cabur®
CONNECTING ENERGY
SINCE 1952

Automation and control solutions

2024 EDITION

OVER 70 YEARS

CABUR POWER HOUSE

Cabur 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 supplies for DIN-rails 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 3-phase dissipates only 36W compared to 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 indispensible factor in minimising 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 3-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 commutate 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 3-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 supplies 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 breakaway starting 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 electrical 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 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.
Since 2007, all Cabur products have been manufactured in conformity with the Rohs Wee directives.

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.

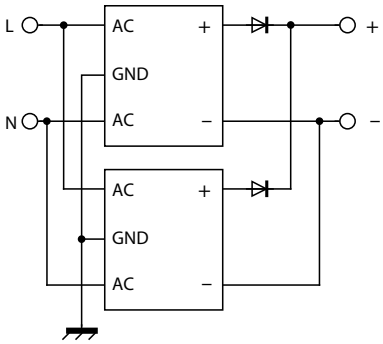


Figure 1

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 ± 12V 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.

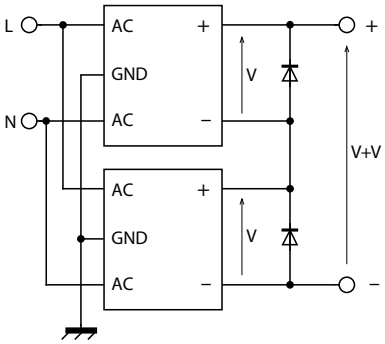


Figure 2

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/2-phase, 564... 775Vdc for 3-phase (please see technical data)
– respect input polarity as indicated in the instructions.

Note for power supplies with secondary input from a transformer

ISOLATION: this series of power supply units is not insulated.
TYPE OF USE: they are suitable for use in PELV (Protective Extra Low Voltage, one pole grounded) and SELV (Safety Extra Low Voltage, no pole grounded).
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 ground one pole of the 24 Vdc of the power supply unit. In the case of use in SELV circuits, do not ground the input grounding terminal.
Grounding one pole of the secondary of the transformer and the 24Vdc of the power supply would damage the power supply.

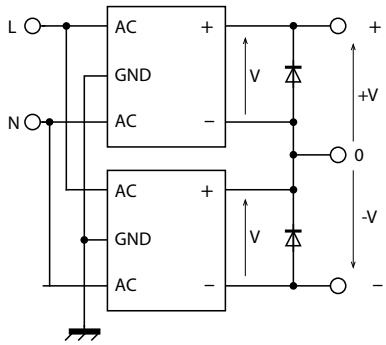


Figure 3

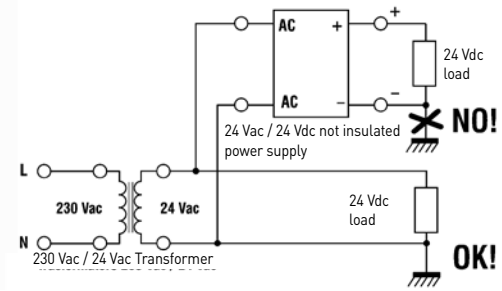


Figure 4

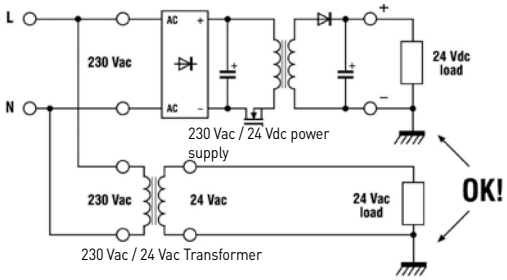


Figure 5

POWER SUPPLIES - QUICK SELECTION TABLE

OUTOUT RATED VOLTAGE [VDC]	OUTPUT ADJUSTABLE RANGE [VDC]	CONTINUOUS CURRENT [A]	OUTPUT POWER [W]	INPUT RATED VOLTAGE [VAC]	PHASE NO.	INPUT VOLTAGE RANGE [VAC]	INPUT VOLTAGE RANGE [VDC]	ALARM CONTACT	REDUNDANT VERSION	TYPE	CODE	PAGE
1.2...24	—	0.3...1.5	30	12-24	1	10...26	-	—	—	CL1R	XCL1R	42
1.2...24	—	0.8...5	120	12-24	1	10...26	-	—	—	CL5R	XCL5R	42
12...15	12...15	7	85	—	—	—	18...36	—	—	CSA120CB	XCSA120CB	39
12	—	1.2	15	120–230	1	85...264	100...370	—	—	CSD1-015W/012V/AA	XCSD1015W012VAA	7
12	—	4....2.0	30	120–230	1	85...264	100...370	—	—	CSD1-030W/012V/AA	XCSD1030W012VAA	8
±5...15	±5...15	2.5...1.7	60	120-230	1	85... 264	90... 370	—	—	CSD1-060W/012V/AD	XCSD1060W012VAD	9
12	12...15	5...4	72	120–230	1	85...264	100...370	—	—	CSD1-072W/012V/AA	XCSD1072W012VAA	10
12	12...15	6	85	120–230	1	90...264	100...345	•	—	CSF85B	XCSF85B	13
12	12...15	8 - 7	96	230-400-500	1-2	187...550	270...725	•	—	CSW121B	XCSW121B	28
12	12...15	16 - 17	192	230-400-500	1-2-3	185...550	270...770	•	—	CSW241B	XCSW241B	29
12-24	11.5 ... 29	100	2400	400–500	3	340...550	—	•	•	CSG2401C	XCSG2401C	37
24	—	0.6	15	120–230	1	85...264	100...370	—	—	CSD1-015W/024V/AA	XCSD1015W024VAA	7
24	—	1.25	30	120–230	1	85...264	100...370	—	—	CSD1-030W/024V/AA	XCSD1030W024VAA	8
24	23.5... 27.5	3	72	120–230	1	85...264	100...370	—	—	CSD1-072W/024V/AA	XCSD1072W024VAA	10
24	16 ... 28	3	72	120–230	1	85...264	100...370	•	—	CSL1-072W/024V/AA	XCSL1072W024VAA	20
24	23...27.5	3.5	85	120–230	1	90...264	100...345	•	—	CSF85C	XCSF85C	12
24	23...27.5	3.5	85	120–230	1	90...264	100...345	•	•	CSF85CP	XCSF85CP	12
24	23...27.5	5	120	120–230	1	90...264	100...345	•	—	CSF120C	XCSF120C	14
24	23...27.5	5	120	120–230	1	90...264	100...345	•	•	CSF120CP	XCSF120CP	14
24	16 ... 28	5	120	120–230	1	85...264	100...370	•	—	CSL1-120W/024V/AA	XCSL1120W024VAA	20
24	24...27.5	5	120	230-400-501	1-2	187...550	270...725	•	—	CSW121C	XCSW121C	28
24	22.5...27.5	5	120	—	—	—	10.5...18	—	—	CSA120BC	XCSA120BC	39
24	22.5...27.5	5	120	—	—	—	18...36	—	—	CSA120CC	XCSA120CC	40
24	22.5...27.5	5	120	—	—	—	36...72	—	—	CSA120DC	XCSA120DC	40
24	23...27.5	10	240	120–230	1	90...132 / 185...264	300...345	•	—	CSF240C	XCSF240C	16
24	23...27.5	10	240	120–230	1	90...132 / 185...264	300...345	•	•	CSF240CP	XCSF240CP	16
24	23...29	10	240	120–230	1	85...264	90...370	•	—	CSL1-240W/024V/AA	XCSL1240W024VAA	21
24	24...27.5	10	240	230-400-500	1-2-3	185...550	270...770	•	—	CSW241C	XCSW241C	29
24	23...27	10	240	—	—	—	100...130	—	•	CSA240FC	XCSA240FC	41
24	24 ... 28	20	480	120–230	1	90...132 / 185...264	259...370	•	•	CSF500C	XCSF500C	18
24	20 ... 28	20	480	120–230	1	85...264	100...370	•	—	CSL1-480W/024V/AA	XCSL1480W024VAA	22
24	20 ... 28	20	480	120–230	1	85...264	100...370	•	—	CSL1-480W/024V/GA	XCSL1480W024VGA	22
24	20 ... 28	20	480	120–230	1	85...264	100...370	•	—	CSL1-480W/024V/AB	XCSL1480W024VAB	22
24	23.3...27.5	20	480	230-400-500	1-2-3	187...550	250...725	•	—	CSW481C	XCSW481C	30
24	24...28	20	480	400–500	3	340...550	—	•	—	CSG500C	XCSG500C	33
24	20 ... 28	20	480	400–500	3	340...550	—	•	—	CSL3-480W/024V/AA	XCSL3480W024VAA	24
24	20 ... 28	20	480	400–500	3	340...550	—	•	—	CSL3-480W/024V/GA	XCSL3480W024VGA	24
24	20 ... 28	20	480	400–500	3	340...550	—	•	—	CSL3-480W/024V/AB	XCSL3480W024VAB	24
24	24...28	30	720	400–500	3	340...550	—	•	—	CSG720C	XCSG720C	34
24	23...27.5	40	960	230 / 400-500	1-2	180...264 / 360...550	550...775	•	•	CSW960CP	XCSW960CP	31
24	24...28	40	960	400–500	3	340...550	—	•	—	CSG960C	XCSG960C	35
24-48	23 ... 56	50	2400	400–500	3	340...550	—	•	•	CSG2401D	XCSG2401D	37

- • INFORMATION AVAILABLE
- — INFORMATION NOT AVAILABLE

POWER SUPPLIES - QUICK SELECTION TABLE

OUTOUT RATED VOLTAGE [VDC]	OUTPUT ADJUSTABLE RANGE [VDC]	CONTINUOUS CURRENT [A]	OUTPUT POWER [W]	INPUT RATED VOLTAGE [VAC]	PHASE NO.	INPUT VOLTAGE RANGE [VAC]	INPUT VOLTAGE RANGE [VDC]	ALARM CONTACT	REDUNDANT VERSION	TYPE	CODE	PAGE
48	45...55	2.5	120	120–230	1	90...264	100...345	•	•	CSF120DP	XCSF120DP	15
48	45...55	5	240	120–230	1	90...132 / 185...264	300...345	•	•	CSF240DP	XCSF240DP	17
48	45...55	10	480	120–230	1	90...132 / 185...264	259...370	•	•	CSF500D	XCSF500D	18
48	40.5 ... 55.5	10	480	120–230	1	85...264	100...370	•	—	CSL1-480W/048V/AA	XCSL1480W048VAA	22
48	40.5 ... 55.5	10	480	120–230	1	85...264	100...370	•	—	CSL1-480W/048V/GA	XCSL1480W048VGA	22
48	40.5 ... 55.5	10	480	120–230	1	85...264	100...370	•	—	CSL1-480W/048V/AB	XCSL1480W048VAB	22
48	45...55	10	480	230-400-500	1-2-3	187...550	250...725	•	—	CSW481D	XCSW481D	30
48	40.5 ... 55.5	10	480	400–500	3	340...550	—	•	—	CSL3-480W/048V/GA	XCSL3480W048VGA	24
48	40.5 ... 55.5	10	480	400–500	3	340...550	—	•	—	CSL3-480W/048V/AB	XCSL3480W048VAB	24
48	40.5 ... 55.5	10	480	400–500	3	340...550	—	•	—	CSL3-480W/048V/AA	XCSL3480W048VAA	24
48	45...55	20	960	400–500	3	340...550	—	•	•	CSG960D	XCSG960D	35
24-48	23 ... 56	50	2400	400–500	3	340...550	—	•	•	CSG2401D	XCSG2401D	37
72	72...85	6	430	230-400-500	1-2-3	187...550	250...725	•	—	CSW481G	XCSW481G	31
72	62.5 ... 81	6.6	480	120–230	1	85...264	100...370	•	—	CSL1-480W/072V/AA	XCSL1480W072VAA	23
72	62.5 ... 81	6.6	480	120–230	1	85...264	100...370	•	—	CSL1-480W/072V/GA	XCSL1480W072VGA	23
72	62.5 ... 81	6.6	480	120–230	1	85...264	100...370	•	—	CSL1-480W/072V/AB	XCSL1480W072VAB	23
72	60 ... 81	6.6	480	400–500	3	340...550	—	•	—	CSL3-480W/072V/GA	XCSL3480W072VGA	25
72	60 ... 81	6.6	480	400–500	3	340...550	—	•	—	CSL3-480W/072V/AB	XCSL3480W072VAB	25
72	60 ... 81	6.6	480	400–500	3	340...550	—	•	—	CSL3-480W/072V/AA	XCSL3480W072VAA	25
72	72...85	13.3	960	400–500	3	340...550	—	•	•	CSG960G	XCSG960G	36
72	50 ... 87	33	2400	400–500	3	340...550	—	•	•	CSG2401G	XCSG2401G	38
100-110-170	88...175	14	2400	400–500	3	340...550	—	•	•	CSG2401R	XCSG2401R	38

• INFORMATION AVAILABLE
— INFORMATION NOT AVAILABLE

MODULAR SWITCHING POWER SUPPLIES

DOMOTIC POWER

Single-phase switching power supply with power up to 70W for use in civil and industrial automation applications. The technical and design characteristics of the housing, with standard modular DIN measurements for installation in control units **were planned to optimise use in home automation.** The performance level and compact size also make it an excellent solution for electrical panels and shallow containers.

High output and a contained working temperature support energy savings and longer component life.

Suggested uses

- Industrial automation applications
- Civil automation applications
- General applications in systems installed using small remote panels

Main features

- The 90...264 Vac and 110...370 Vdc inputs, make it suitable for use on all power supply networks.
- These are Isolation Class 2 power supplies that do not require a grounding connection, which reduces the times and costs of installation in remote panels and surveillance and monitoring systems.
- Their high efficiency reduces energy consumption and operating temperature and allows for use in small housings.
- The large power reserve allows continuous current to be supplied up to at least +50% higher than the rated value, ensuring safety and reliability.
- Short-circuit and overload protection designed to deliver peak currents more than 150% higher than the rated value required by heavy loads.
- Thermal protection prevents failure in cases of prolonged overload at high ambient temperatures.
- Thanks to the high performance and excellent ventilation of internal the components, they are greatly reduced in size and have a degree of protection from accidental contacts of IP20 per IEC529.

Compact size
Ideal for modular control units and shallow containers

Short-circuit and overload protection
Designed to deliver the typical peak currents 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 operating temperature

Input 90...264 Vac and 110...370 Vdc
Appropriate for use on all power supply networks

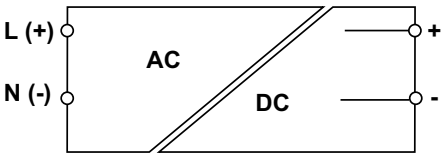
SINGLE PHASE POWER SUPPLIES
DOMOTIC POWER LINE

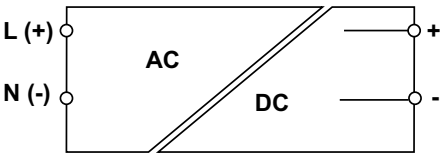
- Single phase and DC input
- Short circuit, overload and input overvoltage protection
- Over temperature protection
- Suitable for standard applications
- Isolation Class 2, no grounding needed

NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance





CODE	XCSD1015W024VAA	XCSD1015W012VAA
TYPE	CSD1-015W/024V/AA	CSD1-015W/012V/AA
INPUT TECHNICAL DATA		
Input rated voltage	120–230 Vac	120–230 Vac
Input voltage AC	85...264 Vac	85...264 Vac
Input voltage DC	100...370 Vdc (derating Uin	100...370 Vdc (derating Uin
Frequency	47...63 Hz	47...63 Hz
Current consumption	0.29 A (120 Vac) / 0.18 A (230 Vac)	0.29 A (120 Vac) / 0.18 A (230 Vac)
Inrush peak current	5 A	5 A
Power factor	> 0.6	> 0.6
Internal protection fuse	T 1 A	T 1 A
External protection on AC line	MT: C-2 A / Fuse: T-2 A	MT: C-2 A / Fuse: T-2 A
OUTPUT TECHNICAL DATA		
Output voltage range	24 Vdc ±1%	12 Vdc ±1%
Output adjustable range		
Continuous current	0.6 A at 60°C	1.2 A at 60°C
Overload limiting	0.81 A	1.6 A
Short circuit peak current		
Ripple @ nominal ratings	50 mVpp	50 mVpp
Hold up time	12 ms (120 Vac) / 20 ms (230 Vac)	12 ms (120 Vac) / 20 ms (230 Vac)
Status indication	LED "DC OK"	LED "DC OK"
Alarm contact		
Parallel connection	possible	possible
Redundant parallel connection	possible with external ORing diode	possible with external ORing diode
GENERAL TECHNICAL DATA		
Efficiency	86% (120 Vac) / 86% (230 Vac)	84% (120 Vac) / 85% (230 Vac)
Dissipated power	2.2 W (120 Vac) / 2.2 W (230 Vac)	2.7 W (120 Vac) / 2.6 W (230 Vac)
Operating temperature range	–20...+70°C (derating -0.9 W >60°C)	–20...+70°C (derating -0.9 W >60°C)
Input / output isolation	3 KVac / 60 s (SELV output)	3 KVac / 60 s (SELV output)
Input / ground isolation	class 2, without PE link	class 2, without PE link
Output / ground isolation	class 2 without PE connection	class 2 without PE connection
Standard / approvals	EN 60950-1, EN 62368-1	EN 60950-1, EN 62368-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	2.5 mm² / 2.5 mm²	2.5 mm² / 2.5 mm²
Housing material	UL94V-0 plastic material	UL94V-0 plastic material
Dimensions (LxHxD)	35x62x90 mm	35x62x90 mm
Approximate weight	91 g	91 g
Mounting information	vertical on a rail, 10 mm from adjacent components	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus cULus	CE cULus cULus
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag		

CSD SERIES

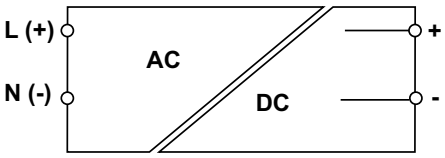
SINGLE PHASE POWER SUPPLIES DOMOTIC POWER LINE

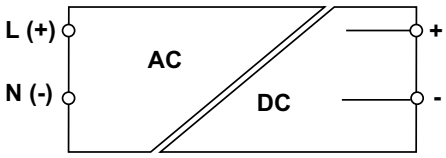
- **Single phase and DC input**
- **Short circuit, overload and input overvoltage protection**
- **Over temperature protection**
- **Suitable for standard applications**
- **Isolation Class 2, no grounding needed**

NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance





CODE	XCSD1030W024VAA	XCSD1030W012VAA
TYPE	CSD1-030W/024V/AA	CSD1-030W/012V/AA
INPUT TECHNICAL DATA		
Input rated voltage	120–230 Vac	120–230 Vac
Input voltage AC	85...264 Vac	85...264 Vac
Input voltage DC	100...370 Vdc (derating Uin<130 Vdc)	100...370 Vdc (derating Uin<130 Vdc)
Frequency	47...63 Hz	47...63 Hz
Current consumption	0.56 A (120 Vac) / 0.34 A (230 Vac)	0.56 A (120 Vac) / 0.34 A (230 Vac)
Inrush peak current	5 A	5 A
Power factor	> 0.6	> 0.6
Internal protection fuse	T 2 A	T 2 A
External protection on AC line	MT: C-3 A / Fuse: T-3 A	MT: C-3 A / Fuse: T-3 A
OUTPUT TECHNICAL DATA		
Output voltage range	24 Vdc ±1%	12 Vdc ±1%
Output adjustable range		5...15 Vdc
Continuous current	1.25 A at 50°C	4A (5V), 2.9A (10V), 2.5A (12V), 2.0A (15V) at 55°C
Overload limiting	2.0 A	6.9...3.0 A
Short circuit peak current		
Ripple @ nominal ratings	50 mVpp	50 mVpp
Hold up time	12 ms (120 Vac) / 20 ms (230 Vac)	12 ms (120 Vac) / 20 ms (230 Vac)
Status indication	LED "DC OK"	LED "DC OK"
Alarm contact		
Parallel connection	possible	possible
Redundant parallel connection	possible with external ORing diode	possible with external ORing diode
GENERAL TECHNICAL DATA		
Efficiency	88% (120 Vac) / 87% (230 Vac)	87% (120 Vac) / 86% (230 Vac)
Dissipated power	4 W (120 Vac) / 3.9 W (230 Vac)	4.1 W (120 Vac) / 4 W (230 Vac)
Operating temperature range	–20...+70°C (derating -1.2 W >50°C)	–20...+70°C (derating -1.2 W >55°C)
Input / output isolation	3 KVac / 60 s (SELV output)	3 KVac / 60 s (SELV output)
Input / ground isolation	class 2, without PE link	class 2, without PE link
Output / ground isolation	class 2 without PE connection	class 2 without PE connection
Standard / approvals	EN 60950-1, EN 62368-1	EN 60950-1, EN 62368-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	2.5 mm² / 2.5 mm²	2.5 mm² / 2.5 mm²
Housing material	UL94V-0 plastic material	UL94V-0 plastic material
Dimensions (LxHxD)	53x62x90 mm	53x62x90 mm
Approximate weight	148 g	148 g
Mounting information	vertical on a rail, 10 mm from adjacent components	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus cULus	CE cULus cULus
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag		

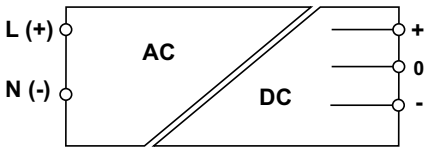
SINGLE PHASE POWER SUPPLIES
DOMOTIC POWER LINE

- Single phase and DC input
- Short circuit, overload and input overvoltage protection
- Over temperature protection
- Suitable for standard applications
- Isolation Class 2, no grounding needed

NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance



CODE	XCSD1060W012VAD
TYPE	CSD1-060W/012V/AD
INPUT TECHNICAL DATA	
Input rated voltage	120–230 Vac
Input voltage AC	90...264 Vac
Input voltage DC	100...370 Vdc (derating Uin<130 Vdc)
Frequency	47...63 Hz
Current consumption	0.94 A (120 Vac) / 0.54 A (230 Vac)
Inrush peak current	15 A
Power factor	> 0.6
Internal protection fuse	T 2 A
External protection on AC line	MT: C-3 A / Fuse: T-3.15 A
OUTPUT TECHNICAL DATA	
Output voltage range	±5...±15 Vdc ±1%
Output adjustable range	±5...±15 Vdc
Continuous current	2.5 A (±5 Vdc), 2.3 A (±10 Vdc), 2.1 A (±12 Vdc), 1.7 A (±15 Vdc)
Overload limiting	7.5 A (±5 Vdc), 5.9 A (±10 Vdc), 5.4 A (±12 Vdc), 4.8 A (±15 Vdc)
Short circuit peak current	
Ripple @ nominal ratings	50 mVpp
Hold up time	20ms
Status indication	LED "DC OK"
Alarm contact	
Parallel connection	possible
Redundant parallel connection	possible with external ORing diode
GENERAL TECHNICAL DATA	
Efficiency	75% (5 Vdc output) / 83% (12 Vdc output)
Dissipated power	9.4 W (120 Vac) / 9.5 W (230 Vac)
Operating temperature range	-20...+60°C (derating 2W > 55°C)
Input / output isolation	3 KVac / 60 s (SELV output)
Input / ground isolation	class 2, without PE link
Output / ground isolation	class 2 without PE connection
Standard / approvals	EN 62368-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2
Protection degree	IP 20
Connection terminal	2.5 mm² / 2.5 mm²
Housing material	UL94V-0 plastic material
Dimensions (LxHxD)	71x62x90 mm
Approximate weight	200 g
Mounting information	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE
ACCESSORIES	
Mounting rail (IEC60715/TH35-7.5)	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag	

CSD SERIES

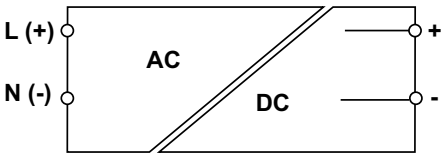
SINGLE PHASE POWER SUPPLIES DOMOTIC POWER LINE

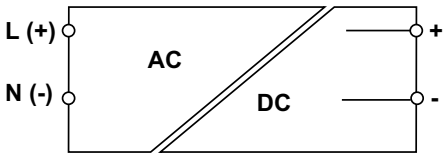
- Single phase and DC input
- Short circuit, overload and input overvoltage protection
- Over temperature protection
- Suitable for standard applications
- Isolation Class 2, no grounding needed

NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance





CODE	XCSD1072W024VAA	XCSD1072W012VAA
TYPE	CSD1-072W/024V/AA	CSD1-072W/012V/AA
INPUT TECHNICAL DATA		
Input rated voltage	120–230 Vac	120–230 Vac
Input voltage AC	85...264 Vac	85...264 Vac
Input voltage DC	100...370 Vdc (derating Uin<130 Vdc)	100...370 Vdc (derating Uin<130 Vdc)
Frequency	47...63 Hz	47...63 Hz
Current consumption	1.17 A (120 Vac) / 0.71 A (230 Vac)	1.17 A (120 Vac) / 0.71 A (230 Vac)
Inrush peak current	15 A	15 A
Power factor	> 0.6	> 0.6
Internal protection fuse	T 2 A	T 2 A
External protection on AC line	MT: C-3 A / Fuse: T-3 A	MT: C-3 A / Fuse: T-3 A
OUTPUT TECHNICAL DATA		
Output voltage range	24 Vdc ±1%	12 Vdc ±1%
Output adjustable range	23.5... 27.5 Vdc	12...15 Vdc
Continuous current	3 A at 55°C	5...4 A at 55°C
Overload limiting	4.5 A	8.0 A
Short circuit peak current		
Ripple @ nominal ratings	50 mVpp	50 mVpp
Hold up time	12 ms (120 Vac) / 20 ms (230 Vac)	12 ms (120 Vac) / 20 ms (230 Vac)
Status indication	LED "DC OK"	LED "DC OK"
Alarm contact		
Parallel connection	possible	possible
Redundant parallel connection	possible with external ORing diode	possible with external ORing diode
GENERAL TECHNICAL DATA		
Efficiency	89% (230 Vac)	89% (230 Vac)
Dissipated power	9.6 W (120 Vac) / 7.9 W (230 Vac)	10 W (120 Vac) / 8.5 W (230 Vac)
Operating temperature range	–20...+70°C (derating -2.6 W >55°C)	–20...+70°C (derating -1.8 W >50°C)
Input / output isolation	3 KVac / 60 s (SELV output)	3 KVac / 60 s (SELV output)
Input / ground isolation	class 2, without PE link	class 2, without PE link
Output / ground isolation	class 2 without PE connection	class 2 without PE connection
Standard / approvals	EN 60950-1, EN 62368-1	EN 60950-1, EN 62368-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	2.5 mm² / 2.5 mm²	2.5 mm² / 2.5 mm²
Housing material	UL94V-0 plastic material	UL94V-0 plastic material
Dimensions (LxHxD)	71x62x90 mm	71x62x90 mm
Approximate weight	229 g	229 g
Mounting information	vertical on a rail, 10 mm from adjacent components	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus cULus	CE cULus cULus
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag		

SWITCH MODE POWER SUPPLY
COOL POWER LINE

Single-phase switching power supply with DIN-rail, designed specifically for applications in command and control panels for industrial automation and process control. Capable of delivering +60% to +80% nominal current for a prolonged period of time while maintaining a constant output voltage and equipped with a voltage threshold-controlled failure contact which is triggered when the voltage drops below 90% of the rated value. **With these features and numerous international certifications, 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 industrial automation with high performance and reliability requirements.
- Applications which require selectable overcurrent protections on DC lines
- Applications in machine automation with high command and control voltage reliability and safety requirements
- Applications in process control
- Uses with heavy loads
- Civil automation applications

Main features

- The 90...264 Vac and 110...370 Vdc inputs, make it suitable for use on all power supply networks.
- Threshold failure contact which is triggered when the voltage falls below 90% of the rated value.
- Versions with integrated ORing diode for redundant parallel connection, preventing the need for external devices and reducing bulk and installation costs.
- High efficiency reduces energy consumption and the operating temperature of components and allows use in small panels and severe environmental conditions.
- Large power reserve allows for delivery of at least +60-80% nominal current and voltage for several minutes, ensuring safety and reliability.
- Output voltage is adjustable and the output is protected against input surge from the DC line generated from inductive loads.
- The output is equipped with dual electronic protection which prevents dangerous voltages for powered components in the event of an internal fault.
- Thermal protection prevents faults in case of prolonged overload with high ambient temperatures.
- Construction ensures excellent ventilation capacity of internal components, with reduced sizes and a degree of protection from accidental contacts of IP20 per IEC529.
- Thanks to their high performance and excellent ventilation capacity, they are among the smallest on the market.

COOL POWER

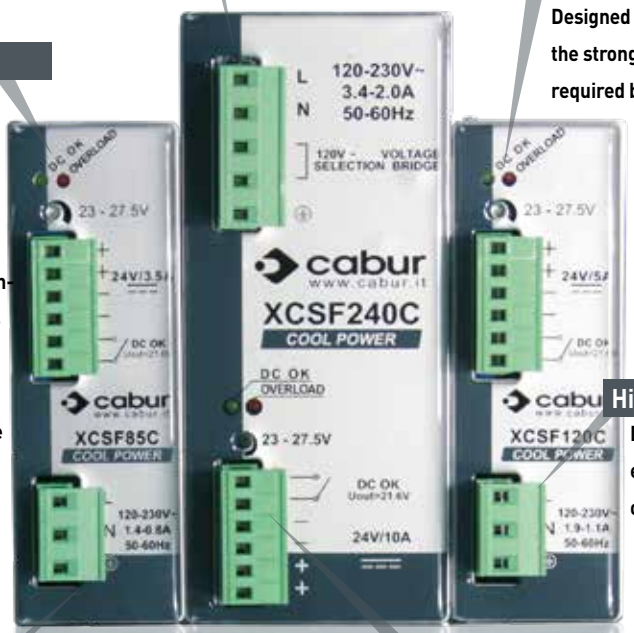
48Vdc and 72-85Vdc models have been introduced, designed to reliably power engines in DC. They:

- 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.

Extremely compact dimensions
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% in the event of overload, and up to 300% during 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 protection
Designed to deliver the strong peak currents required by heavy loads



High efficiency
Designed to save energy and reduce operating temperature

Input 90...264 Vac and 110...370 Vdc
Appropriate for use on all single-phase power supply networks

Intelligent failure contact
Notifies when the output voltage falls below 90% of the rated value once a threshold is surpassed

CSF SERIES

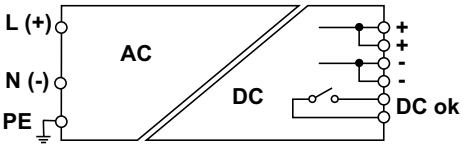
SINGLE PHASE POWER SUPPLIES COOL POWER LINE

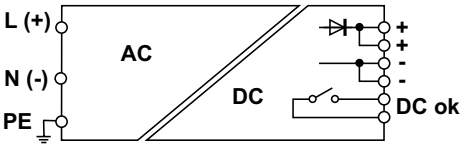
- Single phase and DC input
- Short circuit, overload, input and output overvoltage protections
- Over temperature protection
- Suitable for applications that require high reliability and performance
- Smart alarm contact, signals when output voltage drops more than 10%
- High overload capability to ensure the protections selectivity and start-up of heavy loads

NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance





CODE	XCSF85C	XCSF85CP
TYPE	CSF85C	CSF85CP
INPUT TECHNICAL DATA		
Input rated voltage	120–230 Vac	120–230 Vac
Input voltage AC	90...264 Vac	90...264 Vac
Input voltage DC	100...345 Vdc (derating Uin<130 Vdc)	100...345 Vdc (derating Uin<130 Vdc)
Frequency	47...63 Hz	47...63 Hz
Current consumption	1.6 A (120 Vac) / 0.9 A (230 Vac)	1.6 A (120 Vac) / 0.9 A (230 Vac)
Inrush peak current	20 A	20 A
Power factor	> 0.65	> 0.65
Internal protection fuse	T 2 A	T 2 A
External protection on AC line	MT: C-4 A / Fuse: T 4 A	MT: C-4 A / Fuse: T 4 A
OUTPUT TECHNICAL DATA		
Output voltage range	24 Vdc ±1%	24 Vdc ±1%
Output adjustable range	23...27.5 Vdc	23...27.5 Vdc
Continuous current	3.5 A at 50°C	3.5 A at 50°C
Overload limiting	6 A for >30 s	6 A for >30 s
Short circuit peak current	10 A for 50 ms	10 A for 50 ms
Ripple @ nominal ratings	70 mVpp	70 mVpp
Hold up time	20 ms (120 Vac) / 70 ms (230 Vac)	20 ms (120 Vac) / 70 ms (230 Vac)
Status indication	LED "DC OK" / LED "Alarm"	LED "DC OK" / LED "Alarm"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >21.6 Vdc)	dry contact, max. 1A @ 24 Vdc (Uout >21.6 Vdc)
Parallel connection	possible	possible
Redundant parallel connection	possible with external ORing diode	already fitted with internal ORing diode
GENERAL TECHNICAL DATA		
Efficiency	86% (120 Vac) / 90% (230 Vac)	86% (120 Vac) / 90% (230 Vac)
Dissipated power	14 W (120 Vac) / 10 W (230 Vac)	14 W (120 Vac) / 10 W (230 Vac)
Operating temperature range	–20...+60°C (derating -1.45 W >45°C)	–20...+60°C (derating -1.45 W >45°C)
Input / output isolation	3 KVac / 60 s (SELV output)	3 KVac / 60 s (SELV output)
Input / ground isolation	1.5 kVac / 60 s	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Standard / approvals	EN 60950-1	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	2.5 mm² / 2.5 mm²	2.5 mm² / 2.5 mm²
Housing material	aluminium	aluminium
Dimensions (LxHxD)	40x130x115 mm	40x130x115 mm
Approximate weight	400 g	400 g
Mounting information	vertical on a rail, 10 mm from adjacent components	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus cULus	CE cULus cULus
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag		

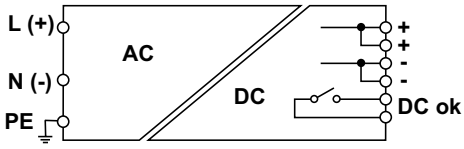
SINGLE PHASE POWER SUPPLIES
COOL POWER LINE

- Single phase and DC input
- Short circuit, overload, input and output overvoltage protections
- Over temperature protection
- Suitable for applications that require high reliability and performance
- Smart alarm contact, signals when output voltage drops more than 10%
- High overload capability to ensure the protections selectivity and start-up of heavy loads

NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance



CODE	XCSF85B
TYPE	CSF85B
INPUT TECHNICAL DATA	
Input rated voltage	120–230 Vac
Input voltage AC	90...264 Vac
Input voltage DC	100...345 Vdc (derating Uin<130 Vdc)
Frequency	47...63 Hz
Current consumption	1.6 A (120 Vac) / 0.9 A (230 Vac)
Inrush peak current	20 A
Power factor	> 0.65
Internal protection fuse	T 2 A
External protection on AC line	MT: C-4 A / Fuse: T 4 A
OUTPUT TECHNICAL DATA	
Output voltage range	12 Vdc ±1%
Output adjustable range	12...15 Vdc
Continuous current	6 A at 50°C
Overload limiting	9A for >30 s
Short circuit peak current	10 A for 50 ms
Ripple @ nominal ratings	30 mVpp
Hold up time	15 ms (120 Vac) / 60 ms (230 Vac)
Status indication	LED "DC OK" / LED "Alarm"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >10.8 Vdc)
Parallel connection	possible
Redundant parallel connection	possible with external ORing diode
GENERAL TECHNICAL DATA	
Efficiency	83% (120 Vac) / 87% (230 Vac)
Dissipated power	17 W (120 Vac) / 13 W (230 Vac)
Operating temperature range	–20...+60°C (derating -1.45 W >45°C)
Input / output isolation	3 KVac / 60 s (SELV output)
Input / ground isolation	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s
Standard / approvals	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2
Protection degree	IP 20
Connection terminal	2.5 mm² / 2.5 mm²
Housing material	aluminium
Dimensions (LxHxD)	40x130x115 mm
Approximate weight	400 g
Mounting information	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE
ACCESSORIES	
Mounting rail (IEC60715/TH35-7.5)	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag	

CSF SERIES

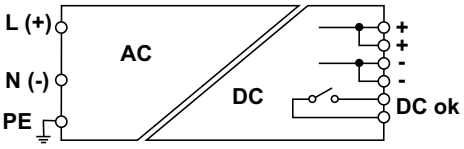
SINGLE PHASE POWER SUPPLIES COOL POWER LINE

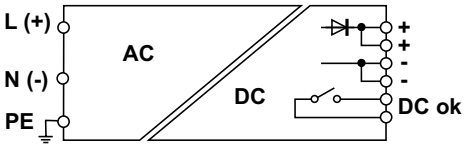
- Single phase and DC input
- Short circuit, overload, input and output overvoltage protections
- Over temperature protection
- Suitable for applications that require high reliability and performance
- Smart alarm contact, signals when output voltage drops more than 10%
- High overload capability to ensure the protections selectivity and start-up of heavy loads

NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance





CODE	XCSF120C	XCSF120CP
TYPE	CSF120C	CSF120CP
INPUT TECHNICAL DATA		
Input rated voltage	120–230 Vac	120–230 Vac
Input voltage AC	90...264 Vac	90...264 Vac
Input voltage DC	100...345 Vdc (derating Uin<130Vdc)	100...345 Vdc (derating Uin<130Vdc)
Frequency	47...63 Hz	47...63 Hz
Current consumption	1.9 A (120 Vac) / 1.1 A (230 Vac)	1.9 A (120 Vac) / 1.1 A (230 Vac)
Inrush peak current	20 A	20 A
Power factor	> 0.65	> 0.65
Internal protection fuse	T 3.15 A	T 3.15 A
External protection on AC line	MT: C-4 A / Fuse: T 4 A	MT: C-4 A / Fuse: T 4 A
OUTPUT TECHNICAL DATA		
Output voltage range	24 Vdc ±1%	24 Vdc ±1%
Output adjustable range	23...27.5 Vdc	23...27.5 Vdc
Continuous current	5 A at 45°C	5 A at 45°C
Overload limiting	8 A for >30 s	8 A for >30 s
Short circuit peak current	15 A for 50 ms	15 A for 50 ms
Ripple @ nominal ratings	30 mVpp	30 mVpp
Hold up time	17 ms (120 Vac) / 72 ms (230 Vac)	17 ms (120 Vac) / 72 ms (230 Vac)
Status indication	LED "DC OK" / LED "Alarm"	LED "DC OK" / LED "Alarm"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >21.6 Vdc)	dry contact, max. 1A @ 24 Vdc (Uout >21.6 Vdc)
Parallel connection	possible	possible
Redundant parallel connection	possible with external ORing diode	already fitted with internal ORing diode
GENERAL TECHNICAL DATA		
Efficiency	86% (120 Vac) / 90% (230 Vac)	86% (120 Vac) / 90% (230 Vac)
Dissipated power	19 W (120 Vac) / 13 W (230 Vac)	19 W (120 Vac) / 13 W (230 Vac)
Operating temperature range	–20...+60°C (derating -1.9 W >45°C)	–20...+60°C (derating -1.9 W >45°C)
Input / output isolation	3 KVac / 60 s (SELV output)	3 KVac / 60 s (SELV output)
Input / ground isolation	1.5 kVac / 60 s	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Standard / approvals	EN 60950-1	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	2.5 mm² / 2.5 mm²	2.5 mm² / 2.5 mm²
Housing material	aluminium	aluminium
Dimensions (LxHxD)	40x130x115 mm	40x130x115 mm
Approximate weight	400 g	400 g
Mounting information	vertical on a rail, 10 mm from adjacent components	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus cULus	CE cULus cULus
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag		

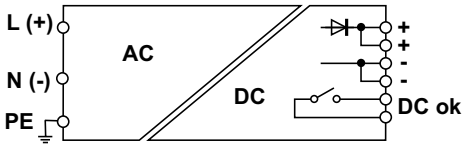
SINGLE PHASE POWER SUPPLIES
COOL POWER LINE

- Single phase and DC input
- Short circuit, overload, input and output overvoltage protections
- Over temperature protection
- Suitable for applications that require high reliability and performance
- Smart alarm contact, signals when output voltage drops more than 10%
- High overload capability to ensure the protections selectivity and start-up of heavy loads

NOTE

Please refer to the datasheet for more details

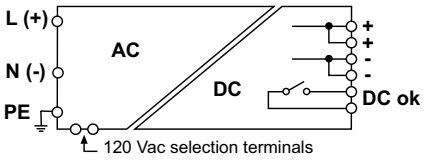
Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance

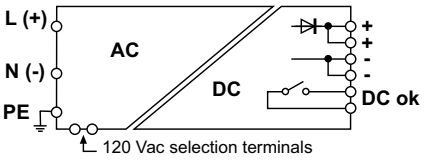


CODE	XCSF120DP
TYPE	CSF120DP
INPUT TECHNICAL DATA	
Input rated voltage	120–230 Vac
Input voltage AC	90...264 Vac
Input voltage DC	100...345 Vdc (derating Uin<130Vdc)
Frequency	47...63 Hz
Current consumption	1.9 A (120 Vac) / 1.1 A (230 Vac)
Inrush peak current	20 A
Power factor	> 0.65
Internal protection fuse	T 3.15 A
External protection on AC line	MT: C-4 A / Fuse: T 4 A
OUTPUT TECHNICAL DATA	
Output voltage range	48 Vdc ±1%
Output adjustable range	45...55 Vdc
Continuous current	2.5 A at 45°C
Overload limiting	8 A for >30 s
Short circuit peak current	7.5 A for 50 ms
Ripple @ nominal ratings	30 mVpp
Hold up time	16 ms (120 Vac) / 81 ms (230 Vac)
Status indication	LED "DC OK" / LED "Alarm"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >43.2 Vdc)
Parallel connection	possible
Redundant parallel connection	already fitted with internal ORing diode
GENERAL TECHNICAL DATA	
Efficiency	86% (120 Vac) / 90% (230 Vac)
Dissipated power	20 W (120 Vac) / 13 W (230 Vac)
Operating temperature range	–20...+60°C (derating -2.4 W >45°C)
Input / output isolation	3 KVac / 60 s (SELV output)
Input / ground isolation	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s
Standard / approvals	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2
Protection degree	IP 20
Connection terminal	2.5 mm² / 2.5 mm²
Housing material	aluminium
Dimensions (LxHxD)	40x130x115 mm
Approximate weight	400 g
Mounting information	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE
ACCESSORIES	
Mounting rail (IEC60715/TH35-7.5)	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag	

CSF SERIES
SINGLE PHASE POWER SUPPLIES COOL POWER LINE

- Single phase and DC input
- Short circuit, overload, input and output overvoltage protections
- Over temperature protection
- Suitable for applications that require high reliability and performance
- Smart alarm contact, signals when output voltage drops more than 10%
- High overload capability to ensure the protections selectivity and start-up of heavy loads





NOTE

Please refer to the datasheet for more details

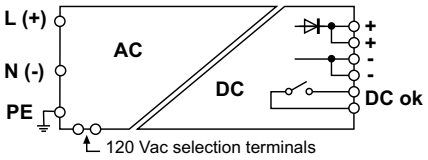
Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance

1) Dual voltage input, with selection through external jumper

CODE	XCSF240C	XCSF240CP
TYPE	CSF240C	CSF240CP
INPUT TECHNICAL DATA		
Input rated voltage	120–230 Vac	120–230 Vac
Input voltage AC	90...132 Vac / 185...264 Vac (1)	90...132 Vac / 185...264 Vac (1)
Input voltage DC	300...345 Vdc	300...345 Vdc
Frequency	47...63 Hz	47...63 Hz
Current consumption	3.5 A (120 Vac) / 1.8 A (230 Vac)	3.5 A (120 Vac) / 1.8 A (230 Vac)
Inrush peak current	35 A	35 A
Power factor	> 0.6	> 0.6
Internal protection fuse	T 6.3 A	T 6.3 A
External protection on AC line	MT: C-10 A / Fuse: T 10 A	MT: C-10 A / Fuse: T 10 A
OUTPUT TECHNICAL DATA		
Output voltage range	24 Vdc ±1%	24 Vdc ±1%
Output adjustable range	23...27.5 Vdc	23...27.5 Vdc
Continuous current	10 A at 45°C	10 A at 45°C
Overload limiting	15 A for >30 s	15 A for >30 s
Short circuit peak current	25 A for 400 ms	25 A for 400 ms
Ripple @ nominal ratings	50 mVpp	50 mVpp
Hold up time	30 ms (120 Vac) / 60 ms (230 Vac)	30 ms (120 Vac) / 60 ms (230 Vac)
Status indication	LED "DC OK" / LED "Alarm"	LED "DC OK" / LED "Alarm"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >21.6 Vdc)	dry contact, max. 1A @ 24 Vdc (Uout >21.6 Vdc)
Parallel connection	possible	possible
Redundant parallel connection	possible with external ORing diode	already fitted with internal ORing diode
GENERAL TECHNICAL DATA		
Efficiency	88% (120 Vac) / 90% (230 Vac)	88% (120 Vac) / 90% (230 Vac)
Dissipated power	32 W (120 Vac) / 27 W (230 Vac)	32 W (120 Vac) / 27 W (230 Vac)
Operating temperature range	–20...+60°C (derating -4 W >45°C)	–20...+60°C (derating -4 W >45°C)
Input / output isolation	3 KVac / 60 s (SELV output)	3 KVac / 60 s (SELV output)
Input / ground isolation	1.5 kVac / 60 s	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Standard / approvals	EN 60950-1	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	2.5 mm² / 2.5 mm²	2.5 mm² / 2.5 mm²
Housing material	aluminium	aluminium
Dimensions (LxHxD)	63.5x135x140 mm	63.5x135x140 mm
Approximate weight	920 g	920 g
Mounting information	vertical on a rail, 10 mm from adjacent components	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus cULus	CE cULus cULus
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag		

SINGLE PHASE POWER SUPPLIES
COOL POWER LINE

- **Single phase and DC input**
- **Short circuit, overload, input and output overvoltage protections**
- **Over temperature protection**
- **Suitable for applications that require high reliability and performance**
- **Smart alarm contact, signals when output voltage drops more than 10%**
- **High overload capability to ensure the protections selectivity and start-up of heavy loads**



NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance

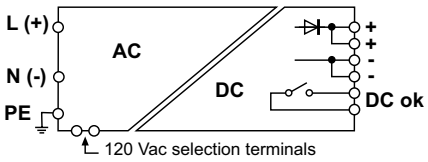
1) Dual voltage input, with selection through external jumper

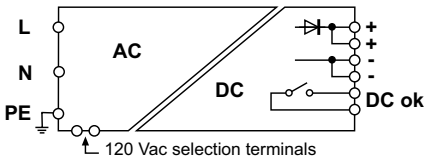
CODE	**XCSF240DP**
TYPE	**CSF240DP**
INPUT TECHNICAL DATA	
Input rated voltage	120–230 Vac
Input voltage AC	90...132 Vac / 185...264 Vac (1)
Input voltage DC	300...345 Vdc
Frequency	47...63 Hz
Current consumption	3.5 A (120 Vac) / 1.8 A (230 Vac)
Inrush peak current	35 A
Power factor	> 0.6
Internal protection fuse	T 6.3 A
External protection on AC line	MT: C-10 A / Fuse: T 10 A
OUTPUT TECHNICAL DATA	
Output voltage range	48 Vdc ±1%
Output adjustable range	45...55 Vdc
Continuous current	5 A at 45°C
Overload limiting	7.5 A for >30 s
Short circuit peak current	25 A for 400 ms
Ripple @ nominal ratings	50 mVpp
Hold up time	30 ms (120 Vac) / 60 ms (230 Vac)
Status indication	LED "DC OK" / LED "Alarm"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >43.2 Vdc)
Parallel connection	possible
Redundant parallel connection	already fitted with internal ORing diode
GENERAL TECHNICAL DATA	
Efficiency	89% (120 Vac) / 89% (230 Vac)
Dissipated power	28 W (120 Vac) / 28 W (230 Vac)
Operating temperature range	–20...+60°C (derating -4 W >45°C)
Input / output isolation	3 KVac / 60 s (SELV output)
Input / ground isolation	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s
Standard / approvals	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2
Protection degree	IP 20
Connection terminal	2.5 mm² / 2.5 mm²
Housing material	aluminium
Dimensions (LxHxD)	63.5x135x140 mm
Approximate weight	920 g
Mounting information	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE
ACCESSORIES	
Mounting rail (IEC60715/TH35-7.5)	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag	

CSF SERIES

SINGLE PHASE POWER SUPPLIES COOL POWER LINE

- **Single phase and DC input**
- **Short circuit, overload, input and output overvoltage protections**
- **Over temperature protection**
- **Suitable for applications that require high reliability and performance**
- **Smart alarm contact, signals when output voltage drops more than 10%**
- **High overload capability to ensure the protections selectivity and start-up of heavy loads**





NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance

1) Dual voltage input, with selection through external jumper

CODE	XCSF500C	XCSF500D
TYPE	CSF500C	CSF500D
INPUT TECHNICAL DATA		
Input rated voltage	120–230 Vac	120–230 Vac
Input voltage AC	90...132 Vac / 185...264 Vac (1)	90...132 Vac / 185...264 Vac (1)
Input voltage DC	259...370 Vdc	259...370 Vdc
Frequency	47...63 Hz	47...63 Hz
Current consumption	8.4 A (120Vac) / 4.4 A (230Vac)	8.4 A (120Vac) / 4.4 A (230Vac)
Inrush peak current	25 A	25 A
Power factor	> 0.75	> 0.75
Internal protection fuse		
External protection on AC line	MT: C-16 A / Fuse: T 15 A	MT: C-16 A / Fuse: T 15 A
OUTPUT TECHNICAL DATA		
Output voltage range	24 Vdc ±1%	48 Vdc ±1%
Output adjustable range	24...28 Vdc	45...55 Vdc
Continuous current	20 A at 45°C	10 A at 45°C
Overload limiting	22 A for >5 s	12 Af for >5 s
Short circuit peak current	35 A for 5 s	20 A for 5 s
Ripple @ nominal ratings	50 mVpp	50 mVpp
Hold up time	12 ms (120 Vac) / 20 ms (230 Vac)	12 ms (120 Vac) / 20 ms (230 Vac)
Status indication	LED "DC OK" / LED "Alarm"	LED "DC OK" / LED "Alarm"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >21.6 Vdc)	dry contact, max. 1A @ 24 Vdc (Uout >43.2 Vdc)
Parallel connection	possible	possible
Redundant parallel connection	already fitted with internal ORing diode	already fitted with internal ORing diode
GENERAL TECHNICAL DATA		
Efficiency	92% (120 Vac) / 92% (230 Vac)	92% (120 Vac) / 92% (230 Vac)
Dissipated power	44 W (120 Vac) / 44 W (230 Vac)	44 W (120 Vac) / 44 W (230 Vac)
Operating temperature range	–20...+60°C (derating -8.2 W >45°C)	–20...+60°C (derating -8.2 W >45°C)
Input / output isolation	3 KVac / 60 s (SELV output)	3 KVac / 60 s (SELV output)
Input / ground isolation	1.5 kVac / 60 s	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Standard / approvals	EN 60950-1	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	4 mm² / 4 mm²	4 mm² / 4 mm²
Housing material	aluminium	aluminium
Dimensions (LxHxD)	80x139x127 mm	80x139x127 mm
Approximate weight	1.3 kg	1.3 kg
Mounting information	vertical on a rail, 10 mm from adjacent components	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus cULus	CE cULus cULus
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag	TAP207A , TAP128A , TAP178A , TAP209A	TAP207A , TAP128A , TAP178A , TAP209A

SWITCH MODE POWER SUPPLY
EASY POWER LINE

EASY POWER

Switching power supply for DIN-rail, for general applications in automation and installation. Offering excellent value for money, these offer a perfect and convenient solution for uses in which the powered loads do not require strong peak currents.
They can deliver over +30% 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

- Civil automation applications
- General applications in plant installations

Main features

- High efficiency reduces energy consumption and the operating temperature of components and allows use in small panels and severe environmental conditions.
- Power reserve +20-30% of nominal current, ensuring safety and reliability.
- Output voltage is adjustable and protected against incoming surge generated by inductive loads on the DC line, and is equipped with a double electronic protection that prevents the powered device from failing in case of an internal malfunction.
- Short-circuit, overload and thermal protection prevents faults in case of prolonged overload with high ambient temperatures.
- Construction ensures optimal capacity of ventilation of internal components, extremely reduced overall dimensions and degree of protection IP20 by accidental contact according to IEC529.
- Offer superior performance, features and reliability compared to other products of a similar power and cost.

Short-circuit, overload and thermal protection
Prevents faults in case of prolonged overload with high ambient temperatures

Adjustable output voltage Protected
against incoming surge generated by inductive loads on the DC line

Power boost
The output power reaches 130% in the event of overload, and up to 150% during a short-circuit

Extremely compact dimensions
Among the smallest on the market, optimising the use of space in the panel without compromising performance

High performance
Reduces the energy consumption and operating temperature of components and allows for use in small panels and in severe ambient conditions

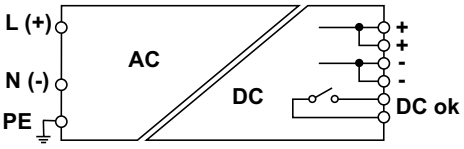
CSL SERIES
SINGLE PHASE POWER SUPPLIES EASY POWER LINE

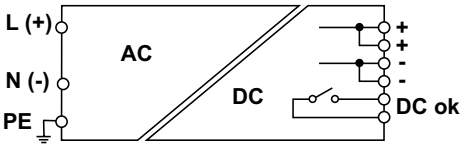
- Single phase and DC input
- Short circuit, overload, input and output overvoltage protections
- Over temperature protection
- Suitable for standard applications
- Alarm contact

NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance





CODE	XCSL1072W024VAA	XCSL1120W024VAA
TYPE	CSL1-072W/024V/AA	CSL1-120W/024V/AA
INPUT TECHNICAL DATA		
Input rated voltage	120–230 Vac	120–230 Vac
Input voltage AC	85...264 Vac	85...264 Vac
Input voltage DC	100...370 Vdc (derating Uin<130Vdc)	100...370 Vdc (derating Uin<130Vdc)
Frequency	47...63 Hz	47...63 Hz
Current consumption	0.8 A (120 Vac) / 0.4 A (230 Vac)	1.5 A (120 Vac) / 0.8 A (230 Vac)
Inrush peak current	20 A	20 A
Power factor	> 0.65	> 0.65
Internal protection fuse	T 2 A	T 3.15 A
External protection on AC line	MT: C-4 A / Fuse: T 4 A	MT: C-4 A / Fuse: T 4 A
OUTPUT TECHNICAL DATA		
Output voltage range	24 Vdc ±1%	24 Vdc ±1%
Output adjustable range	16 ... 28 Vdc	16 ... 28 Vdc
Continuous current	3 A at 50°C	5 A
Overload limiting	<6 A for 30 s	<6 A for 30 s
Short circuit peak current	15 A for 50 ms	15 A for 50 ms
Ripple @ nominal ratings	40 mVpp	50 mVpp
Hold up time	20 ms (120 Vac) / 70 ms (230 Vac)	20 ms (120 Vac) / 20 ms (230 Vac)
Status indication	LED "DC OK"	LED "DC OK"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >22.0 Vdc)	dry contact, max. 1A @ 24 Vdc (Uout >22.0 Vdc)
Parallel connection	possible	possible
Redundant parallel connection	possible with external ORing diode	possible with external ORing diode
GENERAL TECHNICAL DATA		
Efficiency	87% (120 Vac) / 87% (230 Vac)	85% (120 Vac) / 85% (230 Vac)
Dissipated power	10.8 W (120 Vac) / 10.8 W (230 Vac)	21.2 W (120 Vac) / 21.2 W (230 Vac)
Operating temperature range	–20...+70°C (derating -3 W/°C >50°C)	–20...+70°C (derating -3 W/°C >50°C)
Input / output isolation	3 KVac / 60 s (SELV output)	3 KVac / 60 s (SELV output)
Input / ground isolation	1.5 kVac / 60 s	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Standard / approvals	EN 62368-1	EN 62368-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4	EN 61000-6-2, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	2.5 mm² / 2.5 mm²	2.5 mm² / 2.5 mm²
Housing material	aluminium	aluminium
Dimensions (LxHxD)	40x115x115 mm	40x115x115 mm
Approximate weight	400 g	400 g
Mounting information	vertical on a rail, 20 mm from adjacent components	vertical on a rail, 20 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus cULus	CE cULus cULus
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)		
Marking tag		

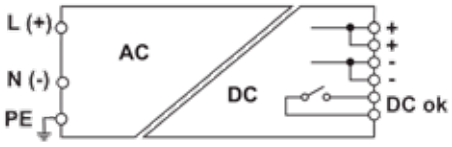
SINGLE PHASE POWER SUPPLIES
EASY POWER LINE

- **Single phase and DC input**
- **Short circuit, overload, input and output overvoltage protections**
- **Over temperature protection**
- **Suitable for standard applications**
- **Alarm contact**

NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance

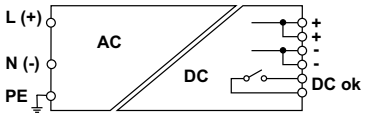


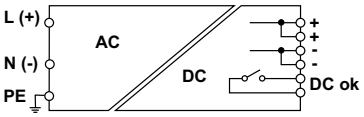
CODE	XCSL1240W024VAA
TYPE	CSL1-240W/024V/AA
INPUT TECHNICAL DATA	
Input rated voltage	120–230 Vac
Input voltage AC	85...264 Vac
Input voltage DC	90...370 Vdc (derating Uin<130 Vdc)
Frequency	47...63 Hz
Current consumption	2.28 A (120Vac) / 1.17 (230 Vac)
Inrush peak current	30 A
Power factor	>0.9
Internal protection fuse	T 4 A
External protection on AC line	MT: C-4 A / Fuse: T 4 A
OUTPUT TECHNICAL DATA	
Output voltage range	24 Vdc ±1%
Output adjustable range	23...29 Vdc
Continuous current	10 A at 50°C
Overload limiting	> 12.5 A
Short circuit peak current	13.5 A (Hiccup mode)
Ripple @ nominal ratings	50 mVpp
Hold up time	20 ms (120 Vac) / 30 ms (230 Vac)
Status indication	LED "DC OK"
Alarm contact	dry contact, max. 1A @ 24 Vdc
Parallel connection	possible
Redundant parallel connection	possible with external ORing diode
GENERAL TECHNICAL DATA	
Efficiency	96% (120 Vac) / 98% (230 Vac)
Dissipated power	33 W / 26 W
Operating temperature range	-20...+70°C (derating -6 W > 50°C)
Input / output isolation	3 KVac / 60 s (SELV output)
Input / ground isolation	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s
Standard / approvals	EN 62368-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2
Protection degree	IP 20
Connection terminal	2.5 mm² / 2.5 mm²
Housing material	aluminium
Dimensions (LxHxD)	60x127x140 mm
Approximate weight	750 g
Mounting information	vertical on a rail, 20 mm from adjacent components
APPROVALS AND MARKINGS	CE
ACCESSORIES	
Mounting rail (IEC60715/TH35-7.5)	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail (IEC60715/TH35-15)	
Marking tag	

CSL SERIES

SINGLE PHASE POWER SUPPLIES EASY POWER LINE

- Single phase and DC input
- Short circuit, overload, input and output overvoltage protections
- Over temperature protection
- Suitable for standard applications
- Alarm contact





NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance

(1) Standard version

(2) With protective coating that allow installation in environment with extreme conditions (product on demand)

(3) With communication port that allow the connection to the net through the external interface XCCI001MB (product on demand)

STANDARD VERSION	XCSL1480W024VAA CSL1-480W/024V/AA (1)	XCSL1480W048VAA CSL1-480W/048V/AA (1)
WITH PROTECTIVE COATING	XCSL1480W024VGA CSL1-480W/024V/GA (2)	XCSL1480W048VGA CSL1-480W/048V/GA (2)
WITH COMMUNICATION INTERFACE	XCSL1480W024VAB CSL1-480W/024V/AB (3)	XCSL1480W048VAB CSL1-480W/048V/AB (3)
INPUT TECHNICAL DATA		
Input rated voltage	120–230 Vac	120–230 Vac
Input voltage AC	85...264 Vac	85...264 Vac
Input voltage DC	100...370 Vdc (derating Uin<130 Vdc)	100...370 Vdc (derating Uin<130 Vdc)
Frequency	47...63 Hz	47...63 Hz
Current consumption	4.9 A (120 Vac) / 2.4 A (230 Vac)	4.3 A (120 Vac) / 2.2 A (230 Vac)
Inrush peak current	36 A	36 A
Power factor	> 0.99	> 0.99
Internal protection fuse	Yes 8 A	Yes 8 A
External protection on AC line	MT: C-6 A / Fuse: T-6.3 A	MT: C-6 A / Fuse: T-6.3 A
OUTPUT TECHNICAL DATA		
Output voltage range	24 Vdc ±1%	48 Vdc ±1%
Output adjustable range	20...28.5 Vdc	40.5...55 Vdc
Continuous current	20 A at 50°C	10 A at 50°C
Overload limiting	23 A (max. 25 A constant current)	13 A (max. 15 A constant current)
Short circuit peak current	32 A 300 ms On /800 ms Off (HICCUP mode)	25 A 100 ms On /800 ms Off (HICCUP mode)
Ripple @ nominal ratings	200 mVpp	200 mVpp
Hold up time	18 ms (120 Vac) / 18 ms (230 Vac)	18 ms (120 Vac) / 18 ms (230 Vac)
Status indication	LED "DC OK", LED "Stand-by"	LED "DC OK", LED "Stand-by"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >21.6 Vdc)	dry contact, max. 1A @ 24 Vdc (Uout >43.2 Vdc)
Parallel connection	possible	possible
Redundant parallel connection	possible with external ORing diode	possible with external ORing diode
GENERAL TECHNICAL DATA		
Efficiency	90.7 %	90.9 %
Dissipated power	53 W	48 W
Operating temperature range	–20...+70°C (derating -14 W/°C >50°C)	–20...+70°C (derating -14 W/°C >50°C)
Input / output isolation	3 KVac / 60 s (SELV output)	3 KVac / 60 s (SELV output)
Input / ground isolation	1.5 kVac / 60 s	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Standard / approvals	EN 60950-1	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	4 mm² / 4 mm²	4 mm² / 4 mm²
Housing material	aluminium	aluminium
Dimensions (LxHxD)	80x170x127 mm	80x170x127 mm
Approximate weight	1.5 kg	1.5 kg
Mounting information	vertical on a rail, 20 mm from adjacent components	vertical on a rail, 20 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus	CE cULus
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)		
Marking tag		

CSL SERIES

SINGLE PHASE POWER SUPPLIES EASY POWER LINE

Single phase and DC input

- **Short circuit, overload, input and output overvoltage protections**
- **Over temperature protection**
- **Suitable for standard applications**
- **Alarm contact**

NOTE

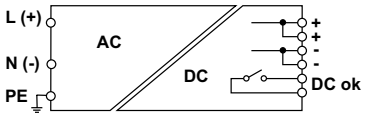
Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance

(1) Standard version

(2) With protective coating that allow installation in environment with extreme conditions (product on demand)

(3) With communication port that allow the connection to the net through the external interface XCCI001MB (product on demand)



STANDARD VERSION	XCSL1480W072VAA
	CSL1-480W/072V/AA (1)
WITH PROTECTIVE COATING	**XCSL1480W072VGA**
	CSL1-480W/072V/GA (2)
WITH COMMUNICATION INTERFACE	**XCSL1480W072VAB**
	CSL1-480W/072V/AB (3)
INPUT TECHNICAL DATA	
Input rated voltage	120–230 Vac
Input voltage AC	85...264 Vac
Input voltage DC	100...370 Vdc (derating Uin<130 Vdc)
Frequency	47...63 Hz
Current consumption	4.4 A (120 Vac) / 2.2 A (230 Vac)
Inrush peak current	36 A
Power factor	> 0.99
Internal protection fuse	Yes 8 A
External protection on AC line	MT: C-6 A / Fuse: T-6.3 A
OUTPUT TECHNICAL DATA	
Output voltage range	72 Vdc ±1%
Output adjustable range	60...81 Vdc
Continuous current	6.6 A at 50°C
Overload limiting	7.5 A (max. 9 A constant current)
Short circuit peak current	18A 100 ms On /800 ms Off (HICCUP mode)
Ripple @ nominal ratings	200 mVpp
Hold up time	18 ms (120 Vac) / 18 ms (230 Vac)
Status indication	LED "DC OK", LED "Stand-by"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >68.4 Vdc)
Parallel connection	possible
Redundant parallel connection	possible with external ORing diode
GENERAL TECHNICAL DATA	
Efficiency	91.5 %
Dissipated power	44 W
Operating temperature range	–20...+70°C (derating -14 W/°C >50°C)
Input / output isolation	3 KVac / 60 s (no SELV output)
Input / ground isolation	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s
Standard / approvals	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2
Protection degree	IP 20
Connection terminal	4 mm² / 4 mm²
Housing material	aluminium
Dimensions (LxHxD)	80x170x127 mm
Approximate weight	1.5 kg
Mounting information	vertical on a rail, 20 mm from adjacent components
APPROVALS AND MARKINGS	CE
ACCESSORIES	
Mounting rail (IEC60715/TH35-7.5)	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail (IEC60715/TH35-15)	
Marking tag	

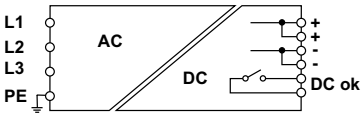
COMMUNICATION

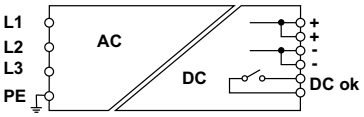
XCI001MB is a microprocessor-controlled communication interface that allow the connection to the net and the remote monitoring of the CSL1-480...AB/CSL3-480...AB power supply, by using the ModBus RTU protocol.
The communication Interface can be directly powered by the monitored PSU by the AUX2 port or can be powered by an auxiliary PSU (10 - 30 Vdc). This option allows the remote control of the PSU ON/OFF.
The connection to the ModBus net take place by 2 equivalent RJ-45 port.

CSL SERIES

3-PHASE POWER SUPPLIES EASY POWER LINE

- 3-phase 400-500 Vac input
- Short circuit, overload, input and output overvoltage protections
- Over temperature protection
- Alarm contact
- High overload capability to ensure the protections selectivity and start-up of heavy loads





NOTE

(1) Standard version

(2) With protective coating that allow installation in environment with extreme conditions (product on demand)

(3) With communication port that allow the connection to the net through the external interface XCCI001MB (product on demand)

Please refer to the datasheet for more details

STANDARD VERSION	**XCSL3480W024VAA**	**XCSL3480W048VAA**
	CSL3-480W/024V/AA (1)	**CSL3-480W/048V/AA (1)**
WITH PROTECTIVE COATING	**XCSL3480W024VGA**	**XCSL3480W048VGA**
	CSL3-480W/024V/GA (2)	**CSL3-480W/048V/GA (2)**
WITH COMMUNICATION INTERFACE	**XCSL3480W024VAB**	**XCSL3480W048VAB**
	CSL3-480W/024V/AB (3)	**CSL3-480W/048V/AB (3)**
INPUT TECHNICAL DATA		
Input rated voltage	3x 400–500 Vac	3x 400–500 Vac
Input voltage AC	340...550 Vac	340...550 Vac
Input voltage DC	500 - 600 Vdc	500 - 600 Vdc
Frequency	47...63 Hz	47...63 Hz
Current consumption	0.8 A (400 Vac)	0.8 A (400 Vac)
Inrush peak current	22 A	22 A
Power factor	0,76	0,76
Internal protection fuse		
External protection on AC line	MT: C-4 A / Fuse: T-3.15 A	MT: C-4 A / Fuse: T-3.15 A
OUTPUT TECHNICAL DATA		
Output voltage range	24 Vdc ±1%	48 Vdc ±1%
Output adjustable range	20...28.5 Vdc	40.5...55 Vdc
Continuous current	20 A at 50°C	10 A at 50°C
Overload limiting	23 A (max. 25 A constant current)	15 A (max. 26 A constant current)
Short circuit peak current	35A 400 ms On /800 ms Off (HICCUP mode)	40 A 400 ms On /800 ms Off (HICCUP mode)
Ripple @ nominal ratings	200 mVpp	200 mVpp
Hold up time	10 ms (400 Vac)	10 ms (400 Vac)
Status indication	LED "DC OK", LED "Stand-by"	LED "DC OK", LED "Stand-by"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >>21.6 Vdc)	dry contact, max. 1A @ 24 Vdc (Uout >43.2 Vdc)
Parallel connection	possible	possible
Redundant parallel connection	possible with external ORing diode	possible with external ORing diode
GENERAL TECHNICAL DATA		
Efficiency	90.5% (400 Vac)	91% (400 Vac)
Dissipated power	48 W (400 Vac)	47.5 W (400 Vac)
Operating temperature range	–20...+70°C (derating -14 W/°C >50°C)	–20...+70°C (derating -14 W/°C >50°C)
Input / output isolation	3 KVac / 60 s (SELV output)	3 KVac / 60 s (SELV output)
Input / ground isolation	1.5 kVac / 60 s	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Standard / approvals	EN 60950-1	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	4 mm² / 4 mm²	4 mm² / 4 mm²
Housing material	aluminium	aluminium
Dimensions (LxHxD)	80x170x127 mm	80x170x127 mm
Approximate weight	1.5 kg	1.5 kg
Mounting information	vertical on a rail, 20 mm from adjacent components	vertical on a rail, 20 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus LISTED	CE cULus LISTED
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)		
Marking tag		

3-PHASE POWER SUPPLIES
EASY POWER LINE

- 3-phase 400-500 Vac input
- Short circuit, overload, input and output overvoltage protections
- Over temperature protection
- Alarm contact
- High overload capability to ensure the protections selectivity and start-up of heavy loads

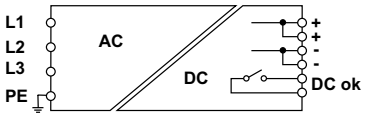
NOTE

(1) Standard version

(2) With protective coating that allow installation in environment with extreme conditions (product on demand)

(3) With communication port that allow the connection to the net through the external interface XCCI001MB (product on demand)

Please refer to the datasheet for more details



STANDARD VERSION	CSL3-480W/072V/AA (1)	XCSL3480W072VAA
WITH PROTECTIVE COATING	CSL3-480W/072V/GA (2)	XCSL3480W072VGA
WITH COMMUNICATION INTERFACE	CSL3-480W/072V/AB (3)	XCSL3480W072VAB
INPUT TECHNICAL DATA		
Input rated voltage	3x 400–500 Vac	
Input voltage AC	340...550 Vac	
Input voltage DC	500 - 600 Vdc	
Frequency	47...63 Hz	
Current consumption	0.8 A (400 Vac)	
Inrush peak current	22 A	
Power factor	0,76	
Internal protection fuse		
External protection on AC line	MT: C-4 A / Fuse: T-3.15 A	
OUTPUT TECHNICAL DATA		
Output voltage range	72 Vdc ±1%	
Output adjustable range	60...81 Vdc	
Continuous current	6.6 A at 50°C	
Overload limiting	11 A (max. 22.5 A constant current)	
Short circuit peak current	20 A 400 ms On /800 ms Off (HICCUP mode)	
Ripple @ nominal ratings	200 mVpp	
Hold up time	10 ms (400 Vac)	
Status indication	LED "DC OK", LED "Stand-by"	
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >68.4 Vdc)	
Parallel connection	possible	
Redundant parallel connection	possible with external ORing diode	
GENERAL TECHNICAL DATA		
Efficiency	91.5% (400 Vac)	
Dissipated power	44.6 W (400 Vac)	
Operating temperature range	–20...+70°C (derating -14 W/°C >50°C)	
Input / output isolation	3 KVac / 60 s (no SELV output)	
Input / ground isolation	1.5 kVac / 60 s	
Output / ground isolation	0.5 kVac / 60 s	
Standard / approvals	EN 60950-1	
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4	
Overvoltage category / pollution degree	II / 2	
Protection degree	IP 20	
Connection terminal	4 mm² / 4 mm²	
Housing material	aluminium	
Dimensions (LxHxD)	80x170x127 mm	
Approximate weight	1.5 kg	
Mounting information	vertical on a rail, 20 mm from adjacent components	
APPROVALS AND MARKINGS	CE	
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB	
Mounting rail (IEC60715/TH35-15)		
Marking tag		

COMMUNICATION

XCI001MB is a microprocessor-controlled communication interface that allow the connection to the net and the remote monitoring of the CSL1-480...AB/CSL3-480...AB power supply, by using the ModBus RTU protocol.
The communication Interface can be directly powered by the monitored PSU by the AUX2 port or can be powered by an auxiliary PSU (10 - 30 Vdc). This option allows the remote control of the PSU ON/OFF.
The connection to the ModBus net take place by 2 equivalent RJ-45 port.

SWITCH MODE POWER SUPPLY UNIVERSAL POWER LINE

DIN-rail based switching power supply with universal input 185...550 Vac single/2 /3-phase for industrial automation and process control applications. Input circuit technology makes these immune to overvoltage caused by faults in 3-phase networks with neutral, increasing the reliability of application. This series offers **greater reliability in industrial environments** compared to single-phase power supplies. The input stage uses components with an operating voltage of 900 V, offering greater resistance to the voltage peaks present in industrial networks than single-phase components. The ability to operate from 185 to 550 Vac allows these power supplies to be used in both 230 V single-phase networks and 400 V 3-phase networks.

Suggested uses

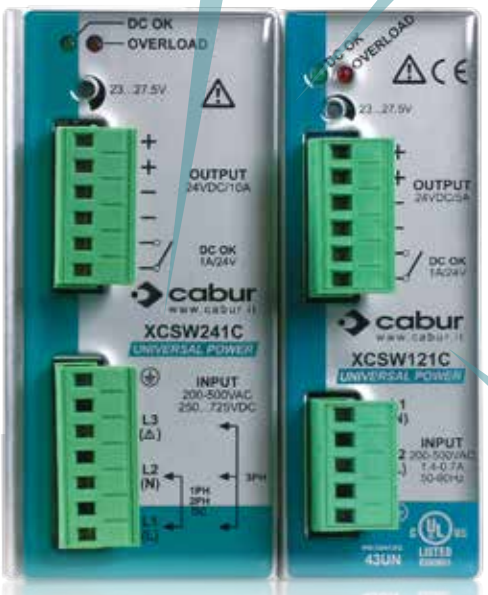
- Wherever maximum flexibility of use is required in single- or 3-phase networks
- Applications in industrial automation and process control
- Uses with heavy loads
- Civil automation applications

Main features

- The 185...550 Vac extended range input is compatible with 230...240 Vac single-phase power, 208 Vac 2-phase and 400...500 Vac 2-phase and 3-phase for maximum adaptability to AC networks, eliminating the need for an isolation transformer.
- The 2-phase input offers reduced bulk, wiring, installation costs and panel space.
- Eliminates the need for a network voltage adaptation transformer.
- Versions with DC OK failure contact
- High efficiency reduces energy consumption and the operating temperature of components and allows use in small panels and severe environmental conditions.
- Large power reserve allows 5 seconds of current to be supplied at least +50% higher than the rated value, ensuring safety and reliability.
- The output is adjustable and protected against incoming surge from the DC line, and is equipped with electronic protection that turns off the output in case of an internal malfunction.
- Short-circuit and overload protection designed to supply peak currents of more than 150% of the rated value required by heavy loads, while the thermal protection prevents faults in case of prolonged overload with high ambient temperatures.
- Construction ensures excellent ventilation capacity of internal components, with reduced sizes and a degree of protection from accidental contacts of IP20 per IEC529.
- Thanks to their high performance and excellent ventilation, they are among the smallest on the market.

185...550 Vac wide range input

Compatible with 230...240 Vac single-phase power, 208 Vac 2-phase and 400...500 Vac 2-phase and 3-phase for maximum adaptability to AC networks, eliminating the need for an isolation transformer.



Power boost

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

High performance

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

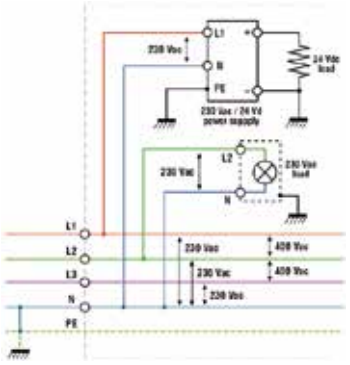
Increased reliability in industrial environments

The input stage uses components with an operating voltage of 900 V, more resistant to the voltage peaks found in industrial networks

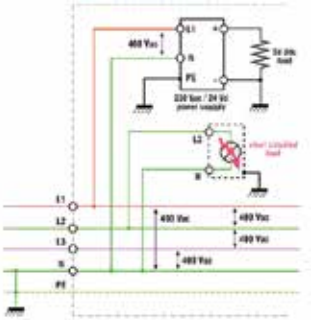
UNIVERSAL POWER

Greater reliability

This series offers greater reliability in industrial environments compared to single-phase power supplies.
The input stage uses components with an operating voltage of 900 V, offering greater resistance to the voltage peaks present in industrial networks than single-phase components.
The ability to operate from 185 to 550 Vac makes these power supplies immune to network faults:
With the output powered at 230 Vac (1L-N), in case of a short in another device connected to L2-N, the neutral is increased to around 400 Vac and the input is powered phase-phase until the protection is opened, which in most cases occurs within 300 ms; this is one of the most frequent causes of malfunction in 230 Vac single-phase power supplies in industrial environments (figures 1 and 2)
Another type of fault in 230 Vac single-phase devices with phase-neutral power is due to the accidental disconnection or interruption of the panel neutral by the plant neutral: with no return to the star point, the neutral increases to phase voltage and applies to single-phase loads of around 400 Vac, and malfunction is inevitable.



Typical application with 3-phase network with neutral. This is used to obtain a voltage of 230 Vac to power loads (a single lamp in the example) and power supplies.



A single short-circuit on the load will raise the neutral potential and all devices connected to it will be powered between two phases, i.e. at around 340...400 Vac rather than 230 Vac.

CSW SERIES

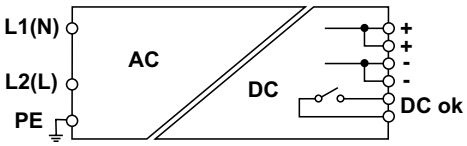
1-2-3-PHASE POWER SUPPLIES UNIVERSAL POWER LINE

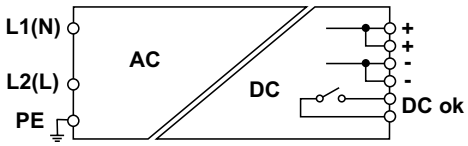
- Single phase and 2-phase input
- Short circuit, overload, input and output overvoltage protections
- Over temperature protection
- Suitable for applications that require high reliability and performance
- Smart alarm contact, signals when output voltage drops more than 10%
- High overload capability to ensure the protections selectivity and start-up of heavy loads

NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance





CODE	XCSW121C	XCSW121B
TYPE	CSW121C	CSW121B
INPUT TECHNICAL DATA		
Input rated voltage	1-2x 230-400-500 Vac	1-2x 230-400-500 Vac
Input voltage AC	187...550 Vac	187...550 Vac
Input voltage DC	270...725 Vdc	270...725 Vdc
Frequency	47...63 Hz	47...63 Hz
Current consumption	1.1 A (230 Vac) / 0.55 A (400 Vac)	1.1 A (230 Vac) / 0.55 A (400 Vac)
Inrush peak current	20 A	20 A
Power factor	> 0.65	> 0.65
Internal protection fuse		
External protection on AC line	MT: C-6 A / Fuse: T-4 A	MT: C-6 A / Fuse: T-4 A
OUTPUT TECHNICAL DATA		
Output voltage range	24 Vdc ±1%	12 Vdc ±1%
Output adjustable range	24...27.5 Vdc	12...15 Vdc
Continuous current	5 A	8 A (12 Vdc) - 7 A (15 Vdc)
Overload limiting	7.5 A for >30 s	10 A for >30 s
Short circuit peak current	14 A for 0.4 s	20 A for 0.4 s
Ripple @ nominal ratings	100 mVpp	100 mVpp
Hold up time	20 ms (230 Vac) / 80 ms (400 Vac)	20 ms (230 Vac) / 80 ms (400 Vac)
Status indication	LED "DC OK" / LED "Alarm"	LED "DC OK" / LED "Alarm"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >21.6 Vdc)	dry contact, max. 1A @ 24 Vdc (Uout >10.8 Vdc)
Parallel connection	possible	possible
Redundant parallel connection	possible with external ORing diode	possible with external ORing diode
GENERAL TECHNICAL DATA		
Efficiency	87% (230 Vac) / 87% (400 Vac)	84% (230 Vac) / 86% (400 Vac)
Dissipated power	18 W (230 Vac) / 18 W (400 Vac)	20 W (230 Vac) / 17 W (400 Vac)
Operating temperature range	–20...+60°C (derating -3 W >45°C)	–20...+60°C (derating -3 W >45°C)
Input / output isolation	3 KVac / 60 s (SELV output)	3 KVac / 60 s (SELV output)
Input / ground isolation	1.5 kVac / 60 s	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Standard / approvals	EN 60950-1	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	2.5 mm² / 2.5 mm²	2.5 mm² / 2.5 mm²
Housing material	aluminium	aluminium
Dimensions (LxHxD)	40x130x115 mm	40x130x115 mm
Approximate weight	600 g	600 g
Mounting information	vertical on a rail, 10 mm from adjacent components	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus	CE cULus
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag		

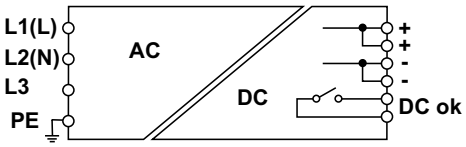
1-2-3-PHASE POWER SUPPLIES
UNIVERSAL POWER LINE

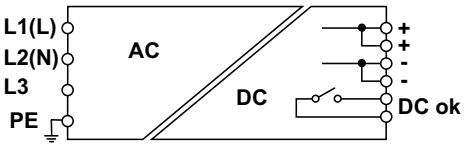
- **Single phase and 2-phase input**
- **Short circuit, overload, input and output overvoltage protections**
- **Over temperature protection**
- **Suitable for applications that require high reliability and performance**
- **Smart alarm contact, signals when output voltage drops more than 10%**
- **High overload capability to ensure the protections selectivity and start-up of heavy loads**

NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance





CODE	XCSW241C	XCSW241B
TYPE	CSW241C	CSW241B
INPUT TECHNICAL DATA		
Input rated voltage	1-2-3x 230-400-500 Vac	1-2-3x 230-400-500 Vac
Input voltage AC	185...550 Vac	185...550 Vac
Input voltage DC	270...770 Vdc	270...770 Vdc
Frequency	47...63 Hz	47...63 Hz
Current consumption	2 A (230 Vac) / 1 A (400 Vac)	2 A (230 Vac) / 1 A (400 Vac)
Inrush peak current	20 A	20 A
Power factor	> 0.65	> 0.65
Internal protection fuse		
External protection on AC line	MT: C-6 A / Fuse: T-6.3 A	MT: C-6 A / Fuse: T-6.3 A
OUTPUT TECHNICAL DATA		
Output voltage range	24 Vdc ±1%	12 Vdc ±1%
Output adjustable range	24...27.5 Vdc	12...15 Vdc
Continuous current	10 A at 50°C	16 A (12 Vdc) - 15 A (15 Vdc)
Overload limiting	15 A for >6 s	20...18 A for >6 s
Short circuit peak current	38 A for 0.5 s	34 A for 0.5 s
Ripple @ nominal ratings	100 mVpp	100 mVpp
Hold up time	15 ms (230 Vac) / 100 ms (400 Vac)	15 ms (230 Vac) / 100 ms (400 Vac)
Status indication	LED "DC OK" / LED "Alarm"	LED "DC OK" / LED "Alarm"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >21.6 Vdc)	dry contact, max. 1A @ 24 Vdc (Uout >10.8 Vdc)
Parallel connection	possible	possible
Redundant parallel connection	possible with external ORing diode	possible with external ORing diode
GENERAL TECHNICAL DATA		
Efficiency	91% (230 Vac) / 92% (400 Vac)	89% (230 Vac) / 90% (400 Vac)
Dissipated power	24 W (230 Vac) / 21 W (400 Vac)	22 W (230 Vac) / 20 W (400 Vac)
Operating temperature range	–20...+60°C (derating -3 W >50°C)	–20...+60°C (derating -3 W >50°C)
Input / output isolation	3 KVac / 60 s (SELV output)	3 KVac / 60 s (SELV output)
Input / ground isolation	2 kVac / 60 s	2 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Standard / approvals	EN 60950-1	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	2.5 mm² / 2.5 mm²	2.5 mm² / 2.5 mm²
Housing material	aluminium	aluminium
Dimensions (LxHxD)	55x130x115 mm	55x130x115 mm
Approximate weight	1 kg	1 kg
Mounting information	vertical on a rail, 10 mm from adjacent components	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus	CE cULus
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag		

CSW SERIES

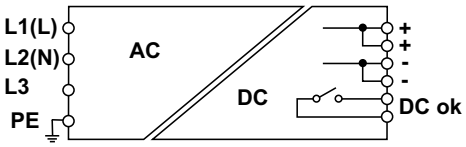
1-2-3-PHASE POWER SUPPLIES UNIVERSAL POWER LINE

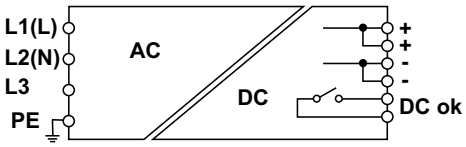
- Single phase and 2-phase input
- Short circuit, overload, input and output overvoltage protections
- Over temperature protection
- Suitable for applications that require high reliability and performance
- Smart alarm contact, signals when output voltage drops more than 10%
- High overload capability to ensure the protections selectivity and start-up of heavy loads

NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance





CODE	XCSW481C	XCSW481D
TYPE	CSW481C	CSW481D
INPUT TECHNICAL DATA		
Input rated voltage	1-2-3x 230-400-500 Vac	1-2-3x 230-400-500 Vac
Input voltage AC	187...550 Vac	187...550 Vac
Input voltage DC	250...725 Vdc	250...725 Vdc
Frequency	47...63 Hz	47...63 Hz
Current consumption	2.2 A (230 Vac) / 1 A (400 Vac)	2.2 A (230 Vac) / 1 A (400 Vac)
Inrush peak current	20 A (230 Vac) / 40 A (500 Vac)	20 A (230 Vac) / 40 A (500 Vac)
Power factor	> 0.95	> 0.95
Internal protection fuse		
External protection on AC line	MT: C-6 A / Fuse: T-6.3 A	MT: C-6 A / Fuse: T-6.3 A
OUTPUT TECHNICAL DATA		
Output voltage range	24 Vdc ±1%	48 Vdc ±1%
Output adjustable range	23.3...27.5 Vdc	45...55 Vdc
Continuous current	20 A at 45°C	10 A at 45°C
Overload limiting	28 A for >5 s	14 A for >5 s
Short circuit peak current	50 A for 0.3 s	25 A for 0.3 s
Ripple @ nominal ratings	100 mVpp	100 mVpp
Hold up time	20 ms (230 Vac) / 20 ms (400 Vac)	20 ms (230 Vac) / 20 ms (400 Vac)
Status indication	LED "DC OK" / LED "Alarm"	LED "DC OK" / LED "Alarm"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >21.6 Vdc)	dry contact, max. 1A @ 24 Vdc (Uout >43.2 Vdc)
Parallel connection	possible	possible
Redundant parallel connection	possible with external ORing diode	possible with external ORing diode
GENERAL TECHNICAL DATA		
Efficiency	92% (230 Vac) / 92% (400 Vac)	92% (230 Vac) / 92% (400 Vac)
Dissipated power	42 W (230 Vac) / 42 W (400 Vac)	42 W (230 Vac) / 42 W (400 Vac)
Operating temperature range	–20...+60°C (derating -16 W >45°C)	–20...+60°C (derating -16 W >45°C)
Input / output isolation	3 KVac / 60 s (SELV output)	3 KVac / 60 s (SELV output)
Input / ground isolation	2 kVac / 60 s	2 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Standard / approvals	EN 60950-1	EN 60950-1
EMC Standard	EN 61000-6-2, EN 61000-6-4	EN 61000-6-2, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	2.5 mm² / 2.5 mm²	2.5 mm² / 2.5 mm²
Housing material	aluminium	aluminium
Dimensions (LxHxD)	73x137x140 mm	73x137x140 mm
Approximate weight	1 kg	1 kg
Mounting information	vertical on a rail, 10 mm from adjacent components	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus	CE cULus
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag		

1-2-3-PHASE POWER SUPPLIES UNIVERSAL POWER LINE

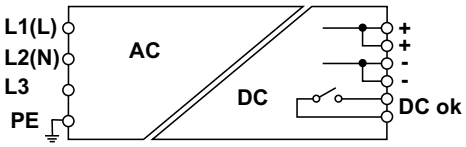
- Single phase and 2-phase input
- Short circuit, overload, input and output overvoltage protections
- Over temperature protection
- Suitable for applications that require high reliability and performance
- Smart alarm contact, signals when output voltage drops more than 10%
- High overload capability to ensure the protections selectivity and start-up of heavy loads

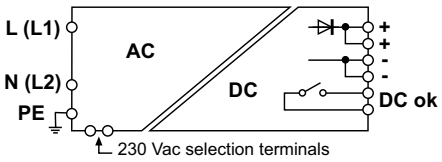
NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance

(1) Dual voltage with selection through external jumper





CODE	XCSW481G	XCSW960CP
TYPE	CSW481G	CSW960CP
INPUT TECHNICAL DATA		
Input rated voltage	1-2-3x 230-400-500 Vac	1x 230 Vac / 2x 400-500 Vac
Input voltage AC	187...550 Vac	180...264 Vac / 360...550 Vac (1)
Input voltage DC	250...725 Vdc	550...775 Vdc
Frequency	47...63 Hz	47...63 Hz
Current consumption	2.2 A (230 Vac) / 1 A (400 Vac)	4.7A (230 Vac) / 4A A (400 Vac)
Inrush peak current	20 A (230 Vac) / 40 A (500 Vac)	16 A
Power factor	> 0.95	> 0.6
Internal protection fuse		
External protection on AC line	MT: C-6 A / Fuse: T-6.3 A	MT: C-10 A / Fuse: 1-2x T 10 A
OUTPUT TECHNICAL DATA		
Output voltage range	72 Vdc ±1%	24 Vdc ±1%
Output adjustable range	72...85 Vdc	23...27.5 Vdc
Continuous current	6 A at 45°C	40 A a 45°C
Overload limiting	9 A for >5 s	50 A for >5 s
Short circuit peak current	12 A for 0.3 s	65 A for 5 s
Ripple @ nominal ratings	100 mVpp	200 mVpp
Hold up time	20 ms (230 Vac) / 20 ms (400 Vac)	20 ms (230 Vac) / 20 ms (400 Vac)
Status indication	LED "DC OK" / LED "Alarm"	LED "DC OK" / LED "Alarm"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >68.4 Vdc)	dry contact, max. 1A @ 24 Vdc (Uout >21.6 Vdc)
Parallel connection	possible	possible
Redundant parallel connection	possible with external ORing diode	already fitted with internal ORing diode
GENERAL TECHNICAL DATA		
Efficiency	91% (230 Vac) / 91% (400 Vac)	90% (400 Vac) at 230 Vac
Dissipated power	42 W (230 Vac) / 42 W (400 Vac)	<100 W (400 Vac) at 230 Vac
Operating temperature range	-20...+60°C (derating -16 W >45°C)	-20...+60°C (derating -32 W >45°C)
Input / output isolation	3 KVac / 60 s (no SELV output)	3 KVac / 60 s (SELV output)
Input / ground isolation	2 kVac / 60 s	2 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Standard / approvals	EN 60950-1	EN 60950-1
EMC Standard	EN 61000-6-2, EN 61000-6-4	EN 61000-6-2, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	2.5 mm² / 2.5 mm²	4 mm² / 10 mm²
Housing material	aluminium	aluminium
Dimensions (LxHxD)	73x137x140 mm	80x139x127 mm
Approximate weight	1 kg	1.2 Kg
Mounting information	vertical on a rail, 10 mm from adjacent components	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus LISTED	CE cULus LISTED
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag		TAP207A , TAP128A , TAP178A , TAP209A

CSG SERIES

SWITCH MODE POWER SUPPLY TRIPLE POWER LINE

400...500 Vac 3-phase switching power supply for industrial automation applications. 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. Equipped with voltage threshold controlled failure contact which is triggered when the voltage falls below 90% of the rated value.
With these features and numerous international certifications, 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 machine automation with high command and control voltage reliability and safety requirements
- In applications which require selectable overcurrent protections on DC lines
- Industrial automation applications
- Uses with heavy loads

Main features

- With 340...550 Vac/507...770 Vdc input, making them suitable for use on all power supply networks.
- High efficiency reduces energy consumption and the operating temperature of components and allows use in small panels and severe environmental conditions.
- Large power reserve allows for delivery of at least +50% of nominal current for 5 seconds maintaining the output voltage stable, ensuring safety and reliability.
- Output voltage is adjustable and protected against incoming surge from the DC line, and is equipped with a double electronic protection that prevents damage to the powered device in case of an internal malfunction.
- Short-circuit and overload protection designed to deliver peak currents more than 150% higher than the rated value required by heavy loads.
- Thermal protection prevents faults in case of prolonged overload with high ambient temperatures.
- Construction ensures optimal capacity of ventilation of internal components, extremely reduced overall dimensions and degree of protection IP20 by accidental contact according to IEC529.

TRIPLE POWER

Special power supplies for engines 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

Notifies when the output voltage falls below 90% of the rated value once a threshold is surpassed

Super compact size

Power boost

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

Wide range

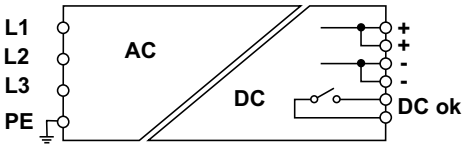
Designed to save energy and reduce operating temperature

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

3-PHASE POWER SUPPLIES
TRIPLE POWER LINE

- 3-phase 400-500 Vac input or 2-phase with derating
- Short circuit, overload, input and output overvoltage protections
- Over temperature protection
- Suitable for applications that require high reliability and performance
- Smart alarm contact, signals when output voltage drops more than 10%
- High overload capability to ensure the protections selectivity and start-up of heavy loads



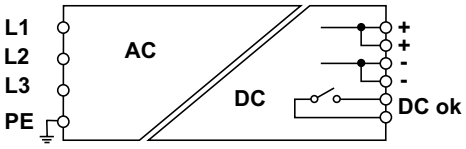
NOTE
Please refer to the datasheet for more details
Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance

CODE	XCSG500C
TYPE	CSG500C
INPUT TECHNICAL DATA	
Input rated voltage	3x 400–500 Vac
Input voltage AC	340...550 Vac
Input voltage DC	
Frequency	47...63 Hz
Current consumption	1 A (400 Vac) / 0.6 A (500 Vac)
Inrush peak current	35 A
Power factor	> 0.75
Internal protection fuse	
External protection on AC line	MT: C-10 A / Fuse: T 10 A
OUTPUT TECHNICAL DATA	
Output voltage range	24 Vdc ±1%
Output adjustable range	24...28 Vdc
Continuous current	20 A at 50°C
Overload limiting	22 A for >5 s
Short circuit peak current	35 A for 5 s
Ripple @ nominal ratings	100 mVpp
Hold up time	15 ms (400 Vac) / 30 ms (500 Vac)
Status indication	LED "DC OK" / LED "Alarm"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >21.6 Vdc)
Parallel connection	possible
Redundant parallel connection	possible with external ORing diode
GENERAL TECHNICAL DATA	
Efficiency	93% (400 Vac) / 93% (500 Vac)
Dissipated power	36 W (400 Vac) / 36 W (500 Vac)
Operating temperature range	–20...+60°C (derating -6 W >50°C)
Input / output isolation	3 KVac / 60 s (SELV output)
Input / ground isolation	2 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s
Standard / approvals	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2
Protection degree	IP 20
Connection terminal	4 mm² / 4 mm²
Housing material	aluminium
Dimensions (LxHxD)	80x139x127 mm
Approximate weight	1.3 kg
Mounting information	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus
ACCESSORIES	
Mounting rail (IEC60715/TH35-7.5)	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag	TAP207A , TAP128A , TAP178A , TAP209A

CSG SERIES

3-PHASE POWER SUPPLIES TRIPLE POWER LINE

- 3-phase 400-500 Vac input or 2-phase with derating
- Short circuit, overload, input and output overvoltage protections
- Over temperature protection
- Suitable for applications that require high reliability and performance
- Smart alarm contact, signals when output voltage drops more than 10%
- High overload capability to ensure the protections selectivity and start-up of heavy loads



NOTE

Please refer to the datasheet for more details

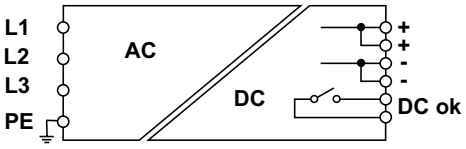
Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance

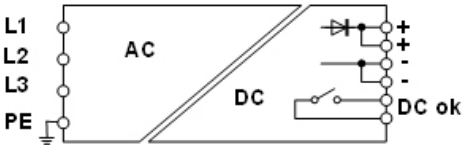
CODE	XCSG720C	XCSG720D
TYPE	CSG720C	CSG720D
INPUT TECHNICAL DATA		
Input rated voltage	3x 400–500 Vac	3x 400–500 Vac
Input voltage AC	340...550 Vac	340...550 Vac
Input voltage DC		–
Frequency	47...63 Hz	47...63 Hz
Current consumption	1.4 A (400 Vac) / 1.1 A (500 Vac)	1.4 A (400 Vac) / 1.1 A (500 Vac)
Inrush peak current	30 A	30 A
Power factor	> 0.75	> 0.75
Internal protection fuse		–
External protection on AC line	MT: C-10 A / Fuse: T 10 A	MT: C-10 A / Fuse: T 10 A
OUTPUT TECHNICAL DATA		
Output voltage range	24 Vdc ±1%	48 Vdc ±1%
Output adjustable range	24...28 Vdc	45...55 Vdc
Continuous current	30 A a 50°C	15 A a 50°C
Overload limiting	45 A for > 5 s	45 A for > 5 s
Short circuit peak current	60 A for 1.5 s	60 A for 1.5 s
Ripple @ nominal ratings	100 mVpp	100 mVpp
Hold up time	10 ms (400 Vac) / 15 ms (500 Vac)	10 ms (400 Vac) / 15 ms (500 Vac)
Status indication	LED DC OK / LED Alarm	LED "DC OK" / LED "Alarm"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >21.6 Vdc)	dry contact, max. 1A
Parallel connection	possibil	possibil
Redundant parallel connection	possible with external ORing diode	possible with external ORing diode
GENERAL TECHNICAL DATA		
Efficiency	92% (400 Vac) / 92% (500 Vac)	92% (400 Vac) / 92% (500 Vac)
Dissipated power	60 W (400 Vac) / 60 W (500 Vac)	60 W (400 Vac) / 60 W (500 Vac)
Operating temperature range	–20...+60°C	–20...+60°C
Input / output isolation	3 KVac / 60 s (SELV output)	3 KVac / 60 s (SELV output)
Input / ground isolation	2 kVac / 60 s	2 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Standard / approvals	EN 60950-1	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	4 mm² / 4 mm²	4 mm² / 4 mm²
Housing material	aluminium	aluminium
Dimensions (LxHxD)	80x139x127 mm	80x139x127 mm
Approximate weight	1.3 kg	1.3 kg
Mounting information	vertical on a rail, 10 mm from adjacent components	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus	CE cULus
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag	TAP207A , TAP128A , TAP178A , TAP209A	TAP207A , TAP128A , TAP178A , TAP209A

3-PHASE POWER SUPPLIES
TRIPLE POWER LINE

- 3-phase 400-500 Vac input or 2-phase with derating
- Short circuit, overload, input and output overvoltage protections
- Over temperature protection
- Suitable for applications that require high reliability and performance
- Smart alarm contact, signals when output voltage drops more than 10%
- High overload capability to ensure the protections selectivity and start-up of heavy loads

NOTE
Please refer to the datasheet for more details
Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance

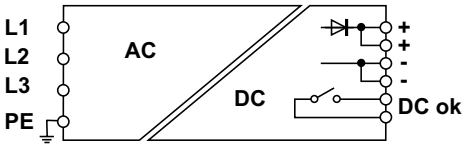




CODE	XCSG960C	XCSG960D
TYPE	CSG960C	CSG960D
INPUT TECHNICAL DATA		
Input rated voltage	3x 400–500 Vac	3x 400–500 Vac
Input voltage AC	340...550 Vac	340...550 Vac
Input voltage DC		
Frequency	47...63 Hz	47...63 Hz
Current consumption	2.2 A (400 Vac) / 1.1 A (500 Vac)	2.2 A (400 Vac) / 1.1 A (500 Vac)
Inrush peak current	20 A	20 A
Power factor	> 0.65	> 0.65
Internal protection fuse		
External protection on AC line	MT: C-10 A / Fuse: T 10 A	MT: C-10 A / Fuse: T 10 A
OUTPUT TECHNICAL DATA		
Output voltage range	24 Vdc ±1%	48 Vdc ±1%
Output adjustable range	24...28 Vdc	45...55 Vdc
Continuous current	40 A a 50°C	20 A at 50°C
Overload limiting	44 A for >5 s	23 A for >5 s
Short circuit peak current	63 A for 5 s	40 A for 5 s
Ripple @ nominal ratings	100 mVpp	100 mVpp
Hold up time	10 ms (400 Vac) / 15 ms (500 Vac)	10 ms (400 Vac) / 15 ms (500 Vac)
Status indication	LED "DC OK" / LED "Alarm"	LED "DC OK" / LED "Alarm"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >21.6 Vdc)	dry contact, max. 1A @ 24 Vdc (Uout >43.2 Vdc)
Parallel connection	possible	possible
Redundant parallel connection	possible with external ORing diode	already fitted with internal ORing diode
GENERAL TECHNICAL DATA		
Efficiency	92% (400 Vac) / 92% (500 Vac)	92% (400 Vac) / 92% (500 Vac)
Dissipated power	80 W (400 Vac) / 80 W (500 Vac)	80 W (400 Vac) / 80 W (500 Vac)
Operating temperature range	–20...+60°C (derating -18 W >45°C)	–20...+60°C (derating -18 W >45°C)
Input / output isolation	3 KVac / 60 s (SELV output)	3 KVac / 60 s (SELV output)
Input / ground isolation	2 kVac / 60 s	2 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Standard / approvals	EN 60950-1	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	4 mm² / 10 mm²	4 mm² / 10 mm²
Housing material	aluminium	aluminium
Dimensions (LxHxD)	80x139x127 mm	80x139x127 mm
Approximate weight	1.2 Kg	1.2 Kg
Mounting information	vertical on a rail, 10 mm from adjacent components	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus	CE cULus
ACCESSORIES	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB	
Mounting rail (IEC60715/TH35-7.5)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail (IEC60715/TH35-15)	TAP207A , TAP128A , TAP178A , TAP209A	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag		TAP207A , TAP128A , TAP178A , TAP209A

CSG SERIES
3-PHASE POWER SUPPLIES TRIPLE POWER LINE

- 3-phase 400-500 Vac input or 2-phase with derating
- Short circuit, overload, input and output overvoltage protections
- Over temperature protection
- Suitable for applications that require high reliability and performance
- Smart alarm contact, signals when output voltage drops more than 10%
- High overload capability to ensure the protections selectivity and start-up of heavy loads

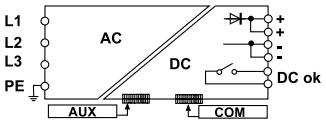


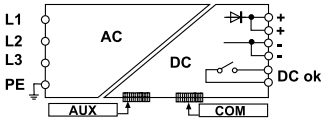
NOTE
Please refer to the datasheet for more details
Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance

CODE	XCSG960G
TYPE	CSG960G
INPUT TECHNICAL DATA	
Input rated voltage	3x 400–500 Vac
Input voltage AC	340...550 Vac
Input voltage DC	
Frequency	47...63 Hz
Current consumption	2.2 A (400 Vac) / 1.1 A (500 Vac)
Inrush peak current	20 A
Power factor	> 0.65
Internal protection fuse	
External protection on AC line	MT: C-10 A / Fuse: T 10 A
OUTPUT TECHNICAL DATA	
Output voltage range	72 Vdc ±1%
Output adjustable range	72...85 Vdc
Continuous current	13.3 A at 50°C
Overload limiting	17 A for >5 s
Short circuit peak current	27 A for 5 s
Ripple @ nominal ratings	100 mVpp
Hold up time	15 ms (400 Vac) / 18 ms (500 Vac)
Status indication	LED "DC OK" / LED "Alarm"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uout >68.4 Vdc)
Parallel connection	possible
Redundant parallel connection	already fitted with internal ORing diode
GENERAL TECHNICAL DATA	
Efficiency	94% (400 Vac) / 94% (500 Vac)
Dissipated power	60 W (400 Vac) / 60 W (500 Vac)
Operating temperature range	–20...+60°C (derating -18 W >45°C)
Input / output isolation	3 KVac / 60 s (no SELV output)
Input / ground isolation	2 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s
Standard / approvals	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2
Protection degree	IP 20
Connection terminal	4 mm² / 10 mm²
Housing material	aluminium
Dimensions (LxHxD)	80x139x127 mm
Approximate weight	1.2 Kg
Mounting information	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE
ACCESSORIES	
Mounting rail (IEC60715/TH35-7.5)	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag	TAP207A , TAP128A , TAP178A , TAP209A

3-PHASE POWER SUPPLIES
TRIPLE POWER LINE

- **3-phase 400-500 Vac input or 2-phase with derating**
- **Short circuit, overload, input and output overvoltage protections**
- **Over temperature protection**
- **Suitable for applications that require high reliability and performance**
- **Smart alarm contact, signals when output voltage drops more than 10%**
- **High overload capability to ensure the protections selectivity and start-up of heavy loads**





NOTE
Please refer to the datasheet for more details
Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance

CODE	XCSG2401C	XCSG2401D
TYPE	CSG2401C	CSG2401D
INPUT TECHNICAL DATA		
Input rated voltage	3x 400–500 Vac	3x 400–500 Vac
Input voltage AC	340...550 Vac	340...550 Vac
Input voltage DC		
Frequency	47...63 Hz	47...63 Hz
Current consumption	4.2 A (400 Vac) / 3.5 A (500 Vac)	4.2 A (400 Vac) / 3.5 A (500 Vac)
Inrush peak current	10 A (with active limitation circuit)	10 A (with active limitation circuit)
Power factor	> 0.92	> 0.92
Internal protection fuse		
External protection on AC line	MT: C-10 A / Fuse: T 10 A	MT: C-10 A / Fuse: T 10 A
OUTPUT TECHNICAL DATA		
Output voltage range	12-24 Vdc ±1%	24-48 Vdc ±1%
Output adjustable range	11.5...29 Vdc	23...56 Vdc
Continuous current	100 A a 45°C	50 A a 45°C
Overload limiting	150 A for >5 s	75 A for >5 s
Short circuit peak current	150 A for 5 s	75 A for 5 s
Ripple @ nominal ratings	200 mVpp	200 mVpp
Hold up time	10 ms (400 Vac) / 10 ms (500 Vac)	10 ms (400 Vac) / 10 ms (500 Vac)
Status indication	LED "DC OK" / LED "Alarm" / Display	LED "DC OK" / LED "Alarm" / Display
Alarm contact	dry contact, max. 1A @ 24 Vdc (programmable)	dry contact, max. 1A @ 24 Vdc (programmable)
Parallel connection	possible	possible
Redundant parallel connection	already fitted with internal ORing diode	already fitted with internal ORing diode
GENERAL TECHNICAL DATA		
Efficiency	92% (400 Vac) / 92% (500 Vac)	93% (400 Vac) / 93% (500 Vac)
Dissipated power	200 W (400 Vac) / 200 W (500 Vac)	180 W (400 Vac) / 180 W (500 Vac)
Operating temperature range	–20...+60°C (derating -40 W >45°C)	–20...+60°C (derating -40 W >45°C)
Input / output isolation	3 KVac / 60 s (SELV output)	3 KVac / 60 s (SELV output)
Input / ground isolation	1.5 kVac / 60 s	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Standard / approvals	EN 60950-1	EN 60950-1
EMC Standard	EN 61000-6-2, EN 61000-6-4	EN 61000-6-2, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	4 mm² / 35 mm²	4 mm² / 35 mm²
Housing material	aluminium	aluminium
Dimensions (LxHxD)	234x105x130 mm	234x105x130 mm
Approximate weight	2.8 Kg	2.8 Kg
Mounting information	vertical on a rail, 60 mm from adjacent components	vertical on a rail, 60 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus LISTED	CE cULus LISTED
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag	TAP207A , TAP128A , TAP178A , TAP209A	TAP207A , TAP128A , TAP178A , TAP209A

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 PFC circuit failure (latched shutdown) circuit
2) a system for controlling lack of phase that automatically reduces output power
3) 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 auto reset with limit current, equal to 150% of rated current and ON/OFF time can be altered;
2) constant power

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

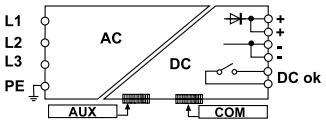
1) an analogue signal 0...10V or 4...20mA that provides an indication of current used by the load
2) a programmable alarm contact able to signal and record the exceeding of the various limits to a memory: output voltage, input current, output overload, over temperature and other parameters that can be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

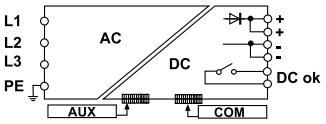
Additional functions:

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) 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.

3-PHASE POWER SUPPLIES
TRIPLE POWER LINE

- **3-phase 400-500 Vac input or 2-phase with derating**
- **Short circuit, overload, input and output overvoltage protections**
- **Over temperature protection**
- **Suitable for applications that require high reliability and performance**
- **Smart alarm contact, signals when output voltage drops more than 10%**
- **High overload capability to ensure the protections selectivity and start-up of heavy loads**





NOTE
Please refer to the datasheet for more details
Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance

CODE	XCSG2401G	XCSG2401R
TYPE	CSG2401G	CSG2401R
INPUT TECHNICAL DATA		
Input rated voltage	3x 400–500 Vac	3x 400–500 Vac
Input voltage AC	340...550 Vac	340...550 Vac
Input voltage DC		
Frequency	47...63 Hz	47...63 Hz
Current consumption	4.2 A (400 Vac) / 3.5 A (500 Vac)	4.2 A (400 Vac) / 3.5 A (500 Vac)
Inrush peak current	10 A (with active limitation circuit)	10 A (with active limitation circuit)
Power factor	> 0.92	> 0.92
Internal protection fuse		
External protection on AC line	MT: C-10 A / Fuse: T 10 A	MT: C-10 A / Fuse: T 10 A
OUTPUT TECHNICAL DATA		
Output voltage range	72 Vdc ±1%	100-110-170 Vdc ±1%
Output adjustable range	50...87 Vdc	88...175 Vdc
Continuous current	33 A at 45°C	14 A at 45°C
Overload limiting	50 A for >5 s	21 A for >5 s
Short circuit peak current	50 A for 5 s	21 A for 5 s
Ripple @ nominal ratings	200 mVpp	200 mVpp
Hold up time	10 ms (400 Vac) / 10 ms (500 Vac)	10 ms (400 Vac) / 10 ms (500 Vac)
Status indication	LED "DC OK" / LED "Alarm" / Display	LED "DC OK" / LED "Alarm" / Display
Alarm contact	dry contact, max. 1A @ 24 Vdc (programmable)	dry contact, max. 1A @ 24 Vdc (programmable)
Parallel connection	possible	possible
Redundant parallel connection	already fitted with internal ORing diode	already fitted with internal ORing diode
GENERAL TECHNICAL DATA		
Efficiency	92% (400 Vac) / 92% (500 Vac)	92% (400 Vac) / 92% (500 Vac)
Dissipated power	200 W (400 Vac) / 200 W (500 Vac)	200 W (400 Vac) / 200 W (500 Vac)
Operating temperature range	–20...+60°C (derating -40 W >45°C)	–20...+60°C (derating -40 W >45°C)
Input / output isolation	3 KVac / 60 s (no SELV output)	3 KVac / 60 s (no SELV output)
Input / ground isolation	1.5 kVac / 60 s	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Standard / approvals	EN 60950-1	EN 60950-1
EMC Standard	EN 61000-6-2, EN 61000-6-4	EN 61000-6-2, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	4 mm² / 35 mm²	4 mm² / 35 mm²
Housing material	aluminium	aluminium
Dimensions (LxHxD)	234x105x130 mm	234x105x130 mm
Approximate weight	2.8 Kg	2.8 Kg
Mounting information	vertical on a rail, 60 mm from adjacent components	vertical on a rail, 60 mm from adjacent components
APPROVALS AND MARKINGS	CE cULus LISTED	CE cULus LISTED
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag	TAP207A , TAP128A , TAP178A , TAP209A	TAP207A , TAP128A , TAP178A , TAP209A

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 PFC circuit failure (latched shutdown) circuit
2) a system for controlling lack of phase that automatically reduces output power
3) 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 auto reset with limit current, equal to 150% of rated current and ON/OFF time can be altered;
2) Constant power

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

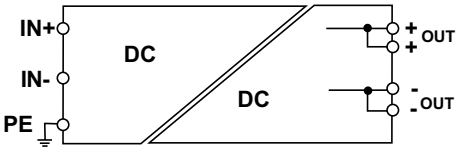
1) an analogue signal 0...10V or 4...20mA that provides an indication of current used by the load
2) a programmable alarm contact able to signal and record the exceeding of the various limits to a memory: output voltage, input current, output overload, over temperature and other parameters that can be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

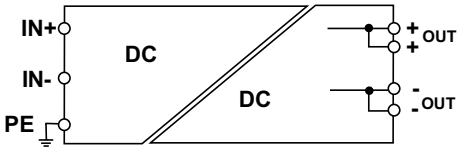
Additional functions:

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) 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.

SWITCH MODE POWER SUPPLIES
DC/DC CONVERTERS

- **DC wide range input**
- **Short circuit, overload, input and output overvoltage protections**
- **Over temperature protection**
- **Compact dimension**





NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance

Inrush current measured at Un with battery power supply; peak current varies according to the internal impedance of the current source and the resistance of the connections.

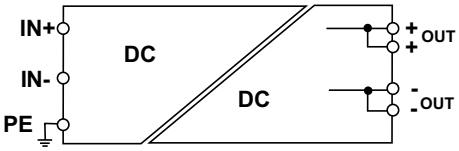
The capacitors between phase and neutral, requires that the isolation tests are carried out in DC

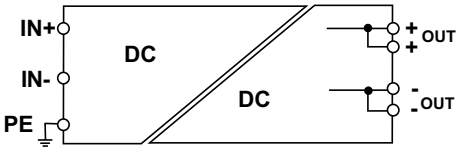
CODE	XCSA120BC	XCSA120CB
TYPE	CSA120BC	CSA120CB
INPUT TECHNICAL DATA		
Input rated voltage	12 Vdc	24 Vdc
Input voltage AC		
Input voltage DC	10.5...18 Vdc	18...36 Vdc
Frequency		
Current consumption	10 A (12 Vdc) ±10%	5.1 A (24 Vdc) ±10%
Inrush peak current	60 A	110 A
Power factor		
Internal protection fuse	T 20 A	T 10 A
External protection on AC line	MT: C-25 A / Fuse: T-25 A	MT: C-13 A / Fuse: T-13 A
OUTPUT TECHNICAL DATA		
Output voltage range	24 Vdc	12...15 Vdc
Output adjustable range	22.5...27.5 Vdc	12...15 Vdc
Continuous current	5 A (24 Vdc)	7 A (12 Vdc)
Overload limiting	6.5 A	9.1 A
Short circuit peak current	12 A for 300 ms	15 A for 300 ms
Ripple @ nominal ratings	100 mVpp	100 mVpp
Hold up time	1 ms	2 ms
Status indication	LED "DC OK"	LED "DC OK"
Alarm contact		
Parallel connection	possible	possible
Redundant parallel connection	possible with external ORing diode	possible with external ORing diode
GENERAL TECHNICAL DATA		
Efficiency	83% (12 Vdc)	85% (24 Vdc)
Dissipated power	25 W (12 Vdc)	17 W (24 Vdc)
Operating temperature range	-20...+50°C	-20...+50°C
Input / output isolation	2.1 kVdc / 60s	2.1 kVdc / 60s
Input / ground isolation	1.41 kVdc / 60s	1.41 kVdc / 60s
Output / ground isolation	0.75 kVdc / 60s	0.75 kVdc / 60s
Standard / approvals	EN 60950-1	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	2.5 mm² / 2.5 mm²	2.5 mm² / 2.5 mm²
Housing material	aluminium	aluminium
Dimensions (LxHxD)	40x130x115 mm	40x130x115 mm
Approximate weight	550 g	550 g
Mounting information	vertical on a rail, 10 mm from adjacent components	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE	CE
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag		

CSA SERIES

SWITCH MODE POWER SUPPLIES DC/DC CONVERTERS

- DC wide range input
- Short circuit, overload, input and output overvoltage protections
- Over temperature protection
- Compact dimension





NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance

Inrush current measured at Un with battery power supply; peak current varies according to the internal impedance of the current source and the resistance of the connections.

The capacitors between phase and neutral, requires that the isolation tests are carried out in DC

CODE	XCSA120CC	XCSA120DC
TYPE	CSA120CC	CSA120DC
INPUT TECHNICAL DATA		
Input rated voltage	24 Vdc	48 Vdc
Input voltage AC		
Input voltage DC	18...36 Vdc	36...72 Vdc
Frequency		
Current consumption	5.8 A (24 Vdc) ±10%	2.8 A (48 Vdc) ±10%
Inrush peak current	90 A	120 A
Power factor		
Internal protection fuse	T 10 A	T 5 A
External protection on AC line	MT: C-13 A / Fuse: T-13 A	MT: C-6 A / Fuse: T-6 A
OUTPUT TECHNICAL DATA		
Output voltage range	24 Vdc	24 Vdc
Output adjustable range	22.5...27.5 Vdc	22.5...27.5 Vdc
Continuous current	5 A (24 Vdc)	5A (24 Vdc)
Overload limiting	6.5 A	6.5 A
Short circuit peak current	12 A for 300 ms	13 A for 300 ms
Ripple @ nominal ratings	150 mVpp	200 mVpp
Hold up time	2 ms	4.5 ms
Status indication	LED "DC OK"	LED "DC OK"
Alarm contact		
Parallel connection	possible	possible
Redundant parallel connection	possible with external ORing diode	possible with external ORing diode
GENERAL TECHNICAL DATA		
Efficiency	87% (24 Vdc)	90% (48 Vdc)
Dissipated power	18 W (24 Vdc)	13 W (48 Vdc)
Operating temperature range	-20...+50°C	-20...+50°C
Input / output isolation	2.1 kVdc / 60s	2.1 kVdc / 60s
Input / ground isolation	1.41 kVdc / 60s	1.41 kVdc / 60s
Output / ground isolation	0.75 kVdc / 60s	0.75 kVdc / 60s
Standard / approvals	EN 60950-1	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	2.5 mm² / 2.5 mm²	2.5 mm² / 2.5 mm²
Housing material	aluminium	aluminium
Dimensions (LxHxD)	40x130x115 mm	40x130x115 mm
Approximate weight	550 g	550 g
Mounting information	vertical on a rail, 10 mm from adjacent components	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE	CE
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag		

SWITCH MODE POWER SUPPLIES
DC/DC CONVERTERS

- **DC wide range input**
- **Short circuit, overload, input and output overvoltage protections**
- **Over temperature protection**
- **Compact dimension**

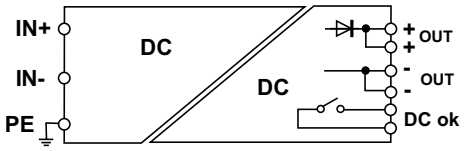
NOTE

Please refer to the datasheet for more details

Above overcurrent limit, the protection starts cycling in ON/OFF mode(hiccup autoreset), the maximum current supplied depends by the line resistance

Inrush current measured at Un with battery power supply; peak current varies according to the internal impedance of the current source and the resistance of the connections.

The capacitors between phase and neutral, requires that the isolation tests are carried out in DC

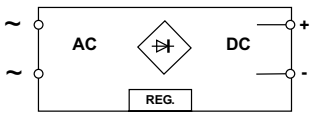


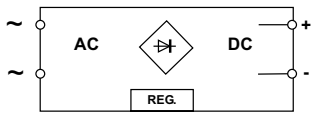
CODE	XCSA240FC
TYPE	CSA240FC
INPUT TECHNICAL DATA	
Input rated voltage	110 Vdc
Input voltage AC	
Input voltage DC	100...130 Vdc
Frequency	
Current consumption	2.4 A (110 Vdc) ±10%
Inrush peak current	150 A
Power factor	
Internal protection fuse	T 5 A
External protection on AC line	MT: C-6 A / Fuse: T-6 A
OUTPUT TECHNICAL DATA	
Output voltage range	24 Vdc
Output adjustable range	23...27 Vdc
Continuous current	10 A at 50°C
Overload limiting	15 A
Short circuit peak current	21 A for 300 ms
Ripple @ nominal ratings	100 mVpp
Hold up time	4 ms
Status indication	LED "DC OK"
Alarm contact	dry contact, max. 1A @ 24 Vdc
Parallel connection	possible
Redundant parallel connection	already fitted with internal ORing diode
GENERAL TECHNICAL DATA	
Efficiency	89% (110 Vdc)
Dissipated power	28W (110 Vdc)
Operating temperature range	-20...+60°C (derating -6 W >50°C)
Input / output isolation	2.1 kVdc / 60s
Input / ground isolation	1.41 kVdc / 60s
Output / ground isolation	0.75 kVdc / 60s
Standard / approvals	EN 60950-1
EMC Standard	EN 61000-6-2, EN 61000-6-4
Overvoltage category / pollution degree	II / 2
Protection degree	IP 20
Connection terminal	2.5 mm² / 2.5 mm²
Housing material	aluminium
Dimensions (LxHxD)	40x130x115 mm
Approximate weight	800 g
Mounting information	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE
ACCESSORIES	
Mounting rail (IEC60715/TH35-7.5)	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag	

LINEAR POWER SUPPLIES WITH ADJUSTABLE OUTPUT

- **Powered by a 12-24 Vac secondary transformer**
- **Short circuit, overload and input overvoltage protection**
- **Over temperature protection**
- **Adjustable output voltage**

NOTE
Please refer to the datasheet for more details





CODE TYPE	XCL1R CL1R	XCL5R CL5R
INPUT TECHNICAL DATA		
Input rated voltage	12-24 Vac	12-24 Vac
Input voltage AC	10...26 Vac (see Tab. 1)	10...26 Vac (see Tab. 1)
Input voltage DC		
Frequency	47...63 Hz	47...63 Hz
Current consumption	2.5 A (24 Vac)	6 A (24 Vac)
Inrush peak current		
Power factor		
Internal protection fuse	T 3 A	T 10 A
External protection on AC line	MT: C-4 A / Fuse: T 4 A	MT: C-10 A / Fuse: T 10 A
OUTPUT TECHNICAL DATA		
Output voltage range	1.2...24 Vdc	1.2...24 Vdc
Output adjustable range	(see Table 1 and Table 2)	(see Table 1 and Table 2)
Continuous current	0.3...1.5 A (see Tab. 2)	0.8...5 A (see Tab. 2)
Overload limiting		
Short circuit peak current		
Ripple @ nominal ratings	< 50 mVpp a 24 Vac	< 50 mVpp a 24 Vac
Hold up time	>20 ms	>20 ms
Status indication	LED "DC OK"	LED "DC OK"
Alarm contact		
Parallel connection		
Redundant parallel connection		
GENERAL TECHNICAL DATA		
Efficiency		
Dissipated power		
Operating temperature range	–20...+45°C	–20...+45°C
Input / output isolation	not insulated	not insulated
Input / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Standard / approvals		
EMC Standard		
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 00	IP 00
Connection terminal	2.5 mm² / 2.5 mm²	2.5 mm² / 2.5 mm²
Housing material	UL94V-0 plastic material	aluminium
Dimensions (LxHxD)	43x74x130 mm	37x115x118 mm
Approximate weight	120 g	350 g
Mounting information	vertical on a rail, 20 mm from adjacent components	vertical on a rail, 20 mm from adjacent components
APPROVALS AND MARKINGS	CE	CE
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)		
Marking tag		

APPLICATIONS

Cabur CL-R series power supplies are linear stabilised with adjustable output, capable of satisfying all small load power needs with non-standard voltages at an extremely affordable cost.
They can be rail mounted in any position as long as sufficient space is left for the free circulation of air for cooling, while model CL1R has a degree of protection IP00, meaning it is to be used inside a protected container.
Even where the power supply is protected against overcurrents, it is advised to follow the nominal data indicated in the tables below.

(1) **CL1R** and **CL5R** provide the nominal performances if combined with the secondary voltages indicated in **Tab. 1**; with a secondary voltage of 24...27 Vac, the maximum obtainable current at output voltages adjusted to values below 24 Vdc is indicated in **Tab. 2**; to stabilise the output voltage and reduce ripple at full load, linear power supplies must be powered with an input voltage that exceeds the output voltage, whereas if they are powered at 24 Vac, with an output adjusted to 24 Vdc and maximum current absorption, the ripple increases and the stability of the output voltage to load variations and ±10% network variations drops; voltages above 27 Vac cause significant heating, triggering the thermal protection and reducing the current supplied.
Products are supplied with a default voltage of 24 Vdc at the output and 26 Vac at the input.

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

Table 1 (see explanation to the 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

Table 2 (see side explanation)

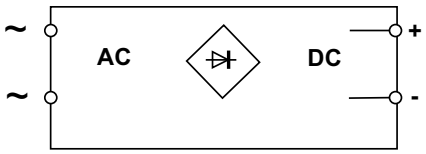
FILTERED POWER SUPPLY

- **Powered by a 12-24 Vac secondary transformer**
- **Rail mountable**

NOTE

Please refer to the datasheet for more details

Output not protected against overcurrent and short circuit, an external fuse must be installed.



CODE TYPE	XAR6 AR6
INPUT TECHNICAL DATA	
Input rated voltage	12-24 Vac
Input voltage AC	6...20 Vac
Input voltage DC	
Frequency	47...63 Hz
Current consumption	7.2 A (24 Vac)
Inrush peak current	
Power factor	
Internal protection fuse	T 8 A
External protection on AC line	MT: C-10 A / Fuse: T 10 A
OUTPUT TECHNICAL DATA	
Output voltage range	Uout = (Uin x 1.41) - 2V
Output adjustable range	
Continuous current	6 A at 20°C
Overload limiting	External fuse must be installed
Short circuit peak current	
Ripple @ nominal ratings	2.5 Vpp
Hold up time	>20 ms
Status indication	LED "DC OK"
Alarm contact	
Parallel connection	
Redundant parallel connection	
GENERAL TECHNICAL DATA	
Efficiency	
Dissipated power	
Operating temperature range	-20...+45°C
Input / output isolation	not insulated
Input / ground isolation	0.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s
Standard / approvals	
EMC Standard	
Overvoltage category / pollution degree	II / 2
Protection degree	
Connection terminal	2.5 mm² / 2.5 mm²
Housing material	UL94V-0 plastic material
Dimensions (LxHxD)	70x80x93 mm
Approximate weight	140 g
Mounting information	vertical on a rail, 20 mm from adjacent components
APPROVALS AND MARKINGS	CE
ACCESSORIES	
Mounting rail (IEC60715/TH35-7.5)	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail (IEC60715/TH35-15)	
Marking tag	

APPLICATIONS

The rectified and filtered power supply comprises a transformer which isolates and reduces the secondary voltage from the network voltage (not supplied), a bridge rectifier and a filter capacity that convert alternating voltage into direct voltage at an SELV value of less than 60 Vdc.

The power supply is not stabilised, therefore the output voltage varies according to the power consumed by the load and to network voltage fluctuations of ±10%. The formulae described in the output technical data are used to calculate voltage at no load, 50% load and full load and to select the transformer best suited to your needs. **These power supplies are a reliable and affordable source for powering relays, contactors, solenoid valves** and loads capable of operating smoothly with a relatively high (5%) alternating waste on 24 Vdc (ripple) and strong changes in output voltage, whereas in applications in which the network is highly unstable and prone to voltage dips, **they may not be suitable for powering devices with microprocessors and memories, analogue converters or devices that require a highly stable power supply voltage.**

Tab. 1 Input/Output behaviour

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

UNINTERRUPTIBLE POWER SUPPLIES
DC/DC UPS ACCESSORY

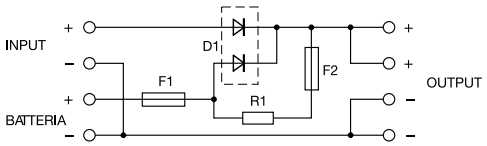
- **Connected to a DC line, allow to supply loads and charge the backup battery**
- **Suitable for Lead-Acid batteries**
- **Suitable for power supplies with adjustable output**

NOTE

Please refer to the datasheet or operating instruction for more details

In order to complete the charge, the DC output of the power supply must be 2-3V more than nominal voltage of the battery

XCSBC does not prevent deep discharge of the battery



CODE TYPE	XCSBC CSBC
INPUT TECHNICAL DATA	
Input rated voltage	12-24 Vdc
Input voltage AC	
Input voltage DC	6...30 Vdc
Frequency	
Current consumption	> 3 A
Inrush peak current	
Power factor	
Internal protection fuse	
External protection on AC line	
OUTPUT TECHNICAL DATA	
Output voltage range	12-24 Vdc
Output adjustable range	Vin-0.2 normal operation / Vbatt-0.2 battery operation (max. 29 Vdc)
Continuous current	10 A at 45°C
Battery safety fuse	Fuse: 6.3 A replaceable
Status indication	
Alarm contact	
Battery type	Lead-Acid
Battery capacity	max. 4 Ah (12 Vdc) / max. 10 Ah (24 Vdc)
Charging current	0.5 A (12 Vdc) / 1 A (24 Vdc)
Battery disconnection voltage	function not present
Protection	short-circuit / battery overload
GENERAL TECHNICAL DATA	
Efficiency	88%
Dissipated power	7.5 W (12 Vdc) 15 W (24 Vdc)
Operating temperature range	-20...+50°C
Input / output isolation	
Input / ground isolation	
Output / ground isolation	
Standard / approvals	
EMC Standard	
Overvoltage category / pollution degree	II / 2
Protection degree	IP 00
Connection terminal	2.5 mm² / 2.5 mm128
Housing material	UL94V-0 plastic material
Dimensions (LxHxD)	26x80x93 mm
Approximate weight	80 g
Mounting information	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE
ACCESSORIES	
Mounting rail (IEC60715/TH35-7.5)	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB

APPLICATIONS

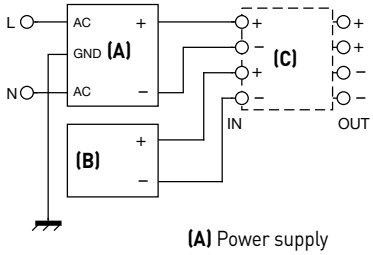
1. Battery charger

This module enables Cabur power supplies to charge a battery while simultaneously powering the load.
The diodes effectively block the power supply from the battery, the resistor limits the load current to prevent power supply safety cut-off and prolonging the life of the battery, and fuse F1 protects the battery in the event of a short-circuit on the load.
The connection occurs as shown below.

2. Placing power supplies in parallel

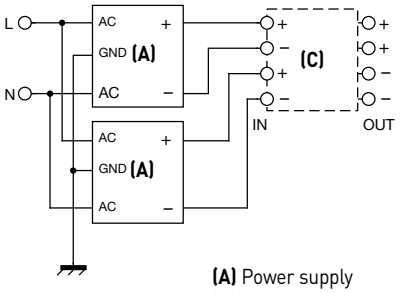
This module can be used to put two power supplies without a blocking diode in parallel, eliminating the need for fuse F2 in series with the charging current limiting resistor.
The connection occurs as shown below.

1. Battery charger



(A) Power supply
(B) Battery
(C) CSBC

2. Placing power supplies in parallel



(A) Power supply
(C) CSBC

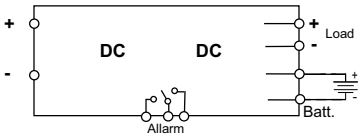
UNINTERRUPTIBLE POWER SUPPLIES
DC/DC UPS ACCESSORY

- **Connected to a DC line, allow to supply loads and charge the backup battery**
- **Suitable for Lead-Acid batteries**
- **Suitable for power supplies with adjustable output**
- **Battery protection (oveload and deep discharge)**
- **LED status indicator and alarm contact**
- **It allows to start loads from battery**

NOTE

Please refer to the datasheet or operating instruction for more details

In order to complete the charge, the DC output of the power supply must be 2-3V more than nominal voltage of the battery



CODE	XCSU5220W024VAA
TYPE	CSU5-220W/024V/AA
INPUT TECHNICAL DATA	
Input rated voltage	24 Vdc
Input voltage AC	
Input voltage DC	26...28.5 Vdc
Frequency	
Current consumption	< 14 A (full load and discharged battery)
Inrush peak current	
Power factor	
Internal protection fuse	
External protection on AC line	
OUTPUT TECHNICAL DATA	
Output voltage range	24 Vdc
Output adjustable range	26...28 Vdc normal operation, 17...26 Vdc battery operation
Continuous current	10 A at 50°C
Battery safety fuse	Fuse: 15 A replaceable
Status indication	LED "DC OK" / LED "Battery OK" / LED "Battery low" / LED "Load OK"
Alarm contact	1 dry contact (DC OK/BATTERY)
Battery type	Lead-Acid
Battery capacity	max. 40 Ah (24 Vdc)
Charging current	2 A - 4 A selectable
Battery disconnection voltage	≤ 18 Vdc ±0.5 V
Protection	reverse polarity, short-circuit, battery overload, battery deep discharge
GENERAL TECHNICAL DATA	
Efficiency	
Dissipated power	
Operating temperature range	-20...+50°C
Input / output isolation	
Input / ground isolation	
Output / ground isolation	
Standard / approvals	
EMC Standard	
Overvoltage category / pollution degree	II / 2
Protection degree	IP 20
Connection terminal	2.5 mm² / 2.5 mm129
Housing material	aluminium
Dimensions (LxHxD)	55x130x115 mm
Approximate weight	300 g
Mounting information	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE
ACCESSORIES	
Mounting rail (IEC60715/TH35-7.5)	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail (IEC60715/TH35-15)	

CSU SERIES

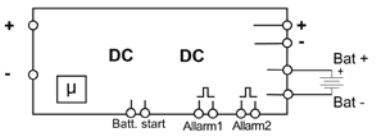
UNINTERRUPTIBLE POWER SUPPLIES DC/DC UPS ACCESSORY

- **Connected to a DC line, allow to supply loads and charge the backup battery**
- **Suitable for 12Vdc and 24 Vd loads and Lead-Acid batteries**
- **Battery protected against oveload and deep discharge**
- **Easy setting with frontal DIP-switch**
- **LED status indicator and alarm contacts**
- **It allows to start loads from battery**

NOTE

Please refer to the datasheet or operating instruction for more details

The internal DC / DC converter increases the voltage only towards the battery and not the load, which will receive the voltage set on the power supply



APPLICATIONS

It's a smart battery charger with a microprocessor that is able to automatically select the input voltage and battery voltage to 12 or 24V. The device is able to charge gel battery or Lead-acid battery.

PRODUCT FEATURES:

• possibility to supply 12Vdc or 24Vdc load depending on the input voltage (crossed combination are not allowed).
• in order to allow the charge of the battery, an internal DC/DC step-up converter increase the voltage towards the battery, thus avoiding overloading.
• Selection of the Battery capacity through dip-switch, from 1.2Ah up to 40Ah.
• two alarms are available (relays), one for monitoring the primary voltage and the second for the state of the battery
• The device is protect against a wrong configuration, for example if the input voltage is 12Vdc and the battery is 24Vdc.
• Temporary start from battery without primary voltage is allowed.
• Programmable Shutdown timer through dip-switch (buffer timer).

CODE	XCSU5240W024VAA
TYPE	CSU5-240W/024V/AA
INPUT TECHNICAL DATA	
Input rated voltage	12-24 Vdc
Input voltage AC	
Input voltage DC	12...13 Vdc / 24...25 Vdc
Frequency	
Current consumption	10 A max
Inrush peak current	
Power factor	
Internal protection fuse	
External protection on AC line	
OUTPUT TECHNICAL DATA	
Output voltage range	12-24 Vdc
Output adjustable range	10...17 Vdc / 19...30 Vdc
Continuous current	20 A (12 Vdc) / 10 A (24 Vdc)
Battery safety fuse	Fuse: 5 A replaceable
Status indication	LED "DC OK" / LED "Battery" / LED "Alarm"
Alarm contact	2 dry contacts (DC OK BATTERY STATUS)
Battery type	Lead-Acid
Battery capacity	1.2...40 Ah programmable
Charging current	0.12...4 A programmable
Battery disconnection voltage	10...11 Vdc (12V) / 19...20Vdc (24V)
Protection	reverse polarity/overload/deep discharge
GENERAL TECHNICAL DATA	
Efficiency	96%
Dissipated power	5 W
Operating temperature range	-20...+60°C (derating -2 W >50°C)
Input / output isolation	
Input / ground isolation	
Output / ground isolation	
Standard / approvals	
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2
Protection degree	IP 20
Connection terminal	2.5 mm² / 2.5 mm² / 0.75 mm² (signals)
Housing material	aluminium
Dimensions (LxHxD)	40x130x115 mm
Approximate weight	300 g
Mounting information	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE
ACCESSORIES	
Mounting rail (IEC60715/TH35-7.5)	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB

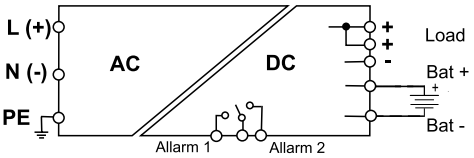
UNINTERRUPTIBLE POWER SUPPLIES
DC-UPS WITH INTEGRATED POWER SUPPLY

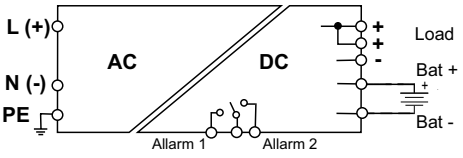
- **Power supply with integrated battery charger**
- **Suitable for Lead-Acid batteries**
- **Supplies power to load and battery simultaneously**
- **Battery protection (oveload and deep discharge)**
- **LED status indicator and alarm contact**

NOTE

Please refer to the datasheet or operating instruction for more details

In order to complete the charge, the DC output of the power supply must be 2-3V more than nominal voltage of the battery





CODE	XCSC120B	XCSC120C
TYPE	CSC120B	CSC120C
INPUT TECHNICAL DATA		
Input rated voltage	120–230 Vac	120–230 Vac
Input voltage AC	90...264 Vac	90...264 Vac
Input voltage DC	100...345 Vdc (derating Uin<130 Vdc)	100...345 Vdc (derating Uin<130 Vdc)
Frequency	47...63 Hz	47...63 Hz
Current consumption	1.6 A (120 Vac) / 0.91 A (230 Vac)	1.9 A (120 Vac) / 1.1 A (230 Vac)
Inrush peak current	20 A	20 A
Power factor	> 0.65	> 0.65
Internal protection fuse	T 3.15 A	T 3.15 A
External protection on AC line	MCB: C-4 A / Fuse: T 4 A	MCB: C-4 A / Fuse: T 4 A
OUTPUT TECHNICAL DATA		
Output voltage range	12 Vdc ±1%	24 Vdc ±1%
Output adjustable range	13...15 Vdc normal operation, 9...15 Vdc battery operation	26...26 Vdc normal operation, 17...25 Vdc battery operation
Continuous current	5 A at 50°C	5 A at 50°C
Battery safety fuse		
Status indication	LED "DC OK" / LED "Alarm"	LED "DC OK" / LED "Alarm"
Alarm contact	dry contact, max. 1A @ 24 Vdc (Uin >21.6 Vdc)	dry contact, max. 1A @ 24 Vdc (Uin >10.8 Vdc)
Battery type	Lead-Acid	Lead-Acid
Battery capacity	max. 1.2 Ah (12 Vdc)	max. 1.2 Ah (24 Vdc)
Charging current	150 mA	150 mA
Battery disconnection voltage	⩽ 9 Vdc ±0.5 V	⩽ 18 Vdc ±0.5 V
Protection	short-circuit / battery overload	reverse polarity, short-circuit, battery overload, battery deep discharge
GENERAL TECHNICAL DATA		
Efficiency	81% (120 Vac) 83% (230 Vac)	84% (120 Vac) 86% (230 Vac)
Dissipated power	25 W (120 Vac) 22 W (230 Vac)	22 W (120 Vac) 19 W (230 Vac)
Operating temperature range	–20...+60°C (derating -2 W >45°C)	–20...+60°C (derating -3.2 W >45°C)
Input / output isolation	3 KVac / 60 s (SELV output)	3 KVac / 60 s (SELV output)
Input / ground isolation	1.5 kVac / 60 s	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Standard / approvals	EN 60950-1	EN 60950-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	2.5 mm² / 2.5 mm²	2.5 mm² / 2.5 mm²
Housing material	aluminium	aluminium
Dimensions (LxHxD)	40x130x115 mm	40x130x115 mm
Approximate weight	450 g	450 g
Mounting information	vertical on a rail, 10 mm from adjacent components	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE	CE
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB

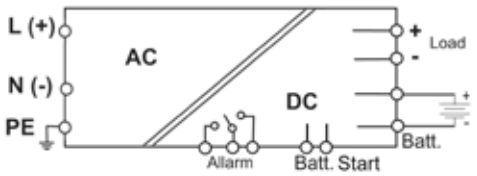
UNINTERRUPTIBLE POWER SUPPLIES
DC-UPS WITH INTEGRATED POWER SUPPLY

- **Power supply with integrated battery charger**
- **Suitable for Lead-Acid batteries**
- **Supplies power to load and battery simultaneously**
- **Battery protection (oveload and deep discharge)**
- **LED status indicator and alarm contact**
- **Possibility of starting load from battery**

NOTE

Please refer to the datasheet or operating instruction for more details

In order to complete the charge, the DC output of the power supply must be 2-3V more than nominal voltage of the battery



CODE	XCSU1220W024VAA
TYPE	XCSU1-220W/024V/AA
INPUT TECHNICAL DATA	
Input rated voltage	120–230 Vac
Input voltage AC	90...264 Vac
Input voltage DC	90...370 Vdc (derating Uin
Frequency	47...63 Hz
Current consumption	2.73 A (120 Vac) / 1.17 A (230 Vac)
Inrush peak current	30 A
Power factor	>0.9
Internal protection fuse	T 2 A
External protection on AC line	MCB: C-4 A / Fuse: T 4 A
OUTPUT TECHNICAL DATA	
Output voltage range	24 Vdc
Output adjustable range	26...28 Vdc normal operation, 17...26 Vdc battery operation
Continuous current	10 A at 50°C
Battery safety fuse	
Status indication	
Alarm contact	1 dry contact (DC OK)
Battery type	Lead-Acid
Battery capacity	max. 40 Ah (24 Vdc)
Charging current	2 A - 4 A selectable
Battery disconnection voltage	⩽ 18 Vdc ±0.5 V
Protection	short circuit, battery overload, deep battery discharge
GENERAL TECHNICAL DATA	
Efficiency	
Dissipated power	22 W (120 Vac) 19 W (230 Vac)
Operating temperature range	–20...+50°C
Input / output isolation	3 KVac / 60 s (SELV output)
Input / ground isolation	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s
Standard / approvals	EN 62368-1
EMC Standard	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overvoltage category / pollution degree	II / 2
Protection degree	IP 20
Connection terminal	2.5mm² / 1.5mm² push-in
Housing material	aluminium
Dimensions (LxHxD)	100x130x140 mm
Approximate weight	1.35 kg
Mounting information	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE
ACCESSORIES	
Mounting rail (IEC60715/TH35-7.5)	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB

UNINTERRUPTIBLE POWER SUPPLIES
BATTERY PACK HOLDER

- 24V battery holder modules
- With two 12V lead acid VRLA AGM batteries
- Versions for 1.2Ah, 3.4Ah, 7.2Ah, 12Ah batteries
- Quick connection with Push-in terminal and integrated protection fuse

CODE	XBPS01AHAA	XBPS03AHAA
TYPE	BPS-1.2AH/AA	BPS-3.4AH/AA
BATTERY TECHNICAL DATA		
Input rated voltage	24 Vdc	24 Vdc
Nominal capacity	1.2 Ah	3.4 Ah
Max. charge current	0.3 A	1.0 A
Charging voltage	27.6 Vdc (20°C)	27.6 Vdc (20°C)
Parallel connection of more battery packs	possible	possible
Series connection of more battery packs	no	no
Battery safety fuse	15 A	25 A
Spare fuse	present	present
Battery type	AGM VRLA	AGM VRLA
GENERAL TECHNICAL DATA		
Operating temperature range	–20...+50°C	–20...+50°C
Overvoltage category / pollution degree	III / 2	III / 2
Protection degree	IP20	IP20
Connection terminal	0.2 ... 4 mm² push-in	0.2 ... 16 mm² push-in
Housing material	aluminium	aluminium
Dimensions (LxHxD)	65x115x172 mm	83x152x190 mm
Approximate weight	1.7 Kg	3.6 Kg
Mounting information	Mounting on panel.	Mounting on panel.
ACCESSORIES		
Spare battery	8911012 (1 pieces)	8911034 (1 pieces)
APPROVALS AND MARKINGS	CE	CE

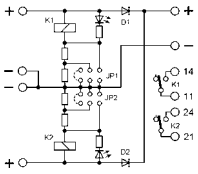
UNINTERRUPTIBLE POWER SUPPLIES
BATTERY PACK HOLDER

- 24V battery holder modules
- With two 12V lead acid VRLA AGM batteries
- Versions for 1.2Ah, 3.4Ah, 7.2Ah, 12Ah batteries
- Quick connection with Push-in terminal and integrated protection fuse

CODE	XBPS07AHAA	XBPS12AHAA
TYPE	BPS-7.2AH/AA	BPS-12AH/AA
BATTERY TECHNICAL DATA		
Input rated voltage	24 Vdc	24 Vdc
Nominal capacity	7.2 Ah	12 Ah
Max. charge current	2.1 A	3.6 A
Charging voltage	27.6 Vdc (20°C)	27.6 Vdc (20°C)
Parallel connection of more battery packs	possible	possible
Series connection of more battery packs	no	no
Battery safety fuse	25 A	40 A
Spare fuse	present	present
Battery type	AGM VRLA	AGM VRLA
GENERAL TECHNICAL DATA		
Operating temperature range	–20...+50°C	–20...+50°C
Overvoltage category / pollution degree	III / 2	III / 2
Protection degree	IP20	IP20
Connection terminal	0.2 ... 16 mm² push-in	0.2 ... 16 mm² push-in
Housing material	aluminium	aluminium
Dimensions (LxHxD)	169x83x265 mm	169x115x265 mm
Approximate weight	5.5 Kg	8.5 Kg
Mounting information	Mounting on panel.	Mounting on panel.
ACCESSORIES		
Spare battery	8911072 (1 pieces)	8911120 (1 pieces)
APPROVALS AND MARKINGS	CE	CE

REDUNDACY MODULES

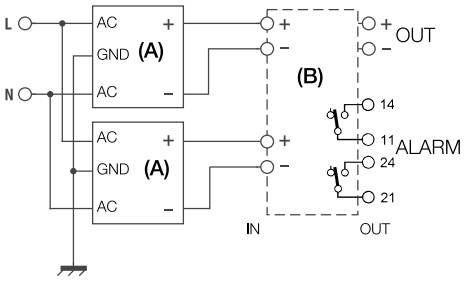
- **Suitable for connecting power supplies without ORing diodes**
- **12, 24 and 48 Vdc selectable operating voltages**
- **2 alarm relays**
- **Compact dimensions**



APPLICATIONS

This module this used for placing two power supplies without blocking diodes in parallel; jumpers can be used to select the desired operating voltage, and each channel has a relay and an LED diode giving you a remote alarm signal in case a power supply switches off.

Connection Diagram



(A) Power supply
(B) CSBD

CODE	XCSBD
TYPE	CSBD
INPUT TECHNICAL DATA	
Input rated voltage	12-24-48 Vdc
Input nominal current	2 x 15 A
OUTPUT TECHNICAL DATA	
Output voltage range	12–24–48 Vdc selectable
Output adjustable range	1 x 15 A (max. 30 A peak)
IN-OUT voltage drop	0.7 V a 15 A
Status indication	LED "DC OK"
Alarm contact	2 dry contacts, max. 1A @ 24 Vdc
GENERAL TECHNICAL DATA	
Efficiency	
Dissipated power	
Operating temperature range	–20...+50°C
EMC Standard	
Overvoltage category / pollution degree	II / 2
Protection degree	IP 00
Connection terminal	2.5 mm² / 2.5 mm²
Housing material	UL94V-0 plastic material
Dimensions (LxHxD)	40x130x85
Approximate weight	120 g
Mounting information	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE
ACCESSORIES	
Mounting rail (IEC60715/TH35-7.5)	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB

CSR SERIES

REDUNDACY MODULES

- **Suitable for connecting power supplies without ORing diodes**
- **Suitable for 12 to 80 V**
- **CPU-controlled electronic redundancy**
- **Current failure and unbalance alarm**
- **High efficiency and low consumption**

NOTE

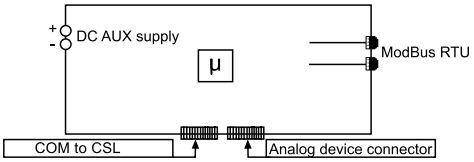
(1) The DC-OK LED signals the status of the output, Unmbalance LEDs signal if the current sharingis balanced or not balanced, alarm LED signals an unmbalanced and critical situation or the failure of one power supply

(2) The Alarm contact opens in case of an unmbalanced and critical situation or the failure of one power supply

CODE	XCSR2M20AA	XCSR2M40AA
TYPE	CSR-2M/20AA	CSR-2M/40/AA
INPUT TECHNICAL DATA		
Input rated voltage	12...80 Vdc	12...80 Vdc
Input nominal current	2 x 20 A	2 x 40 A
OUTPUT TECHNICAL DATA		
Output voltage range	10.8...85 Vdc	10.8...85 Vdc
Output adjustable range	1 x 25 A (max. 40 A peak)	1 x 50 A (max. 80 A peak)
IN-OUT voltage drop	0.2 V a 25 A	0.2 V a 50 A
Status indication	LED "DC OK" / LED "Alarm" / LED "Unbalance" (1)	LED "DC OK" / LED "Alarm" / LED "Unbalance" (1)
Alarm contact	dry contact, max. 1A @ 24 Vdc (2)	dry contact, max. 1A @ 24 Vdc (2)
GENERAL TECHNICAL DATA		
Efficiency	>98% (12 V / 50 A)	>98% (12 V / 50 A)
Dissipated power	5 W	10 W
Operating temperature range	–20...+50°C	–20...+50°C
EMC Standard	EN 61000-6-2, EN 61000-6-4	EN 61000-6-2, EN 61000-6-4
Overvoltage category / pollution degree	II / 2	II / 2
Protection degree	IP 20	IP 20
Connection terminal	16 mm² / 16 mm² / 1.5 mm² (signal)	16 mm² / 16 mm² / 1.5 mm² (signal)
Housing material	aluminium	aluminium
Dimensions (LxHxD)	40x110x145	40x110x145
Approximate weight	200 g	200 g
Mounting information	vertical on a rail, 10 mm from adjacent components	vertical on a rail, 10 mm from adjacent components
APPROVALS AND MARKINGS	CE	CE
ACCESSORIES		
Mounting rail (IEC60715/TH35-7.5)	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 rail (IEC60715/TH35-15)		

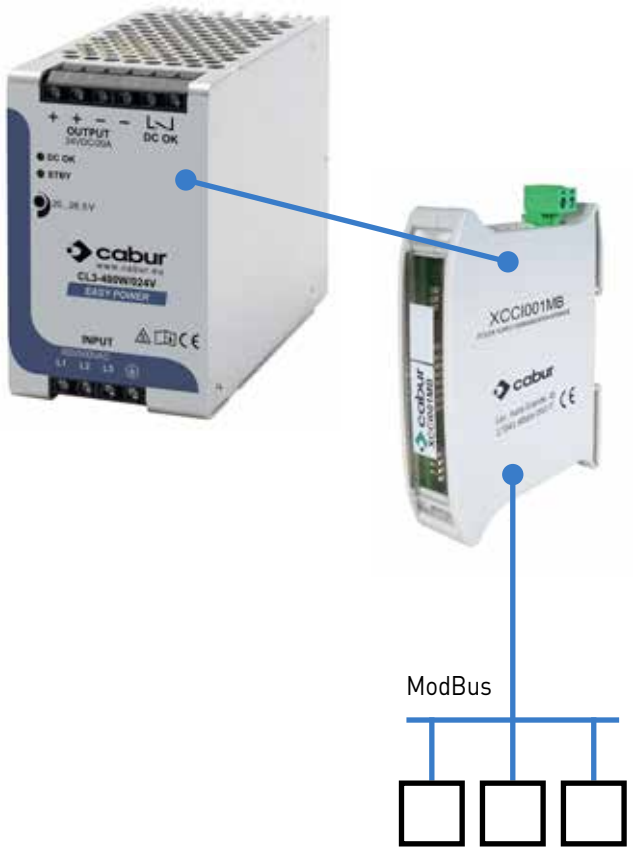
COMMUNICATION INTERFACE

- **Monitoring of signals from the CSL 480W series power supplies**
- **Remote power on and off of the power supplie**
- **ModBus RTU communication**



XCCI001MB is a microprocessor-controlled communication interface that allow the connection to the net and the remote monitoring of the CSL1-480...AB/CSL3-480...AB power supply, by using the ModBus RTU protocol.
The communication Interface can be directly powered by the monitored PSU by the AUX2 port or can be powered by an auxiliary PSU (10 - 30 Vdc). This option allows the remote control of the PSU ON/OFF.
The connection to the ModBus net take place by 2 equivalent RJ-45 port and the address of the device can be set by using the dip switch on the front panel.
The XCCI001MB also allow the connection of additional analog and digital signals, through the AUX1 port.

CODE	**XCCI001MB**
TYPE	**CCI-001-MB**
Power supply	10 – 30 Vdc
Communication protocol	ModBus RTU
Signalling	Green LED – Power on / Yellow LED – TX/RX activity on going
Operating temperature	-20 .. +50 °C
Protection degree	IP20
Standards	CE
Dimensions	40x130x115 mm
Weight	300 g
Housing material	Alluminium
Mounting	DIN rail



ADJUSTABLE ELECTRONIC OVERCURRENT PROTECTION FROM 1...10 A / 24 VDC

According to the new EN60204-1, it is **compulsory** to protect wires on SELV-PELV lines from overcurrent. The standard requires that 24 Vdc overcurrent protections intervene by cutting out the failure before the control and command 24 Vdc falls below 21.6V, cutting off power to the controls and preventing the emergency and safety features from activating.
Under EN 60204-1 and EN 61131-1 and -2, overcurrent protection on SELV/PELV lines must be capable of isolating shorts within 10 ms and hazardous overcurrents within 5 s. The use of power supplies with a high output overcurrent capacity and fast, accurate protections facilitates fault isolation before the 24 V falls below 21.6 V, leaving the controls without power.

Figure 1

Fuses and magneto-thermal switches inserted on 24 Vdc lines have characteristic intervention I/ts that are not suitable for isolating faults with the required speed and accuracy, while the fuses may be replaced with different types, affecting the behaviour of the protection and the safety of the system.

The proper coordination of the circuit in which the overcurrent protection is inserted must consider the total R of the line as: R connections + R wires + R protection + R residual malfunctioning load. The total R must always allow a safe current to circulate in the circuit once the protection is triggered and the protection should neither be undersized, to prevent undesirable bursts at peak load, nor oversized, to prolong its intervention t.

The entire circuit, including power supply, protection, wiring and connections, must be designed such that all overcurrents can be cut-off within 5 s before the 24 Vdc falls below 21.6 Vdc. This requirement can be met with Cabur's CSF and CSG series power supplies, designed to provide a high output overcurrent (nom. I >+50% for > 5s) and CEP System electronic overcurrent protections with an accuracy and speed far superior to magneto-thermal switches and fuses, whose trigger t is independent of ambient T and can be reset locally or remotely.

Figure 3

Protection features

MGTs have two different intervention curves: Thermal and magnetic. The magnetic relay only triggers in the event of a short with different I/t curves; thermal relays all have the same intervention curve regardless of the MGT curve and in the event of an overload they behave as shown in figure 2: overload currents of 1.13 x In are cut in >1h, and at overcurrent > 1.45 x In, the trigger occurs in several minutes.
The disconnection of short-circuit currents is activated by the magnetic relay whose trigger t ranges from 0.01 to 0.1 s, and it occurs at very high currents which the power supply used may not be able to deliver: a C5 MGT used in DC has a safe trigger of > 70 A, a current which only (but not all) power supplies with a far higher nom. I, e.g. 40 A, are capable of providing, but which is not deliverable by 10 A power supplies.
Using MGT as an overcurrent protection, if the power supply used has an overload I 1.2 times greater than its nominal I, disconnection will occur after 20...60 minutes, while with a current 2.5 times higher than the nominal I it will trigger after 25 s to 2 min., depending on the Tamb, times which are too long to guarantee stability at 24V to protect wiring and protection selectivity. In case of malfunction, until the protection triggers, the power supply remains in overload in excess of x 1.5 x 5 s and the 24 V falls below 21.6 V, leaving normal functions and particularly the safety functions without power.

Figure 4

Protection selectivity

In case of an overload or short, only the malfunctioning circuit is isolated from its protection without any effects on the power to the other loads. This feature is obtained using power supplies with a high overcurrent capacity and quick and precise protections.

CEP system – the smart current control system

CEP "recognises" overcurrent at the lowest and most precise threshold and isolates the malfunctioning circuit in the fastest possible time. For maximum flexibility of use, the CEP system allows you to set 10 trigger currents from 1 A to 10 A in 1 A increments, and has 3 intervention curves: "Rapid – Normal – Delayed" (see fig. 3).
The protection status is indicated by two LEDs and a remote alarm transistor output, while the load can be activated/deactivated using the button on the front (fig. 5) or controlled remotely by PLC. The ability to control individual channels separately is useful during installation since various components can be activated and tested individually, while in large plants, the remote control feature can be used to gradually activate the various loads, preventing multiple simultaneous overloads at system start-up.
An additional safety feature is manual disconnection, with which even when reactivating the protections remotely the load will remain inactive, preventing hazardous operating conditions.

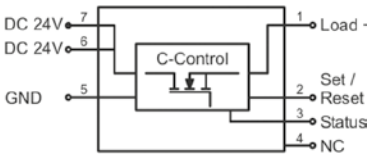
Figure 5

- **Programmable from 1 A to 10 A**
- **3 programmable characteristic curves**
- **Remote or local ON/OFF control**
- **Green ON/red OFF status LED and remote signalling**
- **Slide contact for manual disconnection**
- **Sealable front cover for programming protection**

NOTE

Remote control is through 24 Vdc pulses. Such pulse durations should be: = impulse > 1 s / OFF = impulse > 100 ms and < 800 ms

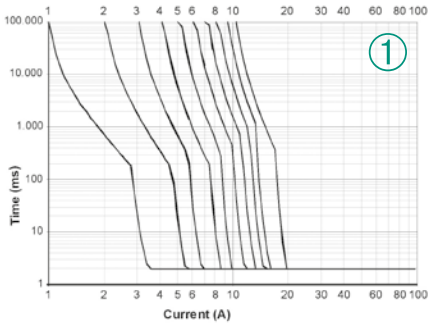
The 3 standard characteristic curves are shown in the diagrams; the CEP-D3 version also has a softwareprogrammable curve.

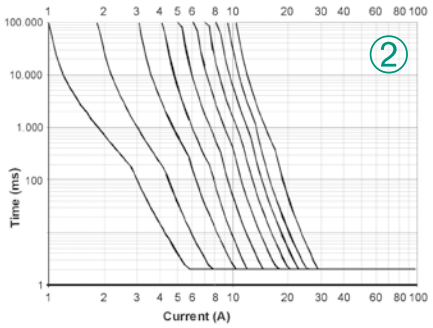


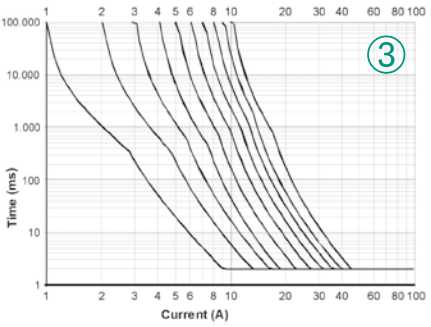
1) sealable cover
2) programming current
3) identification tag
4) programming intervention curve
5) replacing the fuse

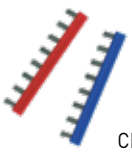
CODE	XCEPD1
TYPE	CEP-D1
INPUT TECHNICAL DATA	
Input rated voltage	24 Vdc
Input voltage range	18...32 Vdc
Input current	10 A DC max
OUTPUT TECHNICAL DATA	
Output voltage range	24 Vdc (voltage drop < 170 mV at Un / In)
Continuous current	1...10 A DC programmable in 1 A increments
Max system current	40 A DC with CEP-RCC distribution bar
Default trip curves	slow, medium and fast
Max connectable output capacity	10,000 µF
Protection	electronic, against reverse polarity
Remote On-OFF control	external 24 Vdc pulse
Status indication	Green LED: constant = OK, flashing = Iout at 90% of nominal, red LED: constant = output manually switched off, flashing slowly = overcurrent, flashing quickly = error
Alarm contact	open collector transistor (overcurrent status)
GENERAL TECHNICAL DATA	
Operating temperature range	-25...+60°C (derating -2 A >40°C)
Input / output isolation	3 KVac / 60 s (SELV output)
Standard / approvals	EN60950-1
EMC Standard	EN61131-1, EN61131-2, EN60898, EN60947-4-1, EN50081
Overvoltage category / pollution degree	II / 2
Protection degree	IP 20
Connection terminal	2.5 mm² / 2.5 mm²
Housing material	UL94V-0 plastic material
Dimensions (LxHxD)	8x115x116 mm
Approximate weight	120 g
Mounting information	vertical on a rail, side by side
APPROVALS AND MARKINGS	CE cULus
ACCESSORIES	
Mounting rail (IEC60715/TH35-7.5)	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail (IEC60715/TH35-15)	PR/3/PP, PR/3/PP/ZB, PR/3/PA, PR/3/PA/ZB
Marking tag	CEP-MTW (code XCEPMTW, table with 50 tags)
Support for supply bus bar	CEP-SS (code XCEPSS)
Supply bus bar	CEP-RCC (code XCEPRCC)
Cover for supply bus bar	CEP-RCP (code XCEPRCP)
Plugin jumper	CEP-BCR (8 poles red) CEP-BCB (8 poles blue)

Characteristic curve:
1) fast
2) medium
3) slow

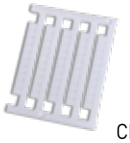








CEP-BCR and CEP-BCB



CEP-MTW

CEP-SS

AUTOMATION
AND CONTROL
SOLUTIONS

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CONNECTIVITY
SOLUTIONS

SOLUTIONS
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