



## EL3356-0090 | TwinSAFE SC: accurate 1-channel load cell analysis (resistor bridge), 24 bit

The analog EL3356-0090 input terminal enables direct connection of a resistor bridge or load cell in a 4- or 6-wire connection technology. The ratio between the bridge voltage  $U_D$  and the supply voltage  $U_{REF}$  is determined simultaneously in the input circuit and the final load value is calculated as a process value on the basis of the settings in the terminal. With automatic self-calibration (can be deactivated) and dynamic filters the terminal with measuring cycles of 10 ms can be used for slow weighings with high precision.

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	EL3356-0090
Number of inputs	2, for 1 resistor bridge in full bridge technology
Power supply	via the E-bus
Technology	resistor bridge, strain gauge
Distributed clocks	yes
Measuring range $U_D$	max. $-25 \dots +25$ mV rated voltage
Measuring range $U_{REF}$	max. $-12 \dots +12$ V rated voltage
Internal resistance	$> 200 \text{ k}\Omega$ ( $U_{REF}$ ), $> 1 \text{ M}\Omega$ ( $U_D$ )
Input filter limit frequency	10 kHz low pass (-3 dB)
Conversion rate	10,000...4 samples/s (0.1...250 ms conversion time)
Power supply $U_v$	up to 12 V DC from power contacts, dependent on sensor
Resolution	24 bit, 32 bit presentation
Measuring error	$< \pm 0.01 \%$ for the calculated load value in relation to the final load value with a 12 V feed and 24 mV bridge voltage (hence nominal strain gauge characteristic value of 2 mV/V), self-calibration active, 50 Hz filter active
Current consumption power contacts	depends on strain gauge supply, min. 1 mA
Current consumption E-bus	typ. 280 mA
Supported nominal sensitivity	all, parameter resolution: 0.01 $\mu\text{V/V}$ ; recommended: 0.5...4 mV/V
Special features	TwinSAFE SC, self-calibration, quadruple averager, dynamic filters
Weight	approx. 60 g
Operating/storage temperature	0...+55 °C/-25...+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
Pluggable wiring	for all ESxxxx terminals
Approvals	CE, UL, Ex, IECEx

Option for the second channel	
EL3751	1-channel analog input, high-precision, parameterisable, 24 bit, 10 kSps, differential, oversampling
EL6224	EtherCAT Terminal, IO-Link master, IP 20

  

Related products	
EK1960	TwinSAFE Compact Controller
EL6910	TwinSAFE Logic (TwinCAT 3)

  

System	
TwinSAFE SC	For further TwinSAFE SC products please see the <a href="#">system overview</a> .