

## KUEBLER - INCREMENTAL ENCODER, SENDIX H120 SERIE H120

- High durability
- Many mounting options
- High degree of enclosure
- Wide temperature range



### PRODUCT DESCRIPTION

The Sendix H120 series is designed to fit in tough environments. Specialized for high voltage motors, generators, steel and crane industry. The sensor has a high enclosure degree, IP66, IP67 and a wide temperature range -40 to +100 ° C. It is also equipped with "HD-Safety Lock™, which includes double gaskets, against moisture and dust. All layers are also sturdier and stronger.

The many choices of contact types make this pulse sensor very flexible, sometimes the optical fiber, M12, M23 and terminal boxes are selected. The H120 can be delivered with a fastening lever in different lengths.

Please refer to the image below for ordering information.

Order code		8.H120.XXXXX.XXXX					
Hollow shaft version		Type	a	b	c	d	e
<b>a</b>	<b>Flange</b>						
	1 = without mounting aid						
	2 = with fastening arm 70 mm [2.76"] <sup>2)</sup>						
	3 = with fastening arm 100 mm [3.93"] <sup>2)</sup>						
	4 = with fastening arm 150 mm [5.91"] <sup>2)</sup>						
	5 = with stator coupling, ø 119 mm [4.69"]						
<b>b</b>	<b>Through hollow shaft</b>						
	2 = ø 16 mm [0.63"]						
	3 = ø 20 mm [0.79"]						
	5 = ø 25 mm [0.98"]						
	7 = ø 28 mm [1.10"]						
	6 = ø 1"						
	<i>Blind hollow shaft, with central fastening insertion depth max. 53 mm [2.09"]</i>						
	A = ø 12 mm [0.47"]						
	B = ø 16 mm [0.63"]						
	<i>Blind hollow shaft, cone with central fastening insertion depth max. 22.5 mm [0.89"]</i>						
	K = ø 17 mm [0.67"], 1: 10						
<b>c</b>	<b>Output circuit / power supply</b>						
	4 = RS422 (with inverted signal) / 5 V DC						
	1 = RS422 (with inverted signal) / 10 ... 30 V DC						
	5 = push-pull (with inverted signal) / 10 ... 30 V DC						
	6 = push-pull (with inverted signal) / 10 ... 30 V DC, power version up to 350 m						
	B = optical fiber + RS422 (with inverted signal) / 5 V DC <sup>3)</sup>						
	A = optical fiber + RS422 (with inverted signal) / 10 ... 30 V DC <sup>3)</sup>						
	C = optical fiber + push-pull (with inverted signal) / 10 ... 30 V DC <sup>3)</sup>						
<b>d</b>	<b>Type of connection</b>						
	1 = radial cable, 1 m [3.28'] PVC						
	A = radial cable, special length PVC *)						
	2 = radial M12 connector, 8-pin, ccw						
	4 = radial M23 connector, 12-pin, ccw						
	D = radial M23 connector, 12-pin, cw						
	K = terminal box with plug-in spring terminal connectors, rotatable through 180°						
	L = optical fiber connector + radial M23 connector, 12-pin, cw <sup>4)</sup>						
	*) Available special lengths (connection type A): 2, 3, 5, 8, 10, 15 m [6.56, 9.84, 16.40, 26.25, 32.80, 49.21'] order code expansion .XXXX = length in dm ex.: 8.H120.121A.2048.0030 (for cable length 3 m)						
<b>e</b>	<b>Pulse rate</b>						
	50, 360, 512, 600, 1000, 1024, 1500, 2000, 2048, 2500, 4096, 5000 (e.g. 360 pulses => 0360)						
	<i>Optional on request</i> - other pulse rates - Ex 2/22 <sup>5)</sup>						

## TECHNICAL DATA

<b>Connection</b>	Cable, M12, M23 contact
<b>Housing diameter</b>	120 mm
<b>IP class</b>	IP66, IP67
<b>Mounting</b>	Hollow shaft
<b>Output</b>	Push/Pull, RS422
<b>Pulse max</b>	5000
<b>Sensor type</b>	Incremental
<b>Shaft diameter max</b>	25 mm
<b>Shaft diameter min</b>	12 mm
<b>Supply voltage dc max</b>	30 V DC
<b>Supply voltage dc min</b>	5 V DC
<b>Temperature operational max</b>	100 °C
<b>Temperature operational min</b>	-40 °C
<b>Version</b>	Multiturn

Output circuit	Type of connector	Cable (Isolate unshielded wires individually before initial start-up)
1, 4, 5, 6	3	Signal: $\overline{V}^+$ , $\overline{V}^-$ , $\overline{0}$ Vmax   $\overline{V}^+$ max   A   X   B   B   0   D   0
		Cable colour: WH, BN, CY, PK, RD, BU, CN, VE, CY, PK, BU, RD, SH, MT
Output circuit	Type of connector	M12 connector, 8-pin
1, 4, 5, 6	2	Signal: $\overline{V}^+$ , $\overline{V}^-$ , $\overline{0}$ Vmax   $\overline{V}^+$ max   A   X   B   B   0   D   0
		Pin: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
Output circuit	Type of connector	M12 connector, 12-pin
1, 4, 5, 6, 8, 9, 10	4, 0, L	Signal: $\overline{V}^+$ , $\overline{V}^-$ , $\overline{0}$ Vmax   $\overline{V}^+$ max   A   X   B   B   0   D   0
		Pin: 10, 12, 11, 2, 3, 5, 6, 8, 1, 3, 4, 9, 7, 8, 10
Output circuit	Type of connector	Terminal connection
1, 4, 5, 6	K	Signal: B   A   $\overline{0}$ V   $\overline{V}^+$   $\overline{V}^-$   0   X   B   B
		Pin: B   A   -   +   PE   0   X   B   B

$\overline{V}^+$  Encoder power supply +V DC  
 $\overline{V}^-$  Encoder power supply ground (GND) (0 V)  
 $\overline{0}$  Vmax /  $\overline{V}^+$ max Using the sensor outputs of the encoder, the voltage ground can be measured and if necessary, corrected accordingly.  
A, X Incremental output channel A  
B, B Incremental output channel B  
L, E Reference signal  
Pin + Plug connector housing (54048)

Top view of mating side, male contact base

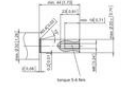
M12 connector, 8-pin, CW  
M13 connector, 12-pin, CW  
M23 connector, 12-pin, CW

Flange with stator coupling, # 13 (0.47)

Blind hollow shaft with central fastening

- 1) 8 x M4, 7 (0.28) deep
- 2) 8 x M4, 8 (0.31) deep

Shaft connection to the application



Flange with fastening arm through hollow shaft

- 1) 8 x M4, 7 (0.28) deep
- 2) 8 x M4, 8 (0.31) deep
- 3) 6 x M4

Recommended torque for the clamping ring 2 Nm

Shaft connection to the application



Fastening arm	L1	L2
	70 mm (2.76)	64.74 (2.55, 2.91)
100 mm (3.93)	94.104 (3.70, 4.09)	112.122 (4.41, 4.80)
150 mm (5.91)	144.154 (5.67, 6.06)	162.172 (6.38, 6.77)

1) With a shaft diameter  $\geq 10$  mm (0.39") the insulation resistance of 2.5 kV cannot be guaranteed. 2) The cable is attached to connection housing.

Flange with fastening arm through hollow shaft and terminal box (type of connection K)

- 1) 8 x M4, 7 (0.28) deep
- 2) 8 x M4, 8 (0.31) deep
- 3) 6 x M4

Recommended torque for the clamping ring 2 Nm

Shaft connection to the application



Fastening arm	L1	L2
	70 mm (2.76)	64.74 (2.55, 2.91)
100 mm (3.93)	94.104 (3.70, 4.09)	112.122 (4.41, 4.80)
150 mm (5.91)	144.154 (5.67, 6.06)	162.172 (6.38, 6.77)

Flange with fastening arm through hollow shaft and optical fibre connection (type of connection L)

- 1) 8 x M4, 7 (0.28) deep
- 2) 8 x M4, 8 (0.31) deep
- 3) 6 x M4

Recommended torque for the clamping ring 2 Nm

Shaft connection to the application



Fastening arm	L1	L2
	70 mm (2.76)	64.74 (2.55, 2.91)
100 mm (3.93)	94.104 (3.70, 4.09)	112.122 (4.41, 4.80)
150 mm (5.91)	144.154 (5.67, 6.06)	162.172 (6.38, 6.77)

1) With a shaft diameter  $\geq 10$  mm (0.39") the insulation resistance of 2.5 kV cannot be guaranteed.

Flange with fastening arm through hollow shaft with central fastening, cone, # 17 (0.47), 1, 10

- 1) 8 x M4, 7 (0.28) deep
- 2) 8 x M4, 8 (0.31) deep
- 3) 6 x M4

Recommended torque for the clamping ring 2 Nm

Shaft connection to the application



Fastening arm	L1	L2
	70 mm (2.76)	64.74 (2.55, 2.91)
100 mm (3.93)	94.104 (3.70, 4.09)	112.122 (4.41, 4.80)
150 mm (5.91)	144.154 (5.67, 6.06)	162.172 (6.38, 6.77)

1) With a shaft diameter  $\geq 10$  mm (0.39") the insulation resistance of 2.5 kV cannot be guaranteed.

