

## Linear actuators DLP, Copac

**FESTO**



# Linear actuators DLP, Copac

Key features and type codes

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## General

|       |               |                    |                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                      |
|-------|---------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| - Ø - | Diameter      | 80 ... 320 mm      | Festo Copac linear valve actuators are ideally suited for use in water, sewage, industrial process water and sileage technology, as well as the paper and bulk goods industry. A clean solution for shut-off, safety and control slide valves. The Copac linear actuator acts directly upon the slide plate and facilitates accurate advancing to various positions. | <ul style="list-style-type: none"> <li>• Fast or slow valve actuation</li> <li>• Position sensing</li> <li>• Internal air channels eliminate protruding tubing and attachments, and thus also harmful accumulation of contaminants</li> <li>• Suitable for manual on-site use, as well as automatic operation</li> <li>• Opening and closing actuated via flange-mounted solenoid valve with port pattern to Namur, or via valve terminals with a choice of 30 different fieldbus protocols</li> <li>• Sturdy and reliable, even in aggressive environments</li> </ul> | <ul style="list-style-type: none"> <li>• Highly corrosion resistant</li> <li>• Mounting port pattern to DIN 3358/ISO 5210 for direct mounting</li> <li>• Port pattern to Namur VDI/VDE 3845 for attaching solenoid valves</li> </ul> |
|       |               |                    |                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                      |
| - I - | Stroke length | 40 ... 600 mm      |                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                      |
| Force |               | 2,800 ... 48,000 N |                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                      |

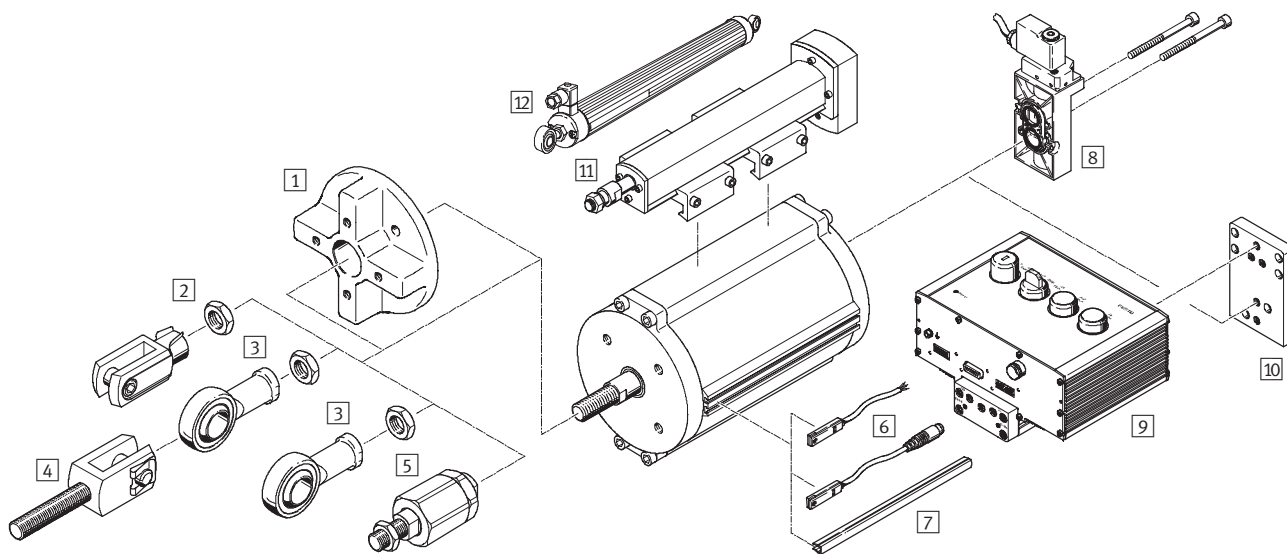


|                  |                               |     |   |     |   |     |   |   |
|------------------|-------------------------------|-----|---|-----|---|-----|---|---|
|                  |                               | DLP | — | 100 | — | 125 | — | A |
| Type             |                               |     |   |     |   |     |   |   |
| DLP              | Double-acting linear actuator |     |   |     |   |     |   |   |
| Piston Ø [mm]    |                               |     |   |     |   |     |   |   |
| Stroke [mm]      |                               |     |   |     |   |     |   |   |
| Position sensing |                               |     |   |     |   |     |   |   |
| A                | Via proximity sensor          |     |   |     |   |     |   |   |

# Linear actuators DLP, Copac

Peripherals overview

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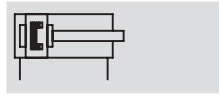
| Mounting attachments and accessories |                                     |                                                                                |             |                 |                 |                |
|--------------------------------------|-------------------------------------|--------------------------------------------------------------------------------|-------------|-----------------|-----------------|----------------|
|                                      | Brief description                   | DLP-80/100                                                                     | DLP-125/160 | DLP-200 ... 320 | ➔ Page/Internet |                |
| 1                                    | Adapter<br>DAPZ-FA                  | For mounting on slide valve armature with ISO 5211 interface                   | ■           | ■               | ■               | 9              |
| 2                                    | Rod clevis<br>SG                    | Enables simple connection between the piston rod and the slide plate           | ■           | ■               | ■               | 9              |
|                                      | Rod clevis, stainless steel<br>CRSG |                                                                                | ■           | ■               | —               | 9              |
| 3                                    | Rod eye<br>SGS                      | With spherical bearing                                                         | ■           | ■               | ■               | 9              |
|                                      | Rod eye, stainless steel<br>CRSGS   |                                                                                | ■           | ■               | —               | 9              |
| 4                                    | Rod clevis<br>SGA                   | With male thread                                                               | ■           | ■               | ■               | 9              |
| 5                                    | Self-aligning rod coupler<br>FK     | For compensating radial and angular deviations                                 | ■           | ■               | ■               | 9              |
| 6                                    | Proximity sensor<br>SMT-8F-I        | Magneto-inductive, Namur, EU-compliant to directive 94/9/EC (ATEX)             | ■           | ■               | ■               | 12             |
|                                      | Proximity sensor<br>SMT-8           | Magneto-resistive, can be integrated in the cylinder profile barrel            | ■           | ■               | ■               | 10             |
|                                      | Proximity sensor<br>SME-8           | Magnetic reed, can be integrated in the cylinder profile barrel                | ■           | ■               | ■               | 11             |
| 7                                    | Slot cover<br>ABP-5-S               | To keep dirt away from the sensor cable and slots                              | ■           | ■               | ■               | 16             |
| 8                                    | Solenoid valve                      | Namur port pattern, not with 9 or 11                                           | ■           | ■               | ■               | solenoid valve |
| 9                                    | Local controller<br>DLP-VSE         | Manual control device, not with 8 or 11                                        | ■           | ■               | ■               | dlp-vse        |
| 10                                   | Sub-base<br>DLP-VSE-OBEN-NAMUR      | Mounting of local controller on the Namur interface                            | ■           | ■               | ■               | dlp-vse        |
| 11                                   | Measuring unit<br>ASDLP             | Conversion of linear movement to rotary movement, not with 8 or 9              | ■           | ■               | —               | asdlp          |
| 12                                   | Displacement encoder<br>MLO-POT     | Conversion of linear movement to voltage signal. The maximum stroke is 700 mm. | ■           | ■               | ■               | mlo-pot        |

# Linear actuators DLP, Copac

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## Technical data

### Function



-  - Diameter  
80 ... 320 mm

-  - Stroke length  
40 ... 600 mm

Force  
2,800 ... 48,000 N



| General technical data       |                                |     |     |     |     |     |     |
|------------------------------|--------------------------------|-----|-----|-----|-----|-----|-----|
| Piston Ø                     | 80                             | 100 | 125 | 160 | 200 | 250 | 320 |
| Pneumatic connection         | G $\frac{1}{4}$                |     |     |     |     |     |     |
| Based on standard            | DIN 3358                       |     |     |     |     |     |     |
| Valve connection conforms to | VDI/VDE 3845 (NAMUR)           |     |     |     |     |     |     |
| Design                       | Piston cylinder, double-acting |     |     |     |     |     |     |
| Cushioning                   | None                           |     |     |     |     |     |     |
| Stroke reserve [mm]          | 2                              |     |     |     | 4   |     |     |
| Assembly position            | Any                            |     |     |     |     |     |     |
| Position sensing             | Via proximity sensor           |     |     |     |     |     |     |
| Efficiency actuator [%]      | 95                             |     |     |     |     |     |     |

| Operating and environmental conditions                                                        |                                                     |  |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------|--|
| Operating pressure <sup>1)</sup> [bar]                                                        | 2 ... 10                                            |  |
| Nominal operating pressure [bar]                                                              | 6                                                   |  |
| Operating medium                                                                              | Filtered compressed air, lubricated or unlubricated |  |
| Ambient temperature <sup>2)3)</sup> [°C]                                                      | -20 ... +80                                         |  |
| Corrosion resistance class CRC <sup>4)</sup>                                                  | 3                                                   |  |
| CE marking (see declaration of conformity) → <a href="http://www.festo.com">www.festo.com</a> | To EU Explosion Protection Directive (ATEX)         |  |
| ATEX category gas                                                                             | II 2G                                               |  |
| Ex-ignition protection type gas                                                               | c T4                                                |  |
| ATEX category dust                                                                            | II 2D                                               |  |
| EX-ignition protection type dust                                                              | c 120°C                                             |  |
| ATEX ambient temperature <sup>3)</sup>                                                        | -20°C ≤ Ta ≤ +60°C                                  |  |

1) Depending upon the counter force of the valve slide, a higher minimum pressure may be required to actuate the overall system

2) Further temperature ranges upon request

3) Note operating range of proximity sensors

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

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

# Linear actuators DLP, Copac

Technical data

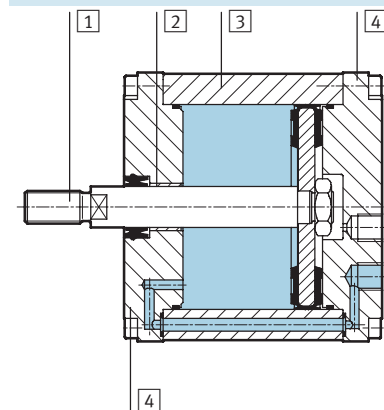
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| Forces [N] and air consumption [NI]                            |       |       |       |        |        |        |        |
|----------------------------------------------------------------|-------|-------|-------|--------|--------|--------|--------|
| Piston Ø                                                       | 80    | 100   | 125   | 160    | 200    | 250    | 320    |
| Theoretical force at 6 bar, advancing                          | 3,016 | 4,712 | 7,363 | 12,064 | 18,850 | 29,452 | 48,255 |
| Theoretical force at 6 bar, retracting                         | 2,827 | 4,524 | 6,881 | 11,581 | 18,080 | 28,698 | 47,501 |
| Theoretical air consumption at 6 bar and 10 mm stroke, pushing | 0.35  | 0.55  | 0.86  | 1.41   | 2.12   | 3.44   | 5.63   |
| Theoretical air consumption at 6 bar and 10 mm stroke, pulling | 0.33  | 0.53  | 0.80  | 1.35   | 2.11   | 3.35   | 5.54   |

| Weights [g]                             |       |       |       |       |        |        |        |
|-----------------------------------------|-------|-------|-------|-------|--------|--------|--------|
| Piston Ø                                | 80    | 100   | 125   | 160   | 200    | 250    | 320    |
| Basic weight with 0 mm stroke           | 1,843 | 2,801 | 4,855 | 5,854 | 12,831 | 21,117 | 33,907 |
| Additional weight per 10 mm stroke      | 68    | 80    | 145   | 159   | 187    | 325    | 399    |
| Moving load with 0 mm stroke            | 624   | 1,200 | 1,809 | 2,183 | 4,691  | 6,650  | 11,040 |
| Additional moving load per 10 mm stroke | 25    | 25    | 63    | 63    | 63     | 99     | 99     |

## Materials

Sectional view



| Linear actuator |                              |
|-----------------|------------------------------|
| 1               | Piston rod                   |
| 2               | Rod bearing                  |
| 3               | Cylinder barrel Ø 80 ... 200 |
|                 | Ø 250, 320                   |
| 4               | Cylinder cap                 |
| -               | Seals                        |

# Linear actuators DLP, Copac

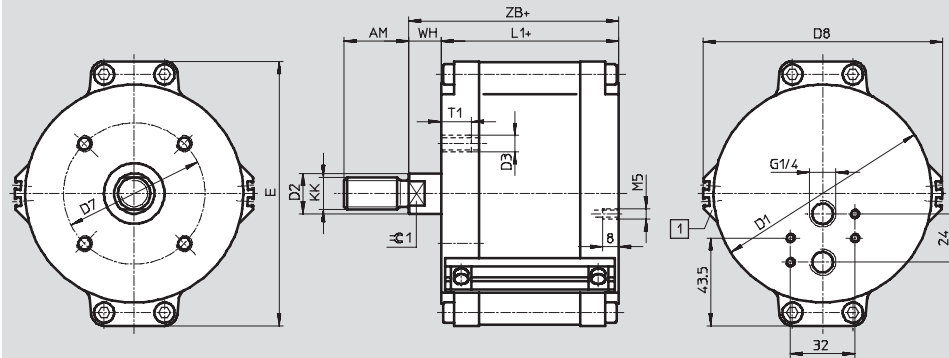
Technical data

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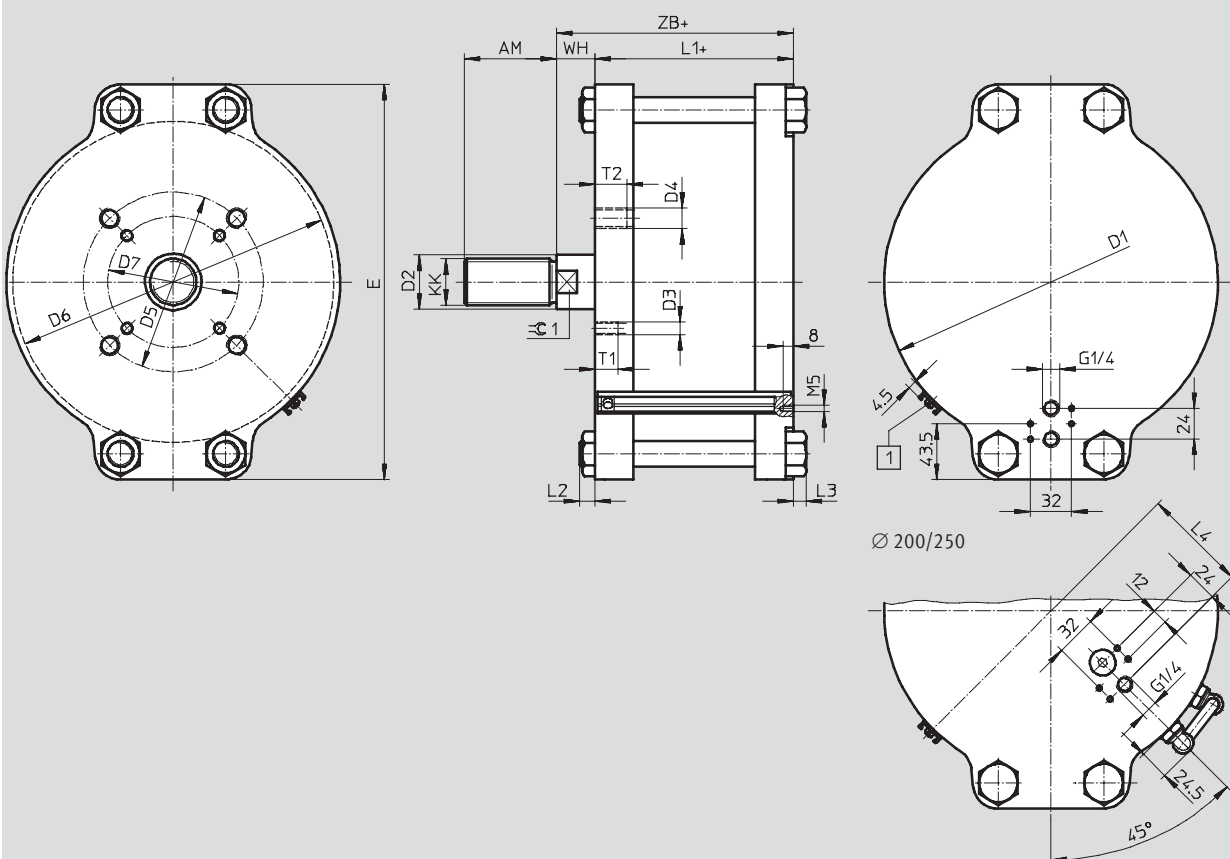
## Dimensions

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Ø 80 ... 160



Ø 200 ... 320



1 Mounting slots for proximity sensor SME/SMT-8

+ = plus stroke length

# Linear actuators DLP, Copac

Technical data

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| Ø<br>[mm]     | AM<br>-2 | D1<br>Ø | D2<br>Ø | D3  | D4  | D5  | D6<br>Ø<br>min. | D7<br>Ø | D8<br>Ø | E   |
|---------------|----------|---------|---------|-----|-----|-----|-----------------|---------|---------|-----|
| DLP-80-...-A  | 32       | 87      | 20      | M8  | -   | -   | -               | 70      | 99      | 108 |
| DLP-100-...-A | 32       | 108     | 20      | M8  | -   | -   | -               | 70      | 119     | 131 |
| DLP-125-...-A | 54       | 135     | 32      | M10 | -   | -   | -               | 102     | 147     | 163 |
| DLP-160-...-A | 54       | 170     | 32      | M10 | -   | -   | -               | 102     | 182     | 199 |
| DLP-200-...-A | 72       | 216     | 40      | M10 | M16 | 140 | 210             | 102     | -       | 271 |
| DLP-250-...-A | 72       | 260     | 40      | M10 | M16 | 140 | 244             | 102     | -       | 308 |
| DLP-320-...-A | 72       | 332     | 40      | M10 | M16 | 140 | 324             | 102     | -       | 378 |

| Ø<br>[mm]     | KK      | L1               | L2<br>min. | L3<br>min. | L4 | T1 | T2<br>min. | WH              | ZB               | ≈C1 |
|---------------|---------|------------------|------------|------------|----|----|------------|-----------------|------------------|-----|
| DLP-80-...-A  | M16x1.5 | 100<br>+1.4/-0.4 |            |            | -  | 15 |            | 16              | 116              | 16  |
| DLP-100-...-A | M16x1.5 | 104<br>+1.4/-0.4 |            |            | -  | 15 |            | 16              | 120              | 16  |
| DLP-125-...-A | M27x2   | 114<br>+1.6/-0.6 | -          | -          | -  | 18 | -          | 24              | 138              | 27  |
| DLP-160-...-A | M27x2   | 114<br>+1.6/-0.6 | -          | -          | -  | 18 | -          | 24              | 138              | 27  |
| DLP-200-...-A | M36x2   | 150<br>+0.8/-1.0 | -          | 10         | 81 | 20 | 24         | 30<br>±1.4      | 180<br>±1        | 36  |
| DLP-250-...-A | M36x2   | 152<br>+0.8/-1.4 | -          | 25         | 94 | 20 | 25         | 30<br>+1.8/-1.4 | 182<br>±1        | 36  |
| DLP-320-...-A | M36x2   | 159<br>+0.8/-1.4 | 12         | -          | -  | 20 | 25         | 30<br>+1.8/-1.6 | 189<br>+0.8/-1.2 | 36  |

# Linear actuators DLP, Copac

Technical data

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| Ordering data                                                                     |                  |                |                |                      |
|-----------------------------------------------------------------------------------|------------------|----------------|----------------|----------------------|
| Version                                                                           | Piston Ø<br>[mm] | Stroke<br>[mm] | Part No.       | Type                 |
| With position sensing                                                             |                  |                |                |                      |
|  | 80               | 40 ... 500     | <b>187 479</b> | <b>DLP-80-...-A</b>  |
|                                                                                   | 100              | 50 ... 500     | <b>187 480</b> | <b>DLP-100-...-A</b> |
|                                                                                   | 125              | 50 ... 500     | <b>187 481</b> | <b>DLP-125-...-A</b> |
|                                                                                   | 160              | 100 ... 500    | <b>187 482</b> | <b>DLP-160-...-A</b> |
|                                                                                   | 200              | 100 ... 600    | <b>542 711</b> | <b>DLP-200-...-A</b> |
|                                                                                   | 250              | 100 ... 600    | <b>187 483</b> | <b>DLP-250-...-A</b> |
|                                                                                   | 320              | 150 ... 600    | <b>187 484</b> | <b>DLP-320-...-A</b> |

## Note

### Stroke length of the actuator

Generally, the stroke length of the Copac linear actuator corresponds to the nominal diameter of the process valve. The system tolerances may lead to a greater stroke range than the specified nominal stroke range of

the linear actuator. The zero point is set with an adjustable rod clevis. This ensures that the end position of the valve slide is reached and the zero position of the system is fixed.

# Linear actuators DLP, Copac

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Accessories

## Adapter DAPZ-FA

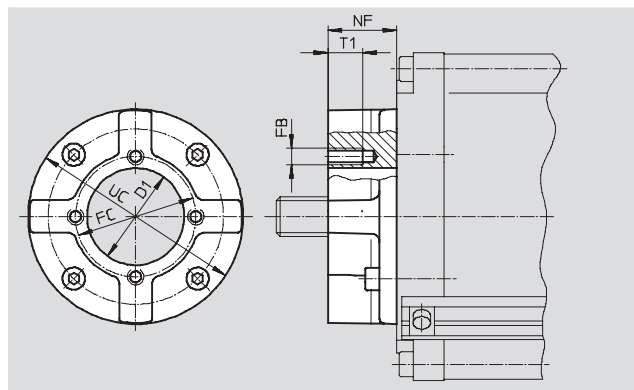
Based on ISO 5211 standard

Scope of delivery:

- 1 flange adapter,
- 4 socket head screws DIN 912

Materials:

- Wrought aluminium alloy
- Galvanised steel
- Free of copper, PTFE and silicone



| Dimensions and ordering data  |         |         |     |         |    |    |         |                   |        |          |                 |
|-------------------------------|---------|---------|-----|---------|----|----|---------|-------------------|--------|----------|-----------------|
| For Ø                         | Size    | D1<br>Ø | FB  | FC<br>Ø | NF | T1 | UC<br>Ø | CRC <sup>1)</sup> | Weight | Part No. | Type            |
| [mm]                          |         | +1      |     |         |    |    | +1      |                   | [g]    |          |                 |
| 80, 100                       | F07/F07 | 30      | M8  | 70      | 40 | 20 | 125     | 3                 | 679    | 536 587  | DAPZ-FA-F07/F07 |
|                               | F07/F10 | 30      | M10 | 102     | 40 | 22 | 125     | 3                 | 670    | 536 588  | DAPZ-FA-F07/F10 |
| 125, 160,<br>200, 250,<br>320 | F10/F07 | 55      | M8  | 70      | 40 | 20 | 125     | 3                 | 667    | 536 589  | DAPZ-FA-F10/F07 |
|                               | F10/F10 | 55      | M10 | 102     | 45 | 22 | 125     | 3                 | 707    | 536 590  | DAPZ-FA-F10/F10 |
|                               | F10/F14 | 55      | M16 | 140     | 65 | 25 | 175     | 3                 | 1,884  | 536 591  | DAPZ-FA-F10/F14 |
| 250, 320                      | F14/F14 | 70      | M16 | 140     | 65 | 25 | 175     | 3                 | 2,130  | 536 592  | DAPZ-FA-F14/F14 |

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

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

| Ordering data – Piston rod attachments |               |          |             | Technical data → Internet: piston rod attachments |               |          |            |
|----------------------------------------|---------------|----------|-------------|---------------------------------------------------|---------------|----------|------------|
| Designation                            | For Ø         | Part No. | Type        | Designation                                       | For Ø         | Part No. | Type       |
| Rod eye SGS                            |               |          |             | Rod clevis SG                                     |               |          |            |
|                                        | 80, 100       | 9 263    | SGS-M16x1,5 |                                                   | 80, 100       | 6 146    | SG-M16x1,5 |
|                                        | 125, 160      | 10 774   | SGS-M27x2   |                                                   | 125, 160      | 14 987   | SG-M27x2-B |
|                                        | 200, 250, 320 | 10 775   | SGS-M36x2   |                                                   | 200, 250, 320 | 9 581    | SG-M36x2   |
| Rod clevis SGA                         |               |          |             | Self-aligning rod coupler FK                      |               |          |            |
|                                        | 80, 100       | 10 768   | SGA-M16x1,5 |                                                   | 80, 100       | 6 142    | FK-M16x1,5 |
|                                        | 125, 160      | 10 770   | SGA-M27x2   |                                                   | 125, 160      | 10 485   | FK-M27x2   |
|                                        | 200, 250, 320 | 10 771   | SGA-M36x2   |                                                   | 200, 250, 320 | 10 746   | FK-M36x2   |

| Ordering data – Piston rod attachments, corrosion-resistant |          |          |              | Technical data → Internet: crsg |          |          |               |
|-------------------------------------------------------------|----------|----------|--------------|---------------------------------|----------|----------|---------------|
| Designation                                                 | For Ø    | Part No. | Type         | Designation                     | For Ø    | Part No. | Type          |
| Rod eye CRSG                                                |          |          |              | Rod clevis CRSGS                |          |          |               |
|                                                             | 80, 100  | 13 571   | CRSG-M16x1,5 |                                 | 80, 100  | 195 584  | CRSGS-M16x1,5 |
|                                                             | 125, 160 | 185 361  | CRSG-M27x2   |                                 | 125, 160 | 195 586  | CRSGS-M27x2   |

# Linear actuators DLP, Copac

Accessories

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| Ordering data – Displacement encoders                                             |             |          | Technical data → Internet: mlo |  |
|-----------------------------------------------------------------------------------|-------------|----------|--------------------------------|--|
|                                                                                   | Stroke [mm] | Part No. | Type                           |  |
|  | 100         | 192 213  | MLO-POT-100-LWG                |  |
|                                                                                   | 150         | 192 214  | MLO-POT-150-LWG                |  |
|                                                                                   | 225         | 152 645  | MLO-POT-225-LWG                |  |
|                                                                                   | 300         | 152 646  | MLO-POT-300-LWG                |  |
|                                                                                   | 360         | 152 647  | MLO-POT-360-LWG                |  |
|                                                                                   | 450         | 152 648  | MLO-POT-450-LWG                |  |
|                                                                                   | 600         | 152 650  | MLO-POT-600-LWG                |  |
|                                                                                   | 750         | 152 651  | MLO-POT-750-LWG                |  |

| Ordering data – Plug socket for displacement encoders                             |     |                       | Technical data → Internet: sd-4 |           |
|-----------------------------------------------------------------------------------|-----|-----------------------|---------------------------------|-----------|
|                                                                                   | Pin | Pin allocation        | Part No.                        | Type      |
|  | 1   | Power supply          | 194 332                         | SD-4-WD-7 |
|                                                                                   | 2   | Signal                |                                 |           |
|                                                                                   | 3   | 0 V                   |                                 |           |
|                                                                                   | 4   | PE (yellow), screened |                                 |           |

| Ordering data – Proximity sensors for T-slot, magneto-resistive                     |                  |                       |           |                     | Technical data → Internet: smt-8 |                      |
|-------------------------------------------------------------------------------------|------------------|-----------------------|-----------|---------------------|----------------------------------|----------------------|
|                                                                                     | Switching output | Electrical connection |           | Cable length<br>[m] | Part No.                         | Type                 |
|                                                                                     |                  | Cable                 | Plug M8x1 |                     |                                  |                      |
|  | N/O contact      |                       |           |                     |                                  |                      |
|                                                                                     | PNP              | 3-wire                | –         | 2.5                 | 175 436                          | SMT-8-PS-K-LED-24-B  |
|                                                                                     |                  |                       |           | 5.0                 | 175 434                          | SMT-8-PS-K5-LED-24-B |
|                                                                                     |                  | –                     | 3-pin     | 0.3                 | 175 484                          | SMT-8-PS-S-LED-24-B  |
|                                                                                     | NPN              | 3-wire                | –         | 2.5                 | 171 180                          | SMT-8-NS-K-LED-24-B  |
|                                                                                     |                  | –                     | 3-pin     | 0.3                 | 171 181                          | SMT-8-NS-S-LED-24-B  |

| Ordering data – Proximity sensors for T-slot                                        |                  |                       |              |          | Technical data → Internet: crsmt |  |
|-------------------------------------------------------------------------------------|------------------|-----------------------|--------------|----------|----------------------------------|--|
|                                                                                     | Switching output | Electrical connection | Cable length | Part No. | Type                             |  |
|  | N/O contact      |                       |              |          |                                  |  |
|                                                                                     | PNP              | Cable, 3-wire         | 2.5          | 525 563  | CRSMT-8-PS-K2,5-LED-24           |  |
|                                                                                     |                  |                       | 5.0          | 525 564  | CRSMT-8-PS-K5-LED-24             |  |

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Accessories

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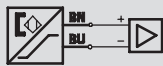
| Ordering data – Proximity sensors for T-slot, magnetic reed                       |                                           |                         |              | Technical data ➔ Internet: sme |                        |
|-----------------------------------------------------------------------------------|-------------------------------------------|-------------------------|--------------|--------------------------------|------------------------|
|                                                                                   | Connection technology                     |                         | Cable length | Part No.                       | Type                   |
|                                                                                   | Cable                                     | Cable with plug<br>M8x1 |              |                                |                        |
|  | N/O contact                               |                         |              |                                |                        |
|                                                                                   | Operating voltage range 0 ... 30 V AC/DC  |                         |              |                                |                        |
|                                                                                   | 3-wire                                    | –                       | 2.5          | 150 855                        | SME-8-K-LED-24         |
|                                                                                   |                                           |                         | 5.0          | 175 404                        | SME-8-K5-LED-24        |
|                                                                                   |                                           |                         | 7.5          | 530 491                        | SME-8-K-7,5-LED-24     |
|                                                                                   | –                                         | 3-pin                   | 0.3          | 150 857                        | SME-8-S-LED-24         |
|                                                                                   | 2-wire                                    | –                       | 2.5          | 171 169                        | SME-8-ZS-KL-LED-24     |
|                                                                                   |                                           |                         |              |                                |                        |
|                                                                                   | Heat-resistant up to 120 °C               |                         |              |                                |                        |
|                                                                                   | 2-wire                                    | –                       | 2.5          | 161 756                        | SME-8-K-24-S6          |
|                                                                                   |                                           |                         |              |                                |                        |
|                                                                                   | Operating voltage range 3 ... 250 V AC/DC |                         |              |                                |                        |
|                                                                                   | 2-wire                                    | –                       | 2.5          | 152 820                        | SME-8-K-LED-230        |
|                                                                                   |                                           |                         |              |                                |                        |
|                                                                                   | Operating voltage range 5 ... 250 V AC/DC |                         |              |                                |                        |
|                                                                                   | 2-wire                                    | –                       | 2.5          | 538 816                        | SME-8-ZS-230V-K2,5Q-OE |
|                                                                                   |                                           |                         | 5.0          | 538 817                        | SME-8-ZS-230V-K5,0Q-OE |
|                                                                                   |                                           |                         |              |                                |                        |
|                                                                                   | N/C contact                               |                         |              |                                |                        |
|                                                                                   | 3-wire                                    | –                       | 7.5          | 160 251                        | SME-8-O-K-LED-24       |

# Linear actuators DLP, Copac

Accessories – Proximity sensors, to EU Explosion Protection Directive (ATEX)

**FESTO**

Function  
Namur, with cable



- EU conformity in accordance with EU Explosion Protection Directive (ATEX)
- Magneto-inductive measuring principle
- Insertable in slot from above
- Cable clip included in the scope of delivery



| Design                                           |      |                   |
|--------------------------------------------------|------|-------------------|
| Design                                           |      | For T-slot        |
| Type of mounting                                 |      | Clamped in T-slot |
| Reproducibility of switching point <sup>1)</sup> | [mm] | ±0.1              |

1) Only applicable to drives protected against rotation

| Technical data                          |        |                                             |
|-----------------------------------------|--------|---------------------------------------------|
| Switching element function              |        | Namur                                       |
| Switching output                        |        | Namur                                       |
| Electrical connection                   |        | Cable, 2-wire                               |
| Mounting position                       |        | Any                                         |
| Cable length                            | [m]    | 5                                           |
| Rated operating voltage                 | [V DC] | 8.2                                         |
| Max. output current                     | [mA]   | < 4.5                                       |
| Residual current                        | [mA]   | < 0.7                                       |
| Switch-on time                          | [ms]   | ≤0.5                                        |
| Switch-off time                         | [ms]   | ≤0.5                                        |
| Protection against short circuit        |        | For all electrical connections              |
| Reverse polarity protection             |        | For all electrical connections              |
| Protection class                        |        | IP65/IP67                                   |
| CE mark (see declaration of conformity) |        | To EU EMC Directive                         |
|                                         |        | To EU Explosion Protection Directive (ATEX) |
| Conforms to                             |        | EN 60947-5-6                                |
| Certificate issuing authority           |        | KEMA 04 ATEX 1114 X                         |
| Certification                           |        | C-Tick                                      |
| Switching status display                |        | Yellow LED                                  |
| Product weight                          | [g]    | 70                                          |

## Note

When used in explosive atmospheres, the proximity sensor SMT-8F-I must absolutely be operated on a circuit

breaker amplifier according to DIN EN 60 947-5-6.

## Note

Operating instructions, conformity declarations and statements of conformity → [www.festo.com](http://www.festo.com)

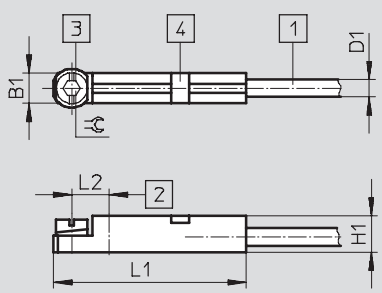
## Linear actuators DLP, Copac

**FESTO**

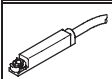
Accessories – Proximity sensors, to EU Explosion Protection Directive (ATEX)

| Materials         |                         |
|-------------------|-------------------------|
| Housing           | Polyamide               |
| Cable sheath      | Polyvinyl chloride      |
| Note on materials | Free of copper and PTFE |

| Operating and environmental conditions NEW  |                      |            |
|---------------------------------------------|----------------------|------------|
| Cable installation                          | Fixed                | Flexible   |
| Ambient temperature [°C]                    | -10 ... +70          | -5 ... +70 |
| ATEX category for gas                       | II 1G                |            |
| ATEX category for dust                      | II 1D                |            |
| Explosion ignition protection type for gas  | EEx ia IIC T4 ... T6 |            |
| Explosion ignition protection type for dust | T115°C               |            |
| Explosion-proof temperature rating          | -10 °C ≤ Ta ≤ +70 °C |            |

| Dimensions                                                                                                                                                                                                                                                              | Download CAD data → <a href="http://www.festo.com/en/engineering">www.festo.com/en/engineering</a> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
|  <div style="margin-left: 600px;"> <p>1 Cable</p> <p>2 Switching point</p> <p>3 Clamping component, max. tightening torque 0.6 Nm</p> <p>4 Yellow LED for switching status</p> </div> |                                                                                                    |

| Type           | B1 | D1  | H1 | L1   | L2  | ⌀   |
|----------------|----|-----|----|------|-----|-----|
| SMT-8F-I-8 ... | 5  | 2.9 | 6  | 31.8 | 6.2 | 1.5 |

| Ordering data                                                                       |                  |                       |              |          |                          |  |
|-------------------------------------------------------------------------------------|------------------|-----------------------|--------------|----------|--------------------------|--|
|                                                                                     | Switching output | Electrical connection | Cable length | Part No. | Type                     |  |
|  | Namur            | Cable, 2-wire         | 5.0          | 536 956  | SMT-8F-I-8,2V-K5,0-OE-EX |  |

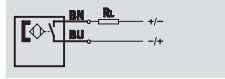
# Linear actuators DLP, Copac

Accessories – Proximity sensors, to EU Explosion Protection Directive (ATEX)

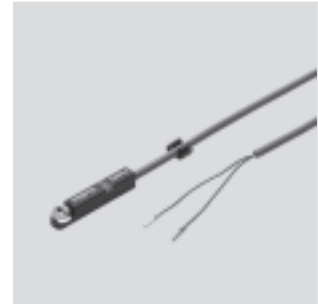
**FESTO**

Function

N/O contact, two-wire, with cable



- Inductive measuring principle
- EU conformity in accordance with EU Explosion Protection Directive (ATEX)
- Insertable in slot from above
- Cable clip and inscription label included in the scope of delivery



| Design                                           |      |                                                  |
|--------------------------------------------------|------|--------------------------------------------------|
| Design                                           |      | For T-slot                                       |
| Type of mounting                                 |      | Clamped in T-slot, insertable in slot from above |
| Connection direction                             |      | In-line                                          |
| Reproducibility of switching point <sup>1)</sup> | [mm] | ±0.1                                             |

1) Only applicable to drives protected against rotation

| Technical data – N/O contact, 2-wire    |        |                                                                    |
|-----------------------------------------|--------|--------------------------------------------------------------------|
| Electrical connection                   |        | Cable, 2-wire                                                      |
| Max. tightening torque                  | [Nm]   | 0.6                                                                |
| Cable length                            | [m]    | 2.5                                                                |
| Cable property                          |        | Standard                                                           |
| Operating voltage range                 | [V DC] | 10 ... 30                                                          |
| Insulation voltage                      | [V]    | 50                                                                 |
| Max. output current                     | [mA]   | 100                                                                |
| Max. switching capacity                 | [W]    | 3                                                                  |
| Max. switching frequency                | [Hz]   | 300                                                                |
| Voltage drop                            | [V]    | ≤5.6                                                               |
| Residual current                        | [mA]   | ≤0.8                                                               |
| Switch-on time                          | [ms]   | ≤1.6                                                               |
| Switch-off time                         | [ms]   | ≤1.6                                                               |
| Protection against short circuit        |        | Yes                                                                |
| Protection against overloading          |        | Yes                                                                |
| Reverse polarity protection             |        | For all electrical connections                                     |
| Protection class                        |        | IP65, IP67                                                         |
| Degree of contamination                 |        | 3                                                                  |
| CE mark (see declaration of conformity) |        | To EU EMC Directive<br>To EU Explosion Protection Directive (ATEX) |
| Conforms to                             |        | DIN EN 60947-5-2                                                   |
| Certification                           |        | C-Tick                                                             |
| Switching status display                |        | Yellow LED                                                         |
| Product weight                          | [g]    | 22                                                                 |

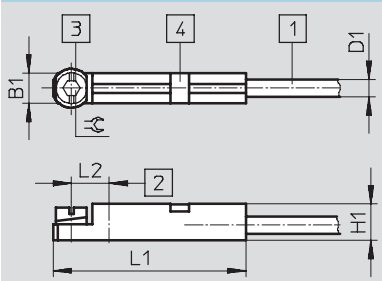
## Linear actuators DLP, Copac

**FESTO**

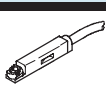
Accessories – Proximity sensors, to EU Explosion Protection Directive (ATEX)

| Materials         |                         |
|-------------------|-------------------------|
| Switching output  | Two-wire                |
| Housing           | Reinforced polyamide    |
| Cable sheath      | Polyurethane            |
| Note on materials | Free of copper and PTFE |

| Operating and environmental conditions      |                            |            |
|---------------------------------------------|----------------------------|------------|
| Cable installation                          | Fixed                      | Flexible   |
| Ambient temperature [°C]                    | –25 ... +55                | –5 ... +55 |
| ATEX category for gas                       | II 3G                      |            |
| ATEX category for dust                      | II 3D                      |            |
| Explosion ignition protection type for gas  | Ex nA II T4 X              |            |
| Explosion ignition protection type for dust | Ex td A22 IP65/67 T110°C X |            |
| Explosion-proof temperature rating          | –25 °C ≤ Ta ≤ +55 °C       |            |

| Dimensions                                                                         | Download CAD data → <a href="http://www.festo.com/en/engineering">www.festo.com/en/engineering</a>                                          |
|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>1 Cable</p> <p>2 Switching point</p> <p>3 Clamping component, max. tightening torque 0.6 Nm</p> <p>4 Yellow LED for switching status</p> |

| Type          | B1 | D1<br>Ø | H1 | L1   | L2  | ≙   |
|---------------|----|---------|----|------|-----|-----|
| SMT-8F-ZS ... | 5  | 2.9     | 6  | 31.8 | 6.2 | 1.5 |

| Ordering data                                                                       |                  |                       |                 |      |       |                     |          |                          |
|-------------------------------------------------------------------------------------|------------------|-----------------------|-----------------|------|-------|---------------------|----------|--------------------------|
|                                                                                     | Switching output | Electrical connection |                 |      |       | Cable length<br>[m] | Part No. | Type                     |
|                                                                                     |                  | Cable                 | Cable with plug |      |       |                     |          |                          |
|                                                                                     |                  |                       | M5x0.5          | M8x1 | M12x1 |                     |          |                          |
|  | N/O contact      |                       |                 |      |       |                     |          |                          |
|                                                                                     | Two-wire         | 2-wire                | –               | –    | –     | 2.5                 | 525 908  | SMT-8F-ZS-24V-K2,5-OE-EX |
|                                                                                     |                  |                       |                 |      |       |                     |          |                          |

# Linear actuators DLP, Copac

Accessories

**FESTO**

| Ordering data – Connecting cables M8x1                                            |                                      |                                       |                  |                         | Technical data → Internet: nebu |                      |
|-----------------------------------------------------------------------------------|--------------------------------------|---------------------------------------|------------------|-------------------------|---------------------------------|----------------------|
|                                                                                   | Electrical connection, left-hand end | Electrical connection, right-hand end | Switching output | Cable length<br><br>[m] | Part No.                        | Type                 |
| Basic version                                                                     |                                      |                                       |                  |                         |                                 |                      |
|  | Straight socket, M8x1, 3-pin         | Cable, open end, 3-wire               | –                | 2.5                     | 541 333                         | NEBU-M8G3-K-2.5-LE3  |
|                                                                                   |                                      |                                       |                  | 5                       | 541 334                         | NEBU-M8G3-K-5-LE3    |
|                                                                                   |                                      |                                       |                  | 10                      | 541 332                         | NEBU-M8G3-K-10-LE3   |
|  | Angled socket, M8x1, 3-pin           | Cable, open end, 3-wire               | –                | 2.5                     | 541 338                         | NEBU-M8W3-K-2.5-LE3  |
|                                                                                   |                                      |                                       |                  | 5                       | 541 341                         | NEBU-M8W3-K-5-LE3    |
|                                                                                   |                                      |                                       |                  | 10                      | 541 335                         | NEBU-M8W3-K-10-LE3   |
| With switching status display                                                     |                                      |                                       |                  |                         |                                 |                      |
|  | Angled socket, M8x1, 3-pin           | Cable, open end, 3-wire               | PNP              | 2.5                     | 541 337                         | NEBU-M8W5P-K-2.5-LE3 |
|                                                                                   |                                      |                                       |                  | 5                       | 541 340                         | NEBU-M8W5P-K-5-LE3   |
|                                                                                   |                                      |                                       | NPN              | 2.5                     | 541 336                         | NEBU-M8W5N-K-2.5-LE3 |
|                                                                                   |                                      |                                       |                  | 5                       | 541 339                         | NEBU-M8W5N-K-5-LE3   |

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

| Ordering data – Cable clip SMBK-8                                                   |                                         |                |
|-------------------------------------------------------------------------------------|-----------------------------------------|----------------|
|                                                                                     |                                         | Part No. Type  |
|  | For fixing the cable in the sensor slot | 534 254 SMBK-8 |

| Ordering data – Inscription labels                                                  |               |                                               |                    |                    |                  |
|-------------------------------------------------------------------------------------|---------------|-----------------------------------------------|--------------------|--------------------|------------------|
|                                                                                     | Material      | Use                                           | Dimensions<br>[mm] | Part No. Type      | PU <sup>1)</sup> |
|  | Polycarbonate | For insertion in the inscription label holder | 23x4               | 541 598 ASLR-L-423 | 34               |

1) Packaging unit per frame

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