ELM3504-0000 | 4-channel measuring bridge analysis, full/half/quarter bridge, 24 bit, 10 ksps

The ELM350x EtherCAT Terminals are designed for the evaluation of measuring bridges in full-bridge, half-bridge and quarter-bridge configuration. The terminals feature internally switchable supplementary resistors. The feed is integrated. Like all other parameters, the supply voltage is adjustable in the CoE. Irrespective of the signal configuration, all ELM modules have the same technological properties. The ELM350x modules for the evaluation of measuring bridges offer a maximum sampling rate of 10,000 or 20,000 samples per second. The 6-pin plug (push-in) can be removed for maintenance purposes without releasing the individual wires.

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

Features	ELM350x
Strain gauge	quarter bridge (350 Ω + 120 Ω), half bridge (up to ±16 mV/V), full bridge (up to ±32 mV/V), internal bridge completion and supply adjustable 0…5 V (2-/3-/4-/5-/6-wire connection), shunt calibration
Voltage measurement	±10 V, ±80 mV, 0…10 V
Potentiometer measurement	potentiometer ≥ 1 kΩ, supply integrated and adjustable 0…5 V
Temperature measurement (RTD)	PT1000

Technical data	ELM3504-0000
Number of channels	4
Technology	resistor bridge, strain gauge
Signal type	differential
Connection technology	2-/3-/4-/5-/6-wire
Connection type	push-in, service plug 6-pin
Max. sampling rate	max. 100 µs/10 ksps (per channel, simultaneously)
Oversampling factor	n = 1…100 selectable (max. 10 ksamples/s)
Internal resistance	> 4 MΩ
Measuring error	up to typ. ±500 ppm/0.05 % relative to the respective full scale value
Temperature coefficient	up to < 10 ppm/K typ.
Functional diagnostics	yes
Connection diagnostics	broken wire/short-circuit
Distributed clocks	yes, accuracy << 1 µs
Current consumption power contacts	–
Current consumption E-bus	typ. 720 mA
Weight	approx. 350 g
Operating/storage temperature	0…+55 °C/-25…+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
ZS9100-0003	shielding hood for EtherCAT measurement modules with push-in connector (ELM3xxx-0000), to provide shielding against external interference and temperature stabilisation at the measuring points when measuring temperature; black, scope of supply: shielding hood, screws, tie wraps