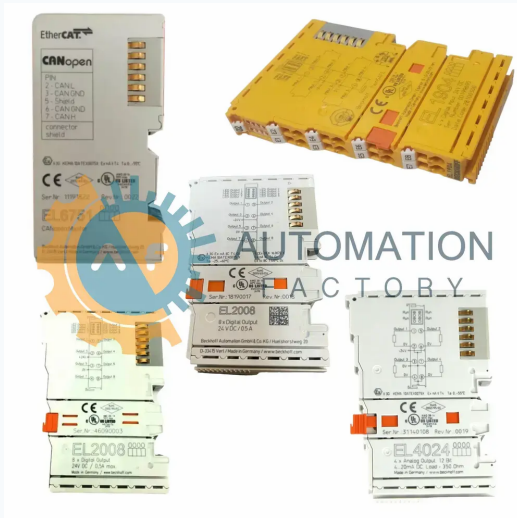




Beckhoff — EL EtherCAT Terminals

EL3051



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The **EL3051** is an analog input terminal from Beckhoff in the EL EtherCAT Terminals series. It converts a process-side 4 to 20 mA current loop into digital words that an EtherCAT controller can read, making it suitable for pressure, level, or position transmitters in distributed I/O stations. Its single channel is referenced to a common ground. The module fits into the series' 12 mm housing and snaps onto a DIN rail alongside other signal types without requiring additional wiring adapters.

This terminal accepts a loop range of **4 to 20 mA** and routes the signal through a 30 V dielectric barrier so that higher field voltages do not reach the bus side. Internally, the signal passes through a **1 kHz** filter that suppresses high-frequency noise before conversion at a native resolution of **12 bits**. The terminal pads the resulting value to **16 bits** for uniform data alignment within the EtherCAT frame. Typical measurement deviation remains below **±0.3%** of full scale, supporting closed-loop applications that require consistent accuracy. The module provides one single-ended analog input and does not support Distributed Clocks, so upstream devices must handle time stamping.

Conversion uses **simultaneous sampling**, and the process image allocates **2 bytes for status and 2 bytes for the value** during each bus cycle. Reliable operation is maintained from **-25 to +60 °C**. Operation outside this temperature range requires appropriate derating, while the powered-down electronics can be stored from -40 to +85 °C. The **IP20** housing limits the ingress of solid objects and is intended for installation in a protected control cabinet. Ground referencing simplifies connections in loop-powered circuits, while the lack of distributed clocking

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provides predictable module latency for analog trend acquisition. The terminal's narrow housing also supports dense I/O arrangements where several signal channels must share limited DIN-rail space.

Specifications

Analog Inputs:	1	Bit Width In The Process Image:	inputs: 4 byte	Conversion Time:	0.625 ms default setting, configurable, multiplex
Current Consumption E-bus:	Typ. 130 mA	Data Presentation:	16 bits	Dielectric Strength:	30 V max.
Distributed Clocks:	No	Ground Reference:	Single Ended	Input Filter:	1 kHz
Input Filter Limit Frequency:	1 kHz	Internal Resistance:	Typ. 85 ?	Measurement Error/uncertainty:	< ±0.3% (relative to full scale value)
Measuring Error:	< ±0.3%	Number Of Inputs:	1 (single-ended)	Operating Temperature:	-25...+60 °C
Power Supply:	via the E-bus	Process Image:	2 bytes status, 2 bytes value	Protection Rating:	IP20
Resolution:	12 bits	Sampling Type:	Simultaneous	Signal Current:	4...20 mA
Storage Temperature:	-40...+85 °C	Last Verified:	10/24/2026 3:01 AM		

Contact Us

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Shipping Options



Payment Methods



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