

Rotary Measuring Technology

Incremental shaft encoder

Heavy duty Type 9000 stainless steel



- Stainless steel housing and shaft
- IP 66
- Highly flexible, chemical resistant PUR-cable (stands up under constant trailing at -20°C up to 70°C)
- Temperature and ageing compensation
- Precision graduation at high resolution
- Large temperature range
- Short-circuit proof outputs

- available as explosion proof zone 2 and 22

Applications:

Food- and pharmaceutical industry, automatic packaging machines, bottling plants, chemical process technology

Pulse rates available at short notice:

10, 20, 25, 30, 50, 60, 100, 120, 125, 127, 150, 180, 200, 216, 240, 250, 254, 256, 300, 314, 360, 375, 400, 500, 512, 600, 625, 720, 745, 750, 762, 800, 900, 927, 1000, 1024, 1250, 1270, 1400, 1500, 1800, 2000, 2048, 2250, 2400, 2500, 3000, 3600, 4000, 4096, 5000

Other pulse rates on request

Mechanical characteristics:

Speed:	max. 6000 min ⁻¹
Rotor moment of inertia:	appr. $15 \times 10^{-6} \text{ kgm}^2$
Starting torque:	< 0,05 Nm
Radial load capacity of shaft*:	140 N
Axial load capacity of shaft*:	70 N
Weight:	appr. 2,8 kg
Protection acc. to EN 60 529:	IP 66
Working temperature:	$-20^{\circ}\text{C} \dots +80^{\circ}\text{C}$
Operating temperature:	$-20^{\circ}\text{C} \dots +85^{\circ}\text{C}$
Shaft:	stainless steel
Shock resistance acc. to DIN-IEC 68-2-27	1000 m/s ² , 6 ms
Vibration resistance acc. to DIN-IEC 68-2-6:	100 m/s ² , 10...2000 Hz

*View also diagrams on page 21

Electrical characteristics:

Output circuit:	RS 422 (TTL-compatible)	Push-pull
Supply voltage:	5 V ($\pm 5\%$) or 10 ... 30 V DC	10 ... 30 V DC
Power consumption (no load) without inverted signal:	-	typ. 55 mA / max. 125 mA
Power consumption (no load) with inverted signals:	typ. 70 mA / max. 90 mA	typ. 80 mA / max. 150mA
Permissible load/channel:	max. $\pm 20 \text{ mA}$	max. $\pm 30 \text{ mA}$
Pulse frequency:	max. 300 kHz	max. 300 kHz
Signal level high:	min. 2,5 V	min. $U_B - 2,5 \text{ V}$
Signal level low:	max. 0,5 V	max. 2,0 V
Rise time t_r	max. 200 ns	max. 1 μs
Fall time t_f	max. 200 ns	max. 1 μs
Short circuit proof outputs: ¹⁾	yes ²⁾	yes
Reverse connection protection at UB:	no; 10 ... 30 V: yes	yes
Conforms to CE requirements acc. to EN 61000-6-1, EN 61000-6-4 and EN 61000-6-3		

¹⁾When supply voltage correctly applied

²⁾Only one channel at a time: (when $U_B = 5 \text{ V}$, short-circuit to channel, 0 V, or $+U_B$ is permitted.)
(when $U_B = 10 \dots 30 \text{ V}$ short-circuit to channel or 0 V is permitted.)

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Terminal assignment

Signal:	0V	0V Sensor ²⁾	+U _B	+U _B Sensor ²⁾	A	\bar{A}	B	\bar{B}	0	$\bar{0}$	Shield
Colour:	WH 0,5 mm ²	WH	BN 0,5 mm ²	BN	GN	YE	GY	PK	BU	RD	

1) PH = Shield is attached to connector housing

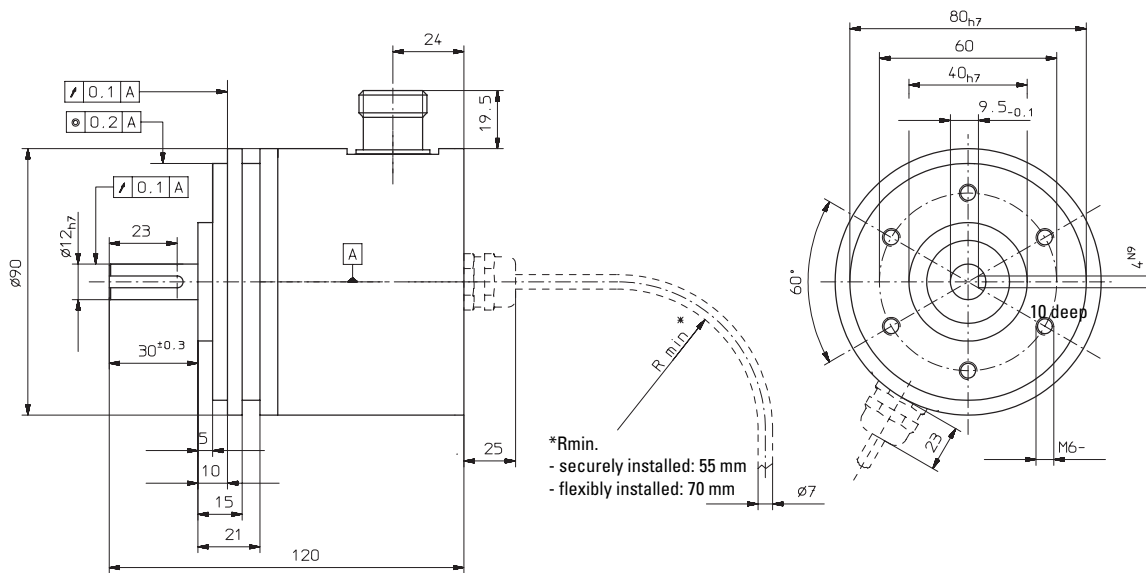
2) The sensor cables are connected to the supply voltage internally if long feeder cables are involved they can be used to adjust or control the voltage at the encoder

- If the sensor cables are not in use, they have to be insulated or 0 V Sensor has to be connected to 0 V and U_B Sensor has to be connected to U_B

- Using RS 422 outputs and long cable distances, a wave impedance has to be applied at each cable end.

Insulate unused outputs before initial startup.

Dimensions

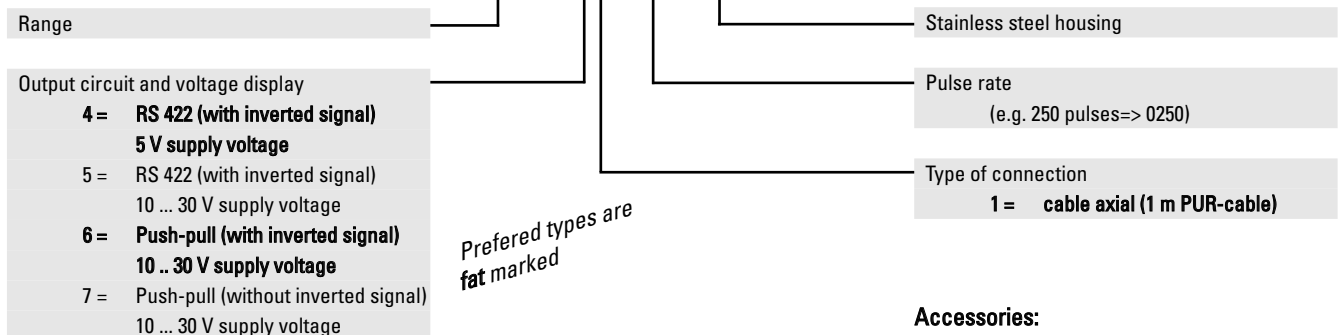


Mounting advice:

Do not connect encoder and drive rigidly to one another at shafts and flanges! Always use couplings to prevent shaft overload (see accessories chapter).

Order code:

8.9000.11X1.XXXX.5007



Accessories:

See accessories chapter