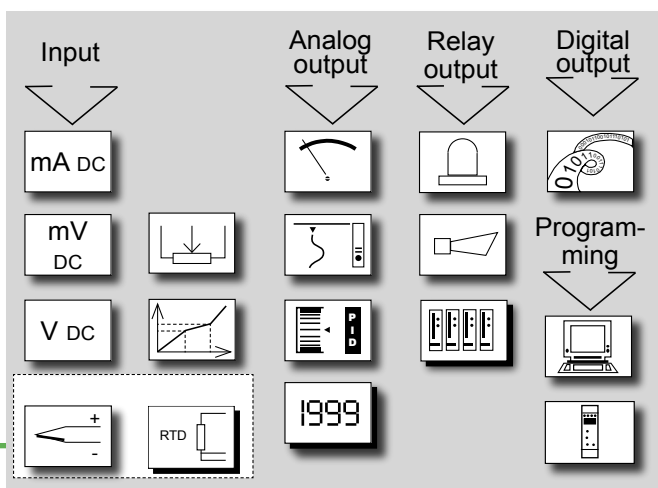


PROGRAMMABLE CONVERTERS

μC 4001



Easy programming by micro-console, or by the PC software MCVISION.

Programming with the Micro-console

This miniaturised micro-console connected on the front face of the instruments allows:

- the visualisation of the measure and the status of the analog and relay outputs,
- the visualisation and modification of the programming,
- the teleloading of programming files for duplication to other converters.

Programming by PC: MCVISION

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.

Digital data link RS485 (Modbus/Jbus)

Allows the communication with processing and exploitation systems (PLC's), as well as a complete configuration of the input, the output and the safeties.

Typical response time: 5ms

- **Universal power supply:**

20 to 270 Vac and 20 to 300 Vdc

- **Universal input:**

±100mV, ±1V, ±10V, ±300V, ±20mA, Pt100 3 wire, Ni 100, ΔPt100, thermocouple, resistance and potentiometer.

- Supply for 2-wire sensor

- **Insulated analog output (A)**
0-4-20mA current (active/passive) or 0-10V voltage.

Relay outputs (R) : 2 inverting relays (8A/250 VAC on resistive load).

Digital output (N), insulated RS485 Modbus/Jbus

Detection of the sensor rupture.

Insulation between input/outputs/supply.

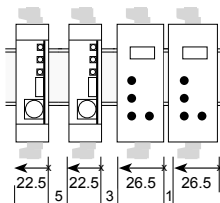
Self-zero and self-diagnosis.

Mode driver: the analog output is piloted either by the digital data link, or locally by the micro-console.

Function simulation of the input measure.

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

Self-extinguishing case of black UL 94VO ABS.
Mounting in switchbox: latching on symmetrical DIN rail.
Rack version: consult.



Dimensions: 22.5x75x120 mm
with μconsole: 26.5x80x130 mm

To allow the inserting of the μconsole : mount the instruments vertically (on horizontal DIN rail), leaving a 5mm space between each.

Operating T°: -10° to 50°C

Storage T°: -20 to 70°C

• **CE** according to the directive EMC 2004/108/CE.

Conform with standards:

IEC 61000-6-4 on emissions, IEC 61000-6-2 immunity (industrial environment)

IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-6 (level 3)

Sensitiveness < ±3% of the measure range

Coding

Type	μC 4001 ARN
Outputs:	
A	analog I/U insulated
R	2 inverting relays
N	digital RS 485

Power supply:

20 to 270 VAC and 20 to 300 Vdc

Power draw: 3.5 W max. 6 VA max.

Dielectric withstanding: 2 kV-50Hz-1min.

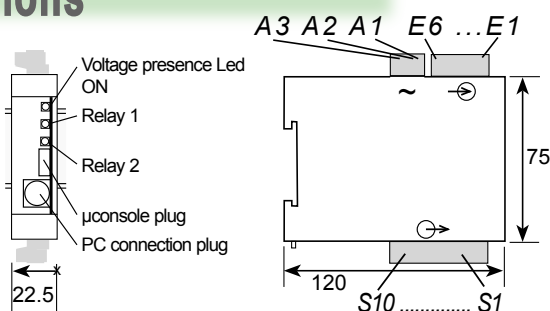
Order example: For a converter with universal input + 1 analog output + 2 relays, request reference **μC 4001 AR**.

Available versions:

μC 4001	A	AR	ARN
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(consult for different configurations)

Dimensions



Features

Inputs

Types of INPUTS	Measure range adjustable from:		Intrinsic error	Console resolution	Input impedance
mA	-22 to +22mA with $\sqrt{\clubsuit}$		< $\pm 0.05\%$ of the MR (3)	10 μ A	5 Ω
mV $\clubsuit$	-110 to +110mV with $\sqrt{\clubsuit}$			10 μ V	$\geq 1\text{M}\Omega$
V	-1.1 to +1.1V with $\sqrt{\clubsuit}$			1 mV	
	-11 to +11V with $\sqrt{\clubsuit}$			1 mV	
	-330 to +330V with $\sqrt{\clubsuit}$			10mV	
Thermocouples $\clubsuit$ ** Standard IEC 581	$^{\circ}\text{C}$	$^{\circ}\text{F}$	< $\pm 0.1\%$ of the MR $\clubsuit(2)$	0.1 $^{\circ}\text{C}$ / 0.1 $^{\circ}\text{F}$	$\geq 1\text{M}\Omega$
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) $\clubsuit$ **	$^{\circ}\text{C}$	$^{\circ}\text{F}$	< $\pm 0.1\%$ of the MR	0.1 $^{\circ}\text{C}$ / 0.1 $^{\circ}\text{F}$	Current 250 μ A
3 wire, Standard IEC 751 (DIN 43760)	-200/850	-328/1562			
Sensor Ni 100 3 wire (1) $\clubsuit$ **	-60/260	-76/500			
Differential measures from 2 sensors Pt100 Ω 2 wire Standard IEC 751 $\clubsuit$ **	-200/270	-328/518			
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*	de 100 Ω à 10 k Ω $\clubsuit$				
Supply for 2-wire sensor	24 Vdc $\pm 15\%$ with protection from short-circuits. 25 mA max.				
Special linearisation programming up to 20 points	On input: mV, V, mA. Resistive sensors and potentiometer				

* Inputs with 2 measures (see response time)
(1) Line resistance <25 Ω
(2) Or 30 μ V typical (60 μ V Max.)
 $\clubsuit$ C/JC efficiency: $\pm 0.03^{\circ}\text{C}/^{\circ}\text{C}$ $\pm 0.5^{\circ}\text{C}$ from -5 $^{\circ}\text{C}$ to +55 $^{\circ}\text{C}$
MR Measure range
 $\sqrt{}$ Extraction of the square root
(3) if cycle time = 2ms
- intrinsic error < $\pm 0.1\%$ of the MR
- thermic drift < 250 ppm/ $^{\circ}\text{C}$
 $\clubsuit$ 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 off value, programmable from 0% to 100% of the input scale.
 $\clubsuit$ A 12 μ A pulsed current allows the detection of line or sensor rupture.
Thermic drift <150ppm / $^{\circ}\text{C}$ (voir 3)
** line resistance <10 Ω and R. max. 400 Ω

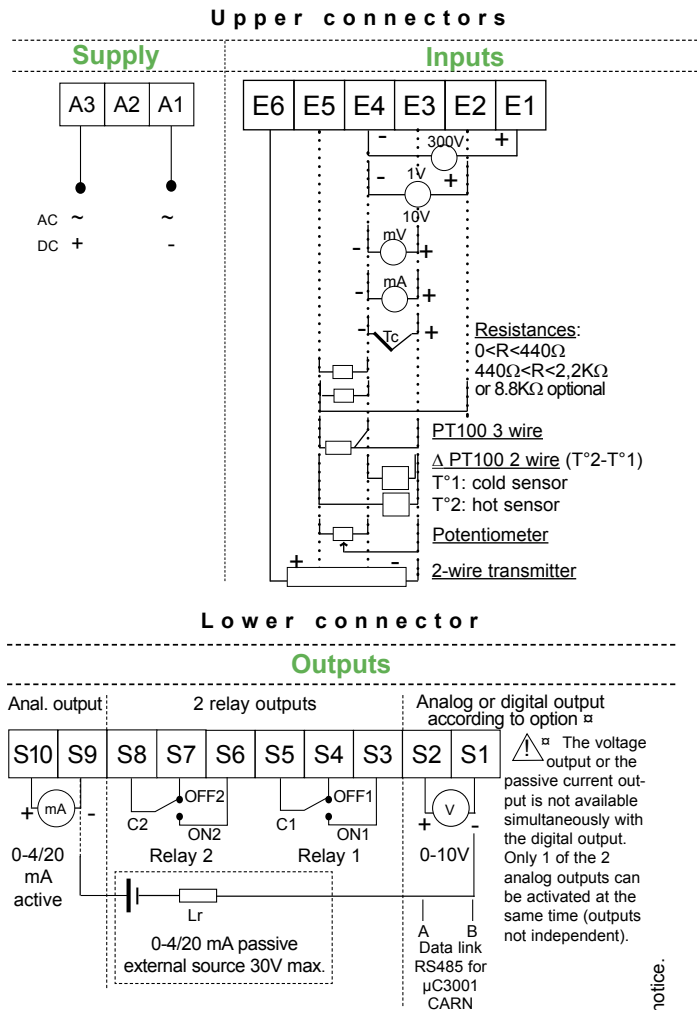
Outputs

μ C 4001	Code	Types of OUTPUTS	Features
$\bullet$	A	1 analog	Active/passive current Current: direct or reversed 0-20mA Load impedance $\leq L_r$ 600 Ω
		Voltage	Voltage: direct or reversed 0-10V Load impedance $\geq L_r$ 5000 Ω
$\bullet$	R	2 inverting relays	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)
$\bullet$ (5)	N	Digital data link RS485 Protocole Modbus/Jbus (EIA RS485) insulated. (with or without parity, even or odd ; 1 or 2 stop bits)	

(5) The digital data link N and the voltage output A are not available simultaneously.

Galvanic partition: 2kV-50Hz-1min. between supply, input, analog output, relay outputs and digital data link 1kV-50Hz-1min. between analog and digital output.

Wiring



Response time of the outputs

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

Programmable cycle time	Max. response time analog	relays	Rejection
2 ms	5 ms	20 ms	-
20.0 ms	40 ms	55 ms	50 Hz
100 ms	200 ms	215 ms	50 Hz / 60Hz

The response times are guaranteed 10 min. after setting the converter on tension, and 30 sec. after a saving of the programming, a revert from measure overstepping, or a sensor rupture.

For the inputs with 2 measures (Tc, Pt100, ni 100 and potentiometer) the 2nd measure is performed every minute. During this measurement, the max. response time on the relays or the analog output increases by 5 ms, 20 ms or 100ms according to the value of the programmed cycle time (2 ms, 20 ms or 100 ms).

In case the sensor rupture detection is being used (inputs mV and T $^{\circ}$), add 2 ms to the response time of the outputs.

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