



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/suppl. 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 / μUSB cable.*



Function

- Frequency measurement (from 0.01Hz to 130KHz) depending on the sensor type (μCvxx I and IC).
- Counting up to 2 000 000 000 with saving of the counters (version μCvxxIC).
- Calculation between channels (sum, subtraction, average) (version μCv20xx).
- Detection of the rotation direction on encoder in phase quadrature (μCv20xx).
- Integration function (μCvxxIC).
- Possibility to programme the 2nd input with function logic input (μCv20xx).
- 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 / μUSB cable).

Programming with the Micro-console

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

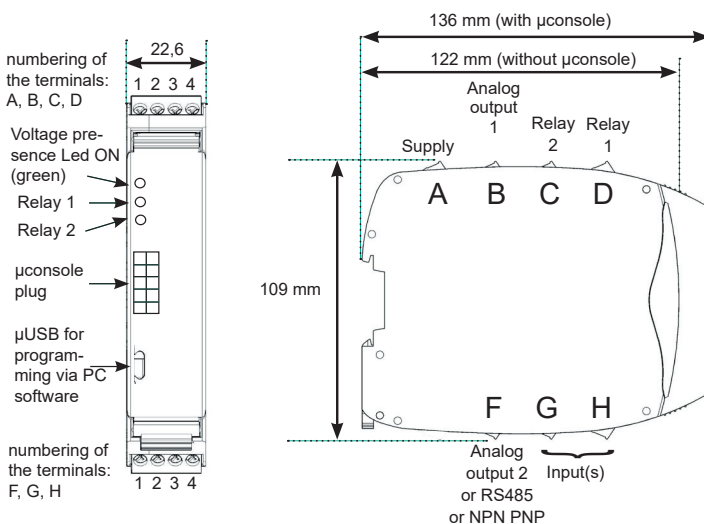
- the value of the measure with its unit,
- the value of the analog output(s),
- the product tag name,
- the status of the relay outputs and the RS485 communication
- Scrolling messages for programming help in various languages
- Passcode protected programming
- Programmable keys for direct access

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

Type μCv 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:

μCv10I	A	AR	ARN		2A	2AR
μCv10IC	A	AR	ARN	ARP	2A	2AR
μCv20I			ARN		2A	2AR
μCv20IC			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 $\pm 15\%$ /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 $\leq Lr$ 600 Ω Voltage: Direct or reversed 0-10V Load impedance $\geq Lr$ 5K Ω Accuracy: 0.1% in relation to the display Ripple: 0.2%
2A	2 analog isolated	Current active/passive Voltage	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

SFERE . Société Française d'Etudes et de Réalisations Electroniques

RCS Lyon 423-502-608 - Printed in France

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

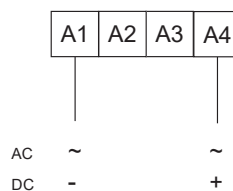
Tél. : 04 78 16 04 04 Fax. : 04 78 16 04 05

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

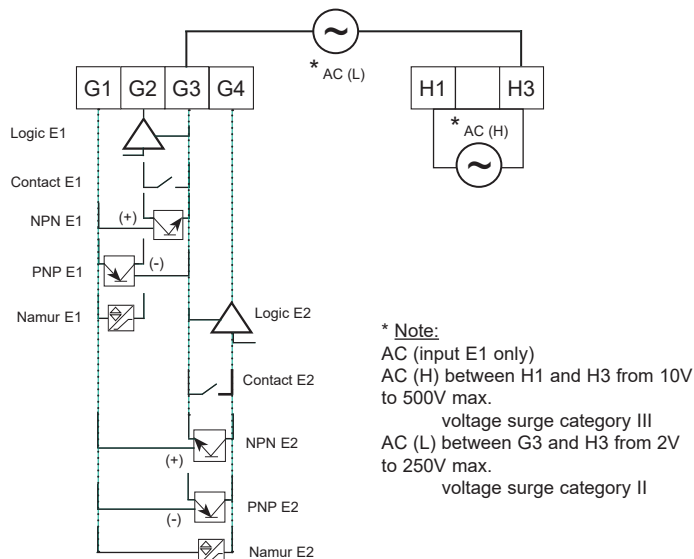
e-mail : info@sphere-net.com . http : //www.sphere-net.com

Wiring

Supply

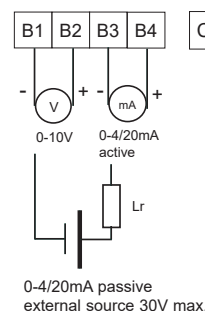


Inputs

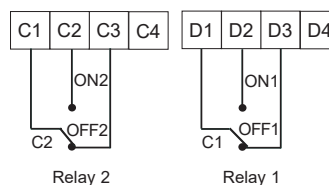


Outputs

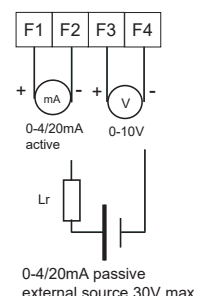
Analog output 1 (option A)



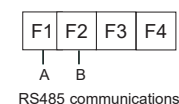
Relay outputs (option R)



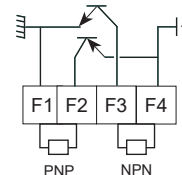
Analog output 2 (option 2A)



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