

# INTRINSIC SAFETY SEPARATING RELAY, 4 CHANNELS

for contact or proximity detector, or logic signal

# TMT4-SI

The TMT4-SI has **intrinsic safety inputs** : this is **associated equipment**, placed in safe area. It has input circuits for connection to a sensor placed in hazardous area and output circuits for connection in safe area only.

This instrument has obtained a CE examination certificate of the type according to the prescriptions of the standards EN 60079-0 (2006), EN 60079-11 (2007), EN 60079-26 (2007), EN 61241-0 (2006) and EN 61241-11 (2006) in accordance with the directive ATEX 94/9/CE.

marking: **CE 0344**  $\text{Ex}$  II(1)GD, [Ex ia] IIC and [Ex iaD]



## Functions :

The TMT4-SI is an **intrinsic safety separating relay for 4 inputs** :

type "contact" or "proximity detector", or "logic signal" (version "TMT4L"). The 4 outputs are of the type "relay" (option "R"), or "PNP transistor" (option "TP"), or "NPN transistor" (option "TN"), or "TTL logic signal" (option "L").

- Programming of the switching state of each of the 4 channels by jumper.
- Visualisation on the front face of the switching state of each channel.

## Applications

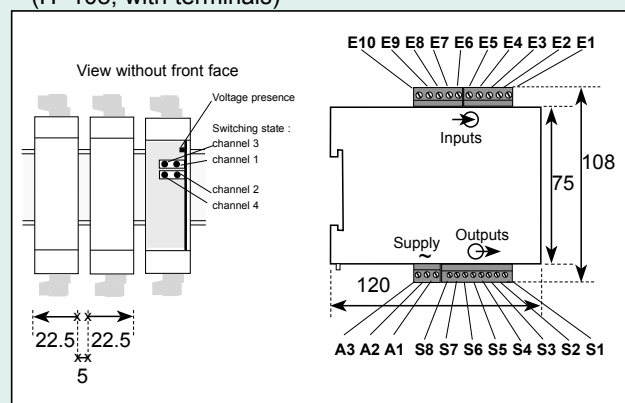
- PLC input interface.
- Data centralising on PLC.
- Acquisition, regulation, recording, watching of signals.
- Retransmission of logic inputs on panel and switchbox.

## Environment

- Reduced case dimensions.
- Plug-off connectors for screwed connectings
- Operating temperature :  $-10^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$
- Storage temperature :  $-30^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$
- CE marking (89/336 rev. 92/31)
- Conform with standards IEC61000-6-4 on rejections and IEC61000-6-2 on immunity (in industrial environment), IEC61000-4-3 level 3, IEC61000-4-4 level 4, IEC61000-4-6 level 3.

## Description

♦ **Housing** : (H x L x D) 75 x 22.5 x 120 mm (H=108, with terminals)



### ♦ Housing :

Self-extinguishing case of black UL 94VO ABS, for latching on symmetrical DIN rail (mount the cases vertically and provide a 5 mm spacing between each).  
Pug-off connectors for screwed connectings, flexible or rigid :  
2.5mm<sup>2</sup> for the supply and the inputs  
1 mm<sup>2</sup> for the outputs

♦ **Weight** : 225g (with packaging).

# Technical features at 23°C

INPUTS (4 channels)

## Potential free contact or proximity detector according to DIN 19234 (NAMUR)

Sensor supply voltage.....	8.5V
Drawn current if type "contact".....	8.5 mA
Switching setpoint.....	1.55 mA
Hysteresis.....	0.2 mA
Impedance.....	1kΩ

## Logic signal

Max. voltage between E1/E2, E3/E4 .....	10 V
Switching setpoint .....	1.55V
Hysteresis.....	0.2 V
Impedance.....	100kΩ

OUTPUTS

## Electromagnetic relay

- 1 potential free "NO / NC" contact per channel
- Switching voltage ..... ≤ 250 VAC or 30 VDC
- Switching current ..... ≤ 5 A (on resistive load)
- Switching frequency..... ≤ 10 Hz
- Contact material..... AgCdO

## NPN or PNP transistor

- Common emitter for outputs 1 and 2
- Common emitter for outputs 3 and 4
- protection from short-circuits and polarity inversions.
- Switching voltage ..... ≤ 30 VDC
- Switching current per output ..... ≤ 25 mA
- Voltage waste ..... ≤ 1.5V
- Switching frequency ..... ≤ 3 kHz (on load < 5kΩ)

## "TTL" logic

- Protection from short-circuits (limitation at 25 mA)
- Low logic level ..... ≤ 0.5V
- Switching frequency..... ≤ 3 kHz

## Galvanic partition :

- inputs / [outputs, supply].....3.8kV eff. 50Hz 1min.
- outputs / supply.....2kV eff. 50Hz 1min.
- between "relay" type outputs.....2.5kV eff. 50Hz 1min.
- outputs 1 and 2 / 3 and 4.....1.5kV eff. 50Hz 1min.
- ("transistor" or "logic" type)

## Power supply : High or low voltage (specify)

- (2) high voltage : 90...265 VAC or 88...350 VDC
- (3) low voltage : 20...40 VAC or 20...64 VDC

## Power draw :

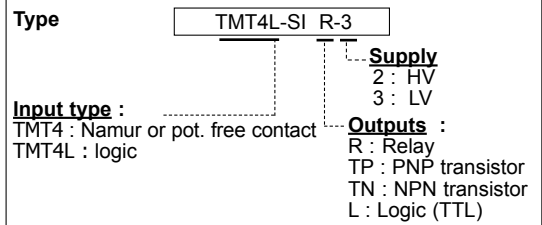
on load < 7 VA (4W), empty < 4 VA (2W)

## ELECTRICAL PARAMETERS RELATED TO THE INTRINSIC SAFETY (homologation will be obtained shortly)

Inputs	Terminals	U <sub>o</sub> (Vdc)	I <sub>o</sub> (mAdc)	P <sub>o</sub> (mW)	L <sub>o</sub> (H)	C <sub>o</sub> (μF)
Contact or proximity detector	E2, E1 (chan. 1) E4, E3 (chan. 2) E7, E6 (chan. 3) E9, E8 (chan. 4)	9.6	9.9	24	>1	3.6
Logic signal	E2, E1 (chan. 1) E4, E3 (chan. 2) E7, E6 (chan. 3) E9, E8 (chan. 4)	9.6	0.097	0.23	>1	3.6

Um < 375 Vdc and Um < 265 Vac

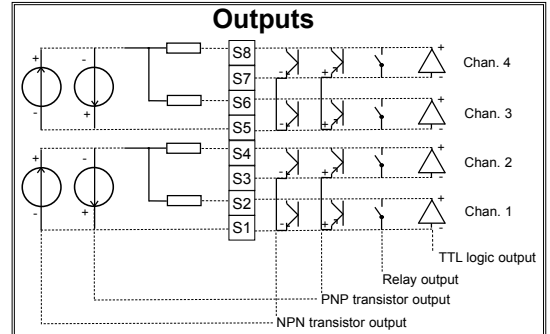
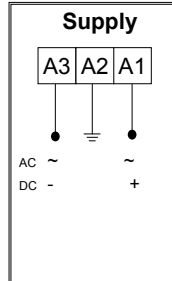
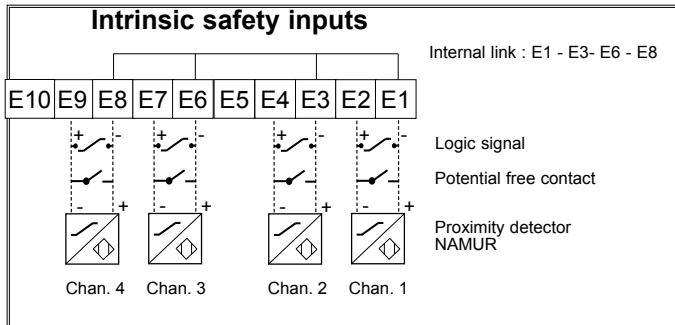
## Coding



## Order example :

For a **4-channel separating relay** with logic input, PNP transistor output, powered in low voltage, request reference : **TMT4L-SI TP-3**

## Connectings



This appliance is dedicated to industrial applications. It has to be installed in an electrical switchbox, or equivalent.



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e-mail : info@ardetem.com  
http : //www.ardetem.com

Route de Brindas  
Parc d'activité d'Arbora N°2  
69510 SOUCIEU EN JARREST  
FRANCE

Tél. : 33 (0)4 72 31 31 30  
Fax. : 33 (0)4 72 31 31 31

## Your representative