





PTK7 - Dynamic inclination sensor  
**Version with digital output CAN**

**Specifications**

		Order options
<b>Output</b>	CANopen SAE J1939	<b>1</b> CANOP CANJ1939
<b>Measurement range</b>	±180° with 1 axis ±60° with 2 axes	
<b>Resolution</b>	≥0.01° Adjustable by the user	
<b>Linearity (static)</b>	0.05° (±30°) 0.1° (±60°) 0.2° (±180°)	
<b>Housing material</b>	Stainless steel EN 1.4404 (AISI 316L)	
<b>Mounting</b>	Screws M6	
<b>Protection class</b>	IP67/IP69 (connector output with IP67/IP69 connector)	
<b>Connection</b>	Connector M12 axial, 5 pin Connector M12 radial, 5 pin	<b>2</b> M12A5/CAN M12R5/CAN
<b>Shock</b>	DIN EN 60068-2-27:2010, 100 g/11 ms, 100 shocks	
<b>Vibration</b>	DIN EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles	
<b>Temperature range</b>	-40° ... +85°C	
<b>Weight</b>	approx. 390 g	
<b>EMC</b>	DIN EN 61326-1:2013	

**Order code**

PTK7 – **1** – **2**

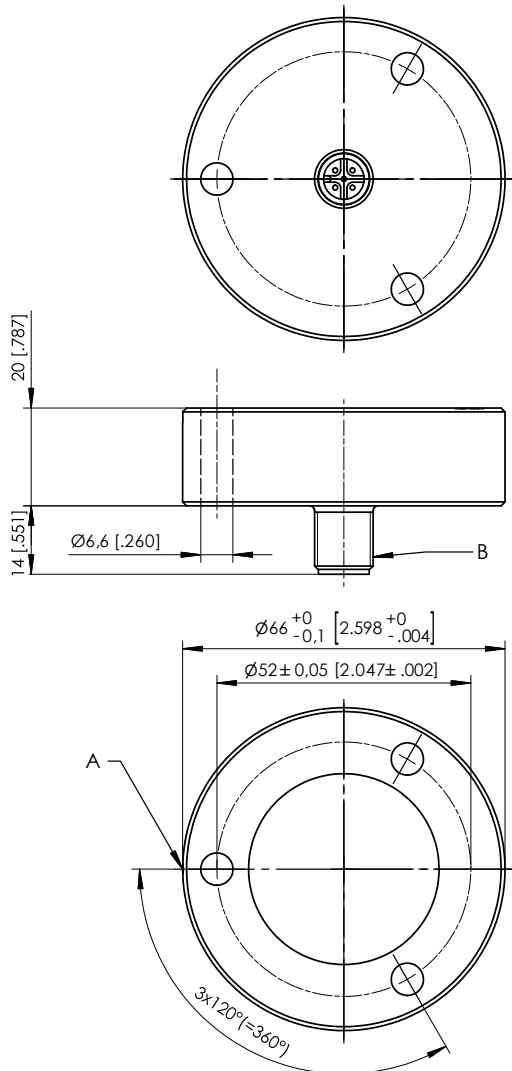
**Order example:** PTK7 – CANOP – M12R5/CAN

**Accessories:**

**Connector cable (see page 9)**

## Dimensions

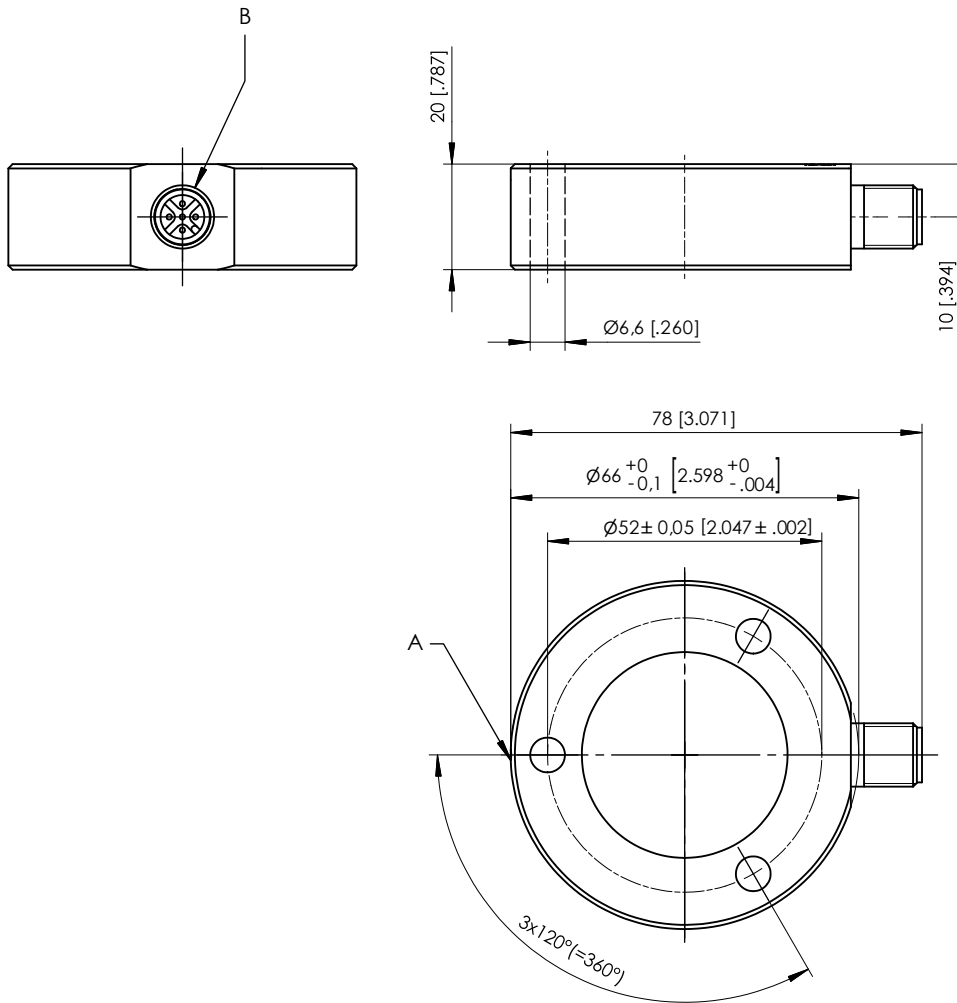
### Connector M12, axial



A – Marking  
B – Connector M12

Dimensions in mm [inch].  
Dimensions informative only.  
For guaranteed dimensions consult factory.

Connector M12, radial




A – Marking  
B – Connector M12

Dimensions in mm [inch].  
Dimensions informative only.  
For guaranteed dimensions consult factory.

## Output specification


### Digital output CANopen

<b>CANOP</b> 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

<b>Specifications</b>	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.
<b>Connector M12, 5 pin</b>   View to the sensor connector	Shield	1
	Excitation +	2
	GND	3
	CAN-H	4
	CAN-L	5

### Digital output SAE J1939

<b>CANJ1939</b> 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
		Identity Number	n..nh	21		
						Byte 2
					Byte 1	nnh

<b>Proprietary PGN - Manufacturer specific Parameter Group Numbers</b>	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

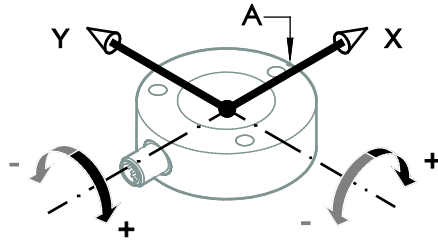
Signal wiring	Output signals	Connector pin no.
<b>Connector M12, 5 pin</b>  <p>View to the sensor connector</p>	Shield	1
	Excitation +	2
	GND	3
	CAN-H	4
	CAN-L	5

## PTK7 - Characteristic of the linear output and mounting options

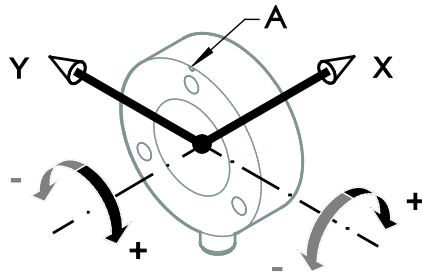
For CAN output, the mounting option can be set by the user via software.  
Sensor position as shown equals 0°.

### 2 measuring axes

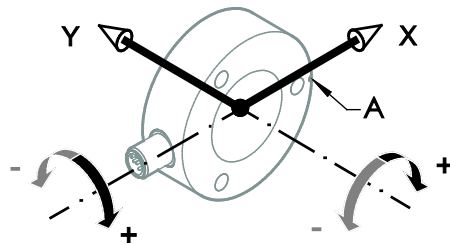
#### Mounting option 2A



#### Mounting option 2B

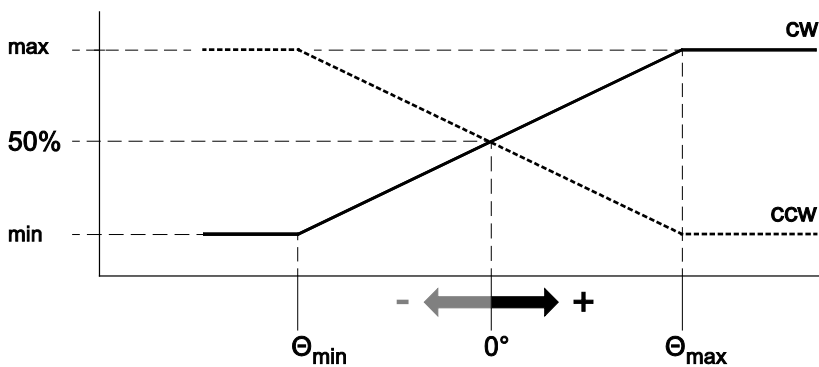


#### Mounting option 2C



A = Marking

### Output signal





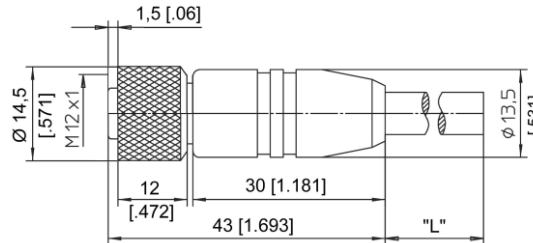
## Accessories

### Connector/bus cable M12, 5 pin CAN-Bus

The 5-lead shielded cable is supplied with a female 5 pin M12 connector at one end and a male 5 pin M12 connector at the other end.

Available lengths are 0.3 m, 2 m, 5 and 10 m.

Cable diameter: 6.7 ±0.2 mm



#### Order code

**KAB - xM - M12/5F/G - M12/5M/G - CAN**

IP69: **KAB - xM - M12/5F/G/69K - M12/5M/G/69K - CAN**

xM = length in m

### Applicable for cable carriers

Maximum movement speed	3 m/s
Maximum acceleration	5 m/s <sup>2</sup>
Minimum bending radius	10 x cable diameter

### T-connector for bus cable M12, 5 pin CAN-Bus

#### Order code

**KAB - TCONN - M12/5M - 2M12/5F - CAN**



### Terminating resistor M12, 5 pin CAN-Bus

#### Order code

**KAB - RTERM - M12/5M/G - CAN**

