

*Power Supply Manager*

**ABT-PSM48**

*Power Supply Unit*

**ABT-PS48800**

*Power Supply Unit Frame*

**ABT-PF4**

**EN**

User Manual

**EN 54-4: 1997/A2:2006**

Fire detection and fire alarm systems – part 4: Power supply equipment

**EN 12101-10:2005**

Smoke and heat control systems. Power supplies



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## **1. Characteristics and purpose of the document**

This User Manual introduces the equipment user into correct operation and use of the ABT-PSM48 Power Supply Manager, ABT-PS48800 Power Supply Unit and ABT-PF4 Power Supply Unit Frame. Information on installation, electrical connection, first operation and servicing is included in attached Technical Documentation.

Keep carefully this User Manual and any other attached documents for further reference.  
Ambient System bears no responsibility for damages caused by failure to observe this document.

## **2. General description**

ABT-PSM48 Power Supply Manager is designed for distribution uninterruptible power supply of guaranteed 40...57,6 VDC and 24 VDC of total maximum power up to 3,2 kW.

As a source of energy distribution, the Manager uses external modules of 800 W ABT-PS48800 Switch Mode Power Supply Units. As a source of back-up power supply, it uses the VRLA battery bank of capacity up to 4x200 Ah. Use of 12 V batteries with a capacity of less than 40 Ah can be used only for public address. ABT-PSM48 co-operates with maximum 4 modules of ABT-PS48800 Units, ensuring safe connection for the purpose of parallel operations and monitors the output parameters of each Power Supply Unit. If the unit is used as a back-up power supply system only, no ABT-PS48800 units will be required. ABT-PSM48 co-operates with the 4x12V VRLA battery bank. It maintains the bank in charged condition, ensures temperature compensation of charging parameters and monitors series resistance of the battery and its wiring in compliance with Exhibit No.A2 to the EN 54-4 Standard. Power Supply Manager and Power Supply Units are designed for assembling in a 19" IP30 Rack with other Fire detection and fire alarm systems elements.

ABT-PSM48 ensures uninterruptible switching to back-up power supply in case of mains power supply decay or failure of ABT-PS48800 Power Supply external modules. The Power Supply Manager is intended for systems requiring back-up power supply, including those compliant to EN 54-16 Voice alarm control and indicating equipment.

The maximum configuration of the 54-4 compliant Power Supply Equipment includes:

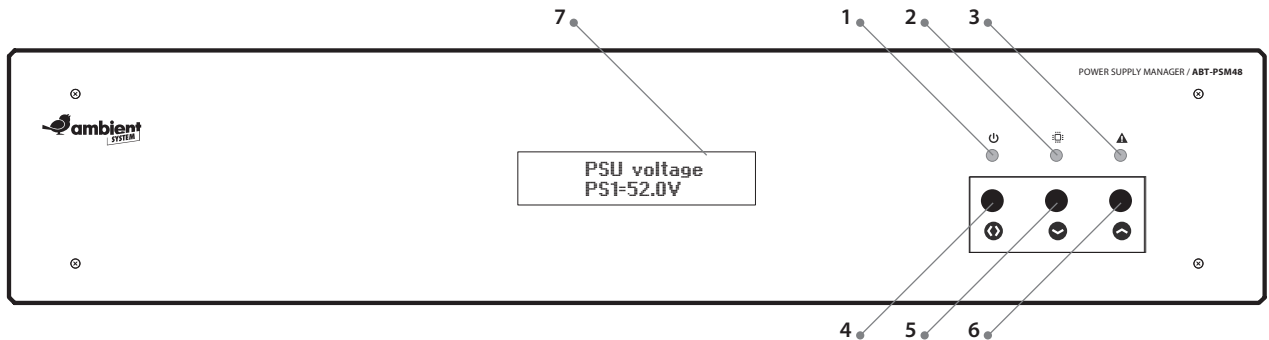
- 1x ABT-PSM48 – Power Supply Manager
- 4x ABT-PS48800 – Power Supply Unit
- 1x ABT-PF4 – Power Supply Unit Frame

### **3. ABT-PSM48 Power Supply Manager**

#### **3.1 Front panel**

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Fig. 1 presents the front panel of Power Supply Manager module, with its most important elements marked.



**Fig. 1 Front panel of ABT-PSM48 Power Supply Manager**

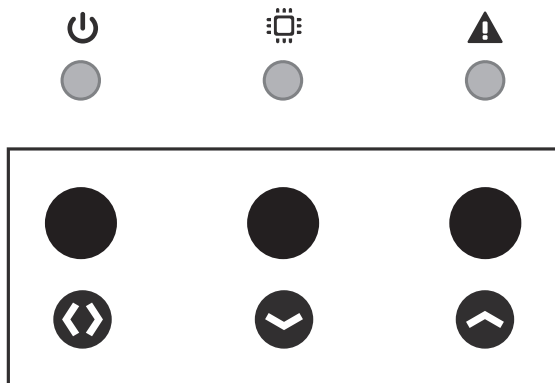
#### **LEGEND:**

- 1 Power**  
Green LED indicates supply connection.
- 2 Active**  
Green LED indicates proper operation and indicates long-press button.
- 3 Fault**  
Yellow LED indicates a system failure.
- 4 Entry/Exit button**  
Menu operation button.
- 5 Arrow Down button**  
Menu navigation button.
- 6 Arrow Up button**  
Menu navigation button.
- 7 Display**  
Alphanumeric LCD Display presents the status of the Power Supply Equipment and Power Supply Manager menu.

Menu navigation with the use of buttons available at the front panel is presented in the following subsection.

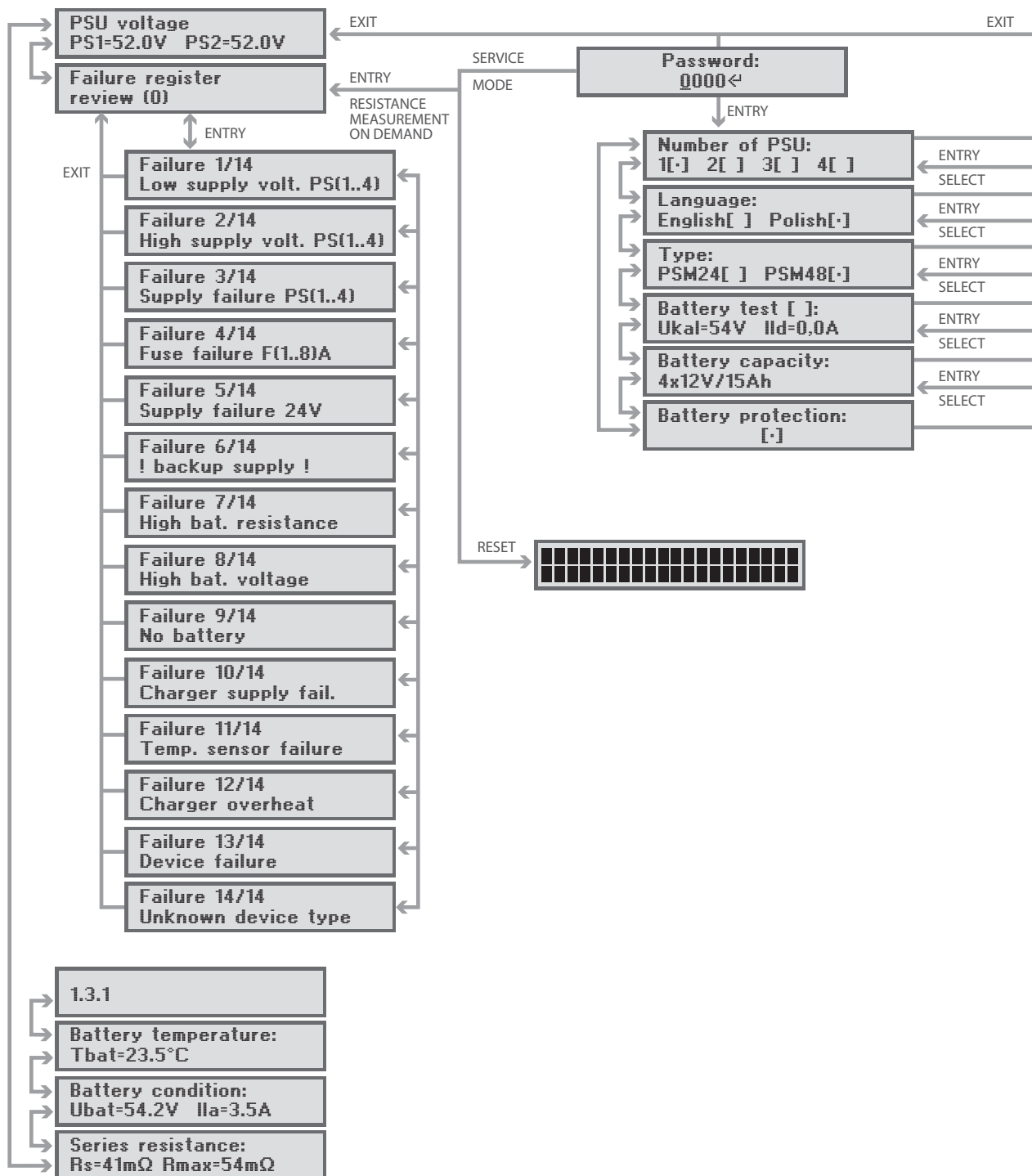
### 3.2 Front panel operation

Typical operation of the power supply system is limited to defining the number of Power Supply Units and adjusting parameters of batteries bank attached. Fig. 2 and Fig. 3 present a part of the Power Supply Manager front panel including buttons and LEDs indicating the condition of the module, as well as the menu structure diagram in form of information available on the alphanumeric display.



**Fig. 2 Front panel buttons**

The front panel buttons are used to control the equipment from its menu. To use the second function of button, press it longer (>1s). Confirmation of this is to deactivate the LED Active. The menu enables monitoring the condition of Power Supply Units, condition of an internal Charger, measuring series resistance of batteries and its connections, checking battery temperature and previewing a list of registered equipment failures and check the Power Supply Manager's firmware version. It is also possible to enter service mode, in order to choose the number of Power Supply Units, disable the battery protection system, adjust battery capacity. Navigating menu by using buttons is described below the figure.



**Fig. 3** Power Supply Manager menu structure block diagram

**ENTRY** – click ENTRY/EXIT button for more than 1 sec.

**EXIT** – click ENTRY/EXIT button

**SELECT** – press ENTRY/EXIT button and hold for approx. 1 s

**POWER SUPPLY UNITS CONDITIONS** – from the main level of menu, using arrows, choose option "PSU voltage" to display parameters of the connected Power Supply Units.

**BATTERY SERIES RESISTANCE MONITOR** – from the main level of menu, using arrows, choose option "Series resistance" to display the periodically measured value of the series resistance of batteries and its connections. There are two values visible on the screen: Rs – measurement results, Rmax – parameter depending on the battery capacity selected in the service mode menu. Rs value should not exceed Rmax, (when Rs goes above Rmax the alarm will be indicated).

**RESISTANCE MEASUREMENT ON DEMAND** – from the main level of menu, using arrows, choose option "Series resistance" and click the ENTRY/EXIT button, then wait for the Rs measurement result

**BATTERY CONDITIONS** – from the main level of menu, using arrows, choose option "Battery conditions" to display conditions of connected battery bank.

**CHARGING PARAMETERS** – from the main level of menu, using arrows, choose option "Battery conditions" to display parameters of charging connected battery bank.

**BATTERY TEMPERATURE** – from the main level of menu, using arrows, choose option "Battery temp." to display ambient temperature around the battery bank.

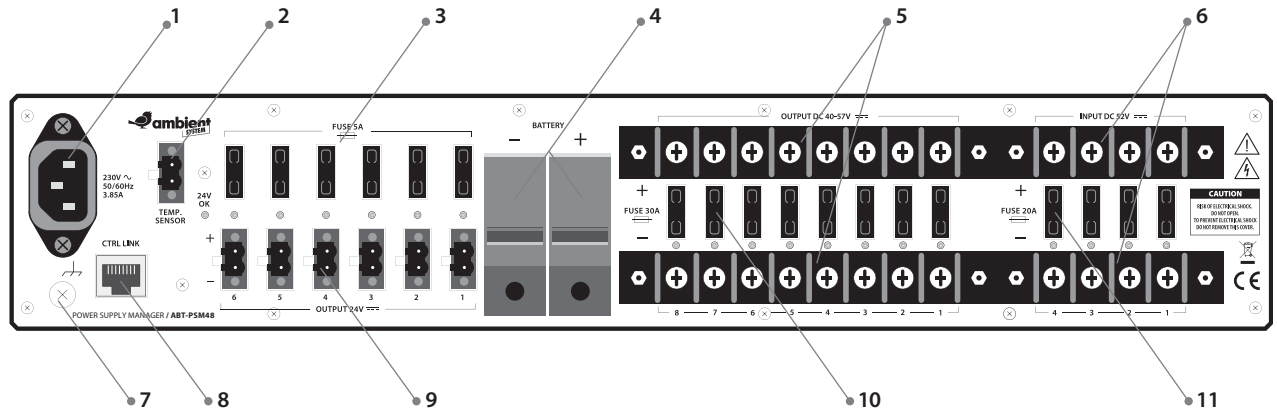
**PREVIEWING FAILURE REGISTER** – from the main menu position, using arrows, choose a suitable option and click the ENTRY/EXIT button. Browse next failure using arrows or click the ENTRY/EXIT to return to the main menu.

**ENTER THE SERVICE MODE** – press ENTRY/EXIT button and Arrow Down button simultaneously, hold them for 1 s. Use Arrows and Select to enter password. Service password is 1992. In service mode, it is possible to edit the number of Power Supply Units connected, disable battery protection or define capacity of battery bank connected. To modify settings, select an option using arrows, press ENTRY/EXIT button and hold for approx. 1 s to change the option and click ENTRY/EXIT button to confirm changes.

**EQUIPMENT RESET** – press Arrow Up and Arrow Down buttons simultaneously and hold for approx. 3 s. The system will reset and indicators tested.

### 3.3 Rear panel

Fig. 4 presents rear panel with markings of the terminals used.



**Fig. 4** Rear panel of ABT-PSM48 Power Supply Manager

#### LEGEND:

- 1 Mains terminal**  
This terminal is used to connect the mains cable.
- 2 Temperature sensor terminal**  
The temperature sensor terminal is used to connect the NTC sensor placed around the battery bank.
- 3 24 V DC output fuses (5 A, 32 V DC)**  
The fuses are used for overcurrent and short circuit protection of 24 V DC outputs.
- 4 Battery terminals**  
Battery terminals are used to connect the 48V VRLA battery bank working as the back-up power supply.
- 5 48V DC output terminals**  
The output terminals provide output voltage of between 40 and 57 V DC.
- 6 Power Supply Unit input terminals**  
The input terminals are used for connecting the 52 V DC from ABT-PS48800 Units.
- 7 Earth terminal**  
This terminal is used to earth the equipment.
- 8 Control link**  
The control link terminal provides failure signals (DC FAIL, AC FAIL, BATTERY FAIL, RESISTANCE EXCEEDED).
- 9 24 V DC output terminals**  
The output terminals provide output voltage of 24 V DC.
- 10 48 V DC output fuses (30 A, 80 V DC)**  
The fuses are used for overcurrent and short circuit protection of 48V DC outputs.
- 11 Power Supply Unit input fuses (20 A, 80 V DC)**  
The fuses are used for protection Power Supply Units inputs.

Details concerning parameters, installation, electrical connection and first run are described in relevant Technical Documentation.



## 4. ABT-PS48800 Power Supply Unit

### 4.1 Rear panel

Fig. 5 presents the rear panel of ABT-PS48800 Power Supply Unit module.

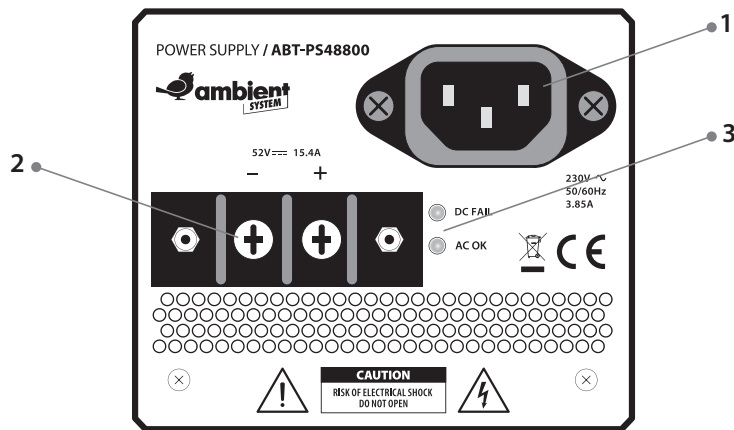


Fig. 5 Rear panel of ABT-PS48800 Power Supply Unit module

#### LEGEND:

- 1 Mains terminal 230 V, 3,85 A**  
This terminal is used to connect the mains cable.
- 2 52 V DC power supply output terminal, 15,4 A**  
The output terminal provides stabilized output voltage of 52 V DC.
- 3 Working condition indicator lights**  
The working condition indicator lights signal the Power Supply Unit condition – each diode is described in the table below.

|         |                                                               |
|---------|---------------------------------------------------------------|
| DC FAIL | lights red if output voltage is not available (e.g. overload) |
| AC OK   | lights green if AC voltage is enough for proper operation     |

Details concerning parameters, installation, electrical connection and first run are described in relevant Technical Documentation.

## **5. ABT-PF4 Power Supply Unit Frame module**

The Power Supply Unit Frame module is designed for mounting the Power Supply Units a 19" IP30 Rack. Four independent ABT-PS48800 may be mounted in the frame, with the use attached bolts.

Details concerning parameters, installation, electrical connection and first run are described in relevant Technical Documentation.

## **6. Manufactures remarks**

Please note that Ambient-System is not responsible for results of unauthorized repairs.

Any repairs of the equipment should be made by the Ambient-System or a service centre authorized by the Ambient-System.

In any unresolved issues, please contact with Ambient-System's trained personnel. A content contained herein is subject to change without notice. Ambient-System reserves the right to change or modify the product and conditions applicable to the use this product at any time.





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