

**Power Supply
Type PS20
v3.2 Rev. D**



PRODUCT DESCRIPTION

The PS20 is dedicated for electronic equipment which require 12VDC buffered supply source. Device consist of metal case with compartment for sealed lead-acid battery, mains transformer and electronic circuit. PS20 may deliver up to 2A current without any time limit, it utilize DC/DC "switched mode" electronic circuit which offer high efficiency (reduced heating of electronic components). PS20 employs internal current limiting and short circuit protection which make it essentially indestructible. The reserve battery is connected to output terminals trough an ultra low-resistance MOS transistor, such a circuit architecture enables optimum performance during AC failure and during dynamic changes of load when excessive current consumption is required. PS20 charge battery with *constant current-constant voltage* method, this method of charging guaranties relatively quick and safe charging process. The initial charging current is factory set to ~300mA, installer should be aware that with battery connected to PS the output current will be reduced to 1700mA. Depending on battery charging phase the output voltage of PS20 may vary from approx. 11.5 up to 13.8V level. When battery voltage drops below ~10.0V level internal circuit disconnect it from load, battery is automatically reconnected when AC supply returns. Battery cut off circuit protect battery from deep discharge but the equipment connected to power supply from operation below 10.0V level which in many cases can lead to undefined system behavior. Battery is protected with 5A fuse which reduce maximum output current sourced from battery and electronic circuit against battery reverse connection. PS20 offer two output ports (Z1 and Z2 terminals). The nominal output voltage is factory set to 13.8V and should not be changed by user. PS20 is equipped with two LEDs, the red one (marked as 230VAC) signalize that AC power exists where the second one (marked as 12VDC) signalize that output voltage is available.

OPTIONAL ALARM MODULE PSAM-1

For more sophisticated installation electronic circuit of PS20 can be equipped with optional alarm module (PSAM-1). This module can be connected to PS20 circuit through dedicated connector (CON4) which is located on PS20 board. The main purpose of PSAM-1 module is to signalize an alarm situation of power supply to external device or system. The PSAM-1 may operate in autonomic or networked mode. When set to autonomic mode it offer three transistors outputs which are dedicated to signalize following situations:

- low battery
- battery failure
- AC lost

Those outputs can be connected to external control panel, access controller or another control or signaling device which will warn authorized personnel.

When PSAM-1 operates in networked mode it must be connected to PR series access controller (PR302/PR402 or PR302LCD) through Clock & Data interface. In this mode PSAM-1 module sends all messages about power supply condition direct to access controller. During *networked* mode PSAM-1 signalize the same alarm condition as during standalone mode and additionally delivers data about actual voltage level available on PS's output terminals.

INSTALLATION

PS20 should be mounted on wall or another surface using four screws, it may be installed in vertical or horizontal position. Power supply should be installed far enough from heat and moisture sources. All electrical connection should be carried out with AC supply off. PS20 will not start operation on reserve battery, the AC supply must exist in order to begin PS activity. The AC supply cable should be guided into PS's case using dedicated hole protected with dielectric sleeve and then firmly fixed to 230VAC input terminals (see installation diagram). Do not adjust potentiometers located on PS20 electronic board, those components are factory set and should not be changed.

Warning

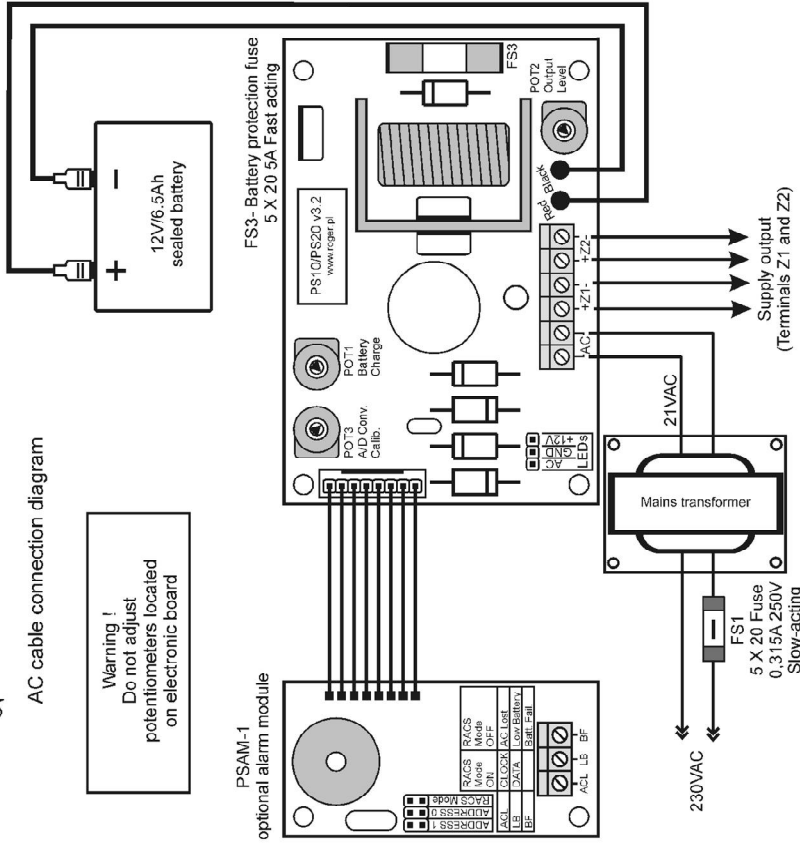
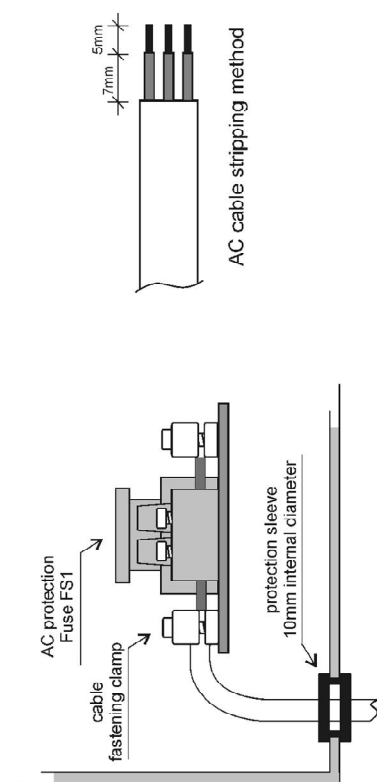
The high voltage exists on some device elements, prior to servicing the AC supply must be switched off.

TECHNICAL SPECIFICATION

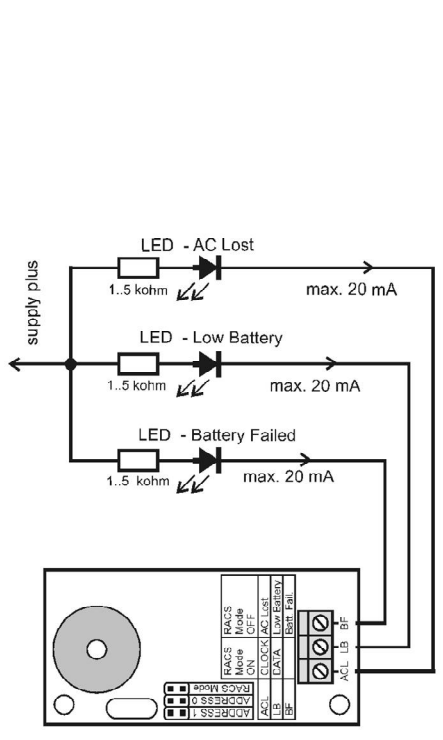
Parameter	Value	Comments
AC supply	230 VAC	RMS value
AC frequency	50..60 Hz	
Nominal Output voltage	13.8 VDC	Output voltage may vary from app. 12.0 up to 13.8V depending on actual battery charging phase.
Max. output current (without battery)	2A	Maximum output current is guaranteed for unlimited time and for entire temp. range. During battery charging process output current will be reduced to 1700mA
Ambient Temperature	0..55 °C	
Max. momentary output current with battery	6A	2.0A delivered by electronic circuit and 4.0A delivered by battery
Initial battery charging current	0.3A	
Battery cut off voltage	10.0V	
Battery compartment	6.5Ah/12V	or 7Ah/12V
Dimensions	234x165x80	
Weight	2,2 kg	Without battery



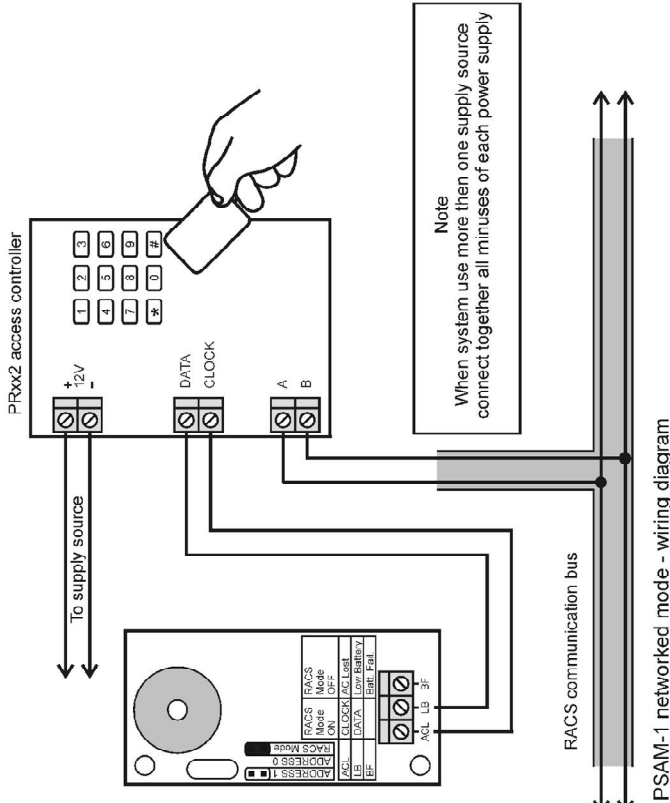
The symbol of a crossed-through waste bin on wheels means that the product must be disposed of at a separate collection point. This also applies to the product and all accessories marked with this symbol. Products labeled as such must not be disposed of with normal household waste, but should be taken to a collection point for recycling electrical and electronic equipment. Recycling helps to reduce the consumption of raw materials, thus protecting the environment.



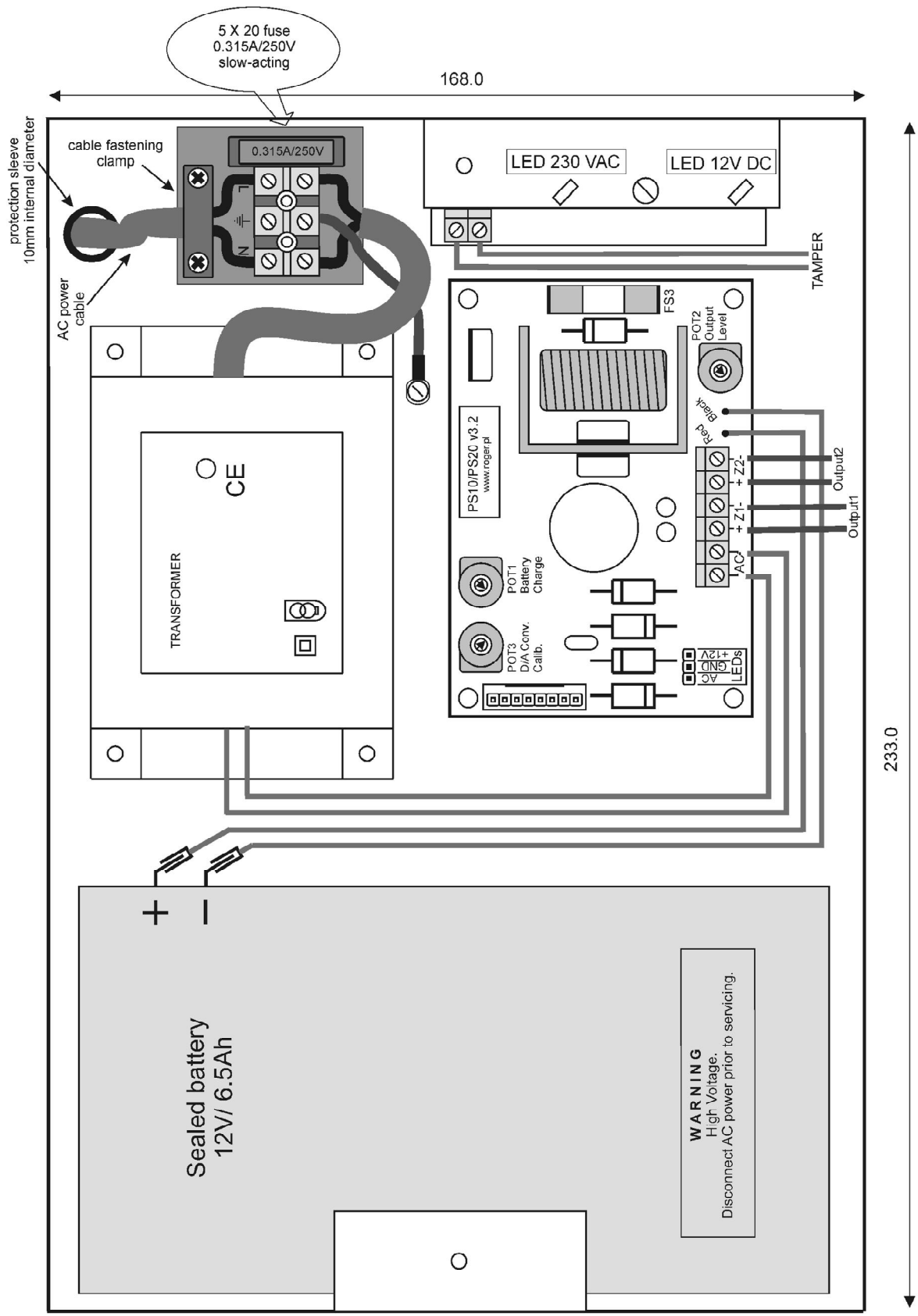
Warning !
Do not adjust
potentiometers located
on electronic board



PSAM-1 automatic mode - wiring diagram



PS10/PS20 v3.2 wiring diagrams



PS10/PS20 v3.2 internal view and installation/wiring diagram

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