

Incremental encoders

Blind or through hollow shaft max. $\varnothing 25.4$ mm

1024...16384 pulses per revolution

G110H, G110S



G110H with through hollow shaft

Technical data - electrical ratings

Voltage supply	5 VDC ± 10 % 4.75...30 VDC
Reverse polarity protection	Yes (4.75...30 VDC)
Consumption w/o load	≤ 30 mA (24 VDC) ≤ 60 mA (5 VDC)
Pulses per revolution	1024...16384
Reference signal	Zero pulse, width 90°
Sensing method	Optical
Output frequency	≤ 150 kHz
Output signals	A 90° B, N + inverted
Output stage	Linedriver/RS422 Push-pull short-circuit proof
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4
Approval	UL approval / E63076

Features

- Encoder with blind or through hollow shaft max. $\varnothing 25.4$ mm
- Max. 16384 pulses per revolution
- Optical sensing
- Robust design
- High resistance to shock and vibrations
- High signal quality

Technical data - mechanical design

Size (flange)	$\varnothing 75$ mm
Protection DIN EN 60529	IP 54
Operating speed	≤ 3800 rpm
Rotor moment of inertia	2000 gcm ²
Materials	Housing: aluminium Flange: aluminium
Operating temperature	-25...+85 °C (24 VDC) -40...+85 °C (optional)
Relative humidity	95 % non-condensing
Resistance	DIN EN 60068-2-6 Vibration 10 g, 16-2000 Hz DIN EN 60068-2-27 Shock 200 g, 6 ms
Connection	Connector M23, 12-pin
Weight approx.	700 g

G110H

Shaft type	$\varnothing 20$ mm (through hollow shaft) $\varnothing 25$ mm (through hollow shaft) $\varnothing 25.4$ mm (through hollow shaft)
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G110S

Shaft type	$\varnothing 20$ mm (blind hollow shaft) $\varnothing 25$ mm (blind hollow shaft)
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Part number

Through hollow shaft

G110H. **C3**

Pulse number - see table

Connection

C3 Connector M23, 12-pin, radial

Voltage supply / signals

22 5 VDC / linedriver RS422 (≤ 6000 pulses)
 25 5 VDC / linedriver RS422 (> 6000 pulses)
 70 4.75...30 VDC / push-pull (≤ 6000 pulses)
 75 4.75...30 VDC / push-pull (> 6000 pulses)

Through hollow shaft / torque pin

H $\varnothing 20$ mm, clamping ring on flange, without pin
 1 $\varnothing 20$ mm, clamping ring on flange, pin 15 mm
 G $\varnothing 25$ mm, clamping ring on flange, without pin
 2 $\varnothing 25$ mm, clamping ring on flange, pin 15 mm
 F $\varnothing 25$ mm, clamping ring on housing, without pin
 5 $\varnothing 25$ mm, clamping ring on housing, pin 15 mm
 0 $\varnothing 25.4$ mm, clamping ring on housing, without pin
 A $\varnothing 25.4$ mm, clamping ring on housing, pin 15 mm

Blind hollow shaft

G110S. **C3**

Pulse number - see table

Connection

C3 Connector M23, 12-pin, radial

Voltage supply / signals

22 5 VDC / linedriver RS422
 70 4.75...30 VDC / push-pull

Blind hollow shaft / torque pin

H $\varnothing 20$ mm, clamping ring on flange, without pin
 1 $\varnothing 20$ mm, clamping ring on flange, pin 15 mm
 G $\varnothing 25$ mm, clamping ring on flange, without pin
 2 $\varnothing 25$ mm, clamping ring on flange, pin 15 mm

Accessories

Connectors and cables

Z 141.001	Female connector M23, 12-pin, less cable
Z 141.003	Female connector M23, 12-pin, 2 m cable
Z 141.005	Female connector M23, 12-pin, 5 m
Z 141.007	Female connector M23, 12-pin, 10 m cable

Mounting accessories

Z 119.041	Torque support by rubber buffer element for encoders with 15 mm pin
Z 119.043	Spring coupling for GX and G1
Z 119.050	Spring coupling for one-side attachment, length 35 mm

Part number (pulse number)

23 (1024)	30 (2500)	35 (5000)	73 (10000)
29 (2048)	34 (4096)	70 (8192)	71 (16384)

Other pulse numbers on request.

Example: part number 35 = 5000 pulses.

Incremental encoders

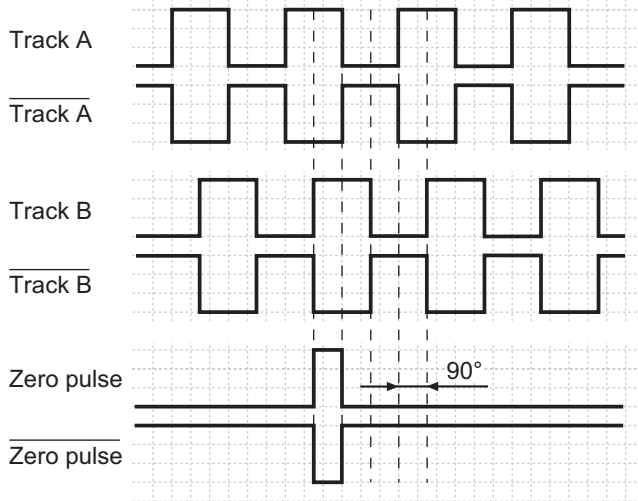
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G110H, G110S

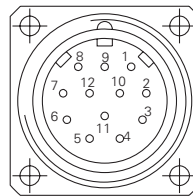
Output signals

Clockwise rotating direction when looking at flange.



Terminal assignment

Connector	Assignment
Pin 1	Track B inv.
Pin 2	UB-Sense
Pin 3	Track N (zero pulse)
Pin 4	Track N inv. (zero pulse inv.)
Pin 5	Track A
Pin 6	Track A inv.
Pin 7	–
Pin 8	Track B
Pin 9	–
Pin 10	GND
Pin 11	GND-Sense
Pin 12	UB



UB-Sense and GND-Sense are directly connected to UB resp. GND. Please use cores twisted in pairs (for example track A / track A inv.) for extension cables of more than 10 m length.

Trigger level

Outputs	Linedriver RS422
Output level High	>2.5 V (I = -20 mA)
Output level Low	<0.5 V (I = 20 mA)
Load High / Low	<20 mA

Outputs	Push-pull short-circuit proof
Output level High	>UB -3 V (I = -20 mA)
Output level Low	<0.5 V (I = 20 mA)
Load High / Low	<20 mA

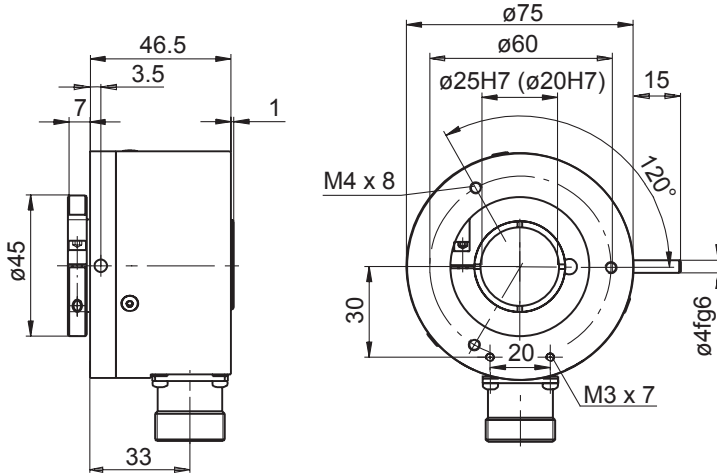
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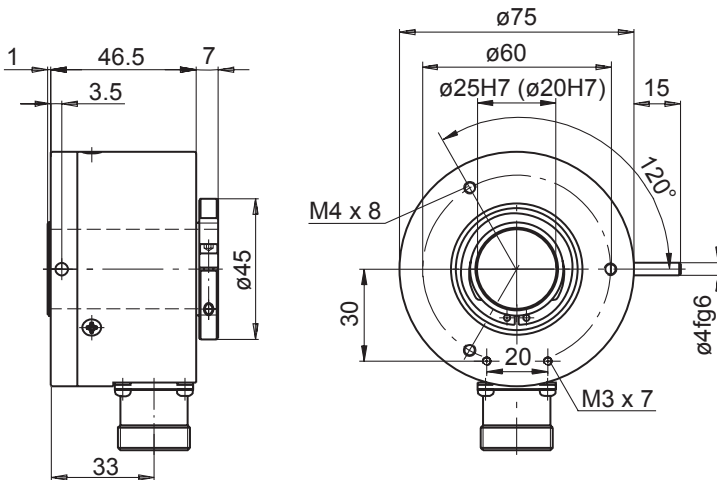
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Dimensions

G110H - through hollow shaft, clamping ring on flange



G110H - through hollow shaft, clamping ring on housing



G110S - blind hollow shaft, clamping ring on flange

