



USER'S MANUAL

FTL-A1R, FTL-A2R, FTL-BR HEAT DETECTORS

The detectors comply with EN 54-5:2003.

Compliance of the detectors with the type and class appear in Table 1.

Table 1

Model	Type	EN 54-5:2003 class
FTL – A1R heat detector	Fixed temperature/rate-of-rise	A1R
FTL – A2R heat detector	Fixed temperature/rate-of-rise	A2R
FTL – BR heat detector	Fixed temperature/rate-of-rise	BR

The following abbreviations apply in the manual.

AL – alarm loop;

CP – control panel.

1 PURPOSE

1.1 The FTL–A1R (FTL–A2R, FTL–BR) heat detectors with standby mode indication are designed to control ambient temperature indoors including unheated premises.

1.2 When exceeding the threshold ambient temperature value or temperature rate of rise in guarded premises the detector forms the alarm signal for CP.

1.3 The Fire mode is indicated with 2 red optical indicators.

1.4 The indication of Fire mode depends on the AL type the detector is connected to. The indication in DC AL is made with continuous light of optical indicators, and in AC AL – with flashing.

1.5 The detector indicates standby mode with short-term flashes of the red LED.

1.6 The detector is intended to operate all day long with CP by 2-wire AL with 12/24V rated loop voltage.

1.7 The MUSH-2 or MUSH-3 modules should be applied to connect detectors to 4-wire CP.

2 TECHNICAL SPECIFICATIONS

2.1 Static response temperature range, °C:

- FTL – A1R	54 – 65
- FTL – A2R	54 – 70
- FTL – BR	69 – 85

2.2. Response time depending on temperature rate-of-rise corresponds to Table 4-5 EN54-5:2003

2.3 Supply voltage range, V 9 - 30

2.4 Standby current consumption at 30 V max, ≤0,15

2.4 Fire current consumption set by external resistor in value range, mA 5 - 20

2.5 Internal resistance in Fire mode at 20 mA, Ohm ≤500

2.5 Dimensions, mm Ø85 × 33

2.6 Weight, kg, 0,05

2.7 Average lifespan, years ≥10

3 ITEMS SUPPLIED WITH THE DETECTOR

<i>Name</i>	<i>Quantity</i>	<i>Note</i>
Heat detector FTL – A1R (FTL – A2R) (FTL – BR)	Up to 100 pcs	In one package
Manual	1 pc.	Per package
Package	1 pc.	Per package

MUSH-2 or MUSH-3 modules can be supplied for connection to a 4-wire CP if ordered separately.

4 PLACEMENT AND INSTALLATION

4.1 You should choose places to locate detectors where there are provided:

- minimal construction vibrations;
- maximum distance from electromagnetic interferences sources (electric wires etc.), infrared radiation (heat devices);
- elimination of water ingress to the housing.

4.2 Place detectors taking into consideration the dimensions according to Figure 1, Figure 2.

4.3 Connect the detectors to a loop using screw joints. You can connect up to two 0,2-0,5 mm² wires to a screw joint.

4.4 Please refer to Figure 3- Figure 7 for wiring diagrams for detectors to different AL types.

4.5 You should provide protection against construction debris and dusts when making repair of lodgings.

5 PREPARATION FOR OPERATING AND SEQUENCE OF OPERATIONS

5.1 Open the package after receiving detectors, check contents.

ATTENTION! If detectors were in conditions of temperature below 0° C before opening the package, allow them to acclimatize inside the structure for at least 4 hours.

5.2 Remove the detector head from the detector, rotate it anti-clockwise relative to the base.

5.3 Secure the base of the detector onto the place of installation using two self-tapping screws Ø3x20 mm² (not supplied with the detector).

5.4 Connect AL to the detector as per Figure 3 - Figure 7. Tighten screws. Check the reliability of the connection. Close the detector head having aligned the marks on the base and on the head. Twist the head clockwise relative to the base as far as it will go.

5.5 Connect AL with detectors to a control panel and check alarm loop circuit. The inbuilt indicator shall flash for a short time upon energizing.

5.6 Please refer to Figure 5 - Figure 7 for wiring diagram for the detector to 4-wire control panel. The MUSH-2 module issues the alarm signal by current decrease or open-circuit of 4-wire loop signal line and the MUSH-3 module – by current increase in 4-wire loop signal line of the control panel.

6 MAINTENANCE

6.1 Vacuum at least every six months to keep unit working efficiently by firstly turning off the mains supply and vacuuming through the vents during one minute using a soft brush attachment or another compressor.

6.2 After maintenance check detectors for proper operation.

6.3 You can check detectors directing air flow with temperature by 5°C higher than activation threshold temperature onto the temperature element.

6.4 It is forbidden to test detectors for proper operation with the help of open fire.

7 GUARANTEE

7.1 The detector is warranted by the manufacturer for 18 months upon the date of the detector's commissioning but not more than for 30 months from the date of acceptance by a representative of the quality control service of the manufacturer.

7.2 The manufacturer repairs or replaces detectors within the guarantee term provided the rules of installation, timely maintenance, transportation and storage of detectors have been kept.

7.3 In the case that faults according to the reclamation have been removed the guarantee term is prolonged for the while detectors were not in use because of faults.

Figure 1

Appearance and dimensions

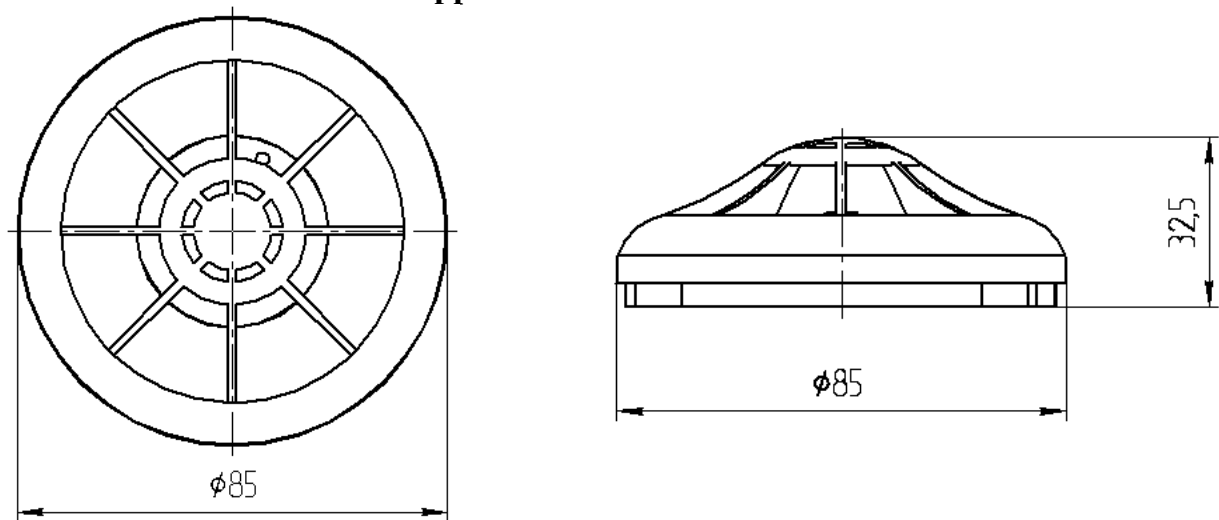
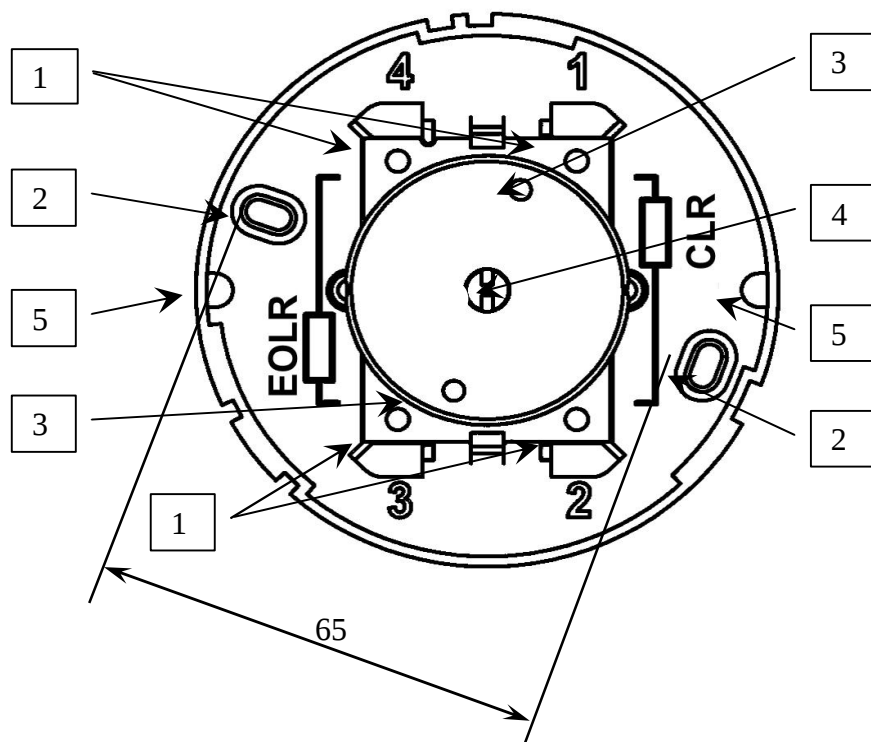


Figure 2

Design and installation dimension

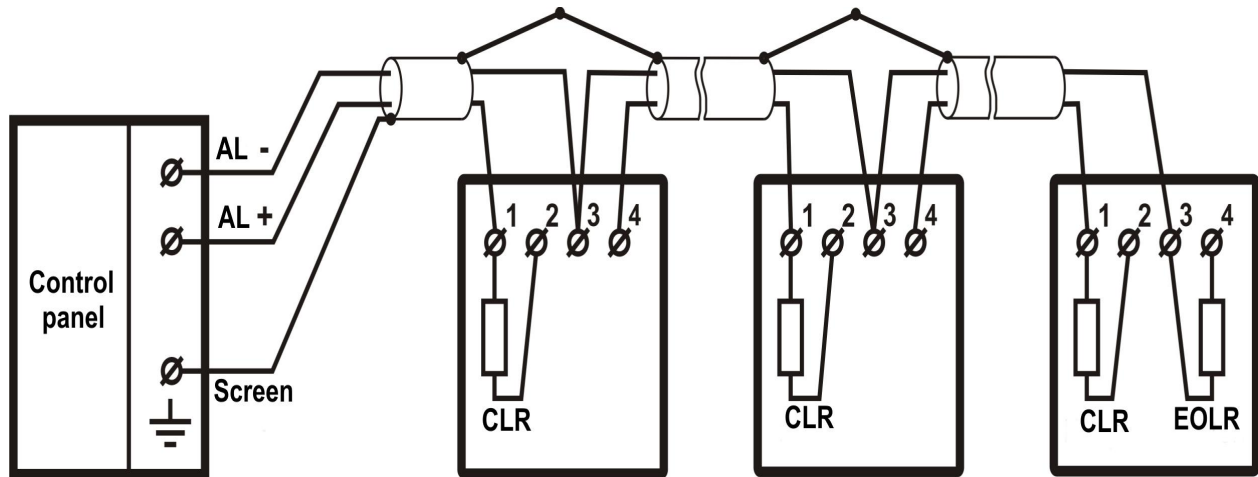


- 1 – Screw joints for AL wires connection
- 2 – Mounting holes
- 3 – Red LED
- 4 – Thermal element
- 5 – Input slots for AL conductors.

The numbers of contacts and places for connection of end-of-line and limiting resistors for **DC AL** housing are marked on the base of the detector.

Figure 3

Wiring diagram to DC control panel



Contacts «1», «2», «3», «4» are marked on the base and on PCB of the detector.

Resistors value is specified by control panel manufacturer.

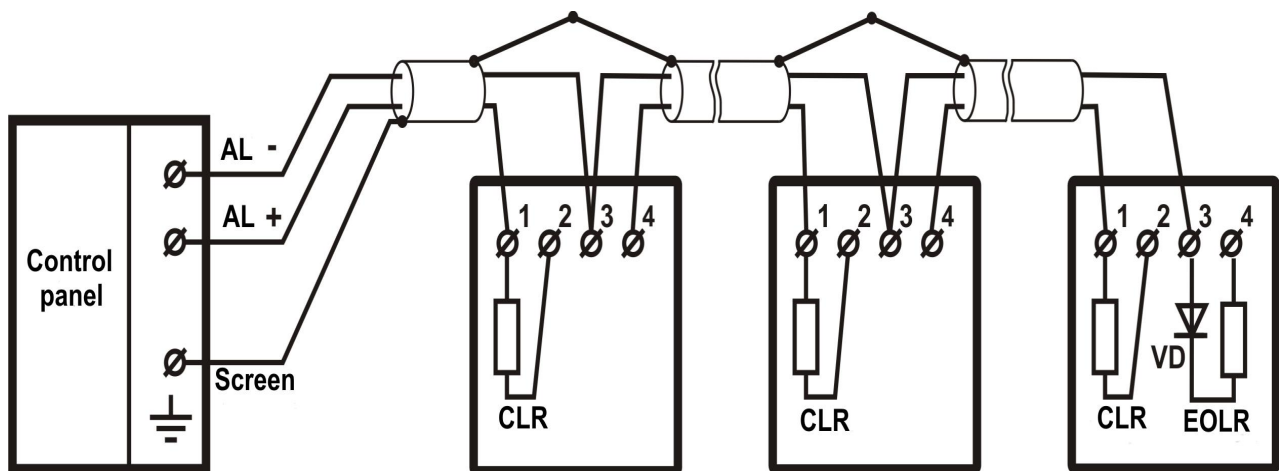
Feasible values:

24V: EOL resistor= (2,4-3,9) kOhm, CLR=(0,68-3,6) kOhm

12 V: EOL resistor = (1,2-2) kOhm, CLR =(0,1-1,5) kOhm

Figure 4

Wiring diagram to AC control panel

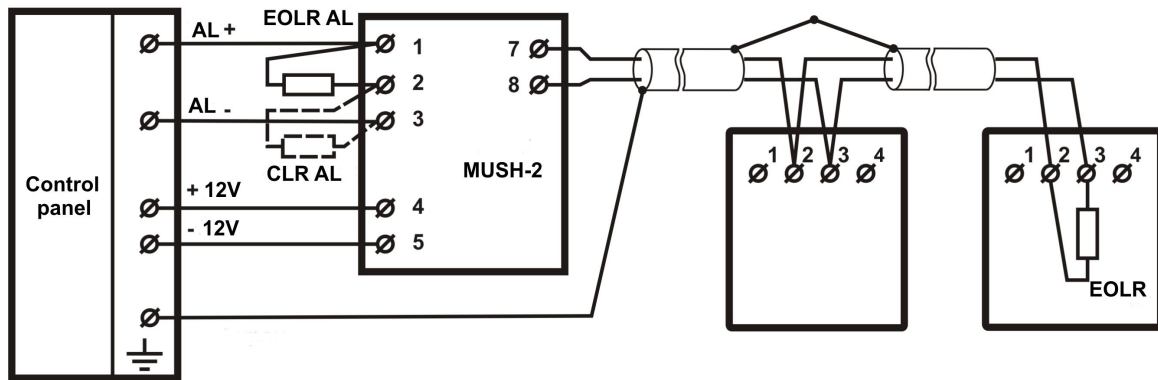


Resistors' values are specified by control panel manufacturer.

Diode VD – 1N4148

Figure 5

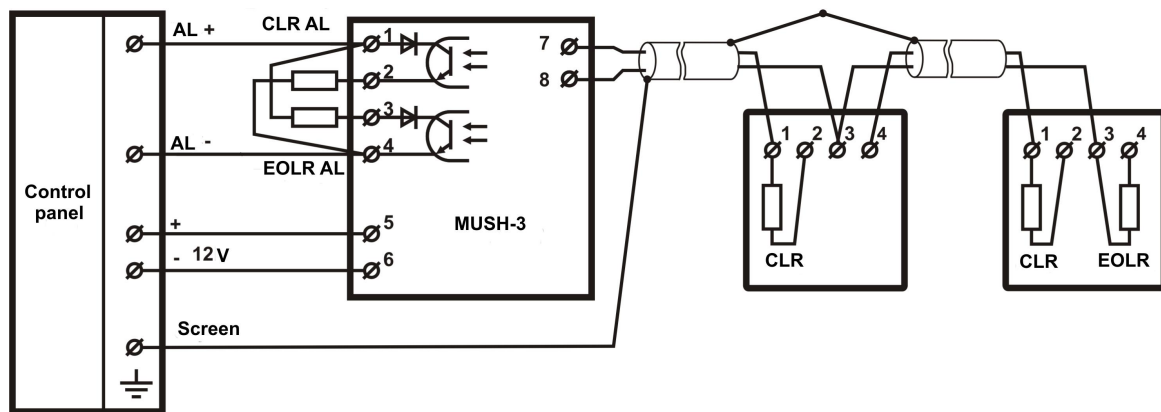
Wiring diagram for connection of detectors to 4-wire AL through MUSH-2 module



$EOLR_{AL}$ (from 1 to 5 kOhm) and CLR_{AL} (from 2 to 15 kOhm) are specified by control panel manufacturer.
EOL resistor = 1,5 kOhm.

Figure 6

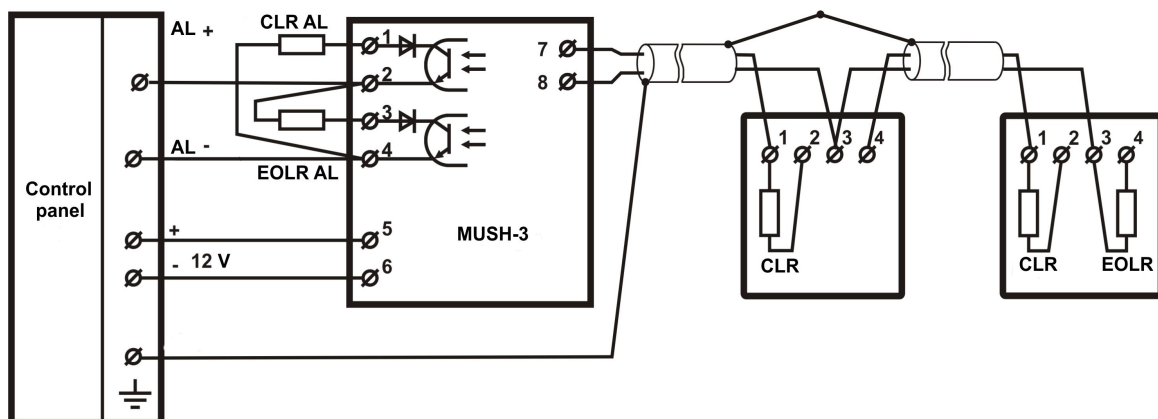
Wiring diagram for connection of detectors to 4-wire DC AL through MUSH-3 module



$EOLR_{AL}$ and CLR_{AL} (from 1 to 5 kOhm) are specified by control panel manufacturer.
CLR= 680 Ohm, EOL resistor = 2,7 kOhm.

Figure 7

Wiring diagram for connection of detectors to 4-wire AC AL through MUSH-3 module



$EOLR_{AL}$ and CLR_{AL} (from 1 to 5 kOhm) are specified by control panel manufacturer.
CLR= 680 Ohm, EOL resistor = 2,7 kOhm.