

Semi-rotary drives DRQ

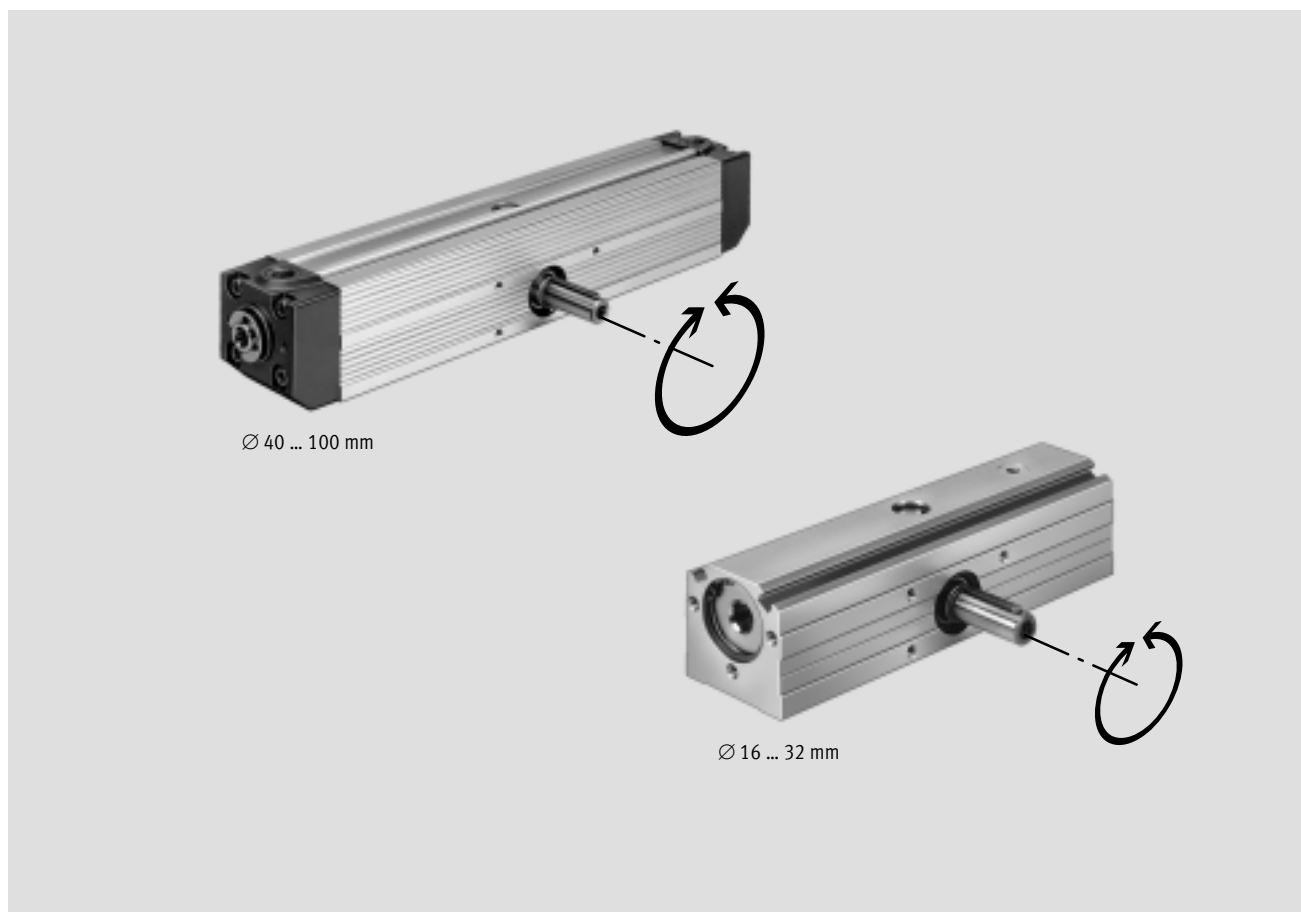


- 1 - Type discontinued
Available up until 2015

Semi-rotary drives DRQ

Features

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Rotating and swivelling

The linear movement of the cylinder is converted into rotational movement by a backlash-compensating gear unit. Precision is increased by backlash-free transmission of force from the gear rack to the pinion.

The semi-rotary drive DRQ-...-PPV-A has variable end-position adjustment at both ends, combined with adjustable end-position cushioning. This permits constant cushioning over the entire end-position adjustment range.

- Nominal swivel angles of 90°, 180°, 270° or 360°
- Freely selectable swivel angle from 0 to 360°
- With adjustable end-position cushioning at both ends and end-position adjustment for piston Ø 16 to 100 mm

- With adjustable end-position cushioning at both ends for piston Ø 40 to 100 mm
- For contactless position sensing
- Backlash-free power transmission
- Wide choice of mounting options

- 1 - Note

Sizing software
Calculating inertia
→ www.festo.com

- 1 - Note

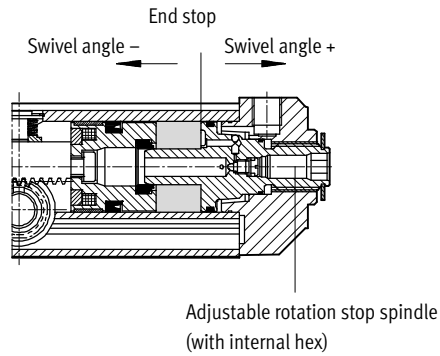
DRQ-...-PPV-A (without end-position adjustment) is only available for drives with piston Ø 40 to 100 mm.

Semi-rotary drives DRQ

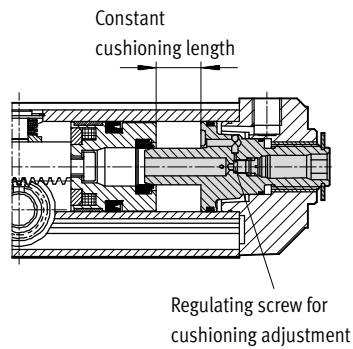
Key features and product range overview

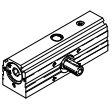
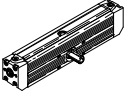
Individually adjustable end positions

The externally adjustable end position adjustment increases service life and permits precise adjustment of the swivel angle.



The design principle always guarantees the full cushioning length. Exception: small swivel angle



| Product range overview | | | | | | | | | |
|------------------------|--|------|---------------------|-------------------|-------------------|---|-------------------------|-----------------------|---------------------|
| Function | Design | Type | Piston Ø [mm] | Swivel angle | | Adjustable cushioning at both ends PPV | End position adjustment | Position sensing A | → Page/ Internet |
| | | | | Fixed [°] | Selectable [°] | | | | |
| Double-acting |   | DRQ | 16, 20, 25, 32 | 90, 180, 270, 360 | 1 ... 359 | ■ | ■ | ■ | 7 |
| | | | 40, 50, 63, 80, 100 | | | ■ | ■ | ■ | 7 |

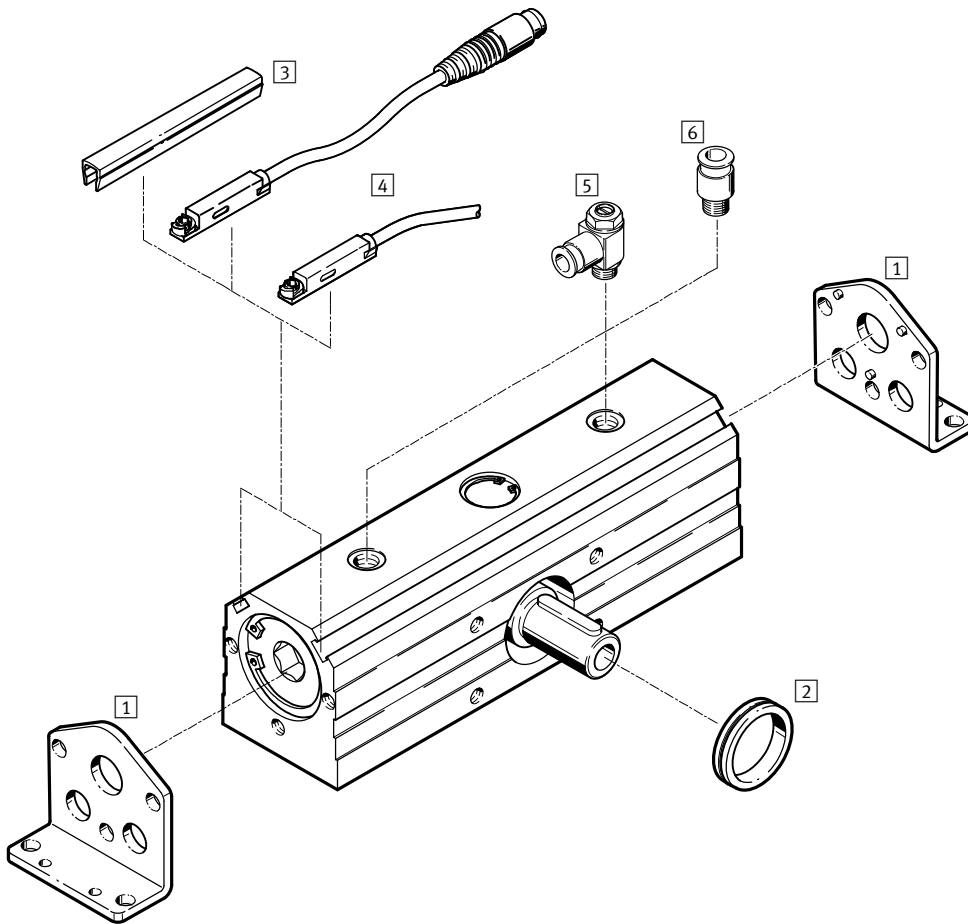
- 1 - Type discontinued
Available up until 2015

Semi-rotary drives DRQ

Peripherals overview

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Piston \varnothing 16 ... 32 mm



| Mounting attachments and accessories | | |
|--------------------------------------|------------------------------------|-----------------|
| | Brief description | → Page/Internet |
| 1 | Foot mounting HQ-...-W | 18 |
| 2 | Central mounting ZBRQ | 20 |
| 3 | Slot cover ABP | 21 |
| 4 | Proximity sensors SME/SMT-8 | 21 |
| 5 | One-way flow control valve GRLA | 20 |
| 6 | Push-in fitting QS | quick star |

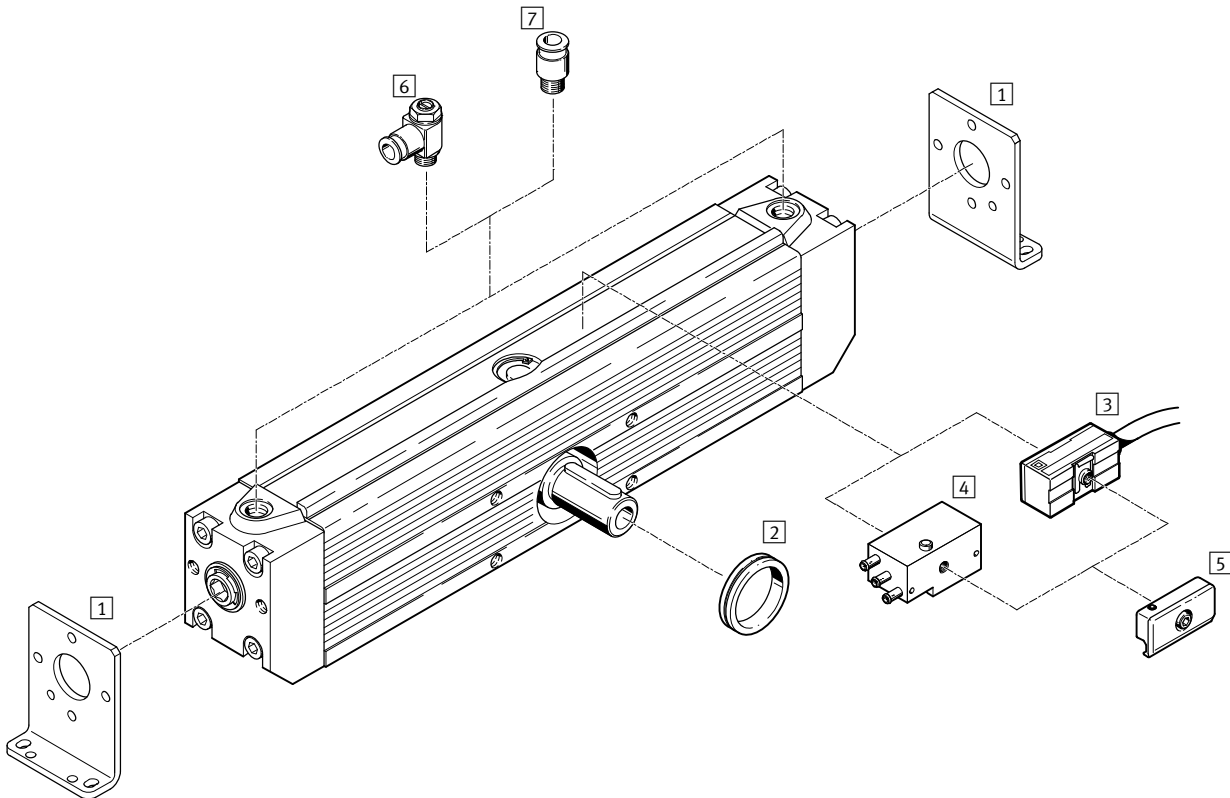
- 2 - Type discontinued
Available up until 2015

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Semi-rotary drives DRQ

Peripherals overview

Piston \varnothing 40 ... 100 mm



| Mounting attachments and accessories | | |
|--------------------------------------|------------------------------------|---|
| | Brief description | → Page/Internet |
| 1 | Foot mounting HQ-...-W | For end caps 19 |
| 2 | Central mounting ZBRQ | For centering 20 |
| 3 | Proximity sensors (SMEO/SMTO) | Magnetic proximity sensor in block design 22 |
| 4 | Proximity sensors SMPO | Pneumatic proximity sensor in block design 22 |
| 5 | Sensor mounting kit SMB-1 | To mount the proximity sensor on the profile rail 22 |
| 6 | One-way flow control valve GRLA | For speed regulation 20 |
| 7 | Push-in fitting QS | For connecting compressed air tubing with standard O.D. quick star |

- 1 - Type discontinued
Available up until 2015

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Semi-rotary drives DRQ

Type codes

DRQ – 40 – ...-180 – PPVJ – A

Type

| | |
|---------------|-----------------|
| Double-acting | |
| DRQ | Rotary actuator |

Piston Ø [mm]

Swivel angle [°]

| | |
|------------|-----------------------------------|
| Fixed | |
| 90 | Nominal swivel angle 90° |
| 180 | Nominal swivel angle 180° |
| 270 | Nominal swivel angle 270° |
| 360 | Nominal swivel angle 360° |
| Selectable | |
| ...-90 | Selectable from 1° to max. 89° |
| ...-180 | Selectable from 91° to max. 179° |
| ...-270 | Selectable from 181° to max. 269° |
| ...-360 | Selectable from 271° to max. 359° |

Cushioning

| | |
|------|--|
| PPV | Pneumatic cushioning adjustable at both ends without end position adjustment |
| PPVJ | Pneumatic cushioning adjustable at both ends with end position adjustment |

Position sensing

| | |
|---|-----------------------|
| A | For proximity sensing |
|---|-----------------------|

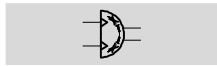
- 7 - Type discontinued
Available up until 2015

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Semi-rotary drives DRQ


Technical data

Function




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-  - Diameter
16 ... 100 mm

-  - Force
0.5 ... 150 Nm



| General technical data | | | | | | | | | |
|------------------------|---|------|------|-----------------|-----------------|-----------------|----|-----------------|-----|
| Piston \varnothing | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
| Pneumatic connection | M5 | | | G $\frac{1}{8}$ | G $\frac{1}{4}$ | G $\frac{3}{8}$ | | G $\frac{1}{2}$ | |
| Operating medium | Compressed air in accordance with ISO 8573-1:2010 [7:-:-] | | | | | | | | |
| Design | Semi-rotary drive based on the rack and pinion principle | | | | | | | | |
| Cushioning | Adjustable at both ends | | | | | | | | |
| Cushioning length [mm] | 6.3 | 8.2 | 10.4 | 13.5 | 21 | 23 | 23 | 30 | 30 |
| Cushioning angle [°] | 72.2 | 78.3 | 74.5 | 77.3 | 96 | 84 | 65 | 69 | 52 |
| Position sensing | For proximity sensing | | | | | | | | |
| Type of mounting | Via female threads Via accessories | | | | | | | | |
| Mounting position | Any | | | | | | | | |

-  - Note: This product conforms to ISO 1179-1 and to ISO 228-1

| Operating and environmental conditions | | | | | | | | | | |
|--|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Piston \varnothing | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | |
| Operating pressure [bar] | 2.5 ... 10 | | | | | | | | | |
| Max. swivelling frequency at 6 bar ¹⁾ | 90° [Hz] | 4.0 | 3.4 | 2.6 | 2.8 | 2.2 | 2.6 | 1.5 | 1.7 | 0.9 |
| | 180° [Hz] | 2.8 | 2.0 | 1.6 | 1.6 | 2.3 | 2.1 | 1.1 | 1.3 | 0.6 |
| | 270° [Hz] | 2.0 | 1.3 | 1.1 | 1.1 | 1.8 | 1.5 | 0.7 | 1.0 | 0.5 |
| | 360° [Hz] | 1.5 | 1.0 | 0.7 | 0.9 | 1.2 | 1.2 | 0.6 | 0.9 | 0.4 |
| Ambient temperature ²⁾ [°C] | -10 ... +60 | | | | | | | | | |

1) At the max. permissible mass moment of inertia for a completed movement cycle (0° > X° > 0°)

2) Note operating range of proximity sensors

| Forces and torques | | | | | | | | | |
|---|--------------------|----------------------|----------------------|---------------------|---------------------|----------------------|----------------------|------------------------|------------------------|
| Piston \varnothing | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
| Theoretical torque at 6 bar [Nm] | 0.5 | 1 | 2.5 | 5 | 9 | 19 | 37 | 75 | 150 |
| Max. perm. radial load ¹⁾ [N] | 60 | 80 | 100 | 120 | 60 | 200 | 300 | 800 | 1,500 |
| Max. perm. axial load ¹⁾ [N] | | | | | 150 | 300 | 500 | 1,000 | |
| Max. perm. mass moment of inertia ¹⁾ [kgm ²] | 2x10 ⁻⁴ | 3.5x10 ⁻⁴ | 7.8x10 ⁻⁴ | 20x10 ⁻⁴ | 50x10 ⁻⁴ | 160x10 ⁻⁴ | 400x10 ⁻⁴ | 1,200x10 ⁻⁴ | 2,000x10 ⁻⁴ |

1) On the drive shaft at maximum frequency

- 1 - Type discontinued
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Semi-rotary drives DRQ

Technical data

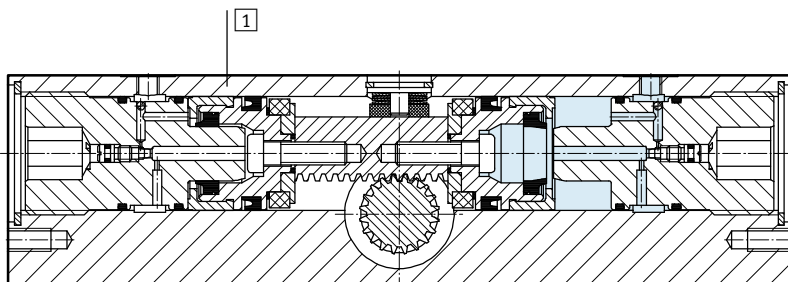
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| Weights | | | | | | | | | | | |
|-------------------------------------|------|-----|-----|-----|-------|-------|-------|-------|--------|--------|--------|
| Piston \varnothing | | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | |
| DRQ without end position adjustment | | | | | | | | | | | |
| Product weight | 90° | [g] | - | - | - | - | 2,630 | 5,030 | 8,650 | 16,000 | 26,800 |
| | 180° | [g] | - | - | - | - | 2,920 | 5,620 | 9,500 | 17,700 | 30,670 |
| | 270° | [g] | - | - | - | - | 3,330 | 6,550 | 11,000 | 21,700 | 34,200 |
| | 360° | [g] | - | - | - | - | 3,470 | 6,750 | 11,500 | 22,500 | 38,000 |
| DRQ with end position adjustment | | | | | | | | | | | |
| Product weight | 90° | [g] | 530 | 730 | 1,120 | 2,270 | 2,900 | 5,510 | 9,800 | 19,000 | 29,300 |
| | 180° | [g] | 550 | 800 | 1,320 | 2,440 | 3,220 | 5,640 | 10,600 | 20,700 | 33,000 |
| | 270° | [g] | 620 | 920 | 1,510 | 2,770 | 3,610 | 6,900 | 12,200 | 24,400 | 39,000 |
| | 360° | [g] | 640 | 960 | 1,570 | 2,860 | 3,710 | 7,180 | 12,600 | 25,340 | 40,600 |

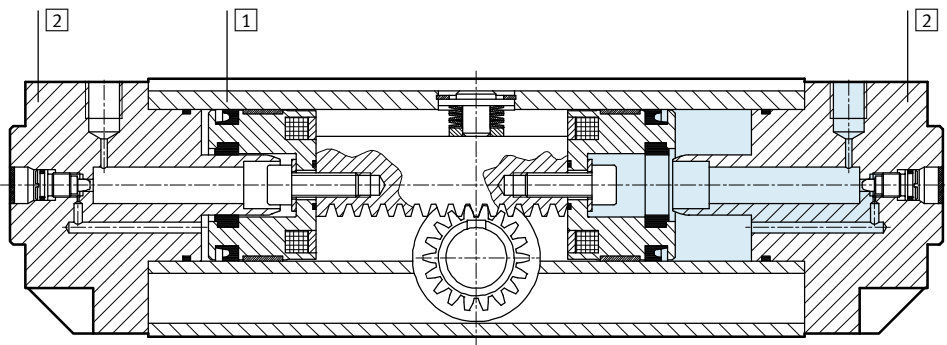
Materials

Sectional view

\varnothing 16 ... 32



\varnothing 40 ... 100



Rotary actuator

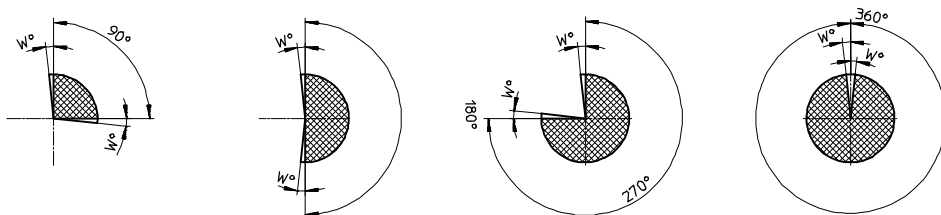
| | | | |
|---|-----------------|--------------------------|------------------------------|
| 1 | Cylinder barrel | \varnothing 16 ... 32 | Anodised aluminium |
| | | \varnothing 40 ... 100 | Aluminium |
| 2 | End cap | \varnothing 40 ... 100 | Die-cast aluminium, anodised |
| - | Seals | | Nitrile rubber, polyurethane |

Semi-rotary drives DRQ

Technical data

Swivel angle for DRQ without end position adjustment

Nominal swivel angle

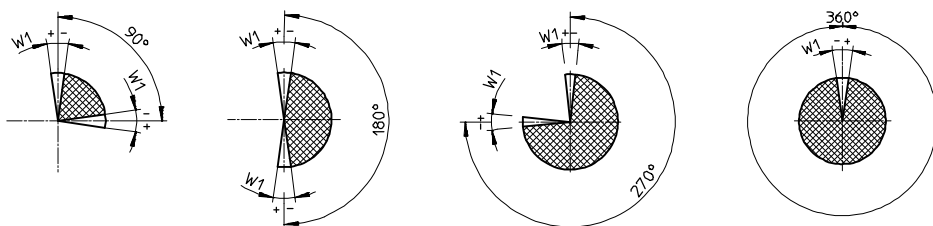


The drives have a tolerance in the end positions that exceeds the guaranteed nominal swivel angle.

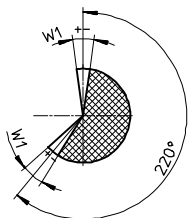
| ∅ [mm] | Tolerance of end positions W [°] |
|-----------|-------------------------------------|
| 40 | 8 |
| 50 | 6 |
| 63 | 4 |
| 80 | |
| 100 | 3 |

Swivel angle for DRQ with end position adjustment

Nominal swivel angle



Selectable swivel angle



| ∅ [mm] | Adjustment range of swivel angle W1 [°] |
|-----------|--|
| 16 | -4 ... +4 |
| 20 | |
| 25 | -5 ... +5 |
| 32 | |
| 40 | -4 ... +5 |

| ∅ [mm] | Adjustment range of swivel angle W1 [°] |
|-----------|--|
| 50 | -7 ... +8 |
| 63 | -12 ... +12 |
| 80 | -12 ... +10 |
| 100 | -8 ... +8 |

- 1 - Type discontinued
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Semi-rotary drives DRQ

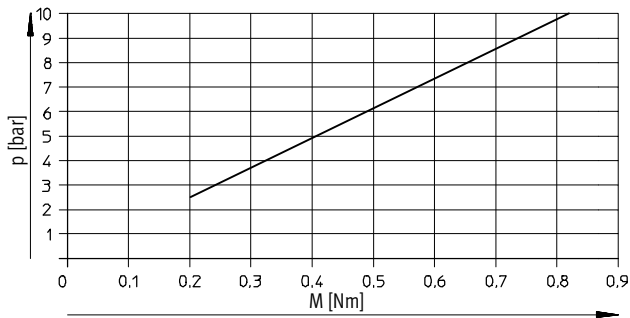
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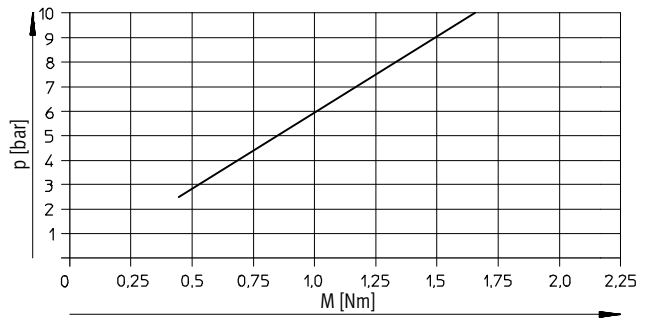
Torque M as a function of the operating pressure p

Static

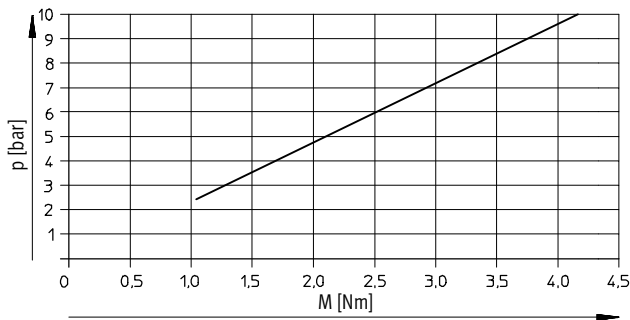
DRQ-16



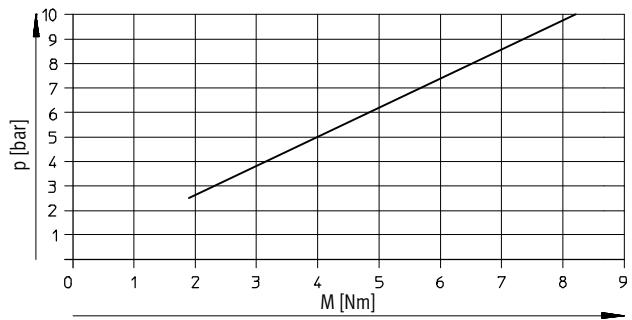
DRQ-20



DRQ-25



DRQ-32



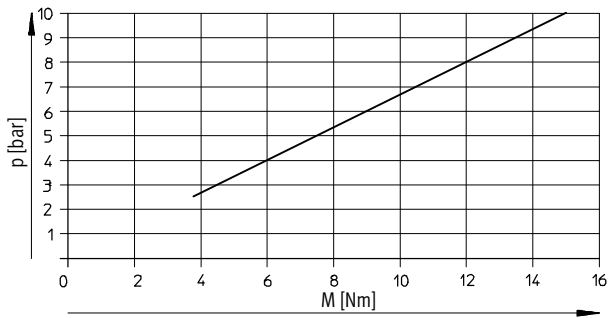
Semi-rotary drives DRQ

Technical data

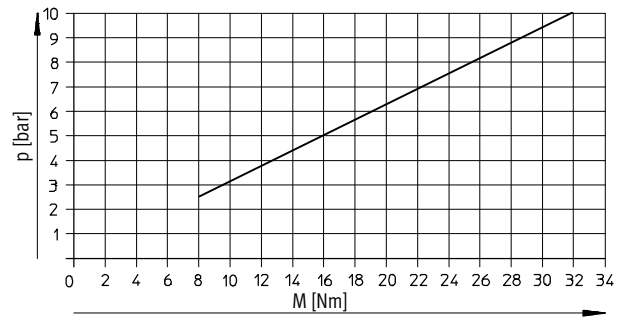
Torque M as a function of the operating pressure p

Static

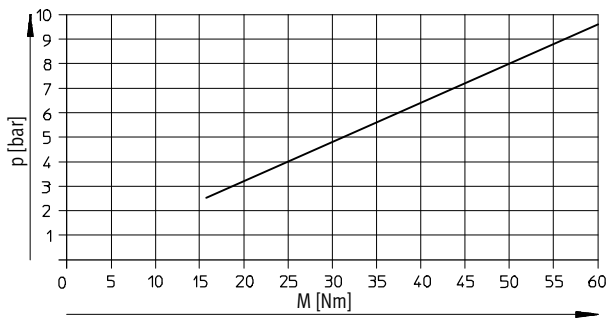
DRQ-40



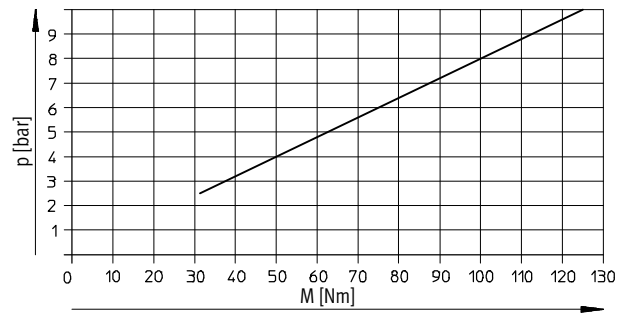
DRQ-50



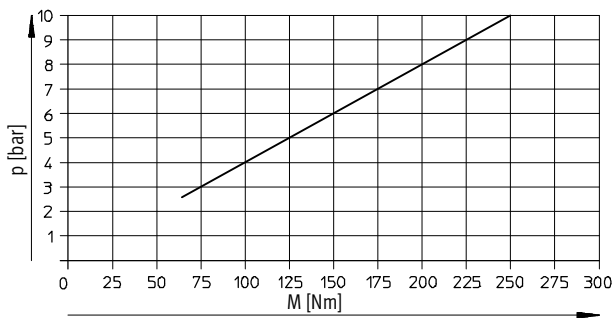
DRQ-63



DRQ-80



DRQ-100



- 7 - Type discontinued
Available up until 2015

Semi-rotary drives DRQ

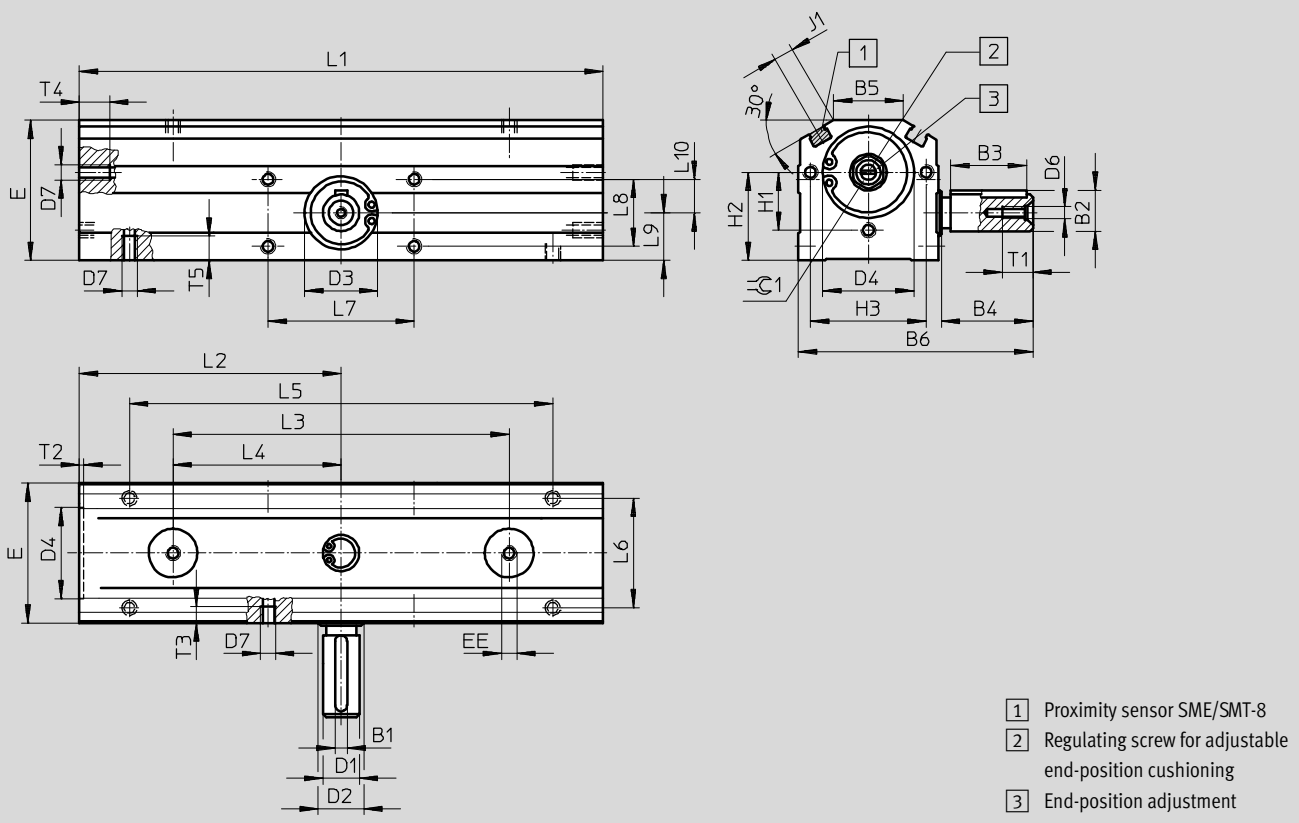
Technical data

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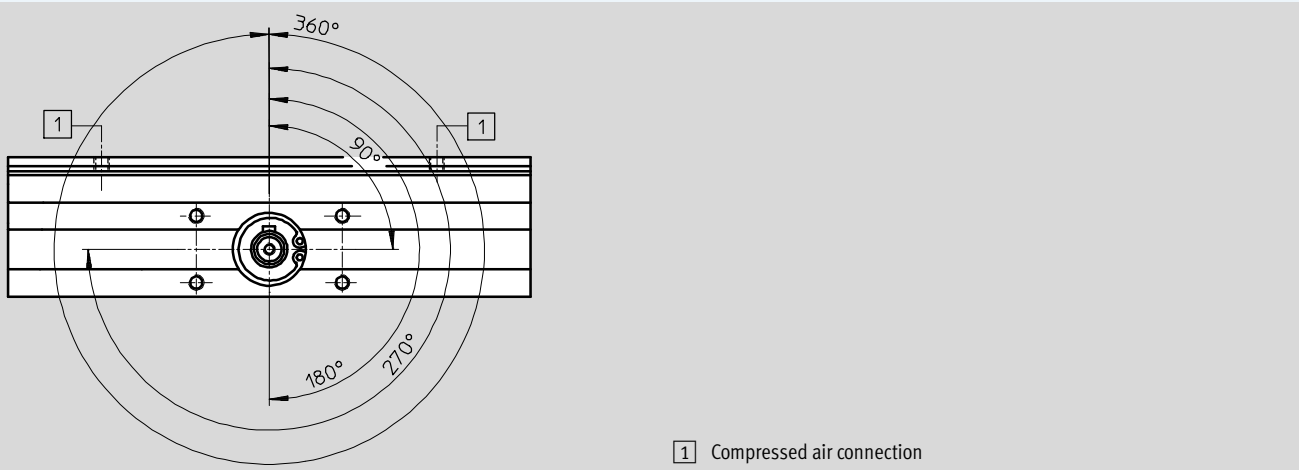
Dimensions

Piston \varnothing 16...32 mm

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Woodruff key position



- 2 - Type discontinued
Available up until 2015

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Semi-rotary drives DRQ

Technical data

| ∅ | B1 | B2 | B3 | B4 | B5 | B6 | D1 ∅ | D2 ∅ | D3 ∅ |
|------|----|------|------|------|----|----|---------|---------|---------|
| [mm] | h9 | max. | -0.2 | ±0.1 | | | g6 | k6 | K7 |
| 16 | 2 | 8.8 | 16 | 20 | 17 | 57 | 8 | 10 | 19 |
| 20 | 3 | 11.2 | 18 | 23 | 19 | 66 | 10 | 12 | 21 |
| 25 | 4 | 13.5 | 25 | 30 | 23 | 77 | 12 | 15 | 24 |
| 32 | 4 | 13.5 | 25 | 30 | 24 | 87 | 12 | 17 | 26 |

| ∅ | D4 ∅ | D6 | D7 | E | EE | H1 | H2 | H3 | J1 |
|------|---------|----|----|------|-----------------|-------|------|------|-----|
| [mm] | H11 | | | ±0.4 | | ±0.1 | ±0.3 | ±0.1 | |
| 16 | 20 | M3 | M5 | 36 | M5 | 13.75 | 22.5 | 27.5 | 5 |
| 20 | 24 | M3 | M5 | 42 | M5 | 15.75 | 26.7 | 31.5 | 5.5 |
| 25 | 30 | M4 | M5 | 46 | M5 | 19 | 28.9 | 38 | 6.5 |
| 32 | 38 | M4 | M5 | 56 | G $\frac{1}{8}$ | 23 | 33.5 | 46 | 8.5 |

| ∅ | | L1 | L2 | L3 | L4 | L5 |
|------|------|-------|-------|-------|-------|------|
| [mm] | | ±0.05 | ±0.05 | ±0.1 | ±0.1 | ±0.2 |
| 16 | 90° | 137 | 68.5 | 92.2 | 46.1 | 105 |
| | 180° | 153 | 76.5 | 108.2 | 54.1 | 121 |
| | 270° | 176 | 88.6 | 131.2 | 66.2 | 144 |
| | 360° | 184 | 91.9 | 139.2 | 69.5 | 152 |
| 20 | 90° | 142 | 71 | 90.8 | 45.4 | 110 |
| | 180° | 160 | 80 | 108.8 | 54.4 | 128 |
| | 270° | 189 | 95.3 | 137.8 | 69.7 | 157 |
| | 360° | 198 | 99 | 146.8 | 73.4 | 166 |
| 25 | 90° | 172 | 86 | 110.4 | 55.2 | 139 |
| | 180° | 197 | 98.5 | 135.4 | 67.7 | 164 |
| | 270° | 235 | 118.5 | 173.4 | 88 | 202 |
| | 360° | 248 | 124 | 186.4 | 93.2 | 215 |
| 32 | 90° | 228 | 114 | 143.8 | 71.9 | 196 |
| | 180° | 259 | 129.5 | 174.8 | 87.4 | 227 |
| | 270° | 306 | 154.7 | 221.8 | 112.6 | 274 |
| | 360° | 322 | 161 | 237.8 | 118.9 | 290 |

| ∅ | L6 | L7 | L8 | L9 | L10 | T1 | T2 | T3 | T4 | T5 | ≈ $\text{C}1$ |
|------|------|------|------|-------|------|----|-----|-----|----|----|---------------|
| [mm] | ±0.1 | ±0.2 | ±0.1 | ±0.35 | ±0.1 | | | | | | |
| 16 | 28 | 40 | 19 | 13.7 | 9.5 | 9 | 1.3 | 5.5 | 10 | 8 | 8 |
| 20 | 32 | 45 | 22 | 16 | 11 | 9 | 1.8 | 5.5 | 10 | 8 | 8 |
| 25 | 36 | 48 | 22 | 15.6 | 11 | 10 | 1.5 | 5.5 | 10 | 8 | 10 |
| 32 | 44 | 52 | 24 | 17.3 | 12 | 10 | 2 | 7.5 | 10 | 8 | 14 |

- | - Note: This product conforms to ISO 1179-1 and to ISO 228-1

- 7 - Type discontinued
Available up until 2015

Semi-rotary drives DRQ

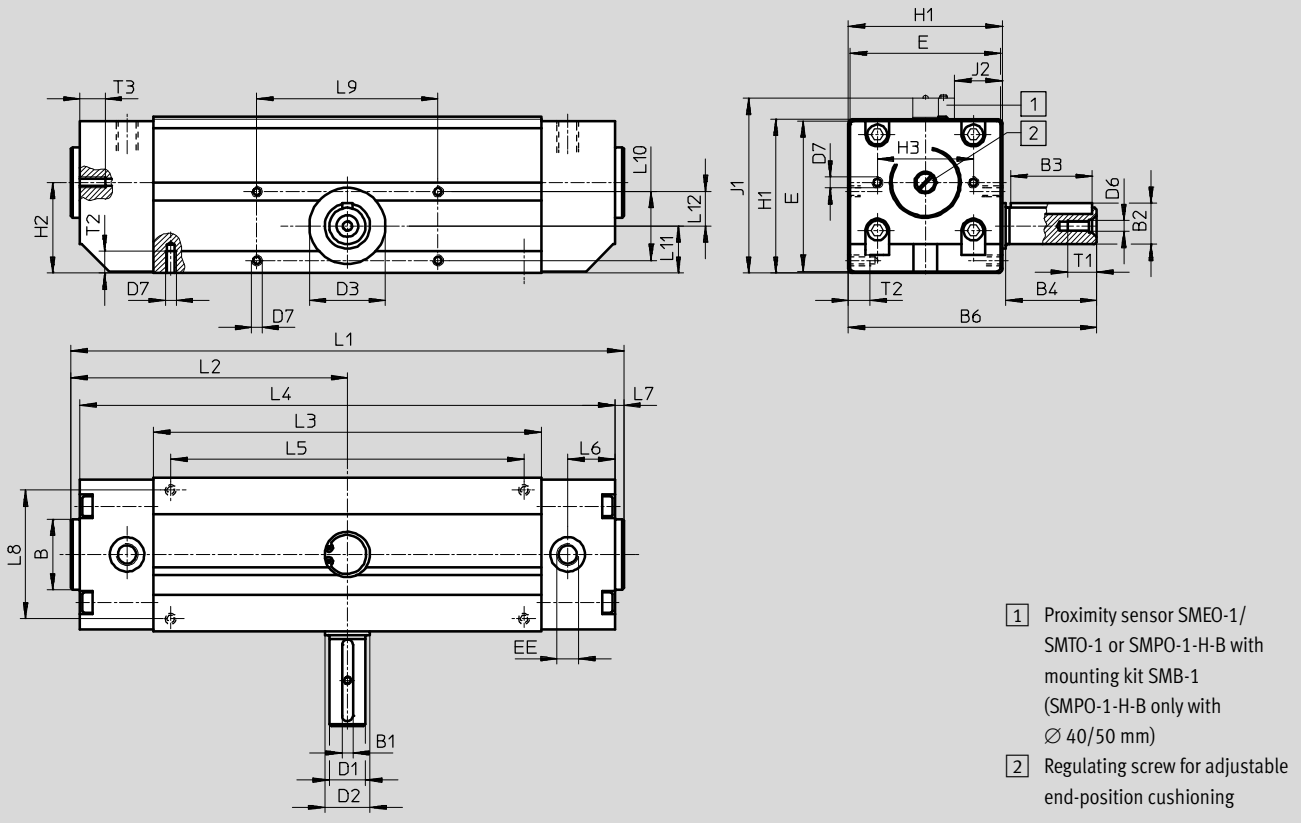
Technical data

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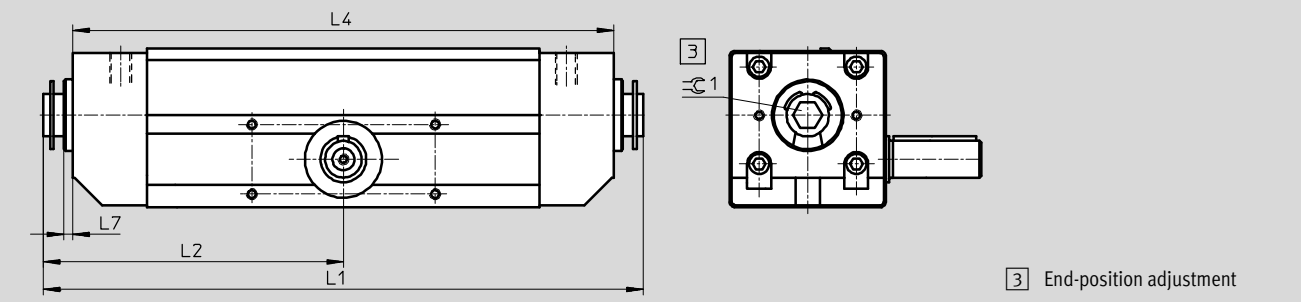
Dimensions


Download CAD data → www.festo.com

Piston \varnothing 40 ... 100 mm, DRQ without end position adjustment



Piston \varnothing 40 ... 100 mm, DRQ with end position adjustment



 Type discontinued
Available up until 2015

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Semi-rotary drives DRQ

Technical data

| ∅ [mm] | B ∅ h10 | B1 h9 | B2 max. | B3 -0.3 | B4 ±0.2 | B6 | D1 ∅ g6 | D2 ∅ k6 | D3 ∅ K6 |
|-----------|---------------|----------|------------|------------|------------|-------|---------------|---------------|---------------|
| 40 | 33 | 5 | 18 | 36 | 40 | 110 | 16 | 20 | 32 |
| 50 | 39 | 6 | 22.5 | 45 | 50 | 137 | 20 | 25 | 42 |
| 63 | 46 | 6 | 24.5 | 45 | 50 | 158 | 22 | 25 | 47 |
| 80 | 46 | 8 | 31 | 56 | 60 | 192 | 28 | 30 | 55 |
| 100 | 50 | 10 | 38 | 70 | 80 | 242.5 | 35 | 40 | 80 |

| ∅ [mm] | D6 | D7 | E | EE | H1 | H2 | H3 ±0.2 | J1 | J2 |
|-----------|-----|-----|-----|----|----------|----|------------|-----|------|
| 40 | M5 | M6 | 66 | G¼ | 68 ±0.4 | 40 | 47 | 82 | 18 |
| 50 | M6 | M6 | 83 | G¼ | 85 ±0.4 | 50 | 53 | 98 | 26.5 |
| 63 | M8 | M8 | 104 | G¾ | 106 ±0.4 | 64 | 66 | 119 | 37 |
| 80 | M12 | M8 | 127 | G¾ | 130 ±0.4 | 80 | 70.7 | 142 | 49 |
| 100 | M12 | M10 | 157 | G½ | 160 ±0.6 | 98 | 94 | 172 | 64 |

| ∅ [mm] | | L1 | | L2 | | L3 ±0.2 | L4 | | L5 ±0.2 |
|-----------|------|-------------|--------------|-------------|--------------|------------|-------------|--------------|------------|
| | | max. PPV | max. PPVJ | max. PPV | max. PPVJ | | max. PPV | max. PPVJ | |
| 40 | 90° | 264.4 | 279 | 132.3 | 139.6 | 194 | 255.4 | 254.9 | 174 |
| | 180° | 303.4 | 318 | 151.8 | 159.1 | 233 | 294.4 | 293.6 | 213 |
| | 270° | 362.4 | 378 | 181.3 | 189.1 | 293 | 354.4 | 353.6 | 270 |
| | 360° | 382.4 | 397 | 191.3 | 198.6 | 312 | 373.4 | 372.7 | 292 |
| 50 | 90° | 307.2 | 327.2 | 153.7 | 163.7 | 215 | 296.2 | 295 | 195 |
| | 180° | 356.2 | 376.2 | 178.2 | 188.2 | 264 | 345.2 | 344 | 244 |
| | 270° | 431.2 | 451.2 | 215.7 | 225.7 | 339 | 420.2 | 419 | 316 |
| | 360° | 455.2 | 475.2 | 227.7 | 237.7 | 363 | 444.2 | 443 | 343 |
| 63 | 90° | 364.4 | 392.4 | 182.3 | 196.3 | 245 | 351.4 | 351 | 215 |
| | 180° | 427.4 | 455.4 | 213.8 | 227.8 | 308 | 414.4 | 414 | 278 |
| | 270° | 521.4 | 549.4 | 260.8 | 274.8 | 402 | 508.4 | 508 | 366 |
| | 360° | 553.4 | 581.4 | 276.8 | 290.8 | 434 | 540.4 | 540 | 404 |
| 80 | 90° | 443.4 | 495.2 | 221.8 | 247.7 | 310 | 430.4 | 450 | 280 |
| | 180° | 521.4 | 573.2 | 260.8 | 286.7 | 388 | 508.4 | 528 | 358 |
| | 270° | 639.4 | 691.2 | 319.8 | 345.7 | 506 | 626.4 | 646 | 468 |
| | 360° | 678.4 | 730.2 | 339.3 | 365.2 | 545 | 665.4 | 685 | 515 |
| 100 | 90° | 506.6 | 558.2 | 253.4 | 278.2 | 363 | 483.6 | 483 | 323 |
| | 180° | 609.6 | 659.2 | 304.9 | 329.7 | 466 | 586.6 | 586 | 426 |
| | 270° | 765.6 | 815.2 | 382.9 | 407.7 | 622 | 742.6 | 742 | 568 |
| | 360° | 817.6 | 867.2 | 408.9 | 433.7 | 674 | 794.6 | 794 | 634 |

| ∅ [mm] | L6 | L7 | L8 | L9 ±0.2 | L10 ±0.1 | L11 | L12 ±0.1 | T1 min. | T2 | T3 | ≈G1 |
|-----------|----|----|----------|------------|-------------|---------|-------------|------------|----|----|-----|
| 40 | 18 | 4 | 56 ±0.1 | 80 | 30 | 21 ±0.4 | 15 | 12.5 | 9 | 15 | 10 |
| 50 | 26 | 5 | 71 ±0.1 | 100 | 38 | 26 ±0.4 | 19 | 16 | 12 | 14 | 14 |
| 63 | 37 | 6 | 90 ±0.1 | 130 | 48 | 32 ±0.4 | 24 | 19 | 15 | 19 | 14 |
| 80 | 51 | 6 | 112 ±0.2 | 160 | 60 | 39 ±0.4 | 30 | 28 | 15 | 17 | 14 |
| 100 | 38 | 11 | 140 ±0.2 | 200 | 76 | 48 ±0.5 | 38 | 28 | 20 | 22 | 14 |

• Note: This product conforms to ISO 1179-1 and to ISO 228-1

- 1 - Type discontinued
Available up until 2015

Semi-rotary drives DRQ


Technical data

FESTO

| Ordering data – Variants with end position adjustment | | | | | | |
|---|-----------|-----------------------|-----------|-----------------------|-----------|-----------------------|
| Design | ∅ 16 [mm] | | ∅ 20 [mm] | | ∅ 25 [mm] | |
| | Part No. | Type | Part No. | Type | Part No. | Type |
| Nominal swivel angle | | | | | | |
| 90° | 35 200 | DRQ-16-90-PPVJ-A | 35 204 | DRQ-20-90-PPVJ-A | 35 208 | DRQ-25-90-PPVJ-A |
| 180° | 35 201 | DRQ-16-180-PPVJ-A | 35 205 | DRQ-20-180-PPVJ-A | 35 209 | DRQ-25-180-PPVJ-A |
| 270° | 35 202 | DRQ-16-270-PPVJ-A | 35 206 | DRQ-20-270-PPVJ-A | 35 210 | DRQ-25-270-PPVJ-A |
| 360° | 35 203 | DRQ-16-360-PPVJ-A | 35 207 | DRQ-20-360-PPVJ-A | 35 211 | DRQ-25-360-PPVJ-A |
| Selectable swivel angle | | | | | | |
| 1 ... max. 89° | 154 451 | DRQ-16-...-90-PPVJ-A | 154 455 | DRQ-20-...-90-PPVJ-A | 154 459 | DRQ-25-...-90-PPVJ-A |
| 91 ... max. 179° | 154 452 | DRQ-16-...-180-PPVJ-A | 154 456 | DRQ-20-...-180-PPVJ-A | 154 460 | DRQ-25-...-180-PPVJ-A |
| 181 ... max. 269° | 154 453 | DRQ-16-...-270-PPVJ-A | 154 457 | DRQ-20-...-270-PPVJ-A | 154 461 | DRQ-25-...-270-PPVJ-A |
| 271 ... max. 359° | 154 454 | DRQ-16-...-360-PPVJ-A | 154 458 | DRQ-20-...-360-PPVJ-A | 154 462 | DRQ-25-...-360-PPVJ-A |

| Design | ∅ 32 [mm] | | ∅ 40 [mm] | | ∅ 50 [mm] | |
|-------------------------|-----------|-----------------------|-----------|-----------------------|-----------|-----------------------|
| | Part No. | Type | Part No. | Type | Part No. | Type |
| Nominal swivel angle | | | | | | |
| 90° | 35 212 | DRQ-32-90-PPVJ-A | 19 380 | DRQ-40-90-PPVJ-A | 19 383 | DRQ-50-90-PPVJ-A |
| 180° | 35 213 | DRQ-32-180-PPVJ-A | 19 381 | DRQ-40-180-PPVJ-A | 19 384 | DRQ-50-180-PPVJ-A |
| 270° | 35 214 | DRQ-32-270-PPVJ-A | 30 600 | DRQ-40-270-PPVJ-A | 30 601 | DRQ-50-270-PPVJ-A |
| 360° | 35 215 | DRQ-32-360-PPVJ-A | 19 382 | DRQ-40-360-PPVJ-A | 19 385 | DRQ-50-360-PPVJ-A |
| Selectable swivel angle | | | | | | |
| 1 ... max. 89° | 154 463 | DRQ-32-...-90-PPVJ-A | 150 180 | DRQ-40-...-90-PPVJ-A | 150 183 | DRQ-50-...-90-PPVJ-A |
| 91 ... max. 179° | 154 464 | DRQ-32-...-180-PPVJ-A | 150 181 | DRQ-40-...-180-PPVJ-A | 150 184 | DRQ-50-...-180-PPVJ-A |
| 181 ... max. 269° | 154 465 | DRQ-32-...-270-PPVJ-A | 151 310 | DRQ-40-...-270-PPVJ-A | 151 311 | DRQ-50-...-270-PPVJ-A |
| 271 ... max. 359° | 154 466 | DRQ-32-...-360-PPVJ-A | 150 182 | DRQ-40-...-360-PPVJ-A | 150 185 | DRQ-50-...-360-PPVJ-A |

| Design | ∅ 63 [mm] | | ∅ 80 [mm] | | ∅ 100 [mm] | |
|-------------------------|-----------|-----------------------|-----------|-----------------------|------------|------------------------|
| | Part No. | Type | Part No. | Type | Part No. | Type |
| Nominal swivel angle | | | | | | |
| 90° | 19 386 | DRQ-63-90-PPVJ-A | 19 389 | DRQ-80-90-PPVJ-A | 19 392 | DRQ-100-90-PPVJ-A |
| 180° | 19 387 | DRQ-63-180-PPVJ-A | 19 390 | DRQ-80-180-PPVJ-A | 19 393 | DRQ-100-180-PPVJ-A |
| 270° | 30 602 | DRQ-63-270-PPVJ-A | 30 603 | DRQ-80-270-PPVJ-A | 30 604 | DRQ-100-270-PPVJ-A |
| 360° | 19 388 | DRQ-63-360-PPVJ-A | 19 391 | DRQ-80-360-PPVJ-A | 19 394 | DRQ-100-360-PPVJ-A |
| Selectable swivel angle | | | | | | |
| 1 ... max. 89° | 150 186 | DRQ-63-...-90-PPVJ-A | 150 189 | DRQ-80-...-90-PPVJ-A | 150 192 | DRQ-100-...-90-PPVJ-A |
| 91 ... max. 179° | 150 187 | DRQ-63-...-180-PPVJ-A | 150 190 | DRQ-80-...-180-PPVJ-A | 150 193 | DRQ-100-...-180-PPVJ-A |
| 181 ... max. 269° | 151 312 | DRQ-63-...-270-PPVJ-A | 151 313 | DRQ-80-...-270-PPVJ-A | 151 314 | DRQ-100-...-270-PPVJ-A |
| 271 ... max. 359° | 150 188 | DRQ-63-...-360-PPVJ-A | 150 191 | DRQ-80-...-360-PPVJ-A | 150 194 | DRQ-100-...-360-PPVJ-A |

 Type discontinued
Available up until 2015

Semi-rotary drives DRQ

Technical data

FESTO

| Ordering data – Variants without end position adjustment | | | | | | |
|--|-----------|----------------------|-----------|----------------------|-----------|----------------------|
| Design | ∅ 40 [mm] | | ∅ 50 [mm] | | ∅ 63 [mm] | |
| | Part No. | Type | Part No. | Type | Part No. | Type |
| Nominal swivel angle | | | | | | |
| 90° | 30 580 | DRQ-40-90-PPV-A | 30 584 | DRQ-50-90-PPV-A | 30 588 | DRQ-63-90-PPV-A |
| 180° | 30 581 | DRQ-40-180-PPV-A | 30 585 | DRQ-50-180-PPV-A | 30 589 | DRQ-63-180-PPV-A |
| 270° | 30 582 | DRQ-40-270-PPV-A | 30 586 | DRQ-50-270-PPV-A | 30 590 | DRQ-63-270-PPV-A |
| 360° | 30 583 | DRQ-40-360-PPV-A | 30 587 | DRQ-50-360-PPV-A | 30 591 | DRQ-63-360-PPV-A |
| Selectable swivel angle | | | | | | |
| 1 ... max. 89° | 150 242 | DRQ-40-...-90-PPV-A | 150 245 | DRQ-50-...-90-PPV-A | 150 248 | DRQ-63-...-90-PPV-A |
| 91 ... max. 179° | 150 243 | DRQ-40-...-180-PPV-A | 150 246 | DRQ-50-...-180-PPV-A | 150 249 | DRQ-63-...-180-PPV-A |
| 181 ... max. 269° | 151 315 | DRQ-40-...-270-PPV-A | 151 316 | DRQ-50-...-270-PPV-A | 151 317 | DRQ-63-...-270-PPV-A |
| 271 ... max. 359° | 150 244 | DRQ-40-...-360-PPV-A | 150 247 | DRQ-50-...-360-PPV-A | 150 250 | DRQ-63-...-360-PPV-A |

| Design | ∅ 80 [mm] | | ∅ 100 [mm] | | |
|-------------------------|-----------|----------------------|------------|-----------------------|---|
| | Part No. | Type | Part No. | Type | |
| Nominal swivel angle | | | | | |
| 90° | 30 592 | DRQ-80-90-PPV-A | 30 596 | DRQ-100-90-PPV-A | – |
| 180° | 30 593 | DRQ-80-180-PPV-A | 30 597 | DRQ-100-180-PPV-A | |
| 270° | 30 594 | DRQ-80-270-PPV-A | 30 598 | DRQ-100-270-PPV-A | |
| 360° | 30 595 | DRQ-80-360-PPV-A | 30 599 | DRQ-100-360-PPV-A | |
| Selectable swivel angle | | | | | |
| 1 ... max. 89° | 150 251 | DRQ-80-...-90-PPV-A | 150 254 | DRQ-100-...-90-PPV-A | – |
| 91 ... max. 179° | 150 252 | DRQ-80-...-180-PPV-A | 150 255 | DRQ-100-...-180-PPV-A | |
| 181 ... max. 269° | 151 318 | DRQ-80-...-270-PPV-A | 151 319 | DRQ-100-...-270-PPV-A | |
| 271 ... max. 359° | 150 253 | DRQ-80-...-360-PPV-A | 150 256 | DRQ-100-...-360-PPV-A | |

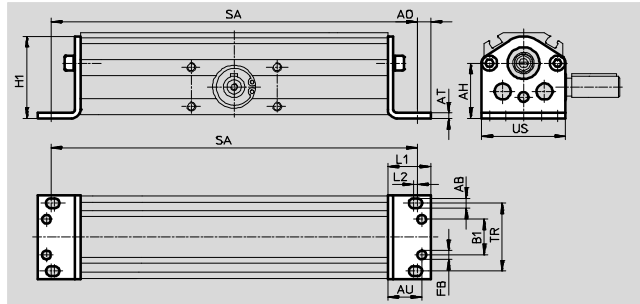
Semi-rotary drives DRQ

Accessories



Foot mounting HQ-...-W
for piston \varnothing 16...32 mm

Material:
Galvanised steel



| Dimensions and ordering data | | | | | | |
|------------------------------|----------------------|------|-----|-----|----|--------------|
| For \varnothing | AB | AH | AO | AT | AU | B1 |
| [mm] | \varnothing H13 | | | | | |
| 16 | 5.5 | 24.5 | 7.5 | 2.5 | 19 | 10 ± 0.1 |
| 20 | 5.5 | 28.7 | 7.5 | 2.5 | 19 | 14 ± 0.1 |
| 25 | 5.5 | 30.9 | 7.5 | 3 | 19 | 20 ± 0.1 |
| 32 | 5.5 | 35.5 | 7.5 | 3 | 19 | 28 ± 0.1 |

| For \varnothing | FB | H1 | L1 | L2 | TR | US |
|-------------------|-----------------------|------|----|----|----------------|----|
| [mm] | \varnothing -0.1 | | | | | |
| 16 | 4.9 | 35.5 | 24 | 2 | 27.5 ± 0.1 | 37 |
| 20 | 4.9 | 41.7 | 24 | 2 | 31.5 ± 0.1 | 43 |
| 25 | 4.9 | 45.9 | 24 | 2 | 38 ± 0.1 | 47 |
| 32 | 4.9 | 55.5 | 24 | 2 | 46 ± 0.1 | 57 |

| For \varnothing | SA | | | | CRC ¹⁾ | Part No. | Type |
|-------------------|----------------|----------------|----------------|----------------|-------------------|---------------|----------------|
| | Swivel angle | | | | | | |
| [mm] | 90° | 180° | 270° | 360° | | | |
| 16 | 170 ± 1.05 | 186 ± 1.05 | 209 ± 1.05 | 217 ± 1.05 | 2 | 35 232 | HQ-16-W |
| 20 | 175 ± 1.05 | 193 ± 1.05 | 222 ± 1.05 | 231 ± 1.05 | 2 | 35 233 | HQ-20-W |
| 25 | 205 ± 1.05 | 230 ± 1.05 | 268 ± 1.05 | 281 ± 1.05 | 2 | 35 234 | HQ-25-W |
| 32 | 261 ± 1.05 | 292 ± 1.05 | 339 ± 1.05 | 355 ± 1.05 | 2 | 35 235 | HQ-32-W |

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

Semi-rotary drives DRQ

Accessories

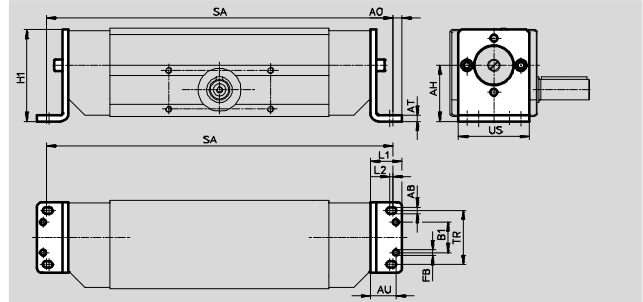


Foot mounting HQ-...-W

for piston \varnothing 40 ... 100 mm

Material:

Galvanised steel



| Dimensions and ordering data | | | | | | |
|------------------------------|----------------------|-----|------|----|----|--------------|
| For \varnothing | AB | AH | AO | AT | AU | B1 |
| [mm] | \varnothing H13 | | | | | |
| 40 | 6.6 | 45 | 9 | 5 | 24 | 24 ± 0.2 |
| 50 | 6.6 | 55 | 9 | 6 | 25 | 30 ± 0.2 |
| 63 | 9 | 69 | 11.5 | 6 | 30 | 36 ± 0.2 |
| 80 | 9 | 84 | 11.5 | 8 | 32 | 40 ± 0.2 |
| 100 | 11 | 102 | 13.5 | 8 | 36 | 58 ± 0.2 |

| For \varnothing | FB | H1 | L1 | L2 | TR | US |
|-------------------|-----------------------|-------|----|----|----------------|------|
| [mm] | \varnothing -0.1 | | | | | |
| 40 | 5.9 | 77 | 30 | 3 | 47 ± 0.2 | 63.5 |
| 50 | 5.9 | 90 | 31 | 3 | 53 ± 0.2 | 69.5 |
| 63 | 7.9 | 112.5 | 37 | 4 | 66 ± 0.2 | 87 |
| 80 | 7.9 | 130 | 39 | 4 | 70.7 ± 0.2 | 89 |
| 100 | 9.9 | 161.5 | 44 | 5 | 94 ± 0.2 | 119 |

| For \varnothing | SA (for DRQ without end position adjustment) | | | | CRC ¹⁾ | Part No. | Type |
|-------------------|--|-------------------|-------------------|-------------------|-------------------|----------|----------|
| | Swivel angle | | | | | | |
| [mm] | 90° | 180° | 270° | 360° | | | |
| 40 | 297.4 $+1.6/-1.2$ | 336.4 $+1.6/-1.2$ | 396.4 $+1.6/-1.2$ | 415.4 $+1.6/-1.2$ | 2 | 19 360 | HQ-40-W |
| 50 | 340.2 $+1.6/-1.2$ | 389.2 $+1.6/-1.2$ | 464.2 $+1.6/-1.2$ | 488.8 $+1.6/-1.2$ | 2 | 19 361 | HQ-50-W |
| 63 | 402.4 $+1.8/-1.4$ | 465.4 $+1.8/-1.4$ | 559.4 $+1.8/-1.4$ | 591.4 $+1.8/-1.4$ | 2 | 19 362 | HQ-63-W |
| 80 | 485.4 $+1.8/-1.4$ | 563.4 $+1.8/-1.4$ | 681.4 $+1.8/-1.4$ | 720.4 $+1.8/-1.4$ | 2 | 19 363 | HQ-80-W |
| 100 | 544.6 $+1.8/-1.4$ | 647.6 $+1.8/-1.4$ | 803.6 $+1.8/-1.4$ | 855.6 $+1.8/-1.4$ | 2 | 19 364 | HQ-100-W |

| For \varnothing | SA (for DRQ with end position adjustment) | | | | CRC ¹⁾ | Part No. | Type |
|-------------------|---|-----------------|-----------------|-----------------|-------------------|----------|----------|
| | Swivel angle | | | | | | |
| [mm] | 90° | 180° | 270° | 360° | | | |
| 40 | 296.6 $+1/-1.4$ | 335.6 $+1/-1.4$ | 395.6 $+1/-1.4$ | 414.6 $+1/-1.4$ | 2 | 19 360 | HQ-40-W |
| 50 | 339 $+1/-1.4$ | 388 $+1/-1.4$ | 463 $+1/-1.4$ | 487 $+1/-1.4$ | 2 | 19 361 | HQ-50-W |
| 63 | 402 $+1/-1.4$ | 465 $+1/-1.4$ | 559 $+1/-1.4$ | 591 $+1/-1.4$ | 2 | 19 362 | HQ-63-W |
| 80 | 505 $+1/-1.4$ | 583 $+1/-1.4$ | 701 $+1/-1.4$ | 740 $+1/-1.4$ | 2 | 19 363 | HQ-80-W |
| 100 | 544 $+1.2/-1.6$ | 647 $+1.2/-1.6$ | 803 $+1.2/-1.6$ | 855 $+1.2/-1.6$ | 2 | 19 364 | HQ-100-W |

1) Corrosion resistance class 2 according to Festo standard 940 070

Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

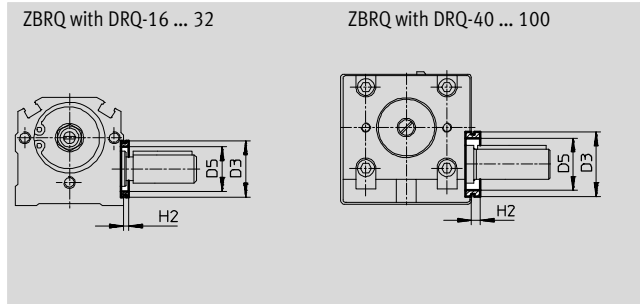
Semi-rotary drives DRQ

Accessories



Central mounting ZBRQ

Material:
Wrought aluminium alloy
Free of copper, PTFE and silicone



| Dimensions and ordering data | | | | | | |
|------------------------------|----------------------|---------------|------|-------------------|---------------|-----------------|
| For \varnothing | D3 | D5 | H2 | CRC ¹⁾ | Part No. | Type |
| [mm] | \varnothing js7 | \varnothing | max. | | | |
| 16 | 19 | 14 | 1.8 | 2 | 35 236 | ZBRQ-16 |
| 20 | 21 | 16 | 2.3 | 2 | 35 237 | ZBRQ-20 |
| 25 | 24 | 19 | 2.1 | 2 | 35 238 | ZBRQ-25 |
| 32 | 26 | 21 | 2.3 | 2 | 35 239 | ZBRQ-32 |
| 40 | 32 | 25 | 4.8 | 2 | 19 395 | ZBRQ-40 |
| 50 | 42 | 34 | 5.8 | 2 | 19 396 | ZBRQ-50 |
| 63 | 47 | 38 | 5.8 | 2 | 19 397 | ZBRQ-63 |
| 80 | 55 | 44 | 8 | 2 | 19 398 | ZBRQ-80 |
| 100 | 80 | 68 | 8 | 2 | 19 399 | ZBRQ-100 |

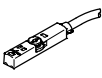
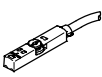
1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

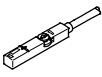


| Ordering data – One-way flow control valves | | | Technical data → Internet: grla | | |
|---|-----------------|-----------------|---------------------------------|----------------|--|
| Connection | Thread | For tubing O.D. | Material | Part No. | Type |
| | | | | | |
| | M5 | 3 | Metal design | 193 137 | GRLA-M5-QS-3-D |
| | | 4 | | 193 138 | GRLA-M5-QS-4-D |
| | G $\frac{1}{8}$ | 3 | | 193 142 | GRLA-$\frac{1}{8}$-QS-3-D |
| | | 4 | | 193 143 | GRLA-$\frac{1}{8}$-QS-4-D |
| | | 6 | | 193 144 | GRLA-$\frac{1}{8}$-QS-6-D |
| | | 8 | | 193 145 | GRLA-$\frac{1}{8}$-QS-8-D |
| | | 10 | | 193 146 | GRLA-$\frac{1}{8}$-QS-10-D |
| | G $\frac{1}{4}$ | 6 | | 193 147 | GRLA-$\frac{1}{4}$-QS-6-D |
| | | 8 | | 193 148 | GRLA-$\frac{1}{4}$-QS-8-D |
| | | 10 | | 193 149 | GRLA-$\frac{1}{4}$-QS-10-D |
| | G $\frac{3}{8}$ | 6 | | 193 149 | GRLA-$\frac{3}{8}$-QS-6-D |
| | | 8 | | 193 150 | GRLA-$\frac{3}{8}$-QS-8-D |
| | | 10 | | 193 151 | GRLA-$\frac{3}{8}$-QS-10-D |
| | G $\frac{1}{2}$ | 12 | | 193 152 | GRLA-$\frac{1}{2}$-QS-12-D |

Semi-rotary drives DRQ

Accessories

FESTO

| Ordering data – Proximity sensors for T-slot, magneto-resistive | | | | | | Technical data → Internet: smt | |
|---|--|---------------|-----------------------|------------------|----------|--------------------------------|--|
| | Type of mounting | Switch output | Electrical connection | Cable length [m] | Part No. | Type | |
| N/O contact | | | | | | | |
|  | Insertable in the slot from above, flush with cylinder profile, short design | PNP | Cable, 3-wire | 2.5 | 574335 | SMT-8M-A-PS-24V-E-2,5-OE | |
| | | | Plug M8x1, 3-pin | 0.3 | 574334 | SMT-8M-A-PS-24V-E-0,3-M8D | |
| | | | Plug M12x1, 3-pin | 0.3 | 574337 | SMT-8M-A-PS-24V-E-0,3-M12 | |
| | | NPN | Cable, 3-wire | 2.5 | 574338 | SMT-8M-A-NS-24V-E-2,5-OE | |
| | | | Plug M8x1, 3-pin | 0.3 | 574339 | SMT-8M-A-NS-24V-E-0,3-M8D | |
| N/C contact | | | | | | | |
|  | Insertable in the slot from above, flush with cylinder profile, short design | PNP | Cable, 3-wire | 7.5 | 574340 | SMT-8M-A-PO-24V-E-7,5-OE | |


| Ordering data – Proximity sensors for T-slot, magnetic reed | | | | | | Technical data → Internet: sme | |
|---|--|---------------|-----------------------|------------------|----------|--------------------------------|--|
| | Type of mounting | Switch output | Electrical connection | Cable length [m] | Part No. | Type | |
| N/O contact | | | | | | | |
|  | Insertable in the slot from above, flush with cylinder profile | Contacting | Cable, 3-wire | 2.5 | 543 862 | SME-8M-DS-24V-K-2,5-OE | |
| | | | | 5.0 | 543 863 | SME-8M-DS-24V-K-5,0-OE | |
| | | | Cable, 2-wire | 2.5 | 543 872 | SME-8M-ZS-24V-K-2,5-OE | |
| | | | Plug M8x1, 3-pin | 0.3 | 543 861 | SME-8M-DS-24V-K-0,3-M8D | |
|  | Insertable in the slot lengthwise, flush with the cylinder profile | Contacting | Cable, 3-wire | 2.5 | 150 855 | SME-8-K-LED-24 | |
| | | | Plug M8x1, 3-pin | 0.3 | 150 857 | SME-8-S-LED-24 | |
| N/C contact | | | | | | | |
|  | Insertable in the slot lengthwise, flush with the cylinder profile | Contacting | Cable, 3-wire | 7.5 | 160 251 | SME-8-O-K-LED-24 | |


| Ordering data – Slot cover for T-slot | | | | | |
|---|-----------------------|------------|----------|---------|--|
| | Mounting | Length [m] | Part No. | Type | |
|  | Insertable from above | 2x 0.5 | 151 680 | ABP-5-S | |


Semi-rotary drives DRQ


Accessories



FESTO

| Ordering data – Rectangular proximity sensor, magneto-resistive | | | | | | Technical data → Internet: smto | |
|---|-----------------|---------------|-----------------------|---------|------------------|---------------------------------|----------------------|
| | Mounting | Switch output | Electrical connection | | Cable length [m] | Part No. | Type |
| | | | Cable | M8 plug | | | |
| NO contact | | | | | | | |
|  | Via accessories | PNP | 3-wire | – | 2.5 | 151 683 | SMTO-1-PS-K-LED-24-C |
| | | | – | 3-pin | – | 151 685 | SMTO-1-PS-S-LED-24-C |
| | | NPN | 3-wire | – | 2.5 | 151 684 | SMTO-1-NS-K-LED-24-C |
| | | | – | 3-pin | – | 151 686 | SMTO-1-NS-S-LED-24-C |

| Ordering data – Rectangular proximity sensors, magnetic reed | | | | | | Technical data → Internet: smeo | |
|---|-----------------|-----------------------|---------|------------------|----------|---------------------------------|--|
| | Mounting | Electrical connection | | Cable length [m] | Part No. | Type | |
| | | Cables | M8 plug | | | | |
| NO contact | | | | | | | |
|  | Via accessories | 3-wire | – | 2.5 | 30 459 | SMEO-1-LED-24-B | |
| | | 3-wire | – | 5.0 | 151 672 | SMEO-1-LED-24-K5-B | |
| | | – | 3-pin | – | 150 848 | SMEO-1-S-LED-24-B | |

| Ordering data – Rectangular proximity sensors, pneumatic | | | | | Technical data → Internet: smpo | |
|--|-----------------|--------------------------------------|--|----------|---------------------------------|--|
| | Mounting | Pneumatic connection | | Part No. | Type | |
| 3/2-way valve, normally closed | | | | | | |
|  | Via accessories | Barbed fitting for tubing ID of 3 mm | | 31 008 | SMPO-1-H-B | |

| Ordering data – Mounting kit | | | | Technical data → Internet: smb | |
|---|---|--|--|--------------------------------|-------|
| | Mounting | | | Part No. | Type |
|  | For cylinder with tie rod \varnothing 6 mm or profile mounting rail | | | 11 886 | SMB-1 |

| Ordering data – Connecting cables | | | | | Technical data → Internet: nebu | |
|---|-------------------------------|------------------------------|------------------|----------|---------------------------------|--|
| | Electrical connection, left | Electrical connection, right | Cable length [m] | Part No. | Type | |
|  | Straight socket, M8x1, 3-pin | Cable, open end, 3-wire | 2.5 | 541 333 | NEBU-M8G3-K-2.5-LE3 | |
| | | | 5 | 541 334 | NEBU-M8G3-K-5-LE3 | |
| | Straight socket, M12x1, 5-pin | Cable, open end, 3-wire | 2.5 | 541 363 | NEBU-M12G5-K-2.5-LE3 | |
| | | | 5 | 541 364 | NEBU-M12G5-K-5-LE3 | |
|  | Angled socket, M8x1, 3-pin | Cable, open end, 3-wire | 2.5 | 541 338 | NEBU-M8W3-K-2.5-LE3 | |
| | | | 5 | 541 341 | NEBU-M8W3-K-5-LE3 | |
| | Angled socket, M12x1, 5-pin | Cable, open end, 3-wire | 2.5 | 541 367 | NEBU-M12W5-K-2.5-LE3 | |
| | | | 5 | 541 370 | NEBU-M12W5-K-5-LE3 | |