



ELX3202-0090 | 2-channel analog input terminal RTD for 2, 3 and 4-wire connection, 16 bit, Ex i, TwinSAFE SC



The ELX3202-0090 analog input terminal allows the direct connection of RTDs located in hazardous areas classified Zone 0/20 or 1/21. The circuitry of the ELX3202-0090 can operate sensors with 2, 3 and 4-wire technology. Linearisation is carried out over the entire freely selectable temperature range. By default the terminal is set to PT100 sensors with 3-wire technology. The ELX3202-0090 terminal indicates signal state and sensor malfunctions (e.g. wire breakage) by means of LEDs.

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. To do this, EtherCAT I/Os from the areas of analog input, position measurement or communication (4...20 mA, incremental encoder, IO-Link, etc.) are extended by the TwinSAFE SC function. The properties typical for the signals and the standard functions of the I/O components are retained. TwinSAFE SC I/Os differ optically from standard I/Os by a yellow stripe on the front of the housing.

The TwinSAFE SC technology enables communication via a TwinSAFE protocol. These connections can be distinguished from the usual secure communication via Safety over EtherCAT.

The data from the TwinSAFE SC components is fed via a TwinSAFE protocol to the TwinSAFE Logic, where it can be used in the context of safety-relevant applications. Detailed examples confirmed/calculated by the TÜV SÜD for the correct application of the TwinSAFE SC components and the respective normative classifications can be found in the TwinSAFE application manual.

Technical data	ELX3202-0090
Number of inputs	2 (differential)
Power supply	via the E-bus
Connection method	2-, 3-, 4-wire (default: 2-wire)
Temperature range	-200...+850 °C (PT sensors); -60...+250 °C (Ni sensors), for further types and details see documentation
Resolution	up to 0.01 °C per digit (preset: 0.1 °C per digit)
Measuring current	< 1 mA (depending on sensor and measuring range)
Measuring error	< ±0.3 % (relative to full scale value)
Internal resistance	typ. ≥ 10 kΩ (differential)
Input filter limit frequency	typ. 1 kHz
Sensor types	PT100, PT200, PT500, PT1000, Ni100, Ni120, Ni1000 resistance measurement (10 Ω...4 kΩ), KT(Y) sensors
Conversion time	10...3300 ms (adjustable, default: 270 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, connection method freely configurable, 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/markings	CE, UL, ATEX, IECEx, cFMus

Ex marking	<p>ATEX: II 3(1)G Ex ec [ia Ga] IIC T4 Gc II (1)D [Ex ia Da] IIIC I (M1) [Ex ia Ma] I</p> <p>IECEX: Ex ec [ia Ga] IIC T4 Gc [Ex ia Da] IIIC [Ex ia Ma] I</p> <p>cFMus: AIS Class I, II, III, Division 1, Groups A thru G Class I, Division 2, Groups A, B, C, D Class I, Zone 2, AEx nA [ia Ga] IIC T4 Gc Class I, Zone 2, AEx ec [ia Ga] IIC T4 Gc [AEx ia Da] IIIC T4</p>
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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