MPSB12
v.1.1
PSB 13,8V automation module

Edition: 5 from 06.08.2018
Supersedes the edition: 4 from 01.06.2016

EN*

Features:

- battery status control
- works with PSBxx, HPSBxx 13,8V power supply units
- LED indication
- EPS technical output indicating AC power collapse – OC and relay type
- PSU technical output indicating power supply module's failure – OC and relay type
- LoB technical output indicating low battery voltage – OC and relay type
- warranty – 2 year from the production date

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 OC and relay type: AC power loss, PSU failure, low battery voltage.

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

Table 1

Element 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]	**EPS -** technical output indicating AC absence – relay type
[5]	**PSU -** output indicating DC absence/PSU failure - relay type
[6]	**LoB -** output indicating low battery voltage - relay type
[7]	**EPS -** technical output indicating AC absence – OC type
[8]	**PSU -** output indicating DC absence/PSU failure - OC type
[9]	**LoB -** output indicating low battery voltage - OC type
[10]	**+BAT-** battery connector
[11]	**Indication connector**
[12]	**+V –**13,8V supply

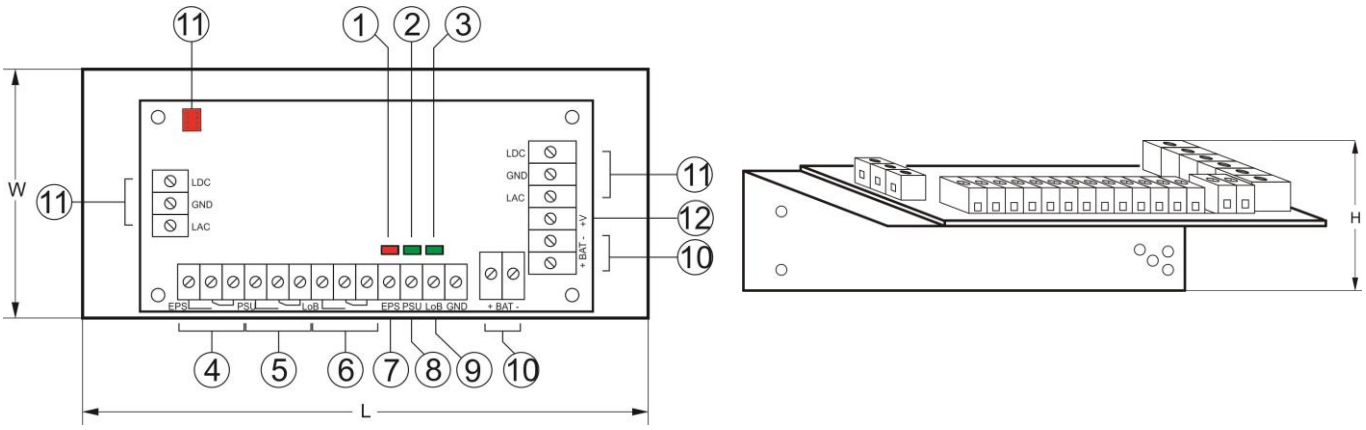


Fig. 1. The view of the module.

1.3 Specifications:

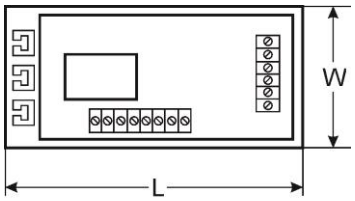
- electrical specifications (tab.2)
- mechanical specifications (tab.3)

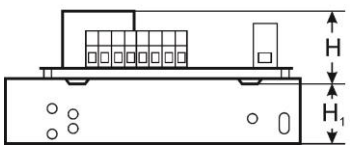
Table 2.

Supply voltage	13,8V DC
Current consumption	60mA max.
Voltage of low battery indication	U<11,5V +/- 3%
Technical outputs: - EPS; 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.
- PSU; output indicating DC absence/PSU failure	- relay type: 1A@ 30VDC/50VAC CAUTION! In the Fig.2. the set of contacts indicates potential-free status of the relay which corresponds to the DC power absence (PSU failure). - OC type, 50mA max., normal status: L (0V) level, failure: hi-Z level
- LoB output indicating low battery voltage	- relay type: 1A@ 30VDC/50VAC CAUTION! In the Fig.2. the set of contacts indicates potential-free status of the relay which corresponds to a low battery level (U_{BAT} <11,5V). - OC type, 50mA max., normal status: (U_{BAT} >11,5V): L (0V), failure: (U_{BAT} <11,5V): hi-Z level Module does not feature a battery detection function, in the case of no battery or non battery connected, the output is in the normal mode.
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	-20ºC...+60ºC

Table 3.

Dimensions	L=116, W=56, H=27, H1=31 [+/- 2mm]
Fixing	M3 screws, mounting plate adjusted for PSB13,8V series power supplies
Connectors	Φ0,41÷1,63 (AWG 26-14)
Net/gross weight	0,11/0,15 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 ⏚ - 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.

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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.

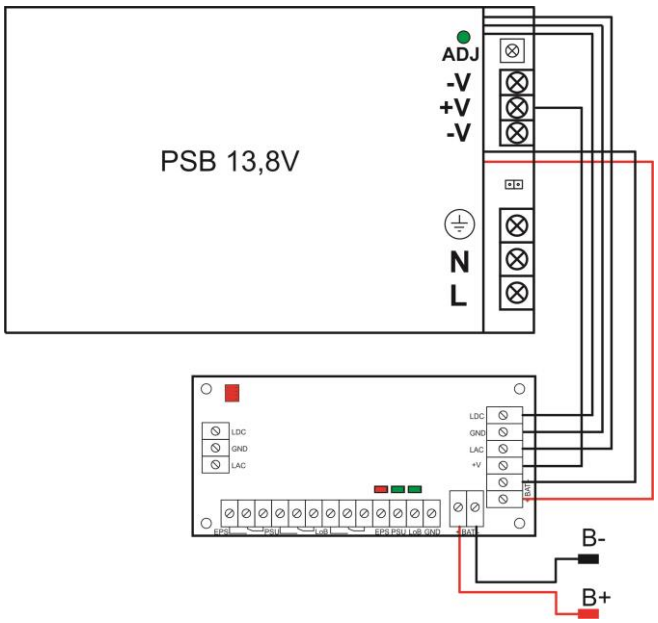

Fig.2. Diagram of connecting the module to the PSB power supply unit.

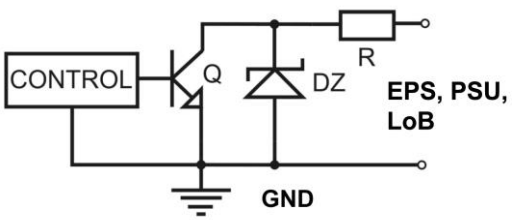

Fig.3 Diagram of an OC type output.

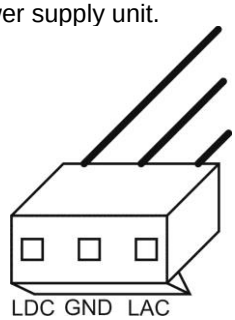

Fig.4 Leads in the indication connector.

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.

WEEE MARK

According to the EU WEE Directive – It is required not to dispose of electric or electronic waste as unsorted municipal waste and to collect such WEEE separately.

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