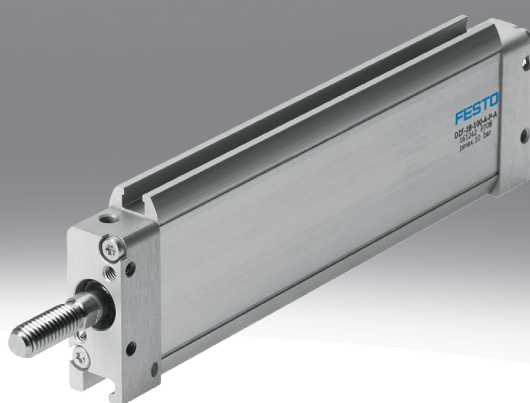


Flat cylinder, inches DZF

**FESTO**



## Characteristics

### At a glance

Link [dzf](#)

For high packing density with block mounting: Double-acting cylinder with adjustable cushioning and protection against torsion with oval piston.

- Protected against rotation thanks to special piston shape
- Extremely flat design
- Ideal for block mounting
- Wide variety of mounting and assembly options

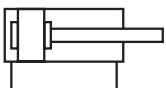
### Piston rod thread type

[A] Male thread



### Cushioning

[P] Elastic cushioning rings/plates on both sides



The drive is fitted with elastic polymer end-position cushioning.

Benefits:

- No adjustment required
- Saves time

### Position sensing

[A] For proximity sensor

By using proximity switches, any position can be detected.

## Type code

| 001 | Series                       |  |
|-----|------------------------------|--|
| DZF | Flat cylinder, double-acting |  |

| 002    | Piston diameter [„] |  |
|--------|---------------------|--|
| 1/2“   | 1/2“                |  |
| 11/16“ | 11/16“              |  |
| 1“     | 1“                  |  |
| 1 1/4“ | 1 1/4“              |  |
| 1 5/8“ | 1 5/8“              |  |
| 2“     | 2“                  |  |
| 2 1/2“ | 2 1/2“              |  |

| 003 | Stroke [„]  |  |
|-----|-------------|--|
| ... | 0.04 ... 13 |  |

| 004 | Piston rod thread type |  |
|-----|------------------------|--|
| A   | Male thread            |  |

| 005 | Cushioning                                    |  |
|-----|-----------------------------------------------|--|
| P   | Elastic cushioning rings/plates on both sides |  |

| 006 | Position sensing     |  |
|-----|----------------------|--|
| A   | For proximity sensor |  |

## Datasheet

## General technical data

| General technical data              |                                                  |                                |                              |                                |                                |                              |                                |
|-------------------------------------|--------------------------------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------------|------------------------------|--------------------------------|
| Piston diameter                     | 1/2", Equivalent di-<br>ameter                   | 11/16", Equivalent<br>diameter | 1", Equivalent di-<br>ameter | 1 1/4", Equivalent<br>diameter | 1 5/8", Equivalent<br>diameter | 2", Equivalent di-<br>ameter | 2 1/2", Equivalent<br>diameter |
| Stroke                              | 0.04 ... 8 in                                    |                                |                              | 0.04 ... 13 in                 |                                |                              |                                |
| Pneumatic connection                | 10-32 UNF-2B                                     |                                |                              | 1/8 NPT                        |                                | 1/4 NPT                      |                                |
| Piston rod thread                   | 10-32 UNF-2A                                     | 5/16-24 UNF-2A                 | 3/8-24 UNF-2A                |                                | 1/2-20 UNF-2A                  | 5/8-18 UNF-2A                |                                |
| Design                              | Piston<br>Piston rod                             |                                |                              |                                |                                |                              |                                |
| Protection against torque/<br>guide | Oval piston                                      |                                |                              |                                |                                |                              |                                |
| Mode of operation                   | Double-acting                                    |                                |                              |                                |                                |                              |                                |
| Cushioning                          | Elastic cushioning rings/plates at both ends     |                                |                              |                                |                                |                              |                                |
| Position detection <sup>1)</sup>    | Via proximity switch                             |                                |                              |                                |                                |                              |                                |
| Variants                            | Piston rod at one end                            |                                |                              |                                |                                |                              |                                |
| Type of mounting                    | Either:<br>Via female thread<br>With accessories |                                |                              |                                |                                |                              |                                |
| Mounting position                   | optional                                         |                                |                              |                                |                                |                              |                                |

<sup>1)</sup> Please note that, when positioning cylinders in series, the stray fields from the switching magnets can result in incorrect switching.

## Operating and environmental conditions

| Piston diameter                                 | 1/2", Equivalent di-<br>ameter                                                             | 11/16", Equivalent<br>diameter | 1", Equivalent di-<br>ameter | 1 1/4", Equivalent<br>diameter | 1 5/8", Equivalent<br>diameter | 2", Equivalent di-<br>ameter | 2 1/2", Equivalent<br>diameter |
|-------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------------|------------------------------|--------------------------------|
| Operating medium                                | Compressed air to ISO 8573-1:2010 [7:4:4]                                                  |                                |                              |                                |                                |                              |                                |
| Note on operating and pilot<br>medium           | Lubricated operation possible (in which case lubricated operation will always be required) |                                |                              |                                |                                |                              |                                |
| Operating pressure                              | 0.16 ... 1 MPa                                                                             | 0.1 ... 1 MPa                  |                              |                                |                                |                              |                                |
| Operating pressure                              | 1.6 ... 10 bar                                                                             | 1 ... 10 bar                   |                              |                                |                                |                              |                                |
| Operating pressure                              | 23.2 ... 145 psi                                                                           | 14.5 ... 145 psi               |                              |                                |                                |                              |                                |
| Ambient temperature <sup>1)</sup>               | -4 ... 176°F                                                                               |                                |                              |                                |                                |                              |                                |
| Corrosion resistance class<br>CRC <sup>2)</sup> | 2 - Moderate corrosion stress                                                              |                                |                              |                                |                                |                              |                                |

<sup>1)</sup> Observe the application range of the proximity switches

<sup>2)</sup> More information [www.festo.com/x/topic/kbk](http://www.festo.com/x/topic/kbk)

## Forces and impact energy

| Piston diameter                                                 | 1/2", Equivalent diameter | 11/16", Equivalent diameter | 1", Equivalent diameter | 1 1/4", Equivalent diameter | 1 5/8", Equivalent diameter | 2", Equivalent diameter | 2 1/2", Equivalent diameter |
|-----------------------------------------------------------------|---------------------------|-----------------------------|-------------------------|-----------------------------|-----------------------------|-------------------------|-----------------------------|
| Theoretical force at 0.6 MPa<br>(6 bar, 87 psi), advance stroke | 15.3 lbf                  | 34.4 lbf                    | 66.3 lbf                | 108.6 lbf                   | 169.5 lbf                   | 264.8 lbf               | 420.4 lbf                   |
| Theoretical force at 0.6 MPa<br>(6 bar, 87 psi), return stroke  | 11.5 lbf                  | 27.7 lbf                    | 55.5 lbf                | 93.3 lbf                    | 142.3 lbf                   | 222.6 lbf               | 378.1 lbf                   |
| Impact energy in end positions                                  | 0.066 ft-lbf              | 0.074 ft-lbf                |                         | 0.295 ft-lbf                | 0.38 ft-lbf                 | 0.47 ft-lbf             | 0.52 ft-lbf                 |

## Torque and angle of rotation

| Piston diameter                                             | 1/2", Equivalent diameter | 11/16", Equivalent diameter | 1", Equivalent diameter | 1 1/4", Equivalent diameter | 1 5/8", Equivalent diameter | 2", Equivalent diameter | 2 1/2", Equivalent diameter |
|-------------------------------------------------------------|---------------------------|-----------------------------|-------------------------|-----------------------------|-----------------------------|-------------------------|-----------------------------|
| Max. torque for protection<br>against torsion <sup>1)</sup> | 0.876 lbf-in              | 1.77 lbf-in                 | 4.417 lbf-in            | 7.081 lbf-in                | 8.851 lbf-in                | 10.621 lbf-in           | 13.276 lbf-in               |
| Torsional backlash at piston<br>rod +/-                     | 2.5 deg                   | 1.2 deg                     | 1 deg                   | 0.8 deg                     | 0.6 deg                     | 0.5 deg                 | 0.4 deg                     |

<sup>1)</sup> The max. torque must not be exceeded even when attaching mounting components to the piston rod

## Datasheet

**Weight**

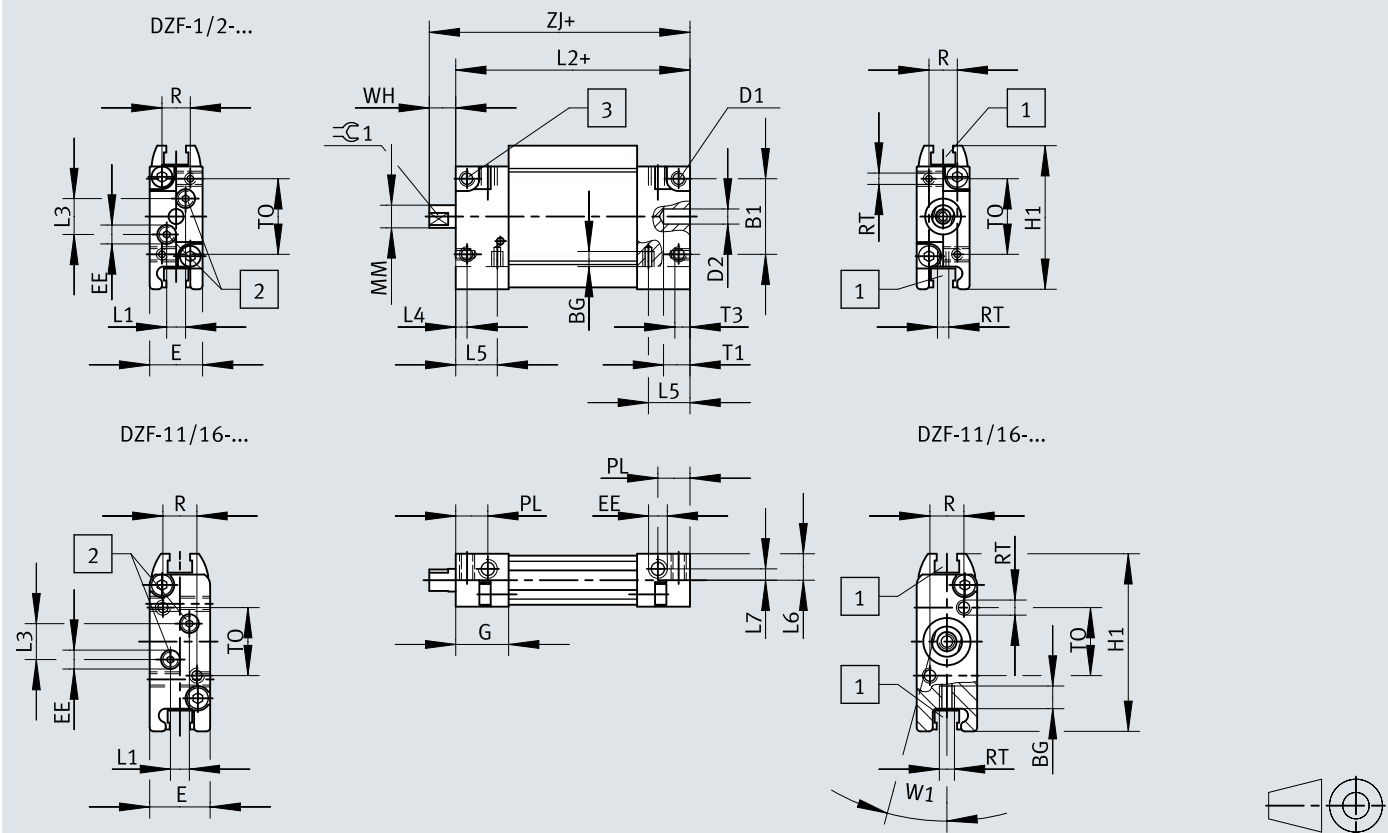
| Piston diameter                          | 1/2", Equivalent diameter | 11/16", Equivalent diameter | 1", Equivalent diameter | 1 1/4", Equivalent diameter | 1 5/8", Equivalent diameter | 2", Equivalent diameter | 2 1/2", Equivalent diameter |
|------------------------------------------|---------------------------|-----------------------------|-------------------------|-----------------------------|-----------------------------|-------------------------|-----------------------------|
| Basic weight with 0 inch stroke          | 3.39 oz                   | 3.77 oz                     | 5.93 oz                 | 9.59 oz                     | 16.93 oz                    | 30.12 oz                | 48.64 oz                    |
| Additional weight per 1 inch stroke      | 0.81 oz                   | 1.16 oz                     | 1.61 oz                 | 2.15 oz                     | 3.58 oz                     | 5.73 oz                 | 8.15 oz                     |
| Moving mass at 0 inch stroke             | 0.42 oz                   | 0.85 oz                     | 1.41 oz                 | 2.29 oz                     | 4.23 oz                     | 7.72 oz                 | 11.89 oz                    |
| Additional moving mass per 1 inch stroke | 0.18 oz                   | 0.36 oz                     | 0.54 oz                 | 0.81 oz                     | 1.43 oz                     | 2.24 oz                 |                             |

**Materials**

| Piston diameter        | 1/2", Equivalent di-<br>ameter   | 11/16", Equivalent<br>diameter | 1", Equivalent di-<br>ameter                      | 1 1/4", Equivalent<br>diameter | 1 5/8", Equivalent<br>diameter | 2", Equivalent di-<br>ameter | 2 1/2", Equivalent<br>diameter |
|------------------------|----------------------------------|--------------------------------|---------------------------------------------------|--------------------------------|--------------------------------|------------------------------|--------------------------------|
| Material housing       | Anodised wrought aluminium alloy |                                |                                                   |                                |                                |                              |                                |
| Material cover         | Wrought aluminium alloy          |                                | Die-cast aluminium,<br>Wrought aluminium<br>alloy | Die-cast aluminium             |                                |                              |                                |
| Material piston rod    | High-alloy stainless steel       |                                |                                                   | High-alloy steel               |                                |                              |                                |
| Material piston seal   | NBR                              |                                |                                                   |                                |                                |                              |                                |
| Material seals         | NBR<br>TPE-U(PU)                 |                                | HNBR<br>TPE-U(PU)                                 |                                | NBR<br>TPE-U(PU)               |                              |                                |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L                |                                |                                                   |                                |                                |                              |                                |

# Dimensions

## Dimensions – Flat cylinder DZF-1/2" ... 11/16"

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


- [1] Mounting slot for proximity switch
- [2] Additional compressed air connections, sealed with blanking plugs
- [3] Observe max. tightening torque
- [4] + = plus stroke length

|           | B1   | BG   | D1             | D2<br>ø<br>H9 | E    | EE              | G<br>+0.2 | H1   | L1   | L2   | L3   | L4   | L5   | L6   |
|-----------|------|------|----------------|---------------|------|-----------------|-----------|------|------|------|------|------|------|------|
| DZF-1/2   | 0.79 | 0.16 | 8-32<br>UNC-2B | 0.16          | 0.55 | 10-32<br>UNF-2B | 0.55      | 1.50 | 0.20 | 2.44 | 0.37 | 0.12 | 0.43 | 0.28 |
| DZF-11/16 | 0.79 | 0.24 | 8-32<br>UNC-2B | 0.16          | 0.63 | 10-32<br>UNF-2B | 0.55      | 1.85 | 0.20 | 2.44 | 0.37 | 0.14 | 0.20 | 0.31 |

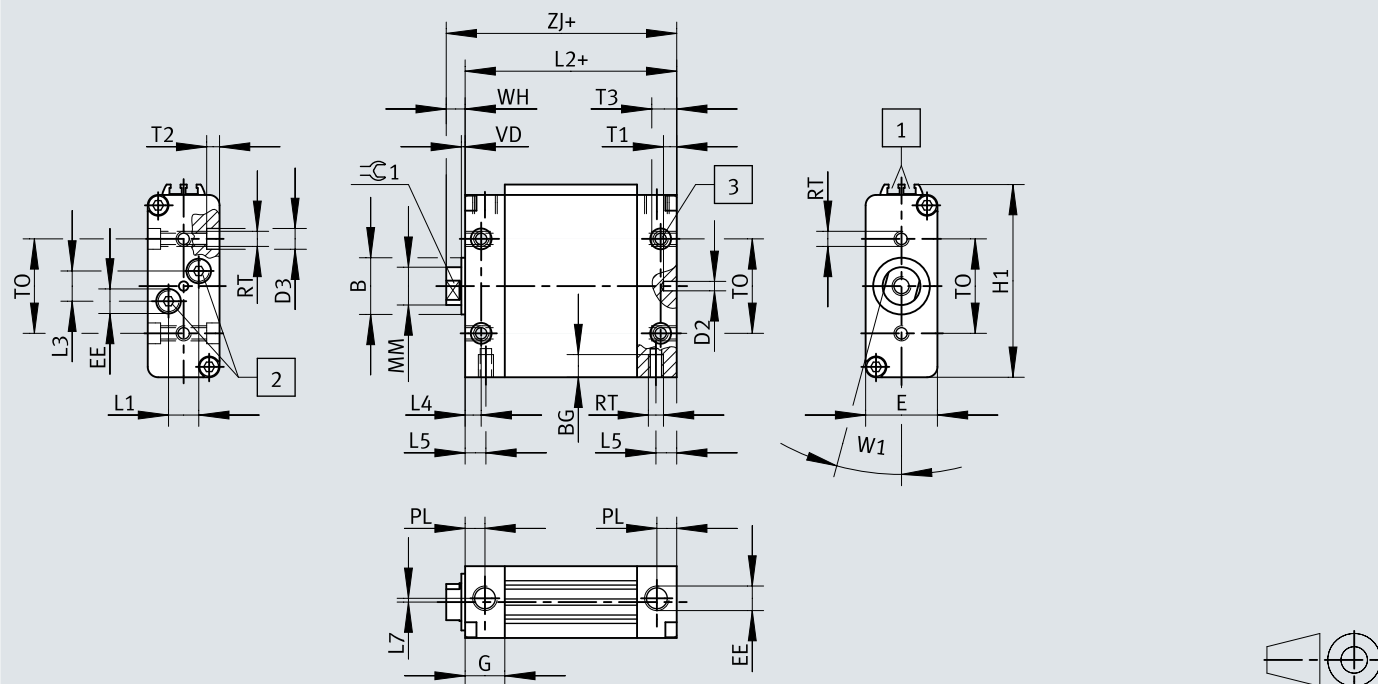
  

|           | L7   | MM<br>ø | PL   | R    | RT             | T1   | T3   | T0   | WH   | W1<br>±1 | ZJ   | ⌀1<br>h13 | 1)                     |
|-----------|------|---------|------|------|----------------|------|------|------|------|----------|------|-----------|------------------------|
| DZF-1/2   | 0.12 | 0.24    | 0.33 | 0.30 | 4-48<br>UNF-2B | 0.28 | 0.16 | 0.79 | 0.28 | 15°      | 2.72 | 3/16      | 7.1/25.7 <sup>2)</sup> |
| DZF-11/16 | 0.10 | 0.31    | 0.33 | 0.35 | 8-32<br>UNC-2B | 0.28 | 0.35 | 0.71 | 0.28 | 15°      | 2.72 | 9/32      | 25.7                   |

- 1) Max. tightening torque [lbf-in] +10%
- 2) For 4-48 UNF-2B/8-32 UNC-2B

## Dimensions

Dimensions – Flat cylinder DZF-1" ... 2 1/2"

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

- [1] Mounting slot for proximity switch  
 [2] Additional compressed air connections, sealed with blanking plugs  
 [3] Observe max. tightening torque  
 [4] + = plus stroke length

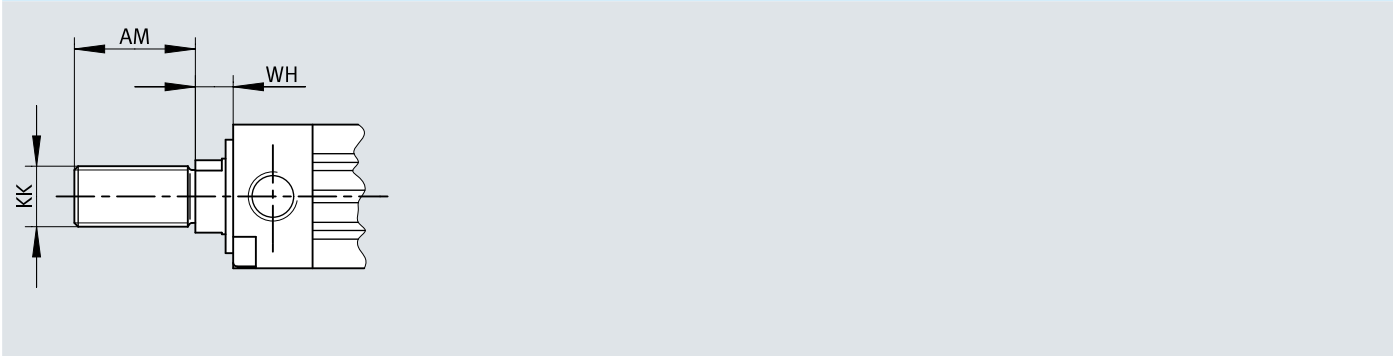
|           | B<br>ø<br>h9 | BG   | D2<br>ø<br>H9 | D3<br>ø | E    | EE              | G<br>+0.2 | H1   | L1   | L2   | L3   | L4   | L5   | L7   |
|-----------|--------------|------|---------------|---------|------|-----------------|-----------|------|------|------|------|------|------|------|
| DZF-1     | 0.63         | 0.31 | 0.16          | 0.31    | 0.79 | 10-32<br>UNF-2B | 0.47      | 2.20 | 0.24 | 2.44 | 0.39 | 0.20 | 0.20 | 0.04 |
| DZF-1 1/4 | 0.79         | 0.35 | 0.16          | 0.39    | 0.94 | 1/8<br>NPT      | 0.67      | 2.56 | 0.30 | 2.83 | 0.57 | 0.33 | 0.33 | 0.06 |
| DZF-1 5/8 | 0.98         | 0.35 | 0.16          | 0.39    | 1.18 | 1/8<br>NPT      | 0.67      | 3.23 | 0.30 | 2.99 | 0.57 | 0.33 | 0.33 | –    |
| DZF-2     | 1.18         | 0.47 | 0.20          | 0.43    | 1.50 | 1/4<br>NPT      | 0.83      | 4.02 | 0.63 | 3.23 | 0.63 | 0.33 | 0.33 | –    |
| DZF-2 1/2 | 1.18         | 0.55 | 0.20          | 0.59    | 1.97 | 1/4<br>NPT      | 0.83      | 4.98 | 0.83 | 3.23 | 0.75 | 0.33 | 0.33 | –    |

|           | MM<br>ø | PL   | RT                | T1   | T2   | T3   | T0   | VD   | W1<br>±1 | WH   | ZJ   | ⌀1<br>h13 | 1)   |
|-----------|---------|------|-------------------|------|------|------|------|------|----------|------|------|-----------|------|
| DZF-1     | 0.39    | 0.24 | 10-24<br>UNC-2B   | 0.28 | 0.16 | 0.31 | 0.98 | 0.08 | 15°      | 0.31 | 2.76 | 11/32     | 35.4 |
| DZF-1 1/4 | 0.47    | 0.33 | 1/4-20<br>UNC-2B  | 0.28 | 0.16 | 0.35 | 1.26 | 0.08 | 15°      | 0.31 | 3.15 | 3/8       | 87.6 |
| DZF-1 5/8 | 0.63    | 0.33 | 1/4-20<br>UNC-2B  | 0.28 | 0.20 | 0.35 | 1.57 | 0.08 | 15°      | 0.35 | 3.35 | 1/2       | 87.6 |
| DZF-2     | 0.79    | 0.41 | 5/16-18<br>UNC-2B | 0.28 | 0.24 | 0.47 | 1.97 | 0.08 | 15°      | 0.39 | 3.62 | 11/16     | 177  |
| DZF-2 1/2 | 0.79    | 0.41 | 3/8-16<br>UNC-2B  | 0.28 | 0.24 | 0.55 | 2.36 | 0.08 | 15°      | 0.39 | 3.62 | 11/16     | 310  |

1) Max. tightening torque [lb·in] +10%

Dimensions

Dimensions – Flat cylinder DZF-...-A-... – with male thread [Download CAD data](#) [www.festo.com](http://www.festo.com)

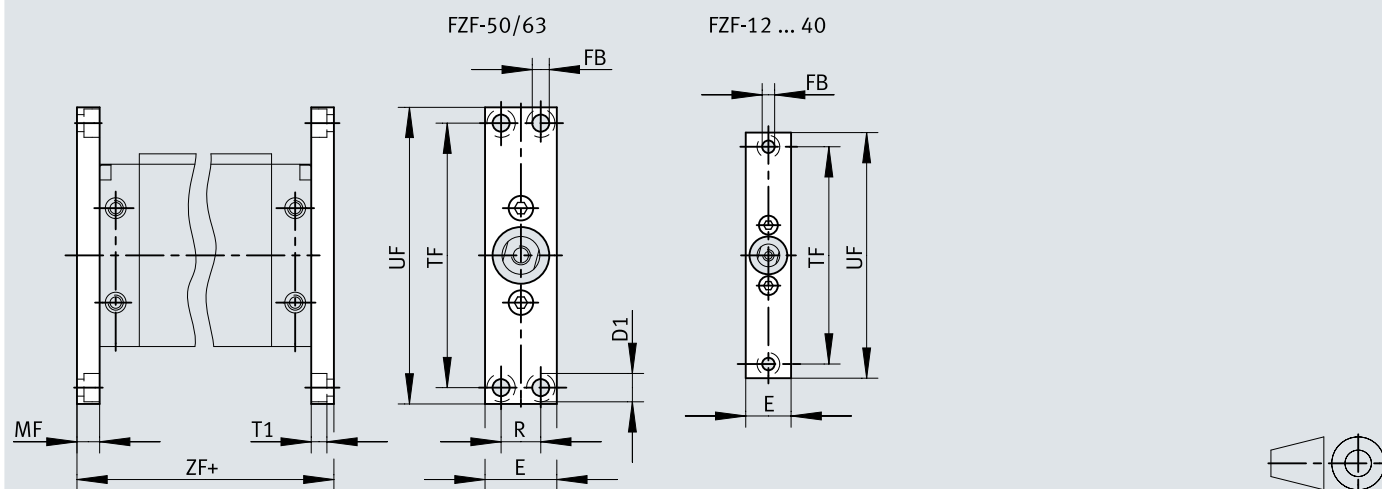


|           | AM   | KK             | WH   |
|-----------|------|----------------|------|
| DZF-1/2   | 0.63 | 10-32 UNF-2A   | 0.28 |
| DZF-11/16 | 0.79 | 5/16-24 UNF-2A | 0.28 |
| DZF-1     | 0.87 | 3/8-24 UNF-2A  | 0.31 |
| DZF-1 1/4 | 0.87 | 3/8-24 UNF-2A  | 0.31 |
| DZF-1 5/8 | 0.94 | 1/2-20 UNF-2A  | 0.35 |
| DZF-2     | 1.26 | 5/8-18 UNF-2A  | 0.39 |
| DZF-2 1/2 | 1.26 | 5/8-18 UNF-2A  | 0.39 |



## Dimensions

### Dimensions – Flange mounting FZF

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


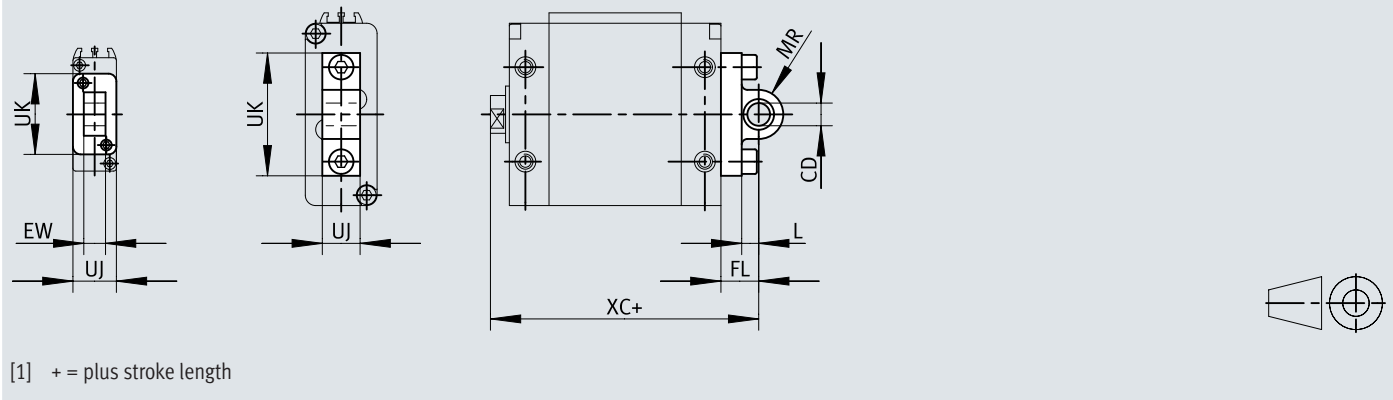
[1] + = plus stroke length

|           | D1<br>ø | E    | FB<br>ø | MF   | R    | T1   | TF   | UF   | ZF   |
|-----------|---------|------|---------|------|------|------|------|------|------|
| FZF-1/2   | 0.31    | 0.55 | 0.18    | 0.31 | –    | 0.18 | 2.95 | 3.54 | 3.07 |
| FZF-11/16 | 0.31    | 0.63 | 0.18    | 0.31 | –    | 0.18 | 3.15 | 3.70 | 3.07 |
| FZF-1     | 0.39    | 0.79 | 0.22    | 0.39 | –    | 0.22 | 3.94 | 4.41 | 3.23 |
| FZF-1 1/4 | 0.43    | 0.94 | 0.26    | 0.39 | –    | 0.26 | 4.53 | 5.12 | 3.62 |
| FZF-1 5/8 | 0.43    | 1.18 | 0.26    | 0.39 | –    | 0.25 | 5.20 | 5.75 | 3.78 |
| FZF-2     | 0.59    | 1.50 | 0.35    | 0.47 | 0.83 | 0.33 | 5.51 | 6.18 | 4.17 |
| FZF-2 1/2 | 0.59    | 1.97 | 0.35    | 0.59 | 1.30 | 0.33 | 5.51 | 6.18 | 4.41 |

Dimensions

Dimensions – Swivel flange SZF [Download CAD data](http://www.festo.com) [www.festo.com](http://www.festo.com)

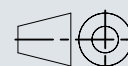
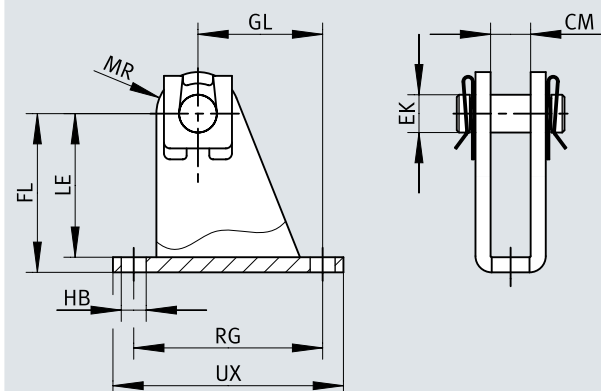
SZF-1/2 ... 11/16      SZF-1 ... 2-1/2



|           | CD<br>∅<br>H9 | EW<br>h12 | FL   | L    | MR   | UJ   | UK   | XC   |
|-----------|---------------|-----------|------|------|------|------|------|------|
| SZF-1/2   | 0.31          | 0.28      | 0.63 | 0.51 | 0.28 | 0.55 | 1.02 | 3.35 |
| SZF-11/16 | 0.31          | 0.28      | 0.71 | 0.59 | 0.28 | 0.63 | 1.02 | 3.43 |
| SZF-1     | 0.31          | 0.35      | 0.55 | 0.31 | 0.30 | 0.35 | 1.46 | 3.31 |
| SZF-1 1/4 | 0.39          | 0.41      | 0.59 | 0.24 | 0.39 | 0.41 | 1.73 | 3.74 |
| SZF-1 5/8 | 0.47          | 0.41      | 0.71 | 0.35 | 0.51 | 0.41 | 2.05 | 4.06 |
| SZF-2     | 0.47          | 0.79      | 0.79 | 0.35 | 0.51 | 0.79 | 2.56 | 4.41 |
| SZF-2 1/2 | 0.63          | 0.98      | 0.94 | 0.51 | 0.67 | 0.98 | 3.07 | 4.57 |

## Dimensions

### Dimensions – Clevis foot LZF

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


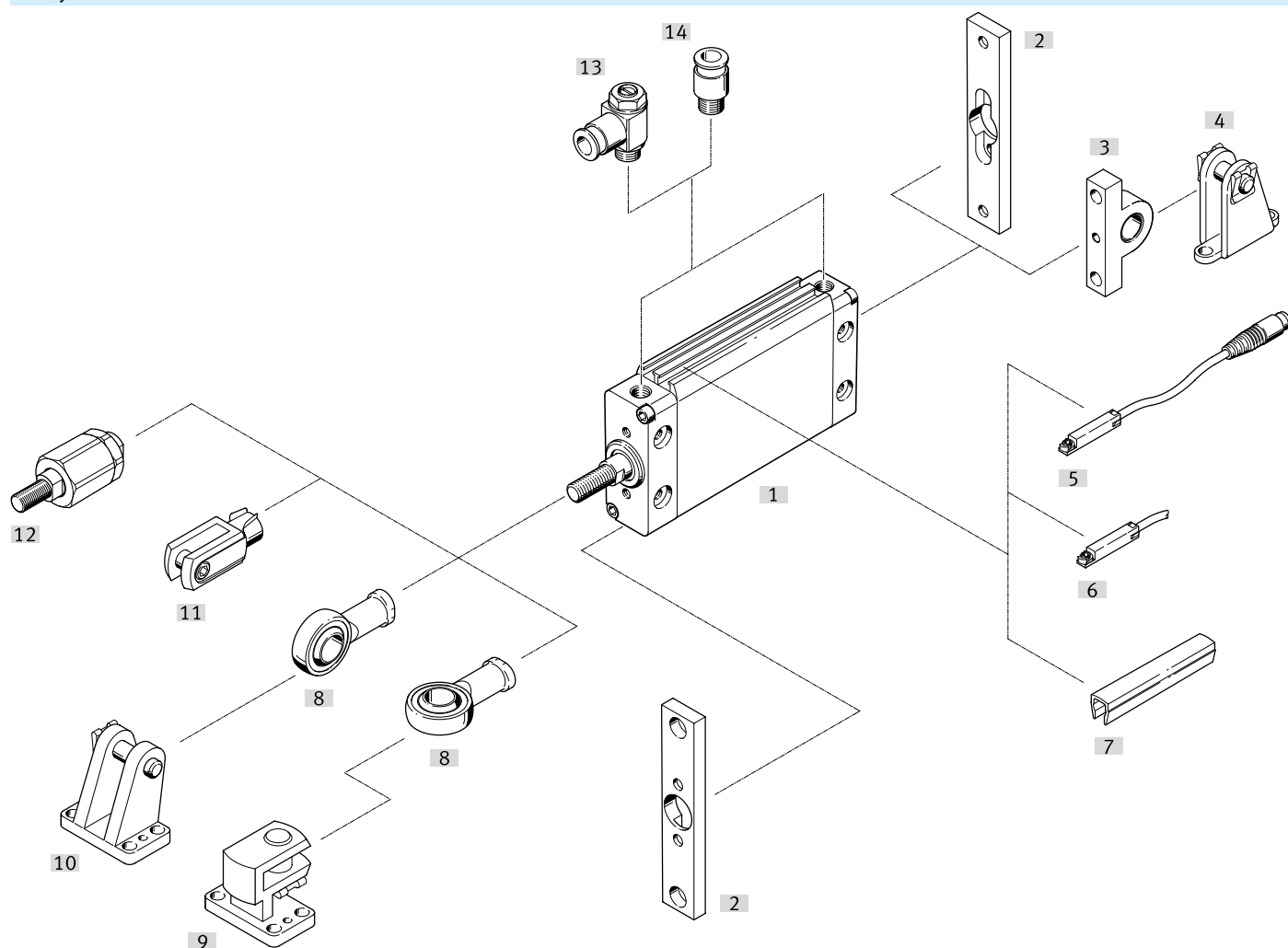
|           | CM   | EK<br>Ø<br>H8 | FL<br>+0.02/-0.01 | GL   | HB<br>Ø | LE   | MR   | RG   | UX   |
|-----------|------|---------------|-------------------|------|---------|------|------|------|------|
| LZF-12/18 | 0.28 | 0.31          | 1.26              | 0.71 | 0.18    | 1.14 | 0.31 | 1.18 | 1.46 |
| LZF-25    | 0.36 | 0.31          | 1.38              | 1.00 | 0.22    | 1.26 | 0.37 | 1.57 | 1.93 |
| LZF-32    | 0.42 | 0.39          | 1.65              | 1.30 | 0.26    | 1.50 | 0.43 | 1.97 | 2.36 |
| LZF-40    | 0.42 | 0.47          | 2.01              | 1.16 | 0.26    | 1.85 | 0.55 | 1.97 | 2.36 |
| LZF-50    | 0.79 | 0.47          | 2.17              | 0.94 | 0.35    | 1.97 | 0.55 | 1.18 | 1.81 |
| LZF-63    | 0.99 | 0.63          | 2.68              | 1.26 | 0.43    | 2.48 | 0.71 | 1.57 | 2.36 |

Ordering data

| Flat cylinder DZF-...                                                             |                             |                     |          |                    |
|-----------------------------------------------------------------------------------|-----------------------------|---------------------|----------|--------------------|
|                                                                                   | Piston diameter             | Stroke              | Part no. | Type               |
|  | 1/2", Equivalent diameter   | 0.04 ... 8.0000 in  | 162972   | DZF-1/2"- -A-P-A   |
|                                                                                   | 11/16", Equivalent diameter |                     | 162973   | DZF-11/16"- -A-P-A |
|                                                                                   | 1", Equivalent diameter     |                     | 162974   | DZF-1"- -A-P-A     |
|                                                                                   | 1 1/4", Equivalent diameter | 0.04 ... 13.0000 in | 162975   | DZF-1 1/4"- -A-P-A |
|                                                                                   | 1 5/8", Equivalent diameter |                     | 162976   | DZF-1 5/8"- -A-P-A |
|                                                                                   | 2", Equivalent diameter     |                     | 162977   | DZF-2"- -A-P-A     |
|                                                                                   | 2 1/2", Equivalent diameter |                     | 162978   | DZF-2 1/2"- -A-P-A |
|                                                                                   |                             |                     |          |                    |

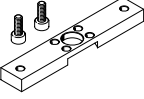
## Peripherals

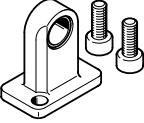
### Flat cylinder DZF



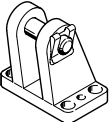
| Accessories                          |                                                                          |  | → Link              |
|--------------------------------------|--------------------------------------------------------------------------|--|---------------------|
| Type/order code                      | Description                                                              |  |                     |
| [1] Flat cylinder DZF                | Double-acting                                                            |  | <a href="#">dzf</a> |
| [2] Flange mounting FZF              | For bearing and end caps                                                 |  | <a href="#">14</a>  |
| [3] Swivel flange SZF                | For end cap                                                              |  | <a href="#">14</a>  |
| [4] Clevis foot LZF                  | -                                                                        |  | <a href="#">14</a>  |
| [5] Proximity switch SME-8           | Can be integrated into the cylinder profile barrel                       |  | <a href="#">15</a>  |
| [6] Proximity switch SMT-8           | Can be integrated into the cylinder profile barrel                       |  | <a href="#">15</a>  |
| [7] Slot cover ABP-5-S               | For protecting the sensor cables and the sensor slots from contamination |  | <a href="#">16</a>  |
| [8] Rod eye SGS                      | With spherical bearing                                                   |  | <a href="#">15</a>  |
| [9] Right-angle clevis foot LQG      | -                                                                        |  | <a href="#">14</a>  |
| [10] Clevis foot LBG                 | -                                                                        |  | <a href="#">14</a>  |
| [11] Rod clevis SG                   | Permits a swivelling movement of the cylinder in one plane               |  | <a href="#">15</a>  |
| [12] Self-aligning rod coupler FK    | To compensate for radial and angular deviations                          |  | <a href="#">15</a>  |
| [13] One-way flow control valve GRLA | For regulating speed                                                     |  | <a href="#">17</a>  |
| [14] Push-in fitting QS              | For bearing and end caps                                                 |  | <a href="#">qs</a>  |

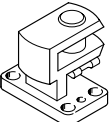
## Accessories

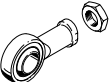
| Foot mounting FZF                                                                |              |                                  |                   |                |          |            |
|----------------------------------------------------------------------------------|--------------|----------------------------------|-------------------|----------------|----------|------------|
|                                                                                  | Description  | Material mounting                | Note on materials | Product weight | Part no. | Type       |
|  | For Ø 1/2"   | Anodised wrought aluminium alloy | RoHS-compliant    | 0.81 oz        | 546553   | FZF-1/2"   |
|                                                                                  | For Ø 11/16" |                                  |                   | 0.99 oz        | 546554   | FZF-11/16" |
|                                                                                  | For Ø 1"     |                                  |                   | 1.97 oz        | 546555   | FZF-1"     |
|                                                                                  | For Ø 1 1/4" |                                  |                   | 2.75 oz        | 546556   | FZF-1 1/4" |
|                                                                                  | For Ø 1 5/8" |                                  |                   | 3.84 oz        | 546557   | FZF-1 5/8" |
|                                                                                  | For Ø 2"     |                                  |                   | 5.89 oz        | 546558   | FZF-2"     |
|                                                                                  | For Ø 2 1/2" |                                  |                   | 10.54 oz       | 546559   | FZF-2 1/2" |

| Swivel flange SZF                                                                |              |                            |                   |                |          |            |
|----------------------------------------------------------------------------------|--------------|----------------------------|-------------------|----------------|----------|------------|
|                                                                                  | Description  | Material mounting          | Note on materials | Product weight | Part no. | Type       |
|  | For Ø 1/2"   | High-alloy stainless steel | RoHS-compliant    | 0.7 oz         | 546567   | SZF-1/2"   |
|                                                                                  | For Ø 11/16" |                            |                   | 0.88 oz        | 546568   | SZF-11/16" |
|                                                                                  | For Ø 1"     |                            |                   | 1.06 oz        | 546569   | SZF-1"     |
|                                                                                  | For Ø 1 1/4" |                            |                   | 1.94 oz        | 546570   | SZF-1 1/4" |
|                                                                                  | For Ø 1 5/8" |                            |                   | 2.64 oz        | 546571   | SZF-1 5/8" |
|                                                                                  | For Ø 2"     |                            |                   | 6.7 oz         | 546572   | SZF-2"     |
|                                                                                  | For Ø 2 1/2" |                            |                   | 11.98 oz       | 546573   | SZF-2 1/2" |

| Clevis foot LZF                                                                    |                   |                   |  |                |          |           |
|------------------------------------------------------------------------------------|-------------------|-------------------|--|----------------|----------|-----------|
|                                                                                    | Description       | Material mounting |  | Product weight | Part no. | Type      |
|  | For Ø 1/2, 11/16" | Galvanised steel  |  | 1.59 oz        | 163962   | LZF-12/18 |
|                                                                                    | For Ø 1"          |                   |  | 2.26 oz        | 163963   | LZF-25    |
|                                                                                    | For Ø 1 1/4"      |                   |  | 4.33 oz        | 163964   | LZF-32    |
|                                                                                    | For Ø 1 5/8"      |                   |  | 5.74 oz        | 163965   | LZF-40    |
|                                                                                    | For Ø 2"          |                   |  | 8.67 oz        | 163966   | LZF-50    |
|                                                                                    | For Ø 2 1/2"      |                   |  | 14.55 oz       | 163967   | LZF-63    |

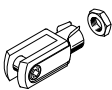
| Clevis foot LBG                                                                    |              |                         |                   |                |          |        |
|------------------------------------------------------------------------------------|--------------|-------------------------|-------------------|----------------|----------|--------|
|                                                                                    | Description  | Material mounting       | Note on materials | Product weight | Part no. | Type   |
|  | For Ø 1 1/4" | Stainless steel casting | RoHS-compliant    | 7.75 oz        | 31761    | LBG-32 |
|                                                                                    | For Ø 1 5/8" |                         |                   | 10.57 oz       | 31762    | LBG-40 |
|                                                                                    | For Ø 2"     |                         |                   | 19.03 oz       | 31763    | LBG-50 |
|                                                                                    | For Ø 2 1/2" |                         |                   | 20.44 oz       | 31764    | LBG-63 |

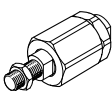
| Clevis foot transverse LQG                                                         |              |                               |                   |                |          |        |
|------------------------------------------------------------------------------------|--------------|-------------------------------|-------------------|----------------|----------|--------|
|                                                                                    | Description  | Material mounting             | Note on materials | Product weight | Part no. | Type   |
|  | For Ø 1 1/4" | Stainless steel casting       | RoHS-compliant    | 10.61 oz       | 31768    | LQG-32 |
|                                                                                    | For Ø 1 5/8" |                               |                   | 13 oz          | 31769    | LQG-40 |
|                                                                                    | For Ø 2"     |                               |                   | 24.88 oz       | 31770    | LQG-50 |
|                                                                                    | For Ø 2 1/2" | Spheroidal graphite cast iron |                   | 27.63 oz       | 31771    | LQG-63 |

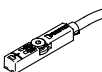
| Rod eye SGS                                                                        |             |                  |                   |                |          |           |
|------------------------------------------------------------------------------------|-------------|------------------|-------------------|----------------|----------|-----------|
|                                                                                    | Description | Material housing | Note on materials | Product weight | Part no. | Type      |
|  | For Ø 1/2"  | Galvanised steel | RoHS-compliant    | 0.74 oz        | 532694   | SGS-10-32 |

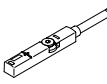
## Accessories

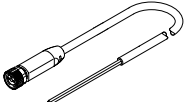
| Rod eye SGS                                                                       |                 |                  |                   |                |          |             |
|-----------------------------------------------------------------------------------|-----------------|------------------|-------------------|----------------|----------|-------------|
|                                                                                   | Description     | Material housing | Note on materials | Product weight | Part no. | Type        |
|  | For Ø 11/16"    | Galvanised steel | RoHS-compliant    | 1.87 oz        | 532695   | SGS-5/16-24 |
|                                                                                   | For Ø 1, 1 1/4" |                  |                   | 3.07 oz        | 532696   | SGS-3/8-24  |
|                                                                                   | For Ø 1 5/8"    |                  |                   | 4.55 oz        | 532697   | SGS-1/2-20  |
|                                                                                   | For Ø 2, 2 1/2" |                  |                   | 9.13 oz        | 532698   | SGS-5/8-18  |

| Rod clevis SG                                                                     |                 |                   |                   |                |          |                 |
|-----------------------------------------------------------------------------------|-----------------|-------------------|-------------------|----------------|----------|-----------------|
|                                                                                   | Description     | Material clevis   | Note on materials | Product weight | Part no. | Type            |
|  | For Ø 1, 1 1/4" | Steel, Galvanised | RoHS-compliant    | 3.7 oz         | 546540   | SG-UNF3/8"-24-B |
|                                                                                   | For Ø 1 5/8"    |                   |                   | 5.81 oz        | 546545   | SG-UNF1/2"-20-B |
|                                                                                   | For Ø 2, 2 1/2" |                   |                   | 13.57 oz       | 546575   | SG-UNF5/8"-18-B |

| Self-aligning rod coupler FK                                                      |                 |                  |                   |                |          |            |
|-----------------------------------------------------------------------------------|-----------------|------------------|-------------------|----------------|----------|------------|
|                                                                                   | Description     | Material housing | Note on materials | Product weight | Part no. | Type       |
|  | For Ø 1/2"      | Galvanised steel | RoHS-compliant    | 0.53 oz        | 532703   | FK-10-32   |
|                                                                                   | For Ø 11/16"    |                  |                   | 1.76 oz        | 532704   | FK-5/16-24 |
|                                                                                   | For Ø 1, 1 1/4" |                  |                   | 7.4 oz         | 532705   | FK-3/8-24  |
|                                                                                   | For Ø 1 5/8"    |                  |                   | 7.58 oz        | 532706   | FK-1/2-20  |
|                                                                                   | For Ø 2, 2 1/2" |                  |                   | 22.91 oz       | 532707   | FK-5/8-18  |

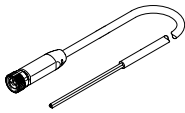
| Proximity switch SMT-8M for T-slot, magneto-resistive                               |                                                        |                           |                       |              |          |                           | Link  |
|-------------------------------------------------------------------------------------|--------------------------------------------------------|---------------------------|-----------------------|--------------|----------|---------------------------|--------------------------------------------------------------------------------------------|
|                                                                                     | Type of mounting                                       | Switching output          | Electrical connection | Cable length | Part no. | Type                      |                                                                                            |
|  | Screw-clamped,<br>Insertable in the<br>slot from above | 3-wire NPN N/O<br>contact | Open end              | 2.5 m        | 574338   | SMT-8M-A-NS-24V-E-2,5-OE  |                                                                                            |
|                                                                                     |                                                        |                           | Plug M8, A-coded      | 0.3 m        | 574339   | SMT-8M-A-NS-24V-E-0,3-M8D |                                                                                            |
|                                                                                     |                                                        | 3-wire PNP N/C<br>contact | Open end              | 7.5 m        | 574340   | SMT-8M-A-PO-24V-E-7,5-OE  |                                                                                            |
|                                                                                     |                                                        |                           |                       | 2.5 m        | 574335   | SMT-8M-A-PS-24V-E-2,5-OE  |                                                                                            |
|                                                                                     |                                                        | 3-wire PNP N/O<br>contact | Plug M8, A-coded      | 0.3 m        | 574334   | SMT-8M-A-PS-24V-E-0,3-M8D |                                                                                            |
|                                                                                     |                                                        |                           | Plug M12, A-coded     |              | 574337   | SMT-8M-A-PS-24V-E-0,3-M12 |                                                                                            |

| Proximity switch SME-8 for T-slot, magnetic reed                                    |                                                      |                        |                       |              |          |                         | Link  |
|-------------------------------------------------------------------------------------|------------------------------------------------------|------------------------|-----------------------|--------------|----------|-------------------------|--------------------------------------------------------------------------------------------|
|                                                                                     | Type of mounting                                     | Switching output       | Electrical connection | Cable length | Part no. | Type                    |                                                                                            |
|  | Screw-clamped, Insertable in the slot from above     | 3-wire N/O contact     | Open end              | 2.5 m        | 543862   | SME-8M-DS-24V-K-2,5-OE  |                                                                                            |
|                                                                                     |                                                      |                        |                       | 5 m          | 543863   | SME-8M-DS-24V-K-5,0-OE  |                                                                                            |
|                                                                                     |                                                      | 2-wire PNP N/O contact | Plug M8, A-coded      | 0.3 m        | 543861   | SME-8M-DS-24V-K-0,3-M8D |                                                                                            |
|                                                                                     |                                                      |                        | Open end              | 2.5 m        | 543872   | SME-8M-ZS-24V-K-2,5-OE  |                                                                                            |
|                                                                                     | Clamped in T-slot, Insertable in the slot lengthwise | None                   |                       |              | 150855   | SME-8-K-LED-24          |                                                                                            |
|                                                                                     |                                                      |                        | Plug M8, A-coded      | 0.3 m        | 150857   | SME-8-S-LED-24          |                                                                                            |
|                                                                                     |                                                      | N/C contact, 3-wire    | Open end              | 7.5 m        | 160251   | SME-8-O-K-LED-24        |                                                                                            |

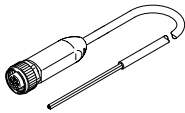
| Connecting cables NEBA, straight, M8 connection                                     |                                           |                                           |                                                      |              |          |                       |
|-------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------|------------------------------------------------------|--------------|----------|-----------------------|
|                                                                                     | Electrical connection 1, connector system | Electrical connection 2, connector system | Electrical connection 2, number of connections/cores | Cable length | Part no. | Type                  |
|  | M8x1, A-coded, to EN 61076-2-104          | Open end                                  | 3                                                    | 2.5 m        | 8078223  | NEBA-M8G3-U-2,5-N-LE3 |

## Accessories

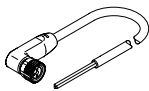
## Connecting cables NEBA, straight, M8 connection

|                                                                                  | Electrical connection 1, connector system | Electrical connection 2, connector system | Electrical connection 2, number of connections/cores | Cable length | Part no.       | Type                       |
|----------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------|------------------------------------------------------|--------------|----------------|----------------------------|
|  | M8x1, A-coded, to EN 61076-2-104          | Open end                                  | 3                                                    | 5 m          | <b>8078224</b> | <b>NEBA-M8G3-U-5-N-LE3</b> |

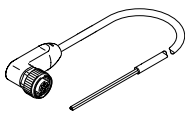
## Connecting cables NEBA, straight, M12 connection

|                                                                                  | Electrical connection 1, connector system | Electrical connection 2, connector system | Electrical connection 2, number of connections/cores | Cable length | Part no.       | Type                          |
|----------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------|------------------------------------------------------|--------------|----------------|-------------------------------|
|  | M12x1, A-coded to EN 61076-2-101          | Open end                                  | 3                                                    | 2.5 m        | <b>8078236</b> | <b>NEBA-M12G5-U-2.5-N-LE3</b> |
|                                                                                  |                                           |                                           |                                                      | 5 m          | <b>8078237</b> | <b>NEBA-M12G5-U-5-N-LE3</b>   |

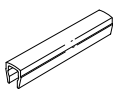
## Connecting cables NEBA, angled, M8 connection

|                                                                                    | Electrical connection 1, connector system | Electrical connection 2, connector system | Electrical connection 2, number of connections/cores | Cable length | Part no.       | Type                         |
|------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------|------------------------------------------------------|--------------|----------------|------------------------------|
|  | M8x1, A-coded, to EN 61076-2-104          | Open end                                  | 3                                                    | 2.5 m        | <b>8078230</b> | <b>NEBA-M8W3-U-2.5-N-LE3</b> |
|                                                                                    |                                           |                                           |                                                      | 5 m          | <b>8078231</b> | <b>NEBA-M8W3-U-5-N-LE3</b>   |

## Connecting cables NEBA, angled, M12 connection

|                                                                                    | Electrical connection 1, connector system | Electrical connection 2, connector system | Electrical connection 2, number of connections/cores | Cable length | Part no.       | Type                          |
|------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------|------------------------------------------------------|--------------|----------------|-------------------------------|
|  | M12x1, A-coded to EN 61076-2-101          | Open end                                  | 3                                                    | 2.5 m        | <b>8078245</b> | <b>NEBA-M12W5-U-2.5-N-LE3</b> |
|                                                                                    |                                           |                                           |                                                      | 5 m          | <b>8078246</b> | <b>NEBA-M12W5-U-5-N-LE3</b>   |

## Slot cover ABP for T-slot

|                                                                                    | Description                       | Material housing | Note on materials | Packaging quantity [pieces] | Part no.      | Type           |
|------------------------------------------------------------------------------------|-----------------------------------|------------------|-------------------|-----------------------------|---------------|----------------|
|  | Length 0.5 m, Inserted from above | ABS              | RoHS-compliant    | 2                           | <b>151680</b> | <b>ABP-5-S</b> |

## One-way flow control valves GRLA – for exhaust air

|                                                                                    | Pneumatic connection, port 2 | Pneumatic connection 1  | Part no.      | Type                            |
|------------------------------------------------------------------------------------|------------------------------|-------------------------|---------------|---------------------------------|
|  | 10-32 UNF-2A                 | Push-in connector 5/32" | <b>564840</b> | <b>GRLA-10-32-UNF-QB-5/32-U</b> |



## Accessories

## One-way flow control valves GRLA – for exhaust air

|                                                                                   | Pneumatic connection, port 2 | Pneumatic connection 1  | Part no. | Type                    |
|-----------------------------------------------------------------------------------|------------------------------|-------------------------|----------|-------------------------|
|  | 10-32 UNF-2A                 | Push-in connector 1/4"  | 564842   | GRLA-10-32-UNF-QB-1/4-U |
|                                                                                   | 1/8 NPT                      | Push-in connector 5/32" | 534656   | GRLA-1/8-QB-5/32-U      |
|                                                                                   |                              | Push-in connector 5/16" | 534659   | GRLA-1/8-QB-5/16-U      |
|                                                                                   |                              | Push-in connector 1/2"  | 534658   | GRLA-1/8-QB-1/4-U       |
|                                                                                   | 1/4 NPT                      | Push-in connector 1/4"  | 534661   | GRLA-1/4-QB-1/4-U       |
|                                                                                   |                              | Push-in connector 5/16" | 534662   | GRLA-1/4-QB-5/16-U      |
|                                                                                   |                              | Push-in connector 3/8"  | 534663   | GRLA-1/4-QB-3/8-U       |
|                                                                                   | 3/8 NPT                      | Push-in connector 1/4"  | 534664   | GRLA-3/8-QB-1/4-U       |
|                                                                                   |                              | Push-in connector 5/16" | 534665   | GRLA-3/8-QB-5/16-U      |
|                                                                                   |                              | Push-in connector 3/8"  | 534666   | GRLA-3/8-QB-3/8-U       |
|                                                                                   |                              | Push-in connector 1/2"  | 534667   | GRLA-3/8-QB-1/2-U       |