

## Optical detector



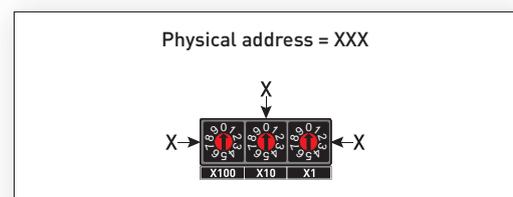
<h3>TFDA-S1</h3>				
<p>Addressable sensor with optical smoke detection technology. The operation of the detector is controlled by a microprocessor. The detection algorithm ensures maximum accuracy in density analysis of the smoke captured by the optical chamber. The automatic gain control algorithm 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 of service. Programmable functions: 3 sensitivity levels, transmission visual indicator (excludable).</p> <p>Provided with actuator for functional electric test. Full RSC® management of the device: programming, remote management and control of all functional parameters. Two notification Leds with 360° visibility. Line separator with dual insulator. Connection on LOOP. Proprietary high speed communication protocol <b>FIRE-SPEED</b>. Assembly on universal support TFBASE01. Degree of protection IP22. ABS V0 enclosure. Dimensions (D x H) 100 x 52mm. (support included). White.</p> <p><b>EN 54-7</b>: 2000 + A1: 2002 + A2: 2006 - <b>EN 54-17</b>: 2005. Certificate of homologation 1293-CPR-0424.</p>				
				Item no. TF3TFDAS1

### OBLIGATIONS AND NOTICES

The detector TFDA-S1 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.



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### 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 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

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

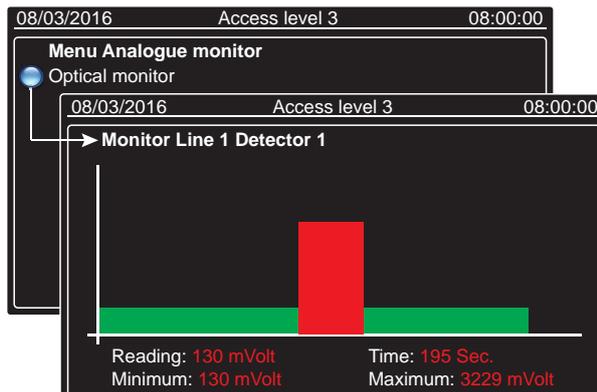
### DIAGNOSTIC FUNCTIONS

The control unit manages a set of diagnostic functions specialized for the different types of detector. The diagnostic functions available for the optical 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 refraction level of the analysis chamber
- Read the statistics from the communication monitor

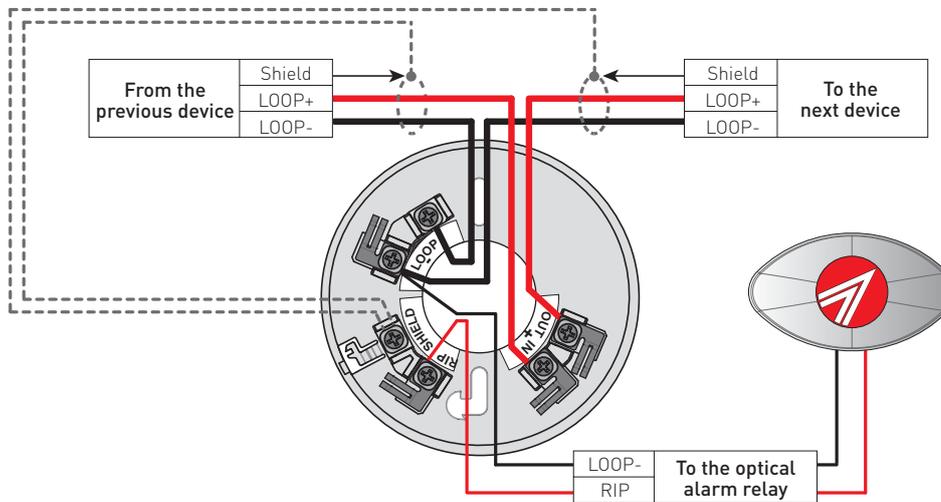
Funzioni diagnostiche rivelatore	
Identification	Turns off the Leds of the device for its identification
Self declaration	Self declaration of the module type
Hardware version	Self declaration of the hardware version
Firmware version	Self declaration of the firmware version
Level measurement	Measurement of the electric values of operation
Analog monitor	Optical monitor
Statistics	Statistic/functional values related to communication
Maintenance	Displays the saturation percentage of the chamber

Draw	Frames sent
Supply level	Errors
Zero level	Success Rate
Draw level	Error rate
Line resistance	Latency time



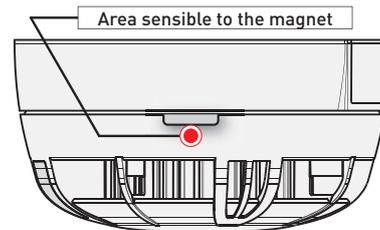
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### CONNECTION TO THE LOOP



### 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.

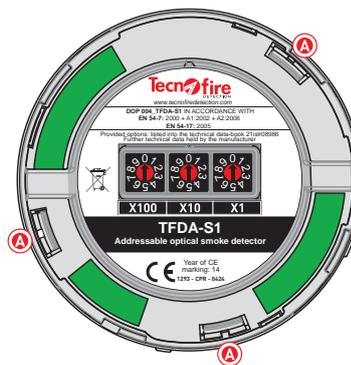


### MAINTENANCE

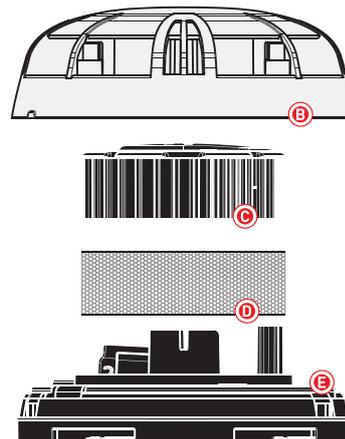
The reduction of detection capacity caused by impurities deposited in the analysis chamber is automatically reported to the control unit which notifies the need for service. The frequency of maintenance of the optical chamber depends on the environmental conditions in which the detector operates. Maintenance 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



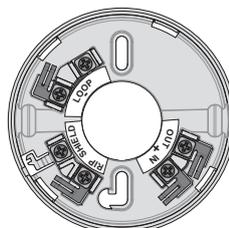
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### DEDICATED ACCESSORIES

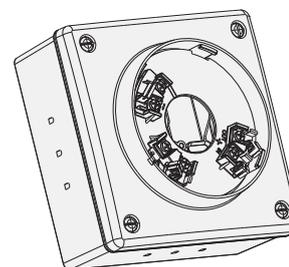
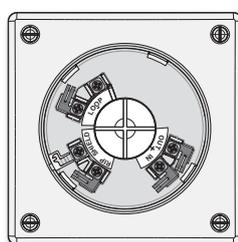
<b>TFRIP-R</b>	Red luminous relay
Item no. TF3TFRIPR	
<b>TFRIP-V</b>	Green luminous relay
Item no. TF3TFRIPV	
<b>TFRIP-G</b>	Yellow luminous relay
Item no. TF3TFRIPG	



<b>TFBASE01</b>
Mounting base for detectors and siren TFIS01. Connector for optical relay. Dimensions (D x H) 100 x 19mm. White. ABS V0 enclosure..
Item no. TF6TFBASE01



<b>TFBOX-S</b>
Junction box with integrated mounting base for detectors and siren TFIS01. Dimensions (L x H x P) 136 x 136 x 79mm. White. ABS V0 enclosure.
Item no. TF5TFBOXS



### TFDA-S1 - Technical and functional specifications

Overview	Device Name	<b>TFDA-S1</b>
	Description	<b>Addressed optical smoke detector</b>
	Communication protocol	<b>FIRE-SPEED</b>
	Addressing	<b>3 rotary switches</b>
Programming	Sensitivity	<b>3 levels</b>
	Polling frequency	<b>2 levels</b>
	Transmission LED	<b>Excludable signal</b>
Electrical specifications	Power supply	<b>From loop</b>
	Rated voltage	<b>24V DC</b>
	Operating voltage	<b>18V...30V DC</b>
	Draw when on	<b>400µA @ 24V DC when non transmitting</b>
	Power requirements in alarm	<b>5mA @ 24V DC</b>
	Output for relay	<b>9,4V DC 3mA (protected)</b>
Line splitter	<b>Intelligent breaker (without loss of devices)</b>	
Physical specifications	Operating temperature	<b>-15°C... +70°C</b>
	Relative humidity	<b>10%...93% (non-condensing)</b>
	Protection Degree	<b>IP22</b>
	Enclosure	<b>ABS V0</b>
	Dimensions (Ø x H)	<b>100 x 52mm (including base)</b>
Weight	<b>115g</b>	
Conformity	Standards	<b>EN 54-7: 2000 + A1: 2002 + A2: 2006 - EN 54-17: 2005</b>
	Certification number	<b>1293-CPR-0424</b>
	Year of CE marking	<b>14</b>
	Number of declaration of performance	<b>004_TFDA-S1</b>
	Notified body	<b>EVPU</b>

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

Rivelatori indirizzati - Addressable detectors - DéTECTEURS adressables - Détecteurs direccionables