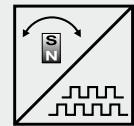


POSIROT® PRDS3 Magnetic Angle Encoder with Incremental Output



Magnetic angle encoder 0 - 360° in a 36 mm dia. housing

- Measurement range 0 - 360°+
- Protection class IP67 / IP69K
- Incremental encoder output
- With 10 mm shaft or 6 mm hollow shaft
- Magnetic measurement principle



Specifications	Output	Incremental encoder outputs A, \bar{A} , B, \bar{B} , Z, \bar{Z} , RS422 or HTL compatible, filtered output
	Measurement range	0 ... 360°
	Resolution	256 or 1024 pulses per revolution
	Linearity	$\pm 1^\circ$
	Protection class	IP67/IP69K (connector output with IP69K connector cable) IP67 (cable output, option IP67/IP69K)
	Material	Aluminium
	Mounting	Clamps, mounting plate
	Shock	EN60068-2-27:1993, 100 g/11 ms, 100 shocks
	Vibration	EN60068-2-6:1995, 20 g 10 Hz-2 kHz, 10 cycles
	Life cycle of bearings	100 x 10 ⁶ revolutions (<1500 r.p.m.)
Revolutions per minute (mech.)	Max. 10,000 r.p.m.	
Allowable shaft load	100 N radial, 100 N axial	

Order Code PRDS3

Model name

Shaft

V = 10 mm shaft
H = 6 mm hollow shaft

Resolution (pulses/revolution)

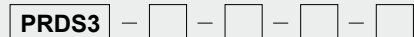
256 / 1024
(other resolutions available on request)

Output (see page 47/48)

RS5VF = RS422 compatible, $U_s = 5$ V DC, filtered output
RS24VF = RS422 compatible, $U_s = 10 \dots 36$ V DC, filtered output
HT24VF = HTL compatible, $U_s = 18 \dots 36$ V DC, filtered output

Connection

KAB2M/KAB2M69K = Cable, standard length 2 m (not with RS5VF), IP67/IP69K
M12A8/M12R8 = 8-pin socket M12 axial/radial



Order code mounting clamps (set of 3 pieces)

PRPT-BFS1

Order code connector cable (see accessories page 90)

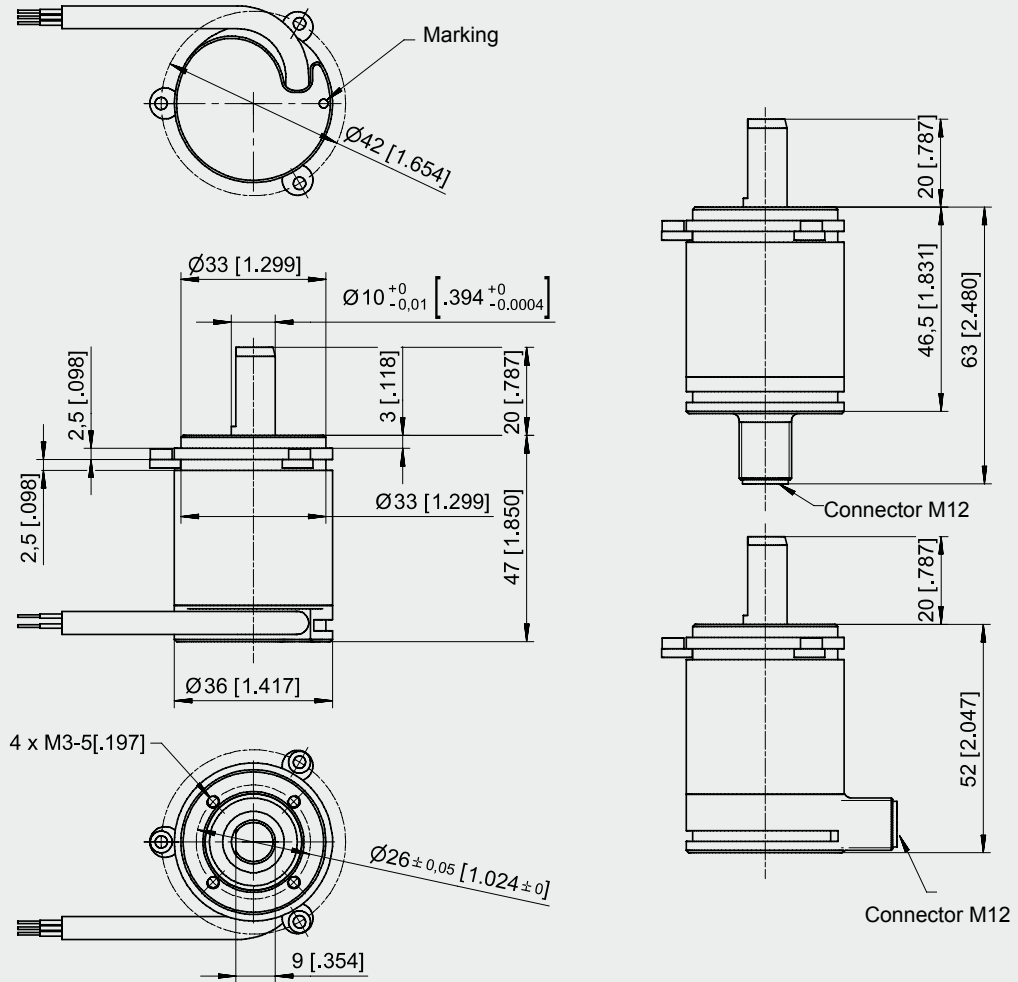
KAB-2M-M12/8F/G-LITZE

Order example: PRDS3 - V - 1024 - HT24VF - KAB2M

POSIROT®
PRAS3/PRDS3
Dimensions



**Outline drawing
 sensor with shaft**



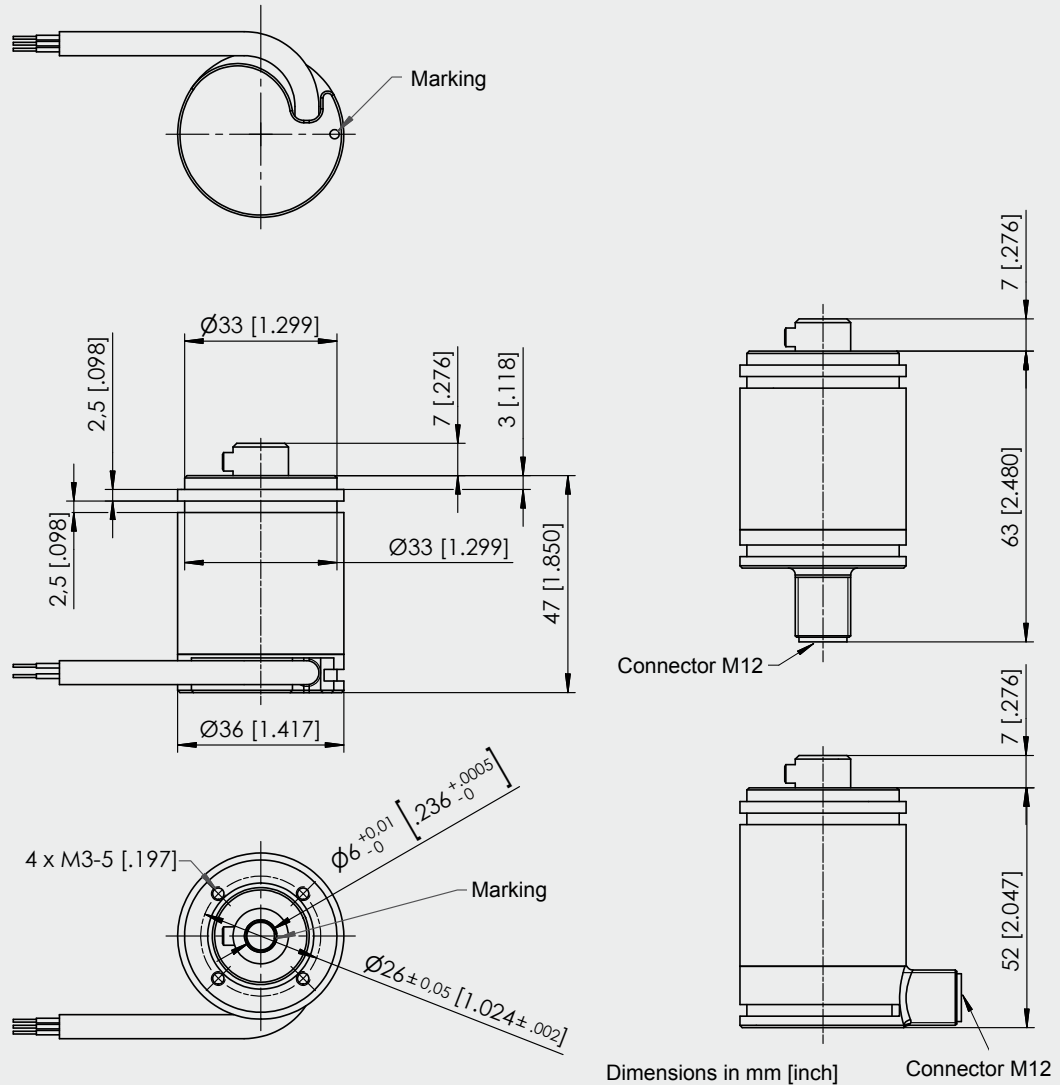
Dimensions in mm [inch]

Weight without cable 250 g approx.
 Dimensions informative only.
 For guaranteed dimensions please consult factory.

POSIROT®
PRAS3/PRDS3
Dimensions



**Outline drawing
 sensor with hollow shaft**



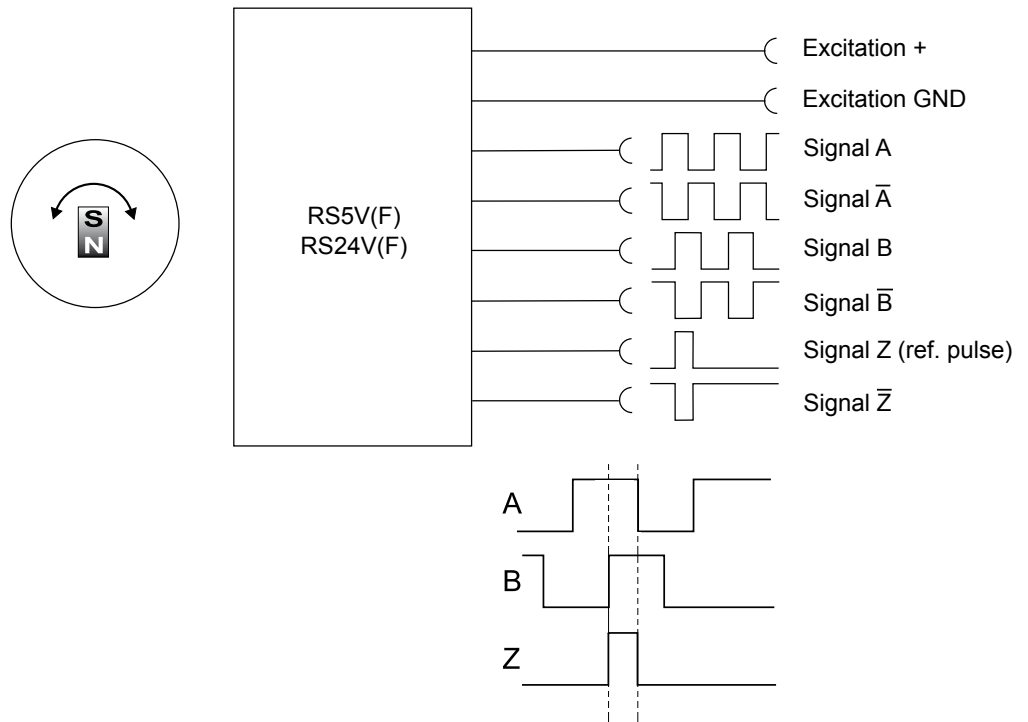
Weight without cable 250 g approx.
 Dimensions informative only.
 For guaranteed dimensions please consult factory.

POSIROT®
PRDS
Output RS5V(F) / RS24V(F)



RS5V(F)/RS24V(F) Incremental 	Interface	EIA RS-422
	Excitation voltage	RS5V(F): 5 V DC $\pm 10\%$; RS24V(F): 10 ... 36 V DC
	Excitation current	100 mA max., depending on the load
	Pulse frequency	<500 kHz
	Output signals	A, \bar{A} , B, \bar{B} , Z, \bar{Z} Push-Pull
	Output current	10 mA max.
	Stability (temperature)	$\pm 50 \times 10^{-6}$ / °C f.s. (typ.)
	Operating temperature	-40 ... +85 °C
	Protection	Short circuit
	EMC	EN61326-1:2006

Output signals



Unfiltered output RS5V / RS24V

A preferred maximum pulse frequency has to be defined within the product code. This will take account for limited bandwidth of downstream counter.

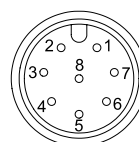
Filtered output RS5VF / RS24VF

Option for filtered jitterfree position value. The filter does not introduce velocity or acceleration error.

Signal wiring	Output signals	Connector pin	Wire color
	Excitation +	1	White
	GND	2	Brown
	A	4	Yellow
	\bar{A}	6	Pink
	B	3	Green
	\bar{B}	5	Grey
	Z	7	Blue
	\bar{Z}	8	Red

Connection

View to sensor
connector



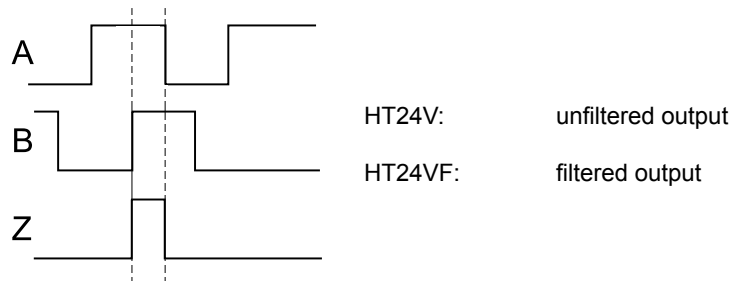
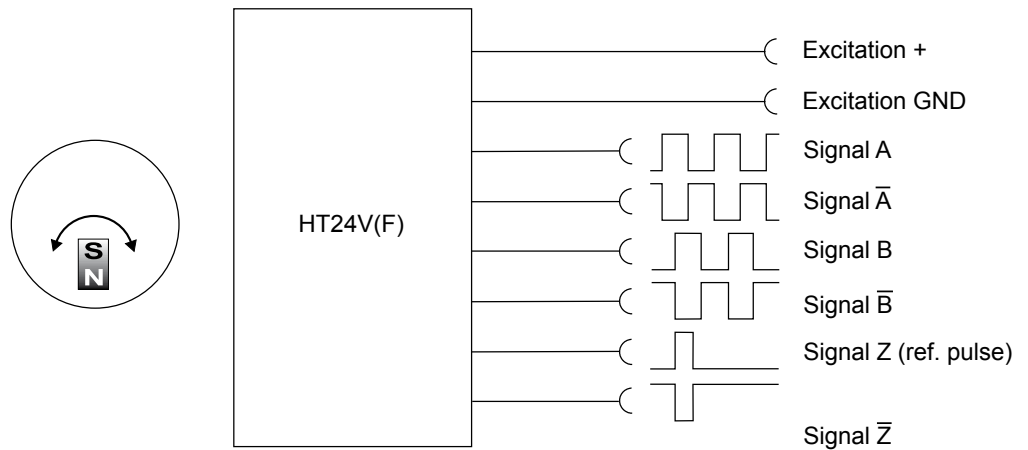
M12A8 / M12R8

POSIROT® PRDS Output HT24V(F)



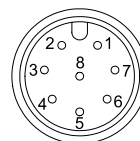
HT24V(F) Incremental 	Interface	EIA RS-422
	Excitation voltage	18 ... 36 V DC
	Excitation current	100 mA max., depending on the load
	Pulse frequency	<500 kHz
	Output signals	A, \bar{A} , B, \bar{B} , Z, \bar{Z} Push-Pull
	Output current	50 mA max.
	Stability (temperature)	$\pm 50 \times 10^{-6} / ^\circ\text{C}$ f.s. (typ.)
	Operating temperature	-40 ... +85 °C
	Protection	Short circuit
	EMC	EN61326-1:2006

Output signals



Signal wiring	Output signals	Connector pin	Cable color
	Excitation +	1	white
	GND	2	brown
	A	4	yellow
	\bar{A}	6	pink
	B	3	green
	\bar{B}	5	grey
	Z	7	blue
	\bar{Z}	8	red

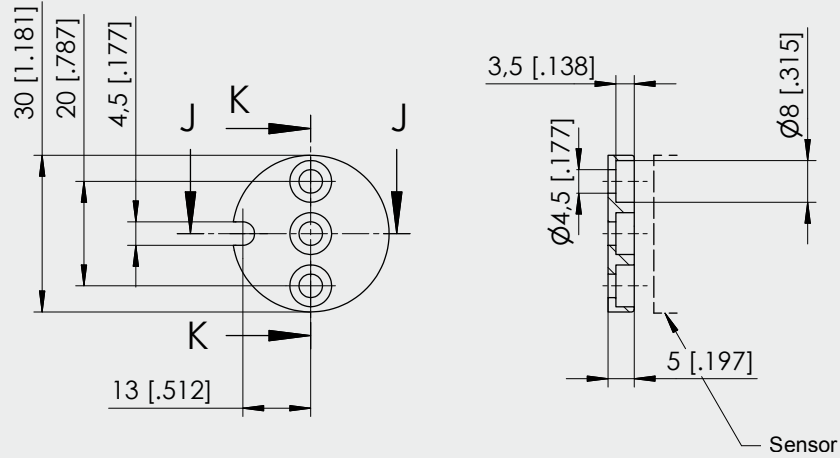
Connection



View to sensor
connector

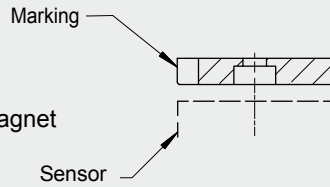
M12A8 / M12R8

PRMAG20

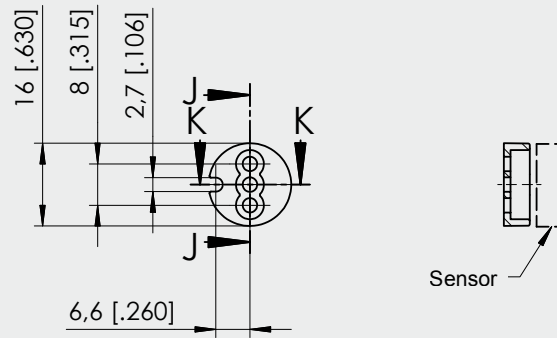


Weight 11 g approx.,
 moment of inertia 1.2 kgmm²

A misalignment of the position magnet
 has an effect on the linearity

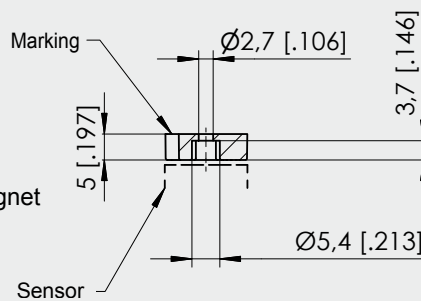


PRMAG21



Weight 3 g approx.,
 moment of inertia 0.1 kgmm²

A misalignment of the position magnet
 has an effect on the linearity



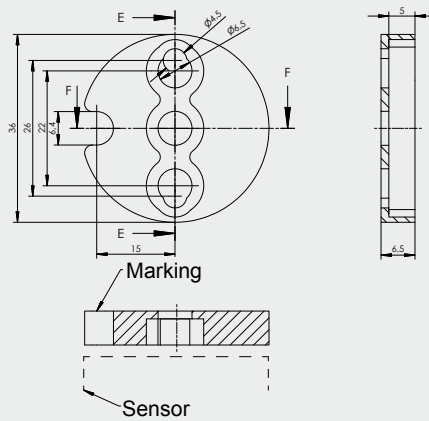
Dimensions in mm [inch]

Dimensions informative only
 For guaranteed dimensions please consult factory

PRMAG22

Weight 17 g approx.,
 moment of inertia 3 kgmm²

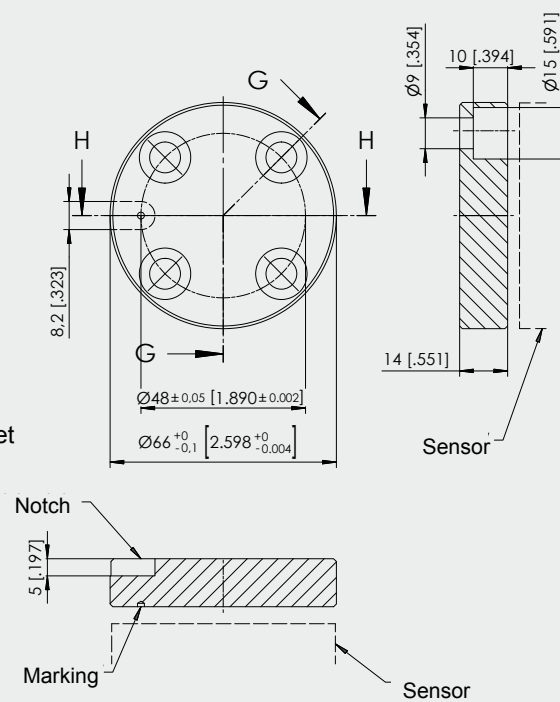
A misalignment of the position magnet
 has an effect on the linearity



PRMAG5Z

Weight 100 g approx.,
 moment of inertia 55 kgmm²

A misalignment of the position magnet
 has an effect on the linearity

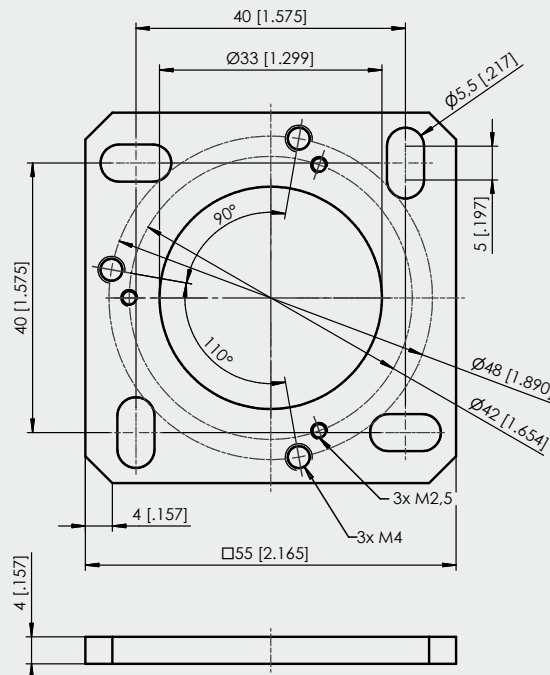


Dimensions in mm [inch]

Dimensions informative only
 For guaranteed dimensions please consult factory

PRPT-BPL1

(screw mounting)
 For PRAS2, PRDS2,
 PRAS3, PRDS3



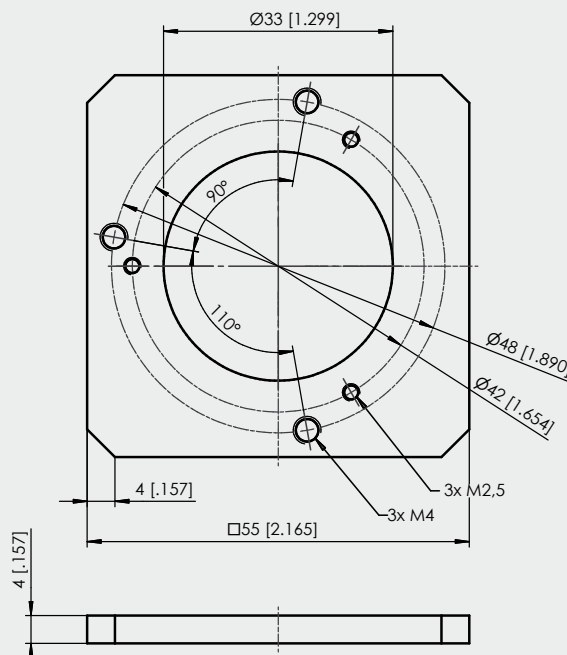
In combination with the
 mounting clamps
 PRPT-BFS1 (3 x M2.5)
 or
 in combination with the
 mounting bracket
 PRPT-BFS2 (3 x M4).

Dimensions in mm [inch]

Weight 30 g approx.
 Dimensions informative only.
 For guaranteed dimensions please consult factory.

PRPT-BPL2

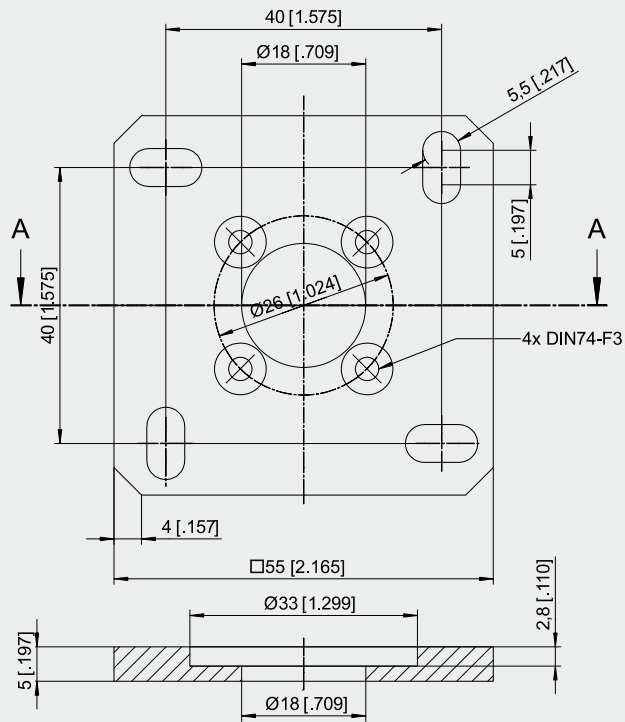
(welding assembly)
 For PRAS2, PRDS2,
 PRAS3, PRDS3



In combination with the
 mounting clamps
 PRPT-BFS1 (3 x M2.5)
 or
 in combination with the
 mounting bracket
 PRPT-BFS2 (3 x M4).

PRPT-BPL3

For PRAS3, PRDS3



Dimensions in mm [inch]

Weight 30 g approx.

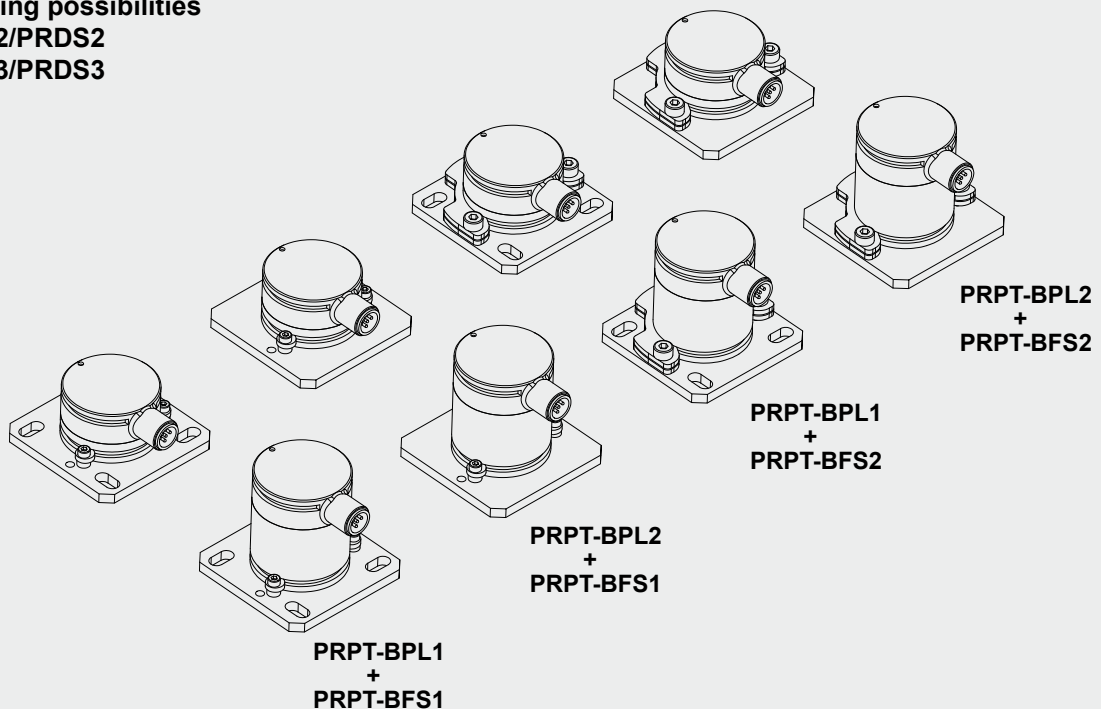
Dimensions informative only.

For guaranteed dimensions please consult factory.

Mounting possibilities

PRAS2/PRDS2

PRAS3/PRDS3



POSIROT® / POSITILT®

Accessories

Connector Cables



Connector cable for POSIROT®-POSITILT® sensors

4 pins M12

Suitable for 5-pin sensor connectors M12A5 and M12R5

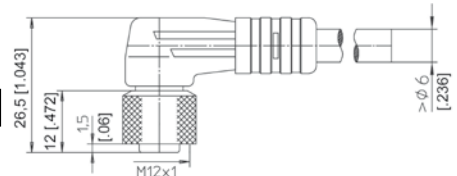
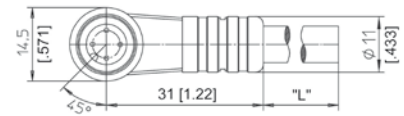
The 4-core screened cable is supplied with a mating 4-pin 90° M12 connector at one end and 4 wires at the other end. Available lengths are 2, 5 and 10 m.

Order code:

KAB - XM - M12/4F/W - LITZE

IP69K: **KAB - XM - M12/4F/W/69K - LITZE**

Length in m



Connector cable for POSIROT®-POSITILT® sensors

4 pins M12

Suitable for 5-pin sensor connectors M12A5 and M12R5

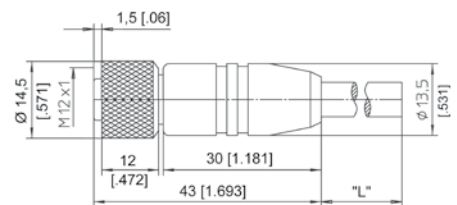
The 4-core screened cable is supplied with a mating 4-pin M12 connector at one end and 4 wires at the other end. Available lengths are 2, 5 and 10 m.

Order code:

KAB - XM - M12/4F/G - LITZE

IP69K: **KAB - XM - M12/4F/G/69K - LITZE**

Length in m



Signal wiring M12, 4 pin	Connector pin / cable color			
	1	2	3	4
	Brown	White	Blue	Black

Connector cable for POSIROT®-POSITILT® sensors

8 pins M12

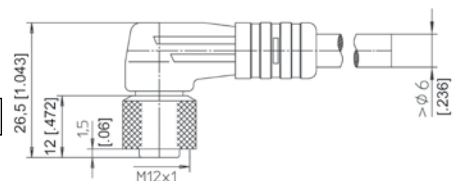
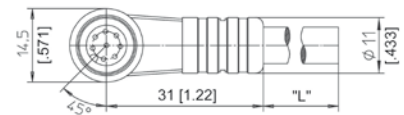
The 8-core screened cable is supplied with a mating 8-pin 90° M12 connector at one end and 8 wires at the other end. Available lengths are 2, 5 and 10 m.

Order code:

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

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

Length in m



Connector cable for POSIROT®-POSITILT® sensors

8 pins M12

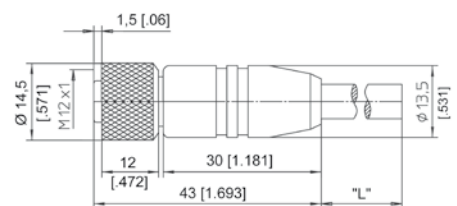
The 8-core screened cable is supplied with a mating 8-pin M12 connector at one end and 8 wires at the other end. Available lengths are 2, 5 and 10 m.

Order code:

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

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

Length in m



Signal wiring M12, 8 pin	Connector pin / cable color							
	1	2	3	4	5	6	7	8
	White	Brown	Green	Yellow	Grey	Pink	Blue	Red