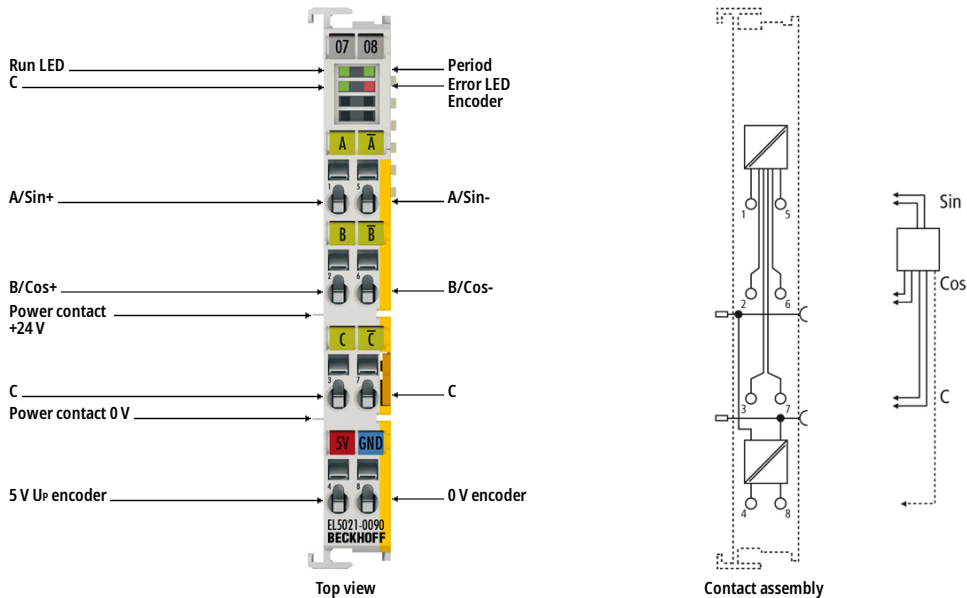




# EL5021-0090 | EtherCAT Terminal, 1-channel encoder interface, SinCos, 1 V<sub>pp</sub>, TwinSAFE SC



**i Product status:** Regular delivery

The EL5021-0090 EtherCAT Terminal is used for the direct connection of a measuring probe or encoder with sinusoidal, differential voltage output 1 V<sub>pp</sub>. Input frequencies of max. 250 kHz can be evaluated. The current counter reading can be zeroed (reset) or stored separately via the C track of the encoder, which is also called reference mark. The 5 V supply to the encoder is provided directly via the terminal connection points. The EL5021-0090 features amplitude and frequency error detection of the input signals.

The EL5021-0090 also supports TwinSAFE SC (TwinSAFE Single Channel). Thereby it is possible to make use of standard signals for safety tasks in any network or fieldbus.

Special features:

- store, lock, set counter
- diagnosis: frequency error and amplitude error of input signals
- integrated frequency measurement
- integrated 5 V DC encoder operating voltage

The analog input signal is processed, interpolated and made available as a 32-bit count value. The count value is a combination of the number of whole periods, max. 24 bits, and the value within one sine period, with max. 13 bit resolution. The EL5021-0090 also provides an internal frequency measurement. 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).

## Product information

### Technical data

Technical data	EL5021-0090
Technology	SinCos encoder interface for differential 1 V <sub>PP</sub> signal
Number of channels	1
Encoder connection	1 x A, B, C: differential inputs 1 V <sub>PP</sub> : 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	max. 24 bit (adjustable)
Input frequency	250 kHz (scanning of the input signals with 70 MHz)
Nominal voltage	24 V DC (-15 %/+20 %)
Resolution	max. 13 bit, 8192 steps per period
Current consumption power contacts	typ. 50 mA + load
Current consumption E-bus	typ. 120 mA
Distributed clocks	yes
Special features	TwinsAFE SC, latch, reset, change counter direction, amplitude and frequency error recognition, frequency-dependent period resolution, frequency counter max. 24 bit
Weight	approx. 55 g
Electrical isolation	500 V (E-bus/field potential)
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
Protect. rating/installation pos.	IP20/variable
EMC immunity/emission	conforms to EN 61000-6-2/EN 61000-6-4
Approvals/markings	CE, UL, ATEX
Ex marking	II 3 G Ex nA IIC T4 Gc

Housing data	EL-12-8pin
Design form	compact terminal housing with signal LEDs
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
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