

Overview

- Interface CANopen®
- Redundant version
- Magnetic sensing method
- Operating temperature -40...+85 °C
- Protection IP 67
- Flange connector M12 or cable
- Measuring length 6 m and 7.8 m
- Designed for harsh environmental conditions
- Removable rubber plugs for drainage
- E1 approval (KBA)
- UL approval / E217823
- Load dump protection
- Integrated inclination sensor



Technical data

Technical data - electrical ratings

Voltage supply	8...36 VDC
Reverse polarity protection	Yes
Short-circuit proof	Yes
Consumption typ.	30 mA (24 VDC, w/o load) 60 mA (24 VDC, w/o load, redundant)
Initializing time typ.	≤ 0.5 s after power on
Interface	CANopen®
Function	Linear position feedback
Profile conformity	CANopen® CiA DS 301, DS 406, DS 410
Measuring range	Up to 7.8 m (linear position) 0...360° (inclination angle)
Resolution	0.1 mm (linear position) 0.1 ° (inclination angle)
Temperature coefficient	0.04 °/K (inclination angle)
Linearity	±0.3 % (linear position) ±0.2° (inclination angle)
Absolute accuracy	±0.6 % FS (+25 °C / linear position) ±1.1 % FS (-40...+85 °C / linear position) ±0.3 ° (+25 °C / inclination angle)
Sensing method	Magnetic
Code sequence	Programmable
Load dump protection	ISO 16750-2 Test Level 4, 12 V / 24 V systems
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-4
Programmable parameters	Operating modes Rotating direction Scaling Zero position
Approval	UL approval / E217823 E1-type UN ECE 10R06 CE

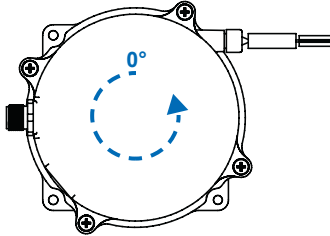
Technical data - mechanical design

Protection EN 60529	IP 67 (housing, drainage holes closed) IP 54 (cable inlet)
Material	Cable: stainless steel cable AISI 304 coated with nylon PA12 Housing: plastic
Operating temperature	-40...+85 °C
Service life	Typ. 500.000 strokes (depends on the type of load)
Measuring length	6 m 7.8 m
Cable acceleration	≤10 m/s ²
Cable speed	≤1 m/s
Cable diameter	0.7 mm
Cable fastening	Eyelet Height: 5 mm Internal diameter: 8 mm Outer diameter: 15 mm
Pull-in force	>1.5 N (pull-in force reduced at low temperatures)
Pull-out force	≤8 N
Resistance	EN 60068-2-6 Vibration 10 g, 10-2000 Hz EN 60068-2-27 Shock 50 g, 11 ms
Weight approx.	625 g
Connection	Cable 2 m, radial Flange connector M12, 5-pin
Instruction	Please consider the assembly instructions

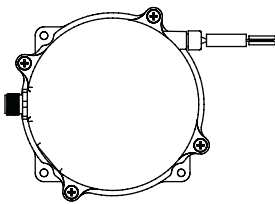
Optional

- With integrated terminating resistor

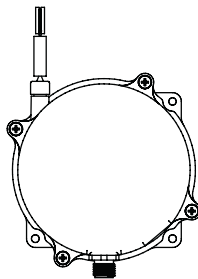
Installation position



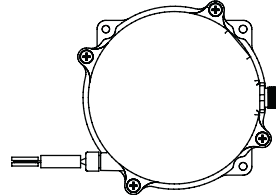
Position 1
0/360°



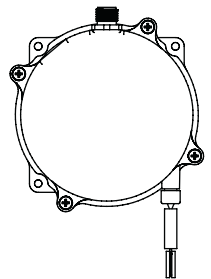
Position 2
+90°



Position 3
+180°



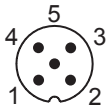
Position 4
+270°



Terminal assignment

Flange connector M12, male, 5-pin

Pin	Signals	Description
1	CAN_GND	Ground connection relating to CAN
2	+Vs	Voltage supply
3	GND	Ground connection relating to +Vs
4	CAN_H	CAN Bus Signal (dominant High)
5	CAN_L	CAN Bus Signal (dominant Low)



Cable

Core colour	Signals	Description
white	GND	Ground connection relating to +Vs
brown	+Vs	Voltage supply
green	CAN_H	CAN Bus Signal (dominant High)
yellow	CAN_L	CAN Bus Signal (dominant Low)
grey	CAN_GND	Ground connection relating to CAN

Cable data: 5 x 0.5 mm², 2 m

Terminals GND and CAN_GND are internally connected and identical in their functions.

CANopen® features

Device profile	Communication profile DS 301 V4.2 Encoder profile DS 406 V4.0.2 LSS service profile DS 305 V3.0 Inclinometer profile DS 410 V1.3
Operating modes	Time-driven (Event-Time) Synchronous transmission (Sync)
Node Monitoring	Heartbeat (default: disabled)
Programmable parameters	Operating modes Rotating direction Scaling Zero position
Default	Baud rate 250 kbit/s Channel A: Node-ID 4 (04h) Channel B: Node-ID 5 (05h) Time-driven: 100 ms

Data transfer
PDO Mapping / ID 4
PDO 1 (linear position)

LSB	...	...	MSB	...	...	...	...
Byte 0	1	2	3	4	5	6	7
linear position $0 \rightarrow 23000 \setminus 47000_{dec}$ in steps of 0.1 mm position increasing in size and value							

PDO 2 (inclination angle)

LSB	...	...	MSB	...	...	...	...
Byte 0	1	2	3	4	5	6	7
inclination angle $0 \rightarrow 3600_{dec}$ in steps of 0.1° angle increasing in size and value							

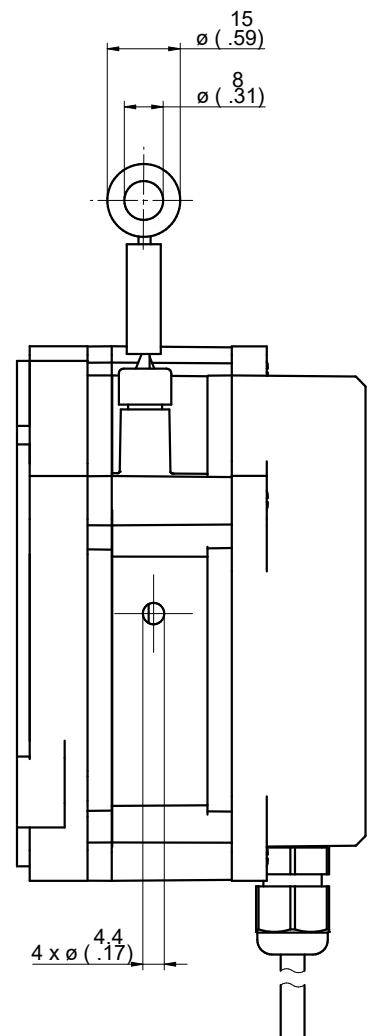
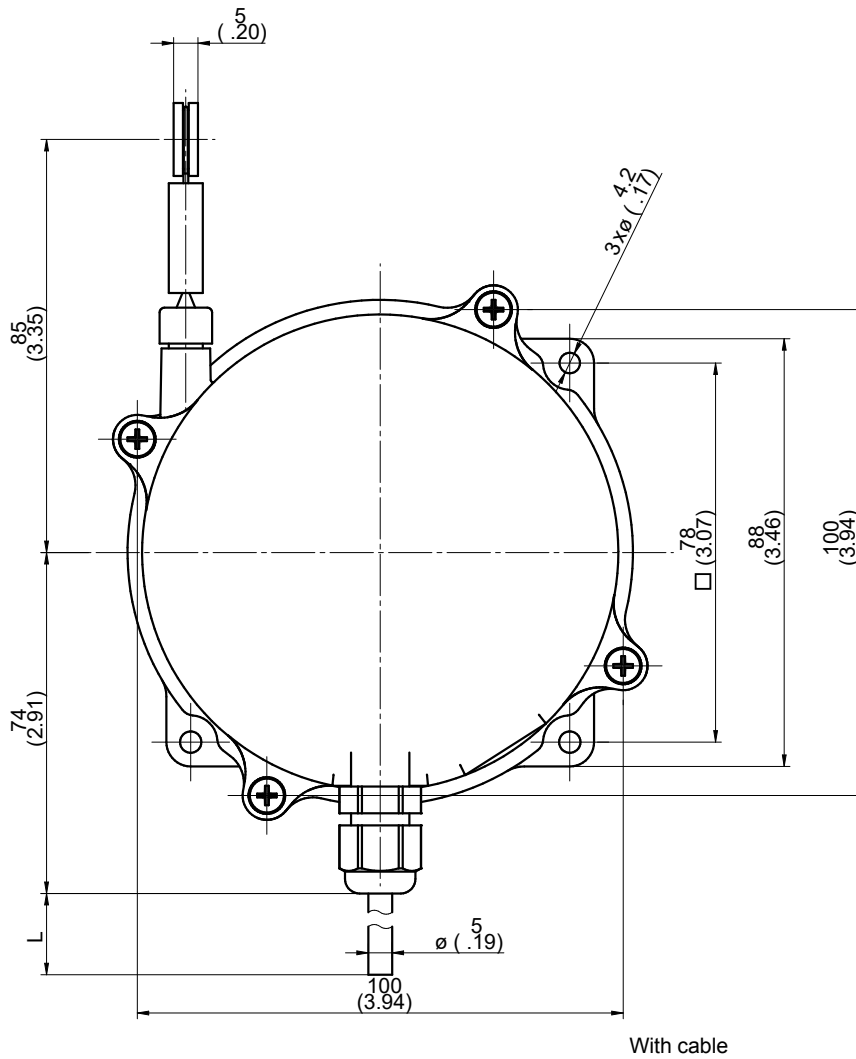
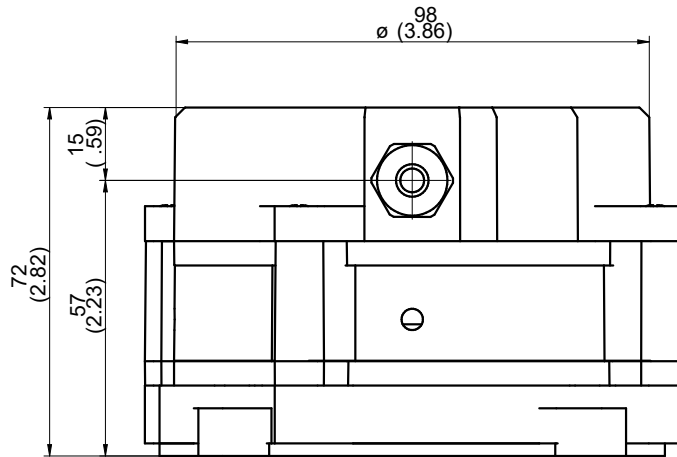
PDO Mapping / ID 5
PDO 1 (linear position)

LSB	...	...	MSB	...	...	...	...
Byte 0	1	2	3	4	5	6	7
linear position $0 \rightarrow 23000 \setminus 47000_{dec}$ in steps of 0.1 mm position increasing in size and value							

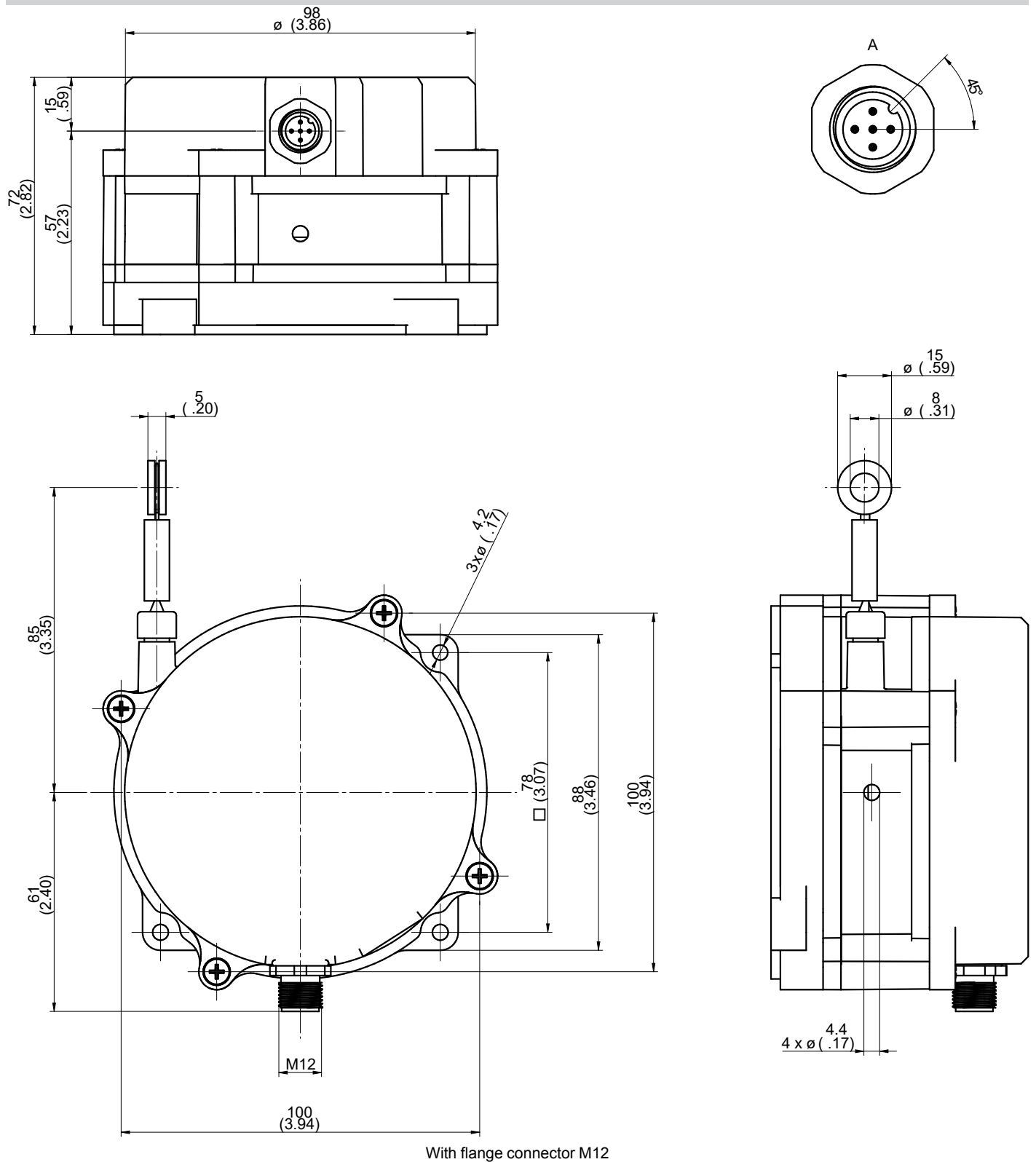
PDO 2 (inclination angle)

LSB	...	...	MSB	...	...	...	...
Byte 0	1	2	3	4	5	6	7
inclination angle $0 \rightarrow 3600_{dec}$ in steps of 0.1° angle increasing in size and value							

Dimensions



Dimensions



GCA5 - CANopen® up to 7.8 m

Ordering reference

	GCA5	-	P	M	###	.	R	C	#	.	##	0	.	A	###	####
Product	GCA5															
Type																
Plastic			P													
Technology																
Magnetic				M												
Measuring range																
6.0 m					060											
7.8 m					078											
Measuring wire fixation																
Ring							R									
Measuring wire diameter																
0.70 mm								C								
Connection																
Cable radial, 2 m									L							
Flange socket radial, M12, 5-pin, male contacts, A-coded									N							
Voltage supply / output																
8...36 VDC, CANopen (DS 406)												CA				
8...36 VDC, CANopen (DS 406) redundant (2-channel design)												CC				
Resolution supplement																
No option												0				
Operating temperature																
-40...+85 °C														A		
Option inclinometer																
1-dimensional / 0...360°															136	
Not selected																
Option terminating resistor																
With integrated terminating resistor																4816
No option																