

# Cable transducer

Interface CANopen® or CANopen® redundant

Measuring length absolute up to 12 m

## GCA12 - CANopen®



GCA12 CANopen®

### 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 12 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

### 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 - 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	12 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 20 g, 10-2000 Hz DIN EN 60068-2-27 Shock 50 g, 11 ms
Weight approx.	1630 g
Connection	Flange connector M12, 5-pin Cable 2 m, radial
Instruction	Please consider the assembly instructions



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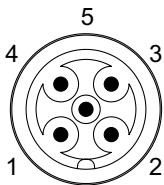
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### Terminal assignment

#### 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 → 100000\120000<sub>dec</sub>

Position increasing in size and value

**PDO 2** (inclination angle)

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

Bit 0      1      2      3

**Channel 1** (inclination angle) = (0 → 3600<sub>dec</sub>)

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 → 100000\120000<sub>dec</sub>

Position increasing in size and value

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

4      5      6      7

**Channel 2** (linear position) = 100000\120000 → 0<sub>dec</sub>

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 → 3600<sub>dec</sub>)

Angle increasing in size and value

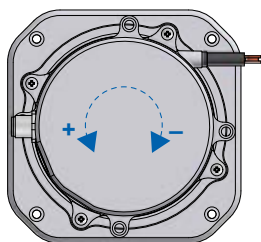
LSB	...	...	MSB
-----	-----	-----	-----

4      5      6      7

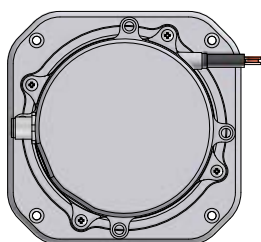
**Channel 2** (inclination angle) = 3600 → 0<sub>dec</sub>

Angle increasing in size and decreasing in value

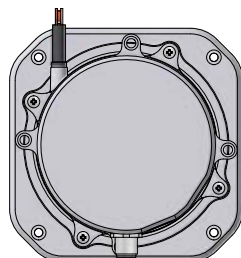
#### Installation position



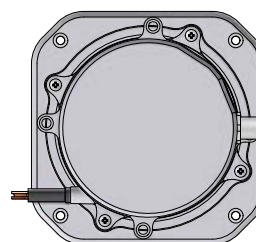
Position 1: 0/360°



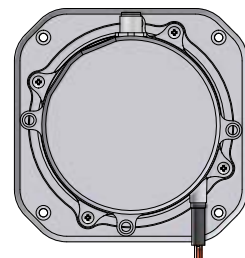
Position 2: +90°



Position 3: +180°



Position 4: +270°



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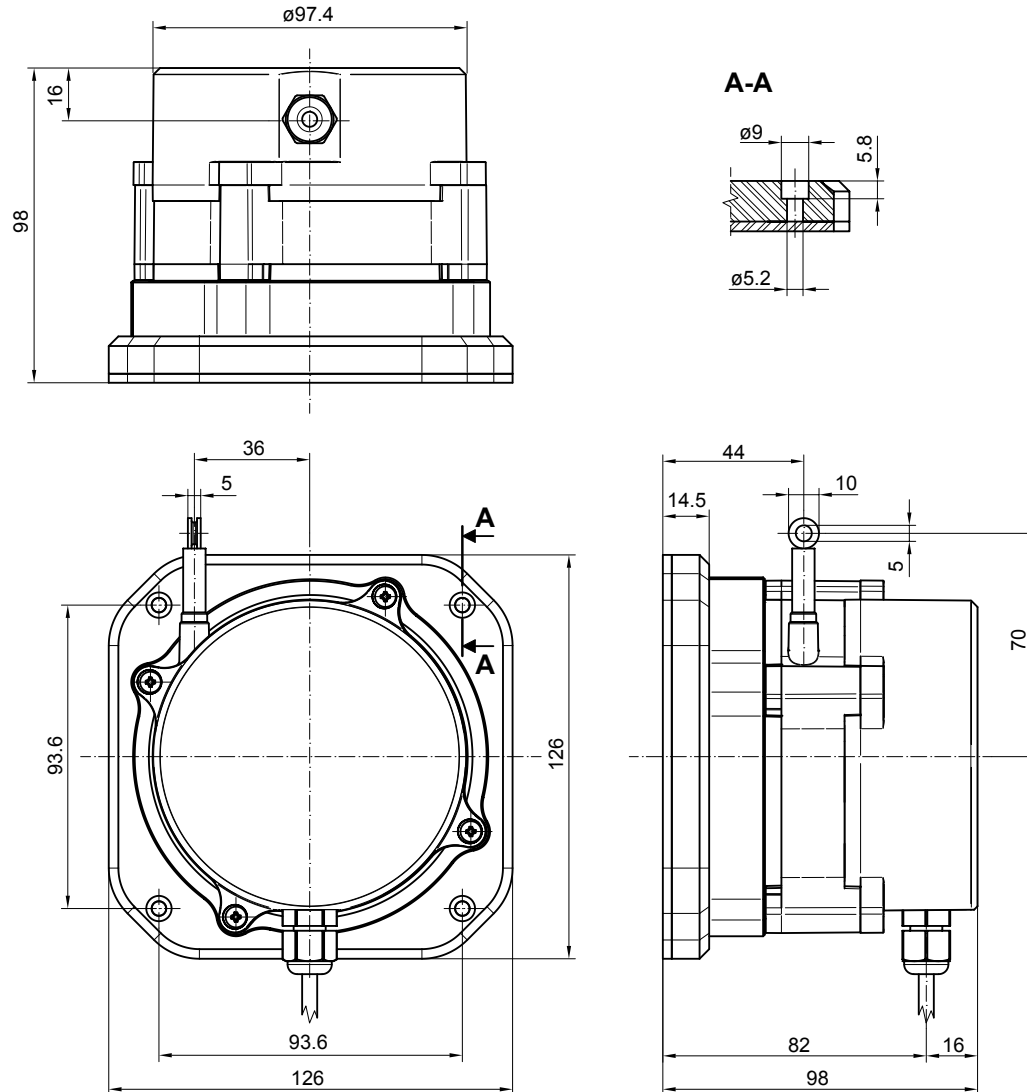
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### Dimensions

#### GCA12 with cable



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## Dimensions

### GCA12 with flange connector (male) M12

