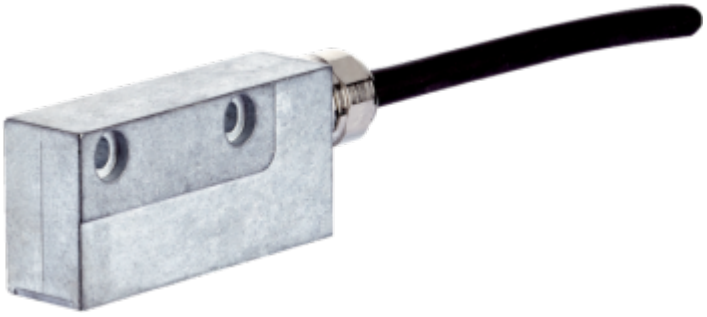
Integrated Encoder

Standar option: Absolute magnetic TTK50 Sick



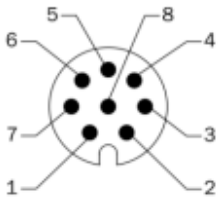
Precision, speed, dynamics, stiffness and high control accuracy - it is exactly these properties which play an important role in high-end applications in drive technology. The TTK50 linear measurement system has all these properties and is a very compact motor feedback system with HIPERFACE® interface. The magnetic principle of operation, the long measuring length, and the extremely high resolution open up all kinds of application possibilities for absolute position detection with linear motors. The TTK50 contains the newest sensor and evaluation technology. The sensor board aligned to the measuring plane is equipped with Hall sensors in two parallel tracks. Their arrangement corresponds with the division of the magnetic tape into an incremental and an absolute component. To calculate the absolute position values during operation, the read head initially detects the absolute starting position when the linear motor starts. All other actual positions of the drive are then determined via incremental position on the magnetic track or the sine/cosine signals.

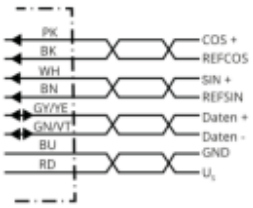
Characteristics

Parameter	Value
Resolution	1 microns
Magnetic pitch	1 mm
Repeatability	< 5 microns
Accuracy	+/- 10 microns
Interface	SIN/COS + Hiperface RS485

Pinout

PIN and wire assignment





PIN	Wire colors (cable connection)	Signal	Explanation
1	Brown	REFSIN	Process data channel
2	White	+ SIN	Process data channel
3	Black	REFCOS	Process data channel
4	Pink	+ COS	Process data channel
5	Gray or yellow	Data +	Parameter channel RS 485
6	Green or purple	Data -	Parameter channel RS 485
7	Blue	GND	Ground connection
8	Red	U_s	Supply voltage
	Screen		Housing

Second option: Absolute optical encoder LIC411 Heidenhain



Characteristics

Parameter	Value
Resolution	0.01 microns
Grading scale pitch	1 mm
Repeatability	< 0.1 microns
Accuracy	+/- 3 or± 5 microns
Interface	Endat 2.2

Pinout

EnDat pin layout

8-pin M12 coupling					15-pin D-sub connector			
	Power supply				Serial data transfer			
	8	2	5	1	3	4	7	6
	4	12	2	10	5	13	8	15
	U_P	Sensor U_P	0 V	Sensor 0 V	DATA	$\overline{\text{DATA}}$	CLOCK	$\overline{\text{CLOCK}}$
	Brown/Green	Blue	White/Green	White	Gray	Pink	Violet	Yellow

Cable shield connected to housing; **U_P** = Power supply voltage
Sensor: The sense line is connected in the encoder with the corresponding power line.
Vacant pins or wires must not be used!

Secondary encoder Temposonic (Optional)



Pinout

STANDARD MALE 7-PIN DIN (D70) INTEGRAL CONNECTOR WIRING



Male, 7-pin (D70) integral connector
(pin-out as viewed from the end of the sensor)

Pin no.	Ext. cable	Function / SSI outputs
1	Gray	Data (-)
2	Pink	Data (+)
3	Yellow	Clock (+)
4	Green	Clock (-)
5	Brown	+24 Vdc (-15/+20%)
6	White	DC ground (for supply)
7	N.C.	N/A

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