

PROGRAMMABLE CONVERTERS

frequency input, counting input

TPI 10I/10IC/550

frequency input

Features

► Frequency measurement or counting input:

Possibility of connection to npn, pnp, logic, namur, contact, alternating up to 500 V. type sensors (without external components)

TPI 10I/TPI 550 : Mode frequency-meter

TPI 10IC : Mode counting

► Logic input

► Self-diagnosis

► Insulation between input / outputs / supply

► Universal power supply : 20 to 270 VAC 20 to 300 VDC

► 1 insulated analog output (A) TPI 10I/10IC

Programmable in 0-4-20mA (active or passive) current or in 0-10V. voltage



► 2 insulated fast analog outputs

TPI 550

0-4-20mA current or 0-10V.voltage (specify on order)

Relay outputs (R):

TPI 550: 2 relays 1NO : 5A/250 Vac on resistive load

TPI 10 I/10IC : 2 inverting relays 8A/250 Vac on resistive load

Insulated digital data link (N): TPI 10I/ 10IC RS 485 Modbus /Jbus

(Possible only with an active current output)

Mode driver: the analog output is piloted either locally by the micro-console, or by the digital data link (TPI 10I/ 10IC).

► Function simulation of the input measure

► Programming either with the micro-console or by PC via the software SuperVision.

Functions

• Frequency measurement or counting input:

In mode frequencymeter: TPI 10I/550

- Measurement of a signal varying from 0,01 Hz to 130kHz (according to the type of input), with an accuracy of 0.025% of the measure and a thermic drift < 50 ppm/°C.
- Special linearisation on 41 points.
- Enlarging effect

In mode counting: TPI 10IC

- Programming of a pulse weight, of an initialisation value and of an auto-init setpoint.
- Saving of the counter in case of power supply cut.

• Logic input

Type of sensor: potential free contact, logic (0-5 V)
Not insulated from the measure input
Display hold
0 reset of the min. and max.
0 reset / re-load / counter stop and start (TPI 10IC)

Configuration

A range of measure interfaces fully programmable either with the micro-console or by PC (software for programming the whole range of the ARDETEM programmable converters).

• Programming with the micro-console

This miniaturised micro-console connected on the front face of the instruments allows:

- the visualisation of the measure and the status of the analog and relay outputs,
- the visualisation and the modification of the programming,
- the teleloading of programming files for duplication to other converters.

• Configuration software

Programming software (Windows environment) allowing:

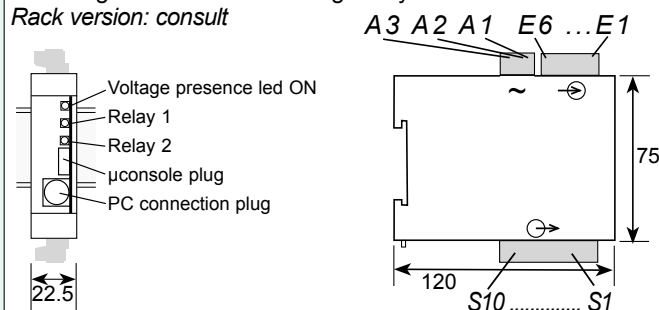
- the storage of configurations as files which can be consulted, modified, duplicated or loaded into the converters,
- the edition and printing of files with or without having a converter connected.

• Digital data link RS485 (Modbus/Jbus)(TPI 10I/10IC)

Allows the communication with processing and exploitation systems (PLC's), as well as a complete configuration of the input, the output and the safeties.

Dimensions

Self-extinguishing case of black UL 94VO ABS
Mounting in switchbox: latching on symmetrical DIN rail.
Rack version: consult



Dimensions	22.5x75x120 mm
With µconsole	26.5x80x130 mm
To allow the inserting of the µconsole, mount the instruments vertically (on horizontal DIN rail), leaving a 5 mm. space between each.	
Operating T°:	-10° to 50°C
Storage T°:	-20 to 70°C

Features

Frequency or counting input

- **Type of sensor:** npn, pnp, logic, namur, contact, alternating.
- **Logic:** voltage up to 18V
Low level ≤ 1.2 V
High level ≥ 2.1 V
- **Npn or contact:**
Input resistance 4.7K Ω to the +18 Vdc
- **Pnp:**
Input resistance 10 K Ω to the GND
- **Namur:**
Supply 8.4 V (10 mA max.)
Input resistance: 1 K Ω to the GND
Low level ≤ 1.2 mA
High level ≥ 2.1 mA
- **Alternating:**
Signal between 5 and 500 Veff.
Input resistance: 1 M Ω
- **Measurable frequency** from 0.01 Hz to 130 KHz according to the type of sensor.
- **Accuracy:** 0.025% of the measure
- **Scale factor** programmable
- Enlarging effect
- **Linearisation:**
Linear input or special linearisation in 41 points (in x and in y)
- Cut off programmable
- **Filtering:**
Programmable analog filter, allows suppressing any parasit noises.
Digital filtering, coefficient and action range programmable - allows stabilising the display in case of unsteady input.
- **Sampling time:**
1 measure window + 1 signal period
Measure window: Programmable for the TPI 550 (from 0.5 to 100 ms)
100 ms for the TPI 10I
- Programming of the minimum measurable frequency

Outputs

Code	Types of OUTPUTS	Features
A	1 (TPI 10I/10IC)	Current: direct or reversed 0-20mA Load impedance $\leq L_r$ 600 Ω Voltage: direct or reversed load impedance $\geq 5k\Omega$
	2 (TPI 550)* analog(s)	
R	2 relays 1 NO (TPI 550) 2 relays 1NO-NC (TPI 10I/10IC)	2 setpoints per relay, configurable on the whole MR. Hysteresis programmable from 0 to 100%. Time delay programmable from 0 to 25 sec. 5A/250V (TPI550) on resistive load 8A/250V (TPI10 I) Mode alarm (setpoint or window), or mode pulses (TPI 10IC)
N	Digital data link (1) RS485 Protocole Modbus/Jbus (EIA RS485) insulated. (with or without parity, even or odd; 1 or 2 stop bits) (only on TPI 10I or IC with active current output)	

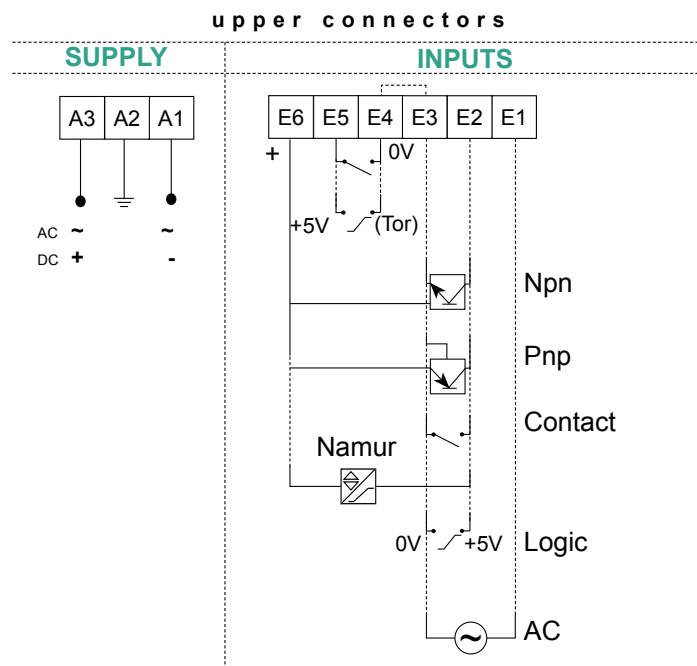
*For the TPI 550 the outputs are standard and the choice current or voltage must be specified on order.

Galvanic partition: 2kV-50Hz-1min. between supply, input, analog output, relay outputs and digital data link (TPI10I/10IC) 1 KV, 50Hz, 1 min. between the analog output and the digital data link (TPI10I/10IC) or between the 2 analog outputs (TPI 550)

- **Power supply:**
20 to 270 VAC and 20 to 300 VDC
Power draw: 4 W maximum, 7 VA maximum

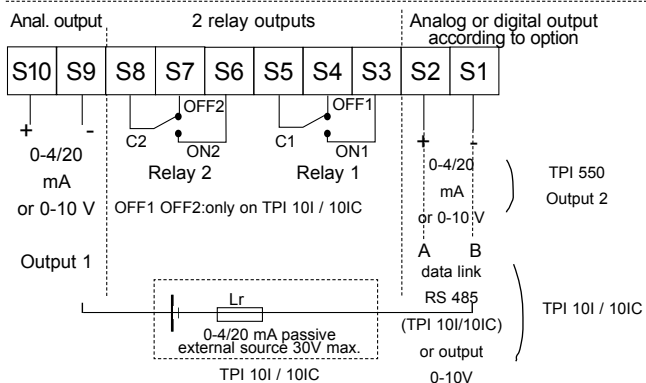
- ♦ **CE** according to IEC 61000-6-4, IEC 61000-6-2 (industrial environment).
- ♦ Disturbance immunity according to the standard
IEC 61000-6-2(IEC 61000-4-3 level 3, IEC 61000-4-4 level 4, IEC 61000-4-6 level 3)

Wiring



Lower connector

OUTPUTS OF THE TPI 550 / TPI 10I/IC



Coding

Type	TPI	10 I	ARN
Versions:	10I/550	Frequency input version	Outputs:
	10IC	Counting input version	A 1 Analog I/U insulated
	K	Rack version (consult)	R 2 inverting rel. 1NO or NO-NC
			N Data link RS 485 (TPI 10I/10IC)

Available versions: (consult for different configurations)

TPI 10I	A	AR	ARN
TPI 10IC	-	AR	ARN
TPI 550		R	-

Order example: for a frequency input converter + analog output + 2 relays, request reference:
TPI 10I AR

your representative



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