

- battery status control
- works with PSB 13,8V power supply units
- LED indication
- FAC technical output indicating AC power collapse OC and relay type
- FPS technical output indicating power supply module's failure
- FLB technical output indicating low battery voltage

1. Technical description.

1.1 General description

MPSB12 automation module is intended for indicating the operating status of buffer power supplies PSB 13,8V type. The PCB board features LEDs that indicate PSU operating status (presence of AC voltage, presence of DC voltage, battery voltage). The module is also equipped with technical outputs of: AC power loss, PSU failure, low battery voltage.

1.1. Description of the module's components and connectors (fig1, tab.1)

Table 1	
Element	Description
no.	Description
[1]	LED indicating presence of 230VAC voltage
[2]	LED indicating presence of DC voltage at the PSU output
[3]	LED indicating correct battery voltage
[4]	FAC- technical output indicating AC absence – relay type
[5]	FAC- technical output indicating AC absence – OC type
[6]	FPS- output indicating DC absence/PSU failure - OC type
[7]	FLB- output indicating low battery voltage - OC type
[8]	Indication connector
[9]	+BAT- battery connector
[10]	+V -13,8V supply



Fig. 1. The view of the module.

1.2 Specifications:

- electrical specifications (tab.2)

- mechanical specifications (tab.3)

Table 2.

Supply voltage	13,8V DC
Current consumption	40mA max.
Voltage of low battery indication	U<11,5V +/- 3%
Technical outputs: - FAC; output indicating AC power failure	 relay type: 1A@ 30VDC/50VAC, time lag: approx. 10s. CAUTION! In Fig.2. the contact set in the potential-free status corresponds to a state with no AC power (AC power failure). OC type, 50mA max., normal status: L (0V) level, failure: hi-Z level, time lag: 10s.
- FPS; output indicating DC absence/PSU failure	- OC type, 50mA max., normal status: L (0V) level, failure: hi-Z level
-FLB output indicating low battery voltage	- OC type, 50mA max., normal status: (U _{BAT} >11,5V): L (0V), failure: (U _{BAT} <11,5V): hi-Z level
LED indication :	
- presence of AC power	-red LED (fig.1, element 1). Under normal status (AC supply) the diode is permanently illuminated. The absence of AC supply is indicated by the AC diode going out. Caution: the LED indicates absence of AC power if the loss lasts minimum 10s.
 presence of DC voltage at the PSU output 	-green LED (fig.1, element 2) indicates DC power at the PSU output. Under normal status the diode is permanently illuminated. In case of a short circuit or an overload, the diode is off
- battery voltage level	- green LED (fig.1, element 3) indicates battery voltage level. Under normal status ($U_{BAT} > 11,5V$) the diode is permanently illuminated. In case of decrease of battery voltage ($U_{BAT} < 11,5V$) the diode is off.
Operating conditions	temperature: -10 °C÷40 °C, relative humidity : 20%90%, without condensation
Storage temperature	-20°C+60°C

Table 3.

Dimensions	110 x 44 x 55 (LxWxH) [mm] (+/-2)
Fixing	M3 screws, mounting plate adjusted for PSB13,8V series power supplies
Connectors	Φ0,41÷1,63 (AWG 26-14)
Net/gross weight	0,1/0,13 kg

2.1. Requirements.

The module is to be mounted by a qualified installer, holding relevant permits and licenses (applicable and required for a given country) for 230V/AC interference and low-voltage installations. The unit should be mounted in confined spaces, in accordance with the 2nd environmental class, with normal relative humidity (RH=90% maximum, without condensation) and temperature from -10°C to +40°C.

The module shall be mounted with a PSU of PSB 13,8V series in a metal enclosure (cabinet, intended device). In order to fulfil LVD and EMC requirements, the rules for: power-supply, encasing and screening shall be followed, according to application.

It is crucial to connect the PE wire to the appropriate PSU terminal.

2.2. Installation procedure.

1. Before installation of the module, make sure that the PSB 13,8V PSU supplying LEDs are disconnected from the 230V AC mains supply.

2. Mount the module on the PSB 13,8V power supply unit.

3. Cut the BAT+, BAT- leads in the PSB 13,8V PSU, separate and connect to the module, following the diagram. (fig.2).

4. Cut the leads of the signal connector in the PSB 13,8V power supply unit, separate and connect to the module, following the diagram. Connect the Lac, Ldc, GND leads of the PSU with appropriate outlets on the automation module. (see fig. 4).

5. Connect the technical outputs of the other device.

6. Connect the 230VAC power cables. Connect the PE cable (yellow-green) to the appropriate PSU terminal (marked with $\frac{1}{2}$ - earth symbol).



The shock protection circuit shall be performed with a particular care, i.e. the yellow and green wire coat of the power cable shall stick to one side of the 'PE' terminal. Using the PSU without a properly made and fully operational shock protection circuit is UNACCEPTABLE! It can cause a device failure or an electric shock.

7. Connect load/loads to proper output connectors of the power supply (positive pole is marked as +V, negative pole as -V)

- 8. Connect the battery in accordance with the signs (colours).
- 9. Once the tests and operation control have been completed, the enclosure/cabinet can be locked.



Fig.2. Diagram of connecting the module to the PSB power supply unit.



Fig.3 Diagram of an OC type output.



Fig.4 Leads in the indication connector.

3. Maintenance.

Any and all maintenance operations may be performed following the disconnection of the PSU from the power supply network. The PSU does not require performing any specific maintenance measures. However, in case of a thick dust layer, clean the PSU with compressed air.

	WELE MARK	
According to the EU WEE Directive – It is required not to dispose of electric or electronic was unsorted municipal waste and to collect such WEEE separately.		
 Pulsar K of purchase If a purc The war manufactur defects hav The equi manufactur The equi manufactur The war Should t later that w The repay equipment All the si The war reasons b mechanic improper Use that v fortuitous improper The war construction repairs ca damage construction modification 	Bogusz Sp.j. (the manufacturer) grants a two-year warranty for the equipment, starting from the initial product date placed on the receipt. hase proof is missing, a three-year warranty period is counted from the device's production date. anty includes free-of-charge repair or replacement with an appropriate equivalent (the selection is at the er's discretion) if the malfunction is due to the manufacturer, includes manufacturing or material defects, unless such e been reported within the warranty period (item 1 and 2). prenent subject to warranty is to be brought to the place where it was purchased, or directly to the main office of the er. anty applies to complete equipment, accompanied by a properly filled warranty claim with a description of the defect. he claim be accepted, the manufacturer is obliged to provide warranty repairs, at the earliest convenience, however not ithin 14 days from the delivery to the service centre of the manufacturer. ir period mentioned in item 6 may be prolonged, if there are no technical possibilities to carry out the repairs, or if the nas been conditionally accepted, due to the breaking warranty terms by the claimant. evices rendered by force of the warranty are carried out at the service centre of the manufacturer, exclusively. anty does not cover the defects of the equipment, resulting from: eyond the manufacturer's control, a l damage, storage and transport, iolates the operation manual or equipment's intended use events, including lightning discharges, power failures, fire, flood, high temperatures and chemical agents, installation and configuration (in defiance with the manual), rranty is void in any of the following circumstances: on changes ried out by any unauthorized service center r removal of warranty labels ons of the serial number willity of the manufacturer towards the buyer is limited to the value of the equipment, determined according to the rices suggested by the manufacturer on the day of purchase.	

Pulsar K.Bogusz Sp.j.

Siedlec 150, 32-744 Łapczyca, Poland Tel. (+48) 14-610-19-40, Fax. (+48) 14-610-19-50 e-mail: <u>biuro@pulsar.pl</u>, <u>sales@pulsar.pl</u> http:// <u>www.pulsar.pl</u>, <u>www.zasilacze.pl</u>