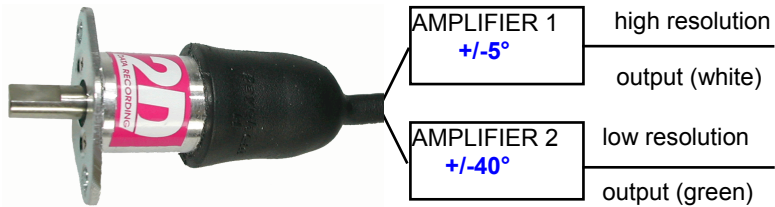


SA-MAPxxyy-000

Dual channel magnetic angle position sensor

Function

- Dual channel magnetic angle position sensor, including 2 amplifiers
- Measures rotation angle / angle positions with very high resolution (e.g. steering position)

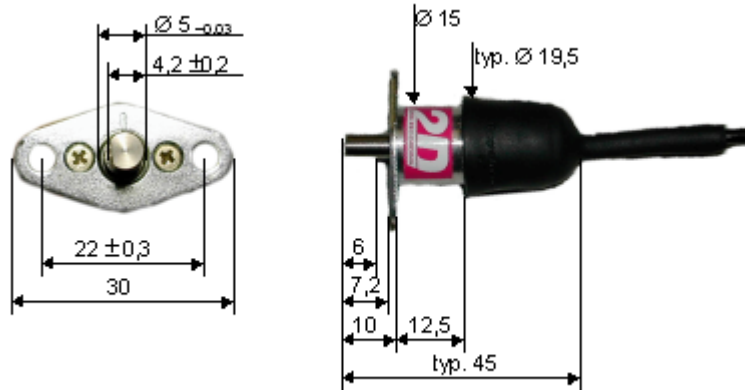


Features

- High resolution
- Wide linear range
- Low weight and small housing
- Long operation life
ball bearings: $>100 \times 10^6$ cycles

Options

- Sensor outputs available from ± 5 to ± 40 , in 5° steps



Technical specifications

Electrical characteristics

| | |
|-----------------------------------|----------------|
| Voltage supply..... | 5 V |
| Output voltage..... | 0 - 5 V |
| Two output ranges with one sensor | |
| ➤ high resolution range 1..... | $\pm 5^\circ$ |
| ➤ low resolution range 2..... | $\pm 40^\circ$ |
| Range of linearity (maximum)..... | $\pm 40^\circ$ |

Mechanical characteristics

| | |
|----------------------------|------------------------------|
| Dimensions (over all)..... | $\varnothing 5 \times 62$ mm |
| Mounting rod..... | $\varnothing 5$ mm |
| Weight..... | 12 g |
| Cable | |
| type..... | Raychem, EPD, Y-cable |
| wire cross-section..... | 3 x AWG 26 |
| Length..... | 1200 mm |

Calibration

Use the formulas on 2nd page to calculate the physical values

Connector

Standard..... Binder 719, 5PM
 Optional..... Deutsch ASC605-06PN, 6PM

Standard connector: SA-MAPxxyy-000
 Optional connector: SA-MAPxxyy-001

xx=put in the range of the sensor (=amplifier 1)

yy=put in the range of the sensor (=amplifier 2)

Environmental data

| | |
|------------------------------|---------------------------------|
| Ambient operating range..... | -25 to +80 °C |
| Operation life..... | $> 100 \times 10^6$ full cycles |
| Sealing class..... | IP 65 |

Vibration resistance

| | |
|--------------------------|--------|
| Vibration tested at..... | 10 G |
| | @50 Hz |

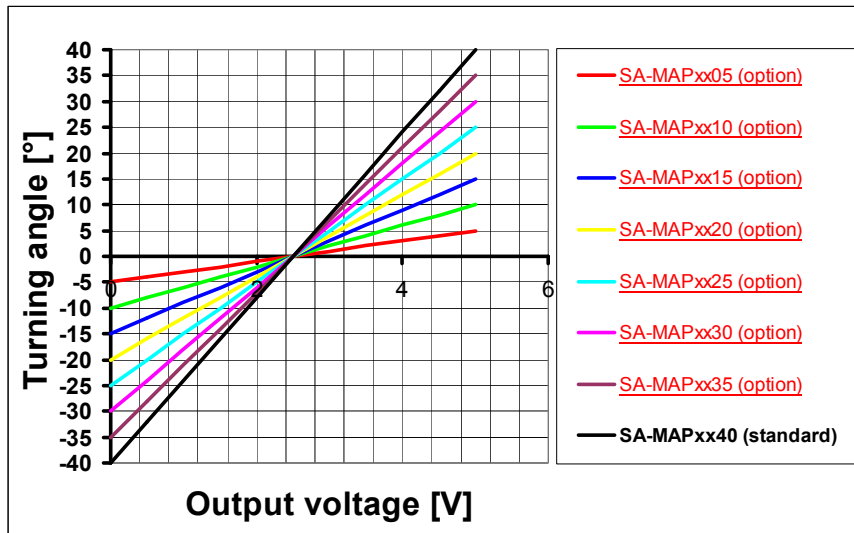
Ordering information

Art.No.:..... SA-MAPxxyy-000

SA-MAP xy -000

Dual channel magnetic angle position sensor

Sensor range



Remark

xx = high resolution range 1 ($\pm 5^\circ$ or all options)

yy = low resolution range 2 with possible options: ± 5 to ± 40 , in 5° steps

Formulas

| SA-MAP xy -000 | | Multiplier | | | | | | | | Offset | | |
|------------------|-------------------|--------------------|------------|------------|------------|------------|------------|------------|------------|--------|--------|------|
| 12 Bit A/D | Turning angle [°] | $= 2 * yy / 4095$ | | | | | | | | * | Digits | - yy |
| 16 Bit A/D | Turning angle [°] | $= 2 * yy / 65535$ | | | | | | | | * | Digits | - yy |
| Voltage* | Turning angle [°] | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | * | Volt | - yy |
| | | SA-MAP0505 | SA-MAP0510 | SA-MAP0515 | SA-MAP0520 | SA-MAP0525 | SA-MAP0530 | SA-MAP0535 | SA-MAP0540 | | | |

= Available options (on customer request)

Replace the **yy** with the turning angle of your sensor: Possible values are 5° , 10° , 15° , 20° , 25° , 30° , 35° and 40°

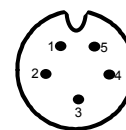
Connector layout

Connector type Deutsch (standard)

| Pin | *Connector1 | Color | Pin | *Connector2 | Color |
|-----|-------------|-------|-----|-------------|-------|
| 1 | GND | black | 1 | GND | black |
| 2 | +5V | red | 2 | +5V | red |
| 3 | - | - | 3 | - | - |
| 4 | - | - | 4 | - | - |
| 5 | Signal | white | 5 | Signal | green |

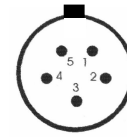
Connector types

Connector at sensor



Binder 719, 5 PM - front side - Binder 719, 5 PF

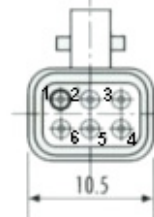
Mating plug



Connector type Deutsch (optional)

| Pin | *Connector1 | Color | Pin | *Connector2 | Color |
|-----|-------------|-------|-----|-------------|-------|
| 1 | GND | black | 1 | GND | black |
| 2 | +5V | red | 2 | +5V | red |
| 3 | - | - | 3 | - | - |
| 4 | - | - | 4 | - | - |
| 5 | Signal | white | 5 | Signal | green |
| 6 | - | - | 6 | - | - |

Connector at sensor



Deutsch ASC605-06PN 6PM (front side)



* connector1 = high resolution range
 * connector2 = low resolution range

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2D Debus & Diebold Meßsysteme GmbH
<http://www.2D-datarecording.com>
<http://www.2D-Kit-System.com>
mail@2D-datarecording.com