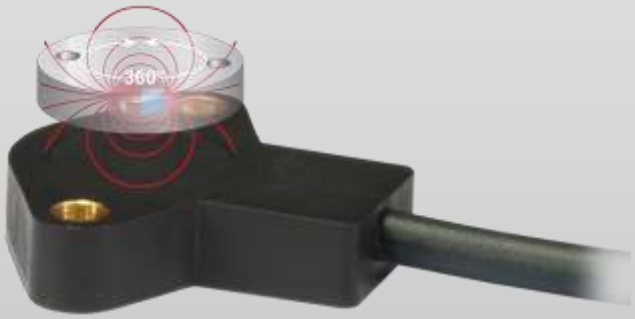
ASM®
perfect in sensors.

POSIROT®

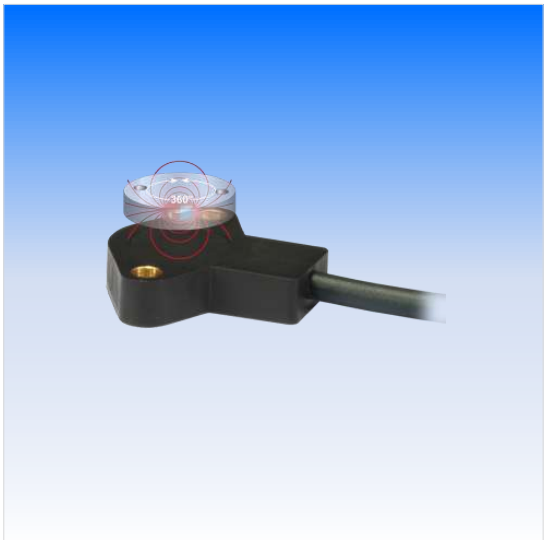
Magnetic Angle Sensors

PRAS27
Magnetic Angle Sensor

Datasheet

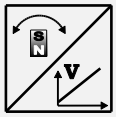


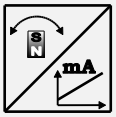
Analog output



Sensor features

- **Measurement range 0 ... 360°**
- **Protection class IP67**
- **Analog output**
- **Compact, low profile housing**
- **Non-contact with external position magnet, no wear**
- **Housing: Plastic**





Specifications

Output	Voltage 0.5 ... 10 V Voltage 0.5 ... 4.5 V Current 4 ... 20 mA, 3 wire
Measurement range	0 ... 15° to 0 ... 360° (in 15° increments)
Resolution	0.03% (60 ... 360°); 0.1% (15 ... 45°)
Repeatability	±0.03% (60 ... 360°); ±0.1% (15 ... 45°)
Linearity	±0.5% f.s. (typical)
Rated distance sensor / magnet	Depending on the position magnet
Protection class	IP67
Housing material	Plastic
Mounting	Screws M4: DIN 912, DIN 6912, DIN 7984
Connection	Cable, standard length 2 m Cable with Deutsch connector DT04
Temperature range	-40 ... +85°C
Shock	DIN EN 60068-2-27:2010, 100 g/11 ms, 100 shocks
Vibration	DIN EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
Weight	20 g approx. (without cable)
EMC	DIN EN 61326-1:2013

Order code

PRAS27 – **1** – **2** – **3** – **4**

1 Measurement range (0 ... 15° to 0 ... 360°, in 15° increments)

15 / 30 / 45 / ... / 345 / 360

2 Output

U2	= Voltage 0.5 ... 10 V (excitation voltage 18 ... 36 V DC)
U2B	= Voltage 0.5 ... 10 V (excitation voltage 11.5 ... 27 V DC)
U6	= Voltage 0.5 ... 4.5 V ratiometric (excitation voltage 5 V DC)
U8	= Voltage 0.5 ... 4.5 V (excitation voltage 11 ... 36 V DC)
I1	= Current 4 ... 20 mA, 3 wire (excitation voltage 18 ... 36 V DC)
I1B	= Current 4 ... 20 mA, 3 wire (excitation voltage 10 ... 27 V DC)

3 Signal characteristics

CW	= Signal increasing CW, clockwise
CCW	= Signal increasing CCW, counterclockwise

4 Connection

KAB2M	= Cable, standard length 2 m
KAB2M-DT04/3P/A*	= Cable 2 m with Deutsch connector DT04, 3 pin
KAB2M-DT04/3P/A-S*	= Cable 2 m with Deutsch connector DT04, 3 pin, with protective tube
KAB2M-DT04/4P/A	= Cable 2 m with Deutsch connector DT04, 4 pin
KAB2M-DT04/4P/A-S	= Cable 2 m with Deutsch connector DT04, 4 pin, with protective tube

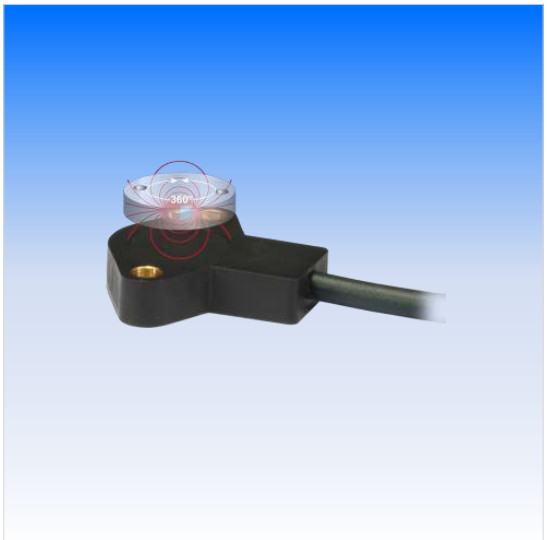
* only for output U6

Order example

PRAS27 – 360 – U6 – CW – KAB2M

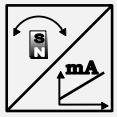
Accessories:
Position magnets (see from page 9)
Magnetic shield (see page 19)

Analog output, redundant



Sensor features

- **Measurement range 0 ... 360°**
- **Protection class IP67**
- **Analog output, redundant**
- **Compact, low profile housing**
- **Non-contact with external position magnet, no wear**
- **Housing: Plastic**



Specifications

Output	Voltage 0.5 ... 10 V, redundant Voltage 0.5 ... 4.5 V, redundant Current 4 ... 20 mA, 3 wire, redundant
Measurement range	0 ... 15° to 0 ... 360° (in 15° increments)
Resolution	0.03% (60 ... 360°); 0.1% (15 ... 45°)
Repeatability	±0.03% (60 ... 360°); ±0.1% (15 ... 45°)
Linearity	±0.5% f.s. (typical)
Rated distance sensor / magnet	Depending on the position magnet
Protection class	IP67
Housing material	Plastic
Mounting	Screws M4: DIN 912, DIN 6912, DIN 7984
Connection	Cable, standard length 2 m
Temperature range	-40 ... +85°C
Shock	DIN EN 60068-2-27:2010, 100 g/11 ms, 100 shocks
Vibration	DIN EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
Weight	20 g approx. (without cable)
EMC	DIN EN 61326-1:2013

Order code

PRAS27	–	1	–	2	–	3	–	4

1 Measurement range (0 ... 15° to 0 ... 360°, in 15° increments)

15 / 30 / 45 / ... / 345 / 360

2 Output

U2R	= Voltage 0.5 ... 10 V, redundant (excitation voltage 18 ... 36 V DC)
U8R	= Voltage 0.5 ... 4.5 V, redundant (excitation voltage 11 ... 36 V DC)
I1R	= Current 4... 20 mA, 3 wire, redundant (excitation voltage 18 ... 36 V DC) (output I1R possible only with CW/CCW signal characteristics)

3 Signal characteristics

CW/CCW	= Signal 1 increasing clockwise, signal 2 increasing counterclockwise
CW/CW*	= Signal 1 and signal 2 increasing clockwise
CCW/CCW*	= Signal 1 and signal 2 increasing counterclockwise

* not available with output I1R

4 Connection

KAB2M	= Cable, standard length 2 m

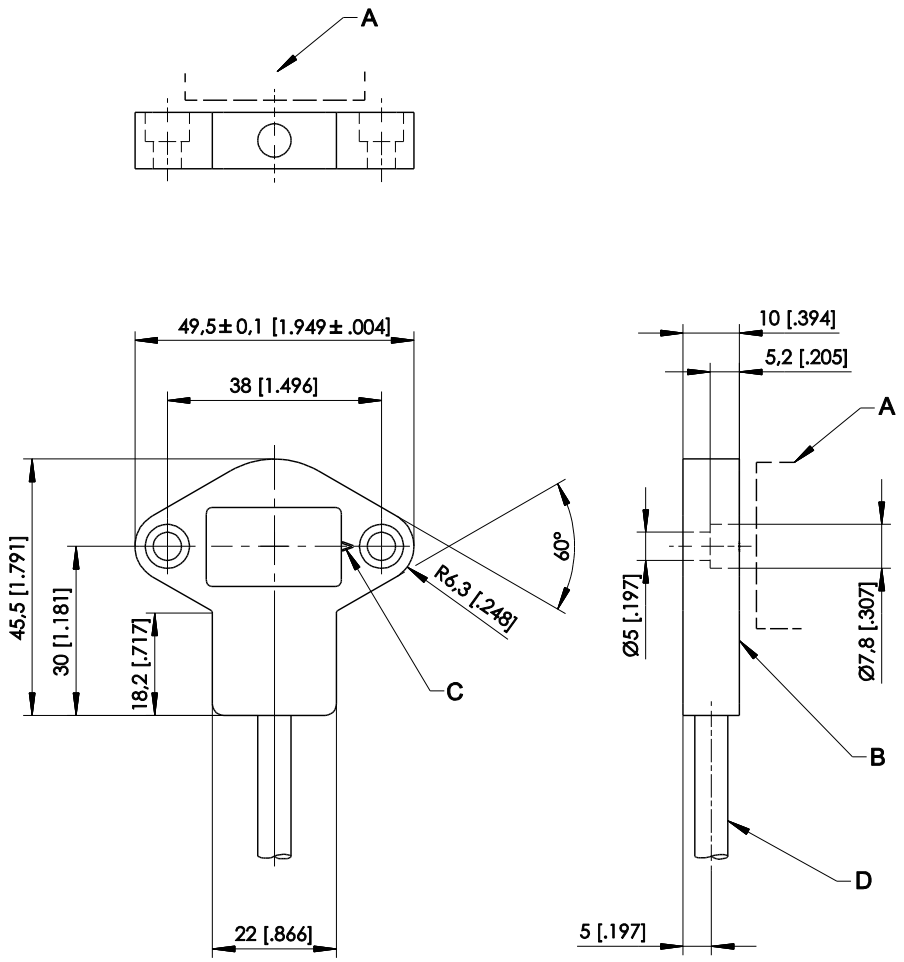
Order example

PRAS27 – 360 – U2R – CW/CCW – KAB2M

Accessories:

Position magnets (see from page 9)
Magnetic shield (see page 19)

Dimensions

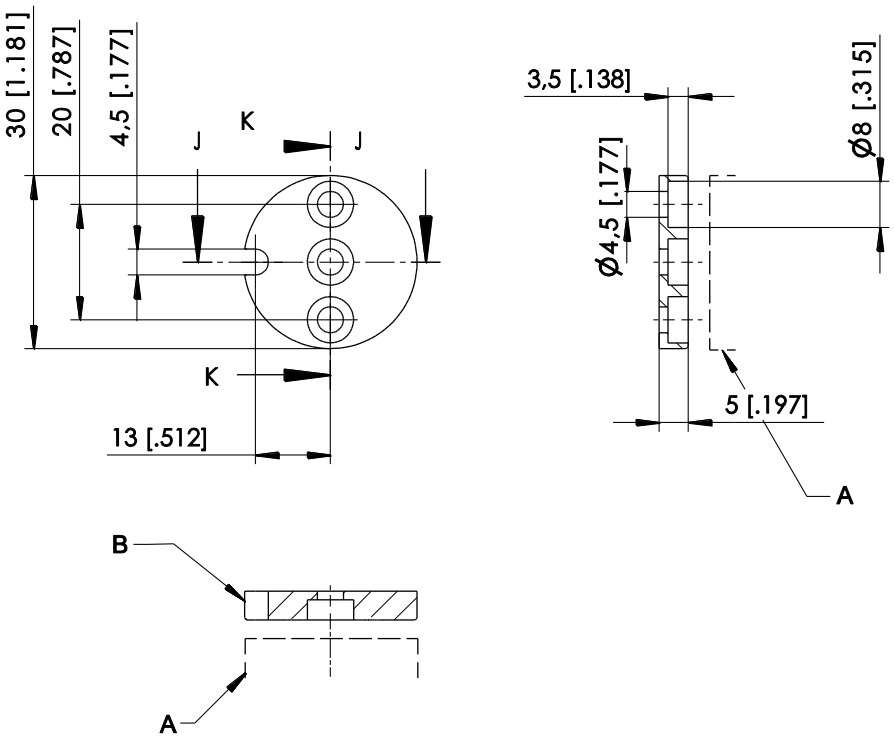


A – Position magnet
B – Measuring area
C – Marking
D – Cable

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

Position magnets

PRMAG20



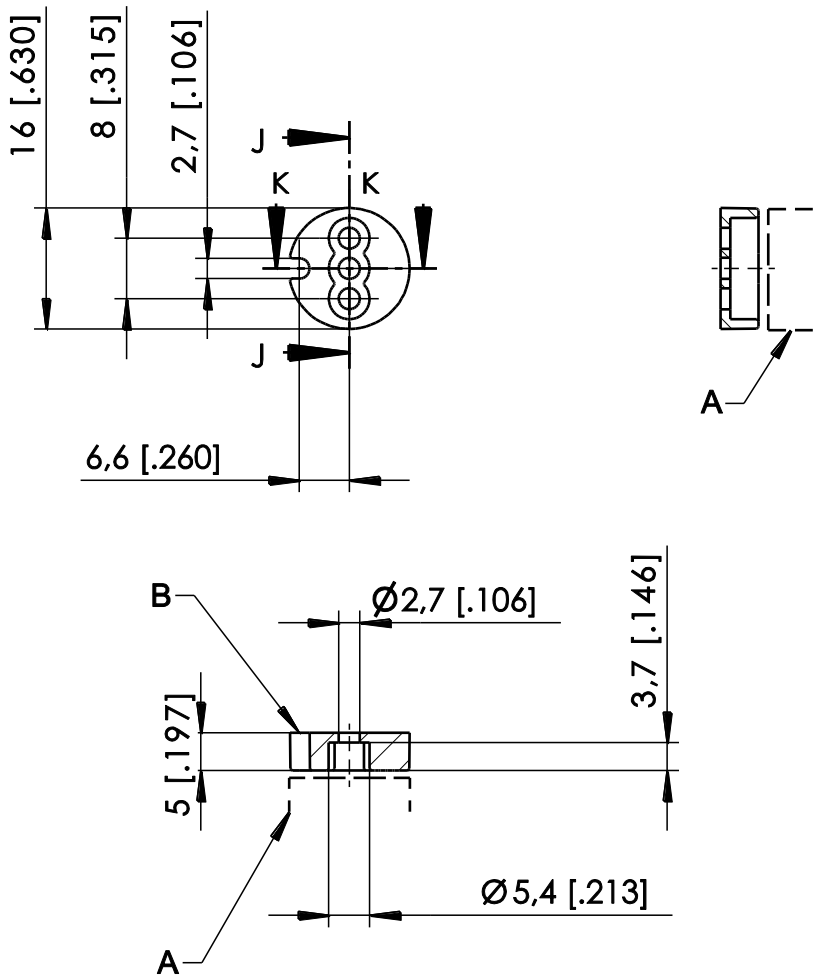
A – Sensor
B – Marking

Order code	Weight	Material	Moment of inertia
PRMAG20	approx. 12 g	zinc coated steel, plastic	1.3 kgmm^2

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.

PRMAG21



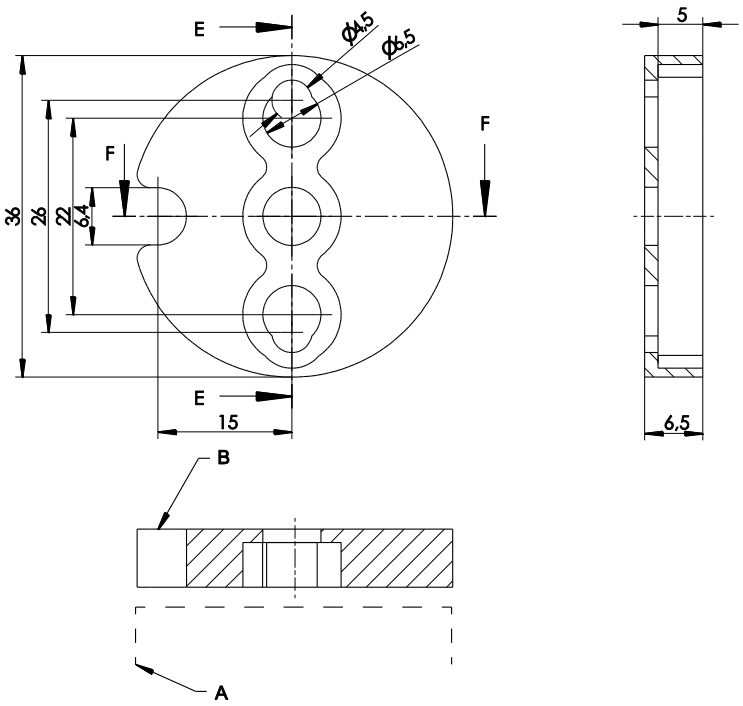
A – Sensor
B – Marking

Order code	Weight	Material	Moment of inertia
PRMAG21	approx. 3 g	zinc coated steel; plastic	0.1 kgmm^2

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



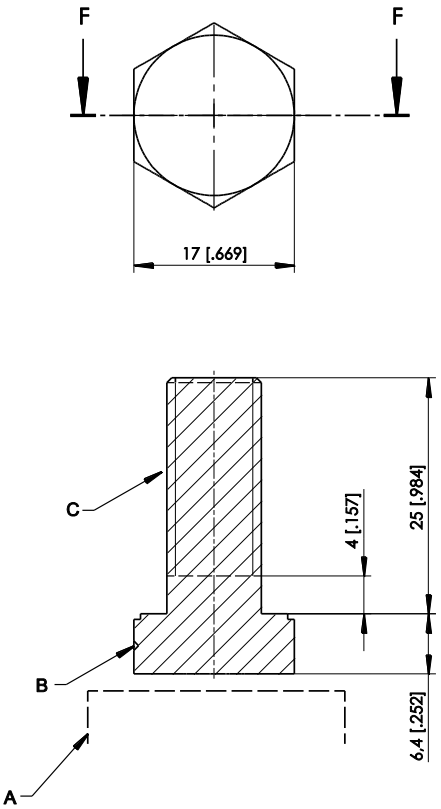
A – Sensor
B – Marking

Order code	Weight	Material	Moment of inertia
PRMAG22	approx. 19 g	zinc coated steel, plastic	3 kgmm^2

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.

PRMAG-M10



A – Sensor
B – Marking
C – Thread M10

Order code	Weight	Material	Moment of inertia
PRMAG-M10	approx. 30 g	stainless steel A2	1.3 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.

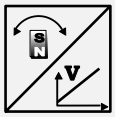
Output specification

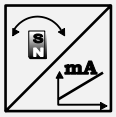
Analog output

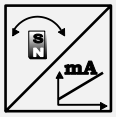
U2 Voltage output 0.5 ... 10 V 	Excitation voltage	18 … 36 V DC
	Excitation current	typical 10 mA max. 15 mA
	Output voltage	0.5 ... 10 V DC
	Output current	2 mA max.
	Measuring rate	1 kHz standard
	Stability (temperature)	±50 x 10^{-6} / °C f.s. (typical for 90° … 360°) ±100 x 10^{-6} / °C f.s. (typical for <90°)
	Protection	Reverse polarity, short circuit
	Operating temperature	-40 … +85 °C
	EMC	DIN EN 61326-1:2013

U2B Voltage output 0.5 ... 10 V 	Excitation voltage	11.5 … 27 V DC
	Excitation current	typical 12 mA max. 16 mA
	Output voltage	0,5 ... 10 V DC
	Output current	2 mA max.
	Measuring rate	1 kHz standard
	Stability (temperature)	±50 x 10^{-6} / °C f.s. (typical for 90° … 360°) ±100 x 10^{-6} / °C f.s. (typical for <90°)
	Protection	Reverse polarity, short circuit
	Operating temperature	-40 … +85 °C
	EMC	DIN EN 61326-1:2013

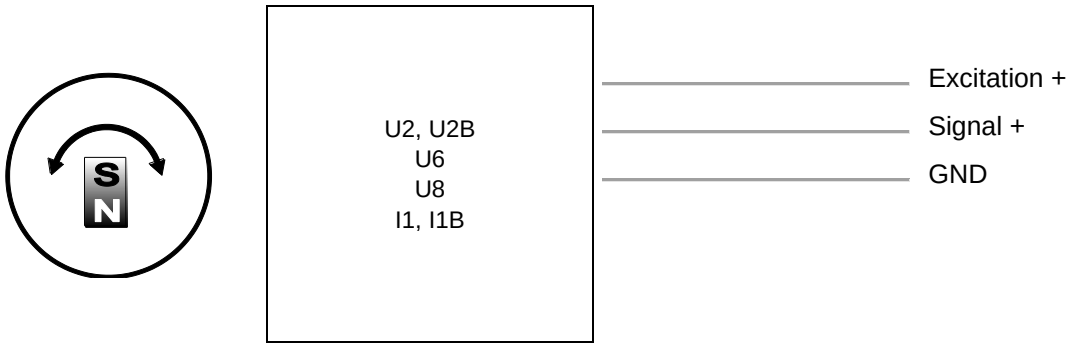
U6 Voltage output 10 … 90 % ratiometric 	Excitation voltage	5 V DC ±10 %
	Excitation current	typical 8 mA max. 12 mA
	Output voltage	10 … 90 % of the excitation voltage
	Output current	2 mA max.
	Measuring rate	1 kHz standard
	Stability (temperature)	±50 x 10^{-6} / °C f.s. (typical for 90° … 360°) ±100 x 10^{-6} / °C f.s. (typical for <90°)
	Protection	Reverse polarity, short circuit
	Operating temperature	-40 … +85 °C
	EMC	DIN EN 61326-1:2013

U8 Voltage output 0.5 … 4.5 V 	Excitation voltage	11 … 36 V DC
	Excitation current	typical 10 mA max. 20 mA
	Output voltage	0.5 … 4.5 V DC
	Output current	2 mA max.
	Measuring rate	1 kHz standard
	Stability (temperature)	±50 x 10^{-6} / °C f.s. (typical for 90° … 360°) ±100 x 10^{-6} / °C f.s. (typical for <90°)
	Protection	Reverse polarity, short circuit
	Operating temperature	-40 … +85 °C
	EMC	DIN EN 61326-1:2013

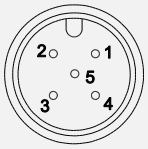
I1 Current output 4 … 20 mA, 3 wires 	Excitation voltage	18 … 36 V DC
	Excitation current	typical 30 mA max. 35 mA
	Load R_L	500 Ω max.
	Output current	4 … 20 mA
	Measuring rate	1 kHz standard
	Stability (temperature)	±50 x 10^{-6} / °C f.s. (typical for 90° … 360°) ±100 x 10^{-6} / °C f.s. (typical for <90°)
	Protection	Reverse polarity, short circuit
	Operating temperature	-40 … +85 °C
	EMC	DIN EN 61326-1:2013

I1B Current output 4 … 20 mA, 3 wires 	Excitation voltage	10 … 27 V DC
	Excitation current	typical 32 mA max. 36 mA
	Load R_L	250 Ω max.
	Output current	4 … 20 mA
	Measuring rate	1 kHz standard
	Stability (temperature)	±50 x 10^{-6} / °C f.s. (typical for 90° … 360°) ±100 x 10^{-6} / °C f.s. (typical for <90°)
	Protection	Reverse polarity, short circuit
	Operating temperature	-40 … +85 °C
	EMC	DIN EN 61326-1:2013

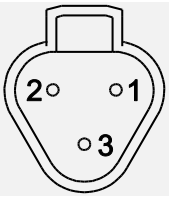
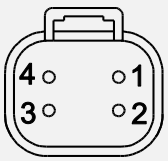
Signal diagram



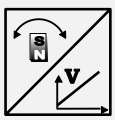
Signal wiring
(connector and cable output)

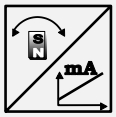
Signal	Connector pin no.	Cable color	View to the sensor connector
Excitation +	1	brown	
Signal	2	white	
GND	3	blue	
Do not connect!	4	black	
Do not connect!	5	grey	

3-wire current 4...20 mA interface: GND has to be connected!

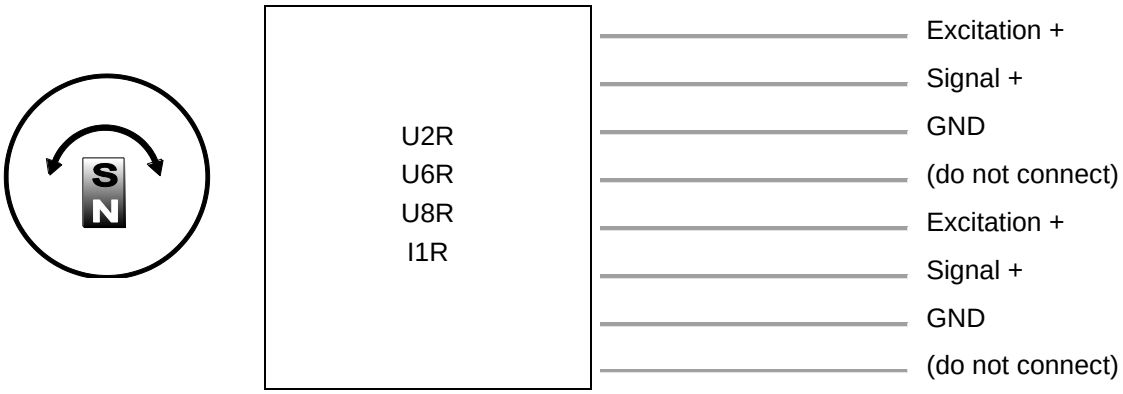
Deutsch connector DT04		
	DT04/3P/A	**DT04/4P/A**

Analog output, redundant

U2R Voltage output 0.5 ... 10 V 	Excitation voltage	18 … 36 V DC
	Excitation current	typical 10 mA max. 15 mA per channel
	Output voltage	0.5 ... 10 V DC
	Output current	2 mA max.
	Measuring rate	1 kHz Standard
	Stability (temperature)	±50 x 10^{-6} / °C f.s. (typical for 90° … 360°) ±100 x 10^{-6} / °C f.s. (typical for <90°)
	Protection	Reverse polarity, short circuit
	Operating temperature	-40 … +85 °C
	EMC	DIN EN 61326-1:2013
U6R Voltage output 10 … 90 % ratiometric 	Excitation voltage	5 V DC ±10 %
	Excitation current	typical 8 mA max. 12 mA per channel
	Output voltage	10 … 90 % of the excitation voltage
	Output current	2 mA max.
	Measuring rate	1 kHz standard
	Stability (temperature)	±50 x 10^{-6} / °C f.s. (typical for 90° … 360°) ±100 x 10^{-6} / °C f.s. (typical for <90°)
	Protection	Reverse polarity, short circuit
	Operating temperature	-40 … +85 °C
	EMC	EN 61326-1:2013
U8R Voltage output 0.5 … 4.5 V 	Excitation voltage	11 … 36 V DC
	Excitation current	typical 10 mA max. 20 mA per channel
	Output voltage	0.5 … 4,5 V DC
	Output current	2 mA max.
	Measuring rate	1 kHz standard
	Stability (temperature)	±50 x 10^{-6} / °C f.s. (typical for 90° … 360°) ±100 x 10^{-6} / °C f.s. (typical for <90°)
	Protection	Reverse polarity, short circuit
	Operating temperature	-40 … +85 °C
	EMC	DIN EN 61326-1:2013

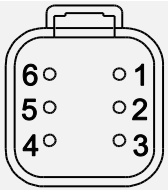
I1R Current output 4 … 20 mA, 3 wires 	Excitation voltage	18 … 36 V DC
	Excitation current	typical 30 mA max. 35 mA per channel
	Load R_L	500 Ω max.
	Output current	4 … 20 mA
	Measuring rate	1 kHz standard
	Stability (temperature)	±50 x 10^{-6} / °C f.s. (typical for 90° … 360°) ±100 x 10^{-6} / °C f.s. (typical for <90°)
	Protection	Reverse polarity, short circuit
	Operating temperature	-40 … +85 °C
	EMC	DIN EN 61326-1:2013

Signal diagram



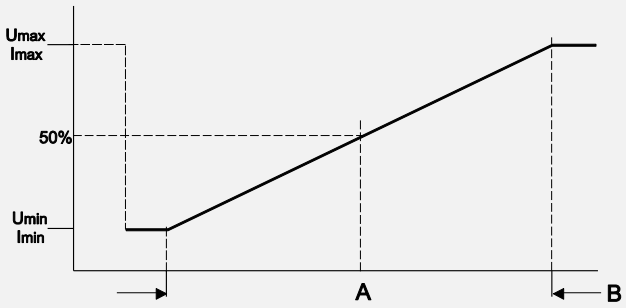
Signal wiring
2 channels, redundant (connector and cable output)

Channel	Signal	Connector pin no.	Cable color	View to the sensor connector
1	Excitation +	1	white	
1	Signal	2	brown	
1	GND	3	green	
1	Do not connect!	4	yellow	
2	Excitation +	5	grey	
2	Signal	6	pink	
2	GND	7	blue	
2	Do not connect!	8	red	

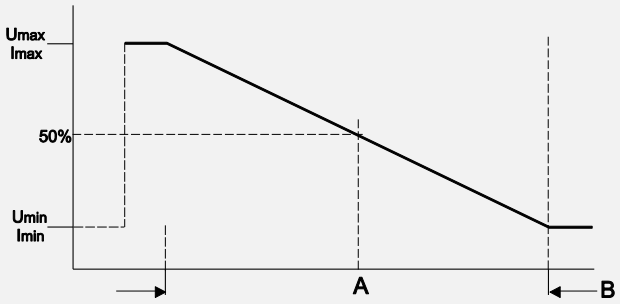
Deutsch connector DT04/6P/A	

Characteristics for magnetic angle sensors

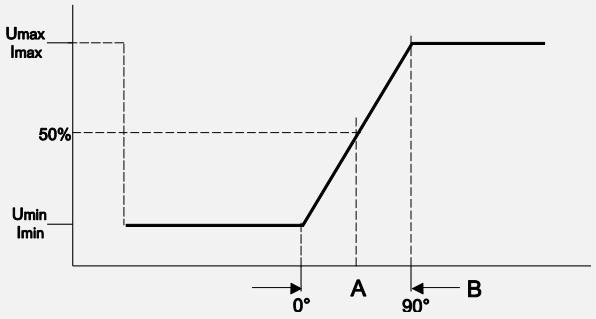
Output signal CW
(clockwise increasing)



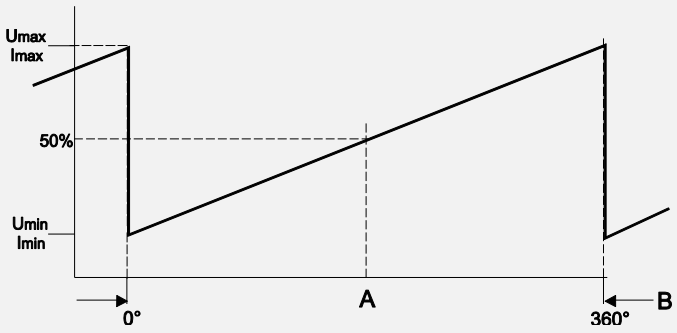
Output signal CCW
(counterclockwise increasing)



Example angular range 90°



Example angular range 360°



A – Marking
B – Measurement range [°]

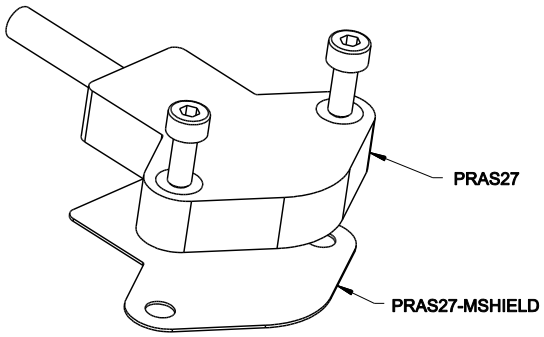
Accessories

PRAS27 Magnetic Shield

An optional shield plate is available for the angle sensors PRAS27 and PRDS27. It can reduce the effect of residual magnetizing in case the sensor has to be mounted on a ferromagnetic material.

Order code magnetic shield:

PRAS27-MSHIELD

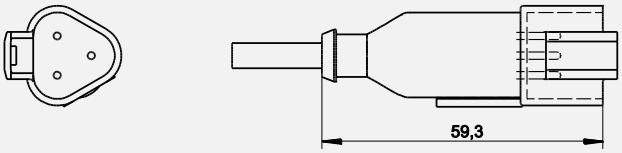
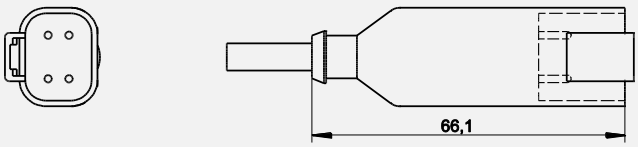
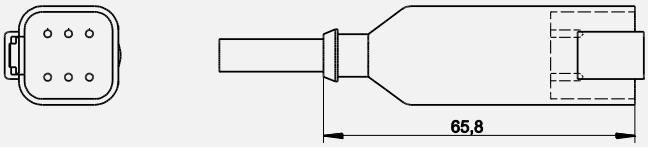
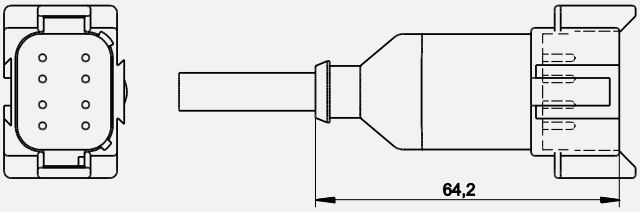


Deutsch connector

Sensors with cable output can be delivered with Deutsch connector.

Protection class:	IP67 (while plugged)
Connection:	3, 4, 6, 8 poles – depending on output, see table below
Wire cross sectional area:	0.5 mm^2
Standard cable length:	2 m
Protective cable tube:	for a better mechanical protection the cable can be delivered with a protective tube

Deutsch connector – table

Number of poles	Deutsch connector DT04	Output
3 pin		U6
4 pin		U2, U2B, U8 I1, I1B CANOP(R), CANJ1939(R)
6 pin		U6R RSSI5V RSSI24V
8 pin		U2R, U8R I1R RS5VF, RS24VF HT24VF

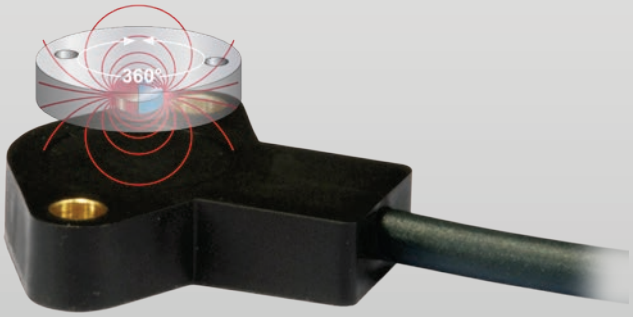
ASM®
perfect in sensors.

POSIROT®

Magnetic Angle Encoders

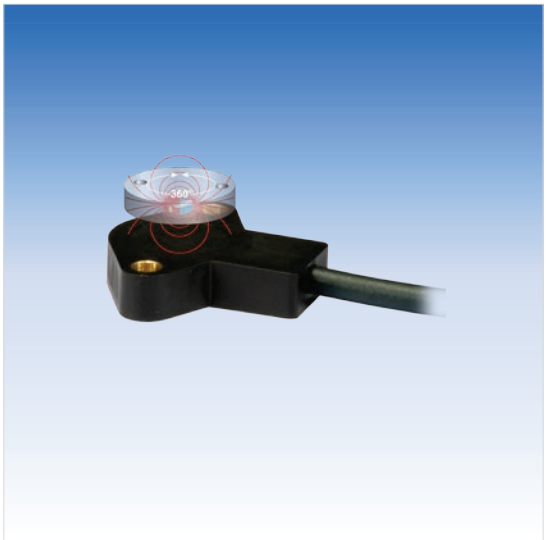
PRDS27
Magnetic Angle Encoder

Datasheet



PRDS27

Digital output CAN



Sensor features

- **Measurement range 0 ... 360°**
- **Protection class IP67**
- **Digital output CAN**
- **Non-contact with external position magnet, no wear**
- **Housing: Plastic**
- **Redundant version available**

Specifications

Output	CANopen (CiA 301-V4.02/406-V3.2) CAN SAE J1939
Measurement range	0 ... 360°
Resolution	0.05° max.
Linearity	±1% (typical)
Rated distance sensor / magnet	Depending on the position magnet
Protection class	IP67
Housing material	Plastic
Mounting	Screws M4: DIN 912, DIN 6912, DIN 7984
Connection	Cable 0.3 m, 5-pin connector M12 Cable with Deutsch connector DT04
Temperature range	-40 ... +85°C
Shock	DIN EN 60068-2-27:2010, 100 g/11 ms, 100 shocks
Vibration	DIN EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
Weight	20 g approx. (without cable)
EMC	DIN EN 61326-1:2013

Order code

PRDS27 – **1** – **2**

1 Output

CANOP	= CANopen
CANJ1939	= CAN SAE J1939
CANOPR	= CANopen, redundant
CANJ1939R	= CAN SAE J1939, redundant

2 Connection

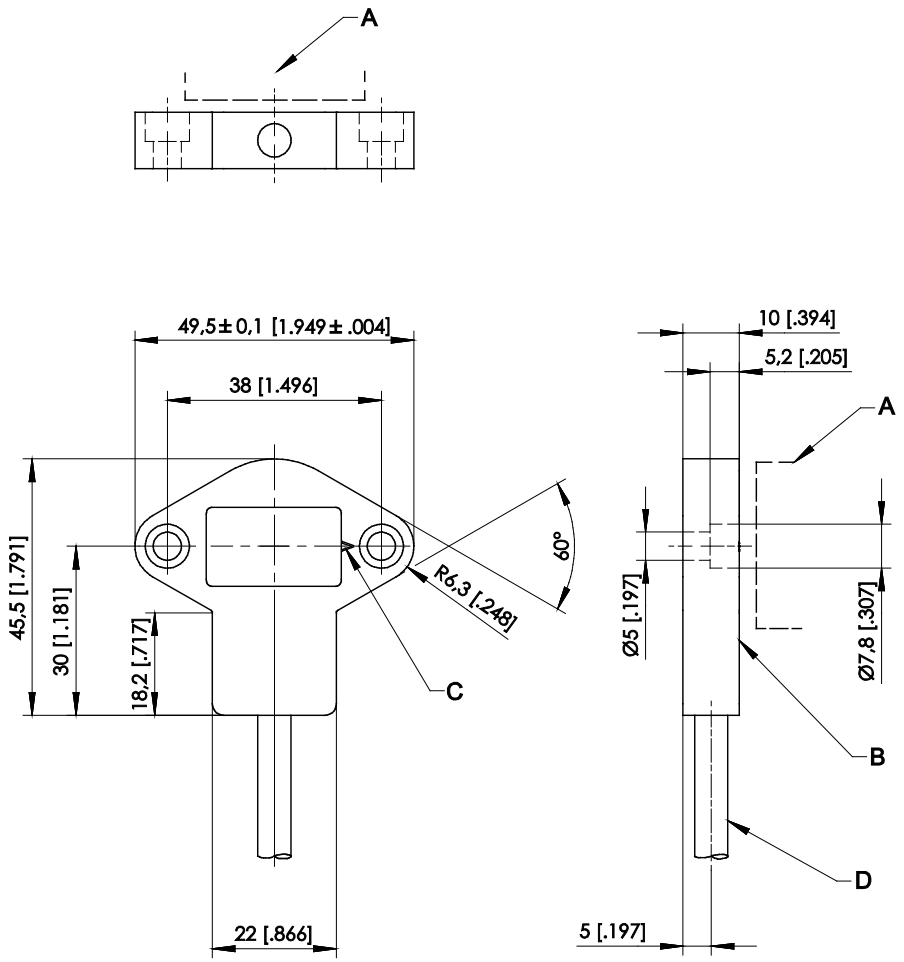
KAB0,3M-M12/CAN	= Cable 0.3 m with connector M12, 5 pin
KAB0,3M-DT04/4P/A	= Cable 0.3 m with Deutsch connector DT04, 4 pin
KAB0,3M-DT04/4P/A-S	= Cable 0.3 m with Deutsch connector DT04, 4 pin, with protective tube

Order example

PRDS27 – CANOP – KAB0,3M – DT04/4P/A

Accessories:
Position magnets (see from page 7)
Magnetic shield (see page 18)

Dimensions

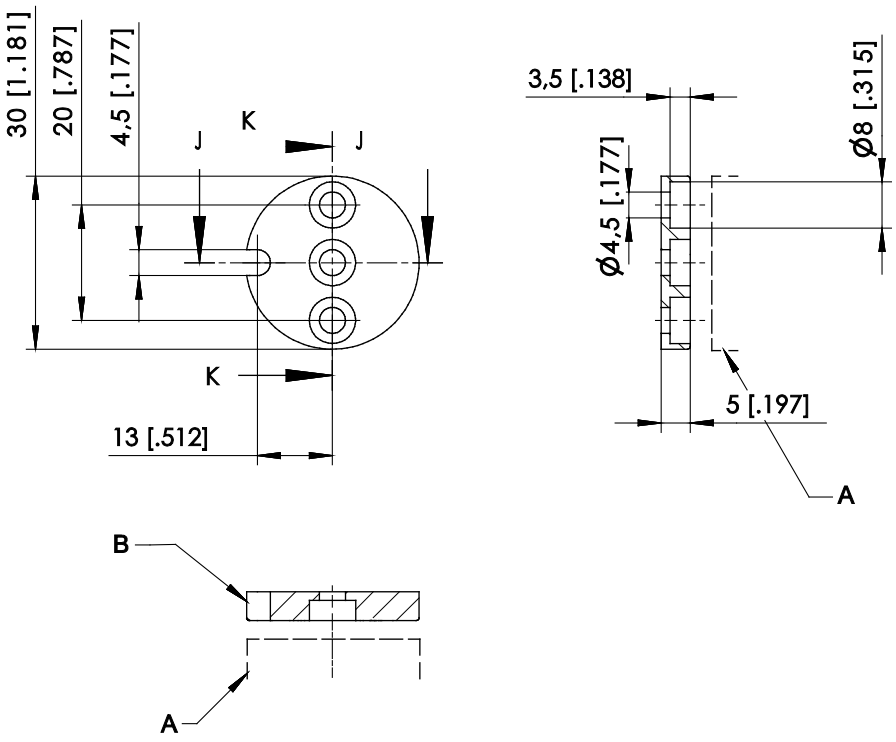


A – Position magnet
B – Measuring area
C – Marking
D – Cable

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

Position magnets

PRMAG20



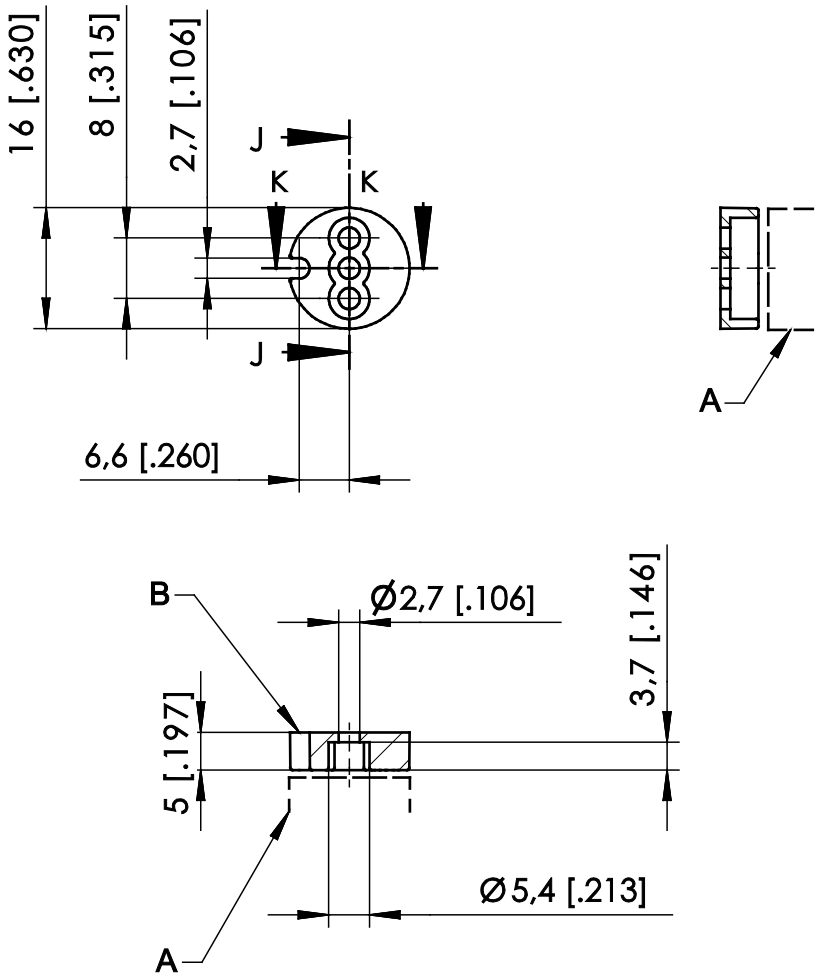
A – Sensor
B – Marking

Order code	Weight	Material	Moment of inertia
PRMAG20	approx. 12 g	zinc coated steel, plastic	1.3 kgmm^2

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.

PRMAG21



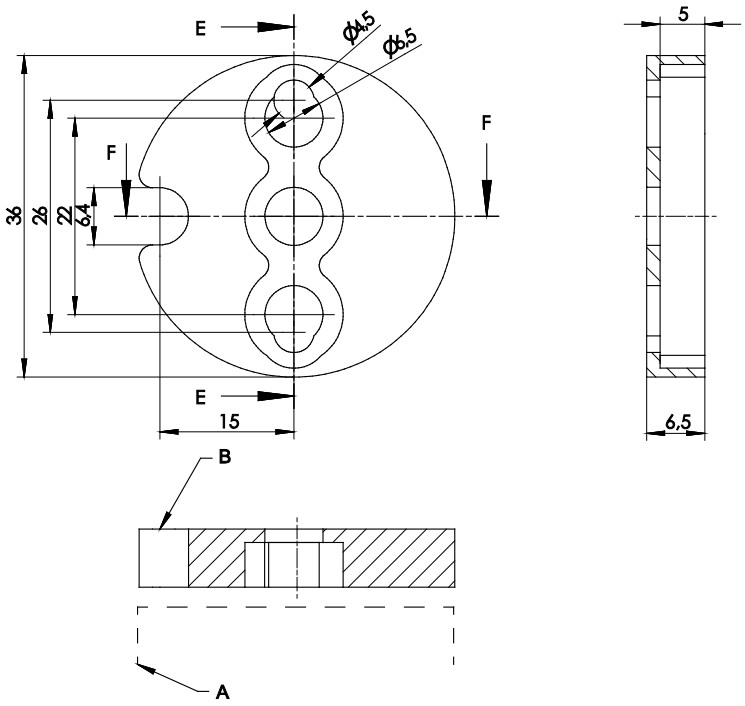
A – Sensor
B – Marking

Order code	Weight	Material	Moment of inertia
PRMAG21	approx. 3 g	zinc coated steel; plastic	0.1 kgmm^2

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



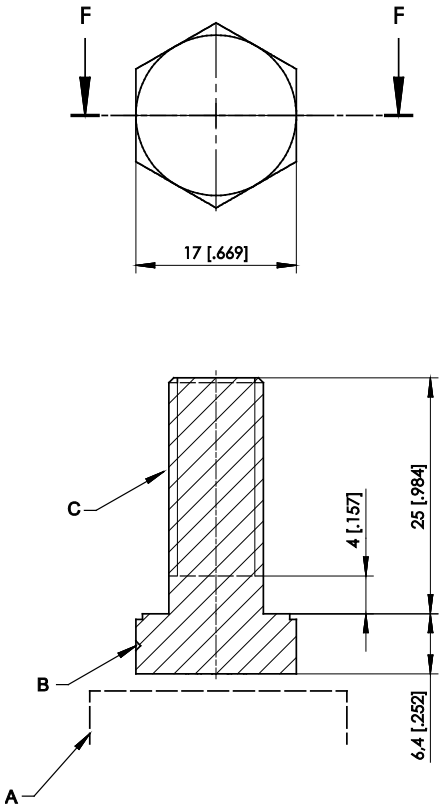
A – Sensor
B – Marking

Order code	Weight	Material	Moment of inertia
PRMAG22	approx. 19 g	zinc coated steel, plastic	3 kgmm^2

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.

PRMAG-M10



A – Sensor
B – Marking
C – Thread M10

Order code	Weight	Material	Moment of inertia
PRMAG-M10	approx. 30 g	stainless steel A2	1.3 kgmm2

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

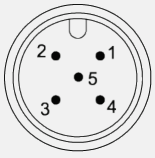
Dimensions in mm [inch].
Dimensions informative only.
For guaranteed dimensions please consult factory.

Output specification

Digital output CANopen

CANOP CANopen 	CAN Specification	ISO 11898, Basic and Full CAN 2.0 B
	Communication profile	CANopen CiA 301 V 4.02, Slave
	Device profile	Encoder CiA 406 V 3.2
	Configuration services	Layer Setting Service (LSS), CiA Draft Standard 305 (transmission rate, node id)
	Error Control	Node Guarding, Heartbeat, Emergency Message
	Node ID	Default: 127; programmable via LSS or SDO
	PDO	3 TxPDO, 0 RxPDO, 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, default: 125 kBaud; programmable via LSS or SDO
	Bus connection	M12 connector, 5 pin
	Integrated bus terminating resistor	Adjustable by the customer
	Bus, galvanic isolated	No

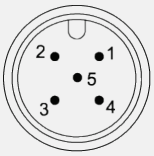
Specifications	Excitation voltage	8 ... 36 V DC
	Excitation current	20 mA typical at 24 V DC 40 mA typical at 12 V DC, 80 mA max.
	Resolution	0.05° max.
	Linearity	1° (optional 0.25°)
	Measuring rate	1 kHz (asynchronous)
	Stability (temperature)	±50 x 10^{-6}/°C f.s. (typical)
	Repeatability	1 LSB
	Operating temperature	See specification of the respective sensor
	Protection	Reverse polarity, short circuit
	Dielectric strength	1 kV (V AC, 50 Hz, 1 min.)
	EMC	DIN EN 61326-1:2013

Signal wiring	**Signal**	**Connector pin no.**	**Cable color**	**View to the sensor connector**
	Shield	1	brown	
	Excitation +	2	white	
	GND	3	blue	
	CAN-H	4	black	
	CAN-L	5	grey	

Signal wiring Deutsch connector DT04/4P/A	**Signal**	**Connector pin no.**	**View to the sensor connector**
	Excitation+	1	
	CAN-H	2	
	GND	3	
	CAN-L	4	

CANOPR CANopen	CAN Specification	ISO 11898, Basic and Full CAN 2.0 B
	Communication profile	CANopen CiA 301 V 4.02, Slave
	Device profile	Encoder CiA 406 V 3.2
	Configuration services	Layer Setting Service (LSS), CiA Draft Standard 305 (transmission rate, node id)
	Error Control	Node Guarding, Heartbeat, Emergency Message
	Node ID	Default: 127 and 126; programmable via LSS or SDO
	PDO	3 TxPDO, 0 RxPDO, 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, default: 125 kBaud; programmable via LSS or SDO
	Bus connection	M12 connector, 5 pin
	Integrated bus terminating resistor	adjustable by the customer
	Bus, galvanic isolated	No

Specifications	Excitation voltage	8 ... 36 V DC
	Excitation current	40 mA typical at 24 V DC 80 mA typical at 12 V DC, 120 mA max.
	Resolution	0.05° max.
	Linearity	1° (0.25° optional)
	Measuring rate	1 kHz (asynchronous)
	Stability (temperature)	±50 x 10^{-6}/°C f.s. (typical)
	Repeatability	1 LSB
	Operating temperature	See specification of the respective sensor
	Protection	Reverse polarity, short circuit
	Dielectric strength	1 kV (V AC, 50 Hz, 1 min.)
	EMC	DIN EN 61326-1:2013

Signal wiring	**Signal**	**Connector pin no.**	**Cable color**	**View to the sensor connector**
	Shield	1	brown	
	Excitation +	2	white	
	GND	3	blue	
	CAN-H	4	black	
	CAN-L	5	grey	

Signal wiring Deutsch connector DT04/4P/A	**Signal**	**Connector pin no.**	**View to the sensor connector**
	Excitation+	1	
	CAN-H	2	
	GND	3	
	CAN-L	4	

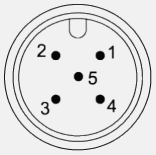
Digital output CAN SAE J1939

CANJ1939 CAN SAE 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		adjustable by the customer
	Address		Default 247d, configurable

NAME Fields	Arbitrary address capable	1	Yes
	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	8 ... 36 V DC
	Excitation current	20 mA typical at 24 V DC 40 mA typical at 12 V DC, 80 mA max.
	Resolution	0.05° max.
	Linearity	1° (0.25° optional)
	Measuring rate	1 kHz (asynchronous)
	Stability (temperature)	±50 x 10^{-6}/°C f.s. (typical)
	Repeatability	1 LSB
	Operating temperature	See specification of the respective sensor
	Protection	Reverse polarity, short circuit
	Dielectric strength	1 kV (V AC, 50 Hz, 1 min.)
	EMV	DIN EN 61326-1:2013

Signal wiring	**Signal**	**Connector pin no.**	**View to the sensor connector**
	Shield	1	
	Excitiation +	2	
	GND	3	
	CAN-H	4	
	CAN-L	5	

Signal wiring Deutsch connector DT04/4P/A	Signal	Connector pin no.	View to the sensor connector
	Excitation+	1	
	CAN-H	2	
	GND	3	
	CAN-L	4	

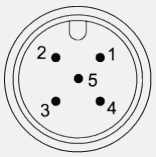
CANJ1939R CAN SAE J1939	CAN Specification	ISO 11898, Basic and Full CAN 2.0 B
	Transceiver	24V-compliant, not isolated
	Communication profile	SAE J1939
	Baud Rate	250 kbit/s
	Internal termination resistor	Adjustable by the customer
	Address	Default 247d and 246d, configurable

NAME Fields	Arbitrary address capable	1	Yes
	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	8 ... 36 V DC
	Excitation current	40 mA typical at 24 V DC 80 mA typical at 12 V DC, 120 mA max.
	Resolution	0.05° max.
	Linearity	1° (0.25° optional)
	Measuring rate	1 kHz (asynchronous)
	Stability (temperature)	±50 x 10^{-6}/°C f.s. (typical)
	Repeatability	1 LSB
	Operating temperature	See specification of the respective sensor
	Protection	Reverse polarity, short circuit
	Dielectric strength	1 kV (V AC, 50 Hz, 1 min.)
	EMV	DIN EN 61326-1:2013

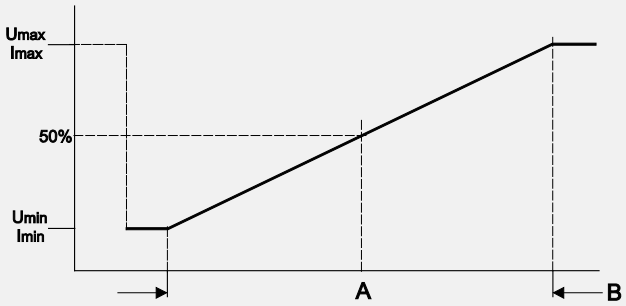
Signal wiring

Signal	Connector Pin no.	Cable color	View to the sensor connector
Shield	1	brown	
Excitiation +	2	white	
GND	3	blue	
CAN-H	4	black	
CAN-L	5	grey	

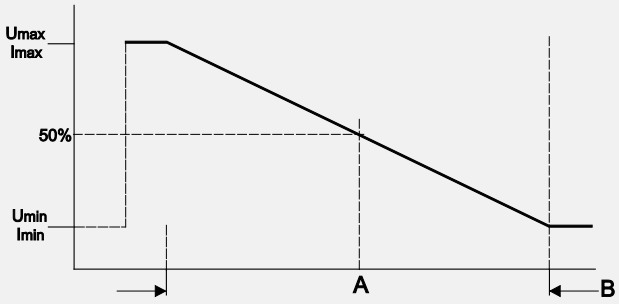
Signal wiring Deutsch connector DT04/4P/A	Signal	Connector pin no.	View to the sensor connector
	Excitation+	1	
	CAN-H	2	
	GND	3	
	CAN-L	4	

Characteristics for magnetic angle sensors

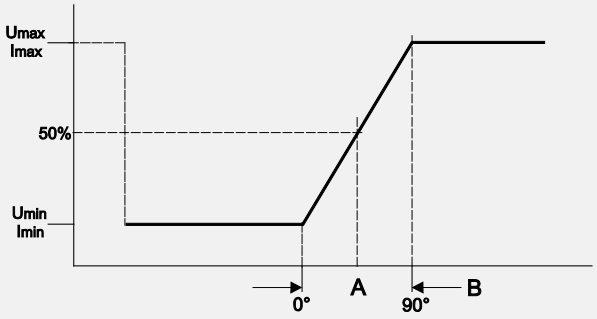
Output signal CW
(clockwise increasing)



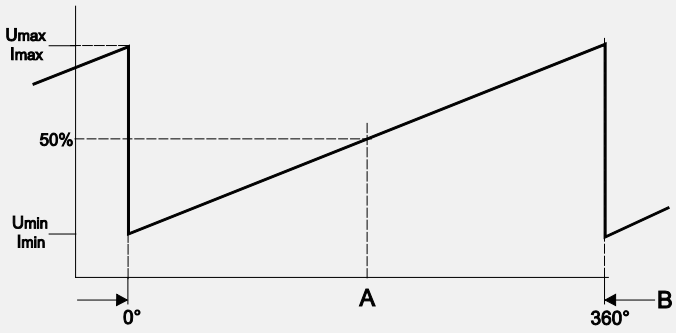
Output signal CCW
(counterclockwise increasing)



Example angular range 90°



Example angular range 360°



A – Marking
B – Measurement range [°]

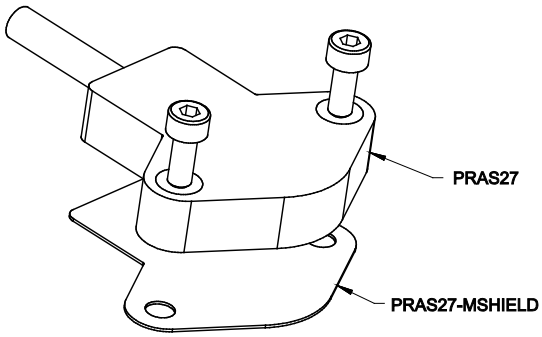
Accessories

PRAS27 Magnetic Shield

An optional shield plate is available for the angle sensors PRAS27 and PRDS27. It can reduce the effect of residual magnetizing in case the sensor has to be mounted on a ferromagnetic material.

Order code magnetic shield:

PRAS27-MSHIELD

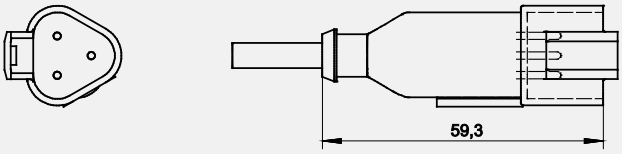
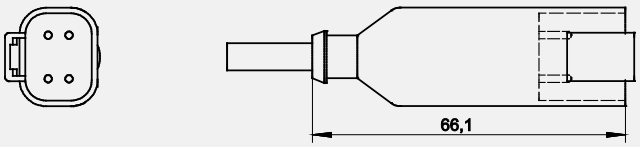
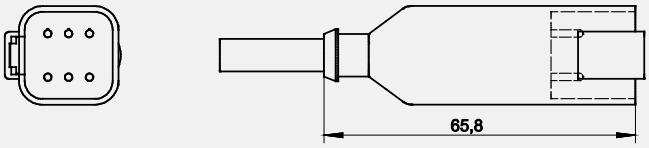
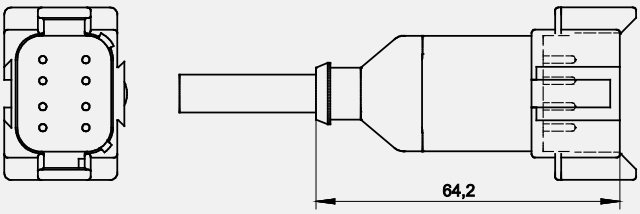


Deutsch connector

Sensors with cable output can be delivered with Deutsch connector.

Protection class:	IP67 (while plugged)
Connection:	3, 4, 6, 8 poles – depending on output, see table below
Wire cross sectional area:	0.5 mm^2
Standard cable length:	2 m
Protective cable tube:	for a better mechanical protection the cable can be delivered with a protective tube

Deutsch connector – table

Number of poles	Deutsch connector DT04	Output
3 pin		U6
4 pin		U2, U2B, U8 I1, I1B CANOP(R), CANJ1939(R)
6 pin		U6R RSSI5V RSSI24V
8 pin		U2R, U8R I1R RS5VF, RS24VF HT24VF