

MEASURE CONVERTERS

WITH DISPLAY, UNIVERSAL, PROGRAMMABLE

Series μ C: μ C 305U, μ C 405U, μ C 805U

Features



- **Universal power supply:** 20 to 270 Vac and 20 to 300 Vdc
- **Universal input:** $\pm 100\text{mV}$, $\pm 1\text{V}$, $\pm 10\text{V}$, $\pm 300\text{V}$, $\pm 20\text{mA}$, Pt100 3 wire, Ni 100, thermocouple, resistance and potentiometer.
- Average response time: 150ms
- Supply for 2-wire sensor
- **Insulated analog output (A)** 0-4-20mA (active/passive) current or 0-10V voltage.
- **4 relay outputs (R4):** 4 inverting relays (8A/250 VAC on resistive load).

Detection of the sensor rupture.

Insulation between input / outputs / supply.
Self-zero and self-diagnosis

Mode driver: the analog output is piloted by the micro-console.

Function simulation of the input measure

Programming either with the micro-console or by PC via the software MCvision.

Type:

μ C 305U: 1 analog output

μ C 405U: 4 relays

μ C 805U: 1 analog output + 4 relays

Configuration

Easy programming on front face with the micro-console keyboard or with the PC software MCVISION.

Programming with the Micro-console

The series μ C accepts 2 types of μ consoles:

- The old generation with 4 alphanumeric electroluminescent green digits
- The new generation with graphical rear-lit LCD

The LCD allows visualising 4 pieces of information:

- the value of the measure,
- the unit of the displayed measure,
- the value of the analog output or the marking name of the product,
- the status of the relay outputs.

This μ console with LCD also allows displaying these information either vertically or horizontally, according to the sense in which the converter is mounted.

Programming by PC: MCVision

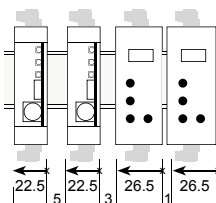
Programming software (Windows environment) allows:

- 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.

Protection: case / terminals: IP 20

Plug-off connectors for screwed connectings

- (2.5 mm², flexible or rigid)
- Weight: 240g (with packaging)
- Self-extinguishing case of black UL 94VO ABS.
- Mounting in switchbox: latching on symmetrical DIN rail.
- *Rack version: consult.*



Dimensions: 22.5x75x120 mm
with μ console: 26.5x80x130 mm

Operating T°: -10° to 50°C
Storage T°: -20 to 70°C

♦ **CE** accord. to IEC 61000-6-4, IEC 61000-6-2 (industrial environment).

- ♦ Disturbance immunity according to the standard
- IEC 61000-6-2 (IEC 61000-4-3 level 3, IEC 61000-4-4 level 4, IEC 61000-4-6 level 3)

Coding

Type μ C 305U

Universal inputs

- Outputs:
- μ C 305U: 1 analog
 - μ C 405U: 4 relays
 - μ C 805U: 1 analog, 4 relays

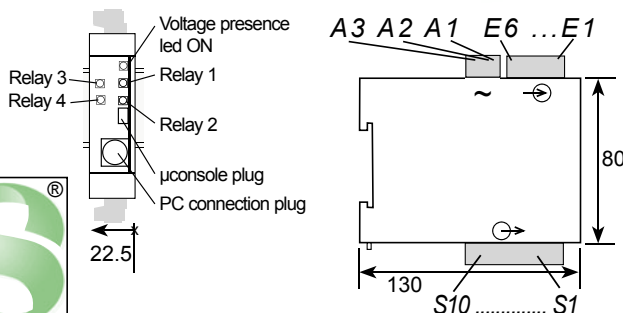
For the μ C 805U, the type of the analog output (mA or V) must be specified on order.

Power supply: 20 to 270 Vac and 20 to 300Vdc

- Power draw: 3 W max. 5.5 VA max.
- Dielectric withstanding: 2 kV-50Hz-1min.

Order example: For a converter with universal input + 1 analog output + 4 relays, powered in 230 V, request reference μ C 805U

Dimensions



The friendly interface



CONVERTER



Features

Inputs

Types of INPUTS	Measure range adjustable from:	Permanent overload	Intrinsic error	Console resolution	Input impedance
mA	-22 to +22mA \clubsuit	± 100 mA	$< \pm 0.05\%$ of the MR	10 μ A	0.9V max. drop
mV \clubsuit	-110 to +110mV \clubsuit	± 1 V		10 μ V	
V	-1.1 to +1.1V \clubsuit	± 50 V		1 mV	
	-11 to +11V \clubsuit			1 mV	
	-330 to +330V \clubsuit	± 600 V		10mV	≥ 1 M Ω
Thermocouples \clubsuit Standard IEC 581	$^{\circ}$ C	$^{\circ}$ F	$< \pm 0.1\%$ of the MR $\clubsuit(2)$	0.1 $^{\circ}$ C / 0.1 $^{\circ}$ F	≥ 1 M Ω
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			
Sensor Pt100 Ω (1) \clubsuit 3 wire, Standard IEC 751 (DIN 43760)	$^{\circ}$ C	$^{\circ}$ F	$< \pm 0.1\%$ of the MR	0.1 $^{\circ}$ C / 0.1 $^{\circ}$ F	Current 250 μ A
	-200/850	-328/1562			
Sensor Ni 100 3 wire (1) \clubsuit	-60/260	-76/500			
Resistive sensors	Calibers 0-440 Ω and 0-2.2 k Ω \clubsuit (0-8.8 k Ω optional)	-	$< \pm 0.1\%$ of the MR (0.5% for 0-2K Ω)	-	-
Potentiometer	from 100 Ω to 10 k Ω \clubsuit	-	-	-	-
Supply for 2-wire sensor	24 V _{DC} $\pm 15\%$ with protection from short-circuits. 25 mA max.				
Special linearisation programming up to 20 points	On input: mV, V, mA. Resistive sensors and potentiometer				

(1) Line resistance $< 25\Omega$

(2) Or 30 μ V typical (60 μ V Max.)

\clubsuit C/JC efficiency: $\pm 0.03^{\circ}$ C/ $^{\circ}$ C $\pm 0.5^{\circ}$ C from -5° C to $+55^{\circ}$ C

MR Measure range

\clubsuit A 12 μ A pulsed current allows the detection of line or sensor rupture
 \star Cut off: the display of the console and the output of the μ C remain at down scale for an input signal $<$ than the cut of value, programmable from 0% to 100% of the input scale.

Thermic drift < 150 ppm/ $^{\circ}$ C

Outputs

μ C 350U	μ C 805U	μ C 405U	Types of OUTPUTS	Features
\bullet	\bullet		Analog insulated	Active/passive 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 (μ C 305U) $\geq L_r$ 500k Ω (μ C 805U)
	\bullet	\bullet	4 relays with NO contact	2 setpoints per relay, configurable on the whole MR. Hysteresis programmable from 0 to 100%. Time delay programmable from 0 to 25 sec. (8A/250VAC on resistive load)

Response time of the outputs:

(for a variation from 0 to 90% of the input signal)

Average response time: 150 ms (1)

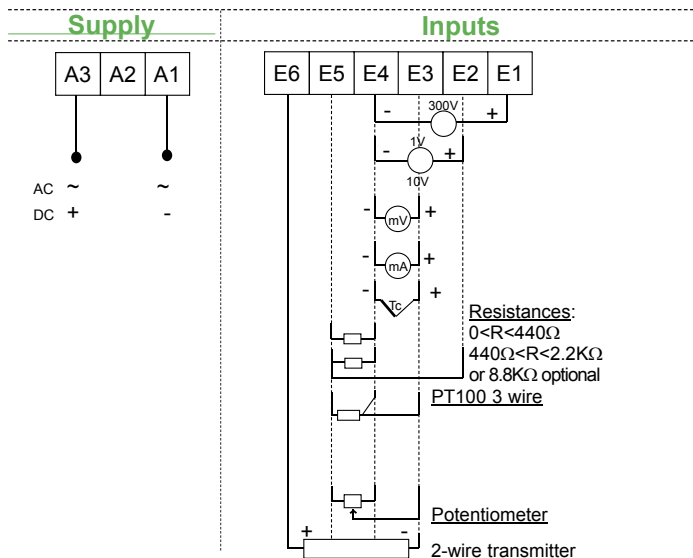
(1) Add 40 ms for the response time on the analog output

Galvanic partition:

2kV-50Hz-1min. between supply, input, analog output, relay output.

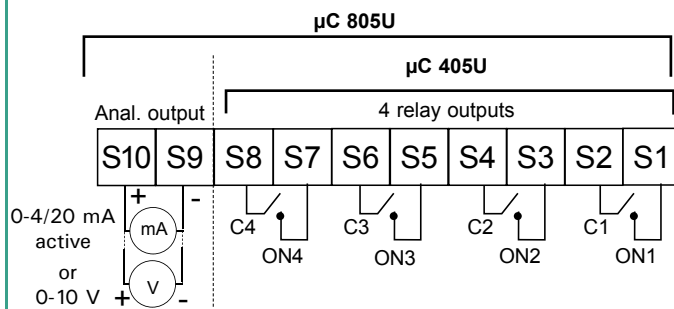
Wiring

Upper connectors

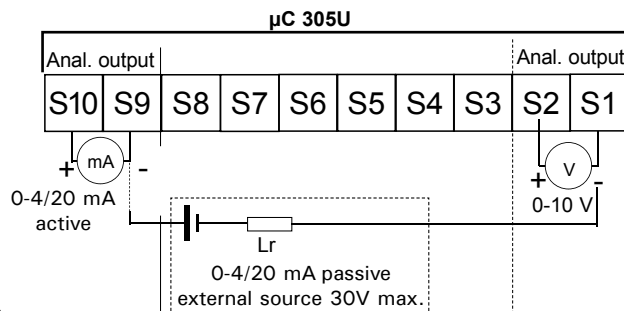


Lower connector

OUTPUTS



For a μ C 805U, the type of the analog output (mA ou V) must be specified on order.



! Only 1 of the 2 analog outputs can be activated at the same time (outputs not independent).

Your representative

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