

DIGITAL MEASURE TRANSMITTER

single/3-phase balanced/unbalanced 3/4 wire networks

Series TRMv5

true RMS measurement
suitable for disturbed electrical networks

Type

The **transmitters TRMv5** are especially designed for the **measurement**, the **control** and the **transmission** of all the parameters from AC electrical networks: voltage, current, power, energy, frequency, etc...

Programming by the PC software SlimSET via a standard USB / μ USB cable or by tactile LCD micro console.

Environment

- Operating temperature:
-10°C to +55°C.
- Storage temperature:
-25°C to +70°C.
- Marking 



Functions

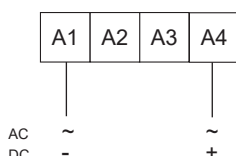
- Universal, for all types of electrical networks. The following input calibers can be programmed:
Current: 1 and 5 A Ac
Voltage:
- 60V L-N / 100V L-L
- 110V L-N / 190V L-L
- 250V L-N / 440V L-L
- 350V L-N / 600V L-L
- High-performance measure: continuous measurement without interruption, suitable for disturbed networks.
- Cycle time: 40ms
- Universal power supply

Available options

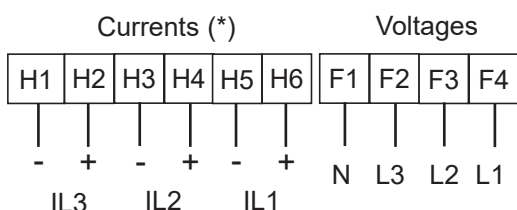
- 5 analog outputs
- 3 relay outputs
- RS485 digital communications
- Ethernet output (TCP Modbus)
- Harmonics analysis
- Logic input

Connectings

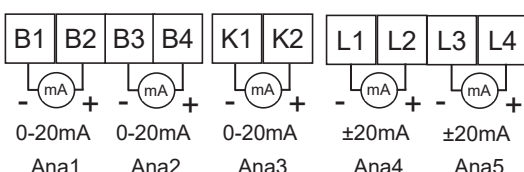
Supply



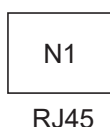
Inputs



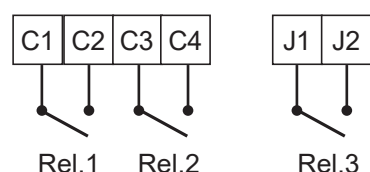
Analog outputs



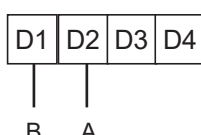
Ethernet output



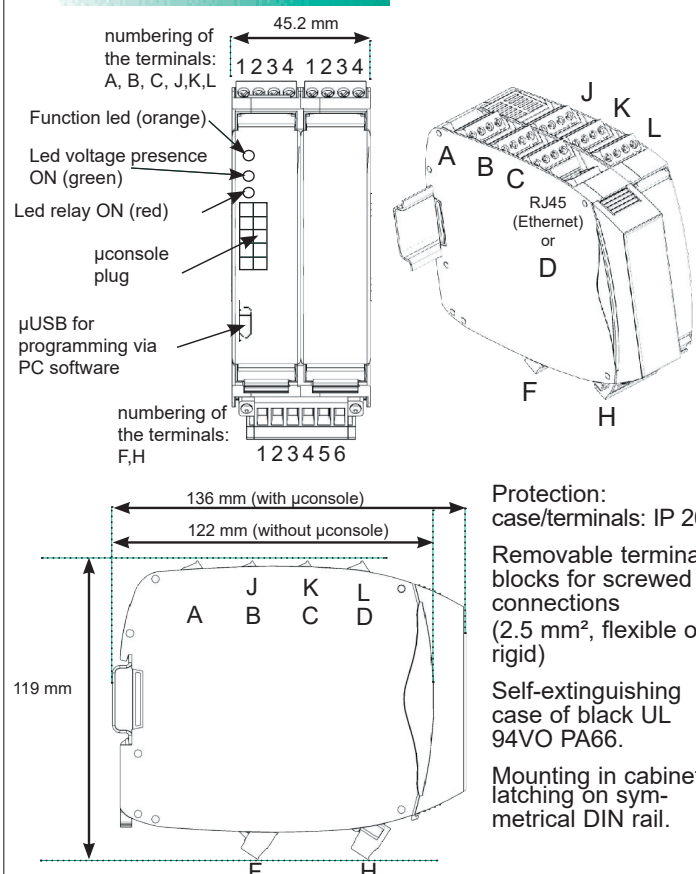
Relay outputs



RS485 output



Dimensions



Protection:
case/terminals: IP 20

Removable terminal blocks for screwed connections (2.5 mm², flexible or rigid)

Self-extinguishing case of black UL 94VO PA66.

Mounting in cabinet: latching on symmetrical DIN rail.

Technical features

Inputs

- **Voltage**
4 programmable ranges:
- 60V L-N / 100V L-L
- 110V L-N / 190V L-L
- 250V L-N / 440V L-L
- 350V L-N / 600V L-L
 - **Current**
2 programmable ranges: 1 and 5 A AC with automatic switching of the internal calibers
- Measurable overranges** 1.2 In; 1.2 Un
- Overloads** permanent: 750 V, 2 In
During 10 s: 1000 V, 10 In
During 0.5 s: 100A
- Power consumptions** voltage input: 1.5 MΩ resistances
current input: < 0.2 VA
- Test voltage** 3 kV / 50 Hz / 1 min. between each current input
- Frequency** 10...50...65 Hz (other frequencies: consult with us)
- Network type** single or 3-phase balanced/unbalanced with or without neutral

Outputs

- **RS485 output (option [N])**
Type 2-wire with galvanic isolation
Baud rate 4800 / 9600 / 19200 / 38400 bauds
Protocole Modbus / Jbus RTU 8 bits programmable parity
Format of the data Integer 16 bits (table of the units) or 32 bits decimal points and units fixed.
- **Relay outputs (option [2R] or [3R])**
Type of contact on potential free contact (galvanic isolation: 3KV) output 1NO
Rated load 5A - 250 VAC
- either **SETPOINTS OUTPUT**
Setting of the setpoints : 0 to 100% of the meas. range (programmable)
Switching hysteresis : 0 to 15% of the setpoint (programmable)
Time delay : 0 to 15s (programmable)
- or **PULSES OUTPUT**
Count rate : 4 / 2 / 1 pulses per second according to the programmed width
Width of the pulses : 100 / 200 / 400ms (programmable)
- **Analog outputs (option [2A] or [4A] or [5A])**
Output signal: programmable with galvanic isolation (1KV betw. outputs):
Bidirectional outputs:
-20/20mA -10/10mA
-5/5mA 0/5mA 0/10mA 0/20mA 4/20mA
Unidirectional outputs:
0/5mA 0/10mA 0/20mA 4/20mA
Scale setting 0 to 100% of the measure range (programmable)
Admissible load up to 500Ω (20mA)
Accuracy of the card < 0.1% of the up scale
Resolution 16 bits
Max. residual ripple. <25mV (peak to peak) on 500Ω load
Response time typical 60/80ms (input/output)
Thermal drifts < 150 ppm/°C
- **Ethernet output (option [F])**
Protocole TCP/IP (Modbus) with galvanic isolation
Speed 10 / 100M
Connecting RJ45
Embarked web server for the reading of the measures.

- **Logic input (option [T])**
Nominal voltage 24VDC ±30% with galvanic isolation 3KV

- **Harmonics analysis (option [H])**
Mesurement of the voltage and current harmonics of the 3 phases up to rank 50. Retransmission possible in Modbus.

- **Profibus or Profinet output (option [PB] or [PN])**

Power supply

Universal power supply
20...250 VAC / 21.5...250 VDC
Power draw: 11 VA max. in ac, 6W max. in DC

Measure

Accuracy rating	Voltages, currents:0.2 Powers: class.....0.5 Active energy: class.....1% Reactive energy: class.....1%
Measuring method	fast simultaneous sampling of the 3 voltages and the 3 currents. Digital calculation on 32 bits. TRMS measurement of deformed signals up to the harmonic 51
Digital filtering	programmable on several levels
Energies	Saved
Cycle time	40ms (for all network types)

Wiring

With detailed manual, delivered with the instrument.

Compliance with standards

Electrical safety	EN 61010-1
Protection class	II double isolation, voltage inputs by protection impedance. The current inputs are electrically isolated from one another.
Environment and accuracy ...	IEC 61557-12
Directive EMC 2014/30/UE ..	EN 61326-1
Energy counting	IEC 62053-22
Pollution degree	2
Measure category	CAT III 300VAC L-N CAT II 600VAC L-N
IN/OUT test voltage	3 KVAC 50Hz 1min.

Coding

TRMv5 3U, 3V, 3 I, cos φ, cos φ/phase, F, P 10/15min., Q 10/15min., S, P/phase, Q/phase, leak current, E active, E reactive, inductive and capacitive

[H] harmonics analysis	[T] 24Vdc isolated logic input
[N] RS485 output	[F] Ethernet output + embarked web server
[2R] 2 relay outputs	[PB] Profibus output
[3R] 3 relay outputs	[PN] Profinet output
[2A] 2 unidirectional analog outputs	
[4A] 2 unidirectional analog outputs 2 bidirectional analog outputs	
[5A] 3 unidirectional analog outputs 2 bidirectional analog outputs	

Order example:

- For a TRMv5 with 2 relay outputs (setpoint or pulses), 2 unidirectional analog outputs and RS485 output request the reference:

TRMv5 2A 2R N

- For a TRMv5 with 5 analog outputs and RS485 output request the reference: **TRMv5 5A N**

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



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

your representative