

## Compact cylinders ADN/AEN, to ISO 21287

**FESTO**



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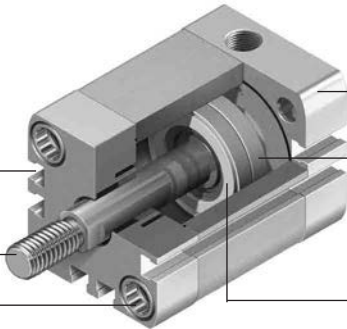
Key features

At a glance

Sensor slots on three sides for flush mounting of proximity sensors

Piston rod with choice of male or female thread

Mounting option:  
Female thread and through-hole



Centring hole in the end cap matches centring pins ZBS

Magnet for contactless position sensing

Integrated cushioning for absorbing residual energy

More than the standard

- The compact cylinder series ADN/AEN comply with the standard ISO 21287
- The ADN/AEN is characterised by its compact design and broad area of application thanks to the large number of variants
- The variants can be configured according to individual needs thanks to the modular product system

Powerful

- Integrated cushioning for absorbing residual energy
- Long service life thanks to exceptional cushioning characteristics and minimal friction factors

Convenient

- Easy to mount with a comprehensive range of mounting accessories for just about every type of installation
- Highly flexible thanks to the wide range of variants
- Contactless position sensing using proximity sensors

Reliable

- Optimised manufacturing methods, patented technology and more than 40 years of experience in the field of cylinders make Festo and ADN/AEN a great team

Cushioning types

Cushioning P

Mode of operation

- The drive has elastic polymer end-position cushioning

Application

- Small loads
- Low speeds
- Small cushioning capacity

Advantages

- No adjustment required
- Saves time

Cushioning PPS

Mode of operation

- The drive has self-adjusting, pneumatic end-position cushioning

Application

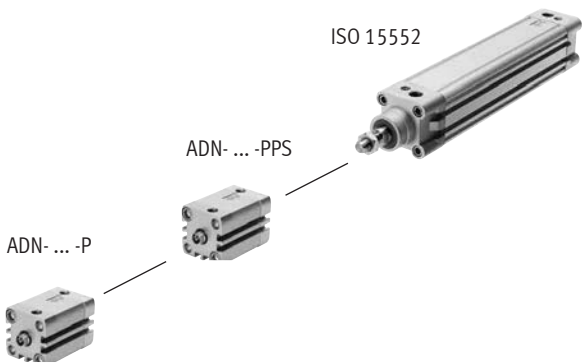
- Larger loads
- Higher speeds
- Larger cushioning capacity

Advantages

- No adjustment required
- Up to 4 times bigger cushioning capacity than ADN-...-P
- Saves time
- Reduced noise

Cushioning capacity of ISO 21287 and ISO 15552

In terms of cushioning capacity, the compact cylinder ADN-...-PPS fills the gap between ADN-...-P and standards-based cylinders with ISO 15552.



For manufacturing lithium-ion batteries

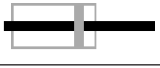
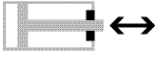
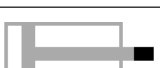
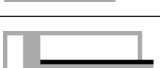
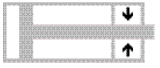
ADN-...-F1A

Recommended for production facilities for the manufacture of lithium-ion batteries.  
Metals with copper, zinc or nickel as the main constituent are excluded from use. Exceptions are nickel in steels, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils.

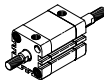
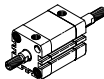
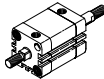
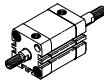
Accessories

Your Festo contact partner can provide information about which accessories are suitable for manufacturing lithium-ion batteries.

## Key features

| Variants from the modular product system                                            |                                                                               |                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Symbol                                                                              | Key features                                                                  | Description                                                                                                                                                                                                                                                                    |
|                                                                                     | F1A Recommended for production plants for manufacturing lithium-ion batteries | Cylinders free of copper, zinc and nickel ( $\leq 1\%$ )                                                                                                                                                                                                                       |
|    | S1 Reinforced piston rod                                                      | Increased lateral loads. Absorbs many times more lateral load than a basic cylinder                                                                                                                                                                                            |
|    | S2 Through piston rod                                                         | The piston rod can be used for attachments at both ends of the cylinder                                                                                                                                                                                                        |
|    | S6 Heat-resistant seals                                                       | Temperature resistance up to max. 120°C                                                                                                                                                                                                                                        |
|    | S10 Constant motion (slow speed) at low piston speeds                         | <ul style="list-style-type: none"> <li>• Break-away pressure: very low</li> <li>• Dynamic response: Suitable for very slow, constant and stick-slip-free movements</li> </ul> Application example: Slow, constant feed motion                                                  |
|    | S11 Low friction                                                              | <ul style="list-style-type: none"> <li>• Break-away pressure: very low</li> <li>• Dynamic response: Especially suitable for slow movements with considerably reduced system friction</li> <li>• Application example: Slow applications where standstill is critical</li> </ul> |
|    | S20 Through, hollow piston rod                                                | The piston rod can be used for attachments at both ends of the cylinder. The piston rod is hollow inside. This means it can be used to carry vacuum or compressed air                                                                                                          |
|   | K2 Extended male piston rod thread                                            | –                                                                                                                                                                                                                                                                              |
|  | K5 Special piston rod thread                                                  | Metric standard thread to ISO                                                                                                                                                                                                                                                  |
|  | K8 Extended piston rod                                                        | –                                                                                                                                                                                                                                                                              |
|  | K10 Smooth anodised aluminium piston rod                                      | Ideal for use in welding environments: <ul style="list-style-type: none"> <li>• Protection against welding spatter</li> <li>• Small working loads</li> <li>• Harder surface compared to steel</li> <li>• Long service life</li> </ul>                                          |
|  | KP With clamping unit                                                         | Integrated clamping unit on the piston rod                                                                                                                                                                                                                                     |
|  | EL With end-position locking                                                  | Positive locking in the end position as a drop guard. If there is a drop in pressure, the cylinder is secured in its end position to prevent it from dropping                                                                                                                  |
|  | Q Square piston rod                                                           | Protection against rotation. For correctly oriented feeding                                                                                                                                                                                                                    |
|  | R3 High corrosion protection                                                  | All external cylinder surfaces comply with corrosion resistance class 3 to Festo standard 940070. The piston rod is made from corrosion- and acid-resistant steel                                                                                                              |
|  | R8 Dust protection with wiper seal                                            | The cylinder has a hard-chrome-plated piston rod and a hard wiper seal, which protects against dry, dusty media                                                                                                                                                                |
|                                                                                     | TL Captive rating plate                                                       | Laser-etched rating plate. For easy identification of components when it comes to replacement, even after years in a harsh environment                                                                                                                                         |
|  | TT Low temperature                                                            | Temperature resistance down to max. –40°C                                                                                                                                                                                                                                      |
|                                                                                     | F1A Recommended for production plants for manufacturing lithium-ion batteries | Cylinders free of copper, zinc and nickel ( $\leq 1\%$ )                                                                                                                                                                                                                       |

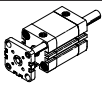
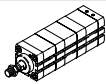
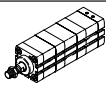
## Product range overview

| Function                                                                            | Design                                                                              | Type                                        | Piston Ø       | Stroke                                | Position sensing | Recommended for production plants for manufacturing lithium-ion batteries | Cushioning |                |                   |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------|----------------|---------------------------------------|------------------|---------------------------------------------------------------------------|------------|----------------|-------------------|
|                                                                                     |                                                                                     |                                             |                |                                       |                  |                                                                           | Fixed      | Self-adjusting |                   |
|                                                                                     |                                                                                     |                                             | [mm]           | [mm]                                  | A                | F1A                                                                       | P          | PPS            |                   |
| Double-acting                                                                       | Basic version                                                                       |                                             |                |                                       |                  |                                                                           |            |                |                   |
|                                                                                     |    | ADN                                         | 12             | 5, 10, 15, 20, 25, 30, 40             | 1 ... 300        | ■                                                                         | ■          | ■              | ■<br>ø 20 ... 100 |
|                                                                                     |                                                                                     |                                             | 16             | 5, 10, 15, 20, 25, 30, 40, 50         | 1 ... 300        |                                                                           |            |                |                   |
|                                                                                     |                                                                                     |                                             | 20, 25         | 5, 10, 15, 20, 25, 30, 40, 50, 60     | 1 ... 300        |                                                                           |            |                |                   |
|                                                                                     |                                                                                     |                                             | 32, 40, 50     | 5, 10, 15, 20, 25, 30, 40, 50, 60, 80 | 1 ... 400        |                                                                           |            |                |                   |
|                                                                                     |                                                                                     |                                             | 63             | 10, 15, 20, 25, 30, 40, 50, 60, 80    | 1 ... 400        |                                                                           |            |                |                   |
|                                                                                     |                                                                                     |                                             | 80, 100        | 10, 15, 20, 25, 30, 40, 50, 60, 80    | 1 ... 500        |                                                                           |            |                |                   |
|                                                                                     |                                                                                     |                                             | 125            | –                                     | 1 ... 500        |                                                                           |            |                |                   |
|                                                                                     |    | ADN-....S2<br>Through piston rod            | 12, 16, 20, 25 | –                                     | 1 ... 300        | ■                                                                         | ■          | ■              | ■<br>ø 20 ... 100 |
|                                                                                     |                                                                                     |                                             | 32, 40, 50, 63 | –                                     | 1 ... 400        |                                                                           |            |                |                   |
|                                                                                     |                                                                                     |                                             | 80, 100, 125   | –                                     | 1 ... 500        |                                                                           |            |                |                   |
|                                                                                     |   | ADN-....S20<br>Through, hollow piston rod   | 16, 20, 25     | –                                     | 1 ... 300        | ■                                                                         | –          | ■              | ■<br>ø 20 ... 100 |
|                                                                                     |                                                                                     |                                             | 32, 40, 50, 63 | –                                     | 1 ... 400        |                                                                           |            |                |                   |
|                                                                                     |                                                                                     |                                             | 80, 100, 125   | –                                     | 1 ... 500        |                                                                           |            |                |                   |
|                                                                                     | Reinforced piston rod                                                               |                                             |                |                                       |                  |                                                                           |            |                |                   |
|                                                                                     |  | ADN-....S1                                  | 25             | –                                     | 5 ... 300        | ■                                                                         | –          | ■              | –                 |
|                                                                                     |                                                                                     |                                             | 40, 63         | –                                     | 10 ... 400       |                                                                           |            |                |                   |
|                                                                                     |                                                                                     |                                             | 100            | –                                     | 10 ... 500       |                                                                           |            |                |                   |
|                                                                                     | Non-rotating with square piston rod                                                 |                                             |                |                                       |                  |                                                                           |            |                |                   |
|                                                                                     |  | ADN-....Q                                   | 12, 16, 20, 25 | –                                     | 1 ... 300        | ■                                                                         | –          | ■              | –                 |
|                                                                                     |                                                                                     |                                             | 32, 40, 50, 63 | –                                     | 1 ... 400        |                                                                           |            |                |                   |
|                                                                                     |                                                                                     |                                             | 80, 100, 125   | –                                     | 1 ... 500        |                                                                           |            |                |                   |
|                                                                                     |  | ADN-....Q-S2<br>Through piston rod          | 12, 16, 20, 25 | –                                     | 1 ... 300        | ■                                                                         | –          | ■              | –                 |
|                                                                                     |                                                                                     |                                             | 32, 40, 50, 63 | –                                     | 1 ... 400        |                                                                           |            |                |                   |
|                                                                                     |                                                                                     |                                             | 80, 100, 125   | –                                     | 1 ... 500        |                                                                           |            |                |                   |
|                                                                                     |  | ADN-....Q-S20<br>Through, hollow piston rod | 16, 20, 25     | –                                     | 1 ... 200        | ■                                                                         | –          | ■              | –                 |
| 32, 40, 50, 63                                                                      |                                                                                     |                                             | –              | 1 ... 300                             |                  |                                                                           |            |                |                   |
| 80, 100, 125                                                                        |                                                                                     |                                             | –              | 1 ... 400                             |                  |                                                                           |            |                |                   |
| Standard hole pattern, with clamping unit                                           |                                                                                     |                                             |                |                                       |                  |                                                                           |            |                |                   |
|  | ADN-....KP                                                                          | 20, 25                                      | –              | 10 ... 300                            | ■                | –                                                                         | ■          | –              |                   |
|                                                                                     |                                                                                     | 32, 40, 50, 63                              | –              | 10 ... 400                            |                  |                                                                           |            |                |                   |
|                                                                                     |                                                                                     | 80, 100                                     | –              | 10 ... 500                            |                  |                                                                           |            |                |                   |
| Standard hole pattern, with end-position locking                                    |                                                                                     |                                             |                |                                       |                  |                                                                           |            |                |                   |
|  | ADN-....EL                                                                          | 20, 25                                      | –              | 10 ... 300                            | ■                | –                                                                         | ■          | –              |                   |
|                                                                                     |                                                                                     | 32, 40, 50, 63                              | –              | 10 ... 400                            |                  |                                                                           |            |                |                   |
|                                                                                     |                                                                                     | 80, 100                                     | –              | 10 ... 500                            |                  |                                                                           |            |                |                   |

## Product range overview

| Type                                                    | Male piston rod thread | Female piston rod thread | Extended male piston rod thread | Special piston rod thread | Extended piston rod | Smooth anodised piston rod | Heat-resistant seals max. 120°C | Slow speed (constant motion) | Low friction | High corrosion protection | Dust protection | Low temperature      | → Page/Internet |
|---------------------------------------------------------|------------------------|--------------------------|---------------------------------|---------------------------|---------------------|----------------------------|---------------------------------|------------------------------|--------------|---------------------------|-----------------|----------------------|-----------------|
|                                                         | A                      | I                        | K2                              | K5                        | K8                  | K10                        | S6                              | S10                          | S11          | R3                        | R8              | TT                   |                 |
| <b>Basic version</b>                                    |                        |                          |                                 |                           |                     |                            |                                 |                              |              |                           |                 |                      |                 |
| <b>ADN</b>                                              | ■                      | ■                        | ■                               | ■                         | ■                   | ■<br>from Ø 20             | ■                               | ■                            | ■            | ■                         | ■<br>from Ø 20  | ■<br>Ø 20<br>... 100 | 13              |
| <b>ADN-...-S2</b><br>Through piston rod                 | ■                      | ■                        | ■                               | ■                         | ■                   | —                          | ■                               | —                            | —            | —                         | —               | ■<br>Ø 20<br>... 100 | 13              |
| <b>ADN-...-S20</b><br>Through, hollow piston rod        | ■                      | —                        | ■                               | ■                         | ■                   | —                          | ■                               | —                            | —            | —                         | —               | —                    | 13              |
| <b>Reinforced piston rod</b>                            |                        |                          |                                 |                           |                     |                            |                                 |                              |              |                           |                 |                      |                 |
| <b>ADN-...-S1</b>                                       | ■                      | ■                        | ■                               | ■                         | ■                   | —                          | ■                               | —                            | —            | ■                         | —               | —                    | 13              |
| <b>Non-rotating with square piston rod</b>              |                        |                          |                                 |                           |                     |                            |                                 |                              |              |                           |                 |                      |                 |
| <b>ADN-...-Q</b>                                        | ■                      | ■                        | ■                               | ■                         | ■                   | —                          | ■                               | —                            | —            | —                         | —               | —                    | 13              |
| <b>ADN-...-Q-S2</b><br>Through piston rod               | ■                      | ■                        | ■                               | ■                         | ■                   | —                          | ■                               | —                            | —            | —                         | —               | —                    | 13              |
| <b>ADN-...-Q-S20</b><br>Through, hollow piston rod      | ■                      | —                        | ■                               | ■                         | ■                   | —                          | ■                               | —                            | —            | —                         | —               | —                    | 13              |
| <b>Standard hole pattern, with clamping unit</b>        |                        |                          |                                 |                           |                     |                            |                                 |                              |              |                           |                 |                      |                 |
| <b>ADN-...-KP</b>                                       | ■                      | ■                        | ■                               | ■                         | ■                   | —                          | —                               | —                            | —            | —                         | —               | —                    | 40              |
| <b>Standard hole pattern, with end-position locking</b> |                        |                          |                                 |                           |                     |                            |                                 |                              |              |                           |                 |                      |                 |
| <b>ADN-...-EL</b>                                       | ■                      | ■                        | ■                               | ■                         | ■                   | —                          | —                               | —                            | —            | —                         | —               | —                    | 49              |

## Product range overview

| Function      | Design                                                                              | Type                               | Piston ∅                | Stroke                                | Position sensing | Cushioning |                |                      |
|---------------|-------------------------------------------------------------------------------------|------------------------------------|-------------------------|---------------------------------------|------------------|------------|----------------|----------------------|
|               |                                                                                     |                                    |                         |                                       |                  | Fixed      | Self-adjusting |                      |
|               |                                                                                     |                                    | [mm]                    | [mm]                                  | A                | P          | PPS            |                      |
| Double-acting | Standard hole pattern, non-rotating with yoke                                       |                                    |                         |                                       |                  |            |                |                      |
|               |    | ADNGF                              | 12                      | 5, 10, 15, 20, 25, 30, 40             | 1 ... 200        | ■          | ■              | ■<br>∅ 20<br>... 100 |
|               |                                                                                     |                                    | 16                      | 5, 10, 15, 20, 25, 30, 40, 50         | 1 ... 200        |            |                |                      |
|               |                                                                                     |                                    | 20, 25                  | 5, 10, 15, 20, 25, 30, 40, 50, 60     | 3 ... 200        |            |                |                      |
|               |                                                                                     |                                    | 32, 40, 50              | 5, 10, 15, 20, 25, 30, 40, 50, 60, 80 | 5 ... 300        |            |                |                      |
|               |                                                                                     |                                    | 63, 80                  | 10, 15, 20, 25, 30, 40, 50, 60, 80    | 5 ... 300        |            |                |                      |
|               |                                                                                     |                                    | 100                     | 10, 15, 20, 25, 30, 40, 50, 60, 80    | 5 ... 400        |            |                |                      |
|               |    | ADNGF-...-S2<br>Through piston rod | 12, 16                  | –                                     | 1 ... 200        | ■          | ■              | ■<br>∅ 20<br>... 100 |
|               |                                                                                     |                                    | 20, 25                  |                                       | 3 ... 200        |            |                |                      |
|               |                                                                                     |                                    | 32, 40, 50, 63, 80, 100 |                                       | 5 ... 250        |            |                |                      |
|               |                                                                                     |                                    |                         |                                       |                  |            |                |                      |
|               | Standard hole pattern, high-force cylinder                                          |                                    |                         |                                       |                  |            |                |                      |
|               |    | ADNH                               | 25                      | –                                     | 1 ... 150        | ■          | ■              | –                    |
|               |                                                                                     |                                    | 40                      |                                       |                  |            |                |                      |
|               |                                                                                     |                                    | 63                      |                                       |                  |            |                |                      |
|               |                                                                                     |                                    | 100                     |                                       |                  |            |                |                      |
|               | Standard hole pattern, multi-position cylinder                                      |                                    |                         |                                       |                  |            |                |                      |
|               |  | ADNM                               | 25                      | –                                     | 1 ... 2000       | ■          | ■              | –                    |
|               |                                                                                     |                                    | 40                      |                                       |                  |            |                |                      |
|               |                                                                                     |                                    | 63                      |                                       |                  |            |                |                      |
|               |                                                                                     |                                    | 100                     |                                       |                  |            |                |                      |

## Product range overview

| Type                                           | Male piston rod thread | Female piston rod thread | Extended male piston rod thread | Special piston rod thread | Extended piston rod | Heat-resistant seals max. 120°C | → Page/Internet |
|------------------------------------------------|------------------------|--------------------------|---------------------------------|---------------------------|---------------------|---------------------------------|-----------------|
|                                                | A                      | I                        | K2                              | K5                        | K8                  | S6                              |                 |
| Standard hole pattern, non-rotating with yoke  |                        |                          |                                 |                           |                     |                                 |                 |
| <b>ADNGF</b>                                   | —                      | —                        | —                               | —                         | —                   | ■                               | adngf           |
| <b>ADNGF-....S2</b><br>Through piston rod      | —                      | —                        | —                               | —                         | —                   | ■                               | adngf           |
| Standard hole pattern, high-force cylinder     |                        |                          |                                 |                           |                     |                                 |                 |
| <b>ADNH</b>                                    | ■                      | ■                        | ■                               | ■                         | ■                   | ■                               | adnh            |
| Standard hole pattern, multi-position cylinder |                        |                          |                                 |                           |                     |                                 |                 |
| <b>ADNM</b>                                    | ■                      | ■                        | ■                               | ■                         | ■                   | ■                               | adnh            |

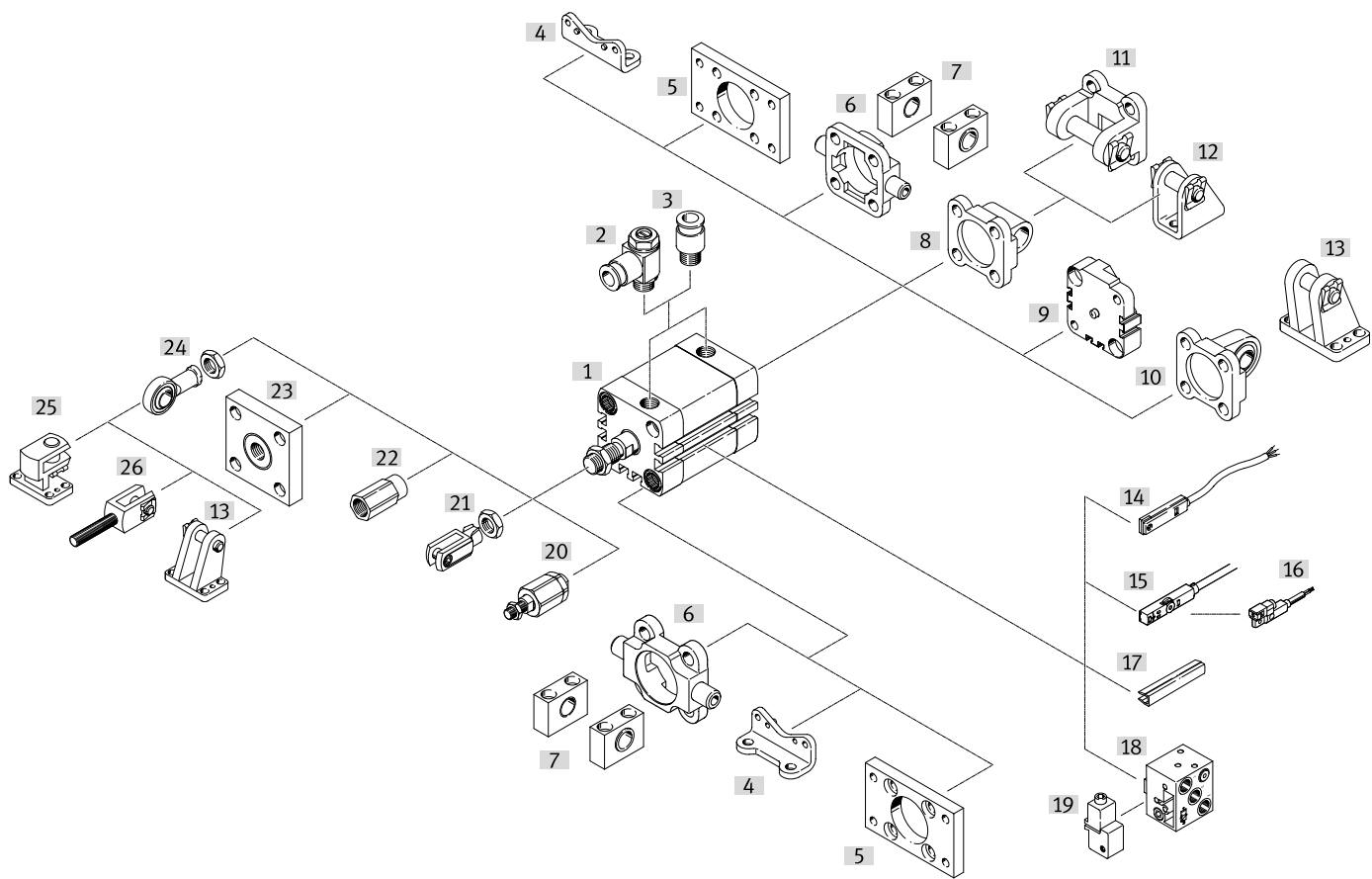
## Product range overview

| Function      | Design                                                                            | Type                 | Piston Ø                            | Stroke   | Position sensing                                                                    | Cushioning                                                                          |
|---------------|-----------------------------------------------------------------------------------|----------------------|-------------------------------------|----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|               |                                                                                   |                      | [mm]                                | [mm]     | A                                                                                   | P                                                                                   |
| Single-acting | Basic version                                                                     |                      |                                     |          |                                                                                     |                                                                                     |
|               |  | AEN                  | 12                                  | 1 ... 10 |  |  |
|               |                                                                                   |                      | 16, 20, 25, 32, 40, 50, 63, 80, 100 | 1 ... 25 |                                                                                     |                                                                                     |
|               |  | AEN-...-Z<br>Pulling | 12                                  | 1 ... 10 |  |  |
|               |                                                                                   |                      | 16, 20, 25, 32, 40, 50, 63, 80, 100 | 1 ... 25 |                                                                                     |                                                                                     |
|               | Non-rotating with square piston rod                                               |                      |                                     |          |                                                                                     |                                                                                     |
|               |  | AEN-...-Q            | 16                                  | 1 ... 25 |  |  |
|               |                                                                                   |                      | 20, 25, 32, 40, 50, 63, 80, 100     | 1 ... 25 |                                                                                     |                                                                                     |

## Product range overview

| Type                                       | Male piston rod<br>thread | Female piston rod<br>thread | Extended male piston rod<br>thread | Special piston<br>rod thread | Extended piston rod | Smooth anodised piston<br>rod | Heat-resistant seals max.<br>120°C | → Page/Internet |
|--------------------------------------------|---------------------------|-----------------------------|------------------------------------|------------------------------|---------------------|-------------------------------|------------------------------------|-----------------|
|                                            | A                         | I                           | K2                                 | K5                           | K8                  | K10                           | S6                                 |                 |
| <b>Basic version</b>                       |                           |                             |                                    |                              |                     |                               |                                    |                 |
| <b>AEN</b>                                 | ■                         | ■                           | ■                                  | ■                            | ■                   | ■<br>from Ø 20                | ■                                  | 59              |
| <b>AEN-...-Z</b><br>Pulling                | ■                         | ■                           | ■                                  | ■                            | ■                   | ■<br>from Ø 20                | ■                                  | 59              |
| <b>Non-rotating with square piston rod</b> |                           |                             |                                    |                              |                     |                               |                                    |                 |
| <b>AEN-...-Q</b>                           | ■                         | ■                           | ■                                  | ■                            | ■                   | —                             | ■                                  | 59              |

Peripherals overview



## Peripherals overview

| Mounting components and accessories |                                          | Description                                                                                    | → Page/Internet |
|-------------------------------------|------------------------------------------|------------------------------------------------------------------------------------------------|-----------------|
| [1]                                 | Compact cylinder<br>ADN                  | Double-acting cylinder                                                                         | 13              |
|                                     | Compact cylinder<br>AEN                  | Single-acting cylinder                                                                         | 59              |
| [2]                                 | One-way flow control valve<br>GRLA/GRLZ  | For speed regulation                                                                           | 83              |
| [3]                                 | Push-in fitting<br>QS                    | For connecting compressed air tubing with standard O.D.                                        | qs              |
| [4]                                 | Foot mounting<br>HNA                     | For bearing or end caps                                                                        | 72              |
| [5]                                 | Flange mounting<br>FNC                   | For bearing or end caps                                                                        | 73              |
| [6]                                 | Trunnion flange<br>ZNCF/CRZNG            | For bearing caps                                                                               | 80              |
| [7]                                 | Trunnion support<br>LNZG                 | For trunnion flange ZNCF/CRZNG                                                                 | 81              |
| [8]                                 | Swivel flange<br>SNCL/SNCL-...-R3        | For end caps                                                                                   | 74              |
| [9]                                 | Multi-position kit<br>DPNA               | For connecting two cylinders with identical piston diameters to form a multi-position cylinder | 77              |
| [10]                                | Swivel flange<br>SNCS/CRSNCS/SNCS-...-R3 | For end caps                                                                                   | 75              |
| [11]                                | Swivel flange<br>SNCB/SNCB-...-R3        | For swivel flange SNCL                                                                         | 79              |
| [12]                                | Clevis foot<br>LBN/CRLBN                 | For swivel flange SNCL                                                                         | 78              |
| [13]                                | Clevis foot<br>LBG/LBG-...-R3            | For swivel flange SNCS                                                                         | 76              |
| [14]                                | Proximity sensor<br>SME-8                | Can be integrated in the cylinder profile barrel                                               | 85              |
| [15]                                | Proximity sensor<br>SME/SMT-8M           | Can be integrated in the cylinder profile barrel                                               | 85              |
| [16]                                | Proximity sensor<br>SMT-8G               | Inserted in the slot lengthwise                                                                | 85              |
| [17]                                | Slot cover<br>ABP-5-S                    | For protecting the sensor cables and the sensor slots from contamination                       | 85              |
| [18]                                | Proximity sensor<br>SMPO-8E              | Pneumatic output signal                                                                        | 85              |
| [19]                                | Mounting kit<br>SMB-8E                   | For proximity sensor SMPO-8E                                                                   | 85              |
| [20]                                | Self-aligning rod coupler<br>FK/CRFK     | For compensating radial and angular deviations                                                 | 82              |
| [21]                                | Rod clevis<br>SG/CRSG                    | Permits a swivelling movement of the cylinder in one plane                                     | 82              |
| [22]                                | Adapter<br>AD                            | For mounting a suction cup on a hollow piston rod                                              | 82              |
| [23]                                | Coupling piece<br>KSG/KSZ                | To compensate for radial deviations                                                            | 82              |
| [24]                                | Rod eye<br>SGS/CRSGS                     | With spherical bearing                                                                         | 82              |
| [25]                                | Right-angle clevis foot<br>LQG           | For rod eye SGS                                                                                | 83              |
| [26]                                | Rod clevis<br>SGA                        | With male thread                                                                               | 82              |

## Type codes

|     |                                                     |  |
|-----|-----------------------------------------------------|--|
| 001 | Series                                              |  |
| ADN | Compact cylinder, double-acting, based on ISO 21287 |  |

|     |                      |  |
|-----|----------------------|--|
| 002 | Piston diameter [mm] |  |
| 12  | 12                   |  |
| 16  | 16                   |  |
| 20  | 20                   |  |
| 25  | 25                   |  |
| 32  | 32                   |  |
| 40  | 40                   |  |
| 50  | 50                   |  |
| 63  | 63                   |  |
| 80  | 80                   |  |
| 100 | 100                  |  |
| 125 | 125                  |  |

|     |             |  |
|-----|-------------|--|
| 003 | Stroke [mm] |  |
| 5   | 5           |  |
| 10  | 10          |  |
| 15  | 15          |  |
| 20  | 20          |  |
| 25  | 25          |  |
| 30  | 30          |  |
| 40  | 40          |  |
| 50  | 50          |  |
| 60  | 60          |  |
| 80  | 80          |  |
| ... | 5 ... 80    |  |

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

|     |                                                   |  |
|-----|---------------------------------------------------|--|
| 005 | Cushioning                                        |  |
| P   | Elastic cushioning rings/plates on both sides     |  |
| PPS | Pneumatic cushioning, self-adjusting at both ends |  |

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

|     |                                                                                    |  |
|-----|------------------------------------------------------------------------------------|--|
| 007 | Special material properties                                                        |  |
|     | None                                                                               |  |
| F1A | Recommended for production facilities for the manufacture of lithium-ion batteries |  |

|     |                             |  |
|-----|-----------------------------|--|
| 008 | Protection against rotation |  |
|     | None                        |  |
| Q   | Square piston rod           |  |

|     |                            |  |
|-----|----------------------------|--|
| 009 | Piston rod type            |  |
|     | At one end                 |  |
| S2  | Through piston rod         |  |
| S20 | Through, hollow piston rod |  |

|              |               |  |
|--------------|---------------|--|
| 010          | Custom thread |  |
| "M5"K5       | M5            |  |
| "M6"K5       | M6            |  |
| "M8"K5       | M8            |  |
| "M10"K5      | M10           |  |
| "M10x1,25"K5 | M10x1.25      |  |
| "M12"K5      | M12           |  |
| "M16"K5      | M16           |  |
| "M20"K5      | M20           |  |
| "M20x1,5"K5  | M20x1.5       |  |

|     |                                  |  |
|-----|----------------------------------|--|
| 011 | Temperature range                |  |
|     | Standard                         |  |
| S6  | Heat-resistant seals max. 120 °C |  |

|     |                        |  |
|-----|------------------------|--|
| 012 | Constant motion        |  |
|     | Standard               |  |
| S10 | Uniform, slow movement |  |

|     |                         |  |
|-----|-------------------------|--|
| 013 | Running characteristics |  |
|     | Standard                |  |
| S11 | Low friction            |  |

|     |                                             |  |
|-----|---------------------------------------------|--|
| 014 | Improved running performance                |  |
|     | None                                        |  |
| K10 | Smooth anodised aluminium coated piston rod |  |

|     |                           |  |
|-----|---------------------------|--|
| 015 | Corrosion protection      |  |
|     | Standard                  |  |
| R3  | High corrosion protection |  |

|     |                           |  |
|-----|---------------------------|--|
| 016 | Captive rating plate      |  |
|     | Rating plate, glued       |  |
| TL  | Laser etched rating plate |  |

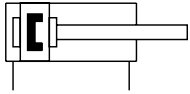
|     |                   |  |
|-----|-------------------|--|
| 017 | Low temperature   |  |
|     | None              |  |
| TT  | -40 °C ... +80 °C |  |

|     |                 |  |
|-----|-----------------|--|
| 018 | Scraper variant |  |
|     | Standard        |  |
| R8  | Dust protection |  |

|     |                  |  |
|-----|------------------|--|
| 019 | EU certification |  |
|     | None             |  |
| EX4 | II 2GD           |  |

## Data sheet

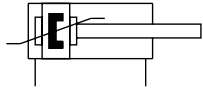
Function  
Elastic cushioning (P)



⌀ - Diameter  
12 ... 125 mm

— - Stroke length  
1 ... 500 mm

Self-adjusting cushioning (PPS)



Variants → page 3



www.festo.com



| General technical data |                                                   |    |     |    |    |    |    |     |    |     |     |
|------------------------|---------------------------------------------------|----|-----|----|----|----|----|-----|----|-----|-----|
| Piston Ø               | 12                                                | 16 | 20  | 25 | 32 | 40 | 50 | 63  | 80 | 100 | 125 |
| Design                 | Piston                                            |    |     |    |    |    |    |     |    |     |     |
|                        | Piston rod                                        |    |     |    |    |    |    |     |    |     |     |
|                        | Cylinder barrel                                   |    |     |    |    |    |    |     |    |     |     |
| Mode of operation      | Double-acting                                     |    |     |    |    |    |    |     |    |     |     |
| Cushioning             |                                                   |    |     |    |    |    |    |     |    |     |     |
| P                      | Elastic cushioning rings/plates at both ends      |    |     |    |    |    |    |     |    |     |     |
| PPS                    | Pneumatic cushioning, self-adjusting at both ends |    |     |    |    |    |    |     |    |     | –   |
| Cushioning length      |                                                   |    |     |    |    |    |    |     |    |     |     |
| PPS [mm]               | –                                                 | 3  | 3.5 | 4  | 5  | 6  | 7  | 7.5 | 10 | –   | –   |
| Position sensing       | Via proximity sensor                              |    |     |    |    |    |    |     |    |     |     |
| Type of mounting       | Via through-hole                                  |    |     |    |    |    |    |     |    |     |     |
|                        | Via female thread                                 |    |     |    |    |    |    |     |    |     |     |
|                        | Via accessories                                   |    |     |    |    |    |    |     |    |     |     |
| Mounting position      | Any                                               |    |     |    |    |    |    |     |    |     |     |

| Technical data – Basic version and variants |    |     |               |               |          |               |
|---------------------------------------------|----|-----|---------------|---------------|----------|---------------|
| Piston Ø                                    | 12 | 16  | 20            | 25            | 32       | 40            |
| Pneumatic connection                        |    |     |               |               |          |               |
| –                                           | M5 | M5  | M5            | M5            | G1/8     | G1/8          |
| S1                                          | –  | –   | –             | M5            | –        | M5            |
| Female piston rod thread                    |    |     |               |               |          |               |
| –                                           | M3 | M4  | M6            | M6            | M8       | M8            |
| K5                                          | –  | –   | M5            | M5            | M6       | M6            |
| S1                                          | –  | –   | –             | M6            | –        | M10           |
| S1-K5                                       | –  | –   | –             | M5            | –        | M8            |
| Male piston rod thread                      |    |     |               |               |          |               |
| –                                           | M5 | M6  | M8            | M8            | M10x1.25 | M10x1.25      |
| K5                                          | M6 | M8  | M10; M10x1.25 | M10; M10x1.25 | M10; M12 | M10; M12      |
| S1                                          | –  | –   | –             | M8            | –        | M12x1.25      |
| S1-K5                                       | –  | –   | –             | M10; M10x1.25 | –        | M10x1.25; M12 |
| Q-K5                                        | M6 | M8  | M10; M10x1.25 | M10; M10x1.25 | M10      | M10           |
| Max. torsional backlash of piston rod [°]   |    |     |               |               |          |               |
| Q                                           | 2  | 1.8 | 1.6           | 1.6           | 1.2      | 1.2           |

## Data sheet

| Technical data – Basic version and variants |          |  |               |  |                   |  |                   |  |         |  |  |
|---------------------------------------------|----------|--|---------------|--|-------------------|--|-------------------|--|---------|--|--|
| Piston Ø                                    | 50       |  | 63            |  | 80                |  | 100               |  | 125     |  |  |
| Pneumatic connection                        |          |  |               |  |                   |  |                   |  |         |  |  |
| –                                           | G1/8     |  | G1/8          |  | G1/8              |  | G1/8              |  | G1/4    |  |  |
| S1                                          | –        |  | G1/8          |  | –                 |  | G1/8              |  | –       |  |  |
| Female piston rod thread                    |          |  |               |  |                   |  |                   |  |         |  |  |
| –                                           | M10      |  | M10           |  | M12               |  | M12               |  | M16     |  |  |
| K5                                          | M8       |  | M8            |  | M10               |  | M10               |  | –       |  |  |
| S1                                          | –        |  | M12           |  | –                 |  | M16               |  | –       |  |  |
| S1-K5                                       | –        |  | M10           |  | –                 |  | –                 |  | –       |  |  |
| Male piston rod thread                      |          |  |               |  |                   |  |                   |  |         |  |  |
| –                                           | M12x1.25 |  | M12x1.25      |  | M16x1.5           |  | M16x1.5           |  | M20x1.5 |  |  |
| K5                                          | M12; M16 |  | M12; M16      |  | M16; M20; M20x1.5 |  | M16; M20; M20x1.5 |  | M20     |  |  |
| S1                                          | –        |  | M16x1.5       |  | –                 |  | M20x1.5           |  | –       |  |  |
| S1-K5                                       | –        |  | M12x1.25; M16 |  | –                 |  | M16x1.5; M20      |  | –       |  |  |
| Q-K5                                        | M12      |  | M12           |  | M16               |  | M16               |  | M20     |  |  |
| Max. torsional backlash of piston rod [°]   |          |  |               |  |                   |  |                   |  |         |  |  |
| Q                                           | 1        |  | 1             |  | 0.8               |  | 0.8               |  | 0.8     |  |  |

| Operating and environmental conditions       |                                                                                            |            |             |           |             |           |    |            |    |           |     |
|----------------------------------------------|--------------------------------------------------------------------------------------------|------------|-------------|-----------|-------------|-----------|----|------------|----|-----------|-----|
| Piston Ø                                     | 12                                                                                         | 16         | 20          | 25        | 32          | 40        | 50 | 63         | 80 | 100       | 125 |
| Operating medium                             | Compressed air to ISO 8573-1:2010 [7:4:4]                                                  |            |             |           |             |           |    |            |    |           |     |
| Note on operating/<br>pilot medium           | Lubricated operation possible (in which case lubricated operation will always be required) |            |             |           |             |           |    |            |    |           |     |
| Operating pressure [bar]                     |                                                                                            |            |             |           |             |           |    |            |    |           |     |
| [MPa]                                        |                                                                                            |            |             |           |             |           |    |            |    |           |     |
| –                                            | 0.1 ... 1                                                                                  |            | 0.06 ... 1  |           |             |           |    |            |    |           |     |
| PPS                                          | –                                                                                          |            | 0.15 ... 1  |           |             | 0.1 ... 1 |    |            | –  |           |     |
| Q                                            | 0.13 ... 1                                                                                 |            | 0.1 ... 1   |           | 0.08 ... 1  |           |    | 0.06 ... 1 |    |           |     |
| S1                                           | –                                                                                          |            |             | 0.1 ... 1 | –           | 0.1 ... 1 | –  | 0.1 ... 1  | –  | 0.1 ... 1 | –   |
| S2, S20                                      | 0.15 ... 1                                                                                 | 0.13 ... 1 | 0.12 ... 1  |           | 0.1 ... 1   |           |    | 0.08 ... 1 |    |           |     |
| S6                                           | 0.1 ... 1                                                                                  |            | 0.06 ... 1  |           | –           |           |    |            |    |           |     |
| S11                                          | 0.045 ... 1                                                                                |            |             |           | 0.025 ... 1 |           |    |            |    |           |     |
| R8, TT                                       | –                                                                                          |            | 0.15 ... 1  |           |             | 0.1 ... 1 |    |            | –  |           |     |
| [bar]                                        |                                                                                            |            |             |           |             |           |    |            |    |           |     |
| –                                            | 1 ... 10                                                                                   |            | 0.6 ... 10  |           |             |           |    |            |    |           |     |
| PPS                                          | –                                                                                          |            | 1.5 ... 10  |           |             | 1 ... 10  |    |            | –  |           |     |
| Q                                            | 1.3 ... 10                                                                                 |            | 1 ... 10    |           | 0.8 ... 10  |           |    | 0.6 ... 10 |    |           |     |
| S1                                           | –                                                                                          |            |             | 1 ... 10  | –           | 1 ... 10  | –  | 1 ... 10   | –  | 1 ... 10  | –   |
| S2, S20                                      | 1.5 ... 10                                                                                 | 1.3 ... 10 | 1.2 ... 10  |           | 1 ... 10    |           |    | 0.8 ... 10 |    |           |     |
| S6                                           | 1 ... 10                                                                                   |            | 0.6 ... 10  |           | –           |           |    |            |    |           |     |
| S11                                          | 0.45 ... 10                                                                                |            |             |           | 0.25 ... 10 |           |    |            |    |           |     |
| R8, TT                                       | –                                                                                          |            | 1.5 ... 10  |           |             | 1 ... 10  |    |            | –  |           |     |
| Ambient temperature <sup>1)</sup> [°C]       |                                                                                            |            |             |           |             |           |    |            |    |           |     |
| –                                            | –20 ... +80                                                                                |            |             |           |             |           |    |            |    |           |     |
| S6                                           | 0 ... +120                                                                                 |            |             |           |             |           |    |            |    |           |     |
| R3                                           | –20 ... +80                                                                                |            |             |           |             |           |    |            |    |           |     |
| TT                                           | –                                                                                          |            | –40 ... +80 |           |             |           |    |            |    |           |     |
| Corrosion resistance class CRC <sup>2)</sup> |                                                                                            |            |             |           |             |           |    |            |    |           |     |
| –                                            | 2                                                                                          |            |             |           |             |           |    |            |    |           |     |
| R3                                           | 3                                                                                          |            |             |           |             |           |    |            |    |           |     |
| F1A                                          | 0                                                                                          |            |             |           |             |           |    |            |    |           |     |
| ATEX                                         | Selected types → <a href="http://www.festo.com">www.festo.com</a>                          |            |             |           |             |           |    |            |    |           |     |

1) Note operating range of proximity sensors

2) Corrosion resistance class CRC 0 to Festo standard FN 940070

No corrosion stress. Applies to small, visually unimportant standards-based parts such as threaded pins, circlips and clamping sleeves which are usually only available on the market in a phosphated or burnished version (and possibly oiled) as well as to ball bearings (for components < CRC 3) and plain bearings.

Corrosion resistance class CRC 2 to Festo standard FN 940070

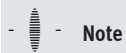
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment.

## Data sheet

| Forces [N] and impact energy [J]        |       |       |       |       |      |      |      |      |      |      |      |
|-----------------------------------------|-------|-------|-------|-------|------|------|------|------|------|------|------|
| Piston ø                                | 12    | 16    | 20    | 25    | 32   | 40   | 50   | 63   | 80   | 100  | 125  |
| Theoretical force at 6 bar, advancing   |       |       |       |       |      |      |      |      |      |      |      |
| –                                       | 68    | 121   | 188   | 295   | 483  | 754  | 1178 | 1870 | 3016 | 4712 | 7363 |
| S1                                      | –     | –     | –     | 295   | –    | 754  | –    | 1870 | –    | 4712 | –    |
| S2                                      | 51    | 90    | 141   | 247   | 415  | 686  | 1057 | 1750 | 2827 | 4524 | 7069 |
| Theoretical force at 6 bar, retracting  |       |       |       |       |      |      |      |      |      |      |      |
| –                                       | 51    | 90    | 141   | 247   | 415  | 686  | 1057 | 1750 | 2827 | 4524 | 7069 |
| S1                                      | –     | –     | –     | 247   | –    | 633  | –    | 1681 | –    | 4417 | –    |
| S2                                      | 51    | 90    | 141   | 247   | 415  | 686  | 1057 | 1750 | 2827 | 4524 | 7069 |
| Max. impact energy at the end positions |       |       |       |       |      |      |      |      |      |      |      |
| –                                       | 0.07  | 0.15  | 0.2   | 0.3   | 0.4  | 0.7  | 1    | 1.3  | 1.8  | 2.5  | 3.3  |
| S1                                      | –     | –     | –     | 0.3   | –    | 0.7  | –    | 1.3  | –    | 2.5  | –    |
| S6                                      | 0.035 | 0.075 | 0.1   | 0.15  | 0.2  | 0.35 | 0.5  | 0.65 | 0.9  | 1.25 | 1.75 |
| K10                                     | –     | –     | 0.16  | 0.24  | 0.32 | 0.56 | 0.8  | 1    | 1.4  | 2    | 2.6  |
| S20                                     | –     | 0.016 | 0.024 | 0.083 | 0.15 | 0.39 | 0.48 | 0.62 | 0.8  | 0.9  | 0.95 |

**Note**

These specifications represent the maximum values that can be achieved. The maximum permissible impact energy must be observed.

Permissible impact speed:

$$V = \sqrt{\frac{2 \times E}{m_1 + m_2}}$$

V Perm. impact speed  
E Max. impact energy  
m1 Moving mass (drive)  
m2 Moving payload

Maximum permissible mass:

$$m_2 = \frac{2 \times E}{V^2} - m_1$$

**Note**

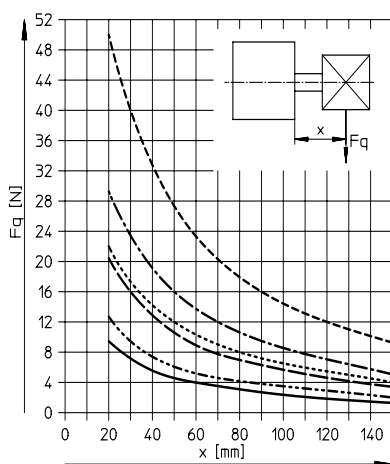
In combination with the self-adjusting cushioning (PPS), the maximum impact energy is still obtained.

**Max. energy conversion capacity [J]**

| Piston ø                            | 20   | 25  | 32 | 40  | 50  | 63  | 80 | 100 |
|-------------------------------------|------|-----|----|-----|-----|-----|----|-----|
| For self-adjusting cushioning (PPS) | 0.65 | 0.8 | 1  | 1.7 | 2.8 | 4.8 | 8  | 12  |

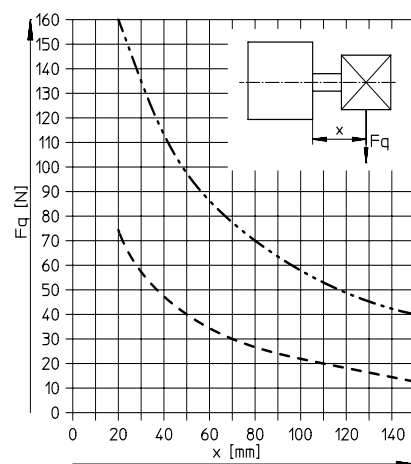
**Max. lateral load F<sub>q</sub> as a function of projection x**

ø 12 ... 63



— ø 12  
- · - · - · ø 16  
- - - - - ø 20  
····· ø 25  
- · - · - · ø 32/40  
- - - - - ø 50/63

ø 80 ... 125



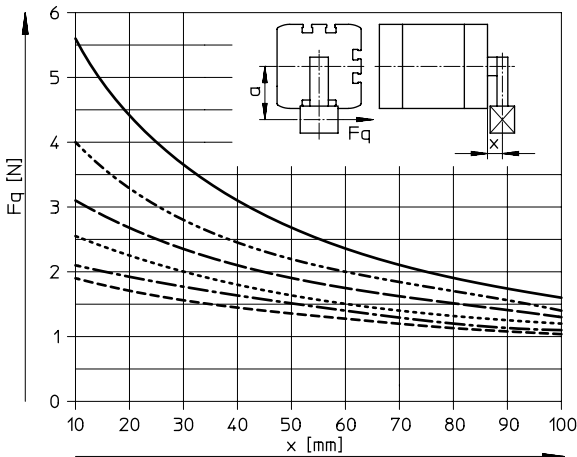
- - - - - ø 80/100  
- · - · - · ø 125

Data sheet

Max. lateral load  $F_q$  as a function of projection  $x$  and lever arm  $a$

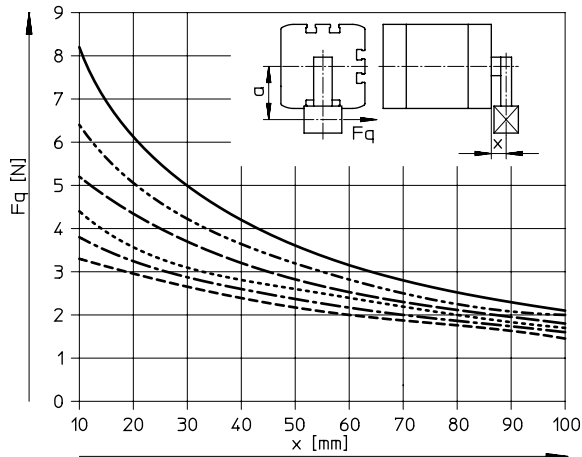
Q – Square piston rod

Ø 12



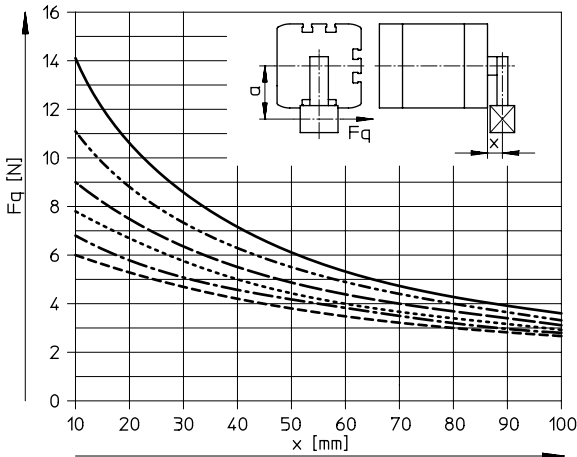
- $a = 5$  mm
- - -  $a = 10$  mm
- - -  $a = 15$  mm
- .....  $a = 20$  mm
- · -  $a = 25$  mm
- - -  $a = 30$  mm

Ø 16



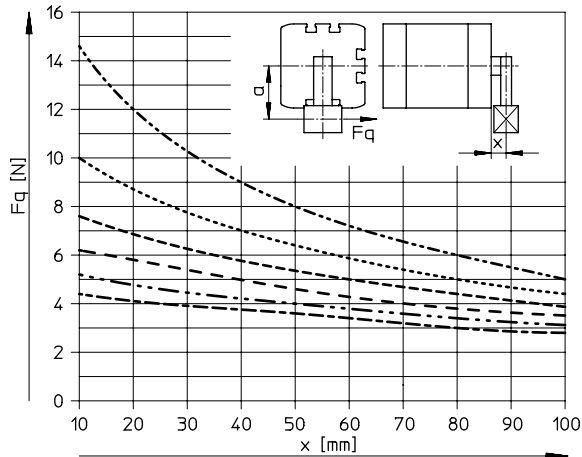
- $a = 5$  mm
- - -  $a = 10$  mm
- - -  $a = 15$  mm
- .....  $a = 20$  mm
- · -  $a = 25$  mm
- - -  $a = 30$  mm

Ø 20/25



- $a = 5$  mm
- - -  $a = 10$  mm
- - -  $a = 15$  mm
- .....  $a = 20$  mm
- · -  $a = 25$  mm
- - -  $a = 30$  mm

Ø 32/40



- - -  $a = 10$  mm
- .....  $a = 20$  mm
- - -  $a = 30$  mm
- - -  $a = 40$  mm
- · -  $a = 50$  mm
- · -  $a = 60$  mm

Note

- Torques on the piston rod are to be excluded with projections greater than those shown in the graphs.

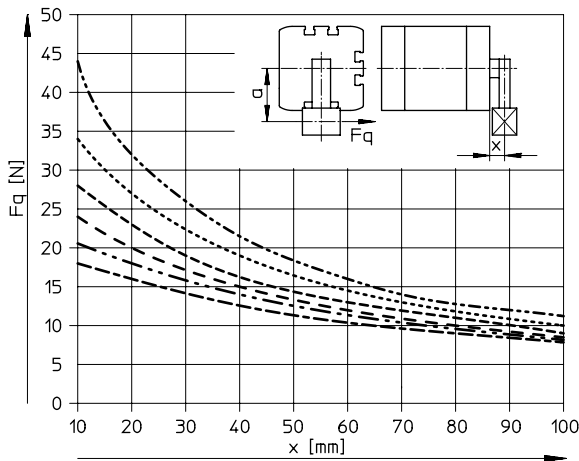
- If  $a = 0$ , the corresponding lateral load line of the basic version of the ADN can be used (→ page 15).

## Data sheet

Max. lateral load  $F_q$  as a function of projection  $x$  and lever arm  $a$ 

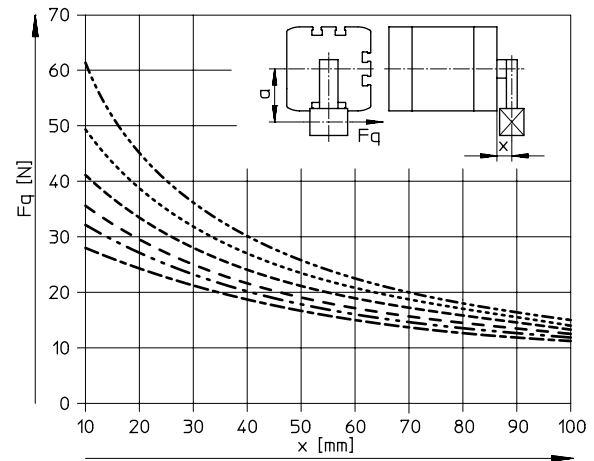
Q – Square piston rod

Ø 50/63



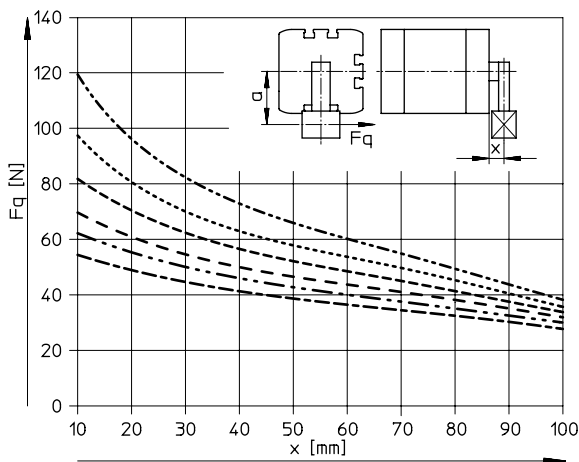
- ..... a = 10 mm
- ..... a = 20 mm
- a = 30 mm
- a = 40 mm
- a = 50 mm
- a = 60 mm

Ø 80/100



- ..... a = 10 mm
- ..... a = 20 mm
- a = 30 mm
- a = 40 mm
- a = 50 mm
- a = 60 mm

Ø 125



- ..... a = 10 mm
- ..... a = 20 mm
- a = 30 mm
- a = 40 mm
- a = 50 mm
- a = 60 mm



## Note

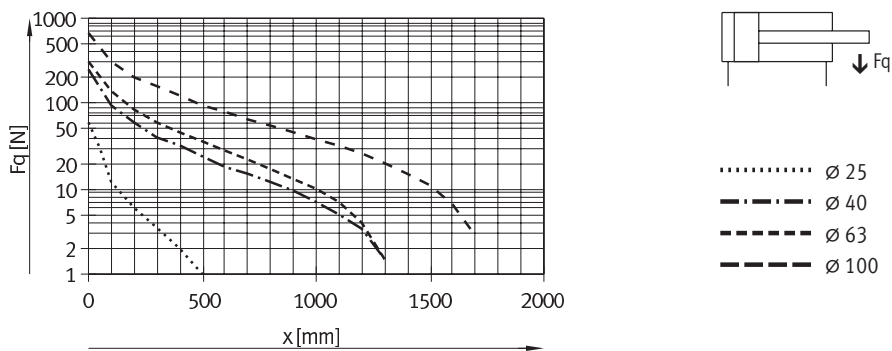
- Torques on the piston rod are to be excluded with projections greater than those shown in the graphs.

- If  $a = 0$ , the corresponding lateral load line of the basic version of the ADN can be used (→ page 15).

## Data sheet

Max. lateral load  $F_q$  as a function of projection  $x$ 

S1 – Reinforced piston rod

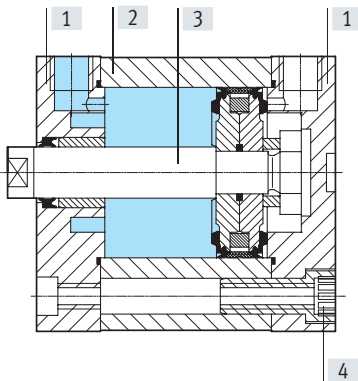


## Weight [g]

| Piston Ø                           | 12 | 16 | 20  | 25  | 32  | 40  | 50  | 63  | 80   | 100  | 125  |
|------------------------------------|----|----|-----|-----|-----|-----|-----|-----|------|------|------|
| Product weight with 0 mm stroke    | 77 | 79 | 131 | 156 | 265 | 346 | 540 | 722 | 1121 | 2154 | 2880 |
| Additional weight per 10 mm stroke | 12 | 14 | 21  | 23  | 30  | 37  | 51  | 59  | 79   | 98   | 117  |
| Moving mass with 0 mm stroke       | 9  | 15 | 30  | 50  | 60  | 80  | 140 | 180 | 400  | 570  | 1080 |
| Additional mass per 10 mm stroke   | 2  | 4  | 6   | 6   | 9   | 9   | 16  | 16  | 25   | 25   | 39   |

## Materials

Sectional view



| Compact cylinder    | Basic version, Q                                                                                                                                                                                                               | R8                                | S6, S10, S11     | R3                                | K10                               | F1A                  |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------|-----------------------------------|-----------------------------------|----------------------|
| [1] Cover           |                                                                                                                                                                                                                                |                                   |                  |                                   |                                   |                      |
| ∅ 12 ... 63         | Anodised aluminium                                                                                                                                                                                                             |                                   |                  |                                   |                                   |                      |
| ∅ 80 ... 125        | Coated die-cast aluminium                                                                                                                                                                                                      |                                   |                  |                                   |                                   |                      |
| [2] Cylinder barrel | Anodised aluminium                                                                                                                                                                                                             |                                   |                  |                                   |                                   |                      |
| [3] Piston rod      | High-alloy steel                                                                                                                                                                                                               | Hard-chrome-plated tempered steel | High-alloy steel |                                   | Anodised aluminium                | High-alloy steel     |
| [4] Flange screws   |                                                                                                                                                                                                                                |                                   |                  |                                   |                                   |                      |
| ∅ 12 ... 16         | High-alloy steel                                                                                                                                                                                                               |                                   |                  | High-alloy steel                  | –                                 | Steel, nickel-plated |
| ∅ 20 ... 63         | Galvanised steel                                                                                                                                                                                                               |                                   |                  | Tempered steel                    | Galvanised steel                  |                      |
| ∅ 80 ... 125        | Standard screws, galvanised steel                                                                                                                                                                                              |                                   |                  | Standard screws, high-alloy steel | Standard screws, galvanised steel |                      |
| – Seals             | Polyurethane                                                                                                                                                                                                                   |                                   | Fluoro rubber    | Polyurethane                      |                                   | Polyurethane         |
| Note on materials   |                                                                                                                                                                                                                                |                                   |                  |                                   |                                   |                      |
| ADN-...             | RoHS-compliant                                                                                                                                                                                                                 |                                   |                  |                                   |                                   |                      |
|                     | PWIS conformity: VDMA24364-B1/B2-L                                                                                                                                                                                             |                                   |                  |                                   |                                   |                      |
| ADN-...S10/11       | Contains PWIS (paint-wetting impairment substances)                                                                                                                                                                            |                                   |                  |                                   |                                   |                      |
|                     | PWIS conformity: VDMA24364 zone III                                                                                                                                                                                            |                                   |                  |                                   |                                   |                      |
| ADN-...F1A          | Metals with copper, zinc or nickel as the main constituent are excluded from use.<br>Exceptions are nickel in steels, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils. |                                   |                  |                                   |                                   |                      |

## Data sheet

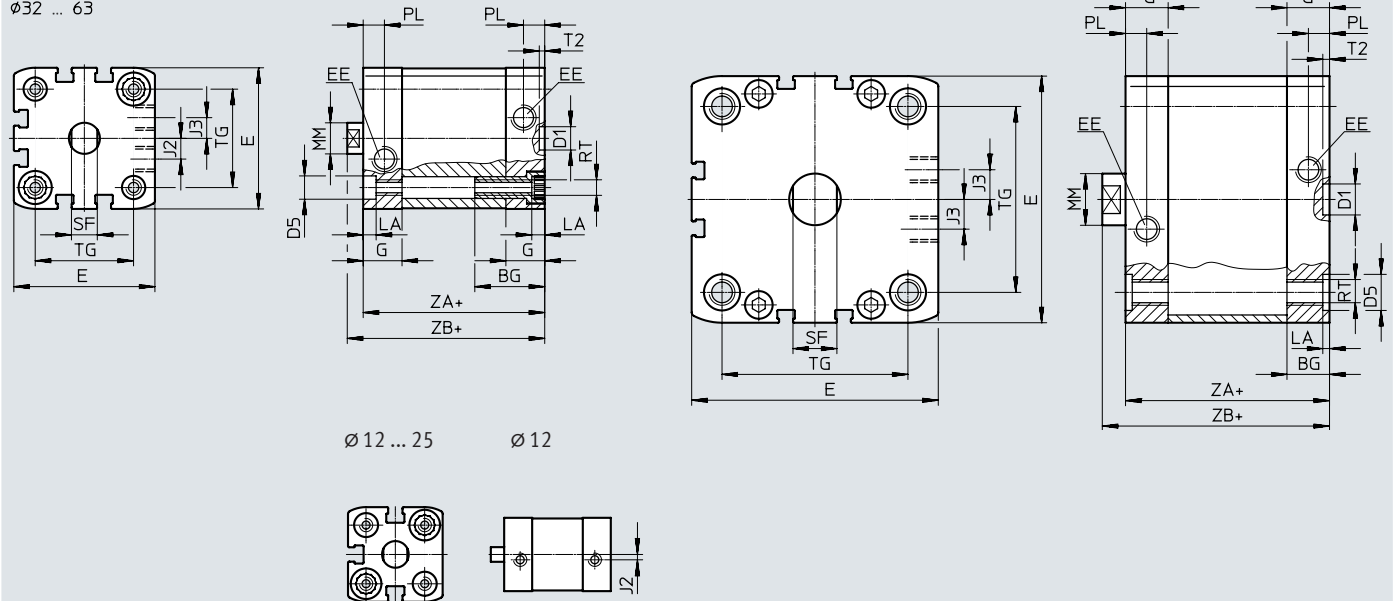
## Dimensions – Basic version

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Ø 12 ... 63

Ø 80 ... 125

Ø 32 ... 63



Ø 12 ... 25

Ø 12

+ = plus stroke length  
 [1] = Drilled hole for centring pin/sleeve

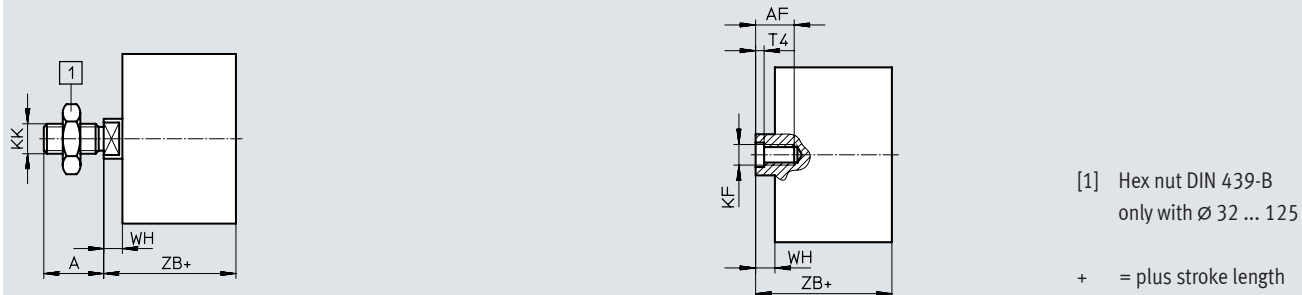
| Ø    | BG   | D1<br>Ø<br>H9 | D5<br>Ø          | E                     | EE   | G     | J2   | J3  | LA   |
|------|------|---------------|------------------|-----------------------|------|-------|------|-----|------|
| [mm] | min. |               |                  |                       |      |       |      |     | +0.2 |
| 12   | 17   | 9             | 6 <sup>F9</sup>  | 27.5 <sup>+0.3</sup>  | M5   | 10.5  | 2    | –   | 3.5  |
| 16   |      |               |                  | 29 <sup>+0.3</sup>    |      | 11    | 2.6  |     |      |
| 20   | 19.5 |               | 9 <sup>F9</sup>  | 35.5 <sup>+0.3</sup>  |      | 12    |      |     | 5    |
| 25   |      |               |                  | 39.5 <sup>+0.3</sup>  | G1/8 | 15    | 6    |     |      |
| 32   | 26   |               |                  | 47 <sup>+0.3</sup>    |      |       | 8    |     |      |
| 40   |      |               |                  | 54.5 <sup>+0.3</sup>  |      |       | 11.5 |     |      |
| 50   | 27   | 12            | 12 <sup>F9</sup> | 65.5 <sup>+0.3</sup>  |      | 16.5  | 20   | 2.6 |      |
| 63   |      |               |                  | 75.5 <sup>+0.3</sup>  |      |       |      |     | 21.5 |
| 80   | 17   |               | 15               | 95.5 <sup>+0.6</sup>  | G1/4 | 21.15 |      | –   |      |
| 100  | 21.5 |               |                  | 113.5 <sup>+0.6</sup> |      |       |      |     |      |
| 125  | 20   |               | –                | 134.6 <sup>+0.3</sup> |      | 20    |      |     |      |

| Ø<br>[mm] | MM<br>Ø | PL   | RT  | SF  | T2   | TG   | ZA   | ZB   | PPS  |
|-----------|---------|------|-----|-----|------|------|------|------|------|
|           |         | +0.2 |     | h13 | +0.1 | ±0.2 | ±0.3 | +1.2 | +1.3 |
| 12        | 6       | 6    | M4  | 5   | 2.1  | 16   | 35   | 39.2 | –    |
| 16        | 8       |      |     | 7   |      | 18   |      | 39.7 |      |
| 20        | 10      |      | M5  | 9   |      | 22   | 37   | 42.5 | 42.5 |
| 25        |         |      |     |     |      | 26   | 39   | 44.5 | 45.3 |
| 32        | 12      | 8.2  | M6  | 10  | 2.6  | 32.5 | 44   | 50   | 50.6 |
| 40        |         |      |     |     |      | 38   | 45   | 51.1 | 51.7 |
| 50        | 16      |      | M8  | 13  |      | 46.5 |      | 56.5 | 56.5 |
| 63        |         |      |     |     |      | 56.5 | 49   | 62.9 | 63.4 |
| 80        | 20      | 10.5 | M10 | 17  |      | 72   | 54   | 62.9 | 63.4 |
| 100       |         |      |     |     |      | 89   | 67   | 76   | 76.8 |
| 125       | 25      |      | M12 | 21  |      | 110  | 81   | 92   | –    |

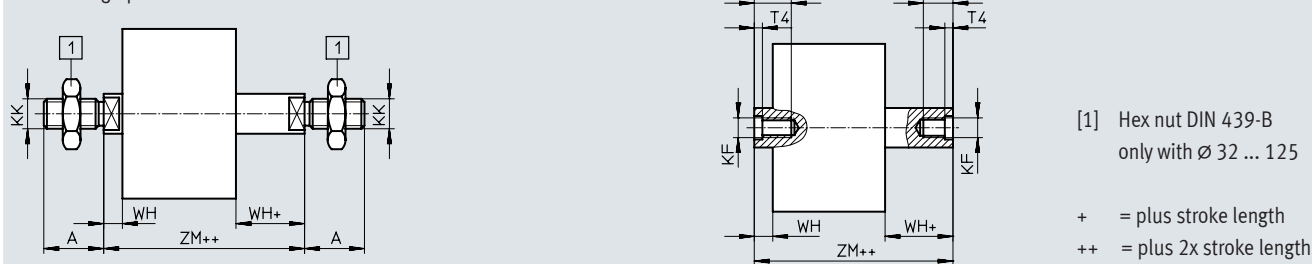
Data sheet

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

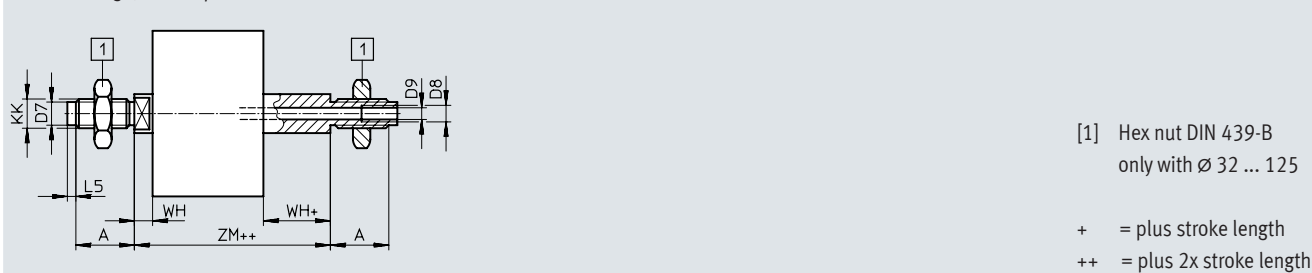
Basic version



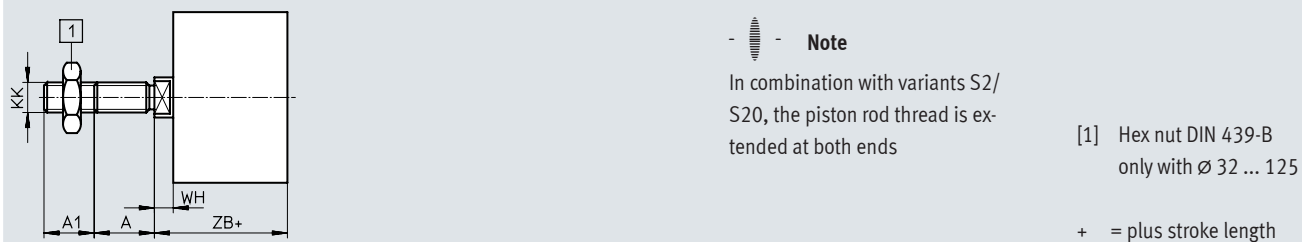
S2 – Through piston rod



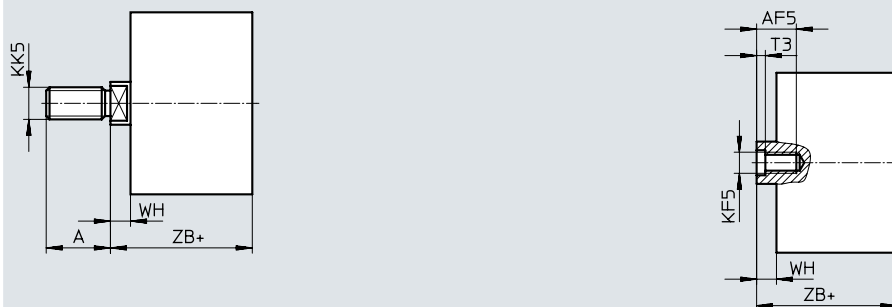
S20 – Through, hollow piston rod



K2 – Extended male piston rod thread



K5 – Special piston rod thread

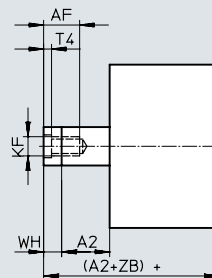
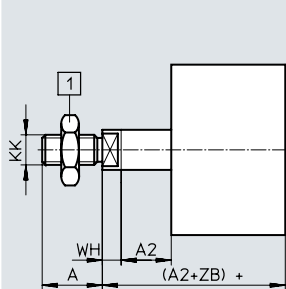


## Data sheet

## Dimensions – Variants

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## K8 – Extended piston rod



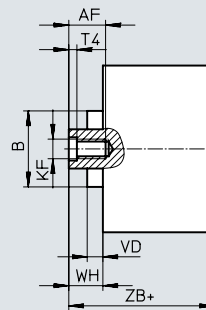
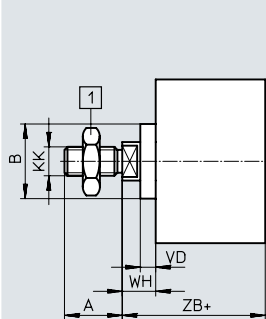
**Note**

In combination with variants S2/  
S20, the piston rod thread is ex-  
tended at one end

[1] Hex nut DIN 439-B  
only with  $\varnothing 32 \dots 125$

+ = plus stroke length

## R8 – Dust protection / TT – Low temperature



[1] Hex nut DIN 439-B  
only with  $\varnothing 32 \dots 125$

+ = plus stroke length

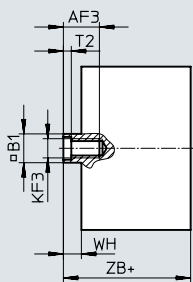
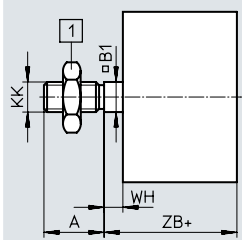
| $\varnothing$<br>[mm] | A  | A1       | A2        | AF<br>min. | AF5<br>min. | B<br>$\varnothing$ | D7<br>$\varnothing$ | D8   | D9<br>$\varnothing$ | L5  | KF  | KF5 | KK       |
|-----------------------|----|----------|-----------|------------|-------------|--------------------|---------------------|------|---------------------|-----|-----|-----|----------|
| 12                    | 10 | 1 ... 10 | 1 ... 300 | 8          | –           | –                  | –                   | –    | –                   | –   | M3  | –   | M5       |
| 16                    | 12 |          |           | 10         | –           | –                  | 4.5                 |      | 3.2                 | 3   | M4  | –   | M6       |
| 20                    | 16 |          |           | 14         | 12          | 18                 | 6                   |      | 3.8                 | 2   | M6  | M5  | M8       |
| 25                    | 16 | 1 ... 20 | 1 ... 400 | 16         | 14          | 27                 | 8                   | –    | 4.5                 | 3   | M8  | M6  | M10x1.25 |
| 32                    | 19 |          |           |            |             |                    |                     |      |                     |     |     |     |          |
| 40                    | 19 |          |           |            |             |                    |                     |      |                     |     |     |     |          |
| 50                    | 22 | 1 ... 30 | 1 ... 500 | 20         | 16          | 31                 | 10                  | –    | 6                   | 3.5 | M10 | M8  | M12x1.25 |
| 63                    | 22 |          |           |            |             |                    |                     |      |                     |     |     |     |          |
| 80                    | 28 |          |           |            |             |                    |                     |      |                     |     |     |     |          |
| 100                   | 28 | 1 ... 40 | 1 ... 500 | 25         | –           | –                  | –                   | G1/8 | 8                   | –   | M12 | M10 | M16x1.5  |
| 125                   | 40 |          |           |            |             |                    |                     | G1/4 |                     |     | M16 | –   | M20x1.5  |

| ø<br>[mm] | KK5            | T3  | T4  | VD  | WH   |             |               | ZB   |             |               | ZM                    |                      |
|-----------|----------------|-----|-----|-----|------|-------------|---------------|------|-------------|---------------|-----------------------|----------------------|
|           |                |     |     |     | +1.3 | PPS<br>+1.4 | R8/TT<br>+1.3 | +1.2 | PPS<br>+1.3 | R8/TT<br>+1.2 |                       | PPS                  |
| 12        | M6             | –   | 1.5 | –   | 4.2  | –           | –             | 39.2 | –           | –             | 44.5 <sup>+0.5</sup>  | –                    |
| 16        | M8             |     |     |     | 4.7  |             |               | 39.7 |             |               | 45.7 <sup>+0.5</sup>  |                      |
| 20        | M10x1.25       | 2   | 2.6 | 5.2 | 5.5  | 5.5         | 10.5          | 42.5 | 42.5        | 47.5          | 49.5 <sup>+0.5</sup>  | 49.5 <sup>+0.5</sup> |
| 25        | M10            |     |     |     |      |             |               | 44.5 | 45.3        | 49.5          | 51.5 <sup>+0.5</sup>  | 51.5 <sup>+0.5</sup> |
| 32        | M10            | 2.6 | 3.3 | 6.4 | 6    | 6.5         | 12.5          | 50   | 50.6        | 56.5          | 57.5 <sup>+0.5</sup>  | 58.6 <sup>+0.6</sup> |
| 40        | M12            |     |     |     | 6.1  | 6.6         |               | 51.1 | 51.7        | 57.5          | 58.6 <sup>+0.6</sup>  | 59.7 <sup>+0.7</sup> |
| 50        | M12            | 3.3 | 4.7 |     | 7.7  | 8.2         | 14.7          | 52.7 | 53.2        | 59.7          | 62.0 <sup>+0.6</sup>  | 63.1 <sup>+0.7</sup> |
| 63        | M16            |     |     |     | 7.5  | 8           | 14.6          | 56.5 | 57          | 63.6          | 65.4 <sup>+0.6</sup>  | 66.5 <sup>+0.7</sup> |
| 80        | M16            | 4.7 | 6.1 |     | 8.9  | 9.4         | 15.4          | 62.9 | 63.4        | 69.4          | 73.2 <sup>+0.6</sup>  | 74.3 <sup>+0.7</sup> |
| 100       | M20x1.5<br>M20 |     |     |     | 9    | 9.8         | 15.5          | 76   | 76.8        | 82.5          | 86.4 <sup>+0.6</sup>  | 88 <sup>+0.7</sup>   |
| 125       | M20            | –   | 7   | –   | 11   | –           | –             | 92   | –           | –             | 104.4 <sup>+0.6</sup> | –                    |

Data sheet

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

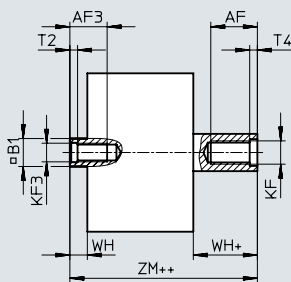
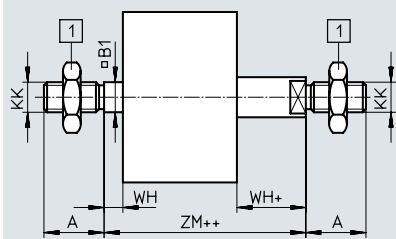
Q – Square piston rod



[1] Hex nut DIN 439-B  
only with  $\varnothing 32 \dots 125$

+ = plus stroke length

Q-S2 – Square, through piston rod

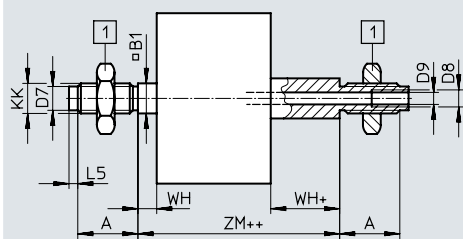


[1] Hex nut DIN 439-B  
only with  $\varnothing 32 \dots 125$

+ = plus stroke length

++ = plus 2x stroke length

Q-S20 – Square, through, hollow piston rod

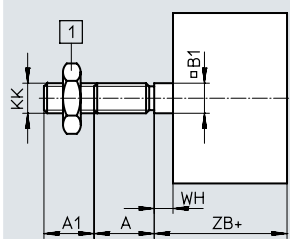


[1] Hex nut DIN 439-B  
only with  $\varnothing 32 \dots 125$

+ = plus stroke length

++ = plus 2x stroke length

Q-K2 – Square piston rod with extended male thread

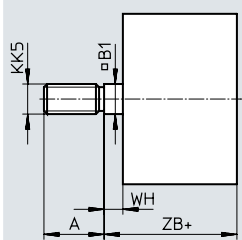


 **Note**  
In combination with variants S2/  
S20, the piston rod thread is ex-  
tended at both ends.

[1] Hex nut DIN 439-B  
only with  $\varnothing 32 \dots 125$

+ = plus stroke length

Q-K5 – Square piston rod with special thread



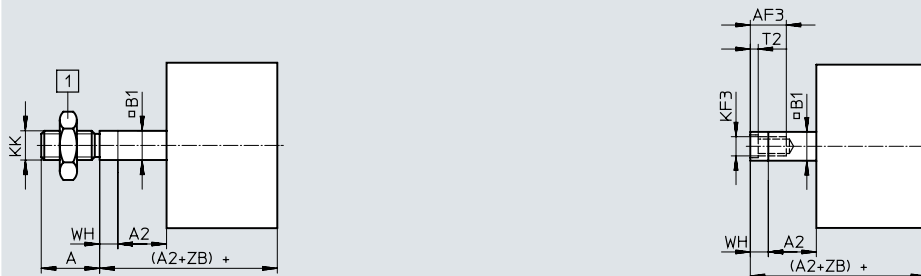
+ = plus stroke length

## Data sheet

## Dimensions – Variants

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Q-K8 – Square, extended piston rod



**Note**

In combination with variants S2/S20, the piston rod thread is extended at both ends.

[1] Hex nut DIN 439-B  
only with  $\varnothing 32 \dots 125$

+ = plus stroke length

| ∅    | A    | A1       | A2        | AF       | AF3       | B1<br>□ | D7<br>∅ | D8   | D9<br>∅ |
|------|------|----------|-----------|----------|-----------|---------|---------|------|---------|
| [mm] | −0.5 |          |           | min.     | min.      |         |         |      |         |
| 12   | 10   | 1 ... 10 | 1 ... 300 | 8        | 8         | 5.5     | –       | –    | –       |
| 16   | 12   |          |           | 10       | 10        | 7       | 4.5     |      | 3.2     |
| 20   | 16   |          |           | 14       | 12        | 9       | 6       |      | 3.8     |
| 25   |      | 1 ... 20 | 1 ... 400 | 16       | 14        | 10      | 8       |      | 4.5     |
| 32   |      |          |           | 20       | 16        | 12      | 10      |      | 6       |
| 40   | 22   |          |           | 1 ... 30 | 1 ... 500 | 20      | 20      | 16   | –       |
| 50   |      | 25       | 24        |          |           | 20      | –       | G1/4 | 11.7    |
| 63   |      |          |           |          |           |         |         |      |         |
| 80   | 28   | 1 ... 40 |           |          |           |         |         |      |         |
| 100  | 40   |          |           |          |           |         |         |      |         |
| 125  |      |          |           |          |           |         |         |      |         |

| $\varnothing$<br>[mm] | L5  | KF  | KF3 | KK       | KK5             | T2  | T4  | WH<br>+1.3 | ZB<br>+1.2 | ZM                    |
|-----------------------|-----|-----|-----|----------|-----------------|-----|-----|------------|------------|-----------------------|
| 12                    | –   | M3  | M3  | M5       | M6              | 1.5 | 1.5 | 4.2        | 39.2       | 44.5 <sup>+0.5</sup>  |
| 16                    | 3   | M4  | M4  | M6       | M8              |     |     | 4.7        | 39.7       | 45.7 <sup>+0.5</sup>  |
| 20                    | 2   | M6  | M5  | M8       | M10x1.25<br>M10 | 2   | 2.6 | 5.5        | 42.5       | 49.5 <sup>+0.5</sup>  |
| 25                    |     |     |     |          |                 |     |     | 6          | 44.5       | 51.5 <sup>+0.5</sup>  |
| 32                    | 3   | M8  | M6  | M10x1.25 | M10             | 2.6 | 3.3 | 6.1        | 50         | 57.5 <sup>+0.5</sup>  |
| 40                    |     |     |     |          |                 |     |     | 6.1        | 51.1       | 58.6 <sup>+0.6</sup>  |
| 50                    | 3.5 | M10 | M8  | M12x1.25 | M12             | 3.3 | 4.7 | 8.2        | 53.2       | 62.8 <sup>+0.6</sup>  |
| 63                    |     |     |     |          |                 |     |     | 8.1        | 57.1       | 66.6 <sup>+0.6</sup>  |
| 80                    | –   | M12 | M10 | M16x1.5  | M16             | 4.7 | 6.1 | 8.9        | 62.9       | 73.2 <sup>+0.6</sup>  |
| 100                   |     |     |     |          |                 |     |     | 9          | 76         | 86.4 <sup>+0.6</sup>  |
| 125                   |     |     |     |          |                 |     |     | 11         | 92         | 104.4 <sup>+0.6</sup> |

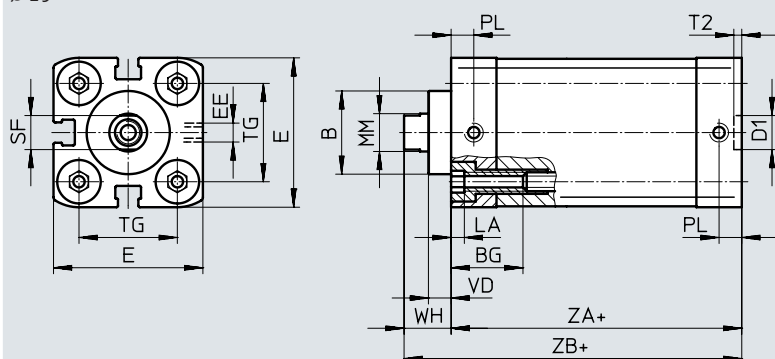
## Data sheet

## Dimensions – Variants

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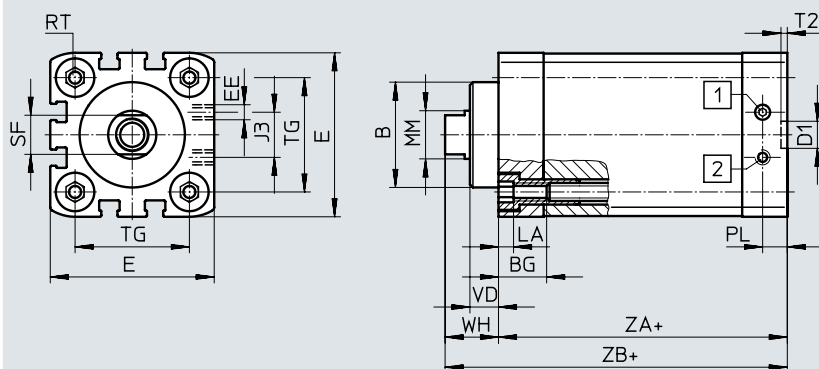
S1 – Reinforced piston rod

Ø 25



+ = plus stroke length

Ø 40 ... 100



- [1] Cylinder advancing  
[2] Cylinder retracting

+ = plus stroke length

| Ø<br>[mm] | B<br>Ø<br>f8 | BG<br>min. | D1<br>Ø<br>H9 | E                     | EE   | J3 | LA | MM<br>Ø | PL   |
|-----------|--------------|------------|---------------|-----------------------|------|----|----|---------|------|
| 25        | 22           | 15         | 9             | 39.5 <sup>+0.3</sup>  | M5   | –  | 5  | 10      | 6    |
| 40        | 35           | 16         | 12            | 54.5 <sup>+0.3</sup>  | G1/8 | 15 | 5  | 16      | 8.2  |
| 63        | 42           | 17         | 12            | 75.5 <sup>+0.3</sup>  | G1/8 | 23 | 5  | 20      | 10.5 |
| 100       | 55           | 17         | 12            | 113.5 <sup>+0.6</sup> | G1/8 | 40 | 5  | 25      | 10.5 |

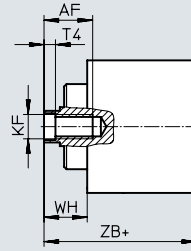
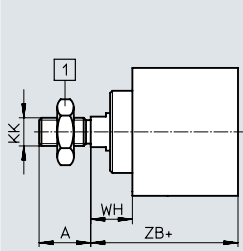
| Ø<br>[mm] | RT  | SF<br>h13 | T2<br>+0.1 | TG<br>±0.2 | VD   | WH<br>+1.3 | ZA<br>±0.3 | ZB<br>+1.2 |
|-----------|-----|-----------|------------|------------|------|------------|------------|------------|
| 25        | M5  | 9         | 2.1        | 26         | 6    | 11.8       | 39         | 50.9       |
| 40        | M6  | 13        | 2.1        | 38         | 9.5  | 18         | 45         | 62.9       |
| 63        | M8  | 17        | 2.6        | 56.5       | 12   | 21         | 49         | 70.2       |
| 100       | M10 | 21        | 2.6        | 89         | 15.5 | 26.5       | 67         | 93.5       |

## Data sheet

## Dimensions – Variants

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

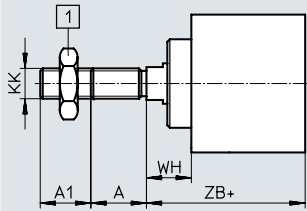
## S1 – Reinforced piston rod



[1] Hex nut DIN 439-B  
only with  $\varnothing 40 \dots 100$

+ = plus stroke length

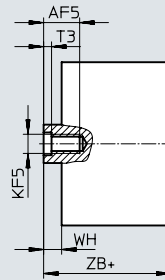
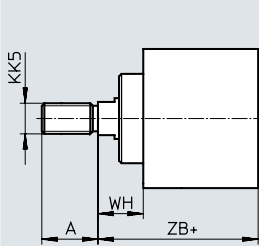
## S1-K2 – Reinforced piston rod with extended male piston rod thread



[1] Hex nut DIN 439-B  
only with  $\varnothing 40 \dots 100$

+ = plus stroke length

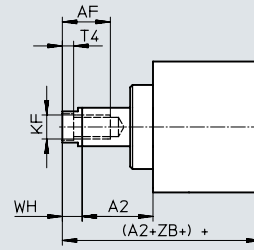
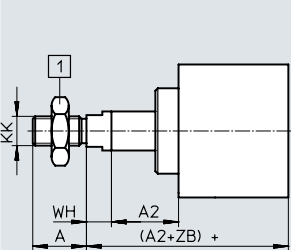
## S1-K5 – Reinforced piston rod with special piston rod thread



[1] Hex nut DIN 439-B  
only with  $\varnothing 40 \dots 100$

+ = plus stroke length

## S1-K8 – Reinforced piston rod with extended piston rod thread



[1] Hex nut DIN 439-B  
only with  $\varnothing 40 \dots 100$

+ = plus stroke length

| $\varnothing$<br>[mm] | A  | A1       | A2        | AF<br>min. | AF5<br>min. | KF  | KF5 | KK       | KK5             | T3  | T4  | WH<br>+1.3 | ZB<br>+1.2 |
|-----------------------|----|----------|-----------|------------|-------------|-----|-----|----------|-----------------|-----|-----|------------|------------|
| 25                    | 16 | 1 ... 20 | 1 ... 300 | 14         | 12          | M6  | M5  | M8       | M10x1.25<br>M10 | 2   | 2.6 | 11.8       | 50.9       |
| 40                    | 22 |          | 1 ... 400 | 20         | 16          | M10 | M8  | M12x1.25 | M10x1.25<br>M12 | 3.3 | 4.7 | 18         | 62.9       |
| 63                    | 28 |          |           |            | 20          | M12 | M10 | M16x1.5  | M12x1.25<br>M16 | 4.7 | 6.1 | 21         | 70.2       |
| 100                   | 40 | 1 ... 30 | 1 ... 500 | 25         | –           | M16 | –   | M20x1.5  | M16x1.5<br>M20  | –   | 7   | 26.5       | 93.5       |

## Data sheet

## ★ Core product range

| Ordering data                                                                    |          | Stroke | I – Piston rod with female thread                |                 | A – Piston rod with male thread                  |                 |
|----------------------------------------------------------------------------------|----------|--------|--------------------------------------------------|-----------------|--------------------------------------------------|-----------------|
| Type                                                                             | Piston Ø |        | P – Elastic cushioning rings/plates at both ends |                 | P – Elastic cushioning rings/plates at both ends |                 |
|                                                                                  | [mm]     | [mm]   | Part no.                                         | Type            | Part no.                                         | Type            |
|  | 12       | 5      | ★ 536211                                         | ADN-12-5-I-P-A  | ★ 536204                                         | ADN-12-5-A-P-A  |
|                                                                                  |          | 10     | ★ 536212                                         | ADN-12-10-I-P-A | ★ 536205                                         | ADN-12-10-A-P-A |
|                                                                                  |          | 15     | ★ 536213                                         | ADN-12-15-I-P-A | ★ 536206                                         | ADN-12-15-A-P-A |
|                                                                                  |          | 20     | ★ 536214                                         | ADN-12-20-I-P-A | ★ 536207                                         | ADN-12-20-A-P-A |
|                                                                                  |          | 25     | ★ 536215                                         | ADN-12-25-I-P-A | ★ 536208                                         | ADN-12-25-A-P-A |
|                                                                                  |          | 30     | ★ 536216                                         | ADN-12-30-I-P-A | ★ 536209                                         | ADN-12-30-A-P-A |
|                                                                                  |          | 40     | ★ 536217                                         | ADN-12-40-I-P-A | ★ 536210                                         | ADN-12-40-A-P-A |
|                                                                                  | 16       | 5      | ★ 536226                                         | ADN-16-5-I-P-A  | ★ 536219                                         | ADN-16-5-A-P-A  |
|                                                                                  |          | 10     | ★ 536227                                         | ADN-16-10-I-P-A | ★ 536220                                         | ADN-16-10-A-P-A |
|                                                                                  |          | 15     | ★ 536228                                         | ADN-16-15-I-P-A | ★ 536221                                         | ADN-16-15-A-P-A |
|                                                                                  |          | 20     | ★ 536229                                         | ADN-16-20-I-P-A | ★ 536222                                         | ADN-16-20-A-P-A |
|                                                                                  |          | 25     | ★ 536230                                         | ADN-16-25-I-P-A | ★ 536223                                         | ADN-16-25-A-P-A |
|                                                                                  |          | 30     | ★ 536231                                         | ADN-16-30-I-P-A | ★ 536224                                         | ADN-16-30-A-P-A |
|                                                                                  |          | 40     | ★ 536232                                         | ADN-16-40-I-P-A | ★ 536225                                         | ADN-16-40-A-P-A |
|                                                                                  |          | 50     | ★ 536341                                         | ADN-16-50-I-P-A | ★ 536331                                         | ADN-16-50-A-P-A |
|                                                                                  | 20       | 5      | ★ 536242                                         | ADN-20-5-I-P-A  | ★ 536234                                         | ADN-20-5-A-P-A  |
|                                                                                  |          | 10     | ★ 536243                                         | ADN-20-10-I-P-A | ★ 536235                                         | ADN-20-10-A-P-A |
|                                                                                  |          | 15     | ★ 536244                                         | ADN-20-15-I-P-A | ★ 536236                                         | ADN-20-15-A-P-A |
|                                                                                  |          | 20     | ★ 536245                                         | ADN-20-20-I-P-A | ★ 536237                                         | ADN-20-20-A-P-A |
|                                                                                  |          | 25     | ★ 536246                                         | ADN-20-25-I-P-A | ★ 536238                                         | ADN-20-25-A-P-A |
|                                                                                  |          | 30     | ★ 536247                                         | ADN-20-30-I-P-A | ★ 536239                                         | ADN-20-30-A-P-A |
|                                                                                  |          | 40     | ★ 536248                                         | ADN-20-40-I-P-A | ★ 536240                                         | ADN-20-40-A-P-A |
|                                                                                  |          | 50     | ★ 536249                                         | ADN-20-50-I-P-A | ★ 536241                                         | ADN-20-50-A-P-A |
|                                                                                  | 25       | 5      | ★ 536259                                         | ADN-25-5-I-P-A  | ★ 536251                                         | ADN-25-5-A-P-A  |
|                                                                                  |          | 10     | ★ 536260                                         | ADN-25-10-I-P-A | ★ 536252                                         | ADN-25-10-A-P-A |
|                                                                                  |          | 15     | ★ 536261                                         | ADN-25-15-I-P-A | ★ 536253                                         | ADN-25-15-A-P-A |
|                                                                                  |          | 20     | ★ 536262                                         | ADN-25-20-I-P-A | ★ 536254                                         | ADN-25-20-A-P-A |
|                                                                                  |          | 25     | ★ 536263                                         | ADN-25-25-I-P-A | ★ 536255                                         | ADN-25-25-A-P-A |
|                                                                                  |          | 30     | ★ 536264                                         | ADN-25-30-I-P-A | ★ 536256                                         | ADN-25-30-A-P-A |
|                                                                                  |          | 40     | ★ 536265                                         | ADN-25-40-I-P-A | ★ 536257                                         | ADN-25-40-A-P-A |
|                                                                                  |          | 50     | ★ 536266                                         | ADN-25-50-I-P-A | ★ 536258                                         | ADN-25-50-A-P-A |
|                                                                                  | 32       | 5      | ★ 536278                                         | ADN-32-5-I-P-A  | ★ 536268                                         | ADN-32-5-A-P-A  |
|                                                                                  |          | 10     | ★ 536279                                         | ADN-32-10-I-P-A | ★ 536269                                         | ADN-32-10-A-P-A |
|                                                                                  |          | 15     | ★ 536280                                         | ADN-32-15-I-P-A | ★ 536270                                         | ADN-32-15-A-P-A |
|                                                                                  |          | 20     | ★ 536281                                         | ADN-32-20-I-P-A | ★ 536271                                         | ADN-32-20-A-P-A |
|                                                                                  |          | 25     | ★ 536282                                         | ADN-32-25-I-P-A | ★ 536272                                         | ADN-32-25-A-P-A |
|                                                                                  |          | 30     | ★ 536283                                         | ADN-32-30-I-P-A | ★ 536273                                         | ADN-32-30-A-P-A |
|                                                                                  |          | 40     | ★ 536284                                         | ADN-32-40-I-P-A | ★ 536274                                         | ADN-32-40-A-P-A |
|                                                                                  |          | 50     | ★ 536285                                         | ADN-32-50-I-P-A | ★ 536275                                         | ADN-32-50-A-P-A |
|                                                                                  |          | 60     | ★ 536286                                         | ADN-32-60-I-P-A | ★ 536276                                         | ADN-32-60-A-P-A |
|                                                                                  |          | 80     | ★ 536287                                         | ADN-32-80-I-P-A | ★ 536277                                         | ADN-32-80-A-P-A |

## Data sheet

## ★ Core product range

| Ordering data                                                                     |          | Stroke | I – Piston rod with female thread<br>P – Elastic cushioning rings/plates at both ends |                 | A – Piston rod with male thread<br>P – Elastic cushioning rings/plates at both ends |                 |
|-----------------------------------------------------------------------------------|----------|--------|---------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------|-----------------|
| Type                                                                              | Piston ø |        | Part no.                                                                              | Type            | Part no.                                                                            | Type            |
|  | 40       | 5      | ★ 536299                                                                              | ADN-40-5-I-P-A  | ★ 536289                                                                            | ADN-40-5-A-P-A  |
|                                                                                   |          | 10     | ★ 536300                                                                              | ADN-40-10-I-P-A | ★ 536290                                                                            | ADN-40-10-A-P-A |
|                                                                                   |          | 15     | ★ 536301                                                                              | ADN-40-15-I-P-A | ★ 536291                                                                            | ADN-40-15-A-P-A |
|                                                                                   |          | 20     | ★ 536302                                                                              | ADN-40-20-I-P-A | ★ 536292                                                                            | ADN-40-20-A-P-A |
|                                                                                   |          | 25     | ★ 536303                                                                              | ADN-40-25-I-P-A | ★ 536293                                                                            | ADN-40-25-A-P-A |
|                                                                                   |          | 30     | ★ 536304                                                                              | ADN-40-30-I-P-A | ★ 536294                                                                            | ADN-40-30-A-P-A |
|                                                                                   |          | 40     | ★ 536305                                                                              | ADN-40-40-I-P-A | ★ 536295                                                                            | ADN-40-40-A-P-A |
|                                                                                   |          | 50     | ★ 536306                                                                              | ADN-40-50-I-P-A | ★ 536296                                                                            | ADN-40-50-A-P-A |
|                                                                                   |          | 60     | ★ 536307                                                                              | ADN-40-60-I-P-A | ★ 536297                                                                            | ADN-40-60-A-P-A |
|                                                                                   |          | 80     | ★ 536308                                                                              | ADN-40-80-I-P-A | ★ 536298                                                                            | ADN-40-80-A-P-A |
|                                                                                   | 50       | 5      | ★ 536320                                                                              | ADN-50-5-I-P-A  | ★ 536310                                                                            | ADN-50-5-A-P-A  |
|                                                                                   |          | 10     | ★ 536321                                                                              | ADN-50-10-I-P-A | ★ 536311                                                                            | ADN-50-10-A-P-A |
|                                                                                   |          | 15     | ★ 536322                                                                              | ADN-50-15-I-P-A | ★ 536312                                                                            | ADN-50-15-A-P-A |
|                                                                                   |          | 20     | ★ 536323                                                                              | ADN-50-20-I-P-A | ★ 536313                                                                            | ADN-50-20-A-P-A |
|                                                                                   |          | 25     | ★ 536324                                                                              | ADN-50-25-I-P-A | ★ 536314                                                                            | ADN-50-25-A-P-A |
|                                                                                   |          | 30     | ★ 536325                                                                              | ADN-50-30-I-P-A | ★ 536315                                                                            | ADN-50-30-A-P-A |
|                                                                                   |          | 40     | ★ 536326                                                                              | ADN-50-40-I-P-A | ★ 536316                                                                            | ADN-50-40-A-P-A |
|                                                                                   |          | 50     | ★ 536327                                                                              | ADN-50-50-I-P-A | ★ 536317                                                                            | ADN-50-50-A-P-A |
|                                                                                   |          | 60     | ★ 536328                                                                              | ADN-50-60-I-P-A | ★ 536318                                                                            | ADN-50-60-A-P-A |
|                                                                                   |          | 80     | ★ 536329                                                                              | ADN-50-80-I-P-A | ★ 536319                                                                            | ADN-50-80-A-P-A |
|                                                                                   | 63       | 10     | ★ 536342                                                                              | ADN-63-10-I-P-A | ★ 536332                                                                            | ADN-63-10-A-P-A |
|                                                                                   |          | 15     | ★ 536343                                                                              | ADN-63-15-I-P-A | ★ 536333                                                                            | ADN-63-15-A-P-A |
|                                                                                   |          | 20     | ★ 536344                                                                              | ADN-63-20-I-P-A | ★ 536334                                                                            | ADN-63-20-A-P-A |
|                                                                                   |          | 25     | ★ 536345                                                                              | ADN-63-25-I-P-A | ★ 536335                                                                            | ADN-63-25-A-P-A |
|                                                                                   |          | 30     | ★ 536346                                                                              | ADN-63-30-I-P-A | ★ 536336                                                                            | ADN-63-30-A-P-A |
|                                                                                   |          | 40     | ★ 536347                                                                              | ADN-63-40-I-P-A | ★ 536337                                                                            | ADN-63-40-A-P-A |
|                                                                                   |          | 50     | ★ 536348                                                                              | ADN-63-50-I-P-A | ★ 536338                                                                            | ADN-63-50-A-P-A |
|                                                                                   |          | 60     | ★ 536349                                                                              | ADN-63-60-I-P-A | ★ 536339                                                                            | ADN-63-60-A-P-A |
|                                                                                   |          | 80     | ★ 536350                                                                              | ADN-63-80-I-P-A | ★ 536340                                                                            | ADN-63-80-A-P-A |
|                                                                                   | 80       | 10     | ★ 536363                                                                              | ADN-80-10-I-P-A | ★ 536353                                                                            | ADN-80-10-A-P-A |
|                                                                                   |          | 15     | ★ 536364                                                                              | ADN-80-15-I-P-A | ★ 536354                                                                            | ADN-80-15-A-P-A |
|                                                                                   |          | 20     | ★ 536365                                                                              | ADN-80-20-I-P-A | ★ 536355                                                                            | ADN-80-20-A-P-A |
|                                                                                   |          | 25     | ★ 536366                                                                              | ADN-80-25-I-P-A | ★ 536356                                                                            | ADN-80-25-A-P-A |
|                                                                                   |          | 30     | ★ 536367                                                                              | ADN-80-30-I-P-A | ★ 536357                                                                            | ADN-80-30-A-P-A |
|                                                                                   |          | 40     | ★ 536368                                                                              | ADN-80-40-I-P-A | ★ 536358                                                                            | ADN-80-40-A-P-A |
|                                                                                   |          | 50     | ★ 536369                                                                              | ADN-80-50-I-P-A | ★ 536359                                                                            | ADN-80-50-A-P-A |
|                                                                                   |          | 60     | ★ 536370                                                                              | ADN-80-60-I-P-A | ★ 536360                                                                            | ADN-80-60-A-P-A |
|                                                                                   |          | 80     | ★ 536371                                                                              | ADN-80-80-I-P-A | ★ 536361                                                                            | ADN-80-80-A-P-A |

## Data sheet

## ★ Core product range

| Ordering data                                                                    |                  | Stroke<br>[mm] | I – Piston rod with female thread<br>PPS – Pneumatic cushioning, self-adjusting at both ends |                   | A – Piston rod with male thread<br>PPS – Pneumatic cushioning, self-adjusting at both ends |                   |
|----------------------------------------------------------------------------------|------------------|----------------|----------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------|-------------------|
| Type                                                                             | Piston ø<br>[mm] |                | Part no.                                                                                     | Type              | Part no.                                                                                   | Type              |
|  | 32               | 10             | ★ 572646                                                                                     | ADN-32-10-I-PPS-A | ★ 572655                                                                                   | ADN-32-10-A-PPS-A |
|                                                                                  |                  | 15             | ★ 572647                                                                                     | ADN-32-15-I-PPS-A | ★ 572656                                                                                   | ADN-32-15-A-PPS-A |
|                                                                                  |                  | 20             | ★ 572648                                                                                     | ADN-32-20-I-PPS-A | ★ 572657                                                                                   | ADN-32-20-A-PPS-A |
|                                                                                  |                  | 25             | ★ 572649                                                                                     | ADN-32-25-I-PPS-A | ★ 572658                                                                                   | ADN-32-25-A-PPS-A |
|                                                                                  |                  | 30             | ★ 572650                                                                                     | ADN-32-30-I-PPS-A | ★ 572659                                                                                   | ADN-32-30-A-PPS-A |
|                                                                                  |                  | 40             | ★ 572651                                                                                     | ADN-32-40-I-PPS-A | ★ 572660                                                                                   | ADN-32-40-A-PPS-A |
|                                                                                  |                  | 50             | ★ 572652                                                                                     | ADN-32-50-I-PPS-A | ★ 572661                                                                                   | ADN-32-50-A-PPS-A |
|                                                                                  |                  | 60             | ★ 572653                                                                                     | ADN-32-60-I-PPS-A | ★ 572662                                                                                   | ADN-32-60-A-PPS-A |
|                                                                                  |                  | 80             | ★ 572654                                                                                     | ADN-32-80-I-PPS-A | ★ 572663                                                                                   | ADN-32-80-A-PPS-A |
|                                                                                  | 40               | 10             | ★ 572664                                                                                     | ADN-40-10-I-PPS-A | ★ 572673                                                                                   | ADN-40-10-A-PPS-A |
|                                                                                  |                  | 15             | ★ 572665                                                                                     | ADN-40-15-I-PPS-A | ★ 572674                                                                                   | ADN-40-15-A-PPS-A |
|                                                                                  |                  | 20             | ★ 572666                                                                                     | ADN-40-20-I-PPS-A | ★ 572675                                                                                   | ADN-40-20-A-PPS-A |
|                                                                                  |                  | 25             | ★ 572667                                                                                     | ADN-40-25-I-PPS-A | ★ 572676                                                                                   | ADN-40-25-A-PPS-A |
|                                                                                  |                  | 30             | ★ 572668                                                                                     | ADN-40-30-I-PPS-A | ★ 572677                                                                                   | ADN-40-30-A-PPS-A |
|                                                                                  |                  | 40             | ★ 572669                                                                                     | ADN-40-40-I-PPS-A | ★ 572678                                                                                   | ADN-40-40-A-PPS-A |
|                                                                                  |                  | 50             | ★ 572670                                                                                     | ADN-40-50-I-PPS-A | ★ 572679                                                                                   | ADN-40-50-A-PPS-A |
|                                                                                  |                  | 60             | ★ 572671                                                                                     | ADN-40-60-I-PPS-A | ★ 572680                                                                                   | ADN-40-60-A-PPS-A |
|                                                                                  |                  | 80             | ★ 572672                                                                                     | ADN-40-80-I-PPS-A | ★ 572681                                                                                   | ADN-40-80-A-PPS-A |
|                                                                                  | 50               | 10             | ★ 572682                                                                                     | ADN-50-10-I-PPS-A | ★ 572691                                                                                   | ADN-50-10-A-PPS-A |
|                                                                                  |                  | 15             | ★ 572683                                                                                     | ADN-50-15-I-PPS-A | ★ 572692                                                                                   | ADN-50-15-A-PPS-A |
|                                                                                  |                  | 20             | ★ 572684                                                                                     | ADN-50-20-I-PPS-A | ★ 572693                                                                                   | ADN-50-20-A-PPS-A |
|                                                                                  |                  | 25             | ★ 572685                                                                                     | ADN-50-25-I-PPS-A | ★ 572694                                                                                   | ADN-50-25-A-PPS-A |
|                                                                                  |                  | 30             | ★ 572686                                                                                     | ADN-50-30-I-PPS-A | ★ 572695                                                                                   | ADN-50-30-A-PPS-A |
|                                                                                  |                  | 40             | ★ 572687                                                                                     | ADN-50-40-I-PPS-A | ★ 572696                                                                                   | ADN-50-40-A-PPS-A |
|                                                                                  |                  | 50             | ★ 572688                                                                                     | ADN-50-50-I-PPS-A | ★ 572697                                                                                   | ADN-50-50-A-PPS-A |
|                                                                                  |                  | 60             | ★ 572689                                                                                     | ADN-50-60-I-PPS-A | ★ 572698                                                                                   | ADN-50-60-A-PPS-A |
|                                                                                  |                  | 80             | ★ 572690                                                                                     | ADN-50-80-I-PPS-A | ★ 572699                                                                                   | ADN-50-80-A-PPS-A |
|                                                                                  | 63               | 10             | ★ 572700                                                                                     | ADN-63-10-I-PPS-A | ★ 572709                                                                                   | ADN-63-10-A-PPS-A |
|                                                                                  |                  | 15             | ★ 572701                                                                                     | ADN-63-15-I-PPS-A | ★ 572710                                                                                   | ADN-63-15-A-PPS-A |
|                                                                                  |                  | 20             | ★ 572702                                                                                     | ADN-63-20-I-PPS-A | ★ 572711                                                                                   | ADN-63-20-A-PPS-A |
|                                                                                  |                  | 25             | ★ 572703                                                                                     | ADN-63-25-I-PPS-A | ★ 572712                                                                                   | ADN-63-25-A-PPS-A |
|                                                                                  |                  | 30             | ★ 572704                                                                                     | ADN-63-30-I-PPS-A | ★ 572713                                                                                   | ADN-63-30-A-PPS-A |
|                                                                                  |                  | 40             | ★ 572705                                                                                     | ADN-63-40-I-PPS-A | ★ 572714                                                                                   | ADN-63-40-A-PPS-A |
|                                                                                  |                  | 50             | ★ 572706                                                                                     | ADN-63-50-I-PPS-A | ★ 572715                                                                                   | ADN-63-50-A-PPS-A |
|                                                                                  |                  | 60             | ★ 572707                                                                                     | ADN-63-60-I-PPS-A | ★ 572716                                                                                   | ADN-63-60-A-PPS-A |
|                                                                                  |                  | 80             | ★ 572708                                                                                     | ADN-63-80-I-PPS-A | ★ 572717                                                                                   | ADN-63-80-A-PPS-A |
|                                                                                  | 80               | 10             | ★ 572718                                                                                     | ADN-80-10-I-PPS-A | ★ 572727                                                                                   | ADN-80-10-A-PPS-A |
|                                                                                  |                  | 15             | ★ 572719                                                                                     | ADN-80-15-I-PPS-A | ★ 572728                                                                                   | ADN-80-15-A-PPS-A |
|                                                                                  |                  | 20             | ★ 572720                                                                                     | ADN-80-20-I-PPS-A | ★ 572729                                                                                   | ADN-80-20-A-PPS-A |
|                                                                                  |                  | 25             | ★ 572721                                                                                     | ADN-80-25-I-PPS-A | ★ 572730                                                                                   | ADN-80-25-A-PPS-A |
|                                                                                  |                  | 30             | ★ 572722                                                                                     | ADN-80-30-I-PPS-A | ★ 572731                                                                                   | ADN-80-30-A-PPS-A |
|                                                                                  |                  | 40             | ★ 572723                                                                                     | ADN-80-40-I-PPS-A | ★ 572732                                                                                   | ADN-80-40-A-PPS-A |
|                                                                                  |                  | 50             | ★ 572724                                                                                     | ADN-80-50-I-PPS-A | ★ 572733                                                                                   | ADN-80-50-A-PPS-A |
|                                                                                  |                  | 60             | ★ 572725                                                                                     | ADN-80-60-I-PPS-A | ★ 572734                                                                                   | ADN-80-60-A-PPS-A |
|                                                                                  |                  | 80             | ★ 572726                                                                                     | ADN-80-80-I-PPS-A | ★ 572735                                                                                   | ADN-80-80-A-PPS-A |

## Data sheet

| Ordering data                                                                     |          |        |                                                                                       |                  |                                                                                     |                  |
|-----------------------------------------------------------------------------------|----------|--------|---------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------|------------------|
| Type                                                                              | Piston ø | Stroke | I – Piston rod with female thread<br>P – Elastic cushioning rings/plates at both ends |                  | A – Piston rod with male thread<br>P – Elastic cushioning rings/plates at both ends |                  |
|                                                                                   | [mm]     | [mm]   | Part no.                                                                              | Type             | Part no.                                                                            | Type             |
|  | 100      | 10     | 536384                                                                                | ADN-100-10-I-P-A | 536374                                                                              | ADN-100-10-A-P-A |
|                                                                                   |          | 15     | 536385                                                                                | ADN-100-15-I-P-A | 536375                                                                              | ADN-100-15-A-P-A |
|                                                                                   |          | 20     | 536386                                                                                | ADN-100-20-I-P-A | 536376                                                                              | ADN-100-20-A-P-A |
|                                                                                   |          | 25     | 536387                                                                                | ADN-100-25-I-P-A | 536377                                                                              | ADN-100-25-A-P-A |
|                                                                                   |          | 30     | 536388                                                                                | ADN-100-30-I-P-A | 536378                                                                              | ADN-100-30-A-P-A |
|                                                                                   |          | 40     | 536389                                                                                | ADN-100-40-I-P-A | 536379                                                                              | ADN-100-40-A-P-A |
|                                                                                   |          | 50     | 536390                                                                                | ADN-100-50-I-P-A | 536380                                                                              | ADN-100-50-A-P-A |
|                                                                                   |          | 60     | 536391                                                                                | ADN-100-60-I-P-A | 536381                                                                              | ADN-100-60-A-P-A |
|                                                                                   |          | 80     | 536392                                                                                | ADN-100-80-I-P-A | 536382                                                                              | ADN-100-80-A-P-A |

| Ordering data                                                                     |          |        |                                                                                              |                    |                                                                                            |                    |
|-----------------------------------------------------------------------------------|----------|--------|----------------------------------------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------------|--------------------|
| Type                                                                              | Piston ø | Stroke | I – Piston rod with female thread<br>PPS – Pneumatic cushioning, self-adjusting at both ends |                    | A – Piston rod with male thread<br>PPS – Pneumatic cushioning, self-adjusting at both ends |                    |
|                                                                                   | [mm]     | [mm]   | Part no.                                                                                     | Type               | Part no.                                                                                   | Type               |
|  | 20       | 10     | 577158                                                                                       | ADN-20-10-I-PPS-A  | 577166                                                                                     | ADN-20-10-A-PPS-A  |
|                                                                                   |          | 15     | 577159                                                                                       | ADN-20-15-I-PPS-A  | 577167                                                                                     | ADN-20-15-A-PPS-A  |
|                                                                                   |          | 20     | 577160                                                                                       | ADN-20-20-I-PPS-A  | 577168                                                                                     | ADN-20-20-A-PPS-A  |
|                                                                                   |          | 25     | 577161                                                                                       | ADN-20-25-I-PPS-A  | 577169                                                                                     | ADN-20-25-A-PPS-A  |
|                                                                                   |          | 30     | 577162                                                                                       | ADN-20-30-I-PPS-A  | 577170                                                                                     | ADN-20-30-A-PPS-A  |
|                                                                                   |          | 40     | 577163                                                                                       | ADN-20-40-I-PPS-A  | 577171                                                                                     | ADN-20-40-A-PPS-A  |
|                                                                                   |          | 50     | 577164                                                                                       | ADN-20-50-I-PPS-A  | 577172                                                                                     | ADN-20-50-A-PPS-A  |
|                                                                                   |          | 60     | 577165                                                                                       | ADN-20-60-I-PPS-A  | 577173                                                                                     | ADN-20-60-A-PPS-A  |
|                                                                                   | 25       | 10     | 577174                                                                                       | ADN-25-10-I-PPS-A  | 577182                                                                                     | ADN-25-10-A-PPS-A  |
|                                                                                   |          | 15     | 577175                                                                                       | ADN-25-15-I-PPS-A  | 577183                                                                                     | ADN-25-15-A-PPS-A  |
|                                                                                   |          | 20     | 577176                                                                                       | ADN-25-20-I-PPS-A  | 577184                                                                                     | ADN-25-20-A-PPS-A  |
|                                                                                   |          | 25     | 577177                                                                                       | ADN-25-25-I-PPS-A  | 577185                                                                                     | ADN-25-25-A-PPS-A  |
|                                                                                   |          | 30     | 577178                                                                                       | ADN-25-30-I-PPS-A  | 577186                                                                                     | ADN-25-30-A-PPS-A  |
|                                                                                   |          | 40     | 577179                                                                                       | ADN-25-40-I-PPS-A  | 577187                                                                                     | ADN-25-40-A-PPS-A  |
|                                                                                   |          | 50     | 577180                                                                                       | ADN-25-50-I-PPS-A  | 577188                                                                                     | ADN-25-50-A-PPS-A  |
|                                                                                   |          | 60     | 577181                                                                                       | ADN-25-60-I-PPS-A  | 577189                                                                                     | ADN-25-60-A-PPS-A  |
|                                                                                   | 100      | 15     | 577191                                                                                       | ADN-100-15-I-PPS-A | 577200                                                                                     | ADN-100-15-A-PPS-A |
|                                                                                   |          | 20     | 577192                                                                                       | ADN-100-20-I-PPS-A | 577201                                                                                     | ADN-100-20-A-PPS-A |
|                                                                                   |          | 25     | 577193                                                                                       | ADN-100-25-I-PPS-A | 577202                                                                                     | ADN-100-25-A-PPS-A |
|                                                                                   |          | 30     | 577194                                                                                       | ADN-100-30-I-PPS-A | 577203                                                                                     | ADN-100-30-A-PPS-A |
|                                                                                   |          | 40     | 577195                                                                                       | ADN-100-40-I-PPS-A | 577204                                                                                     | ADN-100-40-A-PPS-A |
|                                                                                   |          | 50     | 577196                                                                                       | ADN-100-50-I-PPS-A | 577205                                                                                     | ADN-100-50-A-PPS-A |
|                                                                                   |          | 60     | 577197                                                                                       | ADN-100-60-I-PPS-A | 577206                                                                                     | ADN-100-60-A-PPS-A |
|                                                                                   |          | 80     | 577198                                                                                       | ADN-100-80-I-PPS-A | 577207                                                                                     | ADN-100-80-A-PPS-A |

## Ordering data – Modular product system, basic sensor and variants

| Ordering table    |                                                     |        |                                                   |        |           |        |            |        |            |
|-------------------|-----------------------------------------------------|--------|---------------------------------------------------|--------|-----------|--------|------------|--------|------------|
| Size              | 12                                                  | 16     | 20                                                | 25     | 32        | 40     | Conditions | Code   | Enter code |
| Module no.        | 536203                                              | 536218 | 536233                                            | 536250 | 536267    | 536288 |            |        |            |
| Function          | Compact cylinder, double-acting, based on ISO 21287 |        |                                                   |        |           |        |            | ADN    | ADN        |
| Piston Ø [mm]     | 12                                                  | 16     | 20                                                | 25     | 32        | 40     |            | ★ -... |            |
| Stroke [mm]       | 1 ... 300                                           |        |                                                   |        | 1 ... 400 |        |            | ★ -... |            |
| Piston rod thread | Male thread                                         |        |                                                   |        |           |        |            | ★ -A   |            |
|                   | Female thread                                       |        |                                                   |        |           |        | [1]        | ★ -I   |            |
| Cushioning        | Elastic cushioning rings/plates at both ends        |        |                                                   |        |           |        |            | ★ -P   |            |
|                   | –                                                   |        | Pneumatic cushioning, self-adjusting at both ends |        |           |        | [8]        | ★ -PPS |            |
| Position sensing  | Via proximity sensor                                |        |                                                   |        |           |        |            | ★ -A   | -A         |

[1] **I** Not with piston rod type S20.  
Not with extended male thread K2

[8] **PPS** Not with improved running performance K10, temperature resistance S6, low temperature TT, wiper seal R8  
Minimum stroke 5 mm

## Ordering data – Modular product system, basic sensor and variants

| Ordering table               |                                                                                    |                            |                                      |                 |                 |            |            |          |            |
|------------------------------|------------------------------------------------------------------------------------|----------------------------|--------------------------------------|-----------------|-----------------|------------|------------|----------|------------|
| Size                         | 12                                                                                 | 16                         | 20                                   | 25              | 32              | 40         | Conditions | Code     | Enter code |
| Piston rod type              | Through piston rod                                                                 |                            |                                      |                 |                 |            | [2]        | ★ -S2    |            |
|                              | –                                                                                  | Through, hollow piston rod |                                      |                 |                 |            | [2]        | -S20     |            |
| [mm]                         | 1 ... 300                                                                          |                            |                                      |                 | 1 ... 400       |            |            |          |            |
| Extended male thread         | Extended male piston rod thread                                                    |                            |                                      |                 |                 |            |            |          |            |
| [mm]                         | 1 ... 10                                                                           |                            | 1 ... 20                             |                 |                 |            |            | -...K2   |            |
| Special piston rod thread    | Male thread                                                                        | M6                         | M8                                   | M10x1.25<br>M10 | M10x1.25<br>M10 | M10<br>M12 | M10<br>M12 | -“...”K5 |            |
|                              | Female thread                                                                      | –                          | –                                    | M5              | M5              | M6         | M6         |          |            |
| Extended piston rod          | Extended piston rod                                                                |                            |                                      |                 |                 |            |            |          |            |
| [mm]                         | 1 ... 300                                                                          |                            |                                      |                 | 1 ... 400       |            | [3]        | ★ -...K8 |            |
| Improved running performance | –                                                                                  | –                          | Smooth anodised aluminium piston rod |                 |                 |            | [4]        | -K10     |            |
| Temperature resistance       | Heat-resistant seals max. 120°C                                                    |                            |                                      |                 |                 |            |            | ★ -S6    |            |
| Corrosion protection         | High corrosion protection                                                          |                            |                                      |                 |                 |            | [5]        | ★ -R3    |            |
| Captive rating plate         | Laser-etched rating plate                                                          |                            |                                      |                 |                 |            |            | -TL      |            |
| Low temperature              | [°C]                                                                               | –                          | –                                    | –40 ... +80     |                 |            | [6] [7]    | -TT      |            |
| Wiper seal                   | –                                                                                  | –                          | Dust protection                      |                 |                 |            | [6]        | -R8      |            |
| Special material properties  | None                                                                               |                            |                                      |                 |                 |            |            |          |            |
|                              | Recommended for production facilities for the manufacture of lithium-ion batteries |                            |                                      |                 |                 |            | [9]        | -F1A     |            |

- [2] **S2, S20** Not with improved running performance K10.  
Not with corrosion protection R3.  
Not with wiper seal R8
- [3] **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length
- [4] **K10** Not with extended male thread K2.  
Not with special piston rod thread K5.  
Not with corrosion protection R3
- [5] **R3** Not with captive rating plate TL  
Not with wiper seal R8
- [6] **TT, R8** Not with improved running performance K10.  
Not with temperature resistance S6
- [7] **TT** Not with wiper seal R8
- [9] **F1A** Not with S6, S20, K10, R3, TL, TT, R8, PPS

**Note**

NSF-H1 lubricants are used in combination with R3 and in combination with R3 and K2, K5 or K8.

## Ordering data – Modular product system, basic sensor and variants

| Ordering table    |                                                     |        |           |        |        |            |        |            |
|-------------------|-----------------------------------------------------|--------|-----------|--------|--------|------------|--------|------------|
| Size              | 50                                                  | 63     | 80        | 100    | 125    | Conditions | Code   | Enter code |
| Module no.        | 536309                                              | 536330 | 536351    | 536372 | 536393 |            |        |            |
| Function          | Compact cylinder, double-acting, based on ISO 21287 |        |           |        |        |            | ADN    | ADN        |
| Piston Ø [mm]     | 50                                                  | 63     | 80        | –      | –      |            | ★ -... |            |
|                   | –                                                   | –      | –         | 100    | 125    |            | -...   |            |
| Stroke [mm]       | 1 ... 400                                           |        | 1 ... 500 |        |        |            | ★ -... |            |
| Piston rod thread | Male thread                                         |        |           |        |        |            | ★ -A   |            |
|                   | Female thread                                       |        |           |        |        | [1]        | ★ -I   |            |
| Cushioning        | Elastic cushioning rings/plates at both ends        |        |           |        |        |            | ★ -P   |            |
|                   | Pneumatic cushioning, self-adjusting at both ends   |        |           |        | –      | [8]        | ★ -PPS |            |
| Position sensing  | Via proximity sensor                                |        |           |        |        |            | ★ -A   | -A         |

[1] **I** Not with piston rod type S20.  
Not with extended male thread K2

[8] **PPS** Not with improved running performance K10, temperature resistance S6, low temperature TT, wiper seal R8  
Minimum stroke 5 mm

## Ordering data – Modular product system, basic sensor and variants

| Ordering table               |                                                                                    |             |           |     |           |            |          |  |            |
|------------------------------|------------------------------------------------------------------------------------|-------------|-----------|-----|-----------|------------|----------|--|------------|
| Size                         | 50                                                                                 | 63          | 80        | 100 | 125       | Conditions | Code     |  | Enter code |
| Piston rod type              | Through piston rod                                                                 |             |           |     |           | [2]        | ★ -S2    |  |            |
|                              | Through, hollow piston rod                                                         |             |           |     |           | [2]        | -S20     |  |            |
| [mm]                         | 1 ... 400                                                                          |             | 1 ... 500 |     |           |            |          |  |            |
| Extended male thread         | Extended male piston rod thread                                                    |             |           |     |           |            |          |  |            |
| [mm]                         | 1 ... 20                                                                           |             | 1 ... 30  |     | 1 ... 40  |            | -...K2   |  |            |
| Special piston rod thread    | Male thread                                                                        | M12         | M12       | M16 | M16       | M20        | -“...”K5 |  |            |
|                              |                                                                                    | M16         | M16       | M20 | M20       | M20x1.5    |          |  |            |
|                              | Female thread                                                                      | M8          | M8        | M10 | M10       | –          |          |  |            |
| Extended piston rod          | Extended piston rod                                                                |             |           |     |           |            |          |  |            |
| [mm]                         | 1 ... 400                                                                          |             | 1 ... 500 |     |           | [3]        | ★ -...K8 |  |            |
| Improved running performance | Smooth anodised aluminium piston rod                                               |             |           |     |           | [4]        | -K10     |  |            |
|                              | Restricted stroke                                                                  |             |           |     |           |            |          |  |            |
| [mm]                         | 2 ... 400                                                                          |             | 5 ... 400 |     | 5 ... 500 |            |          |  |            |
| Temperature resistance       | Heat-resistant seals max. 120°C                                                    |             |           |     |           |            | ★ -S6    |  |            |
| Corrosion protection         | High corrosion protection                                                          |             |           |     |           | [5]        | ★ -R3    |  |            |
| Captive rating plate         | Laser-etched rating plate                                                          |             |           |     |           |            | -TL      |  |            |
| Low temperature              | [°C]                                                                               | –40 ... +80 |           |     | –         | [6] [7]    | -TT      |  |            |
| Wiper seal                   | Dust protection                                                                    |             |           |     | –         | [6]        | -R8      |  |            |
| Special material properties  | None                                                                               |             |           |     |           |            |          |  |            |
|                              | Recommended for production facilities for the manufacture of lithium-ion batteries |             |           |     |           | [9]        | -F1A     |  |            |

- [2] **S2, S20** Not with improved running performance K10.  
Not with corrosion protection R3.  
Not with wiper seal R8
- [3] **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length
- [4] **K10** Not with extended male thread K2.  
Not with special piston rod thread K5.  
Not with corrosion protection R3
- [5] **R3** Not with captive rating plate TL  
Not with wiper seal R8
- [6] **TT, R8** Not with improved running performance K10.  
Not with temperature resistance S6
- [7] **TT** Not with wiper seal R8
- [9] **F1A** Not with S6, S20, K10, R3, TL, TT, R8, PPS

 **Note**

NSF-H1 lubricants are used in combination with R3 and in combination with R3 and K2, K5 or K8.

## Ordering data – Modular product system, S10 – constant motion, S11 – low friction

| Ordering table               |                                                     |        |                                      |                 |                 |            |            |          |            |  |
|------------------------------|-----------------------------------------------------|--------|--------------------------------------|-----------------|-----------------|------------|------------|----------|------------|--|
| Size                         | 12                                                  | 16     | 20                                   | 25              | 32              | 40         | Conditions | Code     | Enter code |  |
| Module no.                   | 536203                                              | 536218 | 536233                               | 536250          | 536267          | 536288     |            |          |            |  |
| Function                     | Compact cylinder, double-acting, based on ISO 21287 |        |                                      |                 |                 |            |            | ADN      | ADN        |  |
| Piston Ø [mm]                | 12                                                  | 16     | 20                                   | 25              | 32              | 40         |            | -...     |            |  |
| Stroke [mm]                  | 1 ... 300                                           |        |                                      |                 | 1 ... 400       |            |            | -...     |            |  |
| Piston rod thread            | Male thread                                         |        |                                      |                 |                 |            |            | -A       |            |  |
|                              | Female thread                                       |        |                                      |                 |                 |            | [1]        | -I       |            |  |
| Cushioning                   | Elastic cushioning rings/plates at both ends        |        |                                      |                 |                 |            |            | -P       | -P         |  |
| Position sensing             | Via proximity sensor                                |        |                                      |                 |                 |            |            | -A       | -A         |  |
| Extended male thread [mm]    | Extended male piston rod thread                     |        |                                      |                 |                 |            |            |          |            |  |
|                              | 1 ... 10                                            |        | 1 ... 20                             |                 |                 |            |            | -...K2   |            |  |
| Special piston rod thread    | Male thread                                         | M6     | M8                                   | M10x1.25<br>M10 | M10x1.25<br>M10 | M10<br>M12 | M10<br>M12 | -“...”K5 |            |  |
|                              | Female thread                                       | –      | –                                    | M5              | M5              | M6         | M6         |          |            |  |
| Extended piston rod [mm]     | Extended piston rod                                 |        |                                      |                 | 1 ... 300       |            | 1 ... 400  | [2]      | -...K8     |  |
| Improved running performance | –                                                   | –      | Smooth anodised aluminium piston rod |                 |                 |            |            | [3]      | -K10       |  |
| Constant motion [mm]         | Slow speed (constant motion at low piston speeds)   |        |                                      |                 |                 |            |            | [4]      | -S10       |  |
|                              | Restricted stroke                                   |        |                                      |                 | 20 ... 300      |            | 20 ... 400 |          |            |  |
| Low friction                 | Smooth running                                      |        |                                      |                 |                 |            |            | [5]      | -S11       |  |
| Corrosion protection         | High corrosion protection                           |        |                                      |                 |                 |            |            | [6]      | -R3        |  |
| Captive rating plate         | Laser-etched rating plate                           |        |                                      |                 |                 |            |            |          | -TL        |  |

- [1] **I** Not with extended male thread K2
- [2] **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length
- [3] **K10** Not with extended male thread K2  
Not with special piston rod thread K5  
Not with corrosion protection R3
- [4] **S10** Not with low friction S11
- [5] **S11** Not with constant motion S10
- [6] **R3** Not with captive rating plate TL

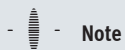
**Note**

NSF-H1 lubricants are used in combination with R3 and in combination with R3 and K2, K5 or K8.

## Ordering data – Modular product system, S10 – constant motion, S11 – low friction

| Ordering table                        |                                                     |           |            |        |          |            |          |  |            |
|---------------------------------------|-----------------------------------------------------|-----------|------------|--------|----------|------------|----------|--|------------|
| Size                                  | 50                                                  | 63        | 80         | 100    | 125      | Conditions | Code     |  | Enter code |
| Module no.                            | 536309                                              | 536330    | 536351     | 536372 | 536393   |            |          |  |            |
| Function                              | Compact cylinder, double-acting, based on ISO 21287 |           |            |        |          |            | ADN      |  | ADN        |
| Piston ø [mm]                         | 50                                                  | 63        | 80         | 100    | 125      |            | -...     |  |            |
| Stroke [mm]                           | 1 ... 400                                           |           | 1 ... 500  |        |          |            | -...     |  |            |
| Piston rod thread                     | Male thread                                         |           |            |        |          |            | -A       |  |            |
|                                       | Female thread                                       |           |            |        |          | [1]        | -I       |  |            |
| Cushioning                            | Elastic cushioning rings/plates at both ends        |           |            |        |          |            | -P       |  | -P         |
| Position sensing                      | Via proximity sensor                                |           |            |        |          |            | -A       |  | -A         |
| Extended male thread [mm]             | Extended male piston rod thread                     |           |            |        |          |            |          |  |            |
|                                       | 1 ... 20                                            |           | 1 ... 30   |        | 1 ... 40 |            | -...K2   |  |            |
| Special piston rod thread Male thread | M12                                                 | M12       | M16        | M16    | M20      |            | -“...”K5 |  |            |
|                                       | M16                                                 | M16       | M20        | M20    | M20x1.5  |            |          |  |            |
| Female thread                         | M8                                                  | M8        | M10        | M10    | –        |            |          |  |            |
| Extended piston rod [mm]              | Extended piston rod                                 |           |            |        |          |            |          |  |            |
|                                       | 1 ... 400                                           |           | 1 ... 500  |        |          | [2]        | -...K8   |  |            |
| Improved running performance          | Smooth anodised aluminium piston rod                |           |            |        |          | [3]        | -K10     |  |            |
|                                       | Restricted stroke                                   |           |            |        |          |            |          |  |            |
|                                       | 2 ... 400                                           | 5 ... 400 | 5 ... 500  |        |          |            |          |  |            |
| Constant motion                       | Slow speed (constant motion at low piston speeds)   |           |            |        |          | [4]        | -S10     |  |            |
|                                       | Restricted stroke                                   |           |            |        |          |            |          |  |            |
|                                       | 20 ... 400                                          |           | 20 ... 500 |        |          |            |          |  |            |
| Low friction                          | Smooth running                                      |           |            |        |          | [5]        | -S11     |  |            |
| Corrosion protection                  | High corrosion protection                           |           |            |        |          | [6]        | -R3      |  |            |
| Captive rating plate                  | Laser-etched rating plate                           |           |            |        |          |            | -TL      |  |            |

- [1] **I** Not with extended male thread K2
- [2] **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length
- [3] **K10** Not with extended male thread K2  
Not with special piston rod thread K5  
Not with corrosion protection R3
- [4] **S10** Not with low friction S11
- [5] **S11** Not with constant motion S10
- [6] **R3** Not with captive rating plate TL

**Note**

NSF-H1 lubricants are used in combination with R3 and in combination with R3 and K2, K5 or K8.

## Ordering data – Modular product system, Q – Square piston rod, non-rotating

| Ordering table                        |                                                     |                                                              |                 |                 |           |        |            |          |            |  |
|---------------------------------------|-----------------------------------------------------|--------------------------------------------------------------|-----------------|-----------------|-----------|--------|------------|----------|------------|--|
| Size                                  | 12                                                  | 16                                                           | 20              | 25              | 32        | 40     | Conditions | Code     | Enter code |  |
| Module no.                            | 536203                                              | 536218                                                       | 536233          | 536250          | 536267    | 536288 |            |          |            |  |
| Function                              | Compact cylinder, double-acting, based on ISO 21287 |                                                              |                 |                 |           |        |            | ADN      | ADN        |  |
| Piston Ø [mm]                         | 12                                                  | 16                                                           | 20              | 25              | 32        | 40     |            | ★ -...   |            |  |
| Stroke [mm]                           | 1 ... 300                                           |                                                              |                 |                 | 1 ... 400 |        |            | ★ -...   |            |  |
| Piston rod thread                     | Male thread                                         |                                                              |                 |                 |           |        |            | ★ -A     |            |  |
|                                       | Female thread                                       |                                                              |                 |                 |           |        | [1]        | ★ -I     |            |  |
| Cushioning                            | Elastic cushioning rings/plates at both ends        |                                                              |                 |                 |           |        |            | ★ -P     | -P         |  |
| Position sensing                      | Via proximity sensor                                |                                                              |                 |                 |           |        |            | ★ -A     | -A         |  |
| Protection against rotation           | Square piston rod                                   |                                                              |                 |                 |           |        |            | ★ -Q     | -Q         |  |
| Piston rod type                       | Through piston rod                                  |                                                              |                 |                 |           |        |            | ★ -S2    |            |  |
|                                       | –                                                   | Through, hollow piston rod<br>Restricted stroke<br>1 ... 200 |                 |                 |           |        | 1 ... 300  |          | -S20       |  |
| Extended male thread [mm]             | Extended male piston rod thread<br>1 ... 10         |                                                              |                 |                 |           |        | 1 ... 20   |          | -...K2     |  |
| Special piston rod thread Male thread | M6                                                  | M8                                                           | M10x1.25<br>M10 | M10x1.25<br>M10 | M10       | M10    |            | -“...”K5 |            |  |
| Extended piston rod [mm]              | Extended piston rod<br>1 ... 300                    |                                                              |                 |                 | 1 ... 400 |        | [2]        | ★ -...K8 |            |  |
| Temperature resistance                | Heat-resistant seals max. 120°C                     |                                                              |                 |                 |           |        |            | ★ -S6    |            |  |
| Corrosion protection                  | High corrosion protection                           |                                                              |                 |                 |           |        | [3]        | ★ -R3    |            |  |
| Captive rating plate                  | Laser-etched rating plate                           |                                                              |                 |                 |           |        |            | -TL      |            |  |

- [1] **I** Not with piston rod type S20.  
Not with extended male thread K2
- [2] **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length
- [3] **R3** Not with captive rating plate TL

**Note**

NSF-H1 lubricants are used in combination with R3 and in combination with R3 and K2, K5 or K8.

## Ordering data – Modular product system, Q – Square piston rod, non-rotating

| Ordering table              |                                                     |           |           |        |          |            |          |          |            |
|-----------------------------|-----------------------------------------------------|-----------|-----------|--------|----------|------------|----------|----------|------------|
| Size                        | 50                                                  | 63        | 80        | 100    | 125      | Conditions | Code     |          | Enter code |
| Module no.                  | 536309                                              | 536330    | 536351    | 536372 | 536393   |            |          |          |            |
| Function                    | Compact cylinder, double-acting, based on ISO 21287 |           |           |        |          |            | ADN      |          | ADN        |
| Piston Ø                    | [mm] 50                                             | 63        | 80        | 100    | 125      |            | ★ -...   |          |            |
| Stroke                      | [mm] 1 ... 400                                      | 1 ... 500 |           |        |          |            | ★ -...   |          |            |
| Piston rod thread           | Male thread                                         |           |           |        |          |            | ★ -A     |          |            |
|                             | Female thread                                       |           |           |        |          | [1]        | ★ -I     |          |            |
| Cushioning                  | Elastic cushioning rings/plates at both ends        |           |           |        |          |            | ★ -P     |          | -P         |
| Position sensing            | Via proximity sensor                                |           |           |        |          |            | ★ -A     |          | -A         |
| Protection against rotation | Square piston rod                                   |           |           |        |          |            | ★ -Q     |          | -Q         |
| Piston rod type             | Through piston rod                                  |           |           |        |          |            | ★ -S2    |          |            |
|                             | Through, hollow piston rod                          |           |           |        |          |            | -S20     |          |            |
|                             | Restricted stroke                                   |           |           |        |          |            |          |          |            |
|                             | [mm] 1 ... 300                                      | 1 ... 400 |           |        |          |            |          |          |            |
| Extended male thread        | Extended male piston rod thread                     |           |           |        |          |            |          |          |            |
| [mm]                        | 1 ... 20                                            |           | 1 ... 30  |        | 1 ... 40 |            | -...K2   |          |            |
| Special piston rod thread   | Male thread                                         | M12       | M12       | M16    | M16      | M20        |          | -“...”K5 |            |
| Extended piston rod         | Extended piston rod                                 |           |           |        |          |            |          |          |            |
| [mm]                        | 1 ... 400                                           |           | 1 ... 500 |        |          | [2]        | ★ -...K8 |          |            |
| Temperature resistance      | Heat-resistant seals max. 120°C                     |           |           |        |          |            | ★ -S6    |          |            |
| Corrosion protection        | High corrosion protection                           |           |           |        |          | [3]        | ★ -R3    |          |            |
| Captive rating plate        | Laser-etched rating plate                           |           |           |        |          |            | -TL      |          |            |

- [1] **I** Not with piston rod type S20.  
Not with extended male thread K2
- [2] **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length
- [3] **R3** Not with captive rating plate TL

**Note**

NSF-H1 lubricants are used in combination with R3 and in combination with R3 and K2, K5 or K8.

## Ordering data – Modular product system, S1 – Reinforced piston rod

| Ordering table            |               |                                                      |                 |                 |                |            |          |            |
|---------------------------|---------------|------------------------------------------------------|-----------------|-----------------|----------------|------------|----------|------------|
| Size                      |               | 25                                                   | 40              | 63              | 100            | Conditions | Code     | Enter code |
| Module no.                |               | 536250                                               | 536288          | 536330          | 536372         |            |          |            |
| Function                  |               | Compact cylinder, double-acting, based on ISO 21287  |                 |                 |                |            | ADN      | ADN        |
| Piston Ø                  | [mm]          | 25                                                   | 40              | 63              | 100            |            | -...     |            |
| Stroke                    | [mm]          | 5 ... 300                                            | 10 ... 400      |                 | 10 ... 500     |            | -...     |            |
| Piston rod thread         |               | Male thread                                          |                 |                 |                |            | -A       |            |
|                           |               | Female thread                                        |                 |                 |                | [1]        | -I       |            |
| Cushioning                |               | Elastic cushioning rings/plates at both ends         |                 |                 |                |            | -P       | -P         |
| Position sensing          |               | Via proximity sensor                                 |                 |                 |                |            | -A       | -A         |
| Extended male thread      | [mm]          | Extended male piston rod thread<br>1 ... 20          |                 |                 | 1 ... 30       |            | -...K2   |            |
| Special piston rod thread | Male thread   | M10x1.25<br>M10                                      | M10x1.25<br>M12 | M12x1.25<br>M16 | M16x1.5<br>M20 |            | -“...”K5 |            |
|                           | Female thread | M5                                                   | M8              | M10             | –              |            |          |            |
| Extended piston rod       | [mm]          | Extended male piston rod thread<br>1 ... 300         |                 |                 | 1 ... 500      | [2]        | -...K8   |            |
| Temperature resistance    |               | Heat-resistant seals max. 120°C                      |                 |                 |                |            | -S6      |            |
| Increased lateral load    |               | Reinforced piston rod or extended piston rod bearing |                 |                 |                |            | -S1      | -S1        |
| Captive rating plate      |               | Laser-etched rating plate                            |                 |                 |                |            | -TL      |            |

[1] **I** Not with extended male thread K2[2] **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

## Type codes

|     |                                                     |  |
|-----|-----------------------------------------------------|--|
| 001 | Series                                              |  |
| ADN | Compact cylinder, double-acting, based on ISO 21287 |  |

|     |                 |  |
|-----|-----------------|--|
| 002 | Piston diameter |  |
| 20  | 20              |  |
| 25  | 25              |  |
| 32  | 32              |  |
| 40  | 40              |  |
| 50  | 50              |  |
| 63  | 63              |  |
| 80  | 80              |  |
| 100 | 100             |  |

|     |            |  |
|-----|------------|--|
| 003 | Stroke     |  |
| ... | 10 ... 500 |  |

|     |               |  |
|-----|---------------|--|
| 004 | Clamping unit |  |
| KP  | Attached      |  |

|     |                        |  |
|-----|------------------------|--|
| 005 | Piston rod thread type |  |
| A   | Male thread            |  |
| I   | Female thread          |  |

|     |                                               |  |
|-----|-----------------------------------------------|--|
| 006 | Cushioning                                    |  |
| P   | Elastic cushioning rings/plates on both sides |  |

|     |                      |  |
|-----|----------------------|--|
| 007 | Position sensing     |  |
| A   | For proximity sensor |  |

|       |                             |  |
|-------|-----------------------------|--|
| 008   | Piston rod thread extension |  |
|       | None                        |  |
| ...K2 | 1 ... 30 mm                 |  |

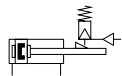
|               |               |  |
|---------------|---------------|--|
| 009           | Custom thread |  |
| "M6"K5        | M6            |  |
| "M8"K5        | M8            |  |
| "M10"K5       | M10           |  |
| "M10x-1,25"K5 | M10x1.25      |  |
| "M12"K5       | M12           |  |
| "M16"K5       | M16           |  |
| "M20x-1,5"K5  | M20x1.5       |  |
| "M5"K5        | M5            |  |
| "M20"K5       | M20           |  |

|       |                      |  |
|-------|----------------------|--|
| 010   | Piston rod extension |  |
|       | None                 |  |
| ...K8 | 1 ... 500 mm         |  |

|     |                           |  |
|-----|---------------------------|--|
| 011 | Captive rating plate      |  |
|     | Rating plate, glued       |  |
| TL  | Laser etched rating plate |  |

## Data sheet

### Function



⌀ - Diameter  
20 ... 100 mm

└ - Stroke length  
10 ... 500 mm

### Variants



K2



K5



K8



### Note

Additional measures are required for use in safety-related applications; in Europe, for example, the standards listed under the EC Machinery Directive must be observed.

Without additional measures in accordance with legally specified minimum requirements, the product is not suitable as a safety-related component in control systems.

| General technical data                    |                                              |     |          |      |          |      |                   |      |
|-------------------------------------------|----------------------------------------------|-----|----------|------|----------|------|-------------------|------|
| Piston Ø                                  | 20                                           | 25  | 32       | 40   | 50       | 63   | 80                | 100  |
| Pneumatic connection                      |                                              |     |          |      |          |      |                   |      |
| Cylinder                                  | M5                                           | M5  | G1/8     | G1/8 | G1/8     | G1/8 | G1/8              | G1/8 |
| KP                                        | M5                                           | M5  | M5       | G1/8 | G1/8     | G1/8 | G1/8              | G1/8 |
| Female piston rod thread                  |                                              |     |          |      |          |      |                   |      |
| –                                         | M6                                           |     | M8       |      | M10      |      | M12               |      |
| K5                                        | M5                                           |     | M6       |      | M8       |      | M10               |      |
| Male piston rod thread                    |                                              |     |          |      |          |      |                   |      |
| –                                         | M8                                           |     | M10x1.25 |      | M12x1.25 |      | M16x1.5           |      |
| K5                                        | M10; M10x1.25                                |     | M10; M12 |      | M12; M16 |      | M16; M20; M20x1.5 |      |
| Axial backlash under load                 | [mm]                                         | 0.5 |          |      | 0.8      |      |                   |      |
| Design                                    | Piston                                       |     |          |      |          |      |                   |      |
|                                           | Piston rod                                   |     |          |      |          |      |                   |      |
|                                           | Cylinder barrel                              |     |          |      |          |      |                   |      |
| Cushioning                                | Elastic cushioning rings/plates at both ends |     |          |      |          |      |                   |      |
| Position sensing                          | Via proximity sensor                         |     |          |      |          |      |                   |      |
| Type of mounting                          | Via through-hole                             |     |          |      |          |      |                   |      |
|                                           | Via female thread                            |     |          |      |          |      |                   |      |
|                                           | Via accessories                              |     |          |      |          |      |                   |      |
| Mounting position                         | Any                                          |     |          |      |          |      |                   |      |
| Type of clamping with effective direction | At both ends                                 |     |          |      |          |      |                   |      |

| Operating and environmental conditions       |                                                                                            |             |  |  |  |  |  |  |
|----------------------------------------------|--------------------------------------------------------------------------------------------|-------------|--|--|--|--|--|--|
| Operating medium                             | Compressed air to ISO 8573-1:2010 [7:4:4]                                                  |             |  |  |  |  |  |  |
| Note on operating/pilot medium               | Lubricated operation possible (in which case lubricated operation will always be required) |             |  |  |  |  |  |  |
| Operating pressure                           | [MPa]                                                                                      | 0.15 ... 1  |  |  |  |  |  |  |
|                                              | [bar]                                                                                      | 1.5 ... 10  |  |  |  |  |  |  |
| Min. release pressure                        | [MPa]                                                                                      | 0.3         |  |  |  |  |  |  |
|                                              | [bar]                                                                                      | 3           |  |  |  |  |  |  |
| Ambient temperature <sup>1)</sup>            | [°C]                                                                                       | –10 ... +80 |  |  |  |  |  |  |
| Corrosion resistance class CRC <sup>2)</sup> |                                                                                            | 2           |  |  |  |  |  |  |

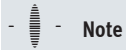
1) Note operating range of proximity sensors

2) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

## Data sheet

| Impact energy [J]                       |     |     |     |     |    |     |     |     |
|-----------------------------------------|-----|-----|-----|-----|----|-----|-----|-----|
| Piston Ø                                | 20  | 25  | 32  | 40  | 50 | 63  | 80  | 100 |
| Max. impact energy at the end positions | 0.2 | 0.3 | 0.4 | 0.7 | 1  | 1.3 | 1.8 | 2.5 |

**Note**

These specifications represent the maximum values that can be achieved. The maximum permissible impact energy must be observed.

Permissible impact speed:

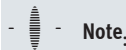
$$V = \sqrt{\frac{2 \times E}{m_1 + m_2}}$$

Maximum permissible mass:

$$m_2 = \frac{2 \times E}{V^2} - m_1$$

V Perm. impact speed  
E Max. impact energy  
m1 Moving mass (drive)  
m2 Moving payload

| Forces [N]                             |     |     |     |      |      |      |      |      |
|----------------------------------------|-----|-----|-----|------|------|------|------|------|
| Piston Ø                               | 20  | 25  | 32  | 40   | 50   | 63   | 80   | 100  |
| Theoretical force at 6 bar, advancing  | 188 | 295 | 483 | 754  | 1178 | 1870 | 3016 | 4712 |
| Theoretical force at 6 bar, retracting | 141 | 247 | 415 | 633  | 990  | 1682 | 2721 | 4418 |
| Static holding force                   | 350 | 350 | 600 | 1000 | 1400 | 2000 | 5000 | 5000 |

**Note.**

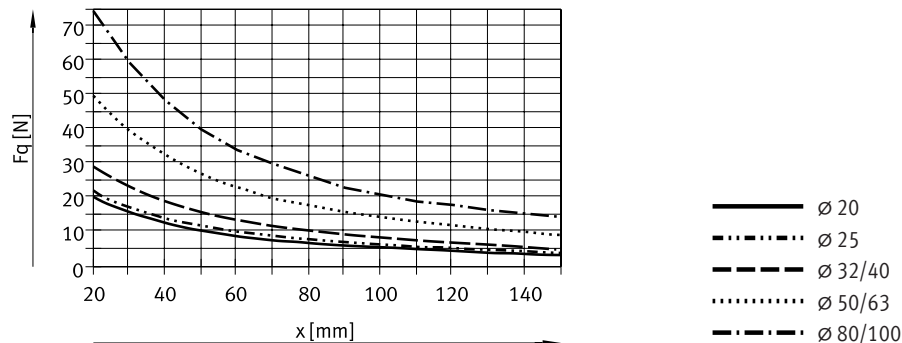
The specified holding force refers to a static load. If this value is exceeded, slippage may occur. Dynamic forces occurring during operation must

not exceed the static holding force. The clamping unit is not backlash-free in the clamped condition if varying loads are applied to the piston rod.

**Control**

The clamping unit may only be released if the forces at the piston have reached equilibrium. Otherwise, there is a risk of accidents due to sudden movement of the piston rod.

Blocking off the compressed air supply at both ends (e.g. with a 5/3-way valve) does not provide any safety.

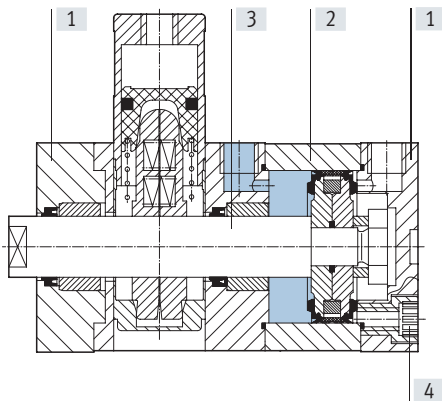
**Max. lateral load  $F_q$  as a function of projection  $x$** 

| Weight [g]                         |     |     |     |     |      |      |      |      |
|------------------------------------|-----|-----|-----|-----|------|------|------|------|
| Piston Ø                           | 20  | 25  | 32  | 40  | 50   | 63   | 80   | 100  |
| Product weight with 0 mm stroke    | 282 | 344 | 503 | 789 | 1268 | 1894 | 3973 | 5497 |
| Additional weight per 10 mm stroke | 22  | 26  | 29  | 45  | 60   | 68   | 93   | 112  |
| Moving mass with 0 mm stroke       | 53  | 63  | 100 | 173 | 296  | 368  | 755  | 932  |
| Additional mass per 10 mm stroke   | 6   | 6   | 9   | 16  | 25   | 25   | 39   | 39   |

Data sheet

Materials

Sectional view



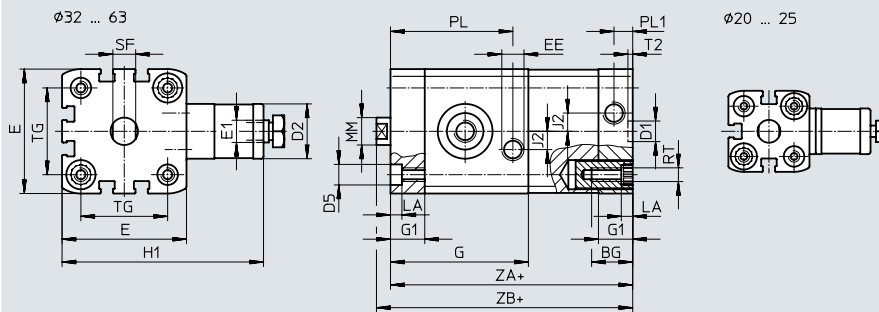
|                  |                   |                                                |
|------------------|-------------------|------------------------------------------------|
| Compact cylinder |                   |                                                |
| [1]              | Cover             | Anodised aluminium                             |
| [2]              | Cylinder barrel   | Anodised aluminium                             |
| [3]              | Piston rod        | High-alloy steel                               |
| [4]              | Flange screws     | Ø 20 ... 63 Galvanised steel                   |
|                  |                   | Ø 80 ... 100 Standard screws, galvanised steel |
| –                | Seals             | Polyurethane, nitrile rubber                   |
|                  | Note on materials | RoHS-compliant                                 |

## Data sheet

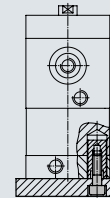
## Dimensions – Basic version

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

Ø 20 ... 63



Only direct mounting is possible with this variant.

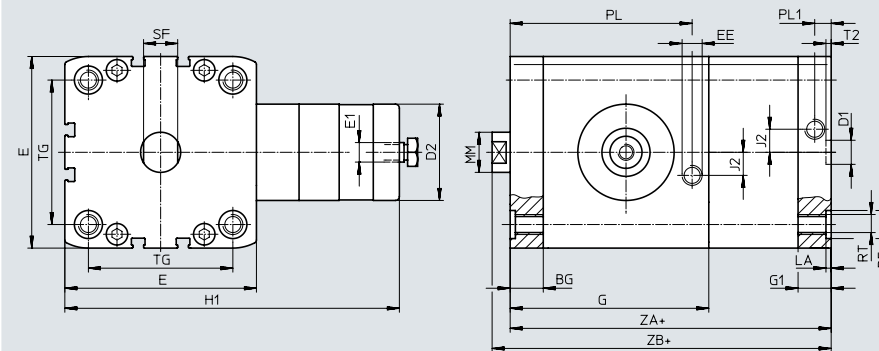


+ = plus stroke length

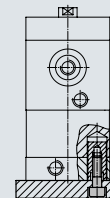
## Dimensions – Basic version

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

Ø 80, 100



Only direct mounting is possible with this variant.



+ = plus stroke length

| Ø<br>[mm] | BG<br>min. | D1<br>Ø<br>H9 | D2<br>Ø | D5<br>Ø          | E                     | E1   | EE   | G    | G1   | H1  | J2   |
|-----------|------------|---------------|---------|------------------|-----------------------|------|------|------|------|-----|------|
| 20        | 19.5       | 9             | 20      | 9 <sup>F9</sup>  | 35.5 <sup>+0.3</sup>  | M5   | M5   | 49.8 | 12   | 63  | 2.6  |
| 25        |            |               |         |                  | 39.5 <sup>+0.3</sup>  |      |      | 50.6 |      | 65  |      |
| 32        |            |               |         |                  | 47 <sup>+0.3</sup>    |      |      | 56.4 |      | 68  |      |
| 40        | 26         | 12            | 24      | 12 <sup>F9</sup> | 54.5 <sup>+0.3</sup>  | G1/8 | G1/8 | 60.4 | 15   | 89  | 8    |
| 50        |            |               | 30      |                  | 65.5 <sup>+0.3</sup>  |      |      | 67.4 |      | 108 |      |
| 63        |            |               | 38      |                  | 75.5 <sup>+0.3</sup>  |      |      | 76.8 |      | 120 |      |
| 80        | 17         | 12            | 48      | 15               | 95.5 <sup>+0.6</sup>  | G1/8 | G1/8 | 99   | 16.5 | 167 | 11.5 |
| 100       | 21.5       |               |         |                  | 113.5 <sup>+0.6</sup> |      |      | 99.6 | 21.5 | 176 |      |

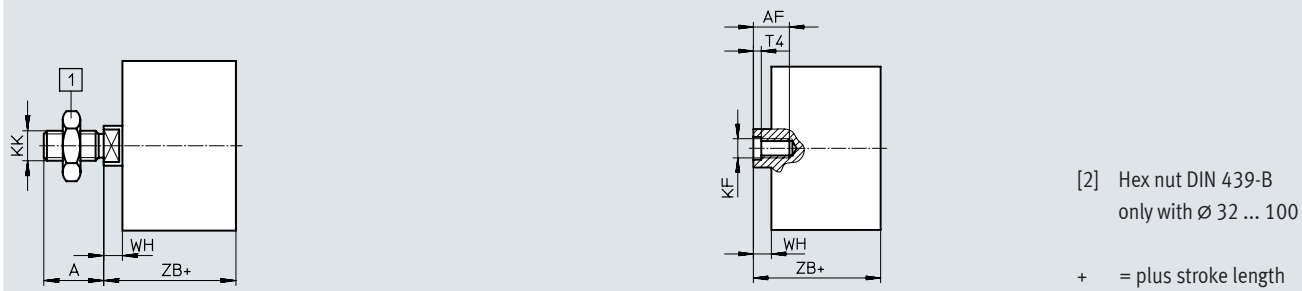
| Ø    | LA   | MM<br>Ø | PL   | PL1   | RT | SF   | T2    | TG   | ZA    | ZB    |
|------|------|---------|------|-------|----|------|-------|------|-------|-------|
| [mm] | +0.2 |         | +0.2 | +0.2  |    | h13  | +0.2  | ±0.2 | ±0.3  | +1.2  |
| 20   | 5    | 10      | 42.8 | 6     | M5 | 9    | 2.1   | 22   | 74.8  | 80.8  |
| 25   |      |         | 44.6 |       |    |      |       | 26   | 77.6  | 83.1  |
| 32   |      | 12      | 49.6 | 8.2   | M6 | 10   |       | 32.5 | 85.4  | 91.4  |
| 40   |      |         | 16   |       |    | 53.6 |       | 13   | 38    | 90.4  |
| 50   |      | 20      | 60.6 |       | M8 | 17   |       | 2.6  | 46.5  | 97.4  |
| 63   | 70   |         | 56.5 | 110.8 |    |      | 118.9 |      |       |       |
| 80   | 2.6  | 25      | 90.7 | M10   | 21 | 72   | 136.5 |      | 145.4 |       |
| 100  |      |         | 88.6 |       |    | 10.5 | 89    |      | 145.1 | 154.1 |

Data sheet

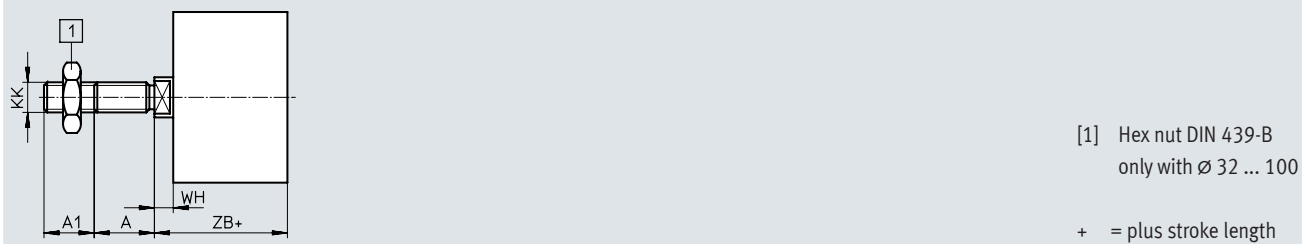
Dimensions – Variants

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

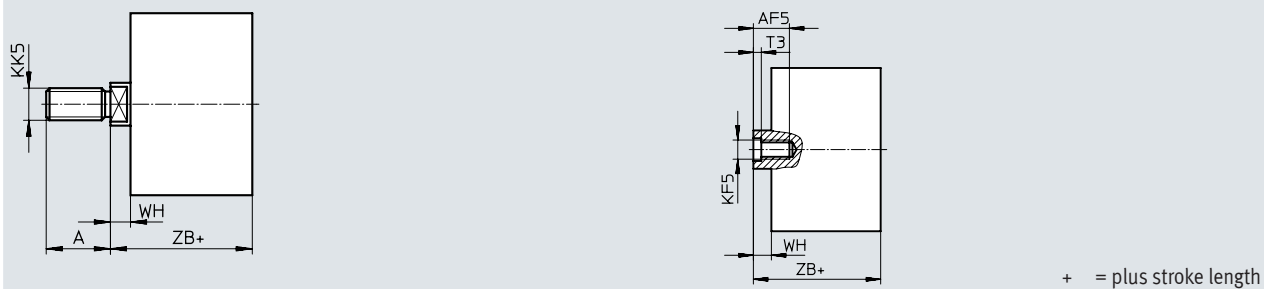
Basic version



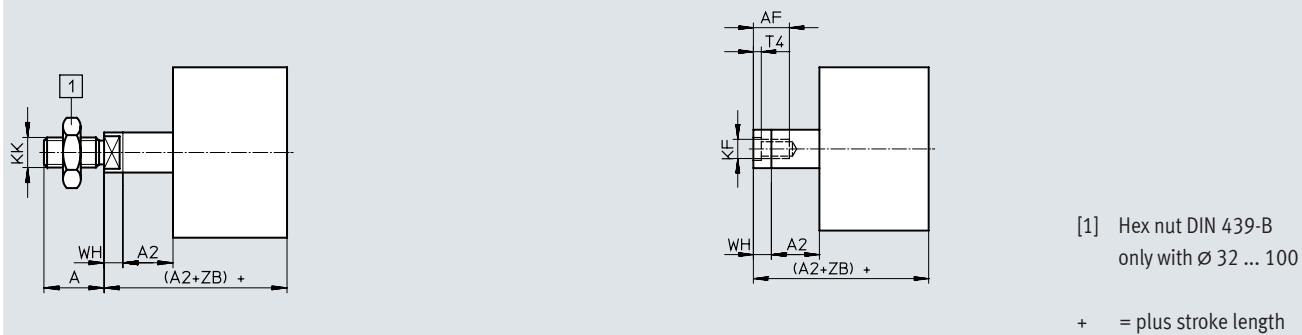
K2 – Extended male piston rod thread



K5 – Special piston rod thread



K8 – Extended piston rod



## Data sheet

| ∅    | A    | A1       | A2        | AF   | AF5  | KF  | KF5 |    |     |    |
|------|------|----------|-----------|------|------|-----|-----|----|-----|----|
| [mm] | −0.5 |          |           | min. | min. |     |     |    |     |    |
| 20   | 16   | 1 ... 20 | 1 ... 300 | 14   | 12   | M6  | M5  |    |     |    |
| 25   |      |          | 1 ... 400 | 16   | 14   | M8  | M6  |    |     |    |
| 32   | 20   |          |           |      |      |     |     | 16 | M10 | M8 |
| 40   |      |          |           | 22   | 20   | M12 | M10 |    |     |    |
| 50   |      |          |           |      |      |     |     |    |     |    |
| 63   |      |          |           |      |      |     |     |    |     |    |
| 80   |      |          |           |      |      |     |     |    |     |    |
| 100  |      |          |           |      |      |     |     |    |     |    |

| ∅    | KK       | KK5            | T3  | T4  | WH   | ZB    |
|------|----------|----------------|-----|-----|------|-------|
| [mm] |          |                |     |     | +1.3 | +1.2  |
| 20   | M8       | M10x1.25       | 2   | 2.6 | 5.5  | 80.8  |
| 25   |          | M10            |     |     |      | 83.1  |
| 32   | M10x1.25 | M10            | 2.6 | 3.3 | 6    | 91.4  |
| 40   |          | M12            |     |     | 6.1  | 96.5  |
| 50   | M12x1.25 | M12            | 3.3 | 4.7 | 8.2  | 105.6 |
| 63   |          | M16            |     |     | 8.1  | 118.9 |
| 80   | M16x1.5  | M16            | 4.7 | 6.1 | 8.9  | 145.4 |
| 100  |          | M20x1.5<br>M20 |     |     | 9    | 154.1 |

## Ordering data – Modular product system

| Ordering table            |                                                                            |                                              |                 |            |            |  |        |           |            |        |  |            |
|---------------------------|----------------------------------------------------------------------------|----------------------------------------------|-----------------|------------|------------|--|--------|-----------|------------|--------|--|------------|
| Size                      | 20                                                                         |                                              | 25              |            | 32         |  | 40     |           | Conditions | Code   |  | Enter code |
| Module no.                | 548206                                                                     |                                              | 548207          |            | 548208     |  | 548209 |           |            |        |  |            |
| Function                  | Compact cylinder, double-acting, standard hole pattern, with clamping unit |                                              |                 |            |            |  |        |           |            | ADN    |  | ADN        |
| Piston Ø                  | [mm]                                                                       | 20                                           | 25              |            | 32         |  | 40     |           |            | -...   |  |            |
| Stroke                    | [mm]                                                                       | 10 ... 300                                   |                 |            | 10 ... 400 |  |        |           |            | -...   |  |            |
| Clamping unit             |                                                                            | Attached                                     |                 |            |            |  |        |           |            | -KP    |  | -KP        |
| Piston rod thread         |                                                                            | Male thread                                  |                 |            |            |  |        |           |            | -A     |  |            |
|                           |                                                                            | Female thread                                |                 |            |            |  |        |           | [1]        | -I     |  |            |
| Cushioning                |                                                                            | Elastic cushioning rings/plates at both ends |                 |            |            |  |        |           |            | -P     |  | -P         |
| Position sensing          |                                                                            | Via proximity sensor                         |                 |            |            |  |        |           |            | -A     |  | -A         |
| Extended male thread      | [mm]                                                                       | Extended male piston rod thread              |                 |            |            |  |        |           |            |        |  |            |
|                           |                                                                            | 1 ... 20                                     |                 |            |            |  |        |           |            | -...K2 |  |            |
| Special piston rod thread | Male thread                                                                | M10x1.25<br>M10                              | M10x1.25<br>M10 | M10<br>M12 | M10<br>M12 |  |        | -“...”K5  |            |        |  |            |
|                           | Female thread                                                              | M5                                           | M5              | M6         | M6         |  |        |           |            |        |  |            |
| Extended piston rod       | [mm]                                                                       | Extended piston rod                          |                 |            | 1 ... 300  |  |        | 1 ... 400 | [2]        | -...K8 |  |            |
| Captive rating plate      |                                                                            | Laser-etched rating plate                    |                 |            |            |  |        |           |            | -TL    |  |            |

[1] **I** Not with extended male thread K2[2] **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

### Ordering data – Modular product system

| Ordering table               |               |                                                                            |            |                       |                       |            |          |        |            |
|------------------------------|---------------|----------------------------------------------------------------------------|------------|-----------------------|-----------------------|------------|----------|--------|------------|
| Size                         |               | 50                                                                         | 63         | 80                    | 100                   | Conditions | Code     |        | Enter code |
| Module no.                   |               | 548210                                                                     | 548211     | 548212                | 548213                |            |          |        |            |
| Function                     |               | Compact cylinder, double-acting, standard hole pattern, with clamping unit |            |                       |                       |            | ADN      |        | ADN        |
| Piston Ø                     | [mm]          | 50                                                                         | 63         | 80                    | 100                   |            | -...     |        |            |
| Stroke                       | [mm]          | 10 ... 400                                                                 |            | 10 ... 500            |                       |            | -...     |        |            |
| Clamping unit                |               | Attached                                                                   |            |                       |                       |            | -KP      |        | -KP        |
| Piston rod thread            |               | Male thread                                                                |            |                       |                       |            | -A       |        |            |
|                              |               | Female thread                                                              |            |                       |                       | [1]        | -I       |        |            |
| Cushioning                   |               | Elastic cushioning rings/plates at both ends                               |            |                       |                       |            | -P       |        | -P         |
| Position sensing             |               | Via proximity sensor                                                       |            |                       |                       |            | -A       |        | -A         |
| Extended male thread<br>[mm] |               | Extended male piston rod thread                                            |            |                       |                       |            | -...K2   |        |            |
|                              |               | 1 ... 20                                                                   |            | 1 ... 30              |                       |            |          |        |            |
| Special piston rod thread    | Male thread   | M12<br>M16                                                                 | M12<br>M16 | M16<br>M20<br>M20x1.5 | M16<br>M20<br>M20x1.5 |            | -“...”K5 |        |            |
|                              | Female thread | M8                                                                         | M8         | M10                   | M10                   |            |          |        |            |
| Extended piston rod<br>[mm]  |               | Extended piston rod<br>1 ... 400                                           |            |                       |                       | 1 ... 500  | [2]      | -...K8 |            |
| Captive rating plate         |               | Laser-etched rating plate                                                  |            |                       |                       |            | -TL      |        |            |

[1] I Not with extended male thread K2

[2] **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

## Type codes

|     |                                                     |  |
|-----|-----------------------------------------------------|--|
| 001 | Series                                              |  |
| ADN | Compact cylinder, double-acting, based on ISO 21287 |  |

|     |                 |  |
|-----|-----------------|--|
| 002 | Piston diameter |  |
| 20  | 20              |  |
| 25  | 25              |  |
| 32  | 32              |  |
| 40  | 40              |  |
| 50  | 50              |  |
| 63  | 63              |  |
| 80  | 80              |  |
| 100 | 100             |  |

|     |            |  |
|-----|------------|--|
| 003 | Stroke     |  |
| ... | 10 ... 500 |  |

|     |                      |  |
|-----|----------------------|--|
| 004 | End-position locking |  |
| ELB | Both sides           |  |
| ELH | Rear                 |  |
| ELV | Front                |  |

|     |                        |  |
|-----|------------------------|--|
| 005 | Piston rod thread type |  |
| A   | Male thread            |  |
| I   | Female thread          |  |

|     |                                               |  |
|-----|-----------------------------------------------|--|
| 006 | Cushioning                                    |  |
| P   | Elastic cushioning rings/plates on both sides |  |

|     |                      |  |
|-----|----------------------|--|
| 007 | Position sensing     |  |
| A   | For proximity sensor |  |

|       |                             |  |
|-------|-----------------------------|--|
| 008   | Piston rod thread extension |  |
|       | None                        |  |
| ...K2 | 1 ... 30 mm                 |  |

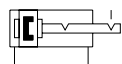
|              |               |  |
|--------------|---------------|--|
| 009          | Custom thread |  |
| "M6"K5       | M6            |  |
| "M8"K5       | M8            |  |
| "M10"K5      | M10           |  |
| "M10x1,25"K5 | M10x1.25      |  |
| "M12"K5      | M12           |  |
| "M16"K5      | M16           |  |
| "M20x1,5"K5  | M20x1.5       |  |
| "M5"K5       | M5            |  |
| "M20"K5      | M20           |  |

|       |                      |  |
|-------|----------------------|--|
| 010   | Piston rod extension |  |
|       | None                 |  |
| ...K8 | 1 ... 500 mm         |  |

|     |                           |  |
|-----|---------------------------|--|
| 011 | Captive rating plate      |  |
|     | Rating plate, glued       |  |
| TL  | Laser etched rating plate |  |

## Data sheet

## Function



## Variants



K2



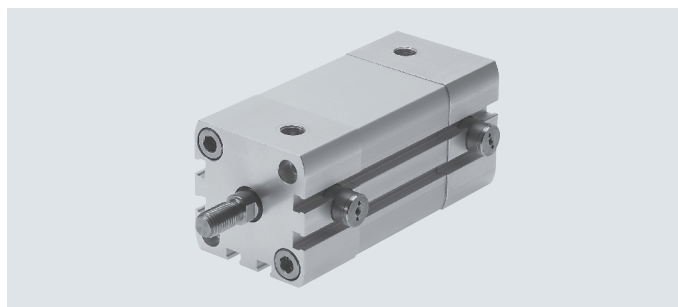
K5



K8

⌀ - Diameter  
20 ... 100 mm

└ - Stroke length  
10 ... 500 mm



⌀ - **Note**

Additional measures are required for use in safety-related applications; in Europe, for example, the standards listed under the EC Machinery Directive must be observed.

Without additional measures in accordance with legally specified minimum requirements, the product is not suitable as a safety-related component in control systems.

## General technical data

| General technical data                       |                                              |     |          |      |          |      |                   |      |  |
|----------------------------------------------|----------------------------------------------|-----|----------|------|----------|------|-------------------|------|--|
| Piston Ø                                     | 20                                           | 25  | 32       | 40   | 50       | 63   | 80                | 100  |  |
| Pneumatic connection                         | M5                                           | M5  | G1/8     | G1/8 | G1/8     | G1/8 | G1/8              | G1/8 |  |
| Female piston rod thread                     |                                              |     |          |      |          |      |                   |      |  |
| –                                            | M6                                           |     | M8       |      | M10      |      | M12               |      |  |
| K5                                           | M5                                           |     | M6       |      | M8       |      | M10               |      |  |
| Male piston rod thread                       |                                              |     |          |      |          |      |                   |      |  |
| –                                            | M8                                           |     | M10x1.25 |      | M12x1.25 |      | M16x1.5           |      |  |
| K5                                           | M10; M10x1.25                                |     | M10; M12 |      | M12; M16 |      | M16; M20; M20x1.5 |      |  |
| Max. axial backlash with end position locked | [mm]                                         | 1.3 |          |      |          |      |                   | 2.1  |  |
| Design                                       | Piston                                       |     |          |      |          |      |                   |      |  |
|                                              | Piston rod                                   |     |          |      |          |      |                   |      |  |
|                                              | Cylinder barrel                              |     |          |      |          |      |                   |      |  |
| End-position locking                         |                                              |     |          |      |          |      |                   |      |  |
| ELB                                          | At both ends                                 |     |          |      |          |      |                   |      |  |
| ELV                                          | At front                                     |     |          |      |          |      |                   |      |  |
| ELH                                          | At rear                                      |     |          |      |          |      |                   |      |  |
| Cushioning                                   | Elastic cushioning rings/plates at both ends |     |          |      |          |      |                   |      |  |
| Position sensing                             | Via proximity sensor                         |     |          |      |          |      |                   |      |  |
| Type of mounting                             | Via female thread                            |     |          |      |          |      |                   |      |  |
|                                              | Via accessories                              |     |          |      |          |      |                   |      |  |
| Mounting position                            | Any                                          |     |          |      |          |      |                   |      |  |

⌀ - **Note**

- No screws with a head or similar may be used in place of end-position locking, as there is a risk that the function will be impaired if they are screwed in too deeply.
- The exhaust hole must not be closed.
- The piston rod can be locked in any stroke position once the drive is brought mechanically into its end position.
- End-position locking has been designed to prevent the load from dropping in case of pressure failure.
- Operation of the cylinder in conjunction with a 3-way valve (especially with the function "mid-position closed" and those with "metallic sealing") should be avoided. The residual pressure that is enclosed on the locking side of the cylinder can release the locking function.
- The cylinder must not be operated with external stops (e.g. shock absorber, buffer, oil brake, etc.):
  - It may not be possible to reliably reach the internal end position.
  - The locking mechanism can wear out prematurely. (In the event of pressure drop in the opposite chamber to less than the locking pressure, the locking piston will prematurely fall to its lower end position.)

## Data sheet

| Operating and environmental conditions       |       | 20                                                                                         | 25 | 32 | 40 | 50         | 63 | 80 | 100 |
|----------------------------------------------|-------|--------------------------------------------------------------------------------------------|----|----|----|------------|----|----|-----|
| Operating medium                             |       | Compressed air to ISO 8573-1:2010 [7:4:4]                                                  |    |    |    |            |    |    |     |
| Note on operating/<br>pilot medium           |       | Lubricated operation possible (in which case lubricated operation will always be required) |    |    |    |            |    |    |     |
| Operating pressure                           | [MPa] | 0.25 ... 1                                                                                 |    |    |    | 0.15 ... 1 |    |    |     |
|                                              | [bar] | 2.5 ... 10                                                                                 |    |    |    | 1.5 ... 10 |    |    |     |
| Ambient temperature <sup>1)</sup>            | [°C]  | -20 ... +80                                                                                |    |    |    |            |    |    |     |
| Corrosion resistance class CRC <sup>2)</sup> |       | 2                                                                                          |    |    |    |            |    |    |     |

- 1) Note operating range of proximity sensors

- 2) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

| Forces [N]                             |     |     |     |     |      |      |      |      |
|----------------------------------------|-----|-----|-----|-----|------|------|------|------|
| Piston Ø                               | 20  | 25  | 32  | 40  | 50   | 63   | 80   | 100  |
| Theoretical force at 6 bar, advancing  | 188 | 295 | 483 | 754 | 1178 | 1870 | 3016 | 4712 |
| Theoretical force at 6 bar, retracting | 141 | 247 | 415 | 686 | 1057 | 1750 | 2827 | 4524 |
| Static holding force                   | 250 | 500 |     |     | 2000 |      | 5000 |      |

### Sizing example



### Note

When sizing pneumatic cylinders it is recommended as a basic principle that only 50% of the indicated theoretical forces (see above) be used

**Assuming:**

Mounting position = vertical

Workpiece load = 44 kg

$$F = m \times g = 44 \text{ kg} \times 9.81 \text{ m/s}^2 = 431.6 \text{ N}$$

**To be calculated:**

Suitable piston diameter

**Example with 32 mm piston diameter:**

Theoretical force at 6 bar, advancing = 483 N

50% of the theoretical force = 241.5 N

Static holding force with 32 mm piston diameter = 500 N

The static holding force of end-position locking is within the permissible range (max. 500 N) for a workpiece load of 44 kg (431.6 N); however, the cylinder would be at 89% capacity.

**Result:**

A cylinder with a piston diameter of 40 mm is therefore recommended for this application.

| Impact energy [J]                       |     |     |     |     |    |     |     |     |
|-----------------------------------------|-----|-----|-----|-----|----|-----|-----|-----|
| Piston Ø                                | 20  | 25  | 32  | 40  | 50 | 63  | 80  | 100 |
| Max. impact energy at the end positions | 0.2 | 0.3 | 0.4 | 0.7 | 1  | 1.3 | 1.8 | 2.5 |



### Note

These specifications represent the maximum values that can be achieved. The maximum permissible impact energy must be observed.

Permissible impact speed:

$$V = \sqrt{\frac{2 \times E}{m_1 + m_2}}$$

Maximum permissible mass:

$$m_2 = \frac{2 \times E}{v^2} - m_1$$

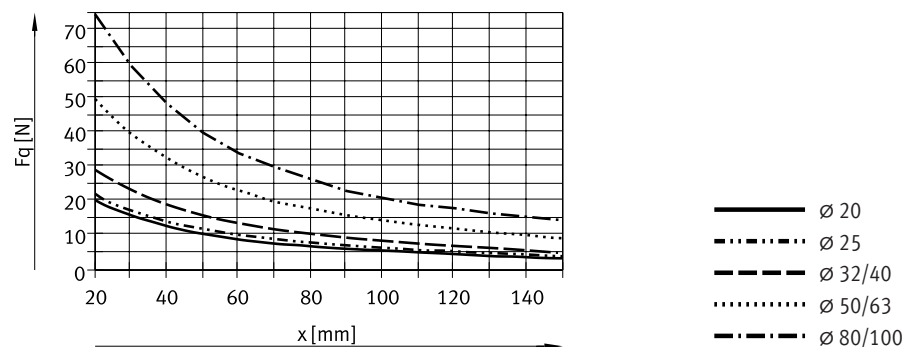
V Perm. impact speed

E Max. impact energy

|    |                     |
|----|---------------------|
| m1 | Moving mass (drive) |
|----|---------------------|

|    |                |
|----|----------------|
| m2 | Moving payload |
|----|----------------|

**Max. lateral load  $F_q$  as a function of projection  $x$**

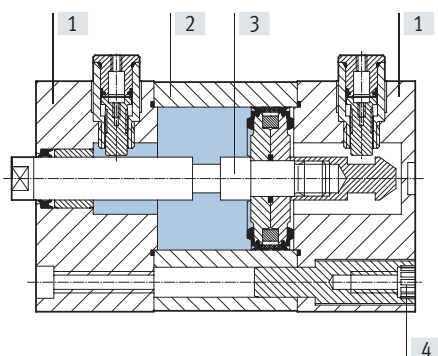


## Data sheet

| Weight [g]                               | 20  | 25  | 32  | 40  | 50   | 63   | 80   | 100  |
|------------------------------------------|-----|-----|-----|-----|------|------|------|------|
| Piston Ø                                 |     |     |     |     |      |      |      |      |
| <b>End-position locking at both ends</b> |     |     |     |     |      |      |      |      |
| Product weight with 0 mm stroke          | 234 | 339 | 518 | 665 | 1334 | 1734 | 3300 | 4735 |
| Additional weight per 10 mm stroke       | 22  | 26  | 29  | 38  | 51   | 59   | 79   | 98   |
| Moving mass with 0 mm stroke             | 43  | 53  | 85  | 101 | 199  | 248  | 475  | 637  |
| Additional mass per 10 mm stroke         | 6   | 6   | 9   | 9   | 16   | 16   | 25   | 25   |
| <b>End-position locking at front</b>     |     |     |     |     |      |      |      |      |
| Product weight with 0 mm stroke          | 177 | 248 | 387 | 498 | 922  | 1228 | 2296 | 3448 |
| Additional weight per 10 mm stroke       | 22  | 26  | 29  | 38  | 51   | 59   | 79   | 98   |
| Moving mass with 0 mm stroke             | 35  | 46  | 75  | 98  | 175  | 225  | 464  | 626  |
| Additional mass per 10 mm stroke         | 6   | 6   | 9   | 9   | 16   | 16   | 25   | 25   |
| <b>End-position locking at rear</b>      |     |     |     |     |      |      |      |      |
| Product weight with 0 mm stroke          | 181 | 252 | 380 | 505 | 920  | 1217 | 2233 | 3409 |
| Additional weight per 10 mm stroke       | 22  | 26  | 29  | 38  | 51   | 59   | 79   | 98   |
| Moving mass with 0 mm stroke             | 37  | 45  | 73  | 89  | 168  | 217  | 413  | 582  |
| Additional mass per 10 mm stroke         | 6   | 6   | 9   | 9   | 16   | 16   | 25   | 25   |

## Materials

## Sectional view



|                  |                   |                                                   |
|------------------|-------------------|---------------------------------------------------|
| Compact cylinder |                   |                                                   |
| [1]              | Cover             | Anodised aluminium                                |
| [2]              | Cylinder barrel   | Anodised aluminium                                |
| [3]              | Piston rod        | High-alloy steel                                  |
| [4]              | Flange screws     | Ø 20 ... 63<br>Galvanised steel                   |
|                  |                   | Ø 80 ... 100<br>Standard screws, galvanised steel |
| –                | Seals             | Polyurethane, nitrile rubber                      |
|                  | Note on materials | RoHS-compliant                                    |

## Data sheet

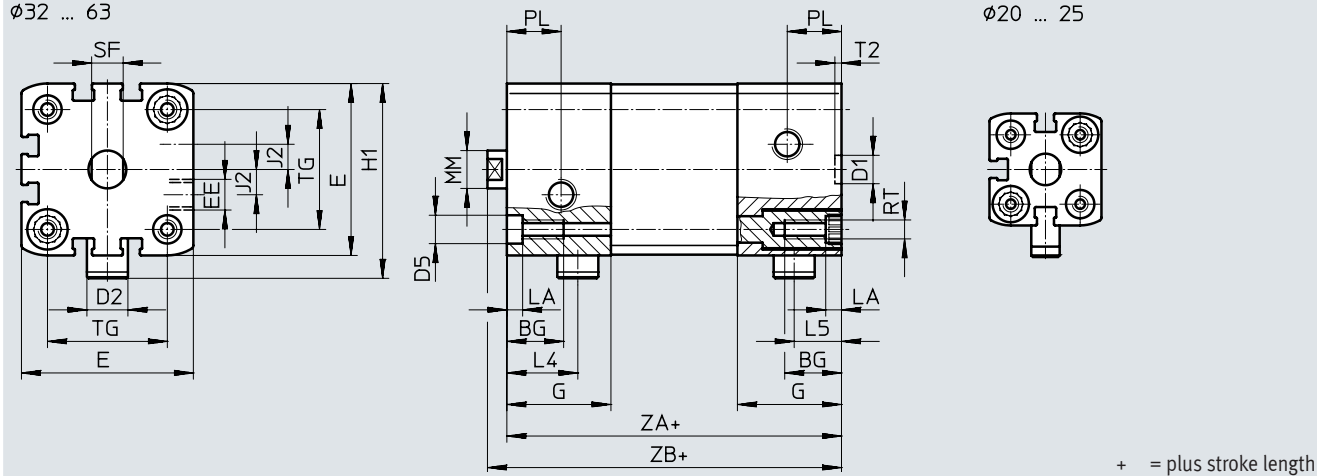
### Dimensions – Basic version

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

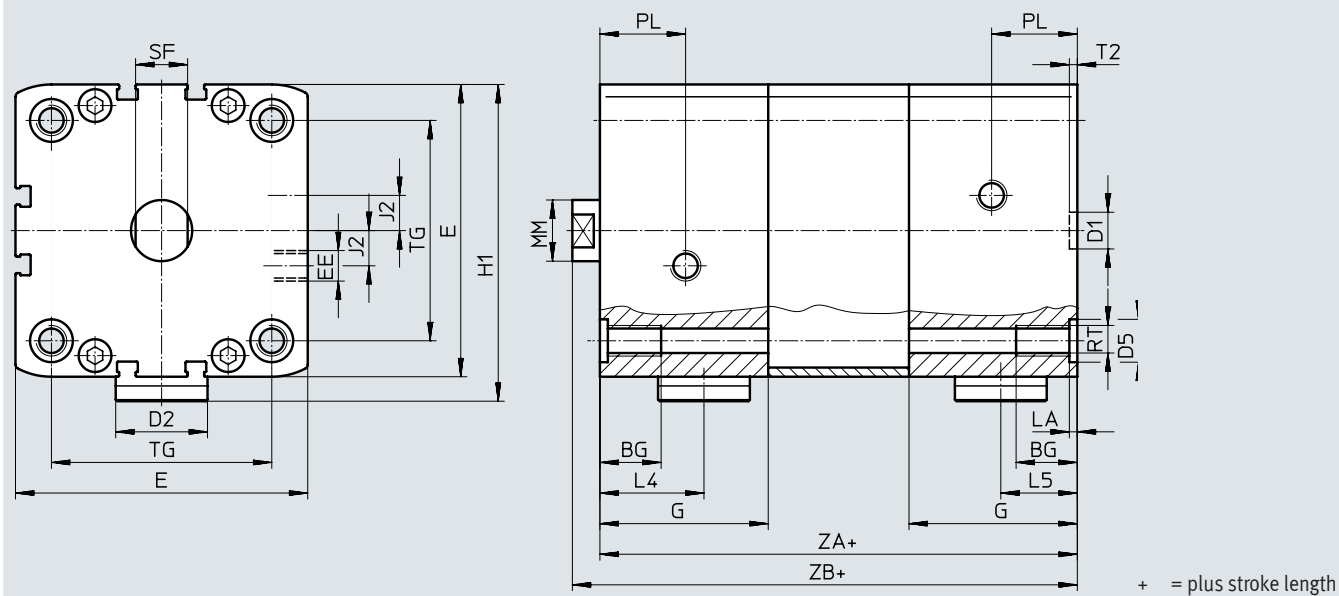
ELB – End-position locking at both ends

ø 20 ... 63

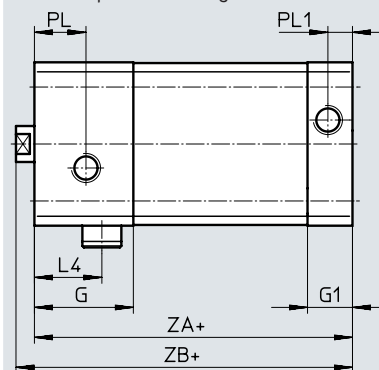
ø 32 ... 63



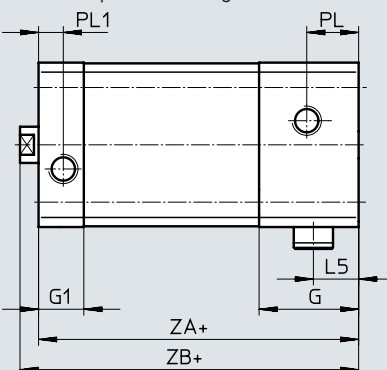
ø 80 ... 100



ELV – End-position locking at front



ELH – End-position locking at rear



+ = plus stroke length

## Data sheet

| ∅    | BG<br>min. | D1<br>∅<br>H9         | D2<br>∅ | D5<br>∅         | E                    | EE   | G    | G1                   | H1   | J2   | L4    | L5   |    |  |
|------|------------|-----------------------|---------|-----------------|----------------------|------|------|----------------------|------|------|-------|------|----|--|
| [mm] |            |                       |         |                 |                      |      |      |                      |      |      |       |      |    |  |
| 20   | 18         | 9                     | 9       | 9 <sup>F9</sup> | 35.5 <sup>+0.3</sup> | M5   | 25   | 12                   | 45.5 | 2.6  | 18.5  | 12.5 |    |  |
| 25   |            |                       | 13      |                 | 39.5 <sup>+0.3</sup> |      | 29.5 |                      | 53.3 |      | 20.8  | 14   |    |  |
| 32   |            |                       |         |                 | 47 <sup>+0.3</sup>   | G1/8 | 33   | 15                   | 58   | 6    | 22.5  | 15   |    |  |
| 40   |            |                       | 20      |                 | 54.5 <sup>+0.3</sup> |      |      |                      | 61.8 | 8    |       |      |    |  |
| 50   | 20         | 12                    |         |                 | 65.5 <sup>+0.3</sup> |      | 43   |                      | 77   | 27.5 | 20.5  |      |    |  |
| 63   |            |                       |         |                 | 75.5 <sup>+0.3</sup> |      |      |                      | 82   |      |       | 11.5 |    |  |
| 80   |            |                       |         |                 | 30                   |      | 15   | 95.5 <sup>+0.6</sup> | 55   | 16.5 | 103.5 | 34   | 25 |  |
| 100  |            | 113.5 <sup>+0.6</sup> | 57      | 21.5            |                      |      |      | 113.5                | 20   | 35   | 27    |      |    |  |

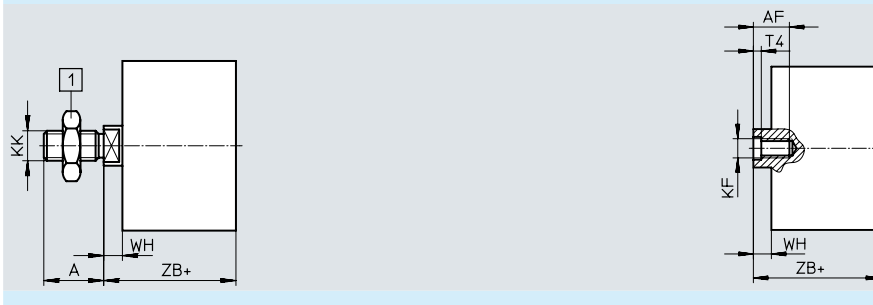
| ∅    | LA   | MM<br>∅ | PL | PL1 | RT   | SF  | T2    | TG   | ZA<br>±0.3 |          | ZB<br>+1.2 |          |
|------|------|---------|----|-----|------|-----|-------|------|------------|----------|------------|----------|
| [mm] | +0.2 |         |    |     |      | h13 | +0.1  | ±0.2 | ELB        | ELV, ELH | ELB        | ELV, ELH |
| 20   | 5    | 10      | 6  | 6   | M5   | 9   | 2.1   | 22   | 63         | 50       | 68.8       | 55.5     |
| 25   |      |         |    |     |      |     |       | 26   | 74         | 56.5     | 79.5       | 62       |
| 32   |      | 12      | 16 | 8.2 | M6   | 10  |       | 32.5 | 80         | 62       | 86         | 68       |
| 40   |      |         |    |     |      |     |       | 38   | 81         | 63       | 87.1       | 69       |
| 50   |      |         |    |     | 16   | 21  |       | M8   | 13         | 46.5     | 101        | 73       |
| 63   | 56.5 | 105     | 77 |     |      |     | 113.1 |      |            | 85.1     |            |          |
| 80   | 2.6  | 20      | 28 |     | 10.5 | M10 | 17    | 2.6  | 72         | 131      | 92.5       | 139.9    |
| 100  |      |         |    | 89  |      |     |       |      | 138        | 102.5    | 147        | 111.5    |

Data sheet

Dimensions – Variants

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

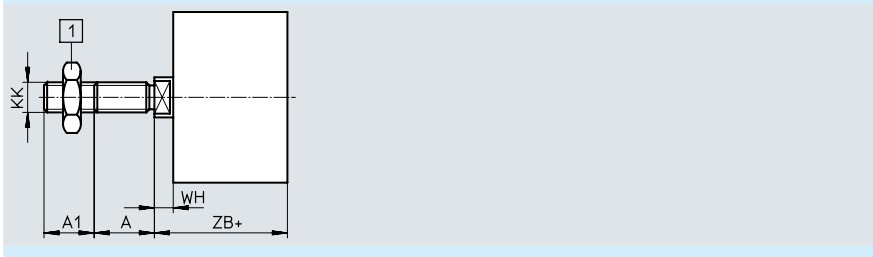
Basic version



[1] Hex nut DIN 439-B  
only with  $\varnothing 32 \dots 100$

+ = plus stroke length

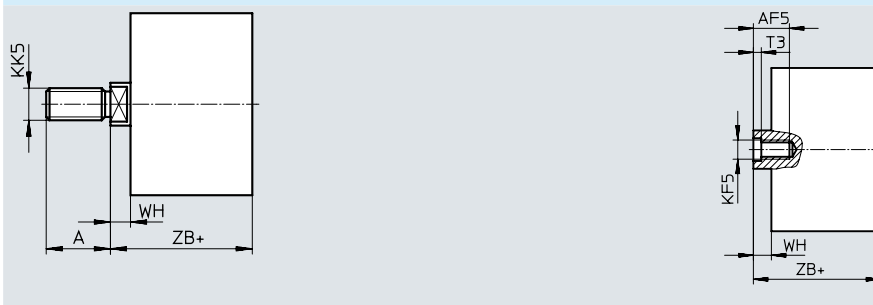
K2 – Extended male piston rod thread



[1] Hex nut DIN 439-B  
only with  $\varnothing 32 \dots 100$

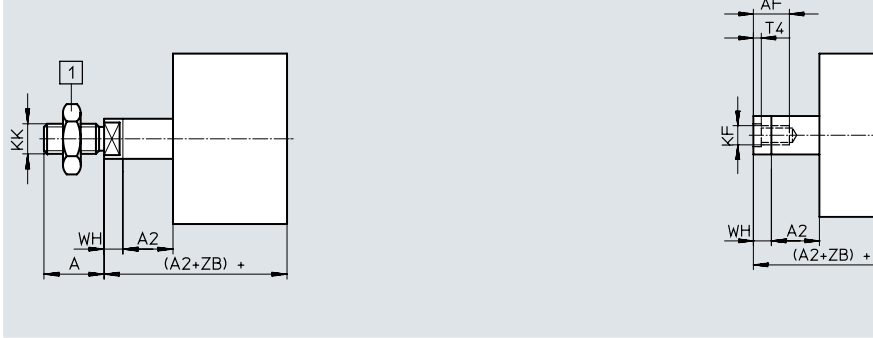
+ = plus stroke length

K5 – Special piston rod thread



+ = plus stroke length

K8 – Extended piston rod



[1] Hex nut DIN 439-B  
only with  $\varnothing 32 \dots 100$

+ = plus stroke length

## Data sheet

| ∅    | A    | A1       | A2        | AF   | AF5      | KF        | KF5 |    |     |    |     |     |
|------|------|----------|-----------|------|----------|-----------|-----|----|-----|----|-----|-----|
| [mm] | −0.5 |          |           | min. | min.     |           |     |    |     |    |     |     |
| 20   | 16   | 1 ... 20 | 1 ... 300 | 14   | 12       | M6        | M5  |    |     |    |     |     |
| 25   |      |          | 1 ... 400 | 16   | 14       | M8        | M6  |    |     |    |     |     |
| 32   | 20   |          |           |      |          |           |     | 16 | M10 | M8 |     |     |
| 40   |      |          |           | 28   | 1 ... 30 | 1 ... 500 | 20  |    |     |    | M12 | M10 |
| 50   |      |          |           |      |          |           |     |    |     |    |     |     |
| 63   |      |          |           |      |          |           |     |    |     |    |     |     |
| 80   |      |          |           |      |          |           |     |    |     |    |     |     |
| 100  |      |          |           |      |          |           |     |    |     |    |     |     |

| ∅    | KK       | KK5            | T3  | T4  | WH   | ZB<br>+1.2 |          |
|------|----------|----------------|-----|-----|------|------------|----------|
| [mm] |          |                |     |     | +1.3 | ELB        | ELV, ELH |
| 20   | M8       | M10x1.25       | 2   | 2.6 | 5.5  | 68.8       | 55.5     |
| 25   |          | M10            |     |     |      | 79.5       | 62       |
| 32   | M10x1.25 | M10            | 2.6 | 3.3 | 6    | 86         | 68       |
| 40   |          | M12            |     |     | 6.1  | 87.1       | 69       |
| 50   | M12x1.25 | M12            | 3.3 | 4.7 | 8.2  | 109.2      | 81.2     |
| 63   |          | M16            |     |     | 8.1  | 113.1      | 85.1     |
| 80   | M16x1.5  | M16            | 4.7 | 6.1 | 8.9  | 139.9      | 101.4    |
| 100  |          | M20x1.5<br>M20 |     |     | 9    | 147        | 111.5    |

## Compact cylinders ADN-EL, standard hole pattern, with end-position locking

### Ordering data – Modular product system

| Ordering table            |               |                                                                                   |                 |            |            |            |          |  |            |
|---------------------------|---------------|-----------------------------------------------------------------------------------|-----------------|------------|------------|------------|----------|--|------------|
| Size                      |               | 20                                                                                | 25              | 32         | 40         | Conditions | Code     |  | Enter code |
| Module no.                |               | 548214                                                                            | 548215          | 548216     | 548217     |            |          |  |            |
| Function                  |               | Compact cylinder, double-acting, standard hole pattern, with end-position locking |                 |            |            |            | ADN      |  | ADN        |
| Piston Ø                  | [mm]          | 20                                                                                | 25              | 32         | 40         |            | -...     |  |            |
| Stroke                    | [mm]          | 10 ... 300                                                                        |                 | 10 ... 400 |            |            | -...     |  |            |
| End-position locking      |               | At both ends                                                                      |                 |            |            |            | -ELB     |  |            |
|                           |               | At front                                                                          |                 |            |            |            | -ELV     |  |            |
|                           |               | At rear                                                                           |                 |            |            |            | -ELH     |  |            |
| Piston rod thread         |               | Male thread                                                                       |                 |            |            |            | -A       |  |            |
|                           |               | Female thread                                                                     |                 |            |            | [1]        | -I       |  |            |
| Cushioning                |               | Elastic cushioning rings/plates at both ends                                      |                 |            |            |            | -P       |  | -P         |
| Position sensing          |               | Via proximity sensor                                                              |                 |            |            |            | -A       |  | -A         |
| Extended male thread      | [mm]          | Extended male piston rod thread<br>1 ... 20                                       |                 |            |            |            | -...K2   |  |            |
| Special piston rod thread | Male thread   | M10x1.25<br>M10                                                                   | M10x1.25<br>M10 | M10<br>M12 | M10<br>M12 |            | -“...”K5 |  |            |
|                           | Female thread | M5                                                                                | M5              | M6         | M6         |            |          |  |            |
| Extended piston rod       |               | Extended piston rod                                                               |                 |            |            |            |          |  |            |
|                           | [mm]          | 1 ... 300                                                                         |                 | 1 ... 400  |            | [2]        | -...K8   |  |            |
| Captive rating plate      |               | Laser-etched rating plate                                                         |                 |            |            |            | -TL      |  |            |

[1] **I** Not with extended male thread K2

[2] **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

## Ordering data – Modular product system

| Ordering table            |                                                                                   |                                             |            |  |                       |          |                       |  |            |          |  |            |
|---------------------------|-----------------------------------------------------------------------------------|---------------------------------------------|------------|--|-----------------------|----------|-----------------------|--|------------|----------|--|------------|
| Size                      | 50                                                                                |                                             | 63         |  | 80                    |          | 100                   |  | Conditions | Code     |  | Enter code |
| Module no.                | 548218                                                                            |                                             | 548219     |  | 548220                |          | 548221                |  |            |          |  |            |
| Function                  | Compact cylinder, double-acting, standard hole pattern, with end-position locking |                                             |            |  |                       |          |                       |  |            | ADN      |  | ADN        |
| Piston Ø                  | [mm]                                                                              | 50                                          | 63         |  | 80                    |          | 100                   |  |            | -...     |  |            |
| Stroke                    | [mm]                                                                              | 10 ... 400                                  |            |  | 10 ... 500            |          |                       |  |            | -...     |  |            |
| End-position locking      | At both ends                                                                      |                                             |            |  |                       |          |                       |  |            | -ELB     |  |            |
|                           | At front                                                                          |                                             |            |  |                       |          |                       |  |            | -ELV     |  |            |
|                           | At rear                                                                           |                                             |            |  |                       |          |                       |  |            | -ELH     |  |            |
| Piston rod thread         | Male thread                                                                       |                                             |            |  |                       |          |                       |  |            | -A       |  |            |
|                           | Female thread                                                                     |                                             |            |  |                       |          |                       |  | [1]        | -I       |  |            |
| Cushioning                | Elastic cushioning rings/plates at both ends                                      |                                             |            |  |                       |          |                       |  |            | -P       |  | -P         |
| Position sensing          | Via proximity sensor                                                              |                                             |            |  |                       |          |                       |  |            | -A       |  | -A         |
| Extended male thread      | [mm]                                                                              | Extended male piston rod thread<br>1 ... 20 |            |  |                       | 1 ... 30 |                       |  |            | -...K2   |  |            |
| Special piston rod thread | Male thread                                                                       | M12<br>M16                                  | M12<br>M16 |  | M16<br>M20<br>M20x1.5 |          | M16<br>M20<br>M20x1.5 |  |            | -“...”K5 |  |            |
|                           | Female thread                                                                     | M8                                          | M8         |  | M10                   |          | M10                   |  |            |          |  |            |
| Extended piston rod       | Extended piston rod                                                               |                                             |            |  |                       |          |                       |  | [2]        | -...K8   |  |            |
|                           | [mm]                                                                              | 1 ... 400                                   |            |  | 1 ... 500             |          |                       |  |            |          |  |            |
| Captive rating plate      | Laser-etched rating plate                                                         |                                             |            |  |                       |          |                       |  |            | -TL      |  |            |

[1] **I** Not with extended male thread K2

[2] **K8** The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

## Type codes

|     |                                                     |  |
|-----|-----------------------------------------------------|--|
| 001 | Series                                              |  |
| AEN | Compact cylinder, single-acting, based on ISO 21287 |  |

|     |                      |  |
|-----|----------------------|--|
| 002 | Piston diameter [mm] |  |
| 12  | 12                   |  |
| 16  | 16                   |  |
| 20  | 20                   |  |
| 25  | 25                   |  |
| 32  | 32                   |  |
| 40  | 40                   |  |
| 50  | 50                   |  |
| 63  | 63                   |  |
| 80  | 80                   |  |
| 100 | 100                  |  |

|     |             |  |
|-----|-------------|--|
| 003 | Stroke [mm] |  |
| ... | 1 ... 25    |  |

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

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

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

|     |                        |  |
|-----|------------------------|--|
| 007 | Active direction       |  |
| Z   | Single-acting, pulling |  |
|     | Single-acting, pushing |  |

|       |                             |  |
|-------|-----------------------------|--|
| 008   | Piston rod thread extension |  |
|       | None                        |  |
| ...K2 | 1 ... 30 mm                 |  |

|              |               |  |
|--------------|---------------|--|
| 009          | Custom thread |  |
| "M5"K5       | M5            |  |
| "M6"K5       | M6            |  |
| "M8"K5       | M8            |  |
| "M10"K5      | M10           |  |
| "M10x1,25"K5 | M10x1.25      |  |
| "M12"K5      | M12           |  |
| "M16"K5      | M16           |  |
| "M20"K5      | M20           |  |
| "M20x1,5"K5  | M20x1.5       |  |

|       |                      |  |
|-------|----------------------|--|
| 010   | Piston rod extension |  |
|       | None                 |  |
| ...K8 | 1 ... 25 mm          |  |

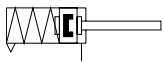
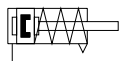
|     |                                             |  |
|-----|---------------------------------------------|--|
| 011 | Improved running performance                |  |
|     | None                                        |  |
| K10 | Smooth anodised aluminium coated piston rod |  |

|     |                                  |  |
|-----|----------------------------------|--|
| 012 | Temperature resistance           |  |
|     | Standard                         |  |
| S6  | Heat-resistant seals max. 120 °C |  |

|     |                           |  |
|-----|---------------------------|--|
| 013 | Captive rating plate      |  |
|     | Rating plate, glued       |  |
| TL  | Laser etched rating plate |  |

## Data sheet

## Function



## Pulling

⌀ - Diameter  
12 ... 100 mm

l - Stroke length  
1 ... 25 mm

 www.festo.com

## Variants



S6



K2



K5



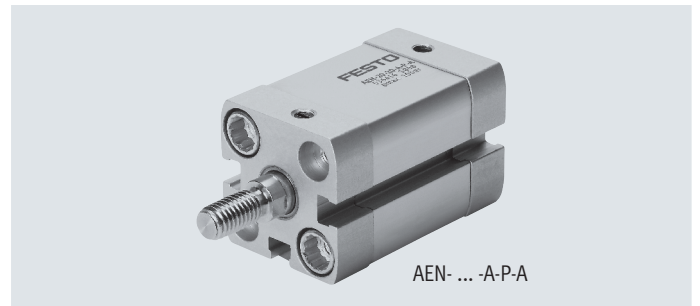
K8



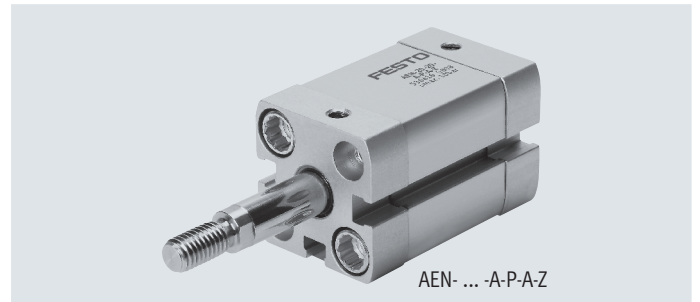
K10



Q



AEN- ... A-P-A



AEN- ... A-P-A-Z

## General technical data

| Piston Ø          | 12                                           | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
|-------------------|----------------------------------------------|----|----|----|----|----|----|----|----|-----|
| Design            | Piston                                       |    |    |    |    |    |    |    |    |     |
|                   | Piston rod                                   |    |    |    |    |    |    |    |    |     |
|                   | Cylinder barrel                              |    |    |    |    |    |    |    |    |     |
| Cushioning        | Elastic cushioning rings/plates at both ends |    |    |    |    |    |    |    |    |     |
| Position sensing  | Via proximity sensor                         |    |    |    |    |    |    |    |    |     |
| Type of mounting  | Via through-hole                             |    |    |    |    |    |    |    |    |     |
|                   | Via female thread                            |    |    |    |    |    |    |    |    |     |
|                   | Via accessories                              |    |    |    |    |    |    |    |    |     |
|                   |                                              |    |    |    |    |    |    |    |    |     |
| Mounting position | Any                                          |    |    |    |    |    |    |    |    |     |

## Technical data – Basic version and variants

| Piston Ø                 | 12 | 16 | 20            | 25            | 32       |
|--------------------------|----|----|---------------|---------------|----------|
| Pneumatic connection     | M5 | M5 | M5            | M5            | G1/8     |
| Female piston rod thread |    |    |               |               |          |
| –                        | M3 | M4 | M6            | M6            | M8       |
| K5                       | –  | –  | M5            | M5            | M6       |
| Male piston rod thread   |    |    |               |               |          |
| –                        | M5 | M6 | M8            | M8            | M10x1.25 |
| K5                       | M6 | M8 | M10; M10x1.25 | M10; M10x1.25 | M10; M12 |
| Q-K5                     | –  | M8 | M10; M10x1.25 | M10; M10x1.25 | M10      |

| Piston Ø                 | 40       | 50       | 63       | 80                | 100               |
|--------------------------|----------|----------|----------|-------------------|-------------------|
| Pneumatic connection     | G1/8     | G1/8     | G1/8     | G1/8              | G1/8              |
| Female piston rod thread |          |          |          |                   |                   |
| –                        | M8       | M10      | M10      | M12               | M12               |
| K5                       | M6       | M8       | M8       | M10               | M10               |
| Male piston rod thread   |          |          |          |                   |                   |
| –                        | M10x1.25 | M12x1.25 | M12x1.25 | M16x1.5           | M16x1.5           |
| K5                       | M10; M12 | M12; M16 | M12; M16 | M16; M20; M20x1.5 | M16; M20; M20x1.5 |
| Q-K5                     | M10      | M12      | M12      | M16               | M16               |

## Data sheet

| Operating and environmental conditions       |                                                                                            |            |            |    |            |            |    |    |    |     |
|----------------------------------------------|--------------------------------------------------------------------------------------------|------------|------------|----|------------|------------|----|----|----|-----|
| Piston Ø                                     | 12                                                                                         | 16         | 20         | 25 | 32         | 40         | 50 | 63 | 80 | 100 |
| Operating medium                             | Compressed air to ISO 8573-1:2010 [7:4:4]                                                  |            |            |    |            |            |    |    |    |     |
| Note on operating/<br>pilot medium           | Lubricated operation possible (in which case lubricated operation will always be required) |            |            |    |            |            |    |    |    |     |
| Operating pressure [bar]                     |                                                                                            |            |            |    |            |            |    |    |    |     |
| [MPa]                                        |                                                                                            |            |            |    |            |            |    |    |    |     |
| –                                            | 0.15 ... 1                                                                                 |            | 0.1 ... 1  |    |            |            |    |    |    |     |
| Z                                            | 0.17 ... 1                                                                                 | 0.22 ... 1 | 0.13 ... 1 |    | 0.07 ... 1 | 0.06 ... 1 |    |    |    |     |
| Q                                            | 0.15 ... 1                                                                                 |            | 0.1 ... 1  |    |            |            |    |    |    |     |
| [bar]                                        |                                                                                            |            |            |    |            |            |    |    |    |     |
| –                                            | 1.5 ... 10                                                                                 |            | 1 ... 10   |    |            |            |    |    |    |     |
| Z                                            | 1.7 ... 10                                                                                 | 2.2 ... 10 | 1.3 ... 10 |    | 0.7 ... 10 | 0.6 ... 10 |    |    |    |     |
| Q                                            | 1.5 ... 10                                                                                 |            | 1 ... 10   |    |            |            |    |    |    |     |
| Ambient temperature <sup>1)</sup> [°C]       |                                                                                            |            |            |    |            |            |    |    |    |     |
| –                                            | –20 ... +80                                                                                |            |            |    |            |            |    |    |    |     |
| S6                                           | 0 ... +120                                                                                 |            |            |    |            |            |    |    |    |     |
| Corrosion resistance class CRC <sup>2)</sup> |                                                                                            |            |            |    |            |            |    |    |    |     |
|                                              | 2                                                                                          |            |            |    |            |            |    |    |    |     |

1) Note operating range of proximity sensors

2) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

| Forces [N] and impact energy [J]        |      |      |      |      |     |      |      |      |      |      |
|-----------------------------------------|------|------|------|------|-----|------|------|------|------|------|
| Piston Ø                                | 12   | 16   | 20   | 25   | 32  | 40   | 50   | 63   | 80   | 100  |
| <b>AEN</b>                              |      |      |      |      |     |      |      |      |      |      |
| Theoretical force at 6 bar, advancing   | 56   | 95   | 162  | 259  | 441 | 702  | 1098 | 1783 | 2899 | 4511 |
| <b>AEN-...-Z, pulling</b>               |      |      |      |      |     |      |      |      |      |      |
| Theoretical force at 6 bar, retracting  | 39   | 65   | 115  | 211  | 373 | 634  | 977  | 1663 | 2610 | 4323 |
| Max. impact energy at the end positions | 0.04 | 0.04 | 0.04 | 0.08 | 0.1 | 0.15 | 0.18 | 0.28 | 0.35 | 0.7  |

**Note**

These specifications represent the maximum values that can be achieved. The maximum permissible impact energy must be observed.

Permissible impact speed:

$$V = \sqrt{\frac{2 \times E}{m_1 + m_2}}$$

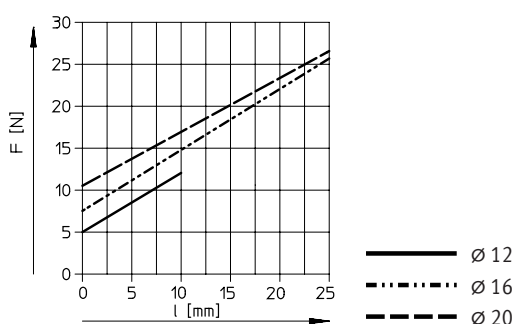
Maximum permissible mass:

$$m_2 = \frac{2 \times E}{v^2} - m_1$$

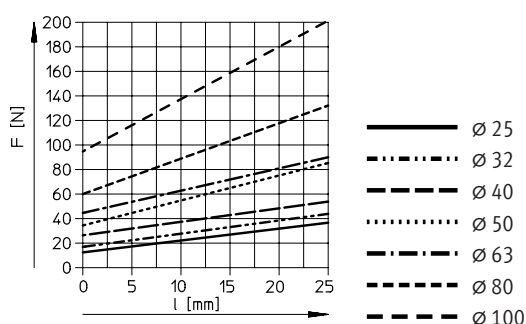
V Perm. impact speed  
 E Max. impact energy  
 m1 Moving mass (drive)  
 m2 Moving payload

## Spring return force F as a function of stroke l

Ø 12 ... 20



Ø 25 ... 100



**Note**

The degree of friction depends on the mounting position and the type of load involved. Single-acting cylinders should as far as possible be operated without lateral loads.



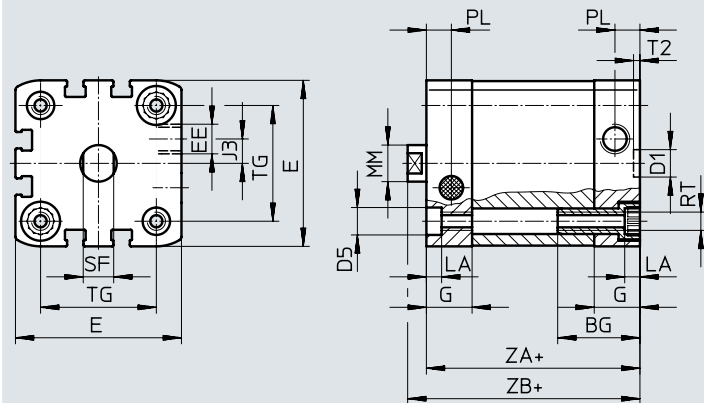
Data sheet

Dimensions – Basic version

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

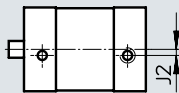
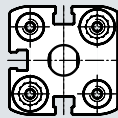
Ø 12 ... 63

Ø 32 ... 63



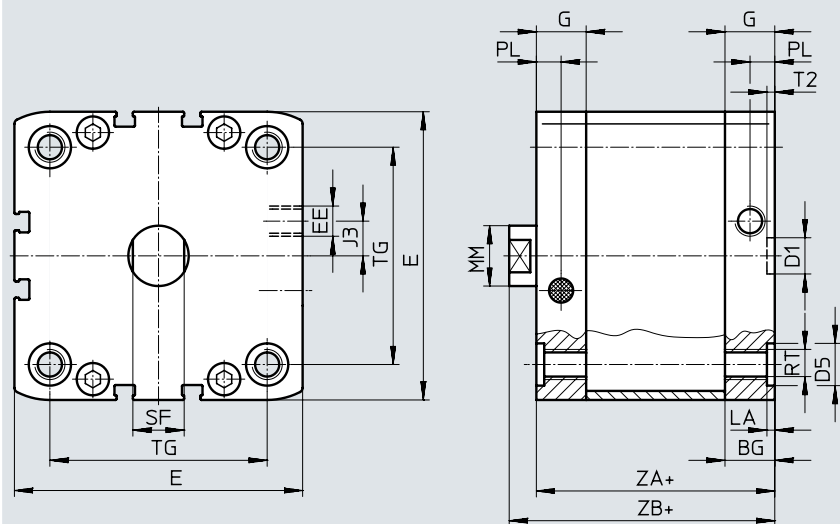
Ø 12 ... 25

Ø 12



+ = plus stroke length

Ø 80 ... 100



+ = plus stroke length

## Data sheet

| ∅    | BG                   | D1<br>∅<br>H9    | D5<br>∅              | E                     | EE                   | G    | J2   | J3  | LA   |
|------|----------------------|------------------|----------------------|-----------------------|----------------------|------|------|-----|------|
| [mm] | min.                 |                  |                      |                       |                      |      |      |     | +0.2 |
| 12   | 17                   | 9                | 6 <sup>F9</sup>      | 27.5 <sup>+0.3</sup>  | M5                   | 10.5 | 2    | –   | 3.5  |
| 16   |                      |                  |                      | 29 <sup>+0.3</sup>    |                      | 11   | 2.6  |     |      |
| 20   | 35.5 <sup>+0.3</sup> |                  | 12                   | 5                     |                      |      |      |     |      |
| 25   | 39.5 <sup>+0.3</sup> |                  |                      |                       |                      |      |      |     |      |
| 32   | 26                   |                  | 9 <sup>F9</sup>      |                       | 47 <sup>+0.3</sup>   | 15   | 6    |     |      |
| 40   |                      |                  |                      |                       | 54.5 <sup>+0.3</sup> |      | 8    |     |      |
| 50   | 27                   | 12 <sup>F9</sup> |                      | 65.5 <sup>+0.3</sup>  | G1/8                 |      | 11.5 | 2.6 |      |
| 63   |                      |                  | 75.5 <sup>+0.3</sup> |                       |                      |      |      |     |      |
| 80   | 17                   |                  | 15                   | 95.5 <sup>+0.6</sup>  |                      | 16.5 |      |     |      |
| 100  | 21.5                 |                  |                      | 113.5 <sup>+0.6</sup> | 21.5                 | 20   |      |     |      |

| ∅    | MM<br>∅ | PL   | RT  | SF  | T2   | TG   | ZA   | ZB   |
|------|---------|------|-----|-----|------|------|------|------|
| [mm] |         | +0.2 |     | h13 | +0.1 | ±0.2 | ±0.3 | +1.2 |
| 12   | 6       | 6    | M4  | 5   | 2.1  | 16   | 35   | 39.2 |
| 16   | 8       |      |     | 7   |      | 18   |      | 39.7 |
| 20   | 10      |      | M5  | 9   |      | 22   | 37   | 42.5 |
| 25   |         |      |     |     |      | 26   | 39   | 44.5 |
| 32   | 12      | 8.2  | M6  | 10  |      | 32.5 | 44   | 50   |
| 40   |         |      |     |     |      | 38   | 45   | 51.1 |
| 50   | 16      |      | M8  | 13  | 2.6  | 46.5 |      | 53.2 |
| 63   |         |      |     |     |      | 56.5 | 49   | 57.1 |
| 80   | 20      |      | M10 | 17  |      | 72   | 54   | 62.9 |
| 100  |         |      |     |     |      | 10.5 | 89   | 67   |

Data sheet

Dimensions – Variants

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

Basic version

[1] Hex nut DIN 439-B  
only with  $\varnothing 32 \dots 100$

+ = plus stroke length

Z – Pulling

[1] Hex nut DIN 439-B  
only with  $\varnothing 32 \dots 100$

+ = plus stroke length  
++ = plus 2x stroke length

K2 – Extended male piston rod thread

[1] Hex nut DIN 439-B  
only with  $\varnothing 32 \dots 100$

+ = plus stroke length

K5 – Special piston rod thread

+ = plus stroke length

K8 – Extended piston rod

[1] Hex nut DIN 439-B  
only with  $\varnothing 32 \dots 100$

+ = plus stroke length

## Data sheet

| ∅    | A    | A1       | A2        | AF   | AF5  | KF  | KF5 |
|------|------|----------|-----------|------|------|-----|-----|
| [mm] | −0.5 |          |           | min. | min. |     |     |
| 12   | 10   | 1 ... 10 | 1 ... 300 | 8    | –    | M3  | –   |
| 16   | 12   |          |           | 10   |      | M4  |     |
| 20   | 16   | 1 ... 20 |           | 14   | 12   | M6  | M5  |
| 25   |      |          | 1 ... 400 | 16   | 14   | M8  | M6  |
| 32   | 19   |          |           |      |      |     |     |
| 40   | 22   |          |           | 20   | 16   | M10 | M8  |
| 50   |      | 1 ... 30 | 1 ... 500 |      |      |     |     |
| 63   |      |          |           |      |      |     |     |
| 80   |      |          |           |      |      |     |     |
| 100  |      |          |           |      |      |     |     |

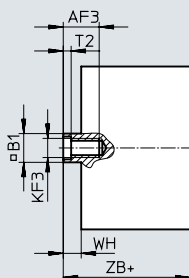
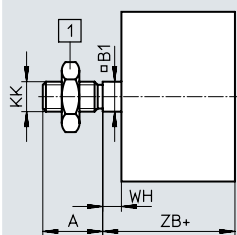
| ∅<br>[mm] | KK       | KK5            | T3  | T4  | WH<br>+1.3 | ZB<br>+1.2 |
|-----------|----------|----------------|-----|-----|------------|------------|
| 12        | M5       | M6             | –   | 1.5 | 4.2        | 39.2       |
| 16        | M6       | M8             |     |     | 4.7        | 39.7       |
| 20        | M8       | M10x1.25       | 2   | 2.6 | 5.5        | 42.5       |
| 25        |          | M10            |     |     |            | 44.5       |
| 32        | M10x1.25 | M10            | 2.6 | 3.3 | 6          | 50         |
| 40        |          | M12            |     |     | 6.1        | 51.1       |
| 50        | M12x1.25 | M12            | 3.3 | 4.7 | 8.2        | 53.2       |
| 63        |          | M16            |     |     | 8.1        | 57.1       |
| 80        | M16x1.5  | M16            | 4.7 | 6.1 | 8.9        | 62.9       |
| 100       |          | M20x1.5<br>M20 |     |     | 9          | 76         |

## Data sheet

### Dimensions – Variants

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

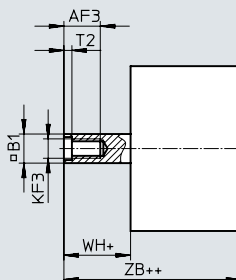
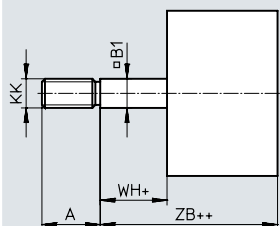
#### Q – Square piston rod



[1] Hex nut DIN 439-B  
only with  $\varnothing 32 \dots 100$

+ = plus stroke length  
++ = plus 2x stroke length

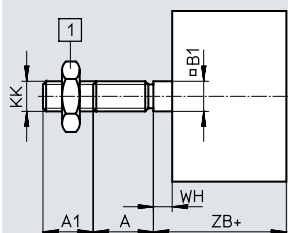
#### Q – Z – Pulling



[1] Hex nut DIN 439-B  
only with  $\varnothing 32 \dots 100$

+ = plus stroke length

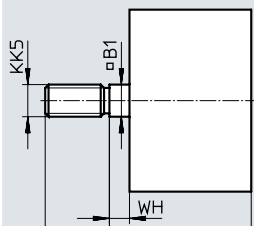
#### Q-K2 – Square piston rod with extended male thread



[1] Hex nut DIN 439-B  
only with  $\varnothing 32 \dots 100$

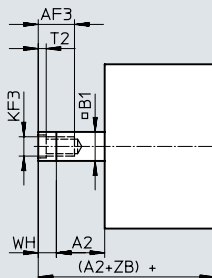
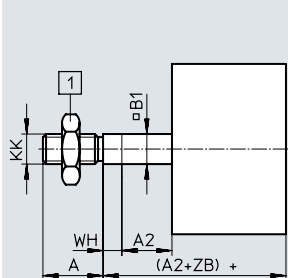
+ = plus stroke length

#### Q-K5 – Square piston rod with special thread



+ = plus stroke length

#### Q-K8 – Square, extended piston rod



[1] Hex nut DIN 439-B  
only with  $\varnothing 32 \dots 100$

+ = plus stroke length

## Data sheet

| ∅    | A    | A1       | A2        | AF3  | B1<br>□ | KF3 |
|------|------|----------|-----------|------|---------|-----|
| [mm] | −0.5 |          |           | min. |         |     |
| 16   | 12   | 1 ... 10 | 1 ... 300 | 10   | 7       | M4  |
| 20   | 16   | 1 ... 20 |           | 12   | 9       | M5  |
| 25   |      |          |           |      |         |     |
| 32   | 19   |          | 1 ... 400 | 14   | 10      | M6  |
| 40   |      |          |           |      |         |     |
| 50   | 22   |          |           | 16   | 12      | M8  |
| 63   |      |          |           |      |         |     |
| 80   | 28   | 1 ... 30 | 1 ... 500 | 20   | 16      | M10 |
| 100  |      |          |           |      |         |     |

| ∅<br>[mm] | KK       | KK5      | T2  | WH<br>+1.3 | ZB<br>+1.2 |
|-----------|----------|----------|-----|------------|------------|
| 16        | M6       | M8       | 1.5 | 4.7        | 39.7       |
| 20        | M8       | M10x1.25 | 2   | 5.5        | 42.5       |
| 25        |          | M10      |     |            | 44.5       |
| 32        | M10x1.25 | M10      | 2.6 | 6          | 50         |
| 40        |          |          |     | 6.1        | 51.1       |
| 50        | M12x1.25 | M12      | 3.3 | 8.2        | 53.2       |
| 63        |          |          |     | 8.1        | 57.1       |
| 80        | M16x1.5  | M16      | 4.7 | 8.9        | 62.9       |
| 100       |          |          |     | 9          | 76         |

## Ordering data – Modular product system, basic sensor and variants

| Ordering table               |                                                     |          |                                      |                 |                 |            |        |          |            |
|------------------------------|-----------------------------------------------------|----------|--------------------------------------|-----------------|-----------------|------------|--------|----------|------------|
| Size                         | 12                                                  | 16       | 20                                   | 25              | 32              | Conditions | Code   |          | Enter code |
| Module no.                   | 536414                                              | 536415   | 536416                               | 536417          | 536418          |            |        |          |            |
| Function                     | Compact cylinder, single-acting, based on ISO 21287 |          |                                      |                 |                 |            | AEN    |          | AEN        |
| Piston Ø [mm]                | 12                                                  | 16       | 20                                   | 25              | 32              |            | -...   |          |            |
| Stroke [mm]                  | 1 ... 10                                            | 1 ... 25 |                                      |                 |                 |            | -...   |          |            |
| Thread type                  | Male thread                                         |          |                                      |                 |                 |            | -A     |          |            |
|                              | Female thread                                       |          |                                      |                 |                 | [1]        | -I     |          |            |
| Cushioning                   | Elastic cushioning rings/plates at both ends        |          |                                      |                 |                 |            | -P     |          | -P         |
| Position sensing             | Via proximity sensor                                |          |                                      |                 |                 |            | -A     |          | -A         |
| Effective direction          | Single-acting, pulling                              |          |                                      |                 |                 |            | -Z     |          |            |
| Extended male thread [mm]    | Extended male piston rod thread                     |          |                                      |                 |                 |            |        |          |            |
|                              | 1 ... 10                                            |          | 1 ... 20                             |                 |                 | [2]        | -...K2 |          |            |
| Special piston rod thread    | Male thread                                         | M6       | M8                                   | M10x1.25<br>M10 | M10x1.25<br>M10 | M10<br>M12 | [2]    | -“...”K5 |            |
|                              | Female thread                                       | –        | –                                    | M5              | M5              | M6         |        |          |            |
| Extended piston rod [mm]     | Extended piston rod                                 |          |                                      |                 |                 |            |        |          |            |
|                              | 1 ... 10                                            | 1 ... 25 |                                      |                 |                 |            | -...K8 |          |            |
| Improved running performance | –                                                   | –        | Smooth anodised aluminium piston rod |                 |                 |            | -K10   |          |            |
| Temperature resistance       | Heat-resistant seals max. 120°C                     |          |                                      |                 |                 |            | -S6    |          |            |
| Captive rating plate         | Laser-etched rating plate                           |          |                                      |                 |                 |            | -TL    |          |            |

[1] **I** Not with extended male thread K2[2] **K2, K5** Not with improved running performance K10

## Ordering data – Modular product system, basic sensor and variants

| Ordering table               |                                                     |               |               |               |                       |                       |               |                 |     |
|------------------------------|-----------------------------------------------------|---------------|---------------|---------------|-----------------------|-----------------------|---------------|-----------------|-----|
| Size                         | 40                                                  | 50            | 63            | 80            | 100                   | Conditions            | Code          | Enter code      |     |
| Module no.                   | <b>536419</b>                                       | <b>536420</b> | <b>536421</b> | <b>536422</b> | <b>536423</b>         |                       |               |                 |     |
| Function                     | Compact cylinder, single-acting, based on ISO 21287 |               |               |               |                       |                       | <b>AEN</b>    |                 | AEN |
| Piston Ø [mm]                | 40                                                  | 50            | 63            | 80            | 100                   |                       | <b>-...</b>   |                 |     |
| Stroke [mm]                  | 1 ... 25                                            |               |               |               |                       |                       | <b>-...</b>   |                 |     |
| Thread type                  | Male thread                                         |               |               |               |                       |                       | <b>-A</b>     |                 |     |
|                              | Female thread                                       |               |               |               |                       | [1]                   | <b>-I</b>     |                 |     |
| Cushioning                   | Elastic cushioning rings/plates at both ends        |               |               |               |                       |                       | <b>-P</b>     |                 | -P  |
| Position sensing             | Via proximity sensor                                |               |               |               |                       |                       | <b>-A</b>     |                 | -A  |
| Effective direction          | Single-acting, pulling                              |               |               |               |                       |                       | <b>-Z</b>     |                 |     |
| Extended male thread [mm]    | Extended male piston rod thread                     |               |               |               |                       |                       |               |                 |     |
|                              | 1 ... 20                                            |               |               | 1 ... 30      |                       | [2]                   | <b>-...K2</b> |                 |     |
| Special piston rod thread    | Male thread                                         | M10<br>M12    | M12<br>M16    | M12<br>M16    | M16<br>M20<br>M20x1.5 | M16<br>M20<br>M20x1.5 | [2]           | <b>-“...”K5</b> |     |
|                              | Female thread                                       | M6            | M8            | M8            | M10                   | M10                   |               |                 |     |
| Extended piston rod [mm]     | Extended piston rod<br>1 ... 25                     |               |               |               |                       |                       | <b>-...K8</b> |                 |     |
| Improved running performance | Smooth anodised aluminium piston rod                |               |               |               |                       |                       | <b>-K10</b>   |                 |     |
| Temperature resistance       | Heat-resistant seals max. 120°C                     |               |               |               |                       |                       | <b>-S6</b>    |                 |     |
| Captive rating plate         | Laser-etched rating plate                           |               |               |               |                       |                       | <b>-TL</b>    |                 |     |

[1] **I** Not with extended male thread K2[2] **K2, K5** Not with improved running performance K10

## Ordering data – Modular product system, Q – Square piston rod, non-rotating

| Ordering table                        |                                                     |                 |                 |               |            |            |            |     |
|---------------------------------------|-----------------------------------------------------|-----------------|-----------------|---------------|------------|------------|------------|-----|
| Size                                  | 16                                                  | 20              | 25              | 32            | Conditions | Code       | Enter code |     |
| Module no.                            | <b>536415</b>                                       | <b>536416</b>   | <b>536417</b>   | <b>536418</b> |            |            |            |     |
| Function                              | Compact cylinder, single-acting, based on ISO 21287 |                 |                 |               |            | <b>AEN</b> |            | AEN |
| Piston Ø [mm]                         | 16                                                  | 20              | 25              | 32            |            | -...       |            |     |
| Stroke [mm]                           | 1 ... 25                                            |                 |                 |               |            | -...       |            |     |
| Thread type                           | Male thread                                         |                 |                 |               |            | -A         |            |     |
|                                       | Female thread                                       |                 |                 |               | [1]        | -I         |            |     |
| Cushioning                            | Elastic cushioning rings/plates at both ends        |                 |                 |               |            | -P         |            | -P  |
| Position sensing                      | Via proximity sensor                                |                 |                 |               |            | -A         |            | -A  |
| Effective direction                   | Single-acting, pulling                              |                 |                 |               |            | -Z         |            |     |
| Protection against rotation           | Square piston rod                                   |                 |                 |               |            | -Q         |            | -Q  |
| Extended male thread [mm]             | Extended male piston rod thread                     |                 |                 |               |            |            |            |     |
|                                       | 1 ... 10                                            | 1 ... 20        |                 |               |            | -...K2     |            |     |
| Special piston rod thread Male thread | M8                                                  | M10x1.25<br>M10 | M10x1.25<br>M10 | M10           |            | -“...”K5   |            |     |
| Extended piston rod [mm]              | Extended piston rod                                 |                 |                 |               |            |            |            |     |
|                                       | 1 ... 25                                            |                 |                 |               |            | -...K8     |            |     |
| Temperature resistance                | Heat-resistant seals max. 120°C                     |                 |                 |               |            | -S6        |            |     |
| Captive rating plate                  | Laser-etched rating plate                           |                 |                 |               |            | -TL        |            |     |

[1] I Not with extended male thread K2

## Ordering data – Modular product system, Q – Square piston rod, non-rotating

| Ordering table                        |                                                     |               |               |               |               |            |            |            |     |
|---------------------------------------|-----------------------------------------------------|---------------|---------------|---------------|---------------|------------|------------|------------|-----|
| Size                                  | 40                                                  | 50            | 63            | 80            | 100           | Conditions | Code       | Enter code |     |
| Module no.                            | <b>536419</b>                                       | <b>536420</b> | <b>536421</b> | <b>536422</b> | <b>536423</b> |            |            |            |     |
| Function                              | Compact cylinder, single-acting, based on ISO 21287 |               |               |               |               |            | <b>AEN</b> |            | AEN |
| Piston Ø [mm]                         | 40                                                  | 50            | 63            | 80            | 100           |            | -...       |            |     |
| Stroke [mm]                           | 1 ... 25                                            |               |               |               |               |            | -...       |            |     |
| Thread type                           | Male thread                                         |               |               |               |               |            | -A         |            |     |
|                                       | Female thread                                       |               |               |               |               | [1]        | -I         |            |     |
| Cushioning                            | Elastic cushioning rings/plates at both ends        |               |               |               |               |            | -P         |            | -P  |
| Position sensing                      | Via proximity sensor                                |               |               |               |               |            | -A         |            | -A  |
| Effective direction                   | Single-acting, pulling                              |               |               |               |               |            | -Z         |            |     |
| Protection against rotation           | Square piston rod                                   |               |               |               |               |            | -Q         |            | -Q  |
| Extended male thread [mm]             | Extended male piston rod thread                     |               |               |               |               |            |            |            |     |
|                                       | 1 ... 20                                            |               |               | 1 ... 30      |               |            | -...K2     |            |     |
| Special piston rod thread Male thread | M10                                                 | M12           | M12           | M16           | M16           |            | -“...”K5   |            |     |
| Extended piston rod [mm]              | Extended piston rod                                 |               |               |               |               |            |            |            |     |
|                                       | 1 ... 25                                            |               |               |               |               |            | -...K8     |            |     |
| Temperature resistance                | Heat-resistant seals max. 120°C                     |               |               |               |               |            | -S6        |            |     |
| Captive rating plate                  | Laser-etched rating plate                           |               |               |               |               |            | -TL        |            |     |

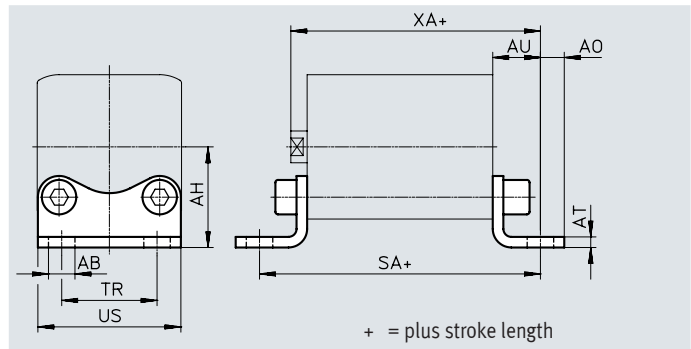
[1] I Not with extended male thread K2

## Accessories

## Foot mounting HNA/HNA- ...-R3

Material:

HNA: galvanised steel  
HNA-...-R3: steel,  
with protective coating  
Free of copper and PTFE  
RoHS-compliant



## Dimensions and ordering data

| For $\varnothing$<br>[mm] | AB<br>$\varnothing$<br>H14 | AH<br>JS14 | AO   | AT<br>$\pm 0.5$ | AU<br>$\pm 0.2$ | SA  | TR<br>$\pm 0.2$ | US<br>$-0.5$ | XA   |
|---------------------------|----------------------------|------------|------|-----------------|-----------------|-----|-----------------|--------------|------|
| 12                        | 5.8                        | 21         | 5    | 3               | 13              | 61  | 16              | 26           | 52.2 |
| 16                        |                            | 22         | 4.75 |                 |                 |     | 18              | 27.5         | 52.9 |
| 20                        | 7                          | 27         | 6.25 | 4               | 16              | 69  | 22              | 34.5         | 58.7 |
| 25                        |                            | 29         |      |                 |                 | 71  | 26              | 38.5         | 60.7 |
| 32                        |                            | 33.5       |      |                 |                 | 7   | 76              | 32           | 46   |
| 40                        | 10                         | 38         | 9    | 5               | 18              | 81  | 36              | 54           | 69.2 |
| 50                        |                            | 45         | 8    |                 | 21              | 87  | 45              | 64           | 74.2 |
| 63                        |                            | 50         |      |                 |                 | 91  | 50              | 75           | 78.2 |
| 80                        | 12                         | 63         | 10.5 | 6               | 26              | 106 | 63              | 93           | 89   |
| 100                       | 14.5                       | 74         | 12.5 |                 | 27              | 121 | 75              | 110          | 103  |

| For $\varnothing$<br>[mm] | Basic version     |               |          |         | R3 – High corrosion protection |               |          |            |
|---------------------------|-------------------|---------------|----------|---------|--------------------------------|---------------|----------|------------|
|                           | CRC <sup>1)</sup> | Weight<br>[g] | Part no. | Type    | CRC <sup>1)</sup>              | Weight<br>[g] | Part no. | Type       |
| 12                        | 1                 | 39            | 537237   | HNA-12  | 3                              | 39            | 537252   | HNA-12-R3  |
| 16                        | 1                 | 42            | 537238   | HNA-16  | 3                              | 42            | 537253   | HNA-16-R3  |
| 20                        | 1                 | 84            | 537239   | HNA-20  | 3                              | 84            | 537254   | HNA-20-R3  |
| 25                        | 1                 | 90            | 537240   | HNA-25  | 3                              | 90            | 537255   | HNA-25-R3  |
| 32                        | 1                 | 123           | 537241   | HNA-32  | 3                              | 123           | 537256   | HNA-32-R3  |
| 40                        | 1                 | 157           | 537242   | HNA-40  | 3                              | 157           | 537257   | HNA-40-R3  |
| 50                        | 1                 | 278           | 537243   | HNA-50  | 3                              | 278           | 537258   | HNA-50-R3  |
| 63                        | 1                 | 328           | 537244   | HNA-63  | 3                              | 328           | 537259   | HNA-63-R3  |
| 80                        | 1                 | 634           | 537249   | HNA-80  | 3                              | 634           | 537260   | HNA-80-R3  |
| 100                       | 1                 | 814           | 537250   | HNA-100 | 3                              | 814           | 537261   | HNA-100-R3 |

1) Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

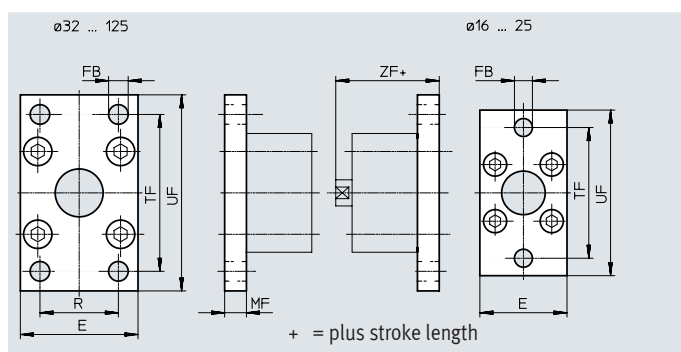
Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment.

## Accessories

### Flange mounting FNC

Material:  
Galvanised steel  
Free of copper and PTFE  
RoHS-compliant



#### Dimensions and ordering data

| For ø | E   | FB<br>ø | MF | R  | TF  | UF  | ZF   | CRC <sup>1)</sup> | Weight | Part no. | Type    |
|-------|-----|---------|----|----|-----|-----|------|-------------------|--------|----------|---------|
| [mm]  |     |         |    |    |     | ±1  |      |                   | [g]    |          |         |
| 12    | 28  | 5.5     | 8  | -  | 40  | 50  | 47.2 | 1                 | 79     | 537245   | FNC-12  |
| 16    | 29  |         |    |    | 43  | 55  | 47.9 | 1                 | 88     | 537246   | FNC-16  |
| 20    | 36  | 6.6     |    |    | 55  | 70  | 50.7 | 1                 | 141    | 537247   | FNC-20  |
| 25    | 40  |         |    |    | 60  | 76  | 52.7 | 1                 | 165    | 537248   | FNC-25  |
| 32    | 45  | 7       | 10 | 32 | 64  | 80  | 60.2 | 1                 | 221    | ★ 174376 | FNC-32  |
| 40    | 54  | 9       |    | 36 | 72  | 90  | 61.2 | 1                 | 291    | ★ 174377 | FNC-40  |
| 50    | 65  |         | 12 | 45 | 90  | 110 | 65.2 | 1                 | 536    | ★ 174378 | FNC-50  |
| 63    | 75  |         |    | 50 | 100 | 120 | 69.2 | 1                 | 679    | ★ 174379 | FNC-63  |
| 80    | 93  | 12      | 16 | 63 | 126 | 150 | 79   | 1                 | 1495   | ★ 174380 | FNC-80  |
| 100   | 110 | 14      |    | 75 | 150 | 175 | 92   | 1                 | 2041   | 174381   | FNC-100 |
| 125   | 132 | 16      | 20 | 90 | 180 | 210 | 112  | 1                 | 3775   | 174382   | FNC-125 |

1) Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

## Accessories

### Swivel flange

#### SNCL/SNCL-...-R3

Material:

SNCL 12 ... 25:

Wrought aluminium alloy

SNCL 32 ... 125:

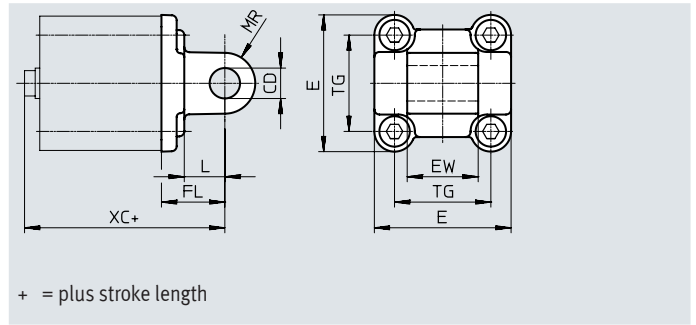
Die-cast aluminium

SNCL-...-R3: wrought aluminium alloy

with protective coating

Free of copper and PTFE

RoHS-compliant



#### Dimensions and ordering data

| For $\varnothing$<br>[mm] | CD<br>$\varnothing$<br>H9 | E                     | EW                  | FL<br>$\pm 0.2$ | L  | MR | TG   | XC   |
|---------------------------|---------------------------|-----------------------|---------------------|-----------------|----|----|------|------|
| 12                        | 6                         | 25 $_{-0.6}^{+0.6}$   | 12 $_{H12}$         | 16              | 10 | 6  | 16   | 55.2 |
| 16                        |                           | 27.5 $_{-0.6}^{+0.6}$ |                     |                 |    |    | 18   | 55.9 |
| 20                        | 8                         | 34.5 $_{-0.6}^{+0.6}$ | 16 $_{H12}$         | 20              | 14 | 8  | 22   | 62.7 |
| 25                        |                           | 38.5 $_{-0.6}^{+0.6}$ |                     |                 |    |    | 26   | 64.7 |
| 32                        | 10                        | 45 $_{-0.5}^{+0.2}$   | 26 $_{-0.6}^{+0.2}$ | 22              | 13 | 10 | 32.5 | 72.2 |
| 40                        | 12                        | 54 $_{-0.5}^{+0.5}$   | 28 $_{-0.6}^{+0.2}$ | 25              | 16 | 12 | 38   | 75.2 |
| 50                        |                           | 64 $_{-0.6}^{+0.6}$   | 32 $_{-0.6}^{+0.2}$ | 27              |    |    | 46.5 | 80.2 |
| 63                        | 16                        | 75 $_{-0.6}^{+0.6}$   | 40 $_{-0.6}^{+0.2}$ | 32              | 21 | 16 | 56.5 | 89.2 |
| 80                        |                           | 93 $_{-0.8}^{+0.8}$   | 50 $_{-0.6}^{+0.2}$ | 36              |    |    | 72   | 99   |
| 100                       | 20                        | 110 $_{-0.8}^{+0.3}$  | 60 $_{-0.6}^{+0.2}$ | 41              | 27 | 20 | 89   | 117  |
| 125                       | 25                        | 131 $_{-0.8}^{+0.8}$  | 70 $_{-0.6}^{+0.2}$ | 50              | 30 | 25 | 110  | 142  |

| For $\varnothing$<br>[mm] | Basic version     |               |          |          | R3 – High corrosion protection |               |          |            |
|---------------------------|-------------------|---------------|----------|----------|--------------------------------|---------------|----------|------------|
|                           | CRC <sup>1)</sup> | Weight<br>[g] | Part no. | Type     | CRC <sup>1)</sup>              | Weight<br>[g] | Part no. | Type       |
| 12                        | 2                 | 20            | 537790   | SNCL-12  | 3                              | 20            | 537794   | SNCL-12-R3 |
| 16                        | 2                 | 21            | 537791   | SNCL-16  | 3                              | 21            | 537795   | SNCL-16-R3 |
| 20                        | 2                 | 38            | 537792   | SNCL-20  | 3                              | 38            | 537796   | SNCL-20-R3 |
| 25                        | 2                 | 41            | 537793   | SNCL-25  | 3                              | 41            | 537797   | SNCL-25-R3 |
| 32                        | 1                 | 71            | ★ 174404 | SNCL-32  | –                              | –             | –        | –          |
| 40                        | 1                 | 95            | ★ 174405 | SNCL-40  | –                              | –             | –        | –          |
| 50                        | 1                 | 158           | ★ 174406 | SNCL-50  | –                              | –             | –        | –          |
| 63                        | 1                 | 225           | ★ 174407 | SNCL-63  | –                              | –             | –        | –          |
| 80                        | 1                 | 436           | ★ 174408 | SNCL-80  | –                              | –             | –        | –          |
| 100                       | 1                 | 606           | 174409   | SNCL-100 | –                              | –             | –        | –          |
| 125                       | 1                 | 1135          | 174410   | SNCL-125 | –                              | –             | –        | –          |

1) Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment.

## Accessories

### Swivel flange

#### SNCS/CRSNCS/SNCS-...-R3

Material:

SNCS 32 ... 50: Die-cast aluminium

SNCS 63 ... 125: Wrought aluminium alloy

CRSNCS 32 ... 80:

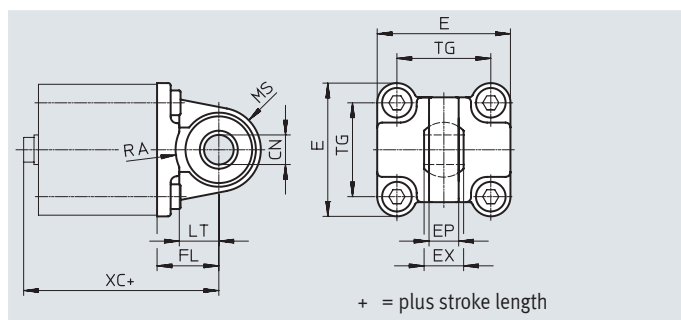
High-alloy stainless steel

SNCS-...-R3 100 ... 125:

Wrought aluminium alloy with

protective coating

RoHS-compliant



#### Dimensions and ordering data

| For Ø | CN<br>Ø              |                | E                  |                    | EP   | EX | FL   |
|-------|----------------------|----------------|--------------------|--------------------|------|----|------|
| [mm]  | ADN-...              | ADN-...-R3     | ADN-...            | ADN-...-R3         | ±0.2 |    | ±0.2 |
| 32    | 10 <sup>+0.013</sup> | 10+0.015/-0.04 | 45+0.2/-0.5        | 45 <sup>-0.5</sup> | 10.5 | 14 | 22   |
| 40    | 12 <sup>+0.015</sup> | 12+0.018/-0.04 | 54 <sup>-0.5</sup> | 54 <sup>-0.5</sup> | 12   | 16 | 25   |
| 50    | 16 <sup>+0.015</sup> | 16+0.018/-0.04 | 64 <sup>-0.6</sup> | 64 <sup>-0.6</sup> | 15   | 21 | 27   |
| 63    | 16 <sup>+0.015</sup> | 16+0.018/-0.04 | 74.5±0.5           | 75 <sup>-0.6</sup> | 15   | 21 | 32   |
| 80    | 20 <sup>+0.018</sup> | 20+0.021/-0.04 | 92.2±0.8           | 93 <sup>-0.8</sup> | 18   | 25 | 36   |
| 100   | 20 <sup>+0.018</sup> | 20+0.021/-0.04 | 109+1/-0.7         | 109+1/-0.7         | 18   | 25 | 41   |
| 125   | 30 <sup>+0.018</sup> | 30+0.021/-0.04 | 132+1/-0.7         | 132+1/-0.7         | 25   | 37 | 50   |

| For Ø | LT | MS                 |                    | RA            |                  | TG   | XC   |
|-------|----|--------------------|--------------------|---------------|------------------|------|------|
| [mm]  |    | ADN-...            | ADN-...-R3         | ADN-...<br>+1 | ADN-...-R3<br>+1 |      |      |
| 32    | 13 | 15 <sup>+0.5</sup> | 15 <sup>+0.5</sup> | 14.5          | 14.5             | 32.5 | 72.2 |
| 40    | 16 | 17 <sup>+0.5</sup> | 17 <sup>+0.5</sup> | 17.5          | 17.5             | 38   | 75.2 |
| 50    | 16 | 20 <sup>+0.5</sup> | 20 <sup>+0.5</sup> | 18.5          | 19               | 46.5 | 80.2 |
| 63    | 21 | 23 <sup>-0.5</sup> | 22 <sup>+0.5</sup> | 23            | 23               | 56.5 | 89.2 |
| 80    | 22 | 28 <sup>-0.5</sup> | 27 <sup>+0.5</sup> | 25            | 25               | 72   | 99   |
| 100   | 27 | 30±0.5             | 30±0.5             | 95            | 100              | 89   | 117  |
| 125   | 30 | 39±0.5             | 39±0.5             | 100           | 100              | 110  | 142  |

| For Ø | Basic version     |               |          |          | High corrosion protection |               |          |             |
|-------|-------------------|---------------|----------|----------|---------------------------|---------------|----------|-------------|
| [mm]  | CRC <sup>1)</sup> | Weight<br>[g] | Part no. | Type     | CRC <sup>1)</sup>         | Weight<br>[g] | Part no. | Type        |
| 32    | 1                 | 86            | ★ 174397 | SNCS-32  | 4                         | 161           | 2895920  | CRSNCS-32   |
| 40    | 1                 | 122           | ★ 174398 | SNCS-40  | 4                         | 239           | 2895921  | CRSNCS-40   |
| 50    | 1                 | 216           | ★ 174399 | SNCS-50  | 4                         | 403           | 2895922  | CRSNCS-50   |
| 63    | 2                 | 281           | ★ 174400 | SNCS-63  | 4                         | 576           | 2895923  | CRSNCS-63   |
| 80    | 2                 | 557           | ★ 174401 | SNCS-80  | 4                         | 1173          | 2895924  | CRSNCS-80   |
| 100   | 2                 | 683           | 174402   | SNCS-100 | 3                         | 684           | 2895925  | SNCS-100-R3 |
| 125   | 2                 | 1369          | 174403   | SNCS-125 | 3                         | 1369          | 2895926  | SNCS-125-R3 |

1) Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment.

Corrosion resistance class CRC 4 to Festo standard FN 940070

Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, e.g. in the chemical or food industries. Such applications may need to be safeguarded by means of special testing (→ also FN 940082), using appropriate media.

## Accessories

### Clevis foot LBG/LBG- ...-R3

The pivot pin is secured against rotation with a spring pin.

#### Material:

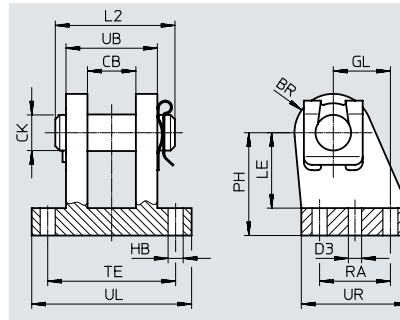
LBG 32 ... 63: Stainless steel casting

LBG 80 ... 125: Spheroidal graphite cast iron

LBG-...-R3: High-alloy stainless steel

Free of copper and PTFE

RoHS-compliant



#### Dimensions and ordering data

| For $\varnothing$ | BR |            | CB   | CK            | D3            | GL | HB            | L2 | LE | PH | RA | TE  | UB | UL  | UR   |
|-------------------|----|------------|------|---------------|---------------|----|---------------|----|----|----|----|-----|----|-----|------|
| [mm]              |    | ADN-...-R3 |      | $\varnothing$ | $\varnothing$ |    | $\varnothing$ |    |    |    |    |     |    |     |      |
| 32                | 12 | 12         | 14.1 | 10            | 4.8           | 16 | 6.8           | 35 | 24 | 32 | 20 | 42  | 28 | 56  | 36   |
| 40                | 14 | 14         | 16.1 | 12            | 5.8           | 20 | 6.8           | 39 | 26 | 36 | 26 | 44  | 30 | 58  | 41.5 |
| 50                | 15 | 15         | 21.1 | 16            | 5.8           | 25 | 9.2           | 50 | 33 | 45 | 31 | 56  | 40 | 70  | 47   |
| 63                | 17 | 17         | 21.1 | 16            | 7.8           | 25 | 9.2           | 50 | 38 | 50 | 31 | 56  | 40 | 70  | 49   |
| 80                | 17 | 17         | 25.1 | 20            | 7.8           | 30 | 11            | 60 | 49 | 63 | 36 | 70  | 50 | 89  | 55   |
| 100               | 20 | 22         | 25.1 | 20            | 9.8           | 41 | 11            | 60 | 56 | 71 | 46 | 70  | 50 | 89  | 65   |
| 125               | 25 | 25         | 37.2 | 30            | 11.8          | 60 | 14            | 89 | 70 | 90 | 70 | 106 | 80 | 128 | 96   |

| For $\varnothing$ | Basic version     |        |          |         | R3 – High corrosion protection |        |          |            |
|-------------------|-------------------|--------|----------|---------|--------------------------------|--------|----------|------------|
|                   | CRC <sup>1)</sup> | Weight | Part no. | Type    | CRC <sup>1)</sup>              | Weight | Part no. | Type       |
| [mm]              |                   | [g]    |          |         |                                | [g]    |          |            |
| 32                | 2                 | 220    | 31761    | LBG-32  | 3                              | 220    | 2078790  | LBG-32-R3  |
| 40                | 2                 | 300    | 31762    | LBG-40  | 3                              | 300    | 2078792  | LBG-40-R3  |
| 50                | 2                 | 540    | 31763    | LBG-50  | 3                              | 540    | 2078794  | LBG-50-R3  |
| 63                | 2                 | 580    | 31764    | LBG-63  | 3                              | 580    | 2078795  | LBG-63-R3  |
| 80                | 2                 | 1050   | 31765    | LBG-80  | 3                              | 1050   | 2078797  | LBG-80-R3  |
| 100               | 2                 | 1375   | 31766    | LBG-100 | 3                              | 1375   | 2078799  | LBG-100-R3 |
| 125               | 2                 | 4140   | 31767    | LBG-125 | 3                              | 4140   | 2078837  | LBG-125-R3 |

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment.

## Accessories

### Multi-position kit DPNA

Material:

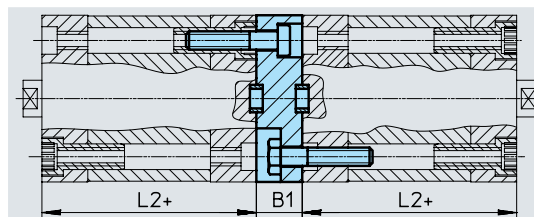
Flange:

Wrought aluminium alloy

Screws: Galvanised steel

Free of copper and PTFE

RoHS-compliant



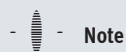
+ = plus stroke length

### Dimensions and ordering data

| For ø | L2 | B1   | Max.<br>overall stroke length | CRC <sup>1)</sup> | Weight | Part no. | Type <sup>1)</sup> |
|-------|----|------|-------------------------------|-------------------|--------|----------|--------------------|
| [mm]  |    |      | [mm]                          |                   | [g]    |          |                    |
| 12    | 35 | 13   | 600                           | 2                 | 28     | 537263   | DPNA-12            |
| 16    |    |      |                               |                   | 33     | 537264   | DPNA-16            |
| 20    |    |      |                               |                   | 50     | 537265   | DPNA-20            |
| 25    |    |      |                               |                   | 60     | 537266   | DPNA-25            |
| 32    | 44 | 15   | 800                           |                   | 99     | 537267   | DPNA-32            |
| 40    | 45 |      |                               |                   | 129    | 537268   | DPNA-40            |
| 50    |    |      |                               |                   | 16     | 537269   | DPNA-50            |
| 63    |    |      |                               |                   | 249    | 537270   | DPNA-63            |
| 80    | 54 | 17   | 1000                          |                   | 474    | 537271   | DPNA-80            |
| 100   | 67 | 19.5 |                               |                   | 712    | 537272   | DPNA-100           |

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.



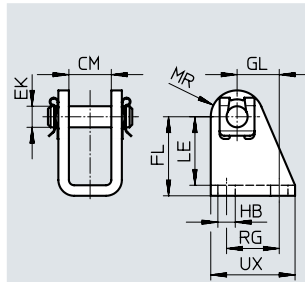
### Note

The maximum overall stroke length must not be exceeded when combining cylinders and multi-position kits.

## Accessories

### Clevis foot LBN

Material:  
Galvanised steel  
Free of copper and PTFE  
RoHS-compliant



#### Dimensions and ordering data

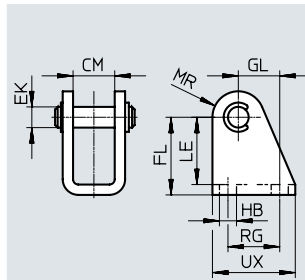
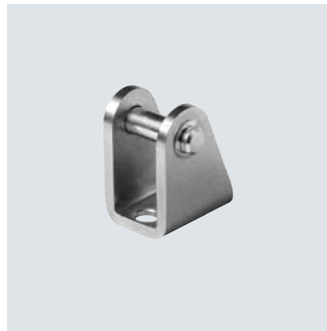
| For $\varnothing$ | CM   | EK<br>$\varnothing$ | FL           | GL | HB<br>$\varnothing$ | LE | MR | RG | UX | CRC <sup>1)</sup> | Weight<br>[g] | Part no. | Type      |
|-------------------|------|---------------------|--------------|----|---------------------|----|----|----|----|-------------------|---------------|----------|-----------|
| [mm]              |      |                     |              |    |                     |    |    |    |    |                   |               |          |           |
| 12/16             | 12.1 | 6                   | 27 +0.3/-0.2 | 13 | 5.5                 | 24 | 7  | 15 | 25 | 1                 | 40            | ★ 6058   | LBN-12/16 |
| 20/25             | 16.1 | 8                   | 30 +0.4/-0.2 | 16 | 6.6                 | 26 | 10 | 20 | 32 | 1                 | 84            | ★ 6059   | LBN-20/25 |

1) Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

### Clevis foot CRLBN, stainless steel

Material:  
High-alloy steel  
Free of copper and PTFE  
RoHS-compliant



#### Dimensions and ordering data

| For $\varnothing$ | CM   | EK<br>$\varnothing$ | FL           | GL | HB<br>$\varnothing$ | LE | MR | RG | UX | CRC <sup>1)</sup> | Weight<br>[g] | Part no. | Type        |
|-------------------|------|---------------------|--------------|----|---------------------|----|----|----|----|-------------------|---------------|----------|-------------|
| [mm]              |      |                     |              |    |                     |    |    |    |    |                   |               |          |             |
| 12/16             | 12.1 | 6                   | 27 +0.3/-0.2 | 13 | 5.5                 | 24 | 7  | 15 | 25 | 4                 | 39            | 161862   | CRLBN-12/16 |
| 20/25             | 16.1 | 8                   | 30 +0.4/-0.2 | 16 | 6.6                 | 26 | 10 | 20 | 32 | 4                 | 82            | 161863   | CRLBN-20/25 |

1) Corrosion resistance class CRC 4 to Festo standard FN 940070

Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, e.g. in the chemical or food industries. Such applications may need to be safeguarded by means of special testing (→ also FN 940082), using appropriate media.

## Accessories

### Swivel flange

#### SNCB/SNCB-...-R3

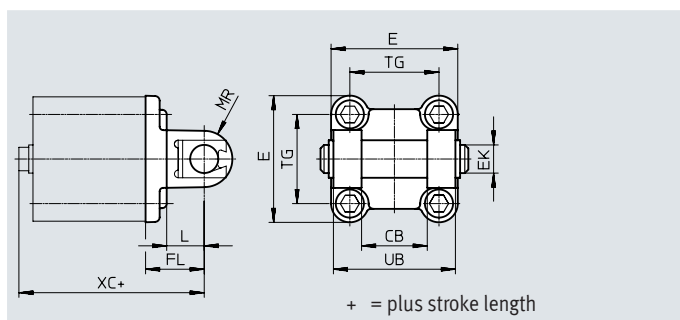
Material:

SNCB: Die-cast aluminium

SNCB-...-R3: Die-cast aluminium with protective coating

Free of copper and PTFE

RoHS-compliant



#### Dimensions and ordering data

| For $\varnothing$ | CB  | E                    | EK<br>$\varnothing$<br>H9/e8 | FL        | L  | MR   | TG   | UB  | XC  |
|-------------------|-----|----------------------|------------------------------|-----------|----|------|------|-----|-----|
| [mm]              | H14 |                      |                              | $\pm 0.2$ |    | -0.5 |      | h14 |     |
| 32                | 26  | $45 \pm 0.2 / -0.5$  | 10                           | 22        | 13 | 8.5  | 32.5 | 45  | 72  |
| 40                | 28  | $54_{-0.5}$          | 12                           | 25        | 16 | 12   | 38   | 52  | 76  |
| 50                | 32  | $64_{-0.6}$          | 12                           | 27        | 16 | 12   | 46.5 | 60  | 80  |
| 63                | 40  | $75_{-0.6}$          | 16                           | 32        | 21 | 16   | 56.5 | 70  | 89  |
| 80                | 50  | $93_{-0.8}$          | 16                           | 36        | 22 | 16   | 72   | 90  | 99  |
| 100               | 60  | $110 \pm 0.3 / -0.8$ | 20                           | 41        | 27 | 20   | 89   | 110 | 117 |
| 125               | 70  | $131_{-0.8}$         | 25                           | 50        | 30 | 25   | 110  | 130 | 142 |

| For $\varnothing$<br>[mm] | Basic version     |               |          |          | R3 – High corrosion protection |               |          |             |
|---------------------------|-------------------|---------------|----------|----------|--------------------------------|---------------|----------|-------------|
|                           | CRC <sup>1)</sup> | Weight<br>[g] | Part no. | Type     | CRC <sup>1)</sup>              | Weight<br>[g] | Part no. | Type        |
| 32                        | 1                 | 103           | ★ 174390 | SNCB-32  | 3                              | 100           | 176944   | SNCB-32-R3  |
| 40                        | 1                 | 155           | ★ 174391 | SNCB-40  | 3                              | 151           | 176945   | SNCB-40-R3  |
| 50                        | 1                 | 233           | ★ 174392 | SNCB-50  | 3                              | 228           | 176946   | SNCB-50-R3  |
| 63                        | 1                 | 375           | ★ 174393 | SNCB-63  | 3                              | 371           | 176947   | SNCB-63-R3  |
| 80                        | 1                 | 636           | ★ 174394 | SNCB-80  | 3                              | 632           | 176948   | SNCB-80-R3  |
| 100                       | 1                 | 1035          | 174395   | SNCB-100 | 3                              | 986           | 176949   | SNCB-100-R3 |
| 125                       | 1                 | 1860          | 174396   | SNCB-125 | 3                              | 1776          | 176950   | SNCB-125-R3 |

1) Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment.

## Accessories

## Trunnion flange ZNCF/CRZNG

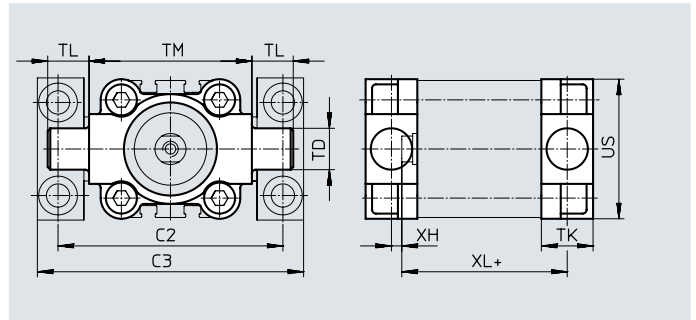
Material:

ZNCF: Stainless steel casting

CRZNG: Electropolished stainless steel casting

Free of copper and PTFE

RoHS-compliant



## Dimensions and ordering data

| For $\varnothing$<br>[mm] | C2  | C3  | TD<br>$\varnothing$<br>e9 | TK | TL | TM  | US  | XH | XL   |
|---------------------------|-----|-----|---------------------------|----|----|-----|-----|----|------|
| 32                        | 71  | 86  | 12                        | 16 | 12 | 50  | 45  | 2  | 58   |
| 40                        | 87  | 105 | 16                        | 20 | 16 | 63  | 54  | 4  | 61.1 |
| 50                        | 99  | 117 | 16                        | 24 | 16 | 75  | 64  | 4  | 64.7 |
| 63                        | 116 | 136 | 20                        | 24 | 20 | 90  | 75  | 4  | 68.5 |
| 80                        | 136 | 156 | 20                        | 28 | 20 | 110 | 93  | 5  | 76.9 |
| 100                       | 164 | 189 | 25                        | 38 | 25 | 132 | 110 | 10 | 95   |
| 125                       | 192 | 217 | 25                        | 50 | 25 | 160 | 131 | 14 | 117  |

| For $\varnothing$<br>[mm] | Basic version     |               |          |          | R3 – High corrosion protection |               |          |           |
|---------------------------|-------------------|---------------|----------|----------|--------------------------------|---------------|----------|-----------|
|                           | CRC <sup>1)</sup> | Weight<br>[g] | Part no. | Type     | CRC <sup>1)</sup>              | Weight<br>[g] | Part no. | Type      |
| 32                        | 2                 | 150           | 174411   | ZNCF-32  | 4                              | 150           | 161852   | CRZNG-32  |
| 40                        | 2                 | 285           | 174412   | ZNCF-40  | 4                              | 285           | 161853   | CRZNG-40  |
| 50                        | 2                 | 473           | 174413   | ZNCF-50  | 4                              | 473           | 161854   | CRZNG-50  |
| 63                        | 2                 | 687           | 174414   | ZNCF-63  | 4                              | 687           | 161855   | CRZNG-63  |
| 80                        | 2                 | 1296          | 174415   | ZNCF-80  | 4                              | 1296          | 161856   | CRZNG-80  |
| 100                       | 2                 | 2254          | 174416   | ZNCF-100 | 4                              | 2254          | 161857   | CRZNG-100 |
| 125                       | 2                 | 3484          | 174417   | ZNCF-125 | 4                              | 3484          | 185362   | CRZNG-125 |

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Corrosion resistance class CRC 4 to Festo standard FN 940070

Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, e.g. in the chemical or food industries. Such applications may need to be safeguarded by means of special testing (→ also FN 940082), using appropriate media.

## Accessories

### Trunnion support LNZG

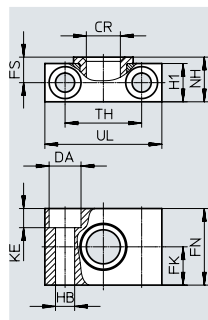
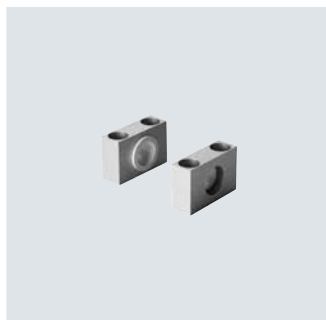
Material:

Trunnion support: Anodised aluminium

Plain bearing: Plastic

Free of copper and PTFE

RoHS-compliant



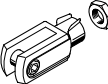
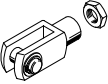
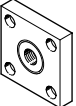
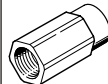
| Dimensions and ordering data |         |         |         |    |      |      |         |     |      |      |    |                   |        |          |              |
|------------------------------|---------|---------|---------|----|------|------|---------|-----|------|------|----|-------------------|--------|----------|--------------|
| For Ø                        | CR<br>Ø | DA<br>Ø | FK<br>Ø | FN | FS   | H1   | HB<br>Ø | KE  | NH   | TH   | UL | CRC <sup>1)</sup> | Weight | Part no. | Type         |
| [mm]                         | D11     | H13     | ±0.1    |    |      |      | H13     |     |      | ±0.2 |    |                   | [g]    |          |              |
| 32                           | 12      | 11      | 15      | 30 | 10.5 | 15   | 6.6     | 6.8 | 18   | 32   | 46 | 2                 | 83     | 32959    | LNZG-32      |
| 40, 50                       | 16      | 15      | 18      | 36 | 12   | 18   | 9       | 9   | 21   | 36   | 55 | 2                 | 129    | 32960    | LNZG-40/50   |
| 63, 80                       | 20      | 18      | 20      | 40 | 13   | 20   | 11      | 11  | 23   | 42   | 65 | 2                 | 178    | 32961    | LNZG-63/80   |
| 100, 125                     | 25      | 20      | 25      | 50 | 16   | 24.5 | 14      | 13  | 28.5 | 50   | 75 | 2                 | 306    | 32962    | LNZG-100/125 |

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

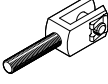
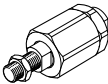
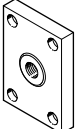
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

## Accessories

## Ordering data – Piston rod attachments

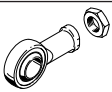
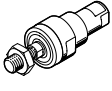
| Designation                                                                        | For ø          | Part no. | Type            |
|------------------------------------------------------------------------------------|----------------|----------|-----------------|
| <b>Rod eye SGS</b>                                                                 |                |          |                 |
|    | 16             | ★ 9254   | SGS-M6          |
|                                                                                    | 20, 25         | ★ 9255   | SGS-M8          |
|                                                                                    | 32, 40         | ★ 9261   | SGS-M10x1.25    |
|                                                                                    | 50, 63         | ★ 9262   | SGS-M12x1.25    |
|                                                                                    | 80, 100        | ★ 9263   | SGS-M16x1.5     |
|                                                                                    | 125            | ★ 9264   | SGS-M20x1.5     |
| <b>Rod clevis SG</b>                                                               |                |          |                 |
|    | 12             | –        |                 |
|                                                                                    | 16             | ★ 3110   | SG-M6           |
|                                                                                    | 20, 25         | ★ 3111   | SG-M8           |
|                                                                                    | 32, 40         | ★ 6144   | SG-M10x1.25     |
|                                                                                    | 50, 63         | ★ 6145   | SG-M12x1.25     |
|                                                                                    | 80, 100        | ★ 6146   | SG-M16x1.5      |
|    | 125            | ★ 6147   | SG-M20x1.5      |
| <b>Coupling piece KSG</b>                                                          |                |          |                 |
|   | 12, 16, 20, 25 | –        |                 |
|                                                                                    | 32, 40         | 32963    | KSG-M10x1.25    |
|                                                                                    | 50, 63         | 32964    | KSG-M12x1.25    |
|                                                                                    | 80, 100        | 32965    | KSG-M16x1.5     |
|                                                                                    | 125            | 32966    | KSG-M20x1.5     |
| <b>Adapter AD</b>                                                                  |                |          |                 |
|  | 12             | –        |                 |
|                                                                                    | 16             | 157328   | AD-M6-M5        |
|                                                                                    |                | 157329   | AD-M6-1/8       |
|                                                                                    |                | 157330   | AD-M6-1/4       |
|                                                                                    | 20             | 157331   | AD-M8-1/8       |
|                                                                                    | 25             | 157332   | AD-M8-1/4       |
|                                                                                    | 32             | 157333   | AD-M10x1.25-1/8 |
|                                                                                    | 40             | 157334   | AD-M10x1.25-1/4 |
|                                                                                    | 50             | 160256   | AD-M12x1.25-1/4 |
|                                                                                    | 63             | 160257   | AD-M12x1.25-3/8 |

Data sheets → Internet: piston rod attachment

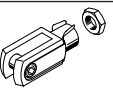
| Designation                                                                        | For ø          | Part no. | Type         |
|------------------------------------------------------------------------------------|----------------|----------|--------------|
| <b>Rod clevis SGA for rod eye SGS</b>                                              |                |          |              |
|   | 12, 16, 20, 25 | –        |              |
|                                                                                    | 32, 40         | 32954    | SGA-M10x1.25 |
|                                                                                    | 50, 63         | 10767    | SGA-M12x1.25 |
|                                                                                    | 80, 100        | 10768    | SGA-M16x1.25 |
|                                                                                    | 125            | 10769    | SGA-M20x1.25 |
| <b>Self-aligning rod coupler FK</b>                                                |                |          |              |
|   | 12             | 30984    | FK-M5        |
|                                                                                    | 16             | ★ 2061   | FK-M6        |
|                                                                                    | 20, 25         | ★ 2062   | FK-M8        |
|                                                                                    | 32, 40         | ★ 6140   | FK-M10x1.25  |
|                                                                                    | 50, 63         | ★ 6141   | FK-M12x1.25  |
|                                                                                    | 80, 100        | ★ 6142   | FK-M16x1.5   |
|                                                                                    | 125            | ★ 6143   | FK-M20x1.5   |
| <b>Coupling piece KSZ</b>                                                          |                |          |              |
|  | 12             | –        |              |
|                                                                                    | 16             | 36123    | KSZ-M6       |
|                                                                                    | 20, 25         | 36124    | KSZ-M8       |
|                                                                                    | 32, 40         | 36125    | KSZ-M10x1.25 |
|                                                                                    | 50, 63         | 36126    | KSZ-M12x1.25 |
|                                                                                    | 80, 100        | 36127    | KSZ-M16x1.5  |
|                                                                                    | 125            | 36128    | KSZ-M20x1.5  |

## Accessories

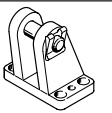
## Ordering data – Piston rod attachments, corrosion-resistant

| Designation                                                                       | For ø   | Part no. | Type           |
|-----------------------------------------------------------------------------------|---------|----------|----------------|
| Rod eye CRSGS                                                                     |         |          |                |
|  | 12      | –        |                |
|                                                                                   | 16      | 195580   | CRSGS-M6       |
|                                                                                   | 20, 25  | 195581   | CRSGS-M8       |
|                                                                                   | 32, 40  | 195582   | CRSGS-M10x1.25 |
|                                                                                   | 50, 63  | 195583   | CRSGS-M12x1.25 |
|                                                                                   | 80, 100 | 195584   | CRSGS-M16x1.5  |
|                                                                                   | 125     | 195585   | CRSGS-M20x1.5  |
| Self-aligning rod coupler CRFK                                                    |         |          |                |
|  | 32, 40  | 2305778  | CRFK-M10x1.25  |
|                                                                                   | 50, 63  | 2305779  | CRFK-M12x1.25  |
|                                                                                   | 80, 100 | 2490673  | CRFK-M16x1.5   |
|                                                                                   | 125     | 2545677  | CRFK-M20x1.5   |

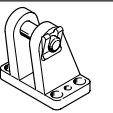
Data sheets → Internet: piston rod attachment

| Designation                                                                       | For ø   | Part no. | Type          |
|-----------------------------------------------------------------------------------|---------|----------|---------------|
| Rod clevis CRSG                                                                   |         |          |               |
|  | 12      | –        |               |
|                                                                                   | 16, 20  | 13567    | CRSG-M6       |
|                                                                                   | 20, 25  | 13568    | CRSG-M8       |
|                                                                                   | 32, 40  | 13569    | CRSG-M10x1.25 |
|                                                                                   | 50, 63  | 13570    | CRSG-M12x1.25 |
|                                                                                   | 80, 100 | 13571    | CRSG-M16x1.5  |
|                                                                                   | 125     | 13572    | CRSG-M20x1.5  |

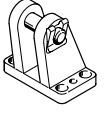
## Ordering data – Mounting components

| Designation                                                                       | For ø   | Part no. | Type    |
|-----------------------------------------------------------------------------------|---------|----------|---------|
| Right-angle clevis foot LQG for rod eye SGS                                       |         |          |         |
|  | 32, 40  | 31761    | LBG-32  |
|                                                                                   | 50, 63  | 31762    | LBG-40  |
|                                                                                   | 80, 100 | 31763    | LBG-50  |
|                                                                                   |         | 31764    | LBG-63  |
|                                                                                   | 125     | 31765    | LBG-80  |
|                                                                                   |         | 31766    | LBG-100 |

Data sheets → Internet: clevis foot

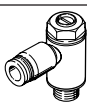
| Designation                                                                       | For ø   | Part no. | Type    |
|-----------------------------------------------------------------------------------|---------|----------|---------|
| Right-angle clevis foot LQG for rod eye SGS                                       |         |          |         |
|  | 32, 40  | 31768    | LQG-32  |
|                                                                                   | 50, 63  | 31769    | LQG-40  |
|                                                                                   | 80, 100 | 31770    | LQG-50  |
|                                                                                   |         | 31771    | LQG-63  |
|                                                                                   | 125     | 31772    | LQG-80  |
|                                                                                   |         | 31773    | LQG-100 |

## Ordering data – Mounting components, high corrosion protection

| Designation                                                                         | For ø   | Part no. | Type       |
|-------------------------------------------------------------------------------------|---------|----------|------------|
| Clevis foot LBG-R3 for rod eye CRSGS                                                |         |          |            |
|  | 32, 40  | 2078790  | LBG-32-R3  |
|                                                                                     | 50, 63  | 2078792  | LBG-40-R3  |
|                                                                                     | 80, 100 | 2078794  | LBG-50-R3  |
|                                                                                     |         | 2078795  | LBG-63-R3  |
|                                                                                     | 125     | 2078797  | LBG-80-R3  |
|                                                                                     |         | 2078799  | LBG-100-R3 |

Data sheets → Internet: clevis foot

## Ordering data – One-way flow control valves

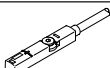
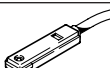
| Ordering data – One way flow control valves                                         |                         |    | Material     | Part no. | Type             |
|-------------------------------------------------------------------------------------|-------------------------|----|--------------|----------|------------------|
| Connection                                                                          | For tubing O.D.         |    |              |          |                  |
| For exhaust air                                                                     |                         |    |              |          |                  |
|  | 12, 16, 20, 25          | 3  | Metal design | ★ 193137 | GRLA-M5-QS-3-D   |
|                                                                                     |                         | 4  |              | ★ 193138 | GRLA-M5-QS-4-D   |
|                                                                                     |                         | 6  |              | ★ 193139 | GRLA-M5-QS-6-D   |
|                                                                                     | 32, 40, 50, 63, 80, 100 | 3  |              | ★ 193142 | GRLA-1/8-QS-3-D  |
|                                                                                     |                         | 4  |              | ★ 193143 | GRLA-1/8-QS-4-D  |
|                                                                                     |                         | 6  |              | ★ 193144 | GRLA-1/8-QS-6-D  |
|                                                                                     |                         | 8  |              | ★ 193145 | GRLA-1/8-QS-8-D  |
|                                                                                     | 125                     | 6  |              | ★ 193146 | GRLA-1/4-QS-6-D  |
|                                                                                     |                         | 8  |              | ★ 193147 | GRLA-1/4-QS-8-D  |
|                                                                                     |                         | 10 |              | ★ 193148 | GRLA-1/4-QS-10-D |

Data sheets → Internet: grla

## Accessories

| Ordering data – One-way flow control valves                                        |                                                                                    |                                                                 |                       |                  | Data sheets → Internet: grlz |                           |  |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------|------------------|------------------------------|---------------------------|--|
|    | Connection                                                                         |                                                                 | Material              | Part no.         | Type                         |                           |  |
|                                                                                    | For Ø                                                                              | For tubing O.D.                                                 |                       |                  |                              |                           |  |
| For supply air                                                                     |                                                                                    |                                                                 |                       |                  |                              |                           |  |
|    | 12, 16, 20, 25                                                                     | 3                                                               | Metal design          | ★ 193153         | GRLZ-M5-QS-3-D               |                           |  |
|                                                                                    |                                                                                    | 4                                                               |                       | ★ 193154         | GRLZ-M5-QS-4-D               |                           |  |
|                                                                                    |                                                                                    | 6                                                               |                       | ★ 193155         | GRLZ-M5-QS-6-D               |                           |  |
|                                                                                    | 32, 40, 50, 63, 80, 100                                                            | 3                                                               |                       | ★ 193156         | GRLZ-1/8-QS-3-D              |                           |  |
|                                                                                    |                                                                                    | 4                                                               |                       | ★ 193157         | GRLZ-1/8-QS-4-D              |                           |  |
|                                                                                    |                                                                                    | 6                                                               |                       | ★ 193158         | GRLZ-1/8-QS-6-D              |                           |  |
|                                                                                    |                                                                                    | 8                                                               |                       | ★ 193159         | GRLZ-1/8-QS-8-D              |                           |  |
|                                                                                    | 125                                                                                | –                                                               |                       | 151195           | GRLZ-1/4-B                   |                           |  |
|                                                                                    | Ordering data – One-way flow control valves for cylinders ADNH and ADN             |                                                                 |                       |                  |                              |                           |  |
|                                                                                    |  | Connection                                                      |                       | Material         | Part no.                     | Type                      |  |
| For Ø                                                                              |                                                                                    | For tubing O.D.                                                 |                       |                  |                              |                           |  |
| For exhaust air                                                                    |                                                                                    |                                                                 |                       |                  |                              |                           |  |
|  | 25, 40                                                                             | 3                                                               | Metal design          | 193137           | GRLA-M5-QS-3-D               |                           |  |
|                                                                                    |                                                                                    | 4                                                               |                       | 193138           | GRLA-M5-QS-4-D               |                           |  |
|                                                                                    | 63, 100                                                                            | 4                                                               |                       | 193143           | GRLA-1/8-QS-4-D              |                           |  |
|                                                                                    |                                                                                    | 6                                                               |                       | 193144           | GRLA-1/8-QS-6-D              |                           |  |
|                                                                                    |                                                                                    | 8                                                               |                       | 193145           | GRLA-1/8-QS-8-D              |                           |  |
|                                                                                    |                                                                                    | Ordering data – Proximity sensors for T-slot, magneto-resistive |                       |                  |                              |                           |  |
|                                                                                    | Type of mounting                                                                   | Switching output                                                | Electrical connection | Cable length [m] | Part no.                     | Type                      |  |
| N/O contact                                                                        |                                                                                    |                                                                 |                       |                  |                              |                           |  |
|  | Insertable in the slot from above, flush with the cylinder profile, short design   | PNP                                                             | Cable, 3-wire         | 2.5              | ★ 574335                     | SMT-8M-A-PS-24V-E-2.5-OE  |  |
|                                                                                    |                                                                                    |                                                                 | Plug M8x1, 3-pin      | 0.3              | ★ 574334                     | SMT-8M-A-PS-24V-E-0.3-M8D |  |
|                                                                                    |                                                                                    |                                                                 | Plug M12x1, 3-pin     | 0.3              | ★ 574337                     | SMT-8M-A-PS-24V-E-0.3-M12 |  |
|                                                                                    |                                                                                    | NPN                                                             | Cable, 3-wire         | 2.5              | ★ 574338                     | SMT-8M-A-NS-24V-E-2.5-OE  |  |
|                                                                                    |                                                                                    |                                                                 | Plug M8x1, 3-pin      | 0.3              | ★ 574339                     | SMT-8M-A-NS-24V-E-0.3-M8D |  |
| N/C contact                                                                        |                                                                                    |                                                                 |                       |                  |                              |                           |  |
|  | Insertable in the slot from above, flush with the cylinder profile, short design   | PNP                                                             | Cable, 3-wire         | 7.5              | ★ 574340                     | SMT-8M-A-PO-24V-E-7.5-OE  |  |
| Ordering data – Proximity sensors for T-slot, magneto-resistive                    |                                                                                    |                                                                 |                       |                  |                              |                           |  |
|                                                                                    | Type of mounting                                                                   | Electrical connection, outlet direction of connection           | Switching output      | Cable length [m] | Part no.                     | Type                      |  |
| N/O contact                                                                        |                                                                                    |                                                                 |                       |                  |                              |                           |  |
|  | Inserted in the slot lengthwise                                                    | Cable, 3-wire, lateral                                          | PNP                   | 2.5              | 547859                       | SMT-8G-PS-24V-E-2,5Q-OE   |  |
|                                                                                    |                                                                                    | Plug M8x1, 3-pin, lateral                                       |                       | 0.3              | 547860                       | SMT-8G-PS-24V-E-0,3Q-M8D  |  |
|                                                                                    |                                                                                    | Cable, 3-wire, lateral                                          | NPN                   | 2.5              | 8065028                      | SMT-8G-NS-24V-E-2,5Q-OE   |  |
|                                                                                    |                                                                                    | Plug M8x1, 3-pin, lateral                                       |                       | 0.3              | 8065027                      | SMT-8G-NS-24V-E-0,3Q-M8D  |  |

## Accessories

| Ordering data – Proximity sensors for T-slot, magnetic reed                       |                                                                  |                  |                       |                  |          | Data sheets → Internet: sme |  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------|------------------|-----------------------|------------------|----------|-----------------------------|--|
|                                                                                   | Type of mounting                                                 | Switching output | Electrical connection | Cable length [m] | Part no. | Type                        |  |
| N/O contact                                                                       |                                                                  |                  |                       |                  |          |                             |  |
|  | Inserted in the slot from above, flush with the cylinder profile | Contacting       | Cable, 3-wire         | 2.5              | ★ 543862 | SME-8M-DS-24V-K-2.5-OE      |  |
|                                                                                   |                                                                  |                  |                       | 5.0              | ★ 543863 | SME-8M-DS-24V-K-5.0-OE      |  |
|                                                                                   |                                                                  |                  | Cable, 2-wire         | 2.5              | ★ 543872 | SME-8M-ZS-24V-K-2.5-OE      |  |
|                                                                                   |                                                                  |                  | Plug M8x1, 3-pin      | 0.3              | ★ 543861 | SME-8M-DS-24V-K-0.3-M8D     |  |
|  | Inserted in the slot lengthwise, flush with the cylinder profile | Contacting       | Cable, 3-wire         | 2.5              | 150855   | SME-8-K-LED-24              |  |
|                                                                                   |                                                                  |                  | Plug M8x1, 3-pin      | 0.3              | 150857   | SME-8-S-LED-24              |  |
| N/C contact                                                                       |                                                                  |                  |                       |                  |          |                             |  |
|  | Inserted in the slot lengthwise, flush with the cylinder profile | Contacting       | Cable, 3-wire         | 7.5              | 160251   | SME-8-O-K-LED-24            |  |

| Ordering data – Connecting cables                                                  |                               |                              |                  |          | Data sheets → Internet: nebu |  |
|------------------------------------------------------------------------------------|-------------------------------|------------------------------|------------------|----------|------------------------------|--|
|                                                                                    | Electrical connection, left   | Electrical connection, right | Cable length [m] | Part no. | Type                         |  |
|   | Straight socket, M8x1, 3-pin  | Cable, open end, 3-wire      | 2.5              | ★ 541333 | NEBU-M8G3-K-2.5-LE3          |  |
|                                                                                    |                               |                              | 5                | ★ 541334 | NEBU-M8G3-K-5-LE3            |  |
|                                                                                    | Straight socket, M12x1, 5-pin | Cable, open end, 3-wire      | 2.5              | ★ 541363 | NEBU-M12G5-K-2.5-LE3         |  |
|                                                                                    |                               |                              | 5                | ★ 541364 | NEBU-M12G5-K-5-LE3           |  |
|  | Angled socket, M8x1, 3-pin    | Cable, open end, 3-wire      | 2.5              | ★ 541338 | NEBU-M8W3-K-2.5-LE3          |  |
|                                                                                    |                               |                              | 5                | ★ 541341 | NEBU-M8W3-K-5-LE3            |  |
|                                                                                    | Angled socket, M12x1, 5-pin   | Cable, open end, 3-wire      | 2.5              | 541367   | NEBU-M12W5-K-2.5-LE3         |  |
|                                                                                    |                               |                              | 5                | 541370   | NEBU-M12W5-K-5-LE3           |  |

| Ordering data – Proximity sensor in block design, pneumatic                         |                      |  | Data sheets → Internet: smpo |         |
|-------------------------------------------------------------------------------------|----------------------|--|------------------------------|---------|
|                                                                                     | Pneumatic connection |  | Part no.                     | Type    |
| 3/2-way valve, normally closed                                                      |                      |  |                              |         |
|  | Female thread M5     |  | 178563                       | SMPO-8E |

| Ordering data – Mounting kit for proximity sensors SMPO-8E                          |                   |  | Data sheets → Internet: smb |        |
|-------------------------------------------------------------------------------------|-------------------|--|-----------------------------|--------|
|                                                                                     | Mounting          |  | Part no.                    | Type   |
|  | Clamped in T-slot |  | 178230                      | SMB-8E |

| Ordering data – Slot cover for T-slot                                               |            |          |          |         |
|-------------------------------------------------------------------------------------|------------|----------|----------|---------|
|                                                                                     | Mounting   | Length   | Part no. | Type    |
|  | Insertable | 2x 0.5 m | 151680   | ABP-5-S |

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