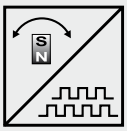
POSIROT®
PRDS5
Magnetic Angle Sensor with Incremental Output



Magnetic angle sensor 0 - 360° in a flat housing with 66 mm resp. 68.2 mm dia.

- **Measurement range 0 - 360°**
- **Protection class IP67 / IP69K, optional IP68***
- **Incremental encoder output**
- **With 10 mm shaft or non-contact**
- **Magnetic measurement principle**
- **Seawater proof**
- **Suitable for use on ocean-going vessels**



* Depth and duration of immersion must be specified!

Specifications		
	Output	Incremental encoder outputs A, $\overline{A}$, B, $\overline{B}$, Z, $\overline{Z}$, RS422 compatible, filtered output
	Measurement range	0 ... 360°
	Resolution	256 or 1024 pulses per revolution
	Linearity	±1°
	Rated distance sensor / magnet	Depending on the position magnet
	Protection class	IP67/IP69K (connector output with IP69K connector cable); IP68 - on request
	Material	Stainless steel
	Mounting	Screws M8
	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 (shaft version)	100 x 10^6 revolutions (<1500 r.p.m.)
	Revolutions per minute (shaft version)	Max. 10,000 r.p.m.
	Allowable shaft load	120 N radial, 120 N axial

Order Code PRDS5

PRDS5 – □ – □ – □ – □ – □

Model name

Mechanical connection

V	= Shaft 10 mm
K	= Non-contact with external magnet

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 ... 36 V DC, filtered output
HT24VF	= HTL compatible, U_S= 18 ... 36 V DC, filtered output

Connection

M12A8/M12R8	= 8-pin socket M12 axial/radial

Housing material

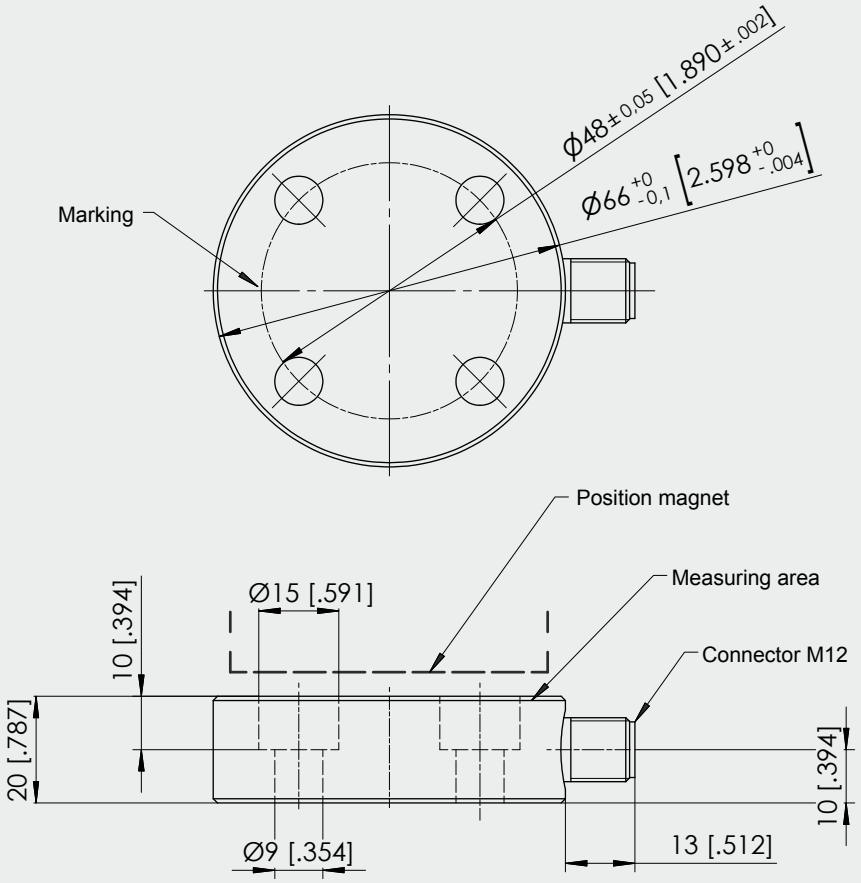
VA	= Stainless steel

Order code position magnet (see accessories page 53/54) **PRMAG ...**

Order code connector cable (see accessories page 90) **KAB-2M-M12/8F/G-LITZE**

Order example: PRDS5 - V - 1024 - RS24VF - M12A8 - VA

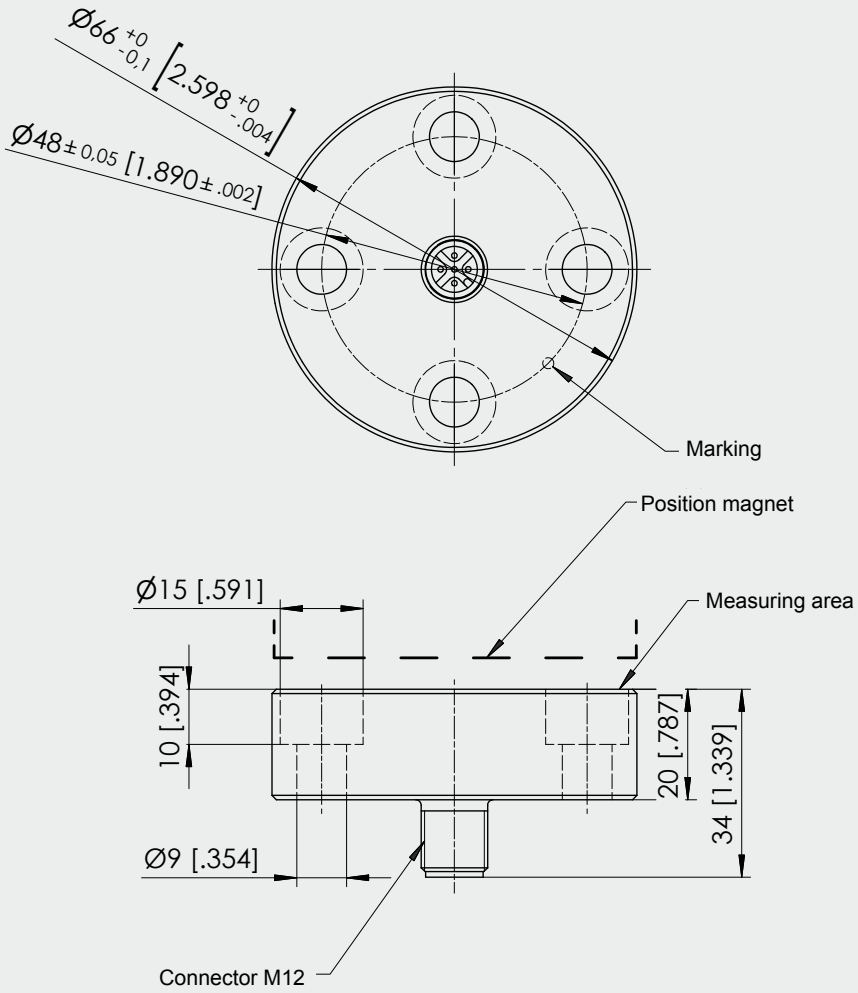
Outline drawing
PRAS5-K/PRDS5-K
M12 radial



Dimensions in mm [inch]

Dimensions informative only.
For guaranteed dimensions consult factory.

Outline drawing
PRAS5-K/PRDS5-K
M12 axial

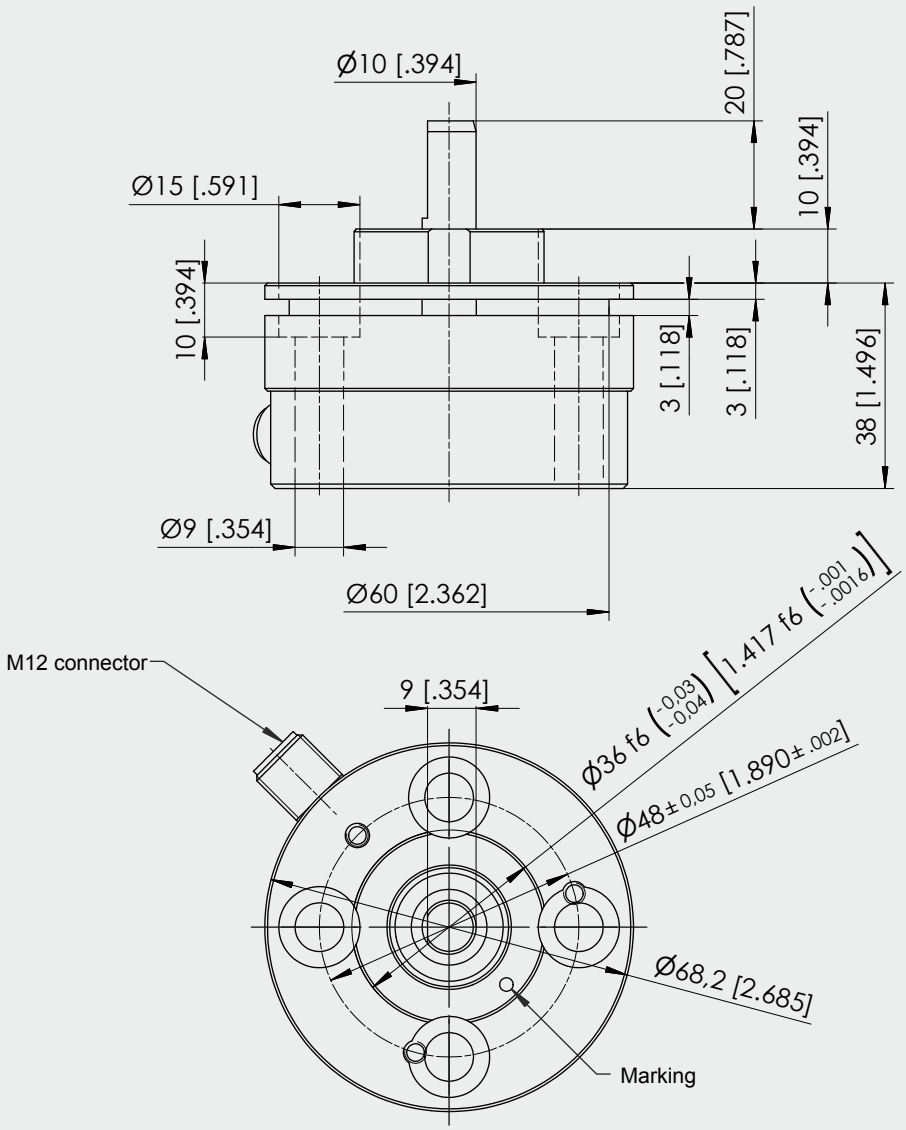


Dimensions in mm [inch]

Dimensions informative only.
For guaranteed dimensions consult factory.

Outline drawing
PRAS5-V, PRDS5-V
M12 radial

(flange mechanically compatible to the analog angle sensor AWS1)

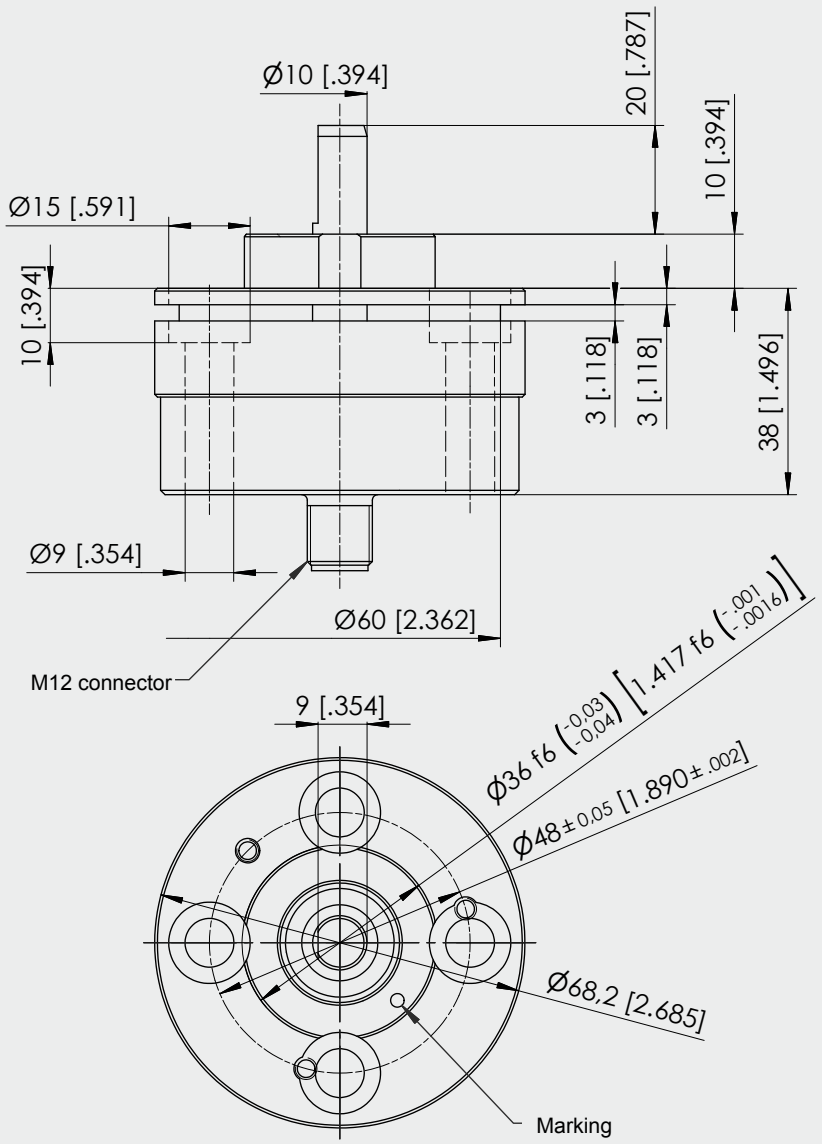


Dimensions in mm [inch]

Dimensions informative only.
For guaranteed dimensions consult factory.

Outline drawing
PRAS5-V, PRDS5-V
M12 axial

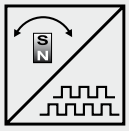
(flange mechanically compatible to the analog angle sensor AWS1)



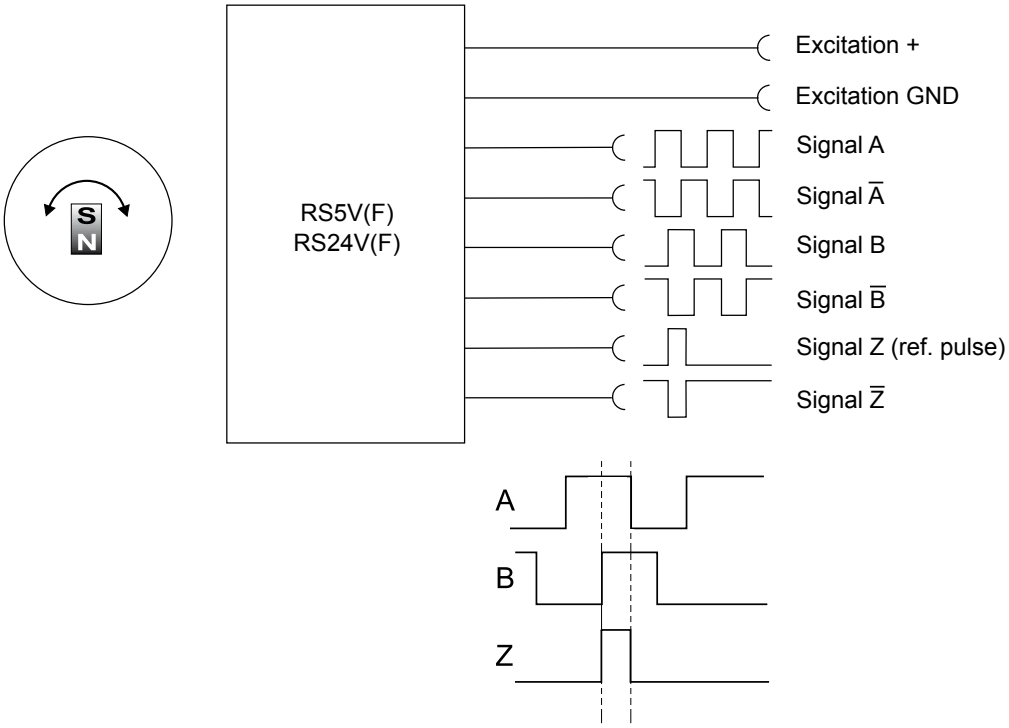
Dimensions in mm [inch]

Dimensions informative only.
For guaranteed dimensions 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 ±10 %; RS24V(F): 10 ... 36 V DC
	Excitation current	100 mA max., depending on the load
	Pulse frequency	<500 kHz
	Output signals	A, $\overline{A}$, B, $\overline{B}$, Z, $\overline{Z}$ Push-Pull
	Output current	10 mA max.
	Stability (temperature)	±50 x 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.

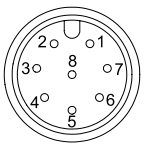
Filtered output RS5VF / RS24VF
Option for filtered jitterfree position value. The filter does not introduce velocity or acceleration error.

Signal wiring

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

Connection

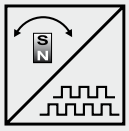
View to sensor connector



M12A8 / M12R8

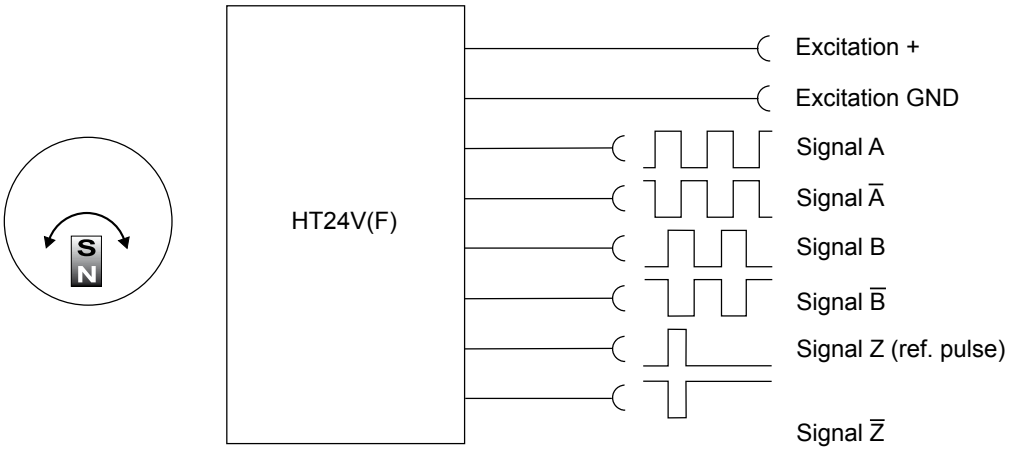
POSIROT®
PRDS
Output HT24V(F)

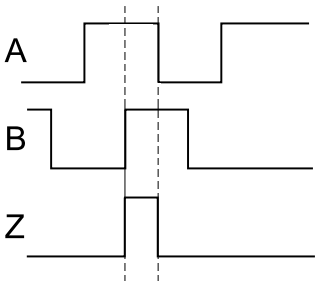
HT24V(F)
Incremental



Interface	24 V-HTL
Excitation voltage	18 ... 36 V DC
Excitation current	100 mA max., depending on the load
Pulse frequency	<500 kHz
Output signals	A, $\overline{A}$, B, $\overline{B}$, Z, $\overline{Z}$ Push-Pull
Output current	50 mA max.
Stability (temperature)	±50 x 10^{-6} / °C f.s. (typ.)
Operating temperature	-40 ... +85 °C
Protection	Short circuit
EMC	EN61326-1:2006

Output signals





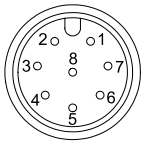
HT24V: unfiltered output

HT24VF: filtered output

Signal wiring

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

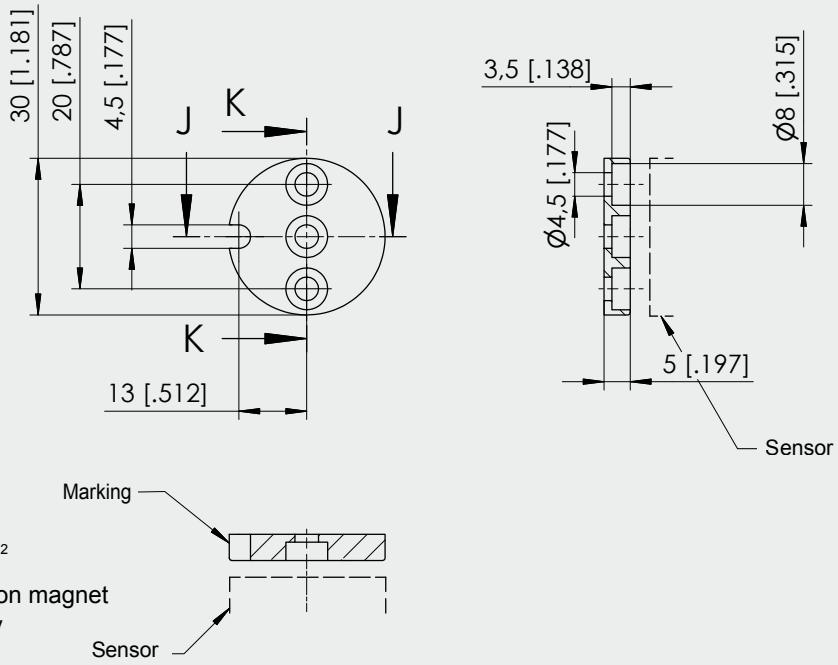
Connection



View to sensor connector

M12A8 / M12R8

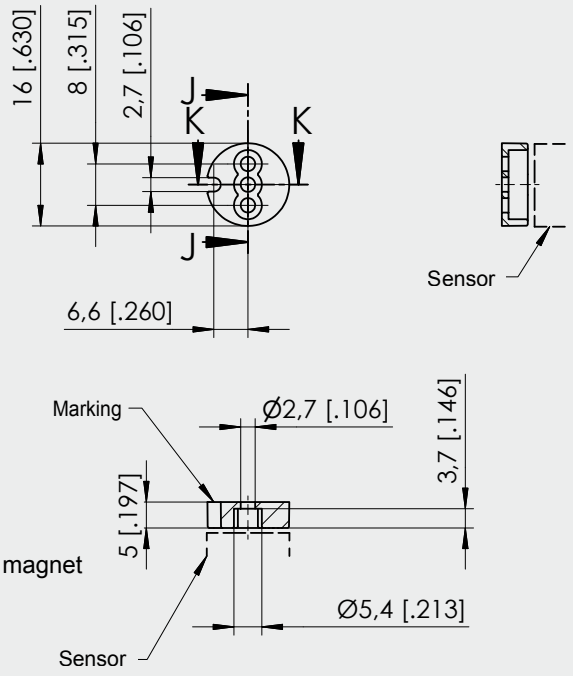
PRMAG20



Weight 11 g approx.,
moment of inertia 1.2 kgmm²

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

PRMAG21



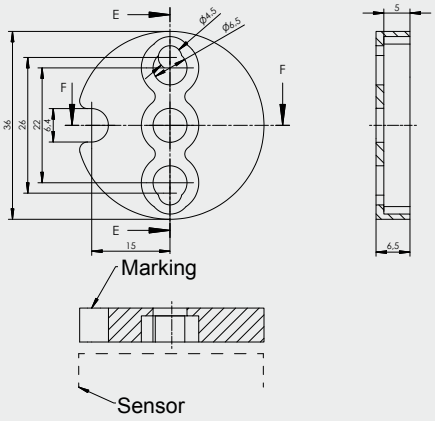
Weight 3 g approx.,
moment of inertia 0.1 kgmm²

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

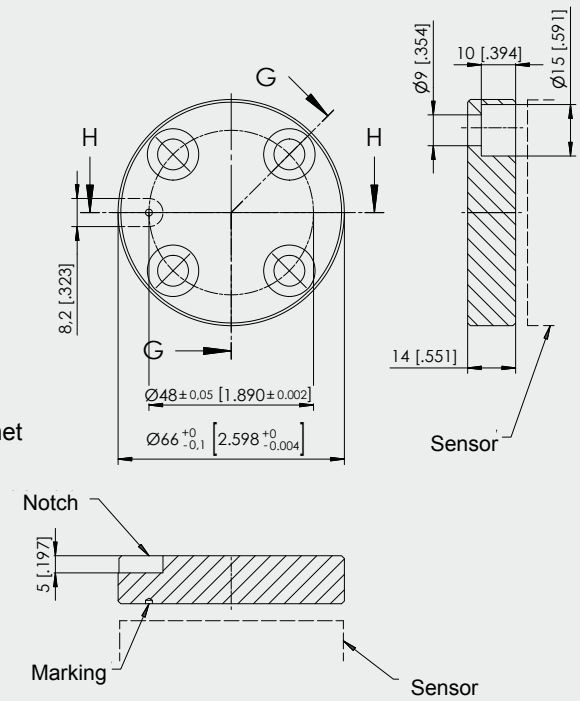
PRMAG22



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

Connector cable for POSIROT®-POSITILT® sensors
4 pins M12

Suitable for 5-pin sensor connectors M12A5 and M12R5

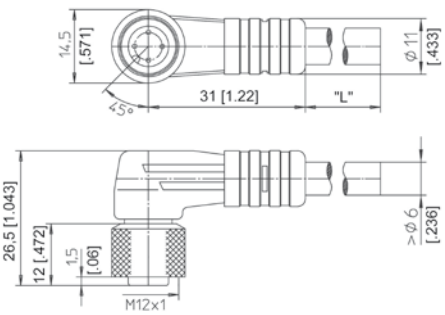
The 4-core screened cable is supplied with a mating 4-pin 90° M12 connector at one end and 4 wires at the other end. Available lengths are 2, 5 and 10 m.

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

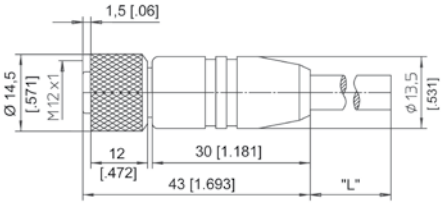
The 4-core screened cable is supplied with a mating 4-pin M12 connector at one end and 4 wires at the other end. Available lengths are 2, 5 and 10 m.

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

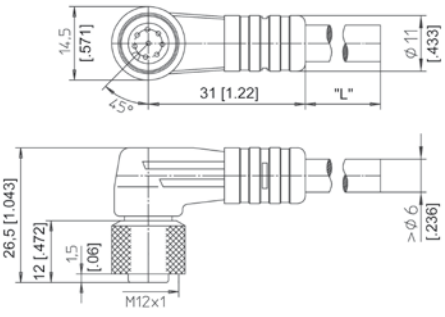
The 8-core screened cable is supplied with a mating 8-pin 90° M12 connector at one end and 8 wires at the other end. Available lengths are 2, 5 and 10 m.

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

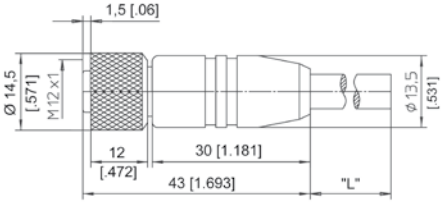
The 8-core screened cable is supplied with a mating 8-pin M12 connector at one end and 8 wires at the other end. Available lengths are 2, 5 and 10 m.

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