

5-output module



TFM05						
<p>Addressable module consisting of five supervised physical/logic units: 5 outputs, uniquely identified by the System, addresses used max. 5. Programmable functions - 2 operational criteria: can be acknowledged or not. 2 output modes: contact or controlled line. Output with programmable actuation time and delay, actuation can be based on algebraic formula. Secure service input for powering external devices.</p> <p>5 LED indicating output state Full RSC® management of the device: setup, remote management and control of all functional parameters. Line splitter with dual insulator. Connection on LOOP.</p> <p>Proprietary high speed communication protocol FIRE-SPEED.</p> <p>Mounting: direct coupling on omega DIN rail or surface mount.</p> <p>Degree of protection IP40. High profile enclosure in ABS V0. Dimensions [L x H x P] 144 x 92 x 71.5mm. White.</p> <p>EN 54-18: 2005/AC: 2007 - EN 54-17: 2005. Certificate of homologation 1293 CPR - 0528.</p>						
						Item no. TF4TFM05HP

OBLIGATIONS AND NOTICES

The module TFM05 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 outputs. Through the Dips 1-5 you can exclude the corresponding outputs from the operation of the module. Based on the address assigned to the module, each output takes a relative address, which can be found in the "addressing" table. The number of available outputs and the use of the various addresses varies as a function of the implemented exclusions. The addresses related to the excluded outputs are free, so they can be used to address other modules on the Loop.

ADDRESSING

The physical addresses that identify the outputs 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 outputs 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.

Exclusion						
Dip/Output match						
Dip	1	2	3	4	5	
Output	A	B	C	D	E	
Dip OFF: corresponding output included Dip ON: corresponding output excluded						
Addressing						
Rotary	Dip 6	Output/Address match				
		A	B	C	D	E
0	OFF	01	02	03	04	
	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



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USE MODES OF THE OUTPUTS

The module has five outputs which can be assigned one of the two available operational criteria: the output can be either acknowledged or not.

The connection of the outputs can be made using either Potential free contact mode or Controlled line mode.

With the controlled line mode, the module monitors the termination of the output lines.

The outputs can take the functional state of standby or signalling, the output state is displayed by the dedicated signalling LEDs.

The operation of the outputs is characterized by the setting of the delay time and of the switching time. Moreover, the operation of the outputs can also be subject to algebraic formulas.

Output use mode	Operational criteria	
	The output can be acknowledged	The output cannot be acknowledged
	Connection mode	
Potential free contact	Controlled line	

Output functional setup	Switching delay	Switching time	Can be subject to formula
	0 to 600 sec.	0 to 600 sec.	✓

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".

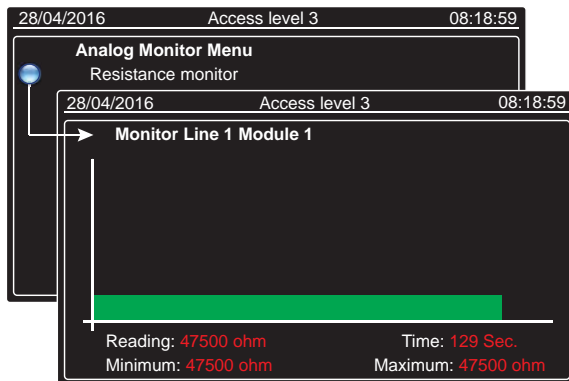
DIAGNOSTIC FUNCTIONS

The control unit manages a set of diagnostic functions specialized for the different types of module.

The diagnostic functions that are available for the output modules allow to:

- Physically identify the module.

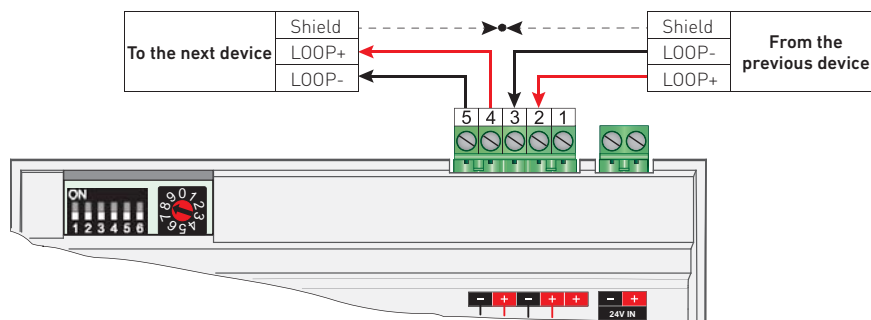
- Identify the type of module, the HW and FW version.
- Measure the electric data of operation.
- Monitor the termination resistance value.
- Read the statistics from the communication monitor
- Test the activation of the output module.



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
Activation	Activates the output (function valid only for output modules)

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

CONNECTION TO THE LOOP



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EQUIPMENT

5	4	3	2	1	27	26	1
							2
							3
							4
							5
							26
							27

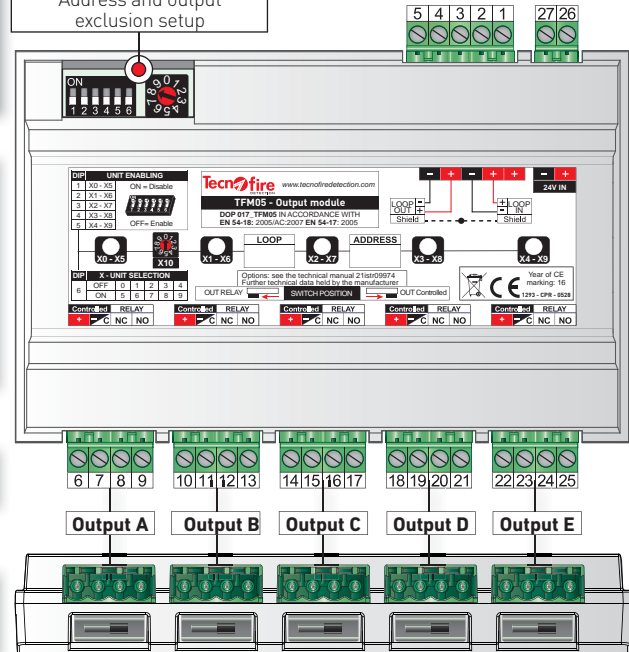
6	10	14	18	22	Controlled+ (Terminated line) Out: A-B-C-D-E
7	11	15	19	23	Controlled- (Terminated line) Out: A-B-C-D-E
Programmable output specialization					
C Out contact relay: A-B-C-D-E					
8	12	16	20	24	NC Out contact relay: A-B-C-D-E
9	13	17	21	25	NO Out contact relay: A-B-C-D-E

N.B. - The polarity of the terminals "Controlled +" and "Controlled -" refers to the state of alarm, in standby mode the polarity of the terminals is reversed.

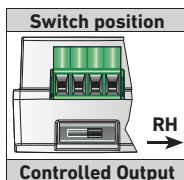
	LED indicating the output state	Standby - Constant slow flashing
		Active - Slow flashing with progressive intensity



Dip-Switch and Rotary-Switch Address and output exclusion setup

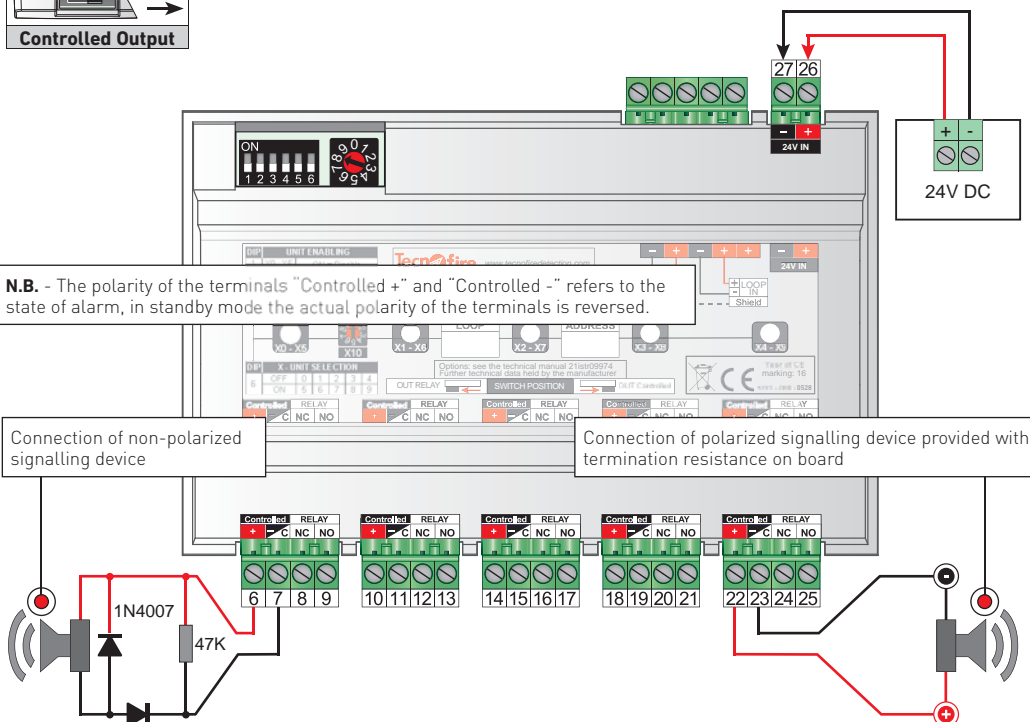


CONTROLLED OUTPUT CONNECTION



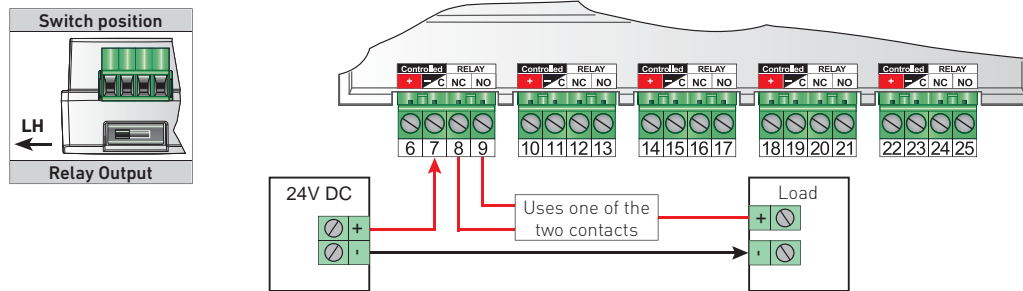
Attention: to use the controlled outputs, you must supply to terminals 26 and 27 an external power supply capable of supplying the current required to power the loads controlled by the outputs.

Attention: it is obligatory to observe the warning even if you use only one output in controlled mode.



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POTENTIAL FREE CONTACT OUTPUT CONNECTION



AVAILABLE MODELS

TFM05-HP

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

Code: TF4TFM05HP



TFM05-LP

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

Code: TF4TFM05LP



TFM05 - Technical specifications and functions

	Device Name	TFM05-HP (TFM05-LP)
Overview	Description	5-output module
	Communication protocol	FIRE-SPEED
	Addressing	1 rotary switch + 1 dip-switch
	Addresses used	1 address for each output (max. 5)
Setup	Polling frequency	2 levels
	Transmission LED	Excludable signal
	Operational criteria	2
	Type of output	Contact or controlled line
	Activation delay	Programmable
	Activation time	Programmable
	Output activation	Subject to algebraic formula
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	<1.5mA @ 24V DC (for each output)
	Line splitter	Intelligent breaker (without loss of devices)
	Relay contacts	Max 30V DC 1A (resistive load)
	Maximum supervised output current	Max 500mA
Output auxiliary power	Range from 18 to 30V DC	
Physical specifications	Operating temperature:	-15°C...+70°C
	Relative Humidity	10% ... 93% (non-condensing)
	Protection Degree	IP40
	Enclosure	ABS V0
	TFM05-HP - Dimensions (L x H x D) - Weight	144 x 118 x 71.5mm - 260g
TFM05-LP - Dimensions (L x H x D) - Weight	144 x 118 x 38.5mm - 230g	
Conformity	Standards	EN 54-18: 2005/AC: 2007 - EN 54-17: 2005
	Approval certificate	1293-CPR-0528
	Year of CE marking	16
	Number of the declaration of performance	017_TFM05
	Certification body	EVPU

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

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