# Series SM6

## Sensors, Series SM6

The AVENTICS Series SM6 are analog distance measuring sensors, which ensure a continuous detection of the piston movements in measuring ranges from 32 mm up to 256 mm. A control element on the sensor allows for setting of the zero point and variable selection of the distance measurement range. The compact sensors are also easy to mount – either directly in the cylinder slot or to the profile using clamp mountings.

- Zero point and measurement range settings via teach-in button
- High accuracy and linearity
- Excellent repeatability and reliability through proven hall sensors
- Choice of any mounting position and cable exit
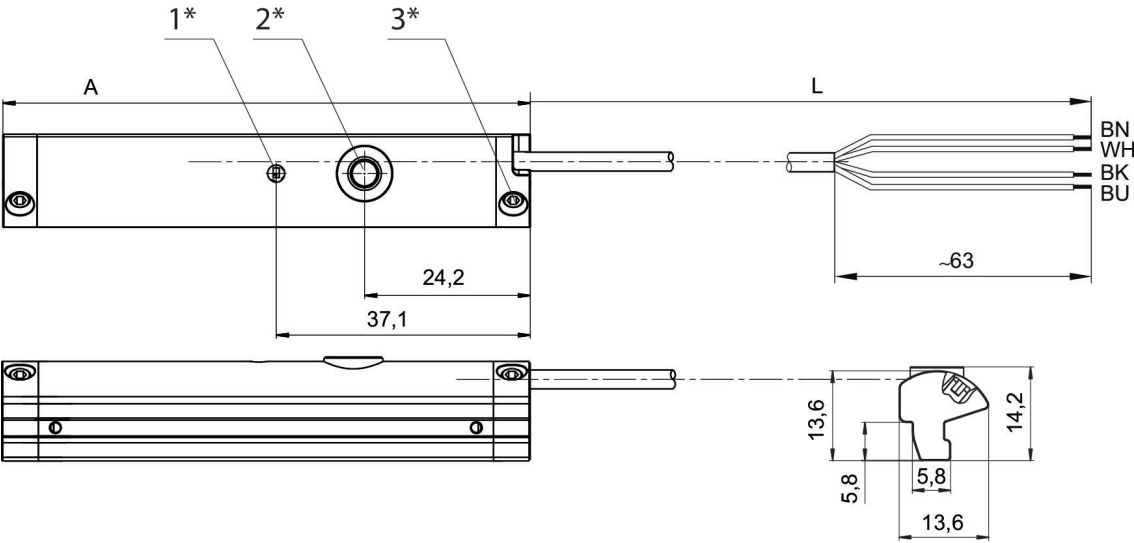- Mounting from above in the 6 mm slot (â €œdrop-inâ€ mounting)

## Sensors, Series SM6

PRA
PRE
CCI
KPZ
SSI
GPC
CVI
cULus
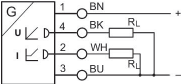
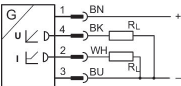| Direct mounting for series | Type of contact | Cable length L [m] | max. measuring range [mm] | Overall length Sensor [mm] | Version | Part No. |
|---|---|---|---|---|---|---|
| PRA, PRE, CCI, KPZ, SSI, GPC, CVI | Analog | 2 | 32 | 45 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010141 |
| PRA, PRE, CCI, KPZ, SSI, GPC, CVI | Analog | 2 | 64 | 77 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010143 |
| PRA, PRE, CCI, KPZ, SSI, GPC, CVI | Analog | 2 | 96 | 109 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010262 |
| PRA, PRE, CCI, KPZ, SSI, GPC, CVI | Analog | 2 | 128 | 141 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010264 |
| PRA, PRE, CCI, KPZ, SSI, GPC, CVI | Analog | 2 | 160 | 173 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010411 |
| PRA, PRE, CCI, KPZ, SSI, GPC, CVI | Analog | 2 | 192 | 205 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010413 |
| PRA, PRE, CCI, KPZ, SSI, GPC, CVI | Analog | 2 | 224 | 237 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010415 |
| PRA, PRE, CCI, KPZ, SSI, GPC, CVI | Analog | 2 | 256 | 269 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010417 |

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Dimensions



1* = LED 2* = teach button 3* = threaded pin M3x11
L = cable length
(2) WH=white
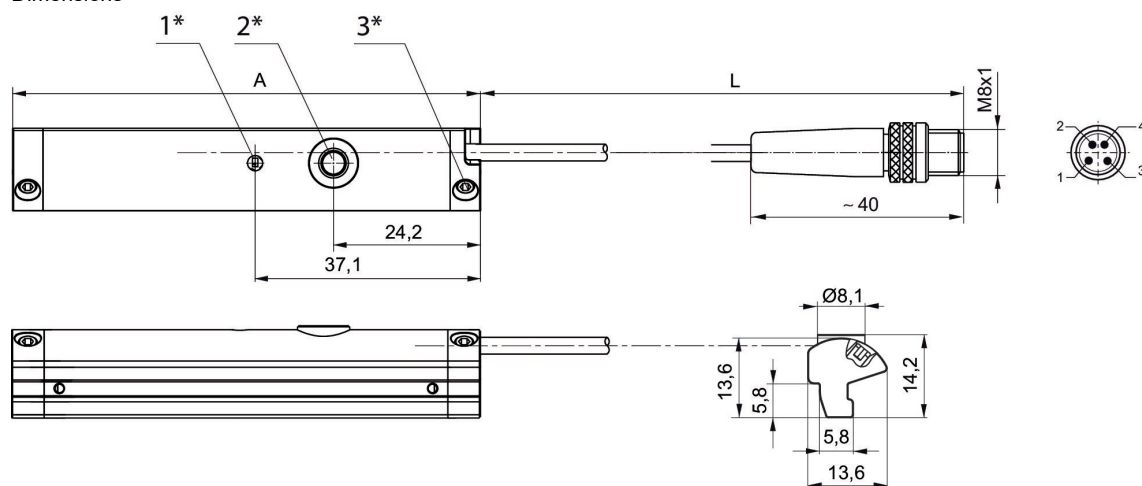A = sensor length

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## Sensors, Series SM6

PRA
PRE
CCI
KPZ
SSI
GPC
CVI
Plug
M8x1
cULus
4-pin

| Direct mounting for series | Type of contact | Cable length L [m] | max. measuring range [mm] | Overall length Sensor [mm] | Version | Part No. |
|---|---|---|---|---|---|---|
| PRA, PRE, CCI, KPZ, SSI, GPC, CVI | Analog | 0.3 | 32 | 45 | short circuit resistant, Protected against polarity reversal, Overload protection | R412010142 |
| PRA, PRE, CCI, KPZ, SSI, GPC, CVI | Analog | 0.3 | 64 | 77 | Protected against polarity reversal, Protected against polarity reversal, Overload protection | R412010144 |
| PRA, PRE, CCI, KPZ, SSI, GPC, CVI | Analog | 0.3 | 96 | 109 | Protected against polarity reversal, Protected against polarity reversal, Overload protection | R412010263 |
| PRA, PRE, CCI, KPZ, SSI, GPC, CVI | Analog | 0.3 | 128 | 141 | Protected against polarity reversal, Protected against polarity reversal, Overload protection | R412010265 |
| PRA, PRE, CCI, KPZ, SSI, GPC, CVI | Analog | 0.3 | 160 | 173 | Protected against polarity reversal, Protected against polarity reversal, Overload protection | R412010410 |
| PRA, PRE, CCI, KPZ, SSI, GPC, CVI | Analog | 0.3 | 192 | 205 | Protected against polarity reversal, Protected against polarity reversal, Overload protection | R412010412 |
| PRA, PRE, CCI, KPZ, SSI, GPC, CVI | Analog | 0.3 | 224 | 237 | Protected against polarity reversal, Protected against polarity reversal, Overload protection | R412010414 |
| PRA, PRE, CCI, KPZ, SSI, GPC, CVI | Analog | 0.3 | 256 | 269 | Protected against polarity reversal, Protected against polarity reversal, Overload protection | R412010416 |

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Dimensions

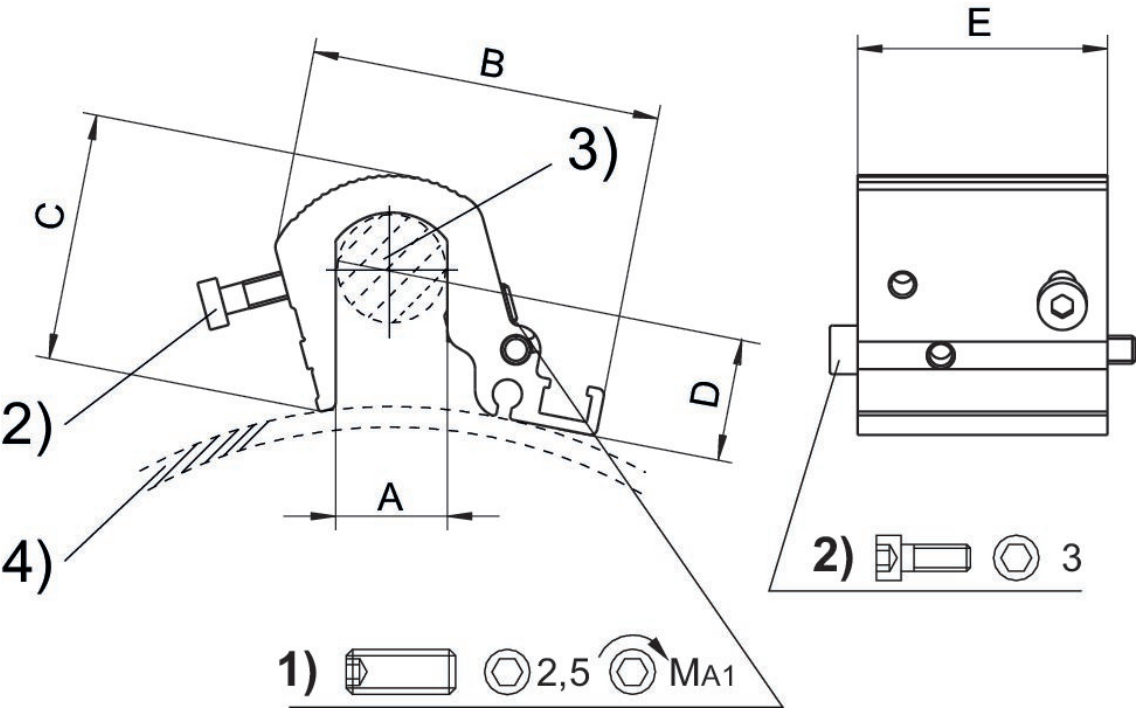1* = LED 2* = teach button 3* = threaded pin M3x11
L = cable length
Pin assignment: 1 = (+), 2 = (OUT 1) 3 = (GND), 4 = (OUT 2), EN 60947-5-7
A = sensor length

## Sensor mounting, Series CB1
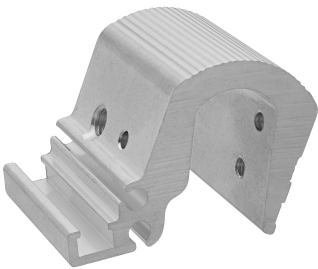


| Min. cylinder Ø [mm] | Max. cylinder Ø [mm] | for sensor | Material | Part No. |
|---|---|---|---|---|
| 160 | 200 | ST6, SN2, SN6, SN1, SM6 | Aluminum | R412017979 |
| 250 | 320 | ST6, SN2, SN6, SN1, SM6 | Aluminum | R412017980 |



1) Clamping threaded pin 2) Mounting screws for sensor 3) Tie rod 4) Cylinder profile

| Cylinders Ø | Part No. | A | B | C | D | E | MA1 [Nm] |
|---|---|---|---|---|---|---|---|
| 160 - 200 mm | R412017979 | 16 | 51 | 36 | 6.8 | 36 | 2 |
| 250 - 320 mm | R412017980 | 24 | 56 | 44.5 | 6.8 | 36 | 2 |

Scope of delivery: Incl. mounting screws

## Sensor mounting, Series CB1

ST6
SM6
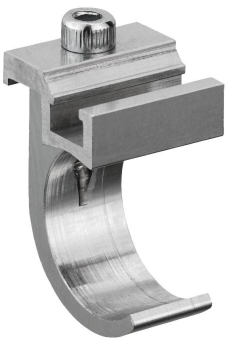


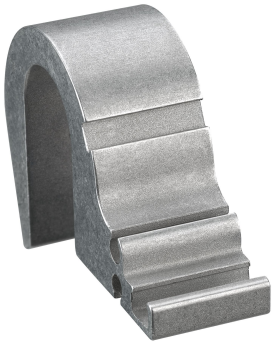| Min. cylinder Ø [mm] | Material | Part No. |
|---|---|---|
| 10 | Aluminum | 1827020296 |
| 12 | Aluminum | 1827020297 |
| 16 | Aluminum | 1827020298 |
| 20 | Aluminum | 1827020299 |
| 25 | Aluminum | 1827020300 |

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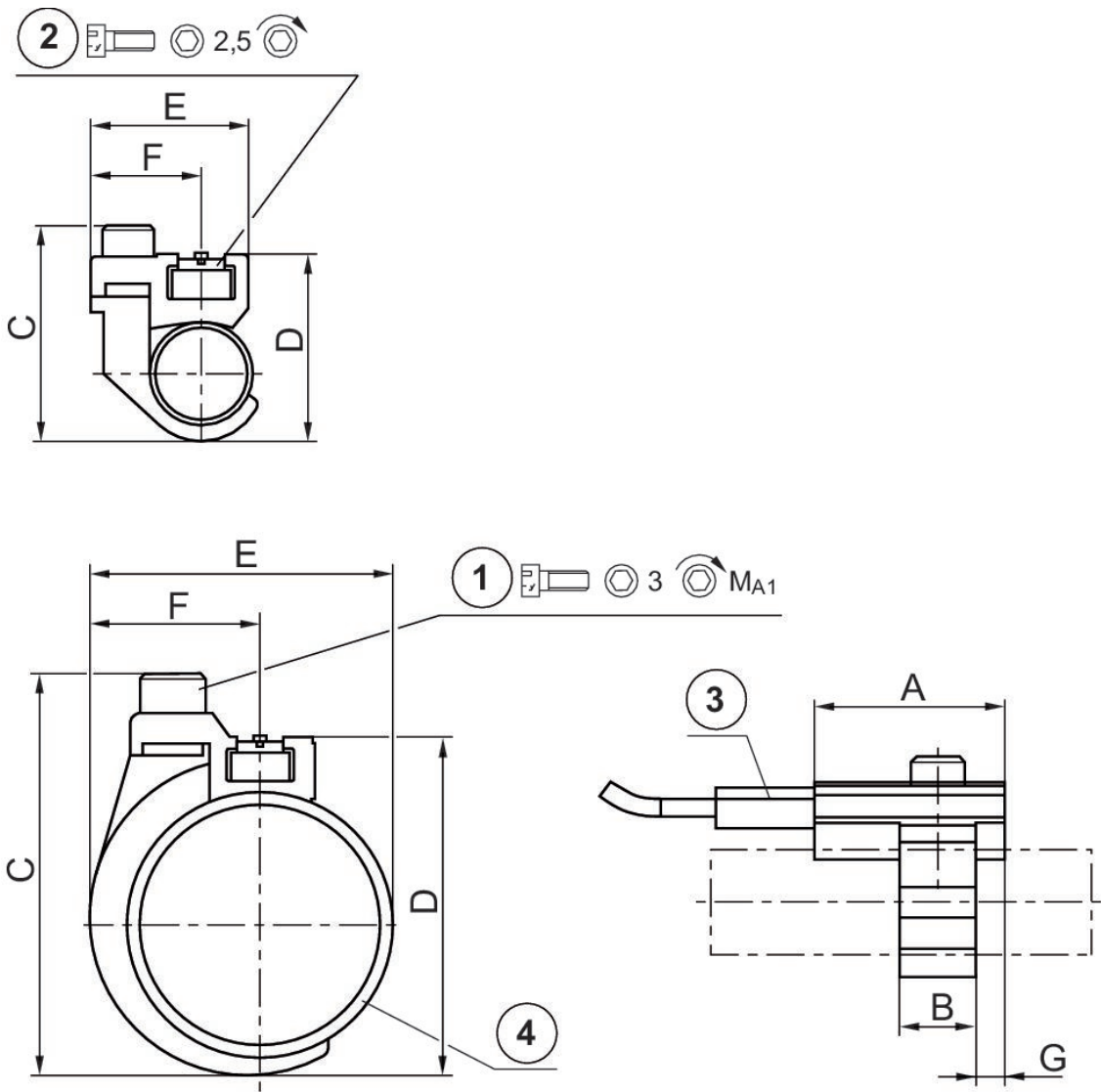
1) Mounting screw 2) Mounting screw for sensor 3) Sensor 4) Cylinder pipe

| Part No. | Cylinders Ø | A | B | C | D | E | F | G | Mounting screw | MA1 [Nm] |
|----------|-------------|-----|-----|-----|-----|------|------|-----|----------------|----------|
| 1827020296 | 10 mm | 20 | 8 | 24 | 19 | 17.5 | 11.8 | 3 | M3x8 | 1 +0,2 |
| 1827020297 | 12 mm | 20 | 8 | 26 | 22 | 19 | 11.8 | 3 | M3x8 | 1 +0,2 |
| 1827020298 | 16 mm | 20 | 12 | 34 | 30 | 23 | 13.8 | 4 | M4x10 | 2 +0,3 |
| 1827020299 | 20 mm | 20 | 12 | 38 | 32 | 26 | 13.8 | 4 | M4x10 | 2 +0,3 |
| 1827020300 | 25 mm | 20 | 12 | 43 | 37 | 31 | 13.8 | 4 | M4x10 | 2 +0,3 |

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## Sensor mounting, Series CB1

ST6
SM6
SN1
SN2



| Min. cylinder Ø [mm] | Max. cylinder Ø [mm] | Material | Part No. |
|---|---|---|---|
| 125 | 125 | Aluminum | 1827020292 |
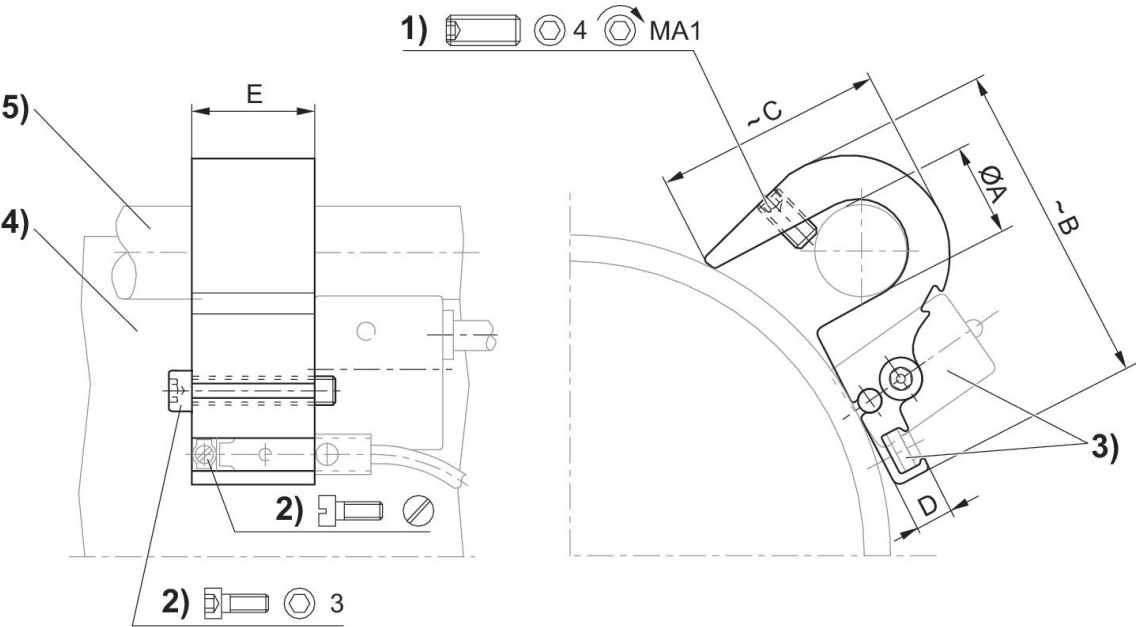


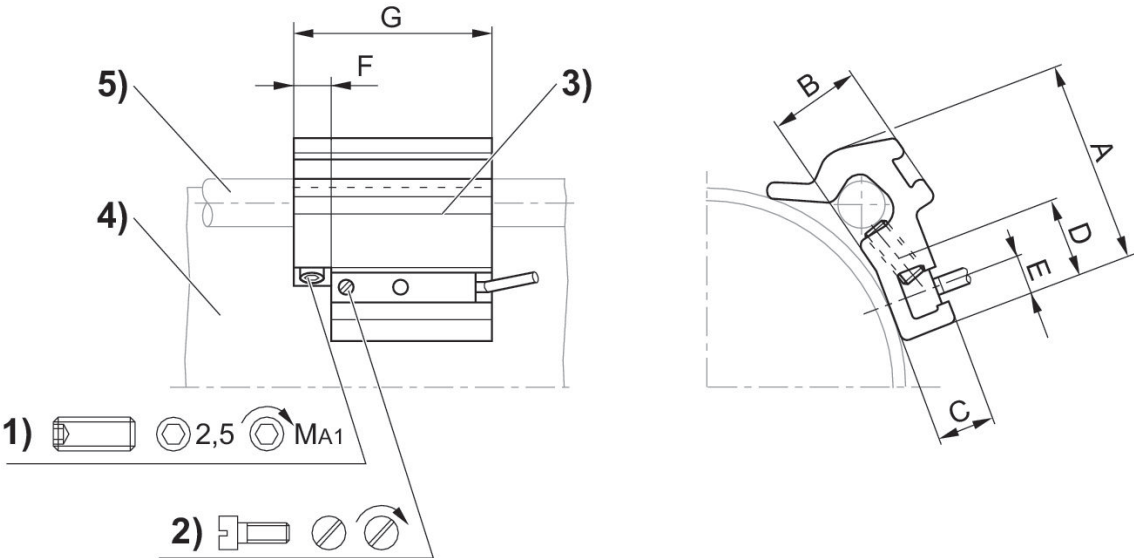1) Clamping threaded pin 2) Mounting screw for sensor 3) Sensor 4) Cylinder profile 5) Tie rod

| Part No. | Cylinders Ø | Ø A | B | C | D | E | Clamping threaded pin | MA1 [Nm] |
|---|---|---|---|---|---|---|---|---|
| 1827020292 | 125 mm | 12 | 45 | 29 | 6.5 | 21 | M5x10 | 2 |

## Sensor mounting, Series CB1

ST6
SM6

| Min. cylinder Ø [mm] | Max. cylinder Ø [mm] | Material | Part No. |
|---|---|---|---|
| 32 | 40 | Aluminum | 1827020282 |
| 50 | 63 | Aluminum | 1827020283 |
| 80 | 100 | Aluminum | 1827020284 |

1) Clamping threaded pin 2) Mounting screw for sensor 3) Sensor 4) Cylinder profile 5) Tie rod

| Part No. | Cylinders Ø | A | B | C | D | E | F | G | Clamping threaded pin | MA1 [Nm] |
|---|---|---|---|---|---|---|---|---|---|---|
| 1827020282 | 32 - 40 mm | 26 | 10 | 7 | 14 | 5 | 8 | 40 | M5x8 | 2 ±0,2 |
| 1827020283 | 50 - 63 mm | 32.5 | 15.5 | 7 | 14 | 5 | 8 | 40 | M5x10 | 2 ±0,2 |
| 1827020284 | 80 - 100 mm | 43 | 17 | 6.9 | 14 | 5 | 8 | 40 | M5x16 | 2 ±0,2 |

## Sensor mounting, Series CB1

ST6
SM6

| Max. cylinder Ø [mm] | Material | Part No. |
|---|---|---|
| 25 | Aluminum | R412022357 |
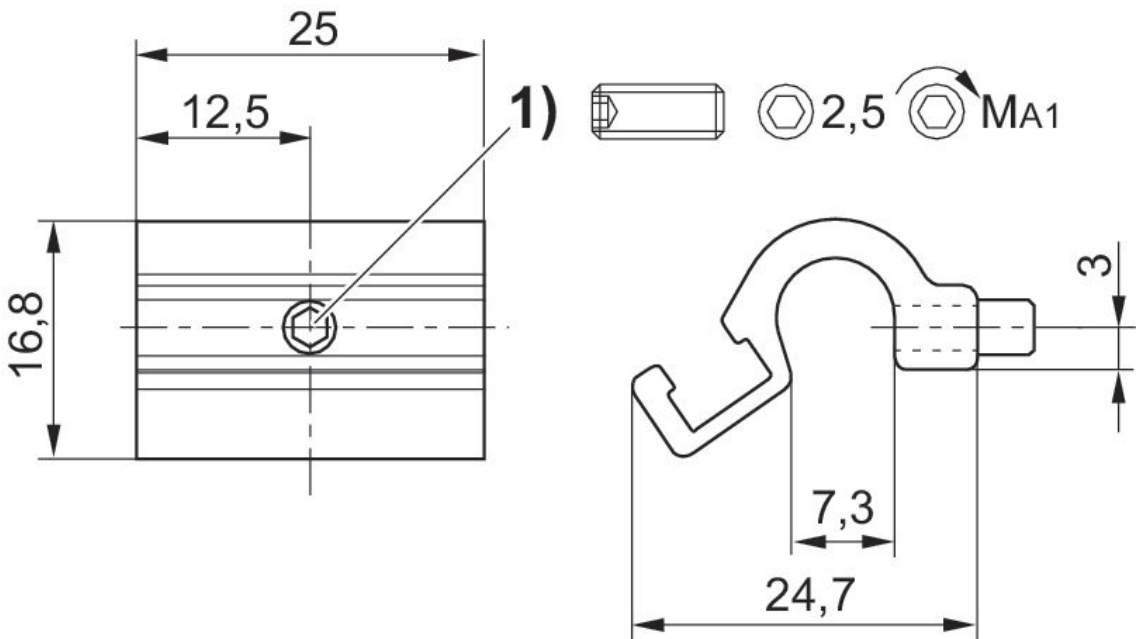
1) Mounting screw

| Part No. | Cylinders Ø max. | MA1 [Nm] |
|---|---|---|
| R412022357 | 25 mm | 1 + 0,3 |

## Round plug connector, Series CON-RD

Socket
M8x1
4-pin

```
1 ──── BN
2 ──── WH
3 ──── BU
4 ──── BK
```

| Opera-tional voltage | Current [A] | Shield-ing | Electri-cal con-nection 1, type | Elec-trical connec-tion 1, thread size | Elec-trical connec-tion 1, coding | Electri-cal con-nection 2, type | Cable length [m] | Cable-Ø [mm] | Wire cross-section [mm²] | Min. ambient temper-ature [°C] | Max. ambient temper-ature [°C] | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48 V AC/DC | 4 | un-shielded | Socket | M8x1 | A-coded | open cable ends | 3 | 4.5 | 0.25 | -40 | 85 | 1834484144 |
| 48 V AC/DC | 4 | un-shielded | Socket | M8x1 | A-coded | open cable ends | 5 | 4.5 | 0.25 | -40 | 85 | 1834484146 |

Dimensions
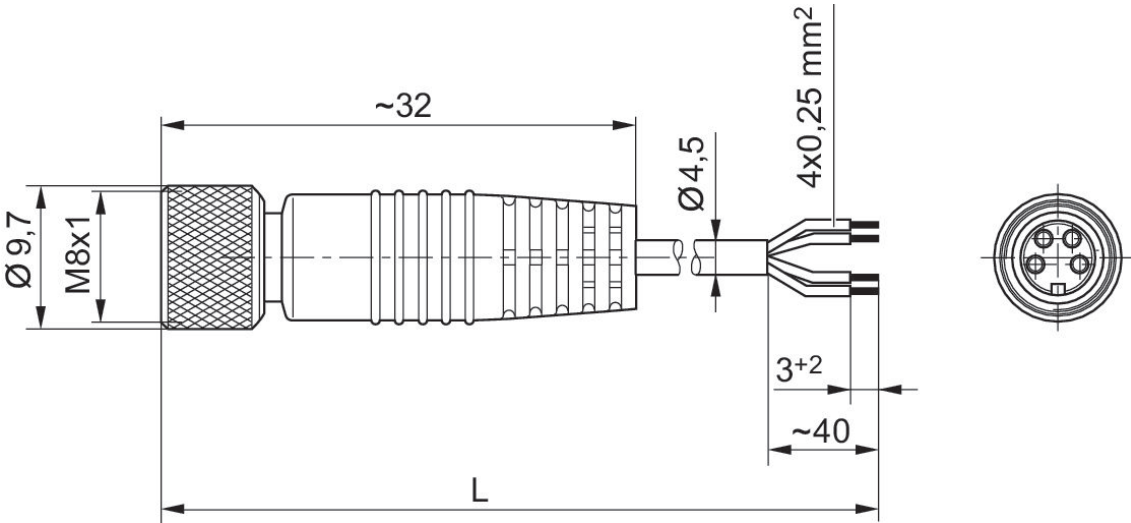
L = length

### 1834484144, 1834484146

Pin assignment, socket

(1) BN=brown (2) WH=white 3) BU=blue (4) BK=black

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## Round plug connector, Series CON-RD

Socket
M8x1
4-pin

```
1 >──────── BN
2 >──────── WH
3 >──────── BU
4 >──────── BK
```

| Opera-tional voltage | Current [A] | Shield-ing | Electri-cal con-nection 1, type | Elec-trical connec-tion 1, thread size | Elec-trical connec-tion 1, coding | Electri-cal con-nection 2, type | Cable length [m] | Cable-Ø [mm] | Wire cross-section [mm²] | Min. ambient temper-ature [°C] | Max. ambient temper-ature [°C] | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48 V AC/DC | 4 | un-shielded | Socket | M8x1 | A-coded | open ca-ble ends | 3 | 4.5 | 0.25 | -25 | 85 | 1834484145 |
| 48 V AC/DC | 4 | un-shielded | Socket | M8x1 | A-coded | open ca-ble ends | 5 | 4.5 | 0.25 | -25 | 85 | 1834484147 |

Dimensions in mm

Ø9,7
M8x1
18,2
10
Ø4,5
4x0,25 mm²
20
26
L
3+2
~40
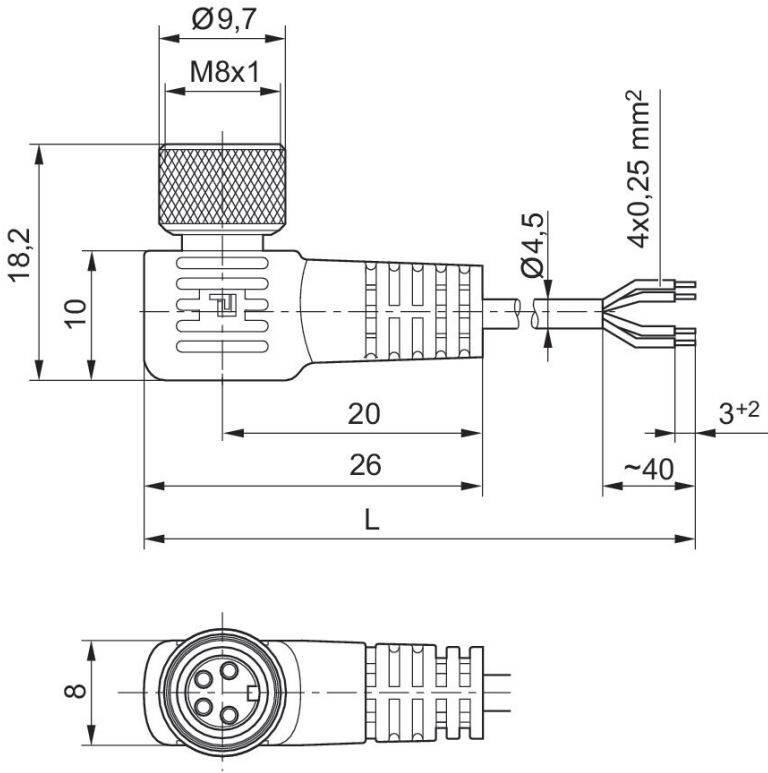
L = length

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## 1834484145, 1834484147

Pin assignment, socket
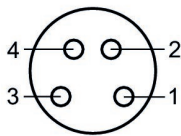


(1) BN=brown (2) WH=white 3) BU=blue (4) BK=black

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