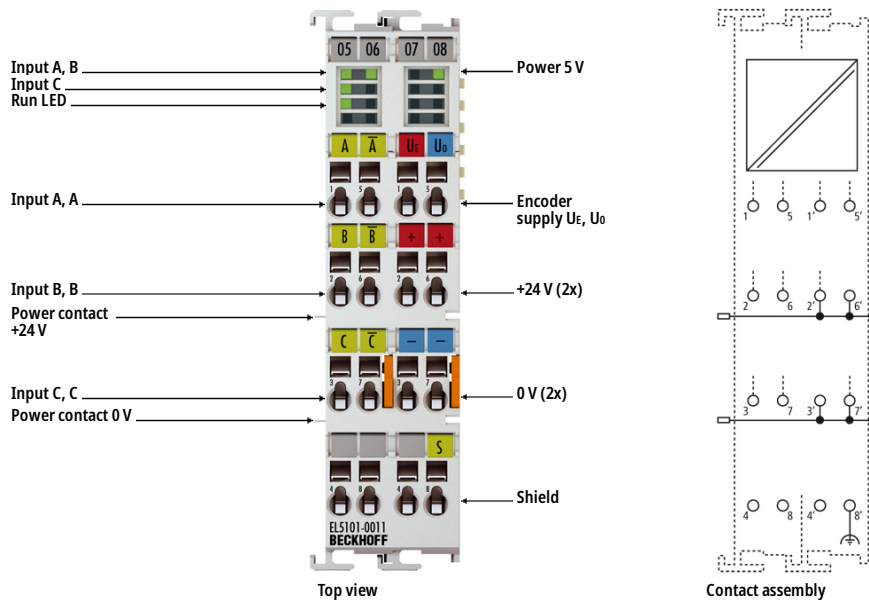
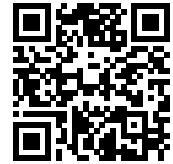


# EL5101-0011 | EtherCAT Terminal, 1-channel encoder interface, incremental, 5 V DC (DIFF RS422), 5 MHz, oversampling



**i Product status:** Regular delivery

The EL5101-0011 EtherCAT Terminal is an interface for the direct connection of incremental encoders with differential signals (RS422). It processes the signals for a finer resolution of position values according to the oversampling principle. The 5 V and 24 V supply of the encoder can be provided directly via the terminal connection points.

Special features:

- high-resolution position detection through oversampling principle
- up to 100 measured values per PLC cycle with 10  $\mu$ s sampling time
- maximum input frequency of 5 MHz

A conventional incremental encoder reads a counter value with each bus cycle and passes it on to the higher-level controller in the next fieldbus cycle. The EL5101-0011 reads the current counter value at several configurable and equidistant times between two fieldbus communication cycles with an adjustable whole number multiple (oversampling factor:  $n$ ) of the bus cycle time. A packet of  $n$  position values of 32 bits each is then transmitted to the higher-level controller in the next fieldbus communication cycle. The minimum sampling time is 10  $\mu$ s (100 kbps). The EL5101-0011 terminal is especially suitable for applications where high-resolution position detection is required.

## Product information

### Technical data

Technical data	EL5101-0011
Technology	incremental encoder interface, differential (RS422)

Number of channels	1
Encoder connection	1 x A, B, C: differential inputs (RS422): A, $\bar{A}$ (inv), B, $\bar{B}$ (inv), C, $\bar{C}$ (inv)
Encoder operating voltage	5 V DC/max. 0.5 A (generated from the 24 V DC power contacts)
Counter	1 x 32 bit
Limit frequency	20 million increments/s (with 4-fold evaluation), corresponding to 5 MHz
Quadrature decoder	4-fold evaluation
Distributed clocks	yes
Oversampling factor	n = 1...100 selectable
Cycle time	min. 500 $\mu$ s
Conversion time	10 $\mu$ s/100 ksps
Current consumption power contacts	typ. 100 mA + load
Current consumption E-bus	typ. 130 mA
Special features	oversampling, wire breakage detection, set counter
Weight	approx. 100 g
Electrical isolation	500 V (E-bus/field potential)
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. rating/installation pos.	IP20/variable
Approvals/markings	CE, UL, ATEX
Ex marking	II 3 G Ex nA IIC T4 Gc

<b>Housing data</b>	EL-24-2x8pin
Design form	compact terminal housing with signal LEDs
Material	polycarbonate
Dimensions (W x H x D)	24 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
Marking	labeling of the BZxxx series
Wiring	solid conductor (e), flexible conductor (f) and ferrule (a): spring actuation by screwdriver
Connection cross-section	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>
Connection cross-section AWG	s*: AWG 28...14, st*: AWG 28...14, f*: AWG 26...16
Stripping length	8...9 mm

**Current load power contacts** $I_{\max}$ : 10 A

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