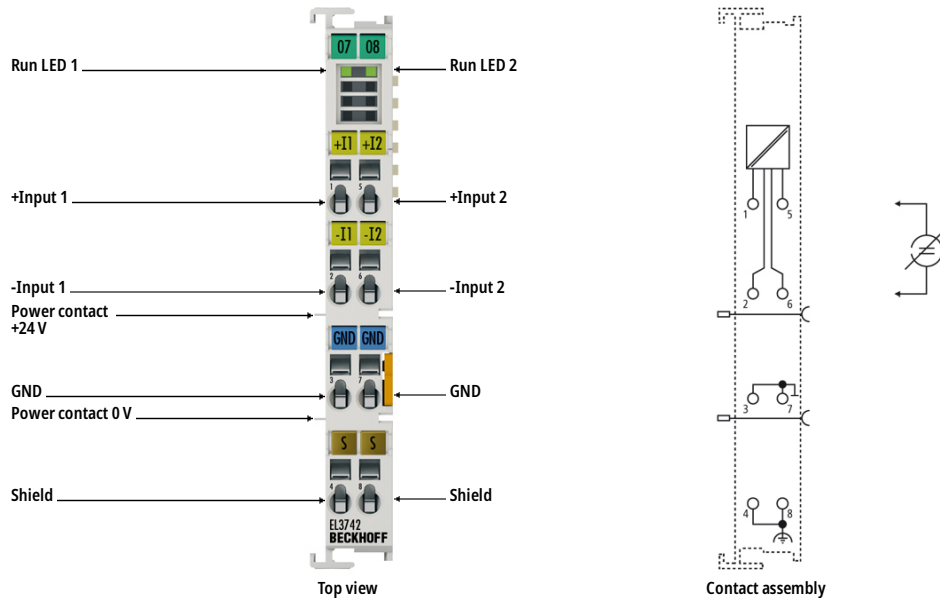




# EL3742 | EtherCAT Terminal, 2-channel analog input, current, 0...20 mA, 16 bit, oversampling



**i** **Product status:** Regular delivery

The EL3742 analog input terminal handles signals in the range between 0 and 20 mA. The voltage is digitized to a resolution of 16 bits, and is transmitted, electrically isolated, to the controller. The input channels of the EtherCAT Terminal have differential inputs and possess a common, internal ground potential. The signals are oversampled with an adjustable, integer multiple (oversampling factor:  $n$ ) of the bus cycle frequency ( $n$  microcycles per bus cycle). For each bus cycle, the EtherCAT Terminal generates a process data block that is collected and transferred during the next bus cycle. The time base of the terminal can be synchronized precisely with other EtherCAT devices via distributed clocks. This procedure enables the temporal resolution of the analog input signals to be increased to  $n$  times the bus cycle time. In conjunction with the EL47xx (analog output terminal with oversampling), responses with equidistant time intervals, e.g. in the event of a threshold value being exceeded, become possible. The distributed clocks function enables several EL3742 devices to be synchronized in almost any configuration. The maximum sampling rate per channel is 100 ksamples/s (100,000 samples/s).

## Product information

### Technical Data

Technical data	EL3742, ES3742
Number of inputs	2 (differential)
Power supply	via the E-bus
Technology	differential input, oversampling
Signal type	differential
Signal current	0...20 mA

Max. sampling rate	max. 10 $\mu$ s/100 kcps (per channel, simultaneously)
Oversampling factor	n = 1...100 selectable
Input signal bandwidth	0...30 kHz recommended
Distributed clocks	yes
Distributed clock precision	$\ll$ 1 $\mu$ s
Internal resistance	typ. 85 $\Omega$ + diode voltage
Input filter limit frequency	80 kHz
Common-mode voltage UCM	max. 10 V
Conversion time	min. 10 $\mu$ s
Resolution	16 bit (incl. sign)
Measuring error	$< \pm 0.3$ % (relative to full scale value) up to 10 Hz input signal
Surge voltage resistance	max. 35 V
Electrical isolation	500 V (E-bus/signal voltage)
Current consumption power contacts	–
Current consumption E-bus	typ. 200 mA
Bit width in the process image	input: n x 2 x 16 bit data; optionally 2 x 16 bit cycle counter, 4 byte StartNextLatch time
Special features	oversampling
Weight	approx. 60 g
Operating/storage temperature	-25...+60 $^{\circ}$ C/-40...+85 $^{\circ}$ 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
Pluggable wiring	for all ESxxxx terminals
Approvals/markings	CE, UL, ATEX
Ex marking	II 3 G Ex nA IIC T4 Gc

Housing data	EL-12-8pin	ES-12-8pin
Design form	compact terminal housing with signal LEDs	terminal housing with pluggable wiring level
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>	s*: 0.08...1.5 mm <sup>2</sup> , st*: 0.08...1.5 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	s*: AWG 28...16, st*: AWG 28...16, f*: AWG 26...16
Stripping length	8...9 mm	9...10 mm
Current load power contacts	I <sub>max</sub> : 10 A	

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

## Ordering Information

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EL3742	EtherCAT Terminal, 2-channel analog input, current, 0...20 mA, 16 bit, oversampling
ES3742	EtherCAT Terminal, 2-channel analog input, current, 0...20 mA, 16 bit, oversampling, pluggable wiring