

Rotary Measuring Technology

Incremental hollow shaft encoder



Large diameter Type A020



A020

- Only 43 mm clearance needed
- Hollow shaft diameter up to 42 mm
- Very easy mounting. The encoder is mounted directly on the drive shaft without couplings.
- Electronic temperature and ageing compensation
- RS 422, push-pull or sine wave output
- High scanning rate

Mechanical characteristics:

Speed: ¹⁾	max. 3000 min ⁻¹
Rotor moment of inertia: ³⁾	<150 x 10 ⁻⁶ kgm ²
Starting torque with sealing:	< 0.2 Nm
Weight:	app. 0.7 kg
Protection acc. to EN 60 529:	IP 65
Working temperature:	-20° C ... +70 °C ²⁾
Operating temperature:	-20° C ... +75 °C ²⁾
Shaft:	stainless steel H7
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

¹⁾ Short term (app. 15 min. range) up to 3500 min⁻¹ ²⁾ Non-condensing ³⁾ Depending on shaft diameter

Pulse rates available at short notice:

360*, 512, 600, 1000, 1024, 1500, 2048, 2500, 4096, 5000

*not with sine wave output

Other pulse rates on request

Electrical characteristics RS 422 or push-pull output:

Output circuit:	RS 422 (TTL-compatible)	Push-pull	Push-pull (7272) ³⁾
Supply voltage:	5 V (±5 %) or 10 ... 30 V DC	10 ... 30 V DC	5 ... 30 V DC
Power consumption (no load) without inverted signal:	not available	typ. 55 mA / max. 125 mA	—
Power consumption (no load) with inverted signal:	typ. 40 mA / max. 90 mA	typ. 80 mA / max. 150 mA	typ. 50 mA / max. 100 mA
Permissible load/channel:	max. ±20 mA	max. ±30 mA	max. ±20 mA
Pulse frequency:	max. 300 kHz	max. 300 kHz	max. 300 kHz
Signal level high:	min. 2.5 V	min. U _B -3 V	min. U _B -2.0 V
Signal level low:	max. 0.5 V	max. 2.5 V	max. 0.5 V
Rise time t _r	max. 200 ns	max. 1 µs	max. 1 µs
Fall time t _f	max. 200 ns	max. 1 µs	max. 1 µs
Short circuit proof outputs ¹⁾ :	yes ²⁾	yes	yes
Reverse connection protection at U _B :	5 V: no, 10 ... 30 V: yes	yes	no
Conforms to CE requirements acc. to EN 61000-6-1, EN 61000-6-4 and EN 61000-6-3			

¹⁾ If supply voltage correctly applied

²⁾ Only one channel allowed to be shorted-out:

(If U_B=5 V, short-circuit to channel, 0 V, or +U_B is permitted)

(If U_B=5-30 V, short-circuit to channel or 0 V is permitted)

³⁾ Max. recommended cable length 30 m

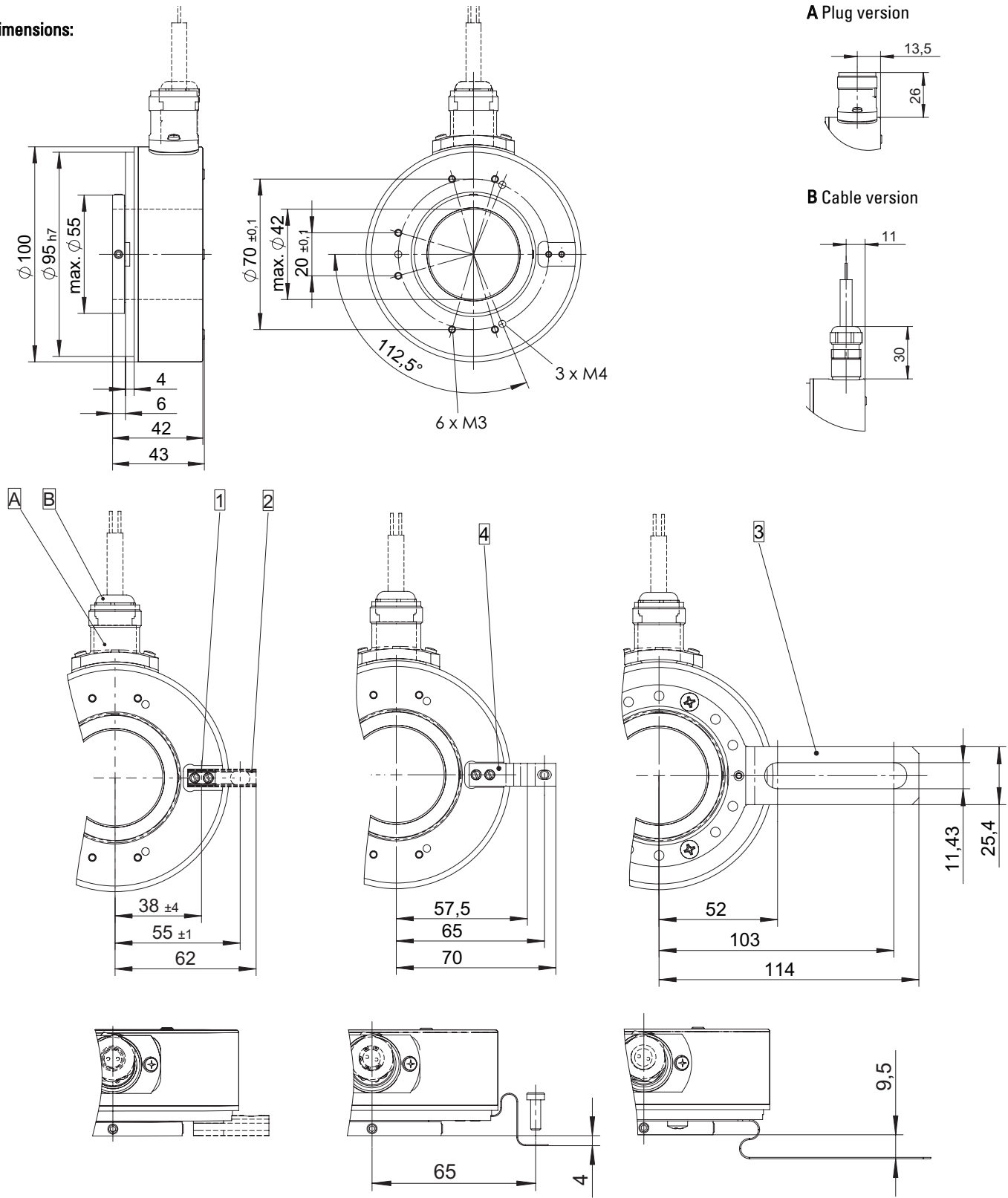
Electrical characteristics sine wave output:

Output circuit:	Sine	Sine
	U = 1 V _{ss}	U = 1 V _{ss}
Supply voltage:	5 V (±5 %)	10 ... 30 V DC
Current consumption (no load) with inverted signals:	typ. 65 mA / max. 110 mA	typ. 65 mA / max. 110 mA
-3 dB frequency:	≥180 kHz	≥180 kHz
Signal level channels A/B:	1 V _{ss} (±20%)	1 V _{ss} (±20 %)
Signal level channel 0:	0.1 ... 1.2 V	0.1 ... 1.2 V
Short circuit proof outputs ¹⁾ :	yes	yes
Reverse connection protection at U _B :	no	yes
Conforms to CE requirements acc. to EN 61000-6-1, EN 61000-6-4 and EN 61000-6-3		

¹⁾ If supply voltage correctly applied

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Dimensions:



- 1 Spring element short (Bracket Nr. 2)
- 2 Spring element long (Bracket Nr. 3)
- 3 Tether arm long
- 4 Bracket

Note: minimum insertion depth $1.5 \times D_{\text{hollow shaft}}$

