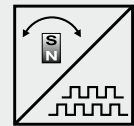




**Magnetic angle sensor 0 - 360° in a flat housing with 66 mm resp. 68.2 mm dia.**

- 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, $\bar{A}$ , B, $\bar{B}$ , Z, $\bar{Z}$ , 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 <sup>6</sup> 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**



**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<sub>s</sub> = 5 V DC, filtered output
- RS24VF = RS422 compatible, U<sub>s</sub> = 10 ... 36 V DC, filtered output
- HT24VF = HTL compatible, U<sub>s</sub> = 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)

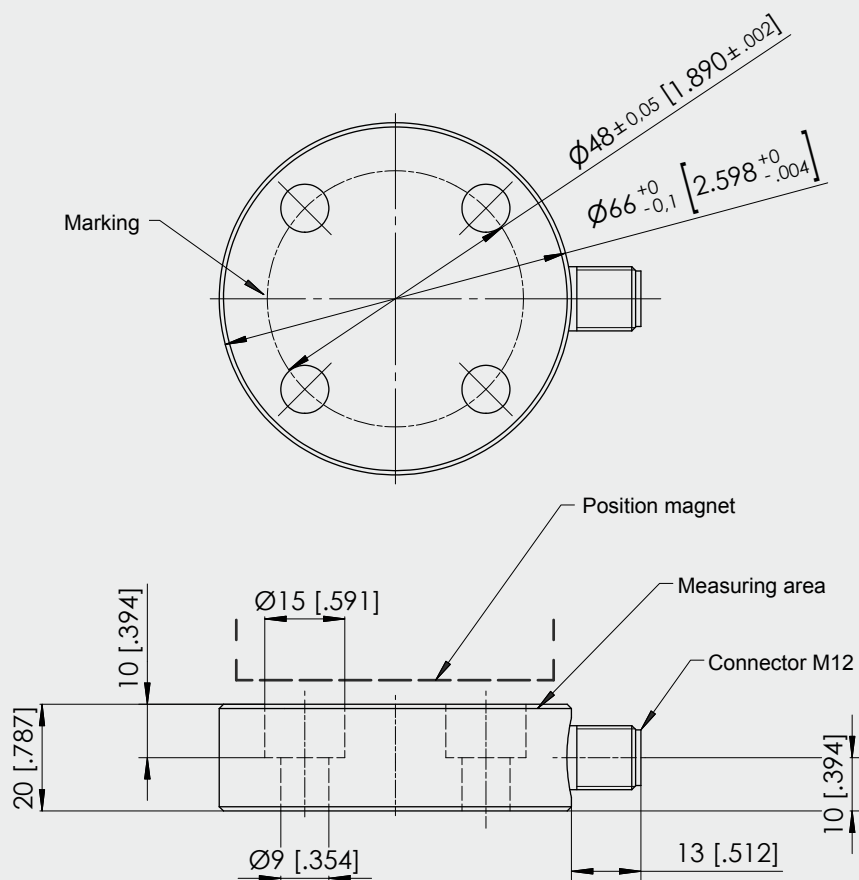
**PRMAG ...**

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



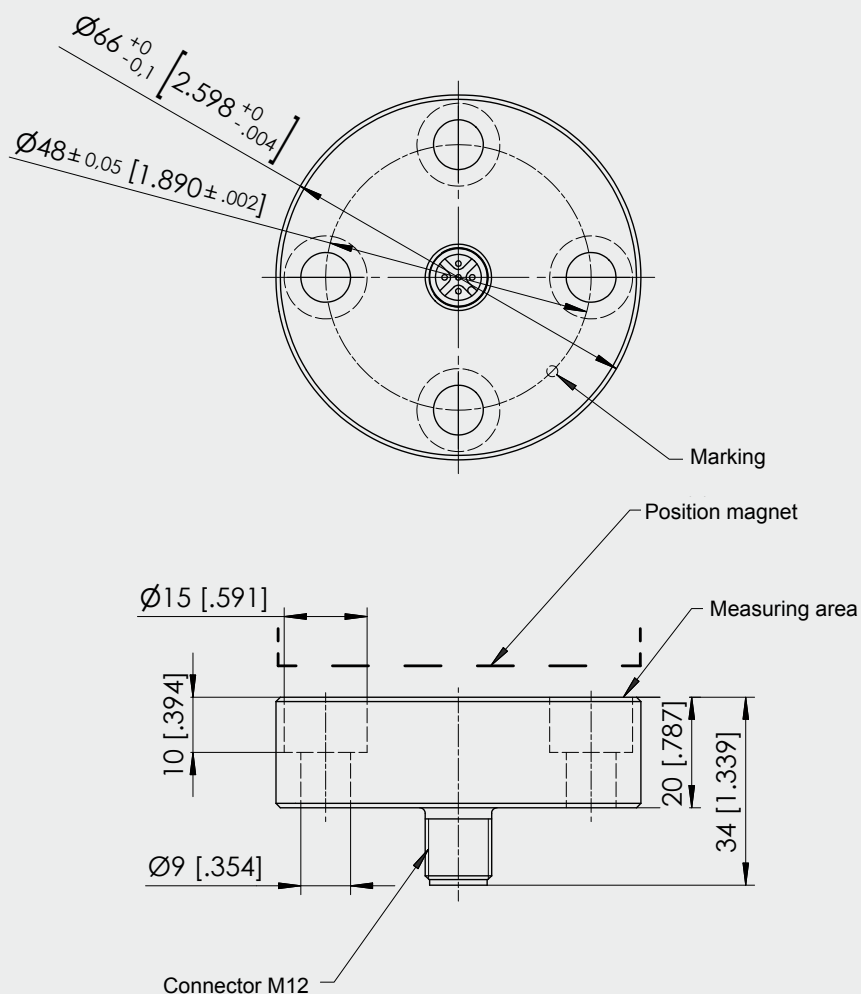
Dimensions in mm [inch]

Dimensions informative only.  
For guaranteed dimensions consult factory.

**POSIROT®**  
**PRAS5/PRDS5**  
**Dimensions**



Outline drawing  
PRAS5-K/PRDS5-K  
M12 axial



Dimensions in mm [inch]

Dimensions informative only.

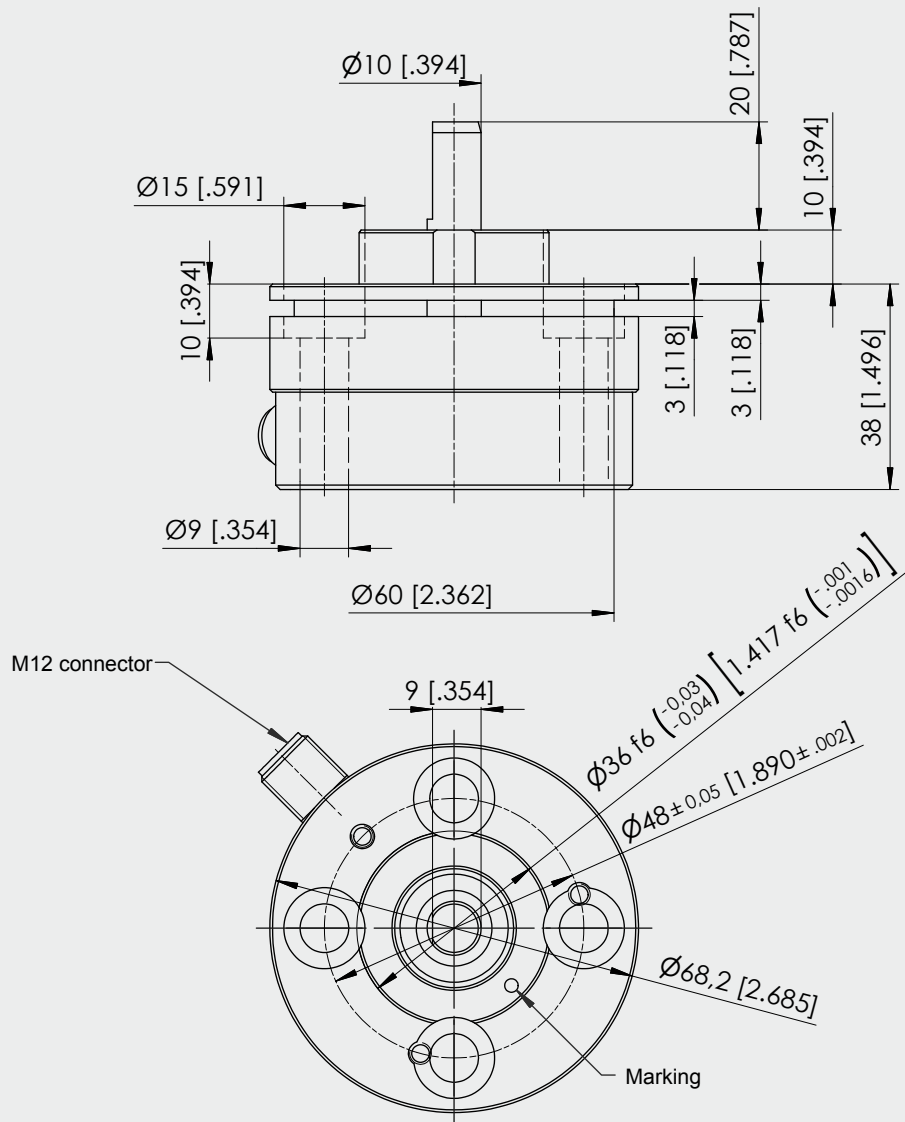
For guaranteed dimensions consult factory.

**POSIROT®**  
**PRAS5/PRDS5**  
**Dimensions**



**Outline drawing**  
**PRAS5-V, PRDS5-V**  
**M12 radial**

(flange mechanically compatible to the analog angle sensor AWS1)



Dimensions in mm [inch]

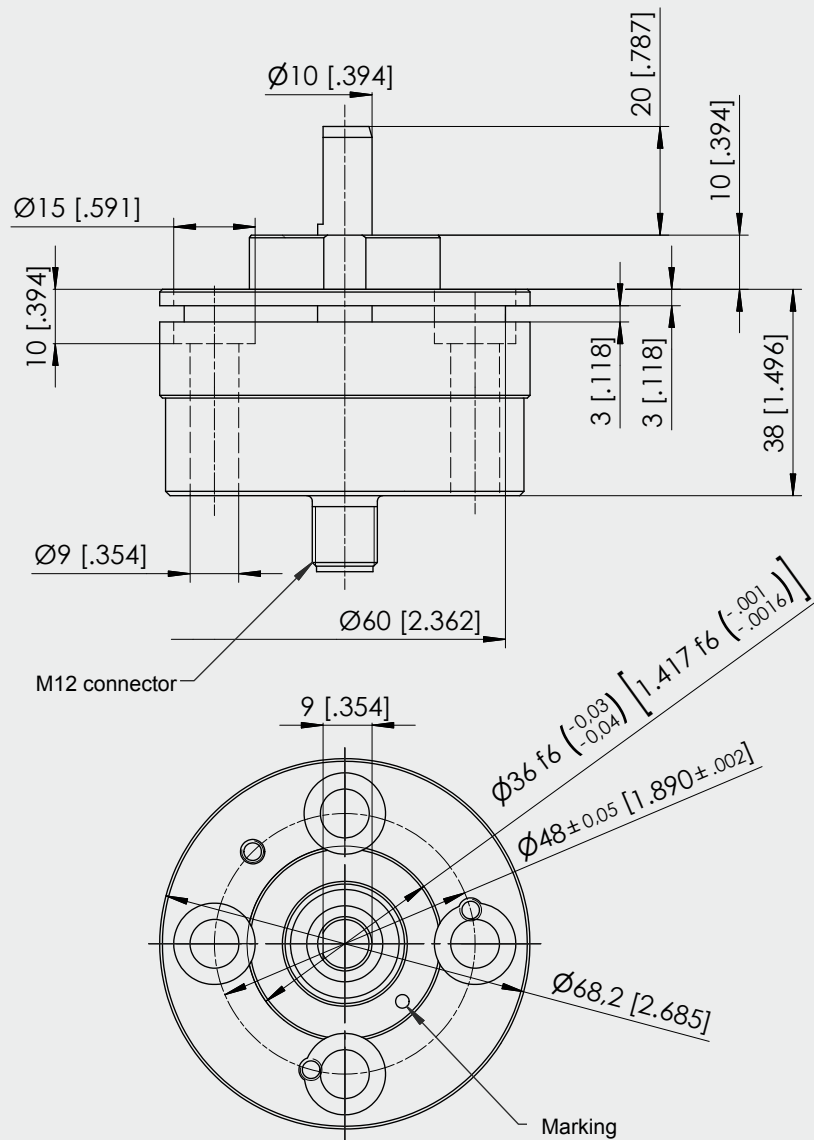
Dimensions informative only.  
 For guaranteed dimensions consult factory.

**POSIROT®**  
**PRAS5/PRDS5**  
**Dimensions**



**Outline drawing**  
**PRAS5-V, PRDS5-V**  
**M12 axial**

(flange mechanically compatible to the analog angle sensor AWS1)



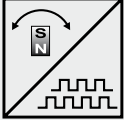
Dimensions in mm [inch]

Dimensions informative only.

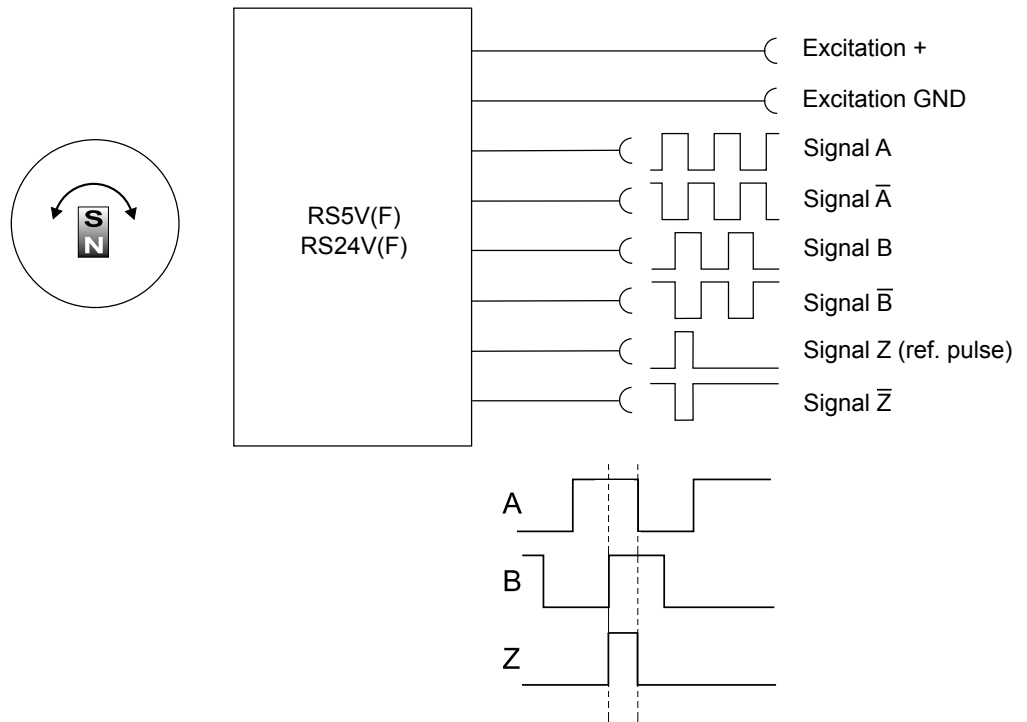
For guaranteed dimensions consult factory.

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



<b>RS5V(F)/RS24V(F)</b> 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.

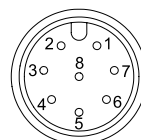
### Filtered output RS5VF / RS24VF

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



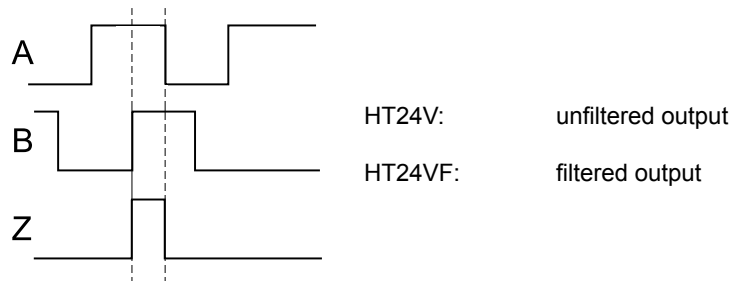
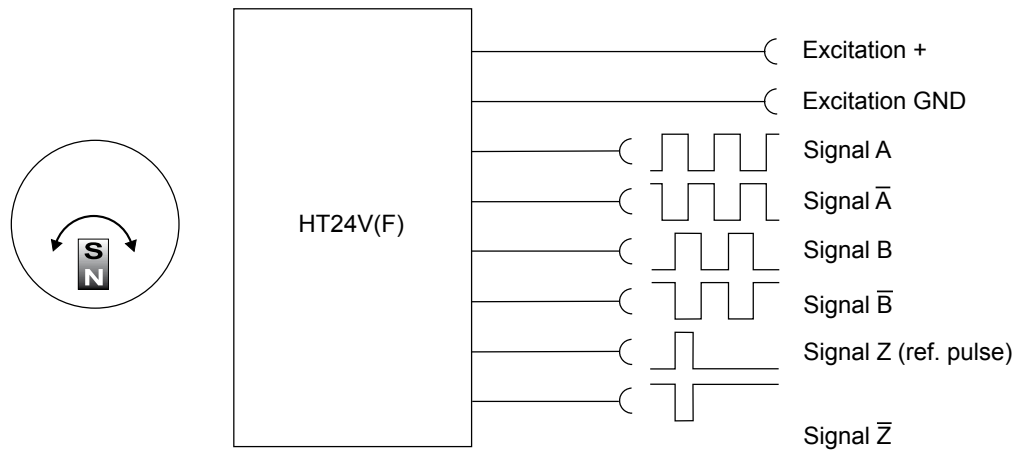
M12A8 / M12R8

# POSIROT® PRDS Output HT24V(F)



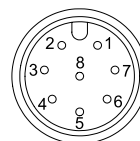
<b>HT24V(F)</b> Incremental 	Interface	EIA RS-422
	Excitation voltage	18 ... 36 V DC
	Excitation current	100 mA max., depending on the load
	Pulse frequency	<500 kHz
	Output signals	A, $\bar{A}$ , B, $\bar{B}$ , Z, $\bar{Z}$ Push-Pull
	Output current	50 mA max.
	Stability (temperature)	$\pm 50 \times 10^{-6} / ^\circ\text{C}$ 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

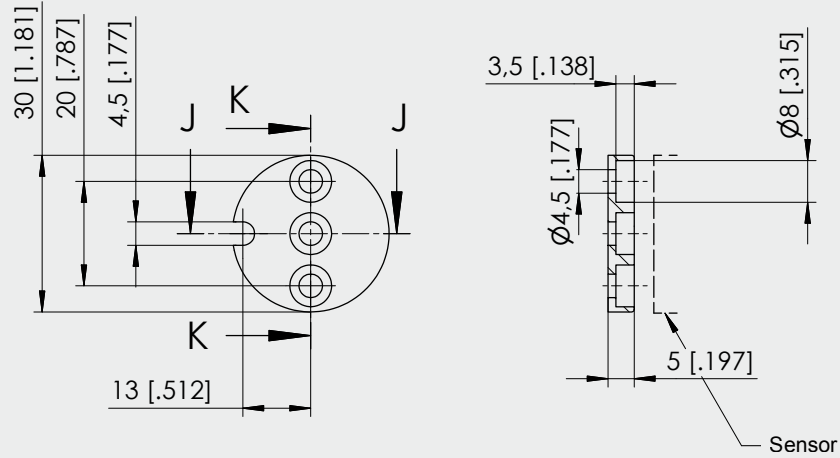
## Connection



View to sensor connector

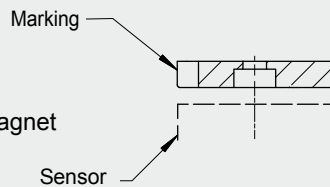
M12A8 / M12R8

**PRMAG20**

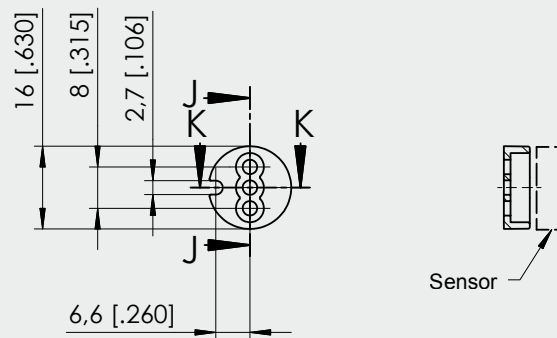


Weight 11 g approx.,  
 moment of inertia 1.2 kgmm<sup>2</sup>

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

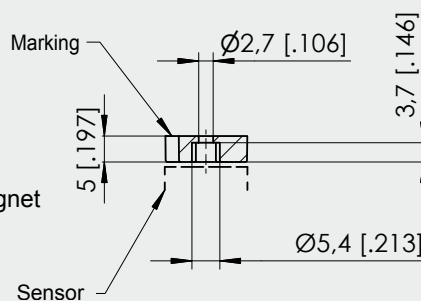


**PRMAG21**



Weight 3 g approx.,  
 moment of inertia 0.1 kgmm<sup>2</sup>

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



Dimensions in mm [inch]

Dimensions informative only

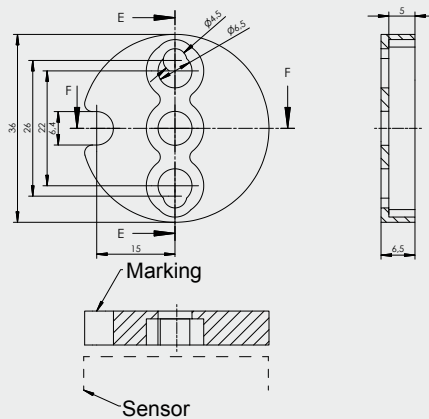
For guaranteed dimensions please consult factory



**PRMAG22**

Weight 17 g approx.,  
 moment of inertia 3 kgmm<sup>2</sup>

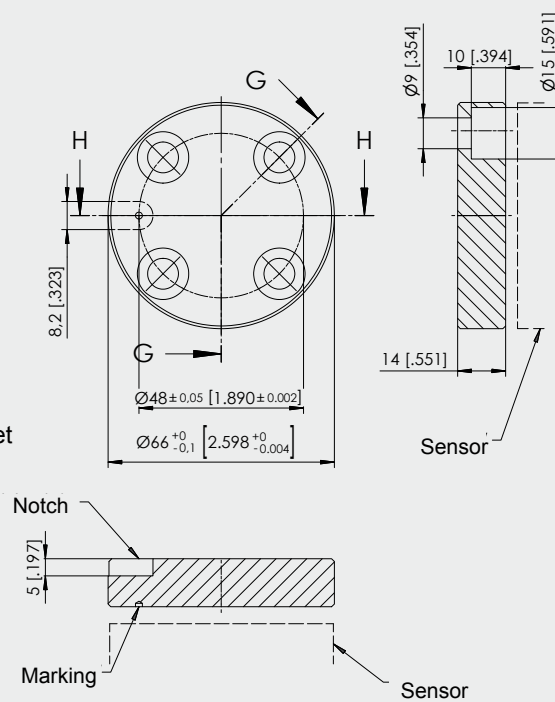
A misalignment of the position magnet  
 has an effect on the linearity



**PRMAG5Z**

Weight 100 g approx.,  
 moment of inertia 55 kgmm<sup>2</sup>

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

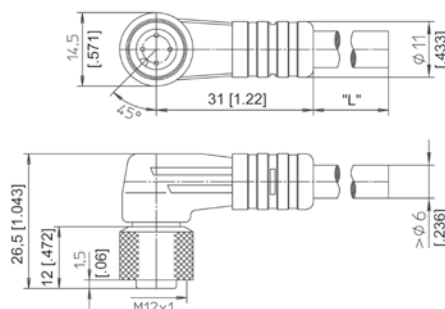
The 4-core screened cable is supplied with a mating 4-pin 90° M12 connector at one end and 4 wires at the other end. Available lengths are 2, 5 and 10 m.

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

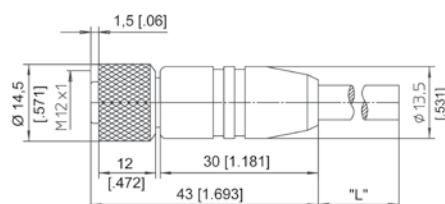
The 4-core screened cable is supplied with a mating 4-pin M12 connector at one end and 4 wires at the other end. Available lengths are 2, 5 and 10 m.

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

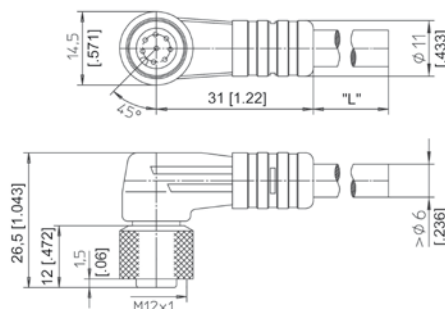
The 8-core screened cable is supplied with a mating 8-pin 90° M12 connector at one end and 8 wires at the other end. Available lengths are 2, 5 and 10 m.

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

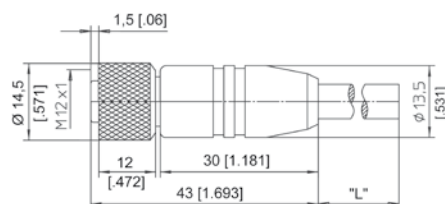
The 8-core screened cable is supplied with a mating 8-pin M12 connector at one end and 8 wires at the other end. Available lengths are 2, 5 and 10 m.

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