



EL5101 | Incremental encoder interface

The EL5101 EtherCAT Terminal is an interface for the direct connection of incremental encoders with differential inputs (RS485). A 32/16 bit counter with a quadrature decoder and a 32/16 bit latch for the zero pulse can be read, set or enabled. Incremental encoders with alarm outputs can be connected at the interface's status input. Interval measurement with a resolution of up to 100 ns is possible. The gate input allows the counter to be halted. The counter state is taken over with a rising edge at the latch input.

Due to the optional interpolating microincrement function, the EL5101 can supply even more precise axis positions for dynamic axes. In addition, it supports the synchronous reading of the encoder value together with other input data in the EtherCAT system via high-precision EtherCAT distributed clocks (DC).

Technical data	EL5101 ES5101
Encoder connection	A, A (inv), B, B (inv), C, C (inv), differential inputs (RS485); status input
Encoder operating voltage	5 V DC
Encoder output current	0.5 A
Counter	32 or 16 bits, binary
Limit frequency	4 million increments/s (with 4-fold evaluation)
Quadrature decoder	4-fold evaluation
Zero-pulse latch	32 or 16 bits
Commands	read, set, enable
Distributed clocks	yes
Supply voltage	24 V DC (-15 %/+20 %)
Current consumption power contacts	0.1 A (without encoder lead current)
Current consumption E-bus	typ. 130 mA
Bit width in the process image	1 x 32 bit input, 1 x 16 bit output, 8 bit control, 8 bit status
Weight	approx. 100 g
Operating/storage temperature	0...+55 °C/-25...+85 °C
Relative humidity	95 %, no condensation
Vibration/shock resistance	conforms to EN 60068-2-6/EN 60068-2-27/29
EMC immunity/emission	conforms to EN 61000-6-2/EN 61000-6-4
Protect. class/installation pos.	IP 20/variable
Pluggable wiring	for all ESxxxx terminals
Further information	www.beckhoff.com/EL5101

Ordering information	
EL5101-0010	incremental encoder interface, 10 million increments/s