



## EP3314-0002 | 4-channel analog input thermocouple

The EP3314 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 EP3314 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).

| Technical data                   | EP3314-0002   |
|----------------------------------|---|
| 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      | 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  |
| 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                        | CE, UL, Ex  |

| 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   |
| ZS2000-3712           | M12, plug, plastic, screw type, straight, male, 5-pin, thermocouples with temperature compensation element |

| Related products |  |
|------------------|--|
| EQ3314-0002      | EtherCAT Box, stainless steel housing, 4 analog inputs for thermocouples, type J,K,L...U, 16 bit |