



Switch mode power supplies

**70PS series**

Max. output power 70W



This product is intended for general use to feed electric and electronic devices in covered rooms, in environments without risk of explosion.

This product is intended to be placed into distributor boxes or eventually into cover of other devices.

Output voltage range from 5V to 48V

Mounting: /S - with screws  
/D - on DIN-rail

Protection degree IP20  
Connector clamps IP00

	Output voltage	Output current	Stability	Ripple 50 Hz	Noise p-p
70PS05V/7A.x/X	5 V	7 A	2 %	<80 mV	<160 mV pp
70PS06V9/5A.x/X	6,9 V	5 A	2 %	<80 mV	<160 mV pp
70PS09V/5A.x/X	9 V	5 A	1 %	<100 mV	<100 mV pp
70PS12V/5A.x/X	12 V	5 A	1 %	<100 mV	<100 mV pp
70PS13V8/5A.x/X	13,8 V	5 A	1 %	<100 mV	<100 mV pp
70PS15V/3A5.x/X	15 V	3,5 A	1 %	<100 mV	<100 mV pp
70PS18V/3A.x/X	18 V	3 A	1 %	<100 mV	<100 mV pp
70PS24V/3A.x/X	24 V	3 A	1 %	<100 mV	<100 mV pp
70PS27V6/2A5.x/X	27,6 V	2,5 A	1 %	<100 mV	<100 mV pp
70PS48V/1A5.x/X	48 V	1,5 A	1 %	<150 mV	<150 mV pp

.x - indicating sort of add-on

/X - indicating style of mounting (D - DIN-rail, S - screws)

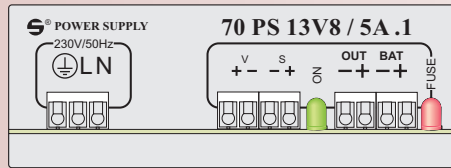
#### TECHNICAL SPECIFICATION

Input voltage	195 - 255 V AC
Operating temperature	-15 °C to +40 °C
Operating relative humidity of environment	max. 75%
Efficiency (typical)	80%
Short-circuit protection on output	permanent
Insulation voltage	3 000 V AC
Weight	480 g
Electrical safety standard	EN 60950-1:2003
EMC standards	EN 55022-B, EN 61000-3-2:2002, EN 61000-3-3:2000+A1:2003 EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11, EN 61000-6-1:2003 EN 61000-6-3:2001

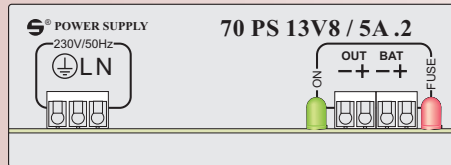


## .x functions

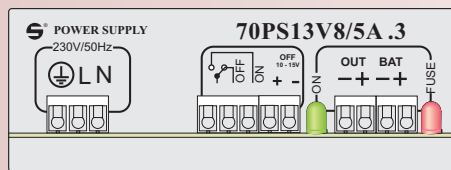
**.1** external OFF / ON  
operation signalization



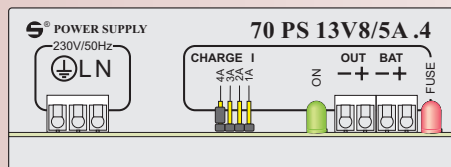
**.2**



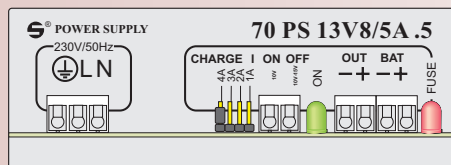
**.3** external OFF / ON  
operation signalization RELAY



**.4** AKU disconnector  
current setting to AKU



**.5** external OFF / ON  
operation signalization  
AKU disconnector  
current setting to AKU



### external OFF / ON

Power supply can be blocked with 10 - 15 V signal without disconnecting line voltage.

Function External OFF / ON ensures disabling the power supply (voltage on output is 0 V) with control signal without the need to disconnect line voltage. Power cut can be simulated with this function and it is possible to check out the state of backup accumulator and operation of entire system in this mode. As long as the control unit allows sending this control signal and can measure accumulator voltage connected on output, we can monitor the state of accumulator in chosen intervals.

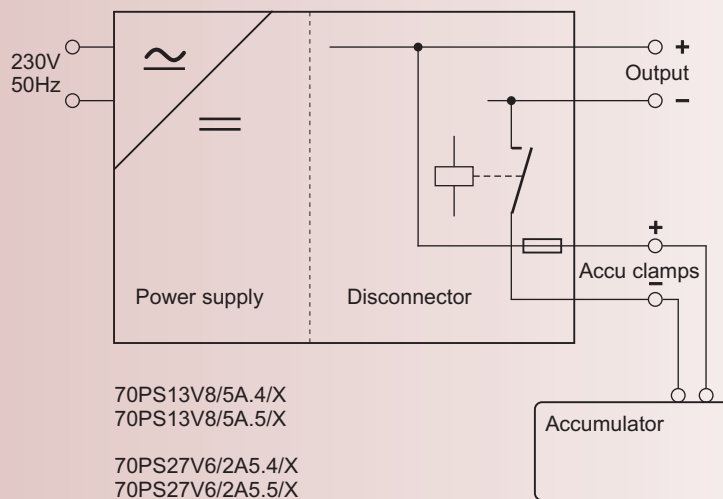
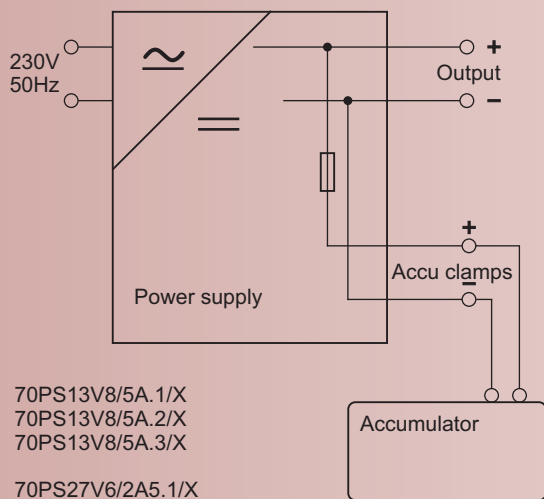
### operation signalization

Operation of power supply and presence of line power is signalized with break-make contact relay (non-potential).

### AKU disconnector

When AKU voltage drops below 10,5 V (21 V) it is galvanically disconnected from power load and protected from potential deep discharge.

During power failure devices are powered from backup accumulator. If power failure lasts extremely long, accumulator is discharging and voltage on accumulator drops below minimal value specified by manufacturer as a value below which is a danger of damaging the accumulator. Below this limiting value when accumulator stays under load the voltage drops quickly (accumulator is discharged and only negligible energy quantum is accumulated in it). Practical contribution from operating accumulator in this mode is in term of extension of backup period negligible but in term of service costs (irreversible accumulator damage and necessity to replace it) at actual relation of prices is considerable. Devices connected to accumulator with low voltage value also usually do not work and this mode does not perform its task. To not to come to damaging the accumulator AKU disconnector galvanically disconnects accumulator from power load when voltage on accumulator drops below set value.



#### current setting to AKU

Setting the charging current to AKU with jumper in four levels 1A, 2A, 3A, 4A, or 0,5A, 1A, 1,5A, 2A. Usage: ensures optimal operation of the accumulator when connected in parallel.

After a power cut and its recovery the power supply's output current will divide to feed the very device and charging current of accumulator. This division is influenced by immediate condition of the accumulator, its discharge that was caused by previous power cut. In case that power cut lasted long and accumulator relatively considerably discharged its charging current will be high and may exceed maximum values specified by manufacturer. Overrunning this value may lead to overheating the accumulator and its damage, eventually shortening its operational life. Function current setting to AKU ensures setting of maximum charging current of accumulator. Several values can be set. Remaining current is flowing to the device and ensures its feeding immediately after restoring of line voltage even in case of previous deep discharge.

When projecting this kind of system it is necessary to correctly dimension and set parameters of the power supplies. As an example we will present 13,8 V / 5 A ( $I_{max} = 5 A$ ). We connect a 12 V accumulator to this power supply. We set its maximum charging current  $I_{charg}$  to 1 A. After power cut and recovery of line voltage the accumulator is charged with current max.  $I_{charg} = 1 A$  and remaining current ( $I_r = 4 A$ ) can flow to power load;  $4 A = 5 A - 1 A$  ( $I_r = I_{max} - I_{charg}$ ). In case of short-term need (circa 1 minute) the system is able to supply higher current also. In case that output current will rise, e.g. to 6 A, power supply will be overloaded and voltage on its output will drop below the value of accumulator voltage. In this mode the accumulator is not charged, but is supplying current (1 A) to power load together with power supply (5 A). When the current consumption drops again, (device is draining maximum required current 4 A), the power supply will charge the accumulator with set charging current max. 1 A.

#### ... parallel connection of accumulator to output of the power supply

We can create simplest backup complex 12 V (24 V) with using power supply 13,8 V (27,6 V) and accumulator 12 V (24 V) that we connect in parallel to output of the power supply. This kind of complex is able to supply for a short term higher current also than is maximum current of the stabilized power supply.

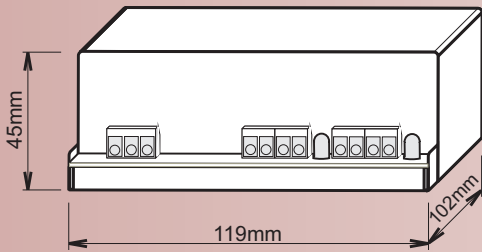
The fuse unit is installed under the cover. It is designed to protect the accumulator against damage from potential short-circuit on the power supply's output clamps. The fuse unit interruption is signaled by lighting red LED.

#### WARNING

It is allowed to connect and disconnect accumulator from the power supply only when power supply is disconnected from main power.



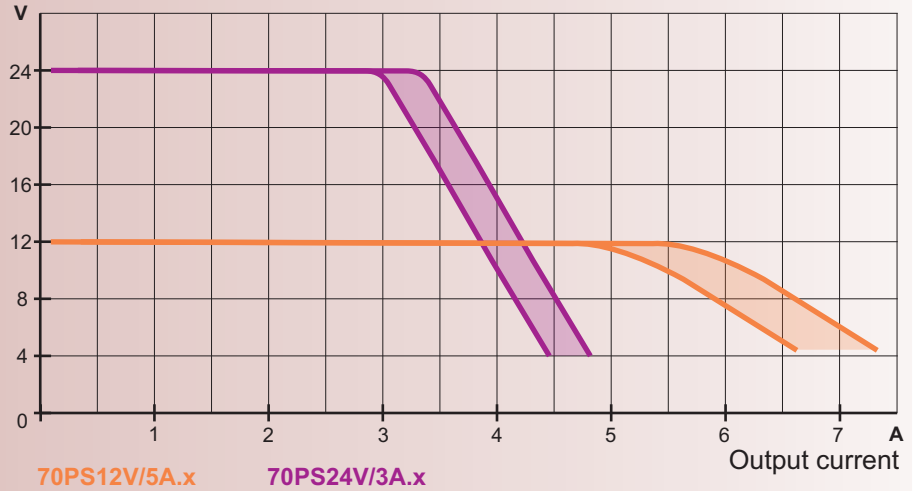
### 70PS



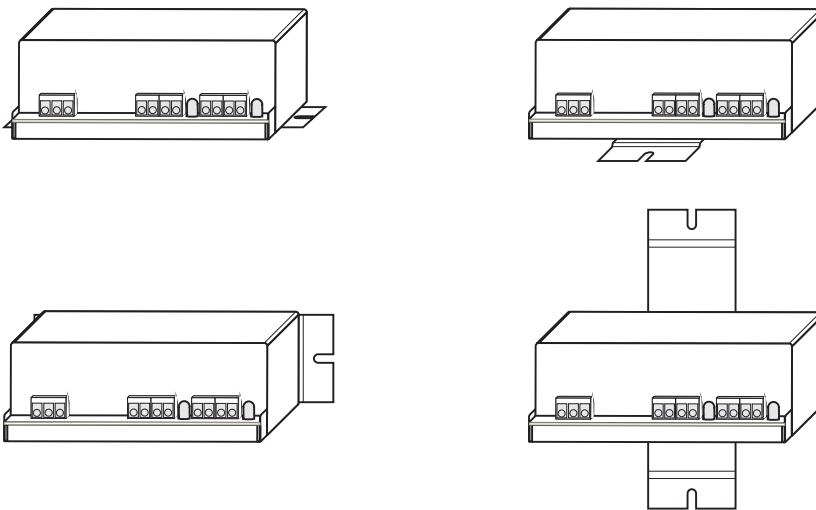
Output voltage

70PS

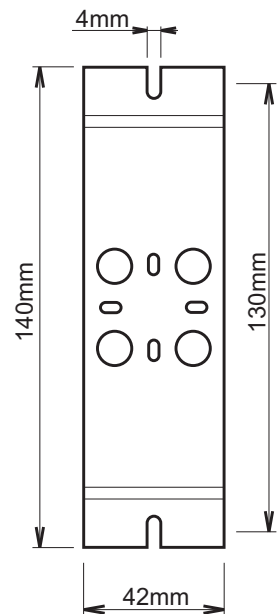
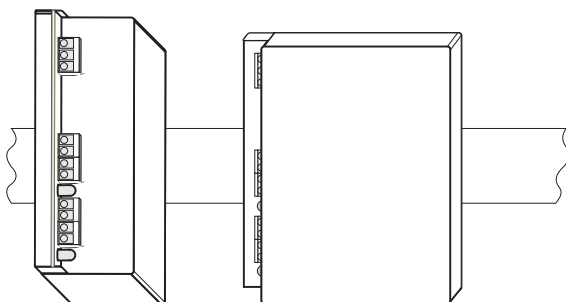
Input voltage: 230V AC



Mounting: /S - with screws



Mounting: /D - on DIN-rail



Holder to mount with screws