



## i ELX5151-0090 | 1-channel incremental encoder interface NAMUR, 32 bit, Ex i, TwinSAFE SC



The ELX5151-0090 EtherCAT Terminal allows the direct connection of an intrinsically safe incremental encoder from Zone 0/20 and 1/21 hazardous areas. The terminal supplies the encoder with 8.2 V DC and evaluates a diagnostic-capable NAMUR signal according to IEC 60947-5-6. In this way, a wire breakage or short circuit can be detected in addition to the switching state. The ELX5151-0090 can also be used as an up/down counter and allows switching between 16- and 32-bit counting.

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 Bus Terminals, 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	ELX5151-0090
Technology	NAMUR
Specification	NAMUR DC switching amplifier (IEC 60947-5-6)
Number of channels	1
Sensor inputs	1
Encoder connection	A, B
Encoder operating voltage	8.2 V DC
Open circuit voltage	typ. 8.2 V DC
"0" signal current	≤ 1.2 mA
"1" signal current	≥ 2.1 mA
Switching hysteresis	0.2 mA
Short circuit current	typ. 9 mA
Fault detection	I ≤ 200 µA (cable break), I ≥ 6.0 mA (short circuit)
Supply voltage electronics	24 V DC (via power contacts), ELX9560 power supply
Current consumption power contacts	typ. 15 mA + load
Current consumption E-bus	typ. 80 mA
Distributed clocks	yes
Special features	up/down counters, 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

