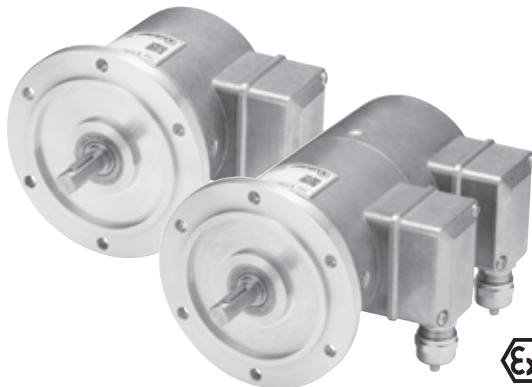


Incremental Encoders

Heavy Duty, optical

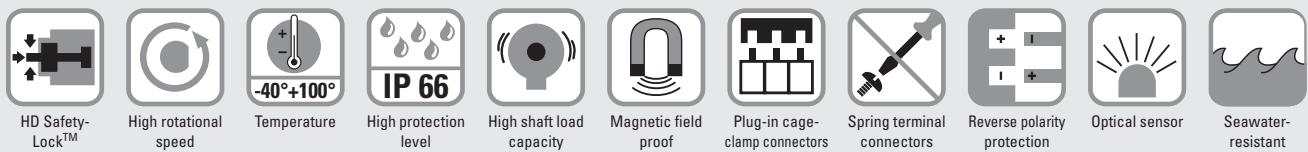
Sendix H100 (Shaft)

Push-Pull / RS422 / Speed switch



The Heavy Duty encoder H100 is an extremely rugged incremental encoder available in 3 versions: encoder with or without speed switch and double encoder.

Thanks to the special HD-Safety-Lock™ construction it is ideally suited for applications in heavy industry, such as steel works and cranes. Resistant materials, wide temperature ranges and a high protection level ensure it remains unaffected by the harshest environmental conditions. Its innovative connection technology enables simple quick installation.



Suitable for your Heavy Duty application

- HD-Safety-Lock™ bearing construction for an extremely high bearing load capacity of up to 300 N axial and 400 N radial
- With a temperature range from -40°C up to +100°C, IP66 protection and seawater-resistant material the encoder is resistant to harsh environmental conditions.
- Feather key shaft slot ensures positive fitting to the application
- Safe overspeed protection by means of mechanical speed switch

Simple quick installation

- Innovative plug-in spring terminal connectors in the terminal box greatly simplify the cable connection and offer a very high level of safety.
- Various connection possibilities thanks to terminal box being rotatable through 180°
- Large number of resolution and switching speed options available as standard

Order code without speed switch

8.H100 . 1 1 1 X . XXXX
Type a b c d e

- | | | | |
|---|---|--|--------------------------------------|
| a Flange
1 = Euro RE0444 | c Version
1 = incremental encoder | e Pulse rate
360, 512, 1000, 1024, 2048, 2500, 3600
(e.g. 360 pulses => 0360)
Other pulse rates on request | <i>optional on request - Ex 2/22</i> |
| b Shaft (ø x L), with feather key shaft slot
1 = ø 11 x 30 mm | d Output circuit / Power supply
1 = RS422 (with inverted signal) / 5 ... 30 V DC
2 = Push-pull (with inverted signal) / 10 ... 30 V DC | | |

Order code with speed switch

8.H100 . 1 1 2 X . XXXX . XXXX . 1
Type a b c d e f g

- | | | | |
|---|---|--|--------------------------------------|
| a Flange
1 = Euro RE0444 | d Output circuit / Power supply
1 = RS422 (with inverted signal) / 5 ... 30 V DC
2 = Push-pull (with inverted signal) / 10 ... 30 V DC | f Switching speed
750, 1000, 2000, 3000, 4000
Other switching speeds on request | <i>optional on request - Ex 2/22</i> |
| b Shaft (ø x L), with feather key shaft slot
1 = ø 11 x 30 mm | e Pulse rate
360, 512, 1000, 1024, 2048, 2500, 3600
(e.g. 360 pulses => 0360)
Other pulse rates on request | g Switching accuracy
1 = Standard (± 4% at 100 rad/s ²)
Other switching accuracies on request | |
| c Version
2 = incremental encoder with mech. speed switch | | | |

Order code double encoder

8.H100 . 1 1 3 X . XXXX . XXXX
Type a b c d e f

- | | | | |
|---|---|---|--------------------------------------|
| a Flange
1 = Euro RE0444 | c Version
3 = 2 x incremental encoder | e Pulse rate encoder 1
360, 512, 1000, 1024, 2048, 2500, 3600 | <i>optional on request - Ex 2/22</i> |
| b Shaft (ø x L), with feather key shaft slot
1 = ø 11 x 30 mm | d Output circuit / Power supply
1 = RS422 (with inverted signal) / 5 ... 30 V DC
2 = Push-pull (with inverted signal) / 10 ... 30 V DC | f Pulse rate encoder 2
360, 512, 1000, 1024, 2048, 2500, 3600 | |

Incremental Encoders

Heavy Duty, optical	Sendix H100 (Shaft)	Push-Pull / RS422 / Speed switch
----------------------------	----------------------------	---

Accessories		
Encoder cable	PUR-trailing cable, shielded, halogen free, orange (4 x 2 x 0,25 mm ² + 2 x 1 mm ² , twisted pair)	8.0000.6400.XXXX ¹⁾
Speed switch cable	TPE-trailing cable, shielded, halogen free, black (5 x 0,75 mm ²)	8.0000.6600.XXXX ¹⁾

Mechanical characteristics		
Speed		max. 6000 min ⁻¹
Starting torque with seal		~ 2 Ncm
Load capacity of shaft	radial	400 N
	axial	300 N
Weight	H100	~ 1,8 kg
	H100 + speed switch	~ 2,7 kg
Protection acc. to EN 60 529		IP66
EX approval for hazardous areas		II 3G 3D Eex nA T4
Working temperature range (surface of housing)		-40°C ... +100°C
Materials	shaft	stainless steel
	housing	die-cast aluminium (EN AC-44300), seawater-resistant coating
	flange	seawater resistant aluminium, Type Al Si Mg Mn (EN AW-6082)
Shock resistance acc. EN 60068-2-27		< 300 g ~ 3000 m/s ² (1 ms)
Vibration resistance acc. EN 60068-2-27		< 10 g ~ 100 m/s ²
		for switching speed 750 or 1000 < 5 g ~ 50 m/s ²

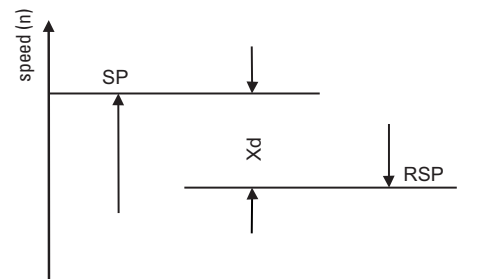
Electrical characteristics		
Output circuit	RS 422 (TTL compatible)	Push-Pull (HTL) up to 150m cable length
Power supply	5 ... 30 V DC	10 ... 30 V DC
Power consumption (no load)		
with inverted signal	typ. 40 mA / max. 90 mA	typ. 50 mA / max. 100 mA
Permissible load / channel	max. ±20 mA	max. ±30 mA
Pulse frequency	max. 300 kHz	max. 300 kHz
Signal level	high low	min. U _B - 2,5 V max. 0,5 V
Rising edge time t_r	max. 200 ns	max. 1 µs
Falling edge time t_f	max. 200 ns	max. 1 µs
Short circuit proof outputs ²⁾	yes ³⁾	yes
Reverse polarity protection of the power supply		
	yes	yes
CE-compliant acc. to	EN 61000-6-2, EN 61000-6-4 and EN 61000-6-3	
RoHS compliant acc. to	EU guideline 2002/95/EG	

Incremental Encoders

Speed switch	
Switching speed (ns)	750 ... 4000 min ⁻¹
max. rotational speed (mechanical)	1,25 x ns
Switching accuracy with acceleration α = 100 rad/s ² (corresponds Δn = 955 min ⁻¹ /s)	+/- 4% of ns
Switching difference CW/CCW rotation	~ 3 %
Switching hysteresis (Xd)	~ 40% up to 80% of ns
Switching capacity	3 A / 230 V AC 1 A / 125 V DC

(more details see manual)

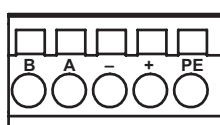
Definition Switching hysteresis (Xd)



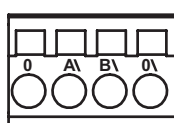
SP = Switching point (for switching speed ns)
 RSP = Reset point
 Xd = Switching difference (Hysteresis)

Terminal assignment terminal connections

Incremental encoders

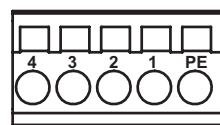


B incremental track B
 A incremental track A
 - 0 V
 + +U_B
 PE shield

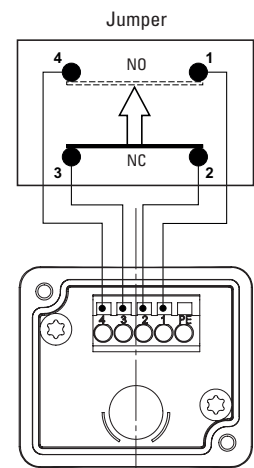


0 incremental track 0
 A incremental track A
 B incremental track B
 0 incremental track 0

Speed switch



4, 1 normally open (NO)
 3, 2 normally closed (NC)
 PE shield



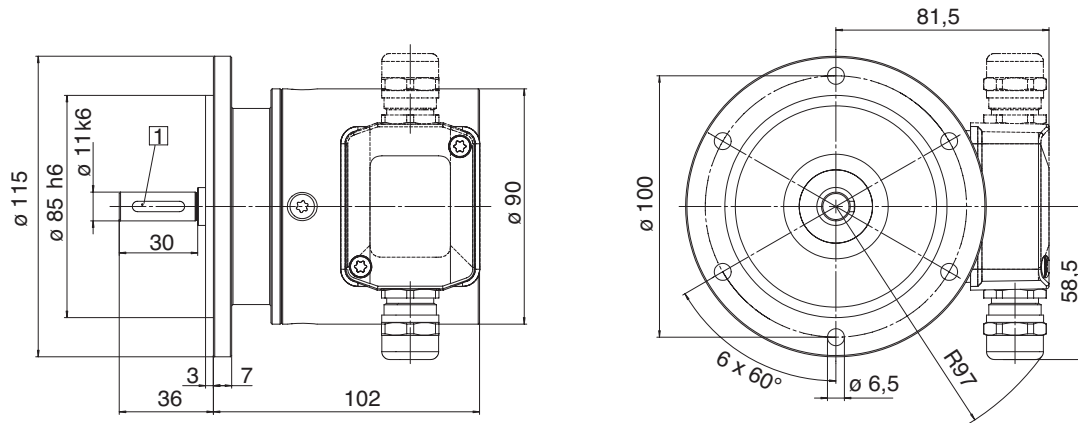
1) XXXX = cable length in meters
 2) If supply voltage U_B correctly applied
 3) Only one channel allowed to be shorted-out:
 at U_B = 5 V short circuit to channel, 0 V, or +U_B is permitted.
 at U_B = 5 ... 30 V short circuit to channel or 0 V is permitted.

Incremental Encoders

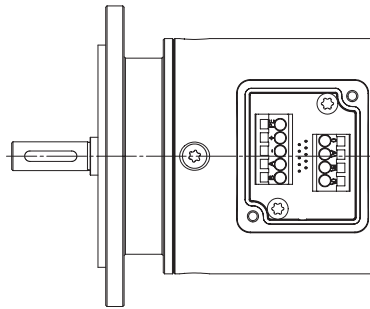
Heavy Duty, optical	Sendix H100 (Shaft)	Push-Pull / RS422 / Speed switch
----------------------------	----------------------------	---

Dimensions

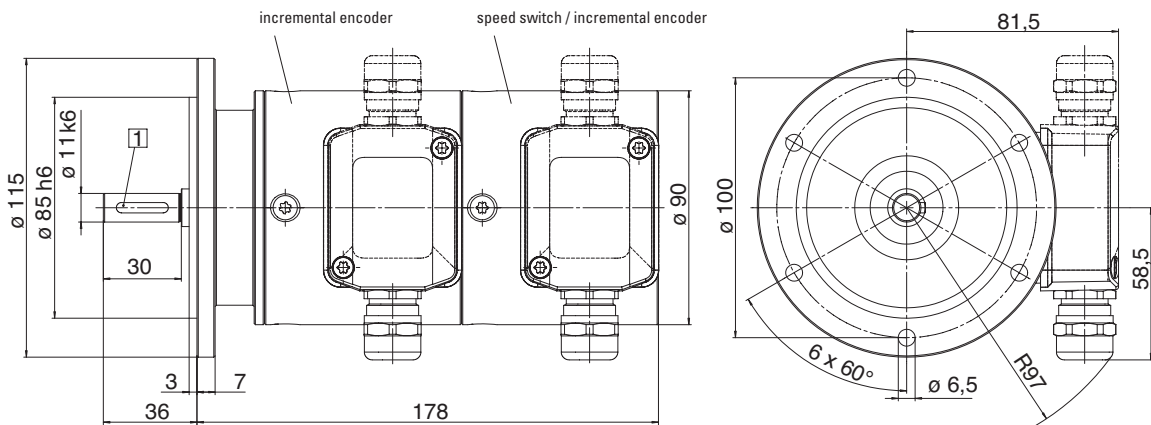
Incremental encoder



1 Feather key acc. to ISO 773



Incremental encoder with mechanical speed switch or 2 x incremental encoder (double encoder)



1 Feather key acc. to ISO 773

