



PTK29

Dynamic inclination sensor with robust, compact stainless steel housing



- **Measurement range $\pm 180^\circ$, 2 axes**
- **Protection class IP67**
- **Hermetically sealed stainless steel housing**
- **Longitudinal water barrier; potted electronics**
- **Wear-free MEMS technology**
- **User selectable axis orientation (optional)**

Product versions



Digital output CAN



PTK29 - Dynamic inclination sensor Version with digital output CAN

Specifications

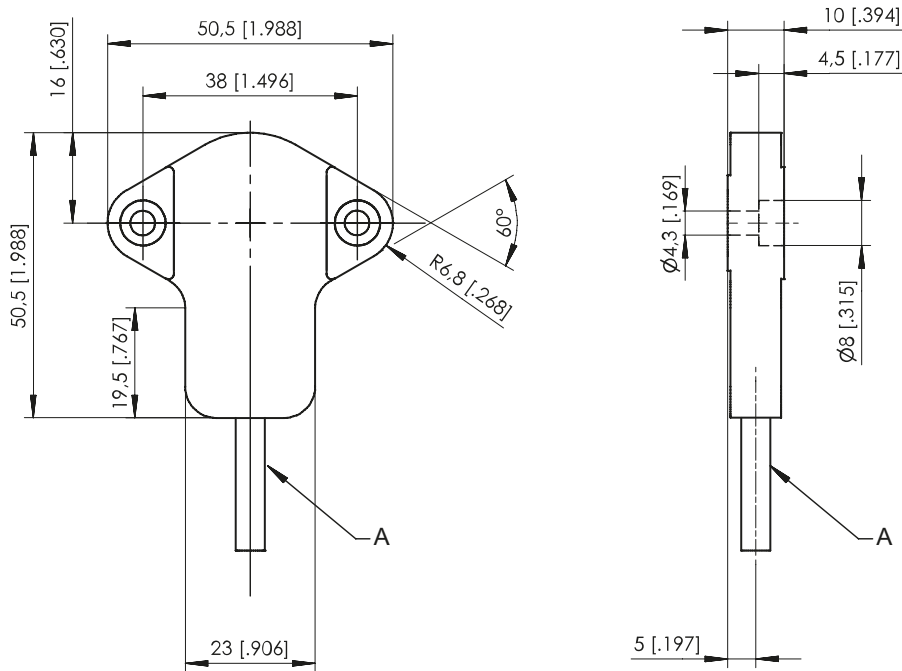
		Order options	
Output	CANopen SAE J1939	1	CANOP CANJ1939
Measurement range	±180°, 2 axes		
Resolution	≥0.01° Adjustable by the user		
Linearity (static)	0.05° (±30°) 0.1° (±60°) 0.2° (±180°)		
Repeatability	<0.05°		
Hysteresis	<0.05°		
Housing material	Stainless steel EN 1.4404 (AISI 316L)		
Mounting	Screws M4: DIN 912, DIN 6912, DIN 7984		
Protection class	IP67		
Connection	Cable 0.3 m with connector M12, 5 pin	2	KAB0,3M – M12/CAN
Shock	DIN EN 60068-2-27:2010, 100 g/11 ms, 100 shocks		
Vibration	DIN EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles		
Temperature range	-40° ... +85°C		
Weight	approx. 80 g (without cable)		
EMC	DIN EN 61326-1:2013		

Order code

PTK29 – **1** – **2**

Order example: PTK29 – CANOP – KAB0,3M – M12/CAN

Dimensions



A – Cable

Dimensions in mm [inch].

Dimensions informative only.

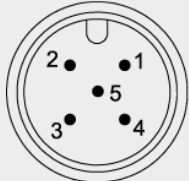
For guaranteed dimensions consult factory.

Output specification

Digital output CANopen

CANOP CANopen 	Communication profile	CANopen CiA 301, Slave
	Encoder profile	CiA 410, Profile „Inclinometer“
	Configuration services	LSS, CiA Draft Standard 305 (Transmission rate, node ID)
	Error Control	Node guarding, Heartbeat, Emergency message
	Node ID	Adjustable via LSS or SDO, default: 127
	PDO	1 TxPDO, 0 RxPDO, no linking, static mapping
	PDO Modes	Event-/Time triggered, Remote-request, Sync cyclic/acyclic
	SDO	1 Server, 0 Client
	Certified	yes
	Transmission rate	125 kBit ... 1 Mbit, adjustable via LSS or SDO, default: 125 kBit
	Bus connection	M12 connector, 5 pin
	Bus, galvanic isolated	no
	Error Control Baudrate	50 kBit/s ... 1 MBit/s configurable
	Transceiver	24V-compliant, not isolated
	Internal termination resistor	120 Ohm configurable

Specifications	Excitation voltage	8 ... 36 V DC
	Excitation current	15 mA typical at 24 V DC 30 mA typical at 12 V DC 100 mA max.
	Measuring rate	0.5 kHz standard
	Stability (temperature)	± 0,2° (-20 ... +40 °C) ± 0,4° (-40 ... +85 °C)
	Repeatability	1 LSB
	Operating temperature	-40 ... +85 °C
	Protection	Reverse polarity, short circuit
	EMC	DIN EN 61326-1:2013

Signal wiring	Output signals	Connector pin no.
Connector M12, 5 pin 	Shield	1
	Excitation +	2
	GND	3
	CAN-H	4
	CAN-L	5

View to the sensor connector

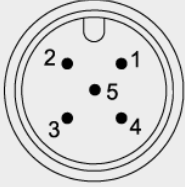
Digital output SAE J1939

CANJ1939 SAE J1939 	CAN Specification	ISO 11898, Basic and Full CAN 2.0 B extended message format with 29-bit identifier
	Transceiver	24V-compliant, not isolated
	Communication profile	SAE J1939, 29-bit identifier
	Transmission rate	250 kBit/s
	Internal termination resistor	120 Ω
	Address	Default 247d, configurable

NAME - Unique device identifier	Name Fields	Remark	Field value	Size [Bit]	Byte order	Byte value
	Arbitrary Address Capable	No	0	1	Byte 8 (MSB)	00h
	Industry Group	Global	0	3		
	Vehicle System instance		0	4		
	Vehicle System	Non specific	7Fh	7	Byte 7	FEh
	Reserved		0	1		
	Function	Non specific	FFh	8	Byte 6	FFh
	Function Instance		0	5	Byte 5	00
	ECU Instance		0	3		
	Manufacturer	Manufacturer Code	145h	11	Byte 4	28h
					Byte 3	A0h+nn
		Identity Number	n..nh	21	Byte 2	nnh
					Byte 1	nnh

Proprietary PGN - Manufacturer specific Parameter Group Numbers	Configuration data	PGN EFddh	Proprietary-A (PDU1 peer-to-peer)
	Process data	PGN FFnnh	Proprietary-B (PDU2 broadcast); nn Group Extension (PS) configurable

Specifications	Excitation voltage	8 ... 36 V DC
	Excitation current	15 mA typical at 24 V DC 30 mA typical at 12 V DC, 100 mA max.
	Measuring rate	0.5 kHz (asynchronous)
	Stability (temperature)	± 0,2° (-20 ... +40 °C) ± 0,4° (-40 ... +85 °C)
	Repeatability	1 LSB
	Operating temperature	-40 ... +85 °C
	Protection	Reverse polarity, short circuit
	EMV	DIN EN 61326-1:2013

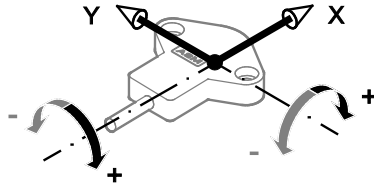
Signal wiring	Output signals	Connector pin no.
Connector M12, 5 pin  View to the sensor connector	Shield	1
	Excitation +	2
	GND	3
	CAN-H	4
	CAN-L	5

PTK29 – Output characteristic and axis orientation

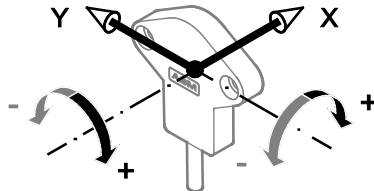
For CAN output, the axis orientation can be set by the user via software.
Sensor position as shown equals 0°.

2 measuring axes

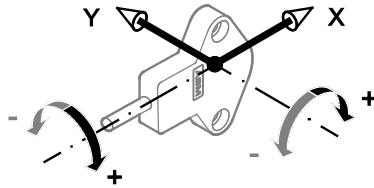
Axis orientation **2A**



Axis orientation **2B**



Axis orientation **2C**



Output signal

