

Electrical specifications

Order information	
Type	CMS-RTD-UI
Cat.no	15919.2
Input data	
Input type	RTD in 2,3 and 4 wire acc. to EN60751/DIN 43760 Pt-100 -50...850°C (default) Pt-500 -50...850°C Pt-1000 -50...850°C Ni-100 -50...180°C Ni-1000 -50...180°C 200uA
Excitation current	200uA
Output data	
Output type	0-10V,0-5V,1-5V,0-5mA,0-10mA,0-20mA,4-20mA
Analog output load	U: > 1kOhm I: <600Ohm
Offset U / I	< 10mV / 20uA
Max. output U / I	< 11V / 22mA
Relay contact	1 CO contact
Max. switching voltage	240V AC
Max. continuous / inrush current	3 / 5A (Ohmic load)
Electrical life span @max. contact load	> 1,5 x 10 ⁸ Cycles
Mechanical life span	> 15 x 10 ⁸ Cycles
Contact material	AgNi
Test voltage coil-contact	4kV
General data	
Power supply voltage	24V DC ±10%
Power supply current (no load)	60mA
Conversion error	< 0,3% F.S.
Temperature coefficient	< 0,01 %/°C
Step response	200ms
Isolation voltage: input / output	1kV, 50Hz, 1min.
Isolation voltage: power supply / signal	1kV, 50Hz, 1min.
Operating temperature range	-20°C...50°C
Dimensions (l x w x h)	17,5 x 99 x 114,5mm
Weight	120g
Mounting	DIN-rail TS35
CE marking	Low Voltage Directive (LVD) 2006/95/EC, according requirements of EN 61010 and EN 50178 EMC Directive 2004/108/EC, according requirements of EN 55011 and EN 61326-1
Conductor cross section	0,2 - 2,5 mm ²
Connector type	screw clamp connection, pluggable
Insulation stripping length	7 mm

Manual



The CMS-RTD-UI is a multi-functional 3-way isolated RTD converter. This module is used for electrical isolation and conversion of analog temperature signals. 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 conversions can be set.

Default input setting is K-type 0..850°C. Default output setting is 0..10V. Other default input/output settings on request.

Features:

- Multiple RTD input (PT100, PT500, PT1000, Ni100, Ni1000)
- Multifunctional analog output (U,I)
- Threshold relay output with adjustable setpoint and hysteresis
- Temperature range selectable via DIP switches
- 3-Way galvanic isolation
- Power supply 24V DC
- Other sensor types on request

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.

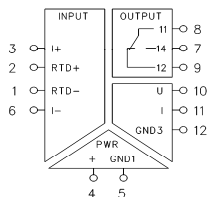
The switching threshold of the relay can be adjusted using potentiometers P1 and P2. The switching diagram is shown on the side of the module.

Connecting the module

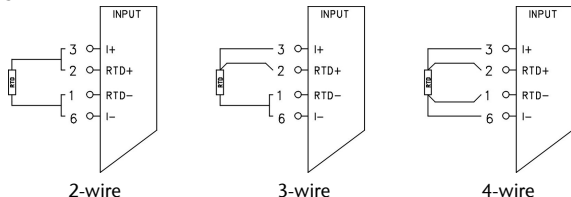
The pin configuration for I/O and power connection is shown on the top of the module. The green Led on top indicates Power ON.

When the input is out of the selected range the led starts blinking.

Connection diagram



Connecting the RTD's:



RTD Settings

Use dipswitch S1 to select RTD type.

S1	RTD		
	5	6	7
PT100	off	off	off
PT500	off	off	on
PT1000	off	on	off
Ni100	off	on	on
Ni1000	on	off	off

Min. (°C)	Max. (°C)
-50	850
-50	850
-50	850
-50	180
-50	180

S1	8
2 & 4-Wire	off
3-Wire	on

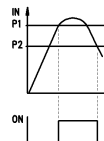
Dipswitch settings

S1	Lowerlimit input			
	1	2	3	4
-50°C	off	off	off	off
-40°C	off	off	off	on
-30°C	off	off	on	off
-20°C	off	off	on	on
-10°C	off	on	off	off
0°C	off	on	off	on
10°C	off	on	on	off
20°C	off	on	on	on
30°C	on	off	off	off
40°C	on	off	off	on
50°C	on	off	on	off
100°C	on	off	on	on
140°C	on	on	off	off
200°C	on	on	off	on
250°C	on	on	on	off
300°C	on	on	on	on

S2	Upperlimit input				
	1	2	3	4	5
0°C	off	off	off	off	off
10°C	off	off	off	off	on
20°C	off	off	off	on	off
30°C	off	off	off	on	on
40°C	off	off	on	off	off
50°C	off	off	on	off	on
60°C	off	off	on	on	off
70°C	off	off	on	on	on
80°C	off	on	off	off	off
90°C	off	on	off	off	on
100°C	off	on	off	on	off
120°C	off	on	off	on	on
140°C	off	on	on	off	off
160°C	off	on	on	off	on
180°C	off	on	on	on	off
200°C	off	on	on	on	on
250°C	on	off	off	off	off
300°C	on	off	off	off	on
350°C	on	off	off	on	off
400°C	on	off	off	on	on
450°C	on	off	on	off	off
500°C	on	off	on	off	on
550°C	on	off	on	on	off
600°C	on	off	on	on	on
650°C	on	on	off	off	off
700°C	on	on	off	off	on
750°C	on	on	off	on	off
800°C	on	on	off	on	on
850°C	on	on	on	off	off

S2	Out		
	6	7	8
0..10V	off	off	off
0..5V	off	on	on
1..5V	off	on	off
0..5mA	off	on	on
0..10mA	on	off	off
0..20mA	on	on	off
4..20mA	on	on	off
10..0V	on	on	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.

The relay switches on when value P1 is reached. The relays switches off when value P2 is reached.

Set both potentiometers at minimum to switch-off the relay function.