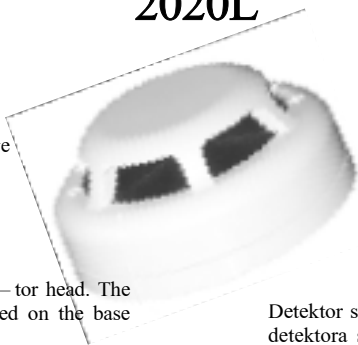


# RATE OF RISE HEAT DETECTOR

# TERMODIFERENCIJABILNI DETEKTOR POŽARA

2020L



## 1. INTRODUCTION

The Rate of rise heat detector is designed to provide early warning of a fire condition reacting upon a sensitive rate of rise in temperature or upon reaching a fixed temperature threshold.

## 2. STRUCTURE AND FUNCTION

The detector consists of two main parts: a base and a detector head. The latter comprises a circuit board. The detector head is fixed on the base by the means of bayonet joints.

When locating the detector head on the base, make sure the bench mark stands about 20 mm before the respective bench mark on the base; then rotate clockwise to fix. The bench marks should fully coincide when fixed. The contact plates are fixed to the base. The connection between the incoming wires and the contact plates is made by the provided screws and washers.

The circuit board is mounted within the detector head. The contact blades are placed on the detector heads' underside. The electric connection with the circuit board is provided by retainer screws.

One of the detector's heat sensitive elements is mounted on the detector heads' underside, the other is located on the circuit board's opposite side. A flat pivot point screw (option) is provided on the detector head to prevent unauthorized removal. A 2 mm tip screwdriver is required for locking and unlocking.

The principle of function of the detector is based on the ohmic resistance alteration in the thermistor as a result of the ambient temperature change. It detects a rise in temperature by sensing a differential in circuit resistance caused by changes in the state of the thermistors.

Upon activation the detector illuminates two red LEDs, situated on the detector head (360° visibility). The LEDs can be reset and extinguished by momentarily removing the power source.

Detector's type and sensitivity are marked.

## 3. PREPARING THE DETECTOR FOR OPERATION

### 3.1. Mounting the detector.

Separate the base from the detector head by turning the detector head in an anti-clockwise direction.

Feed the connection cable through the cable entry in the center of the base. Fix the base on the ceiling using appropriate fixings. Complete the wiring as shown on fig. 2.1 or 2.2. Replace the detector head on the base by offering the detector head to the base ensuring bench marks are no more than 20 mm apart. Rotate the detector head in a clockwise direction to complete location.

Lock the detector head to the base by screwing the flat pivot point screw, using a 2 mm tip screwdriver, ensure not to over tighten.

### 3.2. Testing

Apply power in the range of 12 – 30V DC. Place a permanent magnet on the detector heads surface at the point marked test periphery. The twin LEDs will illuminate. After removing the magnet the LEDs should remain lit until reset by momentary interruption of the power supply. In addition a simulation test of real fire conditions should be completed by means of a warm air probe.

## 4. WARRANTY

The manufacturer guarantees compliance with EN 54 Standard, Part 5. The warrant period is 36 months from the date of purchase, providing that requirements stated in the service schedule have been observed.

## 1. UVOD

Termodiferencijabilni indikator je namenjen za otkrivanje požara u ranoj fazi ragujući na brzini porasta temperature ili pri prelasku maksimalne zadate temperature.

## 2. STRUKTURA I PRINCIP RADA

Detektor se sastoji iz dva osnovna dela: kućišta i glave detektora. Glava detektora se sastoji od štampane ploče i termo elementa. Detektorska glava je pričvršćena na kućište bajonetnom vezom.

Pri postavljanju detektorske glave u kućište reperi na kućištu i glavi treba da su udaljeni oko 20 mm pre upadanja u žleb posle čega okrenećemo glavu detektora u smeru kazaljke na časovniku, do završavanja. Reperi moraju biti poklopljeni. Kontaktni priključci su fiksirani na kućištu. Veza između ulaznih žica i priključaka ostvaruje se vijcima sa podloškom.

Štampana ploča je montirana na detektorskoj glavi. Kontaktne nožice se nalaze na osnovi detektorske glave. Električna veza sa pločom ostvarena je pritežućim vijcima.

Jedan od senzora detektorske glave je smešten u kućištu a drugi je postavljen suprotno na štampanoj ploči. Pljosnati vijak završivač (opcija) je predviđen za neovlašćenu demontažu. Odvijač od 2 mm je potreban za zaključavanje odn. otključavanje.

Princip rada detektora se zasniva na promeni omskog otpora termistora kao rezultat promene spoljašnje temperature. On detektuje porast temperature očitavajući razliku u otpornom kolu uslovljenu promenama stanja termistora.

Posle aktiviranja LED indikatori svetle crveno, i smešteni su u glavi detektora (vidljivo u krugu 360°). LED indikatori mogu biti resetovani samo momentalnim kratkim prekidom napajanja detektora.

Na detektoru su značeni tip i osetljivost detektora.

## 3. PRIPREMA ZA RAD

### 3.1. Montaža detektora

Razdvojimo kućište od glave detektora okrećući ga suprotno kretanju kazaljke na satu. Provući kabl kroz centralni otvor na kućištu. Pričvrstite kućište za zid ili plafon odgovarajućom vijčanom vezom. Izvršiti ožičenje kao što je prikazano na Sl. 2.1 ili Sl. 2.2. Vratiti glavu detektora u kućište tako da reperi budu udaljeni oko 20 mm. Okrenimo glavu detektora u smeru kazaljke na satu do završavanja. Osigurajmo glavu detektora za kućište pomoću završivača, ne pretežuci, pomoću dvomilimetarskog odvijača.

### 3.2. TEST

Priključiti napon u opsegu 12–30V DC, prema Sl. 2.1 ili Sl. 2.2 Staviti permanentni magnet na površinu glave detektora na mestu TEST. Indikatori treba da svetle. Posle pomeranja magnet indikatori moraju i dalje da svetle sve do resetovanja indikatora. Test se može izvršiti i sondom za topli vazduh.

## 4. GARANCIJA

Proizvođač garantuje da proizvod odgovara EN 54, Part 5. Garancijski rok je 36 meseci od dana kupovine, samo pod uslovima navedenim u servisnom planu.

## TECHNICAL DATA / TEHNIČKI PODACI

<b>Supply voltage</b>	- 12÷30 V DC
<b>Average current consumption in quiescent state</b>	- 40 µA at 22.5 V DC
<b>Alarm state current</b>	- (20±2) mA at 22.5 V DC
<b>Sensitivity</b>	- EN 54/5 – Class A1R, A2R or BR (Table 1)
<b>Response time</b>	- EN 54/5 (Table 2)
<b>Protected area</b>	- 35 m <sup>2</sup> at 3.5 m height
<b>Permanent magnet test option</b>	- available
<b>Type of the line to the fire control panel</b>	- two wire
<b>Remote indicator option (connection is made through a built in 500 Ω resistor)</b>	- available
<b>Level of protection</b>	- IP 30
<b>Operational temperature range</b>	- minus 10 °C/plus 90 °C
<b>Dimension (with base)</b>	
- prečnik	- Ø 106 mm
- height	- 48 mm
<b>Weight (incl. base)</b>	- 0.160 kg

<b>Radni napon</b>	- 12÷30 V DC
<b>Srednja jačina struje u mirnom stanju</b>	- 40 µA pri 22.5 V DC
<b>Jačina struje pri požaru</b>	- (20±2) mA pri 22.5 V DC
<b>Osetljivost</b>	- EN 54/5 – Class A1R, A2R ili BR (Tabela 1)
<b>Vreme reagovanja</b>	- EN 54/5 (Tabela 2)
<b>Površina zaštite</b>	- 35 m <sup>2</sup> na 3.5 m visine
<b>Test stalnim magnetom</b>	- moguće
<b>Tip linije povezivanja</b>	- dvožična
<b>Mogućnost daljinske indikacije (veza je omogućena preko ugrađenog otpornika od 500 Ω)</b>	- moguća
<b>Stepen zaštite</b>	- IP 30
<b>Radna temperatura</b>	- minus 10 °C/plus 90 °C
<b>Dimenzije (sa kućištem)</b>	
- prečnik	- Ø 106 mm
- visina	- 48 mm
<b>Težina (sa kućištem)</b>	- 0.160 kg

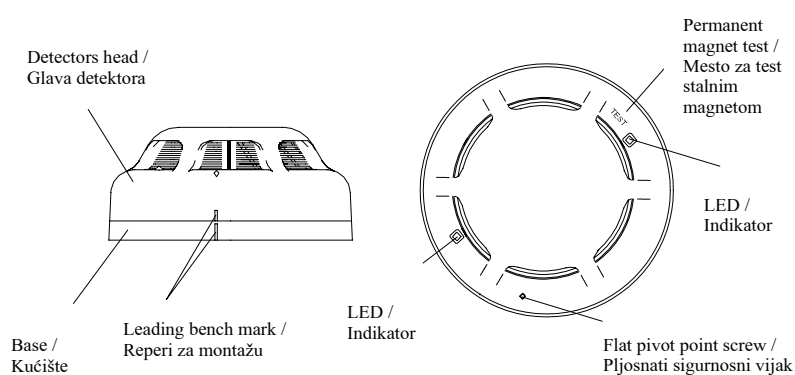


Table 1/Tabela 1

FIRE DETECTOR / Detektor Class / Klasa	Application temperature / Upotrebná temperatura		Operational temperature / Radna temperatura	
	Typical / tipična	max	min	max
A1	25	50	54	65
A2	25	50	54	70
B	40	65	69	85

### ELECTRICAL CONNECTION / ELEKTRO SCHEMA

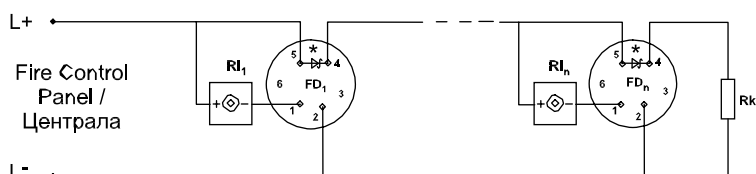


Fig. 2.1 / Sl. 2.2

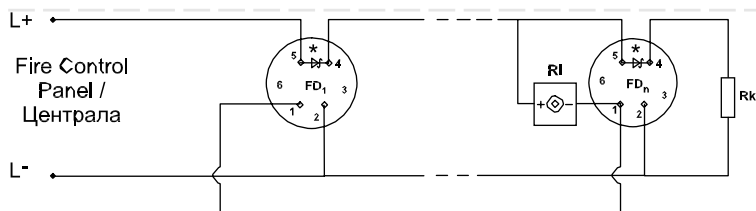


Fig. 2.2 / Sl. 2.2

\*- option / opcija

Rate of rise / Brzina porasta °C/min	Class A1 / Klasa A1		Class A2, B / Klasa A2, B	
	Lower limit / Donja gr. min/sec	Lower limit / Donja gr. min/sec	Lower limit / Donja gr. min/sec	Lower limit / Donja gr. min/sec
1	29:00	40:20	29:00	46:00
3	7:13	13:40	7:13	16:00
5	4:09	8:20	4:09	10:00
10	1:00	4:20	2:00	5:30
20	0:30	2:20	1:00	3:13
30	0:20	1:40	0:40	2:25

### SERVICE SCHEDULE / SERVISNI PLAN

	Task / Zadatak	Periodicity / Periodičnost
1	Check for physical damage / Provera vidljivih mehaničkih oštećenja	weekly / nedeljno
2	Test correct operation / Provera radne sposobnosti	monthly / mesečno
3	Preventive cleaning against dust contamination / Preventivno čišćenje nataložene prašine	every 6 months / polugodišnje
4	Preventive cleaning and inspection of contacts / Preventivno čišćenje i provera kontakta	Annual / godišnje