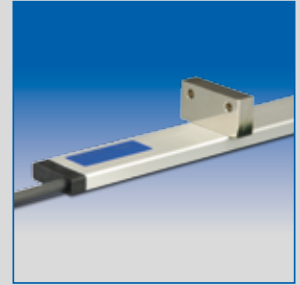
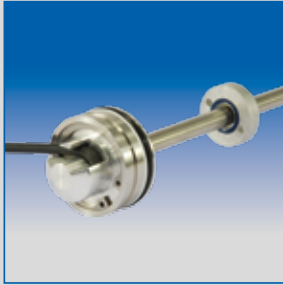




perfect in sensors.



magnetostrictive linear

Position sensors

compact ▪ contactless ▪ wear free

POSICHRON® series

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Applications that are described herein for any of these products are for illustrative purpose only. ASM makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.



ASM is a leading company in the development and production of linear and angular position sensors. ASM sensors are used in industrial and commercial applications, where angle, inclination, displacement or position measurements are used to automate, test or monitor processes.

Innovative Technologies that solve your Measuring Requirements

Our product range consists of various technologies to measure linear, rotatory and angular positions. With over 33 years of experience in the position sensor market, ASM offers innovative solutions for the most demanding applications.

ASM Products Represent Quality and Reliability

The quality and precision of our products ensures consistent productivity. Our continuous research and development in our laboratories as well as our DIN EN 9001:2008 certified quality management system guarantee these high standards.





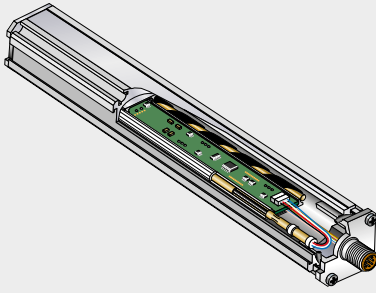
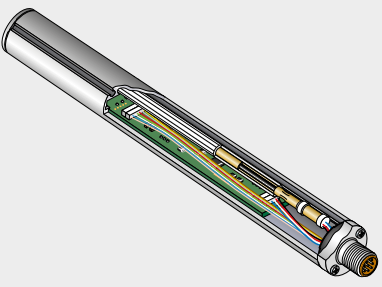
ASM – Global Supplier of Position Sensors

ASM products are sold world-wide through sales offices, subsidiaries and a network of 50 distributors. With this global presence we ensure being close to our customers and able to provide quick product availability wherever ASM sensors are needed.

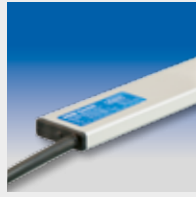
The Product Range

- **POSIWIRE®** Cable Extension Position Sensors
- **POSITAPE®** Tape Extension Position Sensors
- **POSICHRON®** Magnetostrictive Position Sensors
- **POSIMAG®** Magnetic Scale Position Sensors
- **POSIROT®** Magnetic Angle Sensors
- **POSITILT®** Inclination Sensors MEMS
- **PRODIS®** Digital Process Displays

Selection Guide for POSICHRON® Position Sensors

Selection features	Model				
		PCQA22	PCQA24	PCRP21	PCRP32
Measurement range					
100 ... 5750 mm		•	•	•	•
Analogausgänge¹⁾					
0 ... 10 V					
0.5 ... 10 V					
0.5 ... 4,5 V		•	•	•	•
4 ... 20 mA					
Digital outputs					
SSI		•	•	•	•
CANopen		•	•	•	•
CAN SAE J1939		•	•	•	•
Protection class					
Standard		IP64	IP67	IP64	IP68/IP69K
optional		–	IP67/IP69K*	–	–
Housing profile					
		square		round	
					

¹⁾ = 1 or 2 position magnets;
Position and velocity;
Scalable (PMU)



PCFP23

PCFP24

PCFP25

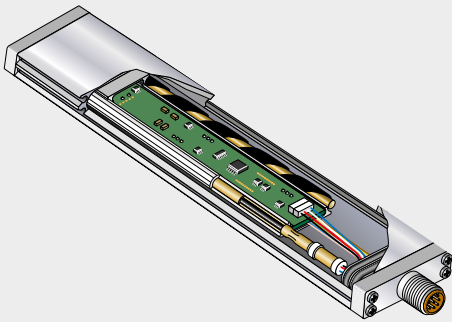
PCST24

PCST25

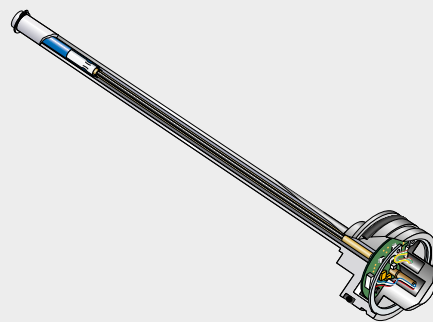
PCST27

•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
IP64	IP67	IP64	IP67	IP67	IP68/IP69K
–	IP67/IP69K*	IP67	IP67/IP69K*	IP67/IP69K	–

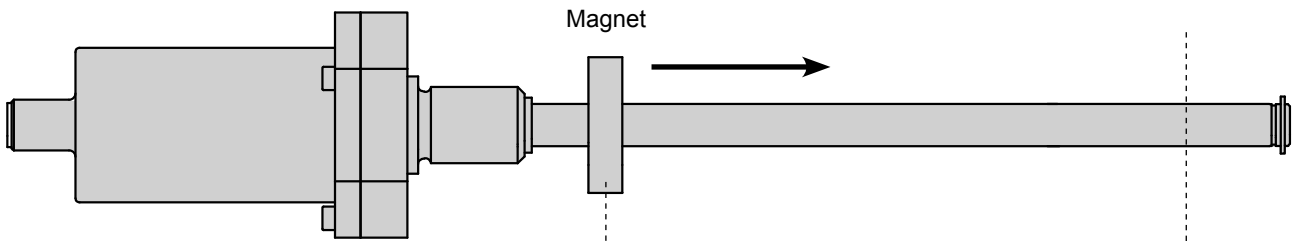
flat



rod-style

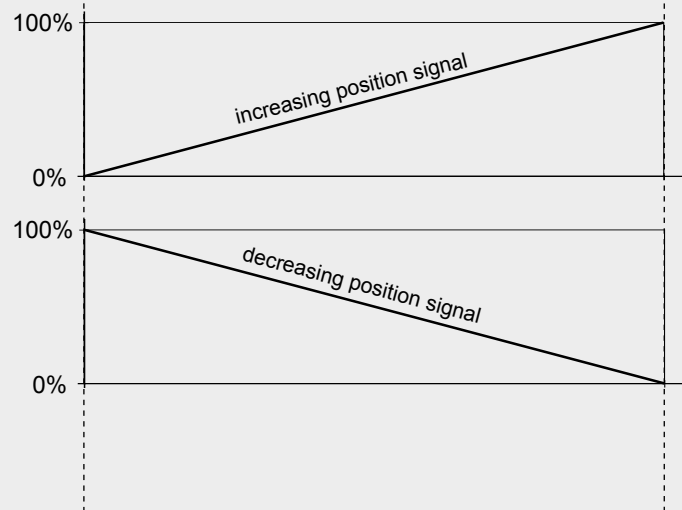


* = with the appropriate connector IP67/IP69K

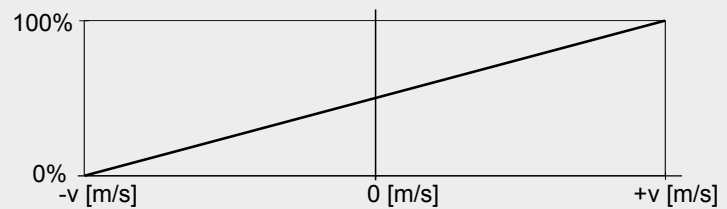


**Analog 1 or 2 channel
Configurable**

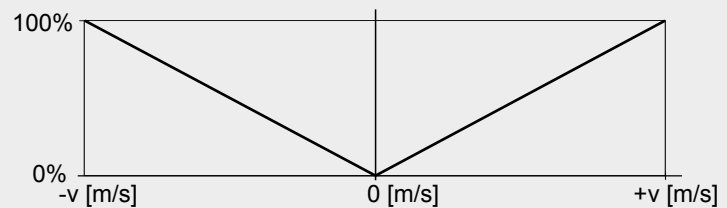
U1	0 ... 10 V / 10 ... 0 V
U2	0,5 ... 10 V / 10 ... 0,5 V
U8	0,5 ... 4,5 V / 4,5 ... 0,5 V
I1	4 ... 20 mA / 20 ... 4 mA



Velocity output signal
with direction detection
(centred)



Centred velocity output signal
without direction detection



POSICHRON® – The Functional Principle

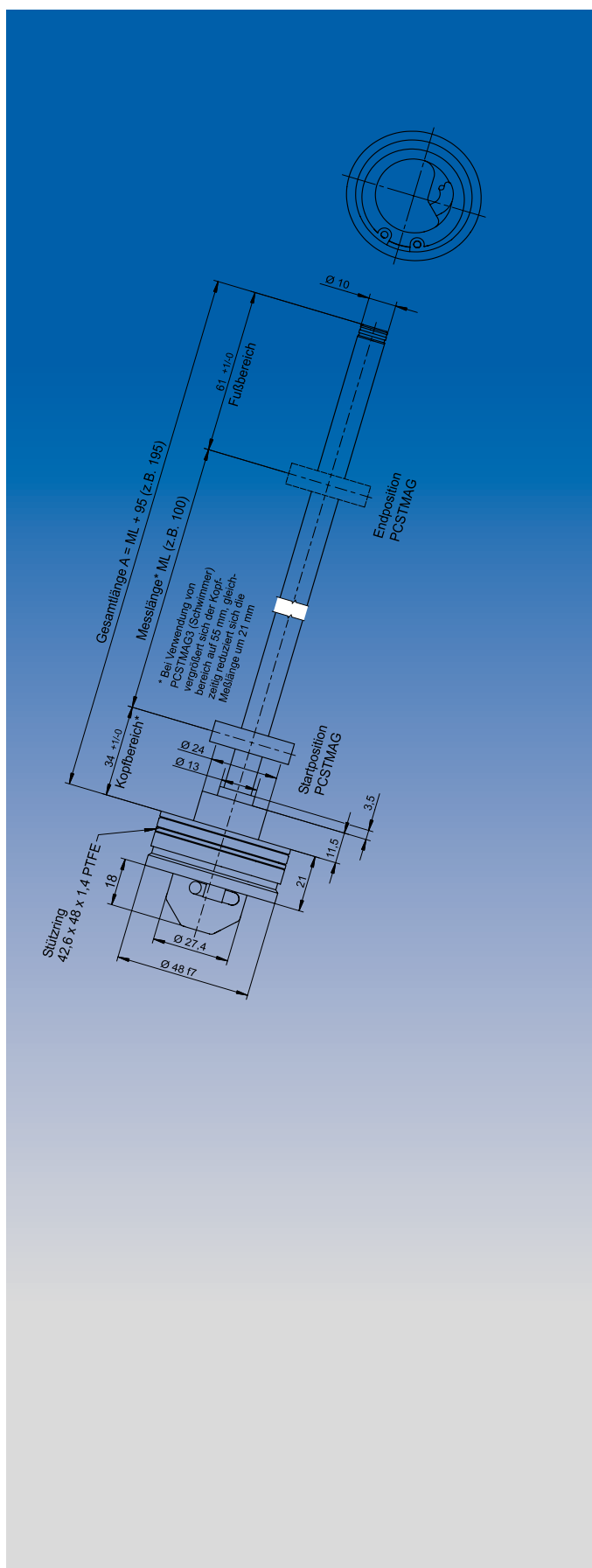
POSICHRON® is an absolute, contactless and wear-free position measuring system. It is extremely rugged making it suitable even for applications where other measuring principles would fail. The availability of various constructions – rod, square profile and ultra-flat profile – means that the system can be adapted to suit all kinds of installation conditions.

The POSICHRON® linear measuring system consists of a magnetostrictive wave guide and a movable magnet for determining position. The measuring principle of POSICHRON® position sensors is based on two physical effects: the Wiedemann effect and the Villari effect.

To create the Wiedemann effect, a current impulse is sent through the POSICHRON® positional sensor's wave guide. This current impulse generates a circular magnetic field which propagates at the speed of light around the wave guide. If this circular magnetic field makes contact with the magnetic field of the position magnet which is moved lengthways, a torsional mechanical-elastic density wave is triggered at the overlap area of the two magnetic fields as a result of magnetostriction. This wave propagates in the wave guide at approx. 2800 m/s.

The sensor head of the POSICHRON® position sensor contains a detector which detects the arrival of this wave. The magneto-elastic Villari effect is used as the method of detection. The position between the detector coil and the magnet which can be moved lengthways along the POSICHRON® sensor is determined by measuring the time difference between the electrical induction current impulse and the voltage pulse generated via the Villari effect in the detector coil (time-of-flight principle).

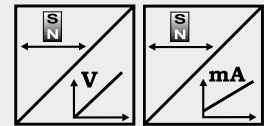
This time difference can be converted using various well-known methods into analog or digital output signals.





POSICHRON® position sensor in square profile

- Protection class IP64
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Easy installation with mounting brackets
- Wear free position magnet
- Contactless
- Also available with guided position magnet
- Analog outputs



Specifications	Output	Voltage Current
	Resolution	Refer to output specification
Sampling rate	Up to 1 kHz, depending on the measurement range	
Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm	
Repeatability	±3 µm	
Housing material	AlMgSi1 / Zn / V4A	
Protection class	IP64 (connector version: with mating connector only)	
Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks	
Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles	
Connection	Connector M12, 8 pin / cable 2 m	
EMC, temperature	Refer to output specification	

**Order code PCQA22
1 channel**



Model name

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Output

- U1 = 0 ... 10 V signal conditioner
- U1/H = U1 with Alarm_HOLD (see page 78)
- U2 = 0.5 ... 10 V signal conditioner
- U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
- U8 = 0.5 ... 4.5 V signal conditioner
- U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
- I1 = 4 ... 20 mA signal conditioner (3 wire)
- I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output

- P1A = Position Magnet 1, increasing
- P1D = Position Magnet 1, decreasing
- PMU = Start value, direction & end value adjustable by the customer

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

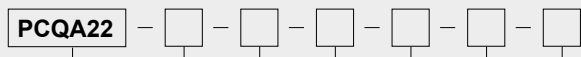
- M12 = Connector M12, 8 pin
- KAB2M = Cable, standard length 2 m, other lengths upon request

Order code mounting set (see page 20)

PCQA-BFS1

Order Code PCQA22

**2 channel,
configurable**



Model name

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Output

- U1 = 0 ... 10 V signal conditioner
- U1/H = U1 with Alarm_HOLD (see page 78)
- U2 = 0.5 ... 10 V signal conditioner
- U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
- U8 = 0.5 ... 4.5 V signal conditioner
- U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
- I1 = 4 ... 20 mA signal conditioner (3 wire)
- I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output 1

- P1A = Position magnet 1, increasing
- P1D = Position magnet 1, decreasing
- DA = Difference magnet 1/2, increasing (2 magnets required)
- DD = Difference magnet 1/2, decreasing (2 magnets required)

Function and characteristics output 2

- P2A = Position magnet 2, increasing
 - P2D = Position magnet 2, decreasing
 - DA = Difference magnet 1/2, increasing
 - DD = Difference magnet 1/2, decreasing
- } 2 magnets required

VZx.x = Velocity with direction detection (with 1 magnet only)

VZx.x = Velocity in steps of 0.1 m/s

Example: VZ1.5	towards start position		towards end position
	-1.5 m/s	0	+1.5 m/s
Output U2:	0.5 V	5.25 V	10 V
Output I1:	4 mA	12 mA	20 mA

VAx.x = Velocity without direction detection (with 1 magnet only)

VAx.x = Velocity in steps of 0.1 m/s

Example: VA1.5	towards start position		towards end position
	-1.5 m/s	0	+1.5 m/s
Output U2:	10 V	0.5 V	10 V
Output I1:	20 mA	4 mA	20 mA

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

- M12 = Connector M12, 8 pin
- KAB2M = Cable, standard length 2 m, other lengths upon request

1. Order example: PCQA22 - 1000 - I1 - P1A - P2D - L10 - M12

Square profile, measurement range 1000 mm, 2 current outputs 4 ... 20 mA (I1)

Output 1: Position magnet 1, increasing signal (P1A)

Output 2: Position magnet 2, decreasing signal (P2D)

2. Order example: PCQA22 - 1000 - U2 - P1A - VZ1.0 - L10 - M12

Square profile, measurement range 1000 mm, 2 voltage outputs 0.5 ... 10 V (U2)

Output 1: Position magnet 1, increasing signal (P1A)

Output 2: Velocity magnet 1, -1 m/s ... 1 m/s for range 0.5 ... 10 V (VZ1.0)

Order code position magnet/slider (see page 21)

PCMAG ...

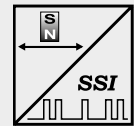
Order code mating connecting cable (see page 82)

KAB-...M-M12/8F/G-LITZE



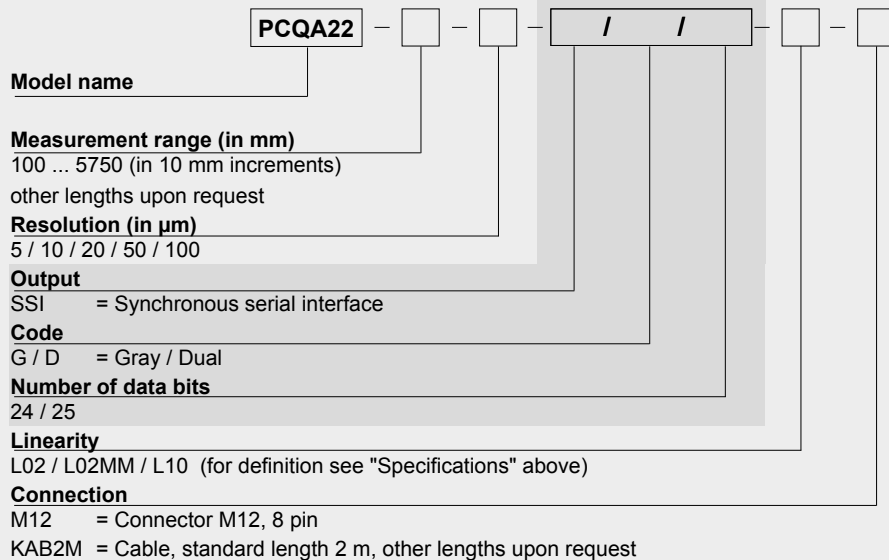
POSICHRON® position sensor in square profile

- Protection class IP64
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Easy installation with mounting brackets
- Wear free position magnet
- Contactless
- Also available with guided position magnet
- Synchronous serial interface (SSI)



Specifications	Output	Synchronous serial interface (SSI)
	Resolution	5, 10, 20, 50, 100 µm
	Sampling rate	Up to 500 Hz depending on the measurement range
	Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
	Repeatability	±3 µm
	Housing material	AlMgSi1 / Zn / V4A
	Protection class	IP64 (connector version: with mating connector only)
	Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks
	Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
	Connection	Connector M12, 8 pin / cable 2 m
EMC, temperature	Refer to output specification	

Order Code PCQA22



Order code mounting set (see page 20)

PCQA-BFS1

Order code position magnet/slider (see page 21)

PCMAG ...

Order code mating connecting cable (see page 82)

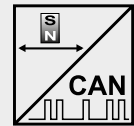
KAB-...M-M12/8F/G-LITZE

Order example: PCQA22 - 2500 - 5 - SSI/G/24 - L10 - M12



POSICHRON® position sensor in square profile

- Protection class IP64
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Easy installation with mounting brackets
- Wear free position magnet
- Contactless
- Also available with guided position magnet
- CANopen bus or CAN SAE J1939 output



Specifications	Output	CANopen bus; CAN SAE J1939
	Resolution	50 µm
	Sampling rate	Up to 1 kHz, depending on the measurement range
	Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
	Repeatability	±3 µm
	Housing material	AlMgSi1 / Zn / V4A
	Protection class	IP64 (connector version: with mating connector only)
	Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks
	Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
	Connection	5 pin socket M12
EMC, temperature	Refer to output specification	

Order Code PCQA22



Model name

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Output

CANOP = CANopen bus
CANOP/R = CANopen-Bus with integrated terminating resistance
CANJ1939 = CAN SAE J1939

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

M12/CAN = Connector M12, 5 pin

Order code mounting set (see page 20)

PCQA-BFS1

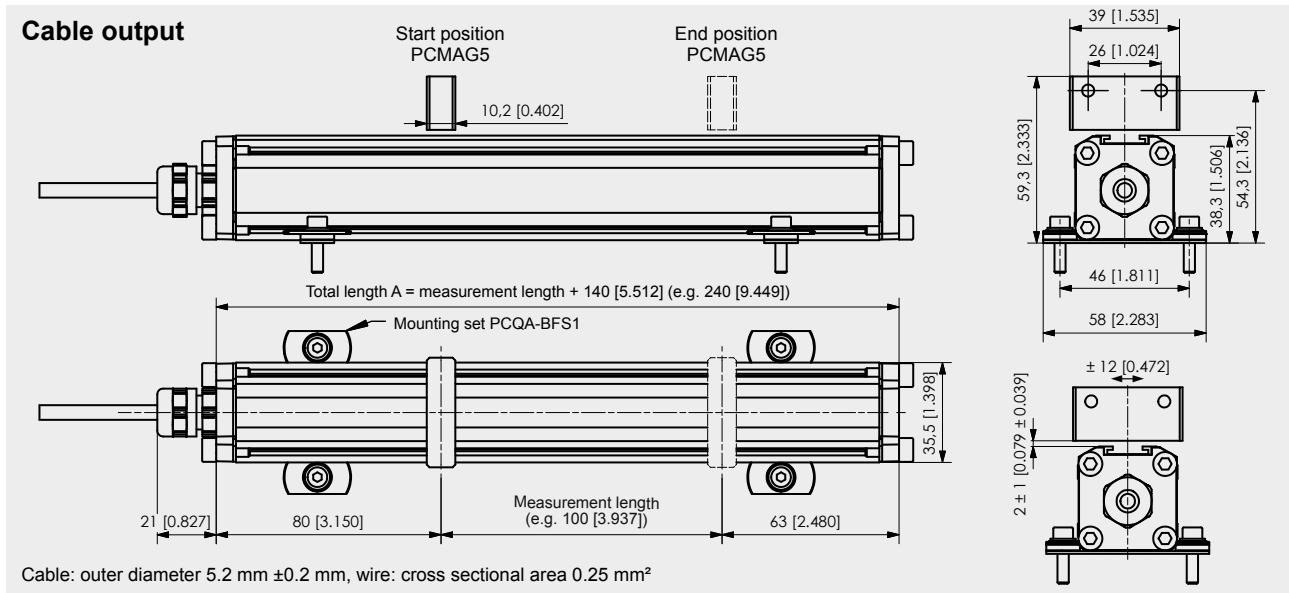
Order code position magnet/slider (see page 21)

PCMAG ...

Order code bus cable (see page 83)

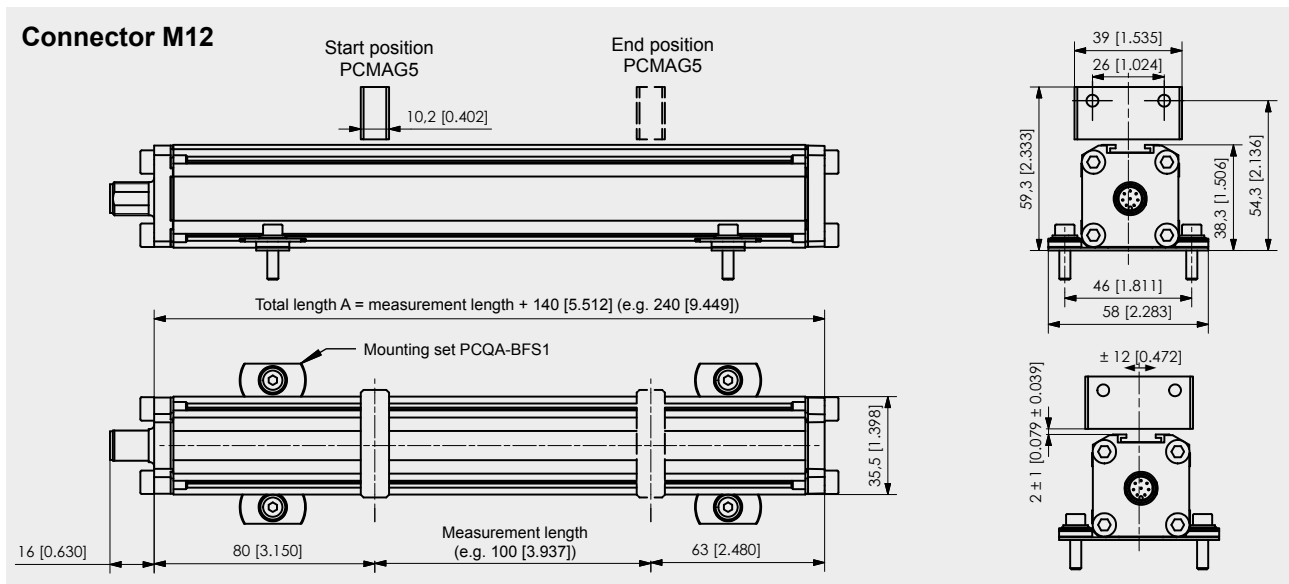
KAB-...M-M12/5F/G-M12/5M/G - CAN

Order example: PCQA22 - 2000 - CANOP - L10 - M12/CAN



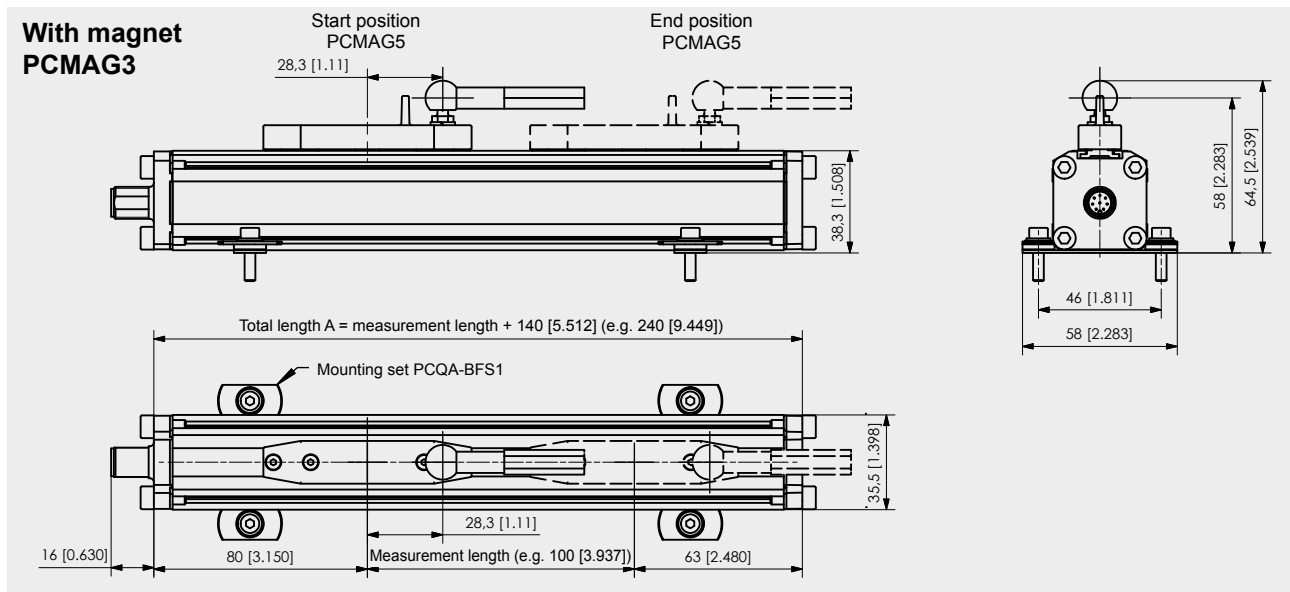
Dimensions in mm [inch]

Dimensions informative only. For guaranteed dimensions consult factory.



Dimensions in mm [inch]

Dimensions informative only. For guaranteed dimensions consult factory.



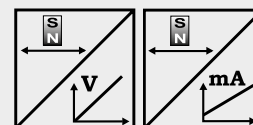
Dimensions in mm [inch]

Dimensions informative only. For guaranteed dimensions consult factory.



POSICHRON® position sensor in square profile

- Protection class up to IP67/IP69K
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Easy installation with mounting brackets
- Wear free position magnet
- Contactless
- Also available with guided position magnet
- Analog output



Specifications	Output	Voltage Current
	Resolution	Refer to output specification
Sampling rate	Up to 1 kHz, depending on the measurement range	
Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm	
Repeatability	±3 µm	
Housing material	AlMgSi1 / Zn / V4A	
Protection class	IP67 (optional IP67/IP69K; connector version: with mating connector only)	
Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks	
Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles	
Connection	Connector M12, 8 pin / cable 2 m	
EMC, temperature	Refer to output specification	

**Order code PCQA24
1 channel**

PCQA24 - [] - [] - [] - [] - []

Model name

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Output

- U1 = 0 ... 10 V signal conditioner
- U1/H = U1 with Alarm_HOLD (see page 78)
- U2 = 0.5 ... 10 V signal conditioner
- U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
- U8 = 0.5 ... 4.5 V signal conditioner
- U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
- I1 = 4 ... 20 mA signal conditioner (3 wire)
- I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output

- P1A = Position Magnet 1, increasing
- P1D = Position Magnet 1, decreasing
- PMU = Start value, direction & end value adjustable by the customer

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

- M12 = Connector M12, 8 pin
- KAB2M = Cable, standard length 2 m, other lengths upon request

Order code mounting set (see page 20)

PCQA-BFS1

Order Code PCQA24
2 channel, configurable

PCQA24 - [] - [] - [] - [] - [] - [] - []

Model name

Measurement range (in mm)
 100 ... 5750 (in 10 mm increments)
 other lengths upon request

Output

U1 = 0 ... 10 V signal conditioner
 U1/H = U1 with Alarm_HOLD (see page 78)
 U2 = 0.5 ... 10 V signal conditioner
 U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
 U8 = 0.5 ... 4.5 V signal conditioner
 U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
 I1 = 4 ... 20 mA signal conditioner (3 wire)
 I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output 1

P1A = Position magnet 1, increasing
 P1D = Position magnet 1, decreasing
 DA = Difference magnet 1/2, increasing (2 magnets required)
 DD = Difference magnet 1/2, decreasing (2 magnets required)

Function and characteristics output 2

P2A = Position magnet 2, increasing
 P2D = Position magnet 2, decreasing
 DA = Difference magnet 1/2, increasing
 DD = Difference magnet 1/2, decreasing } 2 magnets required

VZx.x = Velocity with direction detection (with 1 magnet only)

VZx.x = Velocity in steps of 0.1 m/s			
<u>Example: VZ1.5</u>	towards start position		towards end position
	-1.5 m/s	0	+1.5 m/s
Output U2:	0.5 V	5.25 V	10 V
Output I1:	4 mA	12 mA	20 mA

VAx.x = Velocity without direction detection (with 1 magnet only)

VAx.x = Velocity in steps of 0.1 m/s			
<u>Example: VA1.5</u>	towards start position		towards end position
	-1.5 m/s	0	+1.5 m/s
Output U2:	10 V	0.5 V	10 V
Output I1:	20 mA	4 mA	20 mA

Linearity
 L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

M12 = Connector M12, 8 pin
 KAB2M = Cable, standard length 2 m, other lengths upon request

1. Order example: PCQA24 - 1000 - I1 - P1A - P2D - L10 - M12
 Square profile, measurement range 1000 mm, 2 current outputs 4 ... 20 mA (I1)
 Output 1: Position magnet 1, increasing signal (P1A)
 Output 2: Position magnet 2, decreasing signal (P2D)

2. Order example: PCQA24 - 1000 - U1 - P1A - VZ1.0 - L10 - M12
 Square profile, measurement range 1000 mm, 2 voltage outputs 0.5 ... 10 V (U2)
 Output 1: Position magnet 1, increasing signal (P1A)
 Output 2: Velocity magnet 1, -1 m/s ... 1 m/s for range 0.5 ... 10 V (VZ1.0)

Order code position magnet/slider (see page 21)

PCMAG ...

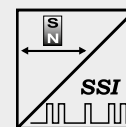
Order code mating connecting cable (see page 82)

KAB-...M-M12/8F/G-LITZE



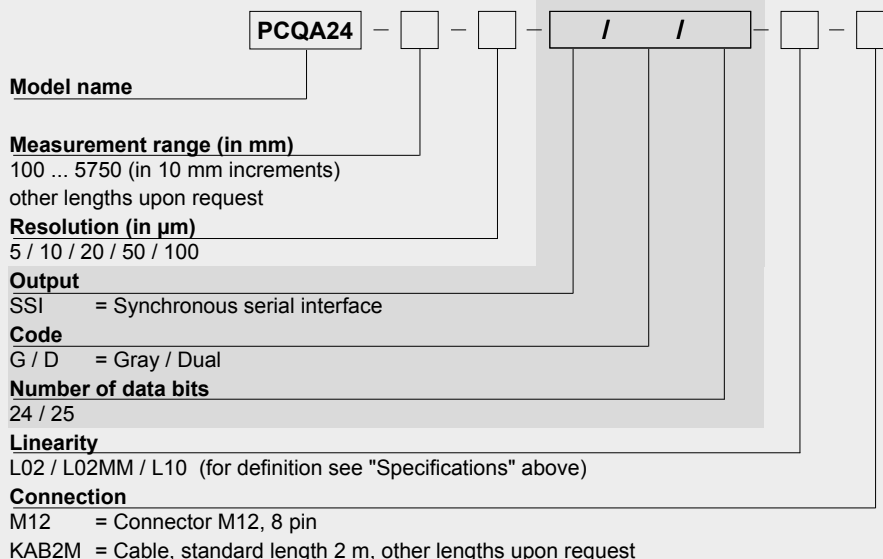
POSICHRON® position sensor in square profile

- Protection class IP67/IP69K
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Easy installation with mounting brackets
- Wear free position magnet
- Contactless
- Also available with guided position magnet
- Synchronous serial interface (SSI)



Specifications	Output	Synchronous serial interface (SSI)
	Resolution	5, 10, 20, 50, 100 µm
	Sampling rate	Up to 1 kHz, depending on the measurement range
	Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
	Repeatability	±3 µm
	Housing material	AlMgSi1 / Zn / V4A
	Protection class	IP67 (optional IP67/IP69K; connector version: with mating connector only)
	Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks
	Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
	Connection	8 pin socket / cable 2 m
EMC, temperature	Refer to output specification	

Order Code PCQA24



Order code mounting set (see page 20)

Order code position magnet/slider (see page 21)

Order code mating connecting cable (see page 82)

PCQA-BFS1

PCMAG ...

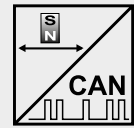
KAB-...M-M12/8F/G-LITZE

Order example: PCQA24 - 2500 - 10 - SSI/G/24 - L10 - M12



POSICHRON® position sensor in square profile

- Protection class IP67/IP69K
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Easy installation with mounting brackets
- Wear free position magnet
- Contactless
- Also available with guided position magnet
- CANopen bus or CAN SAE J1939 output



Specifications		
Output		CANopen bus; CAN SAE J1939
Resolution		50 µm
Sampling rate		Up to 1 kHz, depending on the measurement range
Linearity		Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
Repeatability		±3 µm
Housing material		AlMgSi1 / Zn / V4A
Protection class		P67 (optional IP67/IP69K; connector version: with mating connector only)
Shock		EN 60068-2-27:2010, 50 g 11 ms, 100 shocks
Vibration		EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
Connection		5 pin socket M12
EMC, temperature		Refer to output specification

Order Code PCQA24

Model name PCQA24 - - - -

Measurement range (in mm)
100 ... 5750 (in 10 mm increments)
other lengths upon request

Output
CANOP = CANopen bus
CANOP/R = CANopen-Bus with integrated terminating resistance
CANJ1939 = CAN SAE J1939

Linearity
L02 / L02MM / L10 (for definition see "Specifications" above)

Connection
M12/CAN = Connector M12, 5 pin

Order code mounting set (see page 20)

PCQA-BFS1

Order code position magnet/slider (see page 21)

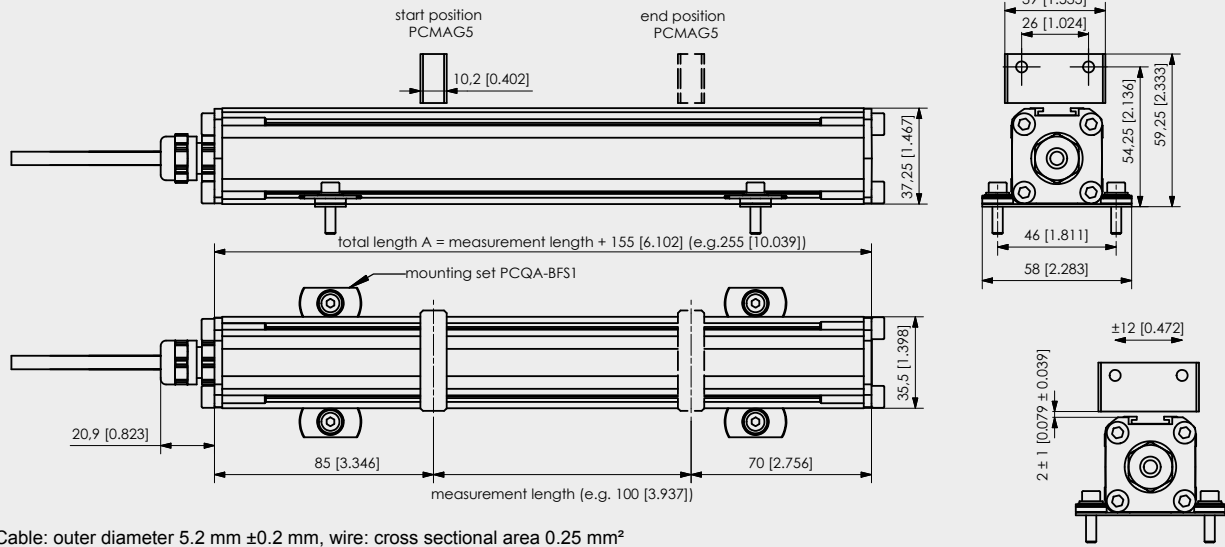
PCMAG ...

Order code bus cable (see page 83)

KAB-...M-M12/5F/G-M12/5M/G - CAN

Order example: PCQA24 - 1000 - CANOP - L10 - M12/CAN

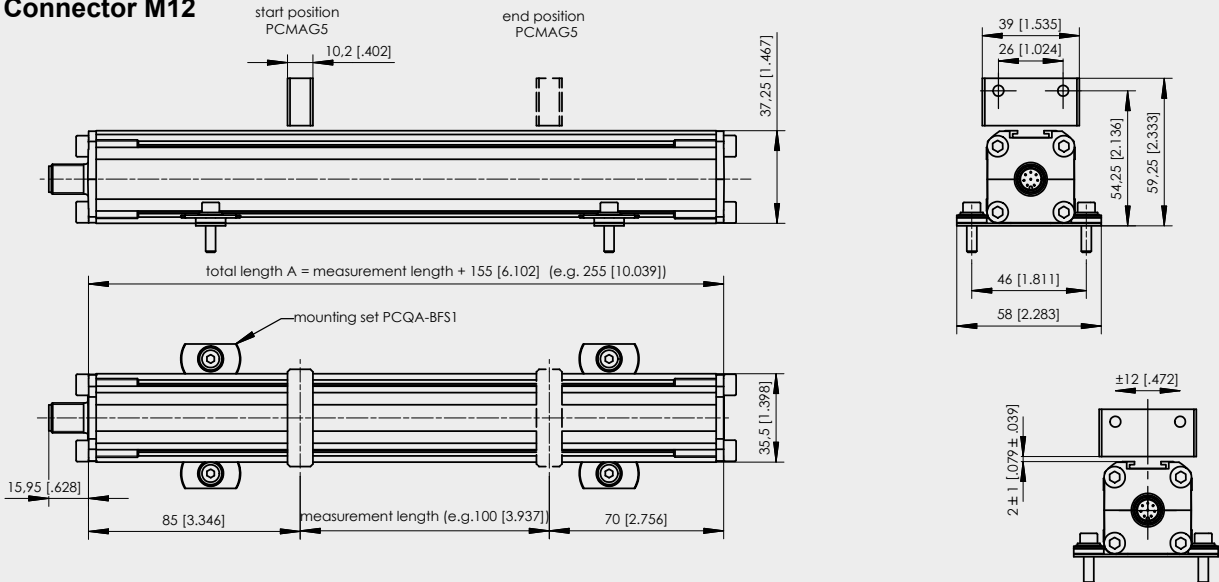
Cable output



Dimensions in mm [inch]

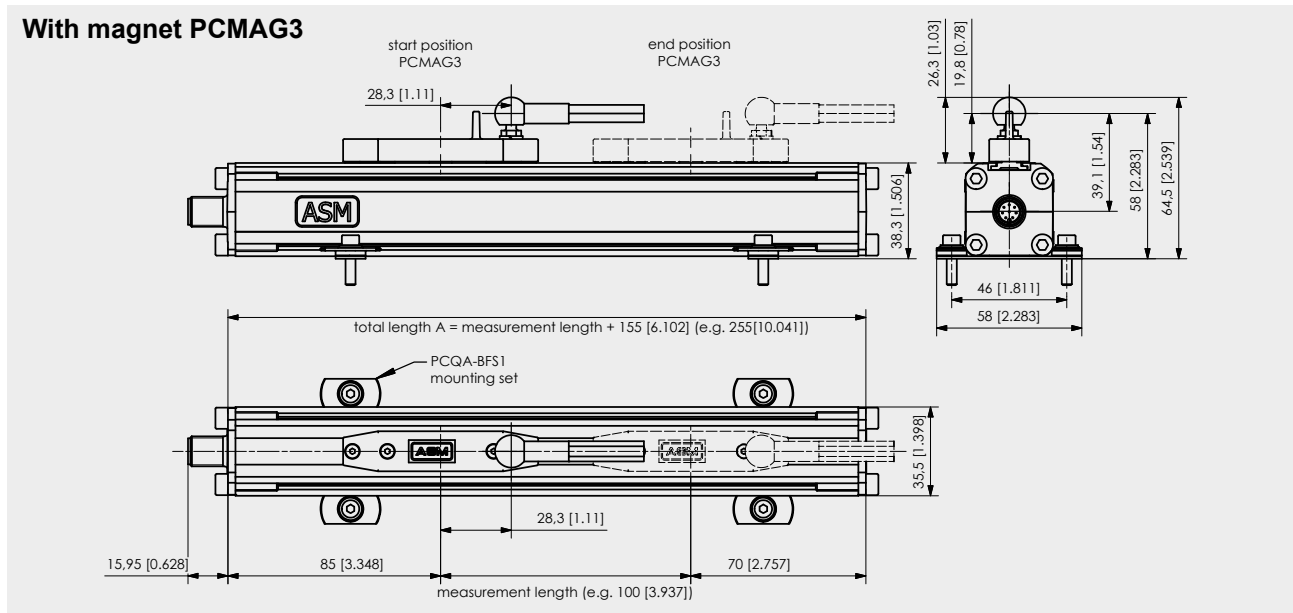
Dimensions informative only. For guaranteed dimensions consult factory.

Connector M12



Dimensions in mm [inch]

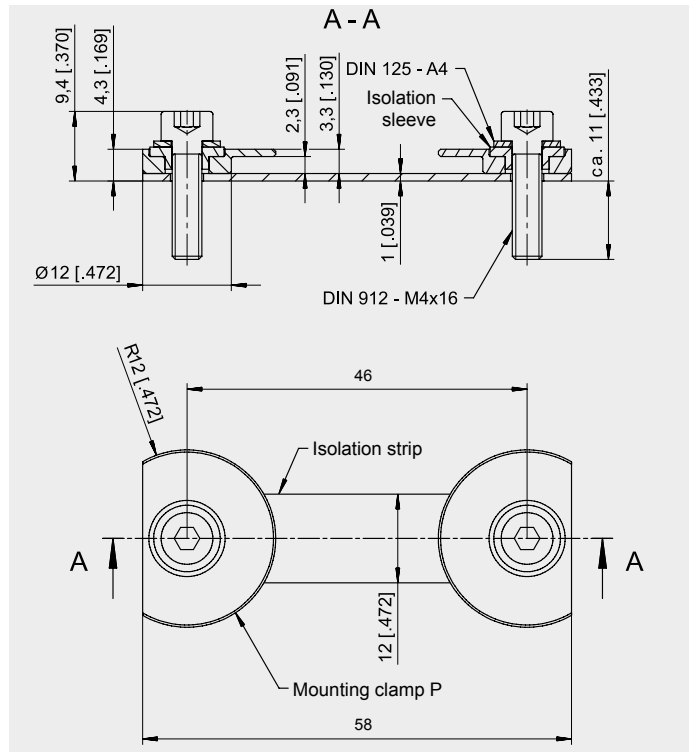
Dimensions informative only. For guaranteed dimensions consult factory.



Dimensions in mm [inch]

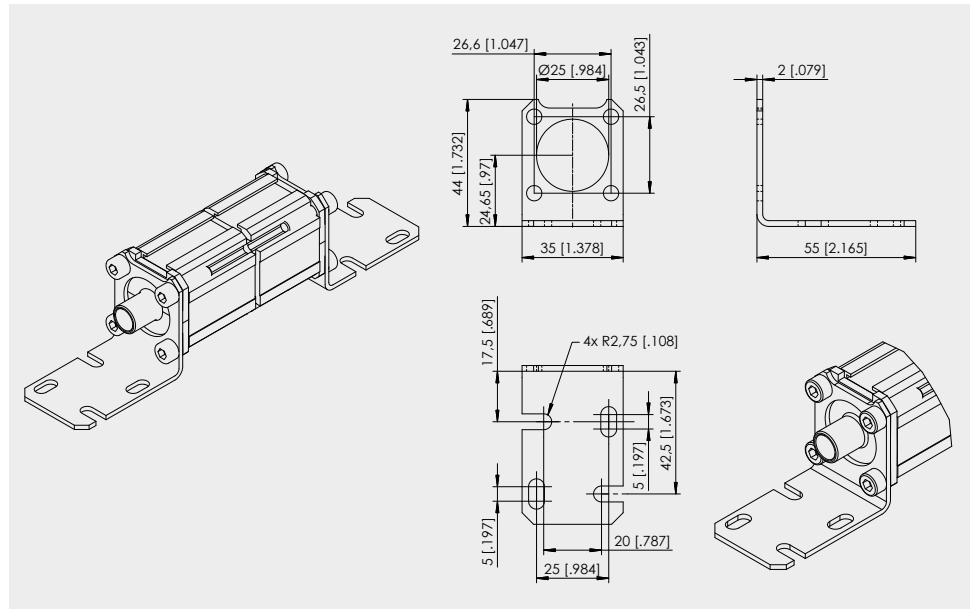
Dimensions informative only. For guaranteed dimensions consult factory.

**Mounting set
 PCQA-BFS1 with
 mounting clamps**



**Option -BFW
 Mounting brackets
 for PCQA22 and
 PCQA24**

Note: The option -BFW can only be ordered with a new sensor, not separately!
 Applicable for sensor lengths up to 1000 mm.



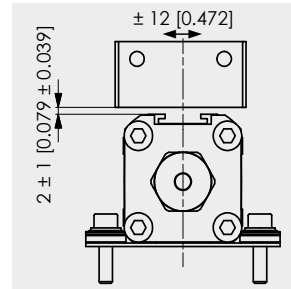
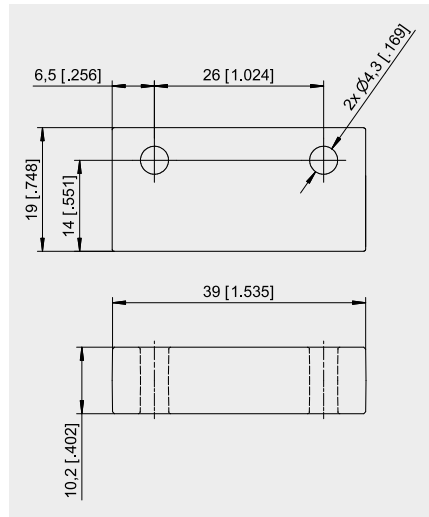
Dimensions in mm [inch]

Dimensions informative only.
 For guaranteed dimensions consult factory.

Order example: PCQA24 - 1000 - U2 - P1A - L10 - M12 - BFW

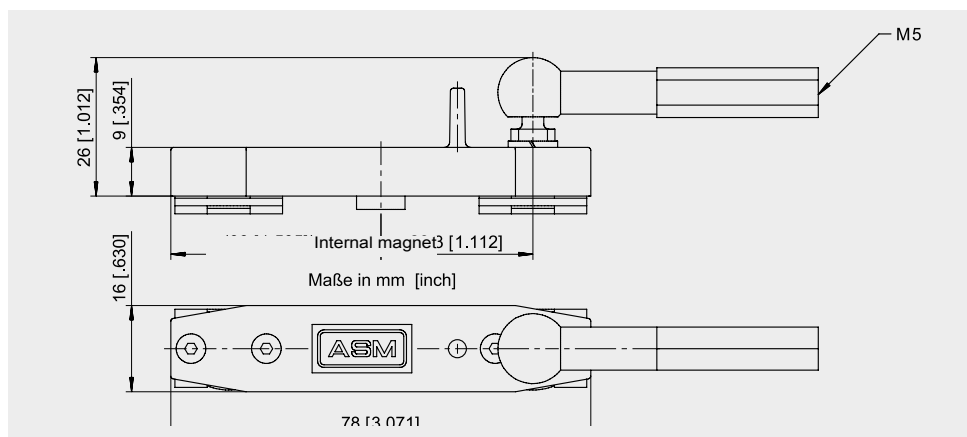
PCMAG5

Standard magnet



PCMAG3

Guided magnet slider with internal position magnet



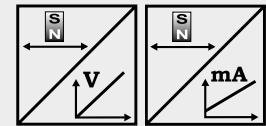
Dimensions in mm [inch]

Dimensions informative only.
For guaranteed dimensions consult factory.



POSICHRON® position sensor
Only 12 mm height and 36 mm width

- Protection class IP64
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Ultra flat profile housing: only 12 mm high
- Easy installation with mounting brackets
- Contactless
- Analog output
- Redundant version: combination of 2 sensors side by side



Specifications	Output	Voltage Current
	Resolution	Refer to output specification
Sampling rate	Up to 1 kHz, depending on the measurement range	
Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm	
Repeatability	±3 µm	
Housing material	AlMgSi1 / Zn / V4A	
Protection class	IP64	
Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks	
Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles	
Connection	4 pin socket M8 / cable 2 m	
EMC, temperature	Refer to output specification	

Order code PCFP23
1 channel



Model name

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
 other lengths upon request

Output

- U1 = 0 ... 10 V signal conditioner
- U1/H = U1 with Alarm_HOLD (see page 78)
- U2 = 0.5 ... 10 V signal conditioner
- U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
- U8 = 0.5 ... 4.5 V signal conditioner
- U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
- I1 = 4 ... 20 mA signal conditioner (3 wire)
- I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output

- P1A = Position Magnet 1, increasing
- P1D = Position Magnet 1, decreasing
- PMU = Start value, direction & end value adjustable by the customer

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

- M8 = Connector M8, 4 pin
- KAB2M = Cable, standard length 2 m, other lengths upon request

Order code mounting set (see page 39)

PCFP23-BFS1

Order Code PCFP23

**2 channel,
configurable**



Model name

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Output

- U1 = 0 ... 10 V signal conditioner
- U1/H = U1 with Alarm_HOLD (see page 78)
- U2 = 0.5 ... 10 V signal conditioner
- U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
- U8 = 0.5 ... 4.5 V signal conditioner
- U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
- I1 = 4 ... 20 mA signal conditioner (3 wire)
- I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output 1

- P1A = Position magnet 1, increasing
- P1D = Position magnet 1, decreasing
- DA = Difference magnet 1/2, increasing (2 magnets required)
- DD = Difference magnet 1/2, decreasing (2 magnets required)

Function and characteristics output 2

- P2A = Position magnet 2, increasing
 - P2D = Position magnet 2, decreasing
 - DA = Difference magnet 1/2, increasing
 - DD = Difference magnet 1/2, decreasing
- } 2 magnets required

VZx.x = Velocity with direction detection (with 1 magnet only)

VZx.x = Velocity in steps of 0.1 m/s

Example: VZ1.5 towards start position towards end position

-1.5 m/s 0 +1.5 m/s

Output U2: 0.5 V 5.25 V 10 V

Output I1: 4 mA 12 mA 20 mA

VAx.x = Velocity without direction detection (with 1 magnet only)

VAx.x = Velocity in steps of 0.1 m/s

Example: VA1.5 towards start position towards end position

-1.5 m/s 0 +1.5 m/s

Output U2: 10 V 0.5 V 10 V

Output I1: 20 mA 4 mA 20 mA

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

KAB2M = Cable, standard length 2 m, other lengths upon request

1. Order example: PCFP23 - 1000 - U2 - P1D - L10 - KAB2M

Flat profile, measurement range 1000 mm, 1 voltage output 0.5 ... 10 V (U2)

Output 1: Position magnet 1, decreasing signal (P1D)

Output 2: Not used

3. Order example: PCFP23 - 1000 - U2 - P1A - VZ1.0 - L10 - KAB2M

Flat profile, measurement range 1000 mm, 2 voltage outputs 0.5 ... 10 V (U2)

Output 1: Position magnet 1, increasing signal (P1A)

Output 2: Velocity magnet 1, -1 m/s ... 1 m/s for range 0.5 ... 10 V (VZ1.0)

Order code position magnet (see page 39)

PCMAG5

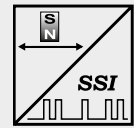
Order code connection cable (see page 83)

KAB-...M-M8/4F/G-LITZE



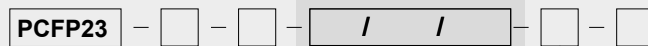
POSICHRON® position sensor with only 12 mm height and 43 mm width

- Protection class IP64
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Ultra flat profile housing: only 12 mm high
- Easy installation with mounting brackets
- Contactless
- Absolutely wear free and maintenance-free
- Synchronous serial interface (SSI)
- Redundant version: combination of 2 sensors side by side



Specifications	Output	Synchronous serial (SSI)
	Resolution	5, 10, 20, 50, 100 µm
	Sampling rate	Up to 1 kHz, depending on the measurement range
	Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
	Repeatability	±3 µm
	Housing material	AlMgSi1 / Zn / V4A
	Protection class	IP64
	Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks
	Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
	Connection	Cable 2 m
EMC, temperature	Refer to output specification	

Order Code PCFP23



Model name

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Resolution (in µm)

5 / 10 / 20 / 50 / 100

Output

SSI = Synchronous serial interface

Code

G / D = Gray / Dual

Number of data bits

24 / 25

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

KAB2M = Cable, standard length 2 m, other lengths upon request

Order code mounting set (see page 39)

PCFP23-BFS1

Order code position magnet (see page 39)

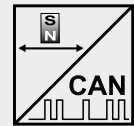
PCMAG5

Order example: PCFP23 - 2000 - 10 - SSI/G/24 - L02 - KAB2M



POSICHRON® position sensor with only 12 mm height and 43 mm width

- Protection class IP64
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Ultra flat profile housing: only 12 mm high
- Easy installation with mounting brackets
- Contactless
- Absolutely wear free and maintenance-free
- CANopen bus or CAN SAE J1939 output
- Redundant version: combination of 2 sensors side by side



Specifications	Output	CANopen bus; CAN SAE J1939
	Resolution	50 µm
	Sampling rate	Up to 1 kHz, depending on the measurement range
	Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
	Repeatability	±3 µm
	Housing material	AlMgSi1 / Zn / V4A
	Protection class	IP64
	Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks
	Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
	Connection	Cable 0,3 m with 5-pin connector M12
EMC, temperature	Refer to output specification	

Order Code PCFP23



Model name

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Output

CANOP = CANopen bus
CANOP/R = CANopen-Bus with integrated terminating resistance
CANJ1939 = CAN SAE J1939

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

KAB0,3M-M12/CAN = Cable (length 0.3 m) with 5-pin M12 connector

Order code mounting set (see page 39)

PCFP23-BFS1

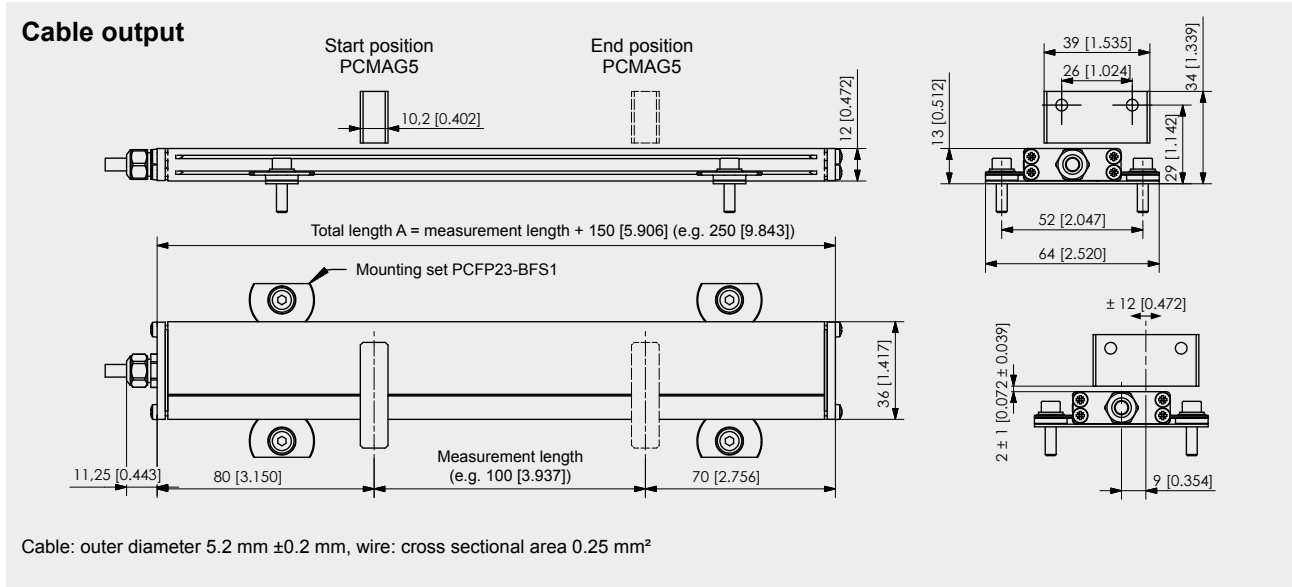
Order code position magnet (see page 39)

PCMAG ...

Order code bus cable (see page 83)

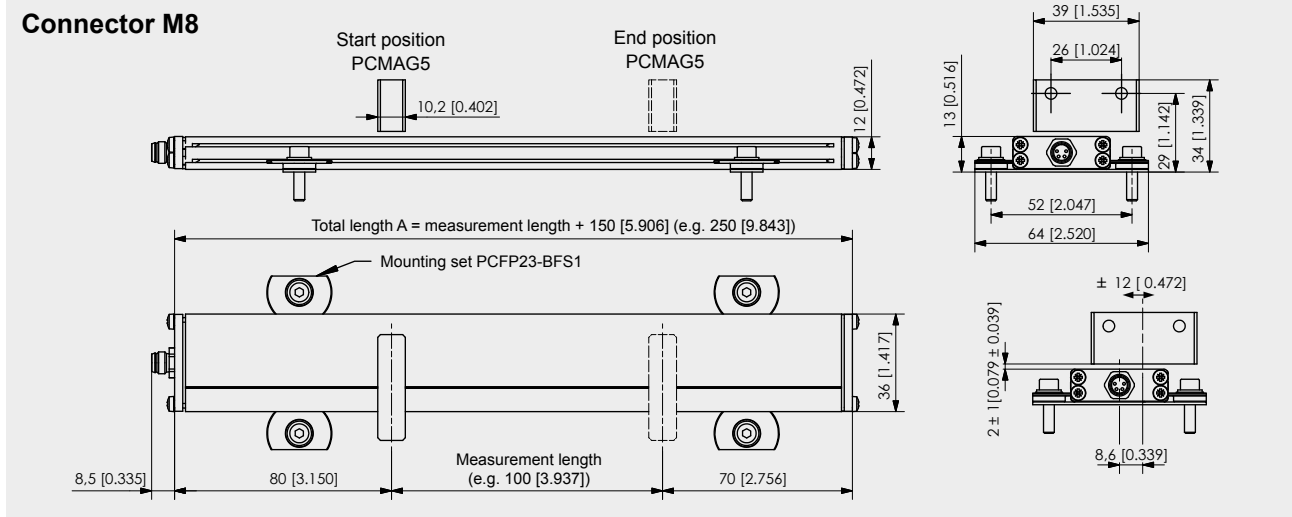
KAB-...M-M12/5F/G-M12/5M/G - CAN

Order example: PCFP23 - 1000 - CANOP - L10 - KAB0,3M-M12/CAN



Dimensions in mm [inch]

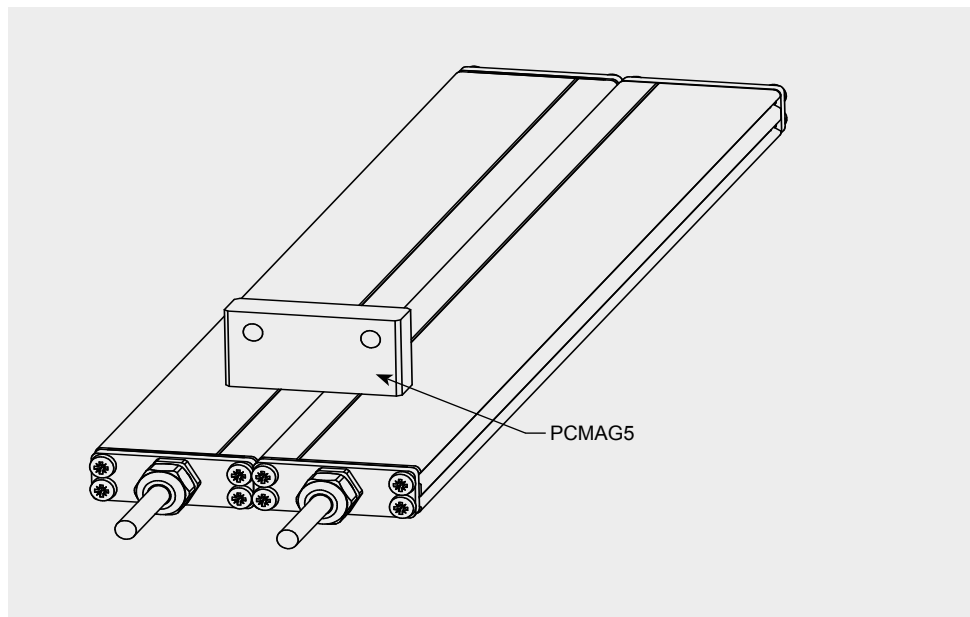
Dimensions informative only. For guaranteed dimensions consult factory.



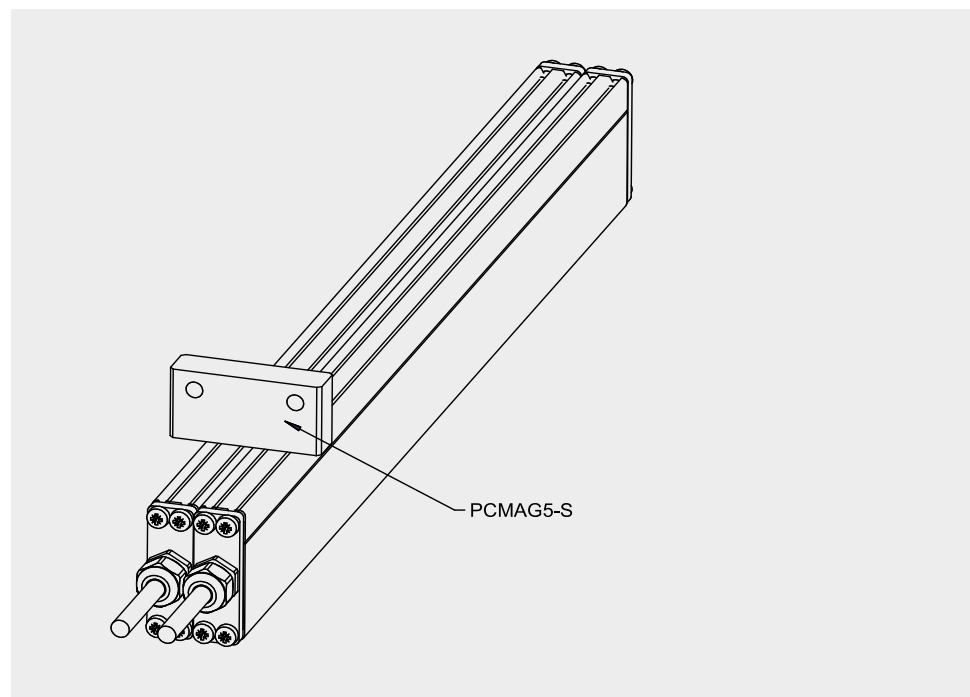
Dimensions in mm [inch]

Dimensions informative only. For guaranteed dimensions consult factory.

Horizontal arrangement



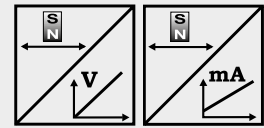
Vertical arrangement





**POSICHRON® position sensor
Only 12 mm height and 43 mm width**

- Protection class up to IP67/IP69K
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Ultra flat profile housing: only 12 mm high
- Easy installation with mounting brackets
- Contactless
- Absolutely wear free and maintenance-free
- Analog output



Specifications	Output	Voltage Current
	Resolution	Refer to output specification
	Sampling rate	Up to 1 kHz, depending on the measurement range
	Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
	Repeatability	±3 µm
	Housing material	AlMgSi1 / Zn / V4A
	Protection class	IP67 (optional IP67/IP69K; connector version: with mating connector only)
	Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks
	Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
	Connection	4 pin socket M8 / cable 2 m
EMC, temperature	Refer to output specification	

**Order code PCFP24
1 channel**



Model name

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Output

- U1 = 0 ... 10 V signal conditioner
- U1/H = U1 with Alarm_HOLD (see page 78)
- U2 = 0.5 ... 10 V signal conditioner
- U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
- U8 = 0.5 ... 4.5 V signal conditioner
- U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
- I1 = 4 ... 20 mA signal conditioner (3 wire)
- I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output

- P1A = Position Magnet 1, increasing
- P1D = Position Magnet 1, decreasing
- PMU = Start value, direction & end value adjustable by the customer

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

- M8 = Connector M8, 4 pin
- KAB2M = Cable, standard length 2 m, other lengths upon request

Order code mounting set (see page 39)

PCFP24-BFS1

Order Code PCFP24
2 channel, configurable

PCFP24 - [] - [] - [] - [] - [] - []

Model name

Measurement range (in mm)
 100 ... 5750 (in 10 mm increments)
 other lengths upon request

Output

U1 = 0 ... 10 V signal conditioner
 U1/H = U1 with Alarm_HOLD (see page 78)
 U2 = 0.5 ... 10 V signal conditioner
 U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
 U8 = 0.5 ... 4.5 V signal conditioner
 U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
 I1 = 4 ... 20 mA signal conditioner (3 wire)
 I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output 1

P1A = Position magnet 1, increasing
 P1D = Position magnet 1, decreasing
 DA = Difference magnet 1/2, increasing (2 magnets required)
 DD = Difference magnet 1/2, decreasing (2 magnets required)

Function and characteristics output 2

P2A = Position magnet 2, increasing
 P2D = Position magnet 2, decreasing
 DA = Difference magnet 1/2, increasing
 DD = Difference magnet 1/2, decreasing } 2 magnets required

VZx.x = Velocity with direction detection (with 1 magnet only)
 VZx.x = Velocity in steps of 0.1 m/s
Example: VZ1.5 towards start position towards end position

	-1.5 m/s	0	+1.5 m/s
Output U2:	0.5 V	5.25 V	10 V
Output I1:	4 mA	12 mA	20 mA

VAx.x = Velocity without direction detection (with 1 magnet only)
 VAx.x = Velocity in steps of 0.1 m/s
Example: VA1.5 towards start position towards end position

	-1.5 m/s	0	+1.5 m/s
Output U2:	10 V	0.5 V	10 V
Output I1:	20 mA	4 mA	20 mA

Linearity
 L02 / L02MM / L10 (for definition see "Specifications" above)

Connection
 KAB2M = Cable, standard length 2 m, other lengths upon request

1. Order example: PCFP24 - 1000 - I1 - P1A - P2D - L10 - KAB2M
 Flat profile, measurement range 1000 mm, 2 current outputs 4 ... 20 mA (I1)
 Output 1: Position magnet 1, increasing signal (P1A)
 Output 2: Position magnet 2, decreasing signal (P2D)

2. Order example: PCFP24 - 1000 - U2 - P1A - VZ1.0 - L10 - KAB2M
 Flat profile, measurement range 1000 mm, 2 voltage outputs 0.5 ... 10 V (U2)
 Output 1: Position magnet 1, increasing signal (P1A)
 Output 2: Velocity magnet 1, -1 m/s ... 1 m/s for range 0.5 ... 10 V (VZ1.0)

Order code position magnet (see page 39)

PCMAG5

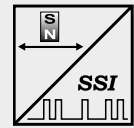
Order code mating connecting cable (see page 83)

KAB-...M-M8/4F/G-LITZE



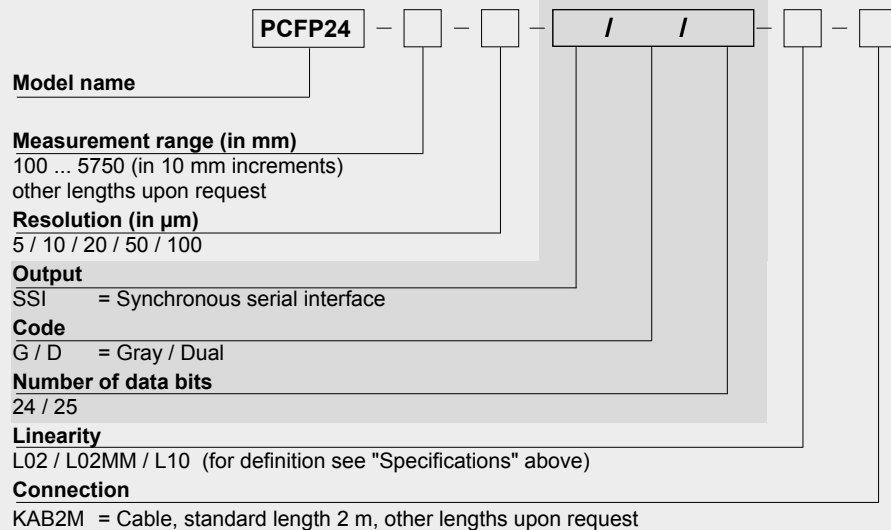
**POSICHRON® position sensor
Only 12 mm height and 43 mm width**

- Protection class up to IP67/IP69K
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Ultra flat profile housing: only 12 mm high
- Easy installation with mounting brackets
- Contactless
- Absolutely wear free and maintenance-free
- Synchronous serial interface (SSI)



Specifications	Output	Synchronous serial (SSI)
	Resolution	5, 10, 20, 50, 100 µm
	Sampling rate	Up to 1 kHz, depending on the measurement range
	Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
	Repeatability	±3 µm
	Housing material	AlMgSi1 / Zn / V4A
	Protection class	IP67 (optional IP67/IP69K; connector version: with mating connector only)
	Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks
	Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
	Connection	Cable 2 m
EMC, temperature	Refer to output specification	

Order Code PCFP24



Order code mounting set (see page 39)

PCFP24-BFS1

Order code position magnet (see page 39)

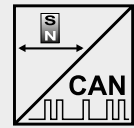
PCMAG5

Order example: PCFP24 - 2000 - 5 - SSI/G/24 - L02 - KAB2M



POSICHRON® position sensor with only 12 mm height and 43 mm width

- Protection class up to IP67/IP69K
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Ultra flat profile housing: only 12 mm high
- Easy installation with mounting brackets
- Contactless
- Absolutely wear free and maintenance-free
- CANopen bus or CAN SAE J1939 output
- Redundant version: combination of 2 sensors side by side



Specifications		
Output		CANopen bus; CAN SAE J1939
Resolution		50 µm
Sampling rate		Up to 1 kHz, depending on the measurement range
Linearity		Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
Repeatability		±3 µm
Housing material		AlMgSi1 / Zn / V4A
Protection class		IP67 (optional IP67/IP69K; connector version: with mating connector only)
Shock		EN 60068-2-27:2010, 50 g 11 ms, 100 shocks
Vibration		EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
Connection		Cable 0,3 m with 5-pin connector M12
EMC, temperature		Refer to output specification

Order Code PCFP24

Model name PCFP24 - - - -

Measurement range (in mm)
100 ... 5750 (in 10 mm increments)
other lengths upon request

Output
CANOP = CANopen bus
CANOP/R = CANopen-Bus with integrated terminating resistance
CANJ1939 = CAN SAE J1939

Linearity
L02 / L02MM / L10 (for definition see "Specifications" above)

Connection
KAB0,3M-M12/CAN = Cable (length 0.3 m) with 5-pin M12 connector

Order code mounting set (see page 39)

PCFP24-BFS1

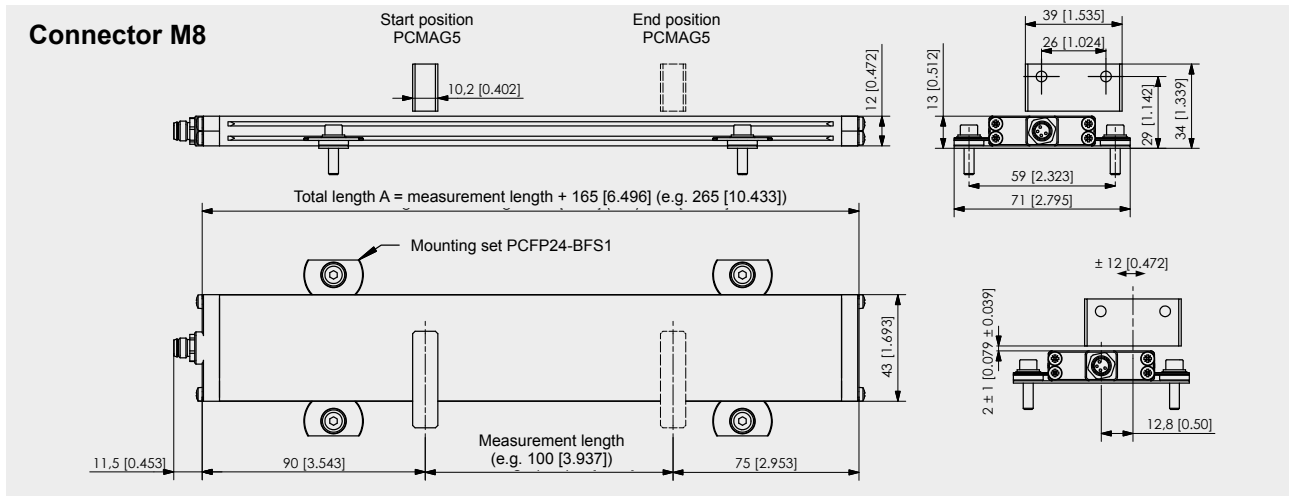
Order code position magnet (see page 39)

PCMAG5

Order code bus cable (see page 83)

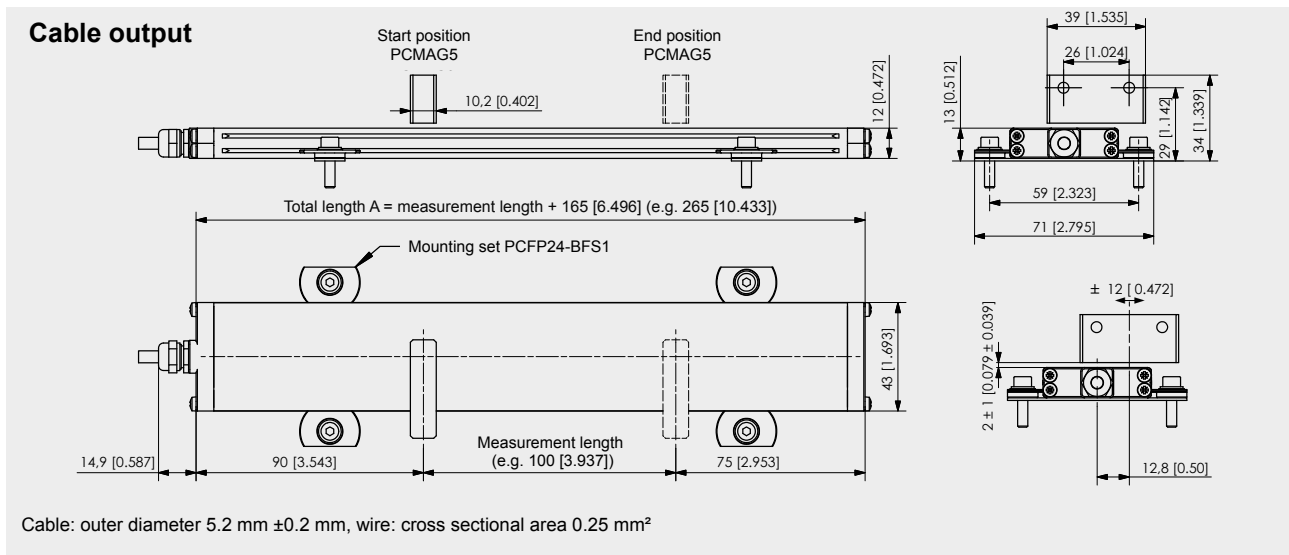
KAB-...M-M12/5F/G-M12/5M/G - CAN

Order example: PCFP24 - 1000 - CANOP - L10 - KAB0,3M-M12/CAN



Dimensions in mm [inch]

Dimensions informative only. For guaranteed dimensions consult factory.



Dimensions in mm [inch]

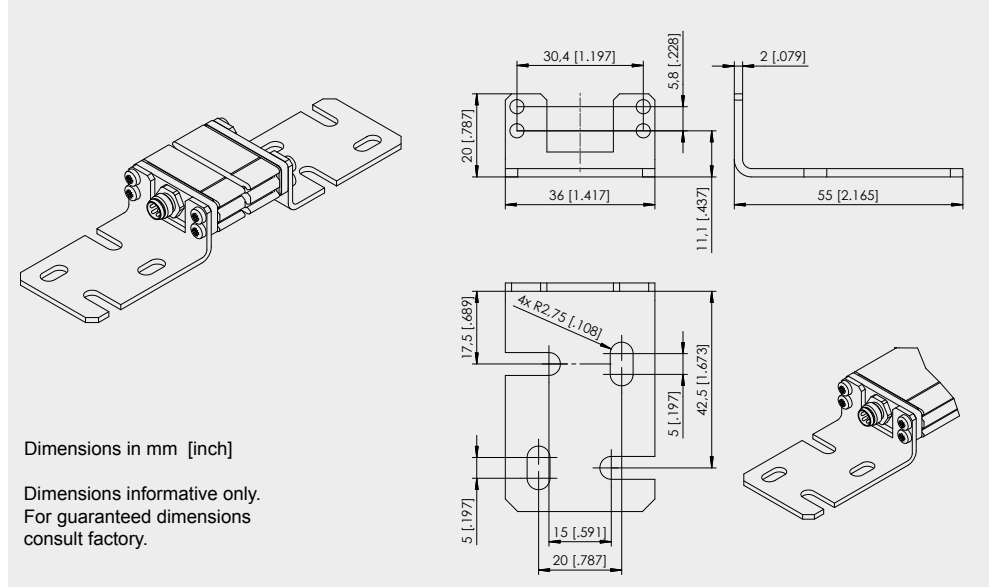
Dimensions informative only. For guaranteed dimensions consult factory.

POSICHRON®
PCFP24
 Flat Profile Housing



Option -BFW
 Mounting brackets for
 PCFP23

Note: The option -BFW can only be ordered with a new sensor, not separately!
 Applicable for sensor lengths up to 1000 mm. Not combinable with PCFP23-BFS1.

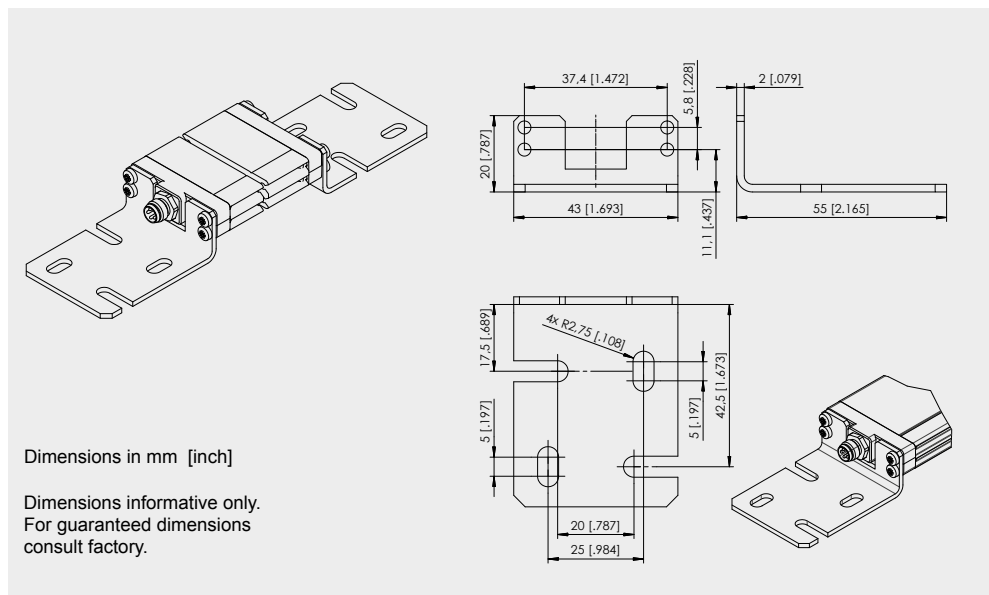


Dimensions in mm [inch]
 Dimensions informative only.
 For guaranteed dimensions
 consult factory.

Order example: PCFP23 - 1000 - STSP - L02 - M8 - BFW

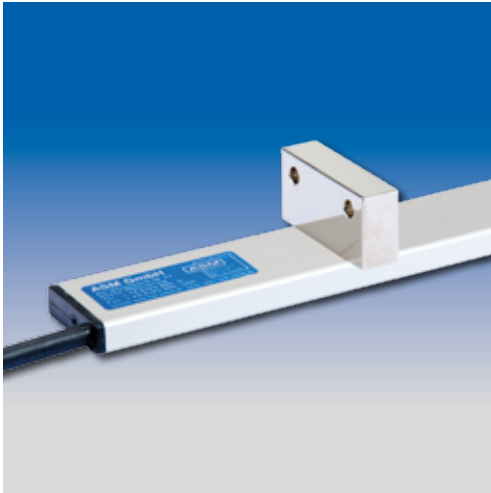
Option -BFW
 Mounting brackets for
 PCFP24

Note: The option -BFW can only be ordered with a new sensor, not separately!
 Applicable for sensor lengths up to 1000 mm. Not combinable with PCFP24-BFS1.



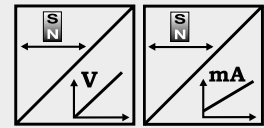
Dimensions in mm [inch]
 Dimensions informative only.
 For guaranteed dimensions
 consult factory.

Order example: PCFP24 - 1000 - STSP - L02 - M8 - BFW



Ultra flat POSICHRON® position sensor

- Only 8 mm high and 28 mm wide
- Protection class up to IP67
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Absolutely wear free and maintenance-free
- Wide variety of mounting
- Analog output



Specifications	Output	Voltage Current
	Resolution	Refer to output specification
Sampling rate	Up to 1 kHz, depending on the measurement range	
Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm	
Repeatability	±3 µm	
Material	AlMgSi1 and plastic	
Protection class	IP64 (optional IP67)	
Connection	Cable 2 m	
Shock	EN 60068-2-27:2010, 50 g/11 ms, 100 shocks	
Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles	
EMC, temperature	Refer to output specification	

**Order code PCFP25
1 channel**



Model name

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Output

- U1 = 0 ... 10 V signal conditioner
- U1/H = U1 with Alarm_HOLD (see page 78)
- U2 = 0.5 ... 10 V signal conditioner
- U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
- U8 = 0.5 ... 4.5 V signal conditioner
- U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
- I1 = 4 ... 20 mA signal conditioner (3 wire)
- I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output

- P1A = Position Magnet 1, increasing
- P1D = Position Magnet 1, decreasing
- PMU = Start value, direction & end value adjustable by the customer

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

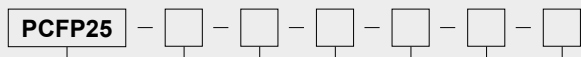
KAB2M = Cable, standard length 2 m, other lengths upon request

Order code position magnet (see page 39)

PCFP25-BFS1

Order Code PCFP25

**2 channel,
configurable**



Model name

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Output

- U1 = 0 ... 10 V signal conditioner
- U1/H = U1 with Alarm_HOLD (see page 78)
- U2 = 0.5 ... 10 V signal conditioner
- U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
- U8 = 0.5 ... 4.5 V signal conditioner
- U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
- I1 = 4 ... 20 mA signal conditioner (3 wire)
- I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output 1

- P1A = Position magnet 1, increasing
- P1D = Position magnet 1, decreasing
- DA = Difference magnet 1/2, increasing (2 magnets required)
- DD = Difference magnet 1/2, decreasing (2 magnets required)

Function and characteristics output 2

- P2A = Position magnet 2, increasing
 - P2D = Position magnet 2, decreasing
 - DA = Difference magnet 1/2, increasing
 - DD = Difference magnet 1/2, decreasing
- } 2 magnets required

VZx.x = Velocity with direction detection (with 1 magnet only)

VZx.x = Velocity in steps of 0.1 m/s

Example: VZ1.5	towards start position	0	towards end position
	-1.5 m/s	0	+1.5 m/s
Output U2:	0.5 V	5.25 V	10 V
Output I1:	4 mA	12 mA	20 mA

VAx.x = Velocity without direction detection (with 1 magnet only)

VAx.x = Velocity in steps of 0.1 m/s

Example: VA1.5	towards start position	0	towards end position
	-1.5 m/s	0	+1.5 m/s
Output U2:	10 V	0.5 V	10 V
Output I1:	20 mA	4 mA	20 mA

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

KAB2M = Cable, standard length 2 m, other lengths upon request

1. Order example: PCFP25 - 1000 - U2 - P1D - L10 - KAB2M

Flat profile, measurement range 1000 mm, 1 voltage output 0.5 ... 10 V (U2)

Output 1: Position magnet 1, decreasing signal (P1D)

Output 2: Not used

2. Order example: PCFP25 - 1000 - I1 - P1A - P2D - L10 - KAB2M

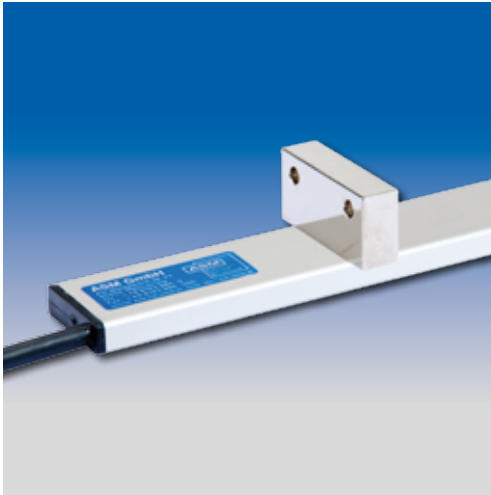
Flat profile, measurement range 1000 mm, 2 current outputs 4 ... 20 mA (I1)

Output 1: Position magnet 1, increasing signal (P1A)

Output 2: Position magnet 2, decreasing signal (P2D)

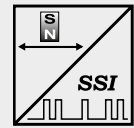
Order code position magnet (see page 39)

PCMAG5



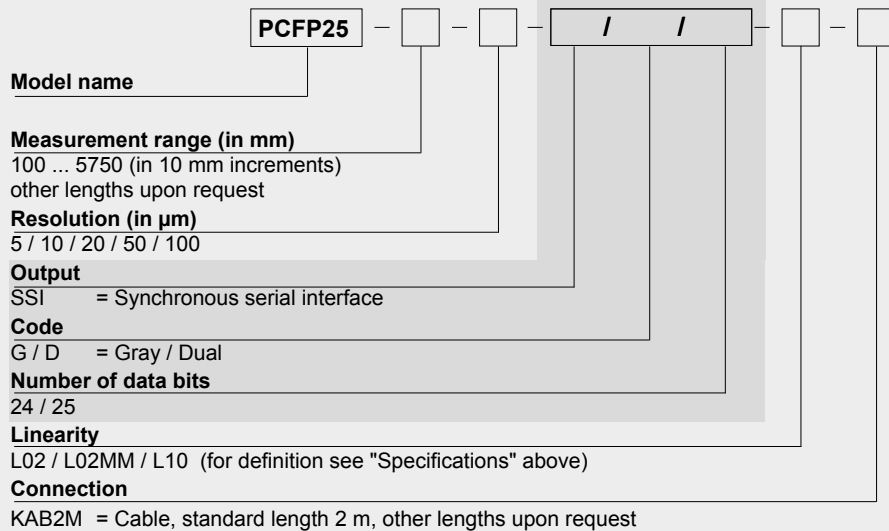
Ultra flat POSICHRON® position sensor

- Only 8 mm high and 28 mm wide
- Protection class up to IP67
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Absolutely wear free and maintenance-free
- Wide variety of mounting
- Synchronous serial interface (SSI)



Specifications	Output	Synchronous serial (SSI)
	Resolution	5, 10, 20, 50, 100 µm
	Sampling rate	Up to 1 kHz, depending on the measurement range
	Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
	Repeatability	±3 µm
	Housing material	AlMgSi1 and plastic
	Protection class	IP64 (optional IP67)
	Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks
	Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
	Connection	Cable 2 m
EMC, temperature	Refer to output specification	

Order Code PCFP24



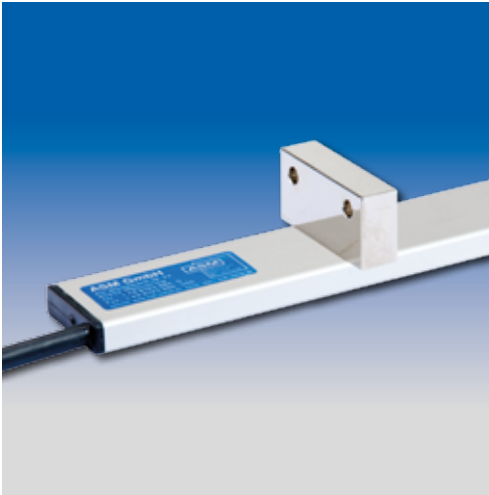
Order code mounting set (see page 39)

PCFP25-BFS1

Order code position magnet (see page 39)

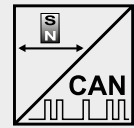
PCMAG5

Order example: PCFP25 - 2000 - 5 - SSI/G/24 - L10 - KAB2M



Ultra flat POSICHRON® position sensor

- Only 8 mm high and 28 mm wide
- Protection class up to IP67
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Absolutely wear free and maintenance-free
- Wide variety of mounting
- CANopen bus or CAN SAE J1939 output



Specifications	Output	CANopen bus; CAN SAE J1939
	Resolution	50 µm
	Sampling rate	Up to 1 kHz, depending on the measurement range
	Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
	Repeatability	±3 µm
	Housing material	AlMgSi1 and plastic
	Protection class	IP64 (optional IP67)
	Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks
	Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
Connection	Cable (length 0.3 m) with 5-pin connector M12	
EMC, temperature	Refer to output specification	

Order Code PCFP25

Model name PCFP25 - [] - [] - [] - []

Measurement range (in mm)
100 ... 5750 (in 10 mm increments)
other lengths upon request

Output
CANOP = CANopen bus
CANOP/R = CANopen-Bus with integrated terminating resistance
CANJ1939 = CAN SAE J1939

Linearity
L02 / L02MM / L10 (for definition see "Specifications" above)

Connection
KAB0,3M-M12/CAN = Cable (length 0.3 m) with 5-pin M12 connector

Order code mounting set (see page 39)

PCFP25-BFS1

Order code position magnet (see page 39)

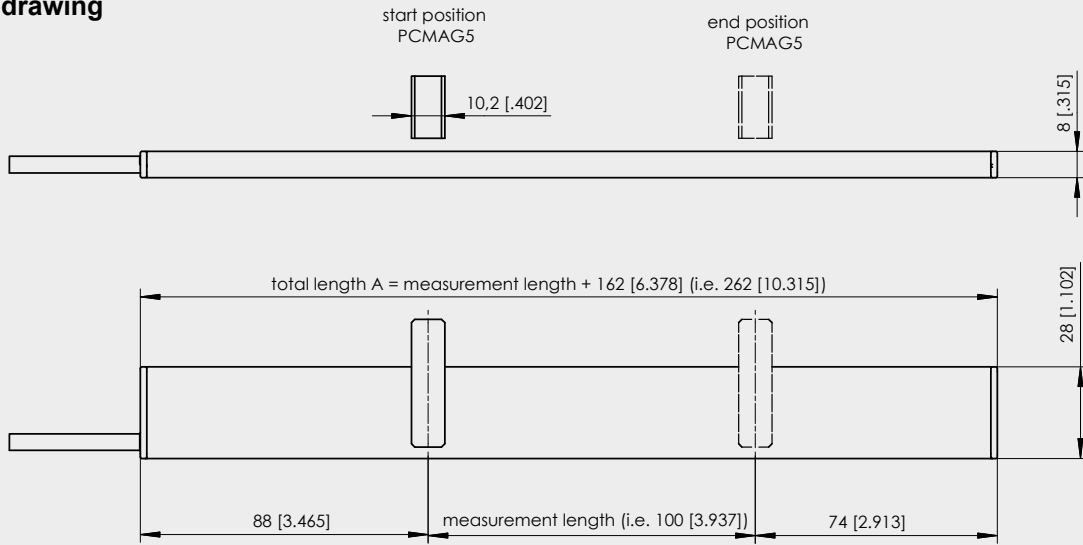
PCMAG5

Order code bus cable (see page 83)

KAB-...M-M12/5F/G-M12/5M/G - CAN

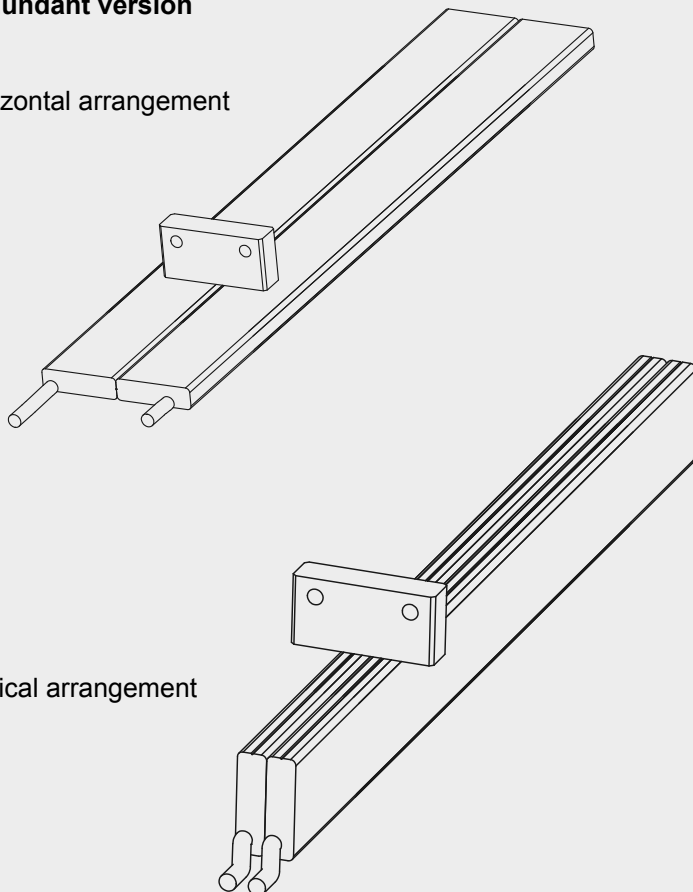
Order example: PCFP25 - 2000 - CANOP - L10 - KAB0,3M-M12/CAN

Outline drawing

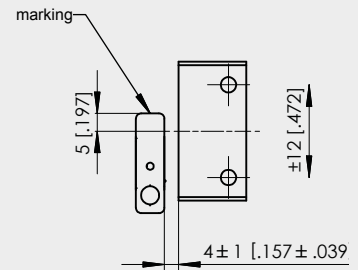


Redundant version

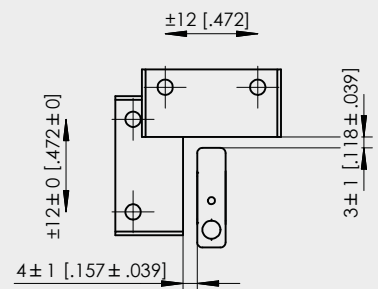
Horizontal arrangement



Vertical arrangement



alternative magnet positions

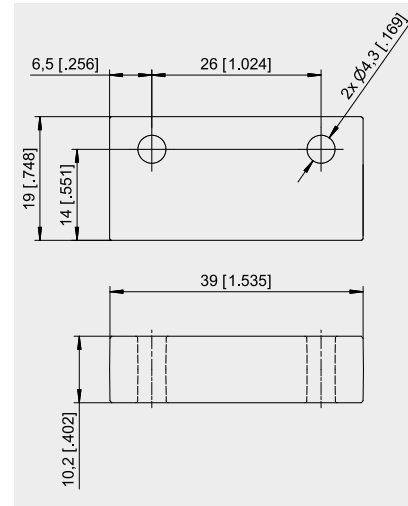
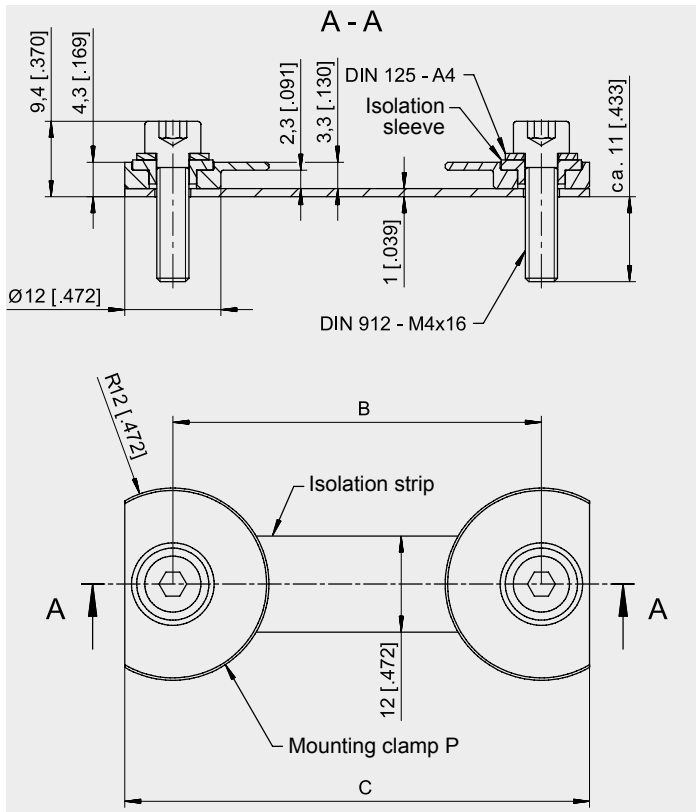


Dimensions in mm [inch]

Dimensions informative only.
For guaranteed dimensions
consult factory.

PCFP23-BFS1 and PCFP24-BFS1
Mounting set for PCFP23, PCFP24

PCMAG5
Standard magnet

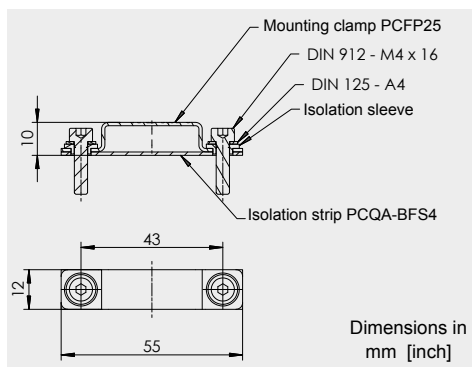


Dimensions in mm [inch]

Dimensions informative only.
For guaranteed dimensions consult factory.

Dimensions BFS1	POSICHRON Model	Dim. B [mm]	Dim. C [mm]
	PCFP23	52	64
	PCFP24	59	71

PCFP25-BFS1
Mounting set for
PCFP25

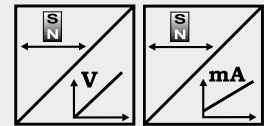


Dimensions in mm [inch]



POSICHRON® position sensor in round profile

- Protection class IP64
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Contactless
- Absolutely wearless and maintenance-free for the positioning magnet
- Analog output



Specifications	Output	Voltage Current
	Resolution	Refer to output specification
Sampling rate	Up to 1 kHz, depending on the measurement range	
Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm	
Repeatability	±3 µm	
Housing material	AlMgSi1 / Zn / V4A	
Protection class	IP64 (with mating connector only)	
Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks	
Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles	
Connection	Connector M12, 8 pin / cable 2 m	
EMC, temperature	Refer to output specification	

**Order code PCRP21
1 channel**



Model name

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Output

- U1 = 0 ... 10 V signal conditioner
- U1/H = U1 with Alarm_HOLD (see page 78)
- U2 = 0.5 ... 10 V signal conditioner
- U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
- U8 = 0.5 ... 4.5 V signal conditioner
- U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
- I1 = 4 ... 20 mA signal conditioner (3 wire)
- I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output

- P1A = Position Magnet 1, increasing
- P1D = Position Magnet 1, decreasing
- PMU = Start value, direction & end value adjustable by the customer

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

- M12 = Connector M12, 8 pin
- KAB2M = Cable, standard length 2 m, other lengths upon request

Order code mounting set (see page 51)

PCRP21-BFS4

Order Code PCRP21
2 channel, configurable

PCRP21 - [] - [] - [] - [] - [] - []

Model name

Measurement range (in mm)
 100 ... 5750 (in 10 mm increments)
 other lengths upon request

Output

U1 = 0 ... 10 V signal conditioner
 U1/H = U1 with Alarm_HOLD (see page 78)
 U2 = 0.5 ... 10 V signal conditioner
 U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
 U8 = 0.5 ... 4.5 V signal conditioner
 U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
 I1 = 4 ... 20 mA signal conditioner (3 wire)
 I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output 1

P1A = Position magnet 1, increasing
 P1D = Position magnet 1, decreasing
 DA = Difference magnet 1/2, increasing (2 magnets required)
 DD = Difference magnet 1/2, decreasing (2 magnets required)

Function and characteristics output 2

P2A = Position magnet 2, increasing
 P2D = Position magnet 2, decreasing
 DA = Difference magnet 1/2, increasing
 DD = Difference magnet 1/2, decreasing } 2 magnets required

VZx.x = Velocity with direction detection (with 1 magnet only)

VZx.x = Velocity in steps of 0.1 m/s			
<u>Example: VZ1.5</u>	towards start position		towards end position
	-1.5 m/s	0	+1.5 m/s
Output U2:	0.5 V	5.25 V	10 V
Output I1:	4 mA	12 mA	20 mA

VAx.x = Velocity without direction detection (with 1 magnet only)

VAx.x = Velocity in steps of 0.1 m/s			
<u>Example: VA1.5</u>	towards start position		towards end position
	-1.5 m/s	0	+1.5 m/s
Output U2:	10 V	0.5 V	10 V
Output I1:	20 mA	4 mA	20 mA

Linearity
 L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

M12 = Connector M12, 8 pin
 KAB2M = Cable, standard length 2 m, other lengths upon request

1. Order example: PCRP21 - 1000 - U2 - P1D - L10 - M12
 Round profile, measurement range 1000 mm, 1 voltage output 0.5 ... 10 V (U2)
 Output 1: Position magnet 1, decreasing signal (P1D)
 Output 2: Not used

2. Order example: PCRP21 - 1000 - I1 - P1A - P2D - L10 - M12
 Round Profile, measurement range 1000 mm, 2 current outputs 4 ... 20 mA (I1)
 Output 1: Position magnet 1, increasing signal (P1A)
 Output 2: Position magnet 2, decreasing signal (P2D)

Order code position magnets (see page 51)

PCMAG ...

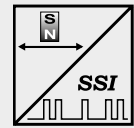
Order code mating connecting cable (see page 82)

KAB-...M-M12/8F/G-LITZE



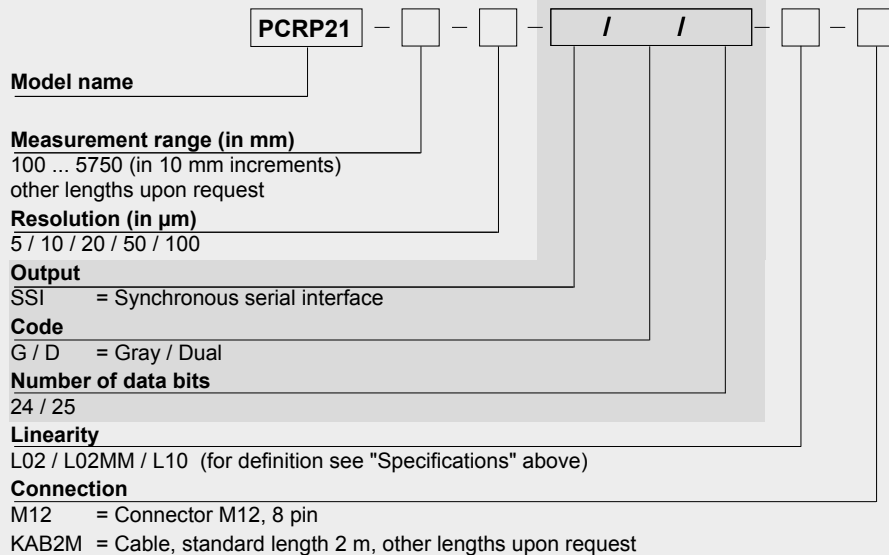
POSICHRON® position sensor in round profile

- Protection class IP64
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Wear- and maintenance-free
- Superior shock and vibration resistance
- Absolutely wear free and maintenance-free
- Synchronous serial interface (SSI)



Specifications		
Output		Synchronous serial interface (SSI)
Resolution		5, 10, 20, 50, 100 µm
Sampling rate		Up to 1 kHz, depending on the measurement range
Linearity		Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
Repeatability		±3 µm
Housing material		AlMgSi1 / Zn / V4A
Protection class		IP64 (with mating connector only)
Shock		EN 60068-2-27:2010, 50 g 11 ms, 100 shocks
Vibration		EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
Connection		Connector M12, 8 pin / cable 2m
EMC, temperature		Refer to output specification

Order Code PCR21



Order code mounting set (see page 51)

PCRP21-BFS4

Order code position magnets (see page 51)

PCMAG ...

Order code mating connecting cable (see page 82)

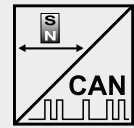
KAB-...M-M12/8F/G-LITZE

Order example: PCR21 - 1000 - 5 - SSI/G/24 - L10 - M12



POSICHRON® position sensor in round profile

- Protection class IP64
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Contactless
- Absolutely wear free and maintenance-free
- CANopen bus



Specifications	Output	CANopen bus; CAN SAE J1939
	Resolution	50 µm
	Sampling rate	Up to 1 kHz, depending on the measurement range
	Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
	Repeatability	±3 µm
	Housing material	AlMgSi1 / Zn / V4A
	Protection class	IP64 (with mating connector only)
	Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks
	Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
	Connection	5 pin socket M12
EMC, temperature	Refer to output specification	

Order Code PCR21

PCR21 - [] - [] - [] - []

Model name

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Output

CANOP = CANopen bus
CANOP/R = CANopen-Bus with integrated terminating resistance
CANJ1939 = CAN SAE J1939

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

M12/CAN = Connector M12, 5 pin

Order code mounting set (see page 51)

PCR21-BFS4

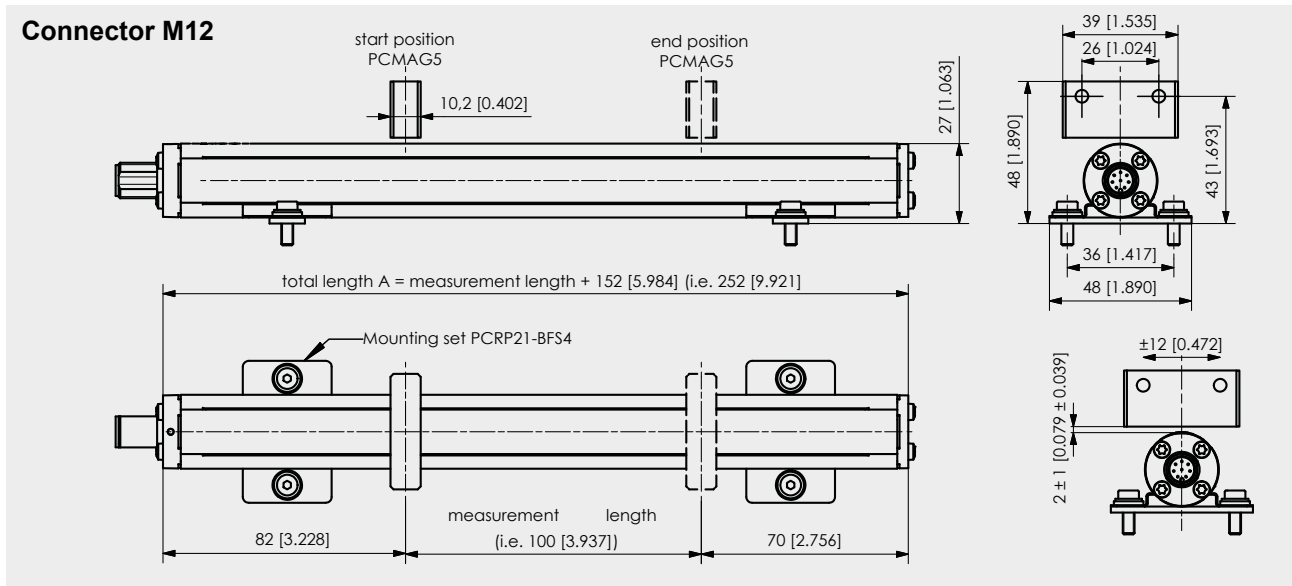
Order code position magnet (see page 51)

PCMAG ...

Order code bus cable (see page 83)

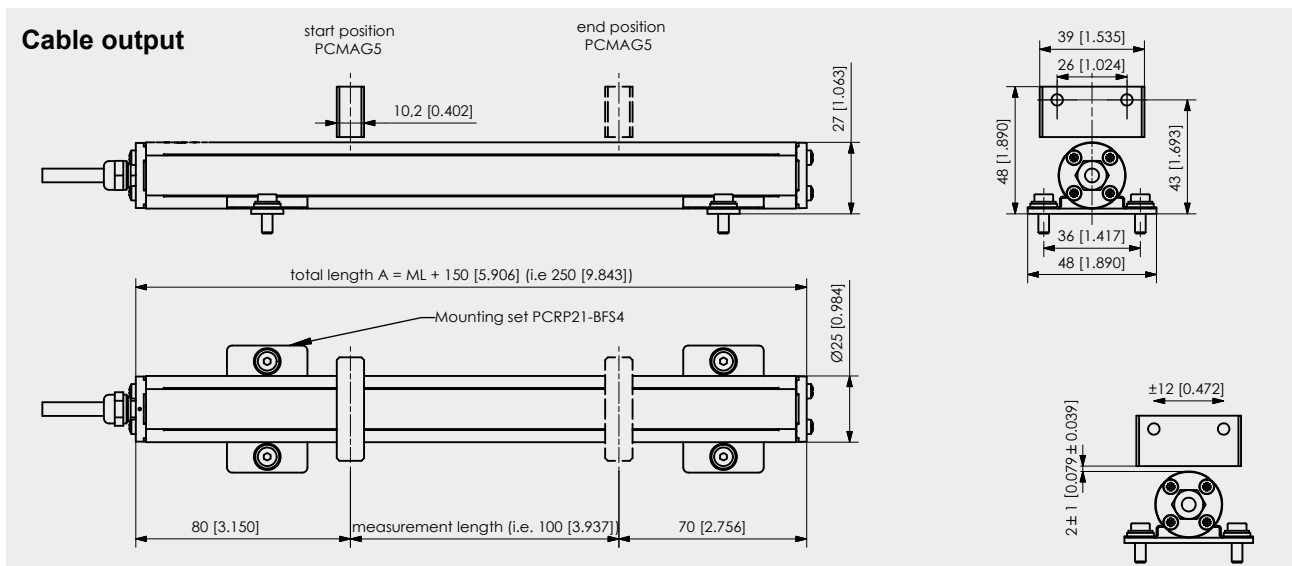
KAB-...M-M12/5F/G-M12/5M/G - CAN

Order example: PCR21 - 1000 - CANOP - L10 - M12/CAN



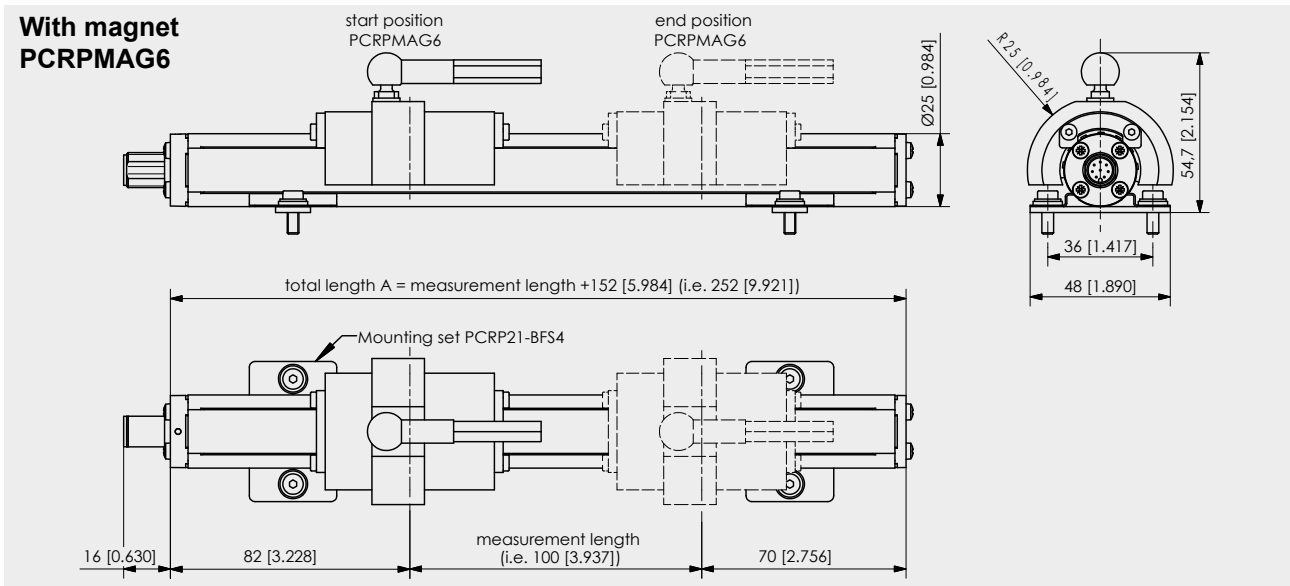
Dimensions in mm [inch]

Dimensions informative only. For guaranteed dimensions consult factory.



Dimensions in mm [inch]

Dimensions informative only. For guaranteed dimensions consult factory.



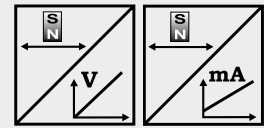
Dimensions in mm [inch]

Dimensions informative only. For guaranteed dimensions consult factory.



POSICHRON® position sensor in a stainless steel pressure tube

- Protection class IP68/IP69K
- Underwater applications, permanent pressure-proof up to 15 bar
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Contactless
- Seawater-proof
- Analog output



Specifications	Output	Voltage Current
	Resolution	Refer to output specification
Sampling rate	Up to 1 kHz, depending on the measurement range	
Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm	
Repeatability	±3 µm	
Housing material	Stainless steel 1.4404	
Protection class	IP68/IP69K (permanent pressure-proof up to 15 bar)	
Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks	
Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles	
Connection	Cable 2 m	
EMC, temperature	Refer to output specification	

**Order code PCRP32
1 channel**



Model name

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Output

- U1 = 0 ... 10 V signal conditioner
- U1/H = U1 with Alarm_HOLD (see page 78)
- U2 = 0.5 ... 10 V signal conditioner
- U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
- U8 = 0.5 ... 4.5 V signal conditioner
- U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
- I1 = 4 ... 20 mA signal conditioner (3 wire)
- I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output

- P1A = Position Magnet 1, increasing
- P1D = Position Magnet 1, decreasing
- PMU = Start value, direction & end value adjustable by the customer

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

KAB2M = Cable, standard length 2 m, other lengths upon request

Order code position magnet (see page 51)

PCMAG5

Order Code PCRP32

**2 channel,
configurable**

PCRP32 - [] - [] - [] - [] - [] - []

Model name

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Output

- U1 = 0 ... 10 V signal conditioner
- U1/H = U1 with Alarm_HOLD (see page 78)
- U2 = 0.5 ... 10 V signal conditioner
- U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
- U8 = 0.5 ... 4.5 V signal conditioner
- U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
- I1 = 4 ... 20 mA signal conditioner (3 wire)
- I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output 1

- P1A = Position magnet 1, increasing
- P1D = Position magnet 1, decreasing
- DA = Difference magnet 1/2, increasing (2 magnets required)
- DD = Difference magnet 1/2, decreasing (2 magnets required)

Function and characteristics output 2

- P2A = Position magnet 2, increasing
 - P2D = Position magnet 2, decreasing
 - DA = Difference magnet 1/2, increasing
 - DD = Difference magnet 1/2, decreasing
- } 2 magnets required

VZx.x = Velocity with direction detection (with 1 magnet only)

VZx.x = Velocity in steps of 0.1 m/s

Example: VZ1.5 towards start position towards end position

-1.5 m/s 0 +1.5 m/s

Output U2: 0.5 V 5.25 V 10 V

Output I1: 4 mA 12 mA 20 mA

VAx.x = Velocity without direction detection (with 1 magnet only)

VAx.x = Velocity in steps of 0.1 m/s

Example: VA1.5 towards start position towards end position

-1.5 m/s 0 +1.5 m/s

Output U2: 10 V 0.5 V 10 V

Output I1: 20 mA 4 mA 20 mA

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

KAB2M = Cable, standard length 2 m, other lengths upon request

1. Order example: PCRP32 - 1000 - U2 - P1D - L02 - KAB2M

Round profile, measurement range 1000 mm, 1 voltage output 0.5 ... 10 V (U2)

Output 1: Position magnet 1, decreasing signal (P1D)

Output 2: Not used

2. Order example: PCRP32 - 1000 - I1 - P1A - P2D - L02 - KAB2M

Round Profile, measurement range 1000 mm, 2 current outputs 4 ... 20 mA (I1)

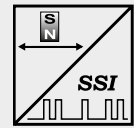
Output 1: Position magnet 1, increasing signal (P1A)

Output 2: Position magnet 2, decreasing signal (P2D)



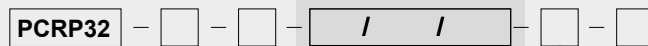
POSICHRON® position sensor in a stainless steel pressure tube

- Protection class IP68/IP69K
- Underwater applications, permanent pressure-proof up to 15 bar
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Contactless
- Seawater-proof
- Synchronous serial interface (SSI)



Specifications	Output	Synchronous serial (SSI)
	Resolution	5, 10, 20, 50, 100 µm
	Sampling rate	Up to 1 kHz, depending on the measurement range
	Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
	Repeatability	±3 µm
	Housing material	Stainless steel 1.4404
	Protection class	IP68/IP69K (permanent pressure-proof up to 15 bar)
	Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks
	Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
	Connection	Cable 2 m
EMC, temperature	Refer to output specification	

Order Code PCR32



Model name

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Resolution (in µm)

5 / 10 / 20 / 50 / 100

Output

SSI = Synchronous serial interface

Code

G / D = Gray / Dual

Number of data bits

24 / 25

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

KAB2M = Cable, standard length 2 m, other lengths upon request

Order code position magnet (see page 51)

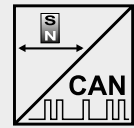
PCMAG5

Order example: PCR32 - 2000 - 5 - SSI/G/24 - L02 - KAB2M



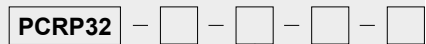
POSICHRON® position sensor in a stainless steel pressure tube

- Protection class IP68/IP69K
- Underwater applications, permanent pressure-proof up to 15 bar
- Measurement range 0 ... 100 bis 0 ... 5750 mm
- Absolute position measurement
- Contactless
- Seawater-proof
- CANopen bus or CAN SAE J1939 output



Specifications	Output	CANopen bus; CAN SAE J1939
	Resolution	50 µm
	Sampling rate	Up to 1 kHz, depending on the measurement range
	Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
	Repeatability	±3 µm
	Housing material	Stainless steel 1.4404
	Protection class	IP68/IP69K (permanent pressure-proof up to 15 bar)
	Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks
	Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
Connection	Cable 2 m	
EMC, temperature	Refer to output specification	

Order Code PCR32



Model name

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Output

CANOP = CANopen bus
CANOP/R = CANopen-Bus with integrated terminating resistance
CANJ1939 = CAN SAE J1939

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

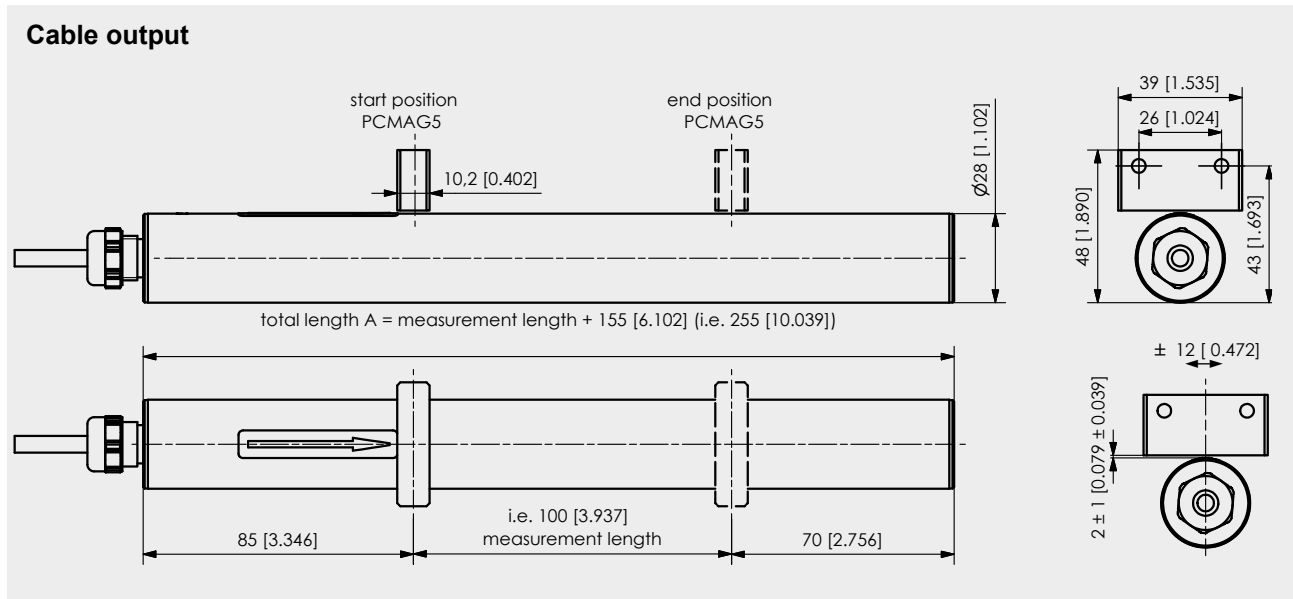
Connection

KAB2M = Cable, standard length 2 m, other lengths upon request

Order code position magnet (see page 51)

PCMAG5

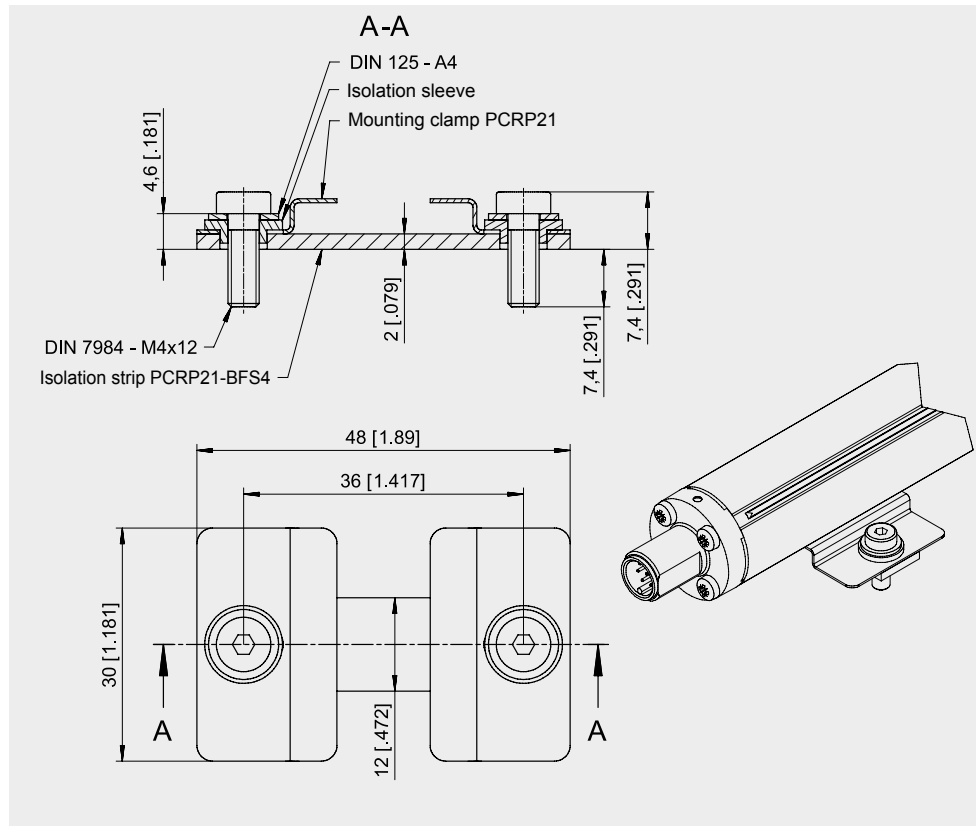
Order example: PCR32 - 2000 - CANOP - L10 - KAB2M



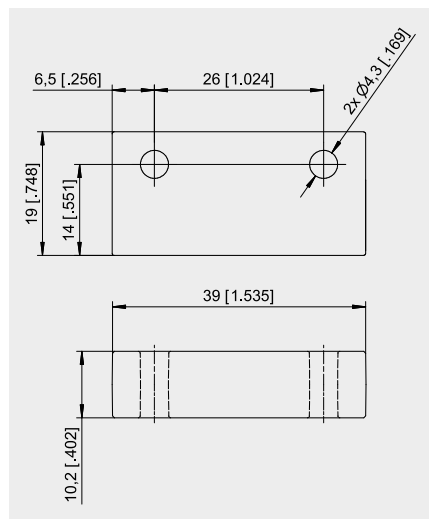
Dimensions in mm [inch]

Dimensions informative only. For guaranteed dimensions consult factory.

PCRP21-BFS4
Mounting set for
PCRP21



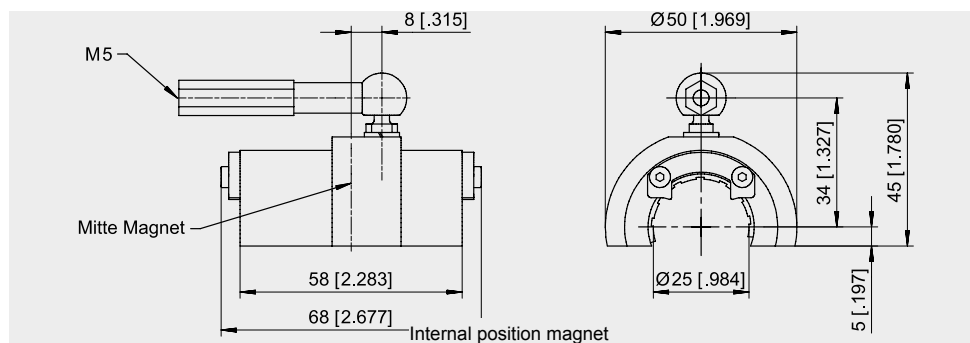
PCMAG5
Standard magnet



Dimensions in mm [inch]

Dimensions informative only.
For guaranteed dimensions consult factory.

PCRPMAG6
Guided magnet slider
for PCR21 with internal
position magnet

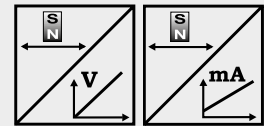


Not to be used for a large number of operation cycles!



POSICHRON® rod-style position sensor

- For hydraulic cylinders, fluid level measurement
- Protection class up to IP67/IP69K
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Contactless
- Replaceable electronics without leakage
- Analog output



Specifications	Output	Voltage Current
	Resolution	Refer to output specification
Sampling rate	Up to 1 kHz, depending on the measurement range	
Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm	
Repeatability	±3 µm	
Housing material	Sensor rod: stainless steel 1.4404, head: AlMgSi	
Mounting	Thread M18x1,5 / thread ¾ inch	
Working pressure of sensor rod	400 bar, other values on request	
Protection class	IP67 (optional IP67/IP69K; connector version: with mating connector only)	
Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks	
Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles	
Connection	8 pin socket M12, cable 2 m	
EMC, temperature	Refer to output specification	

**Order code PCST24
1 channel**

Model name _____ **PCST24** - [] - [] - [] - [] - [] - []

Mounting

M18 = Thread M18x1,5
Z3/4 = Thread ¾" -16 UNF

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Output

U1 = 0 ... 10 V signal conditioner
U1/H = U1 with Alarm_HOLD (see page 78)
U2 = 0.5 ... 10 V signal conditioner
U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
U8 = 0.5 ... 4.5 V signal conditioner
U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
I1 = 4 ... 20 mA signal conditioner (3 wire)
I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output

P1A = Position Magnet 1, increasing
P1D = Position Magnet 1, decreasing
PMU = Start value, direction & end value adjustable by the customer

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

M12 = Connector M12, 8 pin
KAB2M = Cable, standard length 2 m, other lengths upon request

Order code PCST24

**2 channel,
configurable**

PCST24 - [] - [] - [] - [] - [] - [] - []

Model name

Mounting

M18 = Thread M18 x 1,5
Z3/4 = Thread 3/4"-16UNF

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Output

U1 = 0 ... 10 V signal conditioner
U1/H = U1 with Alarm_HOLD (see page 78)
U2 = 0.5 ... 10 V signal conditioner
U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
U8 = 0.5 ... 4.5 V signal conditioner
U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
I1 = 4 ... 20 mA signal conditioner (3 wire)
I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output 1

P1A = Position magnet 1, increasing
P1D = Position magnet 1, decreasing
DA = Difference magnet 1/2, increasing (2 magnets required)
DD = Difference magnet 1/2, decreasing (2 magnets required)

Function and characteristics output 2

P2A = Position magnet 2, increasing
P2D = Position magnet 2, decreasing
DA = Difference magnet 1/2, increasing
DD = Difference magnet 1/2, decreasing

} 2 magnets required

VZx.x = Velocity with direction detection (with 1 magnet only)

VZx.x = Velocity in steps of 0.1 m/s

Example: VZ1.5 towards start position towards end position

	-1.5 m/s	0	+1.5 m/s
Output U2:	0.5 V	5.25 V	10 V
Output I1:	4 mA	12 mA	20 mA

VAx.x = Velocity without direction detection (with 1 magnet only)

VAx.x = Velocity in steps of 0.1 m/s

Example: VA1.5 towards start position towards end position

	-1.5 m/s	0	+1.5 m/s
Output U2:	10 V	0.5 V	10 V
Output I1:	20 mA	4 mA	20 mA

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

M12 = Connector M12, 8 pin
KAB2M = Cable, standard length 2 m, other lengths upon request

Order example: PCST24 - M18 - 1000 - U2 - P1D - L10 - M12

Rod-style design, measurement range 1000 mm, 1 voltage output 0.5 ... 10 V (U2)

Output 1: Position magnet 1, decreasing signal (P1D)

Output 2: Not used

Order code position magnet (see page 71)

PCSTMAG ...

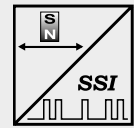
Order code mating connecting cable (see page 82)

KAB- ...M-M12/8F/G-LITZE



POSICHRON® rod-style position sensor

- For hydraulic cylinders, fluid level measurement
- Protection class up to IP67/IP69K
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Contactless
- Replaceable electronics without leakage
- Synchronous serial interface (SSI)



Specifications	Output	Synchronous serial interface (SSI)
	Resolution	5, 10, 20, 50, 100 µm
	Sampling rate	Up to 1 kHz, depending on the measurement range
	Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
	Repeatability	±3 µm
	Housing material	Sensor rod: stainless steel 1.4404, head: AlMgSi
	Mounting	Thread M18x1,5 / thread ¾ inch
	Working pressure of sensor rod	400 bar, other values on request
	Protection class	IP67 (optional IP67/IP69K; connector version: with mating connector only)
	Shock	EN 60068-2-27:2010, 50 g/11 ms, 100 shocks
	Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
	Connection	8 pin socket M12, cable 2 m
	EMC, temperature	Refer to output specification

Order code PCST24

PCST24 - [] - [] - [] - [/] [/] - [] - []

Model name
Mounting
 M18 = Thread M18 x 1,5
 Z3/4 = Thread ¾ "-16UNF
Measurement range (in mm)
 100 ... 5750 (in 10 mm increments)
 other lengths upon request
Resolution [in µm]
 5 / 10 / 20 / 50 / 100
Output
 SSI = Synchronous serial interface
Code
 G / D = Gray / Dual
Number of data bits
 24 / 25
Linearity
 L02 / L02MM / L10 (for definition see "Specifications" above)
Connection
 M12 = Connector M12, 8 pin
 KAB2M = KAB2M = Cable, standard length 2 m, other lengths upon request

Order code position magnet (see page 71)

PCSTMAG ...

Order code mating connecting cable (see page 82)

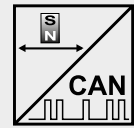
KAB- ...M-M12/8F/G-LITZE

Order example: PCQA24 - M18 - 2500 - 10 - SSI/G/24 - L10 - M12



POSICHRON® rod-style position sensor

- Replaceable electronics without leakage
- Protection class up to IP67/IP69K
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Contactless
- For hydraulic cylinders, fluid level measurement
- CANopen bus or CAN SAE J1939 output



Specifications	Output	CANopen bus; CAN SAE J1939
	Resolution	50 µm
	Sampling rate	Up to 1 kHz, depending on the measurement range
	Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
	Repeatability	±3 µm
	Housing material	Sensor rod: stainless steel 1.4404, head: AlMgSi
	Mounting	Thread M18x1,5 / thread ¾ inch
	Working pressure of sensor rod	400 bar, other values on request
	Protection class	IP67 (optional IP67/IP69K; connector version: with mating connector only)
	Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks
	Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
	Connection	5 pin socket M12
	EMC, temperature	Refer to output specification

Order code PCST24



Model name

Mounting

- M18 = Thread M18 x 1,5
- Z3/4 = Thread ¾" -16UNF

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Output

- CANOP = CANopen bus
- CANOP/R = CANopen bus with integrated terminating resistance
- CANJ1939 = CAN SAE J1939

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

M12/CAN = Connector M12, 5 pin

Order code position magnet (see page 71)

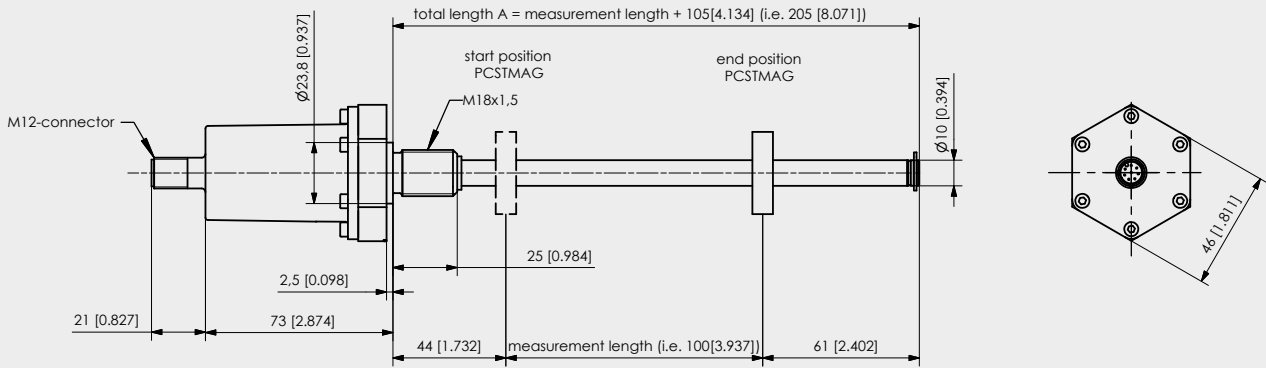
PCSTMAG ...

Order code mating connecting cable (see page 83)

KAB- ...M-M12/5F/G-M12/5M/G - CAN

Order example: PCST24 - M18 - 2000 - CANOP - L10 - M12/CAN

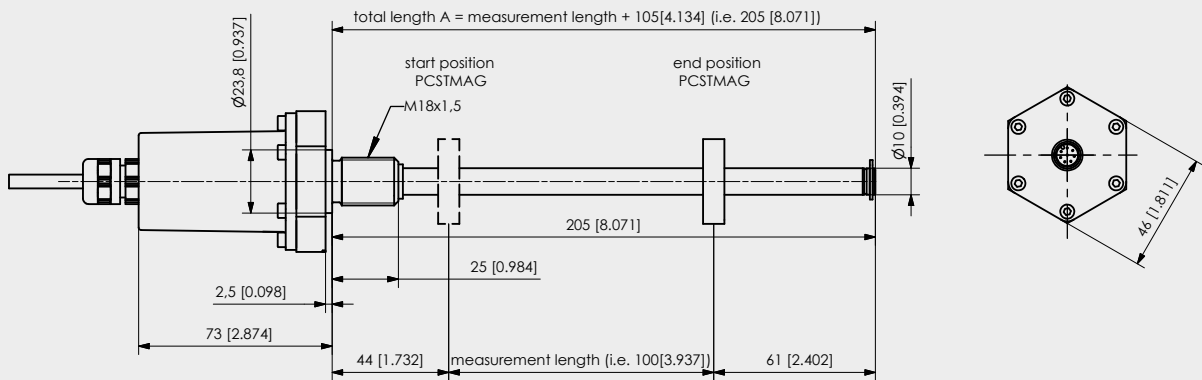
Connector M12



Dimensions in mm [inch]

Dimensions informative only. For guaranteed dimensions consult factory.

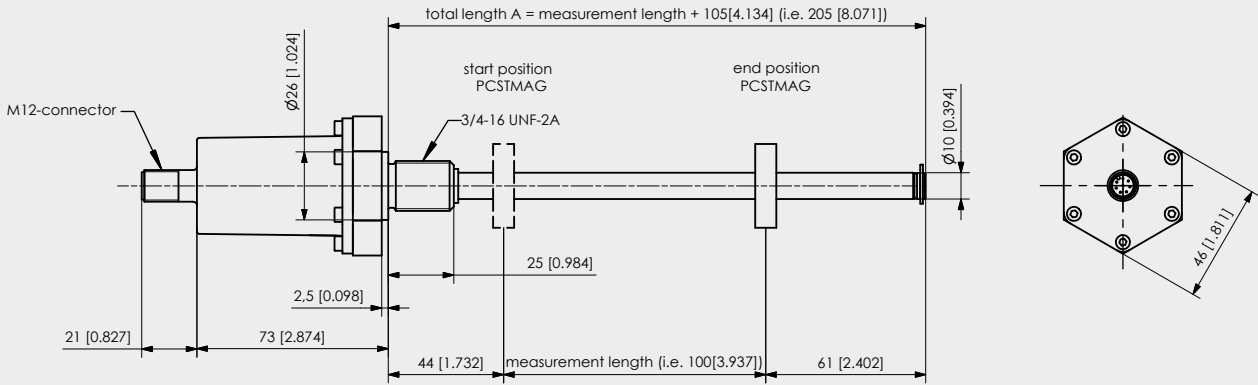
Cable output



Dimensions in mm [inch]

Dimensions informative only. For guaranteed dimensions consult factory.

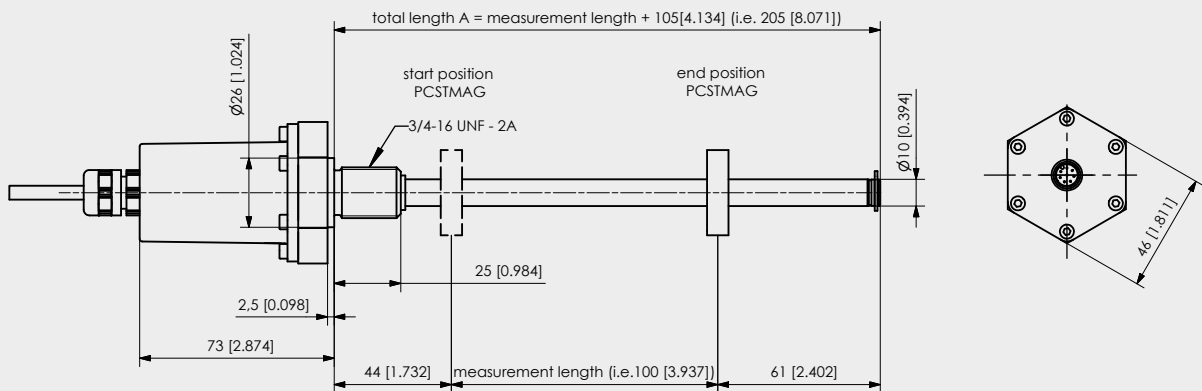
Connector M12



Dimensions in mm [inch]

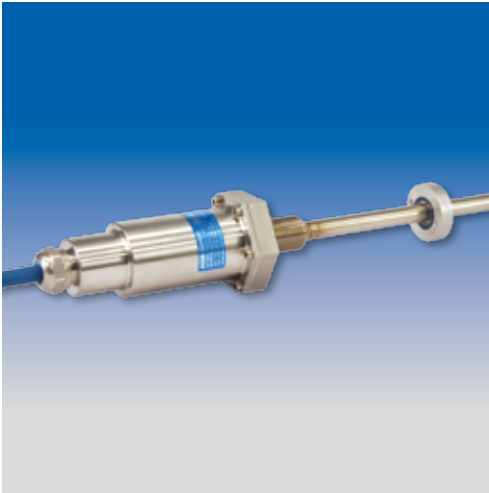
Dimensions informative only. For guaranteed dimensions consult factory.

Cable output



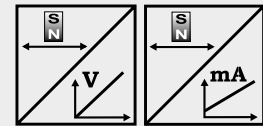
Dimensions in mm [inch]

Dimensions informative only. For guaranteed dimensions consult factory.



POSICHRON® rod-style position sensor

- For hydraulic cylinders, fluid level measurement
- Protection class IP68/IP69K, underwater capability
- Pressure-proof up to 15 bar
- Waterproof cable seal
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Contactless
- Seawater-proof
- Analog output



Specifications	Output	Voltage Current
	Resolution	Essentially infinite
Sampling rate	Up to 1 kHz, depending on the measurement range	
Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm	
Repeatability	±3 µm	
Housing material	Stainless steel 1.4404	
Mounting	Thread M18x1,5 / thread ¾ inch	
Working pressure	400 bar, other values on request	
Protection class	IP68/IP69K (permanent pressure-proof up to 15 bar)	
Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks	
Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles	
Connection	Cable 2 m	
EMC, temperature	Refer to output specification	

**Order code PCST27
1 channel**

Model name _____ **PCST27** - [] - [] - [] - [] - [] - []

Mounting
 M18 = Thread M18 x 1,5
 Z3/4 = Thread ¾"-16UNF

Measurement range (in mm)
 100 ... 5750 (in 10 mm increments)
 other lengths upon request

Output
 U1 = 0 ... 10 V signal conditioner
 U1/H = U1 with Alarm_HOLD (see page 78)
 U2 = 0.5 ... 10 V signal conditioner
 U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
 U8 = 0.5 ... 4.5 V signal conditioner
 U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
 I1 = 4 ... 20 mA signal conditioner (3 wire)
 I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output
 P1A = Position Magnet 1, increasing
 P1D = Position Magnet 1, decreasing
 PMU = Start value, direction & end value adjustable by the customer

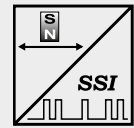
Linearity
 L02 / L02MM / L10 (for definition see "Specifications" above)

Connection
 KAB2M = Cable, standard length 2 m, other lengths upon request



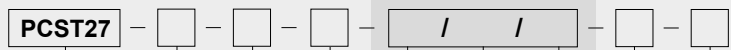
POSICHRON® rod-style position sensor

- For hydraulic cylinders, fluid level measurement
- Protection class IP68/IP69K, underwater capability
- Pressure-proof up to 15 bar
- Waterproof cable seal
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Contactless
- Seawater proof
- Synchronous serial interface (SSI)



Specifications	Output	Synchronous serial interface (SSI)
	Resolution	5, 10, 20, 50, 100 µm
	Sampling rate	Up to 1 kHz, depending on the measurement range
	Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
	Repeatability	±3 µm
	Housing material	Stainless steel 1.4404
	Mounting	Thread M18x1,5 / thread ¾ inch
	Working pressure	400 bar, other values on request
	Protection class	IP68/IP69K (permanent pressure-proof up to 15 bar)
	Shock	EN 60068-2-27:2010, 50 g/11 ms, 100 shocks
	Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
	Connection	Cable 2 m
EMC, temperature	Refer to output specification	

Order code PCST27



Model name

Mounting

- M18 = Thread M18 x 1,5
- Z3/4 = Thread ¾ "-16UNF

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Resolution [in µm]

5 / 10 / 20 / 50 / 100

Output

SSI = Synchronous serial interface

Code

G / D = Gray / Dual

Number of data bits

24 / 25

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

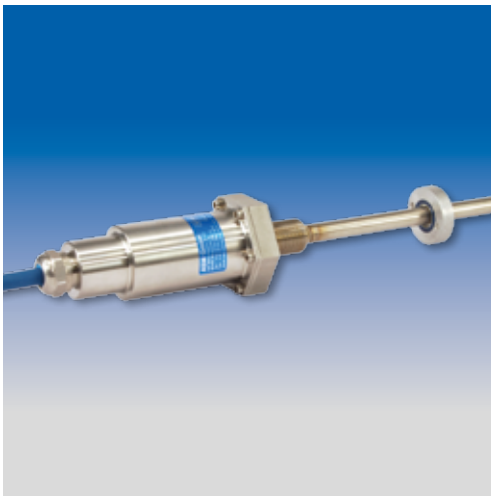
Connection

KAB2M = Cable, standard length 2 m, other lengths upon request

Order code position magnet (see page 71)

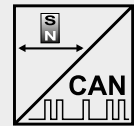
PCSTMAG ...

Order example: PCST27 - M18 - 1500 - 10 - SSI/G/24 - L02 - KAB2M



POSICHRON® rod-style position sensor

- For hydraulic cylinders, fluid level measurement
- Protection class IP68/IP69K, underwater capability
- Pressure-proof up to 15 bar
- Waterproof cable seal
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Contactless
- Seawater proof
- CANopen bus or CAN SAE J1939 output



Specifications	Output	CANopen bus; CAN SAE J1939
	Resolution	50 µm
	Sampling rate	Up to 1 kHz, depending on the measurement range
	Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
	Repeatability	±3 µm
	Housing material	Stainless steel 1.4404
	Mounting	Thread M18x1,5 / thread ¾ inch
	Working pressure	400 bar, other values on request
	Protection class	IP68/IP69K (permanent pressure-proof up to 15 bar)
	Shock	EN 60068-2-27:2010, 50 g/11 ms, 100 shocks
Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles	
Connection	Cable 2 m	
EMC, temperature	Refer to output specification	

Order code PCST27



Model name

Mounting

- M18 = Thread M18 x 1,5
- Z3/4 = Thread ¾ "-16UNF

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Output

- CANOP = CANopen bus
- CANOP/R = CANopen-Bus with integrated terminating resistance
- CANJ1939 = CAN SAE J1939

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

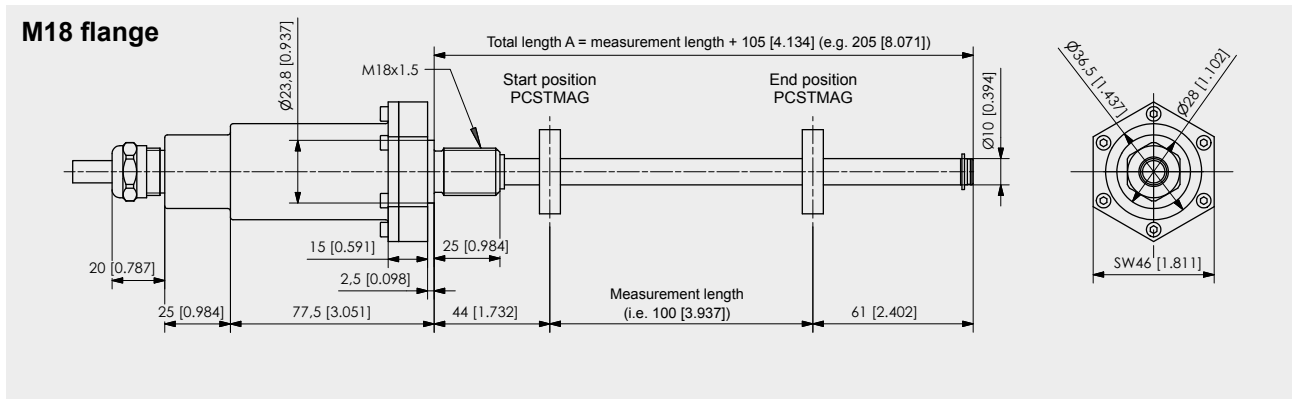
Connection

KAB2M = Cable, standard length 2 m, other lengths upon request

Order code position magnet (see page 71)

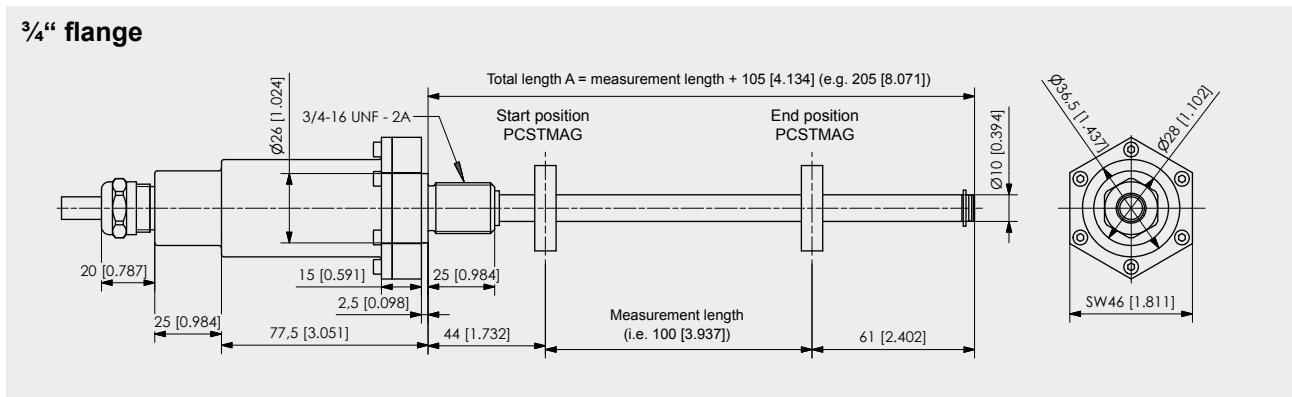
PCSTMAG ...

Order example: PCST27 - M18 - 2500 - CANOP - L10 - KAB2M



Dimensions in mm [inch]

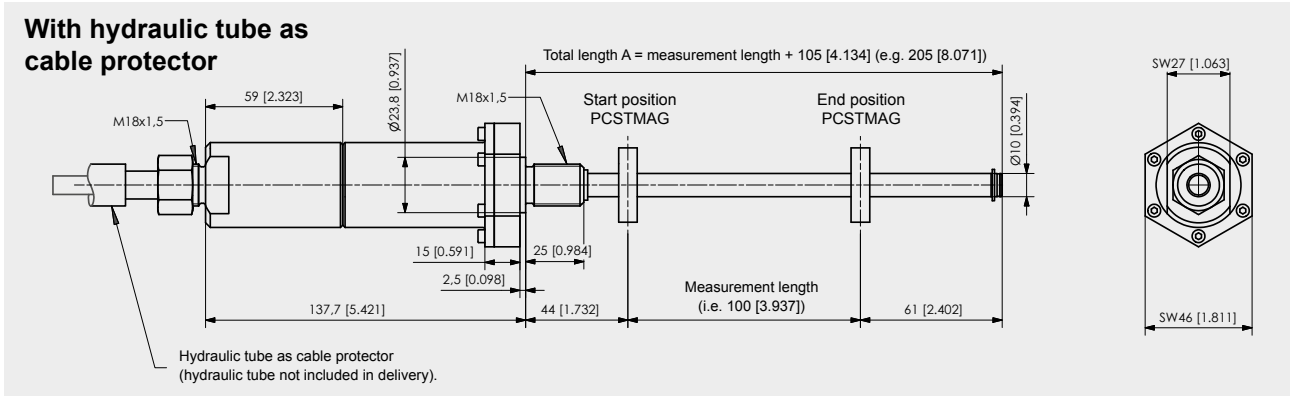
Dimensions informative only. For guaranteed dimensions consult factory.



Dimensions in mm [inch]

Dimensions informative only. For guaranteed dimensions consult factory.

POSICHRON®
PCST27
 Rod-Style Design



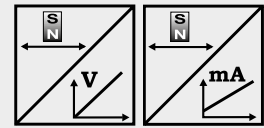
Dimensions in mm [inch]

Dimensions informative only. For guaranteed dimensions consult factory.



POSICHRON® rod-style position sensor

- For hydraulic cylinders, fluid level measurement
- Protection class up to IP67/IP69K
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Contactless
- Analog output



Specifications	Output	Voltage Current
	Resolution	Refer to output specification
Sampling rate	Up to 1 kHz, depending on the measurement range	
Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm	
Repeatability	±3 µm	
Housing material	Sensor rod: stainless steel 1.4404, head: AlMgSi	
Mounting	Thread M18x1,5 / thread ¾ inch / plug-in mounting	
Operating pressure	400 bar, other values on request	
Protection class	IP67 (optional IP67/IP69K)	
Shock	EN 60068-2-27:2010, 50 g 11 ms, 100 shocks	
Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles	
Connection	Cable 2 m	
EMC, temperature	Refer to output specification	

**Order code PCST25
1 channel**

Model name ————— **PCST25** — [] — [] — [] — [] — [] — []

Mounting
 M18 = Thread M18 x 1,5
 Z3/4 = Thread ¾"-16UNF
 SV = Plug-in version

Measurement range (in mm)
 100 ... 5750 (in 10 mm increments)
 other lengths upon request

Output
 U1 = 0 ... 10 V signal conditioner
 U1/H = U1 with Alarm_HOLD (see page 78)
 U2 = 0.5 ... 10 V signal conditioner
 U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
 U8 = 0.5 ... 4.5 V signal conditioner
 U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
 I1 = 4 ... 20 mA signal conditioner (3 wire)
 I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output
 P1A = Position Magnet 1, increasing
 P1D = Position Magnet 1, decreasing
 PMU = Start value, direction & end value adjustable by the customer

Linearity
 L02 / L02MM / L10 (for definition see "Specifications" above)

Connection
 KAB2M = Cable, standard length 2 m, other lengths upon request

PCST25

Rod-Style Design with Analog Output

Order code PCST25
2 channel, configurable

PCST25 - [] - [] - [] - [] - [] - [] - []

Model name

Mounting
M18 = Thread M18 x 1,5
Z3/4 = Thread 3/4"-16UNF
SV = Plug-in version

Measurement range (in mm)
100 ... 5750 (in 10 mm increments)
other lengths upon request

Output
U1 = 0 ... 10 V signal conditioner
U1/H = U1 with Alarm_HOLD (see page 78)
U2 = 0.5 ... 10 V signal conditioner
U2/U; U2/H = U2 with Alarm_LOW; U2 with Alarm_HOLD (see page 78)
U8 = 0.5 ... 4.5 V signal conditioner
U8/U; U8/H = U8 with Alarm_LOW; U8 with Alarm_HOLD (see page 78)
I1 = 4 ... 20 mA signal conditioner (3 wire)
I1/U; I1/H = I1 with Alarm_LOW; I1 with Alarm_HOLD (see page 78)

Function and characteristics output 1
P1A = Position magnet 1, increasing
P1D = Position magnet 1, decreasing
DA = Difference magnet 1/2, increasing (2 magnets required)
DD = Difference magnet 1/2, decreasing (2 magnets required)

Function and characteristics output 2
P2A = Position magnet 2, increasing
P2D = Position magnet 2, decreasing
DA = Difference magnet 1/2, increasing
DD = Difference magnet 1/2, decreasing } 2 magnets required

VZx.x = Velocity with direction detection (with 1 magnet only)
VZx.x = Velocity in steps of 0.1 m/s
Example: VZ1.5 towards start position towards end position

	-1.5 m/s	0	+1.5 m/s
Output U2:	0.5 V	5.25 V	10 V
Output I1:	4 mA	12 mA	20 mA

VAx.x = Velocity without direction detection (with 1 magnet only)
VAx.x = Velocity in steps of 0.1 m/s
Example: VA1.5 towards start position towards end position

	-1.5 m/s	0	+1.5 m/s
Output U2:	10 V	0.5 V	10 V
Output I1:	20 mA	4 mA	20 mA

Linearity
L02 / L02MM / L10 (for definition see "Specifications" above)

Connection
KAB2M = Cable, standard length 2 m, other lengths upon request

Order example: PCST25 - M18 - 1000 - U2 - P1A - VZ1.0 - L10 - KAB2M
Rod-Style Design, measurement range 1000 mm, 2 voltage outputs 0.5 ... 10 V (U2)
Output 1: Position magnet 1, increasing signal (P1A)
Output 2: Velocity magnet 1, -1 m/s ... 1 m/s for range 0,5 ... 10 V (VZ1.0)

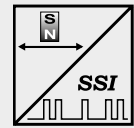
Order code position magnet (see page 71)

PCSTMAG ...



POSICHRON® rod-style position sensor

- For hydraulic cylinders, fluid level measurement
- Protection class up to IP67/IP69K
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Contactless
- Synchronous serial interface (SSI)



Specifications	Output	Synchronous serial interface (SSI)
	Resolution	5, 10, 20, 50, 100 µm
	Sampling rate	Up to 1 kHz, depending on the measurement range
	Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
	Repeatability	±3 µm
	Housing material	Sensor rod: stainless steel 1.4404, head: AlMgSi
	Mounting	Thread M18x1,5 / thread ¾ inch / plug-in mounting
	Working pressure	400 bar, other values on request
	Protection class	IP67 (optional IP67/IP69K)
	Shock	EN 60068-2-27:2010, 50 g/11 ms, 100 shocks
	Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
	Connection	Cable 2 m
EMC, temperature	Refer to output specification	

Order code PCST25



Model name

Mounting

- M18 = Thread M18 x 1,5
- Z3/4 = Thread ¾" -16UNF
- SV = Plug-in version

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other lengths upon request

Resolution [in µm]

5 / 10 / 20 / 50 / 100

Output

SSI = Synchronous serial interface

Code

G / D = Gray / Dual

Number of data bits

24 / 25

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

KAB2M = Cable, standard length 2 m, other lengths upon request

Order code position magnet (see page 71)

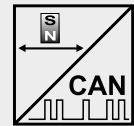
PCSTMAG ...

Order example: PCST25 - M18 - 1500 - 50 - SSI/G/24 - L02 - KAB2M



POSICHRON® rod-style position sensor

- For hydraulic cylinders, fluid level measurement
- Protection class up to IP67/IP69K
- Measurement range 0 ... 100 to 0 ... 5750 mm
- Absolute position measurement
- Contactless
- CAN Output or CAN SAE J1939 output



Specifications	Output	CANopen bus; CAN SAE J1939
	Resolution	50 µm
	Sampling rate	Up to 1 kHz, depending on the measurement range
	Linearity	Ranges >500 mm: L10 = ±0.10 % f.s. L02 = ±0.02 % f.s. Ranges ≤500 mm: L10 = ±0.5 mm L02MM = ±0.2 mm
	Repeatability	±3 µm
	Housing material	Sensor rod: stainless steel 1.4404, head: AlMgSi
	Mounting	Thread M18x1,5 / thread ¾ inch / plug-in mounting
	Working pressure	400 bar, other values on request
	Protection class	IP67 (optional IP67/IP69K)
	Shock	EN 60068-2-27:2010, 50 g/11 ms, 100 shocks
Vibration	EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles	
Connection	Cable (length 0.3 m) with 5-pin connector M12	
EMC, temperature	Refer to output specification	

Order code PCST25



Model name

Mounting

- M18 = Thread M18 x 1,5
- Z3/4 = Thread ¾ "-16UNF
- SV = Plug-in version

Measurement range (in mm)

100 ... 5750 (in 10 mm increments)
other ranges on request

Output

- CANOP = CANopen bus
- CANOP/R = CANopen bus with integrated terminating resistor
- CANJ1939 = CAN SAE J1939

Linearity

L02 / L02MM / L10 (for definition see "Specifications" above)

Connection

KAB0,3M-M12/CAN = Cable (length 0.3 m) with 5-pin connector M12

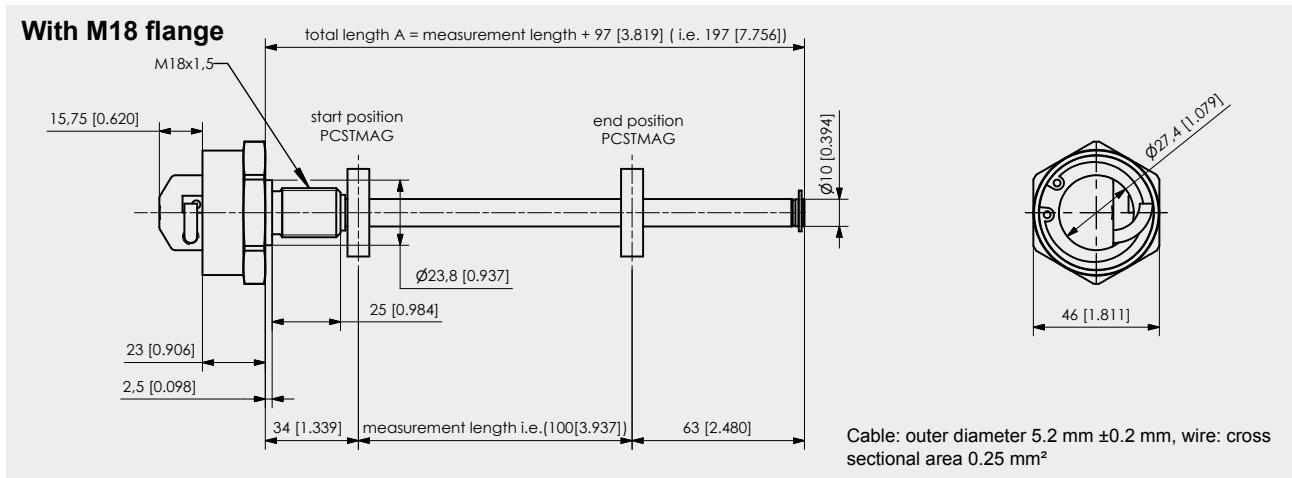
Order code position magnet (see page 71)

PCSTMAG ...

Order code bus cable (see page 83)

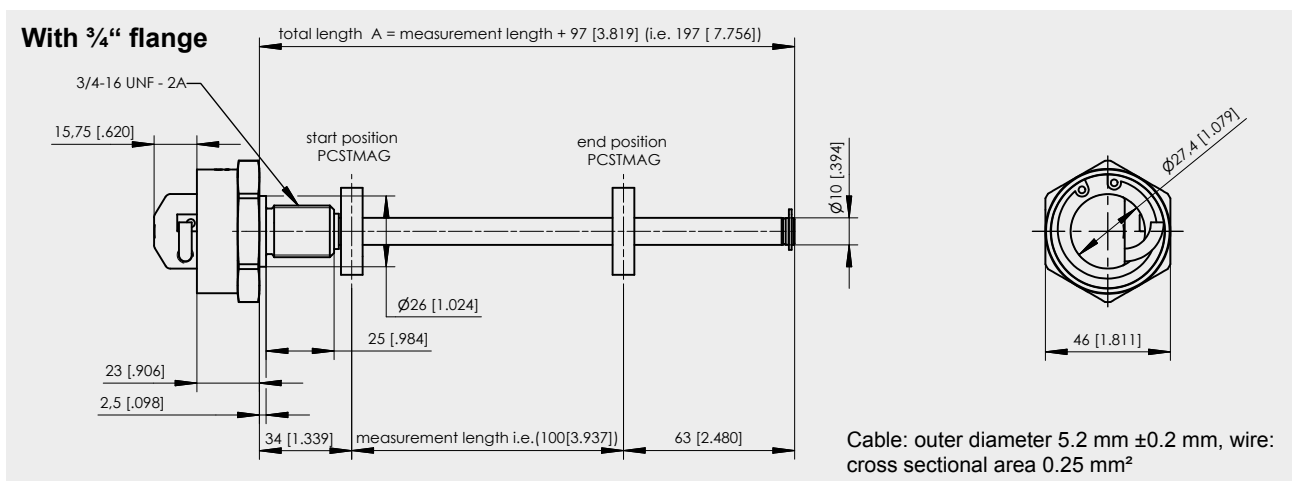
KAB- ...M-M12/5F/G-M12/5M/G - CAN

Order example: PCST25 - M18 - 2500 - CANOP - L10 - KAB0,3M-M12/CAN



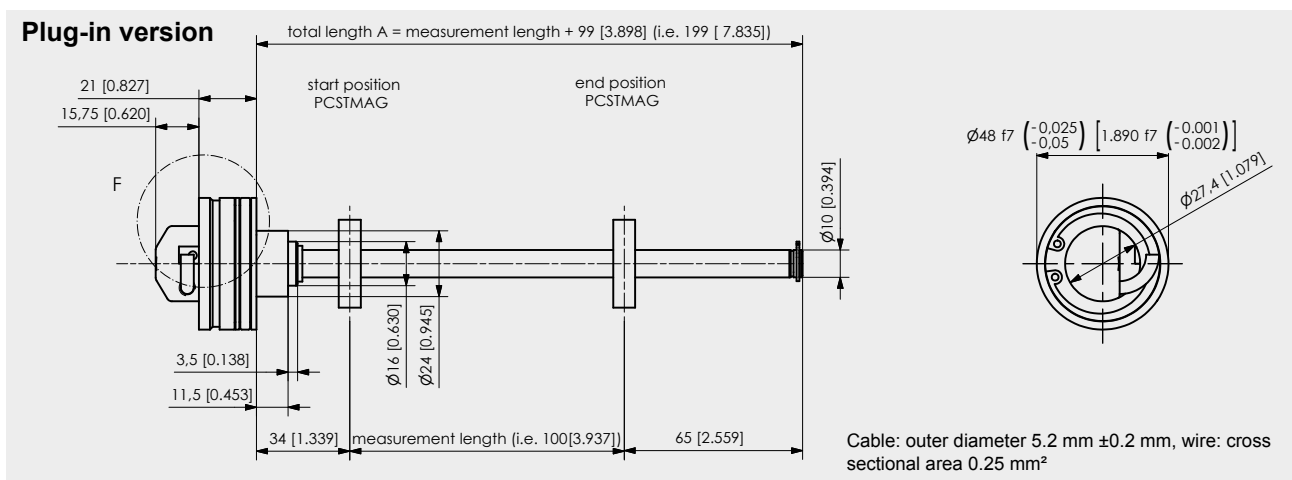
Dimensions in mm [inch]

Dimensions informative only. For guaranteed dimensions consult factory.



Dimensions in mm [inch]

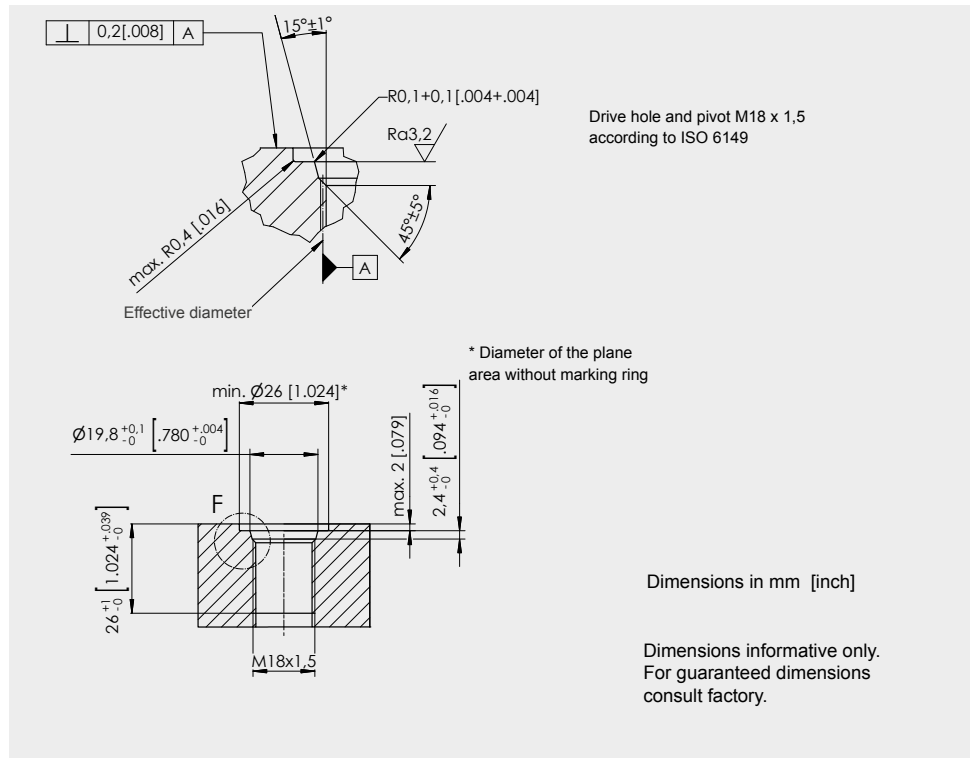
Dimensions informative only. For guaranteed dimensions consult factory.



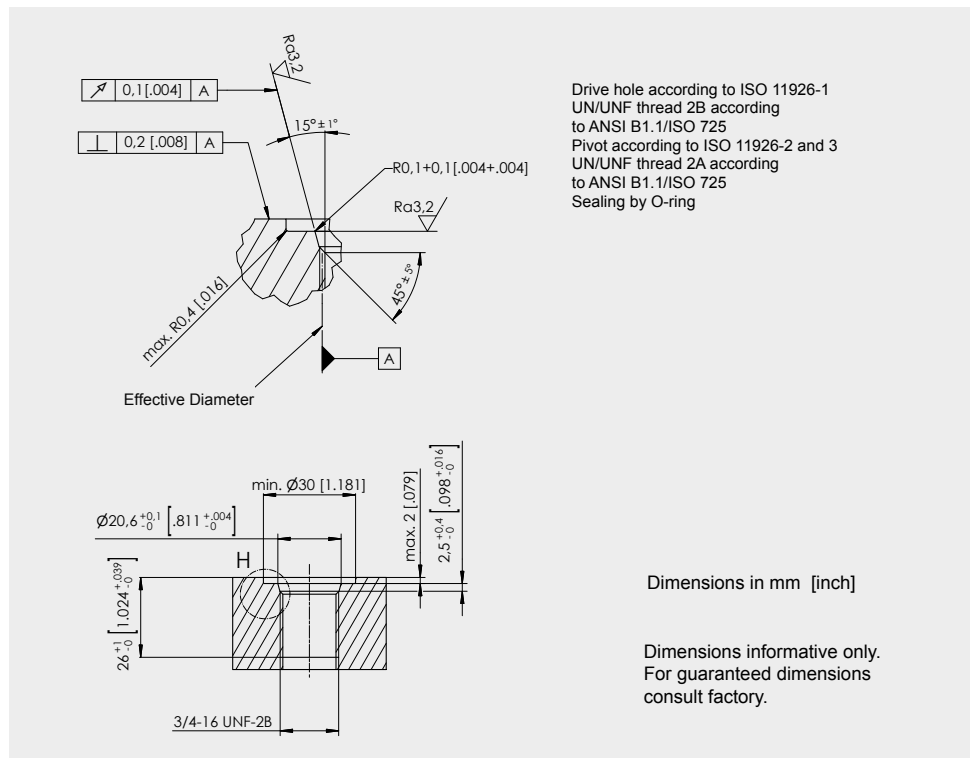
Dimensions in mm [inch]

Dimensions informative only. For guaranteed dimensions consult factory.

**Mounting hole
 M18**



**Mounting hole
 3/4 Zoll**



O-ring sealing (M18)

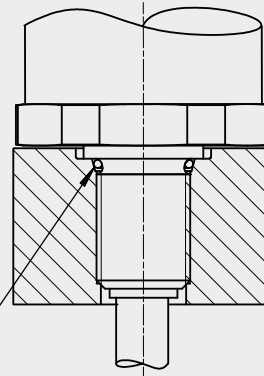
for:

- PCST24-M18...
- PCST25-M18...
- PCST27-M18...

Dimensions in mm [inch]

Dimensions informative only.
For guaranteed dimensions
consult factory.

O-Ring 15,3 x 2,2
[.602 x .087]



Order code O-ring M18

PCST-OR-M18

O-ring sealing (¾ Zoll)

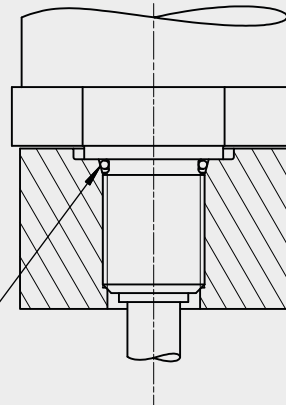
for:

- PCST24-Z3/4...
- PCST25-Z3/4...
- PCST27-Z3/4...

Dimensions in mm [inch]

Dimensions informative only.
For guaranteed dimensions
consult factory.

O-Ring 16,36 x 2,2
[.644 x .087]



Order code O-ring ¾ inch

PCST-OR-Z3/4

O-ring sealing (Plug-in version)

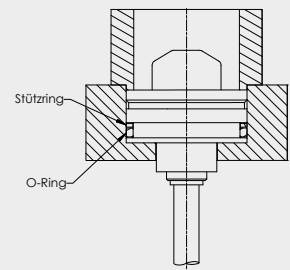
for:

- PCST25-SV...

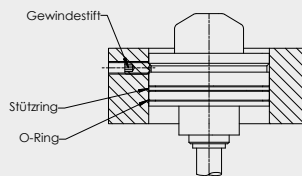
Dimensions in mm [inch]

Dimensions informative only.
For guaranteed dimensions
consult factory.

Ø48 H7 (+0,025 / -0) [1,890 H7 (+,001 / -0)]



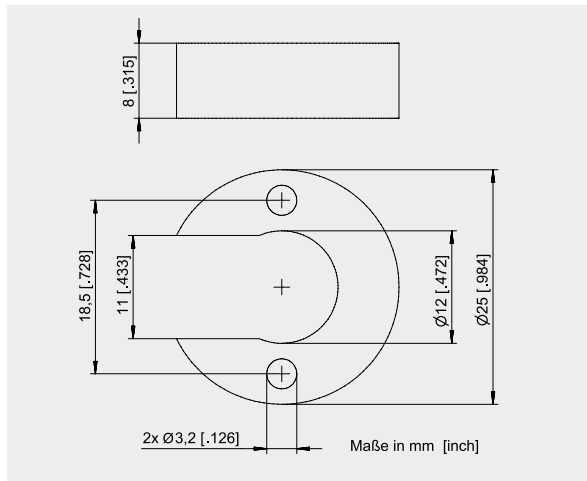
Ø48 H7 (+0,025 / -0) [1,890 H7 (+,001 / -0)]



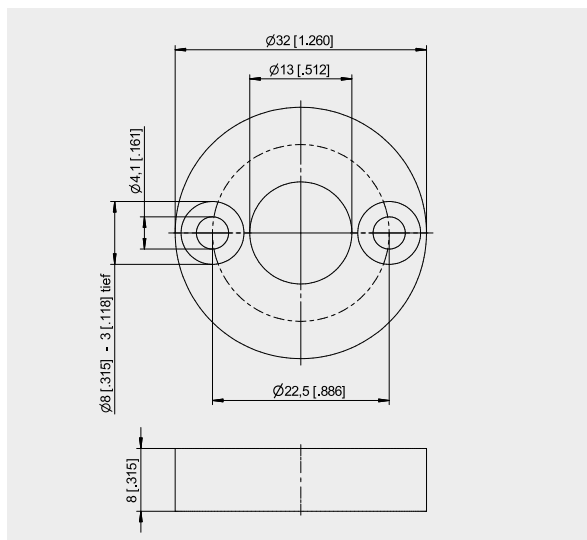
Order code O-ring Plug-in version

PCST-OR-SV

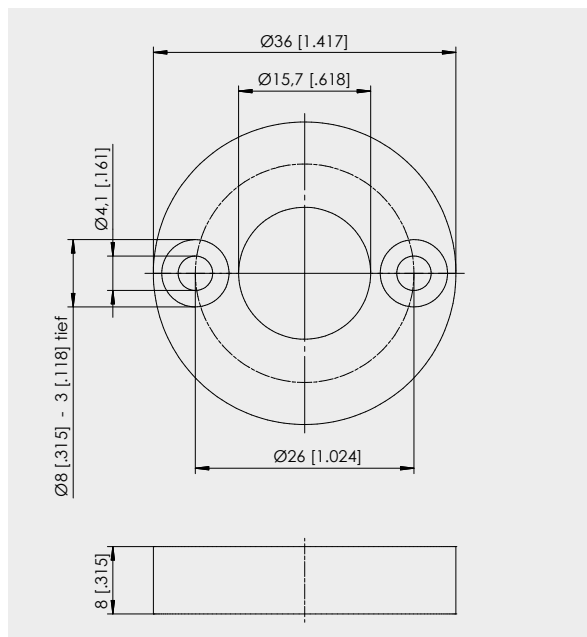
PCSTMAG1



PCSTMAG2
 (standard)



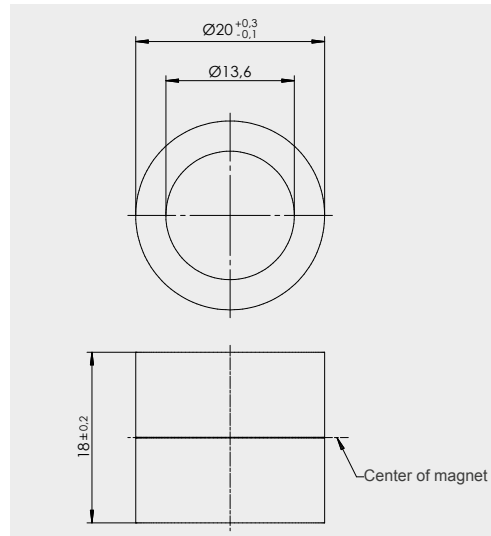
PCSTMAG5



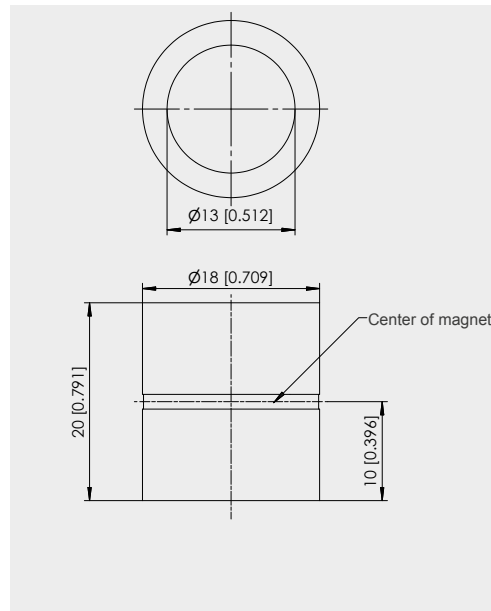
Dimensions in mm [inch]

Dimensions informative only.
 For guaranteed dimensions
 consult factory.
 Other designs can be realized
 on request.

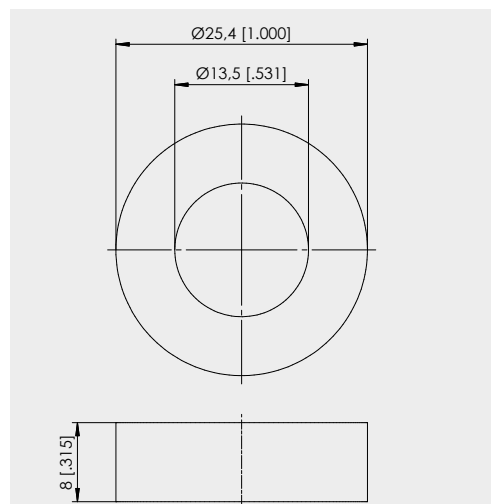
PCSTMAG2-MH1



PCSTMAG2-MH2



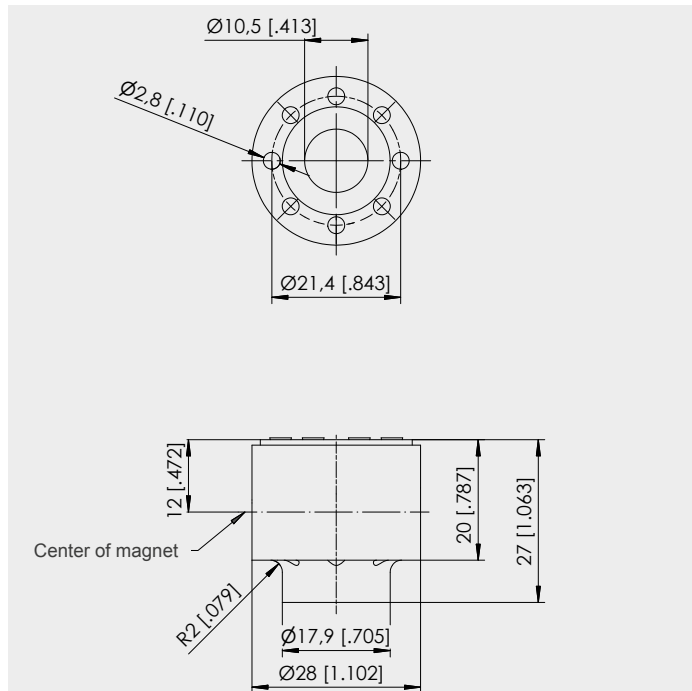
PCSTMAG2-MH3



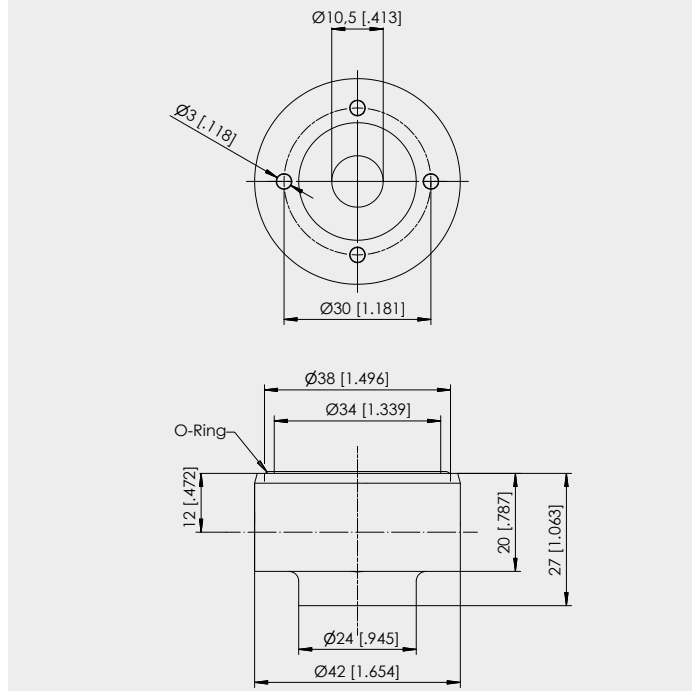
Dimensions in mm [inch]

Dimensions informative only.
For guaranteed dimensions consult factory.
Other designs can be realized on request

PCSTMAG2-G1



PCSTMAG2-G2



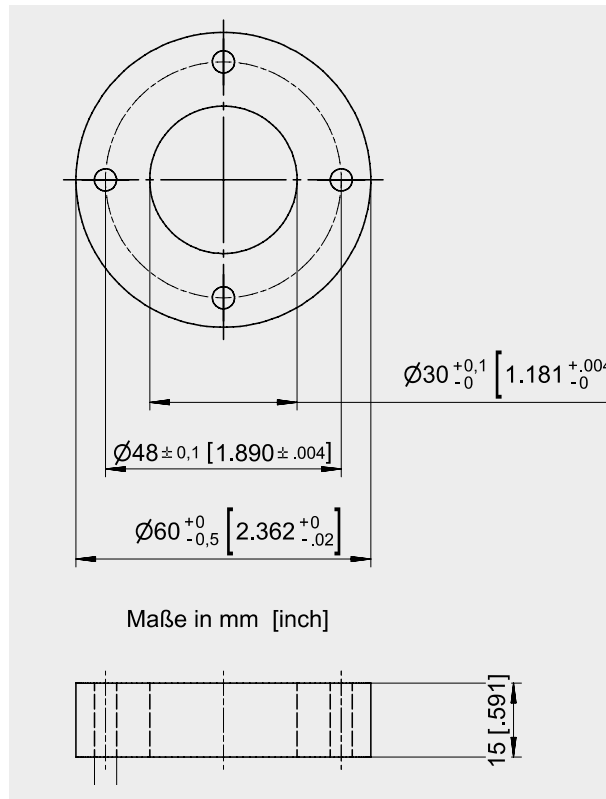
PCSTMAG2 - G1 / G2

Sliding magnet with special self-lubricating and abrasion-resistant material. To be used if sensor is mounted in horizontal position and a mechanical support of the rod is not possible for measurement ranges >1000 mm.

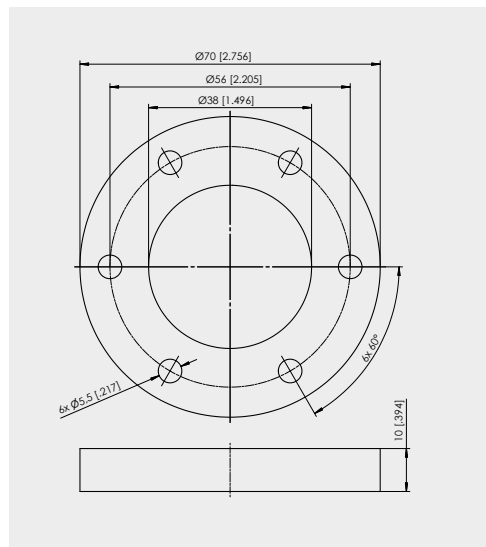
Dimensions in mm [inch]

Dimensions informative only.
For guaranteed dimensions consult factory.
Other designs can be realized on request

PCSTMAG7



PCSTMAG4



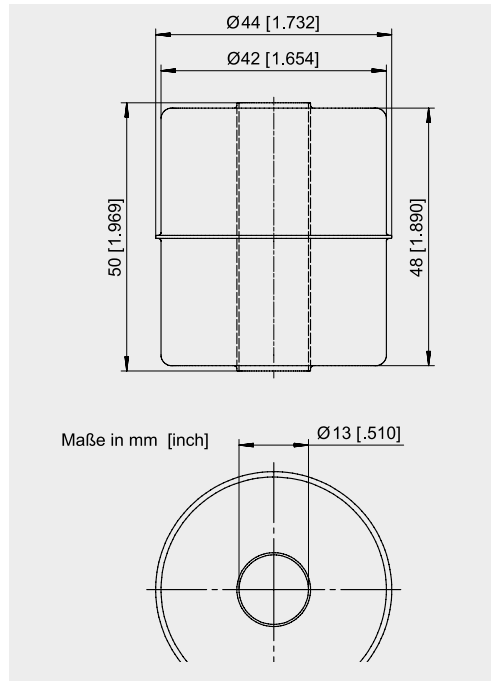
Dimensions in mm [inch]

Dimensions informative only.
For guaranteed dimensions consult factory.
Other designs can be realized on request

PCSTMAG3

(float, continuous pressure up to 9 bar, for media with a specific gravity of $\geq 0,75 \text{ g/cm}^3$)

Material: 1.4404

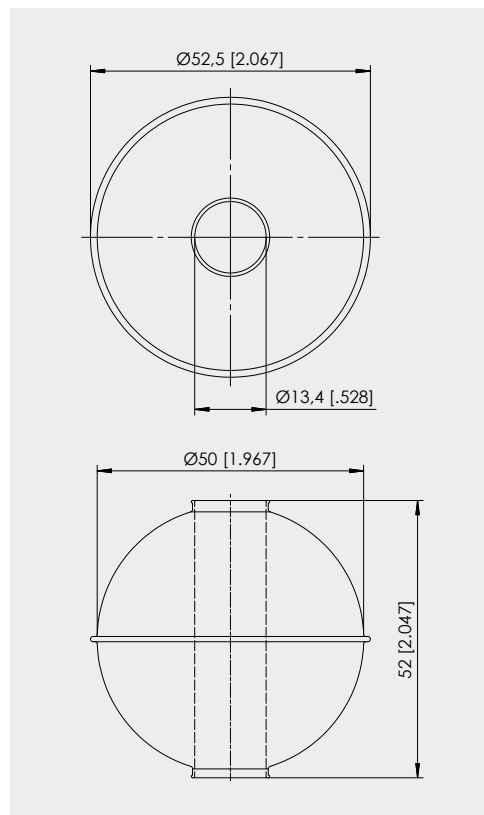


Note: Dependent on the design the available measurement range is reduced of 25 mm on both ends!

PCSTMAG6

(float, continuous pressure up to 30 bar, for media with a specific gravity of $\geq 0,7 \text{ g/cm}^3$)

Material: 1.4571



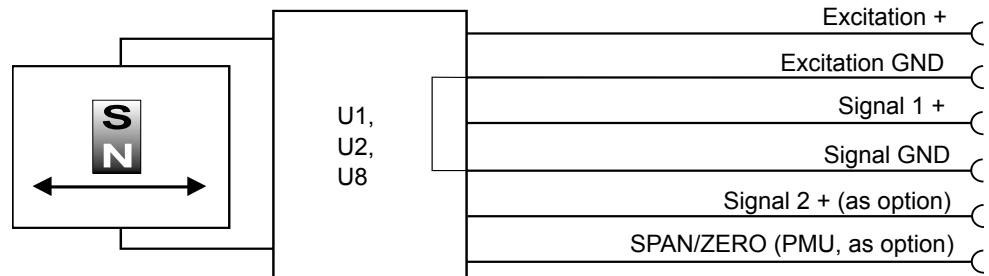
Note: Dependent on the design the available measurement range is reduced of 25 mm on both ends!

Dimensions in mm [inch]

Dimensions informative only.
 For guaranteed dimensions consult factory.
 Other designs can be realized on request

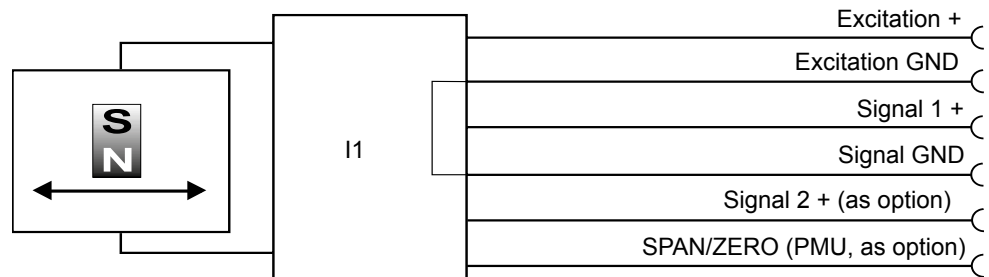
<p>U1, U2, U8 Voltage output</p>	Excitation voltage	U1: 18 ... 36 V DC; U2: 18 ... 36 V DC; U8: 10 ... 36 V
	Excitation current	Typ. 23 mA at 24 V DC, typ. 46 mA at 12 V DC, max. 80 mA
	Output voltage	U1: 0 ... 10 V DC; U2: 0.5 ... 10 V DC; U8: 0.5 ... 4.5 V DC
	Output current	2 mA max.
	Output load	> 5 kΩ
	Resolution	16 bit f.s., min. 10 μm
	Stability (temperature)	±50 x 10 ⁻⁶ / °C f.s.
	Protection	Reverse polarity, short circuit
	Output noise	0.5 mV _{RMS}
	Operating temperature	-40 ... +85 °C
EMC	EN 61326-1:2013	

Signal diagram



<p>I1 Current output (3 wire)</p>	Excitation voltage	18 ... 36 V DC (10 ... 36 V for R _L ≤ 250Ω)
	Excitation current	Typ. 36 mA at 24 V DC, typ. 66 mA at 12 V DC, max. 100 mA
	Load resistor	350 Ω max.
	Output current	4 ... 20 mA, 30 mA max (at failure)
	Resolution	16 bit f.s., min. 10 μm
	Stability (temperature)	±50 x 10 ⁻⁶ / °C f.s.
	Protection	Reverse polarity, short circuit
	Output noise	0.5 mV _{RMS}
	Operating temperature	-40 ... +85 °C
	EMC	EN 61326-1:2013

Signal diagram

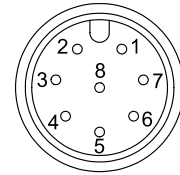


Connector M12, 8-pin

Signal wiring

Signal	Plug connection	Cable connection
Excitation +	1	white
Excitation GND	2	brown
Signal 1 +	3	green
Signal GND	4	yellow
Signal 2 + (optional*)	5	grey
SPAN/ZERO (PMU** only, optional)	6	pink

View to the sensor connector



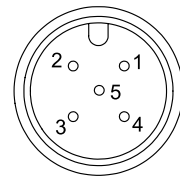
* When using multiple magnets the distance between two magnets must be min. 70 mm to identify the single magnets definitely. ** Description page 78

Connector M12, 5-pin

Signal wiring

Signal	Plug connection
Excitation +	1
Signal 1 +	2
GND	3
Signal 2 + (optional*)	4
PMU** (optional)	5

View to the sensor connector



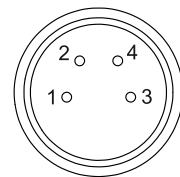
* When using multiple magnets the distance between two magnets must be min. 70 mm to identify the single magnets definitely. ** Description page 78

Connector M8, 4-pin

Signal wiring

Signal	Plug connection
Excitation +	1
Excitation GND	2
Signal +	3
PMU** (optional)	4

View to the sensor connector



* When using multiple magnets the distance between two magnets must be min. 70 mm to identify the single magnets definitely. ** Description page 78

Option - PMU for analog output U1, U2, U8 and I1

Programming of the start and end value by the customer:

The option PMU allows to program the start value and the end value of the output range by a programming signal SPAN/ZERO available at the connector. This Signal SPAN/ZERO must be connected with GND via a push button, then position magnet of the sensor must be moved to the start resp. end position. Pushing the button between 2 and 4 seconds sets the actual position as start position, pushing the button more than 5 seconds sets the actual position as end position. The values will be stored and are available after switching off the sensor.

To reset the sensor to the factory values the button must be pushed for longer than two seconds when the sensor is switched on.

Diagnostic on analog outputs

Behaviour of the analog signal output in case of error

In case of error (magnet missing or outside the measuring range) the analog output signal will assume a state according to the following options:

Alarm_HIGH

The output voltage resp. the output current is at HIGH level (overrange).

Alarm_LOW

The output voltage resp. the output current is at LOW level (underrange).

Alarm_HOLD

The output voltage resp. the output current will keep the last valid state.

	Alarm_HIGH (standard)	Alarm_LOW (.../U)	Alarm_HOLD (.../H)
U1	$U_{out} \geq 10,5 \text{ V}$	—	keeps last valid state (Order code U1/H)
U2	$U_{out} \geq 10,5 \text{ V}$	$U_{out} < 0,25 \text{ V}$ (Order code U2/U)	keeps last valid state (Order code U2/H)
U8	$U_{out} \geq 10 \text{ V}$	$U_{out} < 0,25 \text{ V}$ (Order code U8/U)	keeps last valid state (Order code U8/H)
I1	$I_{out} \geq 21 \text{ mA}$	1,5 ... 2 mA (Order code I1/U)	keeps last valid state (Order code I1/H)

Error signal for SSI output

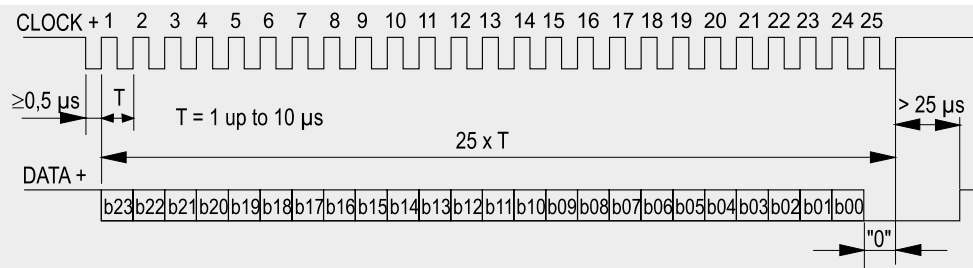
If the sensor cannot detect a magnet the position value will assume the maximum value (0xFFFFFFF).

Synchronous serial interface SSI 	Output	RS422
	Excitation voltage	10 ... 36 V DC, residual ripple 10 mV _{SS}
	Excitation current	Typ. 22 mA at 24 V DC, typ. 46 mA at 12 V DC, 150 mA max.
	Clock frequency	100 kHz ... 1 MHz
	Code	Gray code, dual code
	Resolution	≥ 5 μm
	Delay between pulse trains	>25 μs
	Stability (temperature)	±50 x 10 ⁻⁶ / °C f.s.
	Operating temperature	-40 ... +85 °C
	EMC	EN 61326-1:2013

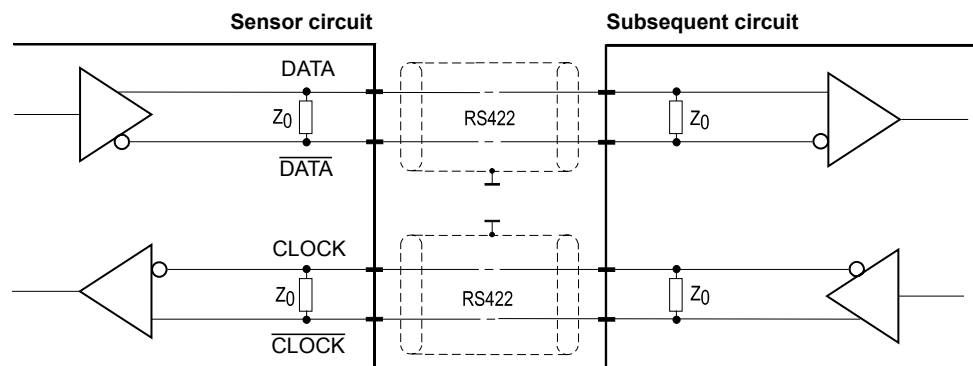
Description

The data transmission takes place by means of the two signals CLOCK and DATA. The processing unit (PLC, microcomputer) sends pulse sequences which clock the data transmission at the required transfer rate. With the first falling edge of the pulse sequence the position of the sensor is recorded and stored. The following rising edges control the bit-by-bit transfer of the data word. After a delay time the next new position information can be transmitted.

Data format
(Train of 26 pulses)



Signal diagram



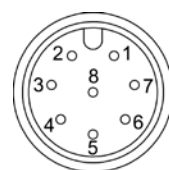
Cable length	Baud rate
50 m	100-1000 kHz
100 m	100-300 kHz

Note:
Extension of the cable length will reduce the maximum transmission rate.
The signals CLOCK/CLOCK and DATA/DATA must be connected in a twisted pair cable, common shielded.

Signal wiring

Signal	Plug connection	Cable connection
Excitation +	1	white
Excitation GND	2	brown
CLOCK	3	green
CLOCK	4	yellow
DATA	5	grey
DATA	6	pink


View to sensor connector



Error indication see page 78.

Description

CANopen interface with process data for position and cam functions, programmable are preset, resolution, filtering and cam switching points.

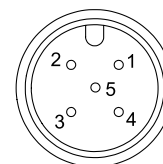
Interface CANOP 	Communication profile	CANopen CiA 301 V 4.02, Slave
	Encoder profile	Encoder CiA 406 V 3.2
	Error Control	Node Guarding, Heartbeat, Emergency Message
	Node ID	Adjustable via LSS or via object dictionary
	PDO	4 TxPDO, 0 RxPDO, no linking, static mapping
	PDO Modes	Event-/Time triggered, Remote-request, Sync cyclic/acyclic
	SDO	1 server, 0 client
	CAM	8 cams
	Certified	Yes
	Transmission rates	50 kBaud to 1 MBaud, adjustable via LSS or via object dictionary
	Nodes	127 max.
	Bus connection	M12 connector, 5 pins
	Integrated bus terminating resistor	120 Ω (option)
	Bus, galvanic isolated	No

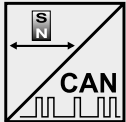
Specifications	Excitation voltage	18 ... 36 V DC
	Excitation current	Typ. 20 mA for 24 V, max. 80 mA
	Number of position magnets	1 ... 4
	Resolution	50 μm
	Measuring rate	1 kHz (asynchronous)
	Stability (temperature)	±50 x 10 ⁻⁶ / °C f.s.
	Repeatability	1 LSB
	Operating temperature	-40 ... +85 °C
	Protection	Reverse polarity, short circuit
	Dielectric strength	500 V (V AC, 50 Hz, 1 min.)
	EMC	EN 61326-1:2013

When using multiple magnets the distance between two magnets must be min. 70 mm to identify the single magnets definitely.

Signal wiring	Signal	Plug connection
	Shield	1
	Excitation +	2
	GND	3
	CAN-H	4
	CAN-L	5

View to sensor connector



Interface J1939 	CAN specification	ISO 11898, Basic and Full CAN 2.0 B
	Transceiver	24V-compliant, not isolated
	Communication profile	SAE J1939
	Baud rate	250 kbit/s
	Internal termination resistor	120 Ω (option)
	Address	Default 247d, configurable

NAME Fields	Arbitrary address capable	0	No
	Industry group	0	Global
	Vehicle system	7Fh (127d)	Non specific
	Vehicle system instance	0	
	Function	FFh (255d)	Non specific
	Function instance	0	
	ECU instance	0	
	Manufacturer	145h (325d)	Manufacturer ID
	Identity number	0nnn	Serial number 21 bit

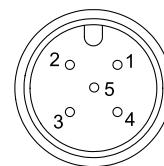
Parameter Group Numbers (PGN)	Configuration data	PGN EF00h	Proprietary-A (PDU1 peer-to-peer)
	Process data	PGN FFnnh	Proprietary-B (PDU2 broadcast); nn Group Extension (PS) configurable

Specifications	Excitation voltage	18 ... 36 V DC
	Excitation current	Typ. 20 mA for 24 V, max. 80 mA
	Measuring rate	1 kHz (asynchronous)
	Stability (temperature)	±50 x 10 ⁻⁶ / °C f.s.
	Repeatability	1 LSB
	Operating temperature	-40 ... +85 °C
	Protection	Reverse polarity, short circuit
	Dielectric strength	500 V (V AC, 50 Hz, 1 min.)
	EMC	EN 61326-1:2013

When using multiple magnets the distance between two magnets must be min. 70 mm to identify the single magnets definitely.

Signal wiring	Signal	Plug connection
	Shield	1
	Excitation +	2
	GND	3
	CAN-H	4
	CAN-L	5

View to sensor connector



**Connector cable
M12, 5-pin
shielded**

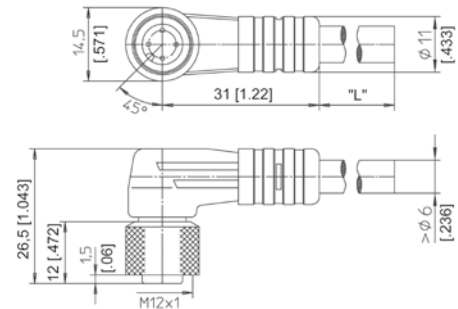
The 5-lead shielded cable is supplied with a mating 5-pin 90° M12 connector at one end and 5 wires at the other end. Available lengths are 2 m, 5 m and 10 m. Wire: cross sectional area 0.34 mm².

Order code:

KAB - XM - M12/5F/W - LITZE

IP69K: KAB - XM - M12/5F/W/69K - LITZE

Length in m



**Connector cable
M12, 5-pin
shielded**

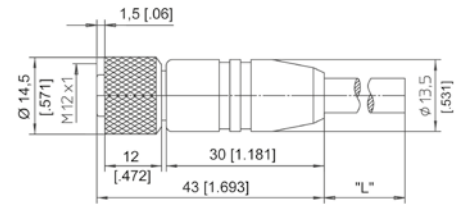
The 5-lead shielded cable is supplied with a mating 5-pin M12 connector at one end and 5 wires at the other end. Available lengths are 2 m, 5 m and 10 m. Wire: cross sectional area 0.34 mm².

Order code:

KAB - XM - M12/5F/G - LITZE

IP69K: KAB - XM - M12/5F/G/69K - LITZE

Length in m



Signal wiring M12, 5-pin	Plug connection / Cable connection				
	1	2	3	4	5
	brown	white	blue	black	grey

**Connector cable
M12, 8-pin
shielded**

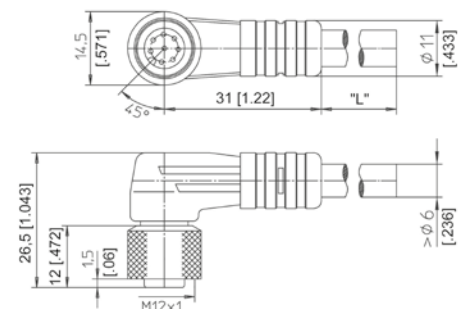
The 8-lead shielded cable is supplied with a mating 8-pin 90° M12 connector at one end and 8 wires at the other end. Available lengths are 2, 5 and 10 m. Wire: cross sectional area 0.25 mm².

Order code:

KAB - XM - M12/8F/W - LITZE

IP69K: KAB - XM - M12/8F/W/69K - LITZE

Length in m



**Connector cable
M12, 8-pin
shielded**

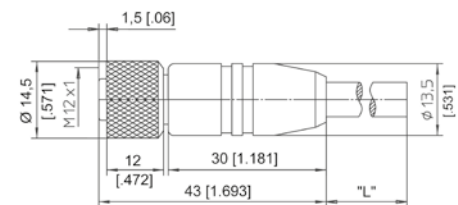
The 8-lead shielded cable is supplied with a mating 8-pin M12 connector at one end and 8 wires at the other end. Available lengths are 2, 5 and 10 m. Wire: cross sectional area 0.25 mm².

Order code:

KAB - XM - M12/8F/G - LITZE

IP69K: KAB - XM - M12/8F/G/69K - LITZE

Length in m



Signal wiring M12, 8-pin	Plug connection / Cable connection							
	1	2	3	4	5	6	7	8
	white	brown	green	yellow	grey	pink	blue	red

Connector cable
M8, 4-pin
shielded

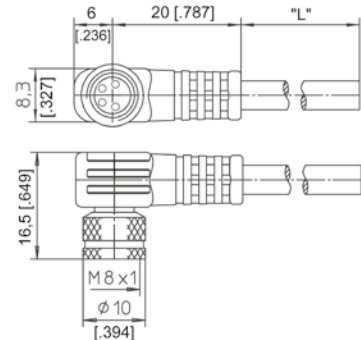
The 4-lead shielded cable is supplied with a mating 4-pin 90° M8 connector at one end and 4 wires at the other end. Available lengths are 2, 5 and 10 m. Wire: cross sectional area 0.14 mm².

Order code:

KAB - XM - M8/4F/W - LITZE

IP69K: KAB - XM - M8/4F/W/69K - LITZE

Length in m



Connector cable
M8, 4-pin
shielded

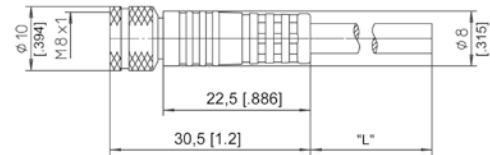
The 4-lead shielded cable is supplied with a mating 4-pin M8 connector at one end and 4 wires at the other end. Available lengths are 2, 5 and 10 m. Wire: cross sectional area 0.14 mm².

Order code:

KAB - XM - M8/4F/G - LITZE

IP69K: KAB - XM - M8/4F/G/69K - LITZE

Length in m



Signal wiring M8, 4-pin	Plug connection / Cable connection			
	1	2	3	4
	brown	white	blue	black

Connector/bus cable
M12, 5-pin
CAN bus
shielded

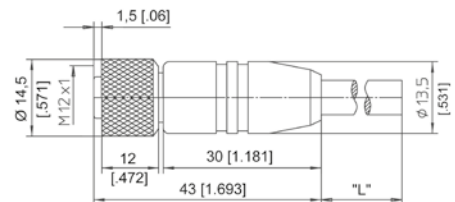
The 5-lead shielded cable is supplied with a female 5-pin M12 connector at one end and a male 5-pin M12 connector at the other end. Available lengths are 0.3 m, 2 m, 5 m and 10 m.

Order code:

KAB - XM - M12/5F/G - M12/5M/G - CAN

IP69K: KAB - XM - M12/5F/G/69K - M12/5M/G/69K - CAN

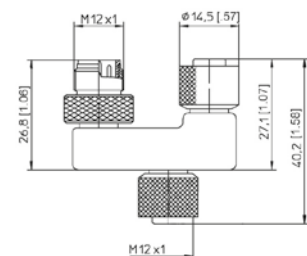
Length in m



T-piece for bus cable
M12, 5-pin
CAN bus

Order code:

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



Terminating
resistance
M12, 5-pin
CAN bus

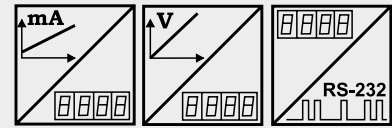
Order code:

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





- For POSICHRON® position sensors with analog Output:
Voltage 0 ... 10 V
Current 0 ... 20 mA
- Integrated sensor supply
- 6-digit LED display
- RS-232 interface
- Optional 4 comparator Output
- Easy programming



Description

PRODIS-ADC is designed for use with analog position sensors to display angles and displacements. A high resolution A/D converter processes signals from sensors with voltage or current output.

The meter is programmable to display values within preset start/end range or values in units as inches, mm or degrees. A tare function or programming lock can be activated with two control terminals.

Sensor excitation is supplied by the meter. With four membrane keys all parameters can be programmed for the special applications. Optional comparator functions with 4 NPN open-collector Output are available, additional 2 of them have relay output.

Specification	Display	6-digit, 7-segment LED, height 14 mm, decimal point programmable
	Counting rate	1 ... 25/s programmable
	Measurement accuracy	±0.05 % f.s.
	Excitation voltage/current	24 V DC ±10%/150 mA, residual ripple 1% _{pp} ; 85-250 V AC, 50-60 Hz/180 mA max.
	Sensor excitation	24 V DC/300 mA; voltage divider 5 V/10 mA
	Input	Two channels, each for: Voltage 0 ... 10V; max. 24V Current 0 ... 20 mA, load 100 Ω, I _{max} <30 mA One input or the difference between both inputs can be chosen by programming
	Control input	2 control inputs 24 V, active low
	Comparator Output (option)	Relay NPN 250 V AC/5 A, 30 V DC/5 A 24 V max./50 mA to GND
	Connection	Terminal strip 12 pole, excitation 3 pole
	Temperature coefficient	±20 x 10 ⁻⁶ / °C
	Operating temperature	-10...+40 °C
	Storage temperature	-20...+85 °C
	Weight	24 V DC: approx. 250 g; 230 V AC: approx. 400 g

Order Code PRODIS-ADC

Model Name

Excitation Voltage

24VDC = 24 V DC

230VAC = 85...250 V AC

Options

REL2 = Comparator

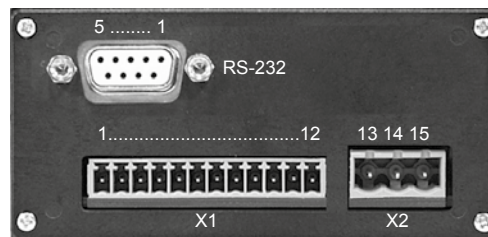
DT = Desktop version

PD-ADC

Order example: PD - ADC - 24VDC - REL2

Specifications (continuation)	Weight	24 V DC: approx. 250 g; 230 V AC: approx. 400 g	
	Protection class	Front IP60, rear IP40	
	Humidity	Max. 80 % R. H., non condensing	
	Safety of equipment	Directive 2006/95/EWG:	DIN EN61010-1:2010
	Electromagnetic compatibility, EMC	Directive 2004/108/EWG:	DIN EN61326-1:2013
Programmable parameters / value range	Value range offset, liwith values	-999999 to +999999	
	Divisor, multiplier	0 to 999999	
	Other programmable parameters	Decimal point position, display brightness	
	Control input terminals	Key lock, display value hold, tare function	
Wiring basic unit	Signals	Connector X1 pin no.	Connector X2 pin no.
	Sensor excitation +U _B 24 V	1	
	Sensor excitation 0 V (GND)	2	
	Control input terminal 1: tare function	3	
	Control input terminal 2: programming lock	4	
	Voltage input terminal 0 ... 10 V, channel 1	5	
	Voltage input terminal 0 ... 10 V, channel 2	6	
	Current input terminal 0 ... 20 mA, channel 1	7	
	Current input terminal 0 ... 20 mA, channel 2	8	
	Voltage divider input terminal, channel 1	9	
	Voltage divider input terminal, channel 2	10	
	Reference voltage 5 V for voltage divider	11	
	GND	12	
	PD-ADC-24VDC Excitation +24 V		13
	Excitation 0 V (GND)		14
	PD-ADC-230VAC Excitation		13, 15
	Protective ground		14

Rear view without comparator Output

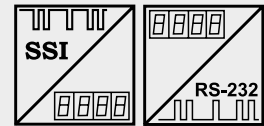


RS-232 interface	Level	RS-232: ±8 V, galvanically isolated	
	Data format	1 start bit, 8 data bits, 1 stop bit, no parity	
	Transmission rate	9600 Baud	
	Signals	Connector X3, Pin No.	D-Sub, Pin No.
	TxD	17	2
RxD	16	3	
GND	18	5	

For rear view with comparator Output and outline drawings see pages 88 and 89.



- For POSICHRON® position sensors with SSI output
- Integrated sensor supply
- 6-digit LED display
- RS-232 interface
- Easy programming



Description

PRODIS®-SSI is designed for use with SSI position sensors to display angle and displacement. Via the CLOCK lines, a sequence of pulses will be transmitted, the input DATA lines will read the sensor's serial bit sequence. The meter is programmable to display values within preset start/end range or values in units as inches, mm or degrees. A tare function or programming lock can be activated with two control terminals. Sensor excitation is supplied by the meter. With four membrane keys, all parameters can be programmed for the special applications.

Specifications	Display	6-digit, 7-segment LED, 14 mm high, decimal point programmable
	Sampling rate	100/s
	Excitation voltage/current	24 V DC ±10%/150 mA, residual ripple 1% _{pp} ; 85-250 V AC, 50-60 Hz/180 mA max.
	Sensor excitation	24 V DC/300 mA or 5 V DC/800 mA
	Inputs	DATA, $\overline{\text{DATA}}$ (RS422)
	Output	CLOCK, $\overline{\text{CLOCK}}$ (RS422)
	Control inputs	2 control inputs 24 V, active low
	Connection	Terminal strip 12-pole, excitation 3-pole
	Operating temperature	-10 ... +40 °C
	Storage temperature	-20 ... +85 °C
Weight	24 V DC: approx. 250 g; 230 V AC: approx. 400 g	

Order Code PRODIS-SSI

Model name

Excitation Voltage

24VDC = 24 V DC

230VAC = 85...250 V AC

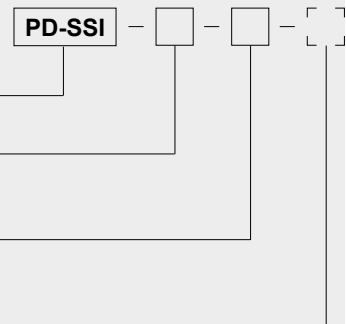
Sensor Excitation

G24V = 24 V DC

G5V = 5 V DC

Options

DT = Desktop version



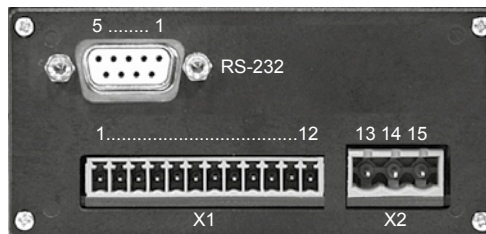
Order example: PD - SSI - 230VAC - G24V

Specifications (continuation)	Protection class	Front IP60, back IP40
	Humidity	Max. 80 % r.h., non condensing
	Safety of equipment	Directive 2006/95/EWG: DIN EN61010-1:2010
	Electromagnetic compatibility, EMC	Directive 2004/108/EWG: DIN EN61326-1:2006

Programmable Parameters / Value range	Value range offset	-999999 to +999999
	Divisor, multiplier	0 to 999999
	Other programmable parameters	Decimal point position, display brightness
	Programmable SSI parameters	Gray/dual code, sign, sampling rate, data format
	Control inputs	Key lock, display value hold, tare function

Wiring basic unit	Signals	Connector X1 pin no.	Connector X2 pin no.
	Sensor excitation +U _B (24 V or 5 V)		1
Sensor excitation 0 V (GND)		2	
Control input 1: tare function		3	
Control input 2: programming lock		4	
Not used		5 / 6	
Output C <small>LOCK</small>		7	
Output C <small>LOCK</small>		8	
Input DATA		9	
Input DATA		10	
Do not connect!		11	
GND		12	
PD-SSI-24VDC			
Excitation +24 V			13
Excitation 0 V (GND)			14
PD-SSI-230VAC			
Excitation			13, 15
Protective ground			14

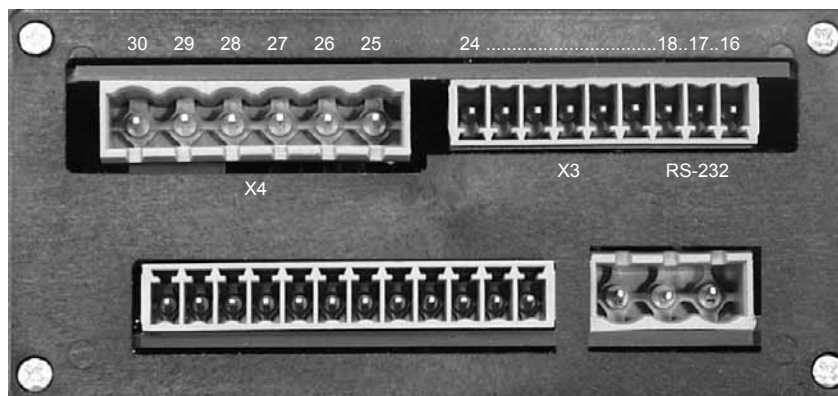
Rear view without comparator Output



RS-232 interface	Level	RS-232: ±8 V, galvanically isolated	
	Data format	1 start bit, 8 data bits, 1 stop bit, no parity	
	Transmission rate	4800 / 9600 / 19200 / 115200 Baud	
	Signals	Connector X3, pin no.	D-Sub, pin no.
	TxD	17	2
	RxD	16	3
GND	18	5	

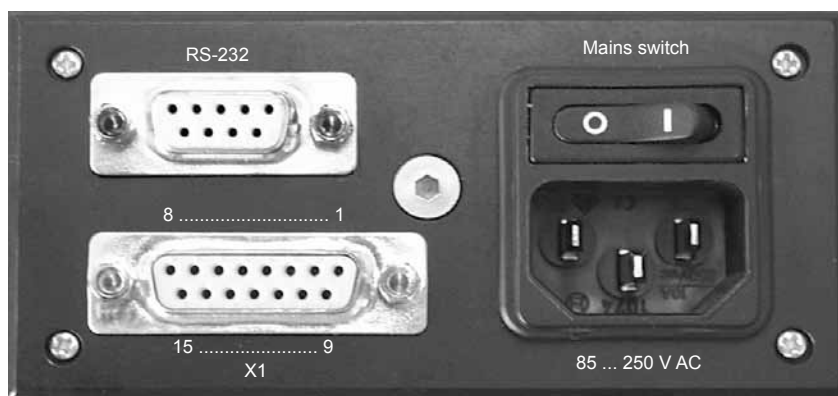
Outline drawings see the following pages.

Rear view with comparator Output



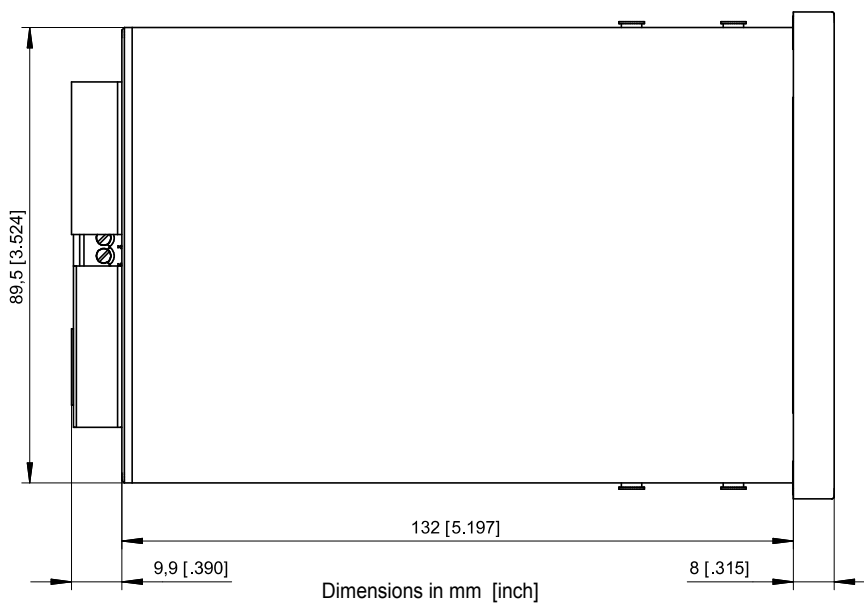
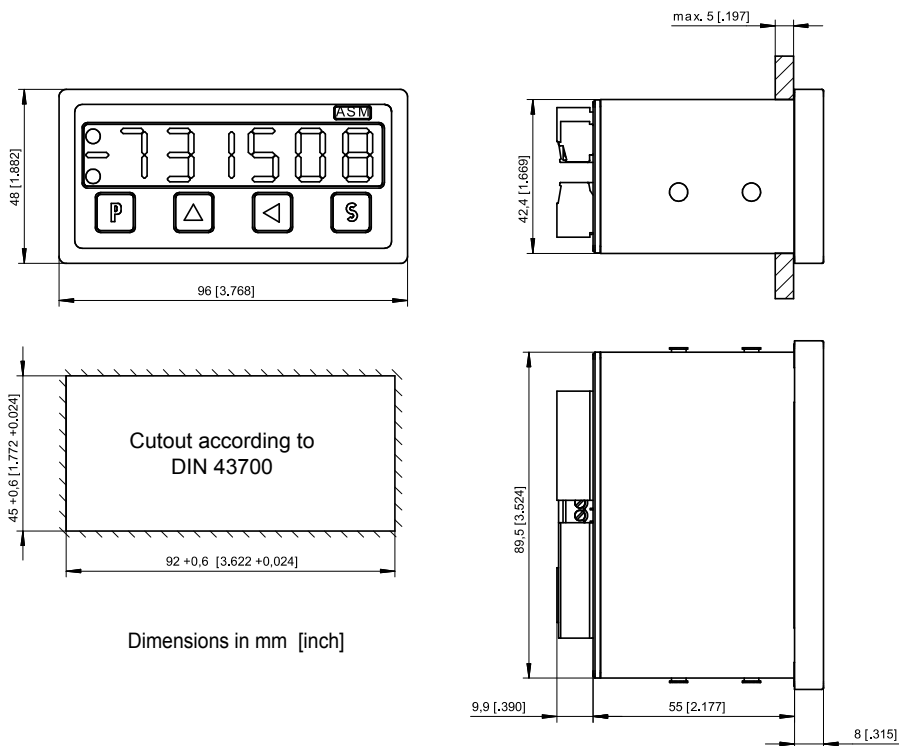
Comparator function (option)	Comparator	Comparator output			
	NPN Collector	Connector X3 pin no.	Relay	Connector X4 pin no.	LED
Comparator 1	NPN1	20	Relay 1	25	LED1
			NO		
Comparator 2	NPN2	21	Relay 2	28	LED2
			NO		
Comparator 3	NPN3	22			
Comparator 4	NPN4	23			
	NPN GND	24			
	NPN U _B (+24V)	19			

Desktop version (option)



Wiring of connector X1 see table at page 85 (PD-ADC) resp. page 87 (PD-SSI).

Outline drawing



PD-XXX-230VAC

Dimensions informative only.
For guaranteed dimensions consult factory.

Protection class according to DIN EN 60529



2nd char. numeral: Protection against ingress of water 1st char. numeral: Protection against solid foreign objects									
Protection against ...	Non protected	Falling water drops vertical / 15°	Spraying water	Splashing water	Water jets	Powerful water jets	Temporary immersion	Continuous Immersion	
DIN EN 60529	IP .. 0	IP .. 1	IP .. 2	IP .. 3	IP .. 4	IP .. 5	IP .. 6	IP .. 7	IP .. 8
IP 0 .. Non protected	IP 00								
IP 1 .. Solid foreign objects diameter ≥ 50 mm	IP 10	IP 11	IP 12						
IP 2 .. Solid foreign objects diameter ≥ 12,5 mm	IP 20	IP 21	IP 22	IP 23					
IP 3 .. Solid foreign objects diameter ≥ 2,5 mm	IP 30	IP 31	IP 32	IP 33	IP 34				
IP 4 .. Solid foreign objects diameter ≥ 1 mm	IP 40	IP 41	IP 42	IP 43	IP 44				
IP 5 .. Dust-protected	IP 50		IP 52	IP 53	IP 54	IP 55	IP 56		
IP 6 .. Dust-tight	IP 60				IP 64	IP 65	IP 66	IP 67	IP 68

* Depth and duration of immersion must be specified!

IP69K - Water at high pressure / steam jet cleaning
 Note: IP67/IP69K does not include IP68



Do you have questions regarding ASM products? Would you like to receive detailed product information sent to you or do you wish to discuss sensor solutions for your application directly with us? We are happy to assist and are looking forward to your inquiry.

You can contact us by phone, e-mail or fax request.
(for contact information see back cover)

A large, faint, light gray world map is centered in the background of the lower half of the page, serving as a backdrop for the website information.

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