Position measurement | **Incremental encoder interface**

The KL5101 Bus Terminal processes differential signals according to the RS422/RS485 standard. This transmission type is particularly resistant to interference and is suitable for high transmission frequencies. The KL5111, KL5151 and KL5152 Bus Terminals have a single-ended input and are simple to wire up. The signal frequencies from less time-critical applications can be processed using these terminals.

All incremental encoder terminals use a quadrature decoder. Gate and latch inputs enable pre-processing in the Bus Terminal in order to be able to transfer positional values to the controller exactly upon an external event and thus support the referencing of a drive.

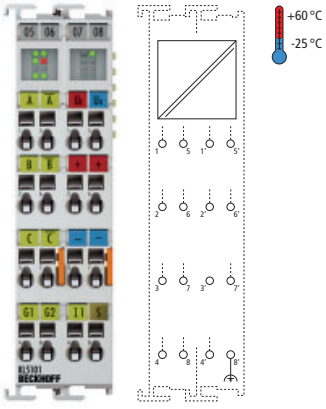
The KL5101 and KL5111 make a period duration measurement available with a resolution of 200 ns. Rotary speeds can thus be determined directly, since a calculation of the speed by means of position differences in the controller is in many cases not accurate enough due to jitter.

The KL5152 contains two encoders and provides a particularly inexpensive solution for a large number of channels if gate and latch functions are not needed.

The LEDs on the Bus Terminals indicate the states of the input signals for better diagnosis.

1-channel incremental encoder interface, 16 bits, differential inputs, RS485

Technical data	**KL5101** | KS5101
Technology	incremental encoder interface (RS485)
Number of channels	1 incremental encoder + 1 input
Encoder connection	A, A (inv), B, B (inv), zero, zero (inv), difference signal (RS485); status input



The KL5101 terminal is an interface for the direct connection of incremental encoders with difference signal (RS485) or with single inputs. A 16 bit counter with a quadrature decoder and a 16 bit latch for the zero pulse can be read, set or enabled. Interval measurement with a resolution of 200 ns is possible. The G2 input allows the counter to be halted (high = stop). The value is read with a rising edge at G1.

Power supply	24 V DC (-15 %/+20 %)
Current consum. pow.cont.	– (no power contacts)
Current consumpt. K-bus	typ. 60 mA
Encoder operating voltage	5 V DC
Encoder output current	0.5 A
Counter	16 bits, binary
Limit frequency	4 million increments/s (with 4-fold evaluation)
Quadrature decoder	1-, 2-, or 4-fold evaluation
Zero-pulse latch	16 bits
Commands	read, set, enable
Special features	–
Operating temperature	-25…+60 °C
Approvals	CE, UL, Ex
Weight	approx. 85 g
Further information	www.beckhoff.com/KL5101
Special terminals	
Distinguishing features	