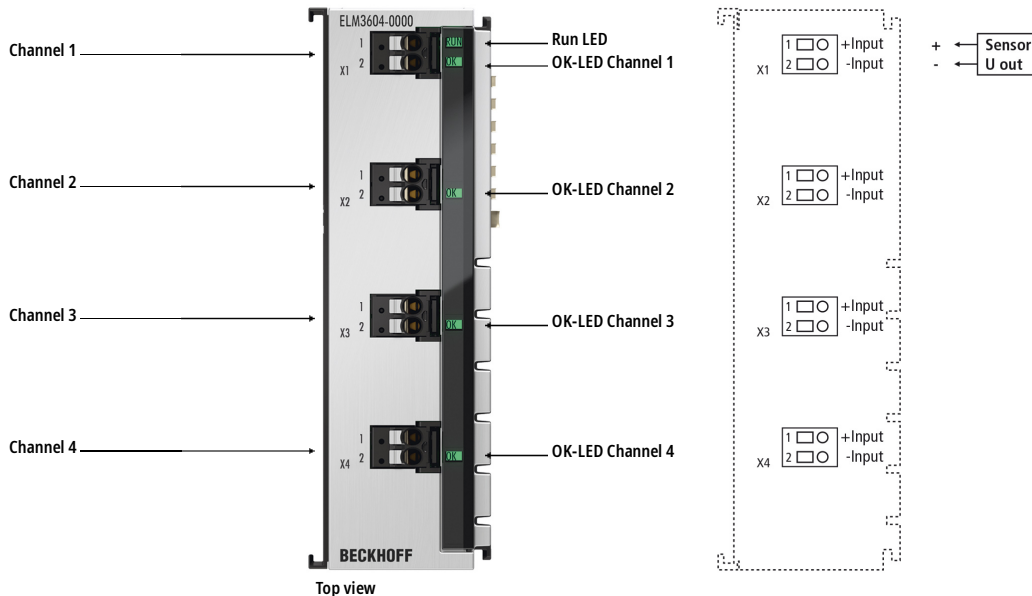
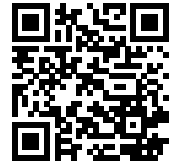


# ELM3604-0000 | EtherCAT Terminal, 4-channel analog input, IEPE/accelerometer, 24 bit, 20 ksps



**i Product status:** Regular delivery

The ELM360x EtherCAT Terminals are designed for the evaluation of IEPE sensors (Integrated Electronics Piezo-Electric), which are mainly used for vibration diagnostics and acoustics. The constant current feed can be set to 0/2/4 mA. The input characteristics are also flexibly adjustable from DC to 10 Hz in the CoE. The ELM360x basically measures voltages AC/DC and in addition, the internal scaler function can be used if, for example, an output in acceleration [ $m/s^2$ ] is desired. In voltage measurement mode 12 different measurement ranges from  $\pm 20$  mV to  $\pm 10$  V and 0 to 20 V are adjustable.

Irrespective of the signal configuration, all ELM modules have the same technological properties. The ELM360x modules for IEPE evaluation offer a maximum sampling rate of 20,000 or 50,000 samples per second. IEPE sensors are often connected via coaxial cables, therefore the ELM360x-0002 feature a BNC connector. The 2-pin version with push-in (ELM360x-0000) on the other hand is ideal for industrial use where a plug is unplugged less frequently for maintenance purposes and fast wiring is much more important.

Available on request as variant with factory calibration certificate or ISO 17025-/DAkkS-compliant certificate including Beckhoff recalibration service.

Extensive documentation is available from Beckhoff sales, support or [measurement@beckhoff.com](mailto:measurement@beckhoff.com).

## Product information

### Technical data

System data	ELM360x
Voltage measurement	$\pm 10/5/2.5/1.25$ V, $\pm 640/320/160/80/40/20$ mV, 0...10/20 V (application notes for $\pm 10$ V measurement see documentation)

IEPE measurement	current feed 2/4 mA, can be deactivated, acquisition of the modulated AC voltage, AC/DC coupling (parameterizable high-pass)
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Technical data	ELM3604-0000
Number of channels	4
Technology	IEPE, voltage measurement
Signal type	single-ended
Connection technology	2-wire
Connection type	push-in, service plug 2-pin
Max. sampling rate	max. 50 $\mu$ s/20 ksps (per channel, simultaneously)
Oversampling factor	n = 1...100 selectable
Internal resistance	> 2 M $\Omega$
Measuring error	typ. < $\pm$ 100 ppm/ $\pm$ 0.01 % in some measuring ranges, relative to the respective full scale value (DC), see documentation
Temperature coefficient	typ. < 10 ppm/K
Functional diagnostics	yes
Connection diagnostics	broken wire/short circuit
Distributed clocks	yes, accuracy << 1 $\mu$ s
Resolution	24 bit (incl. sign)
Electrical isolation channel/channel	no
Electrical isolation channel/bus	707 V DC (type test)
Electrical isolation channel/SGND	707 V DC (type test)
Current consumption power contacts	–
Current consumption E-bus	typ. 650 mA
Weight	approx. 350 g
Operating/storage temperature	0...+55 $^{\circ}$ C/-25...+85 $^{\circ}$ C
Thermal dissipation	typ. 3 W
Special features	ExtendedRange 107 %, free numeric filter, TrueRMS, integrator/differentiator, non-linear scaling, PeakHold
Approvals/markings	CE, UL

Housing data	ELM-30-xpin
Design form	metal housing with signal LEDs
Material	zinc die-cast
Dimensions (W x H x D)	30 mm x 100 mm x 95 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	–

<b>Wiring</b>	solid conductors (e): direct plug-in technique; fine-stranded conductors (f) and ferrule (a): spring actuation by screwdriver
<b>Connection cross-section</b>	s*: 0.2...1.5 mm <sup>2</sup> , st*: 0.2...1.5 mm <sup>2</sup> , f*: 0.25...0.75 mm <sup>2</sup>
<b>Connection cross-section AWG</b>	s*: AWG 24...14, st*: AWG 24...14, f*: AWG 24...14
<b>Stripping length</b>	8...9 mm

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