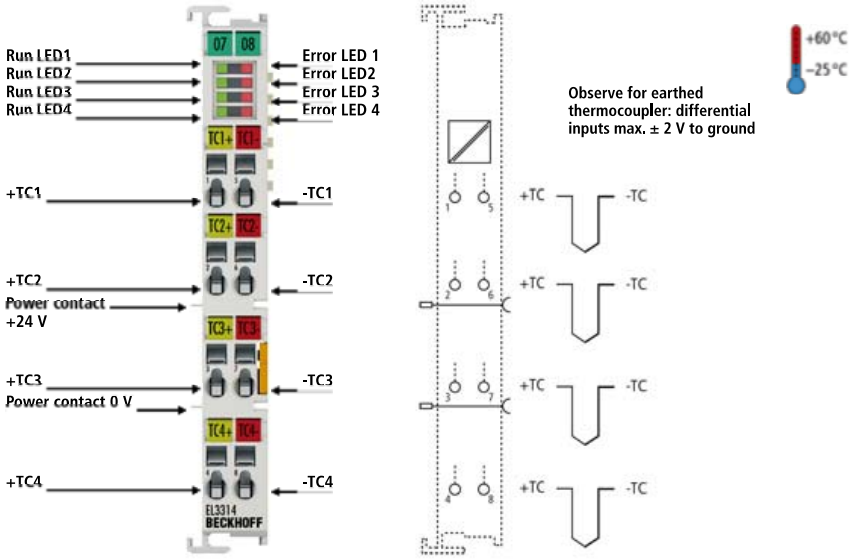

EL3314 | 4-channel thermocouple input terminal with open-circuit recognition

The EL3314 analog input terminal allows four thermocouples to be connected directly. The EtherCAT Terminal circuit can operate thermocouple sensors using the 2-wire technique. A microprocessor handles linearisation across the whole temperature range, which is freely selectable. The error LEDs indicate a broken wire. Compensation for the cold junction is made through an internal temperature measurement at the terminal. The EL3314 can also be used for mV measurement.

Technical data	EL3314
Number of inputs	4
Power supply	via the E-bus
Thermocouple sensor types	types J, K, L, B, E, N, R, S, T, U (default setting type K), mV measurement
Distributed clocks	–
Input filter limit frequency	typ. 1 kHz; dependent on sensor length, conversion time, sensor type
Connection method	2-wire
Wiring fail indication	yes
Conversion time	approx. 2.5 s up to 20 ms, depending on configuration and filter setting, default: approx. 250 ms
Temperature range	in the range defined in each case for the sensor (default setting: type K; -200…+1,370 °C); voltage measurement: ±30 mV…±75 mV
Resolution	0.1 °C per digit
Measuring error	< ±0.3 % (relative to full scale value)
Electrical isolation	500 V (E-bus/signal voltage)
Current consumption power contacts	–
Current consumption E-bus	typ. 200 mA
Bit width in the process image	4 x 32 bit TC input, 4 x 16 bit TC output
Configuration	no address setting, configuration via the controller
Special features	open-circuit recognition
Weight	approx. 60 g
Operating/storage temperature	-25…+60 °C/-40…+85 °C
Relative humidity	95 %, no condensation
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 20/variable
Approvals	CE, UL, Ex