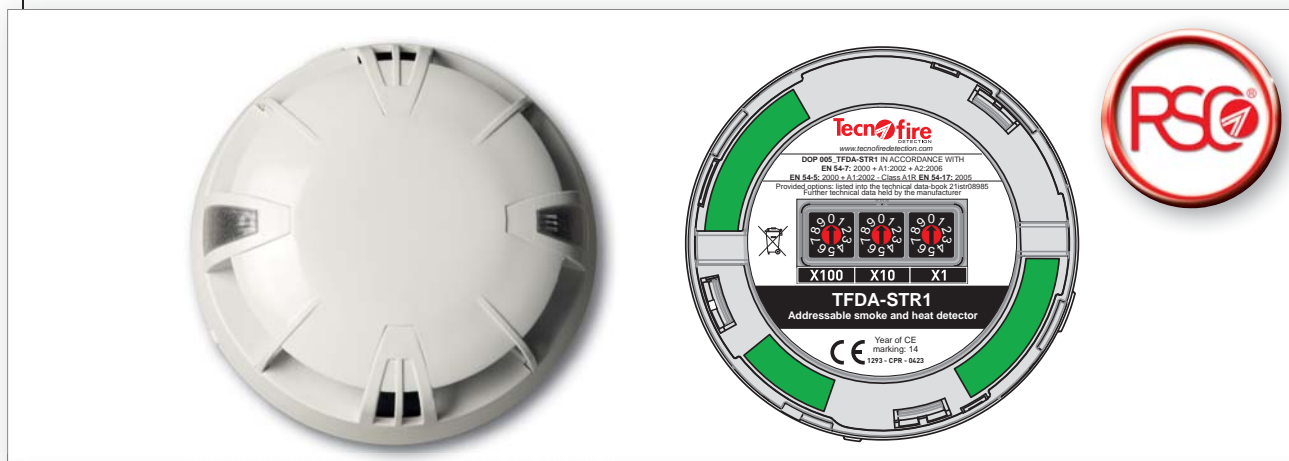


## Optical - rate-of-rise detector



### TFDA-STR1



Addressable sensor in configuration Combo 2T, consisting of two distinct, independent detection sections; the first section consists of an optical smoke detector, the second section of a thermovelocimetric detector with Class A1, Suffix R (static temperature of trip 58°C).

The operation of the detector is controlled by a microprocessor. The detection algorithm ensures maximum accuracy in the determination of the ambient temperature and in the density analysis of the smoke captured by the optical chamber. The automatic gain control algorithm is able to dynamically offset the sensitivity loss due to the deposit of impurities inside the analysis chamber. Any reduction of detection capacity caused by the impurities is reported to the control unit which notifies the need for service.

Programmable functions: 3 levels of sensitivity, excludable visual indication of transmission, excludable pre-alarm function, 4 detection criteria, individually excludable detection sections. Provided with actuator for functional electric test. Full RSC® management of the device: programming, remote management and control of all functional parameters. 2 notification Leds with 360° visibility. Line separator with dual insulator. Connection on LOOP.

Proprietary high speed communication protocol **FIRE-SPEED**.

Assembly on universal support TFBASE01. Degree of protection IP22. ABS V0 enclosure.

Dimensions (D x H) 100 x 52mm. (support included). White.

**EN 54-7: 2000 + A1: 2002 + A2: 2006 - EN 54-5: 2000 + A1: 2002 - EN 54-17: 2005**  
Certificate of homologation 1293 CPR - 0423

Item no. TF3TFDASTR1

#### OBLIGATIONS AND NOTICES

The detector TFDA-STR1 can be used only if connected to a detection loop of the Tecnofire control units models: TFA1-298, TFA2-596, TFA4-1192. During design and installation, it is necessary to observe and apply the applicable regulations.

#### ADDRESSING

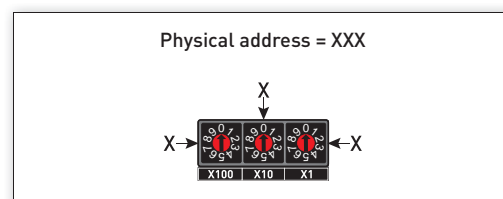
The physical address which identifies the detector is programmed by means of three decimal rotary selectors located on the bottom face of the detector.

The three selectors enable to set the three digits which make up the physical address number.

The selectors are marked by writings which define the position of the digit to set: X100 for hundreds, X10 for tens and X1 for units.

The numeric range of the allowed addresses for the detectors is 001 to 199.

Note: setting the address 000 excludes the detector from operation, yet the detector draws power from the loop.



## Optical - rate-of-rise detector

### LINE SPLITTER

The detector is provided with a line splitter with dual breaker. In case of short circuit of the Loop line, the splitter trips, switching off the faulty section of the line, safeguarding the correct operation of the devices connected upstream and downstream. The trip of the splitter ensures the correct operation of the detector. At the same time the detection unit is sent the faulty notice "Splitter open".



### PROGRAMMING

The operational mode "Single technology pre-alarm" can be enabled or disabled. With pre-alarm mode enabled, it is sufficient the alarm detection by one of the two sections of the detector to generate a pre-alarm signal, generating an alarm requires that both sections detect an alarm. With the mode disabled, it is always necessary that both sections detect an alarm. With this mode, the pre-alarm signal is never generated. Optical detector section. The optical detector section can be disabled. The sensitivity of the detector can be adjusted selecting one of the three sensitivity levels available. However, to maintain the homologation EN 54, the sensitivity level must be set as normal. Thermovelocimetric detector section. The detector should be programmed with the thermovelocimetric suffix R and with the thermal class A1.

Detection logic	Single technology pre-alarm	
	Enabled	Disabled

Optical detector section	Optical detector		
	Enabled		Disabled
	Sensitivity		
	Normal	Low	High
	Please note: to maintain the homologation EN 54, the sensitivity level of the optical detector must be programmed as normal		

Thermovelocimetric detector section	Thermovelocimetric suffix	
	R	
	Thermal class	
	A1	

### DIAGNOSTIC FUNCTIONS

The control unit manages a set of diagnostic functions specialized for the different types of detector. The diagnostic functions available for the opticalthermovelocimetric detector allow to:

- Physically identify the detector.
- Identify the type of detector, the HW and FW version.
- Measure the electric data of operation.
- Monitor the trend of the room temperature
- Monitor the refraction level of the analysis chamber
- Read the statistics from the communication monitor

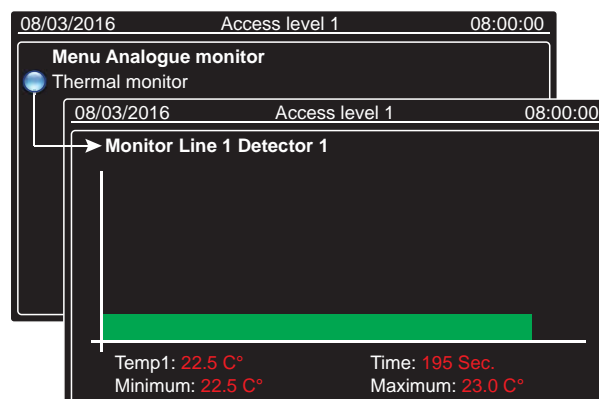
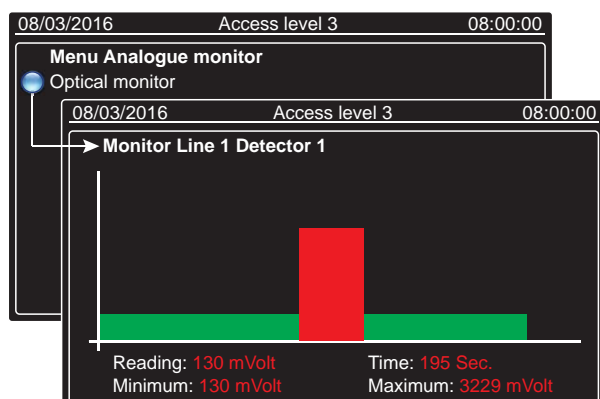
Diagnostic functions of the detector	
<b>Identification</b>	Turns off the Leds of the device for its identification
<b>Self declaration</b>	Self declaration of the module type
<b>Hardware version</b>	Self declaration of the hardware version
<b>Firmware version</b>	Self declaration of the firmware version
<b>Level measurement</b>	Measurement of the electric values of operation
<b>Analog monitor</b>	Thermal monitor and optical monitor
<b>Statistics</b>	Statistic/functional values related to communication
<b>Maintenance</b>	Displays the saturation percentage of the chamber

Draw
Supply level
Zero level
Draw level
Line resistance

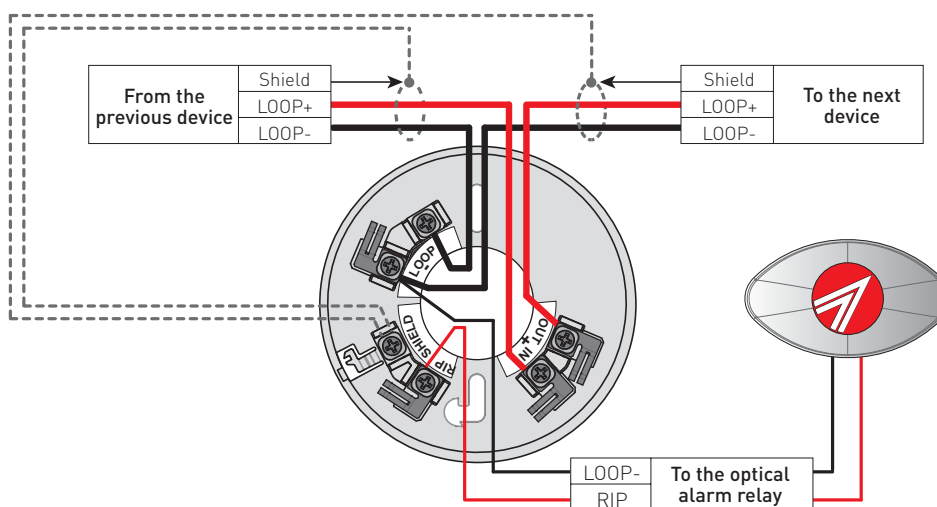
  

Frames sent
Errors
Success Rate
Error rate
Latency time



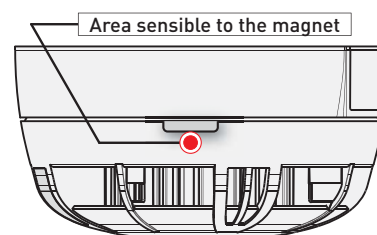
## Optical - rate-of-rise detector

### CONNECTION TO THE LOOP



### ELECTRIC TEST

To verify the correct connection of the detector, it is possible to perform an electric test.  
To perform the test, it is necessary to move a magnet near the area indicated by the drawing, causing an alarm simulation which is sent to the control unit.

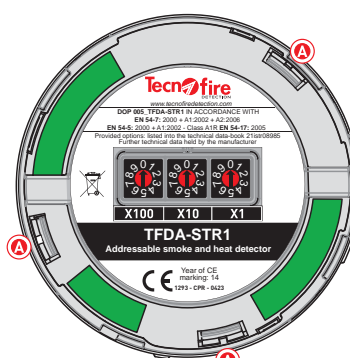


### MAINTENANCE

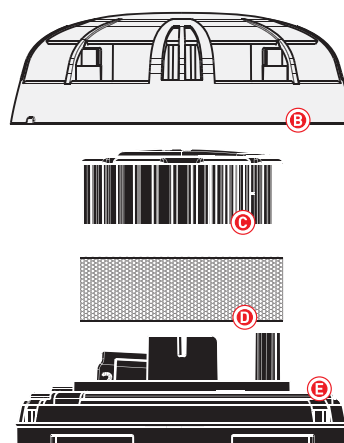
The reduction of detection capacity caused by impurities deposited in the analysis chamber is automatically reported to the control unit which notifies the need for service. The frequency of maintenance of the optical chamber depends on the environmental conditions in which the detector operates. Maintenance should be carried out by specialized personnel provided with the necessary know-how and equipment to perform adequate maintenance work.

### DETECTOR CLEANING AND FUNCTIONAL TEST

Remove the sensor from the base, release the cap performing via a suitable means a slight pressure on the three attachment points, open the analysis chamber by lifting the reflection labyrinth and the anti-insect net, carefully clean all the parts, removing from them any sediment of dust.  
Reassemble the detector, replacing it on its base, then proceed with suitable means to the functional testing of the detector.



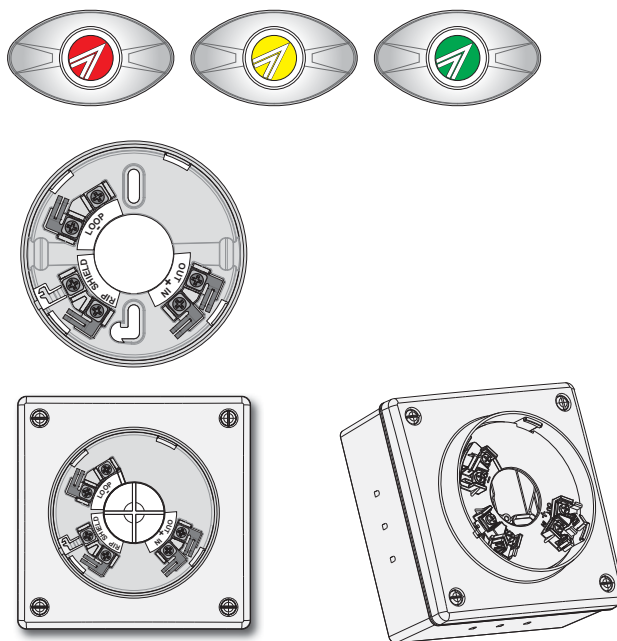
A	Hooking points
B	Hood
C	Reflection labyrinth
D	Anti-insect net
E	Analysis chamber



## Optical - rate-of-rise detector

### DEDICATED ACCESSORIES

<b>TFRIP-R</b>	Red luminous relay
<b>Item no. TF3TFRIPR</b>	
<b>TFRIP-V</b>	Green luminous relay
<b>Item no. TF3TFRIPV</b>	
<b>TFRIP-G</b>	Yellow luminous relay
<b>Item no. TF3TFRIPG</b>	
<b>TFBASE01</b>	
Mounting base for detectors and siren TFS01. Connector for optical relay. Dimensions (D x H) 100 x 19mm. White. ABS V0 enclosure.	
<b>Item no. TF6TFBASE01</b>	
<b>TFBOX-S</b>	
Junction box with integrated mounting base for detectors and siren TFS01. Dimensions (L x H x P) 136 x 136 x 79mm. White. ABS V0 enclosure.	
<b>Item no. TF5TFBOXS</b>	



### TFDA-STR1 - Technical and functions specifications

Overview	Device Name	TFDA-STR1
	Description	Addressed optical + thermovelocimetric smoke detector
	Communication protocol	<b>FIRE-SPEED</b>
	Addressing	3 rotary switches
Programming	Sensitivity	3 levels
	Polling frequency	2 levels
	Transmission LED	Excludable signal
	Pre-alarm	Excludable
	Detection criteria	4
	Detection sections	Individually excludable
	Thermal suffix	R
Electrical specifications	Thermal class	A1
	Power supply	From loop
	Rated voltage	24V DC
	Operating voltage	18V...30V DC
	Draw when on	400µA @ 24V DC when non transmitting
	Power requirements in alarm	5mA @ 24V DC
	Output for relay	9.4V DC 3mA (protected)
Physical specifications	Line splitter	Intelligent breaker (without loss of devices)
	Operating temperature	-15°C...+70°C
	Relative humidity	10%...93% (non-condensing)
	Protection degree	IP22
	Enclosure	ABS V0
	Dimensions (Ø x H)	100 x 52mm (including base)
	Weight	115g
Conformity	Standards	EN 54-7: 2000 + A1: 2002 + A2: 2006 EN 54-5: 2000 + A1: 2002 - EN 54-17: 2005
	Certification number	1293-CPR-0423
	Year of CE marking	14
	Number of declaration of performance	005_TFDA-STR1
	Notified body	EVPU

N.B. The declarations of conformity and performance are available on the website: [www.tecnofiredetection.com](http://www.tecnofiredetection.com)