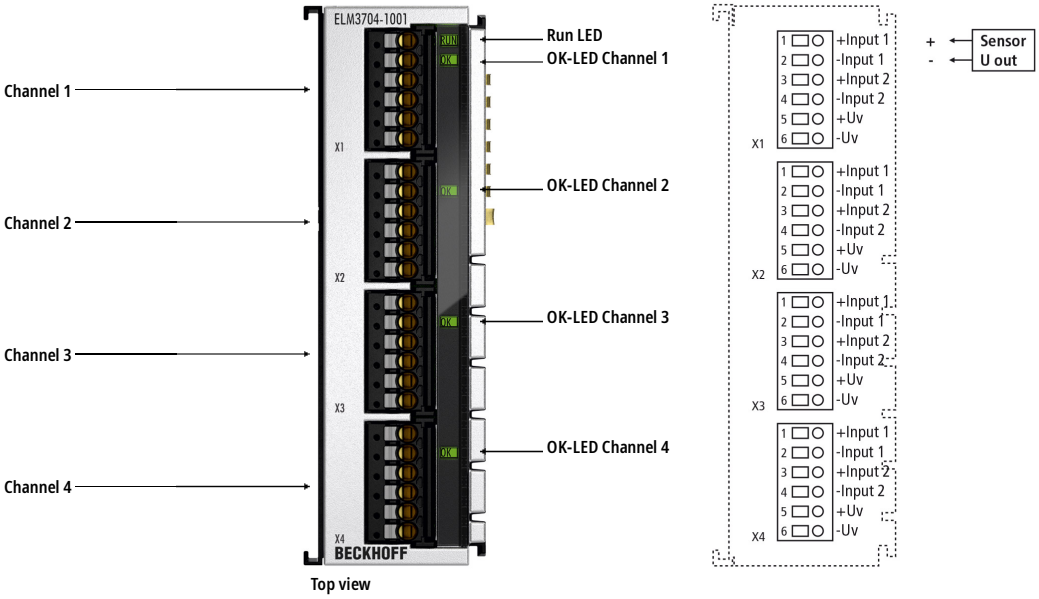
ELM3704-1001 | EtherCAT Terminal, 4-channel analog input, multi-function, 24 bit, 10 ksps, TC compensation



Product status: Regular delivery

The EtherCAT Terminals from the ELM3xxx series were developed in order to enable the high-quality measurement of common electrical signals in the industrial environment. Flexibly usable measurement modules are especially useful in laboratory and testing technology environments.

The ELM3704-1001 with a sampling rate of 10 ksps is designed for fast thermocouple measurements where the ELM3344 and ELM3348 terminals with 1 ksps per channel are not sufficient. For this purpose, the ELM3704-1001 corresponds to the ELM3704-0000, but is only aligned in the thermocouple and voltage measurement function. Thus, all other measuring ranges from the ELM3704-0000 are available to the user (full/half/quarter bridge, 20 mA, 5 kΩ/RTD, IEPE) if they are calibrated on the system side.

Extensive documentation is available from Beckhoff sales, support or measurement@beckhoff.com.

Product information

Technical data

System data	ELM370x
Voltage measurement	±60/10/5/2.5/1.25 V, ±640/320/160/80/40/20 mV, 0...5/10 V (2-wire connection)
Temperature measurement (thermocouple)	type A1, A2, A3, B, C, D, E, G, J, K, L, N, P, R, S, T, U and others; internal/external cold junction measurement (2-wire connection)

Technical data	ELM3704-1001

Number of channels	4
Technology	multi-function (only thermocouple and voltage aligned)
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	see documentation, e.g. relative to the respective full scale value in TC range e.g. type K typ. < ±500 ppm/0.05 %/0.63 K, in voltage range typ. < ±100 ppm/±0.01 % in some measuring ranges
Temperature coefficient	see documentation, e.g. in TC range type K typ. < 13 mK/K, in voltage range up to typ. < 1 ppm/K in some measuring ranges
Functional diagnostics	yes
Connection diagnostics	broken wire/short circuit
Distributed clocks	yes, accuracy << 1 µs
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 E-bus	typ. 890 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

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	–
Wiring	solid conductors (e): direct plug-in technique; fine-stranded conductors (f) and ferrule (a): spring actuation by screwdriver

Connection cross-section	s*: 0.2...1.5 mm², st*: 0.2...1.5 mm², f*: 0.25...0.75 mm²
Connection cross-section AWG	s*: AWG 24...14, st*: AWG 24...14, f*: AWG 24...14
Stripping length	8...9 mm

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