

# INTRINSIC SAFETY MEASURE TRANSMITTER for DC voltage or current

## TMP-SI/CAPPLUS-SI

ARDETEM

SFERE



The **TMP-SI/CAPPLUS-SI** has **intrinsic safety inputs**:

this is an 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.

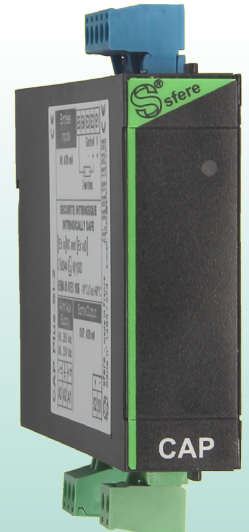
This instrument has obtained a **UE** examination certificate of the type according to the prescriptions of the standards EN 60079-0 (2006), EN 60079-11 (2007), EN 60079-26 (2007), EN 61241-0 (2006) and EN 61241-11 (2006) in accordance with the directive ATEX 2014/34/UE: marking 0344  $\text{Ex}$  II(1)GD, [Exia]IIC and [Ex iaD]

### • Type:

The **TMP-SI/CAPPLUS-SI** is an **isolated measure transmitter** which accepts:

as INPUT A *standardised* 0-10V<sub>DC</sub> voltage or 0-4/20mA<sub>DC</sub> current signal, and then converts it into a *standardised* OUTPUT signal :

- voltage: 0-10V<sub>DC</sub> or bidirectional  $\pm 10$ V<sub>DC</sub>
- current: bidirectional  $\pm 20$ mA<sub>DC</sub> or unidirectional 0/4-20 mA<sub>DC</sub> active or passive



### • Accessibilities:

- Reduced casing
- Plug-off connectors for screwed connectings
- Internal selection of the output calibers by jumpers, accessible behind the front face.

## Applications

- ♦ PLC input interface
- ♦ Data centralisation on PLC
- ♦ Acquisition, regulation, recording, watching of signals.

## Environment

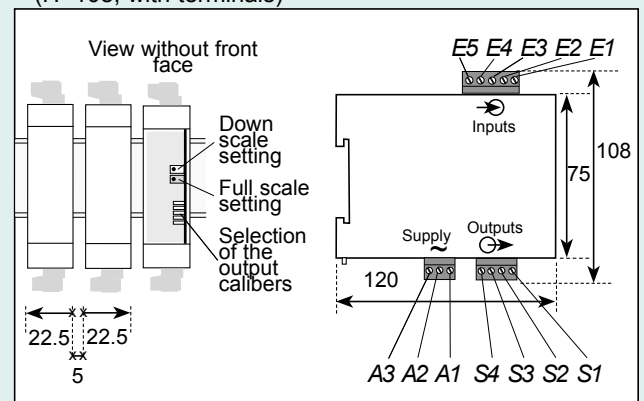
- ♦ Operating temperature : -10°C to +60°C.
- ♦ Storage temperature : -30°C to +80°C.
- ♦  $\text{CE}$  according to IEC 61000-6-4, IEC 61000-6-2 (industrial environment).
- ♦ Disturbance immunity according to the standard IEC 61000-6-2 (IEC 61000-4-3 level 3, IEC 61000-4-4 level 4, IEC 61000-4-6 level 3)

### • Functions:

- Galvanic partition:  
Inputs / [outputs, supply]: 3.8 kV
- Broad supply range
- Low response time: 10ms

## Description

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



- ♦ **Protection:** Case / terminals: IP 20

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



# Technical features at 23°C

INPUTS	<b>Voltage</b>	0-10V <sub>DC</sub> (input resistance: 1MΩ) (±24V <sub>DC</sub> max. between terminals E1 and E3)		Integrated supply for 2-wire sensor 23.1V max. / 14V min. at 20mA / 14.5V min. at 22mA (I max.: 25 mA) Fine settings by multi-turn potentiometers. Possibility to achieve shifted scales.	
	<b>Current</b>	0-20mA, 4-20mA (input resistance: 5Ω) ( I max.  ≤ [5 x I <sub>PE</sub> ] &  I max.  ≤ 100mA between terminals E2 and E3)			
OUTPUTS	<b>Current</b>	0-20mA, 4-20mA, ±20 mA,	(Lr* < 750Ω) (Lr* < 320Ω)	<b>Voltage</b>	0-10V ±10V (Lr* > 1kΩ) (Lr* > 1kΩ)
	<b>Power draw:</b>	on load < 4 VA (2W) empty < 3 VA (1.3W)			
POWER SUPPLY	2 Versions:	High or low voltage (specify on order)			
	<b>High voltage</b>	90...265 V <sub>AC</sub> and 88 ...350 V <sub>DC</sub>	50/60/400 Hz		
TRANSFER	<b>Low voltage</b>	20...40 V <sub>AC</sub> and 20...64 V <sub>DC</sub>	50/60/400 Hz		
	<b>Accuracy rating</b>	: ≤ 0.2%		<b>Response time</b>	: ≤ 250ms [Tr]
	<b>Ripple</b>	: ≤ 0.5%		<b>Pass-band</b>	: 1.5 Hz (-3 decibels) [Bp = 0.35/Tr]
	<b>Galvanic partition</b>	: input / [output, supply] 3.8kV eff. 50Hz 1min. outputs / supply 2kV eff. 50Hz 1min.		<b>Temperature coefficient:</b>	≤ 0.015%/°C
OPTIONS	Shifted or reversed scales.			Short response time : > 10 ms	
	Passive current output 0-20mA, 4-20mA (U: 30V max.)			Long response time : < 40 s	

\*Lr: load resistance

## ELECTRICAL PARAMETERS RELATED TO THE INTRINSIC SAFETY

Inputs	Terminals	U <sub>o</sub> (V <sub>DC</sub> )	I <sub>o</sub> (mA <sub>DC</sub> )	P <sub>o</sub> (mW)	L <sub>o</sub> (mH)	C <sub>o</sub> (μF)
Sensor supply	E5, E2	23.1	100	578	4	0.138
Current	E2, E3	5.5	0.6	0.8	900	58
Voltage	E1, E3	5.5	0.6	0.8	900	58
Um < 375 V <sub>DC</sub> and Um < 265 V <sub>AC</sub>						

## Coding

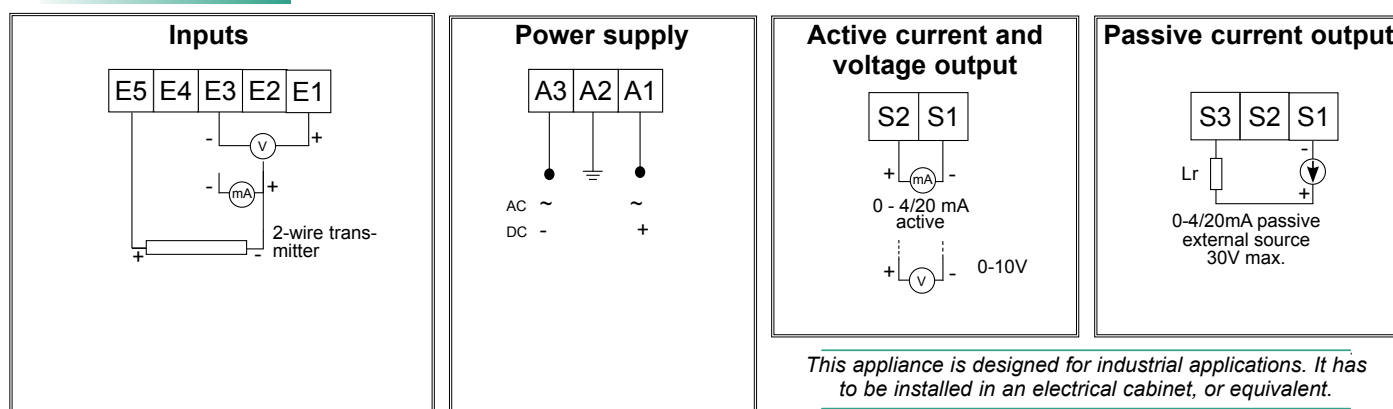
### Types:

**ARDETEM reference: TMP-SI**  
**SFERE reference: CAP PLUS-SI**

Supply : High or low voltage (specify)  
(2) high voltage : 90...265 V<sub>AC</sub> or 88...350 V<sub>DC</sub>  
(3) low voltage : 20...40 V<sub>AC</sub> or 20...64 V<sub>DC</sub>

Order example :  
For a **TMP-SI** or a **CAPPLUS-SI** powered in  
230 V / 50Hz request the reference:  
**TMP-SI/CAPPLUS-SI 2**

## Wiring



*This appliance is designed for industrial applications. It has to be installed in an electrical cabinet, or equivalent.*



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