Edition 1 - 2019

General catalogue

Automatic Fire Alarm Systems

Edition 1 - 2019

General catalogue

Tecnofire DETECTION by Tecnoalarm

Tecnofire®

HI-TECHNOLOGY & DESIGN

WORLDWIDE FROM ITALY

TECNOFIRE FIRE ALARM SYSTEMS

Tecnofire®
HI-TECHNOLOGY & DESIGN
WORLDWIDE FROM ITALY

More than a brand, a guarantee

Tecnoalarm plays a major role in the construction of the Tecnofire brand:
research and development resources, investment capacity, quality as well as reliable and technologically advanced solutions, inherited from the parent company,
add special value to the fire alarm systems of the new company division.

The strategic development of the Tecnofire brand involves operative autonomy,
the constant research of innovative technologies and the continuous extension of the sales network, with the aim to guarantee growth and customer satisfaction in the long run.

The backing of a strong brand with decades of experience, of which Tecnoalarm is one, guarantees the customer of Tecnofire not only high-quality products but also a top-level technical, commercial and logistic support.

RSC® Technology

RSC® (Remote Sensitivity Control) technology by Tecnoalarm has come out on top among lots of other technologies, products and services, by virtue of its reliability, completeness and versatility. Therefore, the decision to implement it in the fire alarm systems from Tecnofire, too.

Its implementation adds great value to the systems thanks to the possibility of managing them completely from a distance and thus reducing the time and cost of maintenance.
RSC® technology provides not only many advantages relating to the simplification of management but also in terms of timeliness and economy of the service.

Security professionals

The planners and installers who apply the technologies from Tecnofire are professionals able to carry out a thorough fire risk assessment and identify the solutions which provide the highest level of protection.

To assist them, Tecnofire is preparing a Guide to the European Standards for Fire Alarm Systems, which has the purpose to explain the European regulatory framework in a simple and comprehensive way.

The website **www.tecnofiredetection.com** provides a wide range of supporting material, such as standards, specifications for tenders, technical drawings, data sheets, information notes etc.

The Tecnofire sales representatives are available for feasibility studies and project consultancy.

EN 54 certification

The entire range of products is developed and produced according to the guidelines of the ISO 9001 quality management system and is certified to the European standards EN 54.

IMQ EVPU CSQ IQNet CE
ISO 9001

Training courses

Tecnofire training courses

Technical training is a fundamental field of activity of Tecnofire, addressing planners, installers as well as system integrators. The aim is to enhance the knowledge of the products and technologies from Tecnofire and facilitate the application of the standards that regulate the installation and maintenance of fire alarm systems.

A rich and diversified training offer, with specific courses for each topic, allows to deepen the knowledge of the products so as to be able to use their full potential. Particular attention is paid to interactivity. The Tecnofire showrooms and training facilities are fully equipped permitting a practical demonstration and an active involvement of the participants.

Tecnofire also provides the planners and installers with a wide range of supporting material and competent and professional consultancy services in line with the sector's continuous technical and regulatory evolution.

The training courses are held in the Tecnofire showrooms and training facilities on a regular basis.
At the end of the course, the participants receive a certificate of attendance.

Tecnofire Engineering Support

Tecnofire supports the system engineers with a team of highly specialized professionals boasting many years of experience in the field of automatic fire alarm systems.
The Tecnofire Engineering Support (**TES**) team provides consulting services for the design and setup of systems in line with the ever more severe regulatory standards, ranging from the early feasibility study to the issue of the necessary documents.
The ad hoc service represents the link between **high technology production** and **advanced system engineering**.

The TES team employs commercial software tools that have been customized in order to contextualize the products according to their technical and functional specifications.
These tools allow to produce a complete project documentation with the utmost simplicity and precision.

The **TES** is embedded in a whole range of customer services offered by Tecnofire, including also the Tecnofire Technical Service (**TTS**) and the Tecnofire Training Academy (**TTA**).
The close interdependence between the services produces a feeling of cohesion and a rich information exchange aimed at sharing experiences with the professionals of the sector.

Tecnofire Technical Service

The Tecnofire Technical Service (**TTS**) is a plus factor of the Tecnofire systems. The TTS team composed of **highly specialized technicians works in close contact with the Tecnofire R & D department** and is always available to assist the installers in programming the systems and searching proactive solutions.

The TTS technicians are trained to **analyze and solve all of the customer's technical problems**, provide detailed information on the functional aspects of the products and indicate the best solution and procedure.

The team's support activity is assisted by **RSC® technology**: connecting remotely to the system, the **technician can check the programming and analyze the functioning of the devices** using specific RSC® tools**.**

Tecnofire Training Academy

With the Tecnofire Training Academy (**TTA**), the company dedicates an entire division to the **training of the professionals of the sector**.
The TTA's aim is to keep up the level of knowledge on the constantly evolving regulatory standards, the Tecnofire systems and the technological innovations of the sector.

In addition, Tecnofire, in collaboration with the major orders, colleges and associations of the sector, organizes **meetings and workshops that allow the students to earn academic credits**.


Tecnofire DETECTION by Tecnoalarm

Certificate of Attendance

This is to certify that Mr./Ms.
Peter Smith

Company
Security Center Ltd.

has attended a training course
on the following fire alarm equipment

Systems:
TFA1-298 TFA2-596 TFA4-1192
RSC® Technology

INDEX

The automatic fire alarm systems from Tecnofire guarantee
the highest standards of fire protection and safety.
Three addressable control panels are available to satisfy
any installation requirement, from small to medium- and large-sized systems,
thanks also to the possibility of networking several fire alarm panels

Addressable control panels

TFA1-298

1 loop addressable control panel

Basic features
- Expandability: max. 5 expansions connected via serial bus
- 1 loop
- 199 addressable detectors per loop
- 99 addressable modules per loop
- Serial bus protocol: "Fire-Bus" proprietary protocol
- 1 RS485 serial bus port (master)
- Loop protocol: "Fire-Speed" proprietary protocol
- Hard-programmed outputs: alarm, siren, failure
- Programmable outputs: 2 open-collector outputs
- Hard-wired zones: 150 zones programmable as fire detection or technical zone
- Virtual zones: 100 zones to be used as operation category for the Boolean functions
- 100 Boolean functions, 44 operation categories
- 50 alarm plans to be associated to the zones
- 8 access periods to be used as operation category
- Customizable 4-years calendar
- Event buffer capacity: 8,192 events
- Serial printer management
- Modular switching power supply
- Max. output current: 2.7A
- Bay for 2x 12V/7Ah batteries

Access levels and protection
- Access levels: level 1 = operator, level 2 = user, level 3 = installer, level 4 = manufacturer
- Protection of access to the system: the access to level 2, 3 and 4 is protected by password
- Passwords: 8 user passwords, 1 installer password, 1 manufacturer password
- Protection of access to the monitored system mode: the monitored system mode is protected by a level 2 password

User interface
- True color TFT display 482 x 272 pixel
- Function keys, 16 signaling LED
- Voice synthesis (vocabulary customizable through the programming software)
- Integrated speaker with volume setting
- Specific notification mode for each event category
- Iconographic event viewing
  Information is displayed in a hierarchical order, according to its importance.
- Intuitive signaling thanks to different colors and font sizes
- Multi-level event viewing
- Quick classification and clear identification of the origin of the event
- Zone alarm notification accompanied by viewing of the alarm plan

Connection ports
- USB port for the direct connection of a PC
- Serial port for the connection of a PC and a serial printer through the PROG32 or PROG USB interface

Control by PC
- Programming of the system
- Upgrade of the firmware of the devices
- Download of the reports
- Customization of the vocabulary, icons and fonts

Software
- Optional software for programming and monitoring of the system

RSC® tools and reports
- RSC® tool - Hardware coherence control
- RSC® tool - Parametric analysis
- RSC® tool - Alarm graph
- RSC® tool - Functioning monitor
- Report - Programming data file
- Report - Hardware coherence control data file
- Report - Parametric analysis data file
- Report - Event log file

ITEM	ITEM NO.	EN 54-2 54-4	RSC®	LOOP	VOICE SYNTHESIS	PRINTER PORT	USB PORT	POWER SUPPLY	METAL BOX
TFA1-298	**TF1TFA1298-UK**	0051-CPR-0444	✓	1	✓	✓	✓	2.7A	✓

TFA1-298 - Technical and functional specifications

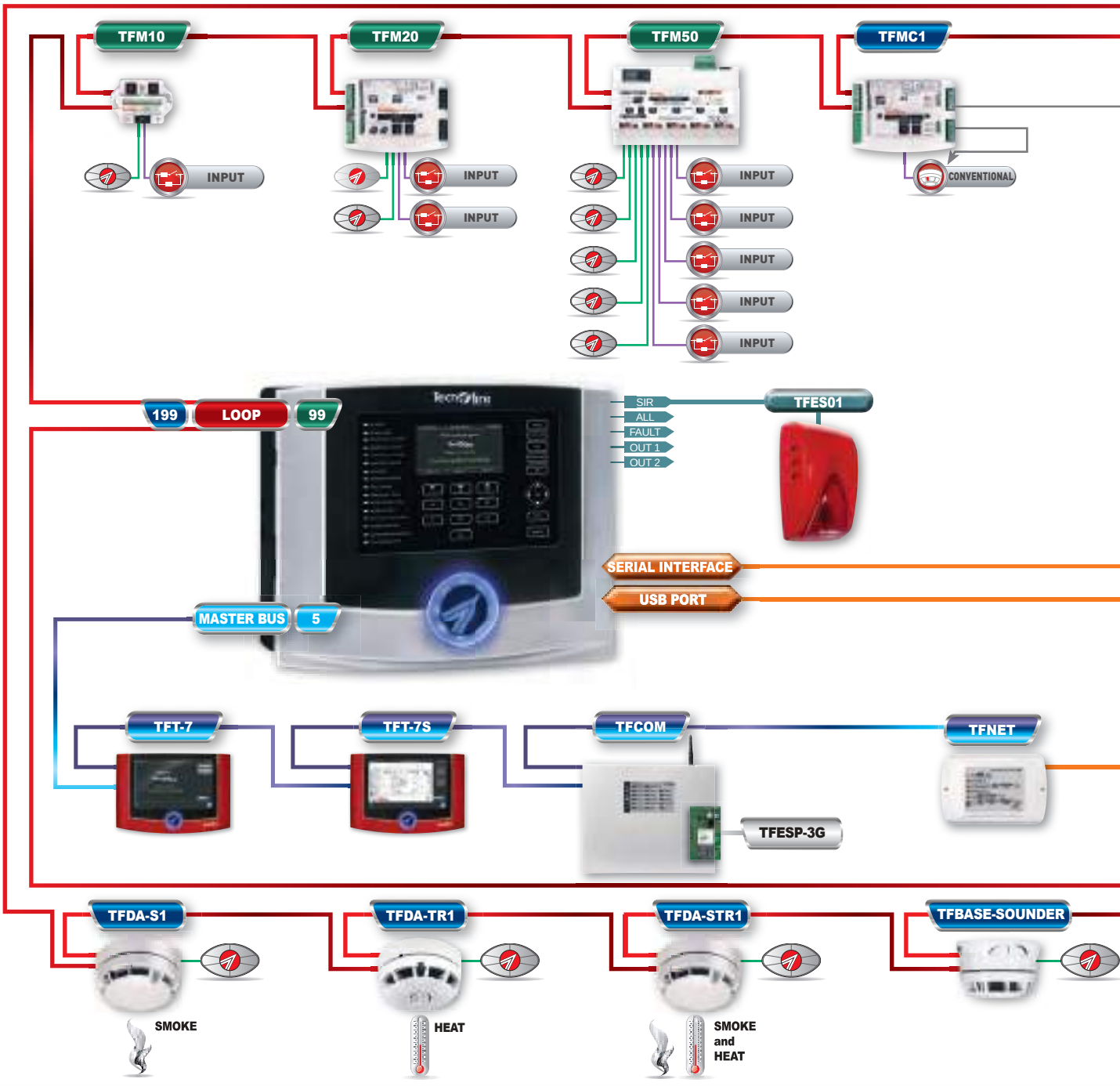
Detectors Modules Zones	Total connectable detectors	**199**
	Total connectable modules	**99**
	Total zones	**150**
	Virtual zones	**100**
CPU outputs	Hard-programmed relays	**2**
	Programmable open-collectors	**2**
	Controlled siren output	**1**
System features	True color TFT display	**480 x 272 pixel**
	Voice synthesis	✓
	Detection loops	**1**
	RS485 serial buses	**Master Bus (1 port)**
	Event buffer capacity	**8192**
Access management	Access levels	**4**
	Access codes	**10**
	Monitored system mode	✓
Protocols	Detection loop	**Fire-Speed**
	RS485 serial bus	**Fire-Bus**
Automation	Formulas	**100**
	Alarm plans	**50**
	Access periods	**8**
	Calendar	**Quadrennial (programmable)**
Expandability	Serial expansions (max. 5)	**TFT-7**
		TFT-7S
		Telephone communicator
		Ethernet interface
	Serial printer	✓
Electrical specifications CPU	CPU board consumption	**200mA @ 24V DC**
	Electrical outputs	**I max. 50mA**
	Power supply voltage (loop, serial bus, sirens)	**20V...27.6V DC**

Modular power supply	Type	**A - switching**
	Operating voltage	**230V AC +10% -15% 50Hz**
	Power supply consumption	**600mA AC**
	Rated output current	**2.7A @ 27.6V DC**
	Max. current available	**2.7A**
	Peak-to-peak ripple voltage	**≤230mV p-p**
	Battery protection fuse	**T 1A**
Battery	Capacity	**2x 12V/7.2Ah**
	Flame class	**V-2 or superior**
	Internal resistance	**1.5 ohm**
	Cut-off voltage	**<17.6V DC**
	Recharge time	**100% in 24h**
Physical specifications	Environmental class	**3K5 (EN 60721-3-3:1995)**
	Operating temperature	**-5°C...+40°C**
	Relative humidity (without condensation)	**10%...93%**
	Protection class	**IP30**
	Casing	**Aluminum - Steel**
	Dimensions (L x H x D)	**361 x 301 x 107mm**
	Weight (without batteries)	**2.7kg**
Conformity	Fire alarm panel	**EN 54-2:1997 + A1:2006**
	Power supply	**EN 54-4:1997 + A2:2006**
	Certification number	**0051-CPR-0444**
	Year of CE marking	**15**
	Number of declaration of performance	**015_TFA1-298**
	Notified body	**IMQ**

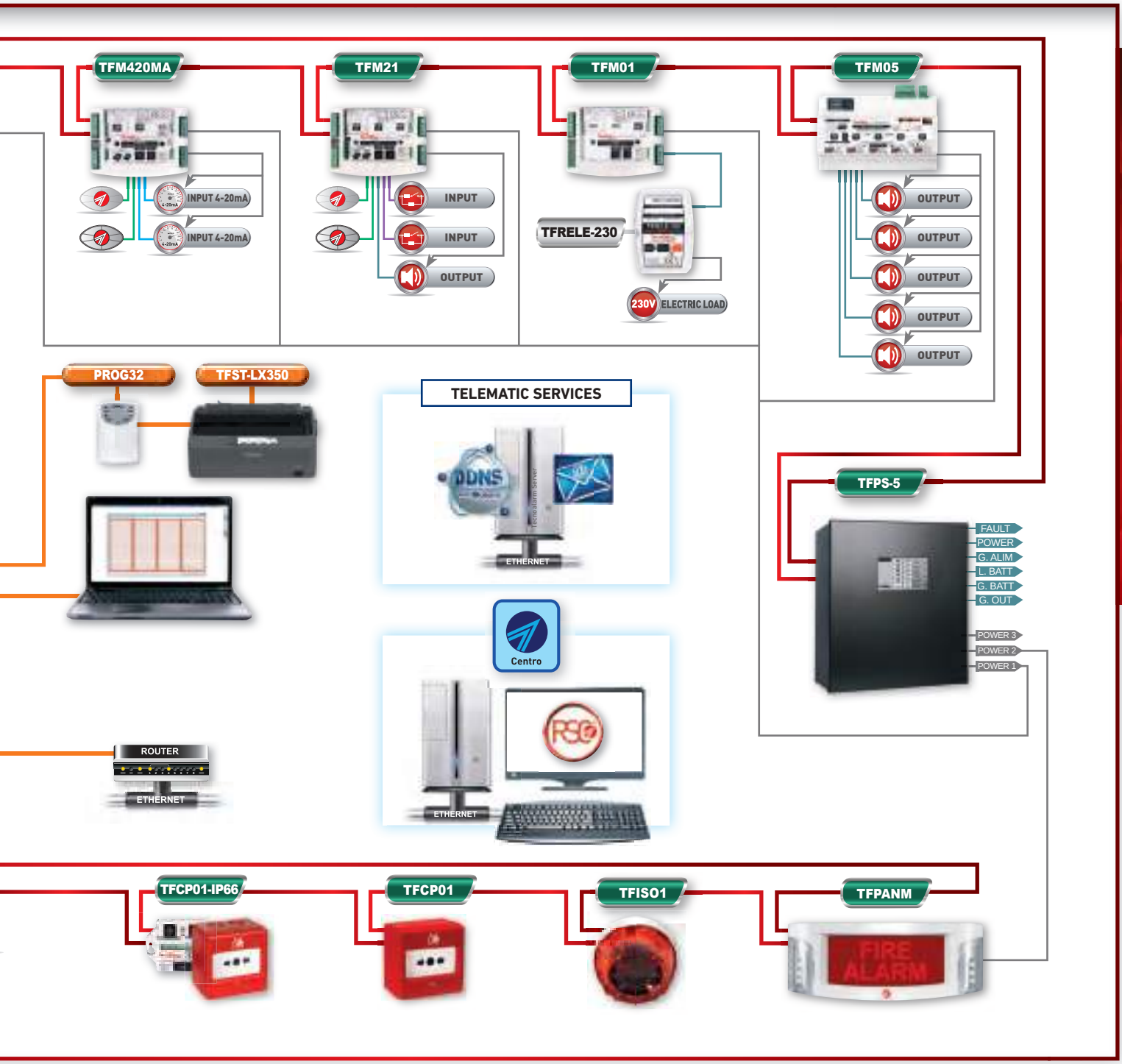
TFA1-298

System configuration

	TFA1-298
Expansions	5
LOOPS	1
DETECTORS PER LOOP	199
MODULES PER LOOP	99




L 361mm
H 301mm
D 107mm


TFM420MA
INPUT 4-20mA
INPUT 4-20mA
TFM21
INPUT
INPUT
OUTPUT
TFM01
TFRELE-230
230V
ELECTRIC LOAD
TFM05
OUTPUT
OUTPUT
OUTPUT
OUTPUT
OUTPUT
PROG32
TFST-LX350
TELEMATIC SERVICES
DDNS
ETHERNET
TFPS-5
FAULT
POWER
G. ALIM
L. BATT
G. BATT
G. OUT
POWER 3
POWER 2
POWER 1
Centro
ROUTER
ETHERNET
ETHERNET
TFCP01-IP66
TFCP01
TFISO1
TFPANM
FIRE ALARM

TFA2-596 - TFA4-1192

2 and 4 loop addressable control panels

Basic features
- Programmable local or master/slave functioning mode
- Expandability in the local functioning mode: max. 16 expansions connected via serial bus
- Expandability in the master/slave mode: max. 16 panels and max. 256 expansions networked via serial bus
- 2 loops (TFA2-596) or 4 loops (TFA4-1192)
- 199 addressable detectors per loop
- 99 addressable modules per loop
- Serial bus protocol: "Fire-Bus" proprietary protocol
- 2 RS485 serial buses (master and slave)
- Loop protocol: "Fire-Speed" proprietary protocol
- Hard-programmed outputs: alarm, siren, failure
- Programmable outputs: 3 free-contact relay outputs, 3 open-collector outputs
- Control output: reset
- Hard-wired zones: 300 zones programmable as fire detection or technical zone
- Virtual zones: 100 zones to be used as operation category for the Boolean functions
- 400 Boolean functions, 44 operation categories
- 200 alarm plans to be associated to the zones
- 32 access periods to be used as operation category
- Customizable 4-years calendar
- Event buffer capacity: 8192 events
- Serial printer management
- Modular switching power supply Fly-back type
- Max. output current: 5A
- Bay for 2x 12V/12Ah batteries

Access levels and protection
- Access levels: level 1 = operator, level 2 = user, level 3 = installer, level 4 = manufacturer
- Protection of access to the system: the access to level 2, 3 and 4 is protected by password
- Passwords: 8 user passwords, 1 installer password, 1 manufacturer password
- Protection of access to the monitored system mode: the monitored system mode is protected by a level 2 password

User interface
- True color TFT display 482 x 272 pixel
- Function keys, 16 signaling LED
- Voice synthesis (vocabulary customizable through the programming software)
- Integrated speaker with volume setting
- Specific notification mode for each event category
- Iconographic event viewing
  Information is displayed in a hierarchical order, according to its importance
- Intuitive signaling thanks to different colors and font sizes
- Multi-level event viewing
- Quick classification and clear identification of the origin of the event
- Zone alarm notification accompanied by viewing of the alarm plan

Ethernet hub
- Standard Ethernet interface 803.2 half/full duplex 10 Mbit to 100 Mbit 4 channels
- Local Server channel: LAN connection
- Remote Server channel: WAN or VPN connection
- Tecnoserver channel: 8 channels for event notification
- Call back channel: connection with CMS
- Protocols: 5 internet protocols (e.g. Contact-ID, SIA)
- Event notification: report codes for 15 categories
- 2 IP addresses per channel for a total of 16 addresses
- Security: data encryption
- AES 128 bit data encryption supported
- Passphrase: specific passphrase for each channel, including call back and server channels
- Access to the server channels protected by a whitelist of IP addresses
- Programmable test call function with TCP/IP

Connection ports
- USB port for the direct connection of a PC
- Serial port for the connection of a PC and a serial printer through the PROG32 or PROG USB interface

Control by PC
- Programming of the system
- Upgrade of the firmware of the devices
- Download of the reports
- Customization of the vocabulary, icons and fonts

Software
- Optional software for programming and monitoring of the system and remote management via LAN or WAN

RSC® tools and reports
- RSC® tool - Hardware coherence control
- RSC® tool - Parametric analysis
- RSC® tool - Alarm graph
- RSC® tool - Functioning monitor
- Report - Programming data file
- Report - Hardware coherence control data file
- Report - Parametric analysis data file
- Report - Event log file

ITEM	ITEM NO.	EN 54-2 54-4	RSC	LOOP	VOICE SYNTHESIS	IP	PRINTER PORT	USB PORT	POWER SUPPLY	METAL BOX
TFA2-596	**TF1TFA2596-UK**	0051-CPR-0389	✓	2	✓	✓	✓	✓	5A	✓
TFA4-1192	**TF1TFA41192-UK**	0051-CPR-0388	✓	4	✓	✓	✓	✓	5A	✓

TFA2-596 - TFA4-1192 - Technical and functional specifications

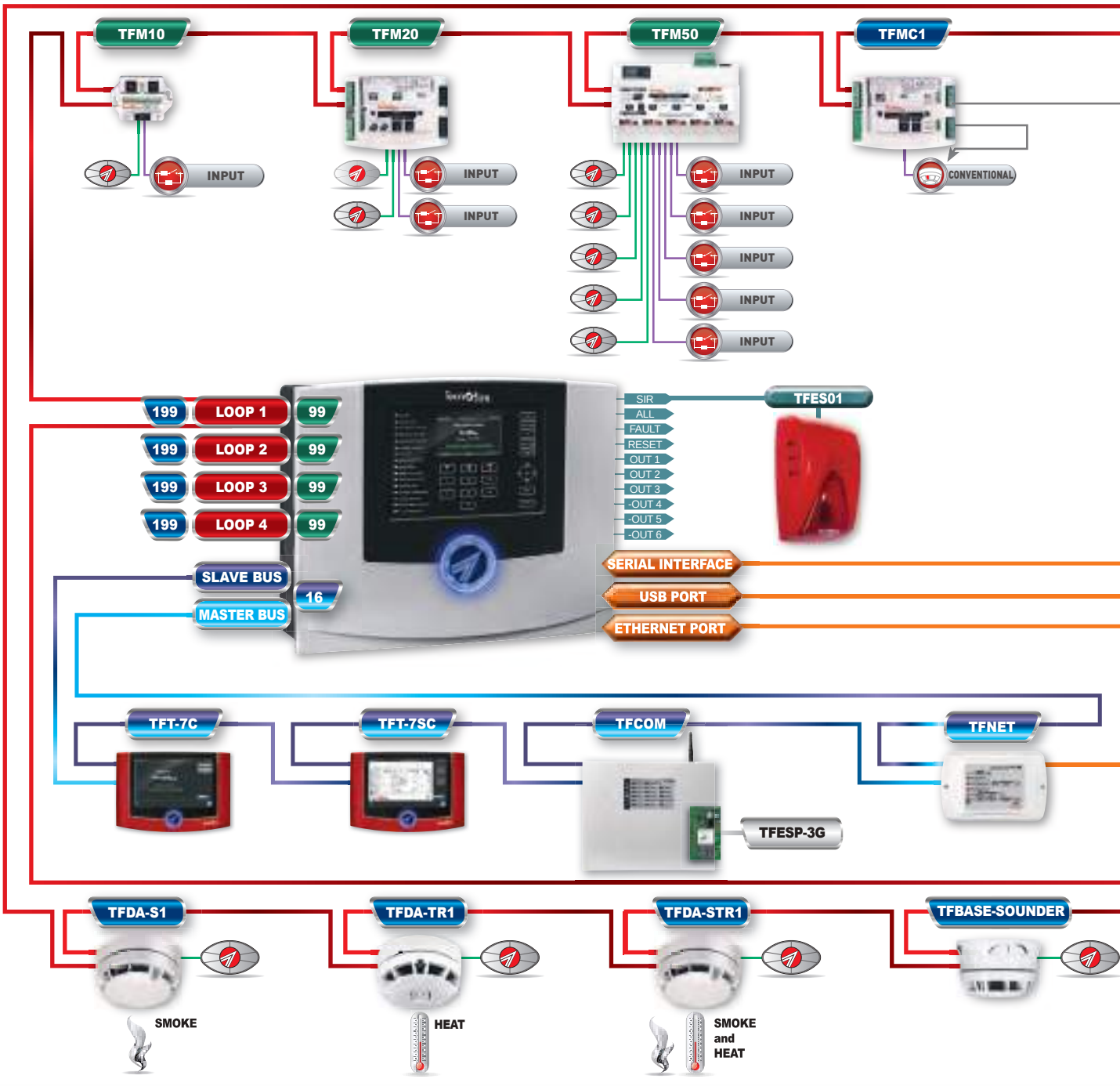
Detectors Modules Zones	Total connectable detectors	**796 (TFA4-1192)**
		398 (TFA2-596)
	Total detectors per loop	**199**
	Total connectable modules	**396 (TFA4-1192)**
		198 (TFA2-596)
	Total modules per loop	**99**
	Total zones	**300**
	Virtual zones	**100**
CPU outputs	Hard-programmed relays	**2**
	Programmable relays	**3**
	Programmable open-collectors	**3**
	Controlled siren output	**1**
	Reset output	**1**
System features	True color TFT display	**480 x 272 pixel**
	Voice synthesis	✓
	Detection loops	**4 (TFA4-1192)**
		2 (TFA2-596)
	RS485 serial buses	**Master Bus (1 port)**
		Slave Bus (1 port)
	Event buffer capacity	**8192**
Access management	Access levels	**4**
	Access codes	**10**
	Monitored system mode	✓
Protocols	Detection loop	**Fire-Speed**
	RS485 serial bus	**Fire-Bus**
Ethernet hub	Type	**Standard 803.2**
	Connection channels	**Local Server**
		Remote Server
		Tecnoserver
		Call back
	Notification channels	**8**
	IP addresses	**16 (2 per channel)**
	Transmittable events	**15 categories**
	Protocols	**5 IP protocols**
	Encryption	**AES 128 bit**
	Transmission time	**SIA IP DC-09 10s**
	Call event queue	**64 events**
Automation	Formulas	**400 (TFA4-1192)**
		200 (TFA2-596)
	Alarm plans	**200 (TFA4-1192)**
		100 (TFA2-596)
	Access periods	**32**
	Calendar	**Quadrennial (programmable)**
	Test call with TCP/IP	✓

Expandability	Serial expansions (max. 16)	**TFT-7**
		TFT-7S
		Telephone communicator
		Ethernet interface
	Network configuration	**1 master + 15 slaves**
	Serial printer	**3**
Electrical specifications CPU	CPU board consumption	**200mA @ 24V DC**
	Electrical outputs	**I max. 50mA**
	Power supply voltage (loop, serial bus, sirens)	**20V...27.6V DC**
Modular power supply	Type	**A - switching Fly-back**
	Operating voltage	**230V AC +10% -15% 50Hz**
	Power supply consumption	**700mA AC**
	Rated output current	**5A @ 27.6V DC**
	Max. current available	**5A**
	Peak-to-peak ripple voltage	**≤150mV p-p**
	Battery protection fuse	**T 1.6A**
Battery	Capacity	**2x 12Ah/12V**
	Flame class	**V-2 or superior**
	Cut-off voltage	**<17.6V DC**
	Recharge time	**100% in 24h**
Physical specificatons	Environmental class	**3K5 (EN 60721-3-3:1995)**
	Operating temperature	**-5°C...+40°C**
	Relative humidity (without condensation)	**10%...93%**
	Protection class	**IP30**
	Casing	**Aluminum - Steel**
	Dimensions (L x H x D)	**441 x 347 x 149mm**
	Weight (without batteries)	**6.2kg**
Conformity	Fire alarm panel	**EN 54-2:1997 + A1:2006**
	Power supply	**EN 54-4:1997 + A2:2006**
	Certification number	**0051-CPR-0388 (TFA4-1192)**
		0051-CPR-0389 (TFA2-596)
	Year of CE marking	**14**
	Number of declaration of performance	**002_TFA4-1192 (TFA4-1192)**
		003_TFA2-596 (TFA2-596)
	Notified body	**IMQ**

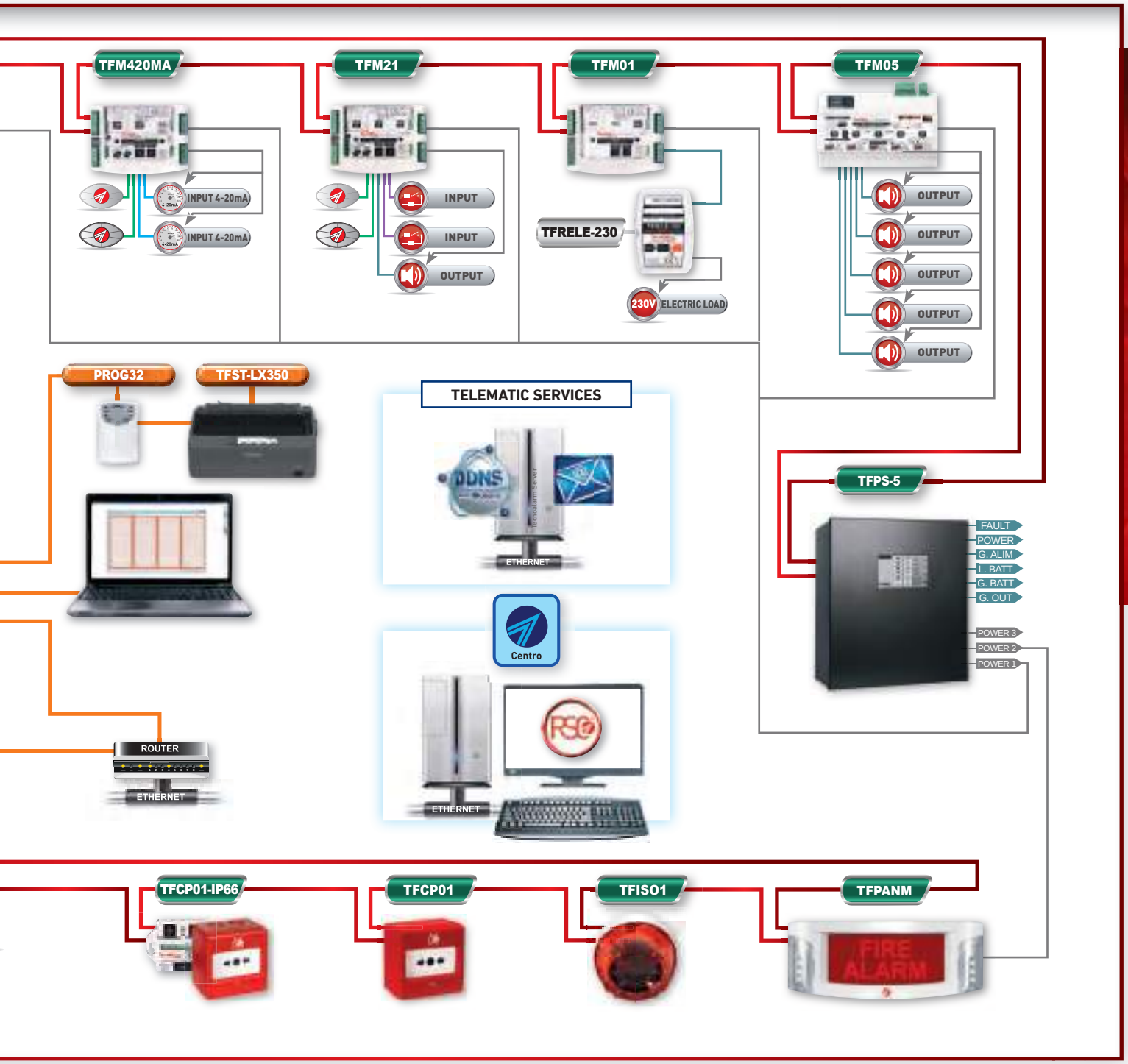
TFA2-596 - TFA4-1192

System configuration

	TFA2-596	TFA4-1192
EXPANSIONS	16	16
LOOPS	2	4
DETECTORS PER LOOP	199	199
TOTAL DETECTORS	398 (199 x 2)	796 (199 x 4)
MODULES PER LOOP	99	99
TOTAL MODULES	198 (99 x 2)	396 (99 x 4)




L 441mm
H 347mm
D 149mm


TFM420MA
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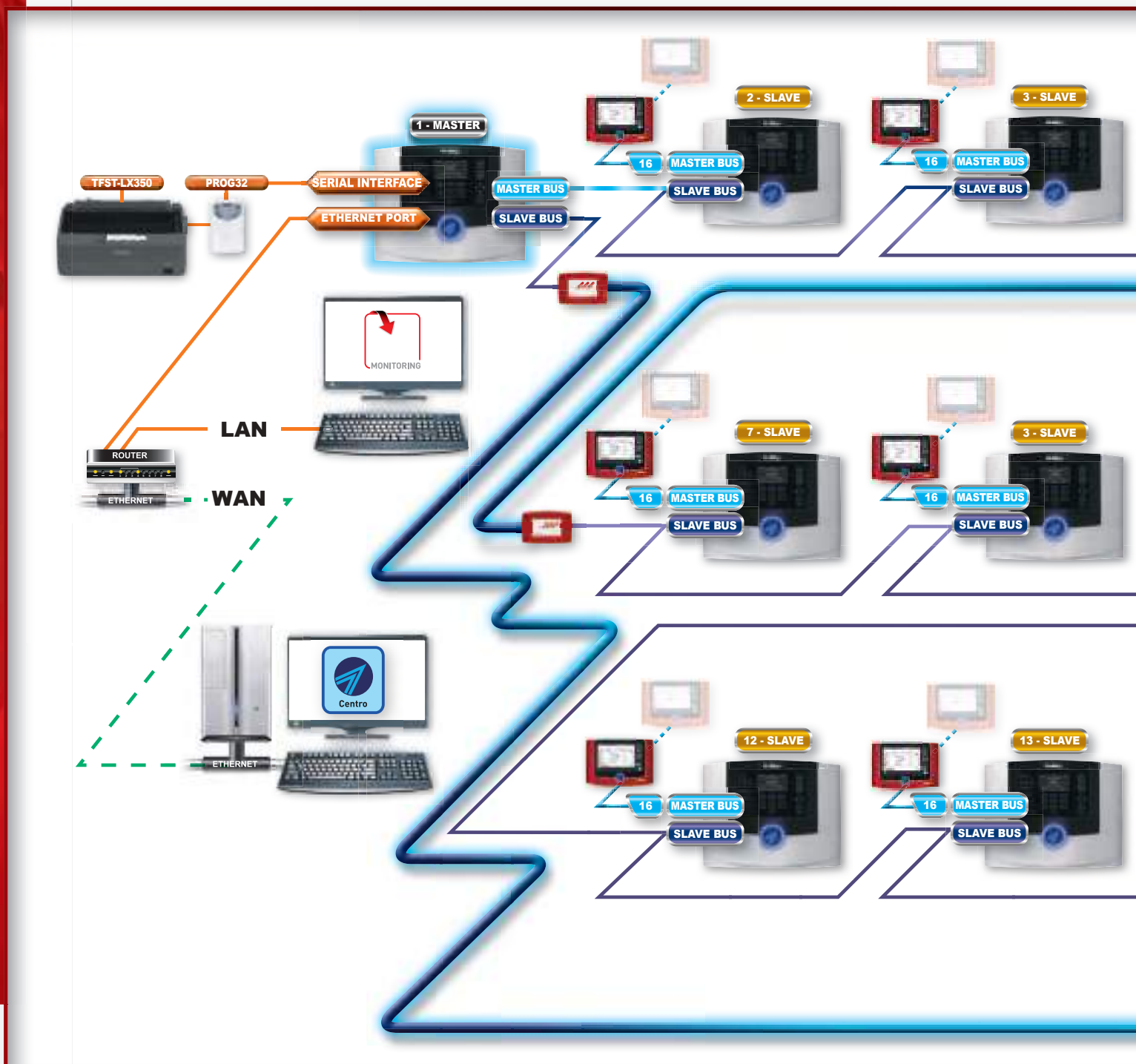
POWER 1
Centro
ROUTER
ETHERNET
ETHERNET
TFCP01-IP66
TFCP01
TFISO1
TFPANM
FIRE ALARM

TFA2-596 - TFA4-1192

Network configuration

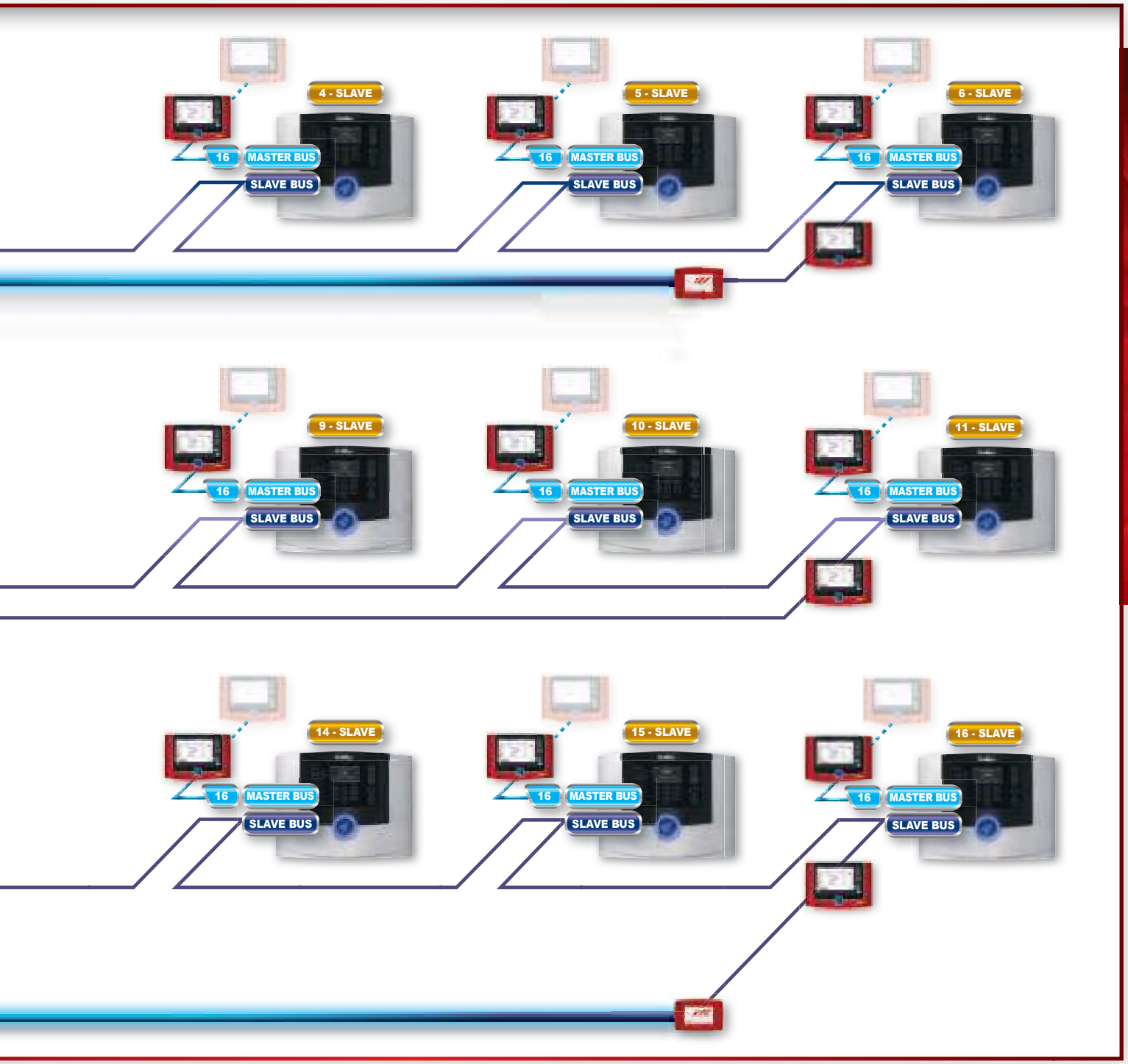
	MAX. SYSTEM CONFIGURATION TFA2-596	MAX. SYSTEM CONFIGURATION TFA4-1192	MAX. NETWORK CONFIGURATION TFA4-1192
Expansions	16	16	256 (16 x 16)
LOOPS	2	4	64 (4 x 16)
DETECTORS PER LOOP	199	199	
TOTAL DETECTORS	398 (199 x 2)	796 (199 x 4)*	12736 (796 x 16)*
MODULES PER LOOP	99	99	
TOTAL MODULES	198 (99 x 2)	396 (99 x 4)	6336 (396 x 16)
ZONES	300	300	4800 (300 x 16)
VIRTUAL ZONES	100	100	1600 (100 x 16)

* The EN 54-2 standard allows to connect a total of 512 detectors and/or manual call points to one single fire alarm panel. Therefore, the maximum number of detectors managed by a Tecnofire network is 8,192 (512 devices multiplied by 16 fire alarm panels).



Fire alarm panel network

The network can be composed of up to 16 addressable control panels.
The connection is made through a supervised RS485 serial bus using either copper cables or glass fiber.
The network is arranged in a hierarchy, one master fire alarm panel has the complete control over up to 15 slave fire alarm panels. All information and signaling will be collected by the master. Network functioning is in compliance with the EN 54-13 standard.
Restrictive clause: The standard EN 54-2 chapter 13.6 provides that a failure may not affect more than 512 detectors and/or manual call points nor compromise their designated functions.
As a consequence, to preserve the compliance with the EN 54-2 standard a maximum of 512 detectors and/or manual call points can be connected to each fire alarm panel.
Therefore, the maximum number of detectors managed by a Tecnofire network is 8,192 (512 devices multiplied by 16 fire alarm panels).



Serial bus extensions

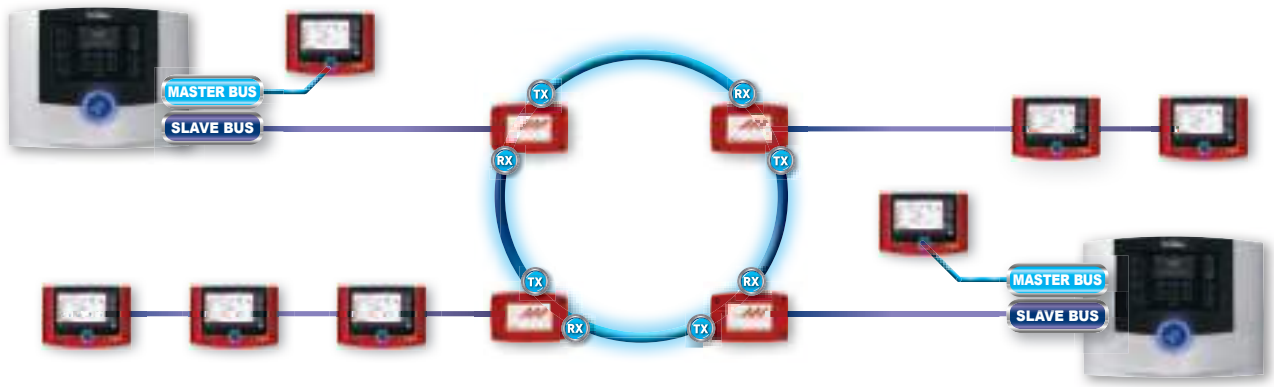
SERIAL BUS

TFSFC01	RS485-FIBER OPTIC CONVERTER	POINT TO POINT 2KM	RING 4KM	ABS V0 BOX

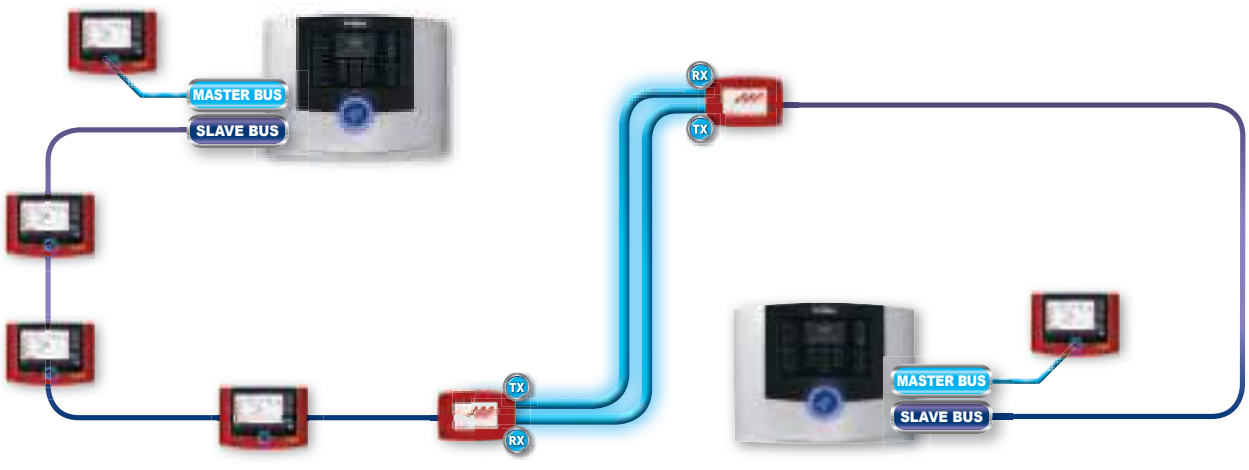
The TFSFC01 is a RS485-fiber optic converter for long-distance serial data transmission over fiber optic cables. The converter can be used for point-to-point connections, with a 2km maximum length for each track, or loop connections, with 4km maximum loop length. The converter extends the maximum track length for data transmission and is especially indicated for use in particularly disturbed areas, outdoor applications subject to electrostatic discharges and elimination of ground loops. Master/slave mode
Functional settings by dip-switch - 3 signaling LED (power supply, data reception via fiber optics, data reception via serial bus).
Casing ABS V0. Dimensions (L x H x D) 140 x 92 x 38mm - Red color

Item no. TF1TFSFC01

Loop connection



Point-to-point connection



TFSFC01 - Technical and functional specifications

General features	Description	**Fiber optic converter**
	Input/output interface	**RS485-fiber optics**
Baud rate	Tecnofire Fire-Bus	**115,200bps**
Fiber optics	Multimode fiber optic cable	**50/125µm or 62.5/125µm**
	Wavelength	**850nm**
	Connector type	**ST**
	Connection	**Point-to-point (2km per track)**
		Loop (4km)
Status signaling	Power supply	✓
	RX RS485	✓
	RX fiber optics	✓

Electrical specifications	Rated voltage	**24V DC**
	Operating voltage	**8V...31V DC**
	Rated consumption	**50mA @ 12V DC**
		27mA @ 28V DC
Physical specifications	Environmental class	**II**
	Operating temperature	**-20°C...+70°C**
	Protection class	**IP42**
	Casing	**ABS V0**
	Dimensions (L x H x D)	**140 x 92 x 38mm**
	Weight	**130g**

ADDRESSABLE CONTROL PANELS - Accessories

TFST-LX350

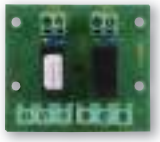
Impact dot-matrix printer - 9 pins - 80 columns - Continuous form - Serial, parallel and USB ports - 230V AC power supply voltage - Dimensions (L x H x D) 362 x 199 x 335mm - Black color

Item no. TF1TFSTLX350

TFPROG32

Printer interface for TFST-LX350 - RS232/RJ45 connection cable included

Item no. TF1TFPROG32



TFBIRELE-24

Relay board with 2 inputs and 2 outputs - Signal relay (24V DC 0.3A) - Potential-free changeover contacts - Dimensions (L x H x D) 59 x 52 x 20mm

Item no. TF1TFBIRELE24

TFCAVO-USB TFA

USB cable for connecting the control panel to the PC

Item no. TF1TFCAVOUSB

The Tecnofire expansions permit the increase and decentralization
of the control and signaling points of the system
as well as the expansion of the telephone notification devices.
The TFA1-298 fire alarm panels manage up to 5 expansions,
the TFA2-596 and TFA4-1192 manage a total of 16 expansions.

Expansions

Repeater panels

The repeater panels with 7 inch touch screen, voice synthesis function and optional floor plan management make decentralized alarm signaling and fire alarm system management easy and intuitive.

TFT-7C

The TFT-7C repeater panel is a multi-purpose user interface composed of a 7 inch TFT screen, a multilingual voice synthesis function with a bi-lingual mode, an acoustic signaling device as well as a vocal and graphic help function. A total of 16 repeater panels can be distributed over the system. The integrated flash memory permits the customization of the graphic interface and the vocabulary by a PC or an external HDD connected to the USB port.
A specific software module permits the implementation of the floor plan management.
RS485 serial connection - Surface or flush mounting - Refined ultra-thin design - ABS V0 casing - IP40 - Dimensions (L x H x D) 225 x 157 x 35mm - Red cover plate

Item no. TF2TFT7C

TFT-7SC

The TFT-7SC is a repeater panel with floor plan management. It provides the same features as the TFT-7C repeater panel and in addition the interactive management of floor plans.
The repeater panel manages up to 32 floor plans, which are viewed according to different operating modes.
On each floor plan, it is possible to position a total of 32 icons, which are associated to the devices of the system or function as navigation keys. In case of alarm, the floor plan corresponding to the place of origin of the alarm is automatically viewed.
RS485 serial connection - Surface or flush mounting - Refined ultra-thin design - ABS V0 casing - IP40 - Dimensions (L x H x D) 225 x 157 x 35mm - Red cover plate

Item no. TF2TFT7SC

TFT-7C - Software plug-in

TFABIL-TFTS

Software plug-in for the TFT-7C repeater panel permitting the implementation of the floor plan management

Item no. TF2TFABILTFTS

TFT-7C - TFT-7SC - Technical and functional specifications

General features	Description	**TFT-7C Repeater panel**
		TFT-7SC - Repeater panel with floor plan management
	Protocol	**FIRE-BUS**
	Address programming	**Digital**
	Connection	**RS485**
User interface	Screen	**Capacitive 7 inch color TFT**
	Resolution	**800 x 480 pixel**
	Info graphics	**Dynamic icons**
	Voice synthesis	**Multilingual**
	Speaker	**Multifunction**
	Help function	**Vocal and graphic**
	Graphic interface	**Customizable**
	Floor plans	**Up to 32 (TFT-7SC only)**
	Icons per floor plan	**Up to 32 (TFT-7SC only)**

Hardware	Memory	**Flash 1 Gbit**
	Port	**USB**
Electrical specifications	Power supply	**Over Serial Bus**
	Rated voltage	**24V DC**
	Operating voltage	**18V...30V DC**
	Stand-by consumption	**90mA @ 24V DC**
	Max. consumption	**240mA @ 24V DC**
Physical specifications	Operating temperature	**-5°C...+40°C**
	Relative humidity (without condensation)	**10%...93%**
	Protection class	**IP40**
	Casing	**ABS V0**
	Dimensions (L x H x D)	**225 x 157 x 35mm**
	Weight	**350g**
Conformity	Approved for use with TFA1-298, TFA2-596 and TFA4-1192 control panels	

REPEATER PANELS - Accessories

TFBASE-TFT7TC

The desk stand represents an ergonomic solution in those cases in which the repeater panel must be placed on the work desk.
Continuous tilt adjustment - Refined design - IP40 - ABS V0 -
Dimensions support base (L x H) 200 x 110mm - White color

Item no. TF2TFBASETFT7TC

TFBASE-TFT7LC

Flush mount base for repeater panels
N.B. The repeater panel always comes with flush mount base.

Item no. TF2TFBASETFT7LC

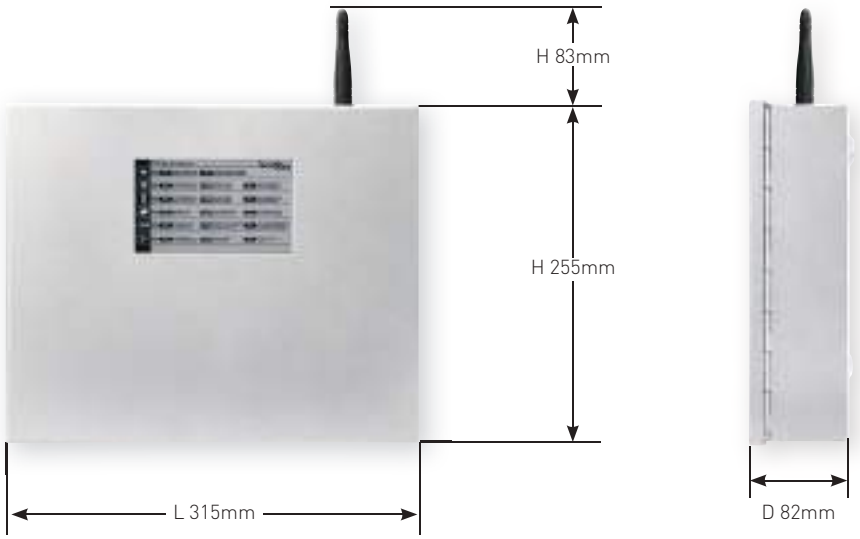
TFCAVO-USB TFT

Mini USB cable for programming of repeater panels

Item no. TF2TFCAVOMINIUS

Telephone communicators

The PSTN telephone communicator TFCOM with optional 3G interface
expands the system's communication vectors and protocols for the notification of alarms.



TFCOM

EN 54-21 | RSC® | PSTN | PSTN ATE2 | SELF-POWERED | VOICE SYNTHESIS | FLASH MEMORY | USB PORT | METAL BOX

The TFCOM is an addressable telephone communicator with on-board PSTN and optional GSM-GPRS interface.
The communicator provides 8 channels for event notification and 1 call back channel for the connection with the monitoring station.
Transmission formats: Voice, SMS, Ring, DTMF, Data - AES 128 bit and AES 256 bit data encryption - Independent passphrase for each channel - Self test of communication vectors, power supply, battery, serial bus communication - Front panel with 6 status LED - Failure output - Bay for 12V/7Ah battery - Integrated RSC® technology: programming, remote management of all functioning parameters - On-board flash memory for customization of the vocabulary (managed by PC as an external HDD) - USB port - RS485 serial connection - Surface mounting - IP30 - Metal casing - Dimensions (L x H x D) 315 x 255 x 82mm - Black color
EN 54-21:2006 - Certification number 0051-CPR-0454 (approved for use with TFA1-298, TFA2-596 and TFA4-1192 control panels)

Item no. TF2TFCOM

TFESP-3G

EN 54-21 | 3G GSM-GPRS | GSM ATE2 | GPRS ATE4 | INTERNAL EXPANSION

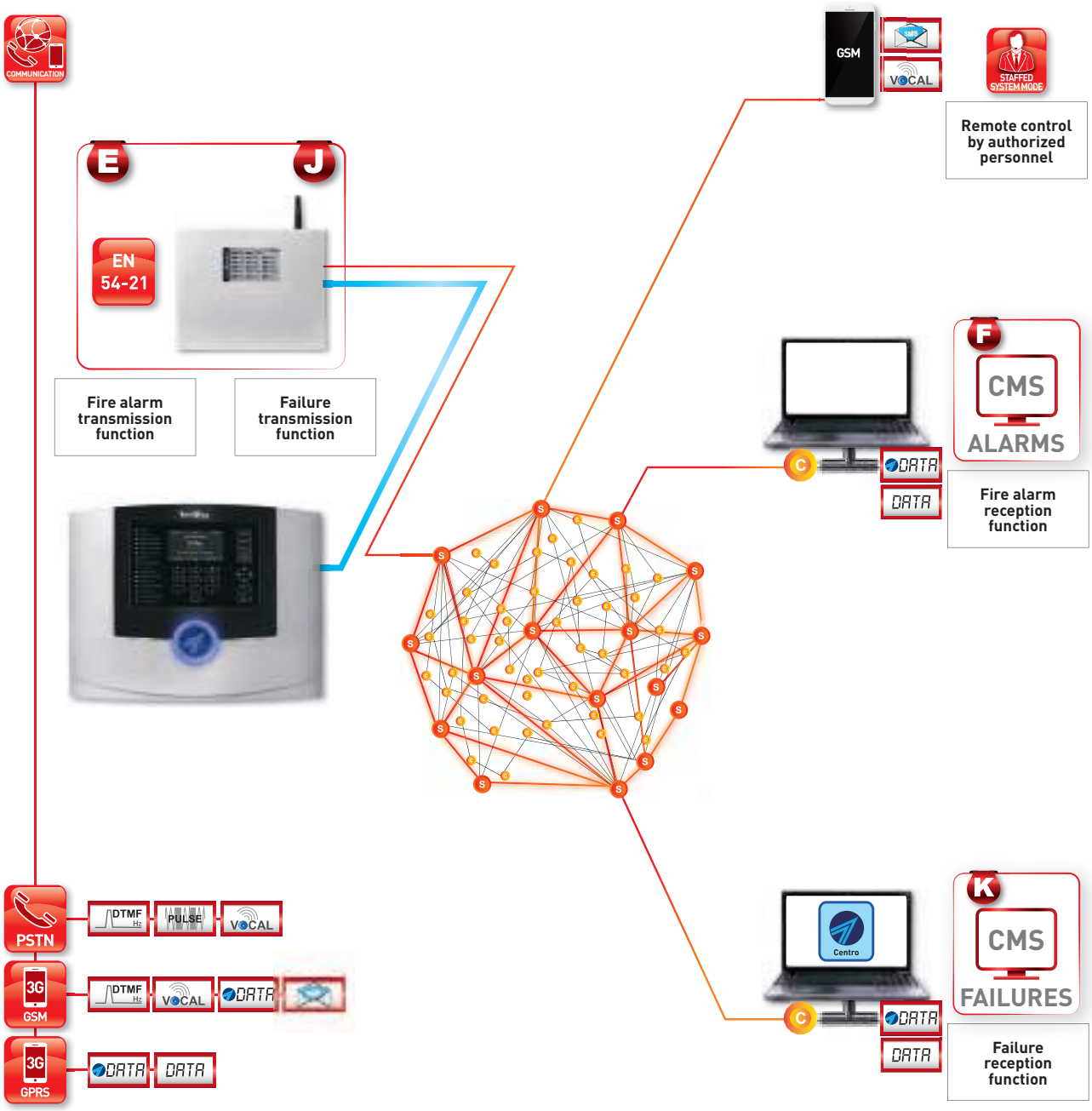
The TFESP-3G is a 3G interface for the telephone communicator TFCOM.
Transmission formats: Voice, SMS, Ring, DTMF, Data - AES 128 bit and AES 256 bit data encryption - Independent passphrase for each channel - Automatic airtime request for prepaid SIM cards - Plug-in connection to TFCOM board
EN 54-21:2006 - Certification number 0051-CPR-0454 (approved for use with TFA1-298, TFA2-596 and TFA4-1192 control panels)

Item no. TF2TFESP3G

FORMATS AND VECTORS	Remote management	IP DATA Tecnoalarm	IP DATA	DATA Tecnoalarm	SMS	VOICE	DTMF	PULSE
TFCOM						✓	✓	✓
TFESP-3G	✓	✓	✓	✓	✓	✓	✓	

Functions of items E, F, J, K according to EN 54-1 (see also pages XY)

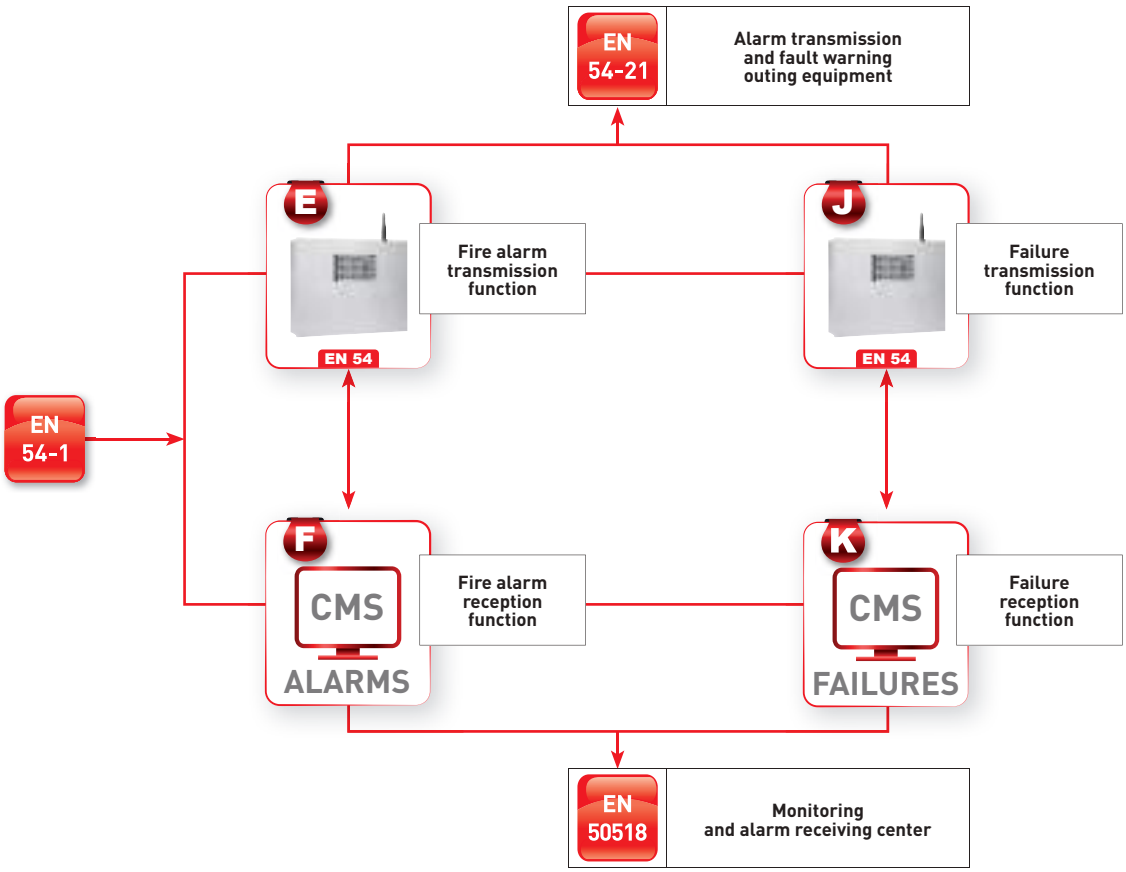
The EN 54-21 is the reference standard for E and J
The EN 50518 is the reference standard for F and K



REFERENCE STANDARDS	
EN 54-1	The EN 54-1 standard uses a block diagram to represent the components of a fire alarm system, divided into 4 major groups according their function. The below figure describes the functions of the items E, J, F, K. The items E and J are in charge of the fire alarm and failure transmission functions, whereas the items F and K perform the relative reception functions as well as the operating supervision of the notification devices. The items E and J transmit notifications with different priorities and markings.
EN 54-21	The EN 54-21 is the reference standard for the functions of fire alarm (item E) and failure (item J) transmission. The 2 functions, although they are indicated separately, may be performed by the same device, provided that it is able to manage several independent transmission channels with different priorities. The protocols used for notification must satisfy appropriate security standards. The notification devices must be equipped with a test call function in order to ensure that possible failures are reported within the reporting time prescribed by the classification.
EN 50518	The EN 50518 is the reference standard for the functions of fire alarm (item F) and failure (item K) reception. The 2 functions, although they are indicated separately, may be performed by the same monitoring station, provided that it is certified to EN 50518 "Monitoring and alarm receiving center". The standard defines the characteristics, security standards and operating procedures for performing the functions of fire alarm and failure reception.

Functions of items E, F, J, K according to EN 54-1

The EN 54-21 is the reference standard for E and J
The EN 50518 is the reference standard for F and K



TFCOM - Technical and functional specifications

General specifications	Model	**TFCOM**
	Description	**Telephone communicator**
	Protocol	**Fire-Bus**
	Address programming	**Dip-switch**
	Connection	**RS485**
Telephone section	Channels	**8**
	PSTN vector	**On-board**
	3G vector (optional)	**TFESP-3G**
	Transmittable events	**33 categories**
	Transmittable zone events	**5**
	Telephone numbers/ IP address	**2 per channel (max. 24 digits)**
	Call event queue	**32**
	Communication protocols	**29**
	Voice synthesis	✓
PSTN interface	Class	**ATE2**
	Conformity	**ETSI ES 203 021-1**
	Vocal transmission time	**12s**
	Transmission time D4	**Contact ID 17s**
	Transmission time M3	**Contact ID 19s**
GSM 2G interface	Class	**ATE4**
	Transmission time D4	**SIA IP DC-09 10s**
	Transmission time M3	**SIA IP DC-09 10s**
Hardware	Flash memory	**1 Gbit**
	USB port	✓
Outputs	Failure	**PTC-protected relay (I max. 750mA)**

Battery	Capacity	**1x 12V/7Ah**
	Flame class	**V-2 or superior**
	Release voltage	**<8.9V**
	Recharge voltage	**Max. 0.85A**
	Recharge time	**100% in 12h**
Electrical specifications	Power supply	**Over serial bus**
	Rated voltage	**24V DC**
	Operating voltage	**20V...27.6V DC**
	Stand-by consumption	**90mA @ 24V DC**
	Max. consumption	**140mA @ 24V DC**
Physical specifications	Operating temperature	**-5°C...+40°C**
	Relative humidity (non-condensing)	**10%...93%**
	Protection class	**IP30**
	Casing	**Steel**
	Dimensions (L x H x D) (w/o antenna)	**315 x 255 x 82mm**
	Antenna height	**65mm**
	Weight (without batteries)	**2.5kg**
Conformity	GSM interface	**2014/53/EU (RED) CE 1909**
	PSTN telephone communicator	**CPR 305/2011**
	Standards	**EN 50136-1 EN 50136-2 EN 54-21:2006**
	Certification number	**0051-CPR-0454**
	Year of CE marking	**16**
	Number of declaration of performance	**016_TFCOM**
	Notified body	**IMQ**
	Approved for use with TFA1-298, TFA2-596 and TFA4-1192 control panels	

TFCOM - Accessories

TFPROLANTENNA

4m extension cord for the connection of the antenna to the 3G interface.

Item no. TF2TPROLANTENN

TFPROLANTENNA 12MT

12m extension cord for the connection of the antenna to the 3G interface

Item no. TF2TFPROLANT12

Ethernet interfaces

The TFNET interface provides a 10/100 Mbit IP/Ethernet node and can be connected both to the LAN and the WAN network.
It implements the management of the telematic services DDNS Tecnoalarm, SNTP and Mail Server Tecnoalarm.
Thanks to specific software plug-ins, the interface is able to manage the protocols Tecno Out and Modbus.

TFNET

The TFNET is an Ethernet interface with 8 channels for event notification.
Transmission formats: Data, Email - AES 128 bit and AES 256 bit data encryption - Independent passphrase for each channel - Self test of communication vectors, power supply, serial bus communication - Front panel with 6 status LED - Integrated RSC® technology: programming, remote management of all functioning parameters - RS485 serial connection - Surface mounting - IP30 - ABS V0 casing - Dimensions (L x H x D) 165 x 110 x 41mm - White color

Item no. TF2TFNET

TFNET - Software plug-ins

TFABIL-MODBUS

Software plug-in for the TFNET interface permitting the implementation of the Modbus protocol. The protocol functions both locally via RS485 serial bus and via LAN/WAN network

Item no. TF2TFABILMODBUS

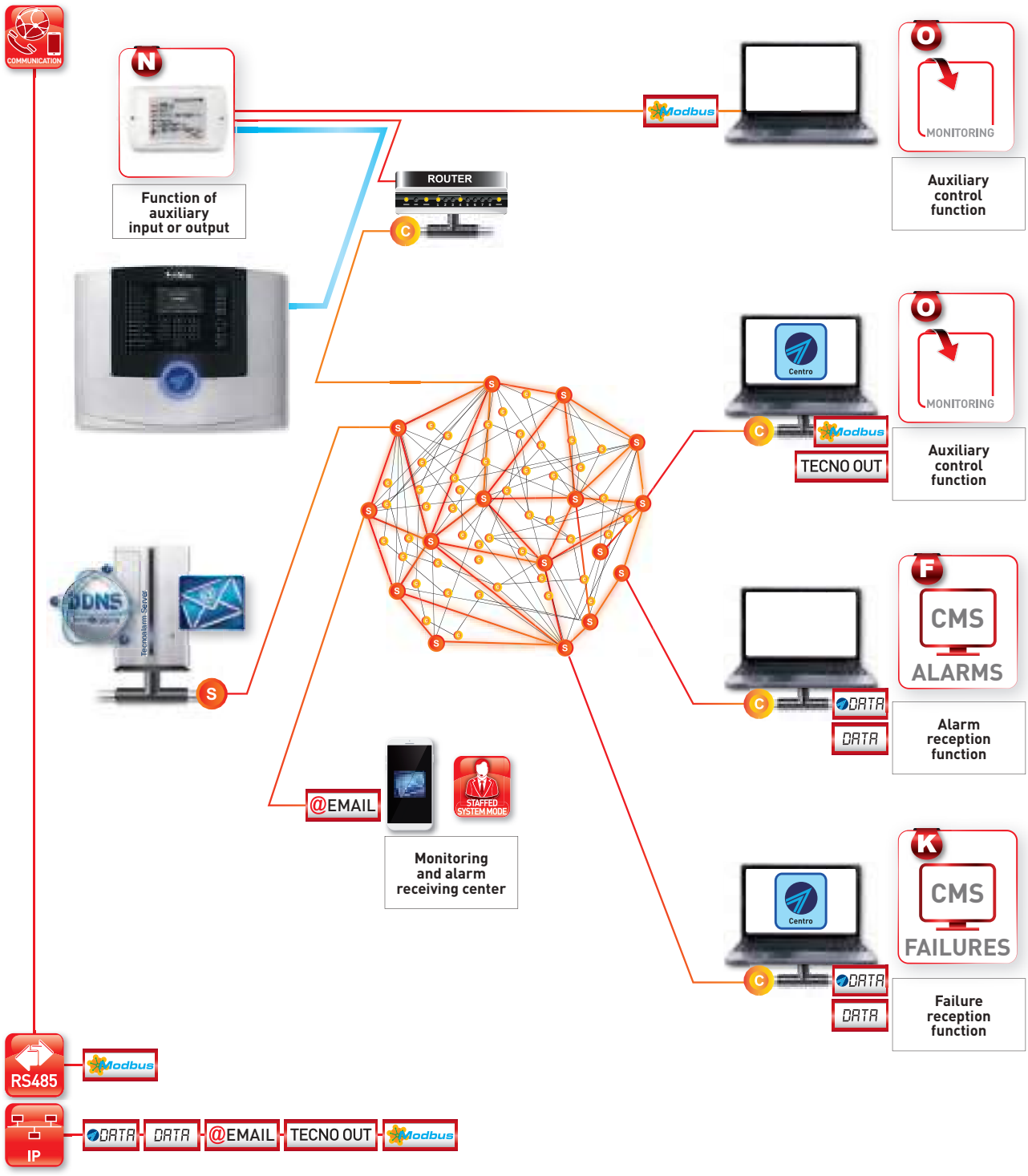
TFABIL-TECNO

Software plug-in for the TFNET interface permitting the implementation of the Tecno Out protocol. The protocol functions via LAN/WAN network

Item no. TF2TFABILTOUT

FORMATS AND VECTORS	DDNS	Remote management	Email	IP Data Tecnoalarm	IP Data	IP Tecno Out Tecnoalarm	IP Modbus	RS485 Modbus
TFNET	✓	✓	✓	✓	✓	Optional	Optional	

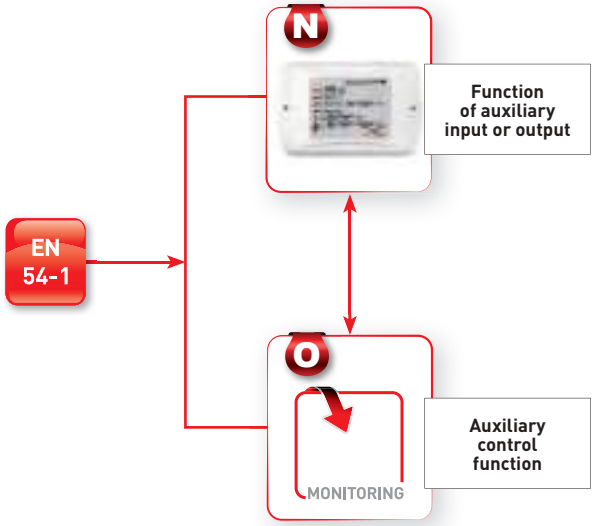
Functions of items F, K, N, O according to EN 54-1 (see also pages XY)



Ethernet interfaces

Reference standard
The EN 54-1 assigns the Function of auxiliary input or output to the item N and cites a data communication interface as possible device for performing the function. There is no specific reference standard yet.

Functions of items N, O according to EN 54-1



TFNET - Technical and functional specifications

General specifications	Model	**TFNET**
	Description	**Ethernet interface**
	Protocol	**Fire-Bus**
	Address programming	**Dip-switch**
	Connection	**RS485**
IP node	Class	**Standard 803.2 - ATE4**
	Ethernet channels	**Server 1**
		Server 2
		Tecnoserver Tecnoalarm
		Service Tecnoalarm
		Tecno Out (optional)
		Modbus (optional)
	Channels	**8**
	Transmittable events	**33 categories**
	Transmittable zone events	**5**
	Telephone numbers/ IP address	**2 per channel (max. 24 digits)**
	Call event queue	**64 events**
	Communication protocols	**11**
Automation	Test call with TCP/IP	✓

Electrical specifications	Power supply	**Over serial bus**
	Rated voltage	**24V DC**
	Operating voltage	**20V...27.6V DC**
	Stand-by consumption	**90mA @ 24V DC**
	Max. consumption	**140mA @ 24V DC**
Physical specifications	Operating temperature	**-5°C...+40°C**
	Relative humidity (non-condensing)	**10%...93%**
	Protection class	**IP30**
	Casing	**ABS V0**
	Dimensions (L x H x D)	**165 x 110 x 41mm**
	Weight	**200g**
Conformity	Standards	**EN 50136-1 EN 50136-2**
	Approved for use with TFA1-298, TFA2-596 and TFA4-1192 control panels	

Telematic services

The Ethernet interface TFNET implements the management of the Tecnoalarm telematic services DDNS Tecnoalarm, SNTP and Mail Server Tecnoalarm.
These services are managed automatically by a dedicated server and aim at simplifying and protecting the Ethernet connection of the Tecnofire systems.

DDNS TECNOALARM
The system's name and IP address are automatically recorded on the DDNS server and transmitted to the internet.
Whenever the system registers that its IP address has changed, it automatically communicates the new address to the DDNS server which updates the registered IP address and transmits the information to the DNS servers on the internet.

SNTP
The system's internal clock is automatically synchronized with an NTP server which uses the universal coordinated time (UTC).

MAIL SERVER TECNOALARM
The systems are equipped with a Mailer Client for the transmission of emails.
The Mail Server Tecnoalarm provides a hard-programmed account for the system, through which it transmits the emails received from the system to a total of 8 recipients.
The emails contain the time of occurrence of the events as well as the system status.

Addressable detectors

Addressable detectors

The range of Tecnofire addressable detectors is composed of devices with different specializations including combo versions which combine several sensor technologies.
The detectors communicate with the control panel using the proprietary high-speed scanning protocol "Fire-Speed".

DETECTOR		THERMAL CLASS	SUFFIX
TFDA-S1	Optical smoke detector	-	-
TFDA-TR1	Rate-of-rise detector	A1/A2 or B	R or S
TFDA-STR1	Combined optical smoke and heat detector	A1	R

TFDA-S1

The TFDA-S1 is an addressable optical smoke detector. Functioning is supervised by a microprocessor the algorithm of which guarantees best detection features and high precision in the densimetric analysis of the smoke captured by the chamber.
The automatic gain control (AGC) is able to compensate dynamically the loss of sensitivity caused by the deposits inside the smoke chamber. Should the detection capacity be compromised by the deposit of dust in the smoke chamber, this is automatically signaled to the fire alarm panel which will require maintenance.
Programmable functions: 3 sensitivity levels, excludable LED signaling for data communication - Integrated actuator of electrical connection test - Integrated RSC® technology: programming, remote management of all functioning parameters - 2 signaling LED visible at 360° - Dual loop isolator - Connection to loop - Proprietary high-speed protocol Fire-Speed - Mounting on universal base TFBASE01 - IP22 - Casing ABS V0 - Dimensions (Ø x H) 100 x 52mm (mounting base not included) - White color
EN 54-7: 2000 + A1: 2002 + A2: 2006 - EN 54-17: 2005 - Certification number 1293-CPR-0424

Item no. TF3TFDAS1

TFDA-TR1

The TFDA-TR1 is an addressable rate-of-rise detector with programmable class and suffix. Functioning is supervised by a microprocessor the algorithm of which guarantees high performance in the detection of the ambient temperature.
Programmable functions: thermal class A1, A2 or B (static response temperature depending on the programmed class), suffix S or R, excludable LED signaling for data communication - Integrated actuator of electrical connection test - Integrated RSC® technology: programming, remote management of all functioning parameters - 2 signaling LED visible at 360° - Dual loop isolator - Connection to loop - Proprietary high-speed protocol Fire-Speed - Mounting on universal base TFBASE01 - IP22 - Casing ABS V0 - Dimensions (Ø x H) 100 x 52mm (mounting base not included) - White color
EN 54-5: 2000 + A1: 2002 - EN 54-17: 2005 - Certification number 1293-CPR-0526

Item no. TF3TFDATR1

TFDA-STR1

The TFDA-STR1 is an addressable Combo 2T detector, composed of 2 independent sections, an optical smoke detector and a class A1R rate-of-rise detector (static response temperature 58°C). Functioning is supervised by a microprocessor the algorithm of which guarantees high performance in the detection of the ambient temperature and high precision in the densimetric analysis of the smoke captured by the chamber. The automatic gain control (AGC) is able to compensate dynamically the loss of sensitivity caused by the deposits inside the smoke chamber. Should the detection capacity be compromised by the deposit of dust in the smoke chamber, this is automatically signaled to the fire alarm panel which will require maintenance.
Programmable functions: 3 sensitivity levels, excludable prealarm function, 4 detection logics, individually excludable detection technology, excludable LED signaling for data communication - Integrated actuator of electrical connection test - Integrated RSC® technology: programming, remote management of all functioning parameters - 2 signaling LED visible at 360° - Dual loop isolator - Connection to loop - Proprietary high-speed protocol Fire-Speed - Mounting on universal base TFBASE01 - IP22 - Casing ABS V0 - Dimensions (Ø x H) 100 x 52mm (mounting base not included) - White color
EN 54-7: 2000 + A1: 2002 + A2: 2006 - EN 54-5: 2000 + A1: 2002 - EN 54-17: 2005 - Certification number 1293-CPR-0423

Item no. TF3TFDASTR1

ADDRESSABLE DETECTORS - Accessories

TFBASE-SOUNDER

The TFBASE-SOUNDER is a universal base with acoustic signaling device for Tecnofire detectors. Functioning of the base is defined by two parameters associated to the detector, the sub-formula and the functioning criterion.
Programmable functions: 8 sound types, 2 volume settings, functioning criterion (can be acknowledged, cannot be acknowledged) - Integrated RSC® technology: programming, remote management of sub-formula and functioning criterion - IP22 - Casing ABS V0 - Dimensions (Ø x H) 108 x 35mm - White color
EN 54-3:2001 + A1:2002 + A2:2006 - Certification number 1293-CPR-0558

Item no. TF6TFSOUNDER

TFDA-DUCT

Analysis chamber for ventilation and air-conditioning pipes
Venturi tube principle - Single air intake and discharge - Universal mounting base TFBASE01 included - IP65 - Casing ABS V0 - Dimensions (L x H x D) 165 x 279 x 83mm -
To be used with TFDA-S1 detector and TFTUBO-DUCT 60 pipe
EN 54-27

Item no. TF3TFDADUCT

TFTUBO-DUCT 60

Sampling pipe with separate air intake and discharge - Length 60cm

Item no. TF3TFTUBODUCT60

TFTUBO-DUCT 150

Sampling pipe with separate air intake and discharge - Length 150cm

Item no. TF3TFTUBODUCT15

TFCOVER-DUCT

Anti-condensation cover for installation in extremely cold or in outdoor areas
The cover protects the analysis chamber against the effects of weather and UV radiation.
Dimensions (L x H x D) 460 x 273 x 122mm

Item no. TF3TFCOVERDUCT

Addressable detectors

ADDRESSABLE DETECTORS - Accessories

TFBASE01

Universal base for TFIS01 sirens and TFDA-S1, TFDA-TR1, TFDA-STR1 detectors
Optical repeater output - ABS V0 - Dimensions (Ø x H) 100 x 19mm - White color

Item no. TF6TFBASE01

TFBOX-S

Junction box with integrated base for TFIS01 sirens and TFDA-S1, TFDA-TR1, TFDA-STR1 detectors
ABS V0 - Dimensions (L x H x D) 136 x 136 x 79mm - White color

Item no. TF5TFBOXS

TFBOX-B

Junction box with exchangeable inserts for closing or connecting Ø 20mm pipe sleeves
Compatible with base TFBASE01 - ABS V0 - Dimensions (Ø x H) 101 x 38mm - White color

Item no. TF6TFBOXB

TFRIP-R INC

Optical repeater
Visible at 360° -
Non-polarized connection -
Flush mounting - IP67 - Red color

Item no. TF3TFRIPRINC

TFRIP-V

Optical repeater
Visible at 360° -
Dimensions (L x H x D) 78 x 45 x 25mm -
Green color

Item no. TF3TFRIPV

TFRIP-R

Optical repeater
Visible at 360° -
Dimensions (L x H x D) 78 x 45 x 25mm -
Red color

Item no. TF3TFRIPR

TFRIP-G

Optical repeater
Visible at 360° -
Dimensions (L x H x D) 78 x 45 x 25mm -
Yellow color

Item no. TF3TFRIPG

Addressable modules

Addressable modules

The range of Tecnofire addressable modules is composed of input-output modules with different functional specializations, interfaces for conventional and 4-20mA devices, manual call points,power supply units, sirens as well as optical-acoustic alarm devices. The modules are connected to the loop of the fire alarm panel and use the proprietary Fire-Speed protocol.

MODULE		LOGIC UNITS	
TFM10	Input module	1	1 input
TFM20	Input module	2	2 inputs
TFM50	Input module	5	5 inputs
TFM420MA	Interface for 4-20mA devices	2	2 inputs
TFMC1	Interface for conventional devices	1	1 input
TFM21	Input-output module	3	2 inputs + 1 output
TFM01	Output module	1	1 output
TFM05	Output module	5	5 outputs
TFCP01	Manual call point	1	1 unit
TFIS01	Siren	2	1 siren + 1 alias
TFPANM	Optical-acoustic alarm sign board	2	1 board + 1 alias
TFPS-5	Power supply	1	1 unit

INPUT-OUTPUT MODULES AND INTERFACES

TFM10

EN 54-18 54-17 · RSC · 1 INPUT · 1 LOGICAL UNIT · ABS V0 BOX

The TFM10 is an addressable module composed of 1 supervised physical/logical unit: 1 input.
Programmable functions: 4 functioning modes (generate alarm, generate acknowledgment, generate reset, none), 2 input types (alarm or failure) - 2 repeater control outputs for input status signaling - Input status LED - Integrated RSC® technology: programming, remote management of all functioning parameters - Dual loop isolator - Connection to loop - Proprietary high-speed protocol Fire-Speed - Surface mounting - IP40 - Casing ABS V0 -
Dimensions (L x H x D) 69.5 x 49.8 x 17mm (length reducible to 49.8mm) - White color
EN 54-18: 2005/AC: 2007 - EN 54-17: 2005 - Certification number 1293-CPR-0490

Item no. TF4TFM10

TFM20

EN 54-18 54-17 · RSC · 2 INPUTS · 2 LOGICAL UNITS · ABS V0 BOX

The TFM20 is an addressable module composed of 2 supervised physical/logical units:
2 inputs, which are individually identified by the system and occupy up to 2 addresses.
Programmable functions: 4 functioning modes (generate alarm, generate acknowledgment, generate reset, none), 2 input types (alarm, failure) - 2 repeater control outputs for input status signaling - 2 input status LED - Integrated RSC® technology: programming, remote management of all functioning parameters - Dual loop isolator - Connection to loop - Proprietary high-speed protocol Fire-Speed - Mounting on the surface or DIN rail TFDIN - IP40 - Casing ABS V0 -
Dimensions (L x H x D) 112 x 78 x 25mm - White color
EN 54-18: 2005/AC: 2007 - EN 54-17: 2005 - Certification number 1293-CPR-0420

Item no. TF4TFM20

TFM50-HP

EN 54-18 54-17 | RSC | 5 INPUTS | 5 LOGICAL UNITS | DIN RAIL MOUNT BOX | ABS V0 BOX

The TFM50-HP is an addressable module composed of 5 supervised physical/logical units: 5 inputs, which are individually identified by the system and occupy up to 5 addresses. Programmable functions: 4 functioning modes (generate alarm, generate acknowledgment, generate reset, none), 2 input types (alarm, failure) - 5 repeater control outputs for input status signaling - 5 input status LED - Integrated RSC® technology: programming, remote management of all functioning parameters - Dual loop isolator - Connection to loop - Proprietary high-speed protocol Fire-Speed - Mounting on the surface or DIN rail TFDIN - IP40 - Casing ABS V0 - Dimensions (L x H x D) 144 x 92 x 71.5mm - White color
EN 54-18: 2005/AC: 2007 - EN 54-17: 2005 - Certification number 1293-CPR-0527

Item no. TF4TFM50HP

TFM50-LP

EN 54-18 54-17 | RSC | 5 INPUTS | 5 LOGICAL UNITS | DIN RAIL MOUNT BOX | ABS V0 BOX

As TFM50-HP but with low-profile casing - Dimensions (L x H x D) 144 x 92 x 38.5mm

Item no. TF4TFM50LP

TFM21

EN 54-18 54-17 | RSC | 2 INPUTS 1 OUTPUT | 3 LOGICAL UNITS | FORMULAS AND & NOT! OR | ABS V0 BOX

The TFM21 is an addressable module composed of 3 supervised physical/logical units: 2 inputs and 1 output, which are individually identified by the system and occupy up to 2 addresses. Programmable functions: 4 functioning modes for inputs (generate alarm, generate acknowledgment, generate reset, none), 2 input types (alarm, failure), 2 functioning modes for outputs (acknowledgeable, non-acknowledgeable), 2 output types (contact, controlled output), output activation delay, output activation time, output activation can be subjected to formula - Protected power supply input for load - 2 repeater control outputs for input status signaling - 3 input/output status LED - Integrated RSC® technology: programming, remote management of all functioning parameters - Dual loop isolator - Connection to loop - Proprietary high-speed protocol Fire-Speed - Mounting on the surface or DIN rail TFDIN - IP40 - Casing ABS V0 - Dimensions (L x H x D) 112 x 78 x 25mm - White color
EN 54-18: 2005/AC: 2007 - EN 54-17: 2005 - Certification number 1293-CPR-0419

Item no. TF4TFM21

TFM01

EN 54-18 54-17 | RSC | 1 OUTPUT | 1 LOGICAL UNIT | FORMULAS AND & NOT! OR | ABS V0 BOX

The TFM01 is an addressable module composed of 1 supervised physical/logical unit: 1 output. Programmable functions: 2 functioning modes (acknowledgeable, non-acknowledgeable), 2 output types (contact, controlled output), output activation delay, output activation time, output activation can be subjected to formula - Protected power supply input for load - Output status LED - Integrated RSC® technology: programming, remote management of all functioning parameters - Dual loop isolator - Connection to loop - Proprietary high-speed protocol Fire-Speed - Mounting on the surface or DIN rail TFDIN - IP40 - Casing ABS V0 - Dimensions (L x H x D) 112 x 78 x 25mm - White color
EN 54-18: 2005/AC: 2007 - EN 54-17: 2005 - Certification number 1293-CPR-0421

Item no. TF4TFM01

TFM05-HP

EN 54-18 54-17 · RSC® · 5 OUTPUTS · 5 LOGICAL UNITS · FORMULAS AND & NOT ! OR | · DIN RAIL MOUNT BOX · ABS V0 BOX

The TFM05-HP is an addressable module composed of 5 supervised physical/logical units:
5 outputs. Programmable functions: 2 functioning modes (acknowledgeable, non-acknowledgeable), 2 output types (contact, controlled output), output activation delay, output activation time, output activation can be subjected to formula - Protected power supply input for load - 5 output status LED - Integrated RSC® technology: programming, remote management of all functioning parameters - Dual loop isolator - Connection to loop - Proprietary high-speed protocol Fire-Speed - Mounting on the surface or DIN rail TFDIN - IP40 - Casing ABS V0 - Dimensions (L x H x D) 144 x 92 x 71.5mm - White color
EN 54-18: 2005/AC: 2007 - EN 54-17: 2005 - Certification number 1293-CPR-0528

Item no. TF4TFM05HP

TFM05-LP

EN 54-18 54-17 · RSC® · 5 OUTPUTS · 5 LOGICAL UNITS · FORMULAS AND & NOT ! OR | · DIN RAIL MOUNT BOX · ABS V0 BOX

As TFM05-HP but with low-profile casing - Dimensions (L x H x D) 144 x 92 x 38.5mm

Item no. TF4TFM05LP

TFMC1

EN 54-18 54-17 · RSC® · 1 INPUT CONVENTIONAL DETECTORS · 1 LOGICAL UNIT · ABS V0 BOX

The TFMC1 is an addressable interface composed of 1 supervised physical/logical unit: 1 input for conventional devices.
Opto-isolated power supply input for conventional detectors - Programmable functions: prealarm signaling - Input status LED - Integrated RSC® technology: programming, remote management of all functioning parameters - Dual loop isolator - Connection to loop - Proprietary high-speed protocol Fire-Speed - Mounting on the surface or DIN rail TFDIN - IP40 - Casing ABS V0 - Dimensions (L x H x D) 112 x 78 x 25mm - White color
EN 54-18: 2005/AC: 2007 - EN 54-17: 2005 - Certification number 1293-CPR-0492

Item no. TF4TFMC1

TFM420MA

EN 54-18 54-17 · RSC® · 2 4-20mA INPUTS · 2 LOGICAL UNITS · ABS V0 BOX

The TFM420MA is an addressable interface composed of 2 supervised physical/logical units:
2 inputs for 4-20mA devices, which are individually identified by the system and occupy up to 2 addresses.
Programmable functions: prealarm signaling, 3 functioning modes (generate alarm, prealarm threshold, alarm threshold) - 2 repeater control outputs for input status signaling - 2 input status LED - Integrated RSC® technology: programming, remote management of all functioning parameters - Dual loop isolator - Connection to loop - Proprietary high-speed protocol Fire-Speed - Mounting on the surface or DIN rail TFDIN - IP40 - Casing ABS V0 - Dimensions (L x H x D) 112 x 78 x 25mm - White color
EN 54-18: 2005/AC: 2007 - EN 54-17: 2005 - Certification number 1293-CPR-0491

Item no. TF4TFM420MA

MANUAL CALL POINTS

TFCP01

The TFCP01 is an addressable manual call point.
Integrated RSC® technology: programming, remote management of all functioning parameters - Dual loop isolator - Connection to loop - Proprietary high-speed protocol Fire-Speed - Fitting either with a resettable actuator or a break glass release button - Accessories included - Glass with protective film against injury - Opening and reset key included - IP44 - Casing ABS V0 - Dimensions (L x H x D) 86 x 86 x 53mm - Red color
EN 54-11: 2001 + A1: 2005 - EN 54-17: 2005 - Certification number 1293-CPR-0418

Item no. TF5TFCP01

TFCP01-IP66

The TFCP01-IP66 is a conventional manual call point for outdoor mounting.
The call point can be connected to the loop through the addressable input module TFM10.
The module can be installed inside the casing of the call point.
Accessories included - Glass with protective film against injury - Opening and reset key included - IP66 - Casing ABS V0 (TFM10 module not included) - Dimensions (L x H x D) 86 x 86 x 53mm - Red color
EN 54-11: 2001 + A1: 2005 - Certification number 0832-CPD-0904

Item no. TF5TFCP01IP66

POWER SUPPLIES

TFPS-5

The TFPS-5 is an addressable power supply.
Operating voltage 230V AC - Rated output current: 5A @ 27.6V DC - 3 outputs for external load with max. 1.1A current - Self test function with automatic battery disconnection in case of deep discharge - 6 status LED on the front panel - Failure output: relay with potential-free contact - Bay for 2x 12V/17Ah batteries - Integrated RSC® technology: programming, remote management of all functioning parameters - Dual loop isolator - Connection to loop - Proprietary high-speed protocol Fire-Speed - Operating temperature: -5°C...+40°C - IP30 - Metal casing - Dimensions (L x H x D) 320 x 365 x 170mm - Black color
EN 54-4:1997 + A1:2002 + A2:2006 - EN 54-17:2005 - EN 12101-10 -
Certification number 0051-CPR-0432

Item no. TF5TFPS5

SIRENS

TFIS01

The TFIS01 is an addressable siren, composed of up to 2 supervised physical/logical units, which are individually identified by the system and occupy up to 2 addresses. The dual ID or device alias mode permits the functional duplication of the siren, so that two different signaling modes and sound types can be programmed.
Programmable functions: 2 functioning modes (acknowledgeable, non-acknowledgeable), 2 signaling modes (optical-acoustic, acoustic), 64 sound types, 2 volume levels, activation delay, activation time, activation can be subjected to formula - Integrated RSC® technology: programming, remote management of all functioning parameters - Dual loop isolator - Connection to loop - Proprietary high-speed protocol Fire-Speed - Mounting on universal base TFBASE01 - IP22 - Casing ABS V0 - Dimensions (Ø x H) 120 x 65mm - Red color
EN 54-3:2001 + A2:2006 - EN 54-17: 2005 - Certification number 1293-CPR-0422

Item no. TF5TFIS01

ALARM SIGN BOARDS

TFPANM

EN 54-3 54-23 54-17 | RSC® | VAD VISUAL ALARM DEVICE | TYPE W-4.6-7.7 | FLASH SYNC | SOUND LEVEL 92dB(A) @1m | 2 LOGICAL UNITS | FORMULAS AND & NOT ! OR | | ABS V0 BOX

The TFPANM is an optical-acoustic alarm sign board composed of 2 supervised physical/logical units, which are individually identified by the system and occupy up to 2 addresses.
The dual ID or device alias mode permits the functional duplication of the alarm sign board.
Programmable functions: 2 functioning modes (acknowledgeable, non-acknowledgeable), 2 signaling modes (optical-acoustic, acoustic), 8 sound types, activation delay, activation time, activation can be subjected to formula - Integrated RSC® technology: programming, remote management of all functioning parameters - Dual loop isolator - Connection to loop - Proprietary high-speed protocol Fire-Speed - Maximum consumption 65mA - Surface mounting with TFBOX-P base (not included) or semi-flush mounting - IP21C - Casing ABS V0 - On-wall dimensions (L x H x D) 373 x 150 x 33mm - In-wall dimensions (L x H x D) 74 x 54 x 32mm - White color
EN 54-3:2001 + A2:2006 - EN 54-17:2005 - EN 54-23:2010 - Certification number 0051-CPR-0531

TFPANM-AI

Optical-acoustic alarm sign board with FIRE ALARM warning

Item no. TF5TFPANMAI-UK

Item no. TF5TFPANMAI-UK

Item no. TF5TFPANMAI-FR

Item no. TF5TFPANMAI-ES

Item no. TF5TFPANMAI-DE

Connection scheme

TFPANM - Accessories

TFBOX-P

Surface mount base for TFPANM and TFPAN - 4 fairleads with exchangeable inserts for closing or connecting Ø 20mm pipe sleeves - Dimensions (board + base) (L x H x D) 373 x 150 x 63mm

Item no. TF5TFBOXP

TFVETRO-CP01

Replacement glass for TFCP01 and TFCP01-IP66 manual call points
Sold in packs of 10

Item no. TF5TFVETROCP01

TFBASE01

Universal base for TFIS01 sirens and TFDA-S1, TFDA-TR1, TFDA-STR1 detectors
Optical repeater output - ABS V0 -
Dimensions (Ø x H) 100 x 19mm -
White color

Item no. TF6TFBASE01

TFCOP-CP01

Transparent replacement cover for TFCP01 and TFCP01-IP66 manual call points
Sold in packs of 10

Item no. TF5TFCOPCP01

TFBOX-S

Junction box with integrated base for TFIS01 sirens and TFDA-S1, TFDA-TR1, TFDA-STR1 detectors
ABS V0 -
Dimensions (L x H x D) 136 x 136 x 79mm -
White color

Item no. TF5TFBOXS

TFKEY-CP01

Opening and reset key for TFCP01 and TFCP01-IP66 manual call points
Sold in packs of 10

Item no. TF5TFKEYCP01

TFRELE-230

Relay board for electrical loads using 230V AC operating voltage - 1 bistable relay output with potential-free change-over contact (max. 5A load) - Functioning depending on output module

Item no. TF5TFRELE230

TFDIN

DIN rail for mounting the modules TFM20, TFM21, TFM01 and interfaces TFMC1 and TFM420MA

Item no. TF5TFDIN

TFBOX-M

Junction box with recess for mounting TFM10, TFM20, TFM21, TFM01 modules and TFMC1, TFM420MA interfaces
ABS V0 -
Dimensions (L x H x D) 136 x 136 x 63mm -
White color

Item no. TF5TFBOXM

TFRIP-R INC

Optical repeater
Visible at 360° -
Non-polarized connection -
Flush mounting - IP67 - Red color

Item no. TF3TFRIPRINC

TFRIP-R

Optical repeater
Visible at 360° -
Dimensions (L x H x D) 78 x 45 x 25mm -
Red color

Item no. TF3TFRIPR

TFRIP-V

Optical repeater
Visible at 360° -
Dimensions (L x H x D) 78 x 45 x 25mm -
Green color

Item no. TF3TFRIPV

TFRIP-G

Optical repeater
Visible at 360° -
Dimensions (L x H x D) 78 x 45 x 25mm -
Yellow color

Item no. TF3TFRIPG

Tecnofire provides a selection of the most performing additional equipment from the major manufacturers with the best price-performance ratio. The equipment has been tested to ensure the highest possible degree of compatibility and functional integration with the Tecnofire products. The integration of additional equipment in the Tecnofire fire alarm systems guarantees a top performance level.

Conventional devices

Optical-acoustic alarm devices

OPTICAL-ACOUSTIC ALARM SIGN BOARDS

TFPAN

EN 54-3 54-23 | VAD VISUAL ALARM DEVICE | TYPE W-4.6-7.7 | 272m³ COVERAGE VOLUME | FLASH SYNC | SOUND LEVEL 88dB(A) @1m | ABS V0 BOX

The TFPAN is an optical-acoustic alarm sign board.
The board can be connected to the loop through the addressable output module TFM01.
Programmable functions: 2 signaling modes (optical-acoustic, acoustic) - Maximum consumption 80mA - Surface mounting with TFBOX-P base (not included) or semi-flush mounting - Operating temperature: -10°C...+55°C - IP21C - Casing ABS V0 - On-wall dimensions (L x H x D) 373 x 150 x 33mm - In-wall dimensions (L x H x D) 74 x 54 x 32mm - White color
EN 54-3:2001 + A2:2006 - EN 54-23:2010 - Certification number 0051-CPR-0531

TFPAN-AI

Optical-acoustic alarm sign board with FIRE ALARM warning

Item no. TF7TFPANAI-UK

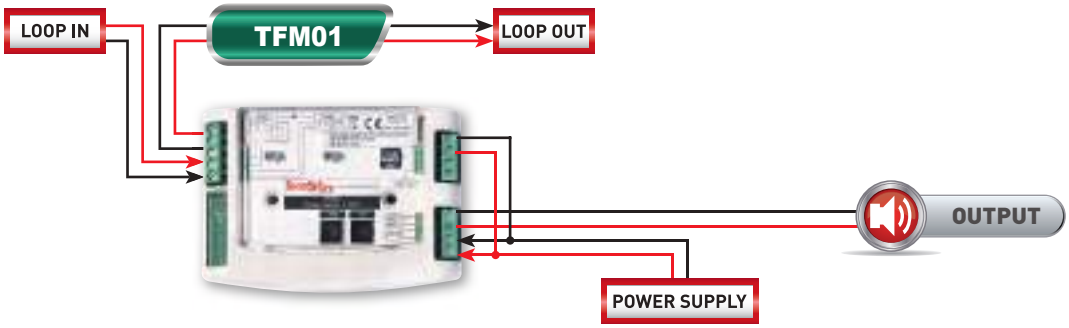
Item no. TF7TFPANAI-UK

Item no. TF7TFPANAI-FR

Item no. TF7TFPANAI-ES

Item no. TF7TFPANAI-DE

Connection scheme



TFPAN - Accessories

TFBOX-P

Surface mount base for TFPANM and TFPAN - 4 fairleads with exchangeable inserts for closing or connecting Ø 20mm pipe sleeves - Dimensions (board + base) (L x H x D) 373 x 150 x 63mm

Item no. TF5TFBOXP

OPTICAL FIRE ALARM DEVICES

TFL04

EN 54-23 | VAD VISUAL ALARM DEVICE | TYPE W-2.4-7.5 | 135m³ COVERAGE VOLUME | ABS V0 BOX

Optical fire alarm device
Surface mounting - Coverage volume 135cbm - Maximum mounting height 2.4 meters - Maximum consumption 25mA - Dimensions (Ø x H) 93 x 38mm - Red color
EN 54-23 - Certification number 0333-CPD-075441

Item no. TF7TFL04

TFL05

EN 54-23 | VAD VISUAL ALARM DEVICE | TYPE C-3-7.5 | 132m³ COVERAGE VOLUME | ABS V0 BOX

Optical fire alarm device
Surface mounting - Ceiling mounting at a maximum height of 3 meters - Coverage volume 132cbm - Maximum consumption 25mA - Dimensions (Ø x H) 93 x 38mm - White color
EN 54-23 - Certification number 0333-CPD-075443

Item no. TF7TFL05

ACOUSTIC FIRE ALARM DEVICES

TFS03

EN 54-3 | SOUND LEVEL 100dB(A) @1m | 2 ALARM INPUTS | ABS V0 BOX

Acoustic fire alarm device
Surface mounting - Sound level 100dB(A) @ 1m - 2 control inputs - 2 alarm modes - Programmable functions: 32 alarm tones (6 certified alarm tones), volume high and low - Maximum consumption 32mA - Dimensions (Ø x H) 93 x 105mm - Red color
EN 54-3 - Certification number 0832-CPD-1651

Item no. TF7TFS03

TFC05

EN 54-3 | SOUND LEVEL 95dB(A) @1m | METAL BOX

Fire alarm bell
Surface mounting - Sound level 95dB(A) @ 1m - Maximum consumption 35mA - Dimensions (Ø x H) 155 x 85mm - Red color
EN 54-3 - Certification number 0832-CPD-0137

Item no. TF7TFC05

TFS04

EN 54-3 | SOUND LEVEL 120dB(A) @1m | 3 ALARM INPUTS | ABS V0 BOX

Acoustic fire alarm device
Surface mounting - Sound level 120dB(A) @ 1m - 3 control inputs - 3 alarm modes - Programmable functions: 42 alarm tones, volume - Maximum consumption 450mA - Dimensions (L x H x D) 168 x 168 x 155mm - Red color
EN 54-3 - Certification number 0832-CPD-0566

Item no. TF7TFS04

Optical-acoustic alarm devices

OPTICAL-ACOUSTIC FIRE ALARM DEVICES

TFSL02

EN 54-3 54-23 | VAD VISUAL ALARM DEVICE | TYPE W-2.4-7.5 | 135m³ COVERAGE VOLUME | SOUND LEVEL 102dB(A) @1m | 2 ALARM INPUTS | ABS V0 BOX

Optical-acoustic fire alarm device
Surface mounting - Coverage volume 135cbm - Maximum mounting height 2.4 meters - Sound level 102dB(A) @ 1m - 2 control inputs - 2 alarm modes - Programmable functions: 32 alarm tones (6 certified alarm tones), volume high and low - Maximum consumption 37mA - Dimensions (L x H x D) 95 x 135 x 95mm - Red casing - White flashlight
EN 54-3 - EN 54-23 - Certification number 0333-CPR-075444

Item no. TF7TFSL02

TFSL03

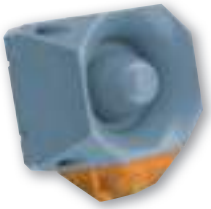
EN 54-3 | VID VISUAL INDICATION DEVICE | SOUND LEVEL 120dB(A) @1m | 3 ALARM INPUTS | ABS V0 BOX

Optical-acoustic fire alarm device
Surface mounting - Sound level 120dB(A) @ 1m - 3 control inputs - 3 alarm modes - Programmable functions: 42 alarm tones, volume - Maximum consumption 1.49A - Dimensions (L x H x D) 168 x 212 x 155mm - Red casing - Red flashlight
EN 54-3 - Certification number 0832-CPD-0568

Item no. TF7TFSL03

TFSL04

EN 54-3 | VID VISUAL INDICATION DEVICE | SOUND LEVEL 120dB(A) @1m | 3 ALARM INPUTS | ABS V0 BOX



The same as TFSL03 but gray casing and yellow flashlight

Item no. TF7TFSL04

SELF-POWERED OPTICAL-ACOUSTIC FIRE ALARM DEVICES

TFES01

EN 54-3 | VID VISUAL INDICATION DEVICE | SOUND LEVEL 107dB(A) @1m | SELF-POWERED | SELF TEST | PC-ABS 5VA BOX

The TFES01 is a self-powered magneto-dynamic siren for outdoor mounting.
Programmable trigger signal: reverse polarity - LED flashlight - Programmable sound type (15 tones) - Self test of the power supply, battery, horn and flash light - Failure output: opto-isolated relay - Sound level 107dB (A) @ 1m (sound type 1) - Max. consumption 350mA - Rated voltage 24V DC - Step-down converter for battery recharge - 12V/2.1Ah battery - Surface mounting - IP33C (EN 60529:1991 + A1:2000) - Casing PC ABS 5VA - Dimensions (L x H x D) 211 x 315 x 98mm - Red color
EN 54-3:2001 + A2:2006 - Certification number 1293-CPR-0493

Item no. TF7TFES01

ATEX CERTIFIED OPTICAL FIRE ALARM DEVICES

TFL06-EX

Optical fire alarm device for indoor and outdoor use and in high-risk environments
Zones 1, 2, 21, 22 - Tube connector 3/4 inch - Max. consumption 130mA - Operating voltage 12...24V AC/DC - Surface mounting - Operating temperature: -20°C...+60°C - IP65 - Dimensions (Ø x H) 365 x 135mm - Red die-cast aluminum casing - Red xenon flashlight - Transparent polycarbonate dome
ATEX EXD II2G IIC T6 GB, EXTB II2D IIIC T200°C DB IP65

Item no. TF7TFL06EX

ATEX CERTIFIED ACOUSTIC FIRE ALARM DEVICES

TFS06-EX

Acoustic fire alarm device for indoor and outdoor use and in high-risk environments
Zones 1, 2, 21, 22 - Programmable functions: 32 sound type - Tube connector 3/4 inch - Sound level 102dB (A) @ 1m - Max. consumption 160mA - Operating voltage 12...24V AC/DC - Surface mounting on swivel mounting bracket - Operating temperature: -20°C...+55°C - IP65 - Dimensions (L x D x H) 230 x 150 x 150mm - Red die-cast aluminum casing - Gray-metallic ABS horn
ATEX EXD II2GD IIC T6 GB, EXTB IIIC T85°C DB IP65

Item no. TF7TFS06EX

TFS07-EX

Acoustic fire alarm device for indoor and outdoor use and in high-risk environments
Zones 1, 2, 21, 22 - Programmable functions: 32 sound type - Tube connector 3/4 inch - Sound level 105dB (A) @ 1m - Max. consumption 800mA - Operating voltage 12...24V AC/DC - Surface mounting on swivel mounting bracket - Operating temperature: -50°C...+60°C - IP6x - Dimensions (L x D x H) 390 x 280 x 280mm - Red die-cast aluminum casing - Gray-metallic ABS horn
ATEX EXD II2G IIC T4 GB, EXTB IID IIIC T130°C DB IP6X

Item no. TF7TFS07EX

Air sampling units

The range of air sampling units selected by Tecnofire offers models
capable of satisfying any application requirement.
It comprises 1 and 2 channel ICAM or VESDA models,
equipped with laser detection chamber (classes A, B, C compliant with EN 54-20).
The top-of-the range models provide WI-FI ports and permit management by PC, Tablet and Smartphone.

The technical department of Tecnofire offers a consultancy service for the correct dimensioning
of the air sampling system according to the specifications of the project.
The length of the tubes and the size of the holes are calculated by a specific flow simulation software,
compliant with the current UNI 9795:2013 standard.
Their interaction with the Tecnofire systems has been tested and evaluated
in order to obtain an excellent functional synergy and the maximum technical satisfaction.

TFUCA-01

EN 54-20 | AIR SAMPLING | LASER DETECTION | 1 CHANNEL | 100m CLASS A 3 B 6 C 18 | COVERAGE 500m² | 3 SIGNALING OUTPUTS

1 channel 1 zone air sampling unit for 25mm ABS pipes
Pipe length max. 100m - Classes A (3 holes), B (6 holes), C (18 holes) - Analysis of the air with 2 high sensitivity addressable sensors - Negative pressure max. 250Pa - 3 programmable relay outputs - Max. consumption 300mA - Dimensions (L x H x D) 259 x 184 x 66mm
VDS, CPD, EN 54-20

Item no. TF13TFUCA01

TFUCA-02

EN 54-20 | AIR SAMPLING | LASER DETECTION | 2 CHANNELS | 100m CLASS A 3 B 6 C 18 | COVERAGE 500m² | 6 SIGNALING OUTPUTS

2 channels 2 zones air sampling unit for 25mm ABS pipes
Pipe length max. 100m - Classes A (3 holes), B (6 holes), C (18 holes) - Analysis of the air with 2 high sensitivity addressable sensors - Negative pressure max. 250Pa - 3 programmable relay outputs - Max. consumption 300mA - Dimensions (L x H x D) 259 x 184 x 66mm
VDS, CPD, EN 54-20

Item no. TF13TFUCA02

TFUCA-06

EN 54-20 | AIR SAMPLING | LASER DETECTION | 1 CHANNEL | 25m CLASS A 12 B 12 C 12 | COVERAGE 250m² | 3 SIGNALING OUTPUTS

1 channel 1 zone zone air sampling unit for 25mm ABS pipes
Pipe length max. 25m - Classes ABC (12 holes to be sized by Aspire-2 software) - Coverage max. 250sqm - Laser detection chamber - Ultrasonic flow sensing - Dual stage air filter - Sensitivity range 0,025%...20% obs/m - Self-diagnosis function with programmable thresholds - 3 programmable relay outputs - Status LED - Memory with 18,000 events capacity - RS232 port - Operating voltage 24VDC - Max. consumption 295mA - Operating voltage 24V DC - Dimensions (L x H x D) 255 x 185 x 90mm
VDS, LPCB, CPD, EN 54-20, UL, ULC, FM

Item no. TF13TFUCA06

TFUCA-07

EN 54-20 | AIR SAMPLING | LASER DETECTION | 1 CHANNEL | 50m CLASS A 30 B 30 C 30 | COVERAGE 500m² | 3 SIGNALING OUTPUTS

1 channel 1 zone air sampling unit for 25mm ABS pipes
Pipe length max. 50m - Classes ABC (30 holes to be sized by Aspire-2 software) - Coverage max. 500sqm - Laser detection chamber - Ultrasonic flow sensing - Dual stage air filter - Sensitivity range 0,025%...20% obs/m - Self-diagnosis function with programmable thresholds - 3 programmable relay outputs - Status LED - Memory with 18,000 events capacity - RS232 port - Max. consumption 490mA - Operating voltage 24V DC -
Dimensions (L x H x D) 256 x 183 x 92mm
VDS, LPCB, CPD, EN 54-20, UL, ULC, FM

Item no. TF13TFUCA07

TFUCA-18

EN 54-20 | AIR SAMPLING | LASER DETECTION | 4 CHANNELS | 360m CLASS A 24 B 28 C 60 | COVERAGE 1600m² | 5 SIGNALING OUTPUTS

4 channels 1 zone air sampling unit for 25mm ABS pipes, especially suitable for industrial applications with a high exposure to vapors and dust
Pipe length max. 360m - Classes A (24 holes), B (28 holes), C (60 holes), holes to be sized by Aspire-2 software - Coverage max. 1600sqm - Laser detection chamber - Ultrasonic flow sensing - Patent-registered dual stage air filter with anti-fluff - Sensitivity range 0,005%...20% obs/m - Self-diagnosis function with programmable thresholds - 5 programmable relay outputs - Status LED - Memory with 18,000 events capacity - USB port - BACnet Ethernet port - Max. consumption 440mA - Operating voltage 24V DC -
Dimensions (L x H x D) 427 x 317 x 180mm
VDS, LPCB, CPD, EN 54-20, UL, ULC, FM

Item no. TF13TFUCA18

TFUCA-21

EN 54-20 | AIR SAMPLING | LASER DETECTION | 1 CHANNEL | 130m CLASS A 30 B 40 C 45 | COVERAGE 1000m² | 7 SIGNALING OUTPUTS

1 channel 1 zone air sampling unit for 25mm ABS pipes
Pipe length max. 130m - Classes A (30 holes), B (40 holes), C (45 holes) - Coverage max. 1000sqm - Laser detection chamber - Ultrasonic flow sensing - Dual stage air filter
Sensitivity range 0,005%...20% obs/m - Self-diagnosis function with programmable thresholds - 7 programmable relay outputs - Status LED - Memory with 20,000 events capacity - USB, LAN, WIFI ports - Max. consumption 440mA - Operating voltage 24V DC - IP40 -
Dimensions (L x H x D) 350 x 225 x 135mm
VDS, EN 54-20, UL, ULC, FM, ActivFire

Item no. TF13TFUCA21

TFUCA-19

EN 54-20 | AIR SAMPLING | LASER DETECTION | 4 CHANNELS | 560m CLASS A 40 B 80 C 100 | COVERAGE 1600m² | 7 SIGNALING OUTPUTS

4 channels 1 zone air sampling unit for 25mm ABS pipes
Pipe length max. 560m - Classes A (40 holes), B (80 holes), C (100 holes) - Coverage max. 1600sqm - Laser detection chamber - Ultrasonic flow sensing - Dual stage air filter - Sensitivity range 0,005%...20% obs/m - Self-diagnosis function with programmable thresholds - 7 programmable relay outputs - Status LED - Memory with 20,000 events capacity - USB, LAN, WIFI ports - Max. consumption 440mA - Operating voltage 24V DC - IP40 -
Dimensions (L x H x D) 350 x 225 x 135mm
VDS, EN 54-20, UL, ULC, FM, ActivFire

Item no. TF13TFUCA19

Air sampling units

TFUCA-20

4 channels 1 zone air sampling unit for 25mm ABS pipes
Pipe length max. 560m - Classes A (80 holes), B (80 holes), C (100 holes) - Coverage max. 1600sqm - Laser detection chamber - Ultrasonic flow sensing - Dual stage air filter - Sensitivity range 0,005%...20% obs/m - Self-diagnosis function with programmable thresholds - 7 programmable relay outputs - 3.5 inch touch screen - Status LED - Memory with 20,000 events capacity - USB, LAN, WIFI ports - Max. consumption 440mA - Operating voltage 24V DC - IP40 - Dimensions (L x H x D) 350 x 225 x 135mm
VDS, EN 54-20, UL, ULC, FM, ActivFire

Item no. TF13TFUCA20

TFUCA-04

4 channels 4 zones air sampling unit for 25mm ABS pipes
Pipe length max. 800m - Classes A (80 holes), B (80 holes), C (100 holes) - Coverage max. 1600sqm - Laser detection chamber - Ultrasonic flow sensing - Sensitivity range 0,0002%...20% obs/m - 7 programmable relay outputs - Status LED - USB, TCP/IP, WIFI ports - Max. consumption 700mA - Operating voltage 24V DC - Operating temperature ambient 0°C...+39°C, sampled air -20°C...+60°C - Dimensions (L x H x D) 350 x 225 x 135mm
VDS, CPD, EN 54-20, UL, ULC

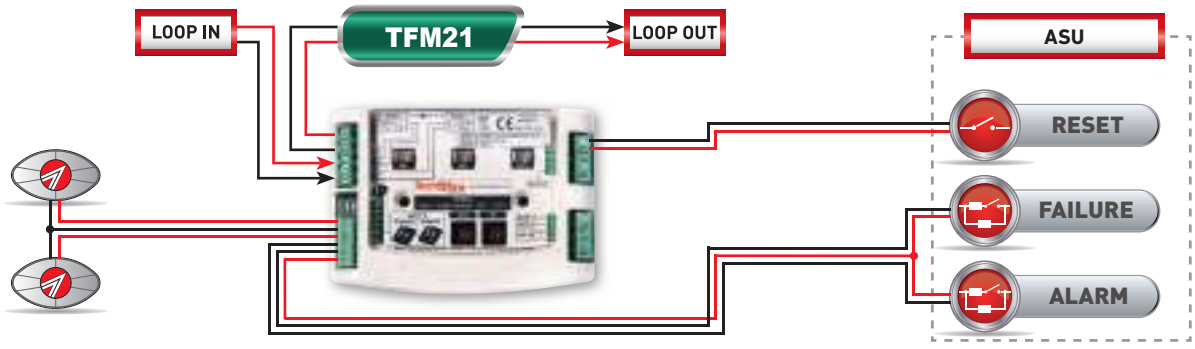
Item no. TF13TFUCA04

TFUCA-05

4 channels 4 zones air sampling unit for 25mm ABS pipes
Pipe length max. 800m - Classes A (80 holes), B (80 holes), C (100 holes) - Coverage max. 1600sqm - Laser detection chamber - Ultrasonic flow sensing - Sensitivity range 0,0002%...20% obs/m - 7 programmable relay outputs - 3.5 inch touch screen - USB, TCP/IP, WIFI ports - Max. consumption 700mA - Operating voltage 24V DC - Operating temperature ambient 0°C...+39°C, sampled air -20°C...+60°C - Dimensions (L x H x D) 350 x 225 x 135mm
VDS, CPD, EN 54-20, UL, ULC

Item no. TF13TFUCA05

Connection scheme



TFTB-25

ABS pipe - External diameter 25mm - Length 3000mm - Thickness 1.9mm - PN16 red color

Item no. TF13TFTB25

TFMN-25

ABS collar - External diameter 25mm - Thickness 1.9mm - PN16 red color (sold in packs of 10)

Item no. TF13TFMN25

TFCR-25 90

ABS bent pipe - 90° - External diameter 25mm - Thickness 1.9mm - PN16 red color (sold in packs of 10)

Item no. TF13TFCR2590

TFCR-25 45

ABS bent pipe - 45° - External diameter 25mm - Thickness 1.9mm - PN16 red color (sold in packs of 10)

Item no. TF13TFCR2545

TFTP-25

ABS end cap - External diameter 25mm - Thickness 1.9mm - PN16 red color (sold in packs of 10)

Item no. TF13TFTP25

TFTEE-25

ABS T-joint - External diameter 25mm - Thickness 1.9mm - PN16 red color (sold in packs of 10)

Item no. TF13TFTEE25

TFST-25

Bracket for ABS pipes - External diameter 25mm - Thickness 1.9mm - PN16 red color (sold in packs of 20)

Item no. TF13TFST25

TFDTC-25

ABS T-joint with flexible pipe and PVC washer with standard 2mm hole - Joint: diameter 25mm - Pipe: external diameter 10mm, length 2m

Item no. TF13TFDTC25

TFTB-10

Rilsan® pipe - Internal diameter 10mm - Red color - 100m hanks

Item no. TF13TFTB10

TFTB-25F30

Flexible pipe with coupling links - External diameter 25mm - Length 300mm

Item no. TF13TFTB25F30

TFTB-25F100

Flexible pipe with coupling links - External diameter 25mm - Length 1000mm

Item no. TF13TFTB25F100

TFCLA

Adhesive for PVC and ABS - 250ml bottle

Item no. TF13TFCLA

TFFT-25EN

External filter with exchangeable cartridge - Suitable for areas with high exposure to dust - Diameter 25mm - Red color - EN 54-20

Item no. TF13TFFT25EN

TFFT-25ENS

Refill for external filter TFFT-25EN (sold in packs of 4)

Item no. TF13TFFT25ENS

TFTB-LABEL

Identification labels for TFTB-25 (sold in rolls of 200)

Item no. TF13TFTBLABEL

The accessories for air sampling units are characterized by a good resistance to shocks and chemical agents.
They can be used with operating temperatures from -40°C to +70°C.
They have been produced in line with the quality system EN ISO 9001 and are compliant to BS 5391-1 and EN 1452-3.
They have been certified to EN 54-20 clause 5.7, EN 61386-1 class 1131 by the Loss Prevention Certification Board (LPCB).

Linear smoke detectors

The range of linear smoke detectors includes models with reflective or point-to-point infrared light and point-to-point or multi-point configurations. All the detectors are equipped with an integrated automated laser pointer.

CONFIGURATIONS	
REFLECTION TX RX	**Reflective light** Linear-type optical smoke detector composed of 2 units, 1 containing both the transmitter and receiver and 1 the reflection panel. The transmitter sends the infrared light to the reflection panel which returns it to the receiver.
END TO END TX — RX	**Point-to-point light** Linear-type optical smoke detector composed of 2 units, 1 transmitter and 1 independent receiver. The infrared light is transmitted to the receiver.
MULTI AND TO AND TX TX RX	**Multipoint-to-point light** Linear-type optical smoke detector composed of several transmitters sending a coded infrared light signal to one receiver.

TFBD-OS

EN 54-12 | END TO END | MULTI AND TO AND | UV+IR DETECTION | LASER POINTER

Linear-type optical smoke detector with point-to-point infrared or UV light
The system can be composed of a receiver and up to 7 transmitters.
The multi-point configuration increases significantly the detection capacity.
Range 6 to 150m depending on the reception angle and the transmission power - Great configuration flexibility and adaptability to architectural requirements - Sophisticated algorithm of the receiver permits the mapping and control of signals coming from the transmitters - Easy installation and alignment thanks to a wide reception angle of the receiver and great orientation facilities - Easy setting through dip-switch - Dynamic compensation of the deterioration of sensitivity due to dust deposits - Good vibration and alignment tolerance - High false alarm immunity
FM, UL, VDS, NF, CPD, EN 54-12 - Certification number 0333-CPD-075387

TFBD-OSI 10

RX UNIT | END TO END | RANGE 30÷150m | RX ANGLES h. 7° v. 4°

Receiver for standard transmitters - Range 30 to 150m - Reception angle 7° horizontal, 4° vertical

Item no. TF9TFBDOSI10

TFBD-OSI 90

RX UNIT | MULTI AND TO AND | RANGE 6 ÷ 34m 12 ÷ 68m | RX ANGLES h. 80° v. 48°

Receiver for operating with maximum 7 transmitters - Range 6 to 34m or 12 to 68m according to transmitter type - Reception angle 80° horizontal, 48° vertical

Item no. TF9TFBDOSI90

TFBD-OSE SP

STANDARD POWER TX UNIT | LITHIUM BATTERY

Standard power transmitter - Lithium battery (5 years autonomy)

Item no. TF9TFBDOSESP

TFBD-OSE SPW

STANDARD POWER TX UNIT

Standard power transmitter - External 24V DC power supply

Item no. TF9TFBDOSESPW

TFBD-OSE HPW

HIGH POWER TX UNIT

High power transmitter for multi-point configurations - External 24V DC power supply

Item no. TF9TFBDOSEHPW

TFBD-5000 50

EN 54-12 | REFLECTION TX RX | IR DETECTION | LASER POINTER | SELF-ALIGNING | RANGE 5÷50m

Linear-type optical smoke detector with reflective infrared light
The system is composed of a controller wired to a receiver-transmitter and a reflection panel.
The controller can be installed remotely, the electrical connection between the controller and the receiver-transmitter is made with 2 wires. It is possible to connect a second receiver-transmitter to double the detection area.
Independent functional settings as well as alarm and failure outputs for each pair - Programmable sensitivity - Range 5 to 50m - Integrated automated laser pointer - Dynamic compensation of the deterioration of sensitivity due to dust deposits - Automatic compensation of misalignment due to structural sinking - Good vibration tolerance - High false alarm immunity
FM, UL, VDS, NF, CPR, EN 54-12 - Certification number 0832-CPR-F0390

Item no. TF9TFBD500050

TFBDT-5000 50

Additional receiver-transmitter for TFBD-5000 50

EXTRA HEAD | RANGE 5÷50m

Item no. TF9TFBDT500050

TFBD-5000 100

EN 54-12 | REFLECTION TX RX | IR DETECTION | LASER POINTER | SELF-ALIGNING | RANGE 8÷100m

Linear-type optical smoke detector with reflective infrared light
The system is composed of a controller wired to a receiver-transmitter and a reflection panel.
The controller can be installed remotely, the electrical connection between the controller and the receiver-transmitter is made with 2 wires. It is possible to connect a second receiver-transmitter to double the detection area.
Independent functional settings as well as alarm and failure outputs for each pair - Programmable sensitivity - Range 50 to 100m - Integrated automated laser pointer - Dynamic compensation of the deterioration of sensitivity due to dust deposits - Automatic compensation of misalignment due to structural sinking - Good vibration tolerance - High false alarm immunity
FM, UL, VDS, NF, CPR, EN 54-12 - Certification number 0832-CPR-F0390

Item no. TF9TFBD5000100

TFBDT-5000 100

Additional receiver-transmitter - TFBD-5000 100

EXTRA HEAD | RANGE 8÷100m

Item no. TF9TFBDT5000100

TFBD-FR1

EN 54-12 | REFLECTION TX RX | IR DETECTION | LASER POINTER | SELF-ALIGNING | RANGE 5÷50m

Linear-type optical smoke detector with reflective infrared light
The system is composed of a receiver-transmitter and a reflection panel.
Status and alignment LED - Alarm and failure relay outputs - Programmable sensitivity - Range 5 to 50m - Servo-controlled laser alignment - Automatic compensation of misalignment - Good vibration tolerance - High false alarm immunity - Dynamic compensation of the deterioration of sensitivity due to dust deposits - Max. consumption 5mA - Operating voltage 14V...36V DC - Operating temperature -20°C...+55°C - IP55 - UL94 V0 polycarbonate casing - Dimensions (L x H x D) 130 x 181 x 134mm
EN 54-12 - Certification number 0832-CPR-F2237

Item no. TF9TFBDFR1

TFBD-5000 LRK

Kit of 3 reflection panels permitting the extension of the range of the TFBD-FR1 detectors to 120m and the TFBD-5000 detectors to 100m

REFLECTIVE UNIT LONG RANGE

Item no. TF9TFBD5000LRK

Linear smoke detectors

TFBD-EX

EN 54-12 | ATEX CATEGORY II 2 G D | ATEX ZONE 1 2 21 22 | END TO END TX—RX | IR DETECTION | LASER POINTER | RANGE 5 ÷ 100m | CAST ALUMINUM BOX

Linear-type optical smoke detector with point-to-point infrared light
The system is composed of a controller and a pair of infrared receiver and transmitter.
The controller can be installed remotely, the electrical connection between the controller and the receiver or the transmitter is made with 2 wires.
Programmable sensitivity - Adjustable range 10 to 100m - Dynamic compensation of the deterioration of sensitivity due to dust deposits - Good vibration and alignment tolerance - High false alarm immunity - Optional alignment tool and swivel mounting bracket
ATEX, EN 54-12 - Certification number 0786-CPD-20196

Item no. TF9TFBDEX

TFBD-3000 120

EN 54-12 | END TO END TX—RX | IR DETECTION | LASER POINTER | RANGE 5 ÷ 120m

Linear-type optical smoke detector with point-to-point infrared light
The system is composed of a controller and a pair of infrared receiver and transmitter.
The controller can be installed remotely, the electrical connection between the controller and the receiver or the transmitter is made with 2 wires. It is possible to connect a second pair of receiver and transmitter to double the detection area.
Independent functional settings as well as alarm and failure outputs for each pair - Programmable sensitivity - Adjustable range 5 to 120m - Integrated laser pointer - Dynamic compensation of the deterioration of sensitivity due to dust deposits - Good vibration and alignment tolerance - High false alarm immunity
VDS, CPD, UL, EN 54-12 - Certification number 0786-CPD-21162

Item no. TF9TFBD3000120

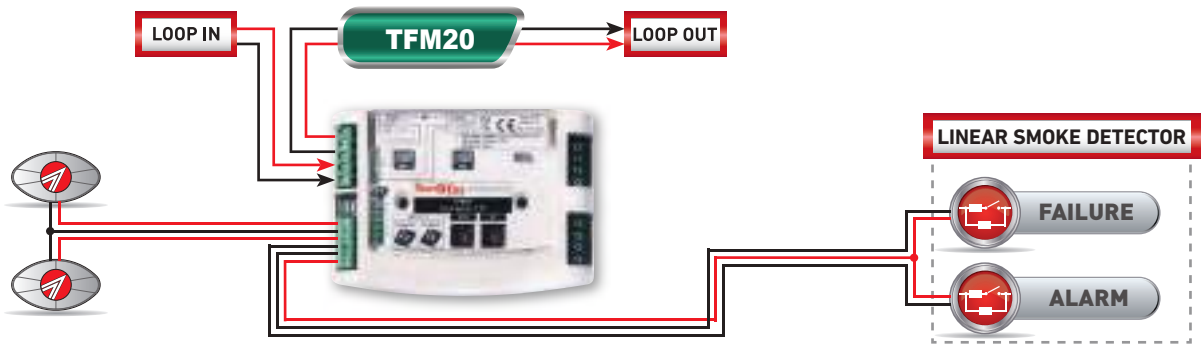
TFBDT-3000 120

Additional pair of receiver and transmitter for TFBD-3000 120

TX RX EXTRA PAIR | RANGE 5 ÷ 120m

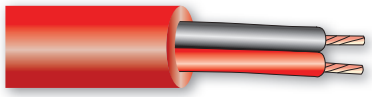
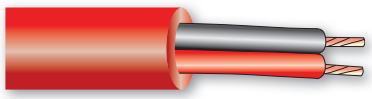
Item no. TF9TFBDT3000120

Connection scheme

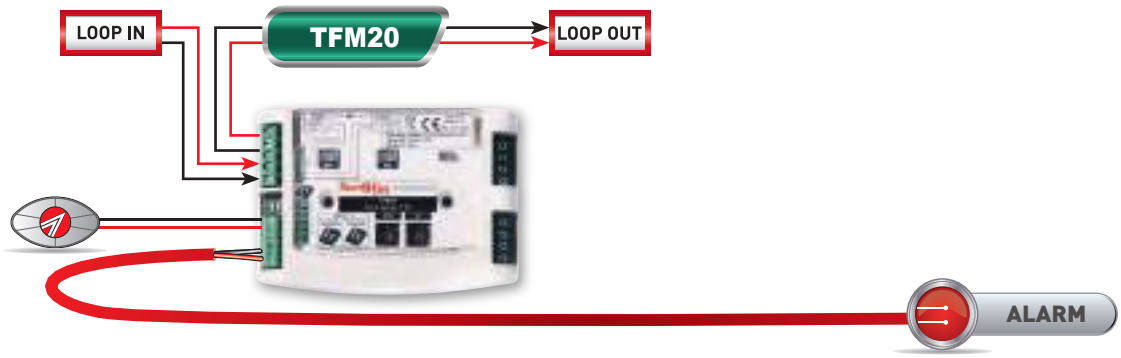


Heat detection cables

The non-resettable heat detection cables are composed of
a twisted pair of conductors that are insulated with thermosensitive polymers.
Melting of the coatings causes a short circuit and an alarm signal.
The heat detection cables are particularly apt for use in storage tanks, cable raceways, tunnels etc.

TFCTS-68EN	EN 54-28 · CPR EU 305/11 · HEAT-SENSITIVE 68°C · TWISTED CABLES · EN 50575 · Eca EUROCLASS · INDOORS OR OUTDOORS MAX +40°	
	Alarm temperature 68°C - Operating temperature max. 40°C - Withstand voltage max. 100V DC - Red thermoplastic coating - External diameter 4.5mm - Weight 25kg/km - 100m hanks EN 54-28 - CPR EU 305/11	
	Item no. TF12TFCTS68	
TFCTS-88EN	As TFCTS-68EN but with alarm temperature 88°C ±3°C and white thermoplastic coating	HEAT-SENSITIVE 88°C
	Item no. TF12TFCTS88	
TFCTS-105EN	As TFCTS-68EN but with alarm temperature 105°C ±3°C and black thermoplastic coating	HEAT-SENSITIVE 105°C
	Item no. TF12TFCTS105	
TFCTS-138EN	As TFCTS-68EN but with alarm temperature 138°C ±3°C and blue thermoplastic coating	HEAT-SENSITIVE 138°C
	Item no. TF12TFCTS138	
TFCTS-68 ULFM	UL FM · HEAT-SENSITIVE 68°C · TWISTED CABLES · INDOORS OR OUTDOORS -40° +46°	
	Alarm temperature 68°C - Operating temperature -40°C...+46°C - Withstand voltage max. 100V DC -Red thermoplastic coating - External diameter 4mm - Weight 25kg/km - 100m hanks - UL/FM	
	Item no. TF12TFCTS68ULFM	
TFCTS-105 ULFM	Alarm temperature 105°C - Operating temperature -40°C...+79°C - Withstand voltage max. 100V DC - Red thermoplastic coating - External diameter 4mm - Weight 25kg/km - 100m hanks - UL/FM	HEAT-SENSITIVE 105°C · INDOORS OR OUTDOORS -40° +79°
	Item no. TF12TFCTS105ULF	

Connection scheme



Electronic heat detectors

The electronic heat detectors permit heat detection in the static or rate-of-rise mode.
Functional attributes, such as thermal class and suffix,
can be set in the factory according to the customer's requirements.

TFDC-TR4

EN 54-5 | HEAT | RATE-OF-RISE | OUTDOORS -20°+110° | CAST ALUMINUM BOX

Electronic point heat detector
Especially suitable for high-risk industrial applications and dangerous atmospheres - Completely immune to electromagnetic disturbances, dust, humidity and exhaust gas - Programmable functions: thermal class A1, A2, B, C or D, suffix R or S, alarm reset, LED signaling - Short circuit isolator - Connection to loop through addressable interface TFMC1 (not included) - Self test - Stand-by consumption 30µA - Alarm consumption approx. 20mA - Operating temperature -20°C...+110°C - IP65 - Aluminum casing - Dimensions (L x H x D) 203 x 95 x 60mm
EN 54-5:2000 + A1:2002 - Certification number 0068-CPR-009

Item no. TF12TFDCTR4

TFDC-TR5

EN 54-5 | ATEX CATEGORY II 2 G | ATEX ZONE 1 2 | HEAT | RATE-OF-RISE | OUTDOORS -20°+110° | CAST ALUMINUM BOX

Electronic point heat detector
Especially suitable for potentially explosive atmospheres - Completely immune to electromagnetic disturbances, dust, humidity and exhaust gas - Programmable functions: thermal class A1, A2, B, C or D, suffix R or S, alarm reset, LED signaling - Short circuit isolator - Connection to loop through addressable interface TFMC1 (not included) - Self test - Stand-by consumption 30µA - Alarm consumption approx. 20mA - Operating temperature -20°C...+110°C - IP66 - Aluminum casing - 1 way tube connector 1/2 inch NPT - Dimensions (L x H x D) 160 x 85 x 75mm
ATEX, EN 54-5:2000 + A1:2002 - Certification number 0068-CPR-009

Item no. TTF12TFDCTR5

DETECTOR CONFIGURATION

THERMAL CLASS	
A1	Static 54°...65°C
A2	Static 54°...70°C
B	Static 69°...85°C
C	Static 84°...100°C
D	Static 99°...115°C

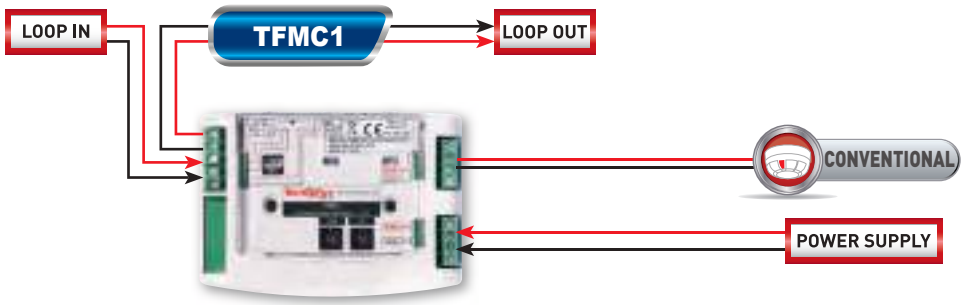
N.B. Other thermal classes have not been certified.

SUFFIX	
R	Static + rate-of-rise
S	Static

ALARM RESET	
M	Manual
A	Automatic

LED SIGNALING	
Mode 1	Off = stand-by
	On = alarm
Mode 2	Flashing = stand-by
	On = alarm
	Off = failure

Connection scheme



Optical flame detectors

The range of optical flame detectors offers models with multi-point infrared or dual technology (UV + IR) configurations. The detectors are suitable for indoor and outdoor use and even for use in environments with high risk of explosion.

TFDF-EX IR2

EN 54-10 | SIL2 | ATEX CATEGORY II 2 G D | ATEX ZONE 1 2 21 22 | 2 x IR DETECTION | CAST ALUMINUM BOX

Dual infrared (IR2) flame detector
Operating range 0.75µm...2.7µm - Outputs: proportional 4-20mA, alarm relay and failure relay - High immunity to light interference - High smoke, vapor and dust tolerance - Programmable response time and sensitivity - Self test - Operating voltage 14V...30V DC - Stand-by consumption 8mA - Operating temperature -10°C...+55°C - EXD - IP66 - Aluminum casing - Dimensions (L x H x D) 146 x 150 x 137mm
SIL2, ATEX, EN 54-10 - Certification number 0832-CPR-F0577

Item no. TF14TFDFIR2EX

TFDF-EX IR3

As TFDF-EX IR2 but with triple infrared (IR3) detector
SIL2, ATEX, EN 54-10 - Certification number 0832-CPR-F0578

3 x IR DETECTION

Item no. TF14TFDFIR3EX

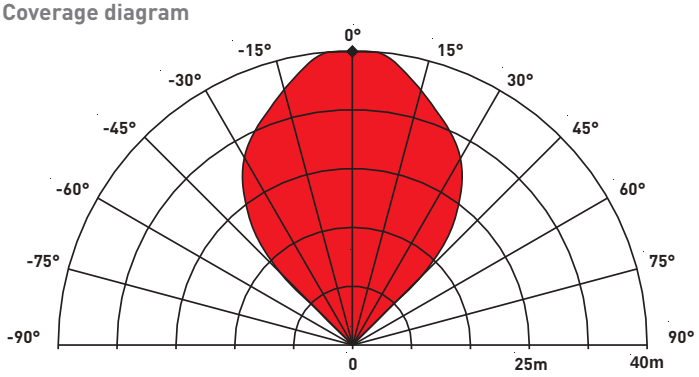
TFDF-EX UVIR2

As TFDF-EX IR2 but with UV and dual infrared (IR2) detectors and operating ranges UV 185nm...260nm, IR 1µm...2.7µm
SIL2, ATEX, EN 54-10 - Certification number 0832-CPR-F0579

2 x IR 1 x UV DETECTION

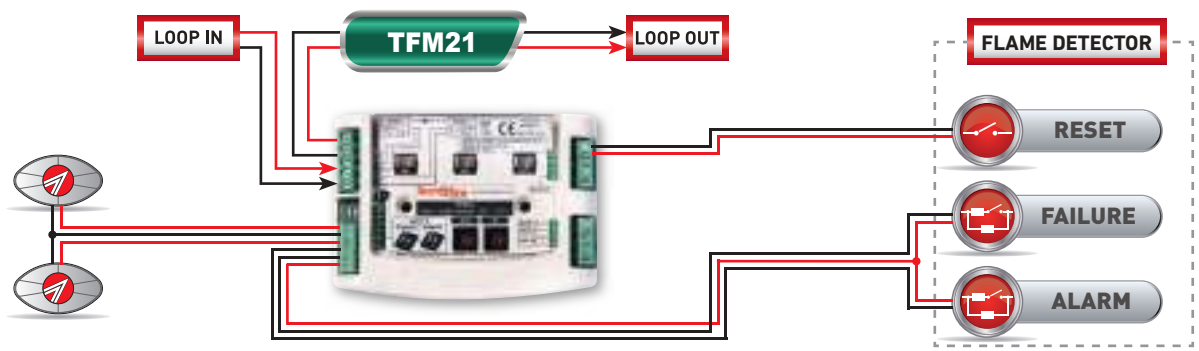
Item no. TF14TFDFUVIR2EX

Coverage diagram



DETECTION FEATURES			
FLAME COLOR	FLAME SIZE	FLAME DISTANCE	AVERAGE RESPONSE TIME
Yellow	0.3 x 0.3m	25m	12s
White	0.5 x 0.5m	25m	25s
Invisible	0.1 x 0.5m	12m	8s

Connection scheme



Optical flame detectors

TFDF IR2

EN 54-10 | SIL2 | 2 x IR DETECTION | CAST ALUMINUM BOX

Dual infrared (IR2) flame detector
Operating range 0.75µm...2.7µm - Outputs: proportional 4-20mA, alarm relay, signaling relay with potential-free changeover contacts - High immunity to light interference - High smoke, vapor and dust tolerance - Programmable response time and sensitivity - Self test - Operating voltage 14V...30V DC - Stand-by consumption 8mA - Operating temperature -10°C...+55°C - IP66 - Aluminum casing - Dimensions (L x H x D) 108 x 142 x 82mm
SIL2, EN 54-10 - Certification number 0832-CPR-F0582

Item no. TF14TFDFIR2

TFDF IR3

As TFDF IR2 but with triple infrared (IR3) detector
SIL2, EN 54-10 - Certification number 0832-CPR-F0583

3 x IR DETECTION

Item no. TF14TFDFIR3

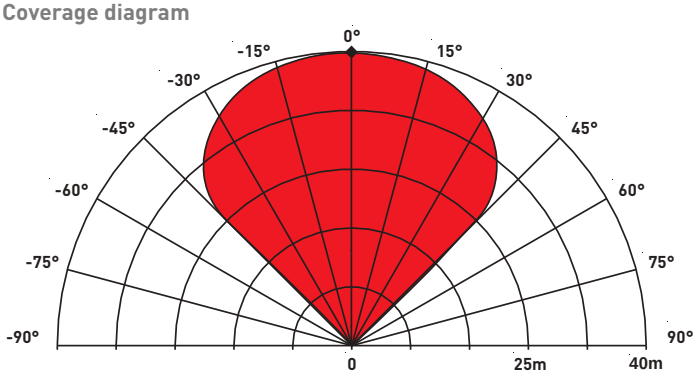
TFDF UVIR2

As TFDF IR2 but with UV and dual infrared (IR2) detectors and operating ranges UV 185nm...260nm, IR 1µm...2.7µm
SIL2, EN 54-10 - Certification number 0832-CPR-F0584

2 x IR 1 x UV DETECTION

Item no. TF14TFDFUVIR2

Coverage diagram



DETECTION FEATURES			
FLAME COLOR	FLAME SIZE	FLAME DISTANCE	AVERAGE RESPONSE TIME
Yellow	0.3 x 0.3m	25m	12s
White	0.5 x 0.5m	25m	25s
Invisible	0.1 x 0.5m	12m	8s

OPTICAL FLAME DETECTORS - Accessories

TFDF-SSAM

Mounting bracket adjustable on 2 axes for TFDF series detectors

Item no. TF14TFDFSSAM

TFDF-WSSS

Protection plate for TFDF-EX series detectors

Item no. TF14TFDFWSSS

TFDF-SSWS

Protection plate for TFDF series detectors

Item no. TF14TFDFSSWS

TFDF-FT

Tester for TFDF and TFDF-EX series detectors

Item no. TF14TFDFFT

Gas detectors

A comprehensive range of gas detectors is available for the detection of toxic, flammable and refrigerant gases in the indoors, outdoors and even in high-risk environments

TOXIC GAS DETECTORS

TFDG-EXD

EN 61000 · SIL1 · ATEX CATEGORY II 2 G · ATEX ZONE 1 2 · TOXIC GAS · ELECTRO-CHEMICAL CELL · CAST ALUMINUM BOX

Gas detector with electrochemical cell and proportional 4-20mA output for zone 1 category 2
Operating pressure 80KPa...110KPa - Max. air velocity <6m/s - Zero tracking and self-test - Plug-in calibration tool - Optional 3-relay board (to be mounted inside the casing) - Operating voltage 12V...24V DC - Max. consumption 70mA @ 12V - Die-cast aluminum casing - Dimensions (L x H x D) 130 x 155 x 90mm
ATEX EXD II2G, SIL1, EMC EN 50270:2011, EN 61000

GAS	ITEM	ITEM NO.	GAS	ITEM	ITEM NO.
Toxic Ammonia	**TFDG-EXD AMCT**	**TF10TFDGAMCTEXD**	Carbon Monoxide	**TFDG-EXD COE**	**TF10TFDGCOEEXD**
Hydrogen Sulfide	**TFDG-EXD IDS**	**TF10TFDGIDSEXD**	Oxygen	**TFDG-EXD OXG**	**TF10TFDGOXGEXD**
Nitric Oxide	**TFDG-EXD MDA**	**TF10TFDGMDAEXD**			

TFDG-EXN

EN 61000 · SIL1 · ATEX CATEGORY II 3 G · ATEX ZONE 2 · TOXIC GAS · ELECTRO-CHEMICAL CELL · CAST ALUMINUM BOX

Gas detector with electrochemical cell and proportional 4-20mA output for zone 2 category 3
Operating pressure 80KPa...110KPa - Max. air velocity <6m/s - Zero tracking and self-test - Plug-in calibration tool - Optional 3-relay board (to be mounted inside the casing) - Operating voltage 12V...24V DC - Max. consumption 70mA @ 12V - Die-cast aluminum casing - Dimensions (L x H x D) 106 x 170 x 65mm
ATEX EXN II3G, SIL1, EMC EN 50270:2011, EN 61000

GAS	ITEM	ITEM NO.	GAS	ITEM	ITEM NO.
Toxic Ammonia	**TFDG-EXN AMC**	**TF10TFDGAMCEXN**	Carbon Monoxide	**TFDG-EXN COE**	**TF10TFDGCOEEXN**
Ethylene	**TFDG-EXN ETL**	**TF10TFDGETLEXN**	Oxygen	**TFDG-EXN OXG**	**TF10TFDGOXGEXN**
Hydrogen Sulfide	**TFDG-EXN IDS**	**TF10TFDGIDSEXN**			

TFDG-PK

EN 61000 · TOXIC GAS · ELECTRO-CHEMICAL CELL · CAST ALUMINUM BOX

Gas detector with electrochemical cell and proportional 4-20mA output
Zero tracking and self-test - Plug-in calibration tool - Optional 3-relay board (to be mounted inside the casing) - Operating voltage 12V...24V DC - Max. consumption 40mA @ 12V - Operating temperature -10°C...+60°C - IP55 - Die-cast aluminum casing - Dimensions (L x H x D) 100 x 180 x 65mm
EMC EN 50270:2011, EN 61000

GAS	ITEM	ITEM NO.	GAS	ITEM	ITEM NO.
Nitrogen Dioxide	**TFDG-PK BDA**	**TF10TFDGBDAPK**	Carbon Monoxide	**TFDG-PK COE**	**TF10TFDGCOEPK**
Carbon Dioxide	**TFDG-PK CO2**	**TF10TFDGCO2PK**			

FLAMMABLE GAS DETECTORS

TFDG-EXD

EN 61000 | SIL1 | ATEX CATEGORY II 2 G | ATEX ZONE 1 2 | FLAMMABLE GAS | CATALYTIC DETECTOR | CAST ALUMINUM BOX

Catalytic gas detector with proportional 4-20mA output for zone 1 category 2
Operating pressure 80KPa...110KPa - Max. air velocity <6m/s - Zero tracking and self-test - Plug-in calibration tool - Optional 3-relay board (to be mounted inside the casing) - Operating voltage 12V...24V DC - Max. consumption 130mA @ 12V - Die-cast aluminum casing - Dimensions (L x H x D) 130 x 155 x 90mm
ATEX EXD II2G, SIL1, EMC EN 50270:2011, EN 61000

GAS	ITEM	ITEM NO.	GAS	ITEM	ITEM NO.
Butyl Acetate	**TFDG-EXD ADB**	**TF10TFDGADBEXD**	Diethyl Ether	**TFDG-EXD ETE**	**TF10TFDGETEEXD**
Ethyl Acetate	**TFDG-EXD ADE**	**TF10TFDGADEEXD**	Ethylene	**TFDG-EXD ETL**	**TF10TFDGETLEXD**
Vinyl Acetate	**TFDG-EXD ADV**	**TF10TFDGADVEXD**	LPG	**TFDG-EXD GPL**	**TF10TFDGGPLEXD**
Acetylene	**TFDG-EXD ACL**	**TF10TFDGACLEXD**	Hydrogen	**TFDG-EXD IDR**	**TF10TFDGIDREXD**
Acetone	**TFDG-EXD ACT**	**TF10TFDGACTEXD**	Iso Butane	**TFDG-EXD IBT**	**TF10TFDGIBTEXD**
Acetic Acid	**TFDG-EXD ACA**	**TF10TFDGACAEXD**	Iso Pentane	**TFDG-EXD IPT**	**TF10TFDGIPTEXD**
Butyl Alcohol	**TFDG-EXD ALB**	**TF10TFDGALBEXD**	Jet Propellant Type 8	**TFDG-EXD JP8**	**TF10TFDGJP8EXD**
Ethyl Alcohol	**TFDG-EXD AET**	**TF10TFDGAETEXD**	Methane	**TFDG-EXD MET**	**TF10TFDGMETEXD**
Iso Butyl Alcohol	**TFDG-EXD AIB**	**TF10TFDGAIBEXD**	Methyl Ethyl Ketone	**TFDG-EXD MKT**	**TF10TFDGMKTEXD**
Iso Propyl Alcohol	**TFDG-EXD AIP**	**TF10TFDGAIPEXD**	Nonane	**TFDG-EXD NON**	**TF10TFDGNONEXD**
Propyl Alcohol	**TFDG-EXD APR**	**TF10TFDGAPREXD**	Ethylene Oxide	**TFDG-EXD ODE**	**TF10TFDGODEEXD**
Ammonia	**TFDG-EXD AMC**	**TF10TFDGAMCEXD**	Pentane	**TFDG-EXD PTN**	**TF10TFDGPTNEXD**
Benzene	**TFDG-EXD BNZ**	**TF10TFDGBNZEXD**	Propane	**TFDG-EXD PRP**	**TF10TFDGPRPEXD**
Butane	**TFDG-EXD BTN**	**TF10TFDGBTNEXD**	Propylene	**TFDG-EXD PRL**	**TF10TFDGPRLEXD**
Cyclohexane	**TFDG-EXD CES**	**TF10TFDGCESEXD**	Styrene	**TFDG-EXD STN**	**TF10TFDGSTNEXD**
Cyclopentane	**TFDG-EXD CPT**	**TF10TFDGCPTEXD**	Toluene	**TFDG-EXD TOL**	**TF10TFDGTOLEXD**
Heptane	**TFDG-EXD EPT**	**TF10TFDGEPTEXD**	Tri Methylbenzene	**TFDG-EXD TMB**	**TF10TFDGTMBEXD**
Hexane	**TFDG-EXD ESN**	**TF10TFDGESNEXD**	Patrol Vapors	**TFDG-EXD VDB**	**TF10TFDGVDBEXD**
Ethane	**TFDG-EXD ETN**	**TF10TFDGETNEXD**	Xylene	**TFDG-EXD XLN**	**TF10TFDGXLNEXD**

TFDG-EXN

EN 61000 | SIL1 | ATEX CATEGORY II 3 G | ATEX ZONE 2 | FLAMMABLE GAS | CATALYTIC DETECTOR | CAST ALUMINUM BOX

Catalytic gas detector with proportional 4-20mA output for zone 2 category 3
Operating pressure 80KPa...110KPa - Max. air velocity <6m/s - Zero tracking and self-test - Plug-in calibration tool - Optional 3-relay board (to be mounted inside the casing) - Operating voltage 12V...24V DC - Max. consumption 130mA @ 12V - Die-cast aluminum casing - Dimensions (L x H x D) 106 x 170 x 65mm
ATEX EXN II3G, SIL1, EMC EN 50270:2011, EN 61000

GAS	ITEM	ITEM NO.	GAS	ITEM	ITEM NO.
Butane	**TFDG-EXN BTN**	**TF10TFDGBTNEXN**	Propane	**TFDG-EXN PRP**	**TF10TFDGPRPEXN**
LPG	**TFDG-EXN GPL**	**TF10TFDGGPLEXN**	Patrol Vapors	**TFDG-EXN VDB**	**TF10TFDGVDBEXN**
Methane	**TFDG-EXN MET**	**TF10TFDGMETEXN**			

TFDG-PK

EN 61000 | FLAMMABLE GAS | CATALYTIC DETECTOR | CAST ALUMINUM BOX

Catalytic gas detector with proportional 4-20mA output
Zero tracking and self-test - Plug-in calibration tool - Optional 3-relay board (to be mounted inside the casing) - Operating voltage 12V...24V DC - Max. consumption 90mA @ 12V - Operating temperature -10°C...+60°C - IP55 - Die-cast aluminum casing - Dimensions (L x H x D) 100 x 180 x 65mm
EMC EN 50270:2011, EN 61000

GAS	ITEM	ITEM NO.	GAS	ITEM	ITEM NO.
LPG	**TFDG-PK GPL**	**TF10TFDGGPLPK**	Patrol Vapors	**TFDG-PK VDB**	**TF10TFDGVDBPK**
Methane	**TFDG-PK MET**	**TF10TFDGMETPK**			

REFRIGERANT GAS DETECTORS

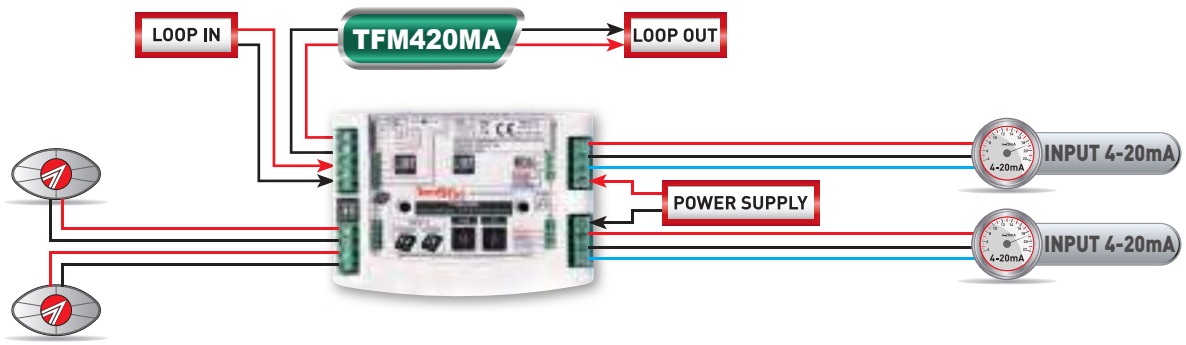
TFDG-EXD

EN 61000 | SIL1 | ATEX CATEGORY Ex II 2 G | ATEX ZONE 1 2 | FLAMMABLE GAS | INFRARED DETECTOR | CAST ALUMINUM BOX

Infrared gas detector with proportional 4-20mA output for zone 1 category 2 and 0/2000ppm infrared sensor - Operating pressure 80KPa...110KPa - Max. air velocity <6m/s - Zero tracking and self-test - Plug-in calibration tool - Optional 3-relay board (to be mounted inside the casing) - Operating voltage 12V...24V DC - Max. consumption 70mA @ 12V - Die-cast aluminum casing - Dimensions (L x H x D) 106 x 170 x 65mm
ATEX EXD II2G, SIL1, EMC EN 50270:2011, EN 61000

GAS	ITEM	ITEM NO.	GAS	ITEM	ITEM NO.
SF6	**TFDG-EXD SF6**	**TF10TFDGSF6EXD**	R404A	**TFDG-EXD R404A**	**TF10TFDGR404EXD**
R1234YF	**TFDG-EXD R1234YF**	**TF10TFDGR123EXD**	R407A	**TFDG-EXD R407A**	**TF10TFDGR407EXD**
R125	**TFDG-EXD R125**	**TF10TFDGR125EXD**	R507	**TFDG-EXD R507**	**TF10TFDGR507EXD**
R134A	**TFDG-EXD R134A**	**TF10TFDGR134EXD**			

Connection scheme



Flood detectors

The range of conventional devices provides point or linear flood detectors
for indoor and outdoor use, especially suitable for monitoring of ditches and interspaces.

TFRPL-108

Point flood detector for the detection of water and a great variety of compounds
Especially suitable for monitoring flooding of ditches and interspaces - Signaling LED for operating status - 1 meter prewired cable - Free changeover relay with 1A 30V DC contacts - Operating voltage 10V...30V DC - Maximum consumption 30mA - Operating temperature 0°C...+60°C - IP68 - Casing ABS - Dimensions (L x H x D) 73 x 92 x 36mm

Item no. TF12TFRPL108

TFSLA

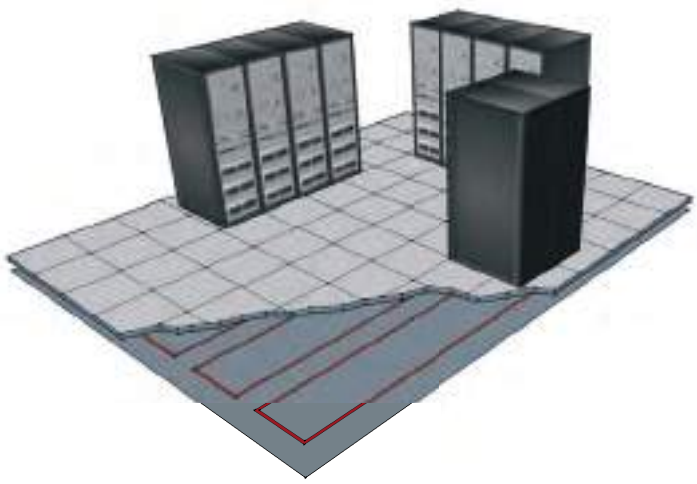
Linear water leak detector
Detection tape made of 2 stainless steel wires on inherently fireproof polyester fabric - Stable sensitivity along the track - Resistance <6 ohm/m - Capacity <10pF/m - Operating temperature max. 200°C - Tape length 25mm - White color - 25m hanks

Item no. TF12TFSLA

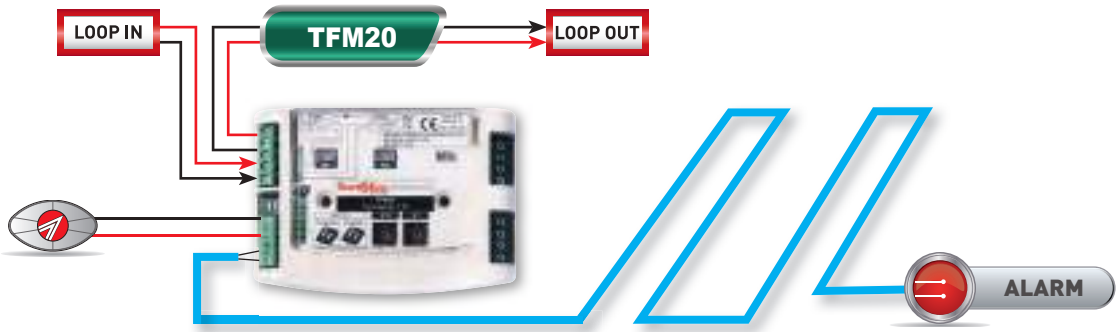
Application

Its flexibility and adaptability makes TFSLA capable of satisfying any installation requirement. The tape can be placed both horizontally and vertically, as well as wrapped around pipes.

It is particularly suitable for the detection of water leaks in large areas, such as the interspaces of raised floors.



Connection scheme



The Tecnofire software offers multiple facilities for programming and managing the Tecnofire fire alarm systems and, supporting the sophisticated diagnostic tools of the exclusive RSC® technology, allows to fully exploit their great potentialities. The printable reports certify functioning and programming of the system and the numerous customizable and constantly updated software services permit to provide the customers with interesting and innovative after-sales services.

Software

PROGRAMMING
Software for programming of the Tecnofire systems locally, through the serial bus, or via LAN

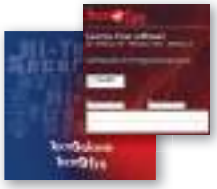
REMOTE MANAGEMENT WITH TCP/IP
Software for remote management of the Tecnofire systems via LAN and WAN

MONITORING
Software for monitoring of the Tecnofire systems locally, through the serial bus, or via LAN

Software

PROGRAMMING

TFSW-PROGRAMMAZIONE



Software for programming of the Tecnofire systems
RSC® management - Management of up to 32 floor plans per system - Connection via serial bus or Ethernet LAN - Windows 32/64 bit compatible

Item no. TF15TFSWPRG

USB cable for direct connection of the fire alarm panel

TFCAVO-USB TFA — **Item no. TF1TFCAVOUSB**

REMOTE MANAGEMENT WITH TCP/IP

TFSW-TCP/IP

Software for remote programming and monitoring of the Tecnofire systems using TCP/IP proprietary protocols
Data encryption with customized passphrases - RSC® management - Management of up to 32 floor plans per system - Connection via serial bus, Ethernet LAN or WAN - Windows 32/64 bit compatible
N.B. The software is available in two configurations for the management of 100 or 1000 systems. It is protected by dongle (to be ordered separately).

TFSW-TCP/IP 100 — **Item no. TF15TFSWTCP100**

TFSW-TCP/IP 1000 — **Item no. TF15TFSWTCP1000**

USB-RS232-RS485-TTL interface
USB cable included
N.B. The PROG USB functions as dongle for the software TFSW-TCP/IP.

TFPROG USB — **Item no. TF1TFPROGUSB**

MONITORING

TFSW-TECNOMONITOR

Software for monitoring of the Tecnofire systems
RSC® management - Management of up to 32 floor plans per system - Connection via serial bus or Ethernet LAN - Windows 32/64 bit compatible
N.B. The software is protected by dongle (to be ordered separately).

Item no.TF15TFSWTECNOM

USB-RS232-RS485-TTL interface
USB cable included
N.B. The PROG USB functions as dongle for the software TFSW-TECNOMONITOR.

TFPROG USB — **Item no. TF1TFPROGUSB**

LICENSE OPTIONS

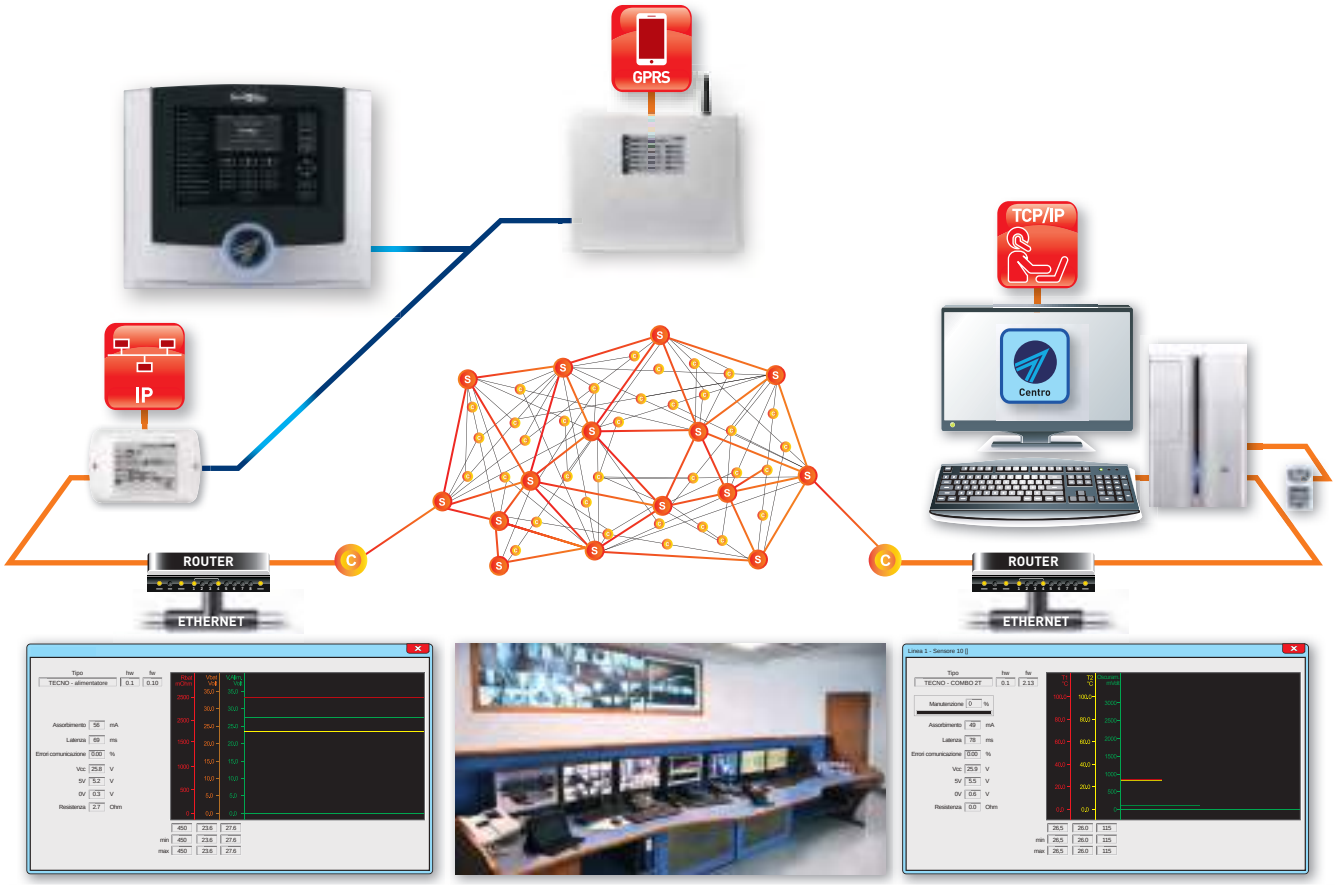
TFSW-TECNOMSG **Item no. TF15TFSWTMSG**	License option for the software TFSW-PROGRAMMAZIONE and TFSW-TCP/IP permitting the customization of the vocabulary of the fire alarm panels

SERVICES

TFSW-COPIA **Item no. TF15TFSWCOPIA**	Copy of the user license for any Tecnofire software

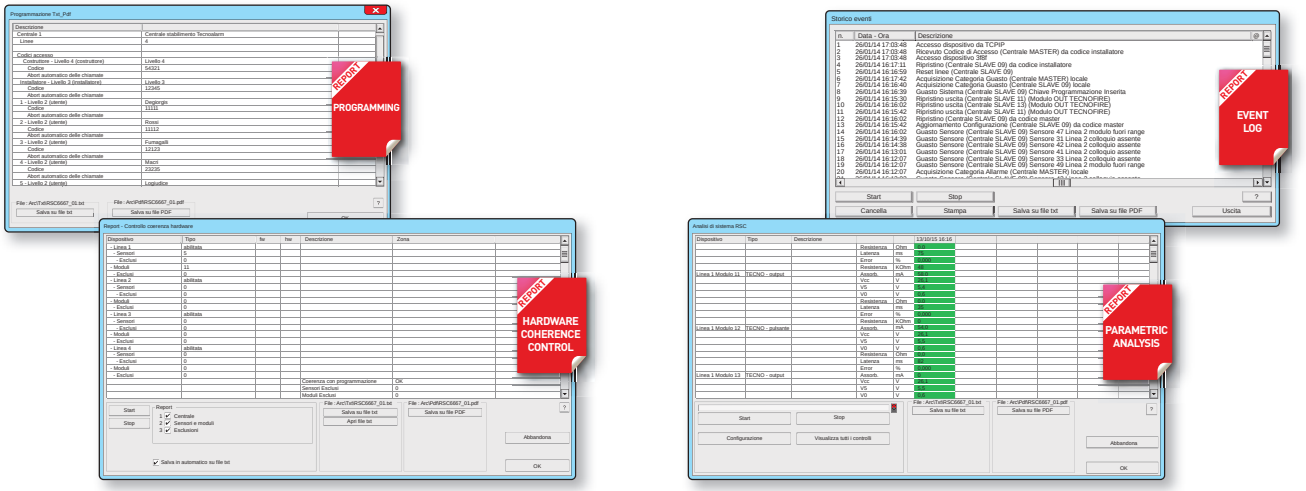
Added value

The remote management software is an investment which increases the professional value of the installation company and reduces the costs of the management of the systems. It allows to remotely assess the need for technical measures and to define the ordinary and preventive maintenance operations. Remote management minimizes the need for travelling the territory, and thus the connected costs.



Documentation

The programming and remote management software, TFSW-PROGRAMMAZIONE and TFSW-TCP/IP, allow to produce documents which certify the correct programming and functioning of the system.

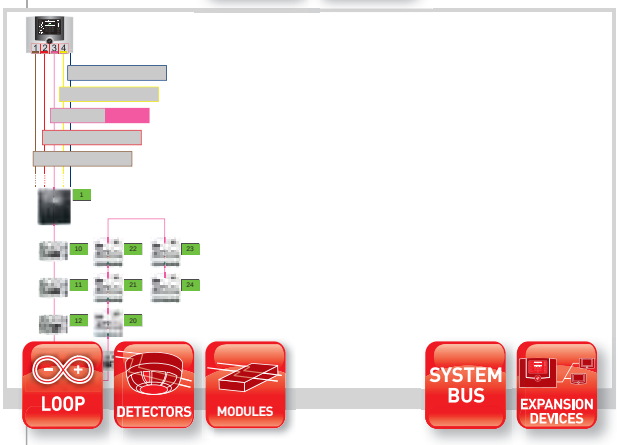


RSC® (Remote Sensitivity Control) technology

RSC® (Remote Sensitivity Control) technology allows to electronically control the Tecnofire systems from a distance. The sophisticated programming software allows the installer to program, manage and control the operating parameters of all the devices the system is composed of.

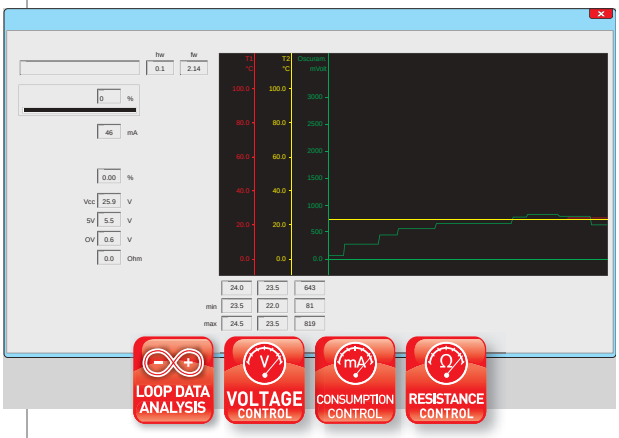
SYSTEM CONFIGURATION

System configuration
The singularity of RSC® technology (Remote Sensitivity Control) consists in the possibility of programming and checking, both locally and remotely, all of the system's operating parameters, starting with those of the control panel up to those of the detection and signaling devices connected to the Master Bus and Slave Bus. The analysis and diagnosis tools permit checking of the electrical and operating parameters on demand, whenever it is considered necessary.



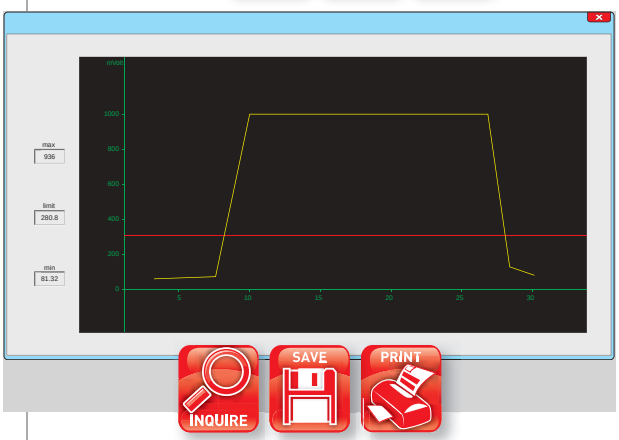
HARDWARE PLAN
LOOP 1 2 3 4 ED

Hardware
The main screen of the control panel reassumes the hardware of the system. It shows the icon of the control panel where the loops and the serial bus converge. The lines representing the loops and the serial bus are only viewed if devices have been programmed. A button next to each line indicates the quantity of connected and programmed devices. By clicking on the button, the icons of the connected devices are viewed with a label indicating its serial address. A color code shows the status of the device. By clicking on the device icons, it is possible to exclude/include the devices, activate the LED and signaling outputs.



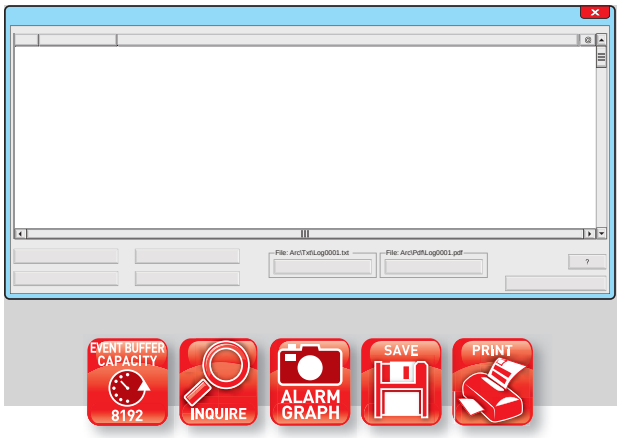
MONITOR DEVICE

Functioning monitor
The Functioning monitor tool gives access to the diagnostic screens and allows to monitor functioning of the devices. The diagnostic screens vary depending on the devices and dynamically and graphically display the relevant electric variables concerning functioning. For instance, temperature trends are shown for the heat detectors, smoke chamber signals are shown for the optical smoke detectors.
For these detectors, the sensitivity of the smoke chamber is monitored, too.



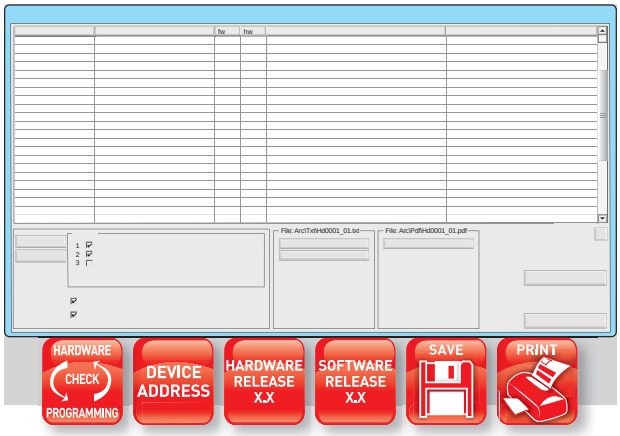
ALARM GRAPH

Alarm graph
The alarms coming from the detectors connected to the loop are stored in the system's event buffer together with a graph indicating functioning at the moment the alarm has occurred. By analyzing the graph it is possible to determine and understand the cause of the alarm. The alarm graphs are automatically downloaded and stored by the software and remain available for future inquiries.



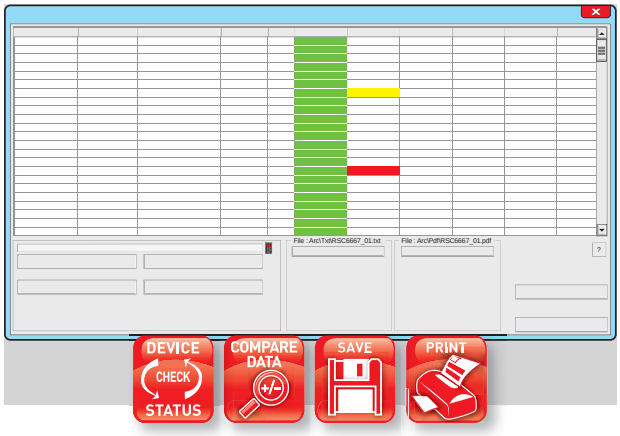
EVENT LOG

Event log
The event log file is stored by the software and is available any time for inquiries. It contains the events relating to functioning of the system, i.e. alarm and prealarm, technical alarm and prealarm, failure and exclusion. The events are listed in reverse chronological order, with indication of the date and time of occurrence as well as the identification data and operating status of the devices. The alarm graphs of the detectors and modules connected to the loop are stored in the same storage directory. The size of the event log file is unlimited and increases by each download from the event buffer of the control panel, whereas the maximum capacity of the system's event buffer is 8,192 events.



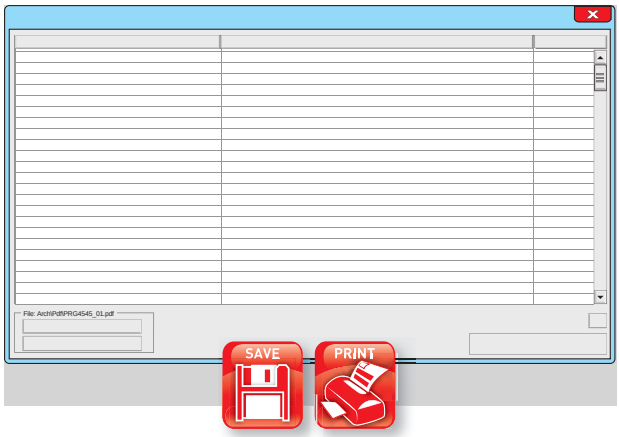
HARDWARE DIAGNOSE

Hardware coherence control
The Hardware coherence control tool analyzes the detectors and modules connected to the loop and the devices connected to the serial bus. It draws an overview of the logical and functional parameters of all system components, such as type, address, function, firmware and hardware release and associated zone. In addition, it verifies the consistency of the serial address and the configuration and signals any inconsistency. The overview can serve as an inspection report in order to certify the efficiency of the system on the basis of objective data.



PARAMETRIC ANALYSIS
CHECKING TEST ✓

Parametric analysis
The collection of data is one of the main functions of RSC® technology, in that it constitutes the prerequisite for supervising and controlling the operational efficiency of the devices. To perform this function, the Parametric analysis tool registers the electrical and operating parameters of the devices, compares them with those from previous and/or subsequent analyses and highlights any deviation. In this regard, it represents one of the preventive maintenance tools allowing to take actions before functional deterioration becomes critical and compromises the device's efficiency.



PROGRAMMING REPORT

Programming report
The software allows to draw a file containing the system's programming data. The programming report, including the date and time of creation, can be printed and attached to the documentation of the installation. It documents the state of programming of the system at the moment of commissioning.

Tecnofire presents its customers a wide and accurate selection of system accessories, which complement and complete the range of products of its catalogue. The accessories meet stringent quality requirements and comply with the applicable product standards. Their interaction with the Tecnofire automatic fire alarm systems has been tested and evaluated in order to obtain an excellent functional synergy and the maximum technical satisfaction.

Accessories

CABLES
A whole range of multicore electrical cables with class 30 or 120 flame-resistance rating is available for either power supply, loop or serial bus connection.

BATTERIES
The range offers high quality rechargeable batteries produced by market-leading companies, standard size 12V lead-acid batteries with different capacity.

ELECTROMAGNETIC DOOR HOLDERS
The range of accessories includes electromagnetic fire door holders with automatic release and holding forces ranking from 50 to 100kg.

Cables

The cables are made of Low Smoke Zero Halogen (LSZH) materials and resist to fire for either 120 minutes (PH120) or 30 minutes (PH30) as prescribed for fixed Automatic Fire Alarm (AFA) systems in high-rise buildings. They are suitable for laying in embedded and/or surface mount pipes, raceways or racks (even without separators).

PH30 CABLES

PH30 CABLES

Flexible red copper conductors - Insulating tape of elastomeric silicone compound - Jacket of flame-retardant LSZH thermoplastic compound - Red color - Operating temperature -30°C...+180°C - Insulation 100/100V - Test voltage 2000V

FIRE-RESISTANT CABLES PH30 LSZH FG40HM1 FOR AFA SYSTEMS		**FLAME-RETARDANCY TEST**	EN 60332-1, EN 60332-3, EN 60331-21, EN 50200 PH30
FIRE-RESISTANCE TEST	EN 50200 PH30	**FIRE-RETARDANCY TEST**	EN 60332-3-25

LOOP CABLE

EN 50200 | CEI 20-105 | PH 30/90 | LSZH CABLES | INSULATION 0.4KV | TWISTED CABLES | SHIELDED CABLES

Shielded fire-resistant power and signaling cable - RAMFIRECRO-F3 Fire Comet - U_0=400V - 2x... sqmm

ITEM	COMPOSITION	SPOOL	ITEM NO.	RESISTIVITY ohm/km	DIAMETER	BEND RADIUS	WEIGHT kg/km
TFCF-2X1 PH30	2x1	200m	TF18TFCF2X1PH3	<19.9	6.5mm (±2%)	65mm (±10%)	58
TFCF-2X1 PH30 90 500		500m	TF18TFCF2X1P35				
TFCF-2X15 PH30	2x1.5	200m	TF18TFCF2X15PH3	<13.6	7.7mm (±2%)	77mm (±10%)	81
TFCF-2X15 PH30 90 500		500m	TF18TFCF2X15PH35				

POWER SUPPLY CABLE

EN 50200 | CEI 20-105 | PH 30/90 | LSZH CABLES | INSULATION 0.4KV | TWISTED CABLES

Shielded fire-resistant power supply cable - RAMFIRECRO-F3 Fire Comet - U_0=400V - 2x... sqmm

ITEM	COMPOSITION	SPOOL	ITEM NO.	RESISTIVITY ohm/km	DIAMETER	BEND RADIUS	WEIGHT kg/km
TFCF-2X25 PH30	2x2.5	200m	TF18TFCF2X25PH3	<8.1	9mm (±2%)	90mm (±10%)	154
TFCF-2X25 PH30 90 500		500m	TF18TFCF2X25P35				

PH120 CABLES

PH120 CABLES

Flexible red copper conductors - Insulating tape of glass/mica and elastomeric compound - Jacket of flame-retardant LSZH thermoplastic compound (compliant with EN 50363-0, quality M1, VDE 0207HM2) - Red color - Operating temperature -25°C...+90°C - Insulation 100/100V - Test voltage 2000V

FIRE-RESISTANT CABLES PH120 LSZH FTE4OHM1 FOR AFA SYSTEMS		HALOGEN GAS EMISSION	<0.5%	EN 50267-2-1 IEC 60754-1
FIRE-RESISTANCE TEST	EN 50200 PH30-PH120 Test report IMQ 01SL00223/1	CORROSIVENESS OF COMBUSTION GAS	pH >4.3 Conductivity <10µS/mm	EN 50267-2-1 IEC 60754-1
FLAME-RETARDANCY TEST	EN 60332-1-2	SMOKE OPACITY	Transmittance >70%	EN 61034-2
FIRE-RETARDANCY TEST	EN 60332-3-25	TOXICITY INDEX	<2	Italian standard (CEI 30-37/4-0)

LOOP CABLE

EN 50200 | CEI 20-105 | PH 120 | LSZH CABLES | INSULATION 0.6/1KV | TWISTED CABLES | SHIELDED CABLES

Shielded fire-resistant power and signaling cable - Branded "Tecnofire Loop Fire-Speed" - U_0=400V

ITEM	COMPOSITION	HANK	ITEM NO.	RESISTIVITY OHM/KM	DIAMETER	BEND RADIUS	WEIGHT KG/KM
TFCF-2X075 SCH	2x0.75	100m	TF18TFCF2X075S	<26	7.00mm (±5%)	35mm (±10%)	57.30
TFCF-2X1 SCH	2x1	100m	TF18TFCF2X1S	<19.5	7.50mm (±5%)	37.5mm (±10%)	65.20
TFCF-2X15 SCH	2x1.5	100m	TF18TFCF2X15S	<13.3	8.70mm (±5%)	43.5mm (±10%)	87.20
TFCF-2X25 SCH	2x2.5	100m	TF18TFCF2X25S	<7.98	10.10mm (±5%)	50.5mm (±10%)	119.20

POWER SUPPLY CABLE

EN 50200 | CEI 20-105 | PH 120 | LSZH CABLES | INSULATION 0.6/1KV | TWISTED CABLES

Shielded fire-resistant power supply cable - Branded "Tecnofire 24V DC User" - U_0=400V

ITEM	COMPOSITION	HANK	ITEM NO.	RESISTIVITY ohm/km	DIAMETER	BEND RADIUS	WEIGHT kg/km
TFCF-2X15	2x1.5	100m	TF18TFCF2X15	<13.3	8.70mm (±5%)	43.5mm (±10%)	82.60
TFCF-2X25	2x2.5	100m	TF18TFCF2X25	<7.98	10.10mm (±5%)	50.5mm (±10%)	114.60

SERIAL BUS CABLE

EN 50200 | CEI 20-105 | PH 120 | LSZH CABLES | INSULATION 0.6/1KV | TWISTED CABLES | SHIELDED CABLES

Shielded fire-resistant power and signaling cable - Branded "Tecnofire BUS RS485"

ITEM	COMPOSITION	HANK	ITEM NO.	RESISTIVITY ohm/km	DIAMETER	BEND RADIUS	WEIGHT kg/km
TFCF-BUS485	2x1.5+2x1	100m	TF18TFCFBUS485	<13.3 (2x1,5) <19.5 (2x1)	11.60mm (±5%)	58mm (±10%)	164.50

Batteries

It is indispensable to ensure the continuity of service of the fire alarm systems, even in case of power failure.
For this reason, Tecnofire has selected a range of high-quality long-life batteries.

YUASA

TFBY-12 2

Rechargeable lead battery Yuasa 12V DC/2.3Ah
Dimensions (L x H x D) 178 x 64 x 34mm

Item no. TF17TFBY1221

TFBY-12 7

Rechargeable lead battery Yuasa 12V DC/7Ah
Dimensions (L x H x D) 151 x 97.5 x 65mm

Item no. TF17TFBY127

TFBY-12 12

Rechargeable lead battery Yuasa 12V DC/12Ah
Dimensions (L x H x D) 151 x 97.5 x 98mm

Item no. TF17TFBY1212

TFBY-12 17

Rechargeable lead battery Yuasa 12V DC/17Ah
Dimensions (L x H x D) 181 x 167 x 76mm

Item no. TF17TFBY1217

FIAMM

TFBF-12 2

Rechargeable lead battery Fiamm 12V DC/2Ah
Dimensions (L x H x D) 178 x 67 x 34.5mm

Item no. TF17TFBF122

TFBF-12 7

Rechargeable lead battery Fiamm 12V DC/7.2Ah
Dimensions (L x H x D) 151 x 99 x 65mm

Item no. TF17TFBF1272

TFBF-12 12

Rechargeable lead battery Fiamm 12V DC 12Ah
Dimensions (L x H x D) 151 x 99 x 98mm

Item no. TF17TFBF1212

TFBF-12 18

Rechargeable lead battery Fiamm 12V DC 18Ah
Dimensions (L x H x D) 181 x 165.5 x 76mm

Item no. TF17TFBF1218

Electromagnetic door holders

A comprehensive range of electromagnetic fire door holders
is available including heavy-duty models and those with automatic release.

TFEL-50

EN 1155 | HOLDING FORCE 50kg | WALL OR FLOOR MOUNTING

Electromagnetic fire door holder with emergency release and cushioned armature
Holding force 50kg - Power supply voltage 24V DC - Max. consumption 60mA - Surface wall mounting or floor mounting - Casing ABS V0 - Dimensions (L x H x D) 72 x 105 x 40mm - White color
EN 1155 - Certification number 0407-CPR-055

Item no. TF8TFEL50

TFEL-100

As TFEL-50 but with holding force 100kg - Max. consumption 100mA - Dimensions (L x H x D) 72 x 105 x 52mm - Black color

HOLDING FORCE 100kg

Item no. TF8TFEL100

TFELS-50 150

EN 1155 | HOLDING FORCE 50kg | WALL OR FLOOR MOUNTING

Electromagnetic fire door holder with emergency release and cushioned armature
Holding force 50kg - Power supply voltage 24V DC - Max. consumption 60mA - Surface wall mounting or floor mounting - Mounting bracket with max. reach 150mm - Casing ABS V0 - Dimensions (L x H) 105 x 105mm - Black color
EN 1155 - Certification number 0407-CPR-055

Item no. TF8TFELS50150

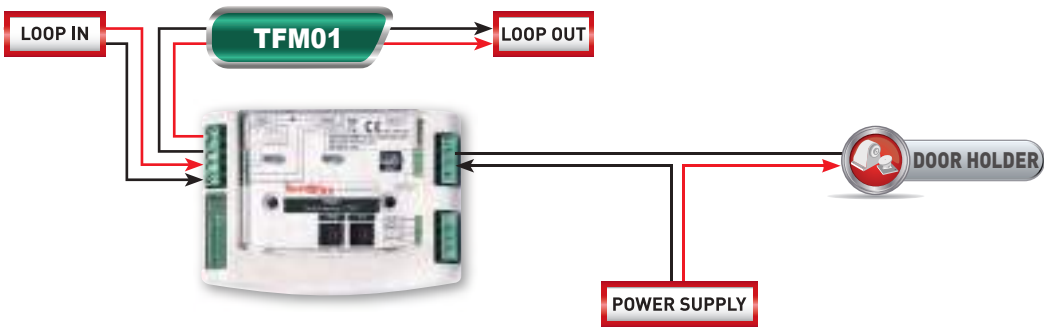
TFELS-100 150

As TFELS-50 150 but with holding force 100kg - Max. consumption 100mA

HOLDING FORCE 100kg

Item no. TF8TFELS100150

Connection scheme



ELECTROMAGNETIC DOOR HOLDERS - Accessories

TFEL-STP

Floor mounting bracket - Varnished steel - Dimensions (L x H x D) 72 x 135 x 48mm

Item no. TF8TFELTP200

TFELTP-200

Spacer for telescopic holder - Length 100mm (cut for shorter lengths)

Item no. TF8TFSTP

The company's communication strategy aims at enhancing the brand Tecnofire and strengthening the goals achieved so far. Tecnofire promotes and communicates effectively to the market the excellence of their products, with harmonized procedures, capable of valuing and transmitting cognitively the brand identity, with product demonstration tools, display equipment, coordinated clothing and accessories, which can promote and encourage the sales activities.

Merchandising

Merchandising

Display equipment
The coordinated and functional display equipment characterizes and organizes the exhibition space at the point of sale and increases its attractiveness.

Apparel
The use of coordinated apparel and clothing accessories also pursues the goals of brand communication. The professional image transmitted by the staff is positively perceived by the customer.

Display equipment

TF-ESPOSITORE01

Counter display - Black Plexiglas® - Wall mounting or on sideboard
Dimensions (L x H x D)
1000 x 1060 x 150mm

Item no. TF19TFESPOSIT01

TF-BASEESPOS

Sideboard - Transparent Plexiglas® - Dimensions (L x H x D)
1000 x 840 x 300mm

Item no. TF19TFBASEESPOS

TF-PANNELLO01

Exhibition panel - Alucobond® - Dimensions (L x H x D) 1000 x 1000mm

ALUCOBOND

Item no. TF19TFPANNEL01

TF-PANNELLOA1

As TF-PANNELLO01 but screen-printed and delivered with the followings devices (not mounted): TFA1-298, TFNET, TFT- 7SC, TFDA-S1, TFDA-STR1, TFRIP-R, TFIS01, TFCP01, TFM21, TFPANM-AI

ALUCOBOND

Item no. TF19TFPANNESPA1

Apparel

TF-CAPPELLINO

Baseball cap
with Worldwide from Italy logo - White color

Item no. TF19TFCAPPEL

TF-POLO

Polo shirt
with Worldwide from Italy logo - White color

Item no. TF19TFPOLO

TF-CAMICIA

Shirt
with Worldwide from Italy logo - White color

Item no. TF19TFCAMICIA

TF-PANTALONE

Trousers
with Tecnofire logo - Red color

Item no. TF19TFPANTALONE

TF-FELPA

Sweatshirt with zip fastener and Worldwide from Italy logo on the front and on the back - White color

Item no. TF19TFFELPA

TF-GIUBBOTTO

Jacket
with Worldwide from Italy logo - Gray color

Item no. TF19TFGIUBBOTTO

ICONOGRAPHY

Standards

EN 54-1	**EN 54-1** Fire detection and fire alarm systems - Part 1: Introduction
EN 54-2	**EN 54-2** Part 2: Control and indicating equipment
EN 54-3	**EN 54-3** Part 3: Fire alarm devices - Sounders
EN 54-4	**EN 54-4** Part 4: Power supply equipment
EN 54-5	**EN 54-5** Part 5: Heat detectors and point detectors
EN 54-7	**EN 54-7** Part 7: Smoke detectors - Point detectors using scattered light, transmitted light or ionization
EN 54-10	**EN 54-10** Part 10: Flame detectors - Point detectors
EN 54-11	**EN 54-11** Part 11: Manual call points
EN 54-12	**EN 54-12** Part 12: Smoke detectors - Line detectors using an optical light beam
EN 54-17	**EN 54-17** Part 17: Short-circuit isolators
EN 54-18	**EN 54-18** Part 18: Input/output devices
EN 54-20	**EN 54-20** Part 20: Power supply equipment
EN 54-21	**EN 54-21** Part 21: Alarm transmission and fault warning routing equipment
EN 54-23	**EN 54-23** Part 23: Fire alarm devices - Visual alarm devices (VAD)
EN 54-27	**EN 54-27** Part 27: Duct smoke detectors
EN 54-28	**EN 54-28** Part 28: Non-resettable line-type heat detectors
EN 1155	**EN 1155** Building hardware - Electrically powered hold-open devices for swing doors - Requirements and test methods
EN 12101-10	**EN 12101-10** Smoke and heat control systems Part 10: Power supplies
EN 50200	**EN 50200** Method of test for resistance to fire of unprotected small cables for use in emergency circuits
EN 50518	**EN 50518** Monitoring and alarm receiving centre
EN 50575	**EN 50575** Power, control and communication cables for general applications in construction works subject to reaction to fire requirements
EN 60529	**EN 60529** Degrees of protection provided by enclosures (IP code)
EN 61000	**EN 61000** Electromagnetic compatibility (EMC)
CPR EU 305/11	**CPR EU 305/11** construction Products Regulation (CPR)
UL FM	**UL/FM** Device certified by Underwriters Laboratories/Factory Mutual (USA)
ATEX CATEGORY II 3 G	**ATEX CATEGORY** Device certified for use in explosive environments (ATmosphères EXplosibles)
ATEX ZONE 0 1 2 20 21 22	**ATEX ZONE** Zone classification according to gas and dust concentration
SIL1	**SIL1** Device with risk reduction factor from >10 to ≥ 100 (Safety Integrity Level)
SIL2	**SIL2** Device with risk reduction factor from >100 to ≥ 1000 (Safety Integrity Level)

Generic features

RSC®	**RSC®** Device featuring RSC® technology
VOICE SYNTHESIS	**VOICE SYNTHESIS** Device featuring voice synthesis
USB PORT	**USB PORT** Device equipped with USB port
FLASH MEMORY	**FLASH MEMORY** Device equipped with flash memory
SELF-POWERED	**SELF-POWERED** Device equipped with proper power supply
INTERNAL EXPANSION	**INTERNAL EXPANSION** Expansion module to be mounted inside the casing
METAL BOX	**METAL BOX** Casing primarily made of metal
ABS V0 BOX	**ABS V0 BOX** Casing primarily made of ABS V0
CAST ALUMINUM BOX	**CAST ALUMINUM BOX** Casing primarily made of die-cast aluminum
PC-ABS 5VA BOX	**PC-ABS 5VA BOX** Casing primarily made of polycarbonate and ABS 5VA
INDOORS OR OUTDOORS -40° +79°	**INDOORS OR OUTDOORS** Device functioning in indoor or outdoor areas with the indicated operating temperature
IPXX	**IPXX** Ingress protection class of the casing

Systems

LOOP	**LOOP** System featuring loop connection
POWER SUPPLY	**POWER SUPPLY** Device providing a proper power supply unit
IP	**IP** Device supporting the IP vector
PRINTER PORT	**PRINTER PORT** System equipped with serial printer port
RS485-FIBER OPTIC CONVERTER	**RS485-FIBER OPTIC CONVERTER** RS485-fiber optic converter
POINT TO POINT 2KM	**POINT-TO-POINT** Point-to-point connection with maximum track length in kilometers
RING 4KM	**RING** Loop connection with maximum loop length in kilometers

Iconography

Expansions

7" COLORS DISPLAY	**DISPLAY** Device equipped with a display of the indicated size (inch)
TOUCH SCREEN	**TOUCH SCREEN** Device equipped with touch screen
32 FLOOR PLANS	**FLOOR PLANS** Device featuring floor plan management
32 ICONS	**ICONS** Number of icons managed per floor plan
PSTN	**PSTN** Device supporting the PSTN vector
PSTN ATE2	**PSTN ATE2** ATE performance criteria of the PSTN vector according to the protocols used
3G GSM-GPRS	**3G GSM-GPRS** Device supporting the 3G vector
GSM ATE2	**GSM ATE2** ATE performance criteria of the GSM vector according to the protocols used
GPRS ATE4	**GPRS ATE4** ATE performance criteria of the GPRS vector according to the protocols used
IP	**IP** Device supporting the IP vector
IP ATE4	**IP ATE4** ATE performance criteria of the IP vector according to the protocols used
DDNS	**DDNS TECNOALARM** Tecnoalarm Dynamic Domain Name System service
TCP/IP	**TCP/IP** Remote management with TCP/IP protocol via LAN/WAN
VOCAL	**VOCAL** Voice protocol
SMS	**SMS** Short Message Service protocol
PULSE	**PULSE** Protocol using tone modulation
DTMF Hz	**DTMF** Dual-Tone Multifrequency data protocol

@ EMAIL	**EMAIL** Email protocol
DATA	**DATA** Digital data protocol
IP DATA	**IP DATA TECNOALARM** Tecnoalarm IP data protocol
IP DATA	**IP DATA** IP data protocol
IP TECNO OUT	**IP TECNO OUT** IP Tecno Out protocol
IP Modbus	**IP MODBUS** IP Modbus protocol
RS485 Modbus	**RS485 MODBUS** Serial Modbus protocol

Addressable detectors

SMOKE	**SMOKE** Smoke detector
HEAT	**HEAT** Heat detector
RATE-OF-RISE	**RATE-OF-RISE** Rate-of-rise detector
COMBO 2T	**COMBO 2T** Combined technology detector
SOUND LEVEL 81dB(A) @1m	**SOUND LEVEL** Device featuring the indicated sound level (dB) at the indicated distance
FORMULAS AND & NOT! OR |	**FORMULAS** Device managing Boolean functions
SMOKE DETECTOR	**SMOKE DETECTOR** Device housing smoke detector
AIR SAMPLING	**AIR SAMPLING** Air sampling
VENTURI TUBE	**VENTURI TUBE** Venturi tube principle

Addressable modules

2 INPUTS	**INPUTS** Number of inputs available
1 OUTPUT	**OUTPUT** Number of outputs available
3 LOGICAL UNITS	**LOGICAL UNITS** Device composed of the indicated number of logical units, identified by the system as independent zones
1 INPUT CONVENTIONAL DETECTORS	**INPUT CONVENTIONAL DETECTORS** Number of inputs available for the connection of conventional detection devices
2 4-20mA INPUTS	**4-20mA INPUTS** Number of available 4-20mA inputs
FORMULAS AND & NOT! OR |	**FORMULAS** Device managing Boolean functions
DIN RAIL MOUNT BOX	**DIN RAIL MOUNT BOX** Mounting on DIN rail
TYPE A	**TYPE A** Type A manual call point (direct actuation)
28V 5A	**28V 5A** Device providing the indicated output voltage/current
3 OUTPUTS 1.1A	**OUTPUTS** Number of power supply outputs managed and available current for loads
VID VISUAL INDICATION DEVICE	**VID** Visual indication device compliant with EN 54-3
VAD VISUAL ALARM DEVICE	**VAD** Visual alarm device compliant with EN 54-23 and EN 54-3 (if equipped with sounder)
SOUND LEVEL 99dB(A) @1m	**SOUND LEVEL** Device featuring the indicated sound level (dB) at the indicated distance
TYPE W-4.6-7.7	**TYPE** Wall mount type with the indicated coverage volume code
272m² COVERAGE VOLUME	**COVERAGE VOLUME** Maximum coverage in square meters
FLASH SYNC	**FLASH SYNC** Synchronization of flashlight signal of several fire alarm devices

Optical-acoustic alarm devices

VID
Visual indication device compliant with EN 54-3

VAD
Visual alarm device compliant with EN 54-23 and EN 54-3 (if equipped with sounder)

TYPE
Wall mount type with the indicated coverage volume code

COVERAGE VOLUME
Maximum coverage in square meters

TYPE
Ceiling mount type with the indicated coverage volume code

COVERAGE VOLUME
Maximum coverage in square meters

SOUND LEVEL
Device featuring the indicated sound level (dB) at the indicated distance

FLASH SYNC
Synchronization of flashlight signal of several fire alarm devices

ALARM INPUTS
Number of control inputs for alarm mode differentiation

SELF TEST
Device featuring self test function

XENON FLASH
Device equipped with xenon flashlight

Air sampling units

AIR SAMPLING
Air sampling

LASER DETECTION
Device equipped with laser detection chamber

CHANNELS
Number of suction channels managed

XXXm CLASS
Maximum pipe length in meters and number of holes according to class

COVERAGE
Maximum coverage in square meters

SIGNALING OUTPUTS
Number of available signaling outputs

TOUCH SCREEN
Device equipped with touch screen

Linear smoke detectors

END-TO-END
Device equipped with point-to-point infrared light

MULTI TX OPERATION
Device featuring multi-point configurations

REFLECTION
Device equipped with reflective infrared light

UV + IR DETECTION
Device equipped with infrared or UV light

IR DETECTION
Device equipped with infrared light

LASER POINTER
Device equipped with automated laser pointer

SELF-ALIGNING
Device performing automatic compensation of misalignment

RANGE
Maximum range in meters

RX ANGLES
Horizontal and vertical reception angles

TX RX EXTRA PAIR
Additional pair of receiver and transmitter

EXTRA HEAD
Additional receiver-transmitter unit

LITHIUM BATTERY
Device functioning with a lithium battery

HIGH POWER TX UNIT
High power transmitter

RX UNIT
Receiver

Electronic heat detectors

HEAT
Heat detector

RATE-OF-RISE
Rate-of-rise detector

Optical flame detectors

2 x IR DETECTION
Dual infrared detector

3 x IR DETECTION
Triple infrared detector

2 x IR + 1 x UV DETECTION
Dual infrared and UV detector

Heat detection cables

HEAT-SENSITIVE
Heat detection cable with the indicated alarm threshold

TWISTED CABLES
Twisted-pair cable

EUROCLASS
Minimum class of reaction to fire (Euroclass)

Electromagnetic door holders

HOLDING FORCE
Holding force in kilogram

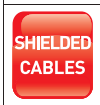
WALL OR FLOOR MOUNTING
Device suitable for wall or floor mounting

Iconography

Gas detectors

	**TOXIC GAS** Toxic gas detector
	**FLAMMABLE GAS** Flammable gas detector
	**REFRIGERANT GAS** Refrigerant gas detector
	**ELECTROCHEMICAL CELL** Gas detector with electrochemical cell
	**INFRARED DETECTOR** Infrared gas detector
	**CATALYTIC DETECTOR** Catalytic gas detector

Cables

	**PH30/90** Cable with class 30 or 90 flame-resistance rating
	**PH120** Cable with class 120 flame-resistance rating
	**LSZH CABLES** Jacket made of flame-retardant low-smoke zero-halogen thermoplastic compound
	**INSULATION** Insulation of the cable in Volt
	**TWISTED CABLES** Twisted-pair cable
	**SHIELDED CABLES** Shielded cable

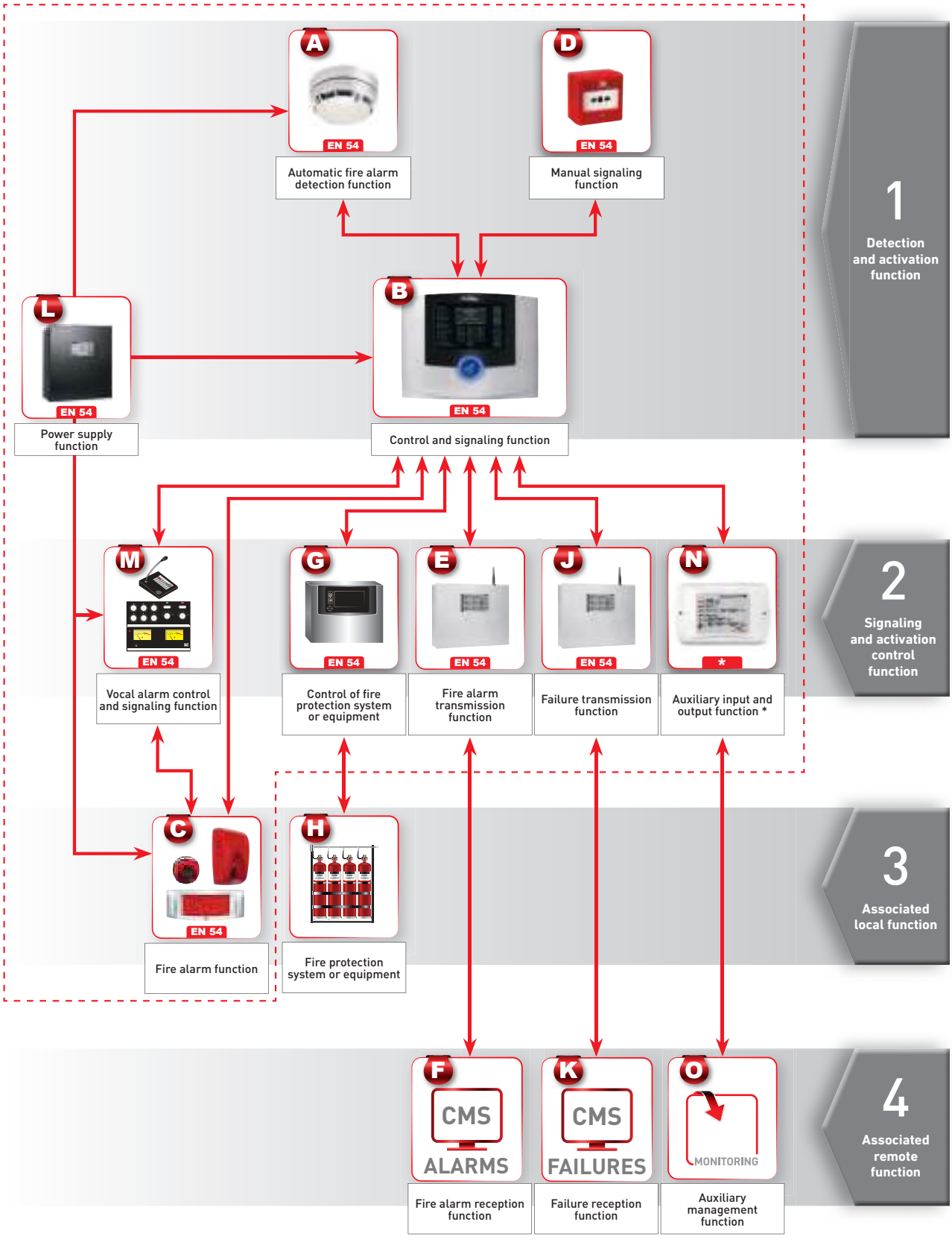
Software

	**CENTRO** Software for Windows
	**PROGRAMMING** Software for programming of Tecnofire systems via serial bus or LAN
	**TCP/IP** Software for remote management of 100 or 1000 Tecnofire systems via LAN/WAN
	**MONITORING** Software for monitoring of Tecnofire systems via serial bus or LAN

Merchandising

	**EXPO** Coordinated display equipment
	**APPAREL** Coordinated apparel

Components of a fire alarm system according to EN 54-1 (figure 1 of the official document)



*Function provided by EN 54-1 but not regularized by any specific standard

EN 54-1 - Fire detection and fire alarm systems - Part 1: Introduction	
Item	**Reference standard and function**
A	**EN 54-5 -** Heat detectors and point detectors
	EN 54-7 - Point detectors using scattered light, transmitted light or ionization
	EN 54-10 - Flame detectors - Point detectors
	EN 54-12 - Smoke detectors - Line detectors using an optical light beam
	EN 54-18 - Input/output devices
	EN 54-20 - Aspirating smoke detectors
	EN 54-22* - Resettable line-type heat detectors
	EN 54-26* - Carbon monoxide detectors - Point detectors
	EN 54-27* - Duct smoke detectors
	EN 54-28* - Non-resettable line-type heat detectors
	EN 54-29* - Multi-sensor fire detectors - Point detectors using a combination of smoke
	EN 54-30* - Multi-sensor fire detectors - Point detectors using a combination of carbon monoxide and heat sensors
	EN 54-31* - Multi-sensor fire detectors - Point detectors using a combination of smoke, carbon monoxide and optionally heat sensors
B	**EN 54-2 -** Control and indicating equipment
	EN 54-13* - Compatibility assessment of system components
C	**EN 54-3 -** Fire alarm devices - Sounders
	EN 54-23 - Fire alarm devices - Visual alarm devices (VAD)
	EN 54-24 - Components of voice alarm systems - Loudspeakers
D	**EN 54-11 -** Manual call points
E	**EN 54-21 -** Alarm transmission and fault warning routing equipment
F	**EN 50518 -** Monitoring and alarm receiving centre
G	**EN 54-2 -** Control and indicating equipment
	EN 54-18 - Input/output devices
H	**EN 14637 -** Building hardware - Electrically controlled hold-open systems for fire/smoke door assemblies - Requirements, test methods, application and maintenance
	EN 15650 - Ventilation for buildings - Fire dampers
	EN 12094 - Fixed firefighting systems - Components for gas extinguishing systems
	EN 12101 - Smoke and heat control systems - Part 10: Power supplies
	EN 12259 - Fixed firefighting systems - Components for sprinkler and water spray systems
J	**EN 54-21 -** Alarm transmission and fault warning routing equipment
K	**EN 50518 -** Monitoring and alarm receiving centre
L	**EN 54-4 -** Power supply equipment
M	**EN 54-16 -** Voice alarm control and indicating equipment
N	Data communication interface
O	Display system
	Building management system
⟷	**EN 54-17 -** Short-circuit isolators
	EN 54-25 - Components using radio links
	EN 50136 - General requirements for alarm transmission

** Voluntary standards that are not mandatory as they have not yet been published in the Official Gazette of the UE*

FOCUS EN 60529

The standard EN 60529 **Degrees of protection provided by enclosures (IP code)** classifies the degree of protection against intrusion, dust, accidental contact, and water for enclosures of electrical equipment with rated voltages inferior to 72.5KV, and it establishes the relevant test methods. This chapter aims at vulgarizing the basic aspects of IP marking and illustrating the criteria and minimum requirements of the individual IP classes.

CODE BREAKDOWN	IP 4 2 C H
IP	The acronym IP stands for Ingress Protection or International Protection
1st digit numeric 0-6 or letter X	Protection of persons against access to hazardous parts inside the enclosure and protection (enclosure) of the device against ingress of solid particles
2nd digit numeric 0-8 or letter X	Protection (enclosure) of the device against ingress of liquids
Additional letter A, B, C or D	The letter indicates that the protection of persons against access to hazardous parts inside the enclosure is higher than that of the enclosure against ingress of solid particles [mechanical impact resistance].
Supplementary letter H, M, S or W	H = High-voltage device - M = Device moving during water test - S = Device standing still during water test W = Device apt for use in special weather conditions *N.B. If several letters are indicated, they must be listed in alphabetical order.*

	PROTECTION AGAINST ACCESS TO HAZARDOUS PARTS		PROTECTION AGAINST INGRESS OF SOLID PARTICLES	
IP0x	**Not protected**	The device (represented by a red ball) does not provide any protection against access to hazardous parts inside the enclosure.	**Not protected**	The device (represented by a red ball) does not provide any protection against ingress of solid parts.
IP1x	**Protection against access to hazardous parts with the back of the hand**	The device is protected against access to hazardous parts with the back of the hand (test specimen: ball probe Ø 50mm).	**Protection against ingress of solid particles Ø ≥50mm**	The device is protected against ingress of solid particles (test specimen: ball probe Ø 50mm).
IP2x	**Protection against access to hazardous parts with a finger**	The device is protected against access to hazardous parts with a finger (test specimen: jointed finger Ø 12mm length 80mm).	**Protection against ingress of solid particles Ø ≥12.5mm**	The device is protected against ingress of solid particles (test specimen: ball probe Ø 12.5mm).
IP3x	**Protection against access to hazardous parts with a tool**	The device is protected against access to hazardous parts with a tool, e.g. screwdriver (test specimen: probe Ø 2.5mm).	**Protection against ingress of solid particles Ø ≥2.5mm**	The device is protected against ingress of solid particles (test specimen: ball probe Ø 2.5mm).
IP4x	**Protection against access to hazardous parts with a wire**	The device is protected against access to hazardous parts with a wire (test specimen Ø 1mm).	**Protection against ingress of solid particles Ø ≥1mm**	The device is protected against ingress of solid particles (test specimen Ø 1mm).
IP5x	**Protection against access to hazardous parts with a wire**	The device is protected against access to hazardous parts with a wire (test specimen Ø 1mm).	**Protection against ingress of dust**	The device is protected against ingress of dust in quantities that may compromise safety and correct functioning.
IP6x	**Protection against access to hazardous parts with a wire**	The device is protected against access to hazardous parts with a wire (test specimen Ø 1mm).	**Total protection against ingress of dust**	The device is completely protected against the ingress of dust, i.e. no dust penetrates its enclosure.

N.B. For obtaining the ingress protection classes, both requirements (Protection against access to hazardous parts and Protection against ingress of solid particles) must be fulfilled.

PROTECTION AGAINST INGRESS OF LIQUIDS

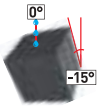
IPx0 — Not protected

The device (represented by a red ball) does not provide any protection against hazardous parts inside the enclosure coming into contact with water.

IPx1 — Protected against vertically falling water drops

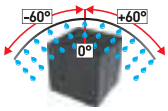
The device is protected against drops of water hitting the enclosure vertically.

IPx2 — Protected against vertically falling water drops



The device is protected against drops of water hitting the enclosure with an angle of up to 15°.

IPx3 — Protected against rain



The device is protected against rain hitting the enclose with an angle of up to 60°.

IPx4 — Protected against water splashes

The device is protected against splashes of water from all directions.

IPx5 — Protected against water jets

The device is protected against water jets from all directions.

IPx6 — Protected against powerful water jets

The device is protected against powerful water jets from all directions.

IPx7 — Protected against the effects of temporary immersion

The device is protected against damages caused by the ingress of water during temporary immersion, in specific weather conditions.

IPx8 — Protected against the effects of continuous immersion

The device is protected against damages caused by the ingress of water during immersion, in weather conditions specified by the manufacturer.

General terms of sale and delivery

1. **PREMISES**
This document contains the general terms of sale and delivery that govern the business relations between Tecnoalarm S.r.l. (Seller) and its customers (Buyers), for any type of product and service. Unless otherwise specified, these terms are applied to all Buyers, in this case professional customers. The terms are an integral part of the "Tecnoalarm General Catalogue", and are considered implicitly known to and accepted by the Buyer when placing the purchase order. The terms, if no other agreement (void if not in written form) exists, are to be considered as binding for the sale of any product of Tecnoalarm. The Seller reserves the right to change them without notice and without prejudice to the validity of previous terms in force at the time of the order. Any different terms and conditions used by the Buyer shall not apply to the relations between the parties if not accepted in writing and, in any case, shall be coordinated with these terms, unless expressly exempted by written act. The acceptance of these terms and the accompanying warranty conditions, as well as all the subsequent relations, agreements, and generally, the behaviors of the parties eventually governed by the same, do not entail the transfer to the Buyer of any exclusive right, nor the establishment of relations of granting, commission and mandate, with or without representation. Equally, they do not give the Buyer the right to market the Tecnoalarm products via e-commerce, or any other form of mail order sales nor to use in any form the mark, the name or other distinctive marks of Tecnoalarm.

2. **PURCHASE ORDERS**
No purchase order sent by the Buyer shall be binding for the Seller if not expressly accepted in writing. The order accepted by the Seller constitutes a firm and irrevocable proposal of contract. Sending an order and collecting the goods by the Buyer shall entail the contextual and integral recognition, knowledge and acceptance of the terms and the attached warranty conditions. The Seller is not bound, except with the express confirmation or subsequent ratification, by the declarations of its agents, business procurers, distributors and other commercial auxiliaries. The acceptance without expressed reservation by the Buyer of products non-compliant in terms of type or quantity, or sent with conditions other than those contained in the request of the Buyer or the offer of the Seller, implies the acceptance by the Buyer of the supply and the terms applied by the Seller. These reservations, even if made in the form of clarifications or corrections to the terms of delivery, shall not be effective if they will not be formulated by the Buyer in writing, immediately after the receipt of the goods.

3. **PLACING OF ORDERS**
Except as provided in the previous article, the Seller only accepts orders placed according to the procedure provided for in this article. All orders must be submitted in writing and complete in every part needed for the correct identification of the requested products. The Buyer may request the cancellation or modification of the order only before the execution of the same, through written communication. The Seller has the right to not accept changes or cancellations if the order is already being processed. The changes and the cancellation of the purchase orders, to be effective, must be expressly accepted by the Seller in writing.

4. **DELIVERY OF THE PRODUCTS**
No purchase order sent by the Buyer will be fulfilled by the Seller if not expressly accepted. Unless otherwise agreed in writing between the parties, the Seller shall deliver the products "ex works" (EXW) Turin, one of his subsidiaries or decentralized warehouses, within the terms of delivery agreed on the acceptance of the order. If required, the Seller will take care of the transport of the products and - in the absence of specific instructions of the Buyer - will choose the carrier that it deems appropriate. Unless otherwise specifically agreed in writing, the transport will take place with the clause "free carrier" (FCA) at the expense and risk of the Buyer. The cost of the transport and packaging, unless otherwise agreed, will be added to the price of the products purchased. The delivery deadline shall be deemed to be respected if the goods are promptly delivered to the carrier. In any case, the Seller shall not be liable for transport delays that cannot be imputed to him. In the case of delayed delivery, the Buyer may cancel the part of the order not delivered only after notifying the Seller, by registered letter with acknowledgement of receipt or with certified e-mail, his intention to do so, and after granting 15 weekdays, from receipt of such communication, within which the Seller can deliver all the products specified in the reminder and not yet delivered. It is excluded any liability of the Seller for damages derived from delayed or total or partial non-delivery of the purchase order. In case the Buyer fails to collect the goods within the agreed time, he will have to refund the Seller the storage costs until delivery or sale of the goods to third parties, which may take place after 30 days from the originally agreed delivery date. Failure or delay of fulfilment of a partial delivery does not implicate the non-fulfilment of the delivery obligation in itself and will have no effect on the other partial deliveries.

5. **PRICES AND TERMS OF PAYMENT**
The prices specified by the Seller in quotations, order confirmations and invoices are based on the price list expressed in Euro, excluding VAT, in force on the day of the order confirmation. Unless otherwise specified, all prices are net of transportation, and any other tax, fee and locally due rate. The applicable taxes are those in force on the date of billing. Any discount on the prices charged by the Seller shall only be applicable if agreed to in writing and only in case of full compliance with the payment terms fixed. In no case will the discounts offered be extendable to supplies, also of similar goods or identical products, performed prior to or subsequent to the order to which the discounts apply. If the costs of raw materials and/or the workforce used by the Seller should suffer changes such as to modify by more than 10% the original balance, the price will be adjusted in proportion, with the option of the parties to terminate the agreement within 10 days from the notice of the variation in the price. The invoices of the Seller are accepted if they are not challenged in writing by the Buyer within 14 days of their receipt. Unless otherwise specifically agreed in writing, the method and term of payment are those previously agreed with the Seller and stated in the customer file. Any payments made to the agents of the Seller must be previously authorized in writing by the latter. According to this, any payment made to subjects not previously authorized for collection shall not discharge the obligation. Any credit instruments accepted by the Seller is subject to collection. Any delay or irregularity in the payment shall give the Seller the right to suspend deliveries and/or terminate the contracts and/or cancel orders in progress, even if not related to the payments in question, as well as the right to compensation for any damages. From the date of expiry of the payment, the default interests at the legal rate provided for in the Decree 231/2002, amended by the Decree 192/2012, shall be entirely due. In no event the Buyer will be authorized to reduce or offset the price with any credit, however occurring, against the Seller, unless prior written permission of this is granted. For the imputation of payment, reference will be made in any case to the provisions of art. 1193 par. 2 C.C. [Italian Civil Code]. The Buyer is obliged to complete payment, even in the event of a dispute or controversy, according to the condition "solve et repete".

6. **RETENTION OF TITLE**
In the case where the payment is carried out, in whole or in part, after delivery, the delivered products shall remain the property of the Seller up to the full payment of the agreed price, within the meaning of art. 1523 C.C. [Italian Civil Code]. The Seller shall have the right to repossess any product with retention of title and the Buyer shall bear the costs. The Seller may withhold as penalty any sum received as payment, without prejudice to the right to compensation for the greater damage. If the Buyer relinquishes the products to a third party, the rights of the Seller shall be transferred to the resale price up to the full payment.

7. **TECHNICAL DESCRIPTIONS AND SPECIFICATIONS OF THE PRODUCTS**
The technical data, dimensions, features, specifications, colors, weights, prices and any other data relating to the products contained in the technical and advertising documentation of the Seller, as well as the characteristics of the samples and models which may be provided to the Buyer, are merely indicative and are not binding, unless they were expressly mentioned in the offer and/or in the written acceptance by the Seller. Any statements or advertising of third parties in no way bind the Seller. Any technical design or document provided to the Buyer that enables to manufacture the products sold, or parts of them, remains the exclusive property of the Seller and shall not be copied, reproduced, transmitted to third parties or however used without the prior written consent. In addition, the Seller remains exclusive holder of all intellectual or industrial property rights relating to the products. The Seller reserves the right, at its sole discretion and without the need for any notice, to make the changes deemed most appropriate that do not adversely affect the functionality, the quality, and the aesthetics of the product itself, with the only obligation to inform the Buyer about the changes.

8. WARRANTY OF THE SELLER

Unless otherwise agreed in writing between the parties, the Seller ensures that its products (with the exception of those parts which are not directly produced) are free from flaws/defects for a period of two (2) years from the date of delivery of the goods to the Buyer. The warranty does not operate with reference to those products whose defects are due to:

a. damage in transit
b. improper use or negligent handling
c. failure to comply with the Seller's instructions relating to the assembly and/or operation of the products
d. lack of ordinary maintenance and preservation of the products
e. normal wear and tear of moving parts
f. repairs and/or changes made by the Buyer or by third parties without the prior written permission of the Seller.

The Seller will, in its sole discretion, replace or repair the defective or faulty products or parts, provided that the Buyer's claim is covered by the warranty and notified within the deadlines referred to in this article. The Buyer shall notify the Seller, under penalty of loss of the right to appeal, of the presence of patent defects within eight days from delivery of the products, or hidden defects or those not detectable by reasonable inspection within eight days from discovery. After the above deadlines have expired, the products are considered as permanently accepted. Claims must be made in writing and must indicate in detail the alleged defects or non-conformities, as well as the references to the relevant invoice, DDT or order confirmation of the Seller. In addition, upon request of the Seller, adequate photographic documentation must be attached to the claims. Incomplete claims will not be covered by the warranty. The products subject to complaint should be immediately sent to the head office of the Seller, or to any other place that the latter will indicate from case to case, at the costs and expenses of the Buyer, unless otherwise agreed between the parties, in order to allow the Seller to complete the necessary checks. The warranty does not cover any damage or defects of the products resulting from, or directly related to, parts assembled/added by the Buyer. If a claim is totally or partially unfounded, the Buyer shall indemnify the Seller for all the costs incurred for the checks. In every case, the Buyer shall not assert any warranty rights towards the Seller if the products have not been paid according to the terms and conditions agreed. The Seller shall not be responsible for any damage arising and/or connected to defects of the products, except in the case of his proven deliberateness or gross negligence. In any case, the Seller shall not be liable for incidental or consequential damages of any nature, such as losses or lost profits arising from inactivity of the Buyer.

9. RESPONSIBILITY OF THE MANUFACTURER

The products with Tecnoalarm brand are manufactured in accordance with the regulations in force in Italy and in the European Union. The Seller is responsible for damages to persons or property arising from the products sold, only in the event of his proven gross negligence in the manufacture of the products themselves. In no event, it shall be considered liable for incidental or consequential damages, loss of production or lost profits. Except as provided above, the Buyer shall not consider the Seller liable in all the actions of third parties based on liability arising from products sold to them and shall indemnify for the damage caused by the claims in question.

10. FORCE MAJEURE

In all cases of force majeure occurring (including but not limited to: lack of supply of raw materials, significant predictable increases of the prices of the same, fire, flood, disturbances in the transport sector, strikes, lock-outs or other similar events, which prevent or reduce the productive capacity of the Seller or block the transport between the plant of the Seller and the place of destination of the products), the Seller shall be entitled to an extension of up to 90 days, extendible to up to 180 days in the most serious cases, of the deadline for the delivery of the products, provided that it promptly notices in writing the Buyer about the occurrence of force majeure. Should the condition of force majeure subsist on expiry of the above time limits, the Buyer may terminate this agreement by giving written notice to the Seller by means of registered letter with acknowledgement of receipt or certified e-mail.

11. CHANGES AND INTERPRETATION OF THE TERMS

For the interpretation of these terms, only the original Italian text shall be considered legally binding. Unless otherwise specified, every reference to price lists, general terms of sale and delivery or other documents from the Seller or third parties is meant as referring to the above mentioned documents in force at the time of the reference itself. Any modification or integration made by the parties to the agreements to which these terms apply, must be made in writing, otherwise they will be void. The derogation to one or more provisions of these terms should not be interpreted extensively or by analogy and does not imply the desire to waive the terms in their entirety.

12. APPLICABLE LAW

For whatever not expressly provided in these terms, the rules laid down by the Italian law, or, alternatively, the uses and practices, shall apply. Since international sales are not explicitly regulated by these terms, these will be governed by the Vienna Convention on the International Sale of Goods of 1980. For the interpretation of the terms of return and other commercial terms possibly used by the parties, refer to the INCOTERMS of the International Chamber of Commerce in Paris. Any foreign uses and practices are not binding in any way for the Seller.

13. DISPUTES AND COMPETENT COURT

For any disputes regarding or in any way connected to the agreements to which these terms apply, the only competent Court is that of Turin, Italy.

14. CONFIDENTIALITY

Any production technology and/or information of the parties (including expedients, design and information) whether or not patented, shall be treated as essentially confidential and shall not be used or disclosed in the absence of prior written permission.

15. FINAL PROVISIONS

Any communication between the parties shall be sent to the respective addresses resulting from the business correspondence exchanged.
If the Seller fails to:

a. apply one of the present terms
b. require to the Buyer to perform any provision of these terms,

this may not be construed as present or future waiver of that provision, nor in any way affect the right of the Seller to have each of the provisions executed in the future. The express waiver by the Seller of any of the provisions of these terms does not constitute a waiver to their future respect by the Buyer.
The agreement may not be transferred in whole or in part without the prior consent of the other party.

Turin, December 2015

Tecnoalarm S.r.l.

NOTES

NOTES

Special thanks to our partners
for allowing us to use the product photos:
BINDING UNION
CALECTRO
CAVICEL
EATON
ELETTRONICA CONDUTTORI
FIRE FIGHTING ENTERPRISES
PIERRE
PLIMAT
RAMCRO
SENSITRON
TECNOS
XTRALIS

General catalogue

Edition 1 - 2019

21ISTR09638

Tecnofire®

HI-TECHNOLOGY & DESIGN
WORLDWIDE FROM ITALY

Tecnofire® DETECTION
by Tecnoalarm®

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