Programmable converter SC31

Isolation amplifier with current or voltage input
4 selectable input ranges and 4 selectable output ranges
15-30 V DC supply, isolated from internal electronics
Built-in supply for external transmitter
Galvanically isolation between input and output
Made in accordance with the CE and EMC regulations

The C-mac® isolation amplifier SC31 is used for signal convertion/isolation between different input- and output signals.
The supply voltage is 15-30 VDC, and the supply voltage as well as inputs and outputs are galvanically isolated from each other.

The unit contains a 24 VDC supply, which can be used to supply external transmitters.

By means of internal jumpers, you can select between 4 different input ranges, and 4 output ranges.

Technical data:

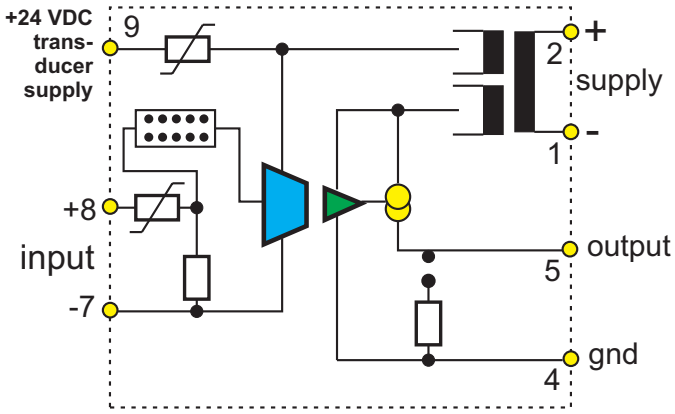
Supply voltage:	15-30 VDC Supply voltage, inputs and outputs are galvanically isolated from each other. (Test voltage 2 kV AC)
Power consumption:	max. 2.5 W (100 mA @ 24 V)
Accuracy:	0,3%
Operation temp.:	-20°C to +60°C
Humidity:	0 - 90% RH, non-condensing
Storage temp.:	-35°C to +85°C
Temp. coefficient:	0,01% / °C
Transducer supply:	24 VDC, max. 30 mA
Indications:	none
Adjustments:	Fine adj. +/- 5% of zero and span. The adjustment potentiometers are placed behind the front plate.

EMC and safety regulations.

Emmision:	EN 50 081 - 1
Immunity:	EN 50 082 - 2
Safety:	EN 60 730

Approvals: The units are produced in accordance with the CE og low voltage regulations.

Block diagram:



Input metering ranges:

0 - 20 mA
4 - 20 mA
0 - 10 V
2 - 10 V

Output ranges:

0 - 20 mA	0 - 10 V(R_{Out} = 500Ω)
4 - 20 mA	2 - 10 V(R_{Out} = 500Ω)

Max. output load, current outputs: 500Ω

Please note, that there is an internal resistor (R_O)on voltage outputs, which means the accuracy of the unit is dependent on the external load resistance.

Ex: With 0-10 V output and load resistance 100 kΩ, the error caused by the load is 0,5%. With load resistance 10 kΩ, the error is 5%.

Input connections:

Active current- or voltage signals:
plus to pin 8, minus to pin 7

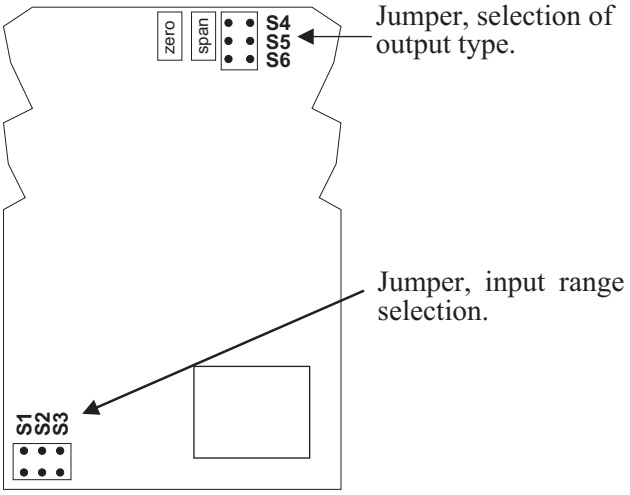
2-wire transducer:
plus to pin 9, minus to pin 8

3-wire transducer:
plus to pin 9, minus to pin 7, output to pin 8

Range selection:

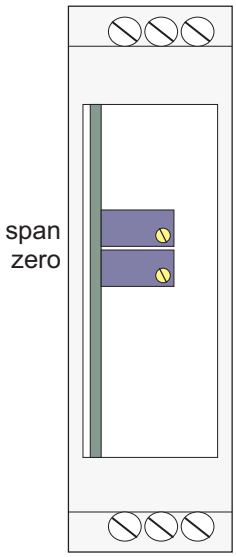
The metering ranges are selected on internal dip-switches and jumpers, and if you need to change the range, you must open the module, and take the pcb out.
On the drawing and table below you can see the different possibilities.

IMPORTANT:
After selecting another range, you must fine-adjust the unit by means of the trimming potentiometers.



Range selections		
Switch	Function	Switch pos.
1-2	current input	1 ON; 2 OFF
	voltage input	1 OFF; 2 ON
3	inp. 0-20mA/0-10V	3 OFF
	inp. 4-20mA/2-10V	3 ON
4	current output	4 OFF
	voltage output	4 ON
5-6	out. 0-20mA/0-10V/0-1V	5 OFF; 6 OFF
	out.4-20mA/2-10V/0.2-1V	5 ON; 6 ON

Fine adjustments:



Ordering guide:

SC31-x-y

x = Input metering range

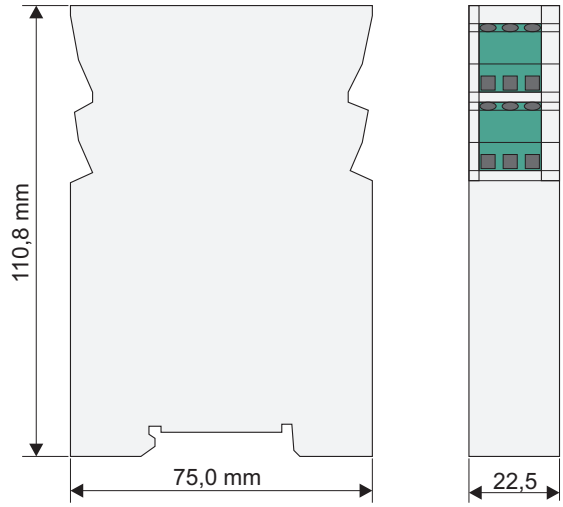
y = Output metering range

Input ranges:	Output ranges:
1 = 0 - 20 mA	1 = 0 - 20 mA
2 = 4 - 20 mA	2 = 4 - 20 mA
3 = 0 - 10 V	3 = 0 - 10 V
4 = 2 - 10 V	4 = 2 - 10 V

Ordering example: SC31-1-2

(input range 0-20 mA, output range 4-20 mA)

Mechanical dimensions:



Materials and weight:

Housing:	Polycarbonate (30% GFR), grey, self-extinguishing
Terminal block:	Polycarbonate UL94 V-2, green,, self-extinguishing
Terminals:	Nickel-plated brass
Weight:	130 g