



## ER3314-0002 | 4-channel analog input thermocouple

The ER3314 EtherCAT Box with analog inputs permits four thermocouples to be directly connected. The module's circuit can operate thermocouple sensors using the 2-wire technique. Linearisation over the full temperature range is realised with the aid of a microprocessor. The temperature range can be selected freely. The error LEDs indicate a broken wire. Compensation for the cold junction is made through a temperature measurement in the connecting plugs. This means that standard extension leads can be connected. The ER3314 can also be used for mV measurement.

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. The parameters are stored in the module. For the temperature compensation a PT1000 element is needed. Beckhoff offers a connector with temperature compensation (ZS2000-3712).

The EtherCAT Box modules with zinc die-cast housing are ready for use in harsh industrial and process environments. With the fully sealed design and metal surfaces the ER series is ideal for applications requiring enhanced load capacity and protection against weld spatter, for example.

Technical data	ER3314-0002
Number of inputs	4
Connection method	screw type M12, 2-wire connection for thermocouple
Protocol	EtherCAT
Bus interface	2 x M8 socket, shielded, screw type
Sensor types	types J, K, L, B, E, N, R, S, T, U (default setting type K), mV measurement
Signal type	thermocouple
Measuring range	depending on sensor type; preset value is type K, -100...+1370 °C
Resolution	0.1 °C per digit
Measuring error	< ±0.3 % for type K (relative to full scale value), further types see documentation
Conversion time	2.5 s up to 20 ms, see documentation, default: approx. 250 ms
Nominal voltage	24 V DC (-15 %/+20 %)
Distributed clocks	–
Input filter	5 variations, configurable
Sensor supply	–
Current consumption from Us (without sensor current)	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 TC input, 4 x 16 bit TC output
Electrical isolation	500 V
Special features	open-circuit recognition
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	CE, UL in preparation

Related products	
EP3314	EtherCAT Box, industrial housing, 4-channel analog input thermocouple