

PROGRAMMABLE CONVERTERS

TPIv-10I/IC 20I/IC / μ Cv-10I/IC 20I/IC

ARDETEM

SFERE



Features

- **Universal power supply:** 20 to 250 Vac and 20 to 250 Vdc
- **Input:** Sensor of type NPN, PNP, logic, NAMUR, contact and alternating up to 500V (on input 1 only).
- **Sensor supply**
- **Isolated analog output(s)** (A/2A) 0-4-20mA (active/passive current) or 0-10V voltage.
- **Relay outputs (R):** 2 change-over relays (8A/250 VAC on resistive load).
- **Digital output (N)** isolated RS485 Modbus/Jbus
- **Pulse output** NPN and PNP

Sensor break detection (input NAMUR) and self-diagnosis.

Isolation between input/outputs/supply.

Mode simulation allowing to validate the configuration or the installation.

Programming either with the micro-console or by the PC software SlimSET via a standard USB / μ USB cable.



Functions

- Frequency measurement (from 0.01Hz to 130KHz) depending on the sensor type (TPIv/ μ Cvxx I and IC).
- Counting up to 2 000 000 000 with saving of the counters (version TPIv/ μ CvxxIC).
- Calculation between channels (sum, subtraction, average) (version TPIv/ μ Cv20xx).
- Detection of the rotation direction on encoder in phase quadrature (TPIv/ μ Cv20xx).
- Integration function (TPIv/ μ CvxxIC).
- Possibility to programme the 2nd input with function logic input (TPIv/ μ Cv20xx).
- 2 relays, independently programmable as alarm (setpoint) or pulses.

Configuration

Easy programming with a micro-console or by the PC software SlimSET (via a standard USB / μ USB cable).

Programming with the Micro-console

The graphical rear-lit LCD with tactile keyboard allows to visualise the following information:

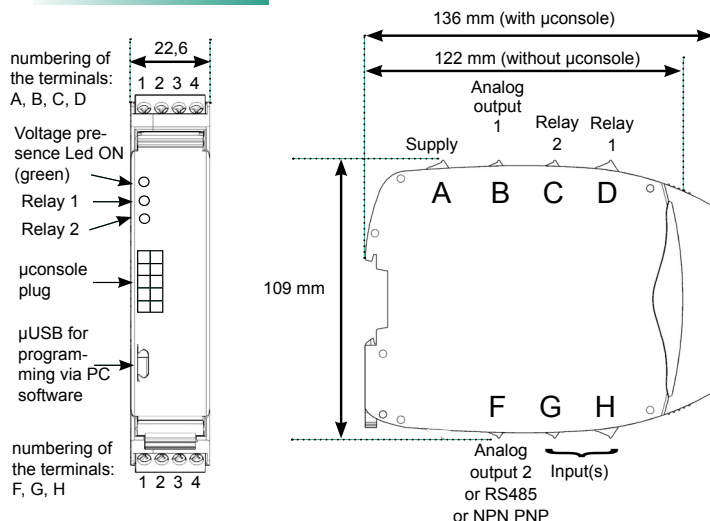
- the value of the measure with its unit,
- the value of the analog output(s),
- the product tag name,
- the status of the relay outputs and the RS485 communication
- Scrolling messages for programming help in various languages
- Passcode protected programming
- Programmable keys for direct access

Programming by PC: SlimSET

Programming software (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.

Dimensions



Coding

TPIv (ARDETEM) XX YY ARN

μ Cv (SFERE) XX YY ARN

Inputs:

xx : 10 (1 input)
20 (2 inputs)
yy : I (frequency)
IC (frequency + counting)

Outputs:

A analog I/U isolated
2A analog I/U isolated
R 2 change-over relays
N RS 485 communications
P output NPN PNP

Available versions:

10I	A	AR	ARN		2A	2AR
10IC	A	AR	ARN	ARP	2A	2AR
20I			ARN		2A	2AR
20IC			ARN	ARP	2A	2AR



Features

Input(s)

- Sensor type:** npn, pnp, logic, namur, contact, alternating
 - Logic:** voltage up to 18V
Low level $\leq 1.2V$
High level $\geq 2.1V$
 - Npn or contact:** U max.: 15V, I max.: 4mA
 - Pnp:** U max.: 20V, I max.: 2mA
 - Namur:**
Input resistance: 1K Ω to the GND
Low level $\leq 1.2mA$
High level $\geq 2.1mA$
 - Alternating** (input E1 only):
AC (L) from 2V to 250 Veff.
AC (H) from 10V to 500 Veff.
Input resistance: 1.2M Ω
- Sensor supply:**
18V $\pm 10\%$ /20mA, or 8.5V $\pm 0.5V$ /20mA if 1 of the 2 inputs is in namur
- Frequency measurement:**
from 0.01Hz to 130 KHz depending on the type of sensor
 - accuracy 0.015% with gate = 100ms
0,1% in alternating input
 - scale factor programmable
 - special linearisation in 10 points (x and y).
- Integrator:** on 1, 60 or 3600 seconds with programmable coefficient and unit.
- Counting:** from -2 Giga to +2 Giga with programmable coefficient and unit.
- Sum, subtraction, average of the 2 input values and detection of the rotation direction on signals in phase quadrature.**

Outputs

Code	Types of OUTPUTS	Features
A	1 analog Current active/passive Voltage	Current: Direct or reversed 0-20mA Load impedance $\leq L_r$ 600 Ω Voltage: Direct or reversed 0-10V Load impedance $\geq L_r$ 5K Ω
2A	2 analog isolated Current active/passive Voltage	Accuracy: 0.1% in relation to the display Ripple: 0.2% Response time in relation to the display: 1ms
R	2 change-over relays	2 setpoints per relay configurable over the whole MR. Hysteresis programmable from 0 to 100%. Time delay programmable from 0 to 999.9 sec. (8A/250 VAC on resistive load)
N	Digital data link RS485 Protocole Modbus/Jbus (EIA RS485) isolated.	
P	PNP output: 18.5V $\pm 10\%$ Rmin.1K Ω / NPN: 16.5V $\pm 10\%$ Imax. 20mA Max. output frequency: 500Hz	

Others

Power supply: 20 to 250 Vac and 20 to 250Vdc

Power consumption: 2.8 W max. 6 VA max.

Dielectric hold: 3 kV-50Hz-1min.

Operating temperature: -20 to +60°C

Storage temperature: -20 to +70°C

Installation: Pollution degree 2 / voltage surge III in AC input (H) and voltage surge II for other inputs.

Protection: housing / terminals: IP 20

Removable terminal blocks for screwed connections

(2.5 mm², flexible or rigid)

Weight: 290g (with packaging)

Self-extinguishing case of black UL 94VO PA66.

Mounting in cabinet: latching on symmetrical DIN rail.

Compliance with standards:

Electrical safety EN 61010-1

ATEX 2014/34/UE (area 2) EN 60079-0, EN 60079-15

Directive EMC 2014/30/UE EN 61326-1

Marking:



II 3 G Ex nA IIC T4 Gc



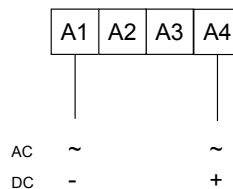
e-mail : info@ardetem.com
http : //www.ardetem.com

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

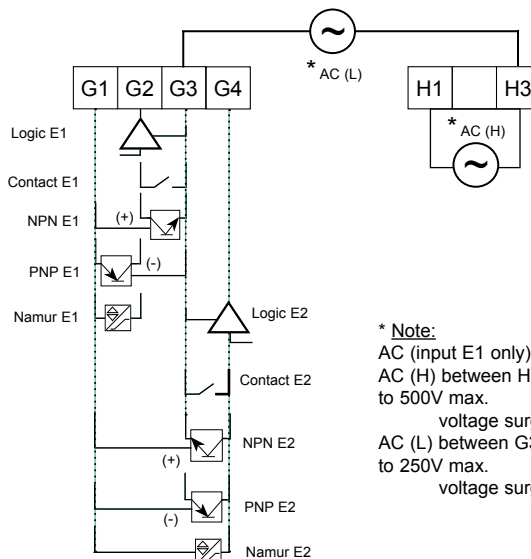
Tél. : 33 (0)4 72 31 31 30
Fax. : 33 (0)4 72 31 31 31

Wiring

Supply



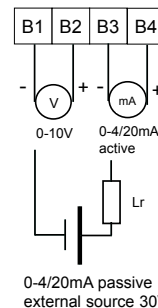
Inputs



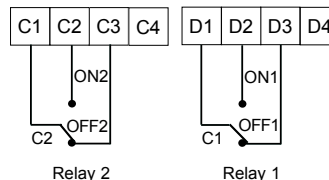
*** Note:**
AC (input E1 only)
AC (H) between H1 and H3 from 10V to 500V max.
voltage surge category III
AC (L) between G3 and H3 from 2V to 250V max.
voltage surge category II

Outputs

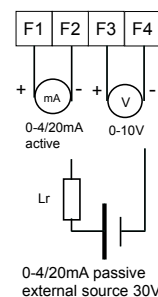
Analog output 1 (option A)



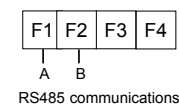
Relay outputs (option R)



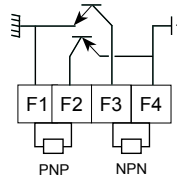
Analog output 2 (option 2A)



RS485 output (option N)



Output NPN-PNP (option P)



The voltage outputs and the current outputs are not independent. One type only activated by programming for each output (V or mA).

your representative