Incremental encoders



Compact optical

Sendix Base KIS40 / KIH40 (shaft / hollow shaft)

Push-Pull / RS422 / open collector



The incremental encoders type Sendix Base KIS40 / KIH40 with optical sensor technology have been designed for highest costeffectiveness. They are available with a resolution of up to 2500 pulses per revolution.

They are particularly suitable for tight mounting spaces and small machines and appliances.





High rotational













Magnetic field protection

Compact and robust

- Only 40 mm outer diameter.
- Blind hollow shaft 8 mm and 1/4".
- · Ideally suited for use where space is tight.
- Sturdy bearing construction in Safety Lock[™] design.
- · Safe commissioning: reverse polarity protection and short-circuit proof.

Flexible

- · Maximum resolution of 2500 pulses per revolution.
- Power supply 5 V DC or 10 ... 30 V DC.
- · Push-Pulll, RS422 or open collector
- · Radial or axial cable.

Order code **Shaft version**

8.KIS40

0 0 0 0







1 = clamping/synchro flange, ø 40 mm [1.57"]

b Shaft (ø x L)

 $3 = \emptyset 6 \times 12.5 \text{ mm} [0.24 \times 0.49^{\circ}], \text{ with flat}$ $5 = \emptyset 1/4$ " x 12.5 mm [1/4" x 0.49"], with flat Output circuit / power supply

4 = Push-Pull (with inverted signal) / 10 ... 30 V DC

3 = open collector (with inverted signal) / 10 ... 30 V DC

6 = RS422 (with inverted signal) / 5 V DC

d Type of connection

1 = axial cable, 2 m [6.56'] PVC cable

2 = radial cable, 2 m [6.56'] PVC cable

Pulse rate 25, 100, 200, 360, 500, 512, 600, 1000, 1024, 2000, 2048, 2500 (e.g. 500 pulses => 0500) other pulse rates on request

Order code **Hollow** shaft

8.KIH40 Type

8000



a Flange

2 = with spring element long

5 = with stator coupling, ø 46 mm [1.81"]

Blind hollow shaft

 $4 = \emptyset 8 \text{ mm} [0.32"]$

 $3 = \emptyset 1/4$ "

Output circuit / power supply

4 = Push-Pull (with inverted signal) / 10 ... 30 V DC

3 = open collector (with inverted signal) / 10 ... 30 V DC

6 = RS422 (with inverted signal) / 5 V DC

Type of connection

1 = axial cable, 2 m [6.56'] PVC cable

2 = radial cable, 2 m [6.56'] PVC cable

Pulse rate 25, 100, 200, 360, 500, 512, 600, 1000, 1024, 2000, 2048, 2500 (e.g. 500 pulses => 0500) other pulse rates on request

55



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Mounting accessory for shaft encoders		Order No.
Coupling	bellows coupling ø 15 mm [0.59"] for shaft 6 mm [0.24"]	8.0000.1202.0606
Connection technology		Order No.
Connector, self-assembly (straight)	M12 female connector with coupling nut	05.CMB 8181-0
Cordset, pre-assembled	M12 female connector with coupling nut, 2 m [6.56'] PVC cable	05.00.6041.8211.002M

Further accessories can be found in the accessories section or in the accessories area of our website at: www.kuebler.com/accessories. Additional connectors can be found in the connection technology section or in the connection technology area of our website at: www.kuebler.com/connection_technology.

Technical data

Mechanical characteristics						
Speed		max. 4500 min ⁻¹				
Mass moment of inertia		approx. 0.2 x 10 ⁻⁶ kgm ²				
Starting torque - at 20°C [68°F]		< 0.05 Nm				
Shaft load capacity	radial	40 N				
	axial	20 N				
Weight		ca. 0.17 kg [6.00 oz]				
Protection acc. to EN 60529		IP64				

Working temperature range		-20°C +70° [-4°F +158°F]		
Materials	shaft	stainless steel		
	flange	aluminium		
	housing	aluminium		
	cable	PVC		
Shock resistance acc. to EN 60068-2-27		1000 m/s ² , 6 ms		
Vibration resistance acc. to EN 60068-2-6		100 m/s ² , 55 2000 Hz		

Electrical characteristics							
Output circuit		RS422 (TTL comp.)	Push-Pull ¹⁾ (7272 comp.)	Open collector (7273)			
Power supply		5 V DC ±5%	10 30 V DC	10 30 V DC			
Power consumption with inverted signal (no load)		typ. 40 mA/max. 90 mA	typ. 50 mA/max. 100 mA	100 mA			
Permissible load / channel		max. ±20 mA	max. ±20 mA	20 mA sink at 30 V DC			
Pulse frequency		max. 250 kHz	max. 250 kHz	max. 250 kHz			
Signal level HIGH LOW Rising edge time t _r		min. 2.5 V max. 0.5 V					
		max. 200 ns					
Falling edge time t _f		max. 200 ns	max. 1 μs				
Short circuit proof outputs ²⁾		yes ³⁾	yes ³⁾ yes				
Reverse polarity protection of the power s	upply	no	yes	yes			
UL approval		pending					
CE compliant acc. to		EMC guideline 2004/108/EC	EMC guideline 2004/108/EC				
RoHS compliant acc. to		guideline 2011/65/EU					

Terminal assignment

	Output circuit	Type of connection	Cable (isolate unused wires individually before initial start-up)								
ſ	3, 4, 6 with inv. signal	1, 2	Signal:	0 V	+V	А	Ā	В	B	0	ō
			Cable colour:	WH	BN	GN	YE	GY	PK	BU	RD

+V: Encoder power supply +V DC

0 V: A, <u>A</u>: Encoder power supply ground GND (0 V)

Incremental output channel A B, <u>B</u>: Incremental output channel B

0, $\overline{0}$: Reference signal

Max. recommended cable length 30 m [98.43'].
 If power supply correctly applied.
 Only one channel allowed to be shorted-out:
 at +V= 5 V DC, short-circuit to channel, 0 V, or +V is permitted.
 at +V= 5 ... 30 V DC, short-circuit to channel or 0 V is permitted.



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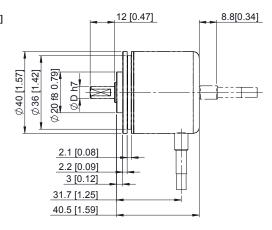
Dimensions shaft version

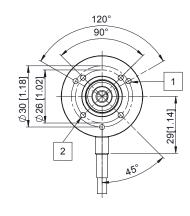
Dimensions in mm [inch]

Clamping / synchro flange, ø 40 [1.57] Flange type 1

1 3 x M3, 4 [0.16] deep

2 4 x M3, 4 [0.16] deep



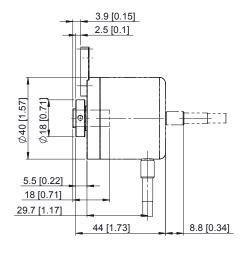


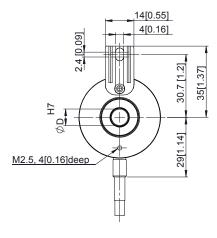
 $D = \emptyset \ 6 \ [0.24]$ ø 1/4"

Dimensions hollow shaft version

Dimensions in mm [inch]

Flange with spring element long Flange type 2

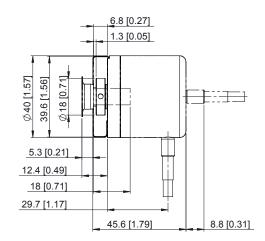


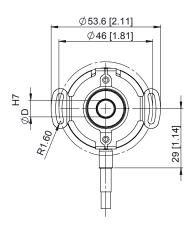


 $D = \emptyset \ 8 \ [0.31]$ ø 1/4"

Flange with stator coupling, ø 46 [1.81] Flange type 5

Shaft: minimum insertion depth 1.5 x D





 $D = \emptyset \ 8 \ [0.31]$ ø 1/4"