



EL3124-0090 | TwinSAFE SC: 4-channel analog input terminal 4...20 mA, differential input, 16 bit

The EL3124-0090 analog input terminal handles signals in the range from 4 to 20 mA. The current is digitised to a resolution of 16 bits and is transmitted, in an electrically isolated form, to the higher-level automation device. The input channels of the EtherCAT Terminal have differential inputs and possess a common, internal ground potential.

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	EL3124-0090
Number of inputs	4 (differential)
Power supply	via the E-bus
Technology	differential input
Signal current	4...20 mA
Distributed clocks	yes
Internal resistance	typ. 85 Ω + diode voltage
Input filter limit frequency	5 kHz
Common-mode voltage U_{CM}	max. 10 V
Conversion time	~ 100 μ s
Resolution	16 bit (incl. sign)
Measuring error	< ± 0.3 % (relative to full scale value)
Surge voltage resistance	35 V DC
Electrical isolation	500 V (E-bus/signal voltage)
Current consumption power contacts	–
Current consumption E-bus	typ. 130 mA
Bit width in the process image	inputs: 16 byte
Configuration	no address or configuration setting
Special features	TwinSAFE SC, standard and compact process image, activatable FIR/IIR filters, limit value monitoring
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/variable
Approvals	CE, UL, Ex

Option for the second channel	
EL6224	EtherCAT Terminal, IO-Link master, IP 20
EL3054	4-channel analog input terminal 4...20 mA, single-ended, 12 bit, 4 x 2-wire system
EL3064	4-channel analog input terminal 0...10 V, single-ended, 12 bit, 4 x 2-wire system
EL3602	2-channel analog input terminal ± 10 V, ± 5 V, ± 2.5 V, ± 1.25 V, differential input, 24 bit

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

System	
TwinSAFE SC	For further TwinSAFE SC products please see the system overview .