

Absolute encoders - bus interfaces

Through hollow shaft up to $\varnothing 14$ mm

Optical multiturn encoders 13 bit ST / 16 bit MT, CANopen®

G0P5H - CANopen®



G0P5H with through hollow shaft

Features

- Encoder multiturn / CANopen®
- Optical sensing method
- Resolution: singleturn 13 bit, multiturn 16 bit
- Through hollow shaft up to $\varnothing 14$ mm
- LED status indicator
- Galvanic isolation
- CANopen® Profile CIA DSP 406
- Permanent check of code continuity
- Maximum resistant against magnetic fields

Technical data - electrical ratings

Voltage supply	10...30 VDC
Reverse polarity protection	Yes
Consumption w/o load	≤ 50 mA (24 VDC)
Initializing time typ.	250 ms after power on
Interface	CANopen®
Function	Multiturn
Transmission rate	10...1000 kBaud
Profile conformity	CANopen® CiA DSP 406 V 3.0
Operating mode	Event-triggered / Time-triggered Remotely-requested Sync (cyclic) / Sync (acyclic)
Identifier	11 bit
Steps per revolution	≤ 8192 / 13 bit
Number of revolutions	≤ 65536 / 16 bit
Absolute accuracy	$\pm 0.025^\circ$
Sensing method	Optical
Code	Binary
Code sequence	CW/CCW programmable
Output stages	CAN bus standard ISO / DIS 11898
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4
Programmable parameters	Operating modes Total resolution Scaling Rotation speed monitoring
Diagnostic functions	Position or parameter error Multiturn sensing
Status indicator	DUO-LED integrated in housing
Approval	UL approval / E63076

Technical data - mechanical design

Size (flange)	$\varnothing 58$ mm
Shaft type	$\varnothing 10...14$ mm (through hollow shaft)
Protection DIN EN 60529	IP 54
Operating speed	≤ 6000 rpm (mechanical) ≤ 6000 rpm (electric)
Starting acceleration	≤ 1000 U/s ²
Starting torque	≤ 0.04 Nm (+25 °C, IP 54)
Rotor moment of inertia	20 gcm ²
Materials	Housing: steel 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 100 g, 4 ms
Weight approx.	500 g
Connection	Connector M12, 5-pin Connector M23, 12-pin

Subject to modification in technic and design. Errors and omissions excepted.

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Terminal significance

UB	Encoder voltage supply
GND B	Encoder ground connection relating to UB
CAN_L	CAN bus signal (dominant Low)
CAN_H	CAN bus signal (dominant High)
CAN_GND	GND relating to CAN interface. Depending on model separated from GND B either by galvanic isolation or by inductive earthing.

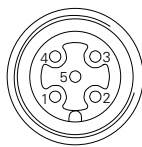
CANopen® features

Bus protocol	CANopen®
Device profile	CANopen® - CiA DSP 406, V 3.0 (Device Class 2, CAN 2.0B)
Operating modes	Event-triggered / Time-triggered Remotely-requested Sync (cyclic) / Sync (acyclic)
Preset	Parameter for setting the encoder to a requested position value assigned to a defined shaft position of the system. The offset of encoder zero point and mechanical zero point is stored in the encoder.
Rotating direction	Parameter for defining the rotating direction in which there have to be ascending or descending position values.
Scaling	Parameter defining the steps per turn as well as the total resolution.
Diagnosis	The encoder supports the following error warnings: - Position and parameter error - Lithium battery voltage control (Multiturn)
Node Monitoring	Heartbeat or Nodeguarding
Default	50 kbit/s, Node ID 1

Terminal assignment

M12-connector

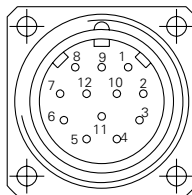
Connector	Core colour	Assignment
Pin 1	brown	GND B
Pin 2	white	UB
Pin 3	blue	CAN_GND
Pin 4	black	CAN_H
Pin 5	grey	CAN_L



Please use cores twisted in pairs (for example CAN_H / CAN_L) for extension cables of more than 10 m length.

M23-connector

Connector	Core colour	Assignment
Pin 1	brown/green	UB
Pin 2	white/green	GND B
Pin 3	pink	CAN_L
Pin 4	grey	CAN_H
Pin 5	white	CAN_GND
Pin 6-12	–	–



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Dimensions

