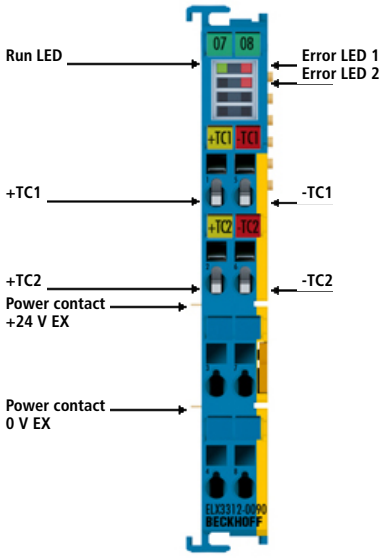

Top view

ELX3312-0090 | 2-channel analog input terminal thermocouple/mV measurement, 2-wire connection, 16 bit, Ex i, TwinSAFE SC

The ELX3312 analog input terminals allows the direct connection of thermocouples located in hazardous areas classified Zone 0/20 or 1/21. The circuitry of the ELX3312 can operate sensors with 2-wire technology. Linearisation is possible over the entire freely selectable temperature range. The error LEDs indicate a broken wire. Compensation for the cold junction is achieved through internal temperature measurement. Millivolt measurement is also possible with ELX3312.

With the aid of the TwinSAFE SC technology (TwinSAFE Single Channel) it is possible to make use of standard signals for safety tasks in any network or fieldbus. The standard functions and features of the I/Os remain available. The data from these TwinSAFE SC I/Os is fed to the TwinSAFE Logic, where they undergo safety-related multi-channel processing. In the Safety Logic the data originating from different sources is analysed, checked for plausibility and submitted to a "voting". This is done by certified function blocks such as Scale, Compare/Voting (1oo2, 2oo3, 3oo5), Limit, etc. For safety reasons, however, at least one of the data sources must be a TwinSAFE SC component. The remainder of the data can originate from other standard I/Os, drive controllers or measuring transducers.

With the aid of the TwinSAFE SC technology it is typically possible to achieve a safety level equivalent to PL d/Cat. 3 in accordance with EN ISO 13849-1 or SIL 2 in accordance with EN 62061.

Technical data	ELX3312-0090
Technology	temperature measurement
Sensor types	thermocouples type K, J, L, E, T, N, U, B, R, S, C (default: type K)
Number of inputs	2 (differential)
Connection method	2-wire
Measuring range	depending on sensor type, default type K: -200…+1350 °C, voltage measurement: ±30…±100 mV, for further types and details see documentation
Resolution	0.1 °C per digit
Measuring error	< ±0.3 % (relative to full scale value)
Internal resistance	typ. ≥ 10 kΩ (differential)
Input filter limit frequency	typ. 1 kHz; depending on sensor length, conversion time, sensor type
Conversion time	10…800 ms (adjustable, default: 100 ms)
Supply voltage electronics	24 V DC (via power contacts), ELX9560 power supply
Current consumption power contacts	typ. 10 mA
Current consumption E-bus	typ. 70 mA
Special features	limit value monitoring, digital filter and characteristic curve linearisation integrated, TwinSAFE SC
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/see documentation
Approvals	CE, Ex

further Ex components	
ELXxxxx	EtherCAT Terminals with intrinsic safe in- and output
ELXxxxx-0090	EtherCAT Terminals with intrinsic safe in- and output and TwinSAFE SC
CPXxxxx	Multi-touch Panel PCs and multi-touch Control Panels for use in hazardous areas, Zone 2/22

Product announcement	estimated market release 3rd quarter 2018