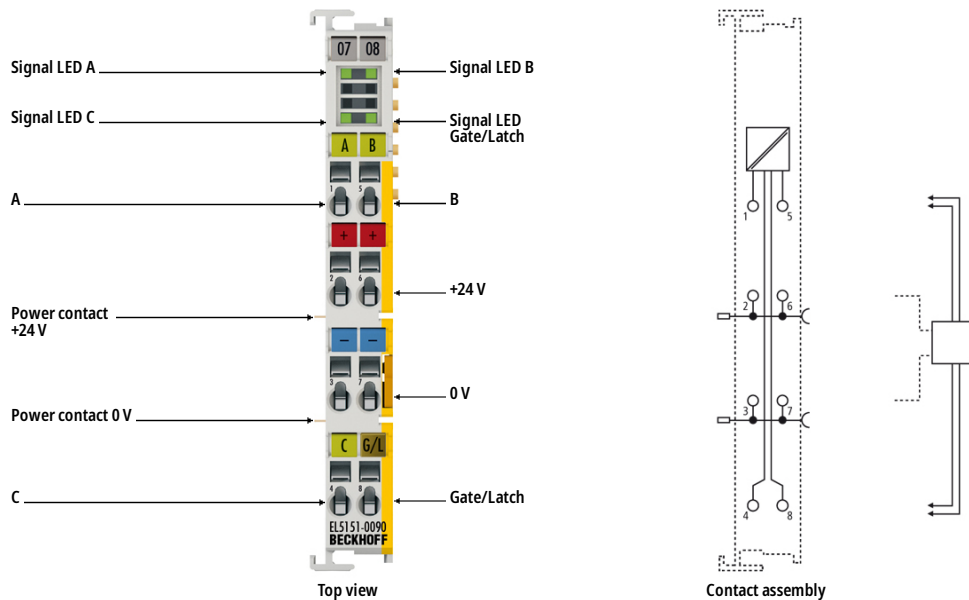
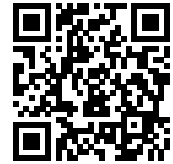


# EL5151-0090 | EtherCAT Terminal, 1-channel encoder interface, incremental, 24 V DC HTL, 100 kHz, TwinSAFE SC



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

The EL5151-0090 EtherCAT Terminal is an interface for the direct connection of one incremental encoder (24 V HTL). An additional 24 V digital input is available for storing or blocking the counter status. As an alternative, the EL5151-0090 can be used as a up/down counter. The 24 V supply of the encoder can be provided directly via the terminal connection points.

The EL5151-0090 also supports TwinSAFE SC (TwinSAFE Single Channel). This enables standard signals to be used for safety-related tasks in any network or fieldbus.

## Special features:

- supports the TwinSAFE SC technology
- save, lock, set counter
- integrated frequency and period measurement
- optional 24 V up/down counter
- microincrements
- synchronous reading of the position value via distributed clocks
- timestamp on the last-registered incremental edge

In addition, the EL5151-0090 enables the measurement of a period or frequency with a resolution of 100 ns. With the optional interpolating microincrement functionality, the EL5151-0090 can provide even more accurate axis positions for dynamic axes. It also supports synchronous reading of the encoder value together with other input data in the EtherCAT system via the high-precision EtherCAT distributed clocks (DC). A timestamp for the last-registered incremental edge is also available. The use of encoder profiles enables simple and fast linking of the process data for motion control applications.

## Product information

### Technical data

Technical data	EL5151-0090
Technology	incremental encoder interface 24 V DC
Number of channels	1
Encoder connection	1 x A, B, C: 24 V single-ended connection: EN 61131-2, Typ 1, "0": < 5 V DC, "1": > 15 V DC, typ. 5 mA
Additional inputs	latch input, 24 V DC
Encoder operating voltage	24 V DC (-15 %/+20 %), (generated from the 24 V DC power contacts)
Counter	1 x 16/32 bit switchable
Limit frequency	400,000 increments/s (with 4-fold evaluation), corresponding to 100 kHz
Quadrature decoder	4-fold evaluation
Nominal voltage	24 V DC (-15 %/+20 %)
Resolution	1/256 bit microincrements
Current consumption power contacts	typ. 100 mA + load
Current consumption E-bus	typ. 130 mA
Distributed clocks	yes
Special features	TwinSAFE SC, gate or latch function, microincrements, timestamping of edges, period duration and frequency measurement, up/down counters
Weight	approx. 50 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
Protect. rating/installation pos.	IP20/variable
EMC immunity/emission	conforms to EN 61000-6-2/EN 61000-6-4
Approvals/markings	CE, UL, ATEX
Pluggable wiring	for all ESxxxx terminals
Ex marking	II 3 G Ex nA IIC T4 Gc

Housing data	EL-12-8pin	ES-12-8pin
Design form	compact terminal housing with signal LEDs	terminal housing with pluggable wiring level
Material	polycarbonate	
Dimensions (W x H x D)	12 mm x 100 mm x 68 mm	
Installation	on 35 mm DIN rail, conforming to EN 60715 with lock	
Side by side mounting by means of	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> , st*: 0.08...2.5 mm <sup>2</sup> , f*: 0.14...1.5 mm <sup>2</sup>	s*: 0.08...1.5 mm <sup>2</sup> , st*: 0.08...1.5 mm <sup>2</sup> , f*: 0.14...1.5 mm <sup>2</sup>
<b>Connection cross-section AWG</b>	s*: AWG 28...14, st*: AWG 28...14, f*: AWG 26...16	s*: AWG 28...16, st*: AWG 28...16, f*: AWG 26...16
<b>Stripping length</b>	8...9 mm	9...10 mm
<b>Current load power contacts</b>	I <sub>max</sub> : 10 A	

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