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# ⓘ ELM3146-0000 | 6-channel analog input, ±10…±1.25 V, ±20 mA, 24 bit, 1 ksps

The 2-, 4-, 6- or 8-channel ELM314x EtherCAT Terminals in the Economy line can be set to current or voltage measurement channel by channel, offering sampling rates of up to 1 ksps per channel. Analog signals in the ranges from ±1.25 to ±10 V, 0 to 10 V, ±20 mA or 0/4 to 20 mA can be processed. The settings for U or I measurement mode and the desired measuring ranges can be selected via the control system and TwinCAT in the CoE interface. Here it is also possible to select the extensive diagnostics features for unattended long-term use. The 2-, 4- or 6-pin push-in connectors can be removed for maintenance purposes; they enable a direct supply of connected sensors. The power contacts on the side simplify the potential distribution directly on the DIN rail. The typical EtherCAT features are available: distributed clocks functionality with timestamp and the familiar data features of the basic line such as filtering, true RMS calculation and more. Variants with factory calibration certificate and recalibration service on request are in preparation for the ELM measurement modules.

| Features | ELM314x |
|---|---|
| Voltage measurement | ±10/5/2.5/1.25 V, 0…5/10 V |
| Current measurement | ±20 mA, 0/4…20 mA, NAMUR NE43 |

| Technical data | ELM3146-0000 |
|---|---|
| Number of channels | 6 |
| Technology | voltage or current measurement, configurable for each channel |
| Signal type | differential |
| Connection technology | 2-/3-/4-wire |
| Connection type | push-in, service plug 6-pin |
| Max. sampling rate | max. 1 ms/1 ksps (per channel, multiplex) |
| Oversampling factor | n = 1…10 selectable |
| Internal resistance | > 4 MΩ (voltage), typ. 200 Ω (current) |
| Measuring error | typ. ±100 ppm/±0.01 % relative to the respective full scale value @ 23 ±15 °C |
| Functional diagnostics | yes |
| Connection diagnostics | broken wire/short-circuit |
| Distributed clocks | yes, accuracy << 1 µs |
| Current consumption power contacts | load-dependent |
| Current consumption E-bus | typ. 250 mA |
| Weight | approx. 350 g |
| Operating/storage temperature | 0…+55 °C/-25…+85 °C |
| Thermal dissipation | typ. 2 W |
| Special features | ExtendedRange 107 %, free numeric filter, TrueRMS, integrator/differentiator, non-linear scaling, PeakHold, service plug, Timestamp |
| Approvals/markings | CE, UL |

| Accessories | |
|---|---|
| ZS9100-0002 | shield connection for ELM series, shield diameter 7…16 mm |