PROGRAMMABLE SIGNAL CONDITIONERS

µCv 10

Features

- **Universal power supply:** 20 to 250 Vac and 20 to 250 Vdc
- **Universal input:** 100mV, 1V, 10V, 270V, 20mA, Pt100, Ni 100 (2, 3 or 4wire), ΔPt100 thermocouple, resistance and potentiometer
- **Typical response time**: 300ms
- **Supply for 2-wire sensor**
- **Isolated analog output(s)** (A/2A) 0-4-20mA current (active/passive) or 0-10V voltage.

Relay outputs (R): 2 or 4 change-over relays (8A/250 VAC on resistive load).
Digital communications (N) isolated RS485 Modbus/Jbus

Sensor break detection and self-diagnosis.

Isolation input / outputs / supply.
Mode simulation allowing to validate the configuration or the installation.

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

CONVERTERS

Configuration

Easy programming on front face with a micro-console or with 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:

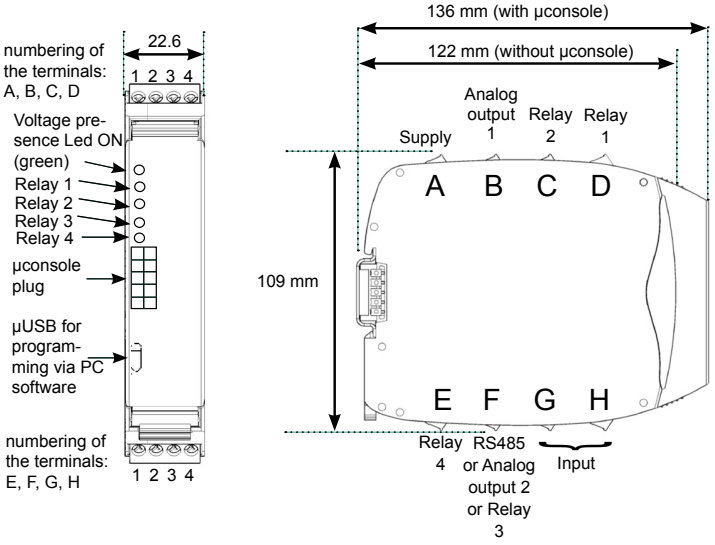
- the measured value with its unit,
- the value of the analog output,
- the product tag name,
- the status of the relay outputs and the RS485 communications.

- Scrolling message for programming help in various languages
- Passcode protected programming

Programming by PC : SlimSET

Programming software (Windows environment) allowing:
The storage of the 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 signal conditioner connected.

Dimensions



Features

Supply: *20 to 250 Vac and 20 to 250Vdc*
Power draw: 2.8 W max. 8 VA max.
Dielectric withstanding: 3.0 kV-50Hz-1min.
Operating temperature: -20 to +60°C
Storage temperature: -20 to +70°C
Installation: Pollution degree 2 / voltage surge II

Protection: case / 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 switchbox: latching on symmetrical DIN rail.

Compliance with standards:

Electrical safety ..... UL 61010-1
..... CSA C22.2 NO.61010-1-12
..... EN 61010-1
ATEX 2014/34/UE (area 2)..... EN 60079-0, EN 60079-15
Directive EMC 2014/30/UE ..... EN 61326-1

Marking:

CE

Ex II 3 G Ex nA IIC T4 Gc

c UL us LISTED — Process Control Equipment E482453

Coding

Type µCv10 ARN

Outputs:
A analog I/U isolated
2A analog I/U isolated
R 2 change-over relays
R4 4 change-over relays
N RS 485 comms

Available versions:

µCv 10	A	AR	2AR	N	AR4

(consult with us for different configurations)

Order example: For s signal conditioner with universal input + *1 analog output + 2 relays: reference* ***µCv 10 AR***

- *Standard programming cable USB type A male to µUSB type B male: reference* **C1-µUSB**

- *CJC terminal (option): reference* **B1CSF-4**

Features

Inputs

Types of **INPUTS**	Measure range adjustable from:		Permanent overload	Intrinsic error	Input impedance
mA(1)	-2 to +22mA		±100mA	< ±0.1% of the MR	Max. drop 0.9V
mV(1)	-10 to +110mV		±1V		≥ 1MΩ
V	-0.1 to +1.1V		±50V		
	-1 to +11V				
	-30 to +300V		±300V		
Thermocouples(1) Standard IEC 581	°C	°F	-	(3) <±0.1% of the MR or 30µV typical (60µV max.)	≥ 1 MΩ
J	-160/1200	-256/2192			
K	-270/1370	-454/2498			
B	200/1820	392/3308			
R	-50/1770	-58/3218			
S	-50/1770	-58/3218			
T	-270/410	-454/770			
E	-120/1000	-184/1832			
N	0/1300	-32/2372			
L	-150/910	-238/1670			
W	1000/2300	1832/4172			
W3	0/2480	32/4496			
WRE5	0/2300	32/4172			
Pt100Ω sensor(1)(2) Standard IEC 751 (DIN 43760)	°C	°F	-	<±0.1% of the MR	Current 250µA
	-200/850	-328/1562	-		
Ni 100 sensor (1)(2)	-60/260	-76/500	-		
Resistive sensors	Calibers 0-440 Ω(1)(2) and 0-10 kΩ		-	<±0.1% of the MR	Max. current 250µA
Potentiometer	from 100Ω to 10 kΩ		-		Max. voltage 100mV
2-wire sensor supply	24 VDC ±15% with protection from short-circuits. 25 mA max.				
Special linearisation programming up to 20 points	On input: mV, V, mA. resistive sensor and potentiometer				
Extraction of the square root	On input mV, V or mA				

(1) Sensor break detection:
mA input (if down scale ≥ 3,5mA)
Other inputs: a 12µA pulsed current allows the detection of line or sensor break.

(2) Wiring possible in 2, 3 and 4 wire
Influence of the line resistance (0<Rl<<25Ω) included in the announced intrinsic error.

(3) CJC efficiency:
Internal CJC: ±2°C ±0.03°C/°C from -10°C to +50°C
CJC (option terminal) : ±1°C from -10°C to +50°C

MR Measure range

Thermal drift <150ppm /°C

Outputs

Code	Types of OUTPUTS		Features
A	1 analog	Current active/passive	Current: Direct or reversed 0-20mA Load impedance ≤ Lr 600Ω
		Voltage	Voltage: Direct or reversed 0-10V Load impedance ≥ Lr 5KΩ
2A	2 analog isolated	Current active/passive	Accuracy: 0.1% in relation to the display
		Voltage	Ripple: 0.2%
			Response time in relation to the display: 40ms
R	2 change-over relays		2 setpoints per relay configurable over the whole MR. Hysteresis programmable from 0 to 100%. Time delay programm. from 0 to 999,9 sec. (8A/250 VAC on resistive load)
R4	4 change-over relays		
N	RS485 digital communications Protocole MODBUS/JBUS (EIA RS485)		

Response time of the outputs:

(for a variation from 10 to 90% of the input signal)

Typical response time: 300 ms

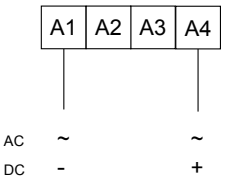
Add 40 ms for the response time on the analog output, or 10ms for the response time on the relay outputs.

Galvanic isolation:

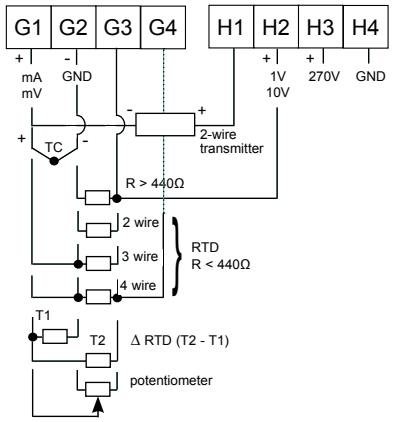
2.5kV-50Hz-1min. between Supply, Input, Analog output, Relay output and RS485.

Connectings

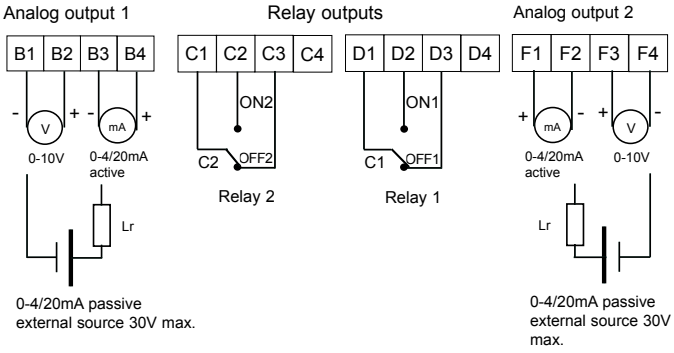
Supply



Inputs

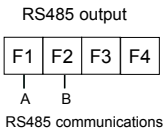


Outputs of the µCv 10 A/AR/2AR

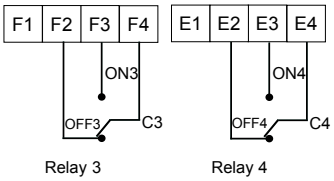


The voltage or current outputs are not independent. One output type only to be activated by programming (V or mA).

µCv10 N outputs



µCv10 AR4 outputs



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@sfere-net.com . http : //www.sfere-net.com

Your representative