PROGRAMMABLE TRANSMITTER

for AC single or 3-phase balanced network measures

TRM 1

Type

- The TRM1 is a measure transmitter for AC current and voltage, that can have as options : an **analogue bidirectionnal** output, a **relay (setpoint or pulses)** output, a **digital RS 422/485** output.
- It is fully programmable via **micro-console** or by **PC** with our SuperVision software.

The **micro-console** clipped on the front face allows measure visualising on a 4-digit alphanumerical display, or occasional modifications of programming via a 4-key keyboard. It also allows teleloading programming files to other products of the ARDETEM range.

Accessibilities

- Safened input (1 and 5A) by a screwed connector.
- Galvanic partition : Input / Output / Supply : 2 KV
- Short cycle time : 55 ms
- Harmonics analysis (optionnal)

Environment

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

TRM1

Wirings

Upper connector

POWER SUPPLY

N- ~ P+ ~

A3 A2 A1

INPUT

· + · +

I U

E4 E3 E2 E1

Lower connector

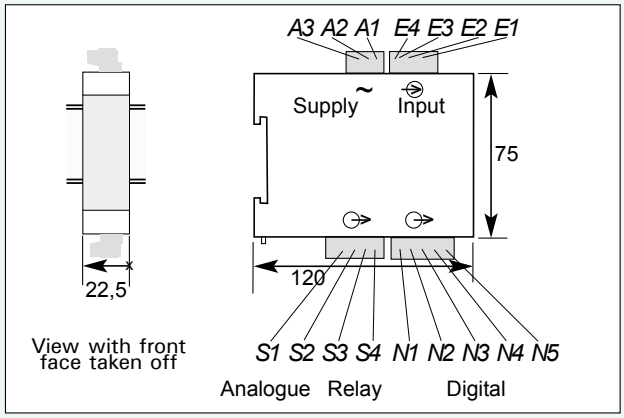
OUTPUTS

analogue output: S1 S2 (+ -) Rc < 600Ω (20 mA)

relay output: S3 S4

digital output: N1 N2 N3 N4 N5 — Gnd Rx- Rx+ Tx- Tx+

Dimensions



Case : Self-extinguishing in black UL94VO ABS
Dimensions without µconsole : (H x L x D) 75 x 22,5 x 120 mm
Dimensions with µconsole : 80 x 26,5 x 130 mm
Latching on symmetrical DIN rail.
Plug-off connectors for screwed connections (2,5mm², flexible or rigid)

Protection : Case / terminals : IP 20

Weight : 230g (packaging included)

ARDETEM 69510 SOUCIEU EN JARREST - Tél. : 33 (0)4 72 31 31 30 Fax. : 33 (0)4 72 31 31 31

Technical features

Inputs

• **Voltages**	2 calibers by program. : Un=150 VAC and 500 VAC Oversteppings 120% Un
• **Currents**	2 Calibers by programming ; In = 1,2 A and 6 A Oversteppings 120% In
Overloads	Permanent : 750 V, 10 A During 10 s : 1000 V, 50 A
Power draws	Voltage inputs : 1 MΩ resistors Current inputs : < 0,2 VA
Test voltage	2 kV / 50 Hz / 1 min.
Frequency	45...50...65 Hz (other frequencies : see with us)
Network type	Single or 3-phase, balanced with/out neutral
Thermic drifts	< 200 ppm

Outputs

combinable outputs (3 maximum) :

ANALOGUE OUTPUT (bidirectionnal) : **option A**

Galvanic partition	2 KV
Output signal	Programmable : -20/20 mA -10/10 mA -5/5 mA 0/5 mA 0/10 mA 0/20 mA 4/20 mA
Scale setting	0 to 100 % of measure range by programming
Admissible load	Up to 600 Ω (20 mA)
Board resolution	24000 points
Board accuracy	< 0,1% of full scale over -20/20 mA (in relation to display) < 0,2 % over -5/5 mA
Max. residual drift	±2,5 mV (peak to peak) on 50 Ω load
Response time	50 ms (<120 ms input/output)
Thermic drifts	< 120 ppm caliber -20/20 mA < 200 ppm caliber 0/20 mA

RELAY OUTPUT (setpoint or pulses) : **option R**

Contact type	Potential free contact (galvanic partition : 2,5 KV)
Cut power	5A - 250 VAC

• **SETPOINT output**

Setting of setpoints	: 0 to 100 % of measure range by progr.
Switching hysteresis	: 0 to 15 % of setpoint by programming
Temporisation	: 0 to 15 s. by programming

• **PULSE output**

Pulse width	: 400 ms
Maximum count rate	: 1 pulse / second
Pulse weight	: on choice by programming

RS485/422 OUTPUT : **option N**

Type	2 or 4 wires (inputs galvanic partition : 2 KV)
Baud rate	4800 / 9600 / 19200 bauds
Protocole	Modbus / Jbus RTU 8 bits odd
Data format	Integer 16 bits (table of units)

This instrument is designed for industrial applications. It has to be mounted in an electrical switchbox, or equivalent.

Power supply

2 Versions : High Voltage or Low Voltage
(to be specified on order)

High Voltage	90...270 VAC or 88...350 VDC
Low Voltage	20...40 VAC or 20...60 VDC
Power draw	5 VA max. in AC

Measures

More than 12 parameters...

Accuracy rating	Voltage, Current : 0,2 Power, Energy : 0,5
Cycle time	55ms (all network types)
Measuring method	Fast simultaneous sampling of voltage and current. Digital calculation on 32 bits. Measure of deformed signals pass-band 800 Hz.
Harmonics analysis	Harmonics up to rank 50 on the 6 channels.
Digital filtering	Programmable on various levels
Energies	Saved every 5 min. Active energy accuracy class 1 (CEI61036).

Measured parameters : Voltage, current, frequency, active power, reactive power, apparent power, power factor, active energy, reactive energy ...

Codings

Type : **TRM 1**

• **Up to 3 outputs can be combined : analogue, relay or digital**

Analogue outputs : bi-directionnal	A
Relay outputs : setpoint or pulses	R
Digital output : RS422 / 485	N

• **Option to be specified** Harmonics analysis (available only on digital output version) — H

• **Power Supply**

High Voltage : 90/270 VAC	88/350 VDC	2
Low Voltage : 20/40 VAC	20/60 VDC	3

References held in stock (others : see with us).
TRM1 A : 1 analogue output (bidirectionnal)
TRM1 AR : 1 analogue output + 1 relay output (setpoint or pulses)
TRM1 N : Digital data link RS485/422

Ordering examples :
For a TRM with 1 analogue + 1 relay output, in High Voltage power supply, request reference : **TRM1 AR 2**

your representative

ARDETEM®
RCS Lyon 444-429-476 - Printed in France.
e-mail : info@ardetem.com
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