

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 ± 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) |
| Resolution (steps/turn) | 5...16384 |
| Reference signal | Zero pulse, width 90° |
| Sensing method | Optical |
| Output frequency | ≤ 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 | ≤ 3800 rpm |
| Rotor moment of inertia | 2000 gcm ² |
| 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 |
| G110H | |
| Shaft | $\varnothing 20$ mm hollow shaft $\varnothing 25$ mm hollow shaft |
| G110S | |
| Shaft | $\varnothing 20$ mm end shaft $\varnothing 25$ mm end shaft |

Incremental encoders

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

G110H, G110S

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 (≤ 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)

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 |

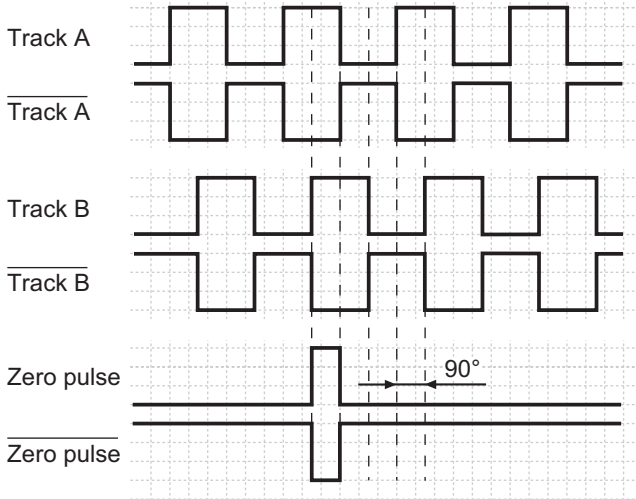
Incremental encoders

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

G110H, G110S

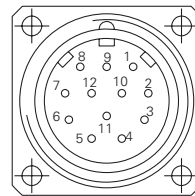
Output signals

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 | <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 |

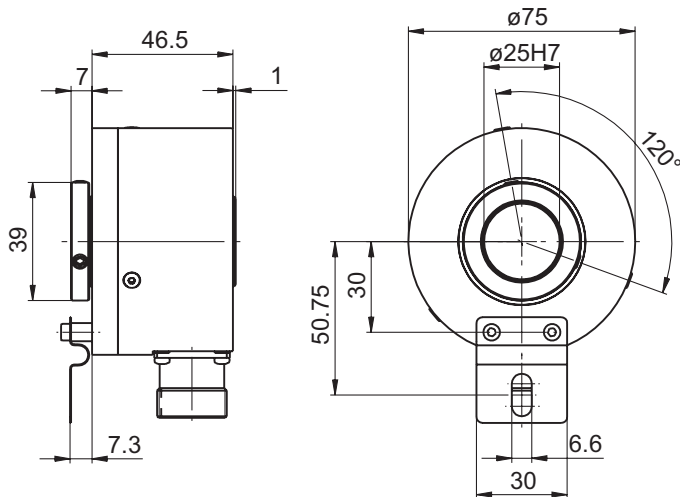
Incremental encoders

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

G110H, G110S

Dimensions

G110H with hollow shaft



G110S with end shaft

