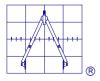


ELECTRONIC HEAT DETECTOR TMP2



INSTALLATION AND OPERATING INSTRUCTIONS

Printed in Italy January 2021 Rev.4.7





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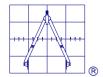




Table of Contents

WARRANTY STATEMENT	4
WARNINGS and CAUTIONS	5
USE AND RESTRICTIONS	5
I INTRODUCTION	6
1.1 General Description	6
1.2 Features	7
1.3 Typical Application	7
II SPECIFICATION	9
2.1 General specification	
2.2 Electrical Specification	
2.3 Environmental Specification	
2.4 Mechanical Specification	
2.5 Ordering information	10
2.6 Outline drawing	
III INSTALLATION	12
3.1 Mounting	
3.2 Generic wiring guidelines	
3.3 Guide lines for proper installation according to EMC Directive	
3.4 General precautions	14
3.5 Storage	
3.6 Cable connection guidelines	
3.7 Final inspection and Start Up	
IV TEST AND VERIFICATION	16
V MAINTENANCE	
VI MARKING and CERTIFICATIONS	18
VII ACCESSORIES	21



WARRANTY STATEMENT

Warranty

Oggioni S.r.l. warrants that all items delivered under this agreement will be free from defects in material and workmanship, conform to applicable specifications, and, to the extend that detailed designs have not been furnished by the buyer, will be free from design defects. Oggioni S.r.l. shall not be liable for the goods being fit for a particular purpose. The above warranty is given by Oggioni S.r.l. subject to the following conditions:

Oggioni S.r.l. shall not be liable in respect of any defect in the goods arising from any design or specification supplied by the buyer;

Oggioni S.r.l. shall not be liable under the above warranty if the total price for the goods has not been paid by the time period specified in charter 6 of the present conditions of sales.

The above warranty does not extend to parts, materials or equipments manufactured by or on behalf of the buyer unless such warranty is given by the manufacturer to Oggioni S.r.l.

If so required by Oggioni S.r.l. the Products will be returned to Oggioni S.r.l. by the buyer at the buyer's risk and expense;

This warranty does not cover defects in or damage to the products which are due to improper installation or maintenance, misuse, neglect or any cause other than ordinary commercial application. Any claim by the buyer which is based on any defect in the quality or condition of the goods or their failure to correspond with specifications shall be notified to Oggioni S.r.l. within 24 months from the date of delivery, unless otherwise specified by Oggioni S.r.l. in writing.

Where any valid claim in respect of any goods which is based on any defect in the quality or conditions of the goods or their failure to meet specifications is notified to Oggioni S.r.l. in accordance with this conditions, Oggioni S.r.l. shall be entitled at Oggioni S.r.l. sole discretion to either replace the goods free of charge or repair the goods. If Oggioni S.r.l. is neither ready nor able to either repair or replace the goods the buyer shall be entitled at the buyer's sole discretion to claim for a reduction of price or the cancellation of the contract.

Limitation of Liability

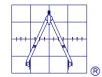
The warranty is in substitution for and shall replace all conditions and warranties on the part of Oggioni S.r.l. implied by statute or common law or otherwise all of which are expressly excluded (insofar as they may be excluded by law) and Oggioni S.r.l. shall not be liable whether in contract, tort or otherwise in respect of defects or in damage to the products or for any injury loss or damage of whatever kind attributable to such defects or damage.

Note that: it is the buyer's responsibility to satisfy itself that the products are suitable for its requirements and Oggioni S.r.l. does not profess to have any skill or judgement in relation to the particular needs of the buyer. The buyer shall be deemed to have full knowledge of the nature and properties of and shall carry out its own testing of the accuracy and performance of the products.

If Oggioni S.r.l. is found liable for any loss or damage suffered by the buyer that liability shall be limited to the price of the products hereunder and in no event shall Oggioni S.r.l. be liable for any loss of profit or any other commercial loss including but not limited to special incidental consequential or other loss or damage.

Although Oggioni S.r.l. will use its best endeavours to ensure that any figure published by Oggioni S.r.l. relating to the performance of the product are accurate, Oggioni S.r.l. does not warrant the accuracy of any published performance figure.

When ordering goods to Oggioni S.r.I. the buyer undertake burden to be in knowledge of all legal limitations and applications and security norms about use of supplied goods. It is therefore excluded any responsibility of Oggioni S.r.I. about use, wrong use, impossibility of use of supplied devices; compensation requests for direct or indirect damages caused by use, wrong use, impossibility of use of supplied devices for whatever reason will thereby not be possible.





WARNINGS and CAUTIONS

TMP2 Heat detectors are not life safety devices.

TMP2 are Fixed Temperature or Rate of Rise Heat Detectors designed to detect open flames which can cause a rapid temperature increase.

The analysis unit uses a hight accuracy solid state transducer, controlled by a microproccesor. Intelligent evaluation algorithms guarantees a lower risk of false alarms.

A service kit is available to simplify configuration, diagnosis, function checks and data archiving.

TMP2 are intellegent and innovative devices usable as integral part of fixed fire detection installations, to protect industrial plants. Additional coating of PCB and soldering of all electronic parts make this detector ideal for use in heavy industrial plants, and offshore applications.



Before using the TMP2 detectors make sure you have read and understood the operating and installation instructions in the present manual.

Improper use of these products, as well as the inadequate maintenance of the same, can compromise the efficiency jeopardizing the safety of the controlled environments.

Improper use of the detectors described in this manual or a use out of manufacturer's specification, as well as unauthorized modification of the product will be considered NON-COMPLIANCE with invalidation of any form of guarantee.

USE AND RESTRICTIONS

TMP2 heat detectors are designed to detect open flames which cause a quick increase in temperature, e.g.:

Hazard material stores.

Exhaust gas ducts.

Engine test blocks

Machine tools Transformer

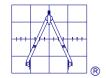
Chemical production

Drying systems.

Combustible material storage

DO NOT locate heat detectors above boilers or heaters or where the temperature is normally very high or liable to sudden fluctuations.

Near heating or air conditioning grilles.





I INTRODUCTION

1.1 General Description

TMP2 Heat detectors are conventional 2-wires detectors designed to be used in outdoor and in indoor industrial environments.

TMP2 heat detectors includes an electronic circuit for signal conditioning generated by the transducer.

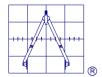
A microprocessor analyzes the signal and, thanks to intelligent evaluation algorithms, assures an early fire detection with low risk of false alarms.





᠍ II 2 GD Ex db tb IIC IIIC T6 T85°C

Dust IP66





1.2 Features

Designed for use in heavy industrial environments.

High electromagnetic tolerance.

High degree of protection (IP66), oil-tight.

High reliability, dependable long-life.

Hight Immunity to EMI disturbances.

Two temperature set-point levels from -20°C to 110°C.

Self-diagnosis procedure.

Wide range of temperature settings.

Two wires technology.

Impact and vibration-resistant.

1.3 Typical Application

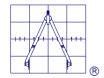
TMP2 heat detectors are particularly suitable in very dangerous environmental conditions such as in the presence of corrosive elements or condensing steams.

Commercial and Industrial plants
Suitable for use in explosive atmospheres
Hazard material stores
Exhaust gas ducts
Engine test blocks
Machine tools
Chemical production
Drying systems.
Combustible material storage

Reference table for the choice of the detectors

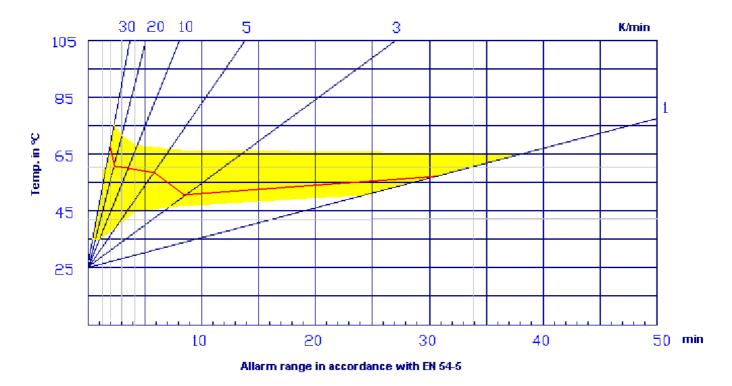
EN 54-5 classifies heat detector according to the environmental temperature and alarm temperature according to te following table.

Class	Normal	Max.	Minimun	Max.
	Environmental	Environmental	Static Threshold	Static Threshold
	Temperature	Temperature		
	°C	°C	°C	°C
A1	25	50	54	65
A2	25	50	54	70
В	40	65	69	85
С	55	80	84	100
D	70	95	99	115



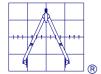


Respone Time



Each TMP2 heat detector has a static response and may also have a rate of rise response. The suffix \mathbf{R} indicates that the heat detector as been tested and approved as a rate of rise (RoR) detector.

The suffix **S** indicate that the heat detector as been tested and approved as a static detector.





II SPECIFICATION

2.1 General specification

Used Sensor Technologies	Semi-conductor
Code of protection	■ II 2 GD Ex db tb IIC IIIC T6 T85°C, only for models
	TMP2-T or TMP2-J
IP Rating	IP66
Location	Hazardous areas (zone 1). Only for models TMP2-T or
	TMP2-J
CE marking	See www.oggionisas.com for Declaration of Conformity
EN54-5 CPR Certificate	For models TMP2-TO; TMP2-JO and TMP2-D

2.2 Electrical Specification

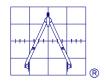
Supply Voltage	12-24 Vdc		
Power consumption	20/30 uA Max. in normal conditions,		
	in Alarm condition:		
	11mA ± 3mA @ 13,7 Vdc		
	12mA ± 3mA @ 24 Vdc		
Supply fuse	50 mA		
Cable Type	2 conductors shielded cable		
Terminals	For wires section 0.56 to 2.5 mm ² (from 22 to 14 AWG)		

2.3 Environmental Specification

EMC susceptibility	According to EN 50270; EN 61000-4
Storage temperature	-20 to +40 °C
Operating temperature	-40 to +110 °C
Humidity range	90% R.H. n.c.

2.4 Mechanical Specification

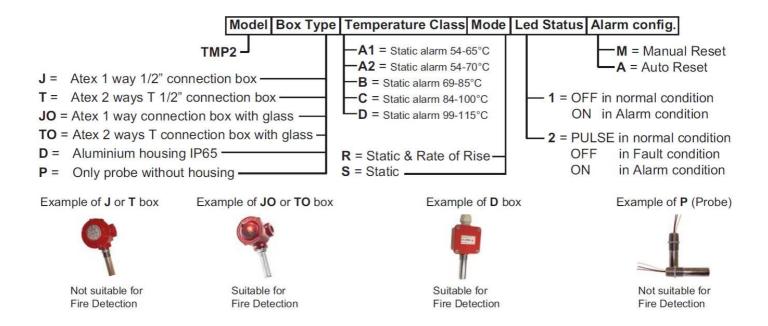
Overall dimensions	ATEX version: 160x85x75 mm
	DUST version: 203x95x60 mm
Weight	ATEX version: 410 g.
	DUST version: 400 g.
Mounting	2x6 mm threaded holes 5 MA
Termination	Ex-d cable gland
Junction box attachment	ATEX version: 1/2" NPT
	DUST version: 2 x M20 Cable Holder (included)
	(Cables diameter from 6 to 13 mm)
Probe Ext. connection	1/2" GAS ISO 228 B

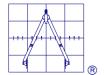




2.5 Ordering information

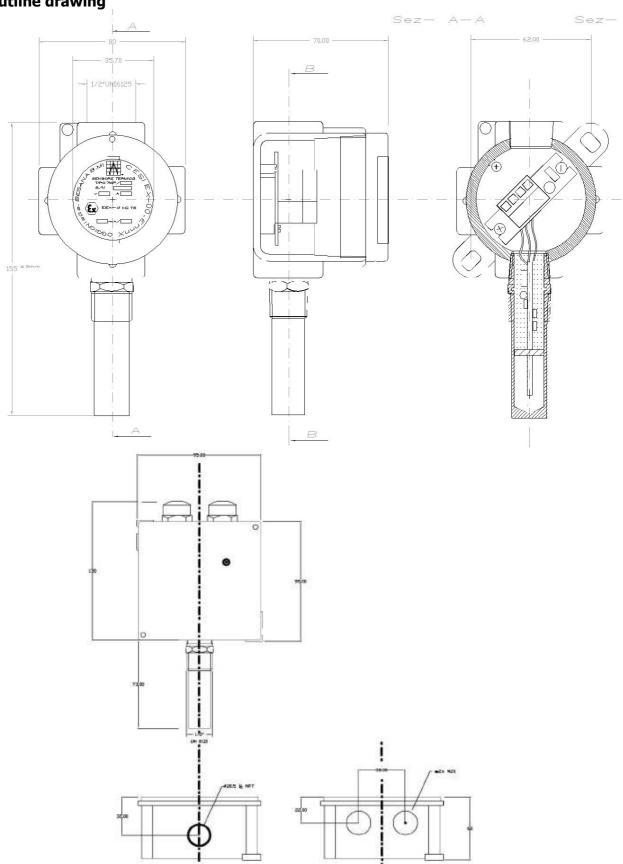
The TMP2 heat detectors may have various configurations according to the application requests. The coding here below groups together the various options.

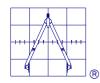






2.6 Outline drawing





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III INSTALLATION

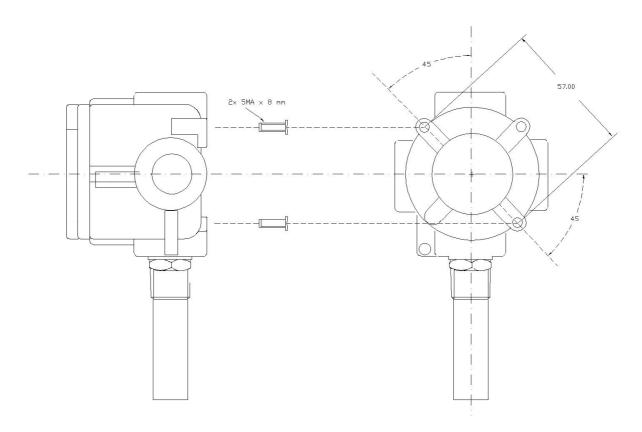
The installation of the heat detector must be performed in accordance with European Standard UNI 9795 - EN 54 or in accordance with national nomative.



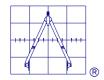
Installation must be carried out by well skilled and competent personnel only. Site the heat detectors to facilitate recalibration and maintenance routine. Always mount the heat detectors vertically with the detection head facing downwards and the cable entry on top, or in horizontal position.

3.1 Mounting

TMP2 heat detectors may be installed directly on a wall or by mounting brackets using the two 5MA mounting holes. The TMP2 detectors can be installed directly on the electrical conduit pipe if it is sufficiently rigid to support the weight of the detector.



If possible install the detectors to facilitate recalibration and maintenance routine.







3.2 Generic wiring guidelines

The use of shielded cables is recommended to connect the heat detector to the power supply unit.

Should more than one strand of wire be used in the wiring be sure that the cable screen is continuous and that the conductors are soldered at the joints.

The cable screen must be connected to safety grounding in safe area.

Furthermore it must be remembered that the protective shielding must be grounded only on the control unit or power supply side and should never be connected to the heat detector.

The use of terminal leads is recommended, or in any case joints on the power cable must be clamped with flat tab connectors or soldered.

Complete all cable insulation testing before connecting the cable at either end.

When all wiring has been completed and tested, the system may be powered-up.

NOTE: All wiring must conform to applicable local codes, ordinances, and regulations.

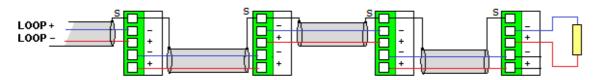
The following table gives a guide about the wire section depending on the distances.

Distance Km	AWG Section	mm ² Section
<0,5	22	0,64
1.5	17	1

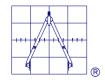
ELECTRICAL CONNECTIONS

Interconnection references for current loop with end of line resistor

Terminal block 5 Pins (TMP2-D version):

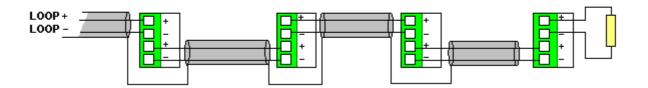


Pin 5: cable shield connection.

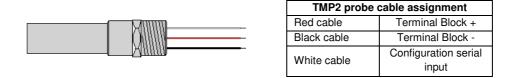




Terminal block 4 Pins (TMP2-J/JO/T/TO):



Single Probe without terminal block (TMP2-P version):



NOTE: Connection to central unit: Short-circuit white cable with red cable (connecting them to the same terminal block)

3.3 Guide lines for proper installation according to EMC Directive

To comply with EN 50270 EMC (Electromagnetic Compatibility), you have to observe some simple points during the installation.

In General:

The area chosen to instal the heat detectors must be free from strong electromagnetic interferences.

Eventual autonomous power supply sources powering the heat detectors must be equipped with line filters type FN 660 (Schaffner) or equivalent or in any case in accordance with the EMC Directive

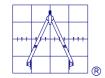
To connect the devices it is recommended to use shielded cables with a minimum cover of 80%. It is recommended to avoid connecting inductive or capacitive loads, that could generate transient on the system power supply, to the same power supply source used for the heat detectors.

If secondary power supply for actuators, sirens or other devices is necessary, it is recommended to use a separate winding on main power supply transformer secondary.

The electrital power supply must be properly connected to the grounding.

3.4 General precautions

Any repairs or tecnical operation on the heat detector must be performed only by athorized Oggioni S.r.l. personnel





3.5 Storage

The heat detectors must be stored in clean areas, not humid and always in the temperature range as indicated of the tecnica specifications.

In case of prolonged storage, heat detectors must be placed into their original packing and they have to be sealed in plastic bags containing, if possible, a drying agent.

3.6 Cable connection guidelines

Connections are made via screw terminals accepting the following wire sections: $#22 \text{ AWG} \div #14 \text{ AWG} (0.5 \div 2.5 \text{ mm}^2)$.

Before powering up the device, ensure that all electrical connections have been completed and are correct.

TMP2 are programmed during production by the manufacturer on customer request and can be modified only by connecting them to a PC using a specific software called "TMP2 Config". (see TMP2 Config software Instruction Manual).

Changes into the TMP2 functioning parameters, made by not trained or not competent people can significantly modify functionalities of the detection system and the device itself.

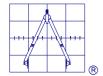
OGGIONI S.r.l. will not be responsible for any damage or problem caused by improper changes into TMP2 functionalities.

3.7 Final inspection and Start Up

Complete all cable insulation testing before connecting the cable at both ends.

The CABLE SHIELD, if used, must be isolated and it must NOT BE CONNECTED TO THE HEAT DETECTOR. Where possible, it can be connected to the provided Pin 5 on the terminal block (TMP2-D version).

After all the wiring has been connected and completely tested, the heat detector must be closed, and only after this the system can be powered on.





IV TEST AND VERIFICATION

OPERATION - Testing for operation is simple and can be done after the heat detector has been installed. Heat the detector with a common 1000-1500 watts industrial dryer, paying attention not overpass the maximum allowed temperature of 120°C.

Direct the heat toward the detector's probe holding the heat source approximately 5-6 cm far from the detector.

Do not use any device with an open flame to test heat detectors.

SENSITIVITY - Sensitivity Test is more difficult and requires a laboratory oven where the temperature can be controlled and where calibrated measuring devices and climatic tunnel are used.

For more details please see www.oggionisas.com TMP2 heat detector test.

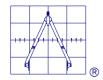
It is recommended to perform functional test on TMP2 heat detectors every six months according to the operation instructions related to the used detector type.



WARNING: If you are working in a classified explosion hazardous area make sure you are taking all the necessary precautions before you open the heat detector body. This operations can only be performed by qualified and trained personnel.



Before starting any test procedure all personnel responsible for security must be informed and all alarm systems which might be connected to the system must be deactivated.





V MAINTENANCE

Safety Warning

Installation and maintenance for these products must be performed by trained, skilled and competent personnel only.

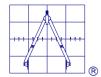
Before starting any maintenance procedures, all responsible security personnel should be informed and all alarm systems which might be connected to the system should be deactivated.



These instruments need a routine maintenance with calibration procedureon a regular basis.

Check (possibly every six months) the detector response.

At the end of the maintenance and/or inspection update the plant register, making sure to keep records of the actions taken.

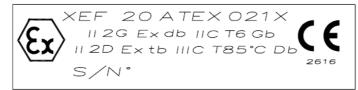




VI MARKING and CERTIFICATIONS

7.1 TMP2 HEAT DETECTOR models TMP2-TO or TMP2-JO





TMP2 HEAT DETECTOR models TMP2-D

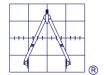


S/N°

TMP2 HEAT DETECTOR models TMP2-T or TMP2-J















EC Declaration of Conformity

We, Oggioni s.a.s, Via Lavoratori Autobianchi 1 20832 Desio (MB) Italy declare under our sole responsibility that the mentioned product is in accordance with the applicable european directive and to the listed harmonized standards or normative documents. Where applicable, a competent body has been released

the relevant EC Type

Examination

This Declaration of Conformity is relevant to the following products

Heat detector, TMP2 series

Equipment or protective system intended for use in potentially explosive atmospheres

relevant european directive

applied harmonized standards

IEC EN 60079-0:2012+A11:2013	Electrical apparatus for explosive gas atmospheres: General requirement	
IEC EN 60079-1:2014	Electrical apparatus for explosive gas atmospheres: Flameproof enclosures "d"	
IEC EN 60079-31:2014	Explosive atmospheres: Equipment dust ignition protection by enclosure "t"	

Type of protection: II 2 GD Ex db tb IIC IIIC T6 T85°C

Notified Body: Xefracert Srl n° 2772 EC Type Examination XEF 20 ATEX 0021 X

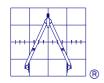
Notification of Quality System according to annex III of 2014/34/UE directive no. XEF 20 ATEX 0021 X issued by Notified Body TUV INTERCERT Srl – CE2616

Signature of manufacturer

General Director

Date: 28/01/2021

Managing Director



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EC DECLRATION OF PERFORMANCE

Issue No: OGG016814



HEAT DETECTOR TMP2 Series

Ref. EC-certificate of conformity n° 0068-CPR-009/2014 EN 54-5 -: 2000 + A1: 200 Notified body: N° 0068 MASINI s.r.l.



de arrenistrativa e laborator: Via Moscowa. 11- Tel. +39.62.93.01.517 r.a Organisa			
	mo Notificato nº 0068 - Notified Bo		ONLINE STEEL
ALLEGATO N. 1 AL CEI ANNEXE No. 1 TO THI	RTIFICATO DI COSTANI ECERTIFICATE OF CONSTAN n. 0068-CPR-009/2014	ZA DELLE CE OF PERF	PRESTAZIO ORMANCE
	II. 0000°CF N-003/2014		
equisiti e caratteristiche funzi unctional characteristics and require	went		
➤ Classi di temperatura Temperature chus	A2S/R e CS/R (EN		
	d performances and characteristics	ic	
Caratteristiche essenziali	Essential Characteristics	Prestazioni Performance	Rif. Capitolo norm Standard clause re
Conditions intermed it attrications. / considetà / Sitardo d' risposte (berron di risposte) e prestazioni in conditioni di aliarme incendio:	Number estimates conditions / sessibility / regionse delay (regionse lime) and performance under the conditions	- 1//100-1-1-1	
- Classificazione	- Classification	Conforme/pass	4.2
 Posizione dell'elemento termosensibile 	- Position of heat sensitive element	Conforme/pass	4.3
- Dipendenza direzionale	- Directional dependence	Conforme/pass	5.2
- Temperatura di risposte statice	- Static response temperature	Conforme/pass	5.3
 Tempi di reposta alla temperatura normale di esercizio 	 Response times from typical application temperature 	Conforme/pass	5.4
- Tempo di risposta a partire da 25 °C	- Response times From 25 °C	Conforme/pass	5.5
 Tempi di risposta a partire da temperatura ambiente elevata 	- Response times from Alph ambient temperature	Conforme/pass	5.6
- Riproducibilità	- Reproducibility	Conforme/pass	5.8
 Prove aggiuntive per rivelaturi con suffisso S 	- Additional test for suffix 5 detectors	Conforme/pass	6.1
Prove aggiuntive per riveratori con suffisso R	- Additional test for suffix R detectors	Conforme/pass	6.2
Affidabilità operativa	Operational relability	522 -5	1
- Indicazione di allarme individuale	- Individual alarm indication	Conforme/pass	4.4
 Collegamento di dispositivi ausiliari 	- Connection of ancillary devices	Conforme/pass	4.5
- Controllo dei rivelatori mobili	- Alonitoning of detachable detectors	Conforme/pass	4.6
 Regalazioni dei fabbricante 	- Manufacturer's adjustments	Conforme/pees	4.7
- Regulazione in campo della risposta	 On-site adjustment of response between 	Conforme/pass	4.8
- Marcattera	- Attribing	Conforme/pass	4.9
- Doti	- Data	Conforme/pass	4.10
- Requisit agguntivi per rivelatori con	- Additional requirements for software controlled detectors	Conforme/pass	4.01

Heat detector - Point detectors model TMP2-JO, TMP2-TO, TMP2-D for Fire detection and Fire alarm systems. Alarm temperature according to class:

Class	Normal	Max.	Minimun	Max.	Status
	Environmental	Environmental	Static Threshold	Static Threshold	
	Temperature	Temperature			
	°C	°C	°C	°C	
A2	25	50	54	70	Certified
С	55	80	84	100	Certified
D	70	95	99	115	Pending

No modification permitted without reference to the Notified Body

Signature of manufacturer

General Director

Managing Director

Date: 01/02/2014



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VII ACCESSORIES

TMP2-SC14 Ex-d Termination Box for End-of-Line Resistor



Mounting Brackets for heat detectors TMP2-J/T/JO/TO model

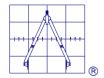


ATEX cerfied Cable Holder Size 1/2" for Ex TMP2, for Not Armoured cables, complete of rubber parts



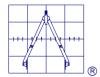
TMP2 Diagnostic Software





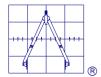


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The brochure includes general specifications which are subject to change without prior notice.



