



## ELM3104-0000 | 4-channel analog input terminal -20/0/+4...+20 mA, 24 bit, 10 ksps

The ELM310x EtherCAT Terminals are designed for flexible current measurement in the range from -20 to +20 mA. They offer selectable measuring ranges of -20/0/4 to  $\pm 20$  mA as well as current measurement according to NAMUR NE43.

The measuring range is selected in the CoE, as are the other setting options such as the filter parameters. Irrespective of the signal configuration, all ELM modules have the same technological properties. The ELM310x modules for current measurement offer a maximum sampling rate of 10,000 or 20,000 samples per second. The 2-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	ELM310x
Current measurement	$\pm 20$ mA, 0/4...20 mA, NAMUR NE43 (2-wire connection)

Technical data	ELM3104-0000
Number of channels	4
Technology	current measurement
Signal type	differential
Connection technology	2-wire
Connection type	push-in, service plug 2-pin
Max. sampling rate	max. 100 $\mu$ s/10 ksps (per channel, simultaneously)
Oversampling factor	n = 1...100 selectable (max. 10 ksamples/s)
Internal resistance	150 $\Omega$ (current)
Measuring error	typ. $\pm 100$ ppm/ $\pm 0.01$ % relative to the respective full scale value
Temperature coefficient	typ. < 10 ppm/K
Functional diagnostics	yes
Connection diagnostics	recommendation: 4...20 mA mode
Distributed clocks	yes, accuracy $\ll 1$ $\mu$ s
Current consumption power contacts	–
Current consumption E-bus	typ. 490 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
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