

# Incremental encoders

Hollow or end shaft max.  $\varnothing 25$  mm  
Resolution 5...16384 pulses

## G110H, G110S



G110H with hollow shaft

### Technical data - electrical ratings

Voltage supply	5 VDC $\pm 10$ % 4.75...30 VDC
Reverse polarity protection	Yes (4.75...30 VDC)
Consumption w/o load	$\leq 30$ mA (24 VDC) $\leq 60$ mA (5 VDC)
Resolution (steps/turn)	5...16384
Reference signal	Zero pulse, width 90°
Sensing method	Optical
Output frequency	$\leq 150$ kHz
Output signals	A 90° B, N + inverted
Output circuit	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 end or hollow shaft max.  $\varnothing 25$  mm
- Resolution max. 16384 ppr
- Optical sensing
- Clamping ring on flange
- Robust design
- High resistance to shock and vibrations
- Top signal quality

### Technical data - mechanical design

Housing	$\varnothing 75$ mm
Protection DIN EN 60529	IP 54
Operating speed	$\leq 3800$ rpm
Rotor moment of inertia	2000 gcm <sup>2</sup>
Materials	Housing: aluminium Flange: aluminium
Operating temperature	-25...+85 °C (24 VDC)
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
Weight approx.	700 g
E-connection	Connector
<b>G110H</b>	
Shaft	$\varnothing 20$ mm hollow shaft $\varnothing 25$ mm hollow shaft
<b>G110S</b>	
Shaft	$\varnothing 20$ mm end shaft $\varnothing 25$ mm end shaft

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## Part number

### Hollow shaft

G110H.   C3

See part number (pulses)

E-connection

C3 Connector M23, 12-pin, radial

Voltage supply / signals

22 5 VDC / Linedriver RS422 ( $\leq$ 6000 pulses)

25 5 VDC / linedriver RS422 (>6000 pulses)

70 4.75...30 VDC / push-pull ( $\leq$ 6000 pulses)

75 4.75...30 VDC / push-pull (>6000 pulses)

Hollow shaft

G Hollow shaft  $\varnothing$ 25 mm without pin

H Hollow shaft  $\varnothing$ 20 mm without pin

### End shaft

G110S.   C3

See part number (pulses)

E-connection

C3 Connector M23, 12-pin, radial

Voltage supply / signals

22 5 VDC / linedriver RS422

70 4.75...30 VDC / push-pull

Hollow shaft

G End shaft  $\varnothing$ 25 mm without pin

H End shaft  $\varnothing$ 20 mm without pin

## Part number (pulses)

49 (5)	06 (200)	24 (1250)	35 (5000)
36 (10)	09 (250)	26 (1500)	48 (6000)
50 (25)	13 (360)	28 (2000)	70 (8192)
39 (50)	14 (400)	29 (2048)	73 (10000)
40 (60)	15 (500)	30 (2500)	71 (16384)
41 (100)	22 (1000)	31 (3600)	
57 (128)	23 (1024)	34 (4096)	

Other pulse numbers upon request.

Example: ordering key 35 = 5000 pulses

## Accessories

### Connectors and cables (page %S)

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 cable
Z 141.007	Female connector M23, 12-pin, 10 m cable

### Mounting accessories (page %S)

Z 119.050	Spring coupling
Z 119.053	Spring coupling height 19.1 mm
Z 119.070	Spring coupling height 29.1 mm
Z 119.076	Spring coupling for encoders with $\varnothing$ 58 mm housing

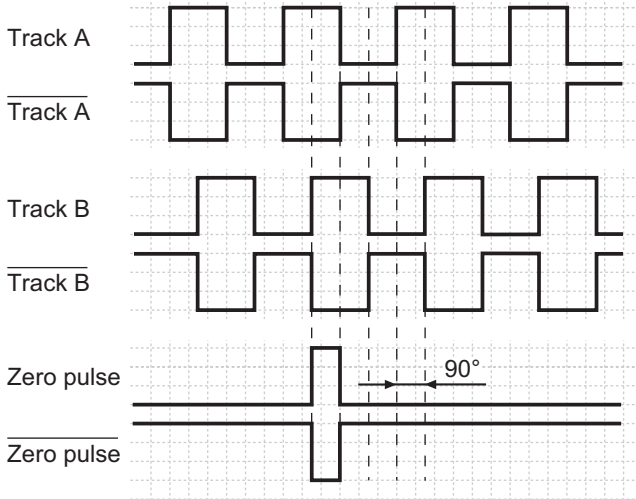
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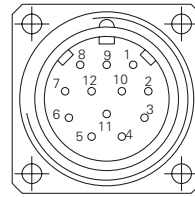
### Output signals

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	<20 mA
Load 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	<20 mA
Load Low	<20 mA

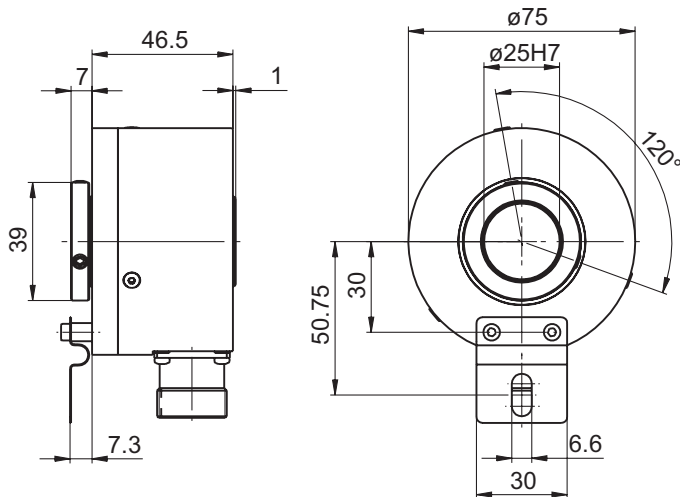
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## Dimensions

### G110H with hollow shaft



### G110S with end shaft

