

DIGITAL MEASURE TRANSMITTER

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

Series μ TACv500

true RMS measurement

suitable for disturbed electrical networks

Type

The **transmitters μ TACv500** 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 (automatic caliber)
Voltage (automatic caliber):
- 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
- Quick cycle time: 40ms
- Universal power supply

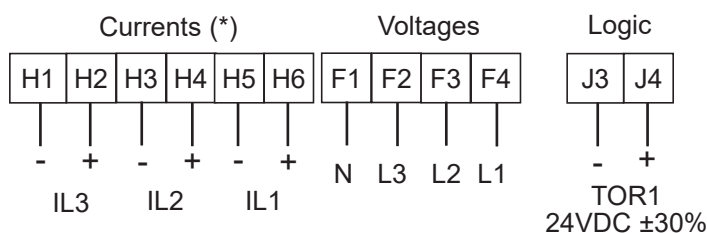
Available options

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

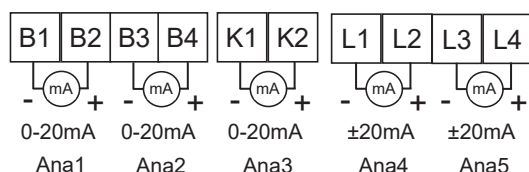
TRANSMITTER

Connectings

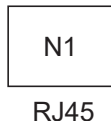
Inputs



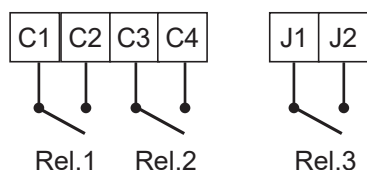
Analog outputs



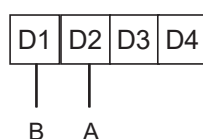
Ethernet output



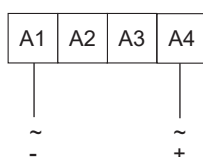
Relay outputs



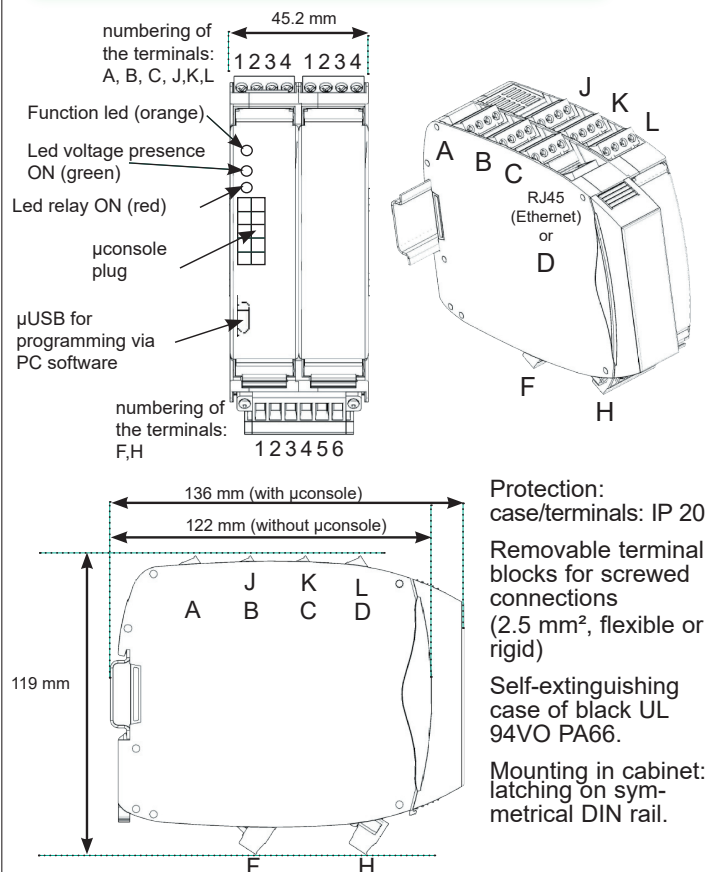
RS485 output



Supply



Dimensions



The friendly interface

CA
CO154

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 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 < 100 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

μTACv500 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 μTACv500 with 2 relay outputs (setpoint or pulses), 2 unidirectional analog outputs and RS485 output request the reference:
μTACv500 2A 2R N
- For a μTACv500 with 5 analog outputs and RS485 output request the reference: **μTACv500 5A N**

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

SFERE . Société Française d'Etudes et de Réalisations Electroniques

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

Tél. : 04 78 16 04 04 Fax. : 04 78 16 04 05
Tel. Intern. : 33 4 78 16 04 04 Fax Intern. : 33 4 78 16 04 05

e-mail : info@sphere-net.com . http : //www.sphere-net.com

Your representative