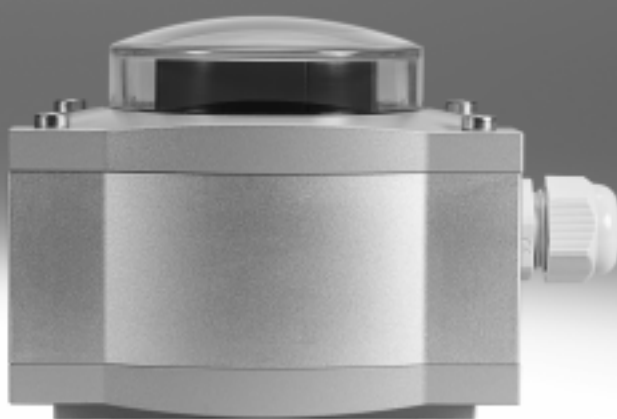


## Sensor boxes SRAP, analogue

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# Sensor boxes SRAP, analogue

Key features

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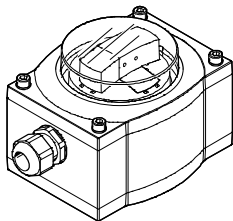
## General information

Analogue sensor box for greater functionality. The analogue sensor box monitors the position of semi-rotary actuators and reports this back to the controller via an analogue 4 ... 20 mA output signal.

## Advantages

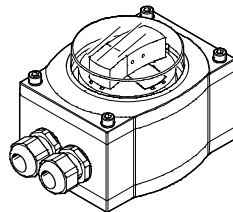
- Simple mounting and commissioning: can be mounted directly on the semi-rotary actuator DFPB without the need for mounting accessories, with teach-in function for flexible adjustment of the zero point within a range from 0 – 270°
- Everything in view, including from a distance: colour-based indication of the current position of the semi-rotary actuator
- Innovative and intelligent: homing to the actual swivel angle makes optimum use of the initial range
- Sturdy and explosion-proof: a match for even harsh, corrosive and potentially explosive environments thanks to corrosion-resistant and waterproof metal housing
- Insensitive to vibration. Always supplies a stable signal as there is no contact between the shaft and sensor
- Quick and easy integration in existing systems thanks to the industrial analogue output signal
- Cost and time savings thanks to the common power supply for the sensor box and solenoid valve
- Cost-efficient regulation in combination with 5/3-way valve compared with positioner solution
- Festo know-how in automation: concept and solution from a single source
- You can find information on the media resistance of the product at → [www.festo.com](http://www.festo.com)

### 1 cable connector



- Power supply for sensor box only

### 2 cable connectors

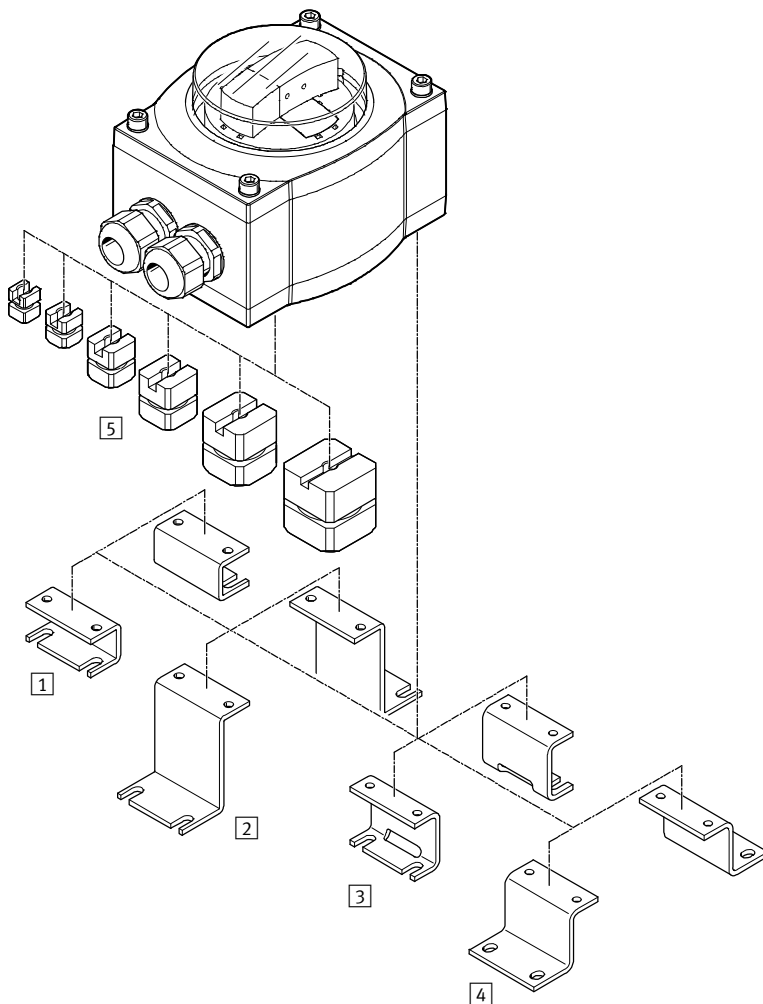


- Common power supply for sensor box and solenoid valve

# Sensor boxes SRAP, analogue

Peripherals overview

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| Mounting attachments and accessories |                                            |                                                           |
|--------------------------------------|--------------------------------------------|-----------------------------------------------------------|
|                                      | Brief description                          | → Page/Internet                                           |
| 1                                    | Adapter kit<br>DASB-P1-HA-SB <sup>1)</sup> | Hole pattern 30x80 mm, height 20 mm<br>dasb               |
| 2                                    | Adapter kit<br>DASB-P1-HL-SB               | Hole pattern 30x130 mm, height 50 mm<br>dasb              |
| 3                                    | Adapter kit<br>DASB-P1-HB-SB               | Hole pattern 30x80 mm, height 30 mm<br>dasb               |
| 4                                    | Adapter kit<br>DASB-P1-HC-SB               | Hole pattern 30x130 mm, height 30 mm<br>dasb              |
| 5                                    | Coupling<br>DARQ-C-S9                      | For direct mounting on semi-rotary actuators DFPB<br>darq |
|                                      | Coupling<br>DARQ-C-S11                     | For direct mounting on semi-rotary actuators DFPB<br>darq |
|                                      | Coupling<br>DARQ-C-S14                     | For direct mounting on semi-rotary actuators DFPB<br>darq |
|                                      | Coupling<br>DARQ-C-S17                     | For direct mounting on semi-rotary actuators DFPB<br>darq |
|                                      | Coupling<br>DARQ-C-S22                     | For direct mounting on semi-rotary actuators DFPB<br>darq |
|                                      | Coupling<br>DARQ-C-S27                     | For direct mounting on semi-rotary actuators DFPB<br>darq |

1) The adapter kit DASB-P1-HA-SB can optionally be used for all DFPB actuators.

# Sensor boxes SRAP, analogue

Type codes

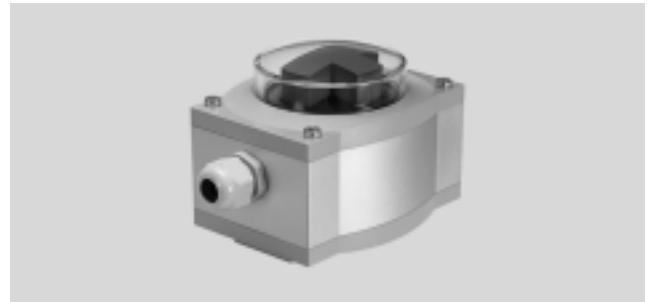
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|                                  |                                           |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
|----------------------------------|-------------------------------------------|------|---|---|---|-----|---|-------|---|---|---|---|---|-------|---|--|---|-----|
|                                  |                                           | SRAP | - | M | - | CA1 | - | BB270 | - | 1 | - | A | - | T2P20 | - |  | - | EX2 |
| <b>Function</b>                  |                                           |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| SRAP                             | Analogue sensor box                       |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| <b>Product version</b>           |                                           |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| M                                | Primarily metal                           |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| <b>Design</b>                    |                                           |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| C                                | Sensor box                                |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| <b>Mechanical interface</b>      |                                           |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| A1                               | Direct mounting, hole pattern<br>30x80 mm |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| <b>Indicator type</b>            |                                           |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| -                                | No indicator                              |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| BB                               | Blue/black position indicator             |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| GR                               | Green/red position indicator              |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| YB                               | Yellow/black position indicator           |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| <b>Measuring range</b>           |                                           |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| 270                              | 0 ... 270°                                |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| <b>Nominal operating voltage</b> |                                           |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| 1                                | 24 V DC                                   |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| <b>Electrical output</b>         |                                           |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| A                                | 4 ... 20 mA                               |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| <b>Electrical connection</b>     |                                           |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| T                                | Terminal box                              |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| <b>Valve connection</b>          |                                           |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| -                                | None                                      |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| 2                                | With valve connection                     |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| <b>Cable connector</b>           |                                           |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| M20                              | M20x1.5, metal                            |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| P20                              | M20x1.5, polymer                          |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| <b>Temperature range</b>         |                                           |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| -                                | Standard -20 ... +80 °C                   |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| <b>EU certification</b>          |                                           |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| -                                | None                                      |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |
| EX2                              | II 3GD                                    |      |   |   |   |     |   |       |   |   |   |   |   |       |   |  |   |     |

## Sensor boxes SRAP, analogue

### Technical data

- The analogue sensor box not only reports the open/closed position of the semi-rotary actuator, but also detects the entire swivel range and reports this back to the controller via an analogue signal
- The integrated sensors are based on proven 2D Hall technology



| General technical data                      |                    |                                    |           |
|---------------------------------------------|--------------------|------------------------------------|-----------|
| Adjustment range for angle detection        | [°]                | 0 ... 270                          |           |
| Based on standard                           |                    | VDI/VDE 3845 (NAMUR)               |           |
| Design                                      |                    | Angular                            |           |
| Mounting position                           |                    | Any                                |           |
| Measured variable                           |                    | Swivel angle                       |           |
| Measuring principle                         |                    | Magnetic Hall                      |           |
| Adjustment options                          |                    | Teach-in                           |           |
|                                             |                    | Teach-in via electrical connection |           |
| Idle current                                | [mA]               | 12 ... 20                          |           |
| Analogue output                             | [mA]               | 4 ... 20                           |           |
| Repetition accuracy of analogue output      |                    | +/- 1 deg                          |           |
| Operating voltage range                     | Direct voltage DC  | [V]                                | 15 ... 30 |
| Insulation voltage                          |                    | [V]                                | 50        |
| Surge capacity                              |                    | [kV]                               | 0.8       |
| Protection against short circuit            |                    | Yes                                |           |
| Protection against overloading              |                    | Yes                                |           |
| Reverse polarity protection                 |                    | For all electrical connections     |           |
| Electrical connection                       |                    | 9-pin                              |           |
|                                             |                    | Screw terminal                     |           |
|                                             |                    | Plug-in                            |           |
| Cable connector                             |                    | M20x1.5                            |           |
| Max. cable length                           | [m]                | 30                                 |           |
| Permissible cable diameter                  | [mm]               | 5 ... 13                           |           |
| Connectable nominal conductor cross section | [mm <sup>2</sup> ] | 2.5                                |           |
| Product weight                              | [g]                | 1000                               |           |
| Housing material                            |                    | Wrought aluminium alloy            |           |
| Note on materials                           |                    | RoHS-compliant                     |           |

# Sensor boxes SRAP, analogue

Technical data

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| Operating and environmental conditions       |                           |
|----------------------------------------------|---------------------------|
| Certification                                | C-Tick                    |
|                                              | c UL us - Recognized (OL) |
|                                              | RCM trademark             |
| Ambient temperature [°C]                     | –20 ... +80 °C            |
| Protection class                             | IP65                      |
| CE mark (see declaration of conformity)      | To EU EMC Directive       |
| Electrical protection class                  | III                       |
| Degree of contamination                      | 3                         |
| Corrosion resistance class CRC <sup>1)</sup> | 3                         |

1) Corrosion resistance class 3 according to Festo standard 940 070

Components subject to high corrosion stress. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.

| Operating and environmental conditions with explosion protection |                                             |
|------------------------------------------------------------------|---------------------------------------------|
| Certification                                                    | C-Tick                                      |
|                                                                  | c UL us - Recognized (OL)                   |
|                                                                  | RCM trademark                               |
| Ambient temperature [°C]                                         | –20 ... +80 °C                              |
| Protection class                                                 | IP65                                        |
| CE mark (see declaration of conformity)                          | To EU EMC Directive                         |
|                                                                  | To EU Explosion Protection Directive (ATEX) |
| ATEX category for gas                                            | II 3G                                       |
| Explosion ignition protection type for gas                       | Ex nA IIC T5 X Gc                           |
| ATEX category for dust                                           | II 3D                                       |
| Explosion ignition protection type for dust                      | Ex tc IIIC T90°C X Dc IP65                  |
| Explosion-proof ambient temperature                              | –20 °C ≤ Ta ≤ +80 °C                        |
| Explosion protection certification outside the EU                | EPL Dc (RU)                                 |
|                                                                  | EPL Gc (RU)                                 |
| Electrical protection class                                      | III                                         |
| Degree of contamination                                          | 3                                           |
| Corrosion resistance class CRC <sup>1)</sup>                     | 3                                           |

1) Corrosion resistance class 3 according to Festo standard 940 070

Components subject to high corrosion stress. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.

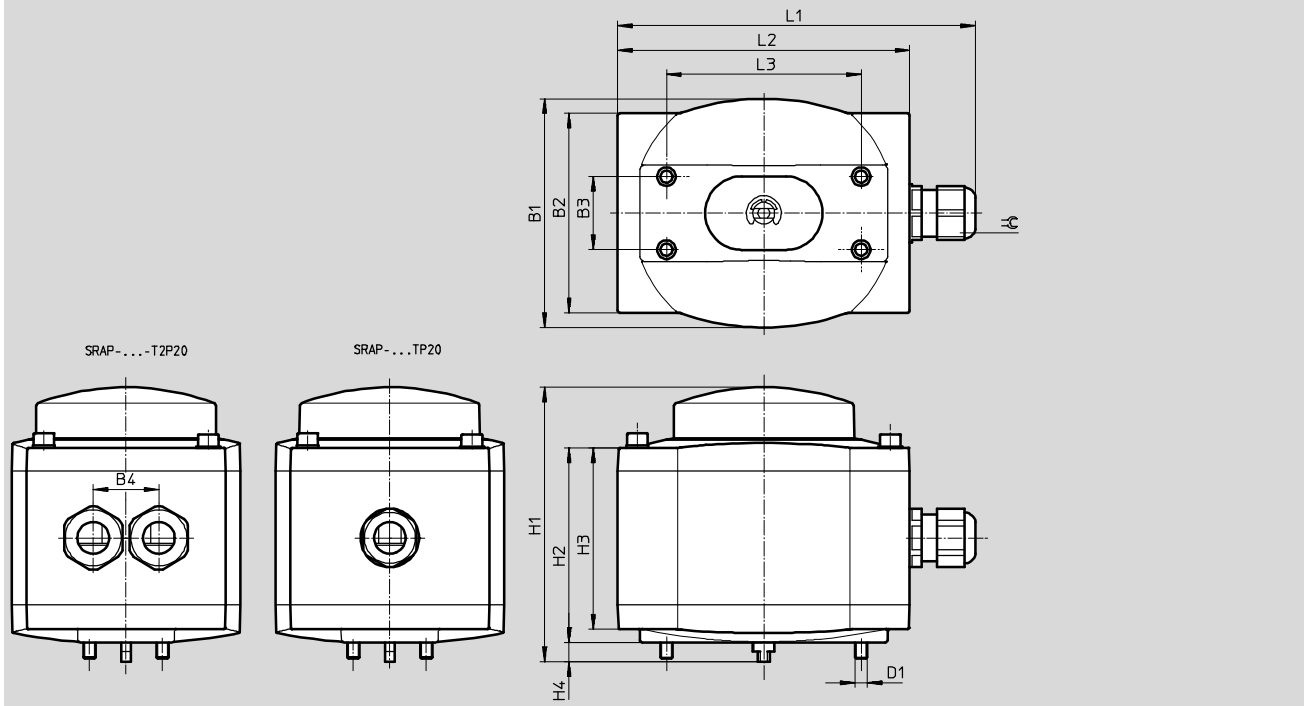
# Sensor boxes SRAP, analogue

Technical data

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## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



| Type                           | B1 | B2<br>±1 | B3 | B4 | D1 | H1    | H2 | H3   | H4  | L1  | L2<br>±1 | L3 | ≡  |
|--------------------------------|----|----------|----|----|----|-------|----|------|-----|-----|----------|----|----|
| SRAP-M-CA1-BB270-1-A-TP20      | 94 | 82       | 30 | -  | M5 | 112.7 | 80 | 74.5 | 7.8 | 148 | 120      | 80 | 24 |
| SRAP-M-CA1-BB270-1-A-TP20-EX2  |    |          |    |    |    |       |    |      |     | 147 |          |    | 22 |
| SRAP-M-CA1-GR270-1-A-TM20      |    |          |    |    |    |       |    |      |     | 148 |          |    | 24 |
| SRAP-M-CA1-GR270-1-A-TP20      |    |          |    |    |    |       |    |      |     | 147 |          |    | 22 |
| SRAP-M-CA1-GR270-1-A-TP20-EX2  |    |          |    |    |    |       |    |      |     | 148 |          |    | 24 |
| SRAP-M-CA1-YB270-1-A-TM-20     |    |          |    |    |    |       |    |      |     |     |          |    |    |
| SRAP-M-CA1-YB270-1-A-TP-20     |    |          |    |    |    |       |    |      |     |     |          |    |    |
| SRAP-M-CA1-YB270-1-A-TP-20-EX2 |    |          |    |    |    |       |    |      |     |     |          |    |    |
| SRAP-M-CA1-GR270-1-A-T2P20     |    |          |    |    |    |       |    |      |     |     |          |    |    |
| SRAP-M-CA1-GR270-1-A-T2P20-EX2 |    |          |    |    |    |       |    |      |     |     |          |    |    |
| SRAP-M-CA1-270-1-A-T2P20       |    |          |    |    |    |       |    |      |     |     |          |    |    |
| SRAP-M-CA1-270-1-A-T2P20-EX2   |    |          |    |    |    |       |    |      |     |     |          |    |    |

## Sensor boxes SRAP, analogue

Technical data

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| Ordering data – Sensor boxes SRAP, analogue without explosion protection          |                    |          |                            |
|-----------------------------------------------------------------------------------|--------------------|----------|----------------------------|
|                                                                                   | Position indicator | Part No. | Type                       |
|  | Blue/black         | 568236   | SRAP-M-CA1-BB270-1-A-TP20  |
|                                                                                   | Red/green          | 568238   | SRAP-M-CA1-GR270-1-A-TM20  |
|                                                                                   | Red/green          | 568239   | SRAP-M-CA1-GR270-1-A-TP20  |
|                                                                                   | Yellow/black       | 568242   | SRAP-M-CA1-YB270-1-A-TM20  |
|                                                                                   | Yellow/black       | 568243   | SRAP-M-CA1-YB270-1-A-TP20  |
|  | Red/green          | 568246   | SRAP-M-CA1-GR270-1-A-T2P20 |
|                                                                                   | No indicator       | 570527   | SRAP-M-CA1-270-1-A-T2P20   |

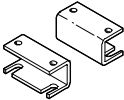
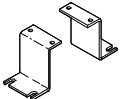
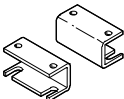
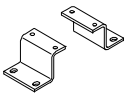
| Ordering data – Sensor boxes SRAP, analogue with explosion protection              |                    |          |                                |
|------------------------------------------------------------------------------------|--------------------|----------|--------------------------------|
|                                                                                    | Position indicator | Part No. | Type                           |
|   | Blue/black         | 568237   | SRAP-M-CA1-BB270-1-A-TP20-Ex2  |
|                                                                                    | Red/green          | 568241   | SRAP-M-CA1-GR270-1-A-TP20-Ex2  |
|                                                                                    | Yellow/black       | 568245   | SRAP-M-CA1-YB270-1-A-TP20-Ex2  |
|  | Red/green          | 568247   | SRAP-M-CA1-GR270-1-A-T2P20-Ex2 |
|                                                                                    | No indicator       | 570528   | SRAP-M-CA1-270-1-A-T2P20-Ex2   |



## Sensor boxes SRAP, analogue

Accessories

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| Dimensions and ordering data                                                        |                                                                                                                                            | Part No. | Type          |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------|
| Adapter kit                                                                         |                                                                                                                                            |          |               |
|    | <ul style="list-style-type: none"><li>• Adapter kit for DAPS and DFPB</li><li>• Shaft height 20 mm, hole patterns 80x30 mm</li></ul>       | 568275   | DASB-P1-HA-SB |
|    | <ul style="list-style-type: none"><li>• Adapter kit for third-party drives</li><li>• Shaft height 50 mm, hole patterns 130x30 mm</li></ul> | 568276   | DASB-P1-HL-SB |
|    | <ul style="list-style-type: none"><li>• Adapter kit for DAPS</li><li>• Shaft height 30 mm, hole patterns 80x30 mm</li></ul>                | 572418   | DASB-P1-HB-SB |
|    | <ul style="list-style-type: none"><li>• Adapter kit for DAPS</li><li>• Shaft height 30 mm, hole patterns 130x30 mm</li></ul>               | 572419   | DASB-P1-HC-SB |
| Couplings                                                                           |                                                                                                                                            |          |               |
|   | Couplings for direct mounting of sensor boxes SRAP on quarter turn actuators DFPB. Technical data ➔ Internet: dfpb                         | 568674   | DARQ-C-S9     |
|                                                                                     |                                                                                                                                            | 568675   | DARQ-C-S11    |
|                                                                                     |                                                                                                                                            | 568676   | DARQ-C-S14    |
|                                                                                     |                                                                                                                                            | 568677   | DARQ-C-S17    |
|                                                                                     |                                                                                                                                            | 568678   | DARQ-C-S22    |
|                                                                                     |                                                                                                                                            | 568679   | DARQ-C-S27    |
| Cable connector                                                                     |                                                                                                                                            |          |               |
|  | Polymer cable connector M20x1.5                                                                                                            | 568278   | NETC-P-M20-P4 |
|  | Metal cable connector M20x1.5                                                                                                              | 568279   | NETC-M-M20-P4 |