

DIGITAL MEASURE TRANSMITTER

for single or 3-phase balanced networks

true RMS measurement

TRM2 / μ TAC200

ARDETEM

SFERE

Type

The transmitters **TRM2 / μ TAC200** are especially designed for the **measurement**, the **control** and the **transmission** of all the parameters of AC electrical networks: voltage, current, power, energy, frequency, etc...

◆ Programming by PC: Software SuperVISION/MCvision



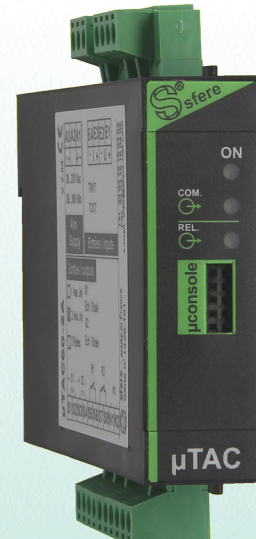
Software for programming and analysis (Windows environment) allowing:

- 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.

◆ Programming by μ Console

This miniaturised μ Console for clipping on the front face of the instruments allows:

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



Environment

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

Functions

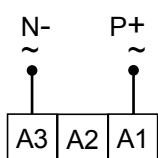
- Universal, with **19 measurable parameters**, for single or 3-phase balanced 3 or 4 wire networks.
- They accept as input by programming:
Current: 1A et 5A AC
Voltage: 100V L-N / 175V L-L and 330V L-N / 600V L-L
- Quick cycle time: 40ms
- Universal (switching) power supply

Options

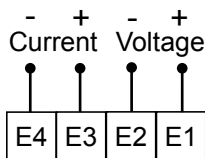
- ◆ Analog outputs (up to 2 outputs)
- ◆ Relay outputs
- ◆ Digital data link RS485
- ◆ Harmonics analysis

Connectings

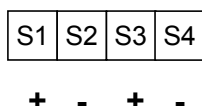
Supply



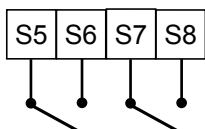
Inputs



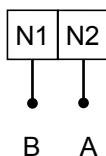
Analog outputs



Relay output

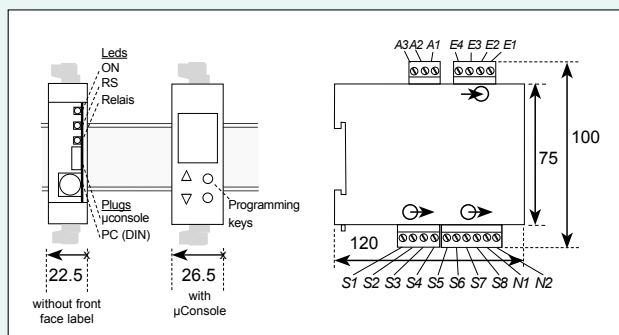


Digital output



Dimensions

Dimensions: (H x L x D) 75 x 22.5 x 120 mm
With μ Console: 80 x 26.5 x 130 mm



- Housing** : Self-extinguishing case of black UL94V0 ABS.
- Connectors** : Plug-off connectors for screwed connections (2.5mm², flexible or rigid)
- Protection** : Housing / terminals: IP 30

Technical features

Inputs

- **Voltage** 2 programmable ranges:
Un=100V L-N / 175V L-L and 330V L-N / 600V L-L
- **Current** 2 programmable ranges: 1 & 5A (In=1.2A & In=6A)

Measurable oversteppings 1.2 In; 1.2 Un

Overloads permanent: 750 V, 2 In
during 10 s: 1000 V, 10 In

Power draw voltage input: resistances 1 MΩ
current input: < 0.2 VA

Test voltage 2 kV / 50 Hz / 1 min.

Frequency 10...50...65 Hz (other frequencies: consult)

Network type single or 3-phase balanced

Outputs

• RS485 output (option **N**)

Type 2 wire (galvanic partition / inputs 2 KV)
Speed 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 partition: 2KV)
output 1NO

Rated load 5A - 250 VAC

- either SETPOINT OUTPUT

Setting of the setpoints : 0 to 100% of the measure range (program.)
Switching hysteresis : 0 to 15% of the setpoint (programmable)
Time delay : 0 to 15s (programmable)

- or PULSE 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**)

Galvanic partition 1kV (between outputs)
2kV (inputs).

Output signal programmable:

Bidirectionnal output (1 output):

-20/20mA -10/10mA
-5/5mA 0/5mA 0/10mA 0/20mA 4/20mA

Unidirectionnal outputs (2 outputs):

0/5mA 0/10mA 0/20mA 4/20mA

Scale setting 0 to 100% of the measure range (programmable)

Admissible load up to 600Ω (20mA)

Accuracy of the card < 0.1% of the full scale on -20/20mA
< 0.2% on -5/5mA

Max. residual ripple >25mV (peak to peak) on 500Ω load

Response time typical 60ms, maximum <100ms (input/output)

Thermal drifts < 120 ppm caliber -20/+20mA

< 200 ppm caliber 0/20 mA

• Harmonics analysis (option **H**)

Measurement of the voltage and current harmonics up to rank 50.
Retransmission possible in Modbus.

Supply

Universal power supply
20...270 VAC / 20...300 VDC

Power draw 6 VA max. in AC, 3.5W max. in DC

Measure

• 19 measurable parameters

Accuracy rating Voltages, currents: 0.2 (IEC688-1)
Powers: class 0.5 (IEC688-1)
Active energy: class 1 (IEC62053-21)
Reactive energy: class 2 (IEC62053-23)

Option P: Active power: class 0.2 (IEC688-1)
Active energy: class 0.5 (IEC62053-22)
Reactive energy: class 1 (IEC62053-24)

Thermal drifts < 200ppm

Measuring method Fast simultaneous sampling of the
voltage and current. Digital calculation
on 32 bits. Measuring of deformed
signals, sampling frequency 6.40KHz

Digital filtering programmable on several levels

Energies Saved

Cycle time 40ms (for all network types)

Wiring

With detailed manual, supplied with the instrument.

Coding

Types:

ARDETEM reference: TRM2

SFERE reference: μTAC200

TRM2 U, I, cos φ, cos φ/phase, F, P 10/15min.,
μTAC200 Q 10/15min., S, P/phase, Q/phase, E active,
E reactive, inductive and capacitive

Options:

- H** harmonics analysis
- R** 2 relay outputs
- A** 1 bidirectionnal analog output
- 2A** 2 unidirectionnal analog outputs
- N** 1 RS485 output
- P** option class 0.2

Order example:

• For a TRM2 or a μTAC200 with 2 relay outputs (setpoint or pulses),
2 unidirectionnal analog outputs, 1 digital data link RS485 and the har-
monics analysis, request the reference:

TRM2/μTAC200 2A R N H

• For a TRM2 or a μTAC200 with 1 analog bidirectionnal output and 2
relay outputs (setpoint or pulses), request the reference:

TRM2/μTAC200 A R

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



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