



## ELX3351-0090 | 1-channel analog input terminal strain gauge, 16 bit, Ex i, TwinSAFE SC



The analog ELX3351-0090 input terminal enables direct connection of a resistor bridge or load cell from hazardous areas, Zone 0/20 and 1/21. The terminal can be connected in 4- or 6-wire technology. The ratio between the bridge voltage  $U_b$  and the supply voltage  $U_r$  is determined in 16-bit resolution, and the load value is calculated as a process value. Apart from automatic self-calibration (can be deactivated), additional functions such as Tara and Freeze as well as dynamic filters are integrated.

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	ELX3351-0090
Technology	resistor bridge, strain gauge
Sensor types	resistor bridge, strain gauge
Number of inputs	1, for 1 resistor bridge in full bridge technology
Bridge input resistance	300 $\Omega$ ...1.5 k $\Omega$
Measuring range $U_b$	max. -20...+20 mV
Measuring range $U_{REF}$	max. -12...+12 V
Internal resistance	> 25 k $\Omega$ ( $U_r$ , differential), > 1 M $\Omega$ ( $U_b$ , differential)
Input filter limit frequency	typ. 9.5 kHz (-3 dB, low pass)
Conversion time	1.5...800 ms, configurable
Resolution	16 bit, 32 bit presentation
Filter	50 Hz, configurable
Measuring error	< $\pm 0.5$ % (relative to full scale value), self-calibration activ
Power supply $U_v$	up to 12 V DC from power contacts, dependent on sensor
Supply voltage electronics	24 V DC (via power contacts), ELX9560 power supply
Current consumption power contacts	depends on sensor, min. 20 mA
Current consumption E-bus	typ. 85 mA
Supported nominal sensitivity	all, parameter resolution: 0.01 $\mu$ V/V; recommended: 0.5...3 mV/V
Special features	self-calibration, dynamic filters, 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