Absolute encoders - bus interfaces

End shaft max. ø14 mm

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

GXP5S - CANopen

GXP5S with end shaft

Features

- **Encoder multiturn / CANopen**
- **Optical sensing**
- **Resolution: singleturn 13 bit, multiturn 16 bit**
- **End shaft ø12 mm / ø14 mm**
- **LED status display**
- **CANopen Profile CIA DSP 406**
- **Permanent check of code continuity**

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
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 turn	8192 / 13 bit
Number of turns	65536 / 16 bit
Absolute accuracy	±0.025°
Sensing method	Optical
Code	Binary
Code sequence	CW/CCW programmable
Output circuit	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

Housing	ø58 mm
Shaft	ø12 mm end shaft ø14 mm end shaft
Protection DIN EN 60529	IP 54
Operating speed	≤6000 rpm (mechanical) ≤6000 rpm (electric)
Starting torque	≤0.015 Nm IP 54
Rotor moment of inertia	20 gcm²
Materials	Housing: steel Flange: steel
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.	600 g
E-connection	Connector

Absolute encoders - bus interfaces

End shaft max. ø14 mm

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

GXP5S - CANopen

Part number

GXP5S. [ ] [10] [ ] [ ]

Interface
- 06 CANopen DSP 406 / galvanically isolated
- 16 CANopen DSP 406 not galvanically isolated

E-connection
- A3 Connector M23, 12-pin, radial
- M1 Connector M12, 5-pin, radial

Voltage supply
- 10 10...30 VDC

End shaft
- 0 End shaft ø12 mm without pin
- 1 End shaft ø12 mm with pin 15 mm
- B End shaft ø12 mm with pin 9.5 mm
- 4 End shaft ø14 mm without pin
- 5 End shaft ø14 mm with pin 15 mm
- F End shaft ø14 mm with pin 9.5 mm

Accessories

Connectors and cables (page %S)

Z 148.001	Female connector M23, 12-pin, less cable
Z 148.003	Female connector M23, 12-pin, 2 m cable
Z 148.005	Female connector M23, 12-pin, 5 m cable
Z 148.007	Female connector M23, 12-pin, 10 m cable
Z 180.003	Female connector M12, 5-pin, 2 m cable
Z 180.005	Female connector M12, 5-pin, 5 m cable
Z 180.007	Female connector M12, 5-pin, 10 m cable

Mounting accessories (page %S)

Z 119.024	Torque support and spring washer for encoders with 9.5 mm pin
Z 119.041	Torque support by rubber buffer element for encoders with 15 mm pin
Z 119.050	Spring coupling
Z 119.053	Spring coupling height 19.1 mm
Z 119.070	Spring coupling height 29.1 mm
Z 119.072	Spring coupling for encoders with ø58 mm housing, hole distance 73 mm
Z 119.073	Spring coupling for encoders with ø58 mm housing, hole distance 68 mm
Z 119.076	Spring coupling for encoders with ø58 mm housing
Z 119.082	Spring coupling for encoders with ø58 mm housing, hole distance 63 mm

Absolute encoders - bus interfaces

End shaft max. ø14 mm

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

GXP5S - CANopen

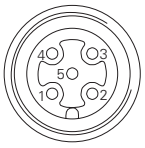
Terminal significance	
UB	Encoder voltage supply
GND B	Encoder ground connection relating to UB
CAN_L	CAN bus signal (dominant Low)
CAN_H	CAN bus signal (dominant High)
CAN_GND	GND relating to CAN interface. Depending on model separated from GND B either by galvanic isolation or by inductive earthing.

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

Connector M12

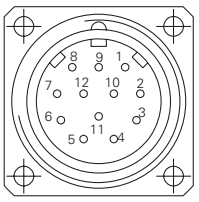
Connector	Core colour	Assignment
Pin 1	brown	GND B
Pin 2	white	UB
Pin 3	blue	CAN_GND
Pin 4	black	CAN_H
Pin 5	grey	CAN_L



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

Connector M23

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	–	–



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

GXP5S - CANopen

Dimensions