Operation and Maintenance Manual

Device for Remote Indication and Operation

ESP External Signal Panel

Rev. 17.2

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1438 – CNBOP

DoP no. 02/FS/2017/PL

AT-0102-0492/2016

Device for remote indication and operation, Remote ESP panel used in buildings

Operation and maintenance documentation of the remote ESP panel

No.	Essential characteristics of the construction product for the intended use or uses	Performance AT-0117-0492/2016		Comments
1	Construction requirements	Table 2 item 1	Conforms	
2	Marking requirements	Table 2 item 2	Conforms	
3	Functional tests	Table 2 item 3	Conforms	
4	Resistance to cold	Table 2 item 4	Conforms	
5	Resistance to constant damp heat	Table 2 item 5	Conforms	
6	Resistance to shocks	Table 2 item 6	Conforms	
7	Resistance to sinusoidal vibrations	Table 2 item 7	Conforms	
8	Resistance to electrostatic discharges	Table 2 item 8	Conforms	
9	Resistance to radiated electromagnetic fields	Table 2 item 9	Conforms	
10	Resistance to conducted sinusoidal interference induced by RF fields	Table 2 item 10	Conforms	
11	Resistance to the series of fast transient electrical states	Table 2 item 11	Conforms	
12	Resistance to transient voltage peaks – slow high-energy voltage surges	Table 2 item 12	Conforms	
13	Resistance to supply voltage changes	Table 2 item 13	Conforms	
14	Constant damp-heat strength	Table 2 item 14	Conforms	
15	Sinusoidal vibration strength	Table 2 item 15	Conforms	

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1. Introduction

1.1 Contents of the manual

This Operation and Maintenance Manual of the ESP external signal panel specifies the technical data, components and operation of the control unit in the system. The manual provides the installation, operation and maintenance instructions. This document is intended for the system's installers, users and maintenance personnel. Subject to changes The authors do not accept any liability for printing errors and obvious mistakes.

NOTE: Read this manual carefully before installation. A failure to comply with the recommendations contained therein may cause a damage to the system, malfunction or operation not in compliance with the applicable regulations. AWEX shall not be liable for the actions of the system's installers, users and maintenance personnel that are inconsistent with this manual.

1.2 Intended use of the ESP external signal panel

The ESP external signal panel is part of the fire alarm control unit intended for the operation of the control unit from a site remote to the physical location of the fire alarm control unit. With its 7 built-in LEDs, it indicates the fire alarm, pre-alarm, disable, test, fault warning, system error and power supply statuses. It also features a 7-inch touch screen, which allows reading additional information on status of the control unit and two function keys (Verification and Reset).

1.3 Characteristics of the ESP external signal panel

- Duplicated control unit interface
- 7-inch touch screen
- 4 access levels
- Multi-language operation
- Key-operated access lock
- Product compliant with AT-102-0492/2016
- Certificate of Conformity No. 3095/2016
- Certificate of Approval No. 2821/2016
- Compact casing
- Casing colour: red and black
- Mounting to flat surfaces inside the building
- For uses in building construction
- Intended for fire alarm systems

1.4 Definitions

- **Pre-alarm (Internal alarm)** – the alarm triggered by a detector or suitably configured input; this alarm requires the verification with a function key on the user control panel and recognition on the object. It does not send a signal to the fire alarm routing equipment (UTA).

- **Fire alarm (External alarm)** – the alarm triggered by a detector, suitably configured input or manual call point. The alarm sends a signal to the fire alarm routing equipment and other safety devices.

- **Detection zone** – a geographical part of the protected site where one or more call points are installed and for which one alarming variant is provided for in the control unit.

- **Alarming variant** – a method of triggering the fire alarm after the algorithm programmed in the fire alarm control unit has been fulfilled.

- **Test condition** – condition of the system, loop, zone, point, input and output, which allows checking a particular component without generating pre-alarm/fire alarm or sending a signal other safety devices by the fire alarm control unit.

- **Disabled condition** – condition of the system, which indicates that any part of the system, such as detection circuit, detection zone or single point, is disabled.

- **Fault warning condition** – condition of the system, which indicates a failure to any system components.

2. Technical data

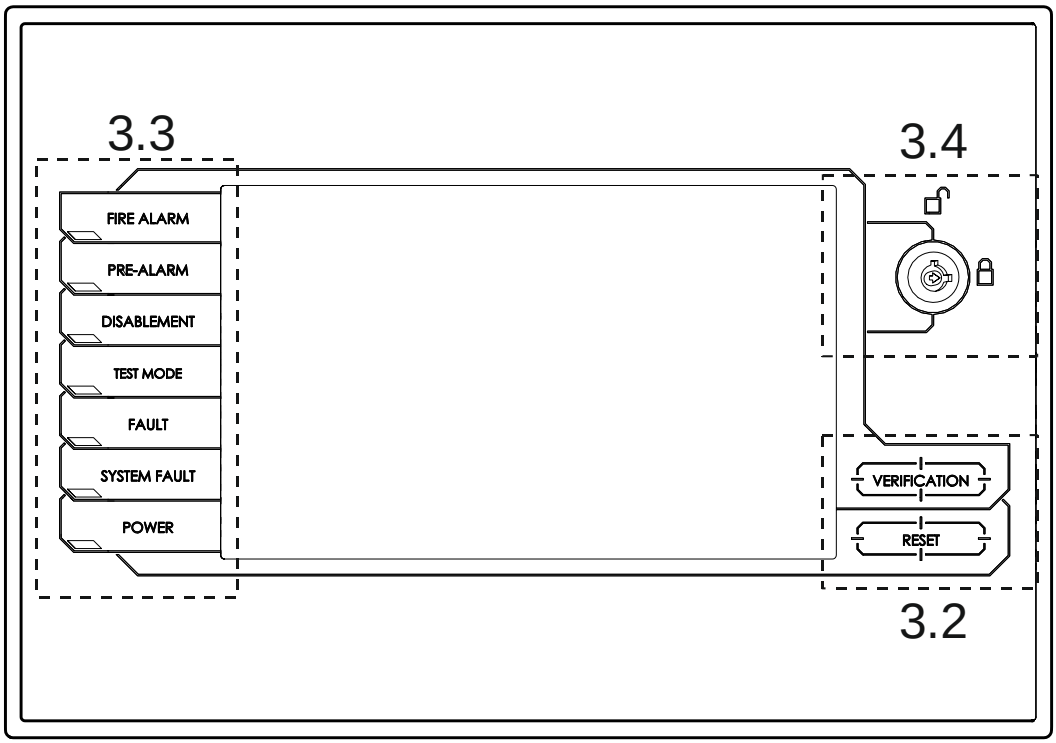
No.	Data	Values
1	Maximum number of units per system	10
2	Display type	TFT
3	Display size	7"
6	Type of power supply	External
7	Supply voltage	24 VDC +/- 25%
8	Power consumption when in detection mode	<150mA
9	Power consumption when in alarming mode	<150mA
10	Operating temperature	from -5°C to 40 °C
11	Working environment	Interior use
12	Permissible relative humidity	93%
13	Protection level	IP 30
14	Colour	Red/black
15	Dimensions	263x184x49 mm

3. ESP External signal panel components

The remote ESP panel allows the fire alarm control unit to be operated from a site remote to the physical location of the control unit. By duplicating its interface, it displays the messages on: alarm, fault, disabling and testing.
With this panel, the fire alarm control unit can be installed in the most convenient location from the point of view of the system topology, whereas the panel itself can be located nearby the system operating personnel.
From the panel level, you can verify the control unit's alarms and reset its indications. The panel monitors its own circuits and indicates their potential errors. The efficiency of the terminal's indicating elements can be tested. The access to the manipulation elements and specific functions is differentiated and divided into access levels.

The external signal panel consists of two elements: the base and the body. The base of the unit is mounted on a permanent basis to the wall or other fixed structural element of the site. In the rear part of the body, there are terminals for electric connections and a SD card slot (Section 3.1), whereas in the front section there is a display for setting up, function keys (Section 3.2), LED indicators (Section 3.3), key-operated access selector switch (Section 3.4) and alarm buzzer (Section 3.5).

Figure 1. ESP External signal panel



3.1 ESP External signal panel motherboard

Figure 2. Electronic components of the external signal panel

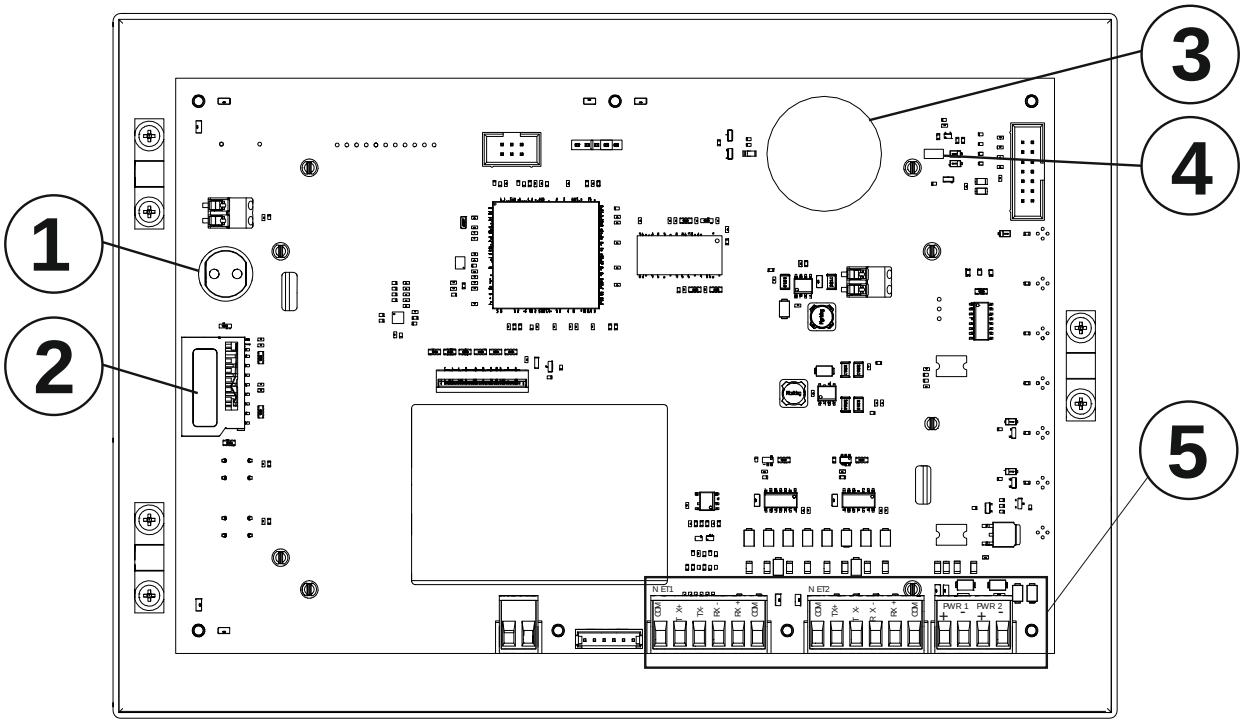
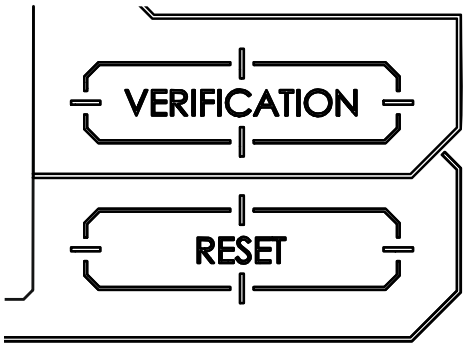


Table 1. Description of terminals and components

Terminal no.	Designation	Terminal description
1	KEY SWITCH	Key-operated access selector switch
2	SD CARD	SD card slot
3	BUZZER	Buzzer
4	MUTE	Buzzer muting jumper
5	NET1, NET2, POWER INPUTS	Connection terminals

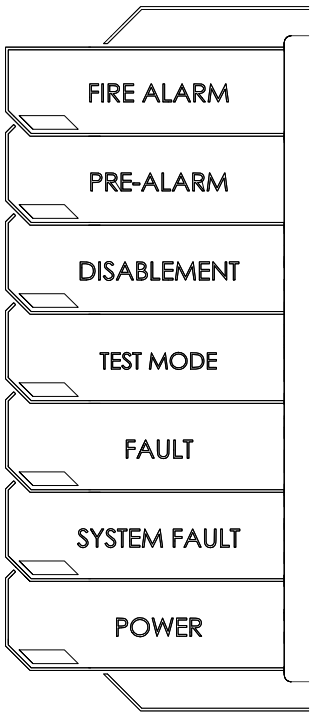
3.2 Function keys on external signal panel



- **Verification** – a function key used to confirm a pre-alarm (external alarm) at the time T1 and to mute the sound.
- **Reset** – a function key used to delete a false fire alarm at the time T2, after having inspected the place of alarm occurrence.

NOTE: The keys are active on the 2nd access level.

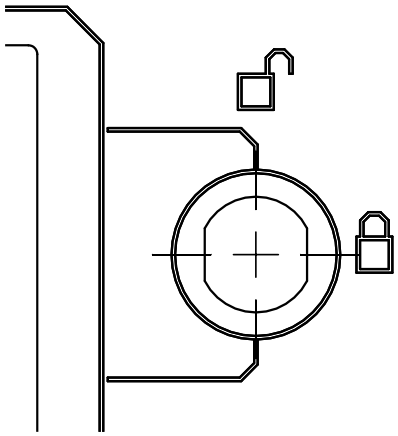
3.3 Optical LED indicators



- **Fire alarm** – the red LED indicates the occurrence of an external alarm.
- **Pre-alarm** – the red LED indicates the detection of a fire alarm by the element of any detection circuit.
- **Disablement** – the yellow LED indicates that any part of the system, such as detection circuit, detection zone or single point, is disabled.
- **Test mode** – the yellow LED indicates test condition of any part of the system, such as detection circuit, detection zone or single point.
- **Fault** – the yellow LED indicates a failure to a part of the system, such as detection circuit, single point, control unit's component or any protection device connected to it.
- **System fault** – the yellow LED indicates a system error.
- **Power** – the green LED indicates that power supply is ON.

3.4 Key-operated access selector switch

Turning the selector switch key allows obtaining the permanent access to level 2, without the need to enter the password. Additionally, when the selector switch key is turned to level 2, the clock on the external signal panel is illuminated.



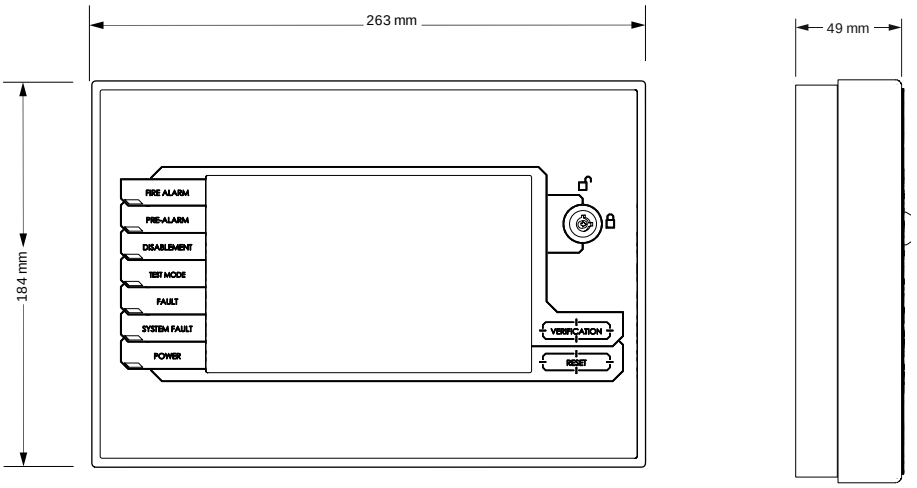
3.5 Alarm buzzer

The alarm buzzer is intended for acoustic signalling of the occurrence of a fire or failure alarm. The buzzer can muted with function keys.

4. Installation data

The external signal panel is designed for interior use. The unit can be mounted to the wall or other fixed structural element of the site. The panel should be mounted at approx. 1.6m above the ground. The unit should be located in a place accessible for the user or rescue teams.

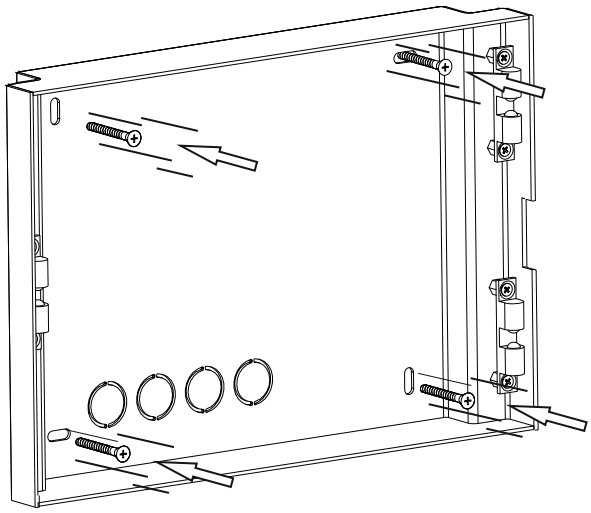
Figure 3. Dimensions



4.1 Installation diagram

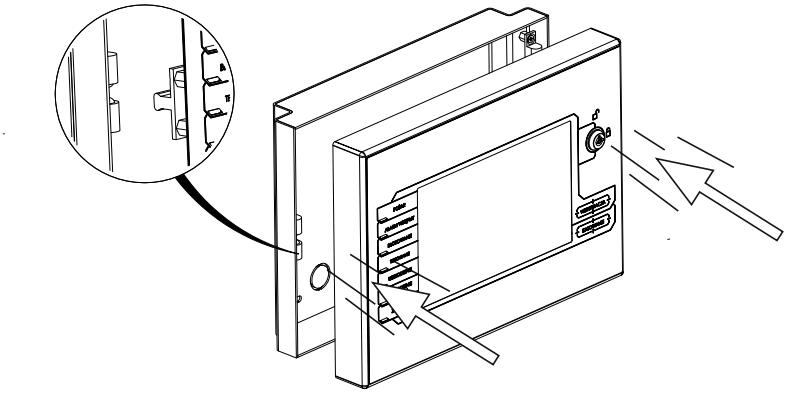
The base of the unit is mounted on a permanent basis to fixed elements of the site: the wall or other structural elements. The base should be secured with mounting bolts designed for use in the fire protection systems inserted through the structural holes (∅ 6) as shown in Figure 4.

Figure 4. Panel base installation diagram.



The body of the panel should be mounted in the base of the unit using three ball latches. The body should be placed against the base and pressed briskly as shown in Figure 5.

Figure 5. Connecting the body of the panel in its base.



4.2 Electrical wiring diagram

The ESP unit should be connected to the communication cables as shown in the diagrams below. Cables should be connected to relevant terminals both in the control unit and in the remote panel, while maintaining the proper sequence of connection (as shown in the figures below). When connecting cables, remember about appropriate cable jumpering. For making connections use FTP cable cat. 5E or YnTKSYekw/HTKSH (1x2x0.8 or 3x2x0.8). Communication cables should be laid between system components using two separate cable paths running in different areas of the building.

Voltage to the device should be supplied from the control unit or from the buffer power supply unit with appropriate parameters, placed in a separate casing. The connection between the panel and the control unit or the buffer power supply unit has to be made with two separate supply paths.

Cables should be inserted into the unit through the openings in the base. The openings are protected with metal parts, which need to be broken off before inserting the cables.

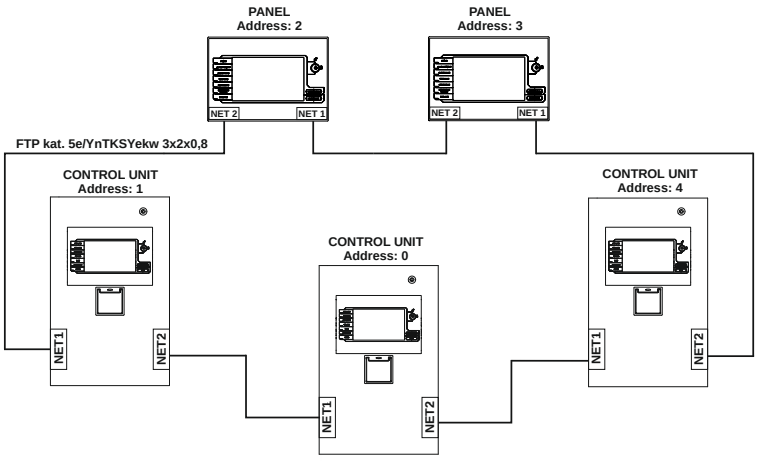


Figure 6. Jumpering of FTP cables.

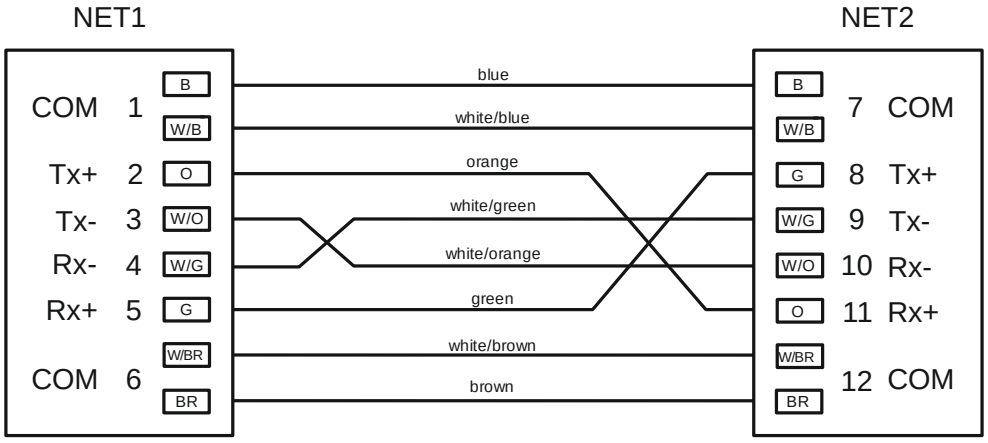


Figure 7. Jumpering of YnTKSYekw 1x2x0.8 cables

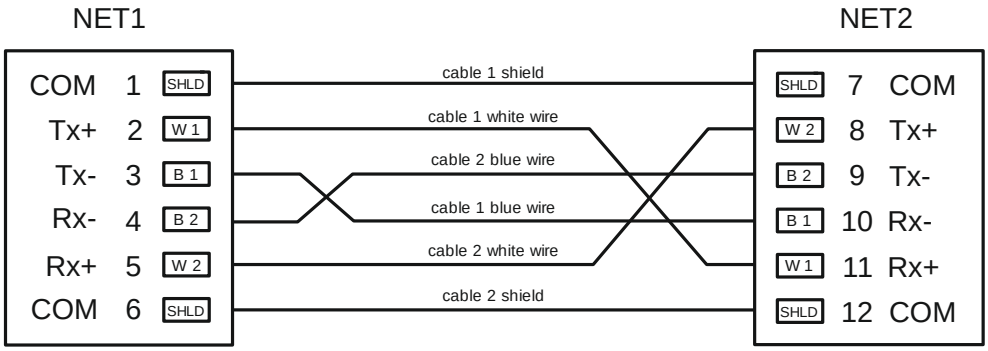
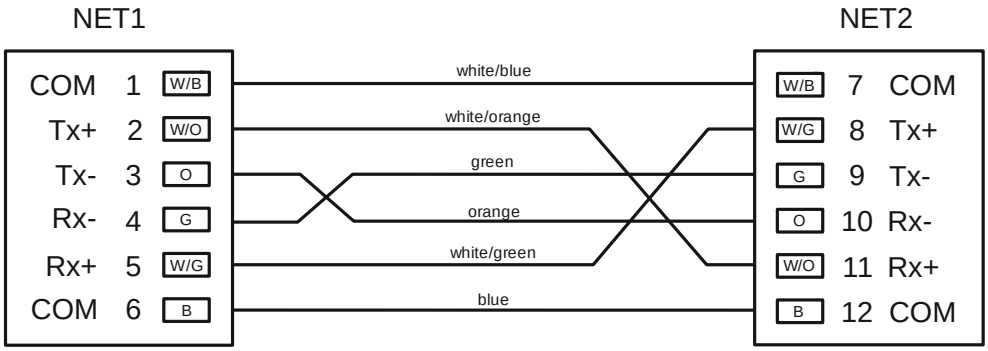


Figure 8. Jumpering of YnTKSYekw 3x2x0.8 cables



NOTE: For connections made with a YnTKSYekw/HTKSH cable, follow colour indications in the figures above.

Figure 9. Supply cable connection diagram

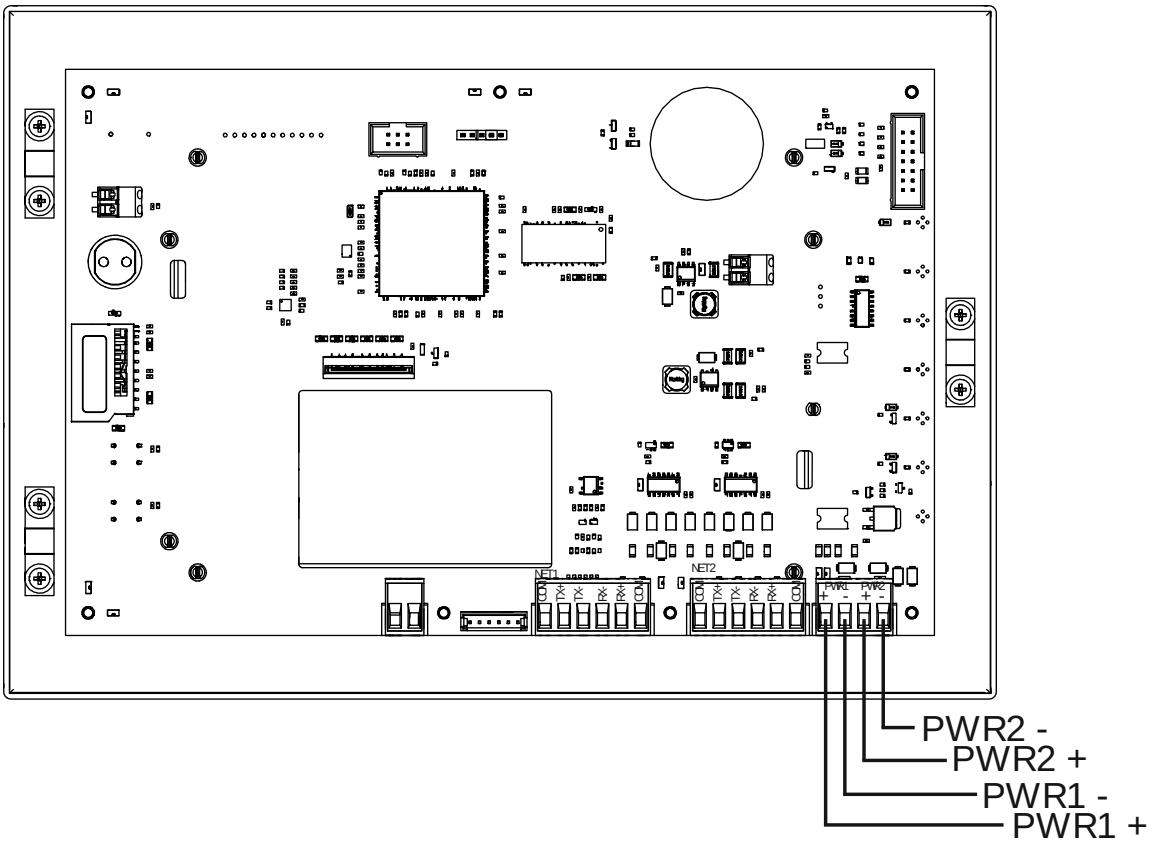


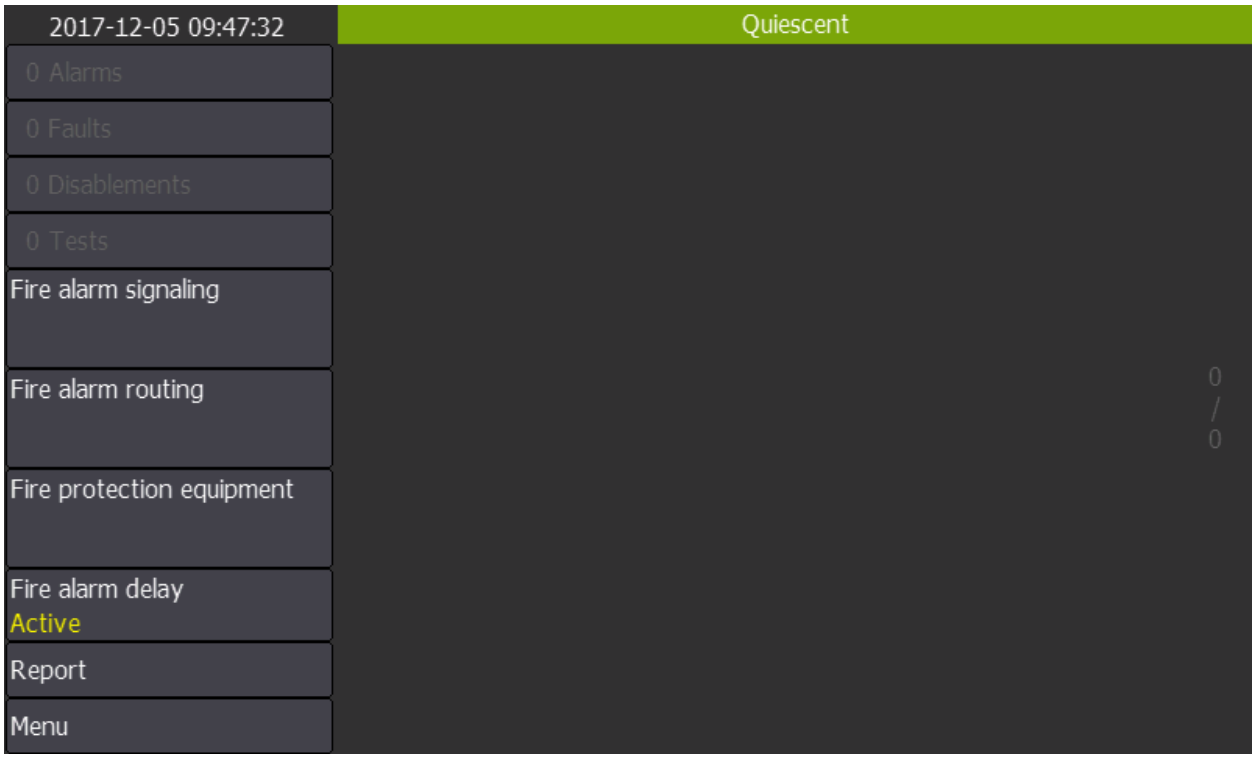
Table 3. Description of power terminals

Terminal no.	Terminal designation
1 (PWR1 +)	Positive input PWR1 24 V DC
2 (PWR1 -)	Negative input PWR1 24 V DC
3 (PWR2 +)	Positive input PWR2 24 V DC
4 (PWR2 -)	Negative input PWR2 24 V DC

5. Start-up

After proper installation and connection, the external signal panel should be tested for activation. Correct electrical installation should be checked with regard to the continuity of wires, presence of short-circuits in the system and accidental voltage supply. After configuration, the panel should display the same messages as shown on the control unit or the messages of the entire system when it is connected to the network of control units. The panel should display the basic screen (Figure 10).

Figure 10. Screenshot of the basic screen.



The panel should be tested as described in chapter 7 of this manual. The following should be checked:

- communication with the control unit via the RS module
- messages displayed on the screen
- operation of the function keys
- operation of the LED indicators
- operation of the touch screen.

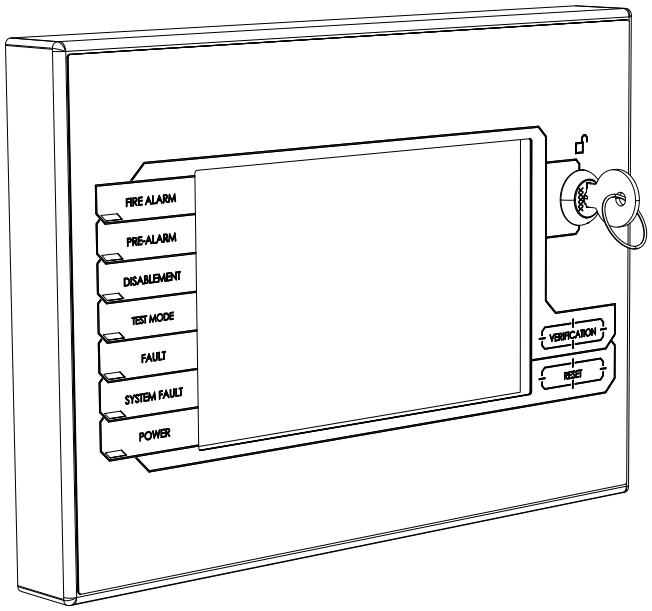
6. Operation

During the operation, the unit should be in detection mode. Only the green **POWER** LED indicator should be illuminated on the panel. In the upper part of the screen, the green bar reading **QUIESCENT** should be displayed. The fields to the left of the screen, i.e. **ALARMS**, **FAULTS**, **DISABLEMENTS** and **TESTS**, should display **0** (as shown in Figure 10). After a pre-set time of inactivity, the display will go into the screen saver mode, and then, also after a pre-set time, it will turn off.
When alarm or fault occurs, the display becomes illuminated. The message indicating the type of the alarm, the area where the affected component is located and the address of the element is displayed.

After the call point within the system triggers the **ALARM**, enter the access **level 2** to verify the alarm:

- Using the key-operated selector switch: Turn the key to the position as shown in the figure below. You will get permanent access to **LEVEL 2** then. Press the **VERIFICATION** key and the alarm verification takes place. After you have inspected the place and found no fire, press the **RESET** key.

Figure 11. Key position in the selector switch



- Using the access key. After pressing the **VERIFICATION** function key, the screen with a request to make the confirmation with the **LEVEL 2** access key will be displayed. After entering the key and pressing the **ENTER** key on the qwerty keyboard, the alarm verification takes place. After you have inspected the place and found no fire, press the **RESET** key and also confirm with the **LEVEL 2** access key. The access keys are enclosed with the unit.

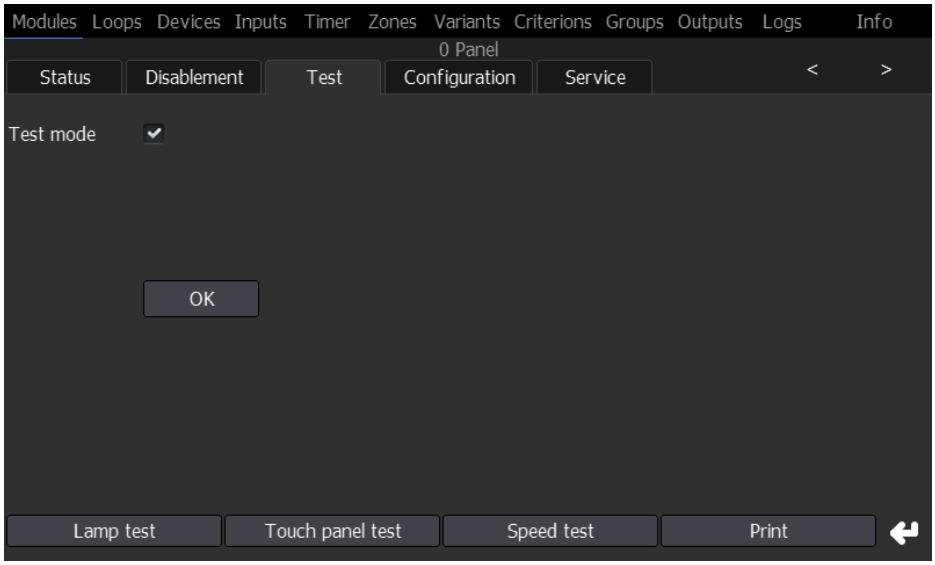
7. Maintenance and service

The maintenance works and periodic inspections must be carried out by the personnel of authorised companies or trained by AWEX. All repairs must be made by the manufacturer.

> **NOTE:** The manufacturer is not responsible for the operation of equipment maintained and repaired by unauthorised personnel.

The ESP external signal panel should be inspected. The maintenance should be carried out no less than once a year or as often as required by the maintenance schedule in accordance with CEN/TS 54-14. In addition, every inspection and maintenance operation must be recorded in the SYSTEM OPERATION BOOK.
During the maintenance, remove dust from the unit and check its functionality:
MENU>PANEL>TEST tab

Figure 12. Panel test menu



With selection of the **Test mode** and confirmation with **OK** key, we can:

- check the optical indicators and alarm buzzer for correct operation
- check the display for correct operation
- check the display for proper refreshing rate

In addition, you should check the function keys for correct operation.
To check the keys for correct operation, press the specific key at any menu level and you should be moved to the home screen. Such a check should be done for both keys.
If you notice any irregularities during the maintenance inspection, contact the manufacturer to repair or replace the affected element.

8. Packaging, storage, transportation

8.1 Packaging

The ESP external signal panel is packed in the manufacturer's box and protected against mechanical damages which may arise during transport.

8.2 Storage

The unit should be kept in the manufacturer's packaging at an ambient temperature of -5°C to 40°C, away from corrosive substances, direct sunlight and point sources of heat.
Relative humidity in the premise should not be higher than 93% at 35°C.

8.3 Transport

Transportation should be made in the manufacturer's packaging at -5°C to 40°C. Relative humidity in the premise should not be higher than 95% at 35°C.

9. Environmental impact

The manufactured product does not pose a risk to public health and the environment and does not contain dangerous materials.

Disposed of product should be transferred to the nearest waste electric and electronic equipment collection point.