

Electrical specifications

Order information	
Type	CMS-I10A-UI
Cat.no	15901.2
Input data	
range (select via dipswitches)	0..0,5A / 0..1A / 0..5A / 0..10A AC and DC
max. voltage	250V AC/DC
measuring principle	true RMS / arithmetic average
AC input frequency	45..65Hz
Output data	
voltage output (select via dipswitch)	0..10V / 0..5V / 1..5V / 10..0V
load resistance	> 1kOhm
current output (select via dipswitch)	0..5mA, 0..10mA, 0..20mA, 4..20mA
load resistance	< 600 Ohm
relay output	1 CO contact
max. switching voltage	250V-
rated / inrush current (ohmic load)	3A / 5A
max. power rating	750VA
electrical life span	at rated, 23°C and ohmic load: 3 x 105 cycles
mechanical life span	15 x 106 cycles
contact material	AgNi 90/10
test voltage coil-contact	4kV
General data	
module power supply	24V DC ±10%
module current (without load)	Approx. 60mA
conversion error	< 0,5% of In
linearity error	< 0,5% of In
temperature coefficient	< 0,05 %/°C
response time	200ms
offset voltage @ 3x In overload	< 0,7% of In
CE marking	Low Voltage Directive (LVD) 2006/95/EC, according requirements of EN 61010 EMC Directive 2004/108/EC, according requirements of EN 55011 and EN 61326-1
isolation voltage input / power	3,5kV, 50Hz, 1min.
isolation voltage input / output	3,5kV, 50Hz, 1min.
isolation voltage output / power	1kV, 50Hz, 1min.
operating / storage temperature	0°C...+50°C / -20°C...+70°C
conductor cross section	0,2 - 2,5 mm ²
connection system	screw clamp connection, pluggable
insulation stripping length	7 mm
mounting / installation position	DIN-rail TS35 / any
module size LxWxH (TS35)	17,5 x 99 x 114,5mm
weight	130 gr

Manual



The CMS-I10A-UI is a multi-functional 3-way isolated signal converter. This module is used for galvanic isolated high current measurement and conversion. Also a threshold relay output is provided.

The 3-way isolation enables the module to be used locally as well as in the vicinity of the controlling system.

The inputs and outputs of the converter are configured by means of dipswitches.

Any combination of input and output can be chosen, so numerous different signal conversions can be set. Default input/output setting is 0..10A / 0..10V. Other default input/output settings on request.

Features:

- Multiple High Current input (0..0,5A, 0..1A, 0..5A, 0..10A, True RMS AC and AVG DC)
- Multifunctional analog output (U,I)
- Threshold relay output with adjustable set point and hysteresis
- Current range selectable via DIP switches
- 3-Way galvanic isolation
- Power supply 24V DC
- Extremely simple Zero-Calibration by pressing calibration button for 5 seconds

Configuration



To open the module press the locking levers under the terminals with a screwdriver.

The module is configured by setting the dip-switches according to the table on the side of the module.

The switching threshold of the relay can be adjusted using potentiometers P1 and P2. The switching diagram is shown on the side of the module.

Measuring principle

Average:

The average of a number of measurements taken from a DC current. When measuring the average of an AC current the result will be '0'.

True R.M.S.:

The effective value of an AC current. This is an equivalent to a DC current that would provide the same amount of heat generated in a resistor as the AC current would if applied to that same resistor.

Connecting the module

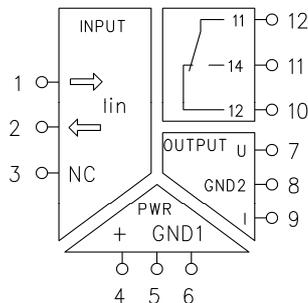
The pin configuration for I/O and power connection is shown on the top of the module. The green Led on top indicates Power ON.

Calibration

The zero value of the module can be calibrated by pressing and holding the calibration button on top of the module until the Led flashes.

During calibration the input should be disconnected or there should be a referenced '0' connected to the input of the module.

Connection diagram



Dipswitch settings

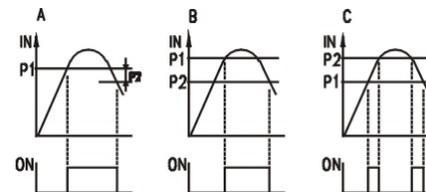
IN	1	2
0...0.5A	OFF	OFF
0...1A	OFF	ON
0...5A	ON	OFF
0...10A	ON	ON

Relais	6	7
OFF	OFF	OFF
A	OFF	ON
B	ON	OFF
C	ON	ON

OUT	3	4	5
0...10V	OFF	OFF	OFF
0...5V	OFF	OFF	ON
1...5V	OFF	ON	OFF
0...5mA	OFF	ON	ON
0...10mA	ON	OFF	OFF
0...20mA	ON	OFF	ON
4...20mA	ON	ON	OFF
10...0V	ON	ON	ON

Measure	8
Average	OFF
True R.M.S.	ON

Relay switching diagram



Set the threshold value of potentiometer P1 and P2 by using a screwdriver. Both potentiometers represent a percentage from the selected input value. Full left turn is 0% and full right turn is 100% of the selected input value.

- A:** The relay switches on when value P1 is reached. The relays switches off when value P1 - P2 is reached.
- B:** The relay switches on when value P1 is reached. The relays switches off when value P2 is reached.
- C:** The relay switches on between P1 and P2.