

PROGRAMMABLE SIGNAL CONDITIONERS

Series TPIv

TPIv400/401-TPAv401

1 analog output

TPIv 450/451

2 isolated analog outputs



Features

- **Universal power supply:** 20 to 250 Vac and 20 to 250 Vdc
- **Process input: (TPIv 400/450)** $\pm 100\text{mV}$, $\pm 1\text{V}$, $\pm 10\text{V}$, $\pm 270\text{V}$, $\pm 20\text{mA}$
- **Universal input: (TPIv 401/451)** $\pm 100\text{mV}$, $\pm 1\text{V}$, $\pm 10\text{V}$, $\pm 270\text{V}$, $\pm 20\text{mA}$, Pt100, Ni 100 (2, 3 or 4 wire), $\Delta\text{Pt}100$ thermocouple, resistance and potentiom.
- **Average response time** 150ms (15ms version F)
- **Supply for 2-wire sensor**
- **Isolated analog outputs (A)** 0-4-20mA current (active/passive) or 0-10V voltage.

Relay outputs (R) : 2 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/ μ USB cable.

Configuration

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

Programming with the Micro-console

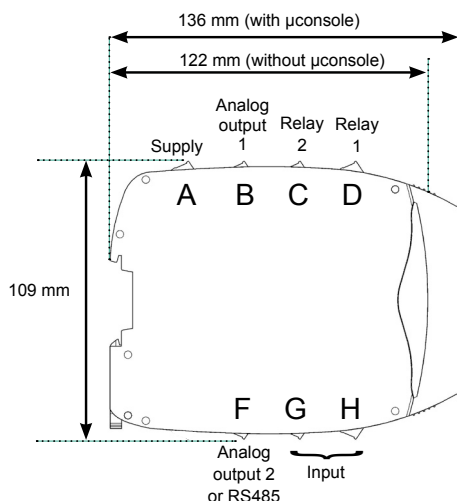
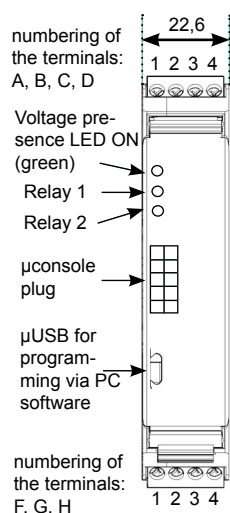
The graphical rear-lit LCD with tactile keyboard allows to visualise the following information:

- the measured value with its unit,
- the value(s) of the analog output(s),
- 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
- Programmable keys for direct access

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.

Dimensions



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:



II 3 G Ex nA IIC T4 Gc



Process
Control
Equipment
E482453

Coding

Type	TPIv 40x ARN	Outputs:
or		A analog I/U isolated
Type	TPIv 45x FR	R 2 change-over relays
		N RS 485 comms
		F fast version

Available versions:

TPIv 401/400	A	AR	ARN
TPIv 451/450	-	R	-
TPAv 401	A	-	-

(consult with us for different configurations)

Order example: For s signal conditioner with universal input + 1 analog output + 2 relays: reference **TPIv 401 AR**

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

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

Features

Inputs

TPIV		Types of INPUTS	Measure range adjustable from:		Permanent overload	Intrinsic error	Input impedance
400 450	401 451						
• •	• •	mA(1)	-2 to +22mA (U) -22 to +22mA (B)		±100mA	< ±0.1% of the MR for inputs of the type (U)	Max. drop 0.9V
• •	• •		-10 to +110mV (U) -110 to +110mV (B)				
• •	• •	V	-0.1 to +1.1V (U) -1.1 to +1.1V (B)		±50V	< ±0.05% of the MR for inputs of the type (B) (4)	≥ 1MΩ
• •	• •		-1 to +11V (U) -11 to +11V (B)				
• •	• •						
• •	• •						
• •	• •						
• •	• •						
		Thermocouples(1) Standard IEC 581	°C	°F		<±0.1% (3) of the MR or 30µV typical (60µV max.)	≥ 1 MΩ
	•	J	-160/1200	-256/2192	-		
		K	-270/1370	-454/2498			
		B	200/1820	392/3308			
		R	-50/1770	-58/3218			
		S	-50/1770	-58/3218			
		T	-270/410	-454/770			
		E	-120/1000	-184/1832			
		N	0/1300	-32/2372			
		L	-150/910	-238/1670			
		W	1000/2300	1832/4172			
		W3	0/2480	32/4496			
		WRE5	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 (-20 to +60°C):
Internal CJC: ±2°C ±0.03°C/°C
CJC (option terminal): ±1°C
- (4) <±0.1% of the MR (B) for the version F if acquisition time <100ms
- MR Measure range
Thermal drift <150ppm /°C

Outputs

TPIV 401	TPIV 451	TPIV 450	Code	Types of OUTPUTS	Features
•	•	•	A	1 analog	Current: Direct or reversed 0-20mA Load impedance ≤ Lr 600Ω Voltage: Direct or reversed 0-10V Load impedance ≥ Lr 5KΩ Accuracy: 0.1% in relation to the display Ripple: 0.2% Response time in relation to the display: 40ms
•	•	•	R	2 analog isolated	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)
•	•	•	N	2 change-over relays	
•	•	•		RS485 digital communications	Protocole MODBUS/JBUS (EIA RS485)

Response time of the outputs:

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

Average response time: 150 ms (15ms for the version F)

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(s), Relay output and RS485.



RCS Lyon 444-429-476 - Printed in France.

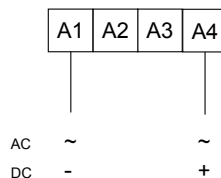
e-mail : info@ardetem.com
http : //www.ardetem.com

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

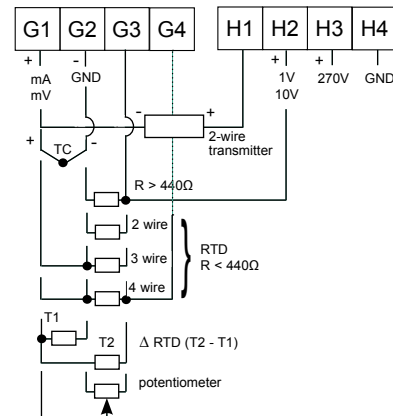
Tél. : 33 (0)4 72 31 31 30
Fax : 33 (0)4 72 31 31 31

Connectings

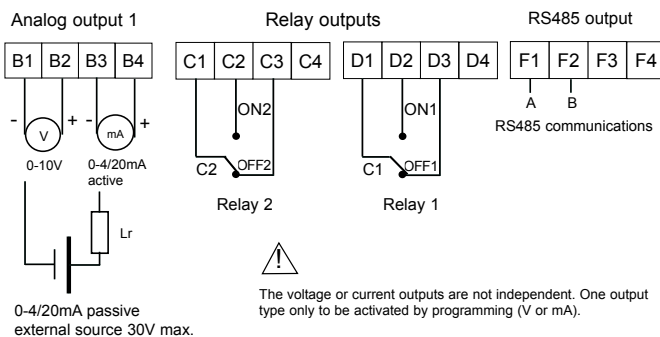
Supply



Inputs

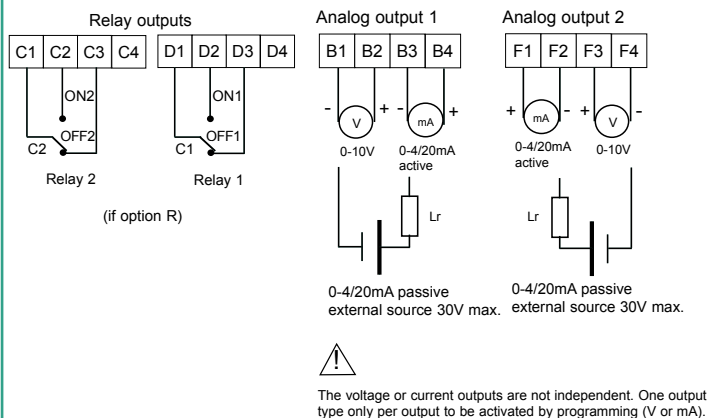


Outputs of the TPIV 401 - TPIV 400



Outputs TPIV 451/450 (R)

TPIV 451/450 Version with 2 independent isolated analog outputs.
TPIV 451/450 R Version with 2 independent isolated analog outputs and 2 relays.



your representative