EtherCAT
signal output

EtherCAT
signal input

M12 I/O
connection sockets

Signal status display

Labelling areas

Power supply
status display:
Box supply (Us)

Auxiliary voltage (UP)

Power supply feed

Power supply down-
stream connection

EP3204-0002

+60 °C
−25 °C

1 | Tx+
2 | Rx+
3 | Rx-
4 | Tx-

1 | RL+
2 | R+
3 | RL-
4 | R-
5 | Shield

4-wire 3-wire 2-wire

1 | + 24 V DC Us
2 | + 24 V DC UP
3 | GNDs
4 | GNDP

**I/O
connection**

**Connector
assignment**

EP3204-0002 | 4-channel analog input PT100 (RTD)

The EP3204 EtherCAT Box with analog inputs allows resistance sensors to be connected directly. The module's circuitry can operate the sensors using 2-, 3- or 4-wire connection techniques. Linearisation over the full temperature range is realised with the aid of a microprocessor. The temperature range can be selected freely. The module can also be used for simple resistance measurement with the output in ohms. The module's standard settings are: resolution 0.1°C in the temperature range of PT100 sensors in 2-wire connection. Sensor malfunctions such as broken wires are indicated by error LEDs. The module is quite versatile, but the default values are selected in such a way that in most cases it is not necessary to perform configuration. The input filter and associated conversion times can be set within a wide range; several data output formats may be chosen. If required, the inputs can be scaled differently. Automatic limit monitoring is also available. Parameterisation is carried out via EtherCAT.

Technical data	EP3204-0002
Number of inputs	4
Connection method	screw type M12 for 2-, 3- and 4-wire connections, presetting: 2-wire
Protocol	EtherCAT
Bus interface	2 x M8 socket, shielded, screw type
Sensor types	PT100, PT200, PT500, PT1000, Ni100, Ni120, Ni1000 resistance measurement (e.g. potentiometer, 10 Ω…1.2/4 kΩ)
Signal type	PT100
Measuring range	-200…+850 °C (PT sensors); -60…+250 °C (Ni sensors)
Resolution	0.1 °C per digit
Measuring error	< ±0.5 °C for PT sensors (further types see documentation)
Conversion time	800 ms up to 2 ms, see documentation, default: approx. 85 ms
Nominal voltage	24 V DC (-15 %/+20 %)
Distributed clocks	–
Measuring current	typ. 0.5 mA
Input filter	5 variations, configurable
Sensor supply	–
Current consumption from Us	120 mA
Power supply connection	feed: 1 x M8 male socket, 4-pin; downstream connection: 1 x M8 female socket, 4-pin
Bit width in the process image	4 x 32 bit RTD input
Electrical isolation	500 V
Special features	open-circuit recognition
Weight	approx. 165 g
Operating/storage temperature	-25…+60 °C/-40…+85 °C
Vibration/shock resistance	conforms to EN 60068-2-6/EN 60068-2-27
EMC immunity/emission	conforms to EN 61000-6-2/EN 61000-6-4
Protect. class/installation pos.	IP 65/66/67 (conforms to EN 60529)/variable
Approvals/Markings	CE, UL, ATEX
Ex-Marking	II 3 G Ex nA IIC T4 Gc

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Accessories	
ZK1090-3xxx-xxxx	Cables for EtherCAT signal in- and -output
ZK2000-6xxx-xxxx	Cables for M12 I/O connection sockets
ZK2000-5xxx/71xx-xxxx	Sensor cable 5-wire unshielded/shielded
ZK2020-3xxx-xxxx	Cables for M8 power supply

Related products	
EQ3204-0002	EtherCAT Box, stainless steel housing, 4 analog inputs for resistance sensors (RTD), PT100…1000, Ni100, 16 bit