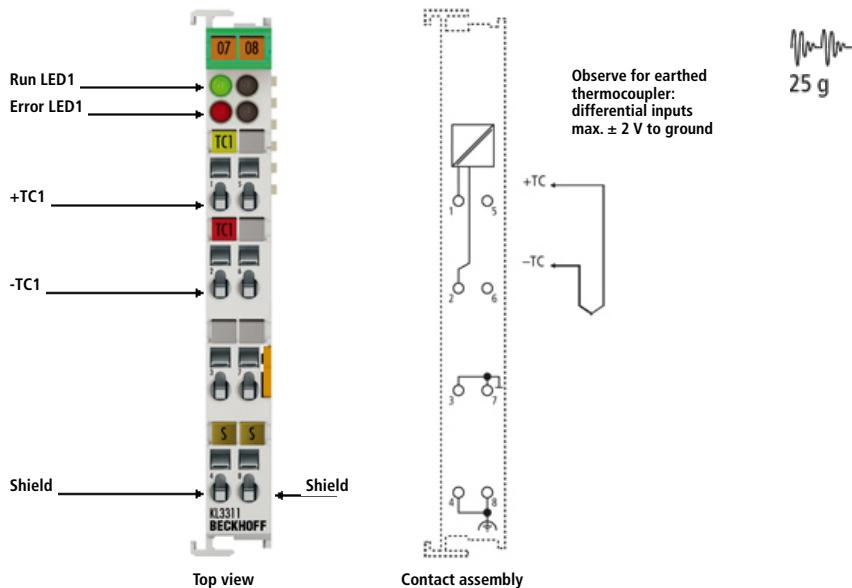


Analog input

KL3311, KL3312



KL3311, KL3312 | 1-, 2-channel thermocouple input terminals with open-circuit recognition

The KL3311 and KL3312 analog input terminals allow thermocouples to be connected directly. The Bus Terminal's circuitry can operate thermocouple sensors using the 2-wire technique. Linearisation over the full temperature range is realised with the aid of a microprocessor. The temperature range can be selected freely. The error LEDs indicate a broken wire. Compensation for the cold junction is made through an internal temperature measurement at the terminals. The KL3311/KL3312 can also be used for mV measurement.

Technical data	KL3311	KL3312
Number of inputs	1	2
Power supply	via the K-bus	
Thermocouple sensor types	types J, K, L, B, E, N, R, S, T, U (default setting type K), mV measurement	
Connection method	2-wire	
Measuring range	in the range defined in each case for the sensor (default setting: type K; -100...+1,370 °C); mV measurement: ± 30 mV... ± 120 mV	
Resolution	0.1 °C per digit	
Conversion time	~ 200 ms	~ 250 ms
Wiring fail indication	yes	
Measuring error	< ± 0.5 % (relative to full scale value)	
Electrical isolation	500 V (K-bus/signal voltage)	
Current consumption power contacts	– (no power contacts)	
Current consumpt. K-bus	typ. 65 mA	
Bit width in the process image	input: 1 x 16 bit data (1 x 8 bit control/status optional)	input: 2 x 16 bit data (2 x 8 bit control/status optional)
Configuration	no address setting, configuration via Bus Coupler or controller	
Special features	electrically isolated	–
Weight	approx. 70 g	
Operating/storage temperature	0...+55 °C/-25...+85 °C	
Relative humidity	95 %, no condensation	
Vibration/shock resistance	conforms to EN 60068-2-6/EN 60068-2-27	
EMC immunity/emission	conforms to EN 61000-6-2/EN 61000-6-4	
Protect. class/installation pos.	IP 20/variable	
Approvals	CE, UL, Ex	

Special terminals	
KL3312-0010	type J
KL3312-0011	type J in Siemens S5 format
KL3312-0012	type L
KL3312-0013	type L in Siemens S5 format
KL3312-0014	type B
KL3312-0015	type B in Siemens S5 format
KL3312-0016	type E
KL3312-0017	type E in Siemens S5 format
KL3312-0018	type N
KL3312-0019	type N in Siemens S5 format
KL3312-0020	type R
KL3312-0021	type R in Siemens S5 format
KL3312-0022	type S
KL3312-0023	type S in Siemens S5 format
KL3312-0024	type T
KL3312-0025	type T in Siemens S5 format
KL3312-0026	type U
KL3312-0027	type U in Siemens S5 format
KL3312-0028	0...120 mV measurement
KL3312-0029	type K in Siemens S5 format
KL3312-0040	expanded temperature range for type S and L type S: -50...+1,700 °C (as supplied type L: -100...+900 °C)
KL3312-0110	type J, Fahrenheit scaling
KL3312-2000	setting of reference junction temperature via process image, unit 1/256° C in a 16 bit word
KL3312-2100	external reference point temperature specification via process image is possible, the unit is 1/256 °C in 16-bit format, fast conversion time 65 ms