

PROGRAMMABLE SIGNAL CONDITIONERS

TPI v10/μCv10

ARDETEM

SFERE



Features

- **Universal power supply:**
20 to 250 Vac and 20 to 250 Vdc
- **Universal input:**
100mV, 1V, 10V, 270V, 20mA, Pt100, Ni 100 (2, 3 or 4wire), ΔPt100 thermocouple, resistance and potentiom.
- **Typical response time:** 300ms
- **Supply for 2-wire sensor**
- **Isolated analog output(s) (A/2A)**
0-4-20mA current (active/passive) or 0-10V voltage.



Relay outputs (R) : 2 or 4 change-over relays (8A/250 VAC on resistive load).

Digital communications (N) isolated RS485 Modbus/Jbus

Sensor break detection and self-diagnosis.

Isolation input / outputs / supply.

Mode simulation allowing to validate the configuration or the installation.

Programming either with micro-console or by the PC software SlimSET via a standard USB/μUSB cable.

Configuration

Easy programming on front face with a micro-console or with the PC software SlimSET (via a standard USB/μUSB cable).

Programming with the Micro-console

The graphical rear-lit LCD with tactile keyboard allows to visualise the following information:

- the measured value with its unit,
- the value of the analog output,
- the product tag name,
- the status of the relay outputs and the RS485 communications.
- Scrolling message for programming help in various languages
- Passcode protected programming

Programming by PC: SlimSET

Programming software (Windows environment) allowing:
The storage of the configurations as files which can be consulted, modified, duplicated or loaded into the converters.
The edition and printing of files with or without having a signal conditioner connected.

Features

Supply: 20 to 250 Vac and 20 to 250Vdc

Power draw: 2.8 W max. 8 VA max.

Dielectric withstanding: 3.0 kV-50Hz-1min.

Operating temperature: -20 to +60°C

Storage temperature: -20 to +70°C

Installation: Pollution degree 2 / voltage surge II

Protection: case / terminals: IP 20

Removable terminal blocks for screwed connections

- (2.5 mm², flexible or rigid)
- Weight: 290g (with packaging)
- Self-extinguishing case of black UL 94VO PA66.
- Mounting in switchbox: latching on symmetrical DIN rail.

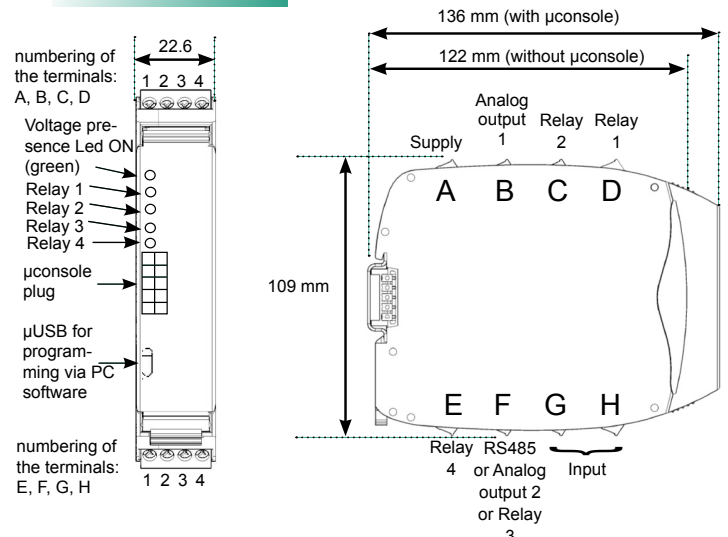
Compliance with standards:

- Directive LV 2014/35/UEEN 61010-1
- Standard for UL electrical safetyUL 61010-1
-CSA C22.2 NO.61010-1-12
- Directive ATEX 2014/34/UE area 2.....EN 60079-0
-EN 60079-15
- Directive EMC 2014/30/UEEN 61326-1

Marking:



Dimensions



Features

Inputs

Types of INPUTS	Measure range adjustable from:	Permanent overload	Intrinsic error	Input impedance
mA(1)	-2 to +22mA	±100mA	< ±0.1% of the MR	Max. drop 0.9V
mV(1)	-10 to +110mV	±1V		≥ 1MΩ
V	-0.1 to +1.1V	±50V		
	-1 to +11V	±300V		
Thermocouples(1) Standard IEC 581 J K B R S T E N L W W3 WRE5	°C	°F	< ±0.1% of the MR or 30µV typical (60µV max.)	≥ 1 MΩ
	-160/1200	-256/2192		
	-270/1370	-454/2498		
	200/1820	392/3308		
	-50/1770	-58/3218		
	-50/1770	-58/3218		
	-270/410	-454/770		
	-120/1000	-184/1832		
	0/1300	-32/2372		
	-150/910	-238/1670		
1000/2300	1832/4172			
0/2480	32/4496			
0/2300	32/4172			
Pt100Ω sensor(1)(2) Standard IEC 751 (DIN 43760)	°C	°F	< ±0.1% of the MR	Current 250µA
	-200/850	-328/1562		
Ni 100 sensor (1)(2)	-60/260	-76/500		
Resistive sensors	Calibers 0-440 Ω(1)(2) and 0-10 kΩ		< ±0.1% of the MR	Max. current 250µA
Potentiometer	from 100Ω to 10 kΩ			Max. voltage 100mV
2-wire sensor supply	24 Vdc ±15% with protection from short-circuits. 25 mA max.			
Special linearisation programming up to 20 points	On input: mV, V, mA, resistive sensor and potentiometer			
Extraction of the square root	On input mV, V or mA			

- (1) Sensor break detection:
mA input (if down scale ≥ 3,5mA)
Other inputs: a 12µA pulsed current allows the detection of line or sensor break.
- (2) Wiring possible in 2, 3 and 4 wire
Influence of the line resistance (0<RI<<25Ω) included in the announced intrinsic error.
- (3) CJC efficiency:
Internal CJC: ±2°C ±0.03°C/°C from -10°C to +50°C
CJC (option terminal) : ±1°C from -10°C to +50°C
- MR Measure range
Thermal drift <150ppm /°C

Outputs

Code	Types of OUTPUTS	Features
A	1 analog Current active/passive Voltage	Current: Direct or reversed 0-20mA Load impedance ≤ Lr 600Ω Voltage: Direct or reversed 0-10V Load impedance ≥ Lr 5KΩ
2A	2 analog isolated Current active/passive Voltage	Accuracy: 0.1% in relation to the display Ripple: 0.2% Response time in relation to the display: 40ms
R	2 change-over relays	2 setpoints per relay configurable over the whole MR. Hysteresis programmable from 0 to 100%. Time delay programm. from 0 to 999.9 sec. (8A/250 VAC on resistive load)
R4	4 change-over relays	
N	RS485 digital communications	Protocoles MODBUS/JBUS (EIA RS485)

Response time of the outputs:

(for a variation from 10 to 90% of the input signal)

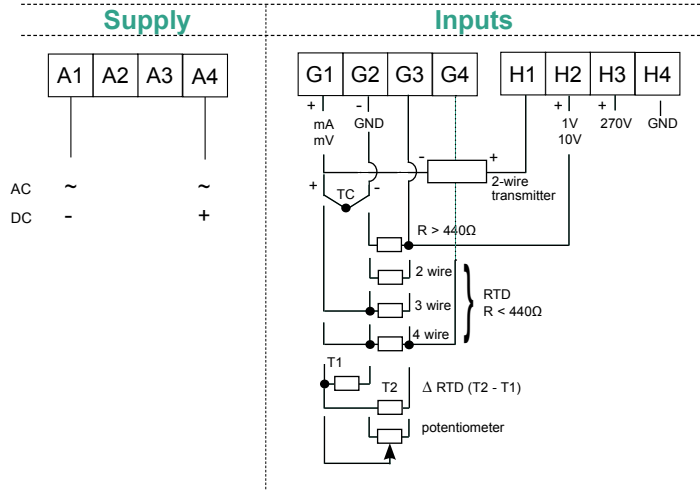
Typical response time: 300 ms

Add 40 ms for the response time on the analog output, or 10 ms for the response time on the relay outputs.

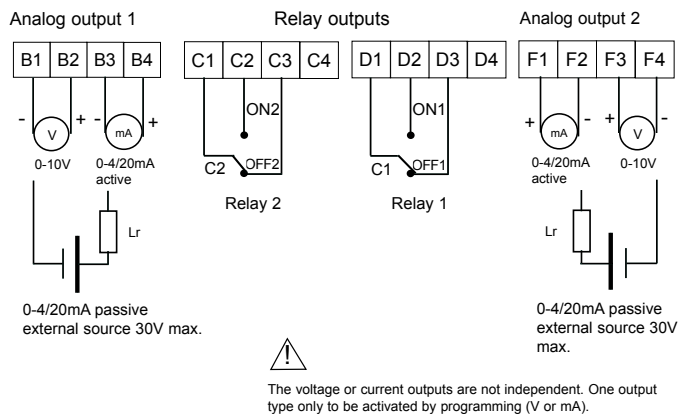
Galvanic isolation:

3.0kV-50Hz-1min. between Supply, Input, Analog output, Relay output and RS485.

Connectings



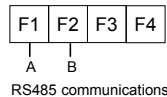
Outputs of the TPIV/µCv 10 A/AR/2AR



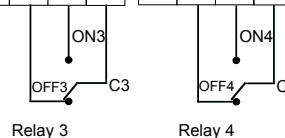
TPIV/µCv 10N outputs

TPIV/µCv 10 AR4 outputs

RS485 output



Relay 3 and Relay 4



Coding

ARDETEM reference: TPIV10

SFERE reference: µCv10

Type **TPIV/µCv 10 ARN**

Outputs:

- A analog I/U isolated
- 2A analog I/U isolated
- R 2 change-over relays
- R4 4 change-over relays
- N RS 485 comms

Available versions:

TPIV/µCv 10	A	AR	2AR	N	AR4
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(consult with us for different configurations)

Order example: For a signal conditioner with universal input + 1 analog output + 2 relays: reference **TPIV/µCv 10 AR**

• Standard programming cable USB type A male to µUSB type B male: reference **C1-µUSB**

• CJC terminal (option): reference **B1CSF-4**

your representative



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