

# Incremental encoders

Hollow or end shaft max.  $\varnothing 15$  mm

Resolution 5...2048 pulses

## GI341, GI342 - *incretivo*



GI342 with hollow shaft

### Technical data - electrical ratings

|                             |                                                   |
|-----------------------------|---------------------------------------------------|
| Voltage supply              | 5 VDC $\pm 10$ %<br>4.75...30 VDC                 |
| Reverse polarity protection | Yes (4.75...30 VDC)                               |
| Consumption w/o load        | $\leq 30$ mA (24 VDC)<br>$\leq 60$ mA (5 VDC)     |
| Resolution (steps/turn)     | 5...2048                                          |
| Reference signal            | Zero pulse, width $90^\circ$                      |
| Sensing method              | Optical                                           |
| Output frequency            | $\leq 150$ kHz                                    |
| Output signals              | A $90^\circ$ B, N + inverted                      |
| Output circuit              | Linedriver RS422<br>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  $\varnothing 10$ -15 mm
- Resolution max. 2048 ppr
- Optical sensing
- Flange and housing made of high-tech plastics
- Tangential cable output
- Available with commutation signals
- Mounting depth 40 mm

### Optional

- Commutation tracks UVW
- High temperature max.  $120^\circ\text{C}$  (only GI341)

### Technical data - mechanical design

|                         |                                                                                          |
|-------------------------|------------------------------------------------------------------------------------------|
| Housing                 | $\varnothing 58$ mm                                                                      |
| Protection DIN EN 60529 | IP 54                                                                                    |
| Operating speed         | $\leq 6000$ rpm                                                                          |
| Rotor moment of inertia | $60\text{ gcm}^2$                                                                        |
| Material                | Housing: carbon-fibre reinforced polyamide                                               |
| Operating temperature   | $-20...+80^\circ\text{C}$                                                                |
| Relative humidity       | 95 % non-condensing                                                                      |
| Resistance              | DIN EN 60068-2-6<br>Vibration 10 g, 16-2000 Hz<br>DIN EN 60068-2-27<br>Shock 200 g, 6 ms |
| Weight approx.          | 150 g                                                                                    |
| E-connection            | Cable 1 m                                                                                |

### GI341

|                 |                                    |
|-----------------|------------------------------------|
| Shaft           | $\varnothing 10...15$ mm end shaft |
| Starting torque | $\leq 0.015$ Nm                    |

### GI342

|                 |                                       |
|-----------------|---------------------------------------|
| Shaft           | $\varnothing 10...15$ mm hollow shaft |
| Starting torque | $\leq 0.05$ Nm                        |

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## Part number

### End shaft

GI341.   **71**

See part number (pulses)

E-connection

71 Cable 1 m, tangential

Voltage supply / signals

22 5 VDC / linedriver RS422

70 4.75...30 VDC / push-pull

72 4.75...30 VDC / linedriver  
RS422 (5 VDC)

Hollow shaft

A End shaft ø12 mm center mounting

B End shaft ø10 mm center mounting

C End shaft ø14 mm center mounting

G End shaft ø15 mm center mounting

### Hollow shaft

GI342.   **71**

See part number (pulses)

E-connection

71 Cable 1 m, tangential

Voltage supply / signals

22 5 VDC / linedriver RS422

70 4.75...30 VDC / push-pull

72 4.75...30 VDC / linedriver  
RS422 (5 VDC)

Hollow shaft

A Hollow shaft ø12 mm clamping ring on flange

B Hollow shaft ø10 mm clamping ring on flange

C Hollow shaft ø14 mm clamping ring on flange

G Hollow shaft ø15 mm clamping ring on flange

## Part number (pulses)

|         |          |           |           |
|---------|----------|-----------|-----------|
| 49 (5)  | 41 (100) | 14 (400)  | 26 (1500) |
| 36 (10) | 57 (128) | 15 (500)  | 29 (2048) |
| 50 (25) | 06 (200) | 22 (1000) |           |
| 39 (50) | 09 (250) | 23 (1024) |           |
| 40 (60) | 13 (360) | 24 (1250) |           |

Other pulse numbers upon request.

Example: ordering key 23 = 1024 pulses

Configurations with commutation tracks on request

## Accessories

### Mounting accessories (page %S)

|           |                                                      |
|-----------|------------------------------------------------------|
| Z 119.023 | Spring coupling for encoders with ø58 mm housing     |
| Z 119.036 | Rubber buffer element 7.5 mm long, as torque support |
| Z 119.040 | Shoulder screw M5 as torque support                  |
| Z 119.068 | Spring coupling                                      |

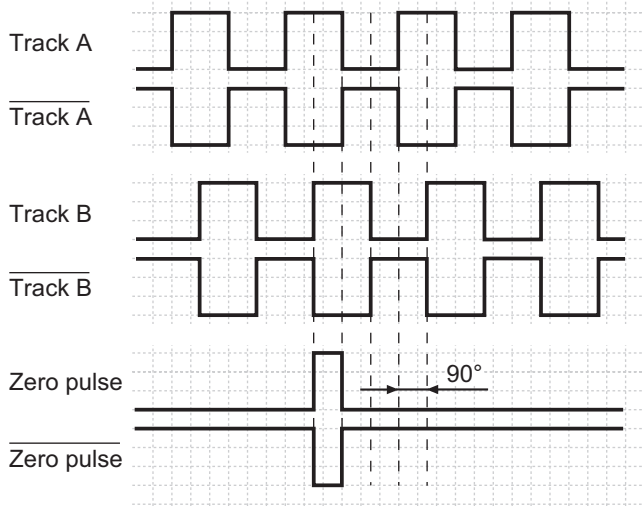
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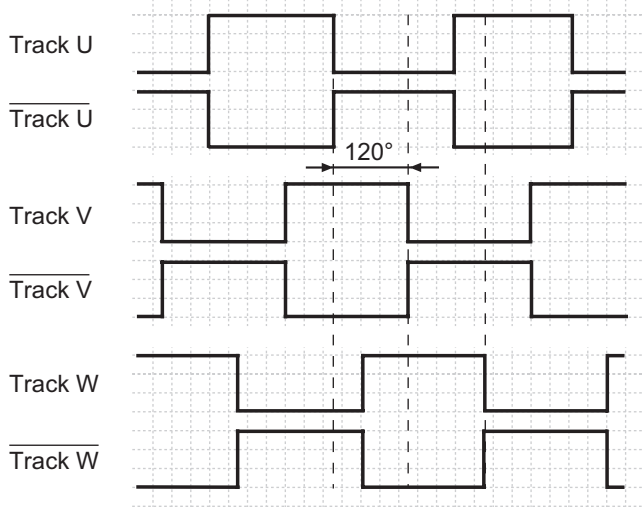
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## Output signals

Clockwise rotating when looking at flange.  
Incremental signals



Commutation signals (optional)



## Terminal assignment

### Without commutating tracks

| Core colour | Assignment                     |
|-------------|--------------------------------|
| grey        | Track B                        |
| pink        | Track B inv.                   |
| red         | Track N (zero pulse)           |
| black       | Track N inv. (zero pulse inv.) |
| brown       | Track A                        |
| green       | Track A inv.                   |
| white/green | GND                            |
| brown/green | UB                             |

### With commutating tracks

| Core colour | Assignment        |
|-------------|-------------------|
| brown/green | UB                |
| red         | Zero setting      |
| black       | Zero setting inv. |
| brown       | Track A           |
| green       | Track A inv.      |
| pink        | Track B inv.      |
| grey        | Track B           |
| white/green | GND               |
| white       | Track W inv.      |
| yellow      | Track W           |
| blue        | Track V           |
| violet      | Track V inv.      |
| grey/pink   | Track U inv.      |
| red/blue    | Track U           |

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                        |

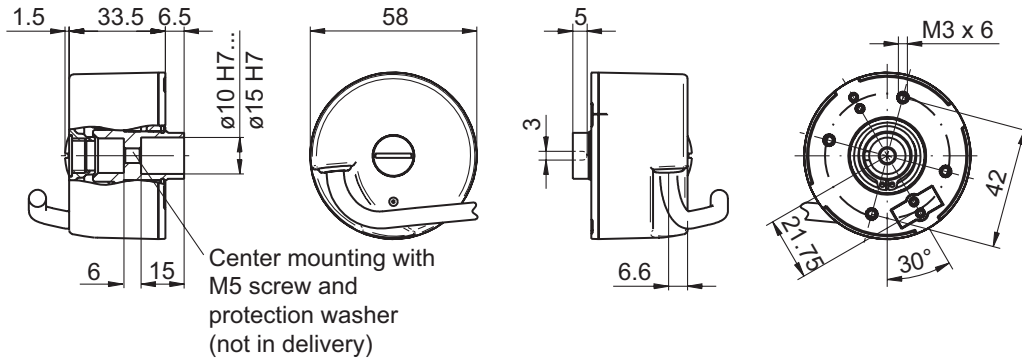
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## Dimensions

### GI341 end shaft



### GI342 hollow shaft

