

DIGITAL MEASURE TRANSMITTER

single/3-phase balanced networks

Series TRMv2

true RMS measurement
suitable for disturbed electrical networks

Type

The **transmitters TRMv2** 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

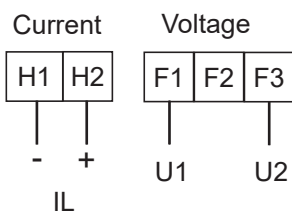
- Universal, for single or 3-phase 3/4 wire balanced networks.
The following input calibers can be programmed:
Current: 1 and 5 A AC
Voltage:
- 60V L-N / 100V L-L
- 110V L-N / 190V L-L
- 250V L-N / 440V L-L
- 350V L-N / 600V L-L
- High-performance measure: continuous measurement without interruption, suitable for disturbed networks.
- Cycle time: 40ms
- Universal power supply

Available options

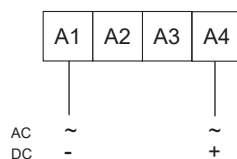
- ♦ 1 or 2 analog outputs
- ♦ 2 relay outputs
- ♦ RS485 digital communications
- ♦ Ethernet output (TCP Modbus)
- ♦ Harmonics analysis

Connectings

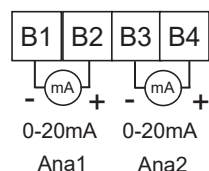
Inputs



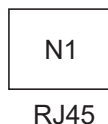
Supply



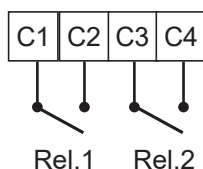
Analog outputs



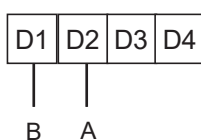
Ethernet output



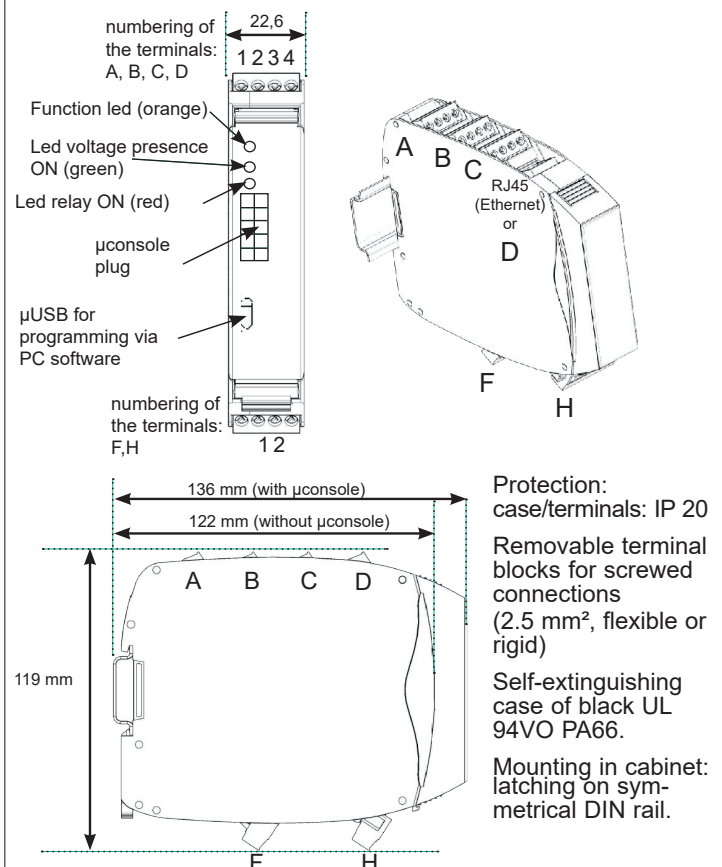
Relay outputs



RS485 output



Dimensions



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 with or without neutral

Outputs

- **RS485 output (option [N])**

Type 2-wire with galvanic isolation

Baud rate 4800 / 9600 / 19200 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 [R])**

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 [A] or [2A])**

Output signal programmable with galvanic isolation:
(1KV between outputs)
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.

• 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: 6 VA max. in ac, 3.5W 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 voltage and the current.
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.
- 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

TRMV2 1U, 1V, 1 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 | [F] Ethernet output + embarked web server |
| [N] RS485 output | [PB] Profibus output |
| [R] 2 relay outputs | [PN] Profinet output |
| [A] 1 unidirectional analog output | |
| [2A] 2 unidirectional analog outputs | |

Order example:

- For a TRMV2 with 2 relay outputs (setpoint or pulses), 2 unidirectional analog outputs and RS485 output request the reference:
TRMV2 2A R N

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



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