



ELM3604-0002 | 4-channel IEPE analysis, 24 bit, 20 ksps, BNC

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/s²] is desired. In voltage measurement mode 12 different measurement ranges from ± 20 mV to ± 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 new 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.

There are variants with factory calibration certificate and a recalibration service for the ELM series in preparation.

Features	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 ± 10 V measurement see documentation)
IEPE measurement	current feed 2/4 mA, can be deactivated, acquisition of the modulated AC voltage, AC/DC coupling (parameterisable high-pass)

Technical data	ELM3604-0002
Number of channels	4
Technology	IEPE, voltage measurement
Signal type	single-ended
Connection technology	2-wire
Connection type	BNC, shielded
Max. sampling rate	max. 50 μ s/20 ksps (per channel, simultaneously)
Oversampling factor	n = 1...100 selectable
Internal resistance	> 2 M Ω
Measuring error	typ. ± 100 ppm/ ± 0.01 % relative to the respective full scale value (DC) @ 23 °C
Temperature coefficient	typ. < 10 ppm/K
Functional diagnostics	yes
Connection diagnostics	broken wire/short-circuit
Distributed clocks	yes, accuracy << 1 μ s
Current consumption power contacts	–
Current consumption E-bus	typ. 460 mA
Weight	approx. 350 g
Operating/storage temperature	-25...+60 °C/-40...+85 °C
Thermal dissipation	typ. 3 W
Special features	ExtendedRange 107 %, free numeric filter, TrueRMS, integrator/differentiator, non-linear scaling, PeakHold
Approvals/markings	CE, UL

Accessories

ZS9100-0002

shield connection for ELM series, shield diameter 7...16 mm