DIGITAL MEASURE TRANSMITTER

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

EVA3000 quick and accurate

true RMS measurement

suitable for highly disturbed electrical networks

Type

The ***transmitters EVA3000*** 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 / µUSB cable or by tactile LCD micro console.

Environment

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

Functions

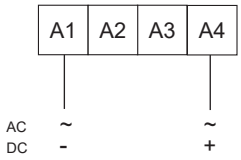
- Universal, for all types of electrical networks. The following input calibers can be programmed:
  Current: 1 and 5 A AC (automatic caliber)
  Voltage (automatic caliber):
  - 60V L-N / 100V L-L
  - 110V L-N / 190V L-L
  - 250V L-N / 440V L-L
  - 350V L-N / 600V L-L
- High-performance measure: continuous measurement without interruption, suitable for highly disturbed networks (phase angle etc.)
- Quick cycle time: 20ms
- Universal power supply

Available options

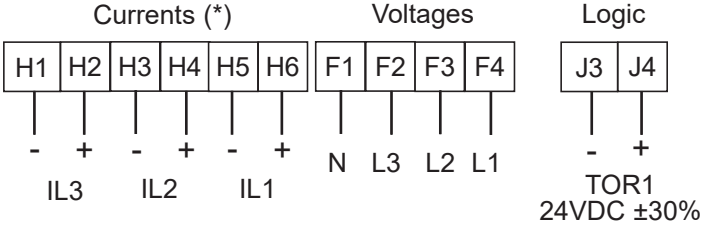
- ♦ **6 analog outputs**
- ♦ **3 relay outputs**
- ♦ **RS485 digital communications**
- ♦ **Ethernet output (TCP Modbus)**
- ♦ **Harmonics analysis**
- ♦ **Logic input**

Connectings

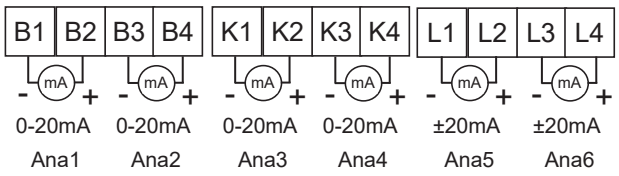
Supply



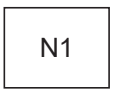
Inputs



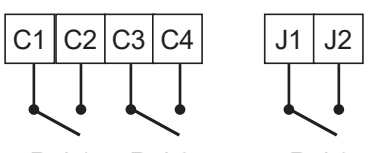
Analog outputs



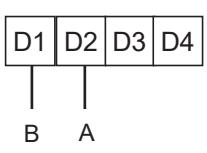
Ethernet output



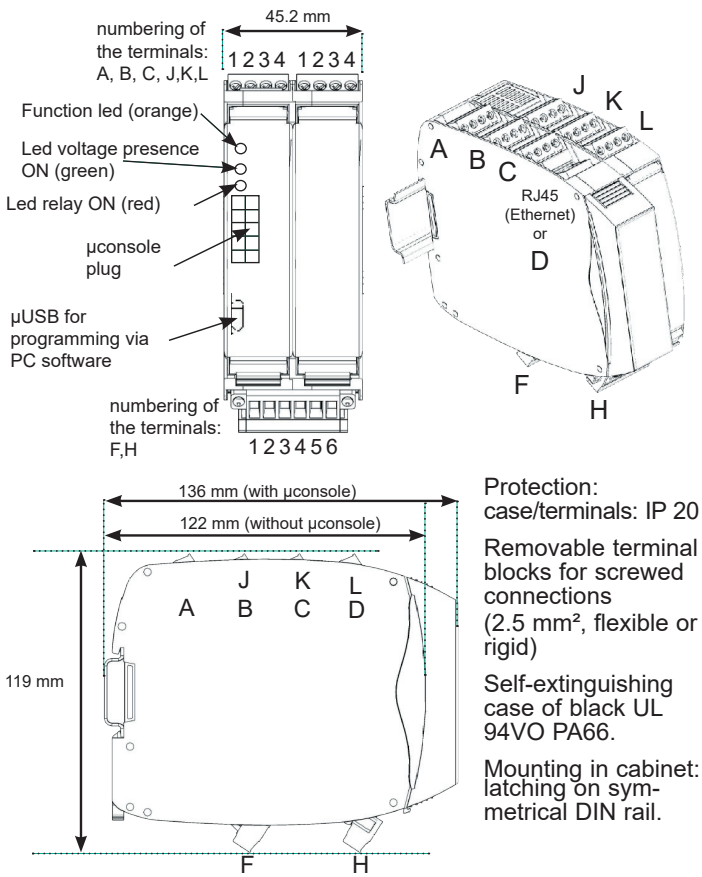
Relay outputs



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 sym-metrical DIN rail.

ARDETEM 69510 SOUCIEU EN JARREST -France - Tél. 33 (0)4 72 31 31 30 - Fax. 33 (0)4 72 31 31 31 - CA CO/151

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 (CT integrated)
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 6A)**

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 **40ms** (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: ..... **0.1** Powers: class..... **0.2** Active energy: class..... **0.5** Reactive energy: class..... **0.5**
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 **127**
Digital filtering	programmable on several levels
Energies	Saved
Cycle time	20ms (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

EVA3000 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
- N — RS485 output
- 2R — 2 relay outputs
- 3R — 3 relay outputs
- 2A — 2 unidirectional analog outputs
- 4A — 2 unidirectional analog outputs, 2 bidirectional analog outputs
- 6A — 4 unidirectional analog outputs, 2 bidirectional analog outputs
- T — 24Vdc isolated logic input
- F — Ethernet output + embarked web server
- PB — Profibus output
- PN — Profinet output

Order example:

• For an EVA3000 with 2 relay outputs (setpoint or pulses), 2 unidirectional analog outputs and RS485 output request the reference:
EVA3000 2A 2R N

• For an EVA3000 with 6 analog outputs and RS485 output request the reference: **EVA3000 6A N**

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

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