

**Electrical specifications**

Order information	
Type	CMS-TC-UI
Cat.no	15900.2
Input data	
Input type	Thermocouple acc. to EN60584 K -50...1350°C (default) J -50...1200°C T -50...400°C E -50...1000°C
Cold junction compensation	Selectable (default: On)
Cold junction error	≤3K (typ. 1,5K)
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 <sup>8</sup> Cycles
Mechanical life span	> 15 x 10 <sup>6</sup> 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 <sup>2</sup>
Connector type	screw clamp connection, pluggable
Insulation stripping length	7 mm

**Manual**



The CMS-TC-UI is a multi-functional 3-way isolated Thermocouple signal 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 thermocouple conversions can be set.

Default input setting is Pt100-0..100°C. Default output setting is 0..10V. Other default input/output settings on request.

**Features:**

- Multiple Thermocouple input (K,J,T,E)
- 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.

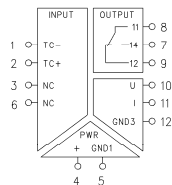
**Connecting the module**

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**



**Thermocouple Settings**

Use dipswitch S1 to select thermocouple type.

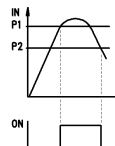
S1	TC		
	5	6	7
K	off	off	off
J	off	off	on
T	off	on	off
E	off	on	on

Min. (°C)	Max. (°C)
-200	1350
-200	1200
-200	400
-200	1000

Cold Junction compensation

S1	8
CJ off	off
CJ 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 relay switches off when value P2 is reached.

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

**Dipswitch settings**

S1	Lowerlimit input			
	1	2	3	4
-100°C	off	off	off	off
-50°C	off	off	off	on
0°C	off	off	on	off
50°C	off	off	on	on
100°C	off	on	off	off
150°C	off	on	off	on
200°C	off	on	on	off
250°C	off	on	on	on
300°C	on	off	off	off
350°C	on	off	off	on
400°C	on	off	on	off
450°C	on	off	on	on
500°C	on	on	off	off
550°C	on	on	off	on
600°C	on	on	on	off
650°C	on	on	on	on

S2	Upperlimit input				
	1	2	3	4	5
0°C	off	off	off	off	off
50°C	off	off	off	off	on
100°C	off	off	off	on	off
150°C	off	off	off	on	on
200°C	off	off	on	off	off
250°C	off	off	on	off	on
300°C	off	off	on	on	off
350°C	off	off	on	on	on
400°C	off	on	off	off	off
450°C	off	on	off	off	on
500°C	off	on	off	on	off
550°C	off	on	off	on	on
600°C	off	on	on	off	off
650°C	off	on	on	off	on
700°C	off	on	on	on	off
750°C	off	on	on	on	on
800°C	on	off	off	off	off
850°C	on	off	off	off	on
900°C	on	off	off	on	off
950°C	on	off	off	on	on
1000°C	on	off	on	off	off
1050°C	on	off	on	off	on
1100°C	on	off	on	on	off
1150°C	on	off	on	on	on
1200°C	on	on	off	off	off
1250°C	on	on	off	off	on
1300°C	on	on	off	on	off
1350°C	on	on	off	on	on

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