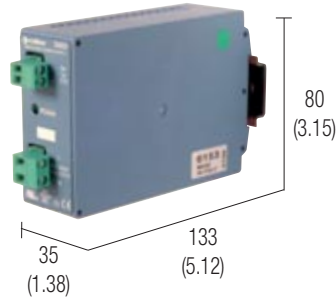
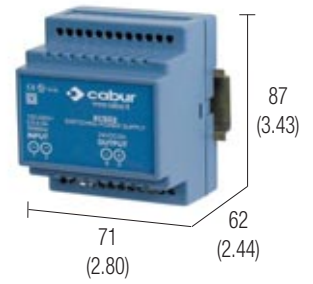


Single phase switching power supply 24 Vdc regulated output

- Class 2 isolation device, does not require GND connection
- Input voltage 90–264 Vac / 110 - 230 Vdc
- Compact dimension
- DIN rail mounting
- Functions and description on the frontal panel
- Suitable for SELV and PELV circuitry

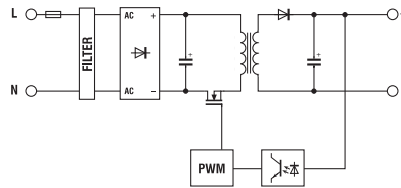

24 Vdc 1 A @ 45°C

24 Vdc 2 A @ 45°C

NOTES

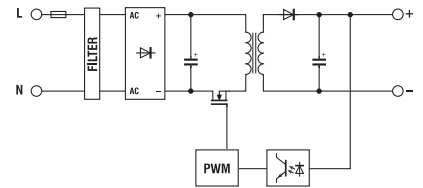
Dimensions indicated on drawings and photos, are overall dimensions, are inclusive of external components such as terminal blocks and Din-rail clamps.

(1) With 110 – 127 Vdc input voltage, the output current must be derated by 25%.

BLOCK DIAGRAM



BLOCK DIAGRAM



APPLICATIONS

With 120-230 Vac input range, are suitable in every supply mains world wide.

The devices comply with IEC and EN EMC Standards for Building automation applications without any external filter. Engineering has been focused on achieving a high efficiency allow to reduce energy consumption and operating temperature of the components. High efficiency moreover makes available over +20% power boost at operating temperature of 45°C, without exceeding the standard temperature limits and guaranteeing safety and reliability.

Short-circuit - overload - over temperature protections are set to give +150% of the rated current to feed heavy loads, start-up currents, while the over temperature protection prevents failure of the power supply also in case of long overload duration with high ambient temperature. Output is adjustable and overvoltage protected. The housings assure a high ventilation of internal components, compact dimensions and a IP20 protection degree according to IEC529 Std.

Battery charger:

these units are suitable as battery chargers while feeding other loads.

To allow a power supply to charge batteries, we developed the cost effective CSBC module (Cat. No. XCSBC), featuring protection diodes, current charge limiting resistor and battery protection fuse. For more details, refer to the accessories section.

VERSIONS

Standard
With failure contact

INPUT TECHNICAL DATA

| | |
|--------------------|---|
| Rated voltage | 90 – 264 Vac / 110 – 300 Vdc (1) |
| Frequency | 50 – 60 Hz |
| Current @ Iout max | 440 mA @ 120 Vac / 165 mA @ 230 Vac ± 10% |
| Inrush current | < 20 A |
| Power factor | > 0.6 full load |
| Protection fuse | T 0.8 A - internal, replaceable |

OUTPUT TECHNICAL DATA

| | |
|-----------------------------------|---|
| Voltage | 24 Vdc - 0 + 5% (not adjustable) |
| Maximum current | 1.2 A overload limit |
| Continuous current | 1 A @ 45°C |
| Load regulation | < 1.5% |
| Ripple @ rated U-I output | ≤ 50 mVpp |
| Hold up time | > 100 ms @ 230Vac full load |
| Overload/short circuit protection | Hiccup circuit, auto reset |
| Output signal | standard version "P" version |

Parallel connection possible
Redundant parallel connection possible with external Oring diode

APPROVALS

GENERAL TECHNICAL DATA

| | |
|--------------------------------|---|
| Efficiency | ≥ 85% @ 230 Vac, ≥ 82% @ 120 Vac |
| Dissipated power | < 6 W |
| Operating temperature | -20 ... +60°C, with overtemperature protection |
| Input / output isolation | 3 kVac / 60 s |
| Input / ground isolation | Class 2 without PE connection |
| Output / ground isolation | Class 2 without PE connection |
| Protection degree | IP 30 |
| Standard / Approvals | EN 60950, IEC950, UL 1950, UL508C |
| EMC standards | EN 50081-1, EN 50082-1, EN 61000-3-2,3 |
| Surge immunity | EN61000-4-2, EN61000-4-4, EN 61000-4-5 |
| Connection terminal blocks | 2.5 mm ² , screw type pluggable |
| Housing material | polyamide UL94V-0 |
| Approximative weight | 300 g (10.50 oz) |
| Mounting information | Vertical on rail, allow 10 mm spacing between adjacent components |
| Mounting rail | PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB |
| according to IEC60715/TH35-7.5 | |

CS4 Cod. XAS4

CSD2 (2) Cod. XCS2

| | |
|--------------------|---|
| Rated voltage | 120 – 240 Vac / 110 – 300 Vdc (1) |
| Frequency | 50 – 60 Hz |
| Current @ Iout max | 700 mA @ 120 Vac / 400 mA @ 230 Vac ± 10% |
| Inrush current | < 15 A |
| Power factor | > 0.6 full load |
| Protection fuse | T 2 A - internal, replaceable |

| | |
|-----------------------------------|--|
| Voltage | 24 Vdc ± 2% (not adjustable) |
| Maximum current | 2.5 A overload limit / 3.5 A peak for 50 ms |
| Continuous current | 2 A @ 45°C |
| Load regulation | < 1% |
| Ripple @ rated U-I output | 60 mVpp |
| Hold up time | > 20 ms @ 230Vac full load |
| Overload/short circuit protection | Hiccup 1.3 Inom auto reset / over temperature protection |
| Output signal | - |

Parallel connection possible
Redundant parallel connection possible with external Oring diode



| | |
|----------------------------|---|
| Efficiency | > 84% @ 120 Vac, > 86% @ 230 Vac |
| Dissipated power | < 9 W @ 120 Vac, < 8 W @ 230 Vac |
| Operating temperature | -10 ... +45°C, with Ta 60°C apply derating 25% |
| Input / output isolation | 3 kVac / 60 s |
| Input / ground isolation | Class 2 without PE connection |
| Output / ground isolation | Class 2 without PE connection |
| Protection degree | IP 20 |
| Standard / Approvals | EN 60950, IEC950 |
| EMC standards | EN 50081-1, EN 50082-1, EN 61000-3-2,3, EN55022-B |
| Surge immunity | EN61000-4-2, EN61000-4-4 |
| Connection terminal blocks | 2.5 mm ² screw type |
| Housing material | polyamide UL94V-0 |
| Approximative weight | 190 g (6.70 oz) |
| Mounting information | vertical on rail, allow 10 mm spacing between adjacent components |
| Mounting rail | PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB |

Single phase switching power supply

24 Vdc regulated output

- 90-264 Vac/110-300 Vdc input voltage
- Short circuit, overload, over temperature, input / output over-voltage protection
- Output protected against internal or external overvoltage
- High efficiency and low dissipated power
- Suitable for SELV and PELV circuitry


24 Vdc 4 A @ 45°C

24 Vdc 6 A @ 45°C

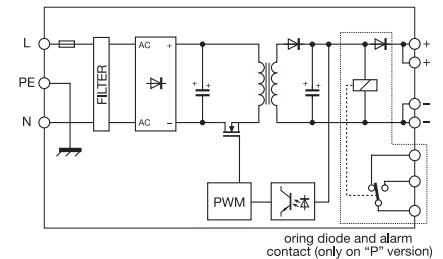
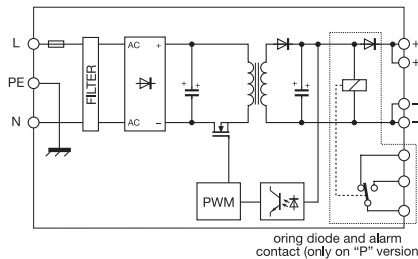
NOTES

Dimensions indicated on drawings and photos, are overall dimensions, are inclusive of external components such as terminal blocks and Din-rail clamps.

(1) Version with Oring diode and failure contact for redundant parallel connection.

(2) With 110 – 127 Vdc input voltage, the output current must be derated by 25%.

BLOCK DIAGRAM



APPLICATIONS

With 120-230 Vac input range, are suitable in every supply mains world wide.

The devices comply with IEC and EN EMC Standards for Building automation applications without any external filter. Engineering has been focused on achieving a high efficiency allow to reduce energy consumption and operating temperature of the components. High efficiency moreover makes available over +20% power boost at operating temperature of 45°C, without exceeding the standard temperature limits and guaranteeing safety and reliability.

Short-circuit - overload - over temperature protections are set to give +150% of the rated current to feed heavy loads, start-up currents, while the over temperature protection prevents failure of the power supply also in case of long overload duration with high ambient temperature. Output is adjustable and overvoltage protected. The housings assure a high ventilation of internal components, compact dimensions and a IP20 protection degree according to IEC529 Std.

Battery charger:

these units are suitable as battery chargers while feeding other loads.

To allow a power supply to charge batteries, we developed the cost effective CSBC module (Cat. No. XCSBC), featuring protection diodes, current charge limiting resistor and battery protection fuse. For more details, refer to the accessories section.

VERSIONS

Standard
With failure contact

INPUT TECHNICAL DATA

Rated voltage
Frequency
Current @ lout max.
Inrush current @ cold start al 230 Vac
Power factor
Protection fuse

OUTPUT TECHNICAL DATA

Voltage
Maximum current
Continuous current
Load regulation
Ripple @ rated U-I output
Hold up time
Overload / short circuit protection
Output signal standard version "P" version
Parallel connection
Redundant parallel connection

APPROVALS

GENERAL TECHNICAL DATA

Efficiency
Dissipated power
Operating temperature
Input / output isolation
Input / ground isolation
Output / ground isolation
Protection degree
Standards / Approvals
EMC Standards
Surge immunity
Connection terminal blocks
Housing material
Approximative weight
Mounting information

Mounting rail type according to IEC60715/TH35-7.5

CSF3
CSF3P

(1)

cod. XCSF3
cod. XCSF3P

90-264 Vac / 110-300 Vdc (2)
47-63 Hz
1.3 A @ 120 Vac / 0.7 A @ 230 Vac
< 20 A
> 0.7
T 2 A - internal, replaceable

24 - 27.5 Vdc adjustable
5 A @ 120 Vac / 6 A @ 230 Vac
4 A @ 45°C / 3 A @ 60°C
< 1%
≤ 40 mVpp @ 230 Vac
> 20 ms @ 230Vac full load
Hiccup 1.6 circuit auto reset / over temperature protection

SPDT 2 A / 250 Vac - 30 Vdc
Possible
"P" version provided with Oring diode



>86% @ 120 Vac / >90% @ 230 Vac
12 W @ 120 Vac / 8 W @ 230 Vac (1)
-20 ... +60°C, with over temperature protection
3 kVac / 60 s
1.5 kVac / 60 s
0.5 kVac / 60 s
IP 20 IEC 529 EN60529
IEC950, EN 60950, UL 508C
EN 50081-1, EN 50082-2, EN 61000-3-2
EN61000-4-2, EN61000-4-4, EN 61000-4-5 lev. 4

2.5 mm², screw type pluggable
Aluminium and stainless steel
Std. version 515 g (18.1 oz) / "P" version 535 g (18.8 oz)
Vertical on rail, allow 10 mm spacing between adjacent components

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

CSF5
CSF5P

(1)

cod. XCSF5
cod. XCSF5P

90-264 Vac / 110-300 Vdc (2)
47-63 Hz
1.8 A @ 120 Vac / 1 A @ 230 Vac
< 20 A
> 0.7
T 3,15 A - internal, replaceable

24 - 27.5 Vdc adjustable
8 A @ 120 Vac / 10 A @ 230 Vac
6 A @ 45°C / 5 A @ 60°C
< 1%
≤ 50 mVpp @ 230 Vac
> 20 ms @ 230Vac full load
Hiccup 1.6 circuit auto reset / over temperature protection

SPDT 2 A / 250 Vac - 30 Vdc
Possible
"P" version provided with Oring diode



>87% @ 120 Vac / >91% @ 230 Vac
18 W @ 120Vac , 12 W @ 230 Vac
-20 ... +60°C, with over temperature protection
3 kVac / 60 s
1.5 kVac / 60 s
0.5 kVac / 60 s
IP 20 IEC 529 EN60529
IEC950, EN 60950, UL 508C
EN 50081-1, EN 50082-2, EN 61000-3-2
EN61000-4-2, EN61000-4-4, EN 61000-4-5 lev. 4

2.5 mm², screw type pluggable
Aluminium and stainless steel
Std. version 535 g (18.8 oz) / "P" version 555 g (19.5 oz)
Vertical on rail, allow 10 mm spacing between adjacent components

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

Single phase switching power supply

24 Vdc regulated output

- 120 and 230 Vac double input voltage
- Short circuit, overload, over temperature, input / output over-voltage protection
- Output protected against internal or external overvoltage
- High efficiency and low dissipated power
- Suitable for SELV and PELV circuitry



24 Vdc 10 A @ 45°C

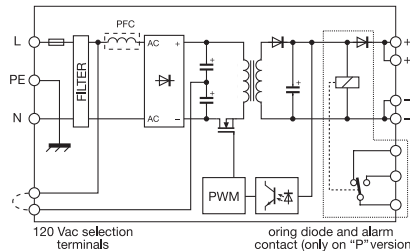
NOTES

Dimensions indicated on drawings and photos, are overall dimensions, are inclusive of external components such as terminal blocks and Din-rail clamps.

If not specified, the technical data in this catalogue are typical and measured @ 25°C (77°F), 230Vac, Unom Vdc and rated current; ripple is measured with probe connected to 0.1uF/20MHz termination.

(1) Version with Oring diode and failure contact for redundant parallel connection.

BLOCK DIAGRAM



APPLICATIONS

With 120-230 Vac input range, are suitable in every supply mains world wide.

The devices comply with IEC and EN EMC Standards for Building automation applications without any external filter. Engineering has been focused on achieving a high efficiency allow to reduce energy consumption and operating temperature of the components. High efficiency moreover makes available over +20% power boost at operating temperature of 45°C, without exceeding the standard temperature limits and guaranteeing safety and reliability.

Short-circuit - overload - over temperature protections are set to give +150% of the rated current to feed heavy loads, start-up currents, while the over temperature protection prevents failure of the power supply also in case of long overload duration with high ambient temperature. Output is adjustable and overvoltage protected. The housings assure a high ventilation of internal components, compact dimensions and a IP20 protection degree according to IEC529 Std.

Battery charger:

these units are suitable as battery chargers while feeding other loads.

To allow a power supply to charge batteries, we developed the cost effective CSBC module (Cat. No. XCSBC), featuring protection diodes, current charge limiting resistor and battery protection fuse. For more details, refer to the accessories section.

VERSIONS

Standard
With failure contact

CSF10 cod. XCSF10
CSF10P (1) cod. XCSF10P

INPUT TECHNICAL DATA

Rated voltage
Frequency
Current @ Iout max.
Inrush current @ cold start al 230 Vac
Power factor
Protection fuse

120 and 230 Vac ±10%
47– 63 Hz
3.5 A @ 120 Vac / 1.8 A @ 230 Vac
< 35 A
> 0.6 @ 120 Vac / > 0.85 A @ 230 Vac
T 6.3 A - internal, replaceable

OUTPUT TECHNICAL DATA

Voltage
Maximum current
Continuous current
Load regulation
Ripple @ rated U-I output
Hold up time
Overload / short circuit protection
Output signal standard version
 "P" version
Parallel connection
Redundant parallel connection

22.5 – 27.5 Vdc adjustable
14 A overload limit / 20 A peak 400 ms
10 A @ 45°C
< 1%
≤ 60 mVpp @ 230 Vac
> 40 ms @ 230Vac full load
Hiccup 1.4 In auto reset / over temperature protection
–
SPDT 2 A / 250 Vac - 30 Vdc
Possible
"P" version provided with Oring diode



APPROVALS

GENERAL TECHNICAL DATA

Efficiency
Dissipated power
Operating temperature
Input / output isolation
Input / ground isolation
Output / ground isolation
Protection degree
Standards / Approvals
EMC Standards
Surge immunity
Connection terminal blocks
Housing material
Approximative weight
Mounting information

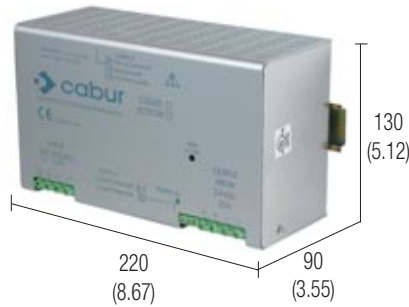
> 87 % @ 120 Vac / > 90 % @ 230 Vac
35 W @120 Vac / 27 W @ 230 Vac
–20 ... +60°C, with overtemperature protection
3 kVac / 60 s
1.5 kVac / 60 s
0.5 kVac / 60 s
IP20
IEC950, EN60950, UL 508c
EN50081-1, EN50082-1, EN61000-3-2
EN61000-4-2, EN61000-4-4, EN61000-4-5, level 4
2.5 mm², screw type pluggable
Aluminium
Std. version 920 g (32.4 oz) / "P" version 940 g (33.1 oz)
Vertical on rail, allow 10 mm spacing between adjacent components
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Mounting rail type according to IEC60715/TH35-7.5

Single phase switching power supply

24 Vdc regulated output

- High efficiency and low dissipated power
- 50 A outrush current per 1.5 s for starting-up heavy loads and to guarantee the selectivity of the 24 V lines
- Short circuit, overload, over temperature, input / output overvoltage protection
- Suitable for SELV and PELV circuitry
- With PFC filter



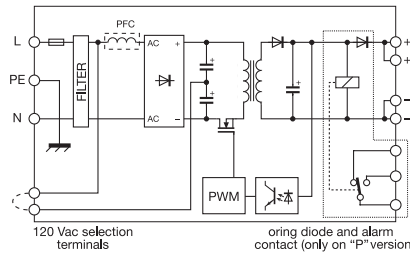
24 Vdc 20 A @ 45°C

NOTES

Dimensions indicated on drawings and photos, are overall dimensions, are inclusive of external components such as terminal blocks and Din-rail clamps.

(1) Version with Oring diode and failure contact for redundant parallel connection

BLOCK DIAGRAM



APPLICATIONS

The CSF series switching power supply units of CABUR have been designed and developed for industrial applications where safety, easy use and reliability are essential. These units comply with the requirements given by the Low Voltage Directive. The three different overvoltage and short circuit protections can be set according to the different type of application. The thermal protection turns off the device if the air temperature is 60°C along with continuous full load protection; when the temperature cools down the power supply restarts itself automatically. These models have an electronic output voltage limitation at ≤ 32 Vdc which, in case of failure, prevents damage to the not feeded devices. CABUR switching power supply units comply with EMI standards.

The CS series with 120, 230 Vac and 110 Vdc settable input have no ignition problems at full load even with low mains voltage and are therefore suitable for critical supply mains.

This series is very compact and has an IPXXB protection degree against accidental contacts according to IEC 529 Std. All the functions are located on the front panel and marked with standard IEC symbols, which makes use very easy, even on site.

Battery charger

These units can be used also to charge batteries while feeding the load; it is only necessary to set the current share ON and to set the constant power protection. We recommend to protect the battery with a fuse.

VERSIONS

Standard
With failure contact

CSF20
CSF20P

Cod. XCSF20
(1) Cod. XCSF20P

INPUT TECHNICAL DATA

Rated voltage
Frequency
Current @ Iout max
Inrush current
Power factor
Protection fuse

120 Vac and 230 Vac $\pm 10\%$
47 – 63 Hz
4.4 A @ 120 Vac / 2.2 A @ 230 Vac
< 25 A
> 0.76 with PFC
T 10 A @ 120 Vac – T 5 A @ 230 Vac (external)

OUTPUT TECHNICAL DATA

Voltage
Maximum current
Continuous current
Load regulation
Ripple @ rated U-I output
Hold up time
Overload/short circuit protection
Output signal Standard version
"P" version
Parallel connection
Redundant parallel connection

24 – 28 Vdc adjustable
25 A overload limit / 50 A peak 1.5 s
20 A @ 45°C
< 1%
 ≤ 50 mVpp
> 20 ms @ 230Vac full load
Hiccup 1.4 circuit, auto reset
Manual reset
Constant current (to select)
–
SPDT 2 A / 250 Vac
possible with Current Share
possible with external Oring diode

APPROVALS



GENERAL TECHNICAL DATA

Efficiency
Dissipated power
Operating temperature
Input / output isolation
Input / ground isolation
Input / ground isolation
Protection degree
Standard / Approvals
EMC Standards
Surge immunity
Connection terminal blocks
Housing material
Weight
Mounting information

> 89 % @ 120 Vac / > 91 % @ 230 Vac
60 W @ 120 Vac / 47 W @ 230 Vac
–20 ... +60°C, with overtemperature protection
3 kVac / 60 s
1.5 kVac / 60 s
0.5 kVac / 60 s
IP 20
IEC950, EN 60950
EN 50081-2, EN 50082-2, EN 61000-3-2
EN61000-4-2, EN61000-4-4, EN 61000-4-5 lev. 4
4 mm², screw type
Aluminium
2000 g (70.2 oz)
Vertical on rail, allow 10 mm spacing between adjacent components

Mounting rail type according to IEC60715/TH35-7.5

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