

ACCELENS INCLINOMETER CANOPEN INTERFACE



Main Features

- Dual axis inclinometer +/- 80°
- Configured for one axis measurements 0-360°
- High Resolution 0.01°
- Accuracy: 0.1°
- Active linearization and temperature compensation
- Interface: CANopen
- Housing Protection Class: IP69k

Programmable Parameters

- Resolution
- Preset
- Software Filters

Electrical Features

- Highly integrated circuit in SMD-technology
- Polarity inversion protection
- Over-voltage-peak protection

Applications

- Measurement of inclinations and rotational movements
- Construction machines
- Cranes
- Medical Systems

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ACCELENS INCLINOMETER CANOPEN INTERFACE

Technical Data

Electrical Data

Model	ACS 080	ACS 360
Measuring Range	+/- 80°	360°
Number of Axes	2	1
Resolution	0,01°	0,01°
Accuracy (T = -10 °C .. +40 °C)*	0.1°	0.1°
Sensor Response Time	10 ms (without filter)	
Recommended Measurement Rate	Up to 10 Hz	
Interface	CANopen (Profile 410) Transceiver according ISO 11898, galvanically isolated by optocouplers	
Transmission Rate	Adjustable, max. 1 MBaud, Factory Setting : 125 kBaud	
Addressing	programmable	
Supply voltage	10-30 V DC (absolute maximum ratings)	
Current Consumption	max. 57 mA with 10 V DC, max. 53 mA with 24 V DC	
EMC	Emitted interference: EN 61000-6-4	
	Noise immunity: EN 61000-6-2	
Connection	Connector Output	

*further data available on request

Mechanical Data

Housing	Plastic (Thermelt 869)
Shock (EN 60068-2-27)	≤ 100 g (half sine, 6 ms))
Vibration (EN 60068-2-6)	≤ 10 g (10 Hz ... 1,000 Hz))
Weight	100 g

Environmental Conditions

Operating temperature	-40°C.....+85°C
Humidity	98 % (without liquid state)
Protection class	IP 69k (connected) (EN 60529)

MTBF Data

Failure Rate [FIT]	759
MTBF [Hours]	1317822
MTBF [Years]	150

The data above were calculated for the electronics of ACS under following conditions:

SNA: Nonmobile operation ground benign Gb,
Tu: 40°C mean component ambient temperature
Zf: Continuous operation 8760 h per year

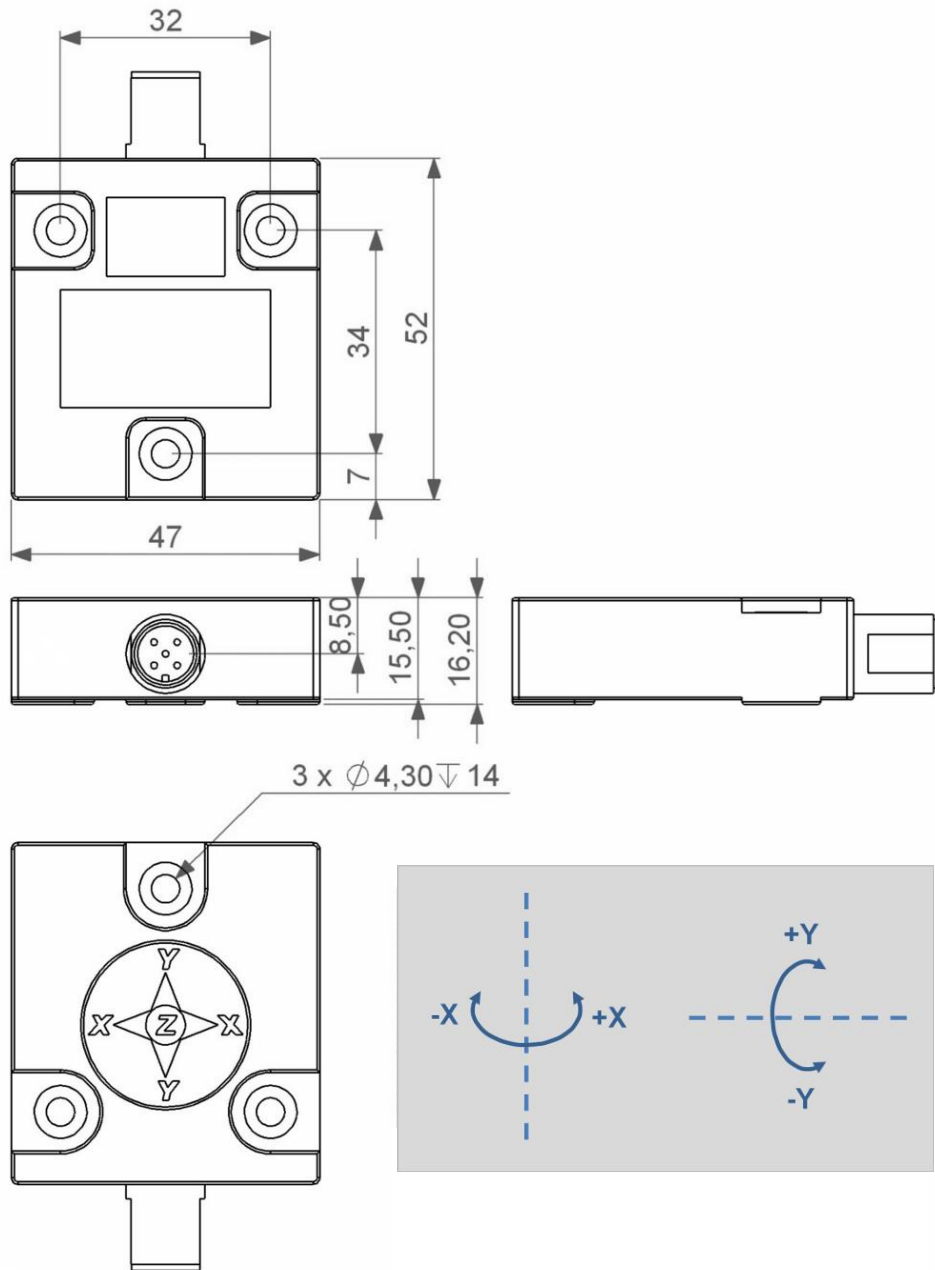
Programmable Parameters

Resolution per 1°	The resolution parameter per 1° is used to program the desired number of steps per 1°. The values 1, 10 and 100 can be programmed.
Preset Value	The preset value is the desired position value, which should be reached at a certain physical position of the axis. The position value is set to the desired process value by the preset parameter.
Digital recursive filter	This filter can be used to adjust the bandwidth of measuring values to minimize the influence of vibration. Factory Setting: Moving average filter activated for 20 subsequent readouts.
Transmission rate	Adjustable, min. 20 kBaud, max. 1 MBaud, Factory Setting : 125 kBaud
Address (Node ID)	Factory setting: Node ID=1, Adjustable from 1 to 127

Programmable CAN Transmission Modes

Polled Mode	By a remote-transmission-request telegram the connected host calls for the current process value. The inclinometer reads the current position value, calculates eventually set-parameters and sends back the obtained process value by the same identifier.
Cyclic Mode	The inclinometer transmits cyclically - without being called by the host - the current process value. The cycle time can be programmed in milliseconds for values between 1 ms and 65536 ms.
Sync Mode	The inclinometer answers with current process value after receiving a sync telegram. The parameter sync counter can be programmed to skip a certain number of sync telegrams before answering again.
Heartbeat-Function	A node signals its communication status by cyclically transmitting a heartbeat message. This message is received by one or any number of members (Heartbeat Consumers) in the bus and so they can control the dedicated node (Heartbeat Producer).

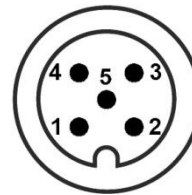
Plastic Housing



Pin Assignment

The inclinometer is connected via a 5 pin round connector
(Standard M12, Male side at sensor, Female at connector counterpart or connection cable).

Signal	5 pin round connector pin number
CAN Ground	1
24 V supply voltage	2
0 V supply voltage	3
CAN High	4
CAN Low	5



Models/Ordering Description

Description	Type key
Accelens	ACS
Range	360° (1 axis) 360 +/-80° (2 axis) 080
Number of axis	One ("ACS360-...") 1 Two ("ACS080-...") 2
Interface	CANopen CA
Version	00
Mounting	Horizontal for +/-80° Version H Vertical for 360° Version V
Housing Material	Plastic P
Inclinometer Series	ACSII 2
Connection	Connector PM

Accessories

Article No	Article	Description
34050515	PAM5	Female cable counterconnector M12x1 5pin A-coded
10001978	PAM5 2m	Connecting cable PAM5 2m shielded

Disclaimer

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