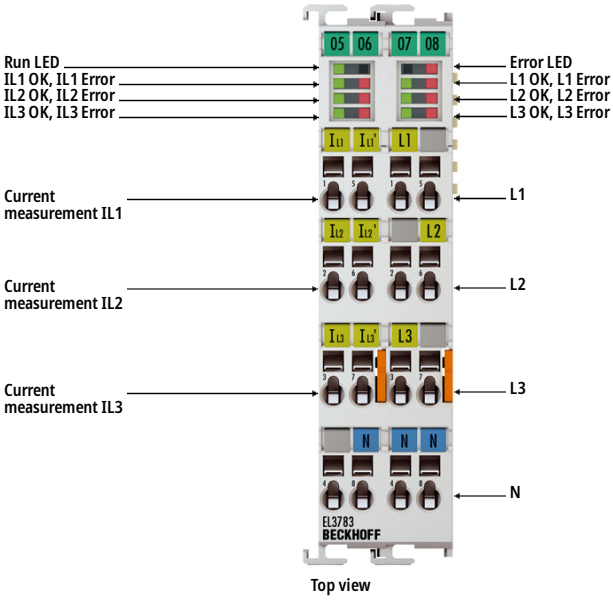
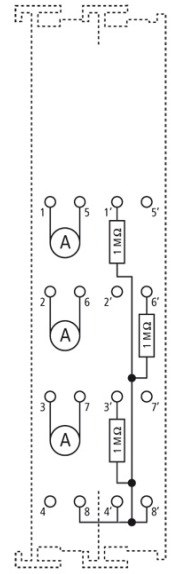
EL3783 | EtherCAT Terminal, 3-channel analog input, multi-function, 690 V AC, 1/5 A, 16 bit, 20 ksps, electrically isolated, oversampling



Top view



Contact assembly

Product status: Regular delivery

The EL3783 EtherCAT Terminal is a power monitoring I/O terminal used for state monitoring of a 3-phase AC voltage system. For each phase, voltage up to 400/690 V_{rms} and current up to 1 A_{rms}/5 A_{rms} are sampled as instantaneous values with a resolution of 16 bits. The six channels are measured simultaneously based on the EtherCAT oversampling principle with a temporal resolution of up to 50 µs and then passed on to the control system. The control system has sufficient computing power for true RMS or performance calculations and complex custom algorithms based on the measured voltages and currents. Through the oversampling principle, the terminal is able to measure at significantly shorter intervals than the cycle time of the control system. AC and DC parameters must be connected and measured with a common reference potential.

Through the feature “ExtendedRange”, the user has the full technical measuring range available at up to 130 % of the specified nominal measuring range. The EL3783 supports distributed clocks and can therefore measure synchronously with other EtherCAT devices. In combination with EL6688 it can be synchronized via IEEE 1588 to external clocks. The terminal can also be operated without distributed clocks.

Product information

Technical Data

Technical data	EL3783
Number of inputs	3 x current, 3 x voltage
Technology	3-phase power monitoring for alternating voltages
Signal type	single-ended

Oversampling factor	n = 1...100 selectable
Distributed clocks	yes
Conversion time	50 µs, all channels simultaneously
Measured values	current (I1, I2, I3), voltage as instantaneous values (oversampling)
Measuring voltage	max. 690 V AC 3~ (ULX-N: max. 400 V AC)
Measuring current	max. 1 A (AC)/5 A (AC), via measuring transformers x A AC/1 A AC or 5 A AC
Measuring range, technical	generally 130 % of the nominal measuring range, see documentation
Resolution	16 bit (incl. sign)
Measuring error	0.2 % relative to full scale value
Electrical isolation	4500 V
Current consumption power contacts	–
Current consumption E-bus	typ. 260 mA
Special features	oversampling, AC measurement, optional single-phase operation, adjustable automatic switch of current measuring range, electrically isolated current inputs
Weight	approx. 100 g
Operating/storage temperature	0...+55 °C/-25...+85 °C (-25...+60 °C/-40...+85 °C in preparation)
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/see documentation
Approvals/markings	CE

Housing data	**EL-24-2x8pin**
Design form	compact terminal housing with signal LEDs
Material	polycarbonate
Dimensions (W x H x D)	24 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^2, st*: 0.08...2.5 mm^2, f*: 0.14...1.5 mm^2
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

Ordering Information

Ordering information	
EL3783	EtherCAT Terminal, 3-channel analog input, multi-function, 690 V AC, 1/5 A, 16 bit, 20 ksps, electrically isolated, oversampling
EL3783-0100	EtherCAT Terminal, 3-channel analog input, multi-function, 130 V AC, 1/5 A, 16 bit, 20 ksps, electrically isolated, oversampling