

# UNIVERSAL INPUT RADIO TRANSMITTER TPIW401AR

Used for the remote control, the watching, the telemetering in applications where the wiring is delicate and costly.



## Features

- **Universal power supply:**  
20 to 270 Vac and 20 to 300 Vdc
- **Universal input:**  
 $\pm 100\text{mV}$ ,  $\pm 1\text{V}$ ,  $\pm 10\text{V}$ ,  $\pm 300\text{V}$ ,  $\pm 20\text{mA}$ , Pt100 3 wire, Ni 100, thermocouple, resistance and potentiometer.
- Average response time: 200ms
- Supply for 2-wire sensor
- **Insulated analog output (A)**  
0-4-20mA (active/passive) current or 0-10V voltage.
- **Output 2 relays (R)**  
(8A/250 VAC on resistive load).

- **Radio output:**  
Mode sender or receiver  
433-434 MHz band, 16 channels  
RATED power: 10mW  
License free use
- **Radio connection installation help menu:**

- display of the reception level
- of the sequence error rate
- of the connection loss counter

**Insulation:** input / outputs / supply.

- **Safety:**  
Checking of the radio sequence validity by CRC16  
Reception failure time out with setting in safety position  
Checking of the current on the output loop  
Self-diagnosis  
Detection of the sensor rupture (depending on the input)  
Checking of the configuration data  
Programming protected by code

### Test functions:

- Simulation of the input measure
- Simulation of the analog output
- Test for setting in error position

## Configuration

Easy programming on front face via the micro-console or with the PC software SUPERVISION.

### Programming with the micro-console

Graphical rear-lit LCD allowing the visualisation of 4 types of information :

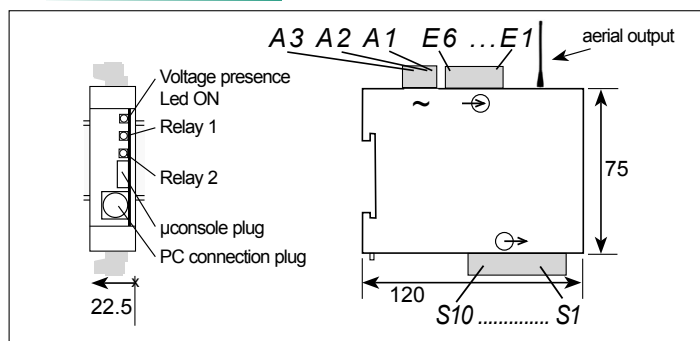
- the measure value
- the displayed measure unit
- the value of the analog output or the product marking name
- the status of the relay outputs

This  $\mu$ console with LCD also allows displaying this information either vertically or horizontally, according to the sense in which the converter is mounted.

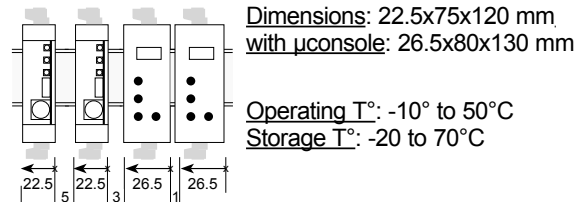
### Programming by PC: SUPERVISION

Programming software (Windows environment) allowing:  
The storage of 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 converter connected.

## Dimensions



Protection: housing / terminals: IP 20  
Plug-off connectors for screwed connections  
(2.5 mm<sup>2</sup>, flexible or rigid)  
Weight: 240g (with packaging)  
Self-extinguishing case of black UL 94VO ABS.  
Mounting in switchbox: latching on symmetrical DIN rail.  
*Rack version: consult.*



**Dimensions:** 22.5x75x120 mm  
**with  $\mu$ console:** 26.5x80x130 mm

**Operating T°:** -10° to 50°C  
**Storage T°:** -20 to 70°C

- ♦ **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)

## Coding

Type	TPIW 401 AR
<b>Universal inputs</b>	
<b>Outputs:</b>	
A	1 analog output
R	2 relays

**Power supply:** 20 to 270 Vac and 20 to 300Vdc

Power draw : 3.5 W max. 6 VA max.  
Dielectric withstanding: 2 kV-50Hz-1min.

### Galvanic partition:

2kV-50Hz-1min. between supply, input, analog output, relay outputs

# Features

## Inputs

Types of INPUTS	Measure range adjustable from:		Permanent overload	Intrinsic error	Console resolution	Input impedance
mA*	----- -2 to +22mA -22 to +22mA		±100mA	< ±0.1% of the MR	10 µA	Max. drop 0.9V
mV*	----- -10 to +110mV -110 to +110mV		±1V		100 µV	≥ 1MΩ
V	----- -0.1 to +1.1V -1.1 to +1.1 V		±50V		1 mV	
	----- -1 to +11V -11 to +11V				10 mV	
	----- -30 to +330V -330 to +330V		±600V		100 mV	
Thermocouples* Standard IEC 581	°C	°F		<±0.1% of the MR  (2)	0.1° or 1° C or F	≥ 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 (1)* 3 wire sensor, Standard IEC 751 (DIN 43760)	°C	°F	-	<±0.1% of the MR	0.1° or 1° C or F	Current 250µA
	-200/850	-328/1562	-			
Ni 100 3 wire (1)*	-60/260	-76/500	-			
Resistive sensors	Calibers 0-440 Ω* and 0-2.2 kΩ (0-8.8 kΩ optional)		-	<±0.1% of the MR (0.5% for 0- 2kΩ)	0.1 Ω (400Ω) 1Ω (2kΩ)	Current max. 250µA
Potentiometer	from 100Ω to 10 kΩ		-		0.1%	Voltage max. 100mV
Supply for 2-wire sensor	24 Vdc ±15% with protection from short-circuits. 25 mA max.					
Special linearisation programming up to 20 points	On inputs: mV, V, mA, resistive sensors and potentiometer					
Extraction of the square root	On inputs: mV, V or mA					

- \* Sensor rupture detection: (2) Or 30 µV typical (60µV Max.)  
mA input (if down scale ≥ 3.5mA)  
Other inputs: a 12µA pulsed current allows the detection of line or sensor rupture.  
C/JC efficiency: ±0.03°C/°C  
±0.5°C from -5°C to +50°C
- (1) The line resistance influence (0<Rl<25Ω) is included in the announced intrinsic error.  
MR measure range  
Thermic drift <150ppm /°C

## Outputs

Code	Types of OUTPUTS	Features
A	1 analog	Current: Direct or reversed 0-20mA Load impedance ≤ Lr 600Ω
	Active/passive current Voltage	Voltage: Direct or reversed 0-10V Load impedance ≥ Lr 5000Ω
R	2 change-over relays	2 setpoints per relay, configurable over the whole MR. Hysteresis programmable from 0 to 100%. Time delay programmable from 0 to 25 sec. (8A/250VAC on resistive load)

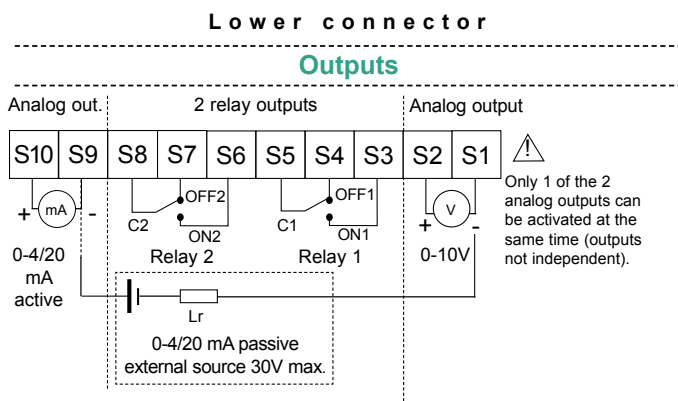
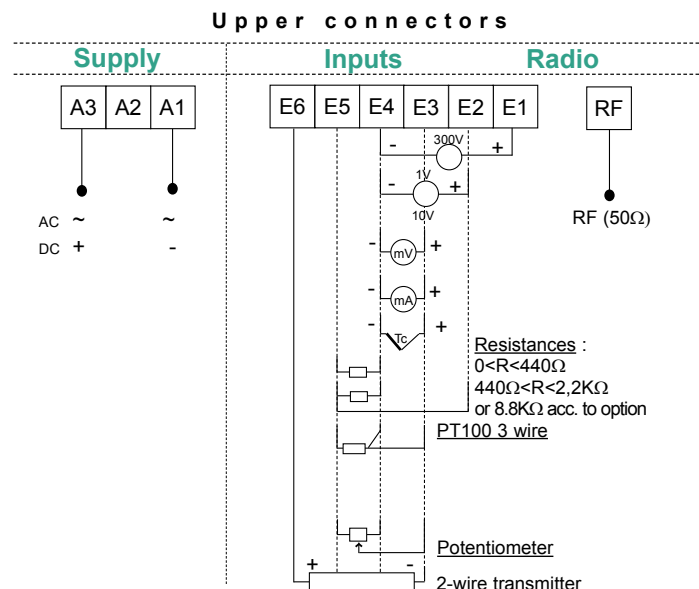
**Typical response time: 200 ms (for a variation from 0 to 90 % of the input signal) (1)**

(1) Add 40 ms for the response time on the analog output

### • Radio

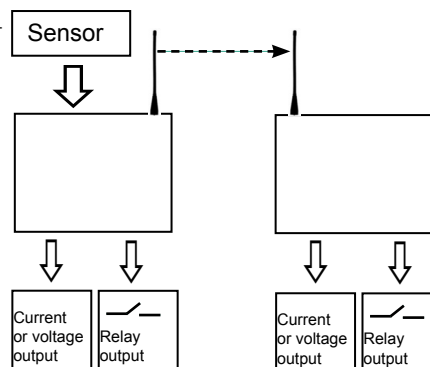
Frequency 433 to 434.790 MHz (16 channels of 100kHz)  
Radio flow: 10 kbauds  
Emission power 10 dBm (10mW)  
Receiving sensitianness -104 dBm  
Aerial impedance 50Ω  
Aerial connector Type SMA Reverse

# Wiring



Mode sender:

The TPIW operates like a classical transmitter. Measurement of the input and positioning of its outputs. It will transmit its measure and the status of its outputs via radio.



Mode receiver:

The TPIW transmits the values received via radio on its outputs and displays the measure value on its micro console

Reach in free field: from 1 to 10 KM depending on the used aerial (consult)

**your representative**



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