



USER'S
MANUAL



**FTL-A1, FTL-A2, FTL-B
HEAT DETECTORS**

The detectors comply with EN 54-5:2000/A1:2002.

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

Model	Type	EN 54-5:2003 class
FTL – A1 heat detector	Fixed temperature	A1
FTL – A2 heat detector	Fixed temperature	A2
FTL – B heat detector	Fixed temperature	B

The following abbreviations apply in the manual.

AL – alarm loop;

CP – control panel.

1 PURPOSE

1.1 The FTL–A1 (FTL–A2, FTL–B) heat detectors are designed to control ambient temperature indoors.

1.2 When exceeding the threshold ambient temperature value in guarded premises the detector issues 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 LED 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 connected with CP by 12/24V 2-wire AL.

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 – A1.....54 – 65

- FTL – A2..... 54 – 70

- FTL – B.....69 – 85

2.2 Supply voltage range, V..... 9 - 30

2.3 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

2.6 Dimensions, mm.....Ø85 × 33

2.7 Weight, g50

2.8 Average lifespan, years.....≥10

3 ITEMS SUPPLIED WITH THE DETECTOR

<i>Name</i>	<i>Quantity</i>	<i>Note</i>
Heat detector FTL – A1 (FTL – A2) (FTL – B)	Up to 100 pcs	
Manual	1 pc.	Per a package
Package	1 pc.	Per 100 pcs

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

4 PLACEMENT AND INSTALLATION

4.1 You should site detectors in places with the following conditions:

- 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 control panels.

4.5 You should provide protection against construction debris and dusts when repairing lodgings.

5 PREPARATION FOR OPERATING AND SEQUENCE OF OPERATIONS

5.1 Open the package after receiving detectors, check contents.

ATTENTION! If detectors were in below 0° C temperature conditions 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 site 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 little 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 the detectors for proper operation.

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

6.4 It is forbidden to test detectors for proper operation with 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 approval by the manufacturer's quality control department.

7.2 The manufacturer shall repair or replace detectors within the guarantee term provided that the rules of installation, timely maintenance, transportation and storage of detectors have been kept.

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

QUALITY AND PACKING CERTIFICATE

Heat detector type FTL-A1 (FTL-A2, FTL-B), serial numbers:

_____ pieces

_____ pieces

Comply with
EN 54-5:2000/A1:2002

Packed in compliance with the factory rules

Approved: *Proper quality*

Manufacturing date _____._____.2011

Packing date _____._____.2011

Quality control mark _____

Figure 1

Appearance and dimensions

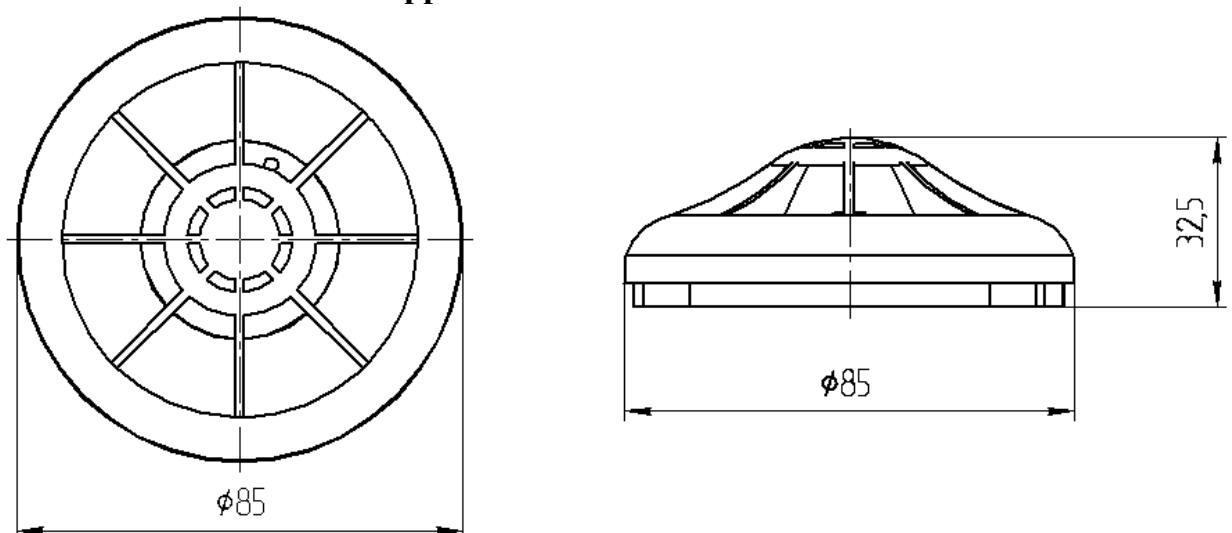
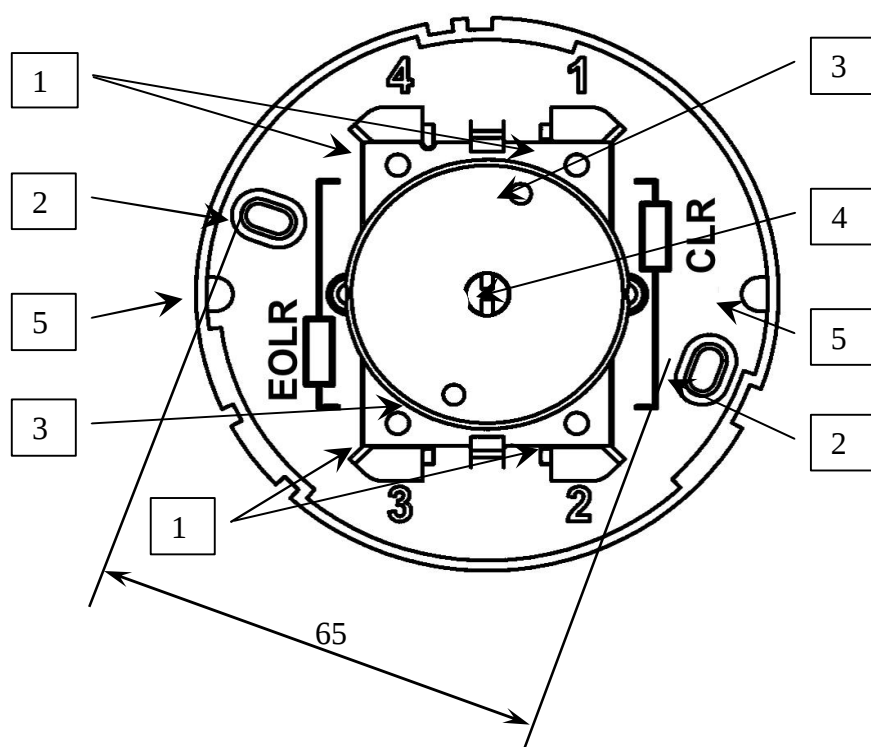


Figure 2

Design and installation dimensions

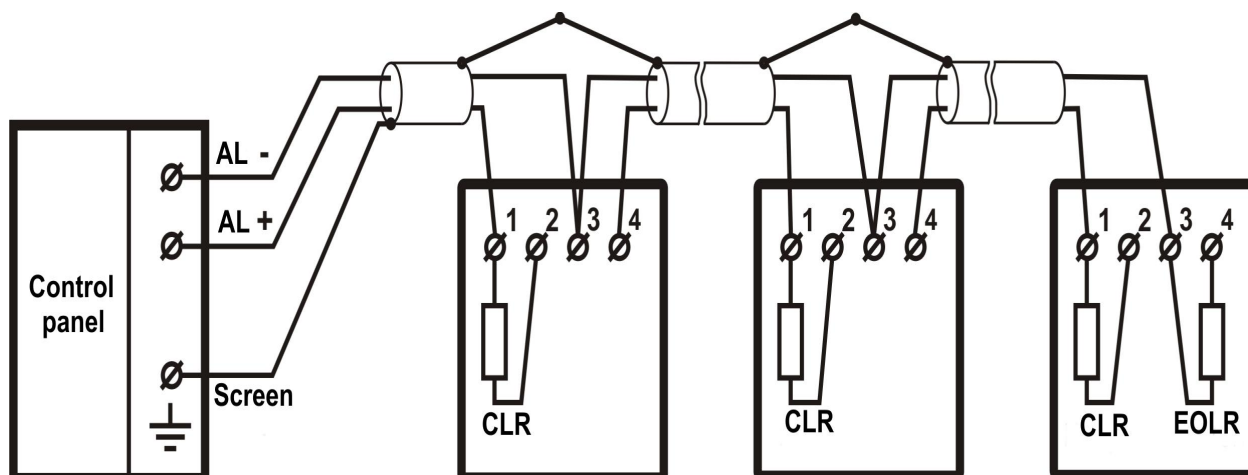


- 1 – Screw joints for AL wires connection
- 2 – Mounting holes
- 3 – Red LED
- 4 – Thermal element
- 5 – Input slots for AL conductors.

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 are specified by control panel manufacturer.

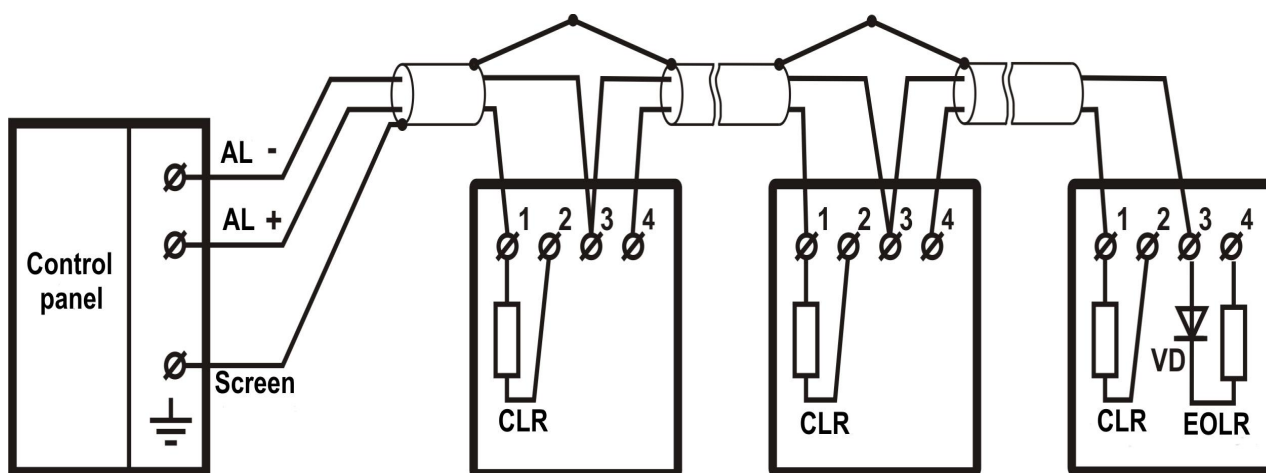
Feasible values:

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

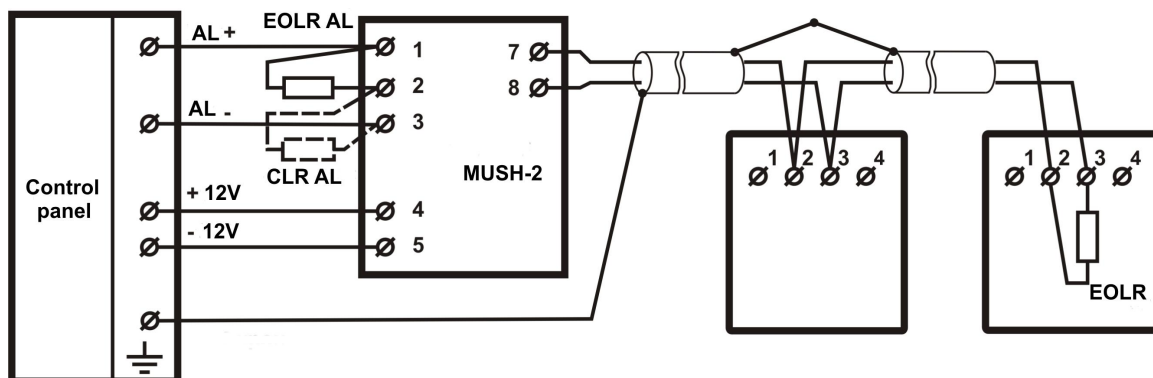


Resistors value are specified by control panel manufacturer.

Diode VD – 1N4148

Figure 5

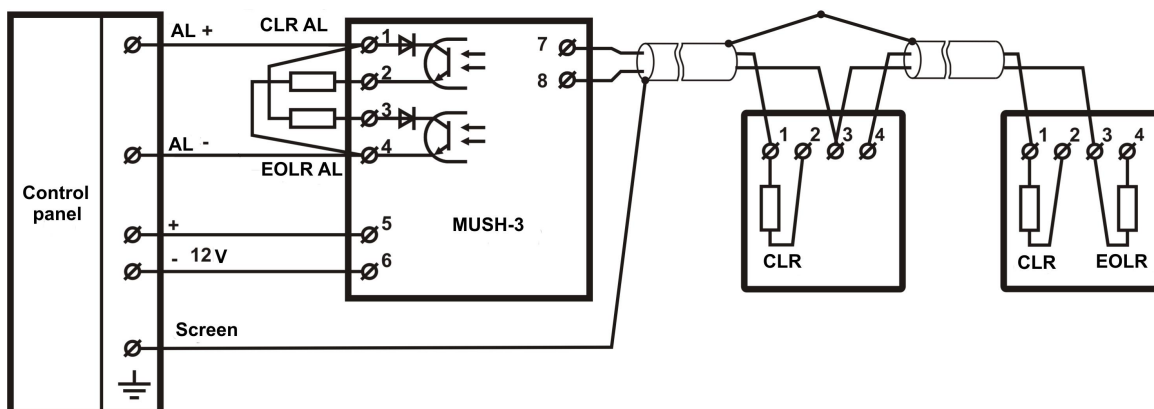
Wiring diagram for connection of detectors to 4-wire AL through MUSH-2 module



$EOLR_{AL}$ (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

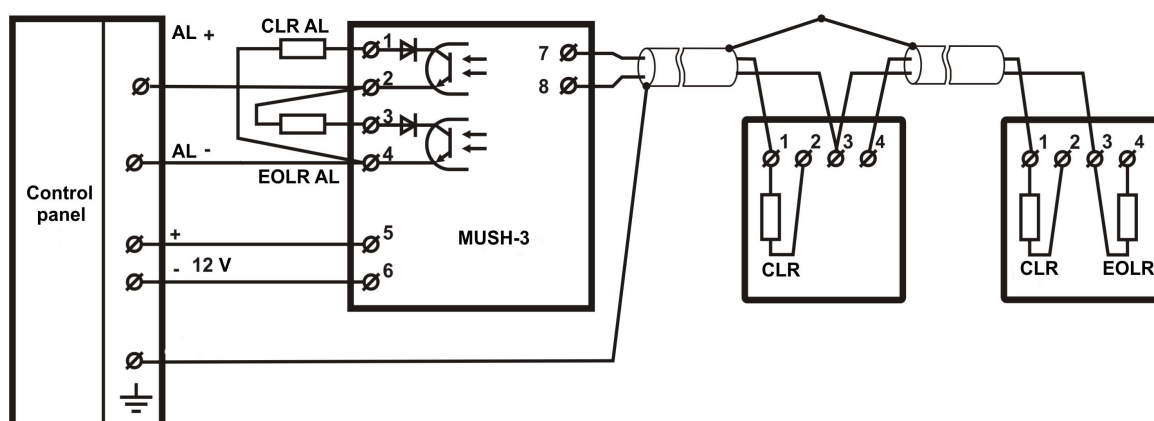
Wiring diagram for connection of detectors to 4-wire DC AL through MUSH-3 module



$EOLR_{AL}$ 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.