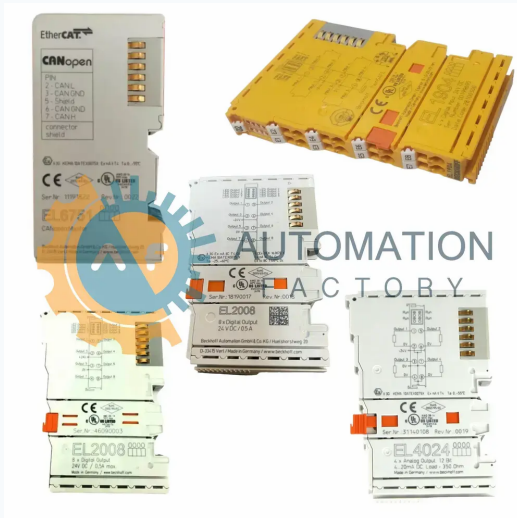




Beckhoff — EL EtherCAT Terminals

EL3014



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The **EL3014** is a four-channel analog input terminal produced by Beckhoff and supplied within the EL EtherCAT Terminals series. Installed on an EtherCAT I/O strand, it conditions ± 10 V process signals and forwards converted digital data to a controller over the real-time fieldbus. By offering compact signal acquisition on the DIN rail, the unit replaces separate analog cards and helps distribute measurement points close to sensors in industrial automation cells. The module occupies a single terminal slot, saving panel space while delivering high-density data collection. Inside the terminal, an acquisition sequence starts with channel selection by a multiplex switch, followed by analog-to-digital conversion. The hardware provides **4 analog inputs**, and the converter yields **12-bit resolution** for each sample. The time needed to convert one channel is **0.625 ms**, allowing deterministic updates to the EtherCAT process image. Power for the measurement electronics is derived from the backplane, and the terminal draws **130 mA** from the E-bus. Because channels are processed with **multiplex sampling**, only one converter is required, which minimizes power dissipation and module width. Differential referencing keeps return currents off the signal shield.

A passive low-pass stage with a cutoff frequency of **1 kHz** suppresses high-frequency transients before conversion. The input path presents **85 Ω** plus a diode voltage drop, limiting reverse currents and protecting the circuitry. A permissible common-mode voltage of **10 V** allows accurate measurement from floating sources. Every channel is mapped to the controller with a process image width of 2 bytes for status data and 2 bytes for the measured value, and the total measurement error remains below $\pm 0.3\%$ of full scale. The housing meets the **IP20** protection rating,

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the installation position is variable, and parameter sets are preserved in integrated nonvolatile storage.

Specifications

Analog Inputs:	4	Common-mode Voltage:	10 V	Common-mode Voltage U Cm:	Max. 10 V
Conversion Time:	0.625 ms	Current Consumption - E-bus:	Typical 130 mA	Dimensions:	12 mm (width) x 100 mm (height) x 68 mm (depth)
E-bus Current:	130 mA	Electronics Supply:	E-bus	Ground Reference:	Differential
Input Filter Cut-off:	1 kHz	Input Filter Limit Frequency:	1 kHz	Installation Position:	Variable
Internal Resistance:	85 ? typ. + diode voltage	Measurement Error/uncertainty:	< ~0.3% of full scale	Measuring Error:	<±0.3% Full Scale
Nocoestorage Support:	Yes	Number Of Inputs:	4 (differential)	Operating Temperature Range:	-25...+60C
Power Supply:	via the E-bus	Process Image Width:	2 B status + 2 B value/ch	Protection Rating:	IP20
Resolution:	12 bits	Sampling Type:	Multiplex	Signal Current:	0...20 mA
Surge Voltage Resistance:	35 V DC	Last Verified:	10/24/2026 11:10 PM		

Contact Us

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Shipping Options



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