		>15 ms / >20 ms	
Overload / short circuit protections	hiccup at the overload limit with auto reset / over temperature protection / ASSIL circuit					
Status display	“DC OK” green LED / “DC OK” alarm contact/ “Overload” red LED					
Alarm contact threshold	<21.6 Vdc		<43.2 Vdc		<64.8 Vdc	
Parallel connection	possible		possible		possible	
Redundant parallel connection	possible with external ORing diode		factory provided with internal ORing diode		factory provided with internal ORing diode	
GENERAL TECHNICAL DATA						
Efficiency (Uin 400 / 500 Vac)	>94% / >94%		>94% / >94%		>95% / >95%	
Dissipated power (Uin 400 / 500 Vac)	30 W / 30 W		30 W / 30 W		26 W / 26 W	
Operating temperature range	–20...+60°C, with derating over 50°C / over temperature protection (3)					
Input/output isolation	3 kVac / 60 s SELV output (5)					
Input/ground isolation	2 kVac / 60 s					
Output/ground isolation	0.5 kVac / 60 s					
Standard/approvals	EN50178, EN61558, EN60950, IEC950, UL508					
EMC Standards	EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11					
MTBF @ 25°C @ nominal ratings	>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F					
Overvoltage category/Pollution degree	II / 2					
Protection degree	IP 20 IEC 529, EN60529					
Connection terminal	6 mm² fixed screw type					
Housing material	aluminium					
Approx. weight	1.3 kg (45.89 oz)					
Mounting information	vertical on rail, allow 10 mm spacing between adjacent components					
MOUNTING ACCESSORIES						
Mounting rail type according to IEC60715/TH35-7.5	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB					
Mounting rail type according to IEC60715/G32	—					

3-phase switching power supply 400-500 Vac output power 720 W

- 3-phase input 340...550 Vac or 2-phase with derating
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits
- Input protected by ASSIL circuit (Surge Suppressor and Inrush Limiter)

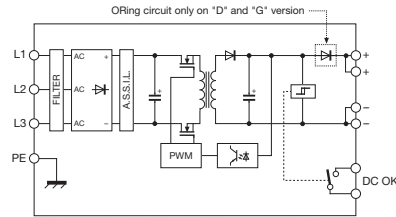


NOTES

The depth dimension includes the DIN rail clamp.

- (1) Version available upon request; for information call our sales department, local agent or representative
- (3) Over 50°C (122°F) apply a derating of about 6 W/°C
- (4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.

BLOCK DIAGRAM



Special version for DC motors

VERSIONS

- Output 24 Vdc 30 A
- Output 12...15 Vdc 60 A
- Output 48 Vdc 15 A redundant version
- Output 72 Vdc 10 A redundant version

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ Iout max. (Uin 400 / 500 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time (Uin 400 / 500 Vac)
- Overload / short circuit protections

- Status display
- Alarm contact threshold
- Parallel connection
- Redundant parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 400 / 500 Vac)
- Dissipated power (Uin 400 / 500 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

Cod. XCSG720C

CSG720C

(1)

CSG720D

(1)

3x 400–500 Vac (range 340...550 Vac)

47...63 Hz

1.4 A / 1.1 A

< 30 A

> 0.75

circuit breaker: 3x 10 A C characteristic - fuse: 3x T 10 A

24 Vdc

24...28 Vdc

30 A @ 50°C (3)

45 A for >5 s

with Uout >90% Un (4)

>80 A for 1.5 s (4)

< 1%

100 mVpp

>10 ms / >15 ms

48 Vdc

45...55 Vdc

15 A @ 50°C (3)

22.5 A for >5 s

with Uout >90% Un (4)

>45 A for 1.5 s (4)

< 1%

100 mVpp

>10 ms / >15 ms

hiccup at the overload limit with auto reset / over temperature protection / ASSIL circuit

"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED

<21.6 Vdc

possible

possible with external ORing diode

<43.2 Vdc

possible

factory provided with internal ORing diode

>92% / >92%

60 W / 60 W

>93% / >93%

55 W / 55 W

–20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

2 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

6 mm² fixed screw type

aluminium

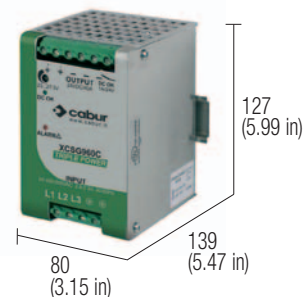
1.3 kg (45.86 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

3-phase switching power supply 400-500 Vac output power 960 W

- 3-phase input 340...550 Vac or 2-phase with derating
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits
- Input protected by ASSIL circuit (Surge Suppressor and Inrush Limiter)

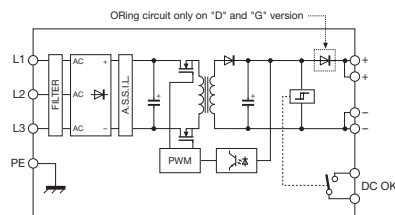


NOTES

The depth dimension includes the DIN rail clamp.

- (3) Over 50°C (122°F) apply a derating of about 18 W/°C
 (4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.
 (5) Version CSG960G is not suitable for SELV applications

BLOCK DIAGRAM



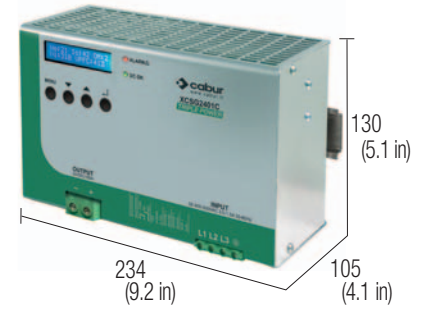
Special version for DC motors

Special version for DC motors

VERSIONS		Cod. XCSG960C		Cod. XCSG960D		Cod. XCSG960G	
Output 24 Vdc 40 A		CSG960C					
Output 12...15 Vdc 80 A				—			
Output 48 Vdc 20 A redundant version				CSG960D			
Output 72 Vdc 13.3 A redundant version						CSG960G (5)	
INPUT TECHNICAL DATA							
Input rated voltage		3x 400–500 Vac (range 340...550 Vac)					
Frequency		47...63 Hz					
Current @ Iout max. (Uin 400 / 500 Vac)		2.2 A / 1.1 A					
Inrush peak current		< 20 A					
Power factor		> 0.65					
Internal protection fuse		—					
External protection on AC line		circuit breaker: 3x 10 A C characteristic - fuse: 3x T 10 A					
OUTPUT TECHNICAL DATA							
Output rated voltage		24 Vdc		48 Vdc		72 Vdc	
Output adjustable range		24...28 Vdc		45...55 Vdc		72...85 Vdc	
Continuous current		40 A @ 50°C (3)		20 A @ 50°C (3)		13.3 A @ 50°C (3)	
Overload limit		56 A for >5 s with Uout >90% Un (4)		28 A for >5 s with Uout >90% Un (4)		18.6 A for >5 s with Uout >90% Un (4)	
Short circuit peak current		>90 A for 5 s (4)		>70 A for 5 s (4)		>30 A for 5 s (4)	
Load regulation		< 1%		< 1%		< 1%	
Ripple @ nominal ratings		100 mVpp		100 mVpp		≤ 100 mVpp	
Hold up time (Uin 400 / 500 Vac)		>10 ms / >15 ms		>10 ms / >15 ms		>15 ms / >18 ms	
Overload / short circuit protections		hiccup at the overload limit with auto reset / over temperature protection					
Status display		"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED					
Alarm contact threshold		<21.6 Vdc		<43.2 Vdc		<64.8 Vdc	
Parallel connection		possible		possible		possible	
Redundant parallel connection		possible with external ORing diode		factory provided with internal ORing diode		factory provided with internal ORing diode	
GENERAL TECHNICAL DATA							
Efficiency (Uin 400 / 500 Vac)		>94% / >94%		>94% / >94%		>92% / >92%	
Dissipated power (Uin 400 / 500 Vac)		61 W / 61 W		61 W / 61 W		85 W / 85 W	
Operating temperature range		–20...+60°C, with derating over 50°C / over temperature protection (3)					
Input/output isolation		3 kVac / 60 s SELV output (5)					
Input/ground isolation		2 kVac / 60 s					
Output/ground isolation		0.5 kVac / 60 s					
Standard/approvals		EN50178, EN61558, EN60950, IEC950, UL508					
EMC Standards		EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11					
MTBF @ 25°C @ nominal ratings		>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F					
Overvoltage category/Pollution degree		II / 2					
Protection degree		IP 20 IEC 529, EN60529					
Connection terminal		6 mm² fixed screw type					
Housing material		aluminium					
Approx. weight		1,2 kg (70.55 oz)					
Mounting information		vertical on rail, allow 10 mm spacing between adjacent components					
MOUNTING ACCESSORIES							
Mounting rail type according to IEC60715/TH35-7.5		PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB					
Mounting rail type according to IEC60715/G32		—					

3-phase switching power supply 400-500 Vac output power 2400 W

- 3-phase input 340...550 Vac or 2-phase with derating
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits
- Input protected by ASSIL circuit (Surge Suppressor and Inrush Limiter)



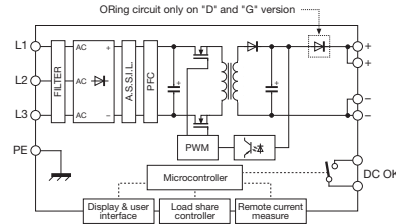
UL pending



NOTES

- The depth dimension includes the DIN rail clamp.
 (2) Version available upon request; for information call our sales department, local agent or representative
 (3) Over 45°C (113°F) apply a derating of about 40 W/°C
 (4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.

BLOCK DIAGRAM



Special version for DC motors

VERSIONS
Output 12-15-24 Vdc 100 A redundant version
Output 24-48 Vdc 50 A redundant version

Cod. XCSG2401C	Cod. XCSG2401D
CSG2401C (2)	CSG2401D (2)

APPLICATIONS

Series CSG2401 has an internal microprocessor that controls the many functions of the power supply, which can be programmed thanks to a user-friendly menu activated by 4 buttons on the front and shown on the front display.

Front display: during normal operation, this shows the output voltage value and current used by the load; during programming, it allows for the choice of the various functions available.

Input protection: the input circuit has been designed to avoid the most common problems seen in 3-phase networks. It therefore has:

- 1) a special ASSIL (Active Surge Suppressor and Inrush Limiter) circuit to protect it against overvoltage in accordance with VDE0160;
- 2) a PFC circuit failure (latched shutdown) circuit;
- 3) a system for controlling lack of phase that automatically reduces output power;
- 4) an auto-restart switch-off system in the event of overvoltage and undervoltage.

Output protection: limit current can be selected as between 10% and 100% of rated current; protection type against overload and short circuit can be chosen from:

- 1) hiccup autoreset with limit current, equal to 150% of rated current and ON/OFF time equal to 5 secs./10 secs. (values can be altered manually);
- 2) constant power.

Output signals: in addition to the "DC OK" and "FAULT" LEDs, the device also has:

- 1) an analogue signal 0...10V or 4...20mA that provides an indication of current used by the load;
- 2) a programmable alarm contact able to signal and record the exceeding of the various limits to a memory: output voltage, input current, output overload, overtemperature and other parameters that can be defined by programming.

Additional functions: the following functions are also available:

- 1) battery charger: the acid lead battery charging function can be selected;
- 2) remote sensing (sense): this allows for the monitoring and compensation of voltage drops on long power supply lines;
- 3) remote switch-off: the power supply can be switched off and disabled from a remote position;
- 4) auxiliary voltage: auxiliary 12 Vdc is also available, regardless of the main output voltage status;
- 5) temperature control: by connecting an external sensor (NTC), the battery charge temperature can be controlled;
- 6) communication port: by means of an RS232 communication device, the power supply can be piloted and monitored from a remote position.

INPUT TECHNICAL DATA
Input rated voltage
Frequency
Current @ Iout max. (Uin 400 / 500 Vac)
Inrush peak current
Power factor
Internal protection fuse
External protection on AC line

3x 400-500 Vac (range 340...550 Vac)
47...63 Hz
4.2 A / 3.5 A
< 2 A (with active inrush current limiter)
> 0.92
—
circuit breaker: 3x 10 A C characteristic - fuse: 3x T10 A

OUTPUT TECHNICAL DATA
Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time (Uin 400 / 500 Vac)
Overload / short circuit protections
Status display

12-15-24 Vdc	24-48 Vdc
11.5...29 Vdc	23...56 Vdc
100 A @ 45°C (3)	50 A @ 45°C (3)
150 A for >5 s with Uout >90% Un (4)	75 A for >5 s with Uout >90% Un (4)
>150 A for 5 s (4)	>75 A for 5 s (4)
< 1%	< 1%
≤ 200 mVpp	≤ 200 mVpp
>10 ms / >10 ms	>10 ms / >10 ms

Alarm contact threshold
Parallel connection
Redundant parallel connection

programmable (see on right side)
"DC OK" green LED / "DC OK" alarm contact / "Overload" red LED / LCD display
programmable (see on right side)
possible
possible

GENERAL TECHNICAL DATA
Efficiency (Uin 400 / 500 Vac)
Dissipated power (Uin 400 / 500 Vac)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards

>92% / >92%	>93% / >93%
200 W / 200 W	180 W / 180 W
-20...+60°C, with derating over 45°C / over temperature protection (3)	
3 kVac / 60 s SELV output (5)	
1.5 kVac / 60 s	
0.5 kVac / 60 s	
EN60950, IEC950	
EN 55011, EN 61000-3-2, EN61000-4-5	
Surge immunity Level IV, VDE0160	
>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F	

MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

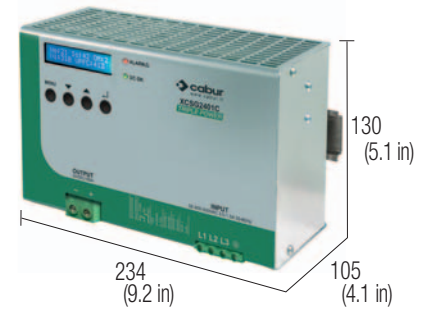
II / 2
IP 20 IEC529, EN60529
4-6 mm² fixed screw type
aluminium
2,8 kg (98,76 oz)
vertical on rail, allow 60 mm spacing between adjacent components

MOUNTING ACCESSORIES
Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
--

3-phase switching power supply 400-500 Vac output power 2400 W

- 3-phase input 340...550 Vac or 2-phase with derating
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in PELV circuits
- Input protected by ASSIL circuit (Surge Suppressor and Inrush Limiter)



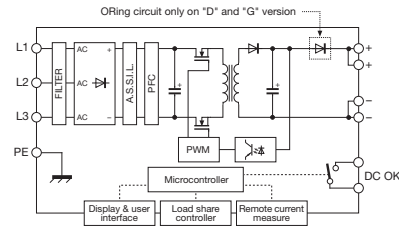
UL pending



NOTES

The depth dimension includes the DIN rail clamp.
With DC input voltage, the output current must be derated by 30%
(2) Version available upon request; for information call our sales department, local agent or representative
(3) Over 45°C (113°F) apply a derating of about 40 W/°C
(4) For this peak current, the output voltage does not drop more than 10% of the nominal value, but the current value, provided by the power supply also depends on the total line resistance.
(5) Version CSG2401G and CSG2401R is not suitable for SELV applications

BLOCK DIAGRAM



Special version for DC motors

VERSIONI

Output 72 Vdc 33 A redundant version (5)
Output 100-110-170 Vdc 14 A redundant version (5)

Cod. XCSG2401G

Cod. XCSG2401R

CSG2401G (5) (2)

CSG2401R (5) (2)

INPUT TECHNICAL DATA

Input rated voltage
Frequency
Current @ Iout max. (Uin 400 / 500 Vac)
Inrush peak current
Power factor
Internal protection fuse
External protection on AC line

3x **400-500 Vac** (range 340...550 Vac)
47...63 Hz
4.2 A / 3.5 A
< 2 A (with active inrush current limiter)
> 0.92
—
circuit breaker: 3x 10 A C characteristic - fuse: 3x T10 A

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time (Uin 400 / 500 Vac)
Overload / short circuit protections
Status display

72 Vdc	100-110-170 Vdc
50...87 Vdc	88...175 Vdc
33 A @ 45°C (3)	14 A @ 45°C (3)
50 A for >5 s with Uout>90% Un (4)	21 A for >5 s with Uout>90% Un (4)
>50 A for 5 s (4)	>21 A for 5 s (4)
< 1%	< 1%
≤ 200 mVpp	≤ 200 mVpp
>10 ms / >10 ms	>10 ms / >10 ms

Alarm contact threshold
Parallel connection
Redundant parallel connection

programmable (see on right side)
"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED / LCD display (see on right side)
programmable
possible
possible

GENERAL TECHNICAL DATA

Efficiency (Uin 400 / 500 Vac)
Dissipated power (Uin 400 / 500 Vac)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

>92% / >92%	>92% / >92%
200 W / 200 W	200 W / 200 W
-20...+60°C, with derating over 45°C / over temperature protection (3)	
3 kVdc / 60 s SELV output (5)	
1.5 kVdc / 60 s	
0.5 kVdc / 60 s	
EN60950, IEC950	
EN 55011, EN 61000-3-2, EN61000-4-5	
Surge immunity Level IV, VDE0160	
>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F	
II / 2	
IP 20 IEC529, EN60529	
4 and 6 mm ² screw type	
aluminium	
2,8 kg (98,76 oz)	
vertical on rail, allow 60 mm spacing between adjacent components	

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

APPLICATIONS

Series CSG2401 has an internal microprocessor that controls the many functions of the power supply, which can be programmed thanks to a user-friendly menu activated by 4 buttons on the front and shown on the front display.

Front display: during normal operation, this shows the output voltage value and current used by the load; during programming, it allows for the choice of the various functions available.

Input protection: the input circuit has been designed to avoid the most common problems seen in 3-phase networks. It therefore has:

- 1) a special ASSIL (Active Surge Suppressor and Inrush Limiter) circuit to protect it against overvoltage in accordance with VDE0160;
- 2) a PFC circuit failure (latched shutdown) circuit;
- 3) a system for controlling lack of phase that automatically reduces output power;
- 4) an auto-restart switch-off system in the event of overvoltage and undervoltage.

Output protection: limit current can be selected as between 10% and 100% of rated current; protection type against overload and short circuit can be chosen from:

- 1) hiccup autoreset with limit current, equal to 150% of rated current and ON/OFF time equal to 5 secs./10 secs. (values can be altered manually);
- 2) constant power.

Output signals: in addition to the "DC OK" and "FAULT" LEDs, the device also has:

- 1) an analogue signal 0...10V or 4...20mA that provides an indication of current used by the load;
- 2) a programmable alarm contact able to signal and record the exceeding of the various limits to a memory: output voltage, input current, output overload, overtemperature and other parameters that can be defined by programming.

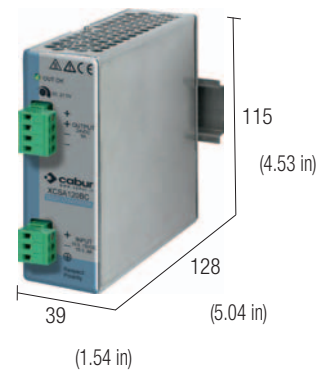
Additional functions: the following functions are also available:

- 1) battery charger: the acid lead battery charging function can be selected;
- 2) remote sensing (sense): this allows for the monitoring and compensation of voltage drops on long power supply lines;
- 3) remote switch-off: the power supply can be switched off and disabled from a remote position;
- 4) auxiliary voltage: auxiliary 12 Vdc is also available, regardless of the main output voltage status;
- 5) temperature control: by connecting an external sensor (NTC), the battery charge temperature can be controlled;
- 6) communication port: by means of an RS232 communication device, the power supply can be piloted and monitored from a remote position.

DC/DC Insulated converters output power 120 W



- DC wide range input
- Short circuit, overload, over temperature protection
- Compact design

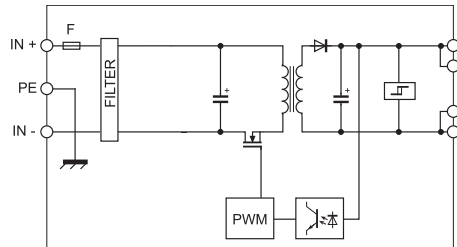


NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

- (1) Inrush current is measured with input supplied by a battery; the current peak vary depending on the internal impedance of the current source and depending on cables and connections resistance.
- (2) According to EN60950 insulation tests on input side must be made only with DC instruments.
- (3) Version available upon request; for information call our sales department, local agent or representative.

BLOCK DIAGRAM



VERSIONS

12 Vdc / 24 Vdc 5 A
12 Vdc / 48 Vdc 2.5 A
24 Vdc / 12 Vdc 7 A
24 Vdc / 24 Vdc 5 A

INPUT TECHNICAL DATA

Input rated voltage
 Current @ Iout max.
 Inrush peak current
 Standby power
 Internal protection fuse
 External protection on AC line
 Overvoltage input protection circuit

OUTPUT TECHNICAL DATA

Output rated voltage
 Output adjustable range
 Continuous current
 Overload limit
 Short circuit peak current
 Load regulation
 Ripple @ nominal ratings
 Hold up time @ In
 Overload / short circuit protections
 Status display
 Alarm contact threshold
 Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

Efficiency (Uin 110 Vdc)
 Dissipated power (Uin 110 Vdc)
 Operating temperature range
 Input/output isolation
 Input/ground isolation
 Output/ground isolation
 Standard/approvals
 EMC Standards
 MTBF @ 25°C @ nominal ratings
 Overvoltage category/Pollution degree
 Protection degree
 Connection terminal
 Housing material
 Approx. weight
 Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
 Mounting rail type according to IEC60715/G32

Cod. XCSA120BC

CSA120BC (3)

Cod. XCSA120BD

CSA120BD (3)

Cod. XCSA120CB

CSA120CB

Cod. XCSA120CC

CSA120CC

12 Vdc (range 10.5...18 Vdc)

10 A \pm 10%
 < 60A / < 2ms (1)
 <1.5 W @ 12 Vdc

12 Vdc (range 10.5...18 Vdc)

12 A \pm 10%
 < 60A / < 2ms (1)
 <1.5 W @ 12 Vdc

24 Vdc (range 18...36 Vdc)

5.1 A \pm 10%
 < 110A / < 2ms (1)
 <1 W @ 24 Vdc

24 Vdc (range 18...36 Vdc)

5.8 A \pm 10%
 < 90A / < 2ms (1)
 <1.5 W @ 24 Vdc

T 20 A replaceable

\geq 25 A C characteristic

Passive varistor and active shutdown at 19 Vdc

T 10 A replaceable

\geq 13 A C characteristic

Passive varistor and active shutdown at 38 Vdc

24 Vdc

22.5...27.5 Vdc

5 A @ 24 Vdc

6.5 A

12 A for 300 ms

48 Vdc

45...55 Vdc

2.5 A @ 48 Vdc

3.4 A

5.8 A for 300 ms

12...15 Vdc

12...15 Vdc

7 A @ 12 Vdc

9.1 A

15 A for 300 ms

24 Vdc

22.5...27.5 Vdc

5 A @ 24 Vdc

6.5 A

12 A for 300 ms

<0.5%

\leq 100 mVpp

>1 ms

<0.5%

\leq 100 mVpp

>2 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED

possible

possible with external ORing diode

> 83%

<25 W

> 83%

<25 W

>87%

<16 W

>87%

<18 W

-20...+50°C

2.1 kVdc / 60s (2)

1.41 kVdc / 60s (2)

0.75 kVdc / 60s (2)

IEC950, EN60950

EN50081-1, EN50082-2, EN61000-3-2

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium

550 g (19.40 oz)

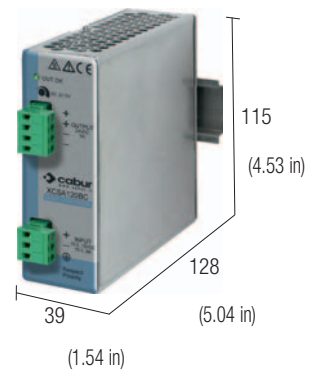
vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

DC/DC Insulated converters output power 120 W



- DC wide range input
- Short circuit, overload, over temperature protection
- Compact design

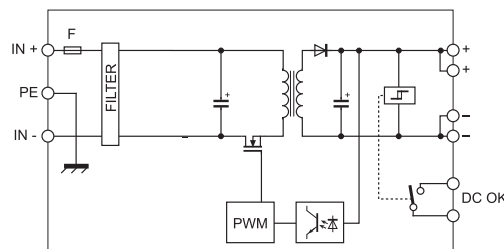


NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

- (1) Inrush current is measured with input supplied by a battery; the current peak vary depending on the internal impedance of the current source and depending on cables and connections resistance.
- (2) According to EN60950 insulation tests on input side must be made only with DC instruments.
- (3) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



VERSIONS

48 Vdc / 12 Vdc 8 A
48 Vdc / 24 Vdc 5 A

Cod. XCSA120DB

Cod. XCSA120DC

CSA120DB (3)

CSA120DC

INPUT TECHNICAL DATA

Input rated voltage
Current @ Iout max.
Inrush peak current
Standby power
Internal protection fuse
External protection on AC line
Overvoltage input protection circuit

48 Vdc (range 36...72 Vdc)
2.8 A $\pm 10\%$
< 120A / < 2ms (1)
< 2 W @ 48 Vdc

48 Vdc (range 36...72 Vdc)
2.8 A $\pm 10\%$
< 120A / < 2ms (1)
< 2 W @ 48 Vdc

T 5 A replaceable

≥ 6 A C characteristic

Passive varistor and active shutdown at 76 Vdc

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time @ In
Overload / short circuit protections
Status display
Alarm contact threshold
Parallel connection

12...15 Vdc

24 Vdc

12...15 Vdc

22.5...27.5 Vdc

8 A @ 12 Vdc

5A @ 24 Vdc

12 A

6.5 A

18 A for 300 ms

13 A for 300 ms

< 0.5%

< 0.5%

≤ 100 mVpp

≤ 200 mVpp

2 ms

4.5 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED

possible

possible with external ORing diode

GENERAL TECHNICAL DATA

Efficiency (Uin 110 Vdc)
Dissipated power (Uin 110 Vdc)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

> 89%

> 90%

< 17 W

< 13 W

-20...+60°C, with derating over 50°C

2.1 kVdc / 60s (2)

1.41 kVdc / 60s (2)

0.75 kVdc / 60s (2)

IEC950, EN60950

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-5-5, EN61000-4-6, EN61000-4-11

> 500'000 h acc. to SN 29500 / > 150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium

550 g (19.40 oz)

vertical on rail, allow 10 mm spacing between adjacent components

MOUNTING ACCESSORIES

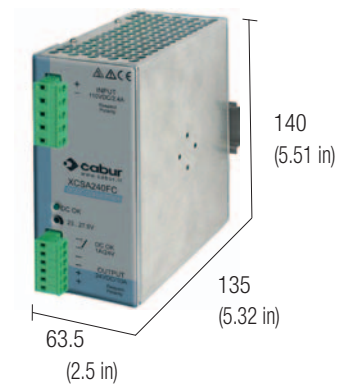
Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

DC/DC Insulated converters output power 240 W

- DC wide range input
- Short circuit, overload, over temperature protection
- Already preset with internal ORing diode for redundant connection
- Compact design

NOTE:
also the power supplies CSD, CSF30, CSF85
and CSF120 series can be supplied in DC 110 V



NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

- (1) Inrush current is measured with input supplied by a battery; the current peak vary depending on the internal impedance of the current source and depending on cables and connections resistance.
- (2) Over 50°C (122°F) apply a derating -6 W/°C, max 60°C
- (3) According to EN60950 insulation tests on input side must be made only with DC instruments.

VERSIONS

110 Vdc / 24 Vdc 10 A
110 Vdc / 24 Vdc 10 A redundant

INPUT TECHNICAL DATA

Input rated voltage
Current @ Iout max.
Inrush peak current
Standby power
Internal protection fuse
External protection on AC line
Overvoltage input protection circuit

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time @ In (Uin 110 Vdc)
Overload / short circuit protections
Status display
Alarm contact threshold
Parallel connection

Redundant parallel connection

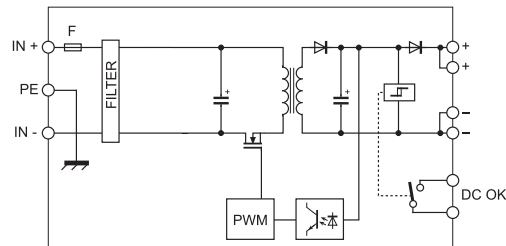
GENERAL TECHNICAL DATA

Efficiency (Uin 110 Vdc)
Dissipated power (Uin 110 Vdc)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

BLOCK DIAGRAM



Cod. XCSA240FC

CSA240FC

110 Vdc (range 100...130 Vdc)
2.4 A ±10%
< 150A / < 2ms (1)
<3.4 W @ 110 Vdc
T 5 A replaceable
≥6 A C characteristic
Passive varistor and active
shutdown at 136 Vdc

24 Vdc

22.7...27 Vdc
10 A @ 50°C (2)
15 A
21 A for 300 ms
<1.5%
≤ 100 mVpp
>4 ms

hiccup at the overload limit with auto reset / over temperature protection
"DC OK" green LED / "DC OK" alarm contact / "Overload" red LED

possible

factory provided with internal
ORing diode

>89%

<28 W

-20...+60°C, with derating over 50°C (2)

2.1 kVdc / 60s (3)

1.41 kVdc / 60s (3)

0.75 kVdc / 60s (3)

IEC950, EN60950

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-5-5, EN61000-4-6, EN61000-4-11
>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium

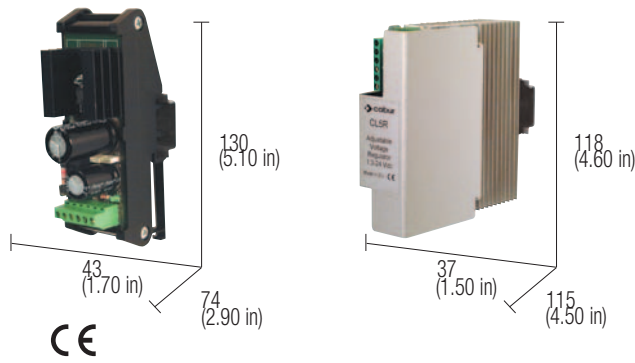
800 g (28.24 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Adjustable linear power supply input 24 Vac

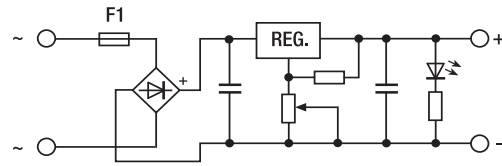
- Adjustable output voltage 1.2...24 Vdc
- Output current 1.5 and 5 A
- Short circuit, overload, over temperature protection



NOTES

The depth dimension includes the terminal blocks and the DIN clamp.
(1) See "Applications"

BLOCK DIAGRAM



VERSIONS

Output 1.2 A
Output 5 A

INPUT TECHNICAL DATA

Input rated voltage
Frequency
Current @ Iout max.
Internal protection fuse
External protection on AC line

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Load regulation
Ripple @ nominal ratings
Hold up time @ In
Overload / short circuit protections
Status display

GENERAL TECHNICAL DATA

Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Reference Standards
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

Cod. XCL1R

CL1R

Cod. XCL5R

CL5R

9...26 Vac (see Tab. 1)
50...60 Hz

2,5 A
T 3 A replaceable
MCB: 4 A C characteristic - fuse T 4 A

6 A
T 10 A replaceable
MCB: 10 A C characteristic - fusibile T 10 A

1.2...24 Vdc
(see Tab. 1 and Tab. 2)
0.3...1.5 A (see Tab. 2)

1.2...24 Vdc
(see Tab. 1 and Tab. 2)
0.8...5 A (see Tab. 2)

< 1%
< 50 mVpp @ 24 Vac
>20 ms
constant current, limit current, auto reset / over temperature protection
"DC OK" green LED

-20...+45°C / over temperature protection (1)

not insulated

0.5 kVac / 60 s

0.5 kVac / 60 s

IEC 664-1, DIN VDE

EN50081-1, EN61000-6-4

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 00 IEC 529, EN60529

2.5 mm² fixed screw type

UL94V-0 plastic material

aluminium

120 g (4.23 oz)

350 g (12.35 oz)

vertical on rail, allow 20 mm spacing between adjacent components

APPLICATIONS

The CL-R linear regulated power supply series of CABUR is provided with adjustable output and it can satisfy all those needs related to the feeding of small loads with non-standard rated voltage and at an extremely limited cost. It can be mounted on the rail in whatever position, providing that enough space for the free circulation of the air remains for the cooling; the CL1R model having an IP 00 protection degree, its use is intended inside a protected enclosure. Even if the power supply is protected from over-current it is advisable to respect the rated values shown in table 1 and 2.

(1) CL1R and CL5R give the rated performances if fed by a voltage between 24 and 27 Vac, as indicated on **Tab. 1**; with input voltage between 24 and 27 Vac, the maximum output current for output voltages lower than 24 Vdc are indicated on **Tab. 2**; to achieve a good voltage stabilization and low ripple, linear power supplies must be fed with an input voltage higher than output voltage, while if they are supplied with 24 Vac, and adjusted for 24 Vdc output, when rated current is supplied, the ripple increases and voltage stabilization decreases; input voltages higher than 27 Vac increases power dissipation and increases operating temperature of the component, and might cause thermal protection shut down. The products are preadjusted to Vout 24 Vdc with Vin 26 Vac.

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

PR/DIN/AC, PR/DIN/AS, PR/DIN/AL

INPUT (Vac)	Uout max. (Vdc)	Iout max (A) XCL1R	Iout max (A) XCL5R
24...27	24	1.5	5
16...18	15	1.5	5
14...16	12	1.5	5
12...14	10	1.5	5
12	9	1.5	5
9	5	1.5	5

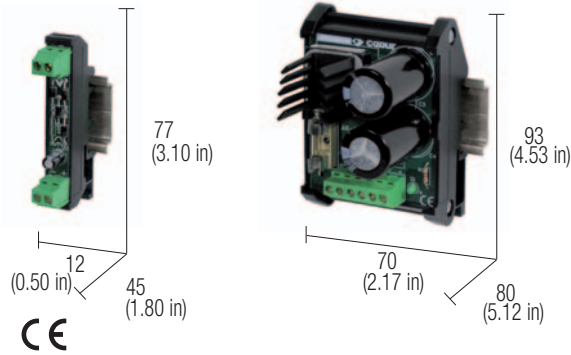
Tab. 1 (see explanation on right side)

INPUT (Vac)	Uout max. (Vdc)	Iout max (A) XCL1R	Iout max (A) XCL5R
24	24	1.5	5
24	15	0.8	2.5
24	12	0.7	2
24	10	0.5	1.5
24	9	0.45	1.3
24	5	0.3	0.8

Tab. 2 (see explanation on right side)

Filtered power supplies without transformer with non regulated output

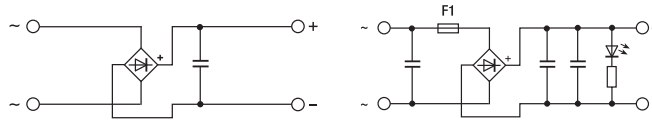
- DIN rail mounting
- Suitable for rectifying 6 Vac to 20 Vac
- $V_{\text{output}} = V_{\text{ac input}} \times 1.41$ (-1V)



NOTES

(2) Version available upon request; for information call our sales department, local agent or representative
 (3) They can work with input from min. 6 Vac to 30 Vac max., the non regulated output voltage depends on the load and on the variations of the input voltage supplied by the transformer
 (4) They are protected from overcurrent by their input fuse (except AR1 model); it is recommended to protect cables of the output line with fuses of value coordinated with the current of the load and cables.

BLOCK DIAGRAM



VERSIONS

Output 1 A
Output 6 A

INPUT TECHNICAL DATA

Input rated voltage
 Frequency
 Current @ Iout max.
 Internal protection fuse
 External protection on AC line

OUTPUT TECHNICAL DATA

Output voltage (without load)
 Output voltage (full load)
 Continuous current
 Overload limit
 Load regulation
 Ripple @ nominal ratings
 Hold up time @ In
 Overload / short circuit protections
 Status display
 Parallel connection
 Redundant parallel connection

GENERAL TECHNICAL DATA

Operating temperature range
 Input/output isolation
 Input/ground isolation
 Output/ground isolation
 Reference Standards
 MTBF @ 25°C @ nominal ratings
 Overvoltage category/Pollution degree
 Protection degree
 Connection terminal
 Housing material
 Approx. weight
 Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
 Mounting rail type according to IEC60715/G32

Cod. XAR1

AR1 (2)

Cod. XAR2

AR6

6...20 Vac
 50...60 Hz

1.2 A @ 20 Vac
 not available
 MCB: 1 A C characteristic - fuse T 1 A

7.2 A @ 20 Vac
 T 8 A replaceable
 MCB: 10 A C characteristic - fusibile T 10 A

1 A @ 20°C
 1 A

6 A @ 20°C
 9 A

$U_{\text{out}} = (U_{\text{in}} \times 1.41)$ (3)
 $U_{\text{out}} = (U_{\text{in}} \times 1.41) - 2$ (3)

≤ 10%

>20 ms

not available, insert external fuse (4)

"DC OK" green LED

-20...+45°C / max 60°C

not insulated

0.5 kVac / 60 s

0.5 kVac / 60 s

IEC 664-1, DIN VDE

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 00 IEC 529, EN60529

2.5 mm² fixed screw type

UL94V-0 plastic material

22 g (0.77 oz)

140 g (4.93 oz)

vertical on rail, allow 50 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

PR/DIN/AC, PR/DIN/AS, PR/DIN/AL

APPLICATIONS

A rectified and filtered power supply is made with a rectifier bridge and a filter capacitor, that converts the alternating voltage into a continuous voltage. Since the power supply unit is not regulated, the output voltage varies considerably according to the current required by the load and according to the ±10% mains voltage variations.

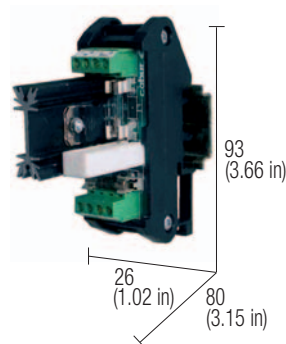
The formula indicated in the output specifications allows to calculate the output voltage with Zero load, with 50% load and full load. This allows you to choose the most suitable transformer for your needs.

These units offer a low cost and a reliable voltage source suitable for loads such as relays, contactors, solenoid valves or loads that can work with relatively high ripple and wide voltage variations; in applications where mains is unstable or troubled, it might be not suitable to feed microprocessor devices, analog converters, encoders and electronic devices which are sensitive to voltage variations.

INPUT (Vac)	OUTPUT without load (Vdc)	OUTPUT full load (Vdc)
20	28.7	24.2
18	25.4	21.4
15	21.2	17.2
12	17	15
9	12.7	8.7
6	8.5	4.5

Accessory for charging buffer batteries

- Battery charger
- Allows to connect in redundant parallel two power supplies
- Suitable for power supplies up to 10 A
- Battery protection fuse
- Battery feedback protection diode
- Current charge limiting resistor

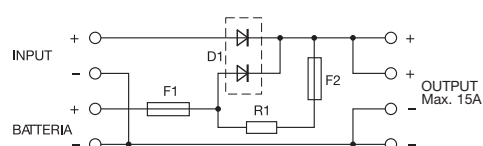


NOTES

The depth dimension includes the terminal blocks and the DIN rail clamp.

- (1) The charging current is dependent on the battery type and the required level of charge, it's about:
- 0.5A max @ 12Vdc battery
 - 1A max @ 24Vdc battery
- (2) The device do not avoid total discharge which always shortens battery life.

BLOCK DIAGRAM



VERSIONS

Cod. XCSBC

CSBC

GENERAL TECHNICAL DATA

Power supply rated voltage	6...30 Vdc
Power supply rated current	> 3 A
Load rated voltage	6...29.5 Vdc
Load max current	10 A
Charge current limitation	(1)
Battery disconnecting voltage	not available
IN/OUT drop voltage	0.5 V
Battery protection fuse	F1 = T 6.3 A / F2 = T 1 A
Protections	battery short circuit / overload (2)
Alarm signal	—
Operating temperature range	-10...+50°C
Reference Standards	IEC 664-1, DIN VDE
Overvoltage category/Pollution degree	II / 2
Protection degree	IP 20 IEC 529, EN60529
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	80 g (2.82 oz)
Mounting information	vertical on rail, adjacent

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

APPLICATIONS

1. Battery charger

With this module is possible to use a Cabur power supply as a battery charger while it is feeding the load.

The diode provides decoupling between the battery and the power supply; the resistance limits the current charge limiting power supply output current and assuring longer life to the battery. The F1 fuse protects the battery and its wiring against short circuit.

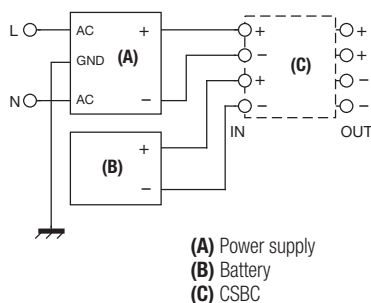
The next picture shows the connections.

2. Parallel connection of power supplies

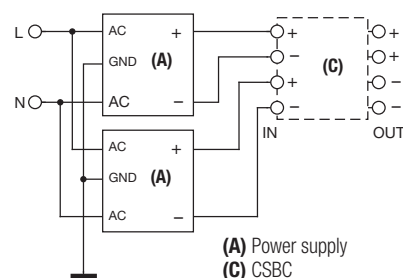
It is possible to use this module also to connect two power supplies in parallel, not provided with output decoupling diode, eliminating "Fuse 2" in series to charging current limiting resistor.

The next picture shows the connections.

1. Battery charger

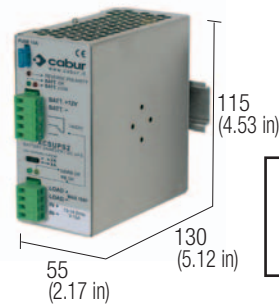


2. Parallel connection of power supplies



Accessory for charging and controlling buffer batteries

- Suitable for power supply with adjustable output
- Suitable for lead batteries
- Suitable for charging batteries while feeding loads
- Battery protection fuse
- "Deep discharge" battery protection
- Status display LED and failure contact



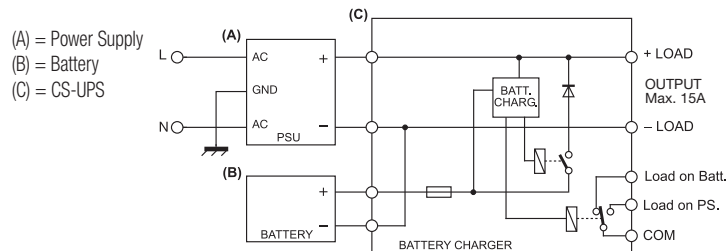
Items sold until sell-out, will be replaced by
XCSU240S from April 2014



NOTES

The depth dimension includes the DIN rail clamp.

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc
Output 12 Vdc

GENERAL TECHNICAL DATA

Power supply input voltage
Power supply rated current
Load rated voltage
Max load current
Charging current
Battery disconnection voltage
IN/OUT voltage drop
Battery protection fuse
Protections
Alarm signals
Operating temperature range
EMC Standards
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

Power supply OK:
Battery OK
Battery LOW
Load OK
Battery reverse polarity

Cod. XCSUPS1

CS-UPS1

26...28.5 Vdc
≥ 3 A
26...28 Vdc
10 A
selectable 2 A or 4 A
≤ 18 Vdc ±0.5V

Cod. XCSUPS2

CS-UPS2

12...15 Vdc
≥ 3 A
10...15 Vdc
10 A
selectable 2 A or 4 A
≤ 9.2 Vdc ±0.5V

0.4 V
T 15 A 42 V blade type

Reverse polarity, short circuit, battery overload, battery deep discharge

SPDT 24 V / 1 A

green LED

red LED

yellow LED

green LED

−10...+50°C

IEC 664-1, DIN VDE

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium

300 g (10.58 oz)

vertical on rail, adjacent

APPLICATIONS

All power supplies with adjustable output voltage to +15% of rated voltage can be used as lead battery chargers, suitable to be used as back up supply in case of AC line breakdown.

The CS-UPS-1 circuit regulate the current charging the battery, and it is possible to set it up to 2A or 4A charging current ; CS- UPS1 disconnects the load from the battery whenever the battery voltage drops under 19Vdc, to avoid total discharge which always shortens battery life.

The module is provided with a fuse protecting the battery and its cable to prevent fire risk in case of short circuit. The module is provided with the following leds display:

PS OK: The green LED is on when the power supply feeding the CS-UPS1 is OK and the load is supplied by the power supply while the battery is continuously charged.

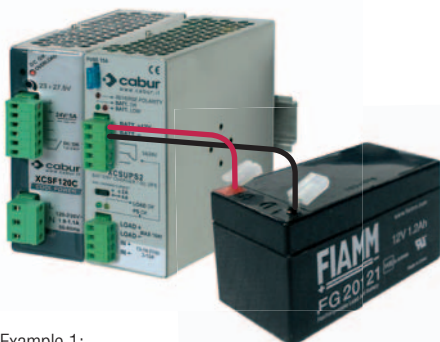
LOAD OK: Yellow LED is on when CS-UPS1 feeds the load.

BATT. OK: Green LED is on when the power supply is turned OFF or disconnected and indicates that the battery is connected and can feed the load.

BATT. LOW: Red LED on when the battery is low or discharged.

REVERSE BATTERY: Red LED is on when battery is connected with reverse polarity.

Alarm contact: a relay with an SPDT contact 1A/24V switches when the load is no more supplied by the power supply and then is supplied by the battery. This contact allows to get a remote warning on the status of the system even in the case that the power supply is turned OFF or damaged, or non more supplied for any reasons.



Example 1:
XCSF120C + XCSUPS1 + batteria



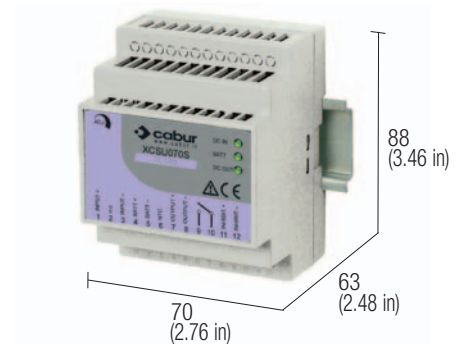
Example 2:
XCSF120C + XCSUPS1 + XCSBP30Y

Accessory for charging and controlling buffer batteries



- Suitable for lead and NiMH batteries
- Suitable for 12 or 24V battery with current load up to 3 A
- High efficiency and low dissipated power
- Compact dimensions
- Connected to a power supply, provides power to the load and keeps the battery in buffer

Available from March 2014

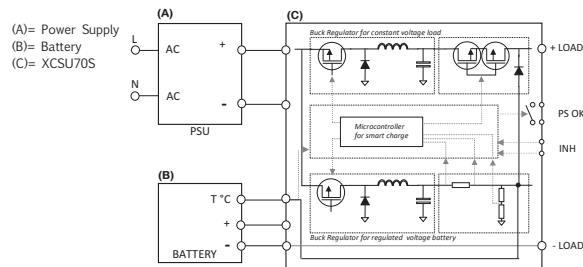


NOTES

The depth dimension includes the DIN rail clamp.

(1) Product under development and available from March 2014, the technical data and the image are to be considered preliminary and subject to change.

BLOCK DIAGRAM



VERSIONS

Cod. XCSU070S

CSU070S (1)

APPLICATIONS

INPUT TECHNICAL DATA

Input voltage
Maximum input current
Consumption without load

12-24 Vdc (range 10...16 Vdc / 20...29 Vdc)

3 A

n.d.

OUTPUT TECHNICAL DATA

Load rated voltage
Current of the load
Status display

12-24 Vdc

3 A (max. 4.5 A for 5 s)

"Backup" alarm contact

"DC OK" green LED

"Alarm/Failure" red LED

0

BATTERY TECHNICAL DATA

Battery type
Nominal battery voltage
Maximum charge current
Backup delay
Protections

Lead-Acid, NiMH

12 or 24 Vdc

0.5 A

n.d.

Reverse polarity, short circuit, battery overload, battery deep discharge

GENERAL TECHNICAL DATA

Efficiency
Dissipated power
Operating temperature range
Input / output isolation
Input / ground isolation
Output / ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

>90%

—

−20...+60°C

0.5 kVac / 60 s

0.5 kVac / 60 s

0.5 kVac / 60 s

EN60950

EN61000-6-2, EN61000-6-4

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² fixed screw type

UL94V-0 plastic material

250 g

vertical on rail, allow 10 mm spacing between adjacent components

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—

Accessory for charging and controlling buffer batteries



- Suitable for lead and NiMH batteries
- Suitable for 12 or 24V battery battery with current load up to 10 A
- High efficiency and low dissipated power
- Compact dimensions
- Connected to a power supply, provides power to the load and keeps the battery in buffer

Available from April 2014

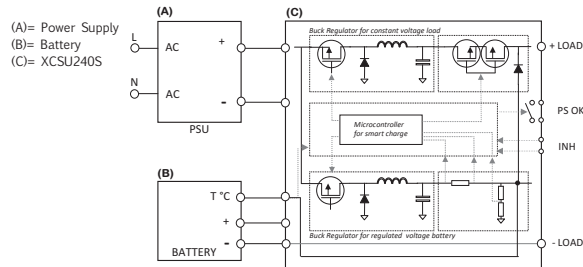


NOTES

The depth dimension includes the DIN rail clamp.

(1) Product under development and available from March 2014, the technical data and the image are to be considered preliminary and subject to change.

BLOCK DIAGRAM



VERSIONS

Cod. XCSU240S

CSU240S (1)

APPLICATIONS

INPUT TECHNICAL DATA

Input voltage
Maximum input current
Consumption without load

12-24 Vdc (range 10...16 Vdc / 20...29 Vdc)
10 A
n.d.

OUTPUT TECHNICAL DATA

Load rated voltage
Current of the load
Status display

12-24 Vdc
10 A (max. 15 A for 5 s)
Alarm contact: normal operation (Ready)
Alarm contact: battery operation (Backup)
"DC OK" green LED
LED red alarm or backup failure

BATTERY TECHNICAL DATA

Battery type
Nominal battery voltage
Maximum charge current
Backup delay
Protections

Lead-Acid, NiMH
12 or 24 Vdc
2 A
n.d.
Reverse polarity, short circuit, battery overload, battery deep discharge

GENERAL TECHNICAL DATA

Efficiency
Dissipated power
Operating temperature range
Input / output isolation
Input / ground isolation
Output / ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

>90%
—
-20...+60°C
0.5 kVac / 60 s
0.5 kVac / 60 s
0.5 kVac / 60 s
EN60950
EN61000-6-2, EN61000-6-4
>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F II / 2
IP 20 IEC 529, EN60529
4 mm² pluggable screw type (IN/OUT/BATT) e 0,75 mm² (signal)
aluminium
500 g
vertical on rail, allow 10 mm spacing between adjacent components

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Accessory for charging and controlling buffer batteries



- Suitable for lead and NiMH batteries
- Suitable for 12 or 24V battery with currents load up to 20 A
- High efficiency and low dissipated power
- Compact dimensions
- Connected to a power supply, provides power to the load and keeps the battery in buffer

Under development and available
from May 2014

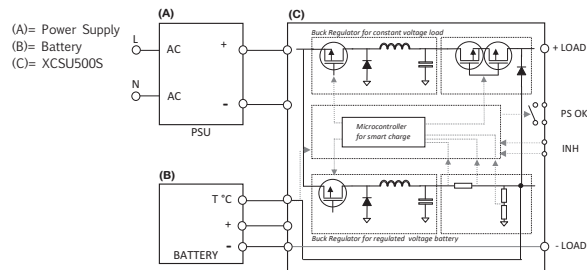


NOTES

The depth dimension includes the DIN rail clamp.

(1) Product under development and available from April 2014, the technical data and the image are to be considered preliminary and subject to change.

BLOCK DIAGRAM



VERSIONS

Cod. XCSU500S

CSU500S (1)

APPLICATIONS

INPUT TECHNICAL DATA

Input voltage
Maximum input current
Consumption without load

12-24 Vdc (range 10...16 Vdc / 20...29 Vdc)
20 A
<2 W

OUTPUT TECHNICAL DATA

Load rated voltage
Current of the load
Status display

12-24 Vdc
20 A (max. 30 A for 5 s)
Alarm contact: normal operation (Ready)
Alarm contact: battery operation (Backup)
"DC OK" green LED
Red LED for backup or failure alarm

BATTERY TECHNICAL DATA

Battery type
Nominal battery voltage
Maximum charge current
Backup delay
Protections

Lead-Acid, NiMH
12 or 24 Vdc
5 A
n.d.
Reverse polarity, short circuit, battery overload, battery deep discharge

GENERAL TECHNICAL DATA

Efficiency
Dissipated power
Operating temperature range
Input / output isolation
Input / ground isolation
Output / ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

>90%
—
-20...+60°C
0.5 kVac / 60 s
0.5 kVac / 60 s
0.5 kVac / 60 s
EN60950
EN61000-6-2, EN61000-6-4
>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F II / 2
IP 20 IEC 529, EN60529
4 mm² pluggable screw type (IN/OUT/BATT) e 0,75 mm² (signal)
aluminium
500 g
vertical on rail, allow 10 mm spacing between adjacent components

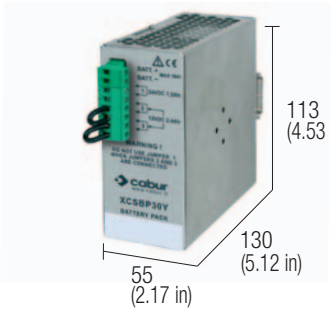
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Batteries holder module

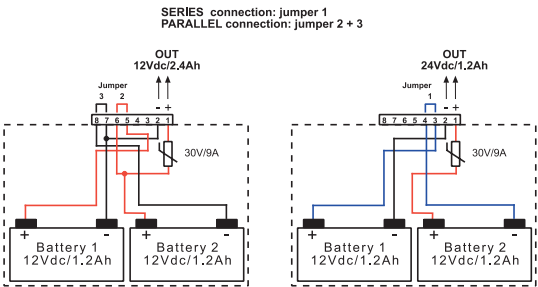
- 12 or 24 Vdc selectable output voltage
- Suitable for sealed lead rechargeable batteries
- Suitable for CSBC, CS-UPS, CSC75
- Suitable for DIN rail installation



NOTES

The depth dimension includes the terminal blocks and the DIN rail clamp.
(1) Into XCSBP30Y are necessary two batteries 8911012

BLOCK DIAGRAM



VERSIONS

Batteries holder module (empty)
Battery (1)

GENERAL TECHNICAL DATA

Batteries type
Internal protection fuse
Setup type
Output voltage
Charging current max.
Discharging current max.
Operating temperature range
EMC Standards
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

CSBP30Y
BAT12V1,2AH

Cod. XCSBP30Y
Cod. 8911012

2 sealed batteries 12 Vdc 1.2 Ah
15 A

parallel	series
12 Vdc 2.4 Ah	24 Vdc 1.2 Ah
0.6 A	0.3 A
5 A	3 A

-10...+50°C
IEC 664-1, DIN VDE
II / 2
IP 20 IEC 529, EN60529
2.5 mm² pluggable screw type
aluminium
1.2 kg (42,36 oz)
vertical on rail, adjacent

APPLICATIONS

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB



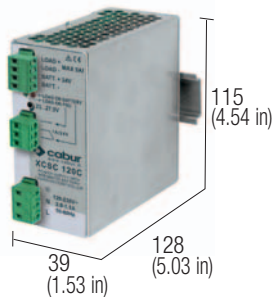
Example 1:
XCSC120C + XCSBP30Y



Example 2:
XCSC120C + XCSUPS1 + XCSBP30Y

Switching power supply with integrated battery charger

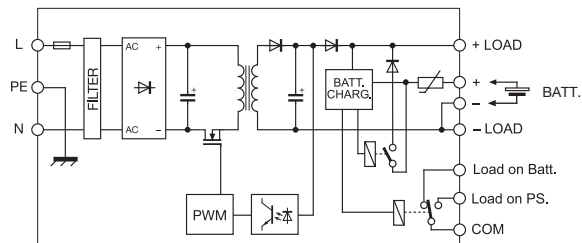
- Suitable for 12 Vdc loads and batteries
- Suitable for lead batteries
- Suitable for charging batteries while feeding loads
- Battery protection circuit
- "Deep discharge" battery protection
- Status display LED and failure contact



NOTES

- The depth dimension includes the terminal blocks and the DIN clamp.
- (2) With 100...127 Vdc input voltage, constant output power and $T_a > 45^\circ\text{C}$, the output current must be derated by 25%
- (3) In addition to the current load, the device supplies about 0.8 A for battery charging
- (4) Over 50°C (122°F) apply a derating $-0.13\text{ A}/^\circ\text{C}$, max 60°C

BLOCK DIAGRAM



VERSIONS

Output 12 Vdc 5 A
Output 24 Vdc 5 A

Cod. XCSC120B

CSC120B

Cod. XCSC120C

CSC120C

APPLICATIONS

INPUT TECHNICAL DATA

Input rated voltage
Frequency
Current @ nominal iout (Uin 120 / 230 Vac)
Inrush peak current
Power factor
Internal protection fuse
External protection on AC line

120–230 Vac (range 90...264 Vac / 100...370 Vdc) (2)
47...63 Hz
2.0 A / 1.1 A $\pm 10\%$
 $< 20\text{ A}$
 > 0.6
T 3.15 A replaceable
circuit breaker: 4 A - C characteristic - fuse: T 3.15 A

OUTPUT TECHNICAL DATA

Output voltage with operating power supply
Output voltage with batteries
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time @ In (Uin 120 / 230 Vac)
Overload / short circuit protections

12.5...15.5 Vdc	23...27.5 Vdc
12...14.4 Vdc	24...26.2 Vdc
7 A @ 50°C (3)	5 A @ 50°C (3)
$> 11\text{ A}$ for $> 30\text{ s}$	$> 8\text{ A}$ for $> 30\text{ s}$
$> 18\text{ A}$ for $> 50\text{ ms}$	$> 12\text{ A}$ for $> 50\text{ ms}$
$< 1\%$	$< 1\%$
80 mVpp	80 mVpp
$> 24\text{ ms}$ / $> 80\text{ ms}$	$> 17\text{ ms}$ / $> 72\text{ ms}$

with operating power supply: hiccup at the overload limit with auto reset
non operating power supply: auto resettable electronic fuse against battery short circuit
with non operating power supply: threshold-relay against battery deep discharge
"PSU OK" green LED / failure contact / "BATTERY" red LED
0.8 A (suitable for sealed lead batteries up to 15 Ah)

GENERAL TECHNICAL DATA

Alarm signals
Max. charging current
Efficiency (Uin 120 / 230 Vac)
Dissipated power (Uin 120 / 230 Vac)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

$> 86\%$ / $> 90\%$
21 W / 13 W
 $-20...+60^\circ\text{C}$, with derating over 50°C / over temperature protection (4)
1.5 kVac / 60 s SELV output
1.5 kVac / 60 s
0.5 kVac / 60 s
IEC950, EN60950
EN55011, EN61000-6-1
 $> 500'000\text{ h}$ acc. to SN 29500 / $> 150'000\text{ h}$ acc. to MIL Std. HDBK 217F
II / 2
IP 20 IEC 529 EN60529
2.5 mm² pluggable screw type
aluminium
500 g (17.65 oz)
vertical on rail, allow 10 mm spacing between adjacent components

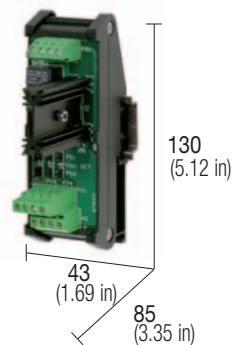
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Accessory for power supplies redundant parallel connections

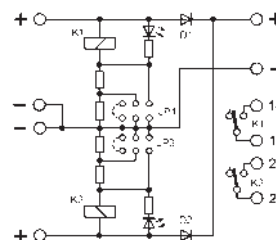
- Suitable for power supplies without Oring diodes
- Compact dimensions
- Three selectable voltages 12, 24 and 48 Vdc
- 2 status/relays contacts
- Power supplied status LED



NOTES

The depth dimension includes the terminal blocks and the DIN rail clamp.

BLOCK DIAGRAM



VERSIONS

Cod. XCSBD

CSBD

APPLICATIONS

This module allows the customer to connect in redundant parallel two power supplies not provided with built in Oring diodes (output decoupling diodes); a jumper bridge allows to select 12, 15, 24 or 48 Vdc operating voltage; each channel is provided with status indication led, status relay and contact for remote failure alarm.

GENERAL TECHNICAL DATA

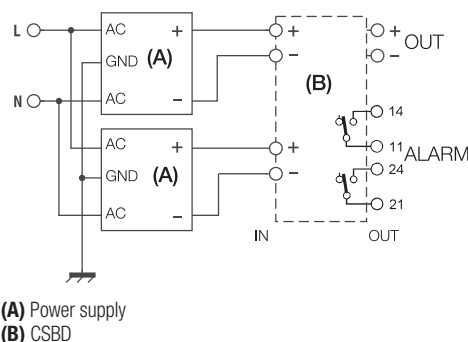
Power supply rated voltage	12–24–48 Vdc selectable
Power supply rated current	15 A, max 30 A
Load rated voltage	12–24–48 Vdc selectable
Load max current	15 A
IN/OUT drop voltage	0.7 V @ 15 A
Protections	—
Alarm signal	2 contacts NA 2A @ 230 Vac
Operating temperature range	–20...+50°C
Reference Standards	IEC 664-1, DIN VDE
Overvoltage category/Pollution degree	II / 2
Protection degree	IP 00 IEC 529, EN60529
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	120 g (4.23 oz)
Mounting information	vertical on rail, adjacent

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
PR/DIN/AC, PR/DIN/AS, PR/DIN/AL

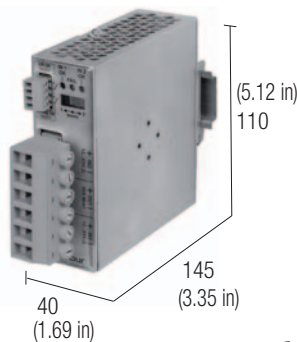
Block diagram



Accessory for power supplies redundant parallel connections



- Suitable for connection of power supplies without ORing diodes
- Load voltages from 12 to 85 V with currents of up to 50 A
- Electronic redundancy controlled by CPU
- Failure alarm and unbalanced current alarm
- High efficiency and low dissipated power
- Compact dimensions



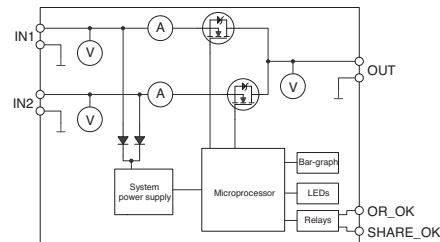
UL pending



NOTES

The depth dimension includes the terminal blocks and the DIN rail clamp.

BLOCK DIAGRAM



VERSIONS

Cod. XCSR50U

CSR50U

APPLICATIONS

The CSR50U is an advanced, microprocessor-controlled module used for redundant parallel connections of two DC power supplies in applications needing higher reliability than provided by common passive ORing modules with diodes to isolate the outputs of the two power supplies.

The CSR50U comes with a current measurement sensor on each input to detect the correct supplied by the two power supplies and signal an alarm when the current supplied is unbalanced. An imbalance greater than 60% in the supply current is a certain indicator that one of the power supplies is failing. Detecting this situation and signalling an alarm with an SPST contact allows preventative maintenance to take place and increases the system's reliability. In redundant systems where an imbalance in the supply is not controlled, it is not possible to monitor the correct supply of current from the two power sources. This setup permits a situation in which the current is supplied by only one power source, which then is forced to work under greater stress. Furthermore, the power source which supplies less current (or no current) may not trigger an alarm in certain conditions.

The CSR50U allows two identical power supplies to be connected for a total current output of 50 A and overall voltage from 12 to 85 Vdc.

Thanks to the ORing and isolation between the two power supplies with the microprocessor-controlled MOSFET, the power dissipated is one tenth that of redundant modules with diodes.

In addition, CSR50Us can be connected together to obtain redundancy of more than two systems.

The CSR50U provides status signals on:

- a fault or power loss in one of the two power sources
- unbalanced current supplies greater than 60%

GENERAL TECHNICAL DATA

Input voltage
Maximum input current
Load rated voltage
Load maximum current
IN/OUT voltage drop
Protections
Status display

12...85 Vdc

50 A

10,8...85 Vdc

50 A (max. 300 A picco)

0,2 V @ 50 A

reverse polarity, input overvoltage

green LED for input voltage control

red LED alarm for redundancy alarm

alarm contact for redundancy alarm (24V/1A)

LED bar for the control of the unbalance current

alarm contact for the control of the unbalance current

>98% (12 V / 50A)

10 W

-20...+50°C

0.5 kVac / 60 s

0.5 kVac / 60 s

EN 60950

EN 61000-6-2, EN 61000-6-4

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

removable screw terminals 16 mm² (IN / OUT) and 1.5 mm² (signal)

aluminium

200 g

vertical on rail, allow 10 mm spacing between adjacent components

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

-

MBC2K

Motor brake controller

The **MBC2K** is a device controlled by a microprocessor, that can automatically insert a power resistor into the DC BUS for braking a motor fed by the same DC Bus through a motor drive. The function of the MBC2K is to dissipate the energy delivered by the motor in an external resistor thus damping the resulting overvoltage on the DC Bus.

On top of that the MBC2K provides several protections to ensure reliable operation.

MBC2K can be connected to any DC Bus within 24Vdc and 100Vdc. The simplified application diagram is shown in Figure 1, while the unit front view with all its controls is shown in Figure 2. Up to 4 MBC2K units can be connected in parallel to increase the braking power up to 8kW max. The MBC2K is provided with a 2.5 digits 7 segments LED display, used to display the DC Bus voltage (with +/- 1V accuracy), to help the user during the setup phase and/or to show error messages.

MBC2K Setup

The MBC2K unit needs to be set up before operating.

The setup phase consists of 3 menu pages. The user can navigate through the menu pages by pressing the MENU button and the values on each menu page can be changed by pressing SET / RESET button.

The three menu pages are the following:

- Brake intervention threshold (VTH) setup
- Hysteresis around the brake intervention threshold voltage
- Master / Slave mode, used for parallel connection up to four modules.

MBC2K protection and error codes

The MBC2K unit integrates several active protections to guarantee reliable operations in normal conditions. As soon as a faulty event is detected the MBC2K power stage is switched off so that no uncontrolled current flow through the brake resistor is possible. A fault condition is indicated by the continuous blinking of the Alarm LED. Remote sensing of the status of the MBC2K unit is possible thanks to the Alarm relay dry contact. To help the user to understand which faulty event occurred, an error code is displayed on the 7 segments LED display. Every protection is latched, so that to put back the MBC2K unit in "operation mode".

Parallel connection up to 4 MBC2K units

The MBC2K brake controller provides a feature allowing connecting up to 4 identical MBC2K units to **increase the peak braking power up to 8kW**. In any case every MBC2K unit can handle only 2kW of peak braking power therefore every MBC2K unit need its own 2kW brake resistor.

To realize this feature the MBC2K is equipped with a Synchronization Bus used to synchronize the operation of all the units connected to the synchronization bus. The principle of operation relies on one MBC2K unit configured as the **master** and others MBC2K units (up to 3) configured as **slave**.

The master measures the DC Bus voltage and decides when to insert its brake resistor in the circuit; on top of that it sends a command on the synchronization bus.

The slaves connected on the synchronization bus are waiting for the command sent by the master; when they receive the command they insert their brake resistors in the circuit too. Please note that even when the MBC2K is configured in slave mode, all its circuits protections are functional.



Figure 1: Simplified application diagram

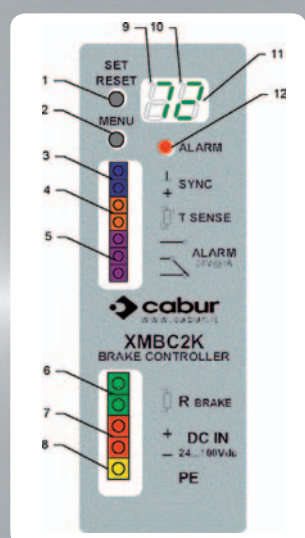
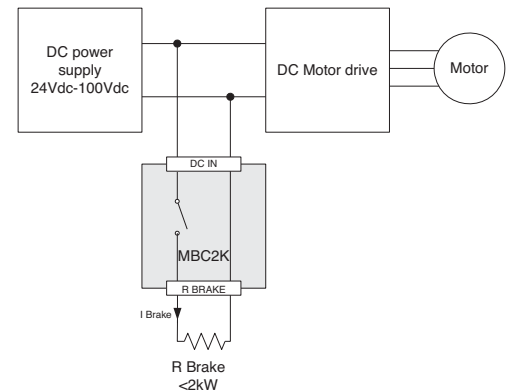
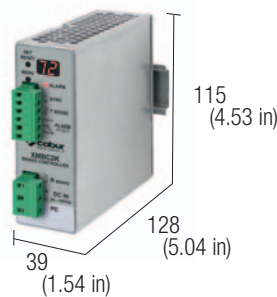


Figure 2: MBC2K Front View

- SET/RESET button:** used to reset the protections and to change setup values in setup mode.
- MENU button:** used to enter into setup mode and to navigate through menu pages.
- Synchronization bus connector:** used to parallel up to 4 units.
- Resistor temperature sensor connector:** used to connect an optional brake resistor temperature sensor.
- Alarm dry contact connector:** an SPDT contact provide remote failure signal.
- Brake resistor connector:** used to connect the brake resistor wires 2.5mm²
- DC Bus connector:** used to connect the MBC2K unit to the power supply Bus (24...100Vdc).
- Protective earth (PE) connection:** to connect the module to the protective earth.
- LED display 100's indicator:** used to display numbers >99 on 2 digits; when this indicator is lit and the display shows "03" this means 103V.
- Brake indicator LED:** used to display braking activity; when lit it means that there is a current flow through the brake resistor.
- 2.5 digits 7-segment display:** in operating mode it shows the voltage measured on the DC Bus (accuracy +/- 1V); it's used also to show menu items and error codes.
- Alarm LED:** used to indicate a fault condition of the unit.

Motor brake controller

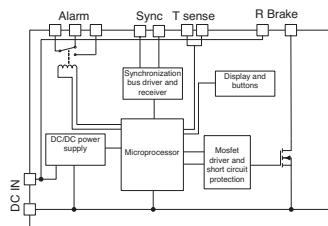
- 20 threshold levels with automatic activation
- Each module can drive 2kW braking power
- It is possible to connect up to four modules master/slave to get 8kW total braking power
- Symple functions programming and set up
- Control of the temperature of the braking resistor



NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

BLOCK DIAGRAM



VERSIONS

Cod. XMBC2K

MBC2K

APPLICATIONS

The MBC2K is a device controlled by a microprocessor, that can automatically insert a power resistor into the DC BUS for braking a motor fed by the same DC Bus through a motor drive. The function of the MBC2K is to dissipate the energy delivered by the motor in an external resistor thus damping the resulting over-voltage on the DC Bus. On top of that the MBC2K provides several protections to ensure reliable operation. MBC2K can be connected to any DC Bus within 24Vdc and 100Vdc. The simplified application diagram is shown in Figure 1, while the unit front view with all its controls is shown in Figure 2. Up to 4 MBC2K units can be connected in parallel to increase the braking power up to 8kW max. The MBC2K is provided with a 2.5 digits 7 segments LED display, used to display the DC Bus voltage (with +/- 1V accuracy), to help the user during the setup phase and/or to show error messages.

INPUT TECHNICAL DATA

Nominal DC BUS voltage range
Maximum braking current
Brake activation voltage
Brake voltage hysteresis
User interface

24...100 Vdc
50 A for 1 s
27....106 V, threshold adjustable in 20 steps
3 V o 6 V selectable
2 setup push buttons (SET/RESET and MENU)
2 x 7 segment LED displays
1 LED for general alarm indication
1 SPDT dry contact for general alarm remote warning
Undervoltage on DC BUS < 22 Vdc
Overvoltage on DC BUS > 110 Vdc
Brake resistor overtemperature (if the temperature sensor is present)
Module Internal overtemperature > 90°C (194°F)
Brake resistor interrupted or not connected
Short circuit : braking current > 80 A
Overload : braking time > 1 s

Protections

Parallel connection

Up to 4 units can be connected in parallel through synchronization bus for a total braking power of 8kW (4 x 2kW braking resistors are needed)

GENERAL TECHNICAL DATA

Dissipated power
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals

20 W

0...+70°C

500 Vac / 60s

IEC950, EN60950 for SELV use up to 60Vdc; using the MBC2K at voltages greater than 60Vdc is not classifiable as SELV
EN55011 Class B

1 / 2

IP 20 IEC 529, EN60529

1.5 and 2.5 mm² pluggable screw type

aluminium

200 g

vertical on rail, allow 10 mm spacing between adjacent components

120 g

vertical on rail, adjacent

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

AC Surge Protection Devices

These are Surge Protection Devices (SPD) that prevent transitional impulsive overvoltage, conducted via the mains power supply, the earth network or signal networks, from damaging electronic command and control systems and electronic appliances in general. Series BY7 protection devices limit dangerous overvoltage to standard levels tolerated by the appliances intended for use in Overvoltage Category II or greater (impulsive overvoltage max. 2.5kV) in zone protected from overvoltage B and C (Zones 1 and 2) if the plant does not have a lightning arrester, in protection zone C (Zone 2) if the plant has a lightning arrester, and are SPD in Test Class II as required by standards IEC1024, IEC1312-1, EN50083-1 in force (see figure 1 the following pages)

Where and how to use them

In accordance with current standards, series BY7 surge protection devices must be installed on incoming power lines to electrical distribution and control and command boards for automation, in order to guarantee immunity to the transistors of the equipment contained, such as PLC, industrial PCs, power supplies, inverters, etc.. For command and control boards, generally in Overvoltage Category II according to IEC EN 644-1 to be compliant with EMC standards, maximum impulsive overvoltage applied to equipment must be below 2.5kV, as indeed is also required by EN61000-4-4, 4-5. If SPDs with residual overvoltage of less than 2.5kV, which can be withstood by equipment, are not installed on command and control boards, overvoltage may cause plant or machine failure or breakdown, with costs that certainly exceed the cost of the SPDs. Installation of SDPs is also required, in any case, in order to comply with EMC standards and CE marking of the board.

Performance

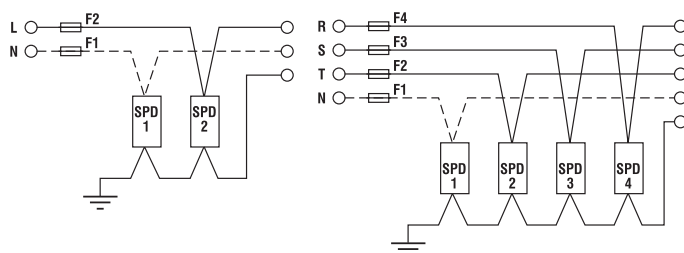
They consist of a wiring socket that can be assembled onto a DIN rail and a removable protection module that contains the discharge, making it easy to disconnect the SPD during insulation tests or for quick replacement at the end of its working life. They are able to withstand ten 20kA impulses of I_{sc} discharge current with impulse 8/20 and a single 40kA impulse, which is statistically very rare. As required by the product regulations on the SPDs, the BY7 series is equipped with an automatic thermal cut-off device able to disconnect the line transformer in the event of failure, providing an indication of the failure discharge visible on the front of the unit and via a clean contact. When, after numerous discharges and years of service the module has deteriorated, it can be rapidly replaced by removing it from its base socket and replacing it with another, identical one, without disconnecting the power supply.

Fuses and protection devices

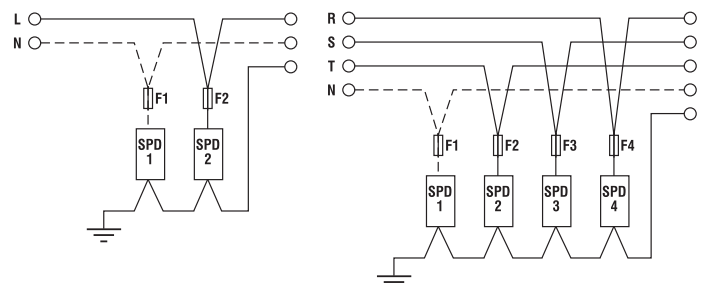
BY7 series overvoltage dischargers have an incorporated device that disconnects the transformer at the end of its working life (close to short circuit or short circuited). They must, however, be fitted with protection against short circuit current upstream and differential protection against indirect contact (generally already included in the installation). If installed downstream of highly sensitive differential protection devices, we recommend using the configuration with gas discharger (see layouts on the following pages). The diagrams below illustrate an example protection connection according to priority type.



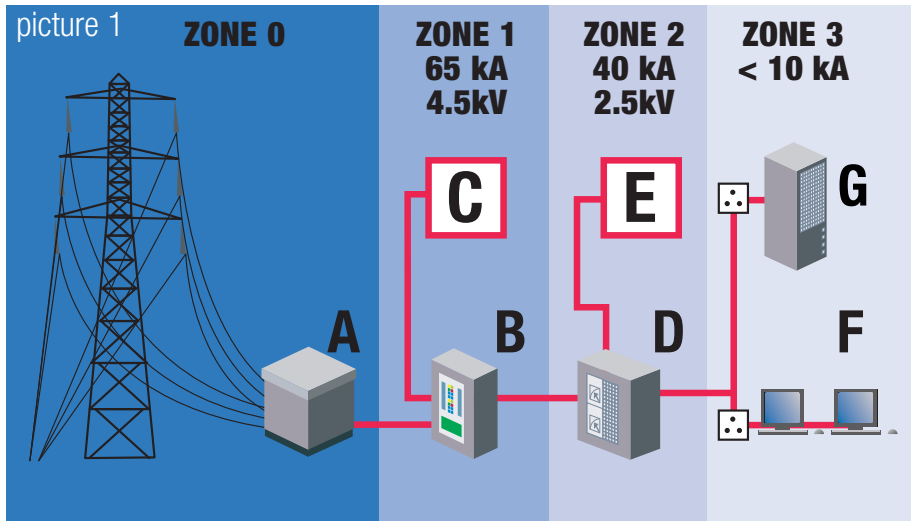
Protection takes priority



Continuity of services takes priority



Surge Protection Devices



Lightning protection zones

Zone 0 - Zone where items are subject to direct lightning strikes or where an unattenuated electromagnetic field occurs as a result of the strike.

Zone 1 - Zone where items are subject to low level direct lightning strikes. The conducted impulse lightning currents and/or switching surges are reduced compared with Zone 0.

Zone 2 - Remnants of lightning impulse currents and/or switching surges are reduced compared with Zone 1.

Zone 3 - Surges, caused by oscillation effects, magnetic field couplings and internal switching surges are reduced compared with Zone 2.

A - Sub Station

B - Main distribution board

C - Heavy machinery

D - Local distribution board

E - Light machinery

F - Workstation

G - Equipment

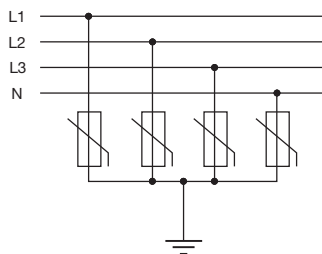
Example of connection for different networks

TN 3-phase system

No. 4 ISPD14440 +
No. 1 screw jumper 9000394



BLOCK DIAGRAM

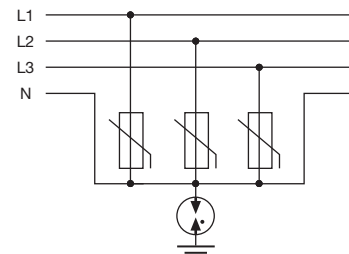


TT 3-phase system

No. 3 ISPD14440 +
No. 1 ISPD1444G +
No. 1 screw jumper 9000394



BLOCK DIAGRAM

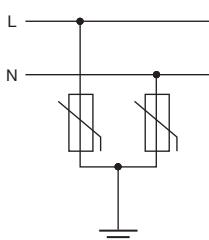


TN single phase system

No. 2 ISPD14275 +
No. 1 screw jumper 9000392



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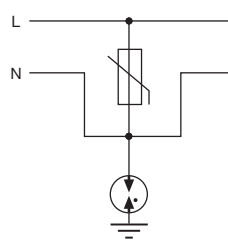


TT single phase system

No. 1 ISPD14275 +
No. 1 ISPD1425G +
No. 1 screw jumper 9000392



BLOCK DIAGRAM

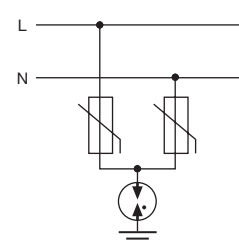


TT single phase system

No. 2 ISPD14275 +
No. 1 ISPD1425G +
No. 1 screw jumper 9000393

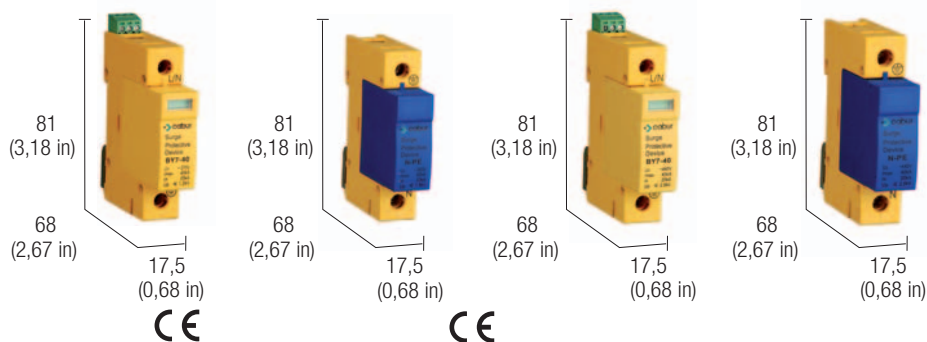


BLOCK DIAGRAM



Surge protection devices

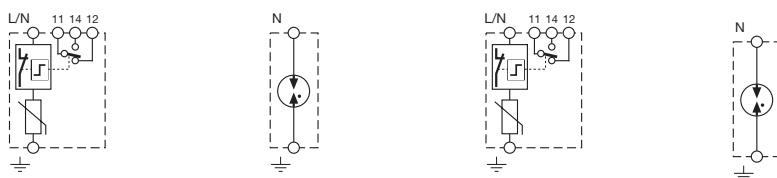
- Rugged contacts
- Pluggable protection
- Efficiency status indicator on front panel
- Available screw jumpers for parallel conection



NOTES

(1) When the thermal protection disconnects the SPD, the contacts 11-14 open and contacts 11-12 close

BLOCK DIAGRAM



VERSIONS

Cod. ISPD14275	Cod. ISPD1425G	Cod. ISPD14440	Cod. ISPD1444G
BY7-40/1-275	BY7-NPE/40-275	BY7-40/1-440	BY7-NPE/40-440

ELECTRICAL TECHNICAL DATA

Category	II	II	II	II
Type of network systems	TN-S; TN-C; TT; IT	TN-S; TN-C; TT; IT	TN-S; TN-C; TT; IT	TN-S; TN-C; TT; IT
Technology	MOV (Metal Oxide Varistor)	GDT (Gas Discharge T)	MOV (Metal Oxide Varistor)	GDT (Gas Discharge Tube)
Rated voltage	Un 230 Vac	Un 230 Vac	Un 400 Vac	Un 400 Vac
Maximum continuous voltage	Uc 275 Vac	Uc 255 Vac	Uc 440 Vac	Uc 440 Vac
Voltage protection level	Up ≤ 1.200 V	Up ≤ 1.800 V	Up ≤ 2.000 V	Up ≤ 1.800 V
Nominal discharge current (8/20)	In 20 kA	In 30 kA	In 20 kA	In 30 kA
Maximum discharge surge current (8/20)	I _{max} 40 kA	I _{max} 40 kA	I _{max} 40 kA	I _{max} 40 kA

GENERAL TECHNICAL DATA

Connection terminal	4 ... 25 mm ² fixed screw type			
Response time	t _a < 25 nS			
Operating temperature range	-40°C < T < 80°C			
Status display	Green OK / Red FAILURE	No	Green OK / Red FAILURE	No
Remote signal	SPDT 1 A/230 Vac (1)	No	SPDT 1 A/230 Vac (1)	No
Remote signal connection	1,5 mm ² pluggable 6 A - 120 V	No	1,5 mm ² pluggable 6 A - 120 V	No
Housing material	UL94V0	UL94V1	UL94V2	UL94V3
Protection degree	IP20	IP21	IP22	IP23
Colour	Yellow	Blue	Yellow	Blue
Packaging quantity	1	1	2	3
Approx. Weight	135 g	95 g	135 g	95 g

vertical on rail, without spacing between adjacent components

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB			
Replacement varistor				
Screw type jumper	2 poles	Cod. 9000392 (BP2)		
	3 poles	Cod. 9000393 (BP3)		
	4 poles	Cod. 9000394 (BP4)		

Adjustable electronic overcurrent protection from 1...10 A / 24 Vdc



According to the new EN60204-1 Std. it is **compulsory** to protect wires on SELV-PELV lines against the effects of surges. The standard requires that surge protection devices on 24 Vdc cut the fault off before the 24 Vdc control drops below 21.6 V, disconnecting power to controls and preventing the starting of emergency and safety functions.

According to EN 60204-1 and EN 61131-1 and -2, surge protection devices on SELV-PELV lines must be able to disconnect shorts within 10 ms and dangerous surges within 5 s. The use of power supplies with high output surge capacity and precise and quick protection devices enables to cut faults off before 24 V drops below 21.6 V disconnecting power to controls.

Fuses and magneto-thermic switches on 24 Vdc lines do not have I / t features enabling to quickly and precisely cut faults off; moreover fuses may be replaced with different types thus altering the system's protection and safety.

The correct coordination of the circuitry into which the surge protection device is incorporated must take into account the line's total R: R connections + R wires + R protection + residual R of the damaged load. R total value must always enable that the protection device's tripping current may flow in the circuit; it is also important to avoid undersizing the protection device in order to prevent inconvenient trips due to the load's breakaway starting I, or oversizing it thus increasing t of intervention.

The whole circuitry made up of power supply, surge protection device, wires and connections must be designed so as to enable the safe interruption of surges within 5 s before 24 Vdc drops below 21.6 Vdc. This condition may be met using Cabur's power supplies - series CSF and CSG - dimensioned to supply high output surge (>+50% of rat.I for >5 s) and electronic surge protection devices with CEP System which are more precise and quicker than magneto-thermic switches and devices whose tripping t does not depend upon ambient T and may be reset with local or remote controls.

Features of protection devices

Mgts have two different intervention curves: Thermal and Magnetic. The magnetic relay trips exclusively in the event of a short with different I / t curves: thermal relays have all the same intervention curve, regardless of the mgt curve and in the event of a surge, they operate as described in figure 2: surge currents $1.13 \times I_n$ are cut in >1h and with surges $> 1.45 \times I_n$, the tripping takes place in a few minutes.

The disconnection of short currents is carried out by a magnetic relay whose tripping t goes from 0.01 to 0.1 sec, with very high currents which the power supply may not be able to supply; an mgt C5 used on DC has >70 A safe tripping, a current that only power supplies with much higher rated I, i.e. 40 A, may be able to supply (and not all of them) and that can not be supplied by 10 A power supplies.

Using mgt as surge protection device, if the power supply has a surge I 1.2 times its rat. I, disconnection will take place in 20...60 min, while with 2.5 currents higher than rat.I it will take place between 25 sec. and 2 min., depending on amb.T., whose times are too long to ensure the stability of 24 V, for protecting wires and the selectivity of protection devices. In the event of a failure - until the protection device trips - the power supply remains with a higher surge of $I_n \times 1.5 \times 5s$ and 24 V drops below 21.6 V leaving standard functions and most of all safety functions with no power supply.

Selectivity of protection devices

In the event of a surge or a short, only the damaged circuit is disconnected by its protection device with no repercussions on the supply of the other loads. This function is obtained with power supplies having high surge capacity and quick and precise protection devices.

CEP system - a smart system for current's control

CEP "recognizes" surges at their lowest and more precise stage and disconnects the damaged circuit as quickly as possible. For an excellent flexible use, the CEP system allows to set 10 tripping currents ranging from 1A to 10 A in 1 A steps and 3 intervention curves "Fast - Normal - Delayed" (see figure 3).

The protection status is displayed by two leds and by a remote alarm transistor output; the load may be activated / deactivated by pressing a button on the front (figure 5) or by the PLC remote control. The possibility of separately controlling single channels is useful during installation, because the various components may be separately activated and tested and - in big systems - the remote control may be used in order to gradually activate loads thus preventing simultaneous overloads when the system is started up. Another important features in terms of safety is the possibility of manually disconnecting the load, which means that even when protection devices are reset from the remote control, the load will remain inactive thus preventing dangerous situations.



figure 1

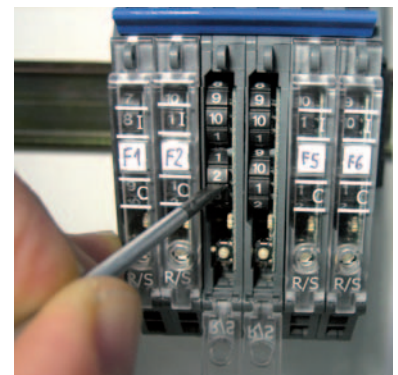


figure 3

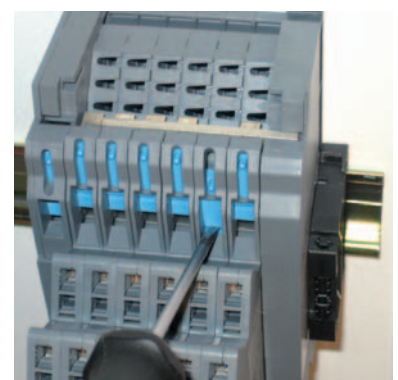


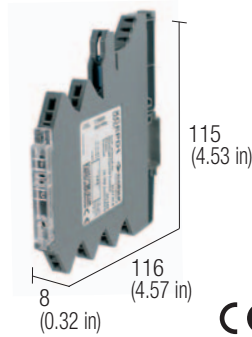
figure 4



figure 5

Programmable electronic overcurrent protection 1...10 A / 24 Vdc

- Programmable from 1 A to 10 A in 1 A steps
- 3 programmable characteristic curves
- Remote or local ON/OFF control
- Status signal with LED and remote signal
- Slide contact for the manual load disconnection
- Sealable front cover allows to protect the set up of the protection



- 1) sealable front cover
- 2) current selector
- 3) identification label
- 4) characteristic curve selector
- 5) ste/reset button

NOTES

The measures include the overall dimensions and the fixing to the guide.

(1) Version available upon request; for information call our sales department, local agent or representative

(2) 24 Vdc remote pulse switch the protection at falling edge. The pulse duration must be: ON = pulse > 1 s / OFF = pulse > 100 ms and < 800 ms

(3) The three standard intervention curves are described in the graphics; the C EP-D3 Version is also provided with a curve programmable through a software

VERSIONS

With overload indication

With status indication (ON/OFF/Overload)

With one wire bus

INPUT TECHNICAL DATA

Rated voltage

Rated current

Max system current

Protection

Remote control ON/OFF

OUTPUT TECHNICAL DATA

Rated voltage

Current min. / max.

Programmable characteristic curves

Switch ON capacity

Status indication

Status display

GENERAL TECHNICAL DATA

Operating temperature range

Input/output isolation

Protection degree

Reference Standards

Connection terminal

Housing material

Approx. weight

Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Distribution rail type according to IEC60715/G32

Distribution kit (terminal + end bracket)

Distribution rail (busbar)

Insulation cover for distribution rail

Plug-in jumper

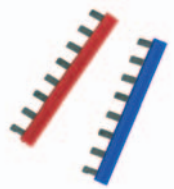
red

blue

Marking tag

BLOCK DIAGRAM

Cod. XCEPD1	Cod. XCEPD2	Cod. XCEPD3
CEP-D1	CEP-D2 (1)	CEP-D3 (1)
24 Vdc (range 18...32 Vdc)		
10 A dc max.		
40 A dc with CEP-RCC copper rail		
Internal against reverse polarity		
24 Vdc external pulse		24 Vdc external pulse and by software (2)
24 Vdc (voltage drop <170 mV @ Un / In)		
1...10 A dc programmable in 10 step of 1 A		
slow, medium, fast		slow, medium, fast and a special programmable custom curve (3)
10.000 µF		
green LED: fixed = ok, flashing = lout at 90% of the nominal, red LED: fixed = output manually switched off, slow flashing = overcurrent, quick flashing = error		
open collector transistor (overcurrent status)	open collector transistor (ON/OFF status)	open collector transistor (programmable status)
-25...+60°C, derating Imax. 8 A over 40°C		
3 kVac / 60 s SELV output		
IP 20 IEC 529, EN60529		
EN60950-1, EN61131-1, EN61131-2, EN60898, EN60947-4-1, EN50081		
0.25...2.5 mm ² fixed screw type		
PA 6.6 (UL94V-0, NFF I2, F2)		
120 g (4.24 oz)		
vertical on rail, adjacent without gap, we recommend the use of end brackets		
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB		
CEP-SS	(cod. XCEPSS)	
CEP-RCC	(cod. XCEPRCC)	
CEP-RCP	(cod. XCEPRCP)	
CEP-BCR	(cod. XCEPBCR)	(8 poles)
CEP-BCB	(cod. XCEPBCB)	(8 poles)
CEP-MTW	(cod. XCEPMTW)	(table with 50 tags)



CEP-BCR and CEP-BCB



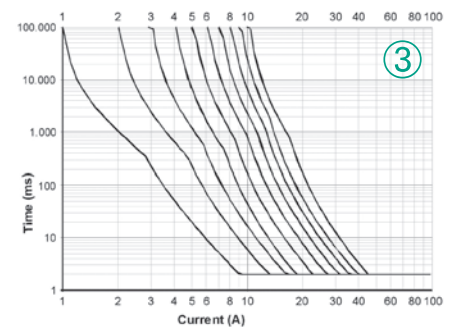
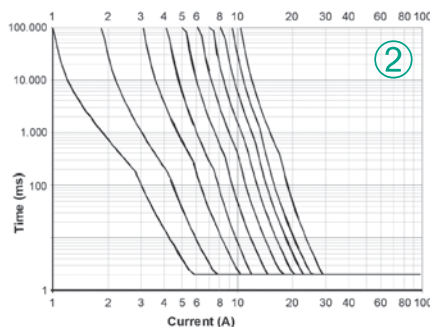
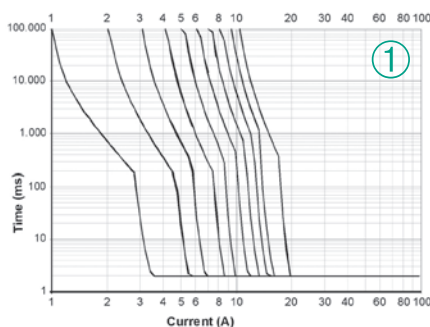
CEP-MTW



CEP-SS

Intervention curves:

- 1) fast
- 2) medium
- 3) slow



EMI filters quick selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

3-phase filter without neutral wire 400-480 Vac

Current	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)						Cat. No.	Page
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz		
7 A	20	60	60	60	50	35	25	60	65	60	55	40	XF07TDVST2	68
16 A	15	50	55	60	50	35	25	55	60	60	55	40	XF16TDVST2	68
30 A	15	50	55	60	50	35	25	55	60	60	55	40	XF30TDVST2	68
42 A	55	70	70	45	35	20	45	45	45	45	45	30	XF42TDVST2	68
55 A	15	55	55	55	50	35	25	55	60	60	50	40	XF55TDVST2	68
75 A	15	55	55	55	50	30	20	50	50	50	55	40	XF75TDVST2	68
100 A	35	50	45	25	15	7	30	35	35	35	30	7	XF100TDVST2	68
150 A	20	30	40	45	40	30	30	40	40	45	40	25	XF150TDS84C	69
180 A	20	30	40	45	40	30	30	40	40	45	40	25	XF180TDS84C	69
200 A	55	60	55	30	20	—	45	30	25	10	10	5	XF200TDDS84C	70
300 A	30	30	23	10	8	5	35	30	25	14	10	5	XF300TDS84C	71
400 A	30	30	20	10	5	2	30	30	20	10	8	2	XF400TDS84C	71

3-phase filter with neutral wire 400-480 Vac

Current	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)						Cat. No.	Page
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz		
10 A	10	20	20	20	30	25	10	20	25	25	30	30	XF10TYG9	73
16 A	25	50	50	50	45	30	35	55	60	60	40	30	XF16TYT2	72
20 A	10	15	20	35	40	25	10	15	20	20	25	20	XF20TYS9	73
25 A	25	50	50	50	45	30	35	55	60	60	40	30	XF25TYT2	72
36 A	25	50	50	50	40	25	30	50	55	50	40	30	XF36TYT2	72
50 A	25	45	45	40	40	25	30	50	50	40	40	30	XF50TYT2	72
100 A	10	20	25	30	30	20	30	40	40	35	35	25	XF100TYT2	72

Single-cell single-phase filter 120-250 Vac

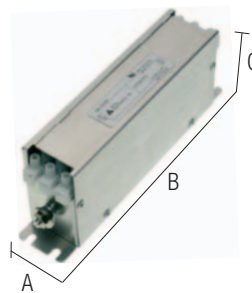
Current	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)						Cat. No.	Page
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz		
3 A	20	30	35	45	50	45	7	35	50	45	45	45	XF03DKBG5B	74
6 A	15	20	25	40	45	45	10	20	45	45	50	45	XF06DKBG5B	74
12 A	10	20	22	35	45	40	10	20	40	45	45	45	XF12DKBG5B	74
16 A	10	18	20	35	45	30	10	18	40	40	40	35	XF16DKCG5B	74
20 A	10	18	20	30	35	35	10	12	35	35	40	40	XF20DKCG5B	74
30 A	10	25	30	45	50	35	12	40	50	50	50	45	XF30DKCS5B	74

Double-cell single-phase filter 120-250 Vac

Current	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)						Cat. No.	Page
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz		
3 A	45	60	60	55	45	45	12	45	45	45	45	45	XF03DPCG5C	75
6 A	30	50	60	55	50	35	8	45	45	45	45	45	XF06DPCG5C	75
12 A	15	25	35	55	55	35	12	40	40	35	35	40	XF12DPCG5C	75
16 A	20	35	45	60	50	35	12	40	40	45	45	50	XF16DPCG5C	75
20 A	15	40	45	50	50	40	12	45	45	45	35	50	XF20DPCG5C	75
30 A	10	30	35	55	45	30	18	45	50	40	40	40	XF30DPGS5C	75

3-phase filter without neutral TDV series

- Models from 7 to 130 A
- High attenuation from 50 kHz to 30 MHz
- High attenuation also with long cables
- Minimum space on the panel



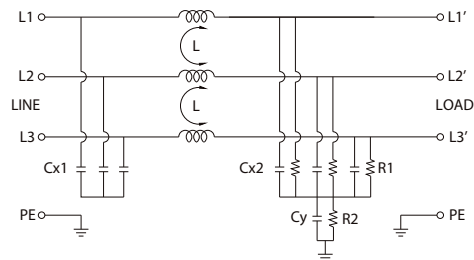
NOTES

Dimensions and diagrams are indicative, for more details see the products data sheet.

(1) According to EN60950 insulation tests on input side must be made only with DC instruments.

(2) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



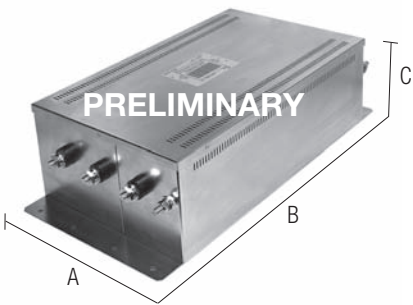
VERSIONS			Dimensions			Weight (kg)
Rated current	Type	Cat. No.	A	B	C	
7 A	F 07 TDV ST2	XF07TDVST2 (2)	42 (1,65 in)	192 (7,56 in)	72 (2,84 in)	
16 A	F 16 TDV ST2	XF16TDVST2 (2)	47 (1,85 in)	252 (9,93 in)	72 (2,84 in)	
30 A	F 30 TDV ST2	XF30TDVST2 (2)	52 (2,05 in)	272 (10,72 in)	87 (3,43 in)	
42 A	F 42 TDV ST2	XF42TDVST2 (2)	52 (2,05 in)	312 (12,29 in)	87 (3,43 in)	
55 A	F 55 TDV ST2	XF55TDVST2 (2)	87 (3,43 in)	252 (9,93 in)	92 (3,62 in)	
75 A	F 75 TDV ST2	XF75TDVST2 (2)	92 (3,62 in)	272 (10,72 in)	137 (5,4 in)	
100 A	F 100 TDV ST2	XF100TDVST2 (2)	90 (3,55 in)	270 (10,64 in)	150 (5,91 in)	

GENERAL TECHNICAL DATA	
Rated voltage	480 Vac \pm 10%
Rated current	see versions table
Frequency	50...60 Hz
Leakage current at 480 Vac 60 Hz	30 mA
Operating temperature range	-25...+85°C
Insulation L/L	1.45 KVdc / 60 s (1)
Insulation L/PE	2.25 KVdc / 60 s (1)
Overvoltage category/Pollution degree	—
Protection degree	IP 20 IEC 529, EN60529
Connection terminal	screw terminals
Housing material	metal
Approx. weight	see versions table
Mounting information	on the panel with screws

Type	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)					
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz
F 07 TDV ST2	20	60	60	60	50	35	25	60	65	60	55	40
F 16 TDV ST2	15	50	55	60	50	35	25	55	60	60	55	40
F 30 TDV ST2	15	50	55	60	50	35	25	55	60	60	55	40
F 42 TDV ST2	55	70	70	45	35	20	45	45	45	45	45	30
F 55 TDV ST2	15	55	55	55	50	35	25	55	60	60	50	40
F 75 TDV ST2	15	55	55	55	50	30	20	50	50	50	55	40
F 100 TDV ST2	35	50	45	25	15	7	30	35	35	35	30	7

3-phase filter without neutral TDS series

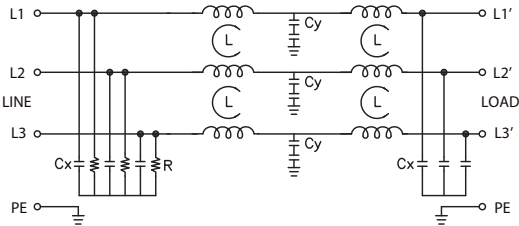
- Models from 150 to 180 A
- High attenuation from 150 kHz to 30 MHz
- High attenuation also with long cables



NOTES

Dimensions and diagrams are indicative, for more details see the products data sheet.
(1) Version available upon request; for information call our sales department, local agent or representative
(2) According to EN60950 insulation tests on input side must be made only with DC instruments.

BLOCK DIAGRAM



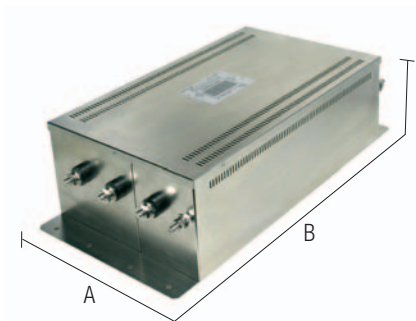
VERSIONS		
Rated current	Type	Cat. No.
150 A	F 150 TDS 84C	XF150TDS84C (1)
180 A	F 180 TDS 84C	XF180TDS84C (1)
GENERAL TECHNICAL DATA		
Rated voltage		
Rated current		
Frequency		
Leakage current at 480 Vac 60 Hz		
Operating temperature range		
Insulation line/line		
Insulation line/PE		
Overvoltage category/Pollution degree		
Protection degree		
Connection terminal		
Housing material		
Approx. weight		
Mounting information		

Dimensions			Weight (kg)
A	B	C	
202 (7,96 in)	390 (15,37 in)	122 (4,81 in)	
202 (7,96 in)	390 (15,37 in)	122 (4,81 in)	
480 Vac ± 10%			
see versions table			
50...60 Hz			
500 mA			
-25...+85°C			
1 KVdc / 60 s (2)			
1 KVdc / 60 s (150A) – 2.25 KVdc / 60 s (180A) (2)			
—			
IP 20 IEC 529, EN60529			
with screw bolts			
metal			
see versions table			
on the panel with screws			

Type	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)					
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz
F 150 TDS 84C	20	30	40	45	40	30	30	40	40	45	40	25
F 180 TDS 84C	20	30	40	45	40	30	30	40	40	45	40	25

3-phase filter without
neutral serie TDDS

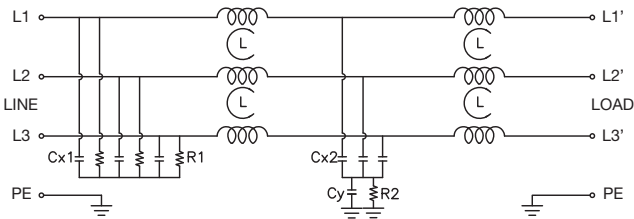
- High attenuation from 150 kHz to 30 MHz
- High attenuation also with long cables



NOTES

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(2) According to EN60950 insulation tests on input side must be made only with DC instruments.

BLOCK DIAGRAM



VERSIONS		
Rated current	Type	Cat. No.
200 A	F 200 TDDS 84C	XF200TDDS84C (1)

Dimensions			Weight (kg)
A	B	C	
240 (9,46 in)	477 (18,79 in)	140 (5,52 in)	

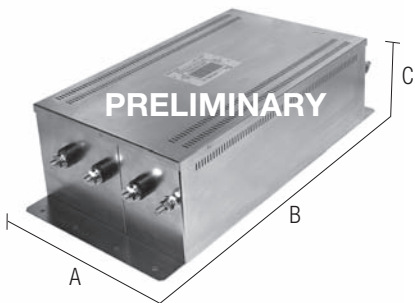
GENERAL TECHNICAL DATA	
Rated voltage	480 Vac ± 10%
Rated current	200 A
Frequency	50...60 Hz
Leakage current at 480 Vac 60 Hz	500 mA
Operating temperature range	-25...+85°C
Insulation line/line	1 KVdc / 60 s (2)
Insulation line/PE	1.8 KVdc / 60 s (2)
Overvoltage category/Pollution degree	—
Protection degree	IP 20 IEC 529, EN60529
Connection terminal	with screw bolts
Housing material	metal
Approx. weight	see versions table
Mounting information	on the panel with screws

Dimensions		Weight (kg)
A	B	C
240 (9,46 in)	477 (18,79 in)	140 (5,52 in)

Type	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)					
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz
F 200 TDDS 84C	55	60	55	30	20	/	45	30	25	10	10	5

3-phase filter without
neutral TDSS series

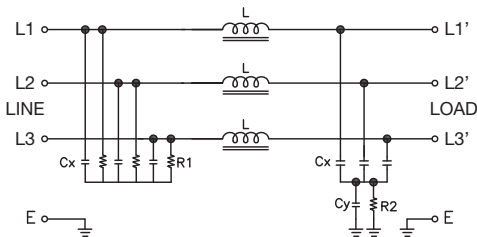
- Models from 300 to 600 A
- High attenuation from 150 kHz to 30 MHz
- High attenuation also with long cables



NOTES

Dimensions and diagrams are indicative, for more details see the products data sheet.
(1) Version available upon request; for information call our sales department, local agent or representative
(2) According to EN60950 insulation tests on input side must be made only with DC instruments.

BLOCK DIAGRAM



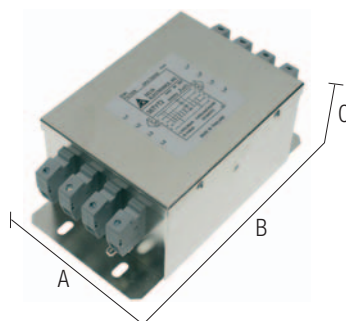
VERSIONS		
Rated current	Type	Cat. No.
300 A	F 300 TDSS 84C	XF300TDSS84C (1)
400 A	F 400 TDSS 84C	XF400TDSS84C (1)
GENERAL TECHNICAL DATA		
Rated voltage		
Rated current		
Frequency		
Leakage current at 480 Vac 60 Hz		
Operating temperature range		
Insulation line/line		
Insulation line/PE		
Overvoltage category/Pollution degree		
Protection degree		
Connection terminal		
Housing material		
Approx. weight		
Mounting information		

Dimensions			Weight (kg)
A	B	C	
242 (9,53 in)	525 (20,69 in)	142 (5,59 in)	
242 (9,53 in)	525 (20,69 in)	142 (5,59 in)	
480 Vac ± 10%			
see versions table			
50...60 Hz			
1000 mA			
-25...+85°C			
0.6 KVdc / 60 s (2)			
1 KVdc / 60 s (2)			
—			
IP 20 IEC 529, EN60529			
with flat plug			
metal			
see versions table			
on the panel with screws			

Type	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)					
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz
F 300 TDSS 84C	30	40	40	25	20	15	40	40	50	35	30	20
F 400 TDSS 84C	25	35	30	20	20	10	40	35	35	20	15	10

3-phase filter with neutral serie TYT

- Models from 16 to 100 A
- High attenuation from 150 kHz to 30 MHz
- High attenuation also with long cables



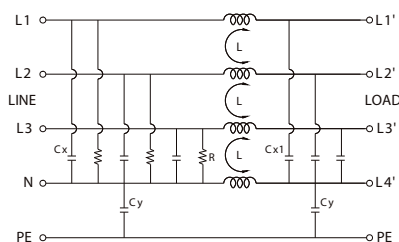
NOTES

Dimensions and diagrams are indicative, for more details see the products data sheet.

(1) According to EN60950 insulation tests on input side must be made only with DC instruments.

(2) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



VERSIONS

Rated current	Type	Cat. No.
16 A	F 16 TYT2	XF16TYT2 (2)
25 A	F 25 TYT2	XF25TYT2 (2)
36 A	F 36 TYT2	XF36TYT2 (2)
50 A	F 50 TYT2	XF50TYT2 (2)
100 A	F 100 TYT2	XF100TYT2 (2)

GENERAL TECHNICAL DATA

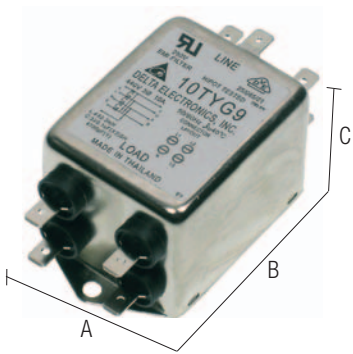
Rated voltage	440 Vac \pm 10%
Rated current	see versions table
Frequency	50...60Hz
Leakage current at 480 Vac 60 Hz	3 mA
Operating temperature range	-25...+85°C
Insulation line/line	1.45 KVdc / 60 s (1)
Insulation line/PE	2.25 KVdc / 60 s (1)
Overvoltage category/Pollution degree	—
Protection degree	IP 20 IEC 529, EN60529
Connection terminal	screw terminals
Housing material	metal
Approx. weight	see versions table
Mounting information	on the panel with screws

Dimensions			Weight (kg)
A	B	C	
107 (4,22 in)	191,5 (7,55 in)	82 (3,23 in)	
107 (4,22 in)	191,5 (7,55 in)	82 (3,23 in)	
107 (4,22 in)	191,5 (7,55 in)	82 (3,23 in)	
124 (4,89 in)	194 (7,64 in)	104 (4,1 in)	
162 (6,38 in)	252 (9,93 in)	132 (5,2 in)	

Type	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)					
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz
F 16 TYT2	25	50	50	50	45	30	35	55	60	60	40	30
F 25 TYT2	25	50	50	50	45	30	35	55	60	60	40	30
F 36 TYT2	25	50	50	50	40	25	30	50	55	50	40	30
F 50 TYT2	25	45	45	40	40	25	30	50	50	40	40	30
F 100 TYT2	10	20	25	30	30	20	30	40	40	35	35	25

Compact 3-phase filter with neutral TY series

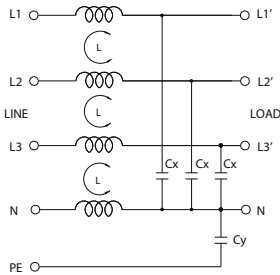
- Models from 10 to 20 A
- High attenuation from 150 kHz to 30 MHz
- High attenuation also with long cables
- Excellent quality/price/performance ratio



NOTES

Dimensions and diagrams are indicative, for more details see the products data sheet.
(1) According to EN60950 insulation tests on input side must be made only with DC instruments.
(2) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



VERSIONS		
Rated current	Type	Cat. No.
10 A	F 10 TYG9	XF10TYG9 (2)
20 A	F 20 TYS9	XF20TYS9 (2)

Dimensions			Weight (kg)
A	B	C	
50 (1,97 in)	85 (3,35 in)	44 (1,73 in)	
50 (1,97 in)	97 (3,82 in)	44 (1,73 in)	

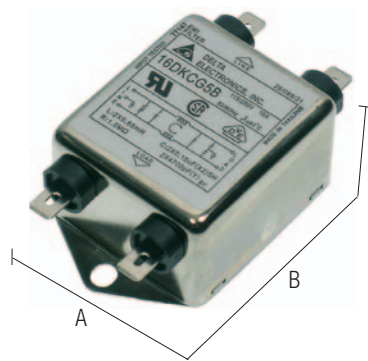
GENERAL TECHNICAL DATA	
Rated voltage	440 Vac ± 10%
Rated current	see versions table
Frequency	50...60Hz
Leakage current at 480 Vac 60 Hz	0.5 mA
Operating temperature range	-25...+85°C
Insulation line/line	1.45 KVdc / 60 s (1)
Insulation line/PE	2.25 KVdc / 60 s (1)
Overvoltage category/Pollution degree	—
Protection degree	IP 20 IEC 529, EN60529
Connection terminal	with flat plug (10 A) and with screw terminals (20 A)
Housing material	metal
Approx. weight	see versions table
Mounting information	on the panel with screws

Dimensions		Weight (kg)
A	B	C
50 (1,97 in)	85 (3,35 in)	44 (1,73 in)
50 (1,97 in)	97 (3,82 in)	44 (1,73 in)

Type	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)					
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz
F 10T YG9	10	20	20	20	30	25	10	20	25	25	30	30
F 20 TYS9	10	15	20	20	25	20	10	15	20	20	25	20

Single-cell single-phase filter DK series

- Models from 3 to 30 A
- High attenuation from 150 kHz to 30 MHz
- High attenuation also with long cables
- Minimum space on the panel

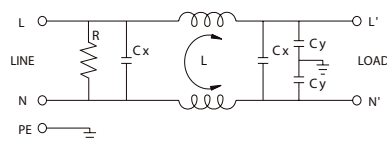


NOTES

Dimensions and diagrams are indicative, for more details see the products data sheet.

- (1) 0.25 mA @ 115 Vac e 0.45 mA @ 250 Vac for models from 3...20 A - 1 mA @ 115 Vac e 2 mA @ 250 Vac for the model of 30 A.
- (2) Version available upon request; for information call our sales department, local agent or representative.
- (3) With flat plug for models from 3...20 A – with screw bolt for the model from 30 A.
- (4) According to EN60950 insulation tests on input side must be made only with DC instruments.

BLOCK DIAGRAM

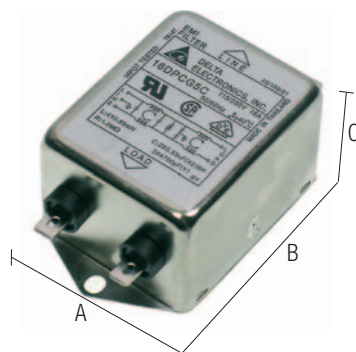


VERSIONS			Dimensions			Weight
Rated current	Type	Cat. No.	A	B	C	(kg)
3 A	F 03 DK BG5B	XF03DKBG5B (2)	64,5 (2,54 in)	34 (1,34 in)	30 (1,18 in)	
6 A	F 06 DK BG5B	XF06DKBG5B (2)	64,5 (2,54 in)	34 (1,34 in)	30 (1,18 in)	
12 A	F 12 DK BG5B	XF12DKBG5B (2)	64,5 (2,54 in)	34 (1,34 in)	30 (1,18 in)	
16 A	F 16 DK CG5B	XF16DKCG5B (2)	45,5 (1,79 in)	71,5 (2,82 in)	30 (1,18 in)	
20 A	F 20 DK CG5B	XF20DKCG5B (2)	51,8 (2,04 in)	84,8 (3,34 in)	30 (1,18 in)	
30 A	F 30 DK CS5B	XF30DKCS5B (2)	56,5 (2,23 in)	114 (4,49 in)	46,4 (1,83 in)	
GENERAL TECHNICAL DATA						
Rated voltage			115–250 Vac ± 10%			
Rated current			see versions table			
Frequency			50...60 Hz			
Leakage current at 480 Vac 60 Hz			0.25...1 mA / 0.45...2 mA (1)			
Operating temperature range			–25...+85°C			
Insulation line/line			1.45 KVdc / 60 s (4)			
Insulation line/PE			2.25 KVdc / 60 s (4)			
Overvoltage category/Pollution degree			—			
Protection degree			IP 20 IEC 529, EN60529			
Connection terminal			with flat plug (from 3 to 20 A) / with screw bolt (30 A) (3)			
Housing material			metal			
Approx. weight			see versions table			
Mounting information			on the panel with screws			

Type	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)					
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz
F 03 DK BG5B	20	30	35	45	50	45	7	35	50	45	45	45
F 06 DK BG5B	15	20	25	40	45	45	10	20	45	45	50	45
F 12 DK BG5B	10	20	22	35	45	40	10	20	40	45	45	45
F 16 DK CG5B	10	18	20	35	45	30	10	18	40	40	40	35
F 20 DK CG5B	10	18	20	30	35	35	10	12	35	35	40	40
F 30 DK CS5B	10	25	30	45	50	35	12	40	50	50	50	45

Double-cell single-phase filter DP series

- Models from 3 to 30 A
- High attenuation from 150 kHz to 30 MHz
- High attenuation also with long cables
- Minimum space on the panel

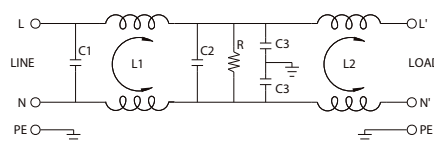


NOTES

Dimensions and diagrams are indicative, for more details see the products data sheet.

- (1) 0.25 mA @ 115 Vac e 0.45 mA @ 250 Vac for models from 3...20 A - 1 mA @ 115 Vac e 2 mA @ 250 Vac for the model of 30 A.
- (2) Version available upon request; for information call our sales department, local agent or representative.
- (3) With flat plug for models from 3...20 A – with screw bolt for the model from 30 A.
- (4) According to EN60950 insulation tests on input side must be made only with DC instruments.

BLOCK DIAGRAM



VERSIONS		
Rated current	Type	Cat. No.
3 A	F 03 DP CG5C	XF03DPCG5C (2)
6 A	F 06 DP CG5C	XF06DPCG5C (2)
12 A	F 12 DP CG5C	XF12DPCG5C (2)
16 A	F 16 DP CG5C	XF16DPCG5C (2)
20 A	F 20 DP CG5C	XF20DPCG5C (2)
30 A	F 30 DP GS5C	XF30DPGS5C (2)

Dimensions			Weight (kg)
A	B	C	
84,8 (3,34 in)	75 (2,96 in)	52 (2,05 in)	
152,9 (6,02 in)	143 (5,63 in)	51,3 (2,02 in)	
84,8 (3,34 in)	75 (2,96 in)	52 (2,05 in)	
56,5 (2,23 in)		46,4 (1,83 in)	

GENERAL TECHNICAL DATA	
Rated voltage	115–250 Vac \pm 10%
Rated current	see versions table
Frequency	50...60 Hz
Leakage current at 480 Vac 60 Hz	0.25...1 mA / 0.45...2 mA (1)
Operating temperature range	–25...+85°C
Insulation line/line	1.45 KVdc / 60 s (4)
Insulation line/PE	2.25 KVdc / 60 s (4)
Overvoltage category/Pollution degree	—
Protection degree	IP 20 IEC 529, EN60529
Connection terminal	with flat plug (from 3 to 20 A) / with screw bolt (30 A) (3)
Housing material	metal
Approx. weight	see versions table
Mounting information	on the panel with screws

Dimensions		Weight (kg)
A	B	C
84,8 (3,34 in)	75 (2,96 in)	52 (2,05 in)
152,9 (6,02 in)	143 (5,63 in)	51,3 (2,02 in)
84,8 (3,34 in)	75 (2,96 in)	52 (2,05 in)
56,5 (2,23 in)		46,4 (1,83 in)

Type	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)					
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz
F 03 DP CG5C	45	60	60	55	45	45	12	45	45	45	45	45
F 06 DP CG5C	30	50	60	55	50	35	8	45	45	45	45	45
F 12 DP CG5C	15	25	35	55	55	35	12	40	40	35	35	40
F 16 DP CG5C	20	35	45	60	50	35	12	40	40	45	45	50
F 20 DP CG5C	15	40	45	50	50	40	12	45	45	40	35	50
F 30 DP GS5C	10	30	35	55	45	30	18	45	50	40	40	40

Analogue signal converters

Applications of analogue signal converters and galvanic isolation

These convert electric signals generated by sensors for measuring physical quantities such as: temperature (RTD thermocouples and PT100 thermal resistors), frequency (proximity, contacts, photoelectric cells), current (HV, Hall sensors), resistance (potentiometers), voltage, pressure, level etc., into standardised electrical signals, adapting them to the I/O of industrial PLC's, DCS's, and PC's (control), or they convert a given analogue signal into a different one, adapting it to the inputs/outputs of the control, or allow remote transmission of the signal without interference via galvanic isolation (Fig. 1).

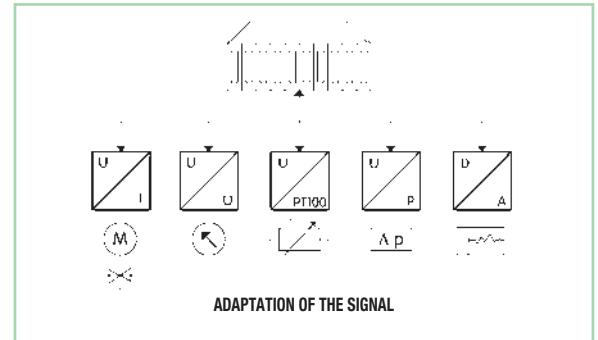


fig. 1

Adaptation between sensor output signal and control input signal

physical quantity measured	sensor output	converter input		converter output	
Temperature	Normally one of the signals indicated in the next column	0 – 60 mV	±60 mV	0 – 5 V	±5 V
Frequency		0 – 100 mV	±100 mV	0 – 10 V	±10 V
Current		0 – 500 mV	±500 mV	0 – 20 mA	±20 mA
Resistance		0 – 1 V	±1 V	4 – 20 mA	
Voltage		0 – 5 V	±5 V		
Pressure		0 – 10 V	±10 V		
Level measurement		0 – 5 mA	±5 mA		
		0 – 10 mA	±10 mA		
	0 – 20 mA	±20 mA			
		0 – 20 mA			

Remote transmission of the signal

The voltage signals reach a max. distance of 10-20 m, beyond this they lose reliability and become very sensitive to earth and induced interference for this reason, in order to transmit at a distance more than 20 m, a voltage signal must be converted into a current signal and galvanically isolated. (Fig. 2).

Current signals exceed 300 m of transmission distance and are less sensitive to induced interference. In order to transmit a current signal at a distance galvanic isolation is required.

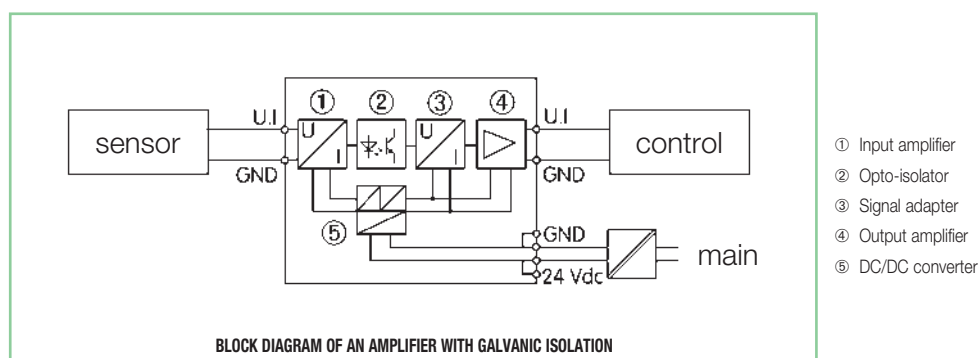


fig. 2

Galvanic isolation of the signal:

- electrically isolates and separates the circuit of the sensor from the control and power supply circuits. Thus each circuit operates with reference to its own zero potential which, being isolated from other circuits, cannot be altered by differences in potential always present between different earth references (Figs. 3).

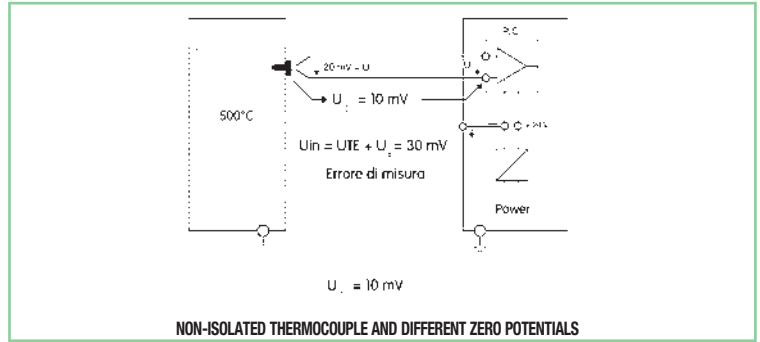


fig. 3

- isolates and separates the various zero potentials between power supply, control and sensors/actuators;
- allows transmission of the signal without errors or interference and with greater reliability;
- the higher the isolation (in kV), the greater the security of transmission where there are zero potentials, electromagnetic interference, transients (lightning, discharges etc.) (Fig. 4).

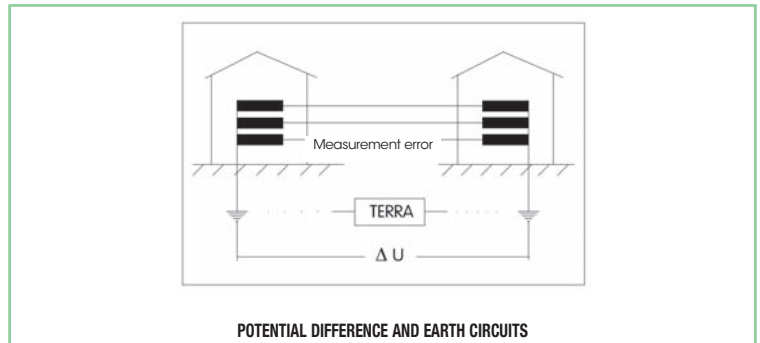


fig. 4

Galvanic isolation is necessary when:

- the distance between control and sensor/actuator is more than 20 m;
- the earth references are different;
- the zero potentials are high, or potentially high in the case of discharges or earth dispersed currents;
- electromagnetic interference is present;
- the signal cables are wired in conduits with power cables (Fig. 5).

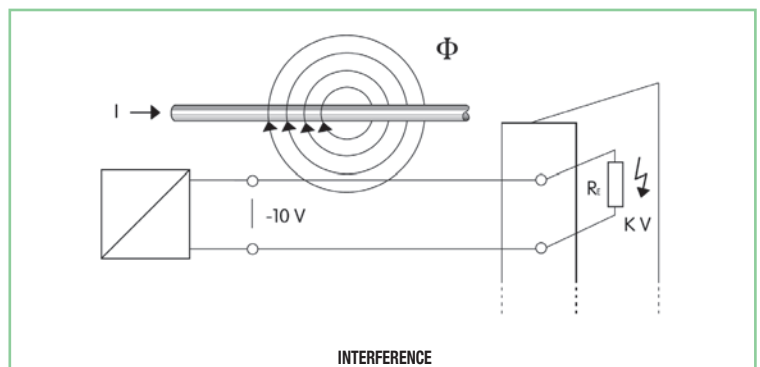


fig. 5

Series and parallel connection of the analogue converters

- To achieve redundancy of a signal or just to duplicate it, you can connect the input of more analogue converters to a single sensor.
- In case of current signals, the input of the converters must be connected in series (Fig. 6).

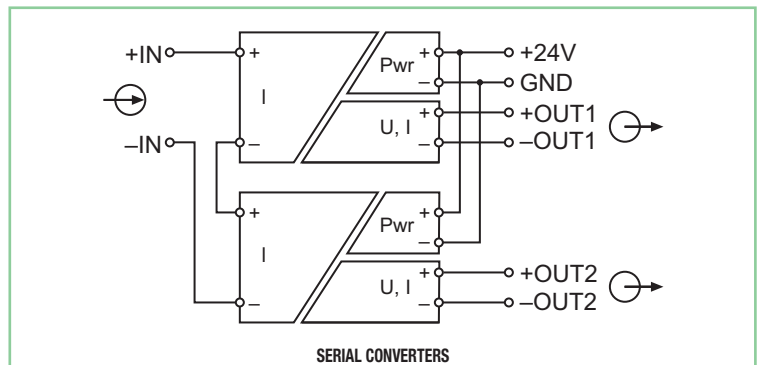


fig. 6

- In case of voltage signals, the input of the converters must be connected in parallel (Fig. 7).

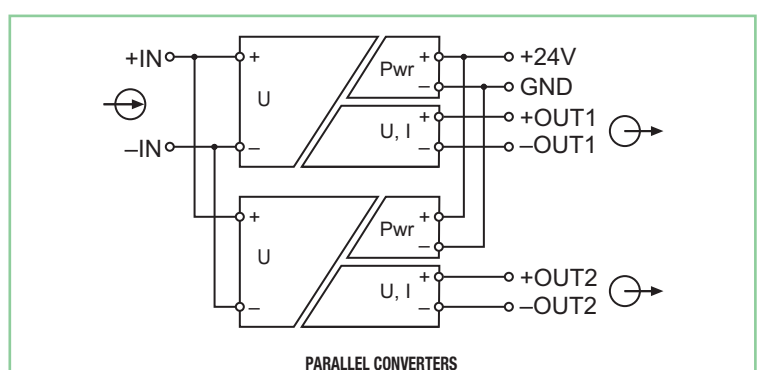


fig. 7

Analogue converters selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

Analogue signal converters and galvanic isolators

Input	Output	Isolation	Power supply	Notes	Type	Cat. No.	Page
0...60 / 0...100 / 0...500 mV ±60 / ±100 / ±500 mV 0...1 / 0...2 / 0...5 / 0...10 V ±1 / ±2 / ±5 / ±10 V 0...5 / 0...10 / 0...20 / 4...20 mA ±5 / ±10 / ±20 mA	0...5 / 0...10 / ±5 / ±10 V 0...20 / 4...20 / ±20 mA	3 ways	24 Vdc	(1) (4)	CA-PI/PO1	XSSAPIPO1	81
0...60 / 0...100 / 0...300 / 0...500 mV 0...1 / 0...10 / 0...20 / 2...20 V 0...5 / 0...10 / 0...20 / 4...20 / ±5 / ±20 mA	0...10 V 0...20 / 4...20 mA	3 ways	24 Vac/dc	(1) (4)	CWUAA 6-0516	X756516	82
0...60 / 0...100 / 0...300 / 0...500 mV 0...1 / 0...10 / 0...20 / 2...20 V 0...5 / 0...10 / 0...20 / 4...20 / ±5 / ±20 mA	0...10 V 0...20 / 4...20 mA	3 ways	24...240 Vac/dc	(1) (5)	CWUAA 6-0517	X756517	82
0...10 V 0...20 / 4...20 mA	0...10 V 0...20 / 4...20 mA	3 ways	24 Vac/dc	(1) (4)	CWNAA 7-0539	X756539	83
0...10 V 0...20 / 4...20 mA	0...10 V 0...20 / 4...20 mA	3 ways	24...240 Vac/dc	(1) (5)	CWNAA 6-0510	X756510	83
0...10 V	0...10 V	3 ways	24 Vac/dc	(2) (4)	CWAA 6-0530	X756530	84
0...10 V	0...20 mA	3 ways	24 Vac/dc	(2) (4)	CWAA 6-0531	X756531	84
0...10 V	4...20 mA	3 ways	24 Vac/dc	(2) (4)	CWAA 6-0532	X756532	84
0...20 mA	0...10 V	3 ways	24 Vac/dc	(2) (4)	CWAA 6-0533	X756533	85
0...20 mA	0...20 mA	3 ways	24 Vac/dc	(2) (4)	CWAA 6-0534	X756534	85
0...20 mA	4...20 mA	3 ways	24 Vac/dc	(2) (4)	CWAA 6-0535	X756535	85
4...20 mA	0...10 V	3 ways	24 Vac/dc	(2) (4)	CWAA 6-0536	X756536	86
4...20 mA	0...20 mA	3 ways	24 Vac/dc	(2) (4)	CWAA 6-0537	X756537	86
4...20 mA	4...20 mA	3 ways	24 Vac/dc	(2) (4)	CWAA 6-0538	X756538	86
0...20 / 4...20 mA	0...20 / 4...20 mA	2 ways	—	(4)	CWPAA 7-0526	X756526	87
0...20 / 4...20 mA	0...20 / 4...20 mA	2 ways	—	(3) (4)	CWPAA 7-0527	X756527	87
-30...+30 V / -50...+50 mA / -5...+5 A	0...20 / 4...20 mA	3 ways	24 Vdc	(6) (7)	LCONALSFDT	X756360	88

Notes

- (1) programmable input and output signal via DIP switches
 (2) single range input and output signal (not programmable), articles generally not in stock but available upon request, for info please contact our sales department
 (3) two channels version

- (4) 1.5 kVac / 60 s two way isolation (input / output) or 1.5 kVac / 60 s three way isolation (input / output / supply)
 (5) 4 kVac / 60 s three way isolation (input / output / supply)
 (6) Input and Output signal range programmable via dip-switch and software
 (7) 2.5 kVac / 60 three way isolation (input / output / supply)

Analogue converters selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

Current transducers and limit value switch

Input	Output	Isolation	Power supply	Notes	Type	Cat. No.	Page
0...50 A ac	adjustable threshold 1...30 A	2 ways	24 Vdc	(3) (4)	CCIS-2	XCCIS2	93
0...1 A ac/dc	0...10 V 0...20 / 4...20 mA	2 ways	24 Vdc	(2)	WAA 7-0540	X756540	94
0...5 A ac/dc	0...10 V 0...20 / 4...20 mA	2 ways	24 Vdc	(2)	WAA 7-0541	X756541	94
0...10 A ac/dc	0...10 V 0...20 / 4...20 mA	2 ways	24 Vdc	(2)	WAA 7-0542	X756542	94

Notes

(1) single I/O version

(2) three programmable output signals

(3) open collector threshold output

(4) threshold output with one changeover relay

Frequency signal converter

Input	Output	Isolation	Power supply	Notes	Type	Cat. No.	Page
0...28.8 kHz (21 ranges)	0...10 V 0...20 / 4...20 mA	2 ways	24 Vac/dc	(1)	CWNFA 6-0524	X756524	97

Auxiliary power supply for sensors and potentiometers

Input	Output	Isolation	Power supply	Notes	Type	Cat. No.	Page
24 Vdc	10 Vdc	2 Vie			CWCV 7-6184	X766184	98

NPN and PNP signal polarity inverter

Input	Output	Isolation	Power supply	Notes	Type	Cat. No.	Page
NPN (17...30 Vdc)	PNP				CI-NPN/PNP	XNPNPNP	99
PNP (17...30 Vdc)	NPN				CI-NPN/PNP	XNPNPNP	99

Analog converters selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

Temperature transducers

Sensor Type	Input	Output	Isolation	Power supply	Notes	Type	Cat. No.	Page
PT100 e PT1000 (2, 3, 4 wires), Thermocouples B, C, E, J, K, N, R, S, T, Potentiometers 0-600 kOhm	Programmable -200...+2400°C (-328...+4352°F) according to sensor type	0...10 V / -10...+10 V 0...20 mA / 4...+20 mA	3 ways	24 Vdc	(1) (2)	LCONTADFDT	X756340	89
PT100 e PT1000 (2, 3, 4 wires), Thermocouples B, C, E, J, K, N, R, S, T, Potentiometers 0-600 kOhm	Programmable -200...+2400°C (-328...+4352°F) according to sensor type	2 thresholds (NO contacts)	3 ways	24 Vdc	(2)	LCONTLSFDT	X756370	90
PT100 3 wire (RTD)	-50...+50°C (-58...+122°F) -50...+100°C (-58...+212°F) -50...+150°C (-58...+302°F) 0...+100°C (+32...+212°F) 0...+150°C (+32...+302°F) 0...+200°C (+32...+392°F) 0...+300°C (+32...+572°F) 0...+400°C (+32...+752°F)	0...10 V 0...20 / 4...20 mA	3 ways	24 Vac/dc	(2)	CWPT 6-0816	X756816	91
PT100 3 wire (RTD)	-50...+50°C (-58...+122°F) -50...+100°C (-58...+212°F) -50...+150°C (-58...+302°F) 0...+100°C (+32...+212°F) 0...+150°C (+32...+302°F) 0...+200°C (+32...+392°F) 0...+300°C (+32...+572°F) 0...+400°C (+32...+752°F)	0...10 V 0...20 / 4...20 mA	3 ways	24...240 Vac/dc	(2)	CWPT 6-0817	X756817	91
Thermocouples J (FeCuNi) and K (NiCrNi)	-50...+200°C (-58...+392°F) -50...+350°C (-58...+662°F) 0...+200°C (+32...+392°F) 0...+400°C (+32...+752°F) 0...+600°C (+32...+1112°F) 0...+800°C (+32...+1472°F) 0...+1000°C (+32...+1832°F) 0...+1200°C (+32...+2192°F)	0...10 V 0...20 / 4...20 mA	3 ways	24 Vac/dc	(2)	CWTH 6-0844	X756844	92
Thermocouples J (FeCuNi) and K (NiCrNi)	-50...+200°C (-58...+392°F) -50...+350°C (-58...+662°F) 0...+200°C (+32...+392°F) 0...+400°C (+32...+752°F) 0...+600°C (+32...+1112°F) 0...+800°C (+32...+1472°F) 0...+1000°C (+32...+1832°F) 0...+1200°C (+32...+2192°F)	0...10 V 0...20 / 4...20 mA	3 ways	24...240 Vac/dc	(2)	CWTH 6-0847	X756847	92

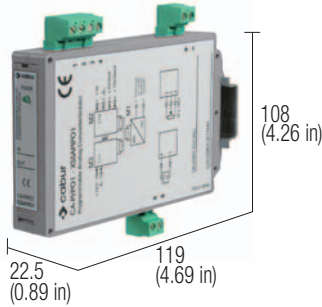
Notes

(1) programmable input and output signals via software

(2) programmable input and output signals via dip-switch

Programmable analogue signal converter

- 19 input scales
- 7 output scales
- 1 SPST (NO) alarm contact
- IN/OUT isolation >3 kVac
- Auxiliary supply output for loop-powered sensors
- Input for potentiometer



TAB.1 - INPUT SELECTION TABLE

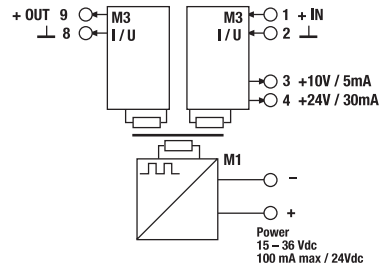
INPUT RANGE		SW1 (INPUT)							
UNIPOLAR	BIPOLAR	1	2	3	4	5	6	7	8
0 – 60 mV	± 60 mV								
0 – 100 mV	± 100 mV		•						
0 – 500 mV	± 500 mV			•					
0 – 1 V	± 1 V				•				
0 – 2 V	± 2 V						•		
0 – 5 V	± 5 V			•	•	•	•		
0 – 10 V	± 10 V								•
0 – 5 mA	± 5 mA			•					
0 – 10 mA	± 10 mA	•			•				
0 – 20 mA	± 20 mA	•					•		
4 – 20 mA	—	•					•		•

NOTES

The dimensions includes the terminal blocks and the DIN clamp.

(1) The modules in stock are programmed and calibrated with 0...10 V and 0...10 V output. Modules programmed and calibrated for all other possible configurations can be supplied on request.

BLOCK DIAGRAM



TAB.2 - OUTPUT SELECTION TABLE

OUTPUT RANGE	INPUT TYPE	SW2 (OUTPUT)								SW3
		1	2	3	4	5	6	7	8	
0 – 5 V	UNIP.	X		•				•		U
	BIP.	X	•	•				•	•	U
± 5 V	UNIP.	X		•				•		U
	BIP.	X		•				•		U
0 – 10 V	UNIP.	X		•						U
	BIP.	X	•	•				•		U
± 10 V	UNIP.	X		•						U
	BIP.	X		•						U
0 – 20 mA	UNIP.	X		•				X		I
	BIP.	X	•	•				X	•	I
± 20 mA	UNIP.	X		•				X		I
	BIP.	X		•				X		I

• = ON
= OFF
X = ANY

VERSIONS

Cat. No. XCAPI03

CAPI03

INPUT TECHNICAL DATA

Input signal (1)	19 programmable ranges (see Table 1)
Impedance voltage / current mode	1 M Ω / 50 Ω
Max. input voltage	15 V
Max. input current	30 mA

OUTPUT TECHNICAL DATA

Output signal (1)	7 programmable ranges (see Table 2)
Applicable load (voltage / current model)	≥ 10 k Ω / ≤ 500 Ω
Max. output voltage	12 V
Max. output current	25 mA

GENERAL TECHNICAL DATA

Supply voltage	15...36 Vdc
Rated current	100 mA max. @ 24 Vdc
Auxiliary DC feed output max. current	10 Vdc 5 mA / 24 Vdc 30 mA
Gain error	< 0.1% FS
Offset error	< 0.05% FS
Linearity error	< 0.1% FS
Zero adjustment / Span adjustment	$\pm 10\%$ FS
Transmission frequency	400Hz...1kHz according to full-scale
Rise time	150 mV / μ s
Bandwidth	1 kHz @ -6 dB
Phase delay	< 10 μ s
I/O / supply isolation	> 3 kVac / 60 s
Continuous voltage isolation	800 Vac max.
Reference Standard	IEC 664-1, DIN VDE0110.1
Overvoltage category/Pollution degree	III / 2
Operating temperature range	-10... +65°C
Δ T	5°C
Protection degree	IP 20 IEC 529, EN60529
ECM standards	EN 50081-2, EN 50082-2
Connection terminal	2.5 mm ² pluggable screw type (14 AWG)
Housing material	polyamide UL94V-0
Approx. weight	150 g (5.29 oz)
Mounting information	vertical on rail, allow 5 mm spacing between adjacent component

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	—
Plug-in jumper	—
red	—
white	—
blue	—

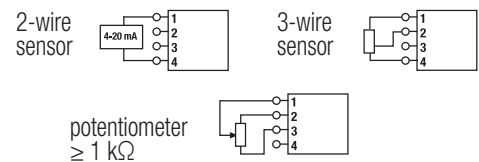
INPUT STAGE

The module can manage single-pole and two-pole inputs, choosing from among the ranges (see Table 1):

- 0...60 mV ± 60 mV
- 0...100 mV ± 100 mV
- 0...500 mV ± 500 mV
- 0...1 V ± 1 V
- 0...5 V ± 5 V
- 0...10 V ± 10 V
- 0...5 mA ± 5 mA
- 0...10 mA ± 10 mA
- 0...20 mA ± 20 mA
- 4...20 mA

The input stage provides two auxiliary supply outputs, for feeding loop powered sensor and potentiometer directly from the module (10V e 24V).

Example of connection:



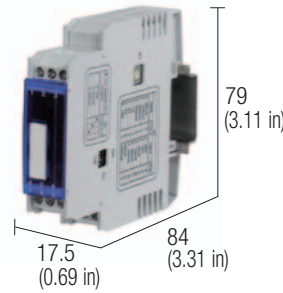
OUTPUT STAGE

The module supplies in output single-pole and two-pole signals with the following ranges (see Table 2):

- 0...5 V ± 5 V
- 0...10 V ± 10 V
- 0...20 mA ± 20 mA
- 4...20 mA

Programmable analogue signal converters

- 3 ways galvanic isolation
- 14 programmable input range
- 3 programmable output range
- Simple programming
- Available version with 24-240 Vac/dc supply voltage

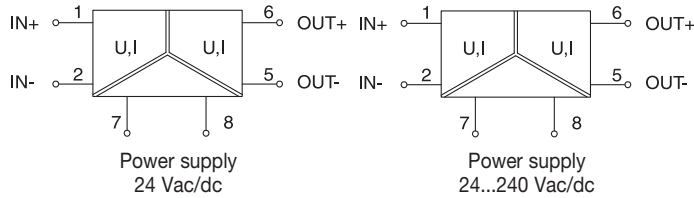


NOTES

The dimensions includes the DIN clamp.

- (1) Adjustable via rotary-switch
- (2) Adjustable via dip-switch
- (3) range 16.8...30 Vdc / 19.2...28.8 Vac
- (4) range 16.8...264 Vdc / 19.2...264 Vac
- (5) 3-way isolation: IN/OUT/power supply
- (6) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



VERSIONS

24 Vac/dc supply voltage
24-240 Vac/dc supply voltage

INPUT TECHNICAL DATA

Input signal (1)

Input resistance

OUTPUT TECHNICAL DATA

Output signal (2)

Applicable load

GENERAL TECHNICAL DATA

Supply voltage
Rated current
Accuracy
Transmission frequency
Temperature coefficient
Isolation
ECM standards
Reference Standard
Overvoltage category/Pollution degree
Protection degree
Operating temperature range
Connection terminal
Housing material
Approx. weight
Mounting information

Cat. No. X756516

CWUAA 6-0516

0...60 / 0...100 / 0...300 / 0...500 mV
0...1 / 0...10 / 0...20 / 2...20 V
0...5 / 0...10 / 0...20 / 4...20 / ±5 / ±20 mA
330 kΩ with input voltage
100 Ω with input current

0...10 V
0...20 / 4...20 mA
>1 kΩ with output voltage
<400 Ω with output current

24 Vac/dc (3)

≤ 35 mA ± 10% @ 24 Vdc
0.1% @ 23°C FS
< 30 Hz
0.02% / K FS
1.5 kVac / 60 s (5)
EN 50081-2, EN 50082-2
IEC 664-1, DIN VDE
III / 2
IP 20 IEC 529, EN60529
-25...+60°C
2.5 mm² fixed screw type
Noryl UL94V-0
65 g (2.29 oz)
vertical on rail adjacent without gap

Cat. No. X756517

CWUAA 6-0517 (6)

0...60 / 0...100 / 0...300 / 0...500 mV
0...1 / 0...10 / 0...20 / 2...20 V
0...5 / 0...10 / 0...20 / 4...20 / ±5 / ±20 mA
330 kΩ with input voltage
100 Ω with input current

0...10 V
0...20 / 4...20 mA
>1 kΩ with output voltage
<400 Ω with output current

24-240 Vac/dc (4)

≤ 35 mA ± 10% @ 24 Vdc
0.1% @ 23°C FS
< 30 Hz
0.02% / K FS
4 kVac / 60 s (5)
EN 50081-2, EN 50082-2
IEC 664-1, DIN VDE
III / 2
IP 20 IEC 529, EN60529
-25...+60°C
2.5 mm² fixed screw type
Noryl UL94V-0
75 g (2.65 oz)
vertical on rail adjacent without gap

APPLICATIONS

Multifunction converters can be used to convert and isolate the most common standard analogue signals; the input of the modules can be set up into 14 signal ranges and the output can be set up to 3 most important analogue ranges. The set up is possible by simply switching the position of a dip switch on the side of the module. The many different input / output combinations offered by multifunctions modules allows to reduce inventory for both new and replacement products and provides many signal conversion solutions. The "3 ways" galvanic isolation assures total isolation between input, output and supply input; this feature, and the "self calibrating signal circuitry", gives excellent accuracy without any manual adjustment. If a single signal must provide several output channels it is possible to use many modules connecting their inputs in parallel as long as the signal is voltage, or in series when signal is current.

MOUNTING ACCESSORIES

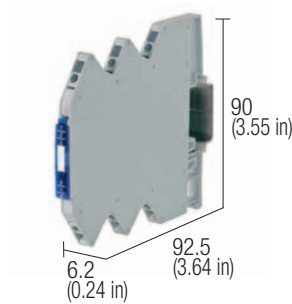
Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Plug-in jumper
(16 poles, 16 A)
red
white
blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—
—
—
—

Programmable analogue signal converters

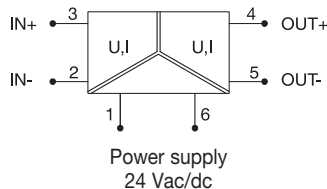
- 1.5 kV, 3 ways, IN/OUT/supply voltage isolation
- 3 programmable input range
- 3 programmable output range
- Simple programming and self calibrating



NOTES

The dimensions includes the DIN clamp.
 (1) range 16.8...30 Vdc / 19.2...28.8 Vac
 (2) range 16.8...264 Vdc / 19.2...264 Vac
 (3) 3-way isolation: IN/OUT/power supply

BLOCK DIAGRAM



VERSIONS

24 Vac/dc supply voltage
24-240 Vac/dc supply voltage

INPUT TECHNICAL DATA

Input signal

Input resistance

OUTPUT TECHNICAL DATA

Output signal

Applicable load

GENERAL TECHNICAL DATA

Supply voltage	24 Vac/dc (1)
Rated current	≤ 35 mA ± 10% @ 24 Vdc
Accuracy	0.1% @ 23°C FS
Transmission frequency	< 30 Hz
Temperature coefficient	0.02% / K FS
Isolation	1.5 kVac / 60 s (3)
ECM standards	EN 61000-6-2, EN 61000-6-4
Reference Standard	IEC 664-1, DIN VDE
Overvoltage category/Pollution degree	III / 2
Protection degree	IP 20 IEC 529, EN60529
Operating temperature range	-25...+60°C
Connection terminal	2.5 mm ² fixed screw type
Housing material	Noryl UL94V-0
Approx. weight	40 g
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
 Mounting rail type according to IEC60715/G32

Plug-in jumper
 (16 poles, 16 A)

red
 white
 blue

Cod. X756539

CWNAA-7-0539

0...10 V

0...20 / 4...20 mA
 330 kΩ with input voltage
 100 Ω with input current

0...10 V

0...20 / 4...20 mA
 >1 kΩ with output voltage
 <400 Ω with output current

24 Vac/dc (1)

≤ 35 mA ± 10% @ 24 Vdc

0.1% @ 23°C FS

< 30 Hz

0.02% / K FS

1.5 kVac / 60 s (3)

EN 61000-6-2, EN 61000-6-4

IEC 664-1, DIN VDE

III / 2

IP 20 IEC 529, EN60529

-25...+60°C

2.5 mm² fixed screw type

Noryl UL94V-0

40 g

vertical on rail adjacent without gap

APPLICATIONS

Multi-function converters can be used to convert and isolate the most common standard analogue signals; the input and the output can be set up into 3 different signal ranges. The set up is possible by simply switching the position of a dip switch on the side of the module.

The input / output combinations offered by these modules provide the most common input/output configurations more economically when compared to 14 input / 3 output modules and reduces inventory.

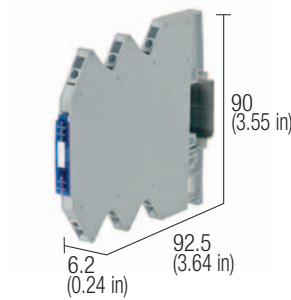
If a single signal must provide several output channels it is possible to use many modules connecting their inputs in parallel as long as the signal is voltage, or in series when signal is current.

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

CWBK 7-0802 cod. X766802
 CWBK 7-0803 cod. X766803
 CWBK 7-0804 cod. X766804

Analogue signal converters

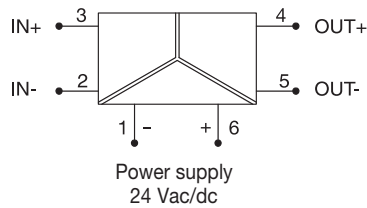
- 1.5 kV, 3 ways, IN/OUT/supply voltage isolation
- Fixed value
- Compact dimension, 6.2 mm pitch



NOTES

The dimensions includes the DIN clamp.
(1) range 16.8...30 Vdc / 19.2...28.8 Vac
(2) 3-way isolation: IN/OUT/power supply

BLOCK DIAGRAM



VERSIONS

IN: 0...10 V / OUT: 0...10 V
IN: 0...10 V / OUT: 0...20 mA
IN: 0...10 V / OUT: 4...20 mA

INPUT TECHNICAL DATA

Input signal
Input resistance

OUTPUT TECHNICAL DATA

Output signal
Applicable load

GENERAL TECHNICAL DATA

Supply voltage
Rated current
Accuracy
Transmission frequency
Temperature coefficient
Isolation
ECM standards
Reference Standard
Overvoltage category/Pollution degree
Protection degree
Operating temperature range
Connection terminal
Housing material
Approx. weight
Mounting information

Cat. No. X756530

CWAA 7-0530

Cat. No. X756531

CWAA 7-0531

Cat. No. X756532

CWAA 7-0532

0...10 V
330 kΩ

0...10 V
330 kΩ

0...10 V
330 kΩ

0...10 V
>1 kΩ

0...20 mA
<400 Ω

4...20 mA
<400 Ω

24 Vac/dc (1)	24 Vac/dc (1)	24 Vac/dc (1)
≤ 13 mA ± 10%	≤ 13 mA ± 10%	≤ 13 mA ± 10%
0.1% @ 23°C FS	0.1% @ 23°C FS	0.1% @ 23°C FS
< 30 Hz	< 30 Hz	< 30 Hz
0.02% / K FS	0.02% / K FS	0.02% / K FS
1.5 kVac / 60 s (2)	1.5 kVac / 60 s (2)	1.5 kVac / 60 s (2)
EN 61000-6-2, EN 61000-6-4	EN 61000-6-2, EN 61000-6-4	EN 61000-6-2, EN 61000-6-4
IEC 664-1, DIN VDE	IEC 664-1, DIN VDE	IEC 664-1, DIN VDE
III / 2	III / 2	III / 2
IP 20 IEC 529, EN60529	IP 20 IEC 529, EN60529	IP 20 IEC 529, EN60529
-25...+60°C	-25...+60°C	-25...+60°C
2.5 mm ² fixed screw type	2.5 mm ² fixed screw type	2.5 mm ² fixed screw type
PPE	PPE	PPE
40 g (1.41 oz)	40 g (1.41 oz)	40 g (1.41 oz)
vertical on rail adjacent without gap	vertical on rail adjacent without gap	vertical on rail adjacent without gap

APPLICATIONS

These converters can be used to convert and isolate the most common standard analogue signals; each model is designed for a single input output signal function, and they are the right solution in applications where many modules handling the same signal are used, where they allow a large cost reduction compared with multi function modules. These modules are provided with 3 ways galvanic isolation between input output and supply voltage. If a single signal must provide several output channels it is possible to use many modules connecting their inputs in parallel as long as the signal is voltage, or in series when the signal is current.

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Plug-in jumper
(16 poles, 16 A)

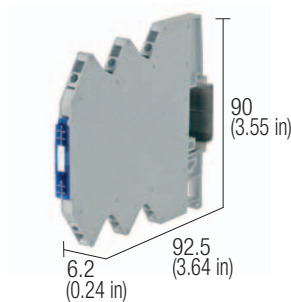
red
white
blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

CWBK 7-0802 Cat. No. X766802
CWBK 7-0803 Cat. No. X766803
CWBK 7-0804 Cat. No. X766804

Analogue signal converters

- 1.5 kV, 3 ways, IN/OUT/supply voltage isolation
- Fixed value
- Compact dimension, 6.2 mm pitch



NOTES

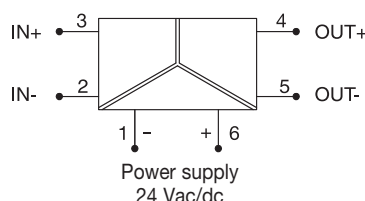
The dimensions includes the DIN clamp.

(1) range 16.8...30 Vdc / 19.2...28.8 Vac

(2) 3-way isolation: IN/OUT/power supply

(3) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



VERSIONS

IN: 0...20 mA / OUT: 0...10 V

IN: 0...20 mA / OUT: 0...20 mA

IN: 0...20 mA / OUT: 4...20 mA

INPUT TECHNICAL DATA

Input signal

Input resistance

OUTPUT TECHNICAL DATA

Output signal

Applicable load

GENERAL TECHNICAL DATA

Supply voltage

Rated current

Accuracy

Transmission frequency

Temperature coefficient

Isolation

ECM standards

Reference Standard

Overvoltage category/Pollution degree

Protection degree

Operating temperature range

Connection terminal

Housing material

Approx. weight

Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Plug-in jumper

(16 poles, 16 A)

red

white

blue

Cat. No. X756533

CWAA 7-0533 (3)

Cat. No. X756534

CWAA 7-0534 (3)

Cat. No. X756535

CWAA 7-0535 (3)

0...20 mA

100 Ω

0...20 mA

100 Ω

0...20 mA

100 Ω

0...10 V

>1 kΩ

0...20 mA

<400 Ω

4...20 mA

<400 Ω

24 Vac/dc (1)

≤ 13 mA ± 10%

0.1% @ 23°C FS

< 30 Hz

0.02% / K FS

1.5 kVac / 60 s (2)

EN 61000-6-2, EN 61000-6-4

IEC 664-1, DIN VDE

III / 2

IP 20 IEC 529, EN60529

-25...+60°C

2.5 mm² fixed screw type

PPE

40 g (1.41 oz)

vertical on rail adjacent without gap

24 Vac/dc (1)

≤ 13 mA ± 10%

0.1% @ 23°C FS

< 30 Hz

0.02% / K FS

1.5 kVac / 60 s (2)

EN 61000-6-2, EN 61000-6-4

IEC 664-1, DIN VDE

III / 2

IP 20 IEC 529, EN60529

-25...+60°C

2.5 mm² fixed screw type

PPE

40 g (1.41 oz)

vertical on rail adjacent without gap

24 Vac/dc (1)

≤ 13 mA ± 10%

0.1% @ 23°C FS

< 30 Hz

0.02% / K FS

1.5 kVac / 60 s (2)

EN 61000-6-2, EN 61000-6-4

IEC 664-1, DIN VDE

III / 2

IP 20 IEC 529, EN60529

-25...+60°C

2.5 mm² fixed screw type

PPE

40 g (1.41 oz)

vertical on rail adjacent without gap

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

CWBK 7-0802

CWBK 7-0803

CWBK 7-0804

Cat. No. X766802

Cat. No. X766803

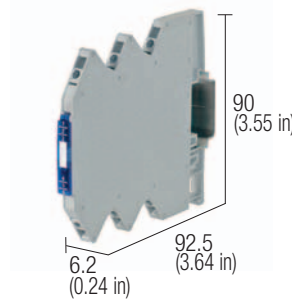
Cat. No. X766804

APPLICATIONS

These converters can be used to convert and isolate the most common standard analogue signals; each model is designed for a single input output signal function, and they are the right solution in applications where many modules handling the same signal are used, where they allow a large cost reduction compared with multi function modules. These modules are provided with 3 ways galvanic isolation between input output and supply voltage. If a single signal must provide several output channels it is possible to use many modules connecting their inputs in parallel as long as the signal is voltage, or in series when the signal is current.

Analogue signal converters

- 1.5 kV, 3 ways, IN/OUT/supply voltage isolation
- Fixed value
- Compact dimension, 6.2 mm pitch



NOTES

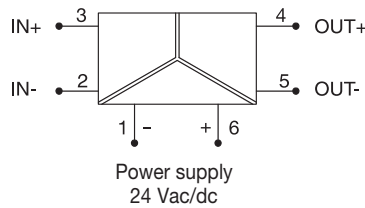
The dimensions includes the DIN clamp.

(1) range 16.8...30 Vdc / 19.2...28.8 Vac

(2) 3-way isolation: IN/OUT/power supply

(3) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



VERSIONS

IN: 4...20 mA / OUT: 0...10 V

IN: 4...20 mA / OUT: 0...20 mA

IN: 4...20 mA / OUT: 4...20 mA

INPUT TECHNICAL DATA

Input signal

Input resistance

OUTPUT TECHNICAL DATA

Output signal

Applicable load

GENERAL TECHNICAL DATA

Supply voltage

Rated current

Accuracy

Transmission frequency

Temperature coefficient

Isolation

ECM standards

Reference Standard

Overvoltage category/Pollution degree

Protection degree

Operating temperature range

Connection terminal

Housing material

Approx. weight

Mounting information

Cat. No. X756536

CWAA 7-0536

Cat. No. X756537

CWAA 7-0537 (3)

Cat. No. X756538

CWAA 7-0538

4...20 mA

100 Ω

4...20 mA

100 Ω

4...20 mA

100 Ω

0...10 V

>1 kΩ

0...20 mA

<400 Ω

4...20 mA

<400 Ω

24 Vac/dc (1)

≤ 13 mA ± 10%

0.1% @ 23°C FS

< 30 Hz

0.02% / K FS

1.5 kVac / 60 s (2)

EN 61000-6-2, EN 61000-6-4

IEC 664-1, DIN VDE

III / 2

IP 20 IEC 529, EN60529

-25...+60°C

2.5 mm² fixed screw type

PPE

40 g (1.41 oz)

vertical on rail adjacent without gap

24 Vac/dc (1)

≤ 13 mA ± 10%

0.1% @ 23°C FS

< 30 Hz

0.02% / K FS

1.5 kVac / 60 s (2)

EN 61000-6-2, EN 61000-6-4

IEC 664-1, DIN VDE

III / 2

IP 20 IEC 529, EN60529

-25...+60°C

2.5 mm² fixed screw type

PPE

40 g (1.41 oz)

vertical on rail adjacent without gap

24 Vac/dc (1)

≤ 13 mA ± 10%

0.1% @ 23°C FS

< 30 Hz

0.02% / K FS

1.5 kVac / 60 s (2)

EN 61000-6-2, EN 61000-6-4

IEC 664-1, DIN VDE

III / 2

IP 20 IEC 529, EN60529

-25...+60°C

2.5 mm² fixed screw type

PPE

40 g (1.41 oz)

vertical on rail adjacent without gap

APPLICATIONS

These converters can be used to convert and isolate the most common standard analog signals; each model is designed for a single input output signal function, and they are the right solution in applications where many modules handling the same signal are used, where they allow a large cost reduction compared with multi function modules. These modules are provided with 3 ways galvanic isolation between input output and supply voltage. If a single signal must provide several output channels it is possible to use many modules connecting their inputs in parallel as long as the signal is voltage, or in series when the signal is current

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Plug-in jumper

(16 poles, 16 A)

red

white

blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

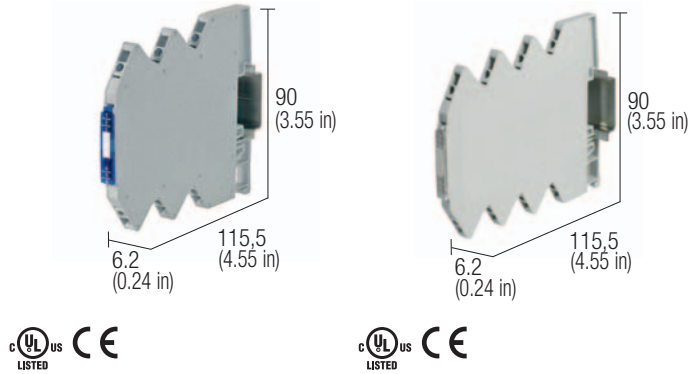
CWBK 7-0802 Cat. No. X766802

CWBK 7-0803 Cat. No. X766803

CWBK 7-0804 Cat. No. X766804

Passive galvanic isolators

- Do not require power supply
- Suitable for loop powered sensors
- 2 Ways I/O 500 V isolation
- Single and double channel version
- Compact dimension, 6.2 mm pitch



NOTES

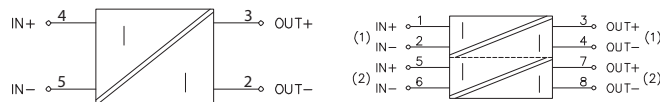
The dimensions includes the DIN clamp.

(1) Input voltage must have a value higher than the value calculated with this formula, where R_b is load resistance (see pic.1); for calculation refer to the diagram comparing minimum input voltage with output load and wires resistance values; refer to the diagram (see pic. 2) to define if application conditions allow to get full 20 mA output signal

(2) 2-way isolation: IN/OUT

(3) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



VERSIONS

Single channel
Double channel

INPUT TECHNICAL DATA

Input signal
Input current
Input voltage (1)
Input resistance

OUTPUT TECHNICAL DATA

Output signal
Applicable load

GENERAL TECHNICAL DATA

Supply voltage
Rated current
Accuracy
Rise time (10...90%)
Transmission frequency
Temperature coefficient
Isolation
ECM standards
Reference Standard
Overvoltage category/Pollution degree
Protection degree
Operating temperature range
Connection terminal
Housing material
Approx. weight
Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

Plug-in jumper
(16 poles, 16 A)

red
white
blue

Cat. No. X756526

CWPAA 7-0526

Cat. No. X756527

CWPAA 7-0527 (3)

1 channel 0...20 mA, 4...20 mA

—
2.7 + (20 mA x R_b)
100 Ω

1 channel 0...20 / 4...20 mA, (max 21 mA)
<400 Ω with output current

2 channels 0...20 mA, 4...20 mA

—
2.7 + (20 mA x R_b)
100 Ω

2 channels 0...20 / 4...20 mA, (max 21 mA)
<400 Ω with output current

—
12 mA
0.1 FS (23°C)
10 ms
30 Hz @ 3 dB
0.02% FS
1.5 kVAc / 60 s (2)
EN 61000-6-2, EN 61000-6-4
IED 664-1, DIN VDE
III / 2
IP 20 IEC 529 EN60529
-25...+60°C
1.5 mm² fixed screw type
Luranyl
35 g (1.24 oz)
vertical on rail adjacent without gap

—
12 mA
0.1 FS (23°C)
10 ms
30 Hz @ 3 dB
0.02% FS
1.5 kVAc / 60 s (2)
EN 61000-6-2, EN 61000-6-4
IED 664-1, DIN VDE
III / 2
IP 20 IEC 529 EN60529
-25...+60°C
1.5 mm² fixed screw type
Luranyl
35 g (1.24 oz)
vertical on rail adjacent without gap

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

CWBK 7-0802 Cat. No. X766802
CWBK 7-0803 Cat. No. X766803
CWBK 7-0804 Cat. No. X766804

APPLICATIONS

The passive galvanic isolators can isolate the signal generated by loop powered sensors, where the applied load must have a resistance lower than 400 Ω 20 mA, including the cable resistance; the applied input voltage has to be higher than 2.7 V compared with output voltage (see note 2). If above conditions are satisfied, passive isolators reduce cabling costs and eliminate power supplies thereby saving costs. If above conditions are not satisfied, passive module introduces a signal attenuation.

figure 1

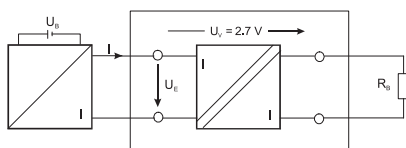
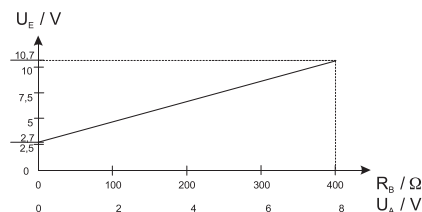
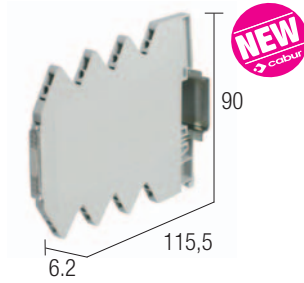


figure 2



Analogue signal limit value switch

- 3 ways I/O 2.5 kV isolation
- programmable input ranges via dip-switch and customizable via software FDT/DTM
- 2 threshold customizable via software FDT/DTM
- Symple functions programming



Programming tool X756894

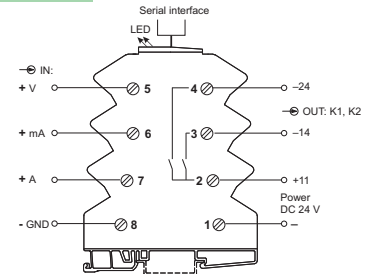
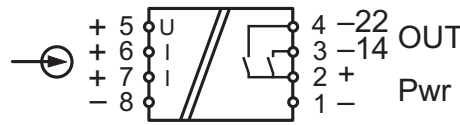


NOTES

The dimensions includes the DIN clamp.

- (1) Version available upon request; for information call our sales department, local agent or representative
- (2) Input temperature ranges can be set via dip switch and adjustable via FDT/DTM software.
Output ranges can be set via FDT/DTM software
- (3) 3-way isolation: IN / OUT/ supply

BLOCK DIAGRAM



VERSION

With screw terminals (standard)

With spring terminals

Programming tool

INPUT TECHNICAL DATA

Input signal (1)

Input resistance

Zero / Spam

OUTPUT TECHNICAL DATA

Threshold regulation

Contact type

Max. switching voltage / current

Status indication

Operating mode

GENERAL TECHNICAL DATA

Supply voltage

Rated current

Accuracy

Data processing

Linearity error

Temperature coefficient

Response time

Isolation

EMC Standard

Reference Standard

Overvoltage category/Pollution degree

Protection degree

Operating temperature range

Connection terminal

Housing material

Approx. weight

Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Plug-in jumper

(16 poles, 16 A)

red
white
blue

Cod. X756360

LCONLSFDT (1)

(1)

Cod. X756894

LCONZUSB (1)

-30...+30 V

330 kΩ

-50...+50 mA

30 Ω

-5...+5 A

10 mΩ

adjustable via software FDT/DTM

programmable via software FDT/DTM

2 NO contact (solid state relay)

30 Vdc / 100 mA

2 yellow LED

limit value, window, tendency, inverting and hold function

24 Vdc (16.8...30 Vdc)

18 mA ± 10% @ 24 Vdc

0.1% FS

24 Bit

< 100 ppm FS

<100 ppm/°C

1...500 ms (adjustable, default 30 ms)

2.5 kVac / 60 s (3)

EN 50081-2, EN 50082-2

IEC 664-1, DIN VDE

III / 2

IP20

-40...+70°C

1.5 mm² fixed screw type

Noryl UL94V-0

600 g

vertical on rail adjacent without gap

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—

CWBK 7-0802 cod. X766802

CWBK 7-0803 cod. X766803

CWBK 7-0804 cod. X766804

APPLICATIONS

CWTPR 7-0360 is an analog signal converter that provides high accuracy measurement and that can be connected to a wide range of analogue sensors.

Input range and the output thresholds can be modified with a FDT/DTM software and an USB interface. Are available two normally open contact with solid state relay.

Temperature transducer

- For PT100, PT1000 sensors, thermocouples, potentiometers
- 3 ways I/O 2.5 kV isolation
- 145 programmable input ranges via dip-switch and customizable via software FDT/DTM
- 5 programmable output ranges via dip-switch and customisable via software FDT/DTM
- Compact dimension, 6.2 mm pitch

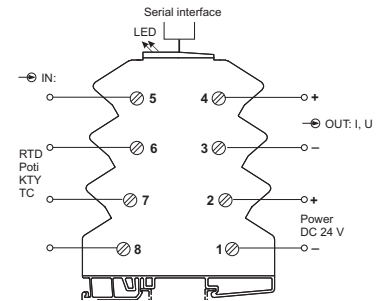
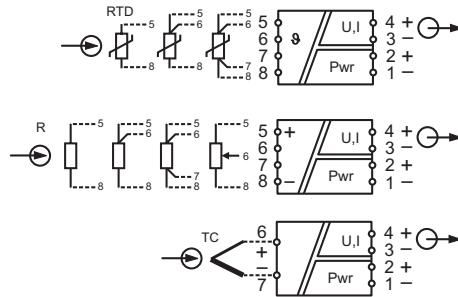


Programming tool X756894

NOTES

The dimensions includes the DIN clamp.
 (1) Version available upon request; for information call our sales department, local agent or representative
 (2) Input temperature ranges, and output signals, can be set via dip switch, or adjustable via FDT/DTM software.
 (3) 3-way isolation: IN / OUT/ supply

BLOCK DIAGRAM



VERSIONS

With screw terminals (standard)

With spring terminals

Programming tool

INPUT TECHNICAL DATA

Input signal

Temperature range

OUTPUT TECHNICAL DATA

Output signal

Applicable load

Display signals

Cod. X756340

Cod. X756894

LCONTADFDT (1)

(1)

LCONZBUSB (1)

PT100, PT1000 sensor
 potenziometro 0...600k Ω
 thermocouple B, C, E, J, K, N, R, S, T type
 -200...+1400°C, according to sensor type (2)

0...10 / -10...+10 V, (max. 10.25 V)
 0...20 / 4...20 mA, (max 21 mA) (2)
 >2 k Ω with output voltage
 <650 Ω with output current
 green LED = OK, flashing red LED = error

GENERAL TECHNICAL DATA

Supply voltage	24 Vdc (16.8...30 Vdc)
Rated current	18 mA max. @ 24 Vdc
Accuracy	10K/span(K) + 0.2% FS (for RTD) / 10K/span(K) + 0.4% FS (for TE)
Data processing	24 bit
Linearity error	$\pm 0.05\%$ FS - $\pm 0.1\%$ FS (for TE)
Temperature coefficient	<100 ppm/°C
Response time	5...500 ms (regolabile, default 30 ms)
Isolation	2.5 kVac / 60 s (3)
ECM standards	EN 61000-6-2, EN 61000-6-4
Reference Standard	IEC 664-1, DIN VDE
Overvoltage category / Pollution degree	III / 2
Protection degree	IP 20 IEC 529 EN60529
Operating temperature	-40...+70°C
Connection terminal	1.5 mm ² fixed screw ty'e
Housing material	PPE
Approx. weight	40 g (1.41 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	—
Plug-in jumper	red white blue
	CWBK 7-0802 cod. X766802 CWBK 7-0803 cod. X766803 CWBK 7-0804 cod. X766804

APPLICATIONS

CSWTPR 7-0340 is a temperature to analog signal conversion module that provides high accuracy measurement and that can be connected to a wide range of temperature sensors. The module can be used for a temperature range from -200 to + 1.400°C.

With resistive sensors it is possible to select among 2, 3, 4 wire connections. Input and output ranges can be modified with a FDT/DTM software and an USB interface.

Range*	S1	S2
Start	7 8 1 2	End 3 4 5 6 7 8
-200°C	•	0°C
-150°C	•	50°C
-100°C	•	100°C
-50°C	•	150°C
0°C	•	200°C
	•	250°C
	•	300°C
	•	350°C
	•	400°C
	•	450°C
	•	500°C
	•	550°C
	•	600°C
	•	650°C
	•	700°C
	•	750°C
	•	800°C
	•	850°C
	•	900°C
	•	950°C
	•	1000°C
	•	1050°C
	•	1100°C
	•	1150°C
	•	1200°C
	•	1250°C
	•	1300°C
	•	1350°C
	•	1400°C
	•	• → Switch On

S1-S2 1-8 off:
 FDT/DTM

Temperature limit value switch

- For PT100, PT1000 sensors, thermocouples, potentiometers
- 3 ways I/O 2.5 kV isolation
- 145 programmable input ranges via dip-switch and customizable via software FDT/DTM™
- 2 threshold customizable via software FDT/DTM
- Compact dimension, 6.2 mm pitch



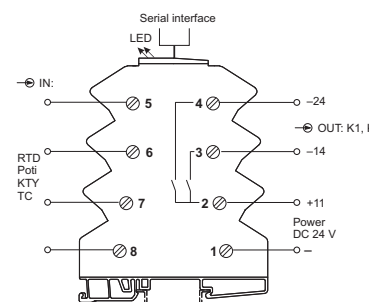
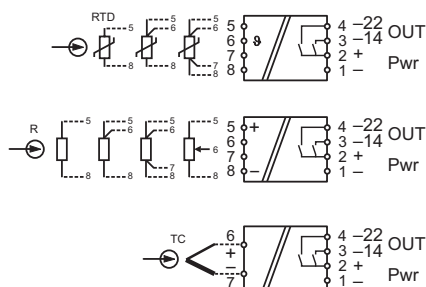
Programming tool X756894

NOTES

The dimensions includes the DIN clamp.

- (1) Version available upon request; for information call our sales department, local agent or representative
- (2) Input temperature ranges can be set via dip switch and adjustable via FDT/DTM software. Output ranges can be set via FDT/DTM software
- (3) 3-way isolation: IN/OUT/power supply

BLOCK DIAGRAM



VERSIONS

With screw terminals (standard)

With spring terminals

Programming tool

INPUT TECHNICAL DATA

Input signal

Temperature range

OUTPUT TECHNICAL DATA

Threshold regulation

Contact type

Max. switching voltage / current

Status indication

Operating mode

GENERAL TECHNICAL DATA

Supply voltage

Rated current

Accuracy

Data processing

Linearity error

Temperature coefficient

Response time

Isolation

ECM standards

Reference Standard

Overvoltage category / Pollution degree

Protection degree

Operating temperature

Connection terminal

Housing material

Approx. weight

Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Plug-in jumper

red

white

blue

Cod. X756370

Cod. X756894

LCNTLSFDT (1)

(1)

LCONZBUSB (1)

PT100, PT1000 sensor
potenziometro 0...600k Ω
thermocouple B, C, E, J, K, N, R, S, T type
-200...+1400°C, according to sensor type (2)

programmable via software FDT/DTM

2 NO contact (solid state relay)

30 Vdc / 100 mA

2 yellow LED

limit value, window, tendency, inverting and hold function

24 Vdc (16.8...30 Vdc)

18 mA max. @ 24 Vdc

10K/span(K) + 0.2% FS (for RTD) / 10K/span(K) + 0.4% FS (for TE)

24 bit

$\pm 0.05\%$ FS (for RTD and potentiometer) / $\pm 0.1\%$ FS (for TE)

<100 ppm/°C

5...500 ms (regolabile, default 30 ms)

2.5 kVac / 60 s (3)

EN 61000-6-2, EN 61000-6-4

IEC 664-1, DIN VDE

III / 2

IP 20 IEC 529 EN60529

-40...+70°C

1.5 mm² fixed screw type

PPE

40 g (1.41 oz)

vertical on rail adjacent without gap

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

CWBK 7-0802 cod. X766802

CWBK 7-0803 cod. X766803

CWBK 7-0804 cod. X766804

APPLICATIONS

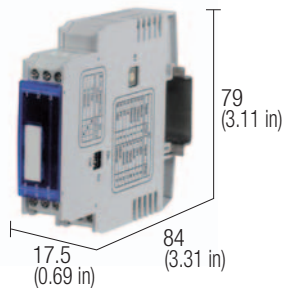
CWTPR 7-0370 is a temperature to analogue signal conversion module that provides high accuracy measurement and that can be connected to a wide range of temperature sensors. The module can be used for a temperature range from -200 to +1.400°C. With resistive sensors it is possible to select among 2, 3, 4 wire connections.

Input range and the output thresholds can be modified with a FDT/DTM software and an USB interface.

Two normally open contact with solid state relay are available.

Temperature transducer

- Converters for PT100 sensors
- 3 ways galvanic isolation
- 8 programmable input range
- 3 programmable output range
- Simple programming
- Version with 24-240 Vac/dc supply voltage

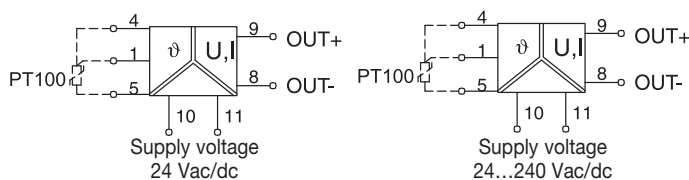


NOTES

The dimensions includes the DIN clamp.

- (1) Adjustable via rotary-switch
- (2) Adjustable via dip-switch
- (3) They can also be used with 2 wire PT100 sensor, connecting the terminals 1 and 4
- (4) range 16.8...30 Vdc / 19.2...28.8 Vac
- (5) range 16.8...264 Vdc / 19.2...264 Vac
- (6) 3-way isolation: IN/OUT/power supply
- (7) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



VERSIONS

24 Vac/dc supply voltage
24-240 Vac/dc supply voltage

INPUT TECHNICAL DATA

Input signal
Temperature range (1)

Supply current

OUTPUT TECHNICAL DATA

Output signal (2)
Applicable load

GENERAL TECHNICAL DATA

Supply voltage
Rated current
Accuracy
Transmission frequency
Temperature coefficient
Isolation
ECM standards
Reference Standard
Overvoltage category/Pollution degree
Protection degree
Operating temperature range
Connection terminal
Housing material
Approx. weight
Mounting information

Cat. No. X756816

CWPT 6-0816

PT100 3 wires (3)
-50...+50°C (-58...+122°F)
-50...+100°C (-58...+212°F)
-50...+150°C (-58...+302°F)
0...+100°C (+32...+212°F)
0...+150°C (+32...+302°F)
0...+200°C (+32...+392°F)
0...+300°C (+32...+572°F)
0...+400°C (+32...+752°F)
0.5 mA

Cat. No. X756817

CWPT 6-0817 (7)

PT100 3 wires (3)
-50...+50°C (-58...+122°F)
-50...+100°C (-58...+212°F)
-50...+150°C (-58...+302°F)
0...+100°C (+32...+212°F)
0...+150°C (+32...+302°F)
0...+200°C (+32...+392°F)
0...+300°C (+32...+572°F)
0...+400°C (+32...+752°F)
0.5 mA

APPLICATIONS

The modules convert and isolate signals generated by 3 wire / 2 wire PT100 (RTD) sensors into analogue signals; the module can be set into 8 temperature ranges and for up to 3 most important analogue ranges. Set up is easily achieved by setting a dip-switch on one side of the module. The modules provide input and output isolation, assuring high signal accuracy, and can be used with isolated and not isolated sensors. Two wire sensors can be used by connecting a jumper wire between 1 and 4 terminal blocks.

MOUNTING ACCESSORIES

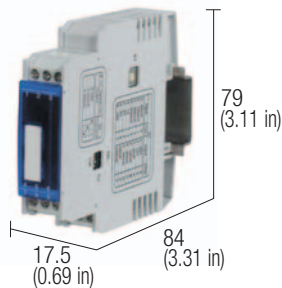
Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Plug-in jumper
(16 poles, 16 A)

red
white
blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Temperature transducer

- Converters for sensors with thermocouples J and K type
- 3 ways galvanic isolation
- 8 programmable input range
- 3 programmable output range
- Simple programming

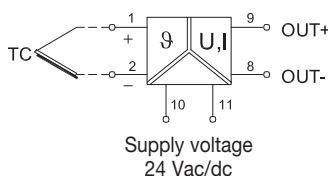


NOTES

The dimensions includes the DIN clamp.

- (1) Adjustable via rotary-switch
- (2) Adjustable via dip-switch
- (3) range 16.8...30 Vdc / 19.2...28.8 Vac
- (4) range 16.8...264 Vdc / 19.2...264 Vac
- (5) *3-way isolation: IN/OUT/power supply
- (7) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



Supply voltage
24...240 Vac/dc

VERSIONS

24 Vac/dc supply voltage
24-240 Vac/dc supply voltage

INPUT TECHNICAL DATA

Input signal

Temperature range (1)

Supply current

OUTPUT TECHNICAL DATA

Output signal (2)

Applicable load

GENERAL TECHNICAL DATA

Supply voltage

Rated current

Accuracy

Transmission frequency

Temperature coefficient

Isolation

ECM standards

Reference Standard

Overvoltage category/Pollution degree

Protection degree

Operating temperature range

Connection terminal

Housing material

Approx. weight

Mounting information

Cat. No. X756844

CWTH 6-0844

Cod. X756847

CWTH 6-0847 (7)

thermocouples FeCuNi (J type) e NiCrNi (K type)
according to DIN/IEC584-1
-50...+200°C (-58...+392°F)
-50...+350°C (-58...+662°F)
0...+200°C (+32...+392°F)
0...+400°C (+32...+752°F)
0...+600°C (+32...+1112°F)
0...+800°C (+32...+1472°F)
0...+1000°C (+32...+1832°F)
0...+1200°C (+32...+2192°F)

termocoppia FeCuNi (tipo J) e NiCrNi (tipo K)
conformi a DIN/IEC584-1
-50...+200°C (-58...+392°F)
-50...+350°C (-58...+662°F)
0...+200°C (+32...+392°F)
0...+400°C (+32...+752°F)
0...+600°C (+32...+1112°F)
0...+800°C (+32...+1472°F)
0...+1000°C (+32...+1832°F)
0...+1200°C (+32...+2192°F)

0...10 V
0...20 / 4...20 mA
>1 kΩ with output voltage,
<400 Ω with output current

0...10 V
0...20 / 4...20 mA
>1 kΩ con uscita in tensione,
<400 Ω con uscita in corrente

24 Vac/dc (3)

≤ 35 mA ± 10% @ 24 Vdc

<0.5% FS

<30 Hz

0.015% / K FS

1.5 kVac / 60 s (5)

EN 50081-2, EN 50082-2

IEC 664-1, DIN VDE

III / 2

IP20

-20...+60°C

2.5 mm² fixed screw type

Noryl UL94V-0

65 g (2.29 oz)

vertical on rail adjacent without gap

24-240 Vac/dc (4)

≤ 35 mA ± 10% @ 24 Vdc

<0.5% FS

<30 Hz

0.015% / K FS

4 kVac / 60 s (5)

EN 50081-2, EN 50082-2

IEC 664-1, DIN VDE

III / 2

IP20

-20...+60°C

morsetti a vite 2.5 mm², fissi

Noryl UL94V-0

75 g

verticali su guida, affiancati

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Plug-in jumper

(16 poles, 16 A)

red

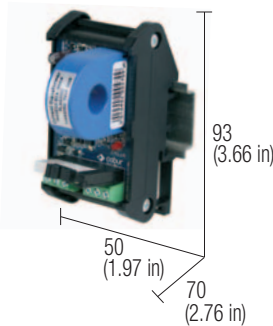
white

blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

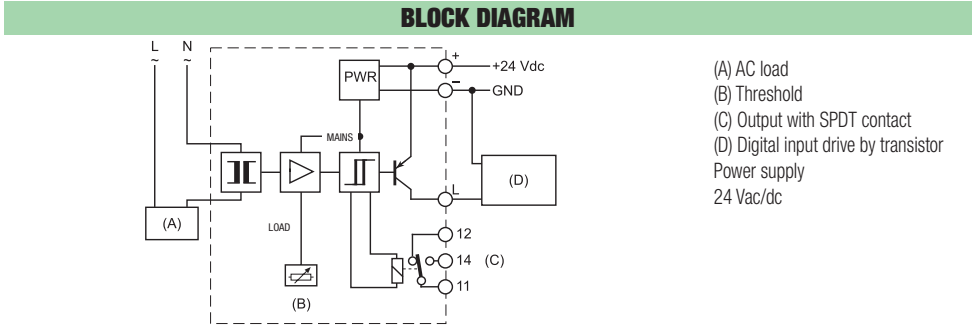
Current limit value switch

- For AC current measure
- Adjustable threshold value
- Versions with transistor or relay output
- IN/OUT 3 kV isolation



NOTES

The dimensions includes the terminal blocks and the DIN clamp.
(1) Isolation referred to conductor being measured, not isolated (naked) and in contact with the wall of the toroid. By using isolated conductors, the isolation value of the conductor is added to isolation of the module.



- (A) AC load
(B) Threshold
(C) Output with SPDT contact
(D) Digital input drive by transistor
Power supply
24 Vac/dc

VERSIONS

Cod. XCCIS2
CCIS-2

INPUT TECHNICAL DATA

Max. measured current	50 A (AC)
Max. measured voltage	600 Vac (1)
Frequency	50...60 Hz
Sensor's hole diameter	Ø 13 mm

50 A (AC)
600 Vac (1)
50...60 Hz
Ø 13 mm

OUTPUT TECHNICAL DATA

Threshold regulation	2...40 A
Threshold hysteresis	± 10%
Max. output current	100 mA open collector PNP
Output status	"high" 24 V (closed) with I < threshold "low" 0 V (open) with I > threshold
Response time	20 ms

2...40 A
± 10%
100 mA open collector PNP
"high" 24 V (closed) with I < threshold "low" 0 V (open) with I > threshold
20 ms

GENERAL TECHNICAL DATA

Supply voltage	24 Vdc ± 10%
Max rated current	100 mA
Operating temperature range	0...60°C
Input/output isolation	> 3 kVac /60 s
Connection terminal	2.5 mm ² fixed screw type (14 AWG)
Housing material	polyamide UL94V-03
Approx. weight	100 g (3.53 oz)
Mounting information	vertical on rail adjacent without gap

24 Vdc ± 10%
100 mA
0...60°C
> 3 kVac /60 s
2.5 mm ² fixed screw type (14 AWG)
polyamide UL94V-03
100 g (3.53 oz)
vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5	
Mounting rail type according to IEC60715/G32	
Plug-in jumper	red
(16 poles, 16 A)	white
	blue

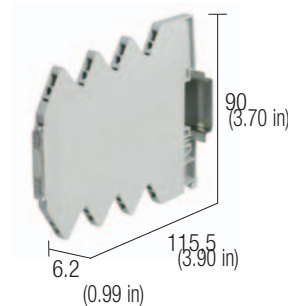
PR/3/AC, PR/3/AS PR/DIN/AC, PR/DIN/AS, PR/DIN/AL
—
—
—

APPLICATIONS

This module converts a current flowing through circuit into a threshold that can be adjusted by the potentiometer; when the current reaches the threshold value, the relay or the transistor switches; the wire must be feed through the hole of the current sensor for current detection.

Current transducers

- For AC/DC current measurements
- Protected against transients
- Power supplied LED
- 3 output signals available

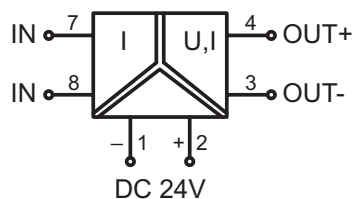


NOTES

The dimensions includes the terminal blocks and the DIN clamp.

(1) Do not connect directly to a 400 V line

BLOCK DIAGRAM



VERSIONS

0...1 A input

0...5 A input

0...10 A input

INPUT TECHNICAL DATA

Input signal

Max. input voltage

Current wire connection

OUTPUT TECHNICAL DATA

Output signal

Max. output signal

Applicable load

GENERAL TECHNICAL DATA

Supply voltage

Rated current

Operating temperature

Linearity error

Offset error

Temperature coefficient

Response time

Protection degree

Connection terminal

Approx. weight

Mounting information

Cod. X756540

WAA 7-0540

Cod. X756541

WAA 7-0541

Cod. X756542

WAA 7-0542

0...1 A AC/DC

400 V (1)

1.5 mm² screw type

0...5 A AC/DC

400 V (1)

1.5 mm² screw type

0...10 A AC/DC

400 V (1)

1.5 mm² screw type

VOLTAGE

0...10 V

11 V

>1 kΩ

CURRENT

0...20 mA / 4...20 mA

21 mA

<400 Ω

24 Vdc (16.8...30 Vdc)

13 mA

-25...+60°C

< 0.1% FS (23°C)

< 0.5% FS (23°C)

< 150 ppm / K FS

150 ms

IP20

1.5 mm² screw type

55 g (1.94 oz)

vertical on rail adjacent without gap

24 Vdc (16.8...30 Vdc)

13 mA

-25...+60°C

< 0.1% FS (23°C)

< 0.5% FS (23°C)

< 150 ppm / K FS

150 ms

IP20

1.5 mm² screw type

55 g (1.94 oz)

vertical on rail adjacent without gap

24 Vdc (16.8...30 Vdc)

13 mA

-25...+60°C

< 0.1% FS (23°C)

< 0.5% FS (23°C)

< 150 ppm / K FS

150 ms

IP20

1.5 mm² screw type

55 g (1.94 oz)

vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Plug-in jumper

(16 poles, 16 A)

red

white

blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

CWBK 7-0802 cod. X766802

CWBK 7-0803 cod. X766803

CWBK 7-0804 cod. X766804

APPLICATIONS

Through a "HALL" sensor they grant AC/DC current measurements.

The presence of current in a circuit indicates not only that power is supplied but also that the circuit is closed and the load connected and active.

It's also possible to know the work conditions of the circuit.

The module guarantees galvanic isolation between the current conductor and the analogue.

● → Switch On		S1			
Input	Output	1	2	3	4
0-1A	0-10V				
0-1A	0-20mA	●			
0-1A	4-20mA		●		

Range WAA7-0540

● → Switch On		S1			
Input	Output	1	2	3	4
0-5A	0-10V				
0-5A	0-20mA	●			
0-5A	4-20mA		●		

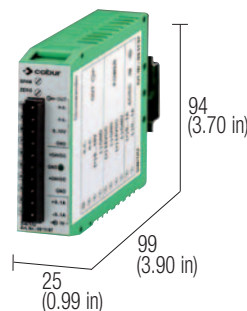
Range WAA7-0541

● → Switch On		S1			
Input	Output	1	2	3	4
0-10A	0-10V				
0-10A	0-20mA	●			
0-10A	4-20mA		●		

Range WAA7-0542

Current transducers

- For AC/DC current measurements
- Protected against transients
- Power supplied LED
- 3 output signals available



NOTES

The dimensions includes the terminal blocks and the DIN clamp.

BLOCK DIAGRAM

Article available until sell-out
 XW000928 will be replaced by **X756540**
 XW000929 will be replaced by **X756541**
 XW000930 will be replaced by **X756542**

VERSIONS

0...1 A input
 0...5 A input
 0...10 A input

INPUT TECHNICAL DATA

Input signal
 Max. input voltage
 Current wire connection

OUTPUT TECHNICAL DATA

Output signal
 Max. output signal
 Applicable load

GENERAL TECHNICAL DATA

Supply voltage
 Rated current
 Operating temperature
 Linearity error
 Offset error
 Amplification error
 Temperature coefficient
 Surge immunity
 Response time
 Protection degree
 Connection terminal
 Approx. weight
 Mounting information

Cat. No. XW000928

SW01VA

Cat. No. XW000929

SW05VA

Cat. No. XW000930

SW10VA

VOLTAGE		CURRENT	
0...1 A AC/DC	380 V	0...5 A AC/DC	380 V
2.5 mm ² pluggable screw type	2.5 mm ² pluggable screw type	0...10 A AC/DC	380 V
2.5 mm ² pluggable screw type	2.5 mm ² pluggable screw type	0...20 mA / 4...20 mA	22 mA
			<500 Ω
24 Vdc ± 10%	60 mA	24 Vdc ± 10%	60 mA
0...55°C	< 0.5%	0...55°C	< 0.5%
< 0.5%	< 0.2%	< 0.5%	< 0.2%
< 0.02%/K	200 V	< 0.02%/K	200 V
10 mS	IP20	10 mS	IP20
2.5 mm ² pluggable screw type	100 g (3.53 oz)	2.5 mm ² pluggable screw type	100 g (3.53 oz)
vertical on rail adjacent without gap	vertical on rail adjacent without gap	2.5 mm ² pluggable screw type	vertical on rail adjacent without gap

APPLICATIONS

In 99 mm depth measure is included the space occupied by the terminal block provided with the product. Through a "HALL" sensor they grant AC/DC current measurements. The presence of current in a circuit indicates not only that power is supplied but also that the circuit is closed and the load connected and active. It's also possible to know the work conditions of the circuit. The module guarantees galvanic isolation between the current conductor and the analogue output and, if not connected in series to the controlled current, cannot be damaged by power surges or short circuits.

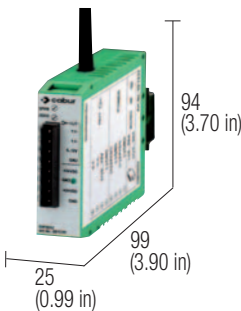
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
 Mounting rail type according to IEC60715/G32
 Plug-in jumper (16 poles, 16 A) red
 white
 blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Current transducers

- For AC/DC current measurements
- Protected against transients
- Power supplied LED
- 3 output signals available

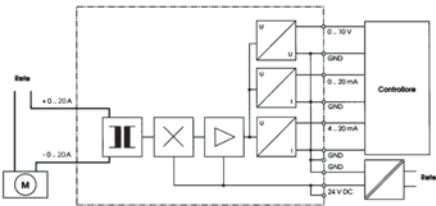


Article available until sell-out

NOTES

The dimensions includes the terminal blocks and the DIN clamp.

BLOCK DIAGRAM



VERSIONS

- 0...20 A input
- 0...50 A input

INPUT TECHNICAL DATA

Input signal
Max. input voltage
Current wire connection

OUTPUT TECHNICAL DATA

Output signal
Max. output signal
Applicable load

GENERAL TECHNICAL DATA

Supply voltage
Rated current
Operating temperature
Linearity error
Offset error
Amplification error
Temperature coefficient
Surge immunity
Response time
Protection degree
Connection terminal
Approx. weight
Mounting information

Cat. No. XW000931

SW20VA

0...20 A AC/DC
380 V
Ø 8 mm

VOLTAGE

0...10 V
11 V
>2 kΩ

Cat. No. XW000932

SW50VA

0...50 A AC/DC
380 V
Ø 8 mm

CURRENT

0...20 mA / 4...20 mA
22 mA
<500 Ω

Cat. No. XW000932

SW50VA

0...50 A AC/DC
380 V
Ø 8 mm

VOLTAGE

0...10 V
11 V
>2 kΩ

CURRENT

0...20 mA / 4...20 mA
22 mA
<500 Ω

APPLICATIONS

In 99 mm depth measure is included the space occupied by the terminal block provided with the product.

They allow the user to measure AC/DC currents by an "HALL" sensor.

The presence of current in a circuit indicates not only that power is supplied but also that the circuit is closed and the load connected and active. It is also possible to know the working conditions of the controlled circuit.

The module guarantees galvanic isolation between the current conductor and the analogue output and, if not connected in series to the controlled current, cannot be damaged by power surges or short circuits.

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35
Mounting rail type according to IEC60715/G32
Plug-in jumper
(16 poles, 16 A)

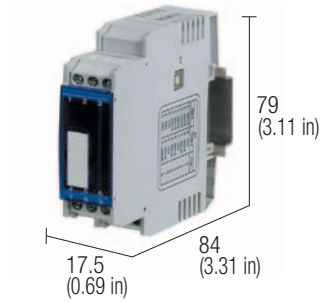
PR/3/AC, PR/3/AS

PR/DIN/AC, PR/DIN/AS, PR/DIN/AL

—
—
—

Frequency signal converter

- Adjustable frequency range 0...28.8 KHz
- 3 programmable analogue signal output ranges
- 3 ways I/O 2.5 kV isolation

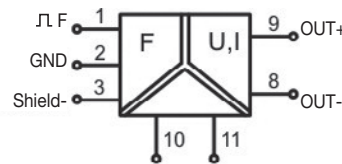


NOTES

The dimensions includes the terminal blocks and the DIN clamp.

- (1) range 16.8...30 Vdc / 19.2...28.8 Vac
(2) 3-way isolation: IN/OUT/power supply

BLOCK DIAGRAM



AC/DC 24V

VERSIONS

Cat. No. X756524

CWNFA 6-0524

INPUT TECHNICAL DATA

Input signal (range)	0...28.8 kHz adjustable via DIP switch
Input signal (type)	AC/DC 0.6...30 Vpp
Input resistance	50 kΩ
Hysteresis	0.5 Vpp o 5 Vpp adjustable via DIP switch

OUTPUT TECHNICAL DATA

Output signal	0...10 V, (max. 10.6 V)
Applicable load	0...20 / 4...20 mA, (max 21 mA)
Ripple	>1 kΩ with output voltage <400 Ω with output current < 5 mVeff

GENERAL TECHNICAL DATA

Supply voltage	24 Vac/dc (1)
Rated current	20 mA
Accuracy	0.1 FS (23°C)
Linearity error	0.02%
Ripple	0.1%
Setting time (accuracy 1%)	200 ms
Temperature coefficient	70 ppm/K
Isolation	1.5 kVac / 60 s (2)
ECM standards	EN 61000-6-2, EN 61000-6-4
Reference Standard	IED 664-1, DIN VDE
Overvoltage category	III
Pollution degree	2
Protection degree	IP 20 IEC 529 EN60529
Operating temperature range	-25...+60°C
Connection terminal	1.5 mm² fixed screw type
Housing material	PPE
Approx. weight	70 g (2.47 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5	
Mounting rail type according to IEC60715/G32	
Plug-in jumper	red white blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

APPLICATIONS

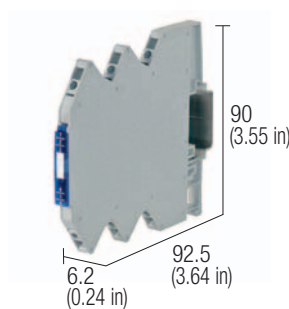
This module is used to convert a frequency signal, with either sinusoidal or square waveform, into a standard analogue signal (eg. 0...10 V, 0..20 mA, 4...20 mA). A microprocessor provides a high resolution, high stability and accuracy output signal and a dip switch gives the possibility to select a calibrated range of frequency measurement from 0 ... 100 Hz up to 0...28.8 kHz.

S2 • → Switch On														
Range*	1	2	3	4	5	6	8	Range*	1	2	3	4	5	6
0-100Hz	•	•	•	•	•			0-5kHz		•		•	•	•
0-200Hz	•	•	•	•	•			0-6kHz	•		•	•	•	
0-250Hz	•	•	•	•	•			0-8kHz	•		•	•	•	•
0-400Hz	•	•	•	•	•			0-10kHz	•		•	•	•	
0-500Hz	•	•	•	•	•			0-12kHz	•		•	•	•	•
0-750Hz	•	•	•	•	•			0-16kHz	•		•	•	•	
0-1kHz	•	•	•	•	•			0-20kHz	•		•	•	•	
0-1.5kHz	•	•	•	•	•			0-24kHz	•		•	•	•	
0-2kHz	•	•	•	•	•			0-28.8kHz						
0-2.5kHz	•	•	•	•	•									
0-3kHz	•	•	•	•	•									
0-4kHz	•	•	•	•	•									
Hysteresis	0.5Vpp													
	5Vpp							•						

• → Switch On		S1	
Output	1	2	3
0-10V	•		
0-20mA		•	
4-20mA			•

Auxiliary supply output for sensors and potentiometers

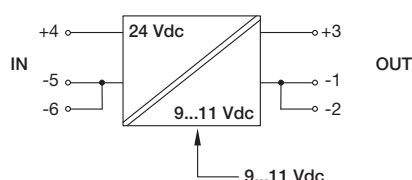
- Stabilized switching converter
- IN 16.8...20 Vdc / 9...11 Vdc 60 mA
- Suitable to feed potentiometers and sensors



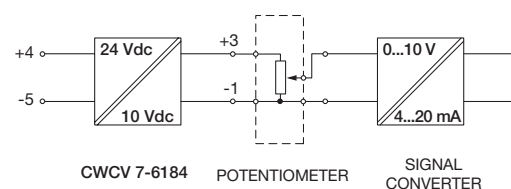
NOTES

The dimensions includes the DIN clamp.
(1) range 16.8...30 Vdc

BLOCK DIAGRAM



EXAMPLE



VERSIONS

With screw connection (standard)
With spring connection

INPUT TECHNICAL DATA

Rated voltage
Current @ Iout max.
Protection fuse

Cat. No. X766184

CWCV 7-6184

24 Vdc (1)
30 mA @ 10 Vdc
T 1 A (external)

OUTPUT TECHNICAL DATA

Voltage
Maximum current
Continuous current
Load regulation
Ripple @ rated U-I output
Overload / short circuit protection
Output signal
Parallel connection

10 Vdc (9...11 Vdc adjustable)
60 mA
60 mA
< 1%
≤ 50 mVpp
si
yellow LED Power OK
possible with external diode

GENERAL TECHNICAL DATA

Operating temperature range
Input/output isolation
Protection degree
EMC Standards
Surge immunity
Connection terminal
Housing material
Approx. weight
Mounting information

-25...+60°C
50 Vac / 60 s
IP 20 IEC529, EN60529
EN 50081-1, EN 50082-2, EN 61000-3-2
EN61000-4-2, EN61000-4-4
1.5 mm² screw type / 1.5 mm² spring type (16 AWG)
Noryl UL94V-0
35 g (1.24 oz)
vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Plug-in jumper

red
white
blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

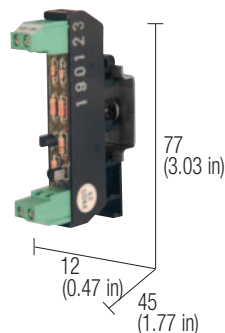
CWBK 7-0802 Cat. No. X766802
CWBK 7-0803 Cat. No. X766803
CWBK 7-0804 Cat. No. X766804

APPLICATIONS

For the highest accuracy of electronic measurements in process control and automation systems, a stable supply source is required to feed reference voltages. Accuracy of position sensors, such as linear or rotary potentiometers, depends greatly on the stability and accuracy of the DC supply of the sensor. For this reason our modules are provided with a calibrated DC output dedicated to feed the sensor for the highest accuracy, and this feature also helps to save space and the cost of an external DC supply source.

NPN and PNP signal polarity inverter

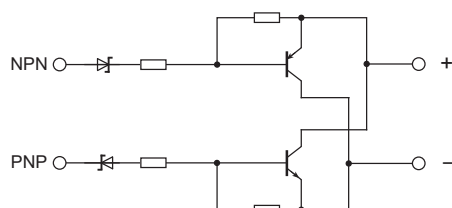
- Converts a NPN sensor in a PNP sensor and vice versa
- Compact design



NOTES

The dimensions includes the terminal blocks and the DIN clamp.
(1) range 17...30 Vdc

BLOCK DIAGRAM



VERSIONS

Cat. No. XNPNPNP

CI-NPN/PNP

INPUT TECHNICAL DATA

Input voltage	24 Vdc (1)
Max. current	200 mA
Max. frequency	120 kHz

GENERAL TECHNICAL DATA

OFF state current	—
ECM standards	EN 61000-6-2, EN 61000-6-4
Reference Standard	IEC 664-1, DIN VDE
Overvoltage category	II
Pollution degree	2
Protection degree	IP 20 IEC 529 EN60529
Operating temperature range	0...55°C
Connection terminal	morsetti a vite 2.5 mm2 fissi
Housing material	Poliammide UL94V-0
Approx. weight	20 g (0.71 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Plug-in jumper

red
white
blue

PR/3/AC, PR/3/AS

PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

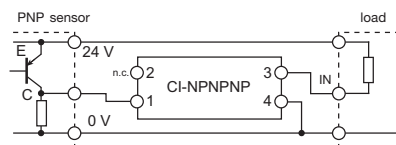
—
—
—

APPLICATIONS

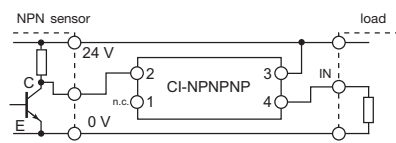
It converts signal form PNP sensors into NPN signal and vice versa. It allows to adapt the PLC inputs to all sensors on the market, regardless of their output polarity, and it is a great help for maintenance and allows in any case a quick replacement of failed sensors when you need a PNP sensor but you have a NPN type.

EXAMPLE

Conversion from PNP to NPN



Conversion from NPN to PNP



Single relay modules quick selection table

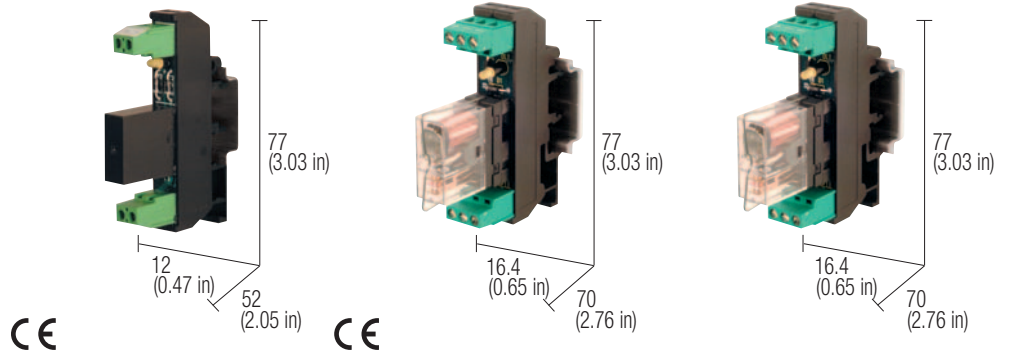
These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

Number of relays	Input rated voltage	Output		Notes	Type	Cat. No.	Page
		type / no. of contacts	rated current				
1	12 Vdc	SPDT	16A	(2)	RF1012D	XRF1012D	102
1	12 Vdc	SPDT	10A	(1)	CM1C012	XCM1C012	103
1	12 Vdc	DPDT	5A	(1)	CM2C012	XCM2C012	104
1	12 Vdc	4PDT	3A	(1)	CM4C012	XCM4C012	105
1	12 Vac	SPDT	10A	(1)	CM1A012	XCM1A012	106
1	12 Vac	DPDT	5A	(1)	CM2A012	XCM2A012	107
1	12 Vac/dc	SPDT	6A	(1)	CWRE7-0848	X766848	110
1	24 Vdc	SPST(NO)	5A	(2)	RFA024D	XRFA024D	101
1	24 Vdc	SPDT	16A	(1)	RE1024D	XRE1024D	101
1	24 Vdc	SPDT	16A	(2)	RF1024D	XRF1024D	101
1	24 Vdc	SPDT	12A	(1)	CM1C024	XCM1C024	103
1	24 Vdc	SPDT	12A	(1)	RE1824D	XRE1824D	101
1	24 Vdc	SPDT	12A	(2)	RF1824D	XRF1824D	101
1	24 Vdc	DPDT	8A	(1)	CM2C024	XCM2C024	104
1	24 Vdc	4PDT	3A	(1)	CM4C024	XCM4C024	105
1	24 Vac/dc	SPDT	6A	(1)	CWRE7-0842	X766842	110
1	24 Vac/dc	SPDT	6A	(2) (3)	CKR16	XCKR16	109
1	24 Vac/dc	DPDT	8A	(1)	RE2024D	XRE2024D	102
2	24 Vac/dc	DPST(NO)	5A	(2)	CKR25	XCKR25	109
1	24 Vac	SPDT	12A	(1)	CM1A024	XCM1A024	106
1	24 Vac	DPDT	8A	(1)	CM2A024	XCM2A024	107
1	48 Vdc	SPDT	10A	(1)	CM1C048	XCM1C048	103
1	48 Vdc	DPDT	5A	(1)	CM2C048	XCM2C048	104
1	48 Vac/dc	SPDT	6A	(1)	CWRE7-0845	X766845	110
1	110 Vdc	SPDT	10A	(1)	CM1C110	XCM1C110	103
1	110 Vdc	DPDT	5A	(1)	CM2C110	XCM2C110	104
1	110...120 Vac/dc	SPDT	6A	(1)	CWRE7-0846	X766846	110
1	120 Vac	SPDT	10A	(1)	CM1A120	XCM1A120	106
1	120 Vac	DPDT	5A	(1)	CM2A120	XCM2A120	107
1	230 Vac	SPDT	6A	(1)	CWRE7-0847	X766847	110
1	230 Vac	SPDT	10A	(1)	CM1A230	XCM1A230	106
1	230 Vac	DPDT	5A	(1)	CM2A230	XCM2A230	107

Notes

- (1) version with pluggable relay
- (2) version with fixed relay
- (3) protection fuse on the contact
- (4) without LED and protection diode

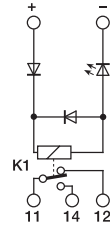
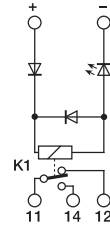
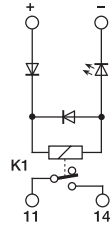
24 Vdc SPDT single relay R series



NOTES

- (1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical
- (2) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

INPUT TECHNICAL DATA

Rated voltage
Rated current (1 channel)
Turn ON time
Turn OFF time
Protection circuit

OUTPUT TECHNICAL DATA

Type and number of contacts
Nominal current (resistive load)
Current breaking power
Current of the fuse max.

GENERAL TECHNICAL DATA

Operating temperature
Coil/contact isolation
Isolation between output terminals
Protection degree
Overvoltage category / pollution degree
Reference Standard
Status display
Connection terminals
Housing material
Approx. weight
Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35
Mounting rail type according to IEC60715/G32
Replacement relay (1)
Screw type jumper black

Cat. No. XRFA024D

—
RFA024D (2)

Cat. No. XR_1824D

RE1824D
RF1824D

Cat. No. XR_1024D

RE1024D
RF1024D (2)

24 Vdc \pm 10%

15 mA \pm 10%

15 ms

5 ms

damping & polarity protection diode

24 Vdc \pm 10%

22 mA \pm 10%

15 ms

5 ms

damping & polarity protection diode

24 Vdc \pm 10%

27 mA \pm 10%

15 ms

5 ms

damping & polarity protection diode

SPST(NO) AgSnO₂

5 A / 250 Vac

5 A

—

SPDT AgSnO₂

12 A / 250 Vac

12 A

—

SPDT AgSnO₂

16 A / 250 Vac

16 A

—

−10...+50°C

2.5 kVac / 60 s

0,5 kVac / 60 s (between open contact)

IP 00 IEC529, EN60529

III / 2

IEC 664-1, DIN VDE 0110.1

green LED

2.5 mm² fixed screw type AWG26-14

UL94V-0 plastic material

30 g (1.07 oz)

vertical on rail adjacent without gap

−10...+50°C

2.5 kVac / 60 s

0,5 kVac / 60 s (between open contact)

IP 00 IEC529, EN60529

III / 2

IEC 664-1, DIN VDE 0110.1

green LED

2.5 mm² fixed screw type AWG26-14

UL94V-0 plastic material

44 g (1.55 oz)

vertical on rail adjacent without gap

−10...+50°C

2.5 kVac / 60 s

0,5 kVac / 60 s (between open contact)

IP 00 IEC529, EN60529

III / 2

IEC 664-1, DIN VDE 0110.1

green LED

2.5 mm² fixed screw type AWG26-14

UL94V-0 plastic material

44 g (1.55 oz)

vertical on rail adjacent without gap

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

Cat. No. 8904000

—

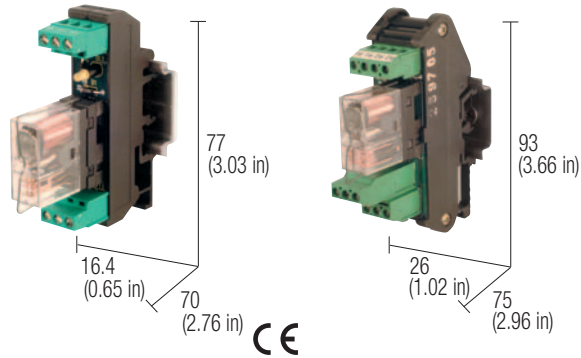
Cat. No. 8904001

—

Cat. No. 8904058

—

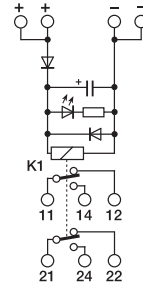
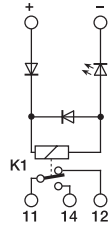
24 Vdc SPDT single relay R series



NOTES

- (1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical
(2) Version available upon request

BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. XRF1012D

Cat. No. XRE2024D

RF1012D

RE2024D

INPUT TECHNICAL DATA

Rated voltage
Rated current (1 channel)
Turn ON time
Turn OFF time
Protection circuit

12 Vdc $\pm 10\%$

24 Vac / dc $\pm 10\%$

44 mA $\pm 10\%$

22 mA $\pm 10\%$

15 ms

15 ms

5 ms

5 ms

damping & polarity protection diode

damping & polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts
Nominal current (resistive load)
Current breaking power
Current of the fuse max.

SPDT AgSnO₂

DPDT AgSnO₂

16 A / 250 Vac

8 A / 250 Vac

16 A

8 A

GENERAL TECHNICAL DATA

Operating temperature
Coil/contact isolation
Isolation between output terminals
Protection degree
Overvoltage category / pollution degree
Reference Standard
Status display
Connection terminals
Housing material
Approx. weight
Mounting information

-10...+50°C

-10...+50°C

2.5 kVac / 60 s

2.5 kVac / 60 s

0,5 kVac / 60 s (between open contact)

0,5 kVac / 60 s (between open contact)

IP 20 IEC529, EN60529

IP 00 IEC529, EN60529

III / 2

III / 2

IEC 664-1, DIN VDE 0110.1

IEC 664-1, DIN VDE 0110.1

green LED

green LED

2.5 mm² fixed screw type AWG26-14

2.5 mm² fixed screw type AWG26-14

UL94V-0 plastic material

UL94V-0 plastic material

44 g (1.55 oz)

76 g (2.68 oz)

vertical on rail adjacent without gap

vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

Replacement relay

(1)

Screw type jumper

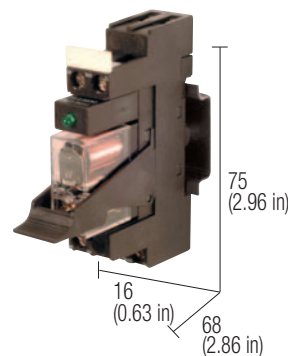
black

Cat. No. 8904032

Cat. No. 8904002

Single relay DC input series CM

- Pluggable relay
- Mounting on DIN rail or panel through central screw
- Compact dimensions
- Cross and slotted screws
- Screw type jumper available



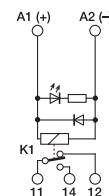
Screw type jumper available

NOTES

The height dimension includes 35 mm DIN rail.

- (1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
- (2) On request, there are available versions without signalling and protection circuit; for the order, please add the suffix "Z" to the item code (for example: XCM1C024Z).
- (3) On request, there are available versions with gold-plated contact; for the order, please add the suffix "U" to the item code (for example: XCM1C024U).

BLOCK DIAGRAM



VERSIONS	
12 Vdc	
24 Vdc	
48 Vdc	
110 Vdc	
INPUT TECHNICAL DATA	
Rated voltage	
Rated current (1 channel)	
Turn ON time	
Turn OFF time	
Protection circuit	
OUTPUT TECHNICAL DATA	
Type and number of contacts	
Nominal current (resistive load)	
Current breaking power	
Current of the fuse max.	
GENERAL TECHNICAL DATA	
Operating temperature range	
Coil/contact isolation	
Isolation between output terminals	
Protection degree	
Overvoltage category/Pollution degree	
Reference Standard	
Status display	
Connection terminal	
Housing material	
Approx. weight	
Mounting information	
MOUNTING ACCESSORIES	
Mounting rail type according to IEC60715/TH35-7.5	
Mounting rail type according to IEC60715/G32	
Replacement relay	(1)
Screw type jumper	black white blue

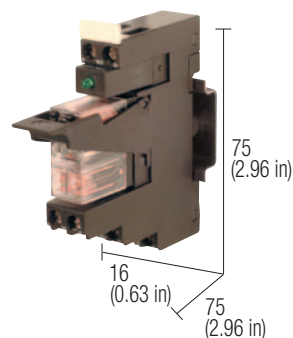
Cat. No. XCM1C012	Cat. No. XCM1C024	Cat. No. XCM1C048	Cat. No. XCM1C110
CM1C012	CM1C024	CM1C048	CM1C0110
12 Vdc ±10%	24 Vdc ±10%	48 Vdc ±10%	110 Vdc ±10%
44 mA ±10%	22 mA ±10%	12 mA ±10%	11 mA ±10%
15 ms	15 ms	15 ms	15 ms
5 ms	5 ms	5 ms	20 ms
damping diode (2)			
SPDT AgSnO ₂ (3)			
12 A / 250 Vac			
12 A			
—			
—10...+50°C			
4 kVac / 60 s			
1 kVac / 60 s (between open contact)			
IP 20 IEC 529, EN60529			
III / 2			
IEC 664-1, DIN VDE 0110.1			
green LED (2)			
2.5 mm ² fixed screw type AWG26-14			
UL94V-0 plastic material			
54 g (1.90 oz)			
vertical on rail adjacent without gap or panel with screw			
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB			
Cat. No. 8904039	Cat. No. 8904001	Cat. No. 8904008	Cat. No. 8904047
Cat. No. XCMB16B			
—			
—			



Screw type jumper

DPDT single relay DC input series CM

- Pluggable relay
- Mounting on DIN rail or panel through central screw
- Compact dimensions
- Cross and slotted screws
- Screw type jumper available



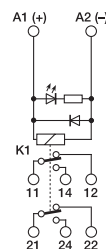
Screw type jumper available

NOTES

The height dimension includes 35 mm DIN rail.

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

BLOCK DIAGRAM



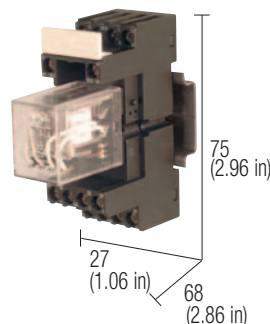
VERSIONS	Cat. No. XCM2C012	Cat. No. XCM2C024	Cat. No. XCM2C048	Cat. No. XCM2C110
12 Vdc	CM2C012			
24 Vdc		CM2C024		
48 Vdc			CM2C048	
110 Vdc				CM2C0110
INPUT TECHNICAL DATA				
Rated voltage	12 Vdc $\pm 10\%$	24 Vdc $\pm 10\%$	48 Vdc $\pm 10\%$	110 Vdc $\pm 10\%$
Rated current (1 channel)	44 mA $\pm 10\%$	22 mA $\pm 10\%$	24 mA $\pm 10\%$	11 mA $\pm 10\%$
Turn ON time	15 ms	15 ms	15 ms	15 ms
Turn OFF time	5 ms	5 ms	5 ms	20 ms
Protection circuit	damping diode			
OUTPUT TECHNICAL DATA				
Type and number of contacts	DPDT AgSnO ₂			
Nominal current (resistive load)	8 A / 250 Vac			
Current breaking power	8 A			
Current of the fuse max.	—			
GENERAL TECHNICAL DATA				
Operating temperature range	-10...+50°C			
Coil/contact isolation	4 kVac / 60 s			
Isolation between output terminals	1 kVac / 60 s (between open contact)			
Protection degree	IP 20 IEC 529, EN60529			
Overvoltage category/Pollution degree	III / 2			
Reference Standard	IEC 664-1, DIN VDE 0110.1			
Status display	green LED			
Connection terminal	2.5 mm ² fixed screw type AWG26-14			
Housing material	UL94V-0 plastic material			
Approx. weight	67 g (2.37 oz)			
Mounting information	vertical on rail adjacent without gap or panel with screw			
MOUNTING ACCESSORIES				
Mounting rail type according to IEC60715/TH35-7.5				
Mounting rail type according to IEC60715/G32				
Replacement relay	(1)			
Screw type jumper	black			
	white			
	blue			
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB				
Cat. No. 8904040	Cat. No. 8904002	Cat. No. 8904009	Cat. No. 8904054	
	Cat. No. XCMB16B			



Screw type jumper

4PDT single relay DC input series CM

- Pluggable relay
- Mounting on DIN rail or panel through central screw
- Compact dimensions
- Cross and slotted screws
- Screw type jumper available



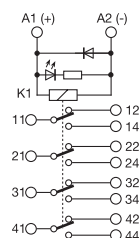
NOTES

The height dimension includes 35 mm DIN rail.

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical

(2) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



VERSIONS

12 Vdc
24 Vdc
48 Vdc
110 Vdc

Cat. No. XCM4C012

CM4C012 (2)

Cat. No. XCM4C024

CM4C024 (2)

Cat. No. XCM1C048

—

Cat. No. XCM1C110

—

INPUT TECHNICAL DATA

Rated voltage
Rated current (1 channel)
Turn ON time
Turn OFF time
Protection circuit

12 Vdc $\pm 10\%$
75 mA $\pm 10\%$
20 ms
20 ms

24 Vdc $\pm 10\%$
38 mA $\pm 10\%$
20 ms
20 ms

damping diode

OUTPUT TECHNICAL DATA

Type and number of contacts
Nominal current (resistive load)
Current breaking power
Current of the fuse max.

4PDT AgSnO₂
3 A / 250 Vac
3 A
—

GENERAL TECHNICAL DATA

Operating temperature range
Coil/contact isolation
Isolation between output terminals
Protection degree
Overvoltage category/Pollution degree
Reference Standard
Status display
Connection terminal
Housing material
Approx. weight
Mounting information

−10...+50°C
4 kVac / 60 s
1 kVac / 60 s (between open contact)
IP 20 IEC 529, EN60529
III / 2
IEC 664-1, DIN VDE 0110.1
green LED
2.5 mm² fixed screw type AWG26-14
UL94V-0 plastic material
vertical on rail adjacent without gap or panel with screw

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Replacement relay
Screw type jumper

(1)
black
white
blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Cat. No. 8904018

Cat. No. 8904030

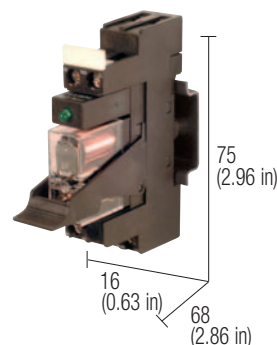
Cat. No. XCMB27B



Screw type jumper

Single relay AC input series CM

- Pluggable relay
- Mounting on DIN rail or panel through central screw
- Compact dimensions
- Cross and slotted screws
- Screw type jumper available



Screw type jumper available

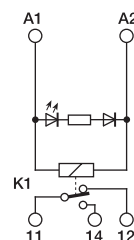
NOTES

The height dimension includes 35 mm DIN rail.

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical

(2) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



VERSIONS

12 Vdc
24 Vdc
120 Vdc
230 Vdc

INPUT TECHNICAL DATA

Rated voltage
Rated current (1 channel)
Turn ON time
Turn OFF time
Protection circuit

OUTPUT TECHNICAL DATA

Type and number of contacts
Nominal current (resistive load)
Current breaking power
Current of the fuse max.

GENERAL TECHNICAL DATA

Operating temperature range
Coil/contact isolation
Isolation between output terminals
Protection degree
Overvoltage category/Pollution degree
Reference Standard
Status display
Connection terminal
Housing material
Approx. weight
Mounting information

Cat. No. XCM1A012

CM1A012 (2)

Cat. No. XCM1A024

CM1A024

Cat. No. XCM1A120

CM1A120 (2)

Cat. No. XCM1A230

CM1A230

12 Vac $\pm 10\%$

95 mA $\pm 10\%$

15 ms

10 ms

24 Vac $\pm 10\%$

48 mA $\pm 10\%$

15 ms

10 ms

120 Vac $\pm 10\%$

10.5 mA $\pm 10\%$

15 ms

10 ms

230 Vac $\pm 10\%$

6 mA $\pm 10\%$

15 ms

10 ms

SPDT AgSnO₂
12 A / 250 Vac
12 A

-10...+50°C

4 kVac / 60 s

1 kVac / 60 s (between open contact)

IP 20 IEC 529, EN60529

III / 2

IEC 664-1, DIN VDE 0110.1

green LED

2.5 mm² fixed screw type AWG26-14

UL94V-0 plastic material

54 g (1.91 oz)

vertical on rail adjacent without gap or panel with screw

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

Replacement relay
Screw type jumper

(1)
black
white
blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Cat. No. 8904016

Cat. No. 8904048

Cat. No. 8904049

Cat. No. 8904050

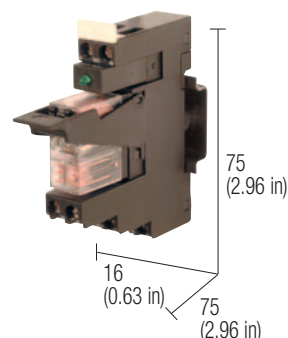
XCMB16B



Screw type jumper

DPDT single relay AC input series CM

- Pluggable relay
- Mounting on DIN rail or panel through central screw
- Compact dimensions
- Cross and slotted screws
- Screw type jumper available



Screw type jumper available

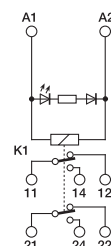
NOTES

The height dimension includes 35 mm DIN rail.

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical

(2) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



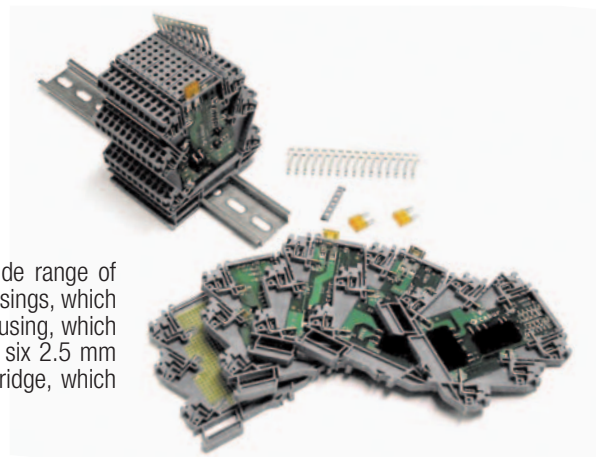
VERSIONS	Cat. No. XCM2A012	Cat. No. XCM2A024	Cat. No. XCM2A120	Cat. No. XCM2A230
12 Vac	CM2A012 (2)			
24 Vac		CM2A024		
120 Vac			CM2A120 (2)	
230 Vac				CM2A230
INPUT TECHNICAL DATA				
Rated voltage	12 Vac $\pm 10\%$	24 Vac $\pm 10\%$	120 Vac $\pm 10\%$	230 Vac $\pm 10\%$
Rated current (1 channel)	95 mA $\pm 10\%$	48 mA $\pm 10\%$	10.5 mA $\pm 10\%$	6 mA $\pm 10\%$
Turn ON time	15 ms	15 ms	15 ms	15 ms
Turn OFF time	10 ms	10 ms	10 ms	10 ms
Protection circuit				
OUTPUT TECHNICAL DATA				
Type and number of contacts	DPDT AgSnO ₂			
Nominal current (resistive load)	8 A / 250 Vac			
Current breaking power	8 A			
Current of the fuse max.				
GENERAL TECHNICAL DATA				
Operating temperature range	-10...+50°C			
Coil/contact isolation	4 kVac / 60 s			
Isolation between output terminals	1 kVac / 60 s (between open contact)			
Protection degree	IP 20 IEC 529, EN60529			
Overvoltage category/Pollution degree	III / 2			
Reference Standard	IEC 664-1, DIN VDE 0110.1			
Status display	green LED			
Connection terminal	2.5 mm ² fixed screw type AWG26-14			
Housing material	UL94V-0 plastic material			
Approx. weight	67 g (2.37 oz)			
Mounting information	vertical on rail adjacent without gap or panel with screw			
MOUNTING ACCESSORIES				
Mounting rail type according to IEC60715/TH35-7.5				
Mounting rail type according to IEC60715/G32				
Replacement relay	(1)			
Screw type jumper	black			
	white			
	blue			
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB				
Cat. No. 8904017	Cat. No. 8904055	Cat. No. 8904056	Cat. No. 8904057	
	Cat. No. XCMB16B			



Screw type jumper

CK system interface

The series is a collection of interfaces for sensors and actuators, is composed by a wide range of electromechanical relay and solid state relay modules and passive interfaces in modular housings, which are only 6 mm wide thus saving valuable space. All products are mounted inside the CK housing, which is also available for use as a housing for custom. The CK housing can be equipped with six 2.5 mm spring-clamp terminals and four contacts for the insertion of a PTC parallel connection bridge, which provides for quick and easy circuit bridging and saves space and harness time.



The product range is currently composed by:

- Single electromechanical relay with 6 A/250 Vac SPDT protected with replaceable fuse, status Led display on front panel, AC/DC input and positive or negative common on relay coil.
- Double electromechanical relay with 5 A/250 Vac SPST (NO), two status LED displays on front panel, AC/DC input and positive or negative common on relay coil.
- Single solid state relay for common negative load, 5 A /48 Vdc output current, protected with replaceable fuse, status LED display on front panel and positive or negative common on input.
- Double solid state relay suitable for 12-24 Vdc 2.5 A loads, status LED display on front panel and positive or negative common of the input and output as well.
- Diode-holder modules with common anode (CK...AC) or common cathode (CK...CC).
- Lamp and LED test modules.
- Supply connection and distribution modules with LED display.

Composition of an interface with the CK System:

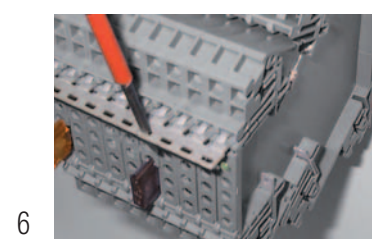
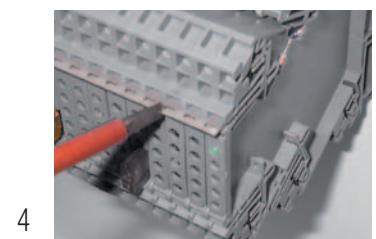
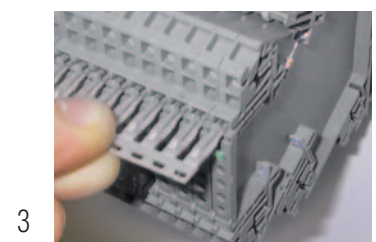
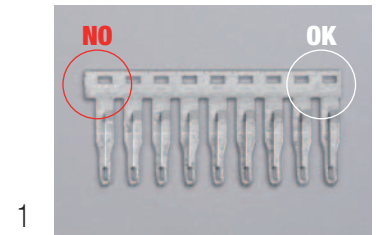
- The required modules must be selected and mounted on the DIN rail.
- The common poles of inputs and outputs can be connected in parallel using the fast connection bridges **PTC/CK/42**.
- For the connection of inputs and outputs of the relay module interface, we recommend to use the **CKF** supply distribution module: it allows to connect and distribute the feeding potential to inputs and outputs on all adjacent modules; the CKF module can be mounted as first module, or even better, in the middle position of the interfaces assembly, to divide 50+50% the current on the bridge and to reduce voltage drop and heating; the CKF- is available with LED for ON display, and is equipped with four 2.5 mm / AWG 26 ÷ 14 / 24 A rated spring-clamp terminals - input and output.
- In order to assure the IP XXB protection degree, the last module must be protected and insulated using the **CK/PT** end section.
- Main technical data and BLOCK DIAGRAM are printed on one side of each module; for individual terminal block marking, CNU/8 marking tags are available; CNU/8 marking tags are available in blank format for pen or plotter marking, or with the Cabur Jet marking printer.
- If the input and output power supply cables of the interface assembly are directly connected to eg. the first module, two cables must be connected on a single terminal block (feeding wire and load wire) forcing to reduce the cross-section of each conductor to less than 2,5 mm²; consequently, this means a current and a reduction of the total number of relay modules that can be fed; the problem can be solved by using the CKF feeder distribution module as described in the third point.

Easy Bridge system

The fast connection bridge **PTC/CK/42** has 42 poles, and a rated current of 32 A; WARNING: the total current is limited by the rated current of the spring-clamp terminal block (24 A): if a PTC/CK serves 10 relays, a rated current of 2,4 A can be distributed on to each relay.

The use of PTC/CK bridges is simple and cost effective; the following instructions must be followed:

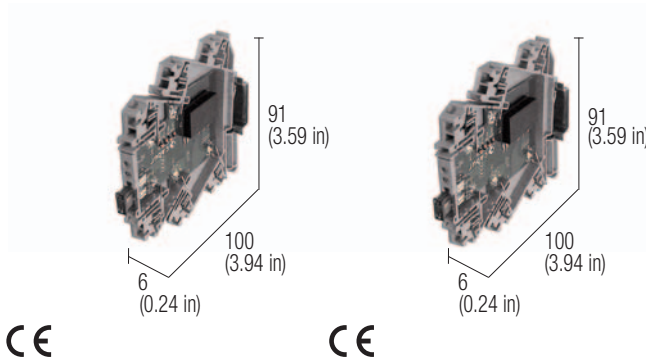
- after having cut the PTC/CK/42-pole bar according to required number of poles, in order to maintain the IPXXB protection degree the bar must be sheared in proximity of the end poles (see pictures 1 and 2);
- insert the jumper in the slot of the CK terminals (see picture 3);
- by using the blade of a screwdriver, the PTC bridge must be pushed down until it snaps into the female contacts; in case of long jumpers, the operation shall be started by pushing the bridge in the middle, then gradually on left / right sides; the jumper will then result completely IPXXB insulated (see picture 4);
- to remove the jumper, the blade of a screwdriver shall be inserted into the slot provided in the upper side of the PTC bridge, then lifted up and finally extracted; in case of long jumpers, the bridge shall be lifted in the middle, then gradually on left / right sides (pictures 5 and 6).



24 Vdc relay modules

CKR series

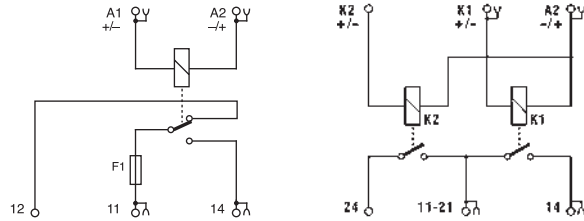
- Built-in replaceable contact protection fuse
- AC/DC common negative or positive input
- Status LED display, reverse polarity protection, crow-bar diode
- 6 mm wide
- Plug-in jumper available



NOTES

- (1) The contact rated voltage is 250 Vac; max operating voltage of the contact of the module is 50 Vac-Vdc, limited by the voltage ratings of the adopted type of fuse, which is rated for ≤ 50 Vac-75 Vdc SELV voltages; WARNING: if used with higher voltage, it does not guarantee breaking power and thus safety, and IP protection degree is lowered to IP 00; fuses with higher current ratings are not allowed and do not protect the contact against short circuit and overcurrents
- (2) Version available upon request.
- (3) In order to assure the IP20 protection degree, the last module must be protected and insulated using the CK/PT end section.

BLOCK DIAGRAM



VERSIONS

- 1 channel**
- 2 channels**

INPUT TECHNICAL DATA

- Rated voltage
- Rated current (1 channel)
- Turn ON time
- Turn OFF time
- Protection circuit

OUTPUT TECHNICAL DATA

- Type and number of contacts
- Nominal current (resistive load)
- Current breaking power
- Current of the fuse max.

GENERAL TECHNICAL DATA

- Operating temperature
- Coil/contact isolation
- Isolation between output terminals
- Protection degree
- Overvoltage category / pollution degree
- Reference Standard
- Status display
- Connection terminals
- Housing material
- Approx. weight
- Mounting information
- Mounting information

ACCESSOIRES DE MONTAGE

- Mounting rail type according to IEC60715/TH35
- Mounting rail type according to IEC60715/G32
- Replacement relay (1)
- Plug-in jumper —
- Marking tags blank
- End plate

Cat. No. XCKR16

CKR16

Cat. No. XCKR25

CKR25 (2)

24 Vac/dc $\pm 10\%$

≤ 15 mA $\pm 10\%$ @ 24 Vdc

5 ms

10 ms

bridge rectifier

24 Vac/dc $\pm 10\%$

≤ 13 mA $\pm 10\%$ @ 24 Vdc

5 ms

10 ms

bridge rectifier

SPDT AgSnO₂

6 A / 250 Vac

30 A

—

2PST (NO) AgSnO₂

5 A / 250 Vac

30 A

—

-20...+60°C

3 kVac / 60 s

IP 20 IEC529, EN60529

II / 2

IEC 664-1, DIN VDE 0110.1

green LED

2.5 mm² AWG26-14 fixed spring type

polyamide UL94V-0

40 g (1.41 oz)

vertical on rail adjacent without gap

-20...+60°C

3 kVac / 60 s

IP 00 IEC529, EN60529

II / 2

IEC 664-1, DIN VDE 0110.1

green LED

2.5 mm² AWG26-14 fixed spring type

polyamide UL94V-0

43 g (1.52 oz)

vertical on rail adjacent without gap

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Cat. No. PTCK42 (42 poles)

Cat. No. NU0851

Cat. No. XCKPT

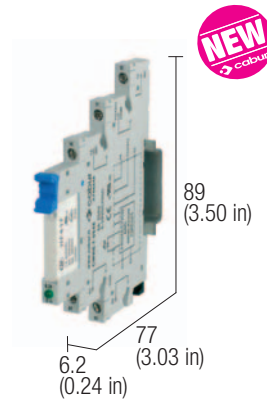
Cat. No. PTCK42 (42 poles)

Cat. No. NU0851

Cat. No. XCKPT

Relay modules AC/DC input series CWRE

- Pluggable relay
- Status LED display
- 6.2 mm wide
- Plug-in jumper available



NOTES

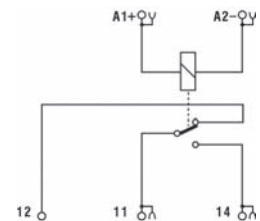
The height dimension includes 35 mm DIN rail.

- (1) Version available upon request; for information call our sales department, local agent or representative.
- (2) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

APPLICAZIONI

The CWRE series is suitable for the commutation of signals and is equipped with a pull-out relay to make the maintenance operations easy. Furthermore this series offers the possibility to execute the parallel on both the input and output side by the means of a proper comb jumper.

BLOCK DIAGRAM



VERSIONS

12 Vac/dc	(1)
24Vac/dc	
48 Vac/dc	(1)
115 Vac/dc	
230 Vac/dc	

INPUT TECHNICAL DATA

Rated voltage
Rated current (1 channel)
Turn ON time
Turn OFF time
Protection circuit

OUTPUT TECHNICAL DATA

Type and number of contacts
Nominal current (resistive load)
Current breaking power
Current of the fuse max.

GENERAL TECHNICAL DATA

Operating temperature
Coil/contact isolation
Isolation between output terminals
Protection degree
Overvoltage category / pollution degree
Reference Standard
Status display
Connection terminals
Housing material
Approx. weight
Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5	
Mounting rail type according to IEC60715/G32	
Replacement relay	(2)
Plug-in jumper	black white blue

Cat. No. X766848	Cat. No. X766842	Cat. No. X766845	Cat. No. X766846	Cat. No. X766847
CWRE7-0848 (1)	CWRE7-0842	CWRE7-0845 (1)	CWRE7-0846	CWRE7-0847
12 Vac/dc ±10%	24 Vac/dc ±10%	48 Vac/dc ±10%	115 Vac/dc ±10%	230 Vac/dc ±10%
10 mA ±10%	7 mA ±10%	5 mA ±10%	4 mA ±10%	4 mA ±10%
8 ms	8 ms	7 ms	8 ms	8 ms
5 ms	5 ms	7 ms	13 ms	13 ms
damping diode and bridge rectifier				
SPDT AgSnO ₂ (3)				
6 A / 250 Vac ; 6 A / 30 Vdc				
DC 13: 24 V / 1A; 115V / 200 mA; 230 V / 100 mA				
—				
-40...+70°C				
4 kVac / 60 s				
1 kVac / 60 s (between open contact)				
IP 20 IEC 529, EN60529				
III / 2				
IEC 664.1, DIN VDE 0110.1				
green LED				
2.5 mm ² fixed screw type AWG26-14				
UL94V-0 plastic material				
35 g (1.23 oz)				
vertical on rail adjacent without gap				
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB				
—				
Cat. No. 8904027				
—				
—				
CWBK7-0813 (Cat. No. X766813) (20 poli)				

Multiple relay modules quick selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

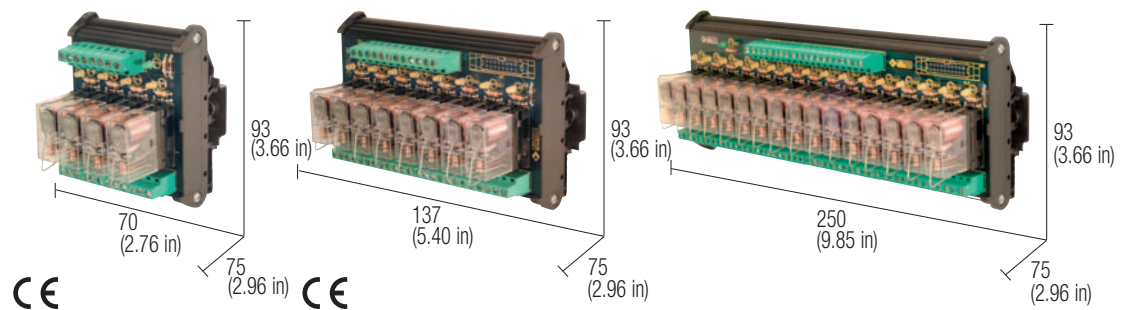
Number of relays	Input rated voltage	Output type / no. of contacts	Rated current	Notes	Type	Cat. No.	Page
4	24 Vdc	SPDT	12 A	(1) (4)	R41E24	XR041E24	113
8	24 Vdc	SPDT	12 A	(1) (4)	R81E24	XR081E24	113
16	24 Vdc	SPDT	12 A	(1) (4)	R161E24	XR161E24	113
4	24 Vac/dc	SPDT	12 A	(1) (6)	R41EAD	XR041EAD	114
8	24 Vac/dc	SPDT	12 A	(1) (6)	R81EAD	XR081EAD	114
16	24 Vac/dc	SPDT	12 A	(1) (6)	R161EAD	XR161EAD	114
4	24 Vac/dc	SPDT	12 A	(1) (6) (8)	R41U24F	XR041U24F	115
8	24 Vac/dc	SPDT	12 A	(1) (6) (8)	R81U24F	XR081U24F	115
16	24 Vac/dc	SPDT	12 A	(1) (6) (8)	R161U24F	XR161U24F	115
4	24 Vdc	DPDT	8 A	(1) (4)	R42E24	XR042E24	116
8	24 Vdc	DPDT	8 A	(1) (4)	R82E24	XR082E24	116
16	24 Vdc	DPDT	8 A	(1) (4)	R162E24	XR162E24	116
4	24 Vac/dc	DPDT	8 A	(1) (6)	R42EAD	XR042EAD	118
8	24 Vac/dc	DPDT	8 A	(1) (6)	R82EAD	XR082EAD	118
16	24 Vac/dc	DPDT	8 A	(1) (6)	R162EAD	XR162EAD	118
8	24 Vac/dc	SPDT	12 A	(1) (6) (9) (10)	RMP081CM	XRMP081CM	119
4	110 Vdc/120 Vac	SPDT	10 A	(1) (6)	R41E11A	XR041E1A	120
8	110 Vdc/120 Vac	SPDT	10 A	(1) (6)	R81E11A	XR081E1A	120
16	110 Vdc/120 Vac	SPDT	10 A	(1) (6)	R161E11A	XR161E1A	120
4	230 Vac	SPDT	10 A	(1) (6)	R41E22A	XR041E2A	121
8	230 Vac	SPDT	10 A	(1) (6)	R81E22A	XR081E2A	121
16	230 Vac	SPDT	10 A	(1) (6)	R161E22A	XR161E2A	121
4	24 Vac/dc	SPDT	8 A	(2) (6)	CR4-1	XCR41	122
4	24 Vac/dc	SPDT	8 A	(1) (6)	CRE4-1	XCRE41	122
8	24 Vac/dc	SPST(NO)	8 A	(1) (6)	CRE8-1	XCRE81	122
8	24 Vac/dc	SPST(NO)	8 A	(2) (6)	CR8-1	XCR81	122
4	24 Vac/dc	DPDT	8 A	(2) (6)	CR4-2SC	XCR42SC	123
4	24 Vac/dc	DPDT	8 A	(1) (6)	CRE4-2SC	XCRE42SC	123

Note

- | | |
|---------------------------------------|---|
| (1) version with pluggable relay | (6) universal control voltage, negative DC command, positive DC, AC |
| (2) version with fixed relay | (7) with connector input command |
| (3) with socket but without relay | (8) with protection fuse on the relay contact |
| (4) negative common, positive command | (9) with test push button |
| (5) positive common, negative command | (10) with test switch |

24 Vdc SPDT relay modules negative common

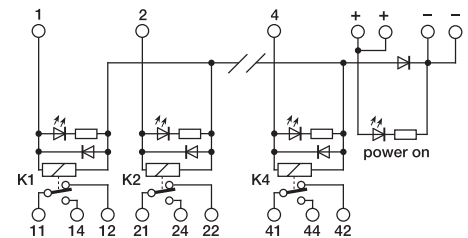
- DC control voltage
- Negative control voltage
- Status LED display
- Pluggable relay



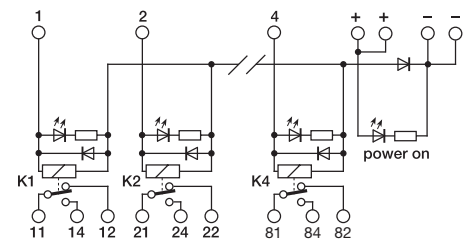
NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical

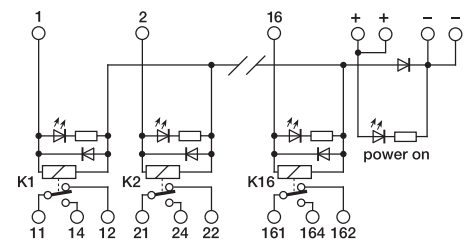
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

Cat. No. XR041E24 Cat. No. XR081E24 Cat. No. XR161E24

R41E24

R81E24

R161E24

INPUT TECHNICAL DATA

Rated voltage	24 Vdc \pm 10%
Rated current (1 channel)	22 mA \pm 10%
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping and polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts	SPDT AgSnO ₂
Nominal load (resistive)	12 A / 250 Vac
Current breaking power	12 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

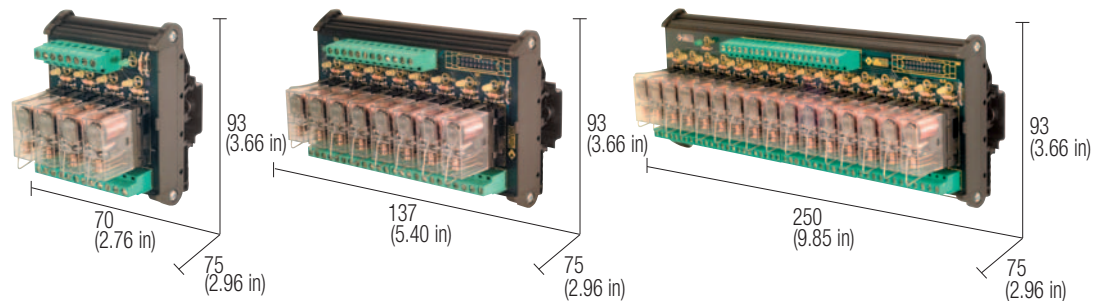
Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 20 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	188 g (6.63 oz) 342 g (12.06 oz) 657 g (23.17 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904001
Screw type jumper	red
	white
	blue

24 Vdc SPDT relay modules positive common

- DC control voltage
- Positive control voltage
- Status LED display
- Pluggable relay

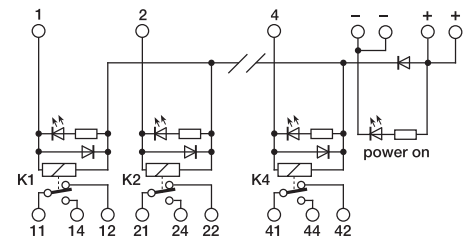


NOTES

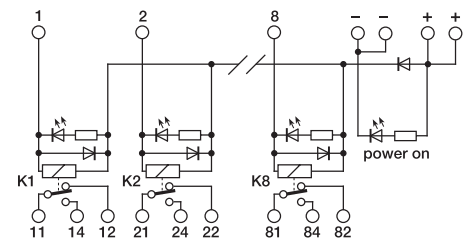
The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical

Article available until sell-out
XR041E24P will be replaced by XR041EAD
XR081E24P will be replaced by XR081EAD
XR161E24P will be replaced by XR161EAD

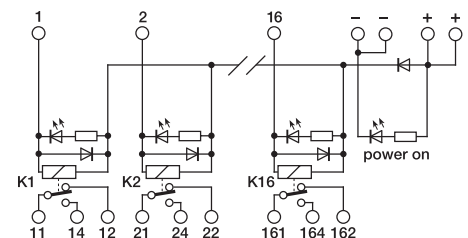
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Rated voltage	24 Vdc $\pm 10\%$
Rated current (1 channel)	22 mA $\pm 10\%$
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping and polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts	SPDT AgSnO ₂
Nominal load (resistive)	12 A / 250 Vac
Current breaking power	12 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

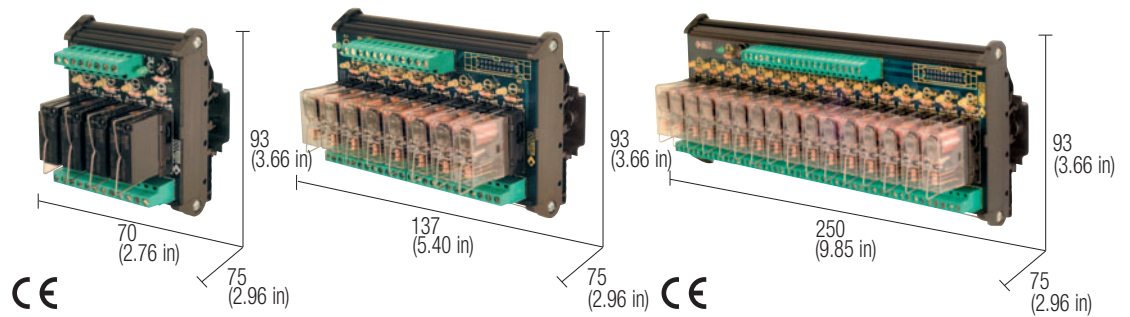
Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	188 g (6.63 oz) 342 g (12.06 oz) 657 g (23.17 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904001
Screw type jumper	red white blue

24 Vac/dc SPDT relay modules universal control voltage

- DC and AC control voltage
- Positive or negative control voltage
- Status LED display
- Pluggable relay



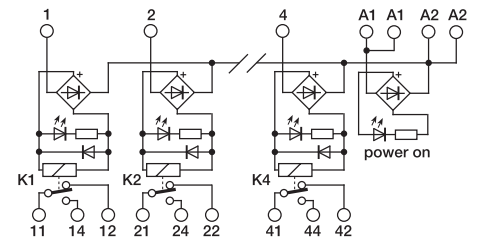
NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical
(2) Version available upon request.

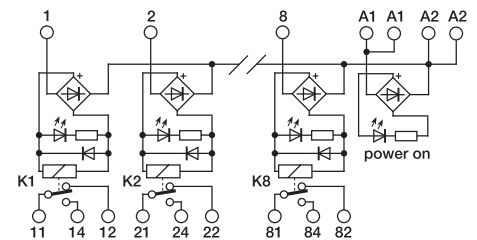
POWER SUPPLY

A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common
A1 = ~	A2 = ~	AC power supply

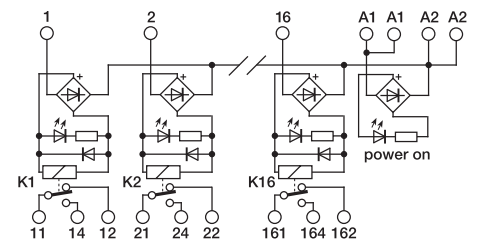
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Rated voltage	24 Vac/dc $\pm 10\%$
Rated current (1 channel)	22 mA $\pm 10\%$
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping diode and bridge rectifier

OUTPUT TECHNICAL DATA

Type and number of contacts	SPDT AgSnO ₂
Nominal load (resistive)	12 A / 250 Vac
Current breaking power	12 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

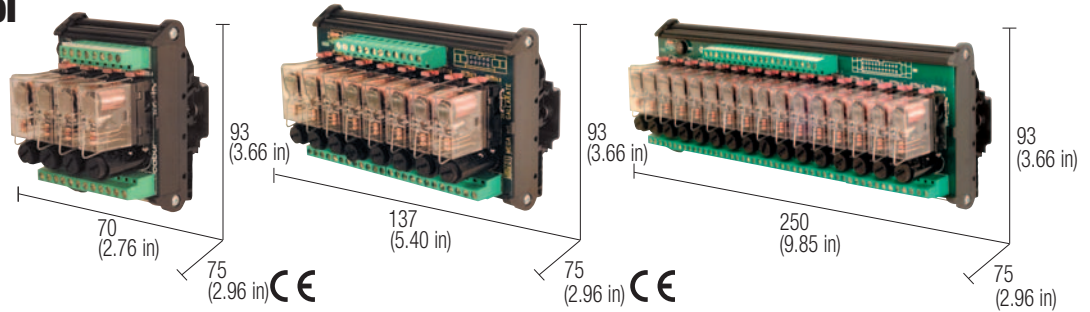
Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	192 g (6.76 oz) 345 g (12.18 oz) 688 g (24.29 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904001
Screw type jumper	red
	white
	blue

24 Vac/dc SPDT relay modules universal control voltage with fuse

- DC and AC control voltage
- Positive or negative control voltage
- Status LED display
- Pluggable relay
- Output contact with protection fuse



NOTES

The height dimension includes 35 mm DIN rail. (1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical. (2) The interface is supplied without a fuse and the screw plug of the fuse-holder is provided in a bag inside the packaging. The fuse must be dimensioned according to load. The max. value of 6.3 A is referred to EN60127-complying fuses and the homologation rated current of the fuseholder. Fuses of a higher value may damage the fuseholder and module.

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Rated voltage	24 Vac/dc $\pm 10\%$
Rated current (1 channel)	22 mA $\pm 10\%$
Turn ON time	15 ms
Turn OFF time	10 ms
Protection circuit	damping diode and bridge rectifier

OUTPUT TECHNICAL DATA

Type and number of contacts	SPDT AgSnO ₂ per 4 relé
Nominal load (resistive)	12 A / 250 Vac
Current breaking power	12 A
Current of the fuse max.	6,3 A (2)

GENERAL TECHNICAL DATA

Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	210 g (7.41 oz) 326 g (11.51 oz) 770 g (27.18 oz)
Mounting information	vertical on rail adjacent without gap

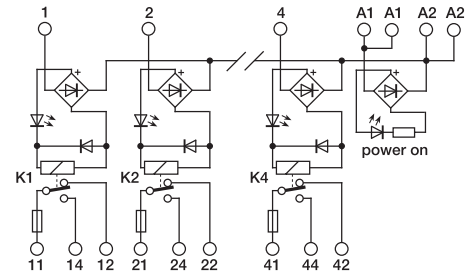
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904001
Screw type jumper	red white blue

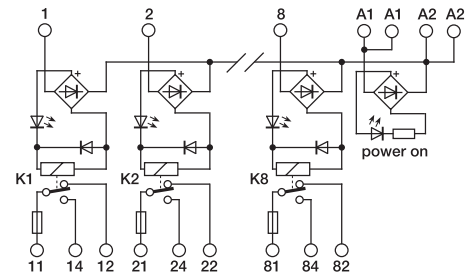
POWER SUPPLY

A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common
A1 = ~	A2 = ~	AC power supply

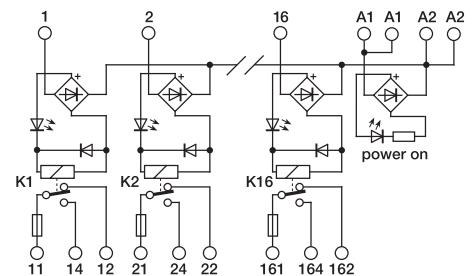
BLOCK DIAGRAM



4 relay module



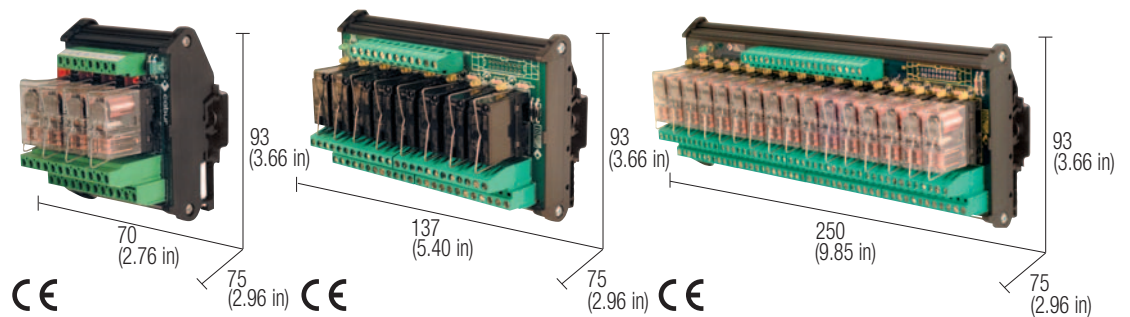
8 relay module



16 relay module

24 Vdc DPDT relay modules negative common

- DC control voltage
- Negative control voltage
- Status LED display
- Pluggable relay



NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Rated voltage	24 Vdc $\pm 10\%$
Rated current (1 channel)	22 mA $\pm 10\%$
Turn ON time	15 ms
Turn OFF time	10 ms
Protection circuit	damping and polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts	DPDT AgNi
Nominal load (resistive)	8 A / 250 Vac
Current breaking power	8 A
Current of the fuse max.	—

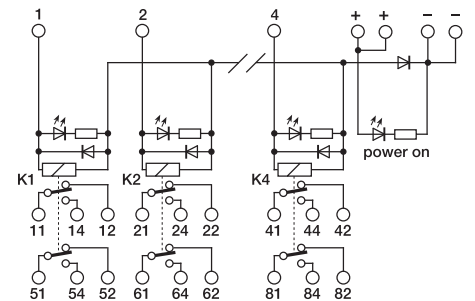
GENERAL TECHNICAL DATA

Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	225 g (7.94 oz) 419 g (14.78 oz) 811 g (28.60 oz)
Mounting information	vertical on rail adjacent without gap

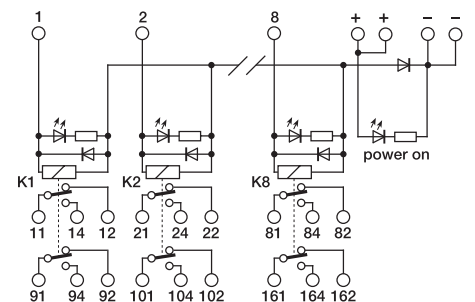
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904002
Screw type jumper	red white blue

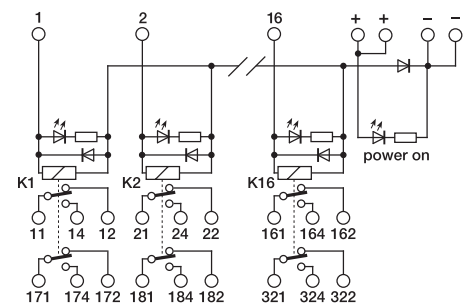
BLOCK DIAGRAM



4 relay module



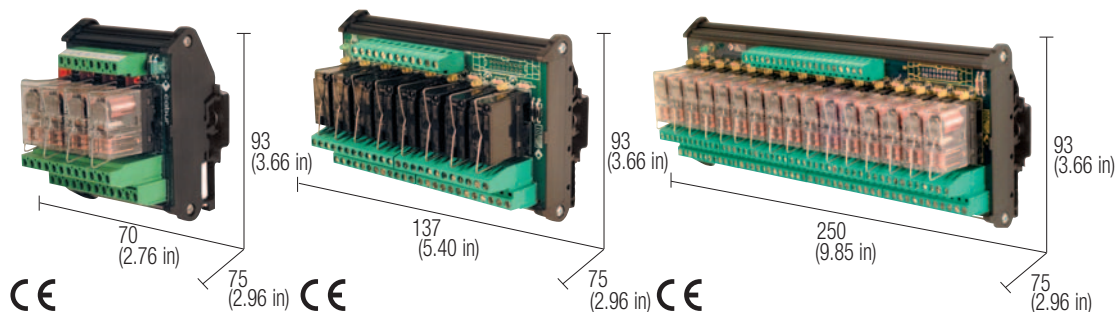
8 relay module



16 relay module

24 Vdc DPDT relay modules positive common

- DC control voltage
- Positive control voltage
- Status LED display
- Pluggable relay

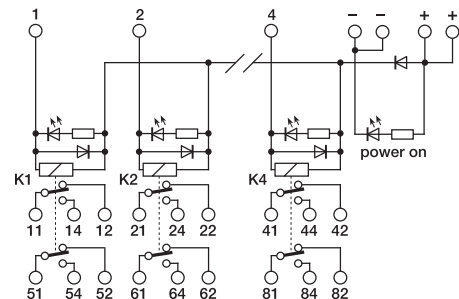


NOTES

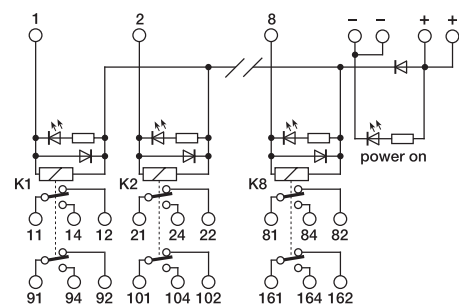
The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

Article available until sell-out
XR042E24P will be replaced by XR042EAD
XR082E24P will be replaced by XR082EAD
XR162E24P will be replaced by XR162EAD

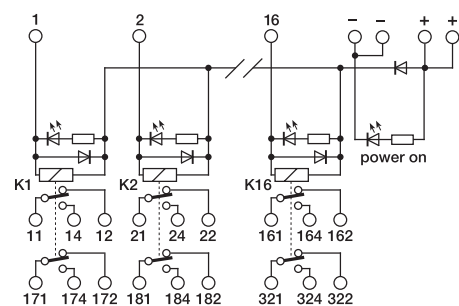
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Rated voltage	24 Vdc $\pm 10\%$
Rated current (1 channel)	22 mA $\pm 10\%$
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping and polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts	DPDT AgNi
Nominal load (resistive)	8 A / 250 Vac
Current breaking power	8 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

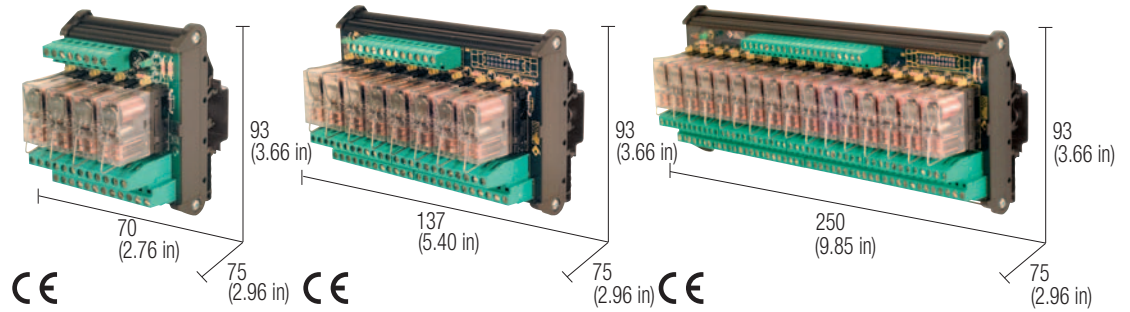
Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	225 g (7.94 oz) 419 g (14.78 oz) 811 g (28.60 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904002
Screw type jumper	red white blue

24 Vac/dc DPDT relay modules universal control voltage

- DC and AC control voltage
- Positive or negative control voltage
- Status LED display
- Pluggable relay



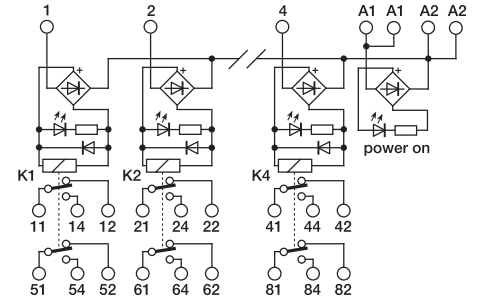
NOTES

The height dimension includes 35 mm DIN rail.
 (1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
 (2) Version available upon request.

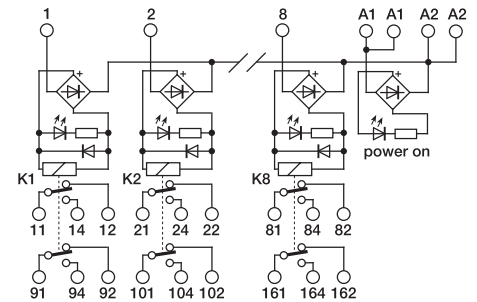
POWER SUPPLY

A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common
A1 = ~	A2 = ~	AC power supply

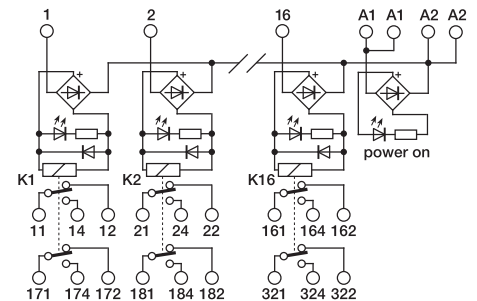
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Rated voltage	24 Vac/dc $\pm 10\%$
Rated current (1 channel)	22 mA $\pm 10\%$
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping diode and bridge rectifier

OUTPUT TECHNICAL DATA

Type and number of contacts	DPDT AgNi
Nominal load (resistive)	8 A / 250 Vac
Current breaking power	8 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

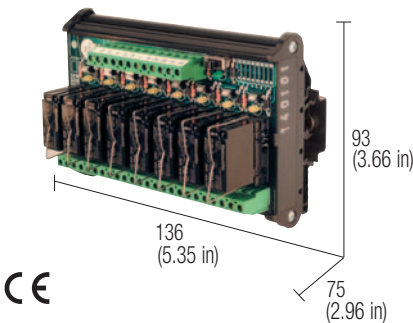
Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	227 g (8.01 oz) 427 g (15.07 oz) 835 g (29.48 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904002
Screw type jumper	red white blue

24 Vac/dc relay
modules universal
control voltage with
test push button

- DC control voltage
- Positive or negative control voltage
- Status LED display
- Pluggable relay
- Test with push button and micro switch



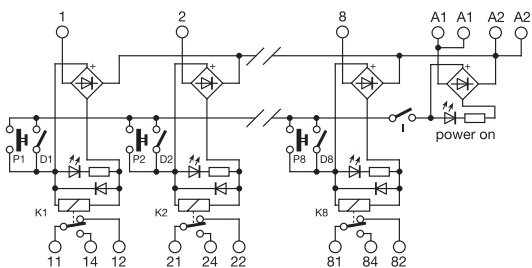
NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
(2) They replace XRP08124 and XRD08124 models.

POWER SUPPLY

A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common
A1 = ~	A2 = ~	AC power supply

BLOCK DIAGRAM



- P = test button
D = dip-switch
IG = master switch (disable the push button and dip-switch)

VERSIONS

Con pulsante e dip switch

Cat. No. XRMP081CM (2)

RMP081CM

INPUT TECHNICAL DATA

Rated voltage	24 Vac/dc \pm 10%
Rated current (1 channel)	22 mA \pm 10%
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping diode and bridge rectifier

OUTPUT TECHNICAL DATA

Type and number of contacts	SPDT AgSnO ₂ per 8 relé
Nominal load (resistive)	12 A / 250 Vac
Current breaking power	12 A
Current of the fuse max.	—

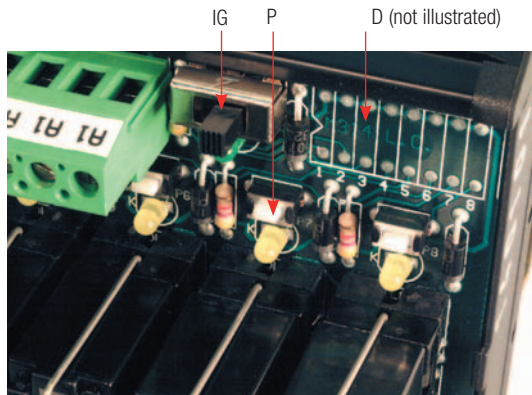
GENERAL TECHNICAL DATA

Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	350 g (12.36 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

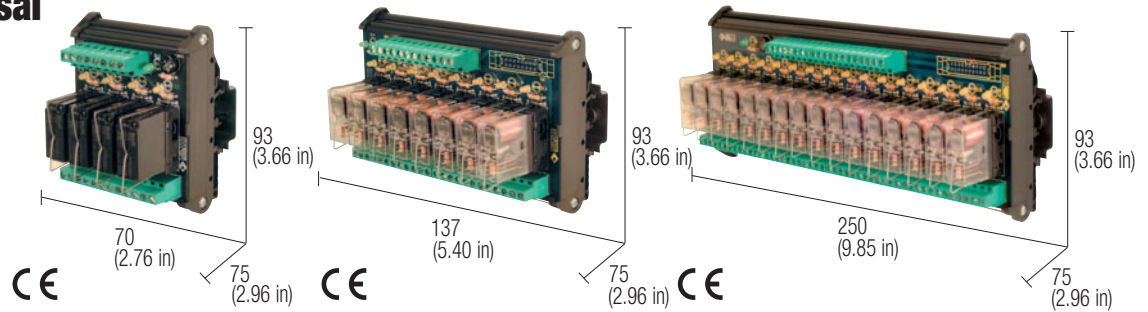
Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904001
Screw type jumper	—
red	—
white	—
blue	—

This series of products allows piloting with alternating and direct current, in which case only positive control is possible. We also recommend cutting JP jumpers if piloting takes place via low-current devices (e.g. proximity sensors).
On both versions it is possible the temporary turn on of the relay by pushing the relative button.
On model RD08124 it is possible to switch on the relays permanently with a Dip-Switch.



110...120 Vac/dc SPDT relay modules universal control voltage

- DC and AC control voltage
- Positive or negative control voltage
- Status LED display
- Pluggable relay



NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

Article available until sell-out

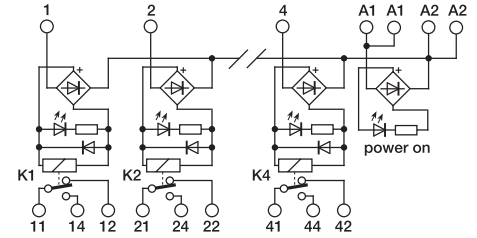
With 110 Vdc rated voltage:

- replace XR041E11A with no.4 XCM1C110 and no.1 XCMB16B
- replace XR081E11A with no.8 XCM1C110 and no.1 XCMB16B
- replace XR161E11A with no.16 XCM1C110 and no.2 XCMB16B

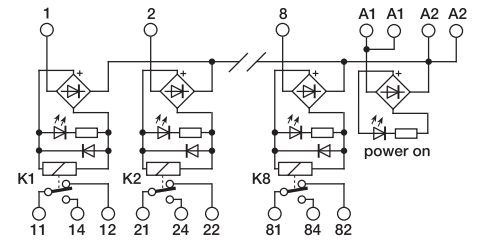
With 120 Vac rated voltage:

- replace XR041E11A with no.4 XCM1A120 and no.1 XCMB16B
- replace XR081E11A with no.8 XCM1A120 and no.1 XCMB16B
- replace XR161E11A with no.16 XCM1A120 and no.2 XCMB16B

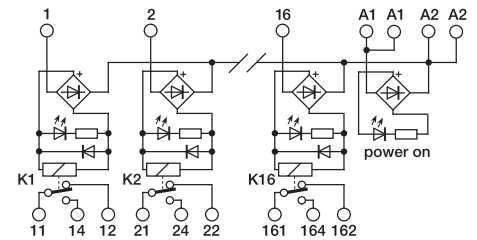
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Rated voltage	110 Vdc / 120 Vac \pm 10%
Rated current (1 channel)	11 mA \pm 10%
Turn ON time	7 ms
Turn OFF time	3 ms
Protection circuit	damping diode and bridge rectifier

OUTPUT TECHNICAL DATA

Type and number of contacts	SPDT AgNi
Nominal load (resistive)	12 A / 250 Vac
Current breaking power	12 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	192 g (6.76 oz) 345 g (12.18 oz) 688 g (24.29 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904047

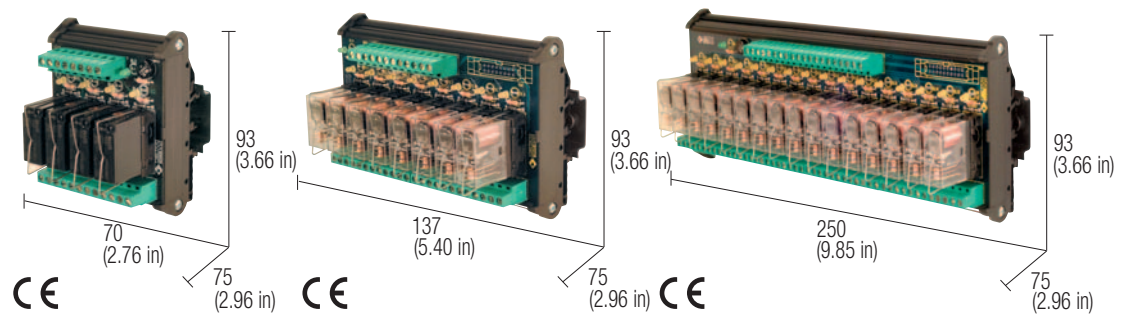
Screw type jumper	red
	white
	blue

POWER SUPPLY

A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common
A1 = ~	A2 = ~	AC power supply

230 Vac SPDT relay modules

- AC control voltage
- Status LED display
- Pluggable relay

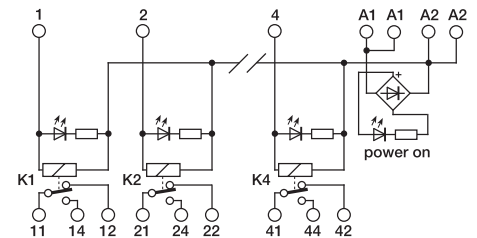


NOTES

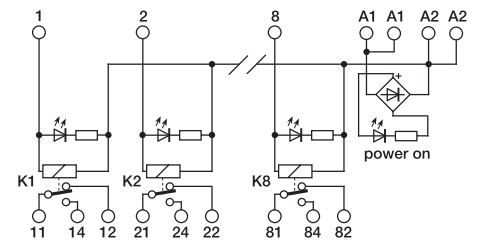
The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

Article available until sell-out
replace XR041E22A with no.4 XCM1A230 and no.1 XCMB16B
replace XR081E22A with no.8 XCM1A230 and no.1 XCMB16B
replace XR161E22A with no.16 XCM1A230 and no.2 XCMB16B

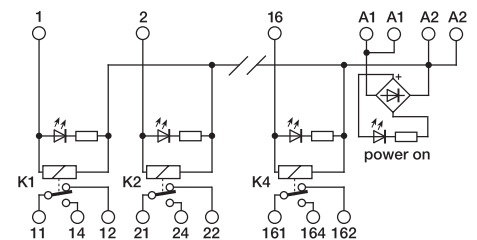
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Rated voltage	230 Vac \pm 10%
Rated current (1 channel)	10 mA \pm 10%
Turn ON time	7 ms
Turn OFF time	2 ms
Protection circuit	—

OUTPUT TECHNICAL DATA

Type and number of contacts	SPDT AgSnO ₂
Nominal load (resistive)	12 A / 250 Vac
Current breaking power	12 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

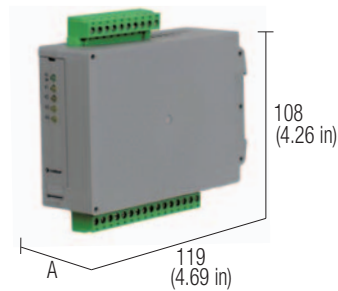
Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	192 g (6.76 oz) 345 g (12.18 oz) 688 g (24.29 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

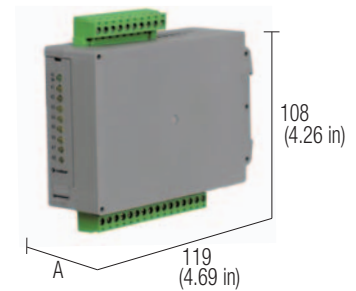
Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904050
Screw type jumper	red white blue

Super compact 24 Vac/dc relay modules universal control voltage

- 3 kV I/O isolation
- 1 kV isolation between output contact
- Fast connection whit pluggable terminals
- DC and AC control voltage
- Positive or negative control voltage



A = 22.5 mm (0.88 in) CR version, 35 mm (1.38 in) CRE version

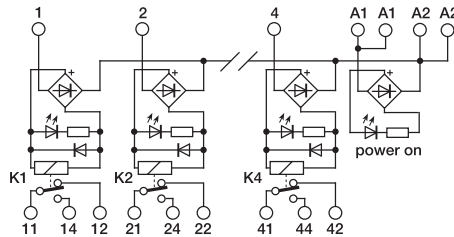


A = 22.5 mm (0.88 in) CR version, 35 mm (1.38 in) CRE version

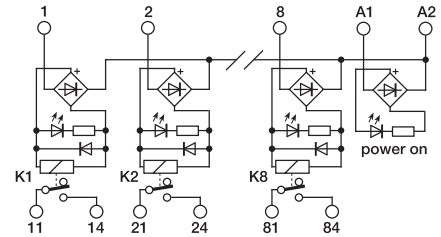
NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
CR4-1 and **CRE4-1**: relay module with SPDT, inputs and outputs with pluggable terminals.
CR8-1 and **CRE8-1**: 8 relay module with SPST (NO), inputs and outputs with pluggable terminals.

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. XCRE41

CRE4-1

Cat. No. XCR4

CR4-1

Cat. No. XCRE81

CRE8-1

Cat. No. XCR81

CR8-1

INPUT TECHNICAL DATA

Rated voltage	24 Vac/dc $\pm 10\%$
Rated current (1 channel)	16 mA $\pm 10\%$
Turn ON time	7 ms
Turn OFF time	3 ms
Protection circuit	damping diode and bridge rectifier

Rated voltage	24 Vac/dc $\pm 10\%$
Rated current (1 channel)	16 mA $\pm 10\%$
Turn ON time	7 ms
Turn OFF time	3 ms
Protection circuit	damping diode and bridge rectifier

OUTPUT TECHNICAL DATA

Type and number of contacts	SPDT AgNiO per 4 relé
Nominal load (resistive)	8 A / 250 Vac
Current breaking power	2000 VA
Current of the fuse max.	—

Type and number of contacts	SPST(NO) per 8 relay
Nominal load (resistive)	8 A / 250 Vac
Current breaking power	2000 VA
Current of the fuse max.	—

GENERAL TECHNICAL DATA

Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 20 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	143 g (5.05 oz) (180 g [6.35 oz] pluggable version)
Mounting information	vertical on rail adjacent without gap

Operating temperature range	-10...+50°C
Coil/contact isolation	3 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 20 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	199 g (7.02 oz) (250 g [8.83 oz] pluggable version)
Mounting information	vertical on rail adjacent without gap

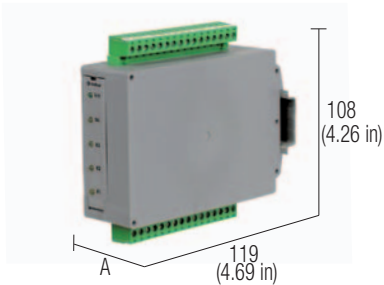
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904042
Screw type jumper	red
	white
	blue

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904042

Super compact 24
Vac/dc relay modules
universal control
voltage

- 3 kV I/O isolation
- 1 kV isolation between output contact
- Fast connection whit pluggable terminals
- DC and AC control voltage
- Positive or negative control voltage

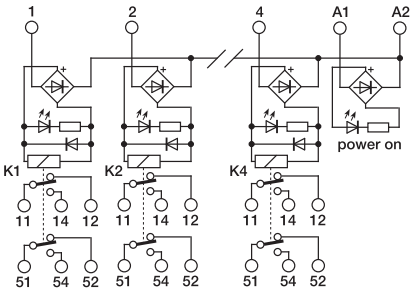


A = 22.5 mm (0.88 in) CR version, 35 mm (1.38 in) CRE version

NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical
(2) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. XCRE42SC
CRE4-2SC (2)

Cat. No. XCR42SC
CR4-2SC (2)

INPUT TECHNICAL DATA

Rated voltage	24 Vac/dc \pm 10%
Rated current (1 channel)	25 mA \pm 10%
Turn ON time	7 ms
Turn OFF time	2 ms
Protection circuit	damping diode and bridge rectifier

OUTPUT TECHNICAL DATA

Type and number of contacts	DPDT AgNi per 4 relé
Nominal load (resistive)	8 A / 250 Vac
Current breaking power	2000 VA
Current of the fuse max.	—

GENERAL TECHNICAL DATA

Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 20 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	137 g (180 g pluggable version)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904052
Screw type jumper	red white blue

PLC interface modules quick selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

Input modules

Number of channels	Connection type	Notes	Type	Cat. No.	Page
8 without isolation	12 Vdc	(1) (4)	IF16S7	XIF16S7	125
8 without isolation	12 Vdc	(1) (3)	IF16LS7	XIF16LS7	125
32 without isolation	12 Vdc	(1) (4)	IF416S7	XIF416S7	125
32 without isolation	12 Vdc	(1) (3)	IF416LS7	XIF416LS7	125

Output modules

Number of channels	Input voltage	Output		Notes	Type	Cat. No.	Page
		type / no. of contacts	rated current				
8	24 Vdc	SPST(NO)	8 A	(1) (3) (5)	CR8-3	XCR83	126
8	24 Vdc	SPST(NO)	8 A	(1) (3) (5)	CRE8-3	XCRE83	126
8	24 Vdc	SPDT	10 A	(1) (3) (5)	RFE8124	XRFE8124	126
8	24 Vdc	DPDT	5 A	(1) (3) (5)	RFE8224	XRFE8224	127
16	24 Vdc	SPDT	10 A	(2) (3) (5)	RFE16124	XRFE16124	128
16	24 Vdc	DPDT	5 A	(2) (3) (5)	RFE16224	XRFE16224	128

Notes

- (1) suitable for PLC Siemens S7 series
- (2) suitable for PLC Telemecanique
- (3) with LED to display the status

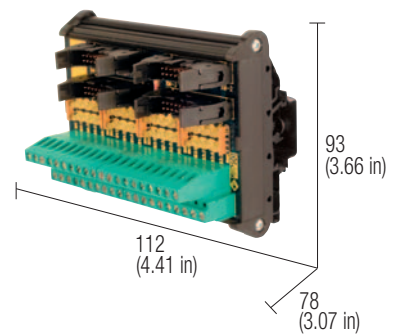
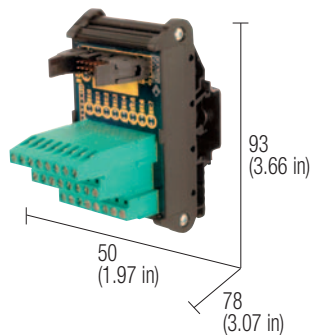
- (4) without LED to display the status
- (5) version with pluggable relay

PLC S7 300 & S7 400

Interface modules

- I/O modules
- With or without status LED display
- Fast connection

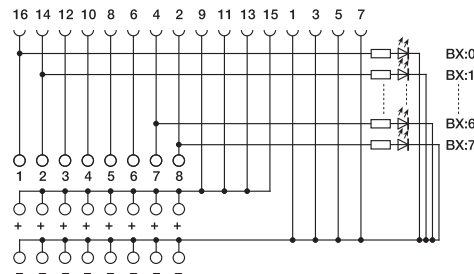
Item available till sell-out



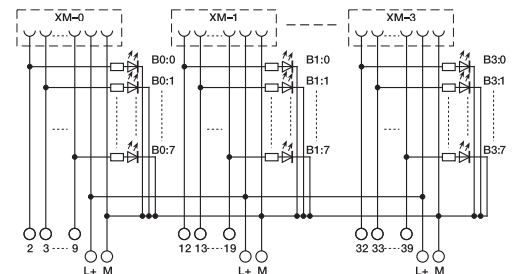
NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
(2) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

With LED to display the status
Without LED to display the status

Cat. No. XIF16S7

IF16S7 (2)

Cat. No. XIF416LS7

IF416LS7 (2)

Cat. No. XIF416S7

IF416S7 (2)

INPUT TECHNICAL DATA

Rated voltage	24 Vdc \pm 10%
Rated current (1 channel)	5 mA \pm 10% (only with "Status LED" version)
Turn ON time	—
Turn OFF time	—
Protection circuit	—

Rated voltage	24 Vdc \pm 10%
Rated current (1 channel)	5 mA \pm 10% (only with "Status LED" version)

OUTPUT TECHNICAL DATA

Type and number of contacts	8 channels without isolation
Nominal load (resistive)	—
Current breaking power	—
Current of the fuse max.	—

4 x 8 channels without isolation

GENERAL TECHNICAL DATA

Operating temperature	-10...+50°C
Coil/contact isolation	—
Isolation between output terminals	—
Protection degree	IP 00 IEC529, EN60529
Overvoltage category / Pollution degree	II / 2
Reference Standard	IEC 664-1
Status display	LED (solo su IF16LS7)
Connection terminals	flat cable 16 poles male and 2.5 mm ² fixed screw type
Housing material	polyamide UL94V-0
Approx. weight	—
Mounting information	—

Operating temperature	-10...+50°C
Coil/contact isolation	—
Isolation between output terminals	—
Protection degree	IP 00 IEC529, EN60529
Overvoltage category / Pollution degree	II / 2
Reference Standard	IEC 664-1
Status display	LED (solo su IF416LS7)
Connection terminals	flat cable 16 poles male and 2.5 mm ² fixed screw type
Housing material	polyamide UL94V-0
Approx. weight	—
Mounting information	—

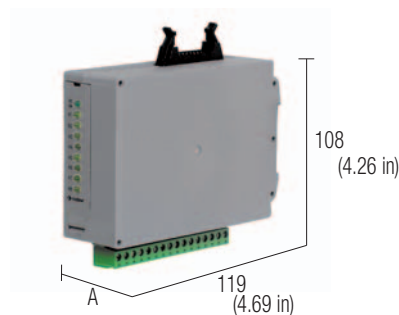
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AS
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	—
Screw type jumper	—
red	—
white	—
blue	—

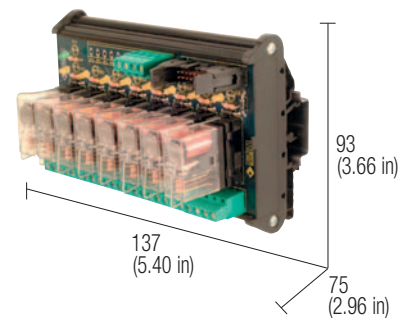
PR/3/AC, PR/3/AS
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

PLC S7 300 & S7 400 Interface modules

- Very compact dimension in CR version
- Fast connection
- Pluggable relay
- Status LED display



A = 22.5 mm (0.88 in) CR version, 35 mm (1.38 in) CRE version

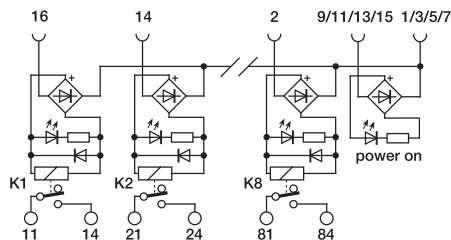


Item available until sell-out
will be replaced by XR081E24

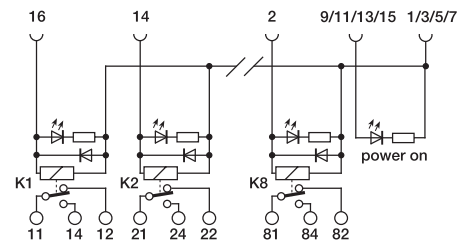
NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
(2) Version available upon request.

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. XCRE83

CRE8-3

Cat. No. XCR83

CR8-3

Cat. No. XRFE8124

RFE8124

INPUT TECHNICAL DATA

Rated voltage
Rated current (1 channel)
Turn ON time
Turn OFF time
Protection circuit

24 Vac/dc $\pm 10\%$
16 mA $\pm 10\%$
15 ms
5 ms
damping diode and bridge rectifier

24 Vac/dc $\pm 10\%$
20 mA $\pm 10\%$
15 ms
10 ms
damping diode and bridge rectifier

OUTPUT TECHNICAL DATA

Type and number of contacts
Nominal load (resistive)
Current breaking power
Current of the fuse max.

SPST(NO) per 8 relay
10 A / 250 Vac
2000 VA
—

SPDT AgNiO per 8 relé
10 A / 250 Vac
10 A
—

GENERAL TECHNICAL DATA

Operating temperature range
Coil/contact isolation
Isolation between output terminals
Protection degree
Overvoltage category / Pollution degree
Reference Standard
Status display
Connection terminal
Housing material
Approx. weight
Mounting information

-10...+50°C
3 kVac / 60 s
1 kVac / 60 s (between open contact)
IP 20 IEC 529, EN60529
III / 2
IEC 664-1, DIN VDE 0110.1
green LED / yellow LED
flat cable 16 poles male
UL94V-0 plastic material
199 g (7.02 oz)
vertical on rail adjacent without gap

-10...+50°C
2.5 kVac / 60 s
1 kVac / 60 s (between open contact)
IP 00 IEC 529, EN60529
III / 2
IEC 664-1, DIN VDE 0110.1
green LED / yellow LED
flat cable 16 poles male and 2.5 mm² fixed screw type
UL94V-0 plastic material
342 g (12.07 oz)
vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35
Mounting rail type according to IEC60715/G32
Replacement relay (1)
Screw type jumper

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
—
Cat. No. 8904042

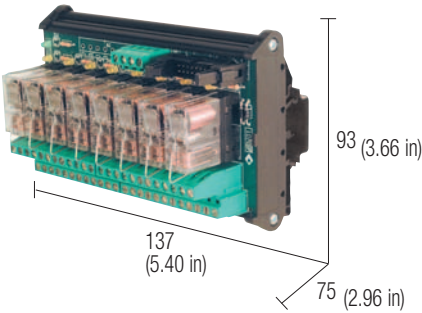
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Cat. No. 8904001

red
white
blue

—
—
—

PLC S7 300 & S7 400
Interface modules

- DC control voltage
- Negative control voltage
- Status LED display
- Pluggable relay
- Fast connection

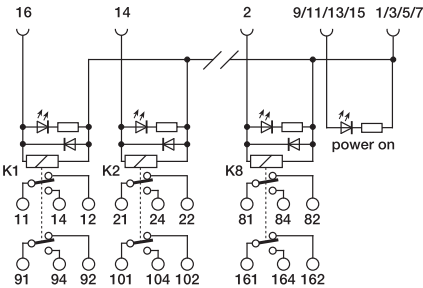


Item available until sell-out
will be replaced by XR082E24

NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
(2) Version available upon request.

BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. XRFE8224
RFE8224

INPUT TECHNICAL DATA

Rated voltage	24 Vdc \pm 10%
Rated current (1 channel)	20 mA \pm 10%
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping and polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts	DPDT AgNiO per 8 relé
Nominal load (resistive)	5 A / 250 Vac
Current breaking power	5 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

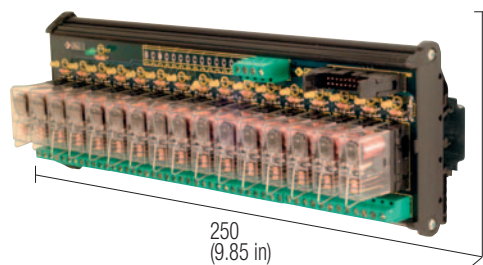
Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	flat cable 16 poles male and 2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	419 g (14.79 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

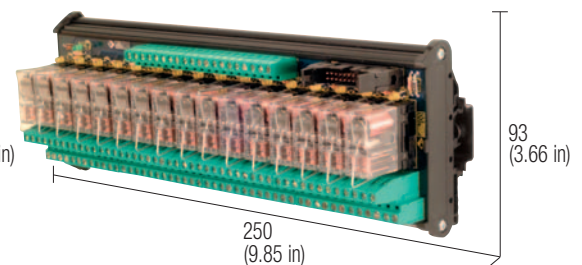
Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904002
Screw type jumper	—
red	—
white	—
blue	—

Telemecanique PLC interface modules

- DC control voltage
- Negative control voltage
- Status LED display
- Pluggable relay
- Fast connection



Item available until sell-out
will be replaced by XR161E24

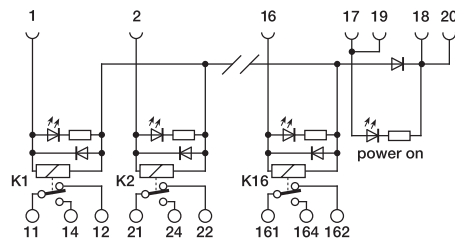


Item available until sell-out
will be replaced by XR162E24

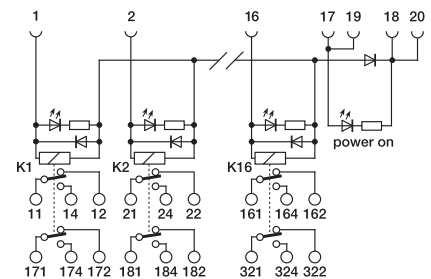
NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. XRFE16124

RFE16124

—

Cat. No. XRFE16224

RFE16224

—

INPUT TECHNICAL DATA

Rated voltage	24 Vdc \pm 10%
Rated current (1 channel)	20 mA \pm 10%
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping and polarity protection diode

Rated voltage	24 Vdc \pm 10%
Rated current (1 channel)	20 mA \pm 10%
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping and polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts	SPDT AgNiO per 16 relé
Nominal load (resistive)	10 A / 250 Vac
Current breaking power	10 A
Current of the fuse max.	—

Type and number of contacts	DPDT AgNiO per 16 relé
Nominal load (resistive)	5 A / 250 Vac
Current breaking power	5 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	flat cable 16 poles male and 2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	657 g (23.19 oz)
Mounting information	vertical on rail adjacent without gap

Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	flat cable 16 poles male and 2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	811 g (28.63 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904001
Screw type jumper	red white blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Cat. No. 8904002

Solid state relay modules quick selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

Input modules

Number of channels	Input voltage	Applicable load		Notes	Type	Cat. No.	Page
		Voltage	Current				
1	5...24 Vdc	5...48 Vdc	3 A	(2)	O332060	XO332060	130
1	5...24 Vdc	5...48 Vdc	500 mA	(2)	CWOT 6-2082	X766082	136
1	12...24 Vdc	5...48 Vdc	500 mA	(2)	CWOT 6-2083	X766083	135
1	12...24 Vdc	5...48 Vdc	5 A	(1)	CM1S024E	XCM1S024E	131
1	24 Vdc	5...48 Vdc	2 A	(1)	CM1S024	XCM1S024	131
1	5...12 Vdc	5...24 Vdc	5 A	(2) (4)	CKS15NA	XCKS15NA	133
1	5...24 Vdc	5...24 Vdc	30 mA	(2)	CKS1S	XCKS1S	136
1	24 Vdc	5...24 Vdc	5 A	(2) (4)	CKS15NB	XCKS15NB	133
1	5...24 Vdc	5...24 Vdc	5 A	(2) (5)	CKS15E	XCKS15E	134
1	12...24 Vdc	12...240 Vac	3 A	(1)	CM1T024E	XCM1T024E	132
1	5...24 Vdc	24...240 Vac	4 A	(2)	O332240	XO332240	130
1	24 Vdc	48...240 Vac	2 A	(1)	CM1T024	XCM1T024	132
2	12...24 Vdc	12...24 Vdc	2 x 2.5 A	(2)	CKS22	XCKS22	134
4	24 Vdc	5...48 Vdc	2 A	(1) (3) (4)	R41S24F	XR041S24F	139
4	24 Vdc	5...48 Vdc	2 A	(1) (3)	R42S24	XR042S24	137
4	24 Vdc	48...240 Vac	2 A	(1) (3)	R42T24	XR042T24	138
8	24 Vdc	5...48 Vdc	2 A	(1) (3) (4)	R81S24F	XR081S24F	139
8	24 Vdc	5...48 Vdc	2 A	(1) (3)	R82S24	XR082S24	137
8	24 Vdc	48...240 Vac	2 A	(1) (3)	R82T24	XR082T24	138
8	5...24 Vdc	12...24 Vdc	8 x 2.5 A	(2) (5)	COP082	XCOP082	140
16	24 Vdc	5...48 Vdc	2 A	(1) (3) (4)	R161S24F	XR161S24F	139
16	24 Vdc	5...48 Vdc	2 A	(1) (3)	R162S24	XR162S24	137
16	24 Vdc	48...240 Vac	2 A	(1) (3)	R162T24	XR162T24	138

Notes

(1) version with pluggable relay

(2) version with fixed relay

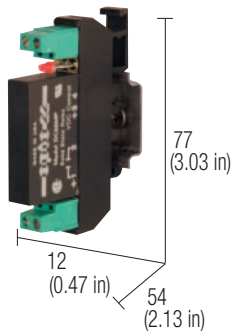
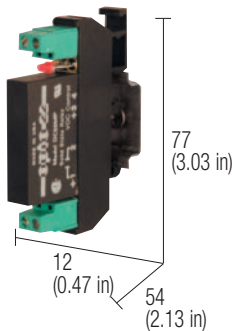
(3) universal control voltage, negative/positive DC command

(4) output contact with protection fuse

(5) electronic output protection

Solid state 5...24 Vdc
single relay

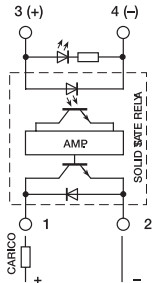
- Fixed relay
- Compact dimensions
- Status LED display



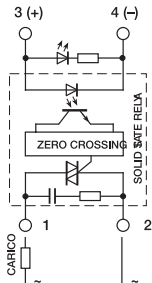
NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. X0332060

0332060

Cat. No. X0332240

0332240

INPUT TECHNICAL DATA

Input voltage	4...30 Vdc
Level 1 (high) input signal	> 3 Vdc
Level 0 (low) input signal	< 1 Vdc
Rated current	< 35 mA
Switching frequency	100 Hz max
Connection terminals	2.5 mm ² fixed screw type

OUTPUT TECHNICAL DATA

Output voltage	5...60 Vdc
Continuous load current	3 A a 20°C (see chart)
Max. current	4 A a 20°C (5 A / 5 s - 25 A / 10 ms)
Leakage current 0 signal	1 mA
OFF/ON switching time	—
Protection circuit	diode
Connection terminals	2.5 mm ² fixed screw type

GENERAL TECHNICAL DATA

Operating temperature	-20...-60°C (see chart)
I/O isolation (coil/contact)	4 kVac / 60 s
Protection degree	IP 00 IEC529, EN60529
Reference Standard	IEC 664-1, DIN VDE 0110.1
Pollution degree	2
Overvoltage category	III
Modello del relé (1)	OPT022
Status display	LED
Housing material	Polyamide UL94V-0
Approx. weight	36 g (1.27 oz)
Mounting information	vertical on rail, allow 4 mm spacing between adjacent components

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	
Mounting rail type according to IEC60715/G32	
Replacement relay (1)	
Screw type jumper	red
	white
	blue

PR/3/AC, PR/3/AS
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

—

—

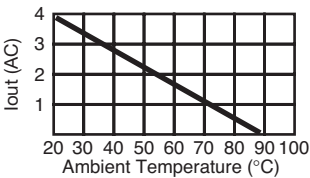
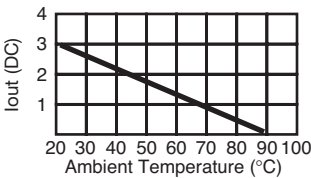
—

PR/3/AC, PR/3/AS
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

—

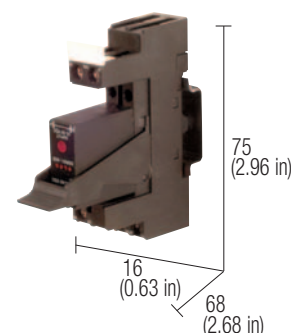
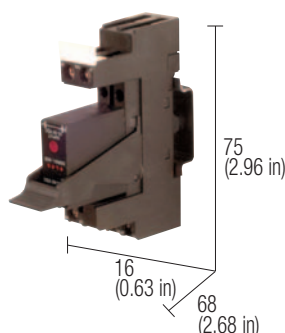
—

—



Solid state 12-24 Vdc single relay

- Low cost
- For DC load (S version)
- Pluggable relay
- Screw type jumper available
- Status LED display

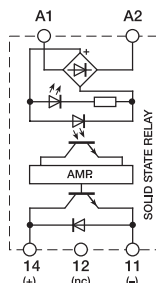


NOTES

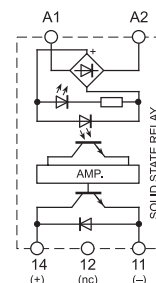
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
(2) Version available upon request; for information call our sales department, local agent or representative

This series can be mounted without any spacing between adjacent components.

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. XCM1S024

CM1S024 (2)

Cat. No. XCM1S024E

CM1S024E (2)

INPUT TECHNICAL DATA

Input voltage	24 Vdc (19.2...28.8 Vdc)
Level 1 (high) input signal	> 19.2 Vdc
Level 0 (low) input signal	< 1 Vdc
Rated current (1 channel)	< 20 mA
Switching frequency	100 Hz max
Connection terminals	2.5 mm ² fixed screw type

12-24 Vdc (10...32 Vdc)
> 10 Vdc
< 9 Vdc
< 13 mA
100 Hz max
2.5 mm ² fixed screw type

OUTPUT TECHNICAL DATA

Output voltage	3...50 Vdc
Continuous load current	2 A @ 40°C
Max. current	8 A / 10 ms
Leakage current 0 signal	0.1 mA
OFF/ON switching time	100 µs / 1 ms
Protection circuit	diode
Connection terminals	2.5 mm ² fixed screw type

0...35 Vdc
5 A @ 60°C
120 A (peak)
10 µA
100 µs / 1 ms
diode
2.5 mm ² fixed screw type

GENERAL TECHNICAL DATA

Operating temperature	-20...+80°C over 40°C apply a derating of 0.04A/°C
I/O isolation (coil/contact)	2.5 kVac / 60 s
Protection degree	IP 00 IEC529, EN60529
Reference Standard	IEC 664-1, DIN VDE 0110.1
Pollution degree	3
Overvoltage category	III
Modello del relé (1)	HF JGX-40F
Status display	LED
Housing material	Polyamide UL94V-0
Approx. weight	—
Mounting information	vertical on rail adjacent without gap

--20...+80°C over 60°C apply a derating of 0,05A/°C
2.5 kVac / 60 s
IP 00 IEC529, EN60529
IEC 664-1, DIN VDE 0110.1
3
III
ELCO SSR91-60B
LED
Polyamide UL94V-0
—
vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AS
Mounting rail type according to IEC60715/G32	—
Replacement relay (1)	Cat. No. 8904404
Screw type jumper	Cat. No. XCMB16B
black	—
white	—
blue	—

PR/3/AC, PR/3/AS

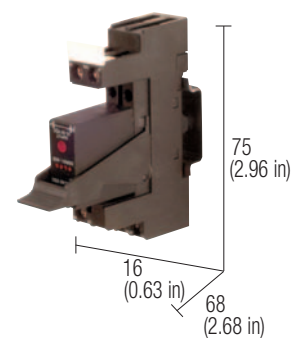
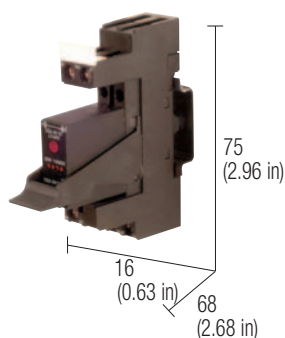
Cat. No. 8904402
Cat. No. XCMB16B



Screw type jumper

Solid state 12-24 Vdc single relay

- Low cost
- For AC load (T version)
- Pluggable relay
- Screw type jumper available
- Status LED display

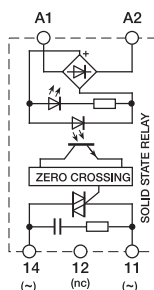


NOTES

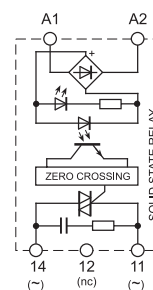
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
(2) Version available upon request; for information call our sales department, local agent or representative

This series can be mounted without any spacing between adjacent components.

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. XCM1T024

CM1T024 (2)

Cat. No. XCM1T024E

CM1T024E (2)

INPUT TECHNICAL DATA

Input voltage	24 Vdc (19.2...28.8 Vdc)
Level 1 (high) input signal	> 19.2 Vdc
Level 0 (low) input signal	< 1 Vdc
Rated current (1 channel)	< 20 mA
Switching frequency	100 Hz max
Connection terminals	2.5 mm ² fixed screw type

12-24 Vdc (10...32 Vdc)
> 10 Vdc
< 9 Vdc
< 13 mA
100 Hz max
2.5 mm ² fixed screw type

OUTPUT TECHNICAL DATA

Output voltage	48...280 Vac (zero crossing)
Continuous load current	3 A @ 40°C
Max. current	120 A / 10 ms
Leakage current 0 signal	5 mA
OFF/ON switching time	1/2 cycle + 1 ms
Protection circuit	—
Connection terminals	2.5 mm ² fixed screw type

12...275 Vac (zero crossing)
3,5A @ 40°C / 3 A @ 60°C
120 A (peak)
1 mA
10 ms / 10 ms max.
—
2.5 mm ² fixed screw type

GENERAL TECHNICAL DATA

Operating temperature	-20...+80°C over 40°C apply a derating of 0.05A/°C
I/O isolation (coil/contact)	2.5 kVac / 60 s
Protection degree	IP 00 IEC529, EN60529
Reference Standard	IEC 664-1, DIN VDE 0110.1
Pollution degree	3
Overvoltage category	III
Modello del relé (1)	HF JGX-40F
Status display	LED
Housing material	Polyamide UL94V-0
Approx. weight	—
Mounting information	vertical on rail adjacent without gap

-20...+80°C over 40°C apply a derating of 0,025A/°C
2.5 kVac / 60 s
IP 00 IEC529, EN60529
IEC 664-1, DIN VDE 0110.1
3
III
ELCO SSR91-60B
LED
Polyamide UL94V-0
—
vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	
Mounting rail type according to IEC60715/G32	
Replacement relay (1)	
Screw type jumper	black white blue

PR/3/AC, PR/3/AS

—
Cat. No. 8904405
Cat. No. XCMB16B
—
—

PR/3/AC, PR/3/AS

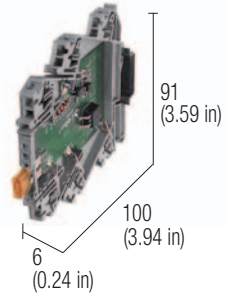
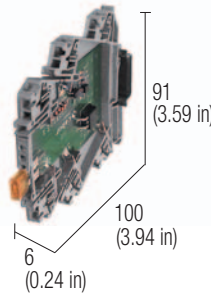
—
Cat. No. 8904403
Cat. No. XCMB16B
—
—



Screw type jumper

Solid state 12-24 Vdc single relay with fuse

- 5 A / 24 Vdc rated current
- Common negative or positive input
- Overload, short-circuit protected output with replaceable fuse
- Status LED display, reverse polarity protection
- 6 mm wide
- Plug-in jumper available



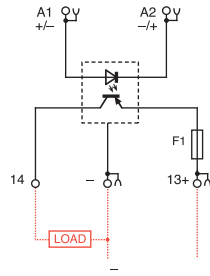
NOTES

- (1) The fast blow-out fuse is calibrated to protect the output stage of the module and it is connected in series to the positive pole; it is possible to replace the fuse with lower rated current values, selected to protect also the load and its wires; a fuse having a current rating higher than 5 A does not protect the output against short circuit and overloads.
- (2) In order to assure the IP20 protection degree, the last module must be protected and insulated using the CK/PT end section.
- (3) Version available upon request; for information call our sales department, local agent or representative

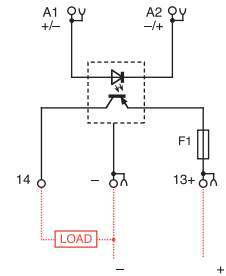
VERSIONS

Pluggable relay
Fixed relay

BLOCK DIAGRAM



BLOCK DIAGRAM



Cat. No. XCKS15NA

CKS15NA (3)

Cat. No. XCKS15NB

CKS15NB

INPUT TECHNICAL DATA

Input voltage	4.5...12 Vdc
Level 1 (high) input signal	≥4.5 Vdc
Level 0 (low) input signal	≤4 Vdc
Rated current	≤5 mA @ 12 Vdc

OUTPUT TECHNICAL DATA

Output voltage	5.2...60 Vdc, max. 100 V (peak)
Continuous load current	5 A / 24 Vdc @ 25°C
Max. current	7.5 A / 1 s, 25 A / 50 ms
Min. applicable load	5.2 V / 10 mA
Leakage current 0 signal	25 µA @ 60 Vdc between 13 and 14
Isolation between open contacts	3 kVac / 60 s
Protection fuse (1)	F 5 A

GENERAL TECHNICAL DATA

Operating temperature	-20...+60°C
I/O isolation	3 kVac / 60 s
Max. switching frequency	400 Hz max.
Protection degree	IP20 IEC529 EN60529
Reference Standard	IEC 664-1, EN50081-1
Pollution degree	2
Overvoltage category	II
Connection terminals	2.5 mm ² (AWG 14), AWG26-14 spring type
Housing material	Polyamide UL94V-0
Approx. weight	32 g (1.13 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7,5	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	—
Replacement relay (1)	—
Plug-in jumper	Cat. No. PTCC42 (42 poles)
Marking tags	Cat. No. NU0851

End plate

Cat. No. XCKPT

MOUNTING ACCESSORIES

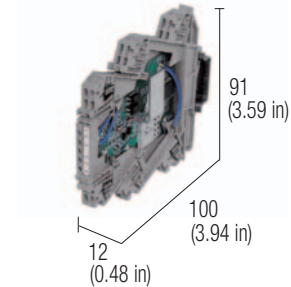
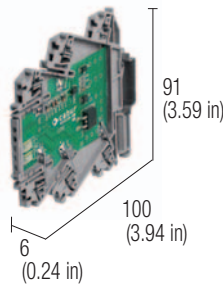
Mounting rail type according to IEC60715/TH35-7,5	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	—
Replacement relay (1)	—
Plug-in jumper	Cat. No. PTCC42 (42 poles)
Marking tags	Cat. No. NU0851

End plate

Cat. No. XCKPT

Solid state 12-24 Vdc single relay with electronic

- Electronic protection from short circuit, overload, overtemperature
- Input and output status LED
- Output extravoltage suppressor diode
- Extralow current absorbing
- Plug-in jumper available



NOTES

(1) Maximum output current of each channel depends on surrounding air temperature, on the number of output contemporarily active and on the current flowing through them; the given value is measured with 4 active outputs and 4 not active

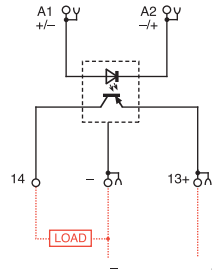
(2) All outputs are overcurrent and overtemperature; when ovd or ovt protections cuts off the output current, the output display led turns off or reduces its light depending on ovd degree; the output turns on automatically when the ovd or ovt are removed.

(3) Version available upon request; for information call our sales department, local agent or representative

VERSIONS

Pluggable relay
Fixed relay

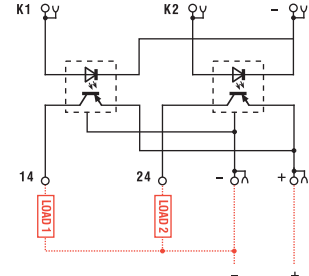
BLOCK DIAGRAM



Cat. No. XCKS15E

—
CKS15E

BLOCK DIAGRAM



Cat. No. XCKS22

—
CKS22 (3)

INPUT TECHNICAL DATA

Input voltage	5...24 Vdc (4.2...32 Vdc)
Level 1 (high) input signal	> 3.5 Vdc
Level 0 (low) input signal	< 3.5 Vdc
Rated current	≤ 5 mA @ 24 Vdc
Input channels	1

5...24 Vdc (4.2...32 Vdc)
> 3.5 Vdc
< 3.5 Vdc
≤ 5 mA @ 24 Vdc
1

12...24 Vdc (range 8...33 Vdc)
≥ 12 Vdc
≤ 11.7 Vdc
≤ 5 mA @ 24 Vdc
2 with common negative

OUTPUT TECHNICAL DATA

Output voltage	5...24 Vdc (5...32 Vdc)
Continuous load current	5 A / 24 Vdc @ 45°C (1)
Max. current	7.5 A / 60 s, 2.5 A / 50 ms peak (1)
Min. applicable load	5.2 V / 100 mA
Max. switching frequency	200 Hz max.
Leakage current 0 signal	< 25 µA @ 24 Vdc
Isolation between open contacts	—
Protection	electronic from overload, overtemperature (2)

5...24 Vdc (5...32 Vdc)
5 A / 24 Vdc @ 45°C (1)
7.5 A / 60 s, 2.5 A / 50 ms peak (1)
5.2 V / 100 mA
200 Hz max.
< 25 µA @ 24 Vdc
—
electronic from overload, overtemperature (2)

12...24 Vdc (range 5...33 Vdc)
2 x 2.5 A / 24 Vdc @ 45°C
4.4 A
10 mA
—
1 mA @ 24 Vdc
3 kVac / 60 s
—

GENERAL TECHNICAL DATA

Operating temperature	-20 ... +60°C (with therml protection) (2)
I/O isolation	3 kVac / 60 s
Max. switching frequency	—
Protection degree	IP20 IEC529 EN60529
Reference Standard	IEC 664-1, EN50081-1
Pollution degree	2
Overvoltage category	II
Connection terminals	2.5 mm ² AWG26-14 fixed spring type
Housing material	Polyamide UL94V-0
Approx. weight	30 g (1.06 oz)
Mounting information	vertical on rail adjacent without gap

-20 ... +60°C (with therml protection) (2)
3 kVac / 60 s
—
IP20 IEC529 EN60529
IEC 664-1, EN50081-1
2
II
2.5 mm² AWG26-14 fixed spring type
Polyamide UL94V-0
30 g (1.06 oz)
vertical on rail adjacent without gap

-20 ... +60°C (with therml protection) (2)
3 kVac / 60 s
1 kHz (Ton <500 ms / Toff <500 ms)
IP20 IEC529 EN60529
IEC 664-1, EN50081-1
2
II
2.5 mm² AWG26-14 fixed spring type
Polyamide UL94V-0
32 g (1.13 oz)
vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7,5	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	—
Replacement relay (1)	—
Plug-in jumper	Cat. No. PTCK42 (42 poles)
Marking tags	Cat. No. NU0851

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—
Cat. No. PTCK42 (42 poles)
Cat. No. NU0851

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—
Cat. No. PTCK42 (42 poles)
Cat. No. NU0851

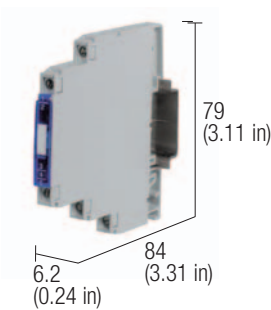
End plate

Cat. No. XCKPT

Cat. No. XCKPT

Solid state 12-24 Vdc
single relay
with electronic SPDT

- 10...40 Vdc rated voltage
- Output with SPDT simulation
- Output voltage 5...48 Vdc 500 mA
- Max switching frequency 1 KHz
- I/O isolation 3.75 kV



NOTES

Compared with standard relays, solid state relays offers many advantages: much longer life, higher switching frequency, lower EMI emissions, higher vibrations withstand capability, wider input voltage range and 70% lower input current. The output of solid state relays is a N.O. type "contact" and up to now SPDT type was not available, forcing to use a standard relay when SPDT function was required. Thanks to a new technology, this new solid state relay offers all the advatages of solid state relays with a SPDT contact output type, making a step ahead possible.

VERSIONS

- Pluggable relay
- Fixed relay

INPUT TECHNICAL DATA

Input signal
Level 1 (high) input signal (ON)
Level 0 (low) input signal (OFF)
Rated current
Protection device

OUTPUT TECHNICAL DATA

Output signal
Continuous load current
Switching delay
Protection device
Output Type

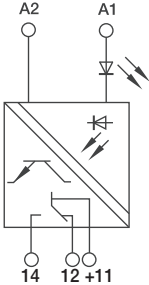
GENERAL TECHNICAL DATA

Operating temperature
I/O isolation
Max. switching frequency
Protection degree
Reference Standard
Pollution degree
Overvoltage category
Connection terminals
Housing material
Approx. weight
Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35
Mounting rail type according to IEC60715/G32
Replacement relay (1)
Plug-in jumper
Marking tags
End plate

BLOCK DIAGRAM



Cat. No. X766083

CWOT 6-2083

24 Vdc (range 10...40 Vdc)
>5 Vdc
<5 Vdc
6 mA
suppressor diode

5...48 Vdc
10...500 mA
12 µs ON / 12 µs OFF
suppressor diode
NPN / PNP transistor, with changeover contact simulation

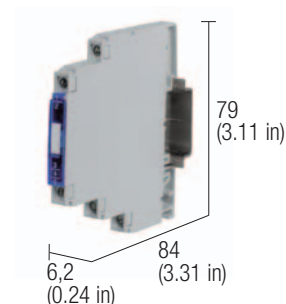
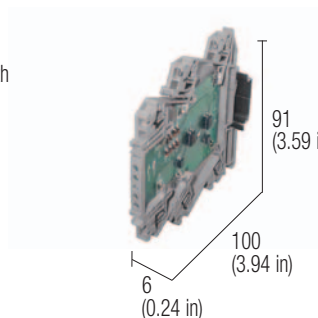
-25 ...+60°C
3.75 kVac / 60 s
<1 KHz
IP 20 IEC529 EN60529
IEC 664-1, DIN VDE
2
III
2.5 mm² fixed screw type
PPE
29 g (1.02 oz)
vertical on rail adjacent without gap

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—
—
—
—
—
—

Signal optoisolators

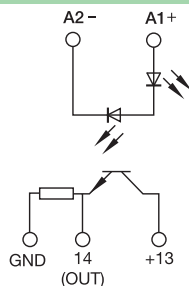
- Suitable for isolation and transmission of digital signal with high frequency
- Status LED display
- 5, 12 and 24 rated voltage
- I/O isolation



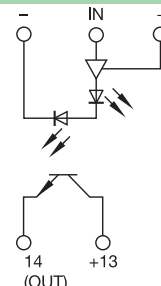
NOTES

(1) Version available upon request.
CKS1S can isolate I/O high frequency signal circuits (encoders, counters etc.) to eliminate influence of different ground reference voltages and ground loops, thus reducing EMI noise influence on signal transmission of sensitive signals; it is always recommended to use balanced type shielded cables (two signal wires + shield); at transmission frequencies higher than 25 Hz the LED light appears constant, it is to be intended as "transmission ON" signal.

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

Cat. No. XCKS1S
CKS1S (1)

Cat. No. X766082
CWOT 6-2082

INPUT TECHNICAL DATA

Input signal	3...30 Vdc
Level 1 (high) input signal (ON)	≥ 3 Vdc
Level 0 (low) input signal (OFF)	≤ 3 Vdc
Rated current	≤ 10 mA @ 24 Vdc

4.5...28 Vdc
>4.2 Vdc
<2.7 Vdc
0.1 mA

OUTPUT TECHNICAL DATA

Output signal	3...30 Vdc
Continuous load current	80 mA / 30 Vdc @ 25°C
Min. applicable load	10 mV / 2 mA
Switching delay	—

5...48 Vdc
10...500 mA
—
12 μs ON / 12 μs OFF

GENERAL TECHNICAL DATA

Operating temperature	-20...+60°C
I/O isolation	3 kVac / 60 s
Max. switching frequency	20 kHz max. duty cycle 50/50, 70/30 max
Protection degree	IP 20 IEC529 EN60529
Reference Standard	IEC 664-1, EN50081-1
Pollution degree	2
Overvoltage category	II
Connection terminals	2.5 mm ² (AWG 14), AWG26-14 spring type
Housing material	Polyamide UL94V-0
Approx. weight	32 g (1.13 oz)
Mounting information	vertical on rail adjacent without gap

-25...+60°C
3.75 kVac / 60 s
<20 KHz
IP 20 IEC529 EN60529
IEC 664-1, DIN VDE
2
III
2.5 mm ² , AWG26-14 a vite
PPE
29 g (1.02 oz)
vertical on rail adjacent without gap

MOUNTING ACCESSORIES

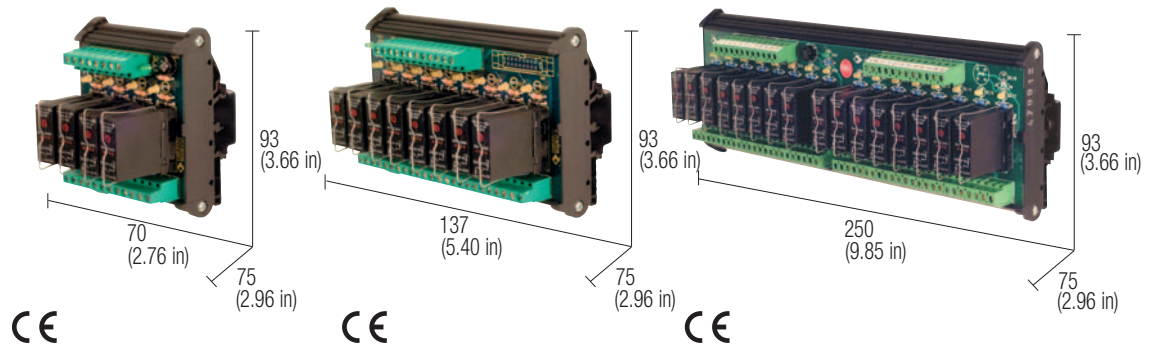
Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	—
Replacement relay (1)	—
Plug-in jumper	Cat. No. PTCK42 (42 poles)
Marking tags	Cat. No. NU0851
blank	—
printed	—
printed	—
End plate	Cat. No. XCKPT

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—
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Solid state 24 Vdc relay modules

- For DC load
- Pluggable relay
- Status LED display



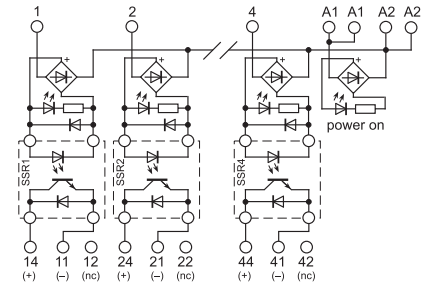
NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
(2) Version available upon request; for information call our sales department, local agent or representative

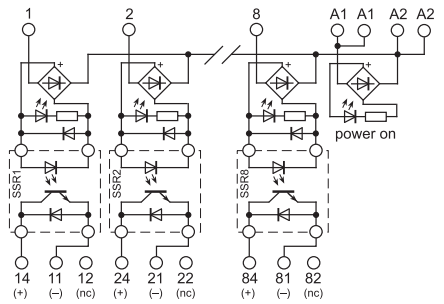
POWER SUPPLY

A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common

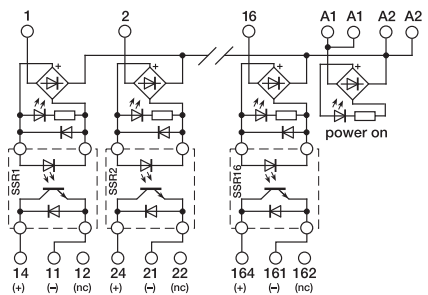
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Input voltage	24 Vdc (19.2...28.8 Vdc)
Level 1 (high) input signal	> 19.2 Vdc
Level 0 (low) input signal	< 1 Vdc
Rated current (1 channel)	< 20 mA
Switching frequency	100 Hz max

OUTPUT TECHNICAL DATA

Output voltage	3...50 Vdc
Continuous load current	2 A @ 40°C
Max. current	8 A / 10 ms
Leakage current 0 signal	0.1 mA
OFF/ON switching time	100 µs / 1 ms
Protection circuit	diode
Current of the fuse max.	—

GENERAL TECHNICAL DATA

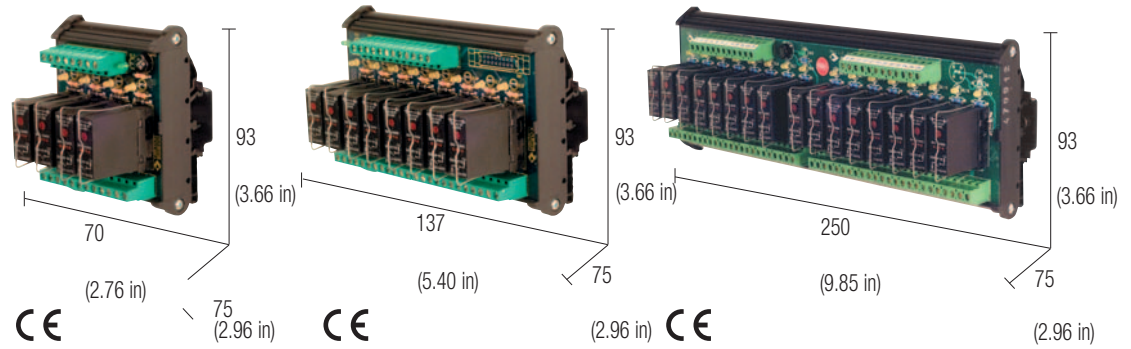
Operating temperature range	-20...+80°C over 40°C apply a derating of 0.04A/°C
I/O isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	207 g (7.31 oz) 379 g (13.38 oz) 756 g (26.69 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904404
Screw type jumper	—

Solid state 24 Vdc relay modules

- For AC load
- Pluggable relay
- Status LED display



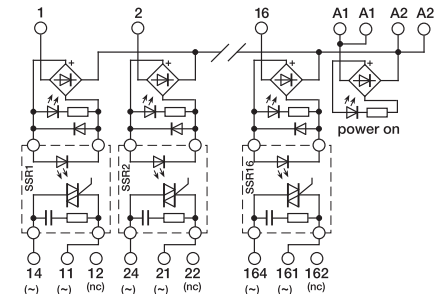
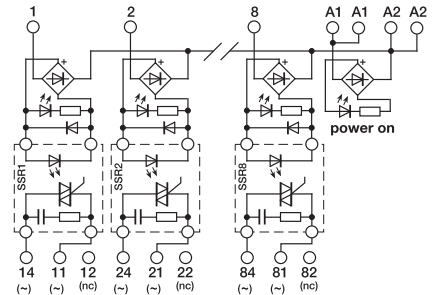
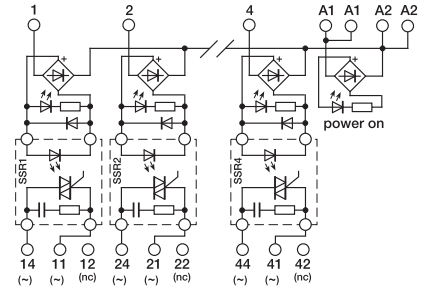
NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
(2) Version available upon request; for information call our sales department, local agent or representative

POWER SUPPLY

A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common

BLOCK DIAGRAM



VERSIONS

4 relay module

8 relay module

16 relay module

Cat. No. XR042T24	Cat. No. XR082T24	Cat. No. XR162T24
R42T24 (2)	R82T24 (2)	R162T24 (2)

INPUT TECHNICAL DATA

Input voltage	24 Vdc (19.2...28.8 Vdc)
Level 1 (high) input signal	> 19.2 Vdc
Level 0 (low) input signal	< 1 Vdc
Rated current (1 channel)	< 20 mA
Switching frequency	100 Hz max

OUTPUT TECHNICAL DATA

Output voltage	48...240 Vac (passage à zéro)
Continuous load current	3 A @ 40°C
Max. current	120 A / 10 ms
Leakage current 0 signal	5 mA
OFF/ON switching time	1/2 cycle + 1 ms
Protection circuit	—
Current of the fuse max.	—

GENERAL TECHNICAL DATA

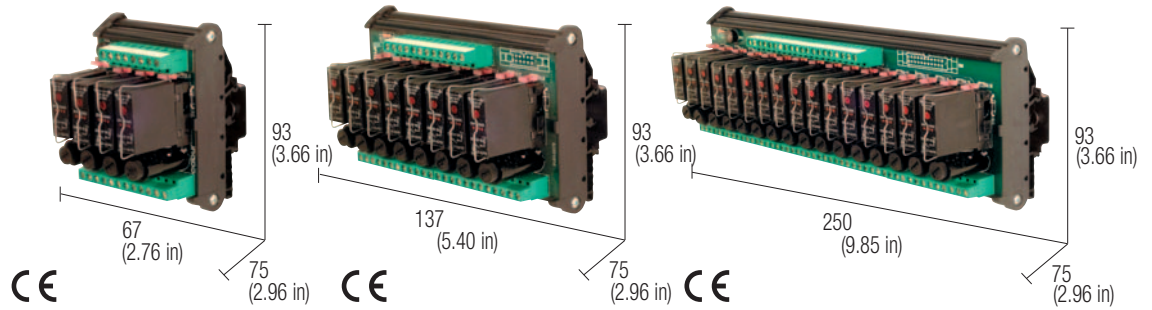
Operating temperature range	-20...+80°C over 40°C apply a derating of 0.05A/°C
I/O isolation	2.5 kVac / 60 s
Protection degree	1 kVac / 60 s (between open contact)
Reference Standard	IP 00 IEC 529, EN60529
Pollution degree	III / 2
Overvoltage category	IEC 664-1, DIN VDE 0110.1
Modello del relé (1)	green LED / yellow LED
Status display	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight (4/8/16 relé)	207 g (7.31 oz) 379 g (13.38 oz) 756 g (26.69 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904405
Screw type jumper	—

Solid state 24 Vdc relay modules with fuse

- For DC load
- Protection fuse on output
- Pluggable relay
- Status LED display



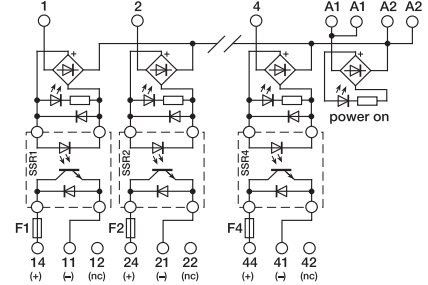
NOTES

- (1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
- (2) The fuse must be dimensioned according to load. The max. value of 6.3 A is referred to EN60127-complying fuses and the homologation rated current of the fuse-holder. Fuses of a higher value may damage the fuse-holder and module.
- (3) Version available upon request; for information call our sales department, local agent or representative

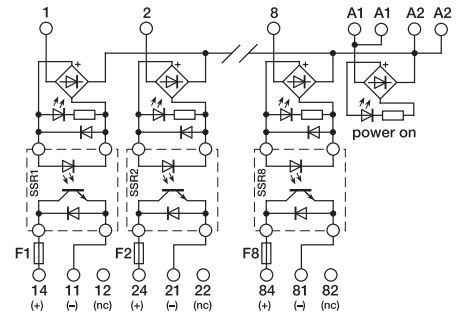
POWER SUPPLY

A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common

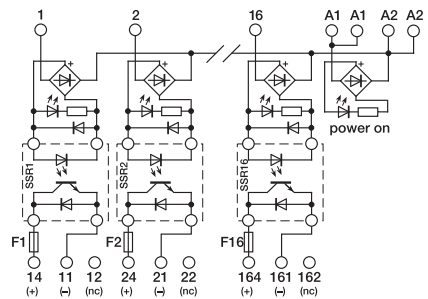
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

Cat. No. XR041S24F	Cat. No. XR081S24F	Cat. No. XR161S24F
R41S24F (3)	R81S24F (3)	R161S24F (3)

INPUT TECHNICAL DATA

Input voltage	24 Vdc (19.2...28.8 Vdc)
Level 1 (high) input signal	> 19.2 Vdc
Level 0 (low) input signal	< 1 Vdc
Rated current (1 channel)	< 20 mA
Switching frequency	100 Hz max

OUTPUT TECHNICAL DATA

Output voltage	3...50 Vdc
Continuous load current	2 A @ 40°C
Max. current	8 A / 10 ms
Leakage current 0 signal	0.1 mA
OFF/ON switching time	100 µs / 1 ms
Protection circuit	diodo
Current of the fuse max.	—

GENERAL TECHNICAL DATA

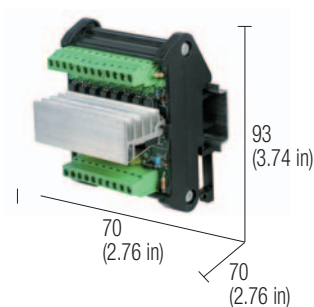
Operating temperature range	-20...+80°C over 40°C apply a derating of 0.04A/°C
I/O isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	207 g (7.31 oz) 379 g (13.38 oz) 756 g (26.69 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904404
Screw type jumper	—

Solid state 24 Vdc relay modules with electronic protection

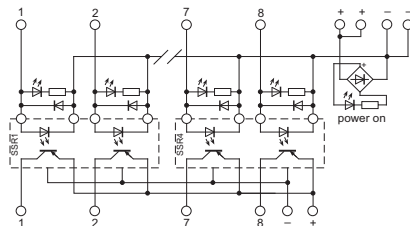
- Rated current output 8 x 2.5 A / 5 - 33 Vdc
- Short circuit, overload, over temperature, overvoltage output protection
- 12-24 Vdc negative common input, 8 status LED K1 and K8
- 8 output status LED, input/output anti polarity inversion diodes
- 70 mm wide



NOTES

- (1) Maximum output current of each channel depends on surrounding air temperature, on the number of output contemporarily active and on the current flowing through them; the given value is measured with 4 active outputs and 4 not active.
- (2) All outputs are overcurrent and overtemperature; when ovd or ovt protections cuts off the output current, the output display led turns off or reduce its light depending on ovd degree; the output turns on automatically when the ovd or ovt are removed.
- (3) Version available upon request

BLOCK DIAGRAM



VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Input voltage

Level 1 (high) input signal

Level 0 (low) input signal

Rated current (1 channel)

Switching frequency

OUTPUT TECHNICAL DATA

Output voltage

Continuous load current

Max. current

Leakage current 0 signal

OFF/ON switching time

Protection circuit

Min. applicable load

GENERAL TECHNICAL DATA

Operating temperature range

I/O isolation

Isolation between output terminals

Protection degree

Overvoltage category / Pollution degree

Reference Standard

Status display

Connection terminal

Housing material

Approx. weight

Mounting information

Cat. No. XCOP082

COP082 (3)

5-24 Vdc (range 4.2...32 Vdc) negative common

> 3.5 Vdc

< 3.5 Vdc

5 mA \pm 10%.

500 Hz

12-24 Vdc, (range 5...32 Vdc) negative common

8 x 2.5 A @ 25°C (1)

4.4 A

25 μ A max @ 24Vdc

200 Hz (Ton < 500 μ s / Toff < 500 μ s)

electronic against short circuit / overload / overtemperature (2)

5.2 Vdc/ 100 mA

-20...-60°C (with therml protection) (2)

2.5 kVac / 60 s

1 kVac / 60 s (between open contact)

IP 00 IEC 529, EN60529

III / 2

IEC 664-1, DIN VDE 0110.1

green LED (DC OK) / yellow LED (output OK)

2.5 mm² fixed screw type

UL94V-0 plastic material

vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35

Mounting rail type according to IEC60715/G32

Replacement relay (1)

Screw type jumper

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

—

—

Passive interface modules selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

Sub-D / Terminal modules

Version	Dimensions AxBxC	Tipology	Type	Cat. No.	Page
9 poles	37x66x93	(6)	ISD09FM	XISD09FM	142
	37x66x93	(5)	ISD09PF	XISD09PF	142
	37x66x93	(8)	ISD09PM	XISD09PM	142
15 poles	47x66x93	(6)	ISD15FM	XISD15FM	142
	47x66x93	(5)	ISD15PF	XISD15PF	142
	47x66x93	(8)	ISD15PM	XISD15PM	142
25 poles	70x66x93	(6)	ISD25FM	XISD25FM	142
	70x66x93	(5)	ISD25PF	XISD25PF	142
	70x66x93	(8)	ISD25PM	XISD25PM	142
	57x80x93	(5) (11)	CPD25F	XCPD25F	144
	57x80x93	(8) (11)	CPD25M	XCPD25M	144
37 poles	107x66x93	(6)	ISD37FM	XISD37FM	142
	107x66x93	(5)	ISD37PF	XISD37PF	142
	107x66x93	(8)	ISD37PM	XISD37PM	142
	77x80x93	(5) (11)	CPD37F	XCPD37F	144
	77x80x93	(8) (11)	CPD37M	XCPD37M	144
50 poles	92x80x93	(5) (11)	CPD50F	XCPD50F	144
	92x80x93	(8) (11)	CPD50M	XCPD50M	144

Diode-holder modules

Version	Dimensions AxBxC	Tipology	Type	Cat. No.	Page
8 diodes	25x60x76	(4)	CDM08CS	XCDM08CS	159
	45x65x93	(1)	CDM08AC	XCDM08AC	160
	45x65x93	(2)	CDM08CC	XCDM08CC	160
16 diodes	50x65x93	(4)	CDM16CS	XCDM16CS	159
	92x65x93	(1)	CDM16AC	XCDM16AC	160
	92x65x93	(2)	CDM16CC	XCDM16CC	160
24 diodes	71x65x93	(4)	CDM24CS	XCDM24CS	159
	137x65x93	(1)	CDM24AC	XCDM24AC	160
	137x65x93	(2)	CDM24CC	XCDM24CC	160
	137x65x93	(2)	CDM24CC	XCDM24CC	160

Lamp testing modules

Version	Dimensions AxBxC	Tipology	Type	Cat. No.	Page
8 diodes	45x65x93	(1)	CLT08AC	XCLT08AC	150
	45x65x93	(2)	CLT08CC	XCLT08CC	150
	45x65x93		CLP08CC	XCLP08CC	151
16 diodes	92x65x93	(1)	CLT16AC	XCLT16AC	150
	92x65x93	(2)	CLT16CC	XCLT16CC	150
	92x65x93		CLP16CC	XCLP16CC	151

Flat / Terminal modules

Version	Dimensions AxBxC	Tipology	Type	Cat. No.	Page
10 poles	42x66x93	(8)	IF10PMS	XIF10PMS	145
	42x66x93	(8) (7)	IF10PML	XIF10PML	145
14 poles	48x66x93	(8)	IF14PMS	XIF14PMS	145
	48x66x93	(8) (7)	IF14PML	XIF14PML	145
16 poles	58x66x93	(8)	IF16PMS	XIF16PMS	145
	58x66x93	(8) (7)	IF16PML	XIF16PML	145
20 poles	70x66x93	(8)	IF20PMS	XIF20PMS	145
	70x66x93	(8) (7)	IF20PML	XIF20PML	145
	47x80x93	(8) (11)	CPC20M	XCPC20M	146
26 poles	86x66x93	(8)	IF26PMS	XIF26PMS	145
	86x66x93	(8) (7)	IF26PML	XIF26PML	145
	57x80x93	(8) (11)	CPC26M	XCPC26M	146
34 poles	107x66x93	(8)	IF34PMS	XIF34PMS	145
	107x66x93	(8) (7)	IF34PML	XIF34PML	145
	70x80x93	(8) (11)	CPC34M	XCPC34M	146
40 poles	122x66x93	(8)	IF40PMS	XIF40PMS	145
	122x66x93	(8) (7)	IF40PML	XIF40PML	145
	77x80x93	(8) (11)	CPC40M	XCPC40M	146
50 poles	92x80x93	(8) (11)	CPC50M	XCPC50M	146
60 poles	107x80x93	(8) (11)	CPC60M	XCPC60M	146
64 poli	117x80x93	(8) (11)	CPC64M	XCPC64M	146

Component-holder modules

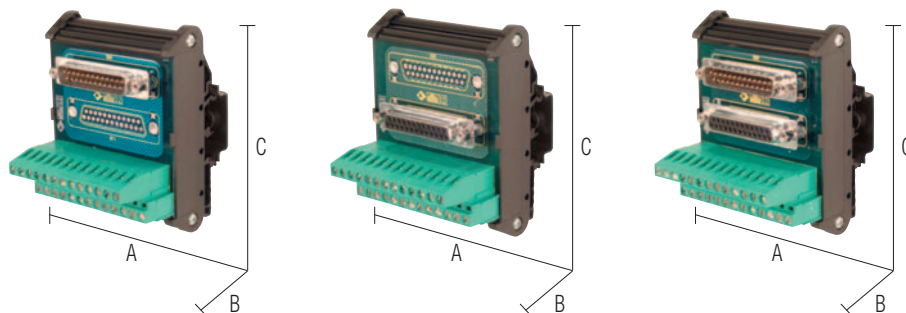
Version	Dimensions AxBxC	Tipology	Type	Cat. No.	Page
4 components	25x66x93	(9)	CCM04SF	XCCM04SF	147
8 components	25x66x93	(10)	CCM08SV	XCCM08SV	147
8 components	47x66x93	(9)	CCM08SF	XCCM08SF	147
8 components	38x66x93	(3)	CCM08CV	XCCM08CV	147
12 components	70x66x93	(9)	CCM12SV	XCCM12SV	147
16 components	47x66x93	(10)	CCM16SV	XCCM16SV	147
24 components	70x66x93	(10)	CCM24SV	XCCM24SV	147

Legenda

- (1) common anode
- (2) common cathode
- (3) with common terminal
- (4) single diode
- (5) female connector

- (6) female + male connector
- (7) with LED
- (8) male connector
- (9) single component with Faston terminals
- (10) single component with terminal blocks
- (11) compact dimensions

Passive interfaces (D-Sub/Terminals modules) ISD series

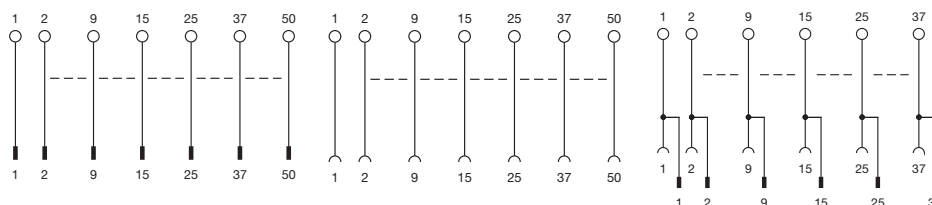


NOTES

These modules allow the transferring to the terminals of the deriving signals on a cable with D-Sub connector type. The numeration is "pin-to-pin".

(1) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM

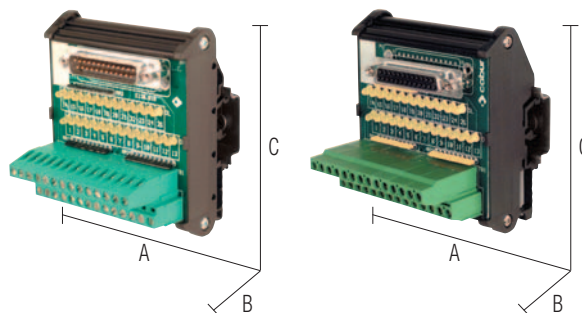


VERSIONS		DIMENSIONS		male		female		male + female	
		(A x B x C)		Item	Cat. No.	Item	Cat. No.	Item	Cat. No.
9 poles	37x66x93 (1.46x2.60x3.66 in)			ISD09PM (1)	XISD09PM	ISD09PF (1)	XISD09PF	ISD09FM	XISD09FM
15 poles	47x66x93 (1.85x2.60x3.66 in)			ISD15PM (1)	XISD15PM	ISD15PF (1)	XISD15PF	ISD15FM	XISD15FM
25 poles	70x66x93 (2.76x2.60x3.66 in)			ISD25PM (1)	XISD25PM	ISD25PF (1)	XISD25PF	ISD25FM	XISD25FM
37 poles	107x66x93 (4.21x2.60x3.66 in)			ISD37PM (1)	XISD37PM	ISD37PF (1)	XISD37PF	ISD37FM	XISD37FM
GENERAL TECHNICAL DATA									
Rated voltage				0...50 Vac / 0...75 Vdc		0...50 Vac / 0...75 Vdc		0...50 Vac / 0...75 Vdc	
Rated current				2 A max.		2 A max.		2 A max.	
Operating temperature				-20...+60°C		-20...+60°C		-20...+60°C	
Protection degree				IP00 IEC529; EN60529		IP00 IEC529; EN60529		IP00 IEC529; EN60529	
Reference Standard				IEC 664-1; DIN VDE 0110.1		IEC 664-1; DIN VDE 0110.1		IEC 664-1; DIN VDE 0110.1	
Pollution degree				2		2		2	
Overvoltage category				II		II		II	
Housing material				polyamide UL94V-0		polyamide UL94V-0		polyamide UL94V-0	
Connection terminal blocks				2.5 mm² fixed screw type (AWG 14)		2.5 mm² fixed screw type (AWG 14)		2.5 mm² fixed screw type (AWG 14)	
Mounting information				vertical on rail adjacent without gap		vertical on rail adjacent without gap		vertical on rail adjacent without gap	
MOUNTING ACCESSORIES									
Mounting rail type according to IEC60715/TH35				PR/3/AC - PR/3/AS					
Mounting rail type according to IEC60715/G32				PR/DIN/AC - PR/DIN/AS - PR/DIN/AL					
Jumper bridge				—					

Passive interfaces (D-Sub/Terminals modules) ISD series

- With LED to display the status

Item available till sell-out



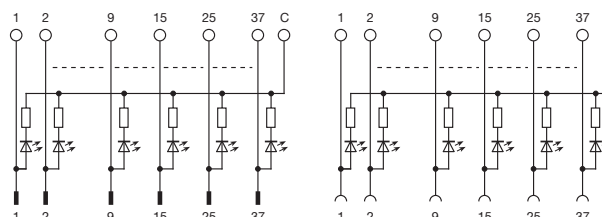
NOTES

These modules allow the transferring to the terminals of the deriving signals on a cable with D-Sub connector type

The numeration is "pin-to-pin"

(1) The LEDs are predisposed for a nominal voltage of 24 Vdc and negative common.

BLOCK DIAGRAM



VERSIONS	DIMENSIONS (A x B x C)
25 poles	80x66x93 (3.15x2.60x3.66 in)
37 poles	109x66x93 (4.30x2.60x3.66 in)

male		female	
Item	Cat. No.	Item	Cat. No.
ISD25PML	XISD25PML	ISD25PFL	XISD25PFL
ISD37PML	XISD37PML	ISD37PFL	XISD37PFL

GENERAL TECHNICAL DATA

Rated voltage	12...24 Vdc ±10% (1)
Rated current	2 A max.
Operating temperature	-20...+60°C
Protection degree	IP00 IEC529; EN60529
Reference Standard	IEC 664-1; DIN VDE 0110.1
Pollution degree	2
Overvoltage category	II
Housing material	polyamide UL94V-0
Connection terminal blocks	2.5 mm² fixed screw type (AWG 14)
Mounting information	vertical on rail adjacent without gap

Rated voltage	12...24 Vdc ±10% (1)
Rated current	2 A max.
Operating temperature	-20...+60°C
Protection degree	IP00 IEC529; EN60529
Reference Standard	IEC 664-1; DIN VDE 0110.1
Pollution degree	2
Overvoltage category	II
Housing material	polyamide UL94V-0
Connection terminal blocks	2.5 mm² fixed screw type (AWG 14)
Mounting information	vertical on rail adjacent without gap

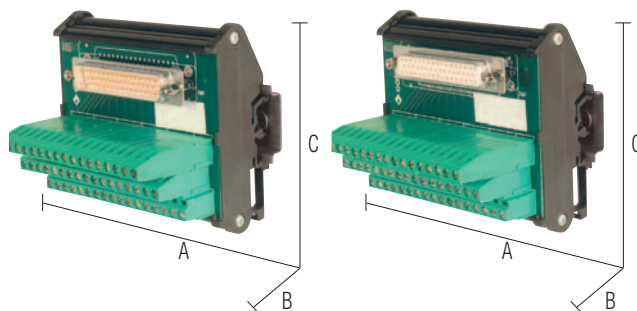
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	
Mounting rail type according to IEC60715/G32	
Jumper bridge	black

PR/3/AC - PR/3/AS
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
—

Passive interfaces (D-Sub/Terminals modules) CPD series

- Compact dimensions



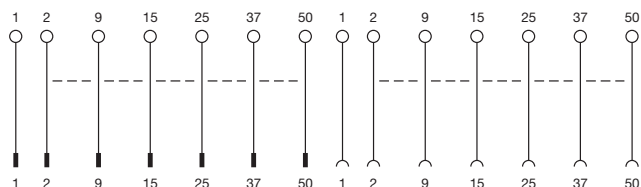
NOTES

These modules allow the transferring to the terminals of the deriving signals on a cable with D-Sub connector type.

The numeration is "pin-to-pin".

(1) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



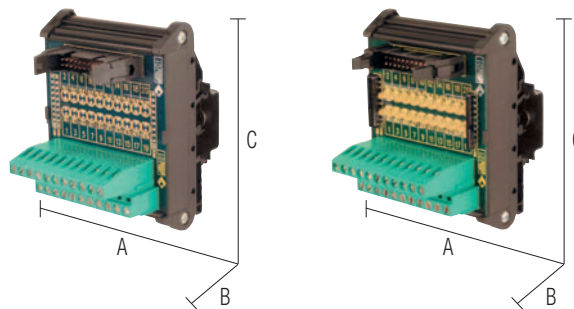
VERSIONS		DIMENSIONS		male		female	
		(A x B x C)		Item	Cat. No.	Item	Cat. No.
25 poles		57x80x93 (2.24x3.15x3.66 in)		CPD25M	XCPD25M	CPD25F	XCPD25F
37 poles		77x80x93 (3.03x3.15x3.66 in)		CPD37M	XCPD37M	CPD37F	XCPD37F
50 poles		92x80x93 (3.62x3.15x3.66 in)		CPD50M (1)	XCPD50M	CPD50F (1)	XCPD50F

GENERAL TECHNICAL DATA	
Rated voltage	0...50 Vac / 0...75 Vdc
Rated current	2 A max.
Operating temperature	-20...+60°C
Protection degree	IP00 IEC529; EN60529
Reference Standard	IEC 664-1; DIN VDE 0110.1
Pollution degree	2
Overvoltage category	II
Housing material	polyamide UL94V-0
Connection terminal blocks	2.5 mm² fixed screw type (AWG 14)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES	
Mounting rail type according to IEC60715/TH35	PR/3/AC - PR/3/AS
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Jumper bridge	black

Passive interfaces (I.D.C./Terminal blocks) IF series

- Available with LED to display the status



NOTES

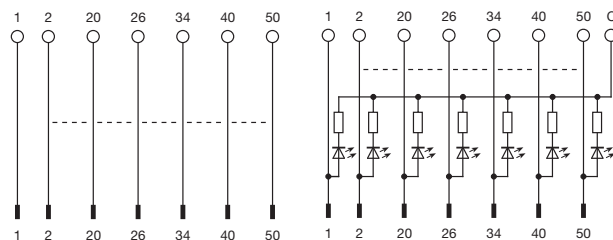
The modules allow the transferring to the terminals the deriving signals on Flat-cable through the employment of IDC ribbon cable connectors (with insulation displacement).

The numeration is "pin-to-pin".

(1) Version available upon request; for information call our sales department, local agent or representative

(2) The LEDs are predisposed for a nominal voltage of 24 Vdc and negative common

BLOCK DIAGRAM



VERSIONS	DIMENSIONS (A x B x C)
10 poles	42x66x93 (1.65x2.60x3.66 in)
14 poles	48x66x93 (1.89x2.60x3.66 in)
16 poles	58x66x93 (2.28x2.60x3.66 in)
20 poles	70x66x93 (2.76x2.60x3.66 in)
26 poles	86x66x93 (3.39x2.60x3.66 in)
34 poles	107x66x93 (4.21x2.60x3.66 in)
40 poles	122x66x93 (4.80x2.60x3.66 in)

Without LED		With LED	
Item	Cat. No.	Item	Cat. No.
IF10PMS (1)	XIF10PMS	IF10PML (1)	XIF10PML
IF14PMS (1)	XIF14PMS	IF14PML (1)	XIF14PML
IF16PMS (1)	XIF16PMS	IF16PML (1)	XIF16PML
IF20PMS (1)	XIF20PMS	IF20PML (1)	XIF20PML
IF26PMS (1)	XIF26PMS	IF26PML (1)	XIF26PML
IF34PMS (1)	XIF34PMS	IF34PML (1)	XIF34PML
IF40PMS (1)	XIF40PMS	IF40PML (1)	XIF40PML

GENERAL TECHNICAL DATA

Rated voltage	0...50 Vac / 0...75 Vdc	12...24 Vdc ±10% (2)
Rated current	750 mA max.	750 mA max.
Operating temperature	-20...+60°C	-20...+60°C
Protection degree	IP00 IEC529; EN60529	IP00 IEC529; EN60529
Reference Standard	IEC 664-1; DIN VDE 0110.1	IEC 664-1; DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	II	II
Housing material	polyamide UL94V-0	polyamide UL94V-0
Connection terminal blocks	2.5 mm ² fixed screw type (AWG 14)	2.5 mm ² fixed screw type (AWG 14)
Mounting information	vertical on rail adjacent without gap	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

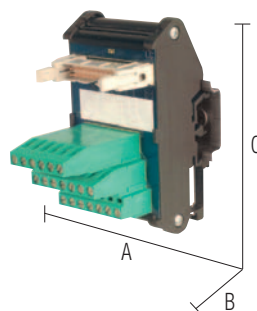
Mounting rail type according to IEC60715/TH35	
Mounting rail type according to IEC60715/G32	
Jumper bridge	black

PR/3/AC - PR/3/AS

PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

Passive interfaces (I.D.C./Terminal blocks) CPC series

- Compact dimensions



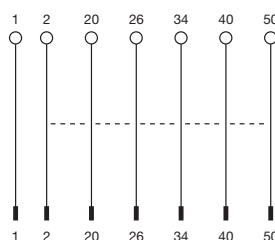
NOTES

The modules allow the transferring to the terminals of the deriving signals on Flat-cable through the employment of IDC ribbon cable connectors (with insulation displacement).

The numeration is "pin-to-pin".

(1) Version available upon request; for information call our sales department, local agent or representative.

BLOCK DIAGRAM



VERSIONS

DIMENSIONS

(A x B x C)

20 poles	47x80x93 (1.85x3.15x3.66 in)
26 poles	57x80x93 (2.24x3.15x3.66 in)
34 poles	70x80x93 (2.76x3.15x3.66 in)
40 poles	77x80x93 (3.03x3.15x3.66 in)
50 poles	92x80x93 (3.62x3.15x3.66 in)
60 poles	107x80x93 (4.21x3.15x3.66 in)
64 poles	117x80x93 (4.61x3.15x3.66 in)

without LED

Item	Cat. No.
CPC20M	XCPC20M
CPC26M	XCPC26M
CPC34M (1)	XCPC34M
CPC40M	XCPC40M
CPC50M (1)	XCPC50M
CPC60M (1)	XCPC60M
CPC64M (1)	XCPC64M

GENERAL TECHNICAL DATA

Rated voltage	0...50 Vac / 0...75 Vdc
Rated current	750 mA max.
Operating temperature	-20...+60°C
Protection degree	IP00 IEC529; EN60529
Reference Standard	IEC 664-1; DIN VDE 0110.1
Pollution degree	2
Overvoltage category	II
Housing material	polyamide UL94V-0
Connection terminal blocks	2.5 mm ² fixed screw type (AWG 14)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	
Mounting rail type according to IEC60715/G32	
Jumper bridge	black

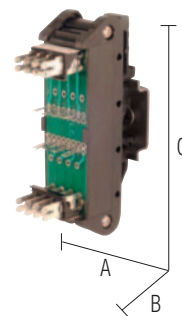
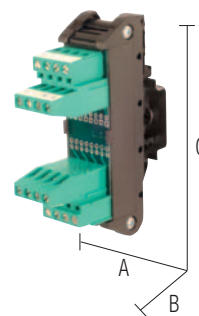
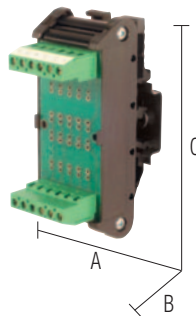
PR/3/AC - PR/3/AS

PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

—

Component-holders modules CCM series

- Compact dimensions
- Available with fast-on connection



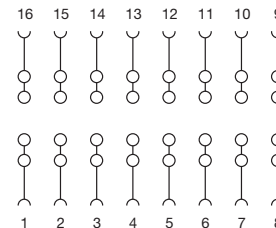
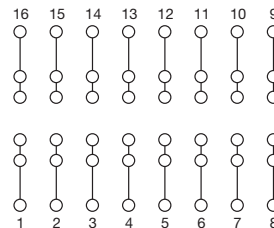
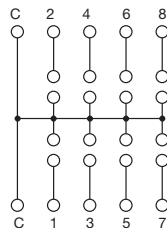
NOTES

The component-holders modules allow the montage of electronic components (diodes, resistors, capacitors etc.) according to customer needs.

They are available with connections with terminal blocks or Faston, and with holes of different diameters for the terminals of the components.

(1) Version available upon request; for info call our sales dept., local agent or representative

BLOCK DIAGRAM



VERSIONS	DIMENSIONS (A x B x C)	with common terminal		single with terminals		single with Faston	
		Item	Cat. No.	Item	Cat. No.	Item	Cat. No.
4 components (1)	25x66x93 (0.98x2.60x3.66 in)	—	—	—	—	CCM04SF	XCCM04SF
8 components (1)	25x66x93 (0.98x2.60x3.66 in)	—	—	CCM08SV	XCCM08SV	—	—
8 components (1)	47x66x93 (1.85x2.60x3.66 in)	—	—	—	—	CCM08SF	XCCM08SF
8 components (1)	25x55x93 (0.98x2.17x3.66 in)	CCM08CV	XCCM08CV	—	—	—	—
12 components (1)	70x66x93 (2.76x2.60x3.66 in)	—	—	—	—	CCM12SF	XCCM12SF
16 components (1)	47x66x93 (1.85x2.60x3.66 in)	CCM16CV	XCCM16CV	CCM16SV	XCCM16SV	—	—
24 components (1)	70x66x93 (2.76x2.60x3.66 in)	—	—	CCM24SV	XCCM24SV	—	—

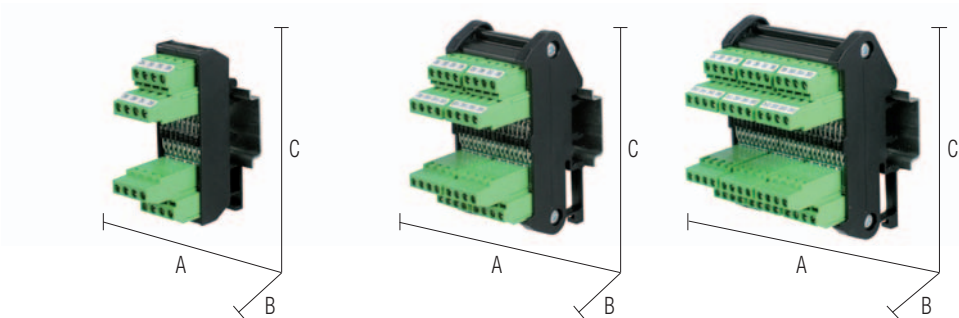
GENERAL TECHNICAL DATA			
Rated voltage	0...220 V ±10%	0...100 V ±10%	0...100 V ±10%
Rated current	5 A (channel) / 15 A (common)	2 A max. (on the common)	2 A max. (on the common)
Operating temperature	-20...+60°C	-20...+60°C	-20...+60°C
Protection degree	IP00 IEC529; EN60529	IP00 IEC529; EN60529	IP00 IEC529; EN60529
Reference Standard	IEC 664-1; DIN VDE 0110.1	IEC 664-1; DIN VDE 0110.1	IEC 664-1; DIN VDE 0110.1
Pollution degree	2	2	2
Overvoltage category	II	II	II
Housing material	polyamide UL94V-0	polyamide UL94V-0	polyamide UL94V-0
Connection terminal blocks	2.5 mm² fixed screw type (AWG 14)	2.5 mm² fixed screw type (AWG 14)	2.5 mm² fixed screw type (AWG 14)
Mounting information	vertical on rail adjacent without gap	vertical on rail adjacent without gap	vertical on rail adjacent without gap

MOUNTING ACCESSORIES		PR/3/AC - PR/3/AS	
Mounting rail type according to IEC60715/TH35	—	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL	—
Mounting rail type according to IEC60715/G32	—	—	—
Jumper bridge	black	—	—

The PMC series has changed its Cat. No. into CCM series, these are the cross reference list.

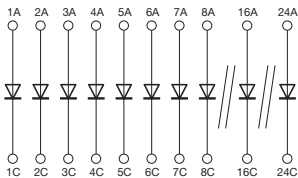
Old item	New item
PMC0001	CCM08CV
PMC0002	CCM08SV
PMC0003	CCM16SV
PMC0004	CCM24SV
PMC0005	CCM04SF
PMC0006	CCM08SF
PMC0007	CCM12SF

Diode-holder modules
with single diodes
CDM series



NOTES

BLOCK DIAGRAM



VERSIONS

DIMENSIONS

(A x B x C)

8 diodes	25x60x76 (0.98x2.36x3.66 in)
16 diodes	50x65x93 (1.97x2.56x3.66 in)
24 diodes	71x65x93 (2.80x2.56x3.66 in)

single diode

Item	Cat. No.
CDM08CS	XCDM08CS
CDM16CS	XCDM16CS
CDM24CS	XCDM24CS

GENERAL TECHNICAL DATA

Rated voltage	0...100 V ±10%
Rated current	1 A max.
Diode type	1N4007
Repetitive peak reverse voltage	1000 V
Operating temperature	-20...+60°C
Protection degree	IP00 IEC529; EN60529
Reference Standard	IEC 664-1; DIN VDE 0110.1
Pollution degree	2
Overvoltage category	II
Housing material	polyamide UL94V-0
Connection terminal blocks	2.5 mm² fixed screw type (AWG 14)
Mounting information	vertical on rail adjacent without gap

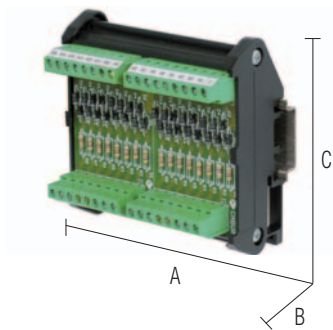
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	
Mounting rail type according to IEC60715/G32	
Jumper bridge	black

PR/3/AC - PR/3/AS

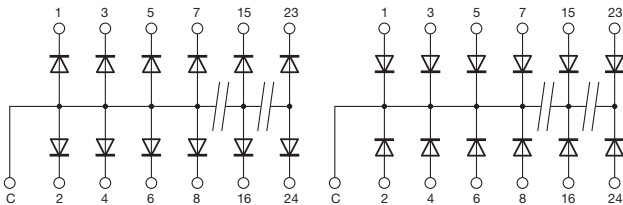
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

Diode-holder modules
with common terminal
CDM series



NOTES

BLOCK DIAGRAM



VERSIONS	DIMENSIONS
	(A x B x C)
8 diodes	45x65x93 (1.77x2.56x3.66 in)
16 diodes	92x65x93 (3.62x2.56x3.66 in)
24 diodes	137x65x93 (5.39x2.56x3.66 in)

common anode		common cathode	
Item	Cat. No.	Item	Cat. No.
CDM08AC	XCDM08AC	CDM08CC	XCDM08CC
CDM16AC	XCDM16AC	CDM16CC	XCDM16CC
CDM24AC	XCDM24AC	CDM24CC	XCDM24CC

GENERAL TECHNICAL DATA

Rated voltage
Rated current
Operating temperature
Diode type
Repetitive peak reverse voltage
Protection degree
Reference Standard
Pollution degree
Overvoltage category
Housing material
Connection terminal blocks
Mounting information

0...230 V \pm 10%
1 A (channel) / 15 A (common).
1N4007
1000 V
-20...+60°C
IP00 IEC529; EN60529
IEC 664-1; DIN VDE 0110.1
2
II
polyamide UL94V-0
2.5 mm ² fixed screw type (AWG 14)
vertical on rail adjacent without gap

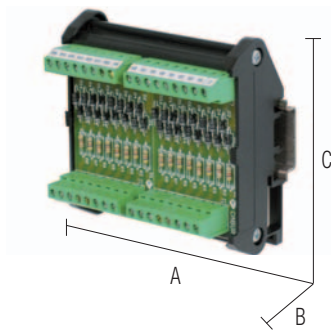
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	
Mounting rail type according to IEC60715/G32	
Jumper bridge	black

PR/3/AC - PR/3/AS
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
—

LED testing modules
CLT series

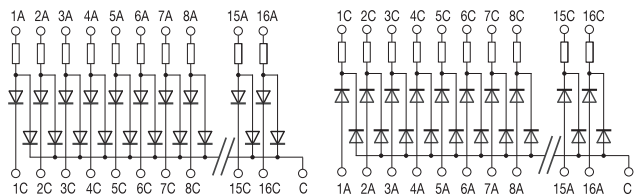
- Compact dimensions
- Integrated limitation resistance
- Suitable only for LED without resistance limiter
- Not suitable for LED lamp with internal limiter circuit



NOTES

- (1) Led test can be performed through a negative signal on the common output
- (2) Led test can be performed through a positive signal on the common input
- (3) Version available upon request; for information call our sales department, local agent or representative

BLOCK DIAGRAM



VERSIONS	DIMENSIONS
	(A x B x C)
8 channels	45x65x93 (1.77x2.56x3.66 in)
16 channels	92x65x93 (3.62x2.56x3.66 in)

common negative (1)		common positive (2)	
Item	Cat. No.	Item	Cat. No.
CLT08AC (3)	XCLT08AC	CLT08CC (3)	XCLT08CC
CLT16AC (3)	XCLT16AC	CLT16CC (3)	XCLT16CC

GENERAL TECHNICAL DATA

Rated voltage
Rated current (1 channel)
Diode type
Limitation resistance
Repetitive peak reverse voltage
Operating temperature
Housing material
Protection degree
Connection terminal blocks
Mounting information

24 Vdc max. 30 Vdc
5 mA @ 24 Vdc
1N4007
4,7 kΩ 1/4 W ±5%
1000 V
-20...+45°C
polyamide UL94V-0
IP 00 IEC529, EN60529
2.5 mm² fixed screw type
vertical on rail adjacent without gap

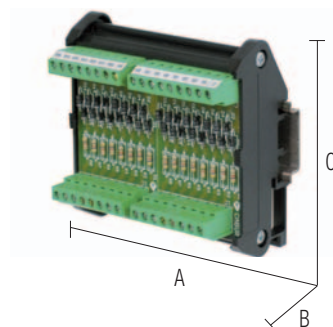
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	
Mounting rail type according to IEC60715/G32	
Jumper bridge	black

PR/3/AC – PR/3/AC/ZB – PR/3/AS – PR/3/AS/ZB
PR/DIN/AC – PR/DIN/AS – PR/DIN/AL
—

Lamp testing modules CLP series

- Compact dimensions
- Suitable also for LED lamp with resistance limiter

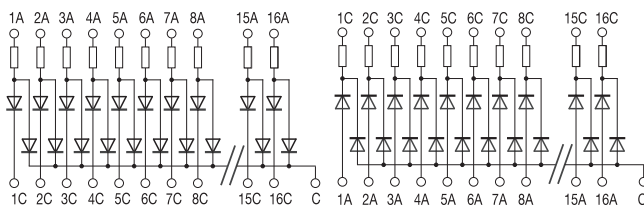


NOTES

With AC input, the diodes rectify the current and the power will be halved.

- (1) Led test can be performed through a negative signal on the common output
 (2) Led test can be performed through a positive signal on the common input

BLOCK DIAGRAM



VERSIONS

DIMENSIONS

	(A x B x C)
8 channels	45x65x93 (1.77x2.56x3.66 in)
16 channels	92x65x93 (3.62x2.56x3.66 in)

common negative (1)

common positive (2)

Item	Cat. No.	Item	Cat. No.
		CLP08CC	XCLP08CC
		CLP16CC	XCLP16CC

GENERAL TECHNICAL DATA

Rated voltage	230 Vac/dc
Rated current (1 channel)	100 mA @ 120 Vac/dc; 50 mA @ 230 Vac/dc
Diode type	1N4007
Limitation resistance	0
Repetitive peak reverse voltage	700 V
Operating temperature	-20...+45°C
Housing material	polyamide UL94V-0
Protection degree	IP 00 IEC529, EN60529
Connection terminal blocks	2.5 mm ² fixed screw type
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

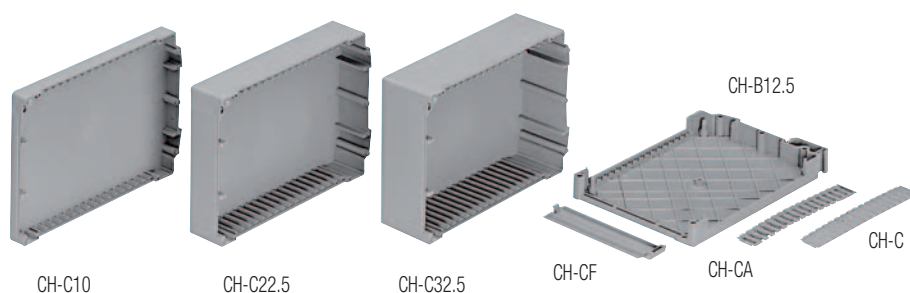
Mounting rail type according to IEC60715/TH35	
Mounting rail type according to IEC60715/G32	
Jumper bridge	black

PR/3/AC – PR/3/AC/ZB – PR/3/AS – PR/3/AS/ZB

PR/DIN/AC – PR/DIN/AS – PR/DIN/AL

Housing for custom applications CH series

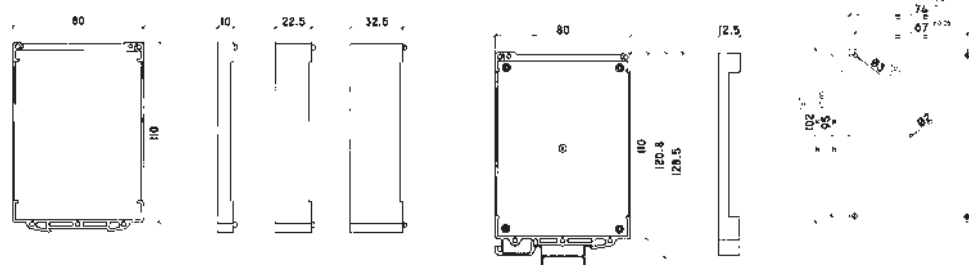
• Available on 3 measures



NOTES

(1) Maximum height of the components measured between the circuit and the cover

BLOCK DIAGRAM



VERSIONS

Right side with hook for DIN rail, 12.5 mm
Left side housing, 10 mm
Left side housing, 22.5 mm
Left side housing, 32.5 mm
Openable hinged cover
Vented cover
Enclosed cover
fixed hinged cover

GENERAL TECHNICAL DATA

Material	Poliamide UL94V-0
Colour	RAL 5014
Temperature	max 80 °C
Dissipated power	max 7 W
Protection degree	fino a IP30
Number of poles for every side	16 +16 (5.08)
Number of poles on the top	10 (5.08)
Mounting information	

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Jumper bridge
red
white
blue

Item	Cat. No.
CH-B12.5	XBB125
CH-C10	XBC010
CH-C22.5	XBC225
CH-C32.5	XBC325
CH-S	XBS000
CH-CA	XBCA00
CH-C	XBC000
CH-CF	XBCF00

APPLICATIONS

CH electronic housings

With the CH (Cabur Housing) series containers, Cabur proposes a modular system which allows you to obtain boxes with 3 width sizes 22.5 mm - 35 mm - 45 mm - composed by 8 easy-to-assemble parts.

The circuit can have a maximum size of 102 x 74 mm and can be inserted on 4 small columns formed in the base which holds it in position.

Additional anchorage of the circuit is possible with a 2.2 x 4.5 mm self-threading screw to be screwed into the central column, also allowing small circuit to be mounted.

The conductors are connected with 2.5 mm pluggable terminals, which are readily available.

16 connection poles which can be used with pitch of 5.08 on each side and 10 on the front side.

The CH-S front closure, with panel opening, provides access to the internal circuit for work on the potentiometers, jumpers and micro-switches.

The side covers are available with ventilating holes or closed, and are pre-cut with 5.08 mm pitch, to make possible an easy cut into necessary length with a pair of scissors, for an easy fit to final dimensions.

The following are required for a composition of a housing::

- 1 CH-B12.5 base 12.5 mm wide
- 1 cover (3 sizes available)
 - CH-C10 10 mm wide
 - CH-C22.5 22.5 mm wide
 - CH-C32.5 32.5 mm wide

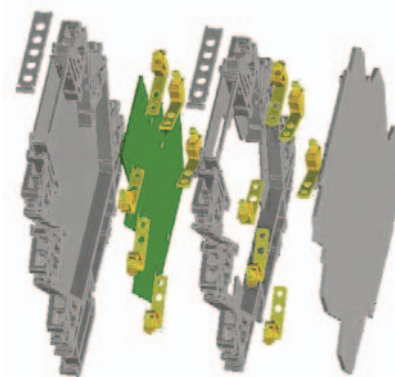
(by adding together the width of the base 12.5 mm with the width of the cover chosen from the 4 available, the total width of the housing is obtained)

- 1 front closure in two versions:
 - CH-S with panel opening
 - CH-CF fixed
- 2 side closures in two versions:
 - CH-C without vents
 - CH-CA with vents

Interior height max (1)	CH-B12.5	CH-C10	CH-C22.5	CH-C32.5	CH-S	CH-CA CH-C
19.1 mm	1	1			1	2
31.6 mm	1		1		1	2
41.6 mm	1			1	1	2

Housing for custom applications CK series

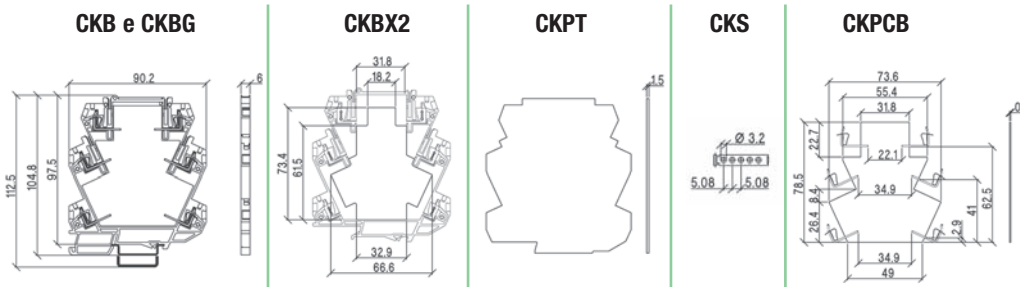
- 6 mm wide, expandable modules
- 6 spring-clamp 2,5 mm² / AWG 26 ÷ 14 terminal blocks
- Jumper insertion possibility on each of the 4 levels
- Hinged front cover access to the printed circuit board



NOTES

- (1) 6 spring-clamp terminal blocks included with solder contact
- (2) In order to assure the IP20 protection degree, the last module must be protected and insulated using the CK/PT end section

BLOCK DIAGRAM



VERSIONS

- Standard base
- Base element with ground contact
- Expansion module
- End section
- Front hinge cover
- Printed circuit board

GENERAL TECHNICAL DATA

- Rated voltage of each terminal block
- Rated current of each terminal block
- Operating temperature
- Protection degree (2)
- Connection terminals
- Housing material
- Approx. weight
- Parallel bridge
- Marking tags

Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32
- Jumper bridge

Item	Cat. No.
CKB (1)	XCKB
CKBG (1)	XCKBG
CKBX2 (1)	XCKX2
CK/PT	XCKPT
CK/S	XCKS
CK/PCB	8901028

230 Vac/dc ± 10%
≤ 24 A
-40...+ 100°C
IP20 IEC529 EN60529
2.5 mm ² , AWG26-14 spring type
polyamide UL 94V0
20 g (CKB, CKBG), 15 g (CKX2, CK/PT)
20 g (CK/PT), 1 g (CK/S), 5 g (CK/PCB)
PTC/CK/42 Cat. No. PTCCK42 (42 poli)
CNU/8/030 Cat. No. NU0851

on rail

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—
—
—
—

APPLICATIONS

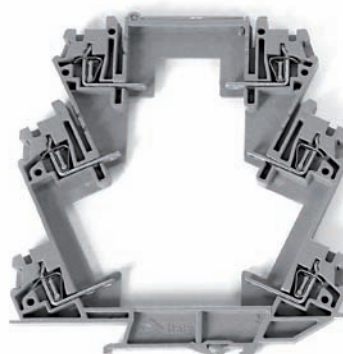
With the CK series modular housings, Cabur offers a modular system that provides housings with increasing dimensions in width for simple components as diodes, resistors or more complex circuits with or without the support of a printed circuit board. For the composition of an housing the following items are necessary:

- a base support element, available in two versions: CKB and CKBG; the latter is provided with an electric metal contact on the DIN rail that allows to connect the internal circuit to the ground. Ground contact towards the DIN rail can carry an impulsive current value of 5 KA (8/20 peak). Both models have an external width of 6 mm and internal width of 5 mm; they are also equipped with 6 springclamp terminal blocks and 4 slots for the insertion of a jumper;
- one or more CKBX2 type expansion modules similar to the base support element, having therefore an external width of 6 mm and a central slot that allows the housing of the bulky components with a height exceeding the overall height of the base support element; the expansion module is also equipped with 6 spring-clamp terminal blocks and 4 slots for the insertion of a jumper;
- the CK/S front cover, granting access to the interior of the product, is also available. Once in open position it has such a dimension in order to guarantee a IPXXB degree of protection, even when it is not employed;
- in order to assure the IPXXB protection degree, the last module must be protected and insulated using the CK/PT end section;
- the CK/PCB printed circuit board is also available; it is useful in low volume custom applications where a special pcb is not designed and also where one requires a prototype without tooling a special printed circuit board.

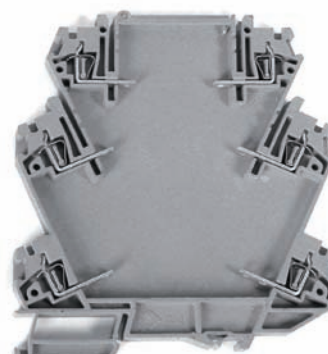
Ground contact on CKBG



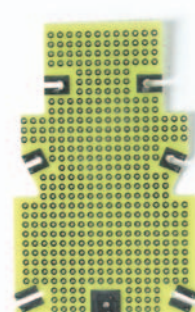
CKBX2



CKB



CK/PCB



Plug-in jumper for CK series

Notes:

- (1) Example of a pre-cut 9 position jumper
- (2) CK/PT end section must be mounted on last module to assure IP20 protection degree
- (3) 32 A is the maximum current; however this value is limited by the rated current of the spring-clamp terminal blocks down to 24 A; for instance, having a jumper of 11 poles (1 for common and 10 for distribution) a current of 2.4 A can be distributed on every poles



VERSIONS	Item	Cat. No.
	PTC/CK/42	PTCCK42
GENERAL TECHNICAL DATA		
Protection degree (2)	IP20 IEC529; EN60529	
Number of poles	42	
Pitch	6 mm (0.24 in)	
Rated current carrying capacity of jumper (3)	32 A	
Insulation color	—	
Material	tin copper alloy	
Approx. weight	27 g (0.95 oz) (42 poles)	

Plug-in jumper for CW..7 series



VERSIONS	Item	Cat. No.	Item	Cat. No.	Item	Cat. No.
	CWBK 7-0802	X766802	CWBK 7-0803	X766803	CWBK 7-0804	X766804
GENERAL TECHNICAL DATA						
Protection degree	IP20 IEC529; EN60529		IP20 IEC529; EN60529		IP20 IEC529; EN60529	
Number of poles	16		16		16	
Pitch	6.2 mm (2.44 in)		6.2 mm (2.44 in)		6.2 mm (2.44 in)	
Rated current carrying capacity of jumper	16 A		16 A		16 A	
Insulation color	red		white		blue	
Material	—		—		—	
Approx. weight	4 g (0.14 oz)		4 g (0.14 oz)		4 g (0.14 oz)	

Plug-in jumper for CWRE series



VERSIONS	Item	Cat. No.
	CWBK 7-0813	X766813
GENERAL TECHNICAL DATA		
Protection degree	IP20 IEC529; EN60529	
Number of poles	20	
Pitch	6.2 mm (2.44 in)	
Rated current carrying capacity of jumper	16 A	
Insulation color	blue	
Material	—	
Approx. weight	6 g (0.21 oz)	

Screw type jumper for CM series



VERSIONS	Item	Cat. No.	Item	Cat. No.
	CMB16B	XCMB16B	CMB27B	XCMB27B
GENERAL TECHNICAL DATA				
Protection degree	IP20 IEC529; EN60529		IP20 IEC529; EN60529	
Number of poles	8		8	
Pitch	16 mm (0.63 in)		27 mm (1.06 in)	
Rated current carrying capacity of jumper	16 A		16 A	
Insulation color	black		black	
Material	—		—	
Approx. weight	3 g (0.10 oz)		3 g (0.10 oz)	

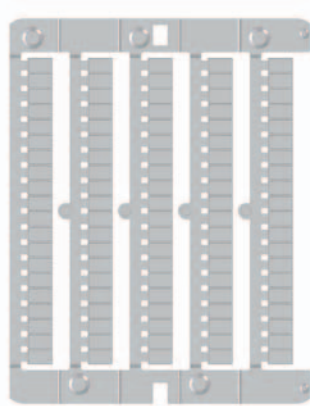
Marking systems

Note:

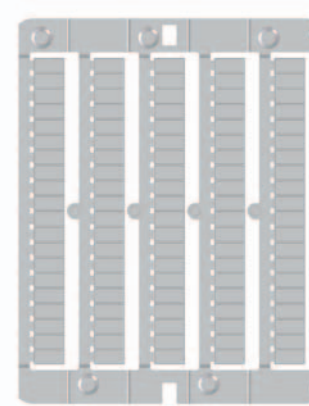
White polycarbonate marking tags to number the terminal blocks of the CK Series modules and CWRE Series converters. To be directly inserted in dedicated holders before or after terminal board preparation. They come in packages of 15 modules of 100 marking tags each, for a total of 1,500 marking tags. The table shows only blank marking tags, available in packages of 1,500 pieces each, which can be written on manually using special pens or printed using an industrial marking system. In particular, **the marking tags shown here can be printed using the innovative CaburJet system and with the CaburPlot plotter.**

In addition to blank marking tags, CNU/8/51 preprinted marking tags are also available with alpha-numeric characters and with the most common electrical symbols.

For more information, please consult the Industrial Marking Systems catalogue.



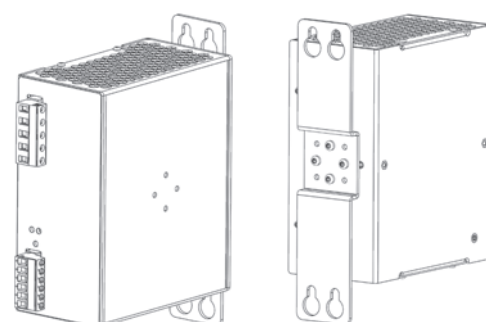
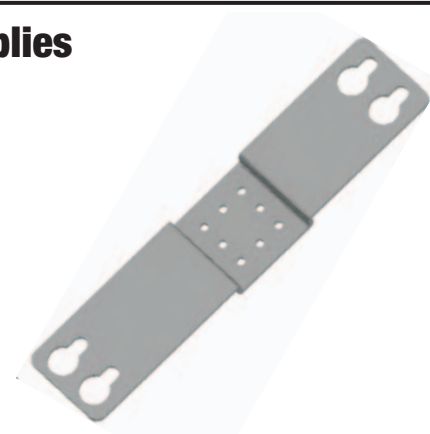
Type **CNU/8/51** code NU0851



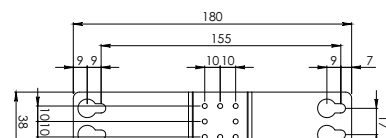
Type **NUPUTUK50** code NUPUTUK50

Description	Sigle	Code
Marking tags for marking CK Series modules	CNU/8/51	NU0851
Marking tags for marking CWRE Series converters	NUPUTUK50	NUPUTUK50

Bracket for power supplies



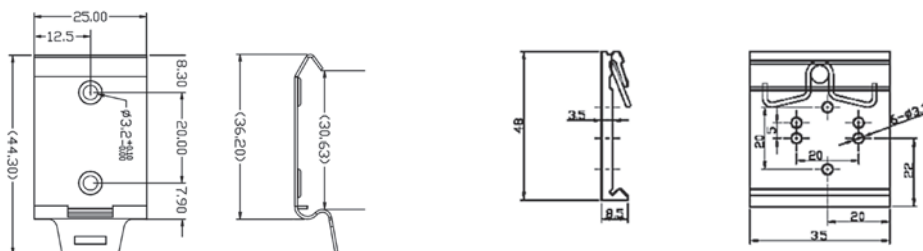
VERSIONS		Sigle	Code
		CDIWMP	XCDIWMP
GENERAL TECHNICAL DATA			
Type of material	P13-FE00 aluminium		
Treatment	"SENDZMIR" system		
Mounting information	screws or rivets		

DIMENSION	
	

DIN rail clamp



DIMENSION



VERSIONS	Item	Cat. No.	Item	Cat. No.
	CDIN-2	XCDIN2	CDIN-4	XCDIN4

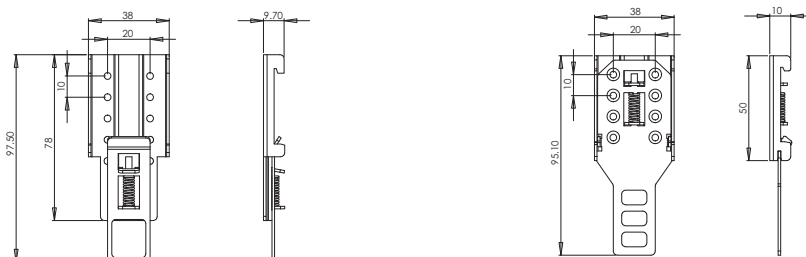
GENERAL TECHNICAL DATA

Type of material
Treatment
Mounting information
Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

P13-FE00	aluminium
black passivated	—
screws or rivets	screws or rivets
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB



DIMENSION



VERSIONS	Item	Cat. No.	Item	Cat. No.
	CDIN-5	XCDIN5	CDINM45	XCDINM45

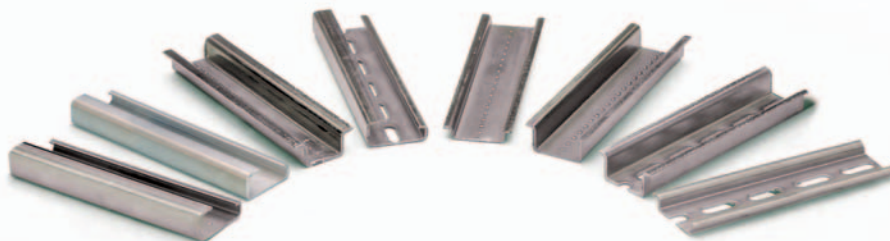
GENERAL TECHNICAL DATA

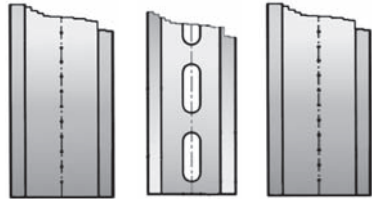
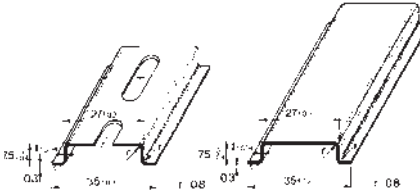
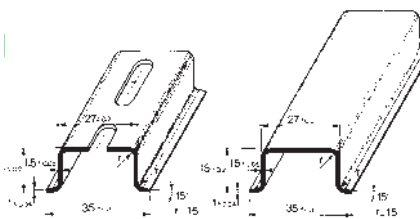
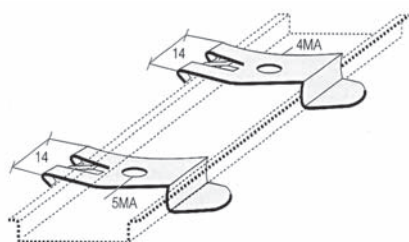
Type of material
Treatment
Mounting information
Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

P13-FE00	P13-FE00
white zinc-plated	zinc-plated
screws or rivets	screws
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Mounting rails

- according to IEC 60715/TH35 - 7,5
- according to IEC 60715/TH35 - 15
- supports for TH/35 type rail

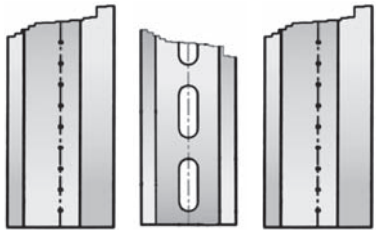
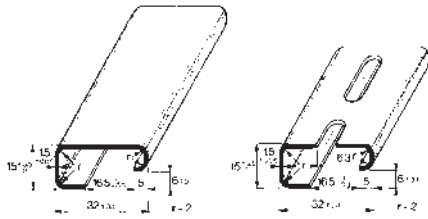
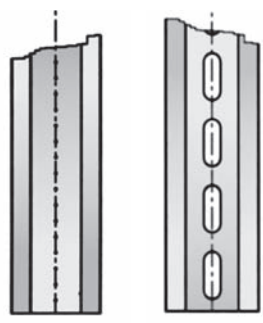


DESCRIPTION	TYPE / CAT. NO.	BLOCK DIAGRAMS
IEC 60715/TH35 - 7.5 rail of passivated steel	PR/3/AC Cat. No. PR003	
IEC 60715/TH35 - 7.5 rail of white zinc-plated steel "SENDZMIR" system	PR/3/AC/ZB Cat. No. PR903	
IEC 60715/TH35 - 7.5 rail of passivated steel with slots	PR/3/AS Cat. No. PR005	
IEC 60715/TH35 - 7.5 rail of white zinc-plated steel "SENDZMIR" system with slots	PR/3/AS/ZB Cat. No. PR905	
IEC 60715/TH35 - 15 rail of passivated steel	PR/3/PP Cat. No. PR007	
IEC 60715/TH35 - 15 rail of white zinc-plated steel "SENDZMIR" system	PR/3/PP/ZB Cat. No. PR907	
IEC 60715/TH35 - 15 rail of passivated steel with slots	PR/3/PA Cat. No. PR006	
IEC 60715/TH35 - 15 rail of white zinc-plated steel "SENDZMIR" system with slots	PR/3/PA/ZB Cat. No. PR906	
Support for IEC 60715/TH35 rail of nickel plated steel and with rapid mounting system 4 MA	ACI121017 Cat. No. Z121017	
Support for IEC 60715/TH35 rail of nickel plated steel and with rapid mounting system 5 MA	ACI121019 Cat. No. Z121019	

Mounting rails

- according to IEC 60715 "G32" type rail
- according to IEC 60715/TH15 - 5.5



DESCRIPTION	TYPE / CAT. NO.	IMAGES
IEC 60715 "G32" type rail of passivated steel	PR/DIN/AC Cat. No. PR001	
IEC 60715 "G32" type rail of white zinc-plated steel "SENDZMIR" system	PR/DIN/AC/ZB Cat. No. PR901	
IEC 60715 "G32" type rail of passivated steel with slots	PR/DIN/AS Cat. No. PR004	
IEC 60715 "G32" type rail of white zinc-plated steel "SENDZMIR" system with slots	PR/DIN/AS/ZB Cat. No. PR904	
IEC 60715 "G32" type rail of aluminium	PR/DIN/AL Cat. No. PR002	
IEC 60715/TH15 – 5.5 rail of passivated steel	PR/2/AC Cat. No. PR009	
IEC 60715/TH15 – 5.5 rail of white zinc-plated steel "SENDZMIR" system	PR/2/AC/ZB Cat. No. PR909	
IEC 60715/TH15 – 5.5 rail of passivated steel with slots	PR/2/AS Cat. No. PR010	
IEC 60715/TH15 – 5.5 rail of white zinc-plated steel "SENDZMIR" system with slots	PR/2/AS/ZB Cat. No. PR910	

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X756510	83	XCLT16AC	150	XCSG960G	43	XR042E24P	117
X756516	82	XCLT16CC	150	XCSL120C	32	XR042EAD	118
X756517	82	XCM1A012	106	XCSL240C	33	XR042S24	137
X756524	97	XCM1A024	106	XCSL481C	34	XR042T24	138
X756526	87	XCM1A120	106	XCSL85C	31	XR081E1A	120
X756527	87	XCM1A230	106	XCSR50U	59	XR081E24	112
X756530	84	XCM1C012	103	XCSU070S	53	XR081E24P	113
X756531	84	XCM1C024	103	XCSU240S	54	XR081E2A	121
X756532	84	XCM1C048	103	XCSU500S	55	XR081EAD	114
X756533	85	XCM1C110	103	XCSUPS1	52	XR081S24F	139
X756534	85	XCM1S024	131	XCSUPS2	52	XR081U24F	115
X756535	85	XCM1S024E	131	XCSW121B	36	XR082E24	116
X756536	86	XCM1T024	132	XCSW121C	36	XR082E24P	117
X756537	86	XCM1T024E	132	XCSW121DP	36	XR082EAD	118
X756538	86	XCM2A012	106	XCSW241B	37	XR082S24	137
X756539	83	XCM2A024	107	XCSW241C	37	XR082T24	138
X756540	94	XCM2A120	107	XCSW241DP	37	XR161E1A	120
X756541	94	XCM2A230	107	XCSW241G	37	XR161E24	112
X756542	94	XCM2C012	104	XCSW481C	38	XR161E24P	113
X756816	91	XCM2C024	104	XCSW481D	38	XR161E2A	121
X756817	91	XCM2C048	104	XCSW481G	38	XR161EAD	114
X756844	92	XCM2C110	104	XF03DKBG5B	74	XR161S24F	139
X756847	92	XCM4C012	105	XF03DPCG5C	75	XR161U24F	115
X756894	88	XCM4C024	105	XF06DKBG5B	74	XR162E24	116
X766082	136	XCMB16B	155	XF06DPCG5C	75	XR162E24P	117
X766083	135	XCMB27B	155	XF07TDVST2	68	XR162EAD	118
X766184	98	XCOP082	140	XF100TDVST2	68	XR162S24	137
X766802	154	XCPC20M	146	XF100TYT2	72	XR162T24	138
X766803	154	XCPC26M	146	XF10TYG9	73	XRE1024D	101
X766804	154	XCPC34M	146	XF12DKBG5B	74	XRE1824D	101
X766813	154	XCPC40M	146	XF12DPCG5C	75	XRE2024D	102
X766842	110	XCPC50M	146	XF150TDS84C	69	XRF1012D	102
X766845	110	XCPC60M	146	XF16DKG5B	74	XRF1024D	101
X766846	110	XCPC64M	146	XF16DPCG5C	75	XRF1824D	101
X766847	110	XCPD25F	144	XF16TDVST2	68	XRFA024D	101
X766848	110	XCPD25M	144	XF16TYT2	72	XRFE16124	128
XAR1	50	XCPD37F	144	XF180TDS84C	69	XRFE16224	128
XAR6	50	XCPD37M	144	XF200TDDS84C	70	XRFE8124	126
XBB125	152	XCPD50F	144	XF20DKG5B	74	XRFE8224	127
XBC000	152	XCPD50M	144	XF20DPCG5C	75	XRMP081CM	120
XBC010	152	XCR41	122	XF20TYS9	73	XW000928	95
XBC225	152	XCR42SC	123	XF25TYT2	72	XW000929	95
XBC325	152	XCR81	122	XF300TDS84C	71	XW000930	95
XBCA00	152	XCR83	126	XF30DKCS5B	74	XW000931	96
XBCF00	152	XCRE41	122	XF30DPCG5C	75	XW000932	96
XBS000	152	XCRE42SC	123	XF30TDVST2	68	Z121017	157
XCAPI03	81	XCRE81	122	XF36TYT2	72	Z121019	157
XCIS2	93	XCRE83	126	XF400TDS84C	71		
XCCM04SF	147	XCSA120BC	46	XF42TDVST2	68		
XCCM08CV	147	XCSA120BD	46	XF50TYT2	72		
XCCM08SF	147	XCSA120CB	46	XF55TDVST2	68		
XCCM08SV	147	XCSA120CC	46	XF75TDVST2	68		
XCCM12SF	147	XCSA120DB	47	XIF10PML	145		
XCCM16CV	147	XCSA120DC	47	XIF10PMS	145		
XCCM16SV	147	XCSA240FC	48	XIF14PML	145		
XCCM24SV	147	XCSBC	51	XIF14PMS	145		
XCDIN2	156	XCSBD	58	XIF16PML	145		
XCDIN4	156	XCSBP30Y	56	XIF16PMS	145		
XCDIN5	156	XCSC120B	57	XIF16S7	125		
XCDINM45	156	XCSC120C	57	XIF20PML	145		
XCDIWWP2	155	XCSD15B	17	XIF20PMS	145		
XCDM08AC	149	XCSD15C	17	XIF26PML	145		
XCDM08CC	149	XCSD30C	18	XIF26PMS	145		
XCDM08CS	148	XCSD30E	18	XIF34PML	145		
XCDM16AC	149	XCSD30F	18	XIF34PMS	145		
XCDM16CC	149	XCSD50B	19	XIF40PML	145		
XCDM16CS	148	XCSD70C	20	XIF40PMS	145		
XCDM24AC	149	XCSF120B	24	XIF416LS7	125		