

## Round cylinders ESNU

**FESTO**



## Key features

### At a glance

ESNU-8 ... 63

- Stainless steel piston rod
- Good running performance and long service life
- Piston rod with male and female thread

ESNU-8 ... 25

- Extensive range of accessories makes it possible to install the cylinder virtually anywhere



- The basic versions conform to ISO 6432, variants are based on these standards

### Wide choice of variants

ESNU-...

- Piston  $\varnothing$  8 ... 63 mm
- Cylinder barrel made of stainless steel
- Bearing and end caps made of wrought aluminium alloy

ESNU-...-MA

- Piston  $\varnothing$  8 ... 63 mm
- Cylinder barrel made of stainless steel
- Bearing cap with threaded flange
- Short end cap with axial supply port



### Cushioning types

Cushioning P

#### Operating mode

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

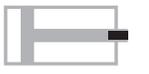
#### Application

- Small loads
- Low speeds
- Low impact energies

#### Benefits

- No adjustment required
- Saves time

## Key features

| Further variants  |                                     |   |
|---|-------------------------------------|---|
| Symbol  | Key features                        | Description   |
|  | K2 Extended male piston rod thread  | –   |
|  | K3 Female piston rod thread         | –   |
|  | K5 Special piston rod thread        | Metric standard thread to ISO   |
|  | K6 Shortened male piston rod thread | –   |
|  | K8 Extended piston rod              | –   |
|  | A6 Metal scraper<br>(32 ... 63 mm)  | The cylinder has a hard-chrome-plated piston rod and metal scraper, which scrapes off hard particles (e.g. welding spatter) that stick to the piston rod. For use in welding systems, for example |

## Longer service life with bellows kit DADB



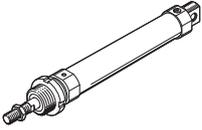
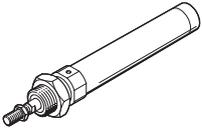
The bellows protects the piston rod, the seal and the bearing from the effects of a wide range of media, which has a positive impact on the service life of these components.

The bellows kit is a leak-free system. To prevent unwanted media from being drawn in, the supply and exhaust air for the kit must be ducted via a pressure compensation hole in the connection part [1].

The kit protects the piston rod, seal and bearing against a wide variety of media, for example:

- Dust
- Chippings
- Oil
- Grease
- Petrol

Product range overview

| Function      | Version   | Piston $\varnothing$ | Stroke     | Variable stroke <sup>1)</sup> | Cushioning<br>Fixed | Position<br>sensing |
|---------------|---|----------------------|------------|-------------------------------|---------------------|---------------------|
|               |   | [mm]                 | [mm]       | [mm]                          | P                   | A                   |
| Single-acting | <b>ESNU-... – With position sensing</b>   |                      |            |                               |                     |                     |
|               |  | 8 ... 63             | 10, 25, 50 | 1 ... 50                      | ■                   | ■                   |
| Single-acting | <b>ESNU-MA-... – Axial supply port</b>  |                      |            |                               |                     |                     |
|               |  | 8 ... 63             | –          | 1 ... 50                      | ■                   | ■                   |

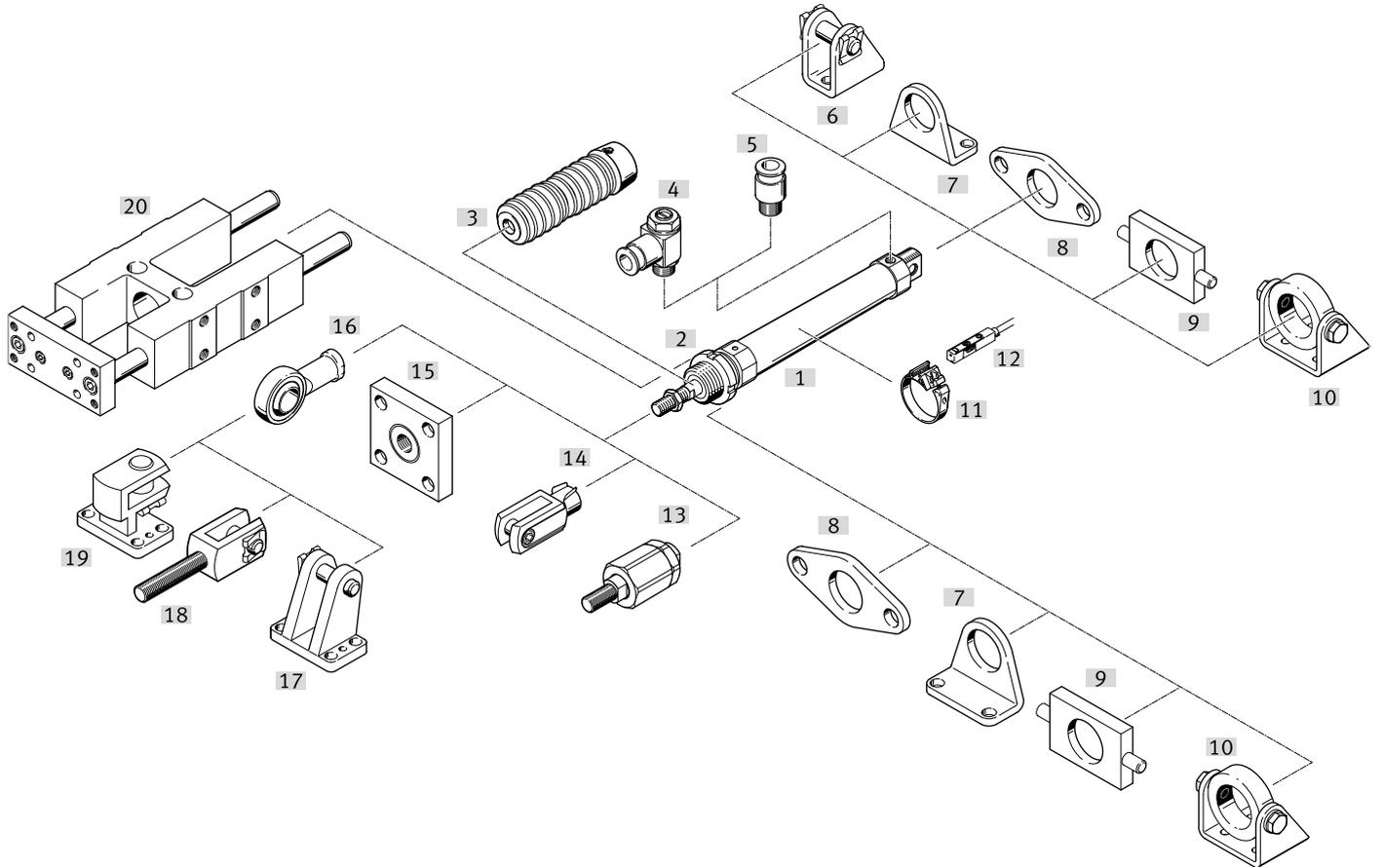
1) Cylinders with position sensing require a minimum stroke of 10 mm to ensure reliable sensing

Product range overview

| Piston $\varnothing$                    | Piston rod     |                |                 |                     |                     | → Page/<br>Internet |
|---|----------------|----------------|-----------------|---------------------|---------------------|---------------------|
|   | Extended<br>K8 | Male thread    |                 |                     | Female thread<br>K3 |                     |
|   |                | Extended<br>K2 | Shortened<br>K6 | Custom thread<br>K5 |                     |                     |
| <b>ESNU-... – With position sensing</b> |                |                |                 |                     |                     |                     |
| 8 ... 63                                | ■              | ■              | ■               | ■                   | ■                   | 9                   |
| <b>ESNU-MA-... – Axial supply port</b>  |                |                |                 |                     |                     |                     |
| 8 ... 63                                | ■              | ■              | ■               | ■                   | ■                   | 9                   |

# Peripherals overview

ESNU-...



## Peripherals overview

| Mounting attachments and accessories |  | Piston ø  | ESNU | MA | → Page/<br>Internet |
|--------------------------------------|--|-----------|------|----|---------------------|
| [1]                                  | Round cylinders<br>ESNU                |           |      |    |                     |
| [2]                                  | Hex nut<br>MSK                         | 16 ... 25 | ■    | ■  | 26                  |
| [3]                                  | Bellows kit <sup>2)</sup><br>DADB      | 12 ... 63 | ■    | ■  | 28                  |
| [4]                                  | One-way flow control valve<br>GRLZ     | 8 ... 63  | ■    | ■  | 33                  |
| [5]                                  | Push-in fitting<br>QS                  | 8 ... 63  | ■    | ■  | qs                  |
| [6]                                  | Clevis foot<br>LBN/CRLBN               | 8 ... 63  | ■    | —  | 25                  |
| [7]                                  | Foot mounting<br>HBN/CRHBN/CRH         | 8 ... 63  | ■    | ■  | 20                  |
| [8]                                  | Flange mounting<br>FBN/CRFBN/CRFV      | 8 ... 63  | ■    | ■  | 22                  |
| [9]                                  | Swivel mounting <sup>1)</sup><br>WBN   | 8 ... 63  | ■    | ■  | 24                  |
| [10]                                 | Swivel mounting <sup>1)</sup><br>SBN   | 20 ... 63 | ■    | ■  | 24                  |
| [11]                                 | Mounting kit<br>SMBR                   | 12 ... 63 | ■    | ■  | 31                  |
| [12]                                 | Proximity switch<br>SMT/SDBT           | 8 ... 63  | ■    | ■  | 31                  |
|                                      | Position transmitter<br>SDAS/SDAT/SMAT | 8 ... 63  | ■    | ■  | 32                  |
| [13]                                 | Self-aligning rod coupler<br>FK/CRFK   | 8 ... 63  | ■    | ■  | 26                  |
| [14]                                 | Rod clevis<br>SG/CRSG                  | 8 ... 63  | ■    | ■  | 26                  |
| [15]                                 | Coupling piece<br>KSG/KSZ              | 12 ... 63 | ■    | ■  | 26                  |
| [16]                                 | Rod eye<br>SGS/CRSGS                   | 8 ... 63  | ■    | ■  | 26                  |
| [17]                                 | Clevis foot<br>LBG                     | 32 ... 63 | ■    | ■  | 25                  |
| [18]                                 | Rod clevis<br>SGA                      | 32 ... 63 | ■    | ■  | 26                  |
| [19]                                 | Right-angle clevis foot<br>LQG         | 32 ... 63 | ■    | ■  | 25                  |
| [20]                                 | Guide unit<br>FEN                      | 8 ... 25  | ■    | ■  | 27                  |

 **Note**

- 1) Cannot be used on the bearing cap in combination with protective bellows kit DADB.
- 2) The bellows kit protects the cylinder (piston rod, seal and bearings) against a wide range of media and thus prevents premature wear. It can only be used in combination with an extended piston rod (K8)

## Type codes

### ESNU-...

| 001         | Series   |
|-------------|--|
| <b>ESNU</b> | Round cylinder, single-acting, pressing, based on ISO 6432 |

| 002       | Piston diameter |
|-----------|-----------------|
| <b>8</b>  | 8               |
| <b>10</b> | 10              |
| <b>12</b> | 12              |
| <b>16</b> | 16              |
| <b>20</b> | 20              |
| <b>25</b> | 25              |
| <b>32</b> | 32              |
| <b>40</b> | 40              |
| <b>50</b> | 50              |
| <b>63</b> | 63              |

| 003 | Stroke   |
|-----|----------|
| ... | 1 ... 50 |

| 004      | Cushioning                                    |
|----------|---|
| <b>P</b> | Elastic cushioning rings/plates on both sides |

| 005      | Position sensing     |
|----------|----------------------|
| <b>A</b> | For proximity sensor |

| 006       | End cap           |
|-----------|-------------------|
|           | Standard          |
| <b>MA</b> | Axial supply port |

| 007       | Piston rod thread extension |
|-----------|-----------------------------|
|           | None                        |
| <b>K2</b> | 1 ... 35 mm                 |

| 008       | K6 - Shortened male piston rod thread |
|-----------|---------------------------------------|
|           | None                                  |
| <b>K6</b> | 1 ... 10 mm                           |

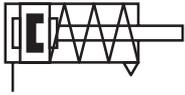
| 009       | Piston rod thread type |
|-----------|------------------------|
|           | Male thread            |
| <b>K3</b> | Female thread          |

| 010            | Custom thread |
|----------------|---------------|
| <b>"M10"K5</b> | M10           |
| <b>"M12"K5</b> | M12           |
| <b>"M16"K5</b> | M16           |

| 011          | Piston rod extension |
|--------------|----------------------|
|              | None                 |
| <b>...K8</b> | 1 ... 50 mm          |

## Datasheet

## P cushioning



-  - Diameter  
 8 ... 25 mm  
 ISO 6432

-  - Diameter  
 32 ... 63 mm

-  - Stroke length  
 1 ... 50 mm



| General technical data |      | 8  | 10 | 12 | 16 | 20   | 25       | 32       | 40       | 50      | 63      |  |
|------------------------|------|--|----|----|----|------|----------|----------|----------|---------|---------|--|
| Piston $\varnothing$   |      | 8  | 10 | 12 | 16 | 20   | 25       | 32       | 40       | 50      | 63      |  |
| Conforms to standard   |      | ISO 6432                                     |    |    |    |      |          | -        |          |         |         |  |
| Pneumatic connection   |      | M5   | M5 | M5 | M5 | G1/8 | G1/8     | G1/8     | G1/4     | G1/4    | G3/8    |  |
| Piston rod thread      |      | M4   | M4 | M6 | M6 | M8   | M10x1.25 | M10x1.25 | M12x1.25 | M16x1.5 | M16x1.5 |  |
| Stroke <sup>1)</sup>   | [mm] | 1 ... 50                                     |    |    |    |      |          |          |          |         |         |  |
| Design                 |      | Piston/piston rod/cylinder barrel            |    |    |    |      |          |          |          |         |         |  |
| Cushioning             |      | Elastic cushioning rings/plates at both ends |    |    |    |      |          |          |          |         |         |  |
| Position sensing       |      | Via proximity switch                         |    |    |    |      |          |          |          |         |         |  |
| Type of mounting       |      | With accessories                             |    |    |    |      |          |          |          |         |         |  |
| Mounting position      |      | Any  |    |    |    |      |          |          |          |         |         |  |

1) Cylinders with position sensing require a minimum stroke of 10 mm to ensure reliable sensing

| Operating and environmental conditions       |       | 8  | 10 | 12 | 16 | 20         | 25 | 32 | 40 | 50 | 63 |  |
|--|-------|--|----|----|----|------------|----|----|----|----|----|--|
| Operating medium                             |       | Compressed air to ISO 8573-1:2010 [7:4:4]  |    |    |    |            |    |    |    |    |    |  |
| Note on the operating/<br>pilot medium       |       | Lubricated operation possible (in which case lubricated operation will always be required) |    |    |    |            |    |    |    |    |    |  |
| Operating pressure                           | [MPa] | 0.15 ... 1   |    |    |    | 0.12 ... 1 |    |    |    |    |    |  |
|  | [bar] | 1.5 ... 10   |    |    |    | 1.2 ... 10 |    |    |    |    |    |  |
| Ambient temperature <sup>1)</sup>            | [°C]  | -20 ... +80  |    |    |    |            |    |    |    |    |    |  |
| Corrosion resistance class CRC <sup>2)</sup> |       | 2  |    |    |    |            |    |    |    |    |    |  |

1) Note operating range of proximity switches

2) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Datasheet

| <b>Forces [N] and impact energy [J]</b>          |      |      |      |      |      |      |      |      |      |      |
|--|------|------|------|------|------|------|------|------|------|------|
| Piston $\varnothing$                             | 8    | 10   | 12   | 16   | 20   | 25   | 32   | 40   | 50   | 63   |
| Theoretical force at 0.6 MPa (6 bar), advancing  | 24   | 41   | 61   | 107  | 169  | 270  | 442  | 688  | 1071 | 1763 |
| Theoretical spring return force                  |      |      |      |      |      |      |      |      |      |      |
| Stroke 10 mm                                     | 4.9  | 4.9  | 6.3  | 13.2 | 18.3 | 22.9 | 36   | 60   | 95   | 95   |
| Stroke 25 mm                                     | 4.1  | 4.1  | 5.4  | 11.9 | 16.5 | 21.2 | 30   | 50   | 82   | 82   |
| Stroke 50 mm                                     | 2.8  | 4.8  | 3.9  | 9.8  | 13.6 | 18.5 | 20   | 30   | 60   | 60   |
| Impact energy in the end positions <sup>1)</sup> | 0.03 | 0.05 | 0.07 | 0.15 | 0.20 | 0.30 | 0.40 | 0.70 | 1    | 1.3  |

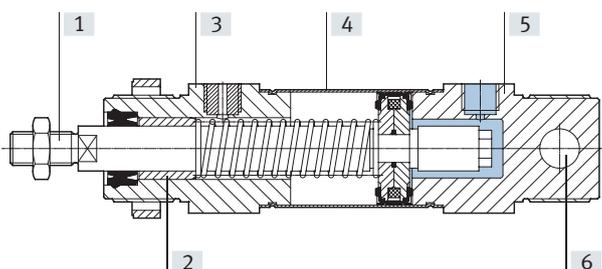
1) The values are reduced by approx. 50% at ambient temperatures of 80 °C

| <b>Weight ESNU-... [g]</b>         |     |      |    |      |       |     |       |     |      |      |
|------------------------------------|-----|------|----|------|-------|-----|-------|-----|------|------|
| Piston $\varnothing$               | 8   | 10   | 12 | 16   | 20    | 25  | 32    | 40  | 50   | 63   |
| Product weight with 0 mm stroke    | 35  | 37.3 | 75 | 89.9 | 186.8 | 238 | 370.5 | 661 | 1087 | 1445 |
| Additional weight per 10 mm stroke | 2.4 | 2.7  | 4  | 4.6  | 7.2   | 11  | 15.5  | 24  | 40   | 44   |

| <b>Weight ESNU-...-MA [g]</b>      |     |     |    |     |     |     |      |     |      |      |
|------------------------------------|-----|-----|----|-----|-----|-----|------|-----|------|------|
| Piston $\varnothing$               | 8   | 10  | 12 | 16  | 20  | 25  | 32   | 40  | 50   | 63   |
| Product weight with 0 mm stroke    | 30  | 33  | 65 | 81  | 167 | 222 | 330  | 585 | 1013 | 1369 |
| Additional weight per 10 mm stroke | 2.4 | 2.7 | 4  | 4.6 | 7.2 | 11  | 15.5 | 24  | 40   | 44   |

### Materials

#### Sectional view



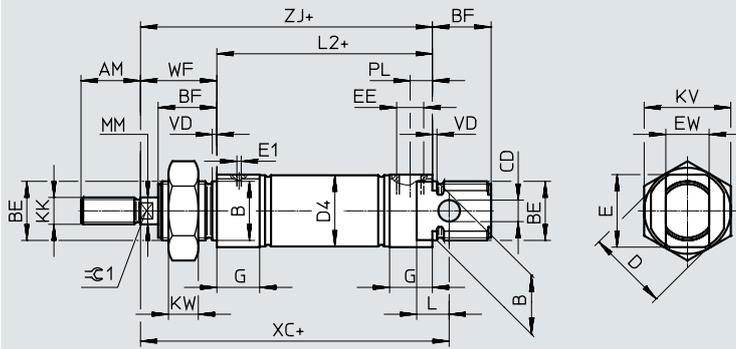
| Round cylinder         |                            |
|------------------------|----------------------------|
| [1] Piston rod         | High-alloy steel           |
| [2] Piston rod bearing | Sintered bronze            |
| [3] Bearing cap        | Anodised aluminium         |
| [4] Cylinder barrel    | High-alloy stainless steel |
| [5] End cap            | Anodised aluminium         |
| - Seals                | NBR, TPE-U(PU)             |
| - Spring               | Spring steel               |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L          |
| Note on materials      | RoHS-compliant             |
| [6] Swivel bearing     | Polymer                    |

Datasheet

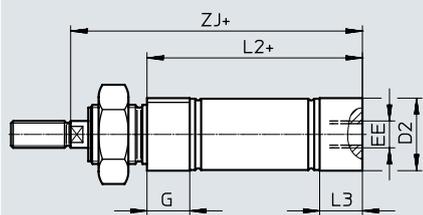
Dimensions

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ESNU-8 ... 25



MA – Axial supply port



- **Note**

Piston rod nut is not included in the scope of delivery for diameter 8 ... 20.

+ = plus stroke length

| ø<br>[mm] | AM | B<br>ø<br>h8 | BE       | BF | CD<br>ø<br>H9 | D<br>ø | D2<br>ø |      | E  | E1  | EE   | EW | G  | KK   |
|-----------|----|--------------|----------|----|---------------|--------|---------|------|----|-----|------|----|----|------|
|           |    |              |          |    |               |        | -MA     | ø    |    |     |      |    |    |      |
| 8         | 12 | 12           | M12x1.25 | 12 | 4             | 16     | 10.5    | 9.3  | 14 | 1   | M5   | 8  | 10 | M4   |
| 10        |    |              |          |    |               |        | 12.5    | 11.3 |    |     |      |    |    |      |
| 12        | 16 | 16           | M16x1.5  | 17 | 6             | 20     | 14.5    | 13.3 | 18 | 1.6 | G1/8 | 12 | 16 | M6   |
| 16        |    |              |          |    |               |        | 17.5    | 17.3 |    |     |      |    |    |      |
| 20        | 20 | 22           | M22x1.5  | 20 | 8             | 30     | 21.7    | 21.3 | 26 | 2   | G1/8 | 16 | 16 | M8   |
| 25        |    |              |          | 22 |               |        | 22      | 26.7 |    |     |      |    |    | 26.5 |

| ø<br>[mm] | KV | KW | MM<br>ø | L  | L2        |      |      | L3  | PL  | VD | WF<br>±1.2 | XC<br>±1 | ZJ        |      | ≡C1  |
|-----------|----|----|---------|----|-----------|------|------|-----|-----|----|------------|----------|-----------|------|------|
|           |    |    |         |    | ESNU- ... | -MA  | -MA  |     |     |    |            |          | ESNU- ... | -MA  |      |
| 8         | 19 | 6  | 4       | 6  | 46        | 43.6 | 7.6  | 6   | 6   | 2  | 16         | 64       | 62        | 59.6 | -    |
| 10        |    |    |         |    |           | 43.1 | 7.1  |     |     |    |            |          |           | 59.1 |      |
| 12        | 24 | 8  | 6       | 9  | 50        | 47.7 | 7.7  | 8.2 | 8.2 | 22 | 75         | 72       | 69.7      | 5    |      |
| 16        |    |    |         |    |           | 56   |      |     |     |    |            |          |           |      | 53.7 |
| 20        | 32 | 11 | 8       | 12 | 68        | 66.5 | 14.5 | 8.2 | 8.2 | 24 | 95         | 92       | 90.5      | 7    |      |
| 25        |    |    | 10      |    | 69.5      | 68.5 | 14   |     |     |    |            |          |           |      | 28   |

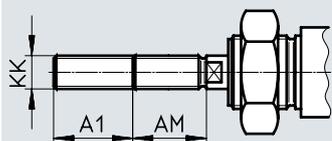
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### Dimensions

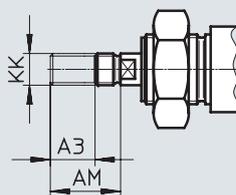
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ESNU-8 ... 25

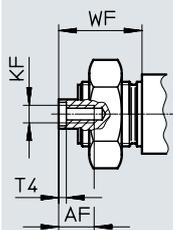
K2 – Extended male piston rod thread



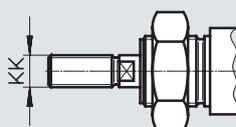
K6 – Shortened male piston rod thread



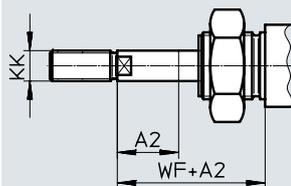
K3 – Female piston rod thread



K5 – Special piston rod thread



K8 – Extended piston rod



| ∅<br>[mm] | A1<br>max. | A2<br>max. | A3<br>max. | AF | AM | KF | KK           |                             | T4  | WF<br>±1.2 |
|-----------|------------|------------|------------|----|----|----|--------------|-----------------------------|-----|------------|
|           |            |            |            |    |    |    | Basic thread | Custom thread <sup>1)</sup> |     |            |
| 8         | 15         | 50         | 4          | –  | 12 | –  | M4           | –                           | –   | 16         |
| 10        |            |            |            | –  |    | –  |              | –                           |     |            |
| 12        |            |            |            | –  |    | –  |              | –                           |     |            |
| 16        | 20         |            | –          | –  | 16 | –  | M6           | –                           | –   | 22         |
| 20        | 25         |            | –          | –  | 20 | M4 | M8           | –                           | 2   | 24         |
| 25        | 35         |            | –          | 8  | 12 | 22 | M6           | M10x1.25                    | M10 | 2.6        |

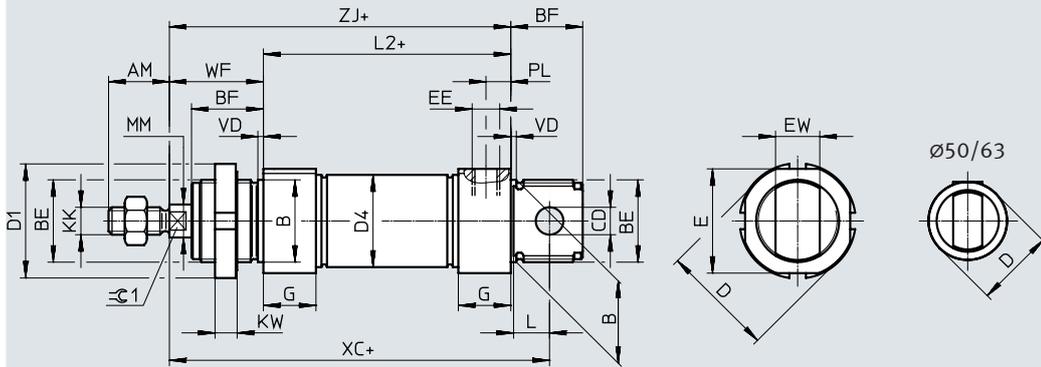
1) The custom threads are only available as male threads. The scope of delivery does not include a hex nut for the piston rod thread

Datasheet

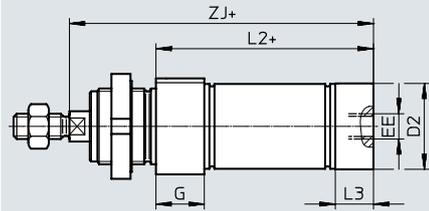
Dimensions

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ESNU-32 ... 63



MA – Axial supply port



+ = plus stroke length

| $\varnothing$<br>[mm] | AM | B<br>$\varnothing$<br>h8 | BE      | BF | CD<br>$\varnothing$<br>H9 | D<br>$\varnothing$ | D1<br>$\varnothing$ | D2<br>$\varnothing$ | D4<br>$\varnothing$ | E  | EE   | EW   | G  | KK       |
|-----------------------|----|--------------------------|---------|----|---------------------------|--------------------|---------------------|---------------------|---------------------|----|------|------|----|----------|
| 32                    | 22 | 30                       | M30x1.5 | 26 | 10                        | 41                 | 42                  | 34                  | 33.6                | 38 | G1/8 | 16   | 19 | M10x1.25 |
| 40                    | 24 | 38                       | M38x1.5 | 30 | 12                        | 49                 | 50                  | 42                  | 41.6                | 45 | G1/4 | 18   | 25 | M12x1.25 |
| 50                    | 32 | 45                       | M45x1.5 | 33 | 16                        | 57                 | 60                  | 53                  | 52.4                | –  |      | G3/8 |    | 21       |
| 63                    |    |                          |         |    |                           | 70                 |                     | 66                  | 65.4                | –  |      |      |    |          |

| $\varnothing$<br>[mm] | KW | L    | L2        |      | L3 | PL | MM<br>$\varnothing$ | VD | WF<br>$\pm 1.2$ | XC<br>$\pm 1$ | ZJ        |       | $\approx \pm 1$ |
|-----------------------|----|------|-----------|------|----|----|---------------------|----|-----------------|---------------|-----------|-------|-----------------|
|                       |    |      | ESNU- ... | -MA  |    |    |                     |    |                 |               | ESNU- ... | -MA   |                 |
| 32                    | 8  | 13   | 69.5      | 65.5 | 15 | 9  | 12                  | 2  | 34              | 117.5         | 103.5     | 99.5  | 10              |
| 40                    | 10 | 15   | 84.6      | 77.6 | 18 | 12 | 16                  | 3  | 39              | 139.6         | 123.6     | 116.6 | 13              |
| 50                    |    | 16   | 86.2      | 86.2 | 25 |    | 20                  |    | 44              | 147.2         | 130.2     | 130.2 | 17              |
| 63                    |    | 94.2 | 94.2      | 28   | 13 | 45 | 156.2               |    | 139.2           | 139.2         |           |       |                 |

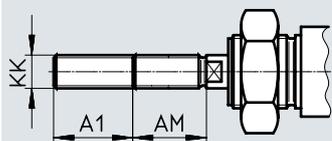
## Datasheet

### Dimensions

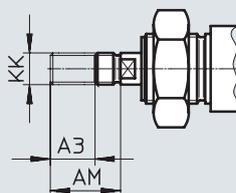
Download CAD data → [www.festo.com](http://www.festo.com)

ESNU-32 ... 63

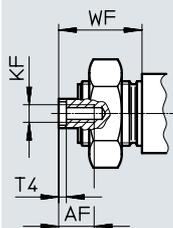
K2 – Extended male piston rod thread



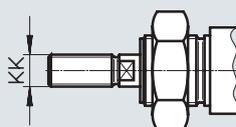
K6 – Shortened male piston rod thread



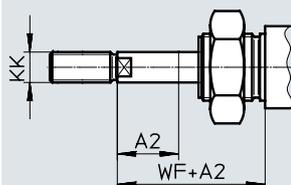
K3 – Female piston rod thread



K5 – Special piston rod thread



K8 – Extended piston rod



| ∅<br>[mm] | A1<br>max. | A2<br>max. | A3<br>max. | AF | AM | KF  | KK           |                             | T4  | WF<br>±1.2 |
|-----------|------------|------------|------------|----|----|-----|--------------|-----------------------------|-----|------------|
|           |            |            |            |    |    |     | Basic thread | Custom thread <sup>1)</sup> |     |            |
| 32        | 35         | 50         | 8          | 12 | 22 | M6  | M10x1.25     | M10                         | 2.6 | 34         |
| 40        |            |            |            |    |    |     | M12x1.25     | M12                         |     |            |
| 50        |            |            | 10         | 16 | 32 | M10 | M16x1.5      | M16                         | 4.7 | 44         |
| 63        |            |            |            |    |    |     |              |                             |     |            |

1) The custom threads are only available as male threads. The scope of delivery does not include a hex nut for the piston rod thread

## Datasheet

| Ordering data    |                |          |                |
|------------------|----------------|----------|----------------|
| Piston ø<br>[mm] | Stroke<br>[mm] | Part no. | Type           |
| 8                | 10             | 19254    | ESNU-8-10-P-A  |
|                  | 25             | 19255    | ESNU-8-25-P-A  |
|                  | 50             | 19256    | ESNU-8-50-P-A  |
| 10               | 10             | 19257    | ESNU-10-10-P-A |
|                  | 25             | 19258    | ESNU-10-25-P-A |
|                  | 50             | 19259    | ESNU-10-50-P-A |
| 12               | 10             | 19260    | ESNU-12-10-P-A |
|                  | 25             | 19261    | ESNU-12-25-P-A |
|                  | 50             | 19262    | ESNU-12-50-P-A |
| 16               | 10             | 19263    | ESNU-16-10-P-A |
|                  | 25             | 19264    | ESNU-16-25-P-A |
|                  | 50             | 19265    | ESNU-16-50-P-A |
| 20               | 10             | 19266    | ESNU-20-10-P-A |
|                  | 25             | 19267    | ESNU-20-25-P-A |
|                  | 50             | 19268    | ESNU-20-50-P-A |
| 25               | 10             | 19269    | ESNU-25-10-P-A |
|                  | 25             | 19270    | ESNU-25-25-P-A |
|                  | 50             | 19271    | ESNU-25-50-P-A |
| 32               | 10             | 196376   | ESNU-32-10-P-A |
|                  | 25             | 196377   | ESNU-32-25-P-A |
|                  | 50             | 196378   | ESNU-32-50-P-A |
| 40               | 10             | 196379   | ESNU-40-10-P-A |
|                  | 25             | 196380   | ESNU-40-25-P-A |
|                  | 50             | 196381   | ESNU-40-50-P-A |
| 50               | 10             | 196382   | ESNU-50-10-P-A |
|                  | 25             | 196383   | ESNU-50-25-P-A |
|                  | 50             | 196384   | ESNU-50-50-P-A |
| 63               | 10             | 196385   | ESNU-63-10-P-A |
|                  | 25             | 196386   | ESNU-63-25-P-A |
|                  | 50             | 196387   | ESNU-63-50-P-A |

| Ordering data          |                |          |                 |
|------------------------|----------------|----------|-----------------|
| Piston ø<br>[mm]       | Stroke<br>[mm] | Part no. | Type            |
| <b>Variable stroke</b> |                |          |                 |
| 8                      | 1 ... 50       | 14119    | ESNU-8-...-P-A  |
| 10                     | 1 ... 50       | 14118    | ESNU-10-...-P-A |
| 12                     | 1 ... 50       | 14317    | ESNU-12-...-P-A |
| 16                     | 1 ... 50       | 14316    | ESNU-16-...-P-A |
| 20                     | 1 ... 50       | 14319    | ESNU-20-...-P-A |
| 25                     | 1 ... 50       | 14318    | ESNU-25-...-P-A |

## Ordering data – Modular product system

| Ordering table   |   |               |               |               |               |               |            |             |            |
|------------------|---|---------------|---------------|---------------|---------------|---------------|------------|-------------|------------|
| Size             | 8   | 10            | 12            | 16            | 20            | 25            | Conditions | Code        | Enter code |
| Module no.       | <b>193996</b>   | <b>193997</b> | <b>193998</b> | <b>193999</b> | <b>194000</b> | <b>194001</b> |            |             |            |
| Function         | Round cylinder, single-acting, pushing, based on ISO 6432 |               |               |               |               |               |            | <b>ESNU</b> | ESNU       |
| Piston Ø [mm]    | 8   | 10            | 12            | 16            | 20            | 25            |            | -...        |            |
| Stroke [mm]      | 1 ... 50  |               |               |               |               |               |            | -...        |            |
| Cushioning       | Elastic cushioning rings/plates at both ends              |               |               |               |               |               |            | <b>-P</b>   | -P         |
| Position sensing | Via proximity switch                                      |               |               |               |               |               | [1]        | <b>-A</b>   | -A         |
| End cap          | Axial supply port   |               |               |               |               |               |            | <b>-MA</b>  |            |

[1] A Minimum stroke ≥ 10 mm required for reliable sensing



**Note**

Cylinders with position sensing require a minimum stroke of 10 mm to ensure reliable sensing.  
Longer strokes on request

## Ordering data – Modular product system

| Ordering table        |                                  |          |          |          |          |      |            |          |            |
|-----------------------|----------------------------------|----------|----------|----------|----------|------|------------|----------|------------|
| Size                  | 8                                | 10       | 12       | 16       | 20       | 25   | Conditions | Code     | Enter code |
| Extended male thread  | Extended male piston rod thread  |          |          |          |          |      |            |          |            |
|                       | [mm]                             | 1 ... 15 | 1 ... 20 | 1 ... 25 | 1 ... 35 | [2]  | -...K2     |          |            |
| Shortened male thread | Shortened male piston rod thread |          |          |          |          |      |            |          |            |
|                       | [mm]                             | 1 ... 4  | 1 ... 8  |          |          |      | -...K6     |          |            |
| Female thread         | Piston rod with female thread    |          |          |          |          |      |            |          |            |
|                       | -                                | -        | -        | -        | (M4)     | (M6) | [3]        | -K3      |            |
| Custom thread         | Special piston rod thread        |          |          |          |          |      |            |          |            |
|                       | -                                | -        | -        | -        | -        | M10  |            | -”...”K5 |            |
| Extended piston rod   | Extended piston rod              |          |          |          |          |      |            |          |            |
|                       | [mm]                             | 1 ... 50 |          |          |          |      |            | ...K8    |            |

[2] K2 Not with female thread K3, shortened male thread K6

[3] K3 Not with custom thread K5, shortened male thread K6

## Ordering data – Modular product system

| Ordering table   |  |               |               |               |            |             |            |
|------------------|--|---------------|---------------|---------------|------------|-------------|------------|
| Size             | 32   | 40            | 50            | 63            | Conditions | Code        | Enter code |
| Module no.       | <b>194002</b>                                | <b>194003</b> | <b>194004</b> | <b>194005</b> |            |             |            |
| Function         | Single-acting round cylinder                 |               |               |               |            | <b>ESNU</b> | ESNU       |
| Piston ø [mm]    | 32   | 40            | 50            | 63            |            | -...        |            |
| Stroke [mm]      | 1 ... 50                                     |               |               |               |            | -...        |            |
| Cushioning       | Elastic cushioning rings/plates at both ends |               |               |               |            | <b>-P</b>   | -P         |
| Position sensing | Via proximity switch                         |               |               |               | [1]        | <b>-A</b>   | -A         |
| End cap          | Axial supply port                            |               |               |               |            | <b>-MA</b>  |            |

[1] A Minimum stroke ≥ 10 mm required for reliable sensing



**Note**

Cylinders with position sensing require a minimum stroke of 10 mm to ensure reliable sensing.  
Longer strokes on request

## Ordering data – Modular product system

| Ordering table        |                                  |          |      |          |            |          |            |
|-----------------------|----------------------------------|----------|------|----------|------------|----------|------------|
| Size                  | 32                               | 40       | 50   | 63       | Conditions | Code     | Enter code |
| Extended male thread  | Extended male piston rod thread  |          |      |          |            |          |            |
|                       | [mm]                             | 1 ... 35 |      |          | [2]        | -...K2   |            |
| Shortened male thread | Shortened male piston rod thread |          |      |          |            |          |            |
|                       | [mm]                             | 1 ... 8  |      | 1 ... 10 |            | -...K6   |            |
| Female thread         | Piston rod with female thread    |          |      |          |            |          |            |
|                       |                                  | (M6)     | (M8) | (M10)    | [3]        | -K3      |            |
| Custom thread         | Special piston rod thread        |          |      |          |            |          |            |
|                       |                                  | M10      | M12  | M16      |            | -“...”K5 |            |
| Extended piston rod   | Extended piston rod              |          |      |          |            |          |            |
|                       | [mm]                             | 1 ... 50 |      |          |            | ...K8    |            |

[2] K2 Not with female thread K3, shortened male thread K6

[3] K3 Not with custom thread K5, shortened male thread K6

Accessories

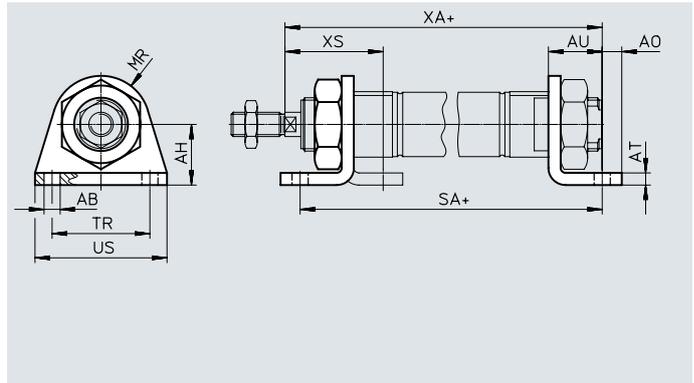
Foot mounting HBN/CRHBN

Scope of delivery:

HBN/CRHBN-...x1: 1 foot  
 HBN/CRHBN-...x2: 2 feet and  
 1 nut

Material:

HBN: Galvanised steel  
 CRHBN: High-alloy stainless steel  
 RoHS-compliant



+ = plus stroke length

Dimensions and ordering data

| For $\varnothing$<br>[mm] | AB<br>$\varnothing$ | AH | A0 | AT | AU | R1 | SA    | TR | US | XA    | XS |
|---------------------------|---------------------|----|----|----|----|----|-------|----|----|-------|----|
| 8, 10                     | 4.5                 | 16 | 5  | 3  | 11 | 10 | 68    | 25 | 35 | 73    | 24 |
| 12                        | 5.5                 | 20 | 6  | 4  | 14 | 13 | 78    | 32 | 42 | 86    | 32 |
| 16                        | 5.5                 | 20 | 6  | 4  | 14 | 13 | 84    | 32 | 42 | 92    | 32 |
| 20                        | 6.6                 | 25 | 8  | 5  | 17 | 20 | 102   | 40 | 54 | 109   | 36 |
| 25                        | 6.6                 | 25 | 8  | 5  | 17 | 20 | 103.5 | 40 | 54 | 114.5 | 40 |

| For $\varnothing$<br>[mm] | Basic version     |            |          |             | High corrosion protection |            |          |               |
|---------------------------|-------------------|------------|----------|-------------|---------------------------|------------|----------|---------------|
|                           | CRC <sup>1)</sup> | Weight [g] | Part no. | Type        | CRC <sup>1)</sup>         | Weight [g] | Part no. | Type          |
| 8, 10                     | 1                 | 22         | 5123     | HBN-8/10x1  | -                         | -          | -        |               |
|                           | 1                 | 54         | 5124     | HBN-8/10x2  | -                         | -          | -        |               |
| 12, 16                    | 1                 | 43         | 5125     | HBN-12/16x1 | 4                         | 43         | 161866   | CRHBN-12/16x1 |
|                           | 1                 | 107        | 5126     | HBN-12/16x2 | 4                         | 107        | 162999   | CRHBN-12/16x2 |
| 20, 25                    | 1                 | 95         | 5127     | HBN-20/25x1 | 4                         | 94         | 161867   | CRHBN-20/25x1 |
|                           | 1                 | 237        | 5128     | HBN-20/25x2 | 4                         | 236        | 162998   | CRHBN-20/25x2 |

1) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Accessories

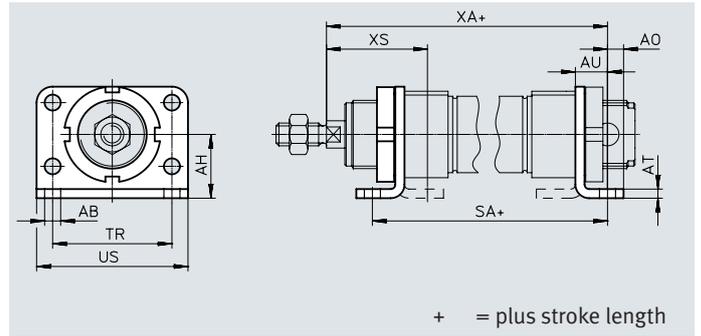
### Foot mounting HBN/CRH

Material:

HBN: Galvanised steel

CRH: High-alloy stainless steel

RoHS-compliant



+ = plus stroke length

#### Dimensions and ordering data

| For $\varnothing$ | AB<br>$\varnothing$ | AH | AO | AT | AU | SA    | TR | US | XA    | XS |
|-------------------|---------------------|----|----|----|----|-------|----|----|-------|----|
| [mm]              |                     |    |    |    |    |       |    |    |       |    |
| 32                | 7                   | 28 | 7  | 4  | 14 | 97.5  | 52 | 66 | 117.5 | 44 |
| 40                | 9                   | 33 | 10 | 5  | 20 | 124.6 | 60 | 80 | 143.6 | 54 |
| 50                | 9                   | 40 | 10 | 6  | 20 | 126.2 | 70 | 90 | 150.2 | 58 |
| 63                | 9                   | 45 | 10 | 6  | 20 | 134.2 | 76 | 96 | 159.2 | 59 |

| For $\varnothing$<br>[mm] | Basic version     |            |               |                 | High corrosion protection |            |               |               |
|---------------------------|-------------------|------------|---------------|-----------------|---------------------------|------------|---------------|---------------|
|                           | CRC <sup>1)</sup> | Weight [g] | Part no.      | Type            | CRC <sup>1)</sup>         | Weight [g] | Part no.      | Type          |
| 32                        | 1                 | 353        | <b>195851</b> | <b>HBN-32x2</b> | 4                         | 353        | <b>162951</b> | <b>CRH-32</b> |
| 40                        | 1                 | 611        | <b>195852</b> | <b>HBN-40x2</b> | 4                         | 611        | <b>162952</b> | <b>CRH-40</b> |
| 50                        | 1                 | 916        | <b>195853</b> | <b>HBN-50x2</b> | 4                         | 916        | <b>162953</b> | <b>CRH-50</b> |
| 63                        | 1                 | 1066       | <b>195854</b> | <b>HBN-63x2</b> | 4                         | 1066       | <b>162954</b> | <b>CRH-63</b> |

1) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

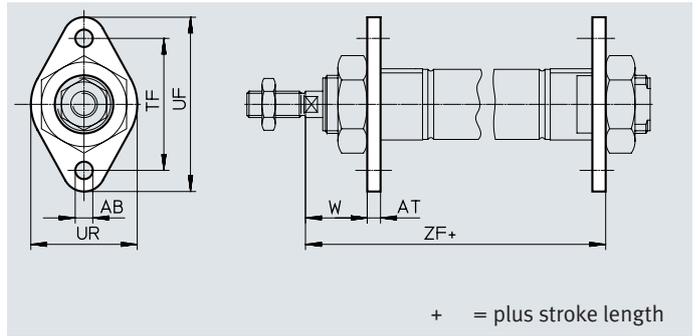
## Accessories

### Flange mounting FBN/CRFBN

Material:

FBN: Galvanised steel

CRFBN: High-alloy stainless steel



#### Dimensions and ordering data

| For $\varnothing$<br>[mm] | AB<br>$\varnothing$ | AT | TF | UF | UR | W  | ZF    |
|---------------------------|---------------------|----|----|----|----|----|-------|
| 8, 10                     | 4.5                 | 3  | 30 | 40 | 25 | 13 | 65    |
| 12                        | 5.5                 | 4  | 40 | 53 | 30 | 18 | 76    |
| 16                        | 5.5                 | 4  | 40 | 53 | 30 | 18 | 82    |
| 20                        | 6.6                 | 5  | 50 | 66 | 40 | 19 | 97    |
| 25                        | 6.6                 | 5  | 50 | 66 | 40 | 23 | 102.5 |

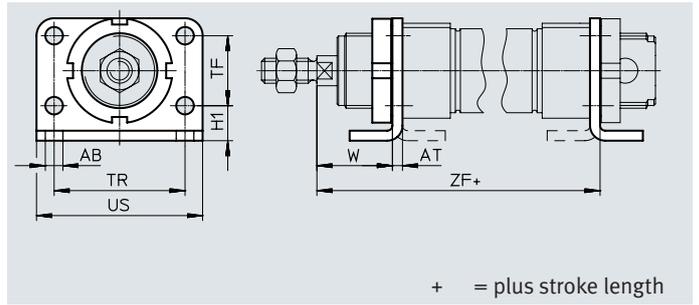
| For $\varnothing$<br>[mm] | Basic version     |            |             |                  | High corrosion protection |            |               |                    |
|---------------------------|-------------------|------------|-------------|------------------|---------------------------|------------|---------------|--------------------|
|                           | CRC <sup>1)</sup> | Weight [g] | Part no.    | Type             | CRC <sup>1)</sup>         | Weight [g] | Part no.      | Type               |
| 8, 10                     | 1                 | 12         | <b>5129</b> | <b>FBN-8/10</b>  | –                         | –          | –             | –                  |
| 12, 16                    | 1                 | 26         | <b>5130</b> | <b>FBN-12/16</b> | 4                         | 26         | <b>161864</b> | <b>CRFBN-12/16</b> |
| 20, 25                    | 1                 | 52         | <b>5131</b> | <b>FBN-20/25</b> | 4                         | 52         | <b>161865</b> | <b>CRFBN-20/25</b> |

1) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Accessories

### Flange mounting FBN/CRFV

Material:  
 FBN: Galvanised steel  
 CRFV: High-alloy stainless steel  
 RoHS-compliant



#### Dimensions and ordering data

| For $\varnothing$<br>[mm] | AB<br>$\varnothing$ | AT | H1 | TF | TR | US | W  | ZF    |
|---------------------------|---------------------|----|----|----|----|----|----|-------|
| 32                        | 7                   | 4  | 14 | 28 | 52 | 66 | 30 | 107.5 |
| 40                        | 9                   | 5  | 18 | 30 | 60 | 80 | 29 | 128.6 |
| 50                        | 9                   | 6  | 20 | 40 | 70 | 90 | 38 | 136.2 |
| 63                        | 9                   | 6  | 20 | 50 | 76 | 96 | 39 | 145.2 |

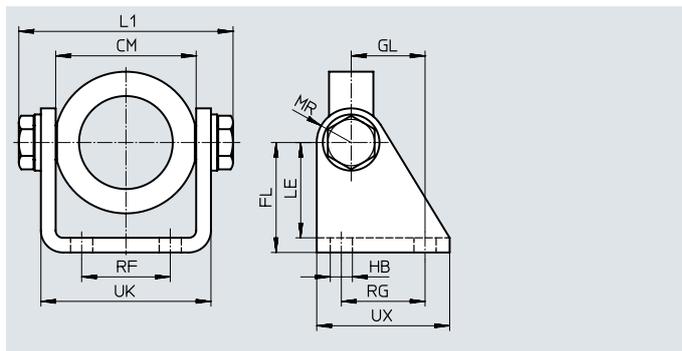
| For $\varnothing$<br>[mm] | Basic version     |            |               |               | High corrosion protection |            |               |                |
|---------------------------|-------------------|------------|---------------|---------------|---------------------------|------------|---------------|----------------|
|                           | CRC <sup>1)</sup> | Weight [g] | Part no.      | Type          | CRC <sup>1)</sup>         | Weight [g] | Part no.      | Type           |
| 32                        | 1                 | 103        | <b>195855</b> | <b>FBN-32</b> | 4                         | 103        | <b>161858</b> | <b>CRFV-32</b> |
| 40                        | 1                 | 191        | <b>195856</b> | <b>FBN-40</b> | 4                         | 191        | <b>161859</b> | <b>CRFV-40</b> |
| 50                        | 1                 | 292        | <b>195857</b> | <b>FBN-50</b> | 4                         | 292        | <b>161860</b> | <b>CRFV-50</b> |
| 63                        | 1                 | 367        | <b>195858</b> | <b>FBN-63</b> | 4                         | 367        | <b>161861</b> | <b>CRFV-63</b> |

1) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Accessories

### Swivel mounting SBN

Material:  
 Retaining ring: Anodised wrought aluminium alloy  
 Bearing: Bronze  
 Screws: Galvanised steel  
 Bracket: Steel  
 Cannot be used on the bearing cap in combination with bellows kit DADB.



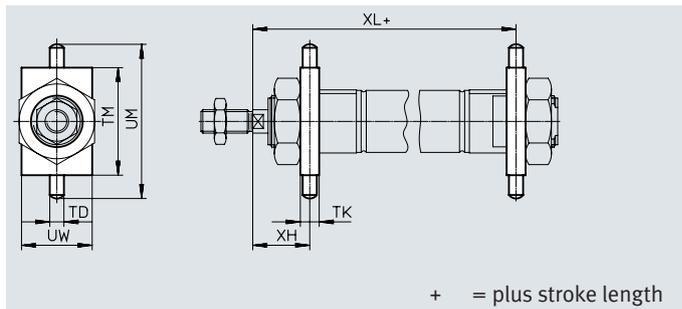
#### Dimensions and ordering data

| For $\varnothing$<br>[mm] | CM       | FL | GL | HB | L1<br>max. | LE | MR | RF | RG | UK   | UX | CRC <sup>1)</sup> | Weight<br>[g] | Part no. | Type      |
|---------------------------|----------|----|----|----|------------|----|----|----|----|------|----|-------------------|---------------|----------|-----------|
| 20/25                     | 38.1+0.4 | 35 | 20 | 7  | 60.2       | 31 | 12 | 20 | 24 | 46.1 | 40 | 1                 | 238           | 539927   | SBN-20/25 |
| 32                        | 46.1+0.2 | 40 | 27 | 9  | 72.2       | 35 | 13 | 28 | 30 | 56.1 | 50 | 1                 | 361           | 539924   | SBN-32    |
| 40                        | 57.1+0.2 | 45 | 30 | 9  | 88.2       | 39 | 14 | 36 | 34 | 69.1 | 54 | 1                 | 593           | 539925   | SBN-40    |
| 50/63                     | 70.1+0.4 | 50 | 34 | 9  | 102.2      | 44 | 16 | 42 | 35 | 82.1 | 65 | 1                 | 894           | 539926   | SBN-50/63 |

1) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

### Swivel mounting WBN

Material:  
 Galvanised steel  
 RoHS-compliant  
 Cannot be used on the bearing cap in combination with bellows kit DADB.



+ = plus stroke length

#### Dimensions and ordering data

| For $\varnothing$<br>[mm] | TD<br>$\varnothing$<br>-0.01/<br>-0.05 | TK | TM | UM  | UW | XH   | XL    | CRC <sup>1)</sup> | Weight<br>[g] | Part no. | Type      |
|---------------------------|--|----|----|-----|----|------|-------|-------------------|---------------|----------|-----------|
| 8, 10                     | 4                                      | 6  | 26 | 38  | 20 | 13   | 65    | 1                 | 20            | 8608     | WBN-8/10  |
| 12                        | 6                                      | 8  | 38 | 58  | 25 | 18   | 76    | 1                 | 51            | 8609     | WBN-12/16 |
| 16                        | 6                                      | 8  | 38 | 58  | 25 | 18   | 82    | 1                 | 51            | 8609     | WBN-12/16 |
| 20                        | 6                                      | 8  | 46 | 66  | 30 | 20   | 96    | 1                 | 67            | 8610     | WBN-20/25 |
| 25                        | 6                                      | 8  | 46 | 66  | 30 | 24   | 101.5 | 1                 | 67            | 8610     | WBN-20/25 |
| 32                        | 8                                      | 12 | 50 | 76  | 40 | 28   | 109.5 | 1                 | 131           | 195863   | WBN-32    |
| 40                        | 10                                     | 15 | 60 | 92  | 50 | 31.5 | 126.1 | 1                 | 238           | 195864   | WBN-40    |
| 50                        | 12                                     | 20 | 80 | 116 | 65 | 34   | 140.2 | 1                 | 596           | 195865   | WBN-50/63 |
| 63                        | 12                                     | 20 | 80 | 116 | 65 | 35   | 149.2 | 1                 | 596           | 195865   | WBN-50/63 |

1) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Accessories

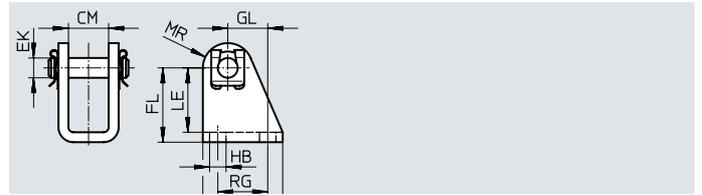
## Clevis foot LBN/CRLBN

Material:

LBN: galvanised steel

CRLBN: High-alloy stainless steel

RoHS-compliant



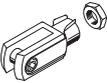
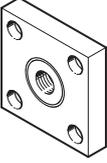
| Dimensions and ordering data |      |                     |              |      |     |      |    |      |    |
|------------------------------|------|---------------------|--------------|------|-----|------|----|------|----|
| For $\varnothing$<br>[mm]    | CM   | EK<br>$\varnothing$ | FL           | GL   | HB  | LE   | MR | RG   | UX |
| 8, 10                        | 8.1  | 4                   | 24 +0.3/-0.2 | 13.8 | 4.5 | 21.5 | 5  | 12.5 | 20 |
| 12, 16                       | 12.1 | 6                   | 27 +0.3/-0.2 | 13   | 5.5 | 24   | 7  | 15   | 25 |
| 20, 25                       | 16.1 | 8                   | 30 +0.4/-0.2 | 16   | 6.6 | 26   | 10 | 20   | 32 |
| 32                           | 16.1 | 10                  | 35 +0.4/-0.2 | 18.5 | 6.6 | 31   | 11 | 24   | 35 |
| 40                           | 18.1 | 12                  | 40 +0.4/-0.2 | 24.5 | 9   | 35   | 13 | 30   | 45 |
| 50, 63                       | 21.1 | 16                  | 45 +0.5/-0.2 | 28   | 9   | 39   | 14 | 34   | 50 |

| For $\varnothing$<br>[mm] | Basic version     |            |               |                  | High corrosion protection |            |               |                    |
|---------------------------|-------------------|------------|---------------|------------------|---------------------------|------------|---------------|--------------------|
|                           | CRC <sup>1)</sup> | Weight [g] | Part no.      | Type             | CRC <sup>1)</sup>         | Weight [g] | Part no.      | Type               |
| 8, 10                     | 1                 | 20         | <b>6057</b>   | <b>LBN-8/10</b>  | -                         | -          | -             | -                  |
| 12, 16                    | 1                 | 40         | <b>6058</b>   | <b>LBN-12/16</b> | 4                         | 39         | <b>161862</b> | <b>CRLBN-12/16</b> |
| 20, 25                    | 1                 | 84         | <b>6059</b>   | <b>LBN-20/25</b> | 4                         | 82         | <b>161863</b> | <b>CRLBN-20/25</b> |
| 32                        | 1                 | 110        | <b>195860</b> | <b>LBN-32</b>    | 4                         | 106        | <b>195866</b> | <b>CRLBN-32</b>    |
| 40                        | 1                 | 191        | <b>195861</b> | <b>LBN-40</b>    | 4                         | 185        | <b>195867</b> | <b>CRLBN-40</b>    |
| 50, 63                    | 1                 | 300        | <b>195862</b> | <b>LBN-50/63</b> | 4                         | 283        | <b>195868</b> | <b>CRLBN-50/63</b> |

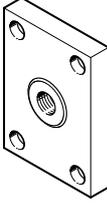
1) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Accessories

### Ordering data – Piston rod attachments

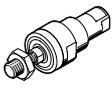
| Designation  | For ø | Part no. | Type         |
|--|-------|----------|--------------|
| <b>Rod eye SGS</b>   |       |          |              |
|    | 8     | 9253     | SGS-M4       |
|  | 10    |          |              |
|  | 12    | 9254     | SGS-M6       |
|  | 16    |          |              |
|  | 20    | 9255     | SGS-M8       |
|  | 25    | 9261     | SGS-M10x1.25 |
|  | 32    |          |              |
|  | 40    | 9262     | SGS-M12x1.25 |
|  | 50    | 9263     | SGS-M16x1.5  |
| 63   |       |          |              |
| <b>Rod clevis SG</b>   |       |          |              |
|    | 8     | 6532     | SG-M4        |
|  | 10    |          |              |
|  | 12    | 3110     | SG-M6        |
|  | 16    |          |              |
|  | 20    | 3111     | SG-M8        |
|  | 25    | 6144     | SG-M10x1.25  |
|  | 32    |          |              |
|  | 40    | 6145     | SG-M12x1.25  |
|  | 50    | 6146     | SG-M16x1.5   |
| 63   |       |          |              |
| <b>Coupling piece KSG</b>  |       |          |              |
|  | 12    | -        |              |
|  | 16    |          |              |
|  | 20    | 32963    | KSG-M10x1.25 |
|  | 25    |          |              |
|  | 32    |          |              |
|  | 40    | 32964    | KSG-M12x1.25 |
|  | 50    | 32965    | KSG-M16x1.5  |
| 63   |       |          |              |
| <b>Hex nut MSK</b>   |       |          |              |
|  | 16    | 189007   | MSK-M16x1.5  |
|  | 20    | 189009   | MSK-M22x1.5  |
|  | 25    |          |              |

Datasheets → Internet: piston rod attachment

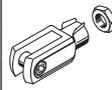
| Designation   | For ø | Part no. | Type         |       |              |
|---|-------|----------|--------------|-------|--------------|
| <b>Rod clevis SGA</b>   |       |          |              |       |              |
|    | 8     | -        |              |       |              |
|   | 10    |          |              |       |              |
|   | 12    |          |              |       |              |
|   | 16    |          |              |       |              |
|   | 20    |          |              |       |              |
|   | 25    |          |              |       |              |
|   | 32    |          |              | 32954 | SGA-M10x1.25 |
|   | 40    |          |              | 10767 | SGA-M12x1.25 |
|   | 50    |          |              | 10768 | SGA-M16x1.5  |
| 63  |       |          |              |       |              |
| <b>Self-aligning rod coupler FK</b>   |       |          |              |       |              |
|    | 8     | 6528     | FK-M4        |       |              |
|   | 10    |          |              |       |              |
|   | 12    | 2061     | FK-M6        |       |              |
|   | 16    |          |              |       |              |
|   | 20    | 2062     | FK-M8        |       |              |
|   | 25    | 6140     | FK-M10x1.25  |       |              |
|   | 32    |          |              |       |              |
|   | 40    | 6141     | FK-M12x1.25  |       |              |
|   | 50    | 6142     | FK-M16x1.5   |       |              |
| 63  |       |          |              |       |              |
| <b>Coupling piece KSZ</b>   |       |          |              |       |              |
|  | 12    | 36123    | KSZ-M6       |       |              |
|   | 16    |          |              |       |              |
|   | 20    | 36124    | KSZ-M8       |       |              |
|   | 25    | 36125    | KSZ-M10x1.25 |       |              |
|   | 32    |          |              |       |              |
|   | 40    | 36126    | KSZ-M12x1.25 |       |              |
|   | 50    | 36127    | KSZ-M16x1.5  |       |              |
| 63  |       |          |              |       |              |

## Accessories

### Ordering data – Piston-rod attachments, corrosion-resistant

| Designation   | For ø | Part no. | Type           |
|---|-------|----------|----------------|
| <b>Rod eye CRSGS</b>  |       |          |                |
|  | 12    | 195580   | CRSGS-M6       |
|   | 16    |          |                |
|   | 20    | 195581   | CRSGS-M8       |
|   | 25    | 195582   | CRSGS-M10x1.25 |
|   | 32    |          |                |
|   | 40    | 195583   | CRSGS-M12x1.25 |
|   | 50    | 195584   | CRSGS-M16x1.5  |
| 63  |       |          |                |
| <b>Self-aligning rod coupler CRFK</b>   |       |          |                |
|  | 25    | 2305778  | CRFK-M10x1.25  |
|   | 32    |          |                |
|   | 40    | 2305779  | CRFK-M12x1.25  |
|   | 50    | 2490673  | CRFK-M16x1.5   |
|   | 63    |          |                |

Datasheets → Internet: piston rod attachment

| Designation   | For ø | Part no. | Type          |
|---|-------|----------|---------------|
| <b>Rod clevis CRSG</b>  |       |          |               |
|  | 12    | 13567    | CRSG-M6       |
|   | 16    |          |               |
|   | 20    | 13568    | CRSG-M8       |
|   | 25    | 13569    | CRSG-M10x1.25 |
|   | 32    |          |               |
|   | 40    | 13570    | CRSG-M12x1.25 |
|   | 50    | 13571    | CRSG-M16x1.5  |
| 63  |       |          |               |

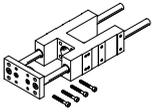
### Ordering data – Mounting components

| Designation  | For ø | Part no. | Type   |
|--|-------|----------|--------|
| <b>Clevis foot LBG</b>   |       |          |        |
|  | 32    | 31761    | LBG-32 |
|  | 40    | 31762    | LBG-40 |
|  | 50    | 31763    | LBG-50 |
|  | 63    | 31764    | LBG-63 |

Datasheets → Internet: clevis foot

| Designation  | For ø | Part no. | Type   |
|--|-------|----------|--------|
| <b>Right-angle clevis foot LQG</b>   |       |          |        |
|  | 32    | 31768    | LQG-32 |
|  | 40    | 31769    | LQG-40 |
|  | 50    | 31770    | LQG-50 |
|  | 63    | 31771    | LQG-63 |

### Ordering data – Guide units

|   | For ø  | Stroke [mm] | With recirculating ball bearing guide |                  | With plain-bearing guide |                  |
|---|--------|-------------|---------------------------------------|------------------|--------------------------|------------------|
|   |        |             | Part no.                              | Type             | Part no.                 | Type             |
|  | 8, 10  | 1 ... 100   | 35197                                 | FEN-8/10-...-KF  | 35196                    | FEN-8/10-...-GF  |
|   | 12, 16 | 1 ... 200   | 33481                                 | FEN-12/16-...-KF | 19168                    | FEN-12/16-...-GF |
|   | 20     | 2 ... 250   | 33482                                 | FEN-20-...-KF    | 19169                    | FEN-20-...-GF    |
|   | 25     | 2 ... 250   | 33483                                 | FEN-25-...-KF    | 19170                    | FEN-25-...-GF    |

Datasheets → Internet: feng

## Accessories

### Protective bellows kit DADB

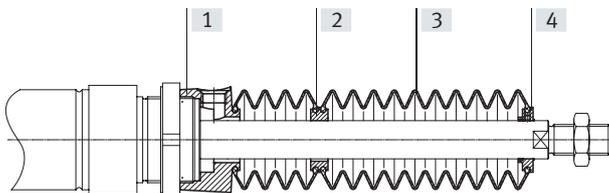


| General technical data                                 |   |    |    |    |    |    |
|--|---|----|----|----|----|----|
| Type DADB-S1-  | 20  | 25 | 32 | 40 | 50 | 63 |
| Max. stroke range of the cylinder <sup>1)2)</sup> [mm] | 10 ... 50   |    |    |    |    |    |
| Type of mounting                                       | Via threaded pin  |    |    |    |    |    |
| Mounting position                                      | Any   |    |    |    |    |    |
| Media resistance                                       | Dust, chippings, oil, grease, fuel (→ Internet: media resistance) |    |    |    |    |    |
| Ambient temperature <sup>3)</sup> [°C]                 | -10 ... +80   |    |    |    |    |    |
| Corrosion resistance class CRC <sup>4)</sup>           | 3   |    |    |    |    |    |

- 1) In conjunction with the bellows kit DADB
- 2) Slight change in spring return force
- 3) Note operating range of proximity switches and cylinder
- 4) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

### Materials

#### Sectional view



| Protective bellows     |                |
|------------------------|----------------|
| [1] Connection         | Polyamide      |
| [2] Adapter            | Polyamide      |
| [3] Protective bellows | NBR            |
| [4] End piece          | Polyamide      |
| - O-ring               | NBR            |
| Note on materials      | RoHS-compliant |

| Weight [g]                   |    |    |    |
|------------------------------|----|----|----|
| Type DADB-S1-<br>Stroke [mm] | 20 | 25 | 32 |
| 10 ... 50                    | 20 | 19 | 29 |
| Type DADB-S1-<br>Stroke [mm] | 40 | 50 | 63 |
| 10 ... 50                    | 34 | 55 | 55 |

## Accessories

### Travel speed $v$ as a function of tubing length $l$

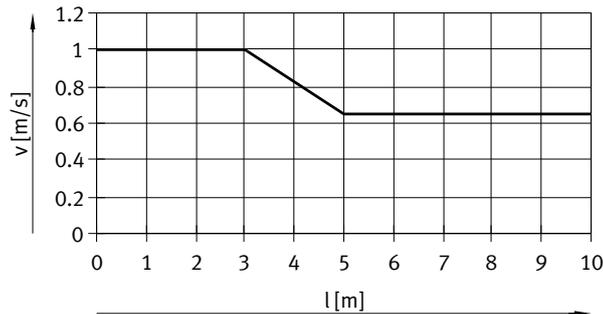


The bellows kit is a leak-free system.

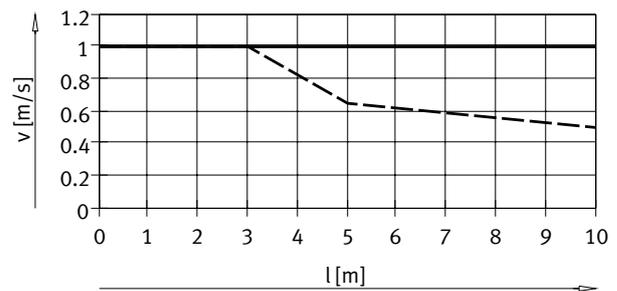
To prevent unwanted media from being drawn in, the supply or exhaust air of the kit is ducted in the connection part via a pressure compensation opening.

The pressure generated in the bellows kit by the positioning motion is primarily defined by the travel speed and tubing length. The recommended tube length in relation to the travel speed of the drive can be read from the diagram.

#### Advancing



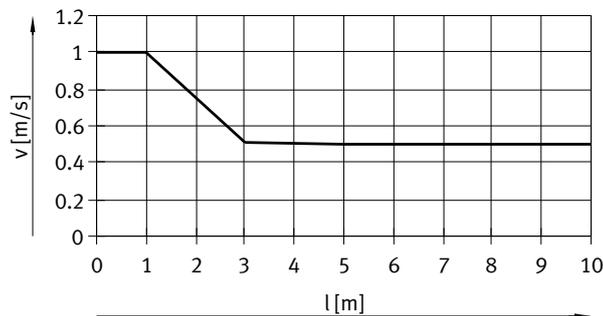
ESNU-20/25



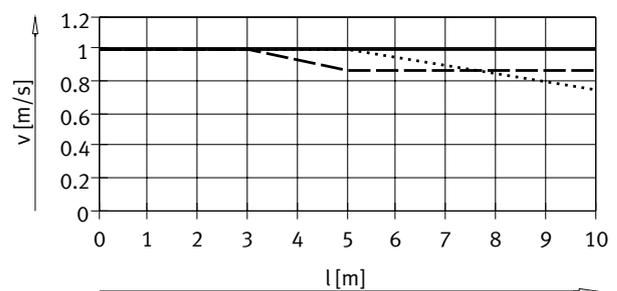
ESNU-32/50/63

ESNU-40

#### Retracting



ESNU-20/25



ESNU-32

ESNU-40

ESNU-50/63

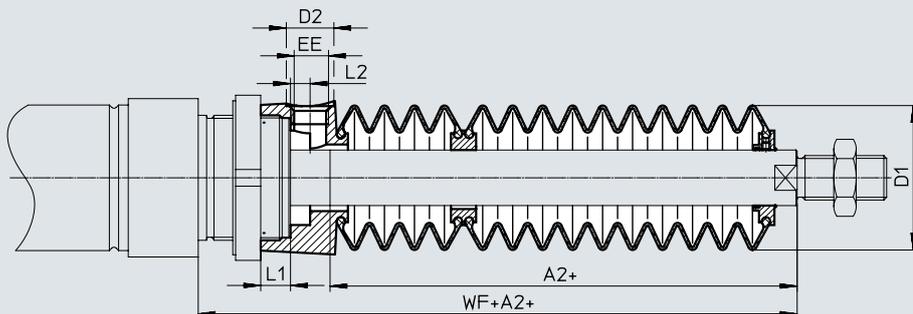
 Note  
The push-in fittings in the adjacent table must be used for the pressure compensation hole. Silencers can be used as an alternative. This reduces the travel speed slightly.

| Tubing size and push-in fitting for pressure compensation hole |                  |                 |                    |
|--|------------------|-----------------|--------------------|
| ø [mm]   | Tubing O.D. [mm] | Push-in fitting |                    |
|  |                  | Part no.        | Type               |
| 20, 25   | 6                | ★ 153317        | QSM-M5-6-I         |
|  |                  | 578371          | NPQH-DK-M5-Q6-P10  |
|  |                  | 578335          | NPQH-D-M5-Q6-P10   |
|  |                  | 578359          | NPQH-D-M5-S6-P10   |
| 32, 40   | 8                | ★ 186109        | QS-G1/8-8-I        |
|  |                  | 578376          | NPQH-DK-G18-Q8-P10 |
|  |                  | 578362          | NPQH-D-G18-S8-P10  |
| 50, 63   | 12               | ★ 186350        | QS-G1/4-12         |
|  |                  | 578344          | NPQH-D-G14-Q12-P10 |
|  |                  | 578366          | NPQH-D-G14-S12-P10 |

Accessories

Dimensions

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



| Ø Stroke<br>[mm] | 20               |                 |         |    |     |     |       | 25               |                 |         |    |     |     |       |
|------------------|------------------|-----------------|---------|----|-----|-----|-------|------------------|-----------------|---------|----|-----|-----|-------|
|                  | A2 <sup>1)</sup> | D1<br>Ø<br>max. | D2<br>Ø | EE | L1  | L2  | WF+A2 | A2 <sup>1)</sup> | D1<br>Ø<br>max. | D2<br>Ø | EE | L1  | L2  | WF+A2 |
| 10 ... 50        | 22               | 29              | 8.5     | M5 | 4.2 | 2.7 | 46    | 22               | 29              | 8.5     | M5 | 4.2 | 2.7 | 50    |

| Ø Stroke<br>[mm] | 32               |                 |         |      |      |     |       | 40               |                 |         |      |     |     |       |
|------------------|------------------|-----------------|---------|------|------|-----|-------|------------------|-----------------|---------|------|-----|-----|-------|
|                  | A2 <sup>1)</sup> | D1<br>Ø<br>max. | D2<br>Ø | EE   | L1   | L2  | WF+A2 | A2 <sup>1)</sup> | D1<br>Ø<br>max. | D2<br>Ø | EE   | L1  | L2  | WF+A2 |
| 10 ... 50        | 30               | 38              | 14      | G1/8 | 12.9 | 5.4 | 64    | 29               | 46              | 14      | G1/8 | 8.1 | 5.4 | 68    |

| Ø Stroke<br>[mm] | 50/63            |                 |         |      |       |    |       |
|------------------|------------------|-----------------|---------|------|-------|----|-------|
|                  | A2 <sup>1)</sup> | D1<br>Ø<br>max. | D2<br>Ø | EE   | L1    | L2 | WF+A2 |
| 10 ... 50        | 30               | 57              | 17      | G1/4 | 10.65 | 7  | 74/75 |

1) The dimension corresponds to the K8 value (extended piston rod) of the drive

Ordering data – Bellows kit

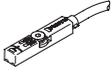
An extended piston rod (order code K8) is absolutely essential when using a bellows kit → Ordering data – Modular product system. The necessary dimension for K8 as a function of piston diameter and cylinder stroke as well as the corresponding bellows kit is indicated in the table below:

| Cylinder data |           |                  | Protective bellows kit |                   | Cylinder data |           |                  | Protective bellows kit |                   |
|---------------|-----------|------------------|------------------------|-------------------|---------------|-----------|------------------|------------------------|-------------------|
| Ø             | Stroke    | Dimension for K8 | Part no.               | Type              | Ø             | Stroke    | Dimension for K8 | Part no.               | Type              |
| [mm]          | [mm]      | [mm]             |                        |                   | [mm]          | [mm]      | [mm]             |                        |                   |
| 20            | 10 ... 50 | 22               | 553407                 | DADB-S1-20-S10-50 | 25            | 10 ... 50 | 22               | 553421                 | DADB-S1-25-S10-50 |
| 32            | 10 ... 50 | 30               | 553441                 | DADB-S1-32-S10-50 | 40            | 10 ... 50 | 29               | 553461                 | DADB-S1-40-S10-50 |
| 50            | 10 ... 50 | 30               | 553481                 | DADB-S1-50-S10-50 | 63            | 10 ... 50 | 30               | 553501                 | DADB-S1-63-S10-50 |

## Accessories

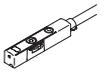
## Ordering data – Proximity switch for T-slot, magneto-resistive

Datasheets → Internet: smt

|   | Type of mounting   | Switching output | Electrical connection | Cable length [m] | Part no. | Type                      |
|---|--|------------------|-----------------------|------------------|----------|---------------------------|
| <b>N/O</b>  |  |                  |                       |                  |          |                           |
|  | Inserted in the slot from above, flush with the cylinder profile, short design | PNP              | Cable, 3-core         | 2.5              | 574335   | SMT-8M-A-PS-24V-E-2.5-OE  |
|   |  |                  | Cable, 2-core         | 5                | 8165237  | SMT-8M-A-ZS-24V-E-5.0-OE  |
|   |  |                  | Plug M8x1, 3-pin      | 0.3              | 574334   | SMT-8M-A-PS-24V-E-0.3-M8D |
|   |  | NPN              | Cable, 3-core         | 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 |

## Ordering data – Proximity switch for T-slot, magnetic Hall

Datasheets → Internet: sdbt

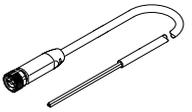
|   | Type of mounting   | Switching output            | Electrical connection | Cable length [m] | Part no. | Type                      |
|---|--|-----------------------------|-----------------------|------------------|----------|---------------------------|
| <b>N/O or N/C contact, switchable</b>   |  |                             |                       |                  |          |                           |
|  | Inserted in the slot from above, flush with the cylinder profile, short design | PNP, switchable to NPN      | Plug M8x1, 3-pin      | 0.3              | 8059120  | SDBT-MSX-1L-PU-E-0.3-N-M8 |
|   |  |                             | Cable, 3-core         | 2.5              | 8059121  | SDBT-MSX-1L-PU-E-2.5-N-LE |
|   |  | NPN, can be switched to PNP | Plug M8x1, 3-pin      | 0.3              | 8059123  | SDBT-MSX-1L-NU-E-0.3-N-M8 |
|   |  |                             | Cable, 3-core         | 2.5              | 8059124  | SDBT-MSX-1L-NU-E-2.5-N-LE |

## Ordering data – Mounting kits for proximity switches SMT/SDBT

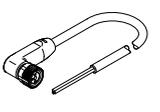
Datasheets → Internet: smbr

| Designation   | For $\varnothing$ | Part no.  | Type      |
|---|-------------------|-----------|-----------|
| <b>Mounting kit SMBR-8</b>  |                   |           |           |
|  | 8                 | 175091    | SMBR-8-8  |
|   | 10                | 175092    | SMBR-8-10 |
|   | 12                | 175093    | SMBR-8-12 |
|   | 16                | 175094    | SMBR-8-16 |
|   | 20                | 175095    | SMBR-8-20 |
|   | 25                | 175096    | SMBR-8-25 |
|   | 32                | 175097    | SMBR-8-32 |
|   | 40                | 175098    | SMBR-8-40 |
|   | 50                | 175099    | SMBR-8-50 |
| 63  | 175100            | SMBR-8-63 |           |

## Connecting cables NEBA, straight

|   | Electrical connection 1, connection technology | Electrical connection 2, connection technology | Electrical connection 2, number of pins/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 |
|   |  |  |   | 5 m          | 8078224  | NEBA-M8G3-U-5-N-LE3   |

## Connecting cables NEBA, angled

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

## Accessories

### Position transmitter

The position transmitter continuously senses the position of the piston. It has an analogue output with an output signal that is proportional to the piston position.

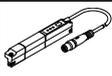
#### Ordering data – Position transmitter for T-slot

Datasheets → Internet: sdas

| Position measuring range  | Description  | Type of mounting                | Electrical connection     | Cable length [m] | Part no.       | Type                                    |
|---|--|---------------------------------|---------------------------|------------------|----------------|---|
|   |  |                                 |                           |                  |                |   |
|  ≤ 52 | Choice of two operating modes:<br>• two adjustable switching outputs<br>• IO-Link® | Inserted in the slot from above | Plug M8x1, 4-pin, in-line | 0.3              | <b>8063974</b> | <b>SDAS-MHS-M40-1L-PNLK-PN-E-0.3-M8</b> |
|   |  |                                 |                           |                  |                |   |

#### Ordering data – Position transmitter for T-slot

Datasheets → Internet: sdat

| Position measuring range   | Analogue output |      | Type of mounting | Electrical connection           | Cable length [m]          | Part no. | Type   |
|--|-----------------|------|------------------|---------------------------------|---------------------------|----------|--|
|  | [V]             | [mA] |                  |                                 |                           |          |  |
|  | 0 ... 50        | –    | 4 ... 20         | Inserted in the slot from above | Plug M8x1, 4-pin, in-line | 0.3      | <b>1531265</b> <b>SDAT-MHS-M50-1L-SA-E-0.3-M8</b>  |
|  | 0 ... 80        |      |                  |                                 |                           |          | <b>1531266</b> <b>SDAT-MHS-M80-1L-SA-E-0.3-M8</b>  |
|  | 0 ... 100       |      |                  |                                 |                           |          | <b>1531267</b> <b>SDAT-MHS-M100-1L-SA-E-0.3-M8</b> |
|  | 0 ... 125       |      |                  |                                 |                           |          | <b>1531268</b> <b>SDAT-MHS-M125-1L-SA-E-0.3-M8</b> |
|  | 0 ... 160       |      |                  |                                 |                           |          | <b>1531269</b> <b>SDAT-MHS-M160-1L-SA-E-0.3-M8</b> |

#### Ordering data – Position transmitter for T-slot

Datasheets → Internet: smat

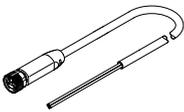
| Position measuring range  | Analogue output |      | Type of mounting                | Electrical connection     | Cable length [m] | Part no.      | Type                       |
|---|-----------------|------|---------------------------------|---------------------------|------------------|---------------|----------------------------|
|   | [V]             | [mA] |                                 |                           |                  |               |                            |
|  0 ... 40 | 0 ... 10        | –    | Inserted in the slot from above | Plug M8x1, 4-pin, in-line | 0.3              | <b>553744</b> | <b>SMAT-8M-U-E-0.3-M8D</b> |
|   |                 |      |                                 |                           |                  |               |                            |

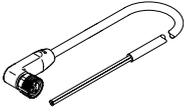
#### Ordering data – Mounting kits for position transmitters SDAS/SDAT/SMAT

Datasheets → Internet: smbr

| Designation  | For ø         | Part no.         | Type             |
|--|---------------|------------------|------------------|
| <b>Mounting kit SMBR-8</b>   |               |                  |                  |
|  | 8             | <b>175091</b>    | <b>SMBR-8-8</b>  |
|  | 10            | <b>175092</b>    | <b>SMBR-8-10</b> |
|  | 12            | <b>175093</b>    | <b>SMBR-8-12</b> |
|  | 16            | <b>175094</b>    | <b>SMBR-8-16</b> |
|  | 20            | <b>175095</b>    | <b>SMBR-8-20</b> |
|  | 25            | <b>175096</b>    | <b>SMBR-8-25</b> |
|  | 32            | <b>175097</b>    | <b>SMBR-8-32</b> |
|  | 40            | <b>175098</b>    | <b>SMBR-8-40</b> |
|  | 50            | <b>175099</b>    | <b>SMBR-8-50</b> |
| 63   | <b>175100</b> | <b>SMBR-8-63</b> |                  |

## Accessories

| Connecting cables NEBA, straight  |  |  |   |              |                |                              |
|---|--|--|---|--------------|----------------|------------------------------|
|   | Electrical connection 1, connection technology | Electrical connection 2, connection technology | Electrical connection 2, number of pins/cores | Cable length | Part no.       | Type                         |
|  | M8x1 A-coded to EN 61076-2-104                 | Open end                                       | 4   | 2.5 m        | <b>8078227</b> | <b>NEBA-M8G4-U-2.5-N-LE4</b> |
|   |  |  |   | 5 m          | <b>8078228</b> | <b>NEBA-M8G4-U-5-N-LE4</b>   |

| Connecting cables NEBA, angled  |  |  |   |              |                |                              |
|---|--|--|---|--------------|----------------|------------------------------|
|   | Electrical connection 1, connection technology | Electrical connection 2, connection technology | Electrical connection 2, number of pins/cores | Cable length | Part no.       | Type                         |
|  | M8x1 A-coded to EN 61076-2-104                 | Open end                                       | 4   | 2.5 m        | <b>8078233</b> | <b>NEBA-M8W4-U-2.5-N-LE4</b> |
|   |  |  |   | 5 m          | <b>8078234</b> | <b>NEBA-M8W4-U-5-N-LE4</b>   |

| Ordering data – One-way flow control valves |            |                 |          |          | Datasheets → Internet: grl |
|---|------------|-----------------|----------|----------|----------------------------|
|   | Connection |                 | Material | Part no. | Type                       |
|   | Thread     | For tubing O.D. |          |          |                            |

| For supply air  |      |   |              |               |                        |
|---|------|---|--------------|---------------|------------------------|
|  | M5   | 3 | Metal design | <b>193153</b> | <b>GRLZ-M5-QS-3-D</b>  |
|   |      | 4 |              | <b>193154</b> | <b>GRLZ-M5-QS-4-D</b>  |
|   |      | 6 |              | <b>193155</b> | <b>GRLZ-M5-QS-6-D</b>  |
|   | G1/8 | 3 |              | <b>193156</b> | <b>GRLZ-1/8-QS-3-D</b> |
|   |      | 4 |              | <b>193157</b> | <b>GRLZ-1/8-QS-4-D</b> |
|   |      | 6 |              | <b>193158</b> | <b>GRLZ-1/8-QS-6-D</b> |
|   |      | 8 |              | <b>193159</b> | <b>GRLZ-1/8-QS-8-D</b> |