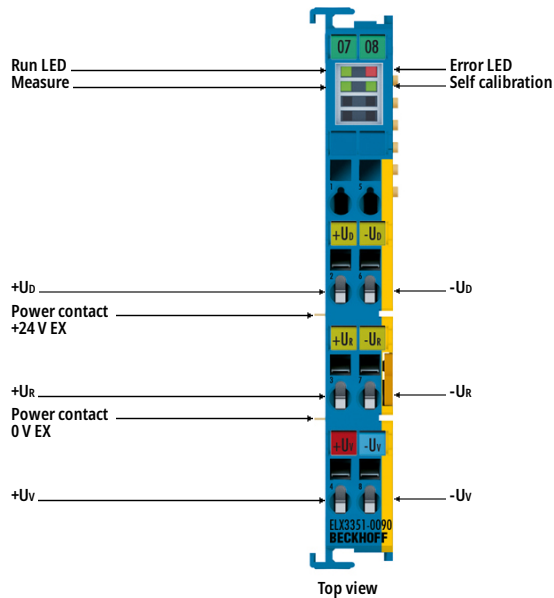


# ELX3351-0090 | EtherCAT Terminal, 1-channel analog input, measuring bridge, full bridge, 24 bit, Ex i, TwinSAFE SC



## **i** Product status: Regular delivery

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  $U_D$  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. 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.

## Product information

### Technical data

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 $U_D$              | max. -18...+18 mV   |
| Measuring range $U_{REF}$          | max. -12...+12 V  |
| Internal resistance                | > 25 k $\Omega$ ( $U_R$ , differential), > 1 M $\Omega$ ( $U_D$ , differential)   |
| Input filter limit frequency       | typ. 3.6 kHz (-3 dB, low pass)  |
| Conversion time                    | typ. 1.6 ms   |
| Resolution                         | 24 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, Freeze, TwinSAFE SC  |
| Weight                             | approx. 60 g  |
| Operating/storage temperature      | -25...+60 $^{\circ}C$ /-40...+85 $^{\circ}C$  |
| 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. rating/installation pos.  | IP20/see documentation  |
| Approvals/markings                 | CE, UL, ATEX, IECEx, cFMus  |
| Ex marking                         | <p>ATEX:<br/> II 3(1)G Ex ec [ia Ga] IIC T4 Gc<br/> II (1)D [Ex ia Da] IIIC<br/> I (M1) [Ex ia Ma] I</p> <p>IECEx:<br/> Ex ec [ia Ga] IIC T4 Gc<br/> [Ex ia Da] IIIC<br/> [Ex ia Ma] I</p> <p>cFMus:<br/> AIS Class I, II, III, Division 1, Groups A thru G<br/> Class I, Division 2, Groups A, B, C, D<br/> Class I, Zone 2, AEx ec [ia Ga] IIC T4 Gc<br/> [AEx ia Da] IIIC T4</p> |

|              |   |
|--------------|---|
| Housing data | ELX-12-8pin                               |
| Design form  | compact terminal housing with signal LEDs |

|  |   |
|--|---|
| <b>Material</b>                          | polycarbonate, blue   |
| <b>Dimensions (W x H x D)</b>            | 12 mm x 100 mm x 68 mm  |
| <b>Installation</b>                      | on 35 mm DIN rail, conforming to EN 60715 with lock   |
| <b>Side by side mounting by means of</b> | double slot and key connection  |
| <b>Marking</b>                           | labeling of the BZxxx series  |
| <b>Wiring</b>                            | solid conductor (e), flexible conductor (f) and ferrule (a): spring actuation by screwdriver            |
| <b>Connection cross-section</b>          | s*: 0.08...2.5 mm <sup>2</sup> ,<br>st*: 0.08...2.5 mm <sup>2</sup> ,<br>f*: 0.14...1.5 mm <sup>2</sup> |
| <b>Connection cross-section AWG</b>      | s*: AWG 28...14,<br>st*: AWG 28...14,<br>f*: AWG 26...16  |
| <b>Stripping length</b>                  | 8...9 mm  |
| <b>Power contacts</b>                    | 2 blade/spring contacts   |

\*s: solid wire; st: stranded wire; f: with ferrule