

Cable transducer

Interface CANopen® redundant

Measuring length absolute 2.3 m and 4.7 m

GCA5 - CANopen®



GCA5 CANopen®

Technical data - electrical ratings

Voltage supply	10...30 VDC
Consumption typ.	30 mA (24 VDC, w/o load)
Initializing time typ.	12 ms after power on
Interface	CANopen®
Function	Linear position feedback
Profile conformity	CANopen® CiA DS 301, DS 406, DS 410
Measuring range	Up to 4.7 m (linear position) 360° (inclination angle)
Resolution	0.1 mm (linear position) 0.1 ° (inclination angle)
Temperature coefficient	0.02 °/K (inclination angle)
Linearity	±0.5 % FS (linear position) ±0.5 % FS (inclination angle)
Absolute accuracy	±0.8 % FS (+25 °C / linear position) ±1.8 % FS (-40...+85 °C / linear position) ±0.2 ° (+25 °C / inclination angle)
Sensing method	Magnetic
Code sequence	Programmable
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-3
Programmable parameters	Operating modes Rotating direction Scaling Zero position

Features

- Redundant magnetic position sensing
- Interface CANopen® redundant
- Operating temperature -40...+85 °C
- Protection IP 67
- Flange connector M12 or cable
- Measuring length 2.3 m and 4.7 m
- Designed for harsh environmental conditions
- Removable stickers for drainage

Optional

- Integrated redundant inclination sensor

Technical data - mechanical design

Protection DIN EN 60529	IP 67 (housing, drainage holes closed), IP 54 (cable inlet)
Materials	Cable: Stainless steel cable AISI 316 coated with nylon PA12 Housing: plastic
Operating temperature	-40...+85 °C
Measuring length	2.3 m 4.7 m
Cable acceleration	≤50 m/s ²
Cable diameter	0.9 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
Relative humidity	95 % non-condensing
Resistance	DIN EN 60068-2-6 Vibration 10 g, 10-2000 Hz DIN 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

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Part number

GCA5-PM

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						<u>Inclination sensor (axes / measuring range)</u> Without inclination sensor 136 1-dimensional / 0...360°
						<u>Voltage supply / interface</u> C5 10...30 VDC / CANopen® (DS406) redundant sensing
						<u>Connection</u> L Cable radial, 2 m N Flange connector M12, 5-pin, radial, male contacts, CCW
						<u>Measuring range</u> 023 2.3 m 047 4.7 m

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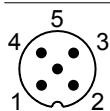
Measuring length absolute 2.3 m and 4.7 m

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Terminal assignment

Flange connector M12, male, 5-pin

Pin	Signals	Description
1	0 V	Ground connection relating to +Vs
2	+Vs	Voltage supply
3	CAN_GND	Ground connection relating to CAN
4	CAN_H	CAN Bus Signal (dominant High)
5	CAN_L	CAN Bus Signal (dominant Low)



Cable

Core colour	Signals	Description
white	0 V	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

CANopen® features

Bus protocol	CANopen®
Device profile	CANopen® - CiA DS 301, DS 406, DS 410
Operating modes	Time-triggered Sync (cyclic)
Node Monitoring	Heartbeat (default: disabled)
Programmable parameters	Operating modes Rotating direction Scaling Zero position
Default	Baud rate 250 kbit/s, Node ID 4 (04h)

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Data transfer

PDO Mapping

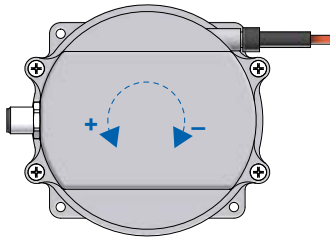
PDO 1 (linear redundant position)

LSB	MSB	LSB	MSB
Byte 0	1	2	3	4	5	6	7
Channel 1 (linear position) = $0 \rightarrow 23000\backslash 47000_{dec}$ Position increasing in size and value				Channel 2 (linear position) = $23000\backslash 47000 \rightarrow 0_{dec}$ Position increasing in size and decreasing in value			

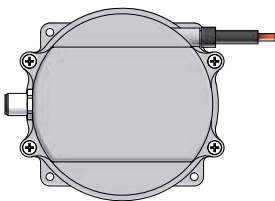
PDO 2 (redundant inclination angle)

LSB	MSB	LSB	MSB
Byte 0	1	2	3	4	5	6	7
Channel 1 (inclination angle) = $(0 \rightarrow 3600_{dec})$ Angle increasing in size and value				Channel 2 (inclination angle) = $3600 \rightarrow 0_{dec}$ Angle increasing in size and decreasing in value			

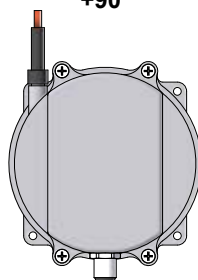
Installation position



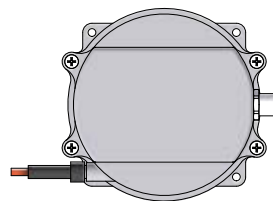
Position 1
0/360°



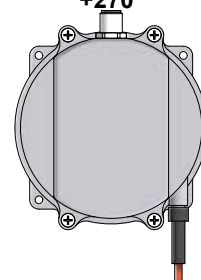
Position 2
+90°



Position 3
+180°



Position 4
+270°



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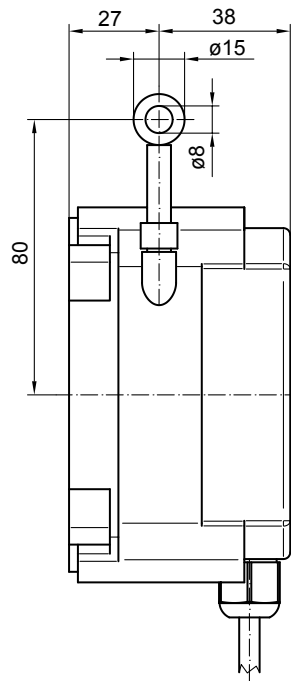
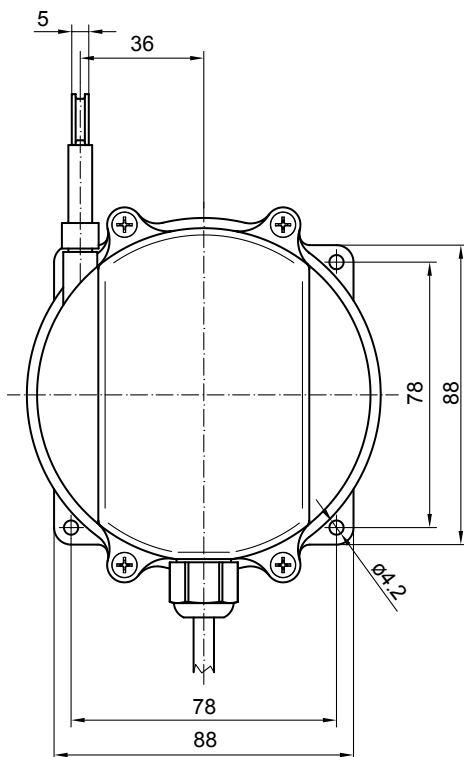
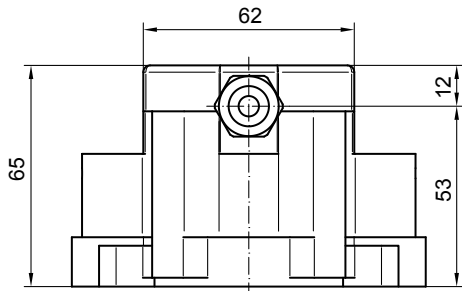
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Dimensions

GCA5 with cable



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Dimensions

GCA5 with flange connector (male) M12

