

# Cable transducer

Interface CANopen® or CANopen® redundant

Measuring length absolute up to 8 m

## GCA8 - CANopen®



GCA8 CANopen®

### Features

- Interface CANopen® or CANopen® redundant
- Potentiometer sensing measuring method
- Operating temperature -40...+85 °C
- Protection IP 65
- Flange connector M12 or cable
- Removable stickers for drainage
- Isolation voltage 3 kV

### Optional

- Integrated inclination sensor

### Technical data - electrical ratings

Voltage supply	10...30 VDC
Consumption typ.	25 mA (24 VDC, w/o load)
Initializing time typ.	500 ms after power on
Interface	CANopen®
Function	Linear position feedback
Profile conformity	CANopen® CiA DS 301, DS 406, DS 410
Measuring range	Up to 8 m (linear position) 360° (inclination angle)
Resolution	0.1 mm (linear position) 0.1 ° (inclination angle)
Temperature coefficient	0.02 °/K (inclination angle)
Linearity	±0.3 % FS (linear position) ±0.5 % FS (inclination angle)
Absolute accuracy	±0.3 % FS (linear position) ±0.5 % FS (inclination angle) ±0.2 ° (+25 °C / inclination angle)
Sensing method	Potentiometer
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

### Technical data - mechanical design

Protection DIN EN 60529	IP 65 (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	8 m
Cable diameter	0.7 mm
Cable fastening	Eyelet Height: 5 mm Internal diameter: 5 mm Outer diameter: 10 mm
Pull-in force	>2.5 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.	775 g
Connection	Cable 2 m, radial Flange connector M12, 5-pin
Instruction	Please consider the assembly instructions

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#### Part number

GCA8-PP 

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					<u>Inclination sensor (axes / measuring range)</u>
					Without inclination sensor
					136 1-dimensional / 0...360°
					<u>Voltage supply / interface</u>
					C6 10...30 VDC / CANopen® (DS406)
					C8 10...30 VDC / CANopen® (DS406) redundant
					<u>Connection</u>
				L	Cable radial, 2 m
				N	Flange connector M12, 5-pin, radial, male contacts, CCW
					<u>Measuring range</u>
				060	6 m
				080	8 m

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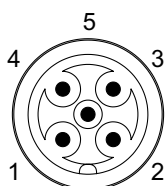
Measuring length absolute up to 8 m

## GCA8 - CANopen®

### Terminal assignment

#### Flange connector M12, 5-pin

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



Flange connector M12  
male, 5-polig

### Cable

Core colour	Assignment	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 mm<sup>2</sup>, 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 position)

LSB	...	...	MSB
-----	-----	-----	-----

Bit 0	1	2	3
-------	---	---	---

**Channel 1** (linear position) =  $0 \rightarrow 60000 \setminus 80000_{dec}$

Position increasing in size and value

**PDO 2** (inclination angle)

LSB	...	...	MSB
-----	-----	-----	-----

Bit 0	1	2	3
-------	---	---	---

**Channel 1** (inclination angle) =  $(0 \rightarrow 3600_{dec})$

Angle increasing in size and value

##### PDO Mapping (redundant)

**PDO 1** (redundant linear position)

LSB	...	...	MSB
-----	-----	-----	-----

Bit 0	1	2	3
-------	---	---	---

**Channel 1** (linear position) =  $0 \rightarrow 60000 \setminus 80000_{dec}$

Position increasing in size and value

LSB	...	...	MSB
-----	-----	-----	-----

4	5	6	7
---	---	---	---

**Channel 2** (linear position) =  $60000 \setminus 80000 \rightarrow 0_{dec}$

Position increasing in size and decreasing in value

**PDO 2** (redundant inclination angle)

LSB	...	...	MSB
-----	-----	-----	-----

Bit 0	1	2	3
-------	---	---	---

**Channel 1** (inclination angle) =  $(0 \rightarrow 3600_{dec})$

Angle increasing in size and value

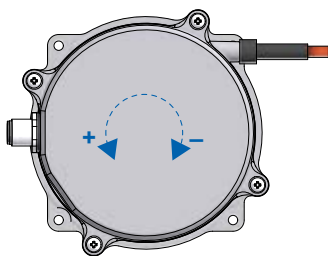
LSB	...	...	MSB
-----	-----	-----	-----

4	5	6	7
---	---	---	---

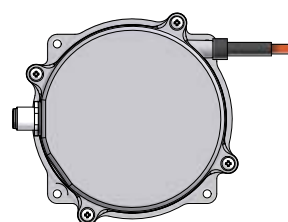
**Channel 2** (inclination angle) =  $3600 \rightarrow 0_{dec}$

Angle increasing in size and decreasing in value

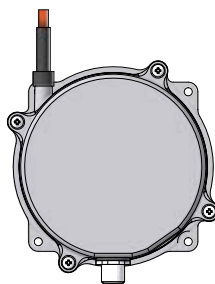
#### Installation position



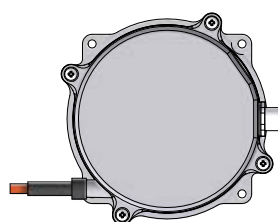
Position 1: **0/360°**



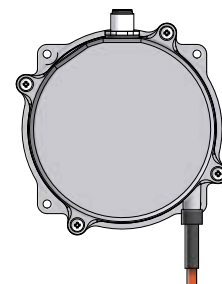
Position 2: **+90°**



Position 3: **+180°**



Position 4: **+270°**



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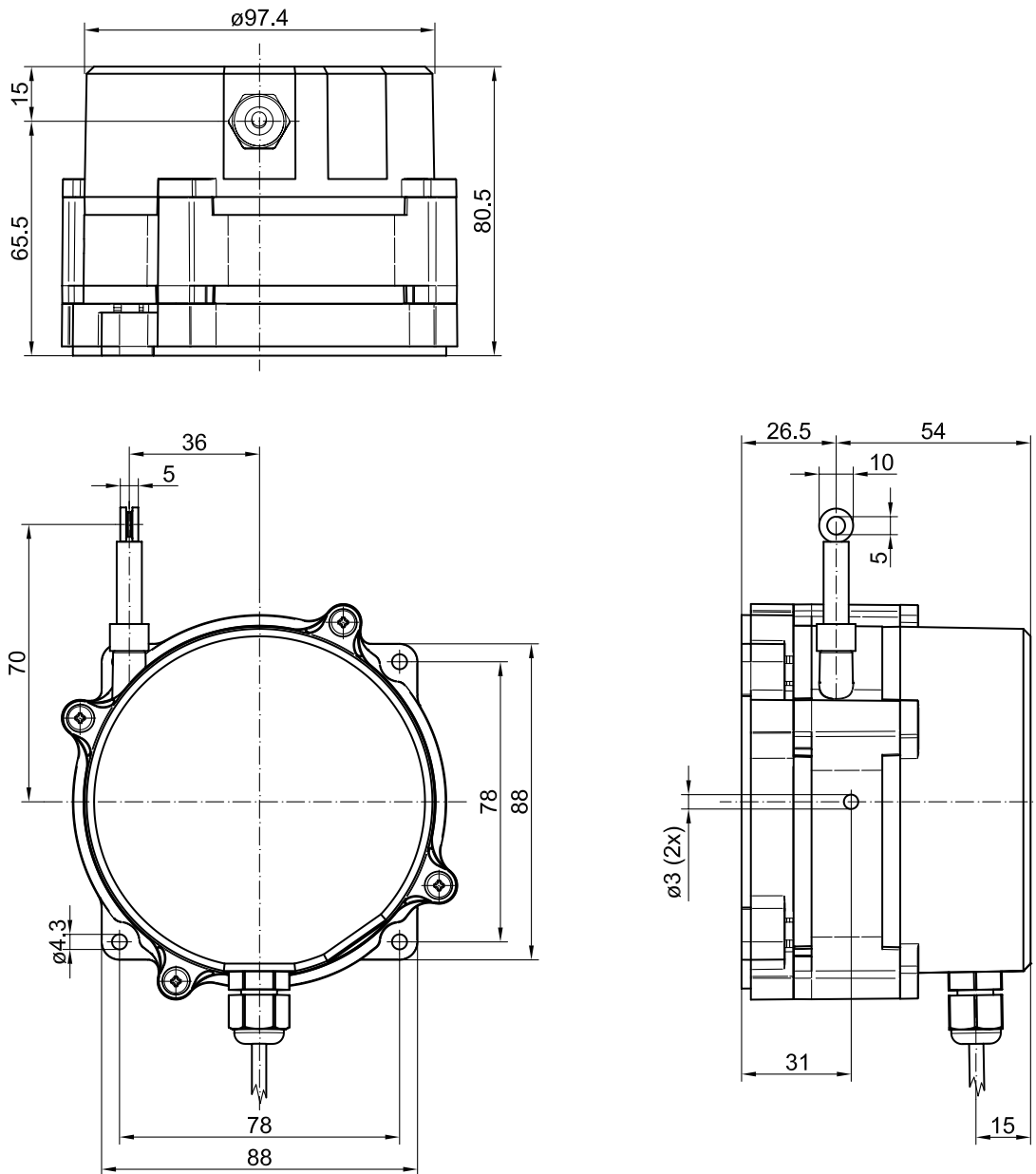
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## GCA8 - CANopen®

### Dimensions

#### GCA8 with cable



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GCA8 - CANopen®

## Dimensions

GCA8 with flange connector (male) M12

