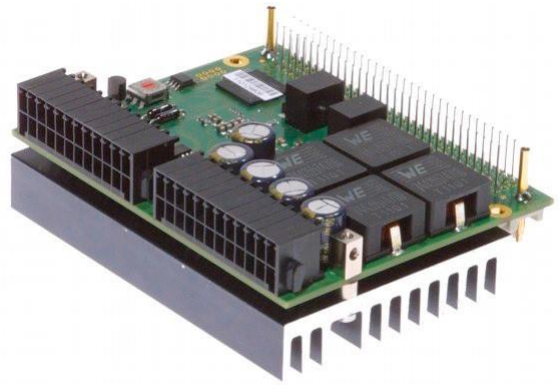
21. COP-PTC (Peltier Output Stage)

COP-PTC 6111434xx

The COP-PTC can be connected to up to two Peltier elements. Temperature is controlled via PT-100 measuring resistors. The Peltier element can be used for both heating and cooling.

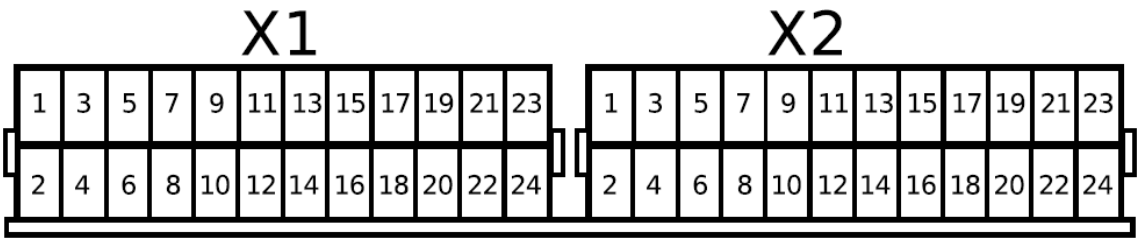


21.1. Technical Specifications

Peltier Element		
Number of power outputs	1 or 2 (see also 16.5 on page 61)	
Output voltage	± 48	V
Output current at channel 1	10	A
Output current at channel 2	5 per channel	A
Vcc PWR power supply	18 ... 48	V
Maximum Vcc PWR power consumption	10	A
PT-100		
Number PT-100 inputs	4	
Measuring ranges	-80 ... 460	°C
Sampling rate	100	Hz
Resolution	0.02	K
Accuracy [1)]	0.5	K
Full scale drift	5	ppm/K
Connection technology	Four-wire	
Module		
Warm-up time	15	min
Maximum power consumption at 24V node power supply	150	mA

1) The value does not take into account the PT100 resistor's accuracy.

21.2. Pin Assignment



X1					
No.	Dir	Id.	Id.	Dir	No.
2	Out	A 01	A 00	Out	1
4		GND	GND		3
6	In	+A 01	+A 00	In	5
8	In	-A 01	-A 00	In	7
10	Out	A 03	A 02	Out	9
12		GND	GND		11
14	In	+A 03	+A 02	In	13
16	In	-A 03	+A 02	In	15
18		Shield	Shield		17
20		GND	+24V	Out	19
22	In	D 01	D 00	In	21
24		Shield	Shield		23

X2					
No.	Dir	Id.	Id.	Dir	No.
2	In	Vcc PWR1)	Vcc PWR1)	In	1
4		GND1)	GND1)		3
6	Out	PWR_B 0	PWR_A 0	Out	5
8	Out	PWR_B 1	PWR_A 1	Out	7
10		GND	GND		9
12	In	Vcc IO	Vcc IO	In	11
14		GND	GND		13
16	Out	D 01	D 00	Out	15
18	Out	D 03	D 02	Out	17
20		GND	GND		19
22		GND	GND		21
24		Shield	Shield		23

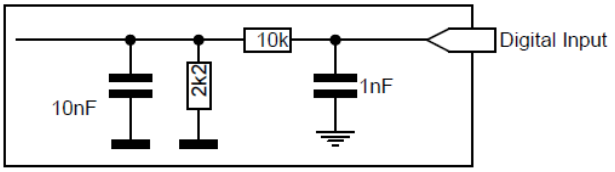
Two pins need to be used for the power supply.
Maximum current load per pin (section 5.3.1)

21.3. Hardware Description

PT-100

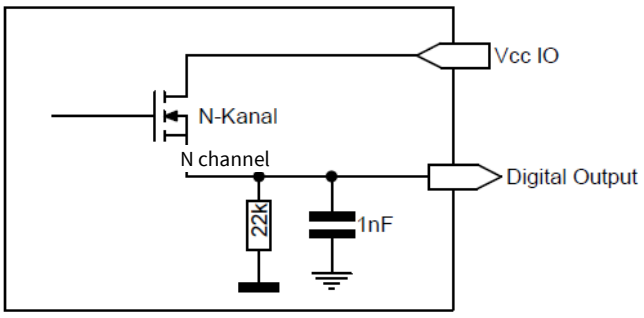
The PT-100 sensors are connected directly to the module via four-wire lines. To prevent errors due to self-heating, the measuring current flows only during the measurement. Two high-precision reference resistors, the properties of which are stored in the EEPROM, are integrated into the module for automatic zero point and full-scale calibration.

Digital inputs



Digital outputs

The digital high side outputs are supplied from an external power source.
Vcc IO supplies power to D 00 to D 03

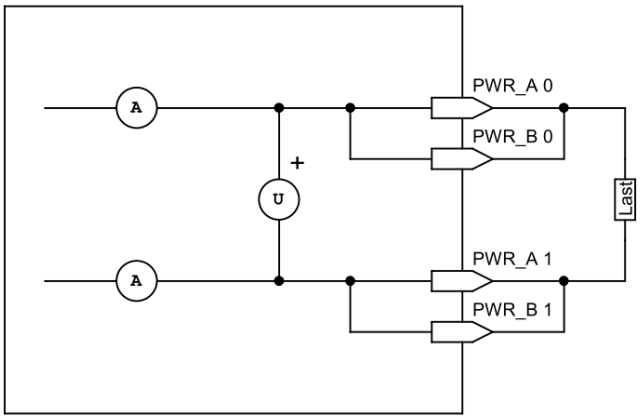


21.4. Connection Examples

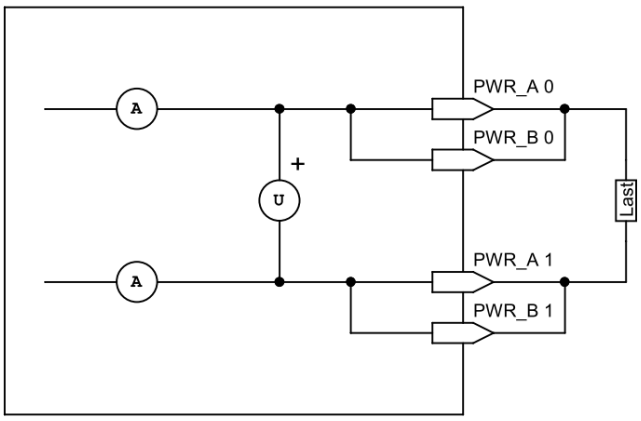
When wiring, please note that the COP-PTC module outputs a positive voltage for heating and a negative voltage for cooling. With the Peltier elements, on the other hand, a positive voltage for cooling is often specified.

Channel 1 COP-PTC

For channel 1 PTC modules, outputs +PWR 0 and -PWR0 or, as the case may be, +PWR 1 and -PWR1 must be short-circuited. The maximum current load per terminal pin: See section 5.3.1.



Chanel 2 COP-PTC



21.5. Available Options

Item Number	Label	Option	Description
611143410	COP-PTC	1x10A	1-channel peltier element final stage
611143400	COP-PTC	2x5A	2-channel peltier element final stage