

# Incremental encoders

Through hollow shaft up to  $\varnothing 12$  mm  
6000...80000 pulses per revolution

## G0333



G0333 with through hollow shaft

### Features

- Encoder with through hollow shaft  $\varnothing 12$  mm
- Optical sensing method
- Max. 80000 pulses per revolution
- Clamping ring on housing

### Technical data - electrical ratings

Voltage supply	5 VDC $\pm 10$ % 4.75...30 VDC 10...30 VDC
Reverse polarity protection	Yes (4.75...30 VDC)
Consumption w/o load	$\leq 30$ mA (24 VDC) $\leq 60$ mA (5 VDC)
Pulses per revolution	6000...80000
Reference signal	Zero pulse, width $90^\circ$
Sensing method	Optical
Output frequency	$\leq 300$ kHz
Output signals	A $90^\circ$ B, N + inverted
Output stages	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

### Technical data - mechanical design

Size (flange)	$\varnothing 58$ mm
Shaft type	$\varnothing 12$ mm (through hollow shaft)
Protection DIN EN 60529	IP 54
Operating speed	$\leq 6000$ rpm
Starting torque	$\leq 0.03$ Nm (IP 54)
Rotor moment of inertia	14.5 gcm <sup>2</sup>
Materials	Housing: aluminium Flange: aluminium
Operating temperature	-25...+85 °C -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.	250 g

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## Part number

### Hollow shaft with clamping ring

G0333.   **C3**

Pulse number - see table

Connection

C3 Connector M23, 12-pin, radial

Voltage supply / signals

25 5 VDC / linedriver RS422

75 4.75...30 VDC / push-pull

77 10...30 VDC / linedriver  
RS422 (5 VDC)

Through hollow shaft / torque pin

0  $\varnothing 12$  mm, clamping ring on housing, pin  
15 mm, IP 54

1  $\varnothing 12$  mm, clamping ring on housing, pin  
9.5 mm, IP 54

A  $\varnothing 12$  mm, clamping ring on housing, without  
pin, IP 54

## Part number (pulse number)

70 (8192)	73 (10000)	72 (20000)	75 (48000)
74 (9000)	71 (16384)	77 (36000)	76 (80000)

Other pulse numbers on request.

Example: part number 70 = 8192 pulses.

## Accessories

### Connectors and cables

Z 141.001 Female connector M23, 12-pin, without 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

Z 119.023 Spring coupling for encoders with  $\varnothing 58$  mm  
housing

Z 119.024 Torque support and spring washer for  
encoders with 9.5 mm pin

Z 119.041 Torque support by rubber buffer for encoders  
with 15 mm pin

# Incremental encoders

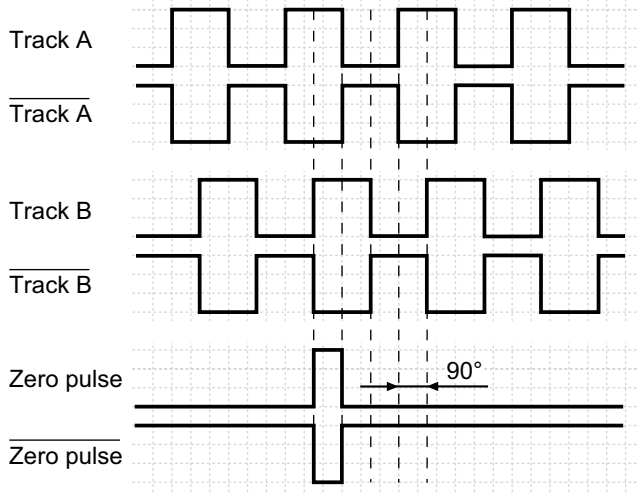
Through hollow shaft up to  $\varnothing 12$  mm

6000...80000 pulses per revolution

## G0333

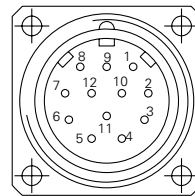
### Output signals

Clockwise rotating direction when looking at flange.



### Terminal assignment

Connector	Core colour	Assignment
Pin 1	pink	Track B inv.
Pin 2	blue	UB-Sense
Pin 3	red	Track N (zero pulse)
Pin 4	black	Track N inv. (zero pulse inv.)
Pin 5	brown	Track A
Pin 6	green	Track A inv.
Pin 7	–	–
Pin 8	grey	Track B
Pin 9	–	–
Pin 10	white/green	GND
Pin 11	white	GND-Sense
Pin 12	brown/green	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

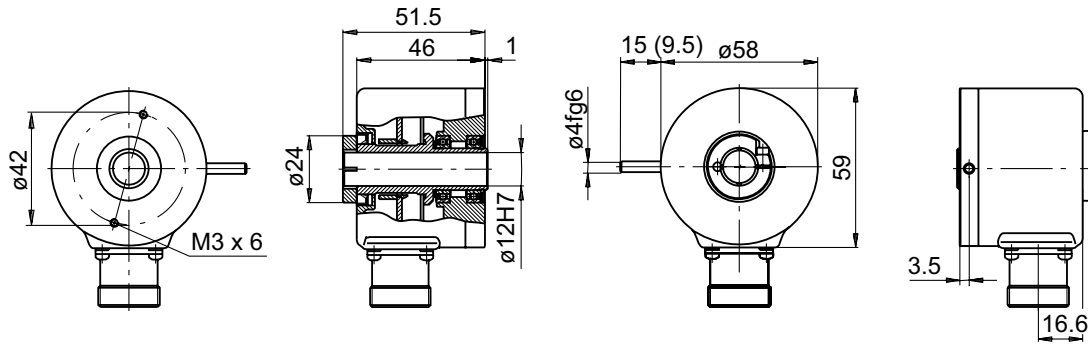
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## Dimensions

### G0333 - through hollow shaft and clamping ring



### Connector dimensions

