

Absolute encoders - bus interfaces

EX approval ATEX EEx d IIC T6

Multiturn encoder 13 bit ST / 16 bit MT

X 700 - CANopen



X 700 with CANopen

Features

- Encoder multiturn / CANopen / ATEX
- Optical sensing
- Resolution: singleturn 13 bit, multiturn 16 bit
- Clamping flange / shaft \varnothing 10 mm
- Explosion protection per EEx d IIC T6
- Area of application: EX I/II 2 GD / ATEX 133213X
- Device class 2 / zone 1 (gas), zone 21 (dust)
- Galvanic isolation

Technical data - electrical ratings

Voltage supply	10...30 VDC
Reverse polarity protection	Yes
Consumption w/o load	\leq 50 mA (24 VDC)
Initializing time (typ.)	250 ms after power on
Interface	CANopen
Transmission rate	10...1000 kBaud
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	\pm 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
Approval	UL approval / E301461

Technical data - mechanical design

Housing	\varnothing 70 mm
Shaft	\varnothing 10 mm (clamping flange)
Flange	Clamping flange
Protection DIN EN 60529	IP 67
Operating speed	\leq 6000 rpm (mechanical) \leq 6000 rpm (electric)
Starting torque	\leq 0.4 Nm
Admitted shaft load	\leq 60 N axial \leq 50 N radial
Materials	Housing: stainless steel Flange: stainless steel
Operating temperature	-25...+60 °C
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
Weight approx.	1300 g
E-connection	Cable 2 m (other length upon request)

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Part number

X 700.P	1	1		
				Interface
			05	CANopen DSP 406 / 10-core cable
			15	CANopen DSP 417 / 10-core cable
			A5	CANopen DSP 406 / 5-core cable
			B5	CANopen DSP 417 / 5-core cable
				E-connection
			12	Cable 2 m, axial
			19	Cable 20 m, axial
				Voltage supply / signals
			1	10...30 VDC / 13 + 16 bit
				Flange / Shaft
			1	Clamping flange / ø10 mm IP 67

CD with file descriptions is not included in the delivery. You may order them on CD as accessory free-of-charge under part number Z 150.022. Matching bus covers are listed in the chapter "Accessories".

Accessories

Programming accessories

Z 150.022 CD with describing files & manuals

CANopen features

Bus protocol	CANopen
Device profile	CANopen - CiA DSP 406, CANopen - CiA DSP 417 (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	DSP 406 50 kbit/s, Node ID 1 DSP 417 250 kbit/s, Node ID 4

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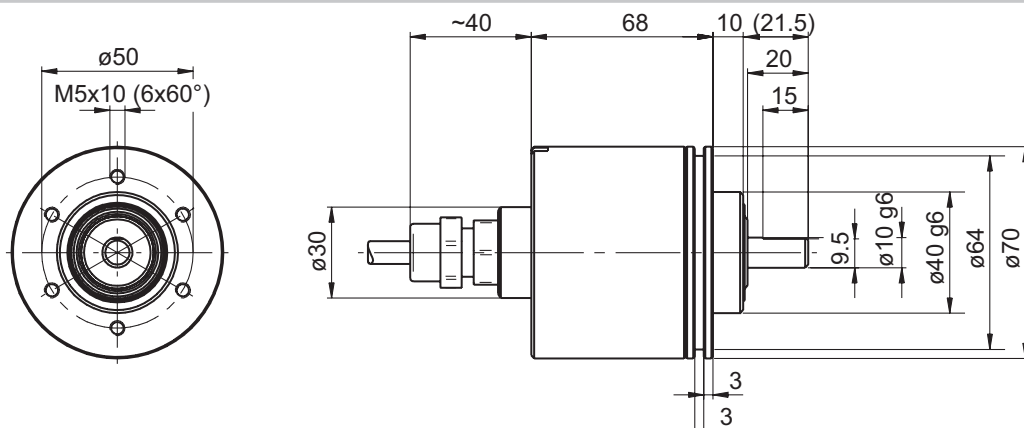
Terminal significance

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. Separated from GND B either by galvanic isolation.

Terminal assignment

Core colour	Assignment 05/15	Assignment A5/B5
brown	UB (IN)	UB
white	GNDB (IN)	GND
green	CAN_H (IN)	CAN_H
yellow	CAN_L (IN)	CAN_L
black	CAN_GND (IN)	-
red	UB (OUT)	-
bleu	GNDB (OUT)	-
grey	CAN_H (OUT)	CAN GND
pink	CAN_L (OUT)	-
violet	CAN_GND (OUT)	-

Dimensions



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