Electro-optical Incremental Encoder
Model GIO 50
Version in stainless steel - IP 67

GIO 12485 BE

07 / 2011

- **Contactless optical system**
- **Version in stainless steel**
- **Pulses per revolution 12,500 min^{-1} max.**
- **Protected against short circuits and reverse polarization**
- **Protection grade: IP 67**

Construction

Flange and case in stainless steel (1.4305) - Shaft in stainless steel - Ball bearings (1.4305) with sealing - GaAlAs diode - Photo-array with comparator and trigger circuits for long life stabilization - SMT layout.

Electrical data

- Standard pulses per revolution: 360, 1024, 2048, 3600, 4096
- Optional pulses per revolution: see table
- Supply voltage V_S: 4.5 -30 VDC / 5 VDC ± 5 % (see output signals)
- Supply current I_B: max. 45 mA (w/o load)
- Output level V_O:
  - ☐ Low: 500 mV max. at I_{Low} = 10 mA
  - ☐ High: V_S - 0.6 V at I_{high} = - 10 mA
- Signal current I_O: 30 mA max.
- Output frequency: 200 kHz max.
- Pulse rate: 1:1 ± 10 %
- Phase shift: 90° ± 18°
- EMC: EN 50081-2, EN 50082-2

Mechanical data

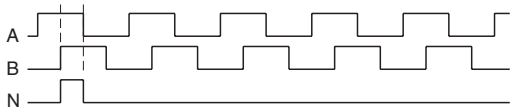
- Shaft diameter: 10 mm
  - ☐ optional: 6 and 8 mm
- Operating speed: 6,000 min^{-1} max.
- Inertia of rotor: 0.8 gcm²
- Wind-up torque: < 0.01 Nm at 25°C
- Permissible shaft load:
  - ☐ axial: 20 N
  - ☐ radial: 20 N
- Mass: 0.235 kg + cable 60 g/m
- Cable: 4x2x0.25 mm², TP, screened
- Cable length: 1 m, w/o connector
- Cable exit: radial
  - ☐ optional: axial

Environmental data

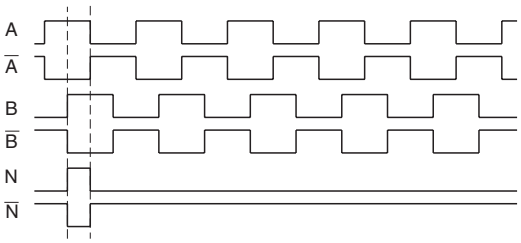
- Operating temperatur range: - 40 °C to + 85 °C
- Storage temperature range: - 40 °C to + 85 °C
- Resistance to shock: 1000 m/s²; 11 ms (DIN IEC 68) (Bump: 100 m/s² - 16 ms (1000 x 3 axis))
- Resistance to vibrations: 10 Hz ... 2000 Hz ; 100 m/s² (DIN IEC 68)
- Protection grade: IP 67 (DIN 40 050)

Output signal (clockwise, view shaftside)

Variant VN



Variant XN / TN / UN



Output circuits

Variant	Signals	V_S	V_{signal}
VN	A, B, N	24 V	24 V
XN	A, B, N + inverted	24 V	24 V
TN	A, B, N + inverted	5 V	5 V Line driver RS 422A
UN	A, B, N + inverted	24 V	5 V Line driver RS 422A

Pulses per revolution

2	25	75	250	600	1500	**4096**
5	30	80	256	635	2000	5000
6	32	90	300	720	2048	8192
8	36	100	**360**	800	2400	9000
10	40	125	400	1000	2500	10000
15	50	150	455	**1024**	3000	12500
16	60	180	500	1131	**3600**	
20	64	200	512	1250	4000	

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Electrical connections

Output	VN	XN/TN/UN
$+V_S$ $-V_S$	red blue	red blue
Channel A Channel A inv.	pink ---	pink gray
Channel B Channel B inv.	green ---	green yellow
Zero Zero inv.	white ---	white brown
Shield	Connected to housing	

* The basic versions in accordance with the data sheet bear the code number 01. Variations from the basic version are indicated with a consecutive number and are documented in our works.

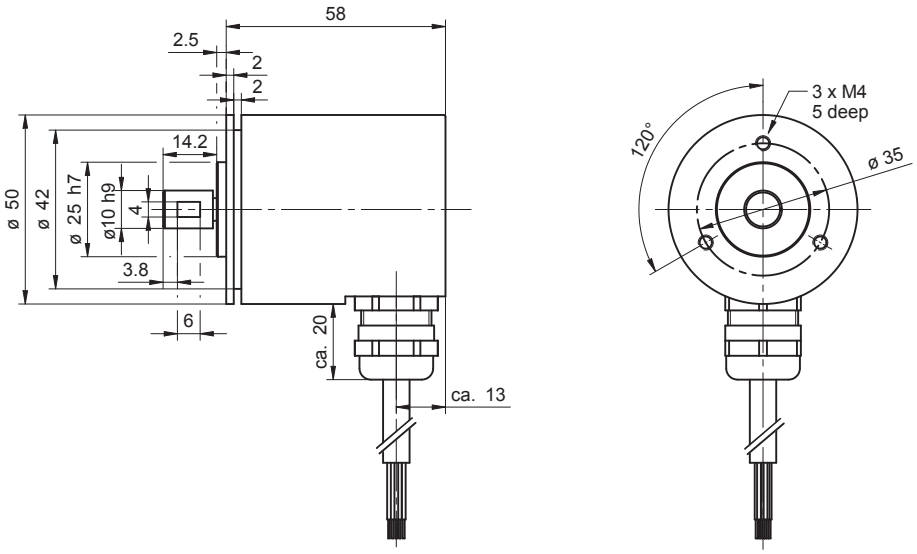
Order code format:

GIO 50 - S 1000 VN 10 R 1 A01

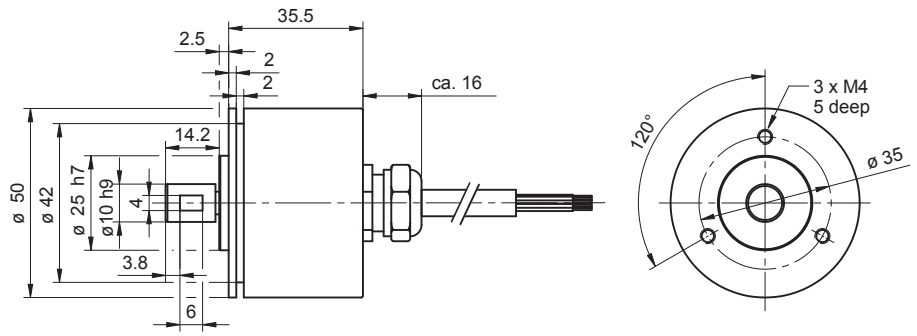
- Electrical and mechanical variants*
- Supply voltage (V_S)
  1 = 4.5 - 30 VDC
  2 = 5 VDC
- Cable exit
  R = radial
  A = axial
- Shaft diameters
  10 mm
  optional: 6, 8 mm
- Signal variant
  VN, XN, TN, UN
- Resolution
- Model
  S = synchron flange
- Series GIO 50

Dimensions in mm

Model GIO 50
(with radial cable exit)

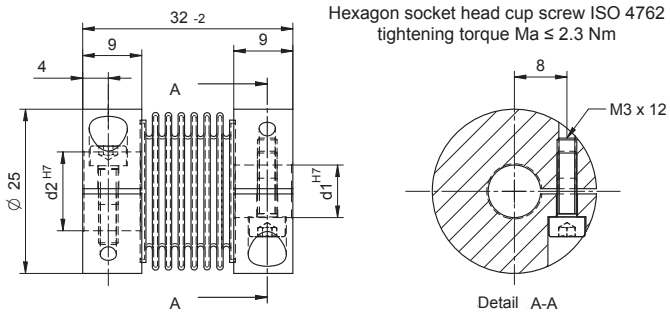


Model GIO 50
(with axial cable exit)



Mounting accessories (to be ordered separately)

Coupling: BKK 32/X (Stainless steel)
Data sheet: BKK 11840



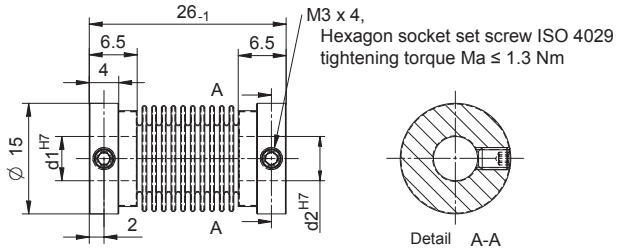
Order code format

BKK 32 / 8 - 10 - A01

- Mechanical variants
- Diameter of bore **d1 / d2** H7
- d2 6, 8, 10, 12 mm
- d1 6, 8, 10 mm
- Length: 32 mm
- Model BKK

Mounting accessories (to be ordered separately)

Coupling: BKM 26/X (Stainless steel)
Data sheet: BKM 11995



Order code format

BKM 26 / 6 - 10 - A01

- Mechanical variants
- Diameter of bore **d1 / d2** H7
- d2 6, 8 mm
- d1 6, 8 mm
- Length: 26 mm
- Model BKM

Fixing clamp RW (Stainless steel)
Data sheet: MZ 10111