TFM50

Tecnofire DETECTION

5-input module

RSC®

TFM50		RSC®	5 LOGICAL UNITS	5 INPUTS	DIN RAIL BOX	ABS V0 BOX

Addressable module consisting of five supervised physical/logic units: 5 inputs, uniquely identified by the System, addresses used max. 5. Programmable functions - 4 operation criteria: generates alarm, generates acknowledgement, generates reset, none. 2 input connection modes: Alarm or Fault. 5 input state repeating outputs. 5 LEDs indicating input state.
Full RSC® management of the device: setup, remote management and control of all functional parameters.
Line splitter with dual insulator. Connection on LOOP.
Proprietary high speed communication protocol ***FIRE-SPEED***.
Mounting: direct coupling on omega DIN rail or surface mount. Degree of protection IP40.
High profile enclosure in ABS V0. Dimensions (L x H x P) 144 x 92 x 71.5mm. White.
EN 54-18: 2005/AC: 2007 - **EN 54-17**: 2005. Certificate of homologation 1293 CPR – 0527

Item no. TF4TFM50HP

OBLIGATIONS AND NOTICES

The module TFM50 can be used only if connected to a detection loop of the Tecnofire control units models: TFA1-298, TFA2-596, TFA4-1192.
During design and installation, it is necessary to observe and apply the applicable regulations.

LOGIC UNITS

The module consists of five functional physical/logic units, corresponding to the five inputs.
Using the Dips 1-5 you can exclude the corresponding inputs from the operation of the module. Based on the address assigned to the module, each input takes a relative address, which can be found in the "addressing" table.
The number of available inputs and the use of the various addresses varies as a function of the implemented exclusions.
The addresses related to the excluded inputs are free, so they can be used to address other modules on the Loop.

ADDRESSING

The physical addresses that identify the inputs of the module can be programmed via the rotary decimal switch and the setting of Dip 6.
- Setting of the Rotary - With the Rotary, you set the decade (ten) to which the address sequence of the inputs belongs.
- Setting of Dip 6- With the Dip 6 you can set the range of the numeric sequence of the units:
With the Dip 6 set to OFF you set the low unitary sequence X0 to X4.
With the Dip 6 set to ON you set the high unitary sequence X5 to X9.

5 LOGICAL UNITS

Exclusion

Dip/Input match

Dip	1	2	3	4	5
Input	A	B	C	D	E

Dip OFF: corresponding input included
Dip ON: corresponding input excluded

Addressing

Rotary	Dip 6	Input/Address match				
		A	B	C	D	E
0	OFF	•	01	02	03	04
	Attention: the address 00 is not managed					
	ON	05	06	07	08	09
1	OFF	10	11	12	13	14
	ON	15	16	17	18	19
2	OFF	20	21	22	23	24
	ON	25	26	27	28	29
3	OFF	30	31	32	33	34
	ON	35	36	37	38	39
4	OFF	40	41	42	43	44
	ON	45	46	47	48	49
5	OFF	50	51	52	53	54
	ON	55	56	57	58	59
6	OFF	60	61	62	63	64
	ON	65	66	67	68	69
7	OFF	70	71	72	73	74
	ON	75	76	77	78	79
8	OFF	80	81	82	83	84
	ON	85	86	87	88	89
9	OFF	90	91	92	93	94
	ON	95	96	97	98	99

Moduli indirizzati - Addressable peripheral devices - Périphériques adressables - Periféricos direccionables

5-input module

USE MODES OF THE INPUTS

The module has five inputs to which it is possible to assign one of the four operational criteria:
Generates alarm - The activation of the input generates an alarm.
Generates acknowledgement - The activation of the input acknowledges the ongoing event.
Generates reset - The activation of the input causes system reset.
None - The activation of the input does not cause any direct action; its activation can be used in an operational formula.

The connection of the inputs can be made in either Generate Alarm mode or Balanced (Fault) mode.
The inputs can take the functional state of standby or signalling, the input state is displayed using dedicated LEDs.
Each input is equipped with a state repeating output with which it is possible to control remote repeaters.

Inputs use mode	Operational criteria			
	Generates alarm	Generates acknowledgement	Generates reset	None
	Connection mode			
	Generates alarm		Balanced (faulty)	

Connection mode "Generates alarm" functional states
Fault (short circuit)
Alarm
Standby
Fault (open line)

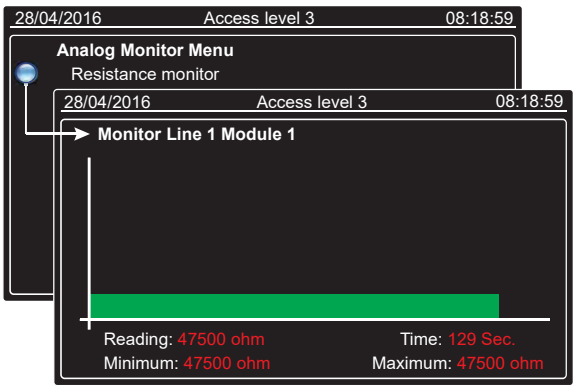
"Balanced (Fault)" connection mode functional states
Fault (short circuit)
Generic fault
Standby
Fault (open line)

LINE SPLITTER

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

DIAGNOSTIC FUNCTIONS

The control unit manages a set of diagnostic functions specialized for the different types of module.
The diagnostic functions that are available for the input modules allow to:
- Physically identify the module.
- Identify the type of module, the HW and FW version.
- Measure the electric data of operation.
- Monitor the termination resistance value.
- Read the statistics from the communication monitor



Diagnostic functions of the module	
Identification	Turns on the Leds of the device for its identification
Self declaration	Self declaration of the module type
Hardware version	Self declaration of the hardware version
Firmware version	Self declaration of the firmware version
Level measurement	Measurement of the electric values of operation
Analog monitor	Monitor of line termination resistance value
Statistics	Statistic/functional values related to communication

Draw
Supply level
Zero level
Draw level
Line resistance

Frames sent
Errors
Success Rate
Error rate
Latency time

5-input module

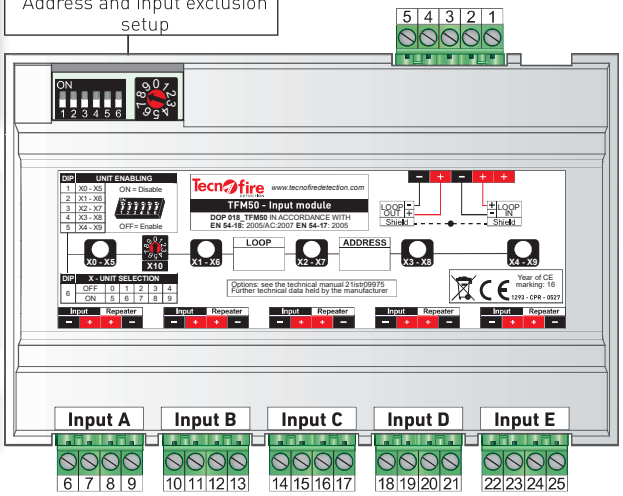
EQUIPMENT

1	LOOP + input (no breaker)
2	LOOP+ input
3	LOOP- input
4	LOOP+ output
5	LOOP- output

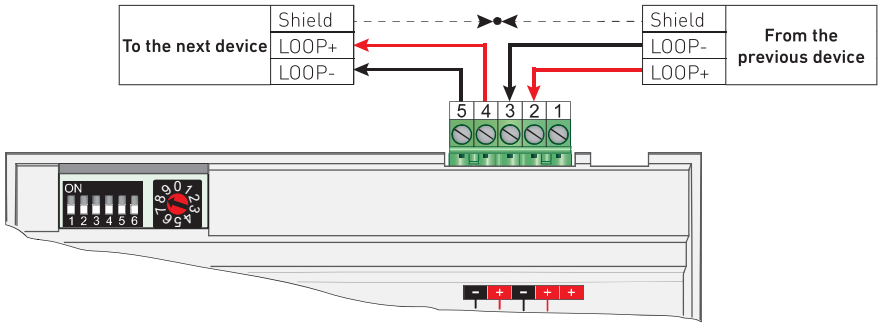
A	6	10 14 18 22	INPUT- (Inputs: A-B-C-D-E)
B	7	11 15 19 23	INPUT+ (Inputs: A-B-C-D-E)
C	8	12 16 20 24	REPEATER+ (Inputs: A-B-C-D-E)
D	9	13 17 21 25	REPEATER- (Inputs: A-B-C-D-E)
E			

X0 - X5	LED indicating input state	Standby - Constant slow flashing
		Active - Led on

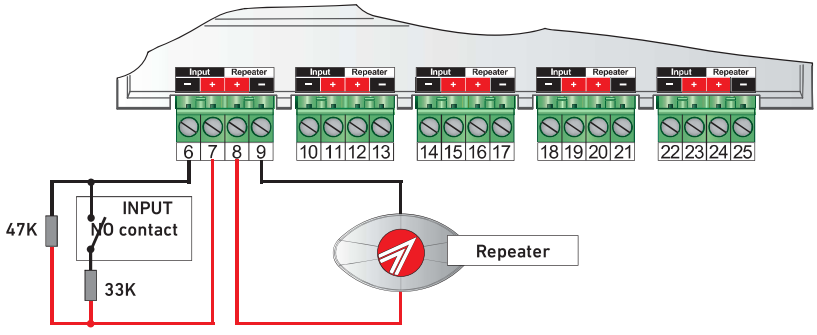
Dip Switch and Rotary Switch
Address and input exclusion setup

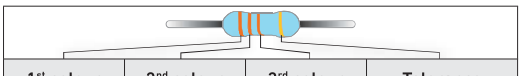


CONNECTION TO THE LOOP



INPUT CONNECTION





	1st colour	2nd colour	3rd colour	Tolerance
33K	Orange	Orange	Orange	Gold
47K	Yellow	Violet	Orange	Gold

5-input module

DEDICATED ACCESSORIES

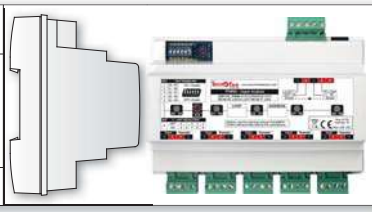
TFRIP-R	Red luminous repeater
Code: TF3TFRIPR	
TFRIP-V	Green luminous repeater
Code: TF3TFRIPV	
TFRIP-G	Yellow luminous repeater
Code: TF3TFRIPG	

AVAILABLE MODELS

TFM50-HP

High profile enclosure
Dimensions (L x H x D)
144 x 118 x 71.5mm

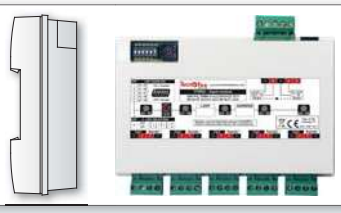
Code: TF4TFM50HP



TFM50-LP

Low profile enclosure
Dimensions (L x H x D)
144 x 118 x 38.5mm

Code: TF4TFM50LP



TFM50 - Technical data and functions

Overview	Device Name	**TFM50-HP (TFM50-LP)**
	Description	**5-input module**
	Communication protocol	**FIRE-SPEED**
	Addressing	**1 rotary switch + 1 dip-switch**
	Addresses used	**1 address for each input (max. 5)**
Setup	Polling frequency	**2 levels**
	Transmission LED	**Excludable signal**
	Operational criteria	**4**
	Type of input	**Alarm or fault**
Electrical specifications	Power supply	**From loop**
	Rated Voltage	**24V DC**
	Operating voltage	**Range from 18V to 30V DC**
	Draw (idle)	**500µA @ 24V DC when non transmitting**
	Power requirements in alarm	**<2.3mA @ 24V DC (for each output)**
	Line splitter	**Intelligent breaker (without loss of devices)**
	Outputs for repeaters	**9.4V DC 3mA (protected)**
Physical specifications	Operating temperature:	**-15°C...+70°C**
	Relative Humidity	**10% ... 93% (non-condensing)**
	Protection Degree	**IP40**
	Enclosure	**ABS V0**
	TFM50-HP - Dimensions (L x H x D) - Weight	**144 x 118 x 71.5mm - 230g**
	TFM50-LP - Dimensions (L x H x D) - Weight	**144 x 118 x 38.5mm - 200g**
Conformity	Standards	**EN 54-18: 2005/AC: 2007 - EN 54-17: 2005**
	Approval certificate	**1293-CPR-0527**
	Year of CE marking	**16**
	Number of the declaration of performance	**018_TFM50**
	Certification body	**EVPU**

N.B. The declarations of conformity and performance can be found at: www.tecnofiredetection.com

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