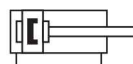


# RA/192000/M, ISO Compact cylinder

## Magnetic piston, double acting



- >  $\varnothing$  20 ... 125 mm
- > Conforms to ISO 21287
- > M/50 switches can be mounted flush with the profile
- > Magnetic piston as standard
- > Seals ensure low friction operation and long life
- > Three different guiding systems:  
RA/192000/N2, .../N4 or .../N6

### Technical features

#### Medium:

Compressed air, filtered, lubricated or non-lubricated

#### Standard:

Based on ISO 21287

#### Operation:

RA/192000/M: Double acting, magnetic piston, male piston rod thread, buffer cushioning  
RA/192000/MX: Double acting, magnetic piston, female piston rod thread, buffer cushioning

#### Operating pressure:

1 ... 10 bar (14 ... 145 psi)

#### Ports:

M5, G1/8 ... G1/4

#### Cylinder diameters:

20, 25, 32, 40, 50, 63, 80, 100 and 125 mm

#### Standard Strokes:

See table below (standard stroke lengths)

#### Non-standard strokes:

$\varnothing$  20 ... 25 mm (5 ... 200 mm)  
 $\varnothing$  32 ... 40 mm (5 ... 300 mm)  
 $\varnothing$  50 ... 63 mm (10 ... 400 mm)  
 $\varnothing$  80 ... 125 mm (15 ... 500 mm)

#### Operating temperature:

-5 ... +80 °C max. (+23 ... +176 °F)  
Air supply must be dry enough to avoid ice formation at temperatures below +2 °C (+35 °F).

#### Materials:

Profile barrel: Anodized aluminium  
End covers: Pressure diecast aluminium  
Piston rod: Stainless steel  
Piston rod seals: PUR  
Piston seals: NBR  
O-rings: NBR

### Technical data

| Cylinder $\varnothing$ (mm)                | 20      | 25      | 32       | 40       | 50       | 63       | 80      | 100     | 125   |
|--------------------------------------------|---------|---------|----------|----------|----------|----------|---------|---------|-------|
| Port size                                  | M 5     | M 5     | G 1/8    | G 1/8    | G 1/8    | G 1/8    | G 1/8   | G 1/8   | G 1/4 |
| Piston rod $\varnothing$ (mm)              | 10      | 10      | 12       | 16       | 20       | 20       | 25      | 25      | 32    |
| Piston rod thread                          | M8x1,25 | M8x1,25 | M10x1,25 | M10x1,25 | M12x1,25 | M12x1,25 | M16x1,5 | M16x1,5 | M27x2 |
| Energy (J) max.                            | 0,2     | 0,3     | 0,45     | 0,75     | 1,1      | 1,3      | 1,9     | 2,3     | 3     |
| Theoretical thrusts at 6 bar outstroke (N) | 188     | 294     | 482      | 754      | 1178     | 1870     | 3016    | 4710    | 7363  |
| Theoretical thrusts at 6 bar instroke (N)  | 141     | 247     | 414      | 633      | 990      | 1680     | 2722    | 4416    | 6882  |
| Air consumption at 6 bar outstroke (l/cm)  | 0,022   | 0,035   | 0,056    | 0,088    | 0,137    | 0,218    | 0,35    | 0,55    | 0,86  |
| Air consumption at 6 bar instroke (l/cm)   | 0,016   | 0,028   | 0,048    | 0,074    | 0,114    | 0,195    | 0,32    | 0,51    | 0,79  |

### Technical data, Tandem Cylinder (increased force), RA/1920xx/TM.

| For Model only RA/1920xx/TM..              | 20    | 25    | 32    | 40    | 50    | 63    | 80    | 100   |
|--------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Energy (J) max.                            | 0,2   | 0,3   | 0,45  | 0,75  | 1,1   | 1,3   | 1,9   | 2,3   |
| Theoretical thrusts at 6 bar outstroke (N) | 330   | 542   | 897   | 1387  | 2168  | 3552  | 5737  | 9130  |
| Theoretical thrusts at 6 bar instroke (N)  | 141   | 247   | 414   | 633   | 990   | 1680  | 2722  | 4416  |
| Air consumption at 6 bar outstroke (l/cm)  | 0,038 | 0,063 | 0,105 | 0,162 | 0,253 | 0,414 | 0,669 | 1,065 |
| Air consumption at 6 bar instroke (l/cm)   | 0,016 | 0,028 | 0,048 | 0,074 | 0,114 | 0,195 | 0,32  | 0,51  |

### Standard strokes

| Cylinder<br>ø (mm) | Stroke length (mm) |    |    |    |    |    |    |    |    |    |     |
|--------------------|--------------------|----|----|----|----|----|----|----|----|----|-----|
|                    | 5                  | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 80 | 100 |
| 20                 | •                  | •  | •  | •  | •  | •  | •  | •  | —  | —  | —   |
| 25                 | •                  | •  | •  | •  | •  | •  | •  | •  | —  | —  | —   |
| 32                 | •                  | •  | •  | •  | •  | •  | •  | •  | —  | —  | —   |
| 40                 | •                  | •  | •  | •  | •  | •  | •  | •  | —  | —  | —   |
| 50                 | —                  | •  | •  | •  | •  | •  | •  | •  | •  | •  | •   |
| 63                 | —                  | —  | •  | •  | •  | •  | •  | •  | •  | •  | •   |
| 80                 | —                  | —  | •  | •  | •  | •  | •  | •  | •  | •  | •   |
| 100                | —                  | —  | •  | •  | •  | •  | •  | •  | •  | •  | •   |
| 125                | —                  | —  | •  | •  | •  | •  | •  | •  | •  | •  | •   |

## Design and sizing in pneumatics

### Golden Rules

Design and sizing in pneumatics is often based upon experience coupled with an element of fear of under specifying crucial equipment. In an attempt to ensure enough power, engineers may select over sized cylinders and then select over sized valves to supply them with enough air. The same uncertainty can also lead to over sized specification of air line equipment, fittings and tubing.

The outcome is components larger than necessary that use too much compressed air and waste energy and money.

However when following some well proven golden rules and a few laws of pneumatics it is easy to achieve correctly sized pneumatic installations.

### Basics to Consider

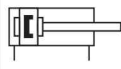
The force required, the pressure available, the speed of movement and air consumption. ISO and VDMA standard or compact style also cushioning and sensors. Cylinders are greased on assembly and operate under normal conditions without additional lubrication. However using a lubricator will extend the life of these products.

### Golden Rule:

The theoretical force of the cylinder should be 25% extra for high speed, 50% extra for low speed and 100% extra for ultra low speed (positioning) applications.

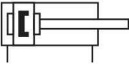
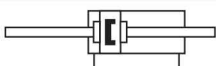
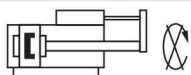
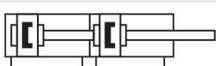
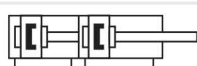
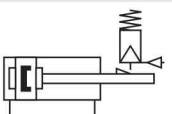
The correct sizing is based upon the required force and applied pressure. Go to page 1 for more information on cylinder sizing and air consumption.

## Additional ISO 15552 Cylinder ranges (Cylinder ranges in the red frame are shown in this data sheet)

|   |                                                                                     |                |              |                       |                 |            |             |        |           |            |                      |                        |                           |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------|--------------|-----------------------|-----------------|------------|-------------|--------|-----------|------------|----------------------|------------------------|---------------------------|
| Symbols                                                                            |                                                                                     | Profile barrel | Round barrel | Industrial Automation | Food & Beverage | Automotive | ATEX II 2GD | Rail * | CE-marked | ø (mm)     | Range                | Description            | Datasheet                 |
|   |   | •              | •            | •                     | •               | •          | •           | •      | •         | 20 ... 125 | RA/192000            | Double Acting Cylinder | de_1_5_084_RA_192000_M    |
|                                                                                    |                                                                                     |                |              |                       |                 |            |             |        |           | 20 ... 125 | RA/192000/M/EX       |                        | de_1_5_085_RA_192000_M_EX |
|  |  | •              | •            | •                     | •               | •          |             |        |           | 20 ... 63  | RA/191000, RA/193000 | Single Acting Cylinder | de_1_4_084_RA_191000_M    |

• Range available. For additional information please contact the technical service or <http://www.norgren.com> \*1) Rail Cylinder Shock and vibration tested to EN 61373 Category 1; Class A + B

## Cylinder variants

| Symbol                                                                              | Versions | Piston Rod Material | Standard Model with |                        | Description              | Page       |                                                                                                                                                                                                                                    |   |
|-------------------------------------------------------------------------------------|----------|---------------------|---------------------|------------------------|--------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| See the description below                                                           | T        | R                   | S                   | Male Piston Rod Thread | Female Piston Rod Thread | (mm)       |                                                                                                                                                                                                                                    |   |
|    | •        | X                   | •                   | RA/192000/M            | RA/192000/MX             | 20 ... 125 | Standard Cylinder *1)                                                                                                                                                                                                              | 7 |
|                                                                                     |          | X                   | •                   | RA/192000/W2           | RA/192000/W2X            | 20 ... 25  | Cylinder with Special Wiper - Seal                                                                                                                                                                                                 |   |
|                                                                                     |          | X                   | •                   | RA/192000/X4           | RA/192000/X4X            | 32 ... 100 | Low Friction Cylinder<br>Operating pressure: 1 ... 10 bar, Medium: Compressed air, filtered and non-lubricated recommended                                                                                                         |   |
|    |          | X                   | •                   | RA/192000/MU           | RA/192000/MUX            | 20 ... 125 | Cylinder with Extended Piston Rod<br>ø 20 ... 25 mm (Stroke + Extension = 300 mm)<br>ø 32 ... 40 mm (Stroke + Extension = 400 mm)<br>ø 50 ... 63 mm (Stroke + Extension = 500 mm)<br>ø 80 ... 125 mm (Stroke + Extension = 600 mm) |   |
|    | •        | X                   | •                   | RA/192000/JM           | RA/192000/JMX            | 20 ... 125 | Cylinder with Double Ended Piston Rod *1)                                                                                                                                                                                          |   |
|    |          | X                   |                     | RA/192000/N2           | RA/192000/N2X            | 20 ... 100 | Cylinder with Non-Rotating Piston Rod                                                                                                                                                                                              |   |
|    |          | X                   |                     | RA/192000/N4           |                          | 20 ... 100 | Cylinder with guiding<br>ø 20 ... 25 mm (max. Stroke = 80 mm)<br>ø 32 ... 100 mm (max. Stroke = 100 mm)                                                                                                                            |   |
|    |          | X                   |                     | RA/192000/N6           |                          | 25 ... 32  | Cylinder with External Guiding<br>Standard Strokes 25, 50, 75 and 100 mm only                                                                                                                                                      |   |
|   |          | X                   | •                   | RA/192000/TM           | RA/192000/TMX            | 20 ... 100 | Tandem Cylinder (increased force)                                                                                                                                                                                                  |   |
|  |          | X                   | •                   | RA/192000/SM           | RA/192000/SMX            | 20 ... 100 | Multi Position Cylinder                                                                                                                                                                                                            |   |
|  |          | X                   | •                   | RA/192000/L4           | RA/192000/L4X            | 32 ... 125 | Cylinder with Locking unit (Passive)<br>Spring force on removal of the signal to the unit. Operating pressure for locking unit: 4 ... 10 bar                                                                                       |   |

Alternative Variants without Magnet piston (ø 63 ... 125 mm) on request.

\*1) Varinate T: ø 20 ... 100 mm; max. Stroke 200 mm

T = High temperature +150 °C (+302 °F); Piston Rod Material: R = Stainless steel martensitic; S = Stainless steel austenitic; X = Standard; • = Option

## Option selector

| Special variants                         | Substitute |
|------------------------------------------|------------|
| High temperature version:<br>150 °C max. | T          |
| Piston rod materials                     | Substitute |
| Stainless steel martensitic (1.4021)     | R          |
| Stainless steel austenitic (1.4305)      | S          |
| Cylinder ø (mm)                          | Substitute |
| 20                                       | 020        |
| 25                                       | 025        |
| 32                                       | 032        |
| 40                                       | 040        |
| 50                                       | 050        |
| 63                                       | 063        |
| 80                                       | 080        |
| 100                                      | 100        |
| 125                                      | 125        |

Note: If option is not required, disregard option position within part number eg. RA/192100/M/100. For combinations of cylinder variants consult our technical service.

Please note that heat resistant seals are not available for all variants.

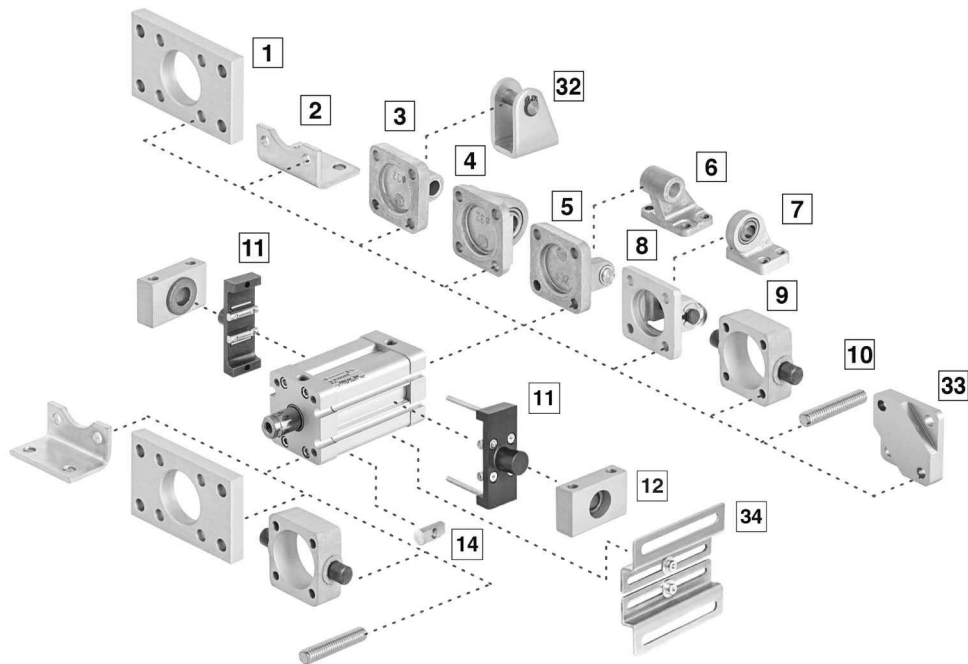
This options selector explains only the cylinder variants.

Additional variants/options can not be derived from.

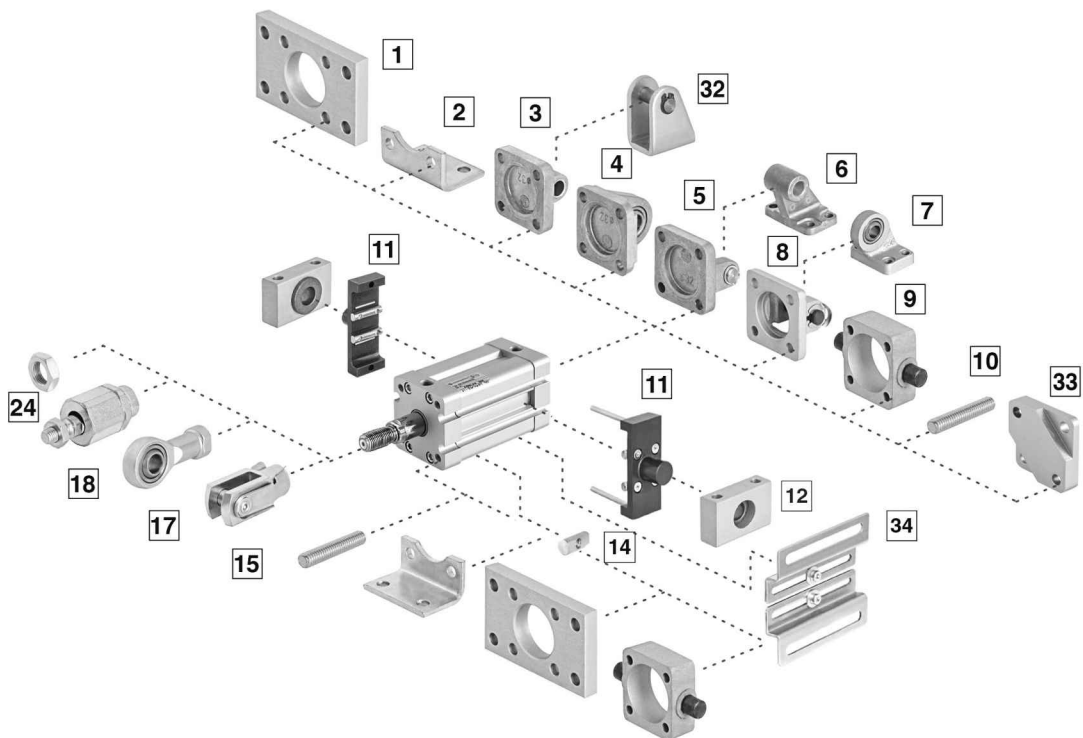
★★A/192★★/★★/★★

| Strokes (mm)                       | Substitute              |
|------------------------------------|-------------------------|
| ø 20 and 25                        | 5 < 200                 |
| ø 32 and 40                        | 5 < 300                 |
| ø 50 and 63                        | 10 < 400                |
| ø 80 to 125                        | 15 < 500                |
| Piston rod thread                  | Substitute              |
| Female                             | X                       |
| Male                               | None                    |
| Variants (magnetic piston)         | Substitute              |
| Standard                           | M                       |
| Double ended piston rod            | JM                      |
| Non-rotating piston rod (internal) | N2                      |
| Guiding                            | N4                      |
| Special wiper/seal                 | W2                      |
| Locking unit                       | L4                      |
| External guiding                   | N6                      |
| Extended piston rod                | MU                      |
| RA/192**/MU*/**/*                  |                         |
|                                    | → Extension (mm)        |
| Low friction                       | X4                      |
| Tandem cylinder                    | TM                      |
| Multi-position cylinder            | SM                      |
| RA/192**/SM*/**/*                  |                         |
|                                    | → Rear cylinder stroke  |
|                                    | → Front cylinder stroke |

## Series RA/192000/MX



## Series RA/192000/M



## Mountings

| Model | A                                                                                 | B, G                                                                              | C                                                                                 | D                                                                                 | D2                                                                                 | FH                                                                                  | L2                                                                                  |
|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|       |  |  |  |  |  |  |  |
|       | <b>10</b>                                                                         | <b>1</b>                                                                          | <b>2</b>                                                                          | <b>5</b>                                                                          | <b>8</b>                                                                           | <b>9</b>                                                                            | <b>32</b>                                                                           |
| ø     | Page 11                                                                           | Page 11                                                                           | Page 11                                                                           | Page 12                                                                           | Page 12                                                                            | Page 12                                                                             | Page 13                                                                             |
| 20    | —                                                                                 | QA/192020/22                                                                      | QM/192020/21                                                                      | —                                                                                 | —                                                                                  | —                                                                                   | QM/8020/44                                                                          |
| 25    | —                                                                                 | QA/192025/22                                                                      | QM/192025/21                                                                      | —                                                                                 | —                                                                                  | —                                                                                   | QM/8020/44                                                                          |
| 32    | QM/8032/35                                                                        | QA/8032/22                                                                        | QA/192032/21                                                                      | QA/8032/23                                                                        | QA/8032/42                                                                         | QA/8032/34                                                                          | —                                                                                   |
| 40    | QM/8032/35                                                                        | QA/8040/22                                                                        | QA/192040/21                                                                      | QA/8040/23                                                                        | QA/8040/42                                                                         | QA/8040/34                                                                          | —                                                                                   |
| 50    | QM/8050/35                                                                        | QA/8050/22                                                                        | QA/192050/21                                                                      | QA/8050/23                                                                        | QA/8050/42                                                                         | QA/8050/34                                                                          | —                                                                                   |
| 63    | QM/8050/35                                                                        | QA/8063/22                                                                        | QA/192063/21                                                                      | QA/8063/23                                                                        | QA/8063/42                                                                         | QA/8063/34                                                                          | —                                                                                   |
| 80    | QM/8080/35                                                                        | QA/8080/22                                                                        | QA/192080/21                                                                      | QA/8080/23                                                                        | QA/8080/42                                                                         | QA/8080/34                                                                          | —                                                                                   |
| 100   | QM/8080/35                                                                        | QA/8100/22                                                                        | QA/192100/21                                                                      | QA/8100/23                                                                        | QA/8100/42                                                                         | QA/8100/34                                                                          | —                                                                                   |
| 125   | QM/8125/35                                                                        | QM/8125/22                                                                        | QM/8125/21                                                                        | QM/8125/23                                                                        | QA/8125/42                                                                         | QA/8125/34                                                                          | —                                                                                   |
| Model | R                                                                                 | S                                                                                 | SW                                                                                | UH                                                                                | UR                                                                                 | US                                                                                  | Assembly Kit                                                                        |
|       |  |  |  |  |  |  |  |
|       | <b>3</b>                                                                          | <b>12</b>                                                                         | <b>6</b>                                                                          | <b>11</b>                                                                         | <b>4</b>                                                                           | <b>7</b>                                                                            | <b>33</b>                                                                           |
| ø     | Page 12                                                                           | Page 13                                                                           | Page 14                                                                           | Page 13                                                                           | Page 13                                                                            | Page 14                                                                             | Page 15                                                                             |
| 20    | QM/192020/27                                                                      | —                                                                                 | —                                                                                 | —                                                                                 | —                                                                                  | —                                                                                   | QA/192020/55                                                                        |
| 25    | QM/192025/27                                                                      | —                                                                                 | —                                                                                 | —                                                                                 | —                                                                                  | —                                                                                   | QA/192025/55                                                                        |
| 32    | QA/8032/27                                                                        | QA/8032/41                                                                        | M/P19493                                                                          | PQA/182032/40                                                                     | QA/8032/33                                                                         | M/P40310                                                                            | QA/192032/55                                                                        |
| 40    | QA/8040/27                                                                        | QA/8040/41                                                                        | M/P19494                                                                          | PQA/182040/40                                                                     | QA/8040/33                                                                         | M/P40311                                                                            | QA/192040/55                                                                        |
| 50    | QA/8050/27                                                                        | QA/8040/41                                                                        | M/P19495                                                                          | PQA/182050/40                                                                     | QA/8050/33                                                                         | M/P40312                                                                            | QA/192050/55                                                                        |
| 63    | QA/8063/27                                                                        | QA/8063/41                                                                        | M/P19496                                                                          | PQA/182063/40                                                                     | QA/8063/33                                                                         | M/P40313                                                                            | QA/192063/55                                                                        |
| 80    | QA/8080/27                                                                        | QA/8063/41                                                                        | M/P19497                                                                          | PQA/182080/40                                                                     | QA/8080/33                                                                         | M/P40314                                                                            | QA/192080/55                                                                        |
| 100   | QA/8100/27                                                                        | QA/8100/41                                                                        | M/P19498                                                                          | PQA/182100/40                                                                     | QA/8100/33                                                                         | M/P40315                                                                            | QA/192100/55                                                                        |
| 125   | QM/8125/27                                                                        | QA/8100/41                                                                        | M/P19499                                                                          | PQA/182125/40                                                                     | QM/8125/33                                                                         | M/P71355                                                                            | QA/192125/55                                                                        |

## For cylinders with male piston rod thread

## Accessories

| Model | AK                                                                                  | F                                                                                   | N2                                                                                  | UF                                                                                  | Groove cover                                                                        | Magnetically operated switches                                                       | Groove key                                                                            | Valve mounting kit                                                                    |
|-------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|       |  |  |  |  |  |  |  |  |
|       | <b>18</b>                                                                           | <b>15</b>                                                                           | <b>24</b>                                                                           | <b>17</b>                                                                           |                                                                                     |                                                                                      | <b>14</b>                                                                             | <b>34</b>                                                                             |
| ø     | Page 11                                                                             | Page 12                                                                             | Page 13                                                                             | Page 12                                                                             | Page 15                                                                             | Page 16 & 17                                                                         | Page 15                                                                               | Page 15                                                                               |
| 20    | QM/8020/38                                                                          | QM/8020/25                                                                          | M/P1501/60                                                                          | QM/8020/32                                                                          | M/P72725/1000                                                                       |                                                                                      | M/P72816                                                                              | —                                                                                     |
| 25    | QM/8020/38                                                                          | QM/8020/25                                                                          | M/P1501/60                                                                          | QM/8020/32                                                                          | M/P72725/1000                                                                       |                                                                                      | M/P72816                                                                              | —                                                                                     |
| 32    | QM/8025/38                                                                          | QM/8025/25                                                                          | M/P1501/89                                                                          | QM/8025/32                                                                          | M/P72725/1000                                                                       |                                                                                      | M/P72816                                                                              | —                                                                                     |
| 40    | QM/8025/38                                                                          | QM/8025/25                                                                          | M/P1501/89                                                                          | QM/8025/32                                                                          | M/P72725/1000                                                                       |                                                                                      | M/P72816                                                                              | —                                                                                     |
| 50    | QM/8040/38                                                                          | QM/8040/25                                                                          | M/P1501/90                                                                          | QM/8040/32                                                                          | M/P72725/1000                                                                       |                                                                                      | M/P72816                                                                              | QA/180050/22/54                                                                       |
| 63    | QM/8040/38                                                                          | QM/8040/25                                                                          | M/P1501/90                                                                          | QM/8040/32                                                                          | M/P72725/1000                                                                       |                                                                                      | M/P72816                                                                              | QA/180050/22/54                                                                       |
| 80    | QM/8050/38                                                                          | QM/8050/25                                                                          | M/P1501/91                                                                          | QM/8050/32                                                                          | M/P72725/1000                                                                       |                                                                                      | M/P72816                                                                              | QA/180080/22/54                                                                       |
| 100   | QM/8050/38                                                                          | QM/8050/25                                                                          | M/P1501/91                                                                          | QM/8050/32                                                                          | M/P72725/1000                                                                       |                                                                                      | M/P72816                                                                              | QA/180080/22/54                                                                       |
| 125   | QM/8125/38                                                                          | QM/8125/25                                                                          | M/P1501/105                                                                         | QM/8125/32                                                                          | M/P72725/1000                                                                       |                                                                                      | M/P72816                                                                              | QA/180080/22/54                                                                       |

| Pos. | Style | Standard                                                                                                    | Pos. | Style      | Standard                                                                                               | Pos. | Style              | Standard                                                            |
|------|-------|-------------------------------------------------------------------------------------------------------------|------|------------|--------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------------------------------------------|
| 1    | B, G  | Clear anodised aluminium                                                                                    | 7    | US         | Coated cast iron<br>Inner ring: steel, Outer ring: brass                                               | 15   | F                  | Galvanized steel, Bolt: galvanized steel, Circlip: Galvanized steel |
| 2    | C     | Coated steel (ø 20 ... 125 mm)                                                                              | 8    | D2         | Die-cast aluminium (ø 32 ... 125 mm)<br>Bolt: stainless steel (martensitic), Circlip: galvanized steel | 17   | UF                 | Galvanized steel, Inner ring: steel, Outer ring: brass              |
| 3    | R     | Die-cast aluminium (ø 20 ... 100 mm)<br>Coated cast iron (ø 125 mm)                                         | 9    | FH         | Coated cast iron                                                                                       | 18   | AK                 | Galvanized steel                                                    |
| 4    | UR    | Die-cast aluminium (ø 32 ... 100 mm)<br>Coated cast iron (ø 125 mm)<br>Inner ring: steel, Outer ring: brass | 10   | A          | Galvanized steel                                                                                       | 24   | N2                 | Galvanized steel                                                    |
| 5    | D     | Die-cast aluminium (ø 32 ... 125 mm)<br>Bolt: galvanized steel (martensitic)<br>Circlip: galvanized steel   | 11   | UH         | Anodised aluminium                                                                                     | 32   | L2                 | Galvanized steel                                                    |
| 6    | SW    | Die-cast aluminium (ø 32 ... 100 mm)<br>Coated cast iron (ø 125 mm)                                         | 14   | Groove key | Steel                                                                                                  | 33   |                    | Anodised aluminium                                                  |
|      |       |                                                                                                             |      |            |                                                                                                        | 34   | Valve mounting kit | Galvanized steel                                                    |

**Spares kit for profile barrel**

(wearing parts to be replaced are: piston seals, barrel seals, damping seals and piston rod seals as well as the wear ring)



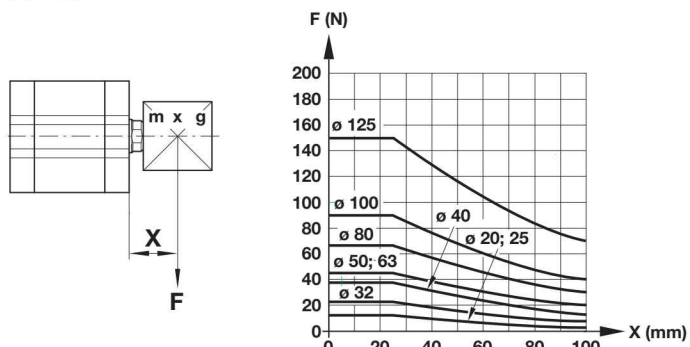
| Spares kit        |                          |          | Option                                         |                 |                 |                 |                 |
|-------------------|--------------------------|----------|------------------------------------------------|-----------------|-----------------|-----------------|-----------------|
| Piston rod thread | Male thread              |          | M / MU / JM / L4 / N4 / N6                     | W2              | N2              | X4              | TM / SM         |
|                   | Female thread            |          | MX / MUX / JMX / L4X                           | W2X             | N2X             | X4X             | TMX / SMX       |
| Standard          | <b>Model</b>             | <b>ø</b> | <b>Standard temperature (-5 °C ... +80 °C)</b> |                 |                 |                 |                 |
|                   | RA/192***<br>SA/192***   | 020      | QM/192020/00                                   | QM/192020/W2/00 | QM/192020/N2/00 | -               | 2x QM/192020/00 |
|                   |                          | 025      | QM/192025/00                                   | QM/192025/W2/00 | QM/192025/N2/00 | -               | 2x QM/192025/00 |
|                   |                          | 032      | QM/192032/00                                   | -               | QM/192032/N2/00 | QM/192032/X4/00 | 2x QM/192032/00 |
|                   |                          | 040      | QM/192040/00                                   | -               | QM/192040/N2/00 | QM/192040/X4/00 | 2x QM/192040/00 |
|                   |                          | 050      | QM/192050/00                                   | -               | QM/192050/N2/00 | QM/192050/X4/00 | 2x QM/192050/00 |
|                   |                          | 063      | QM/192063/00                                   | -               | QM/192063/N2/00 | QM/192063/X4/00 | 2x QM/192063/00 |
|                   |                          | 080      | QM/192080/00                                   | -               | QM/192080/N2/00 | QM/192080/X4/00 | 2x QM/192080/00 |
|                   |                          | 100      | QM/192100/00                                   | -               | QM/192100/N2/00 | QM/192100/X4/00 | 2x QM/192100/00 |
|                   |                          | 125      | QM/192125/00                                   | -               | -               | -               | 2x QM/192125/00 |
|                   | <b>Model</b>             | <b>ø</b> | <b>High temperature (0 °C ... +150 °C)</b>     |                 |                 |                 |                 |
| Special option    | TRA/192***<br>TSA/192*** | 020      | TQM/192020/00                                  | -               | -               | -               | -               |
|                   |                          | 025      | TQM/192025/00                                  | -               | -               | -               | -               |
|                   |                          | 032      | TQM/192032/00                                  | -               | -               | -               | -               |
|                   |                          | 040      | TQM/192040/00                                  | -               | -               | -               | -               |
|                   |                          | 050      | TQM/192050/00                                  | -               | -               | -               | -               |
|                   |                          | 063      | TQM/192063/00                                  | -               | -               | -               | -               |
|                   |                          | 080      | TQM/192080/00                                  | -               | -               | -               | -               |
|                   |                          | 100      | TQM/192100/00                                  | -               | -               | -               | -               |
|                   |                          | 125      | -                                              | -               | -               | -               | -               |

\*\*\* = Stroke

### RA/192000/M. – Standard cylinder

### RA/192000/N2. – Cylinder with non-rotating piston rod

#### Side load

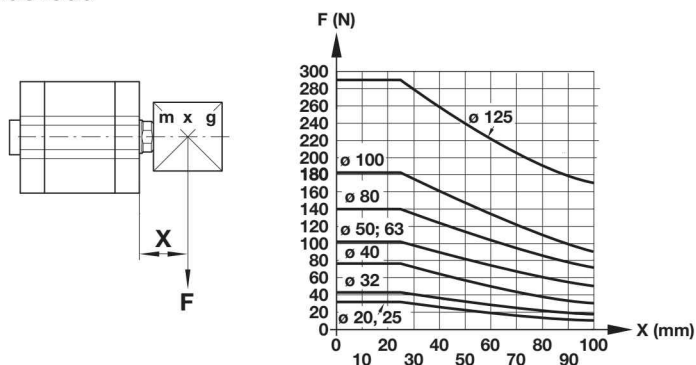


Special variant: TRA/192000  
F x 0,5

| ø   | Torque max. (Nm) | Model                      |
|-----|------------------|----------------------------|
| 20  | 0,15             | RA/192020/M. RA/192020/N2. |
| 25  | 0,25             | RA/192025/M. RA/192025/N2. |
| 32  | 0,4              | RA/192032/M. RA/192032/N2. |
| 40  | 0,75             | RA/192040/M. RA/192040/N2. |
| 50  | 1,5              | RA/192050/M. RA/192050/N2. |
| 63  | 1,5              | RA/192063/M. RA/192063/N2. |
| 80  | 2,5              | RA/192080/M. RA/192080/N2. |
| 100 | 2,5              | RA/192100/M. RA/192100/N2. |

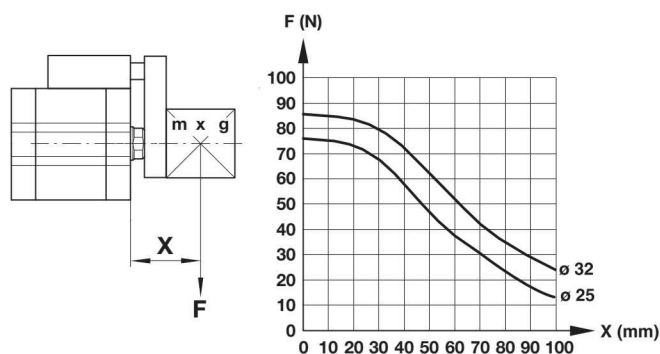
### RA/192000/JM – Cylinder with double ended piston rod

#### Side load



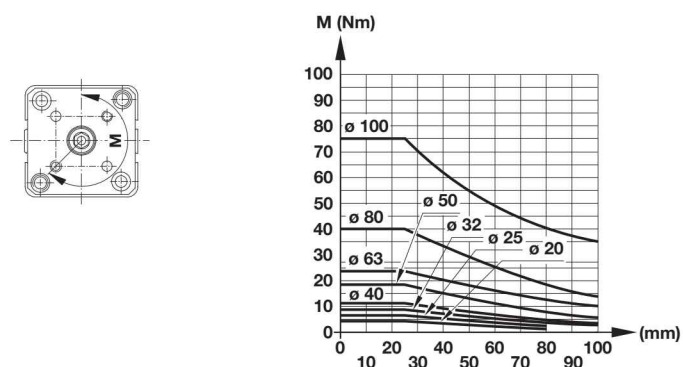
### RA/192000/N6 – Cylinder with external guiding

#### Side load

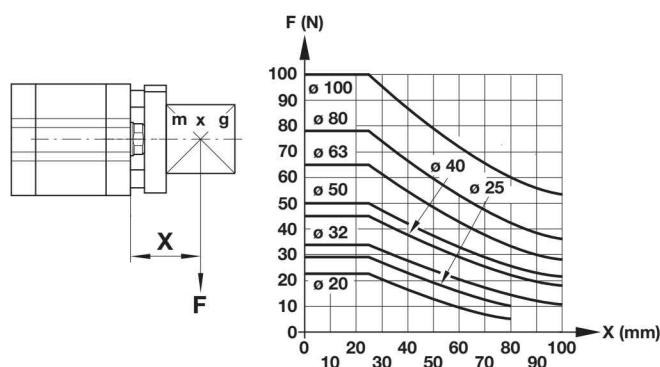


### RA/192000/N4 – Cylinder with guiding

#### Torque moment

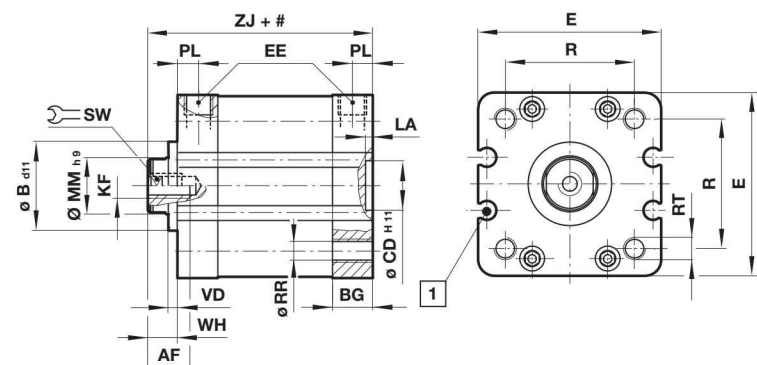


#### Side load



## Dimensions

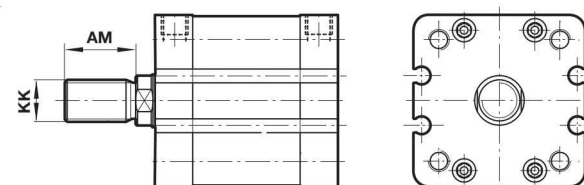
### RA/192000/MX – Standard cylinder With female piston rod thread



## Dimensions

### RA/192000/M – Standard cylinder With male piston rod thread

Dimensions in mm  
Projection/First angle



# Stroke

1 M/50 switches can be mounted flush with the profile

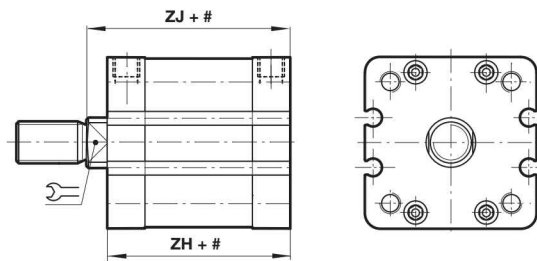
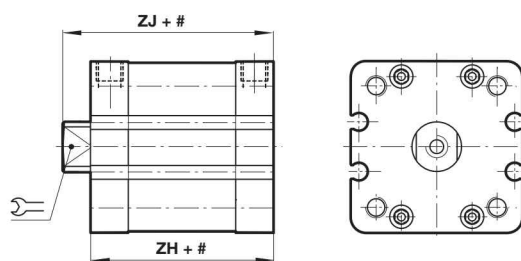
| ø   | AF   | AM   | ø B d11 | BG                                                                                     | ø CD H11 | □ E  | EE    | KF         | KK       | LA          | ø MM h9 | PL             |
|-----|------|------|---------|----------------------------------------------------------------------------------------|----------|------|-------|------------|----------|-------------|---------|----------------|
| 20  | 10   | 16   | —       | 12                                                                                     | 10       | 37   | M 5   | M6         | M8x1,25  | 2,5         | 10      | 7              |
| 25  | 10   | 16   | —       | 13                                                                                     | 10       | 41   | M 5   | M6         | M8x1,25  | 2,5         | 10      | 7              |
| 32  | 12   | 19   | —       | 14,5                                                                                   | 14       | 48   | G 1/8 | M8         | M10x1,25 | 2,5         | 12      | 7,5            |
| 40  | 12   | 19   | —       | 14,5                                                                                   | 14       | 54,5 | G 1/8 | M8         | M10x1,25 | 2,5         | 16      | 7,5            |
| 50  | 16   | 22   | —       | 14                                                                                     | 18       | 66   | G 1/8 | M10        | M12x1,25 | 2,5         | 20      | 7,5            |
| 63  | 16   | 22   | —       | 14                                                                                     | 18       | 76   | G 1/8 | M10        | M12x1,25 | 2,5         | 20      | 7,5            |
| 80  | 20   | 28   | —       | 15,5                                                                                   | 23       | 96   | G 1/8 | M12        | M16x1,5  | 3           | 25      | 7,5            |
| 100 | 20   | 28   | —       | 21,5                                                                                   | 26       | 116  | G 1/8 | M12        | M16x1,5  | 3           | 25      | 10,5           |
| 125 | 30   | 54   | 60      | 20,5                                                                                   | 28       | 142  | G 1/4 | M20        | M27x2    | 3           | 32      | 10,5           |
| ø   | □ R  | ø RR | RT      |  SW | VD       | WH   | ZJ    | kg at 0 mm |          | kg per 5 mm |         | Model          |
| 20  | 22   | 4,3  | M5      | 8                                                                                      | —        | 6    | 43    | 0,12       |          | 0,01        |         | RA/192020/M./* |
| 25  | 26   | 4,3  | M5      | 8                                                                                      | —        | 6    | 45    | 0,15       |          | 0,01        |         | RA/192025/M./* |
| 32  | 32,5 | 5,3  | M6      | 10                                                                                     | —        | 7    | 51    | 0,23       |          | 0,02        |         | RA/192032/M./* |
| 40  | 38   | 5,3  | M6      | 13                                                                                     | —        | 7    | 52    | 0,30       |          | 0,02        |         | RA/192040/M./* |
| 50  | 46,5 | 6,8  | M8      | 17                                                                                     | —        | 8    | 53    | 0,46       |          | 0,03        |         | RA/192050/M./* |
| 63  | 56,5 | 6,8  | M8      | 17                                                                                     | —        | 8    | 57    | 0,70       |          | 0,03        |         | RA/192063/M./* |
| 80  | 72   | 8,6  | M10     | 22                                                                                     | —        | 10   | 64    | 1,23       |          | 0,04        |         | RA/192080/M./* |
| 100 | 89   | 8,6  | M10     | 22                                                                                     | —        | 10   | 77    | 2,20       |          | 0,05        |         | RA/192100/M./* |
| 125 | 110  | 10,6 | M12     | 27                                                                                     | 4        | 18   | 89    | 3,60       |          | 0,07        |         | RA/192125/M./* |

\* Please insert standard stroke length.

## Cylinder variants

### RA/192000/N2X – Cylinder with non-rotating piston rod With female piston rod thread

### RA/192000/N2 – Cylinder with non-rotating piston rod With male piston rod thread



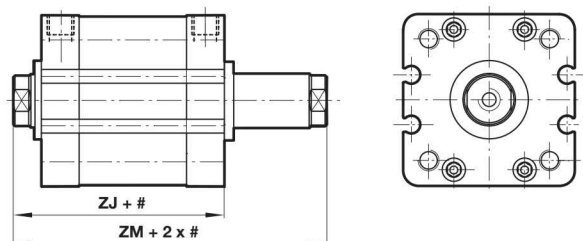
# Stroke

| ø   | SW | ZH | ZJ | kg at 0 mm | kg per 5 mm | Model           |
|-----|----|----|----|------------|-------------|-----------------|
| 20  | 8  | 47 | 53 | 0,12       | 0,01        | RA/192020/N2./* |
| 25  | 8  | 49 | 55 | 0,15       | 0,01        | RA/192025/N2./* |
| 32  | 10 | 54 | 61 | 0,23       | 0,02        | RA/192032/N2./* |
| 40  | 13 | 55 | 62 | 0,30       | 0,02        | RA/192040/N2./* |
| 50  | 16 | 55 | 63 | 0,46       | 0,03        | RA/192050/N2./* |
| 63  | 16 | 59 | 67 | 0,70       | 0,03        | RA/192063/N2./* |
| 80  | 21 | 64 | 74 | 1,23       | 0,04        | RA/192080/N2./* |
| 100 | 21 | 77 | 87 | 2,20       | 0,05        | RA/192100/N2./* |

Note: The basic length of the RA/192000/N2 version is slightly longer than the standard.

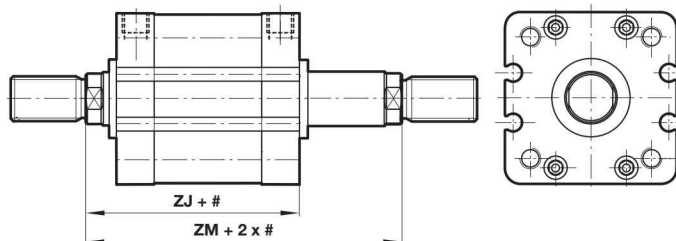
**RA/192000/JMX**

**Cylinder with double ended piston rod  
With female piston rod thread**


**RA/192000/JM**

**Cylinder with double ended piston rod  
With male piston rod thread**

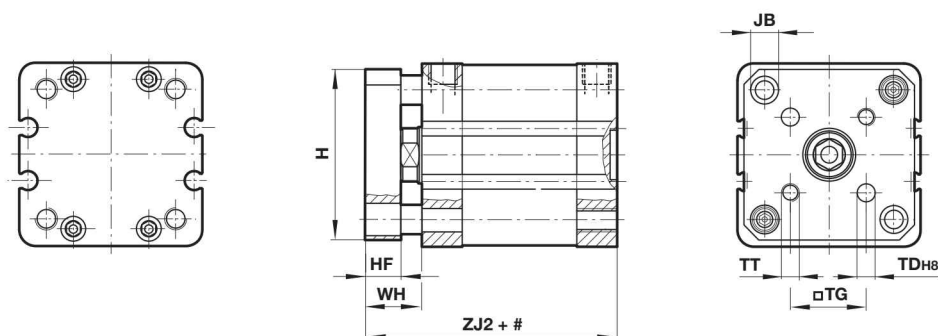
Dimensions in mm  
Projection/First angle



| ø   | ZJ | ZM  | kg at 0 mm | kg per 5 mm | Model           |
|-----|----|-----|------------|-------------|-----------------|
| 20  | 43 | 49  | 0,15       | 0,01        | RA/192020/JM./* |
| 25  | 45 | 51  | 0,18       | 0,01        | RA/192025/JM./* |
| 32  | 51 | 58  | 0,28       | 0,02        | RA/192032/JM./* |
| 40  | 52 | 59  | 0,35       | 0,02        | RA/192040/JM./* |
| 50  | 53 | 61  | 0,52       | 0,03        | RA/192050/JM./* |
| 63  | 57 | 65  | 0,76       | 0,03        | RA/192063/JM./* |
| 80  | 64 | 74  | 1,30       | 0,04        | RA/192080/JM./* |
| 100 | 77 | 87  | 2,30       | 0,05        | RA/192100/JM./* |
| 125 | 89 | 107 | 3,75       | 0,07        | RA/192125/JM./* |

# Stroke

\* Please insert standard stroke length.

**RA/192000/N4 – Cylinder with guiding**


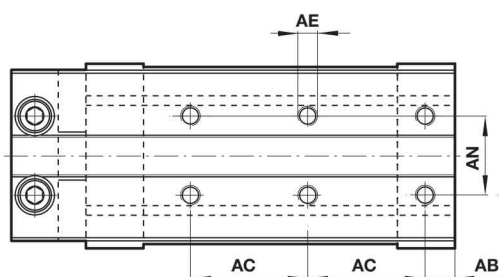
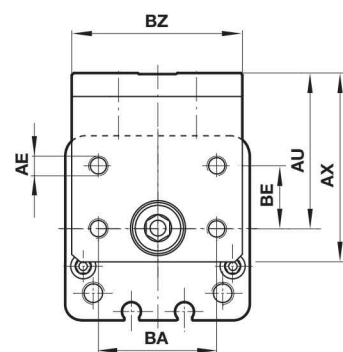
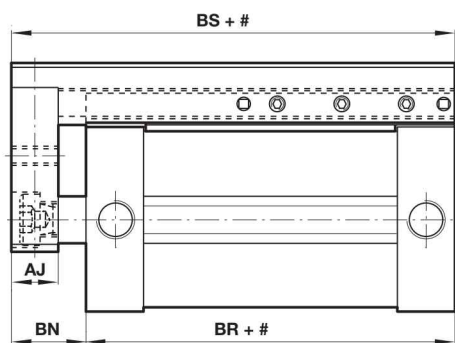
# Stroke

| ø   | H    | HF | ø JB | ø TDH8 | ... TG | TT  | WH | ZJ2 | kg at 0 mm | kg per 5 mm | Model           |
|-----|------|----|------|--------|--------|-----|----|-----|------------|-------------|-----------------|
| 20  | 34   | 8  | 7,5  | 4      | 12     | M4  | 14 | 51  | 0,17       | 0,01        | RA/192020/N4./* |
| 25  | 38   | 8  | 7,5  | 5      | 15,6   | M5  | 14 | 53  | 0,23       | 0,01        | RA/192025/N4./* |
| 32  | 45   | 10 | 9    | 5      | 19,8   | M5  | 17 | 61  | 0,33       | 0,02        | RA/192032/N4./* |
| 40  | 51   | 10 | 9    | 5      | 23,3   | M5  | 17 | 62  | 0,45       | 0,02        | RA/192040/N4./* |
| 50  | 62,5 | 12 | 11   | 6      | 29,7   | M6  | 20 | 65  | 0,65       | 0,03        | RA/192050/N4./* |
| 63  | 72   | 12 | 11   | 6      | 35,4   | M6  | 20 | 69  | 0,95       | 0,03        | RA/192063/N4./* |
| 80  | 92   | 15 | 15   | 8      | 46     | M8  | 25 | 79  | 1,70       | 0,04        | RA/192080/N4./* |
| 100 | 112  | 15 | 15   | 10     | 56,5   | M10 | 25 | 92  | 3,10       | 0,05        | RA/192100/N4./* |

\* Please insert standard stroke length.

## RA/192000/N6 – Cylinder with external guiding

Dimensions in mm  
Projection/First angle

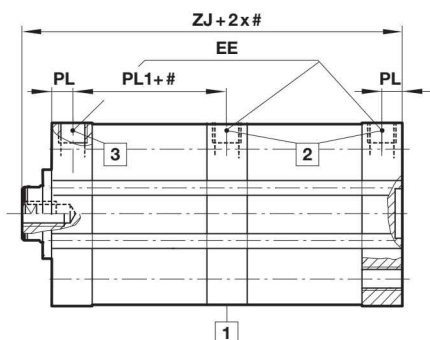


# Standard strokes 25, 50, 75 and 100 mm only

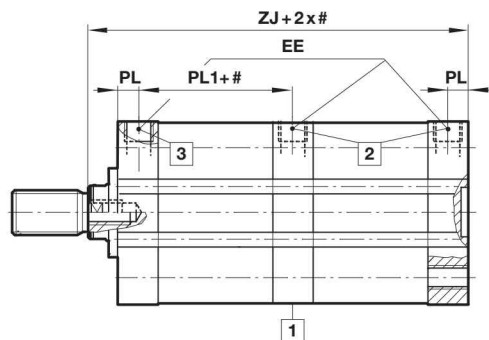
| ø  | AB  | AC | AE | AJ | AN | AU   | AX   | BA | BE | BN | BR | BS | BZ   | at 0 mm | per 5 mm | Model          |
|----|-----|----|----|----|----|------|------|----|----|----|----|----|------|---------|----------|----------------|
| 25 | 7,5 | 30 | M5 | 12 | 20 | 37,5 | 44   | 30 | 16 | 18 | 39 | 57 | 43,5 | 0,31 kg | 0,09 kg  | RA/192025/N6/* |
| 32 | 7,5 | 30 | M5 | 12 | 20 | 40,5 | 48,5 | 30 | 16 | 19 | 44 | 63 | 43,5 | 0,44 kg | 0,12 kg  | RA/192032/N6/* |

\* Please insert standard stroke length.

## RA/192000/TMX – Tandem cylinder with female piston rod thread



## RA/192000/TM – Tandem cylinder with male piston rod thread



| ø   | EE    | PL   | PL1  | ZJ  | kg at 0 mm | kg per 5 mm | Model           |
|-----|-------|------|------|-----|------------|-------------|-----------------|
| 20  | M5    | 7    | 25,5 | 68  | 0,21       | 0,01        | RA/192020/TM./* |
| 25  | M5    | 7    | 26,5 | 71  | 0,26       | 0,01        | RA/192025/TM./* |
| 32  | G 1/8 | 7,5  | 30   | 81  | 0,39       | 0,02        | RA/192032/TM./* |
| 40  | G 1/8 | 7,5  | 31   | 83  | 0,51       | 0,02        | RA/192040/TM./* |
| 50  | G 1/8 | 7,5  | 31   | 85  | 0,78       | 0,03        | RA/192050/TM./* |
| 63  | G 1/8 | 7,5  | 36   | 94  | 1,21       | 0,03        | RA/192063/TM./* |
| 80  | G 1/8 | 7,5  | 40   | 104 | 2,11       | 0,04        | RA/192080/TM./* |
| 100 | G 1/8 | 10,5 | 45,5 | 122 | 3,68       | 0,05        | RA/192100/TM./* |

\* Please insert standard stroke length.

# Stroke

1 Exhaust port

Note: Do not cover this area!

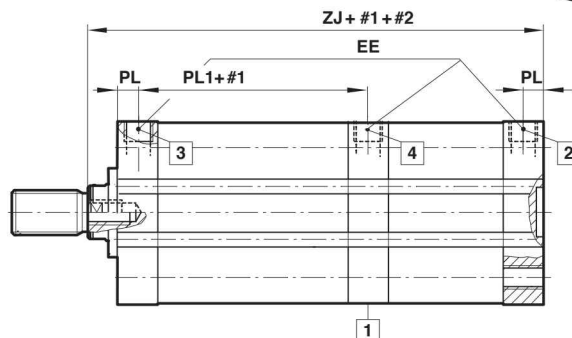
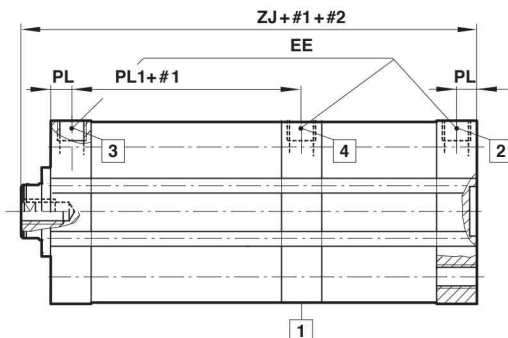
2 Pressure »outstroke«

3 Pressure »instroke«

### RA/192000/SMX – Multi position cylinder with female piston rod thread

### RA/192000/SM – Multi position cylinder with male piston rod thread

Dimensions in mm  
Projection/First angle



| ø   | EE    | PL   | PL1  | ZJ  | kg at 0 mm | kg per 5 mm | Model           |
|-----|-------|------|------|-----|------------|-------------|-----------------|
| 20  | M5    | 7    | 25,5 | 68  | 0,21       | 0,01        | RA/192020/SM./* |
| 25  | M5    | 7    | 26,5 | 71  | 0,26       | 0,01        | RA/192025/SM./* |
| 32  | G 1/8 | 7,5  | 30   | 81  | 0,39       | 0,02        | RA/192032/SM./* |
| 40  | G 1/8 | 7,5  | 31   | 83  | 0,51       | 0,02        | RA/192040/SM./* |
| 50  | G 1/8 | 7,5  | 31   | 85  | 0,78       | 0,03        | RA/192050/SM./* |
| 63  | G 1/8 | 7,5  | 36   | 94  | 1,21       | 0,03        | RA/192063/SM./* |
| 80  | G 1/8 | 7,5  | 40   | 104 | 2,11       | 0,04        | RA/192080/SM./* |
| 100 | G 1/8 | 10,5 | 45,5 | 122 | 3,68       | 0,05        | RA/192100/SM./* |

\* Please insert standard stroke length.

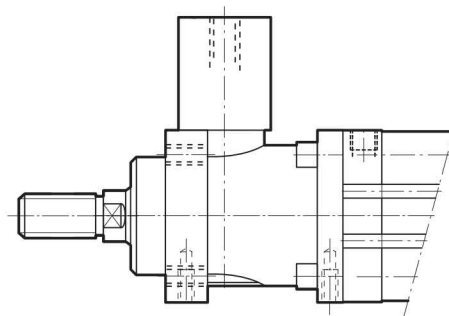
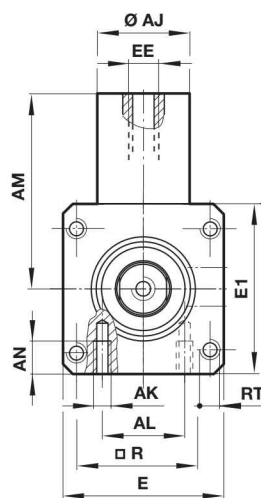
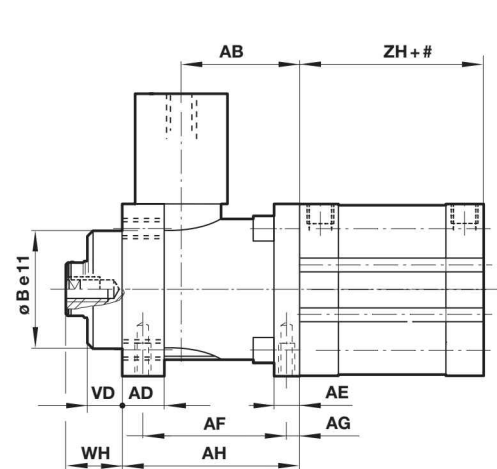
1 Exhaust port  
Note: Do not cover this area!

#1 Stroke front cylinder  
#2 Stroke rear cylinder  
Note: Stroke (#1) > stroke (#2)

2 Pressure »outstroke« rear cylinder  
3 Pressure »instroke«  
4 Pressure »outstroke« front cylinder

### RA/192000/L4X – Cylinder with locking unit female piston rod thread

### RA/192000/L4 – Cylinder with locking unit male piston rod thread



# Stroke

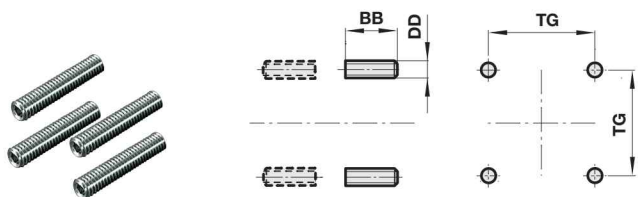
| ø   | AB    | AD   | AE   | AF | AG   | AH  | ø AJ          | AK  | AL         | AM   | AN          | Be11 | E               | E 1 |
|-----|-------|------|------|----|------|-----|---------------|-----|------------|------|-------------|------|-----------------|-----|
| 32  | 32    | 12   | 8    | 40 | 4,2  | 48  | 25            | M5  | 16         | 49   | 8           | 30   | 48              | 50  |
| 40  | 35,5  | 12   | 10   | 46 | 4,5  | 55  | 24            | M5  | 21         | 61,5 | 10          | 35   | 56              | 58  |
| 50  | 49    | 16   | 15   | 54 | 11,5 | 70  | 30            | M6  | 24         | 75   | 12          | 40   | 68              | 70  |
| 63  | 49    | 15   | 15   | 55 | 7,5  | 70  | 38            | M8  | 32         | 86   | 12          | 45   | 82              | 85  |
| 80  | 62    | 16   | 16   | 70 | 10   | 90  | 53            | M8  | 44         | 119  | 16          | 45   | 100             | 105 |
| 100 | 65    | 18   | 16   | 70 | 10   | 92  | 48            | M8  | 60         | 119  | 16          | 55   | 120             | 130 |
| 125 | 85    | 27   | 25   | 95 | 11   | 122 | 65            | M10 | 75         | 140  | 20          | 60   | 140             | 150 |
| ø   | EE    | R    | RT   | VD | WH   | ZH  | Locking force |     | kg at 0 mm |      | kg per 5 mm |      | Model           |     |
| 32  | M 5   | 32,5 | M 6  | 10 | 16   | 44  | 600 N         |     | 0,53       |      | 0,02        |      | RA/192032/L4./* |     |
| 40  | G 1/8 | 38   | M 6  | 10 | 18   | 45  | 1000 N        |     | 0,70       |      | 0,02        |      | RA/192040/L4./* |     |
| 50  | G 1/8 | 46,5 | M 8  | 12 | 22   | 45  | 1500 N        |     | 1,26       |      | 0,03        |      | RA/192050/L4./* |     |
| 63  | G 1/8 | 56,5 | M 8  | 12 | 20   | 49  | 2200 N        |     | 1,90       |      | 0,03        |      | RA/192063/L4./* |     |
| 80  | G 1/8 | 72   | M 10 | 20 | 33   | 54  | 5000 N        |     | 3,80       |      | 0,04        |      | RA/192080/L4./* |     |
| 100 | G 1/8 | 89   | M 10 | 23 | 38   | 67  | 5000 N        |     | 5,90       |      | 0,05        |      | RA/192100/L4./* |     |
| 125 | G 1/8 | 110  | M 12 | 32 | 65   | 71  | 7000 N        |     | 10,10      |      | 0,07        |      | RA/192125/L4./* |     |

\* Please insert standard stroke length.

## Mountings

### Front or rear stud mounting A

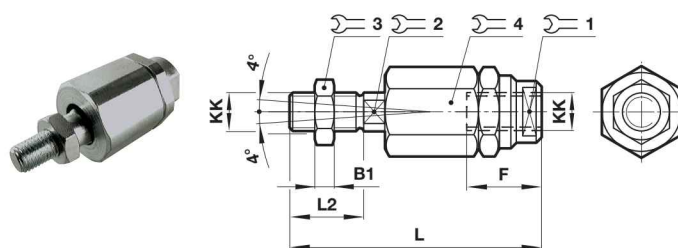
Conforms to ISO 15552, type MX1



| ø      | BB | DD  | TG        | kg   | Model (A)  |
|--------|----|-----|-----------|------|------------|
| 32/40  | 17 | M6  | 32,5/38   | 0,02 | QM/8032/35 |
| 50/63  | 23 | M8  | 46,5/56,5 | 0,05 | QM/8050/35 |
| 80/100 | 28 | M10 | 72/89     | 0,08 | QM/8080/35 |
| 125    | 34 | M12 | 110       | 0,14 | QM/8125/35 |

### Piston rod swivel AK

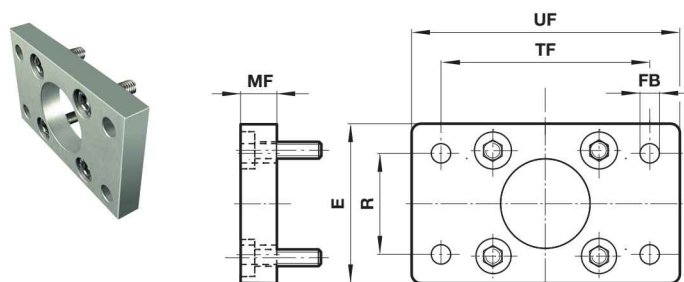
Dimensions in mm  
Projection/First angle



| ø      | KK       | B1   | F  | L   | L2 | 1  | 2  | 3  | 4  | kg   | Model (AK) |
|--------|----------|------|----|-----|----|----|----|----|----|------|------------|
| 20/25  | M8x1,25  | 4    | 18 | 55  | 16 | 10 | 7  | 13 | 17 | 0,05 | QM/8020/38 |
| 32/40  | M10x1,25 | 5    | 26 | 73  | 20 | 19 | 12 | 17 | 30 | 0,20 | QM/8025/38 |
| 50/63  | M12x1,25 | 6    | 26 | 77  | 24 | 19 | 12 | 19 | 30 | 0,20 | QM/8040/38 |
| 80/100 | M16x1,5  | 8    | 34 | 106 | 32 | 30 | 19 | 24 | 42 | 0,65 | QM/8050/38 |
| 125    | M27x2    | 13,5 | 40 | 147 | 54 | 40 | 24 | 41 | 55 | 1,70 | QM/8125/38 |

### Front flange B, Front flange G

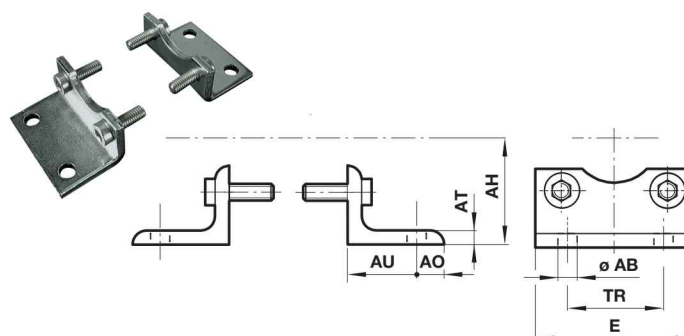
Conforms to ISO 21 287 (ø 20 and 25 mm) and  
ISO 15552 (ø 32 to 125 mm), type MF1 and MF2



| ø   | E   | ø FB | MF | R  | TF  | UF  | kg   | Model (B/G)  |
|-----|-----|------|----|----|-----|-----|------|--------------|
| 20  | 36  | 6,6  | 8  | –  | 55  | 70  | 0,16 | QA/192020/22 |
| 25  | 40  | 6,6  | 8  | –  | 60  | 76  | 0,2  | QA/192025/22 |
| 32  | 50  | 7    | 10 | 32 | 64  | 80  | 0,25 | QA/8032/22   |
| 40  | 55  | 9    | 10 | 36 | 72  | 90  | 0,35 | QA/8040/22   |
| 50  | 65  | 9    | 12 | 45 | 90  | 110 | 0,7  | QA/8050/22   |
| 63  | 75  | 9    | 12 | 50 | 100 | 125 | 0,8  | QA/8063/22   |
| 80  | 100 | 12   | 16 | 63 | 126 | 154 | 1,35 | QA/8080/22   |
| 100 | 120 | 14   | 16 | 75 | 150 | 186 | 2,2  | QA/8100/22   |
| 125 | 140 | 16   | 20 | 90 | 180 | 224 | 2,7  | QM/8125/22   |

### Foot C

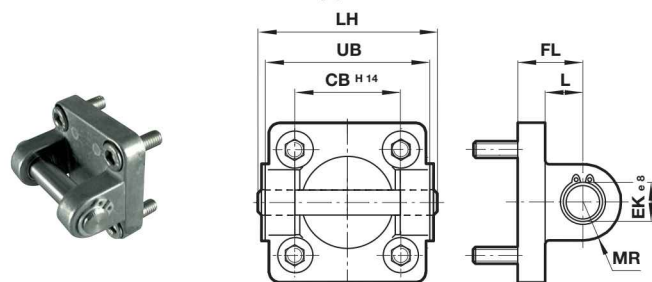
Conforms to ISO 15552, type MS1



| ø   | ø AB | AH   | AO | AT | AU | E    | TR | kg   | Model (C)    |
|-----|------|------|----|----|----|------|----|------|--------------|
| 20  | 7    | 27   | 6  | 4  | 16 | 36   | 22 | 0,03 | QM/192020/21 |
| 25  | 7    | 29   | 7  | 4  | 16 | 40   | 26 | 0,04 | QM/192025/21 |
| 32  | 7    | 33,5 | 7  | 4  | 16 | 48   | 32 | 0,15 | QA/192032/21 |
| 40  | 10   | 38   | 9  | 4  | 18 | 54,5 | 36 | 0,18 | QA/192040/21 |
| 50  | 10   | 45   | 9  | 5  | 21 | 66   | 45 | 0,3  | QA/192050/21 |
| 63  | 10   | 50   | 9  | 5  | 21 | 76   | 50 | 0,39 | QA/192063/21 |
| 80  | 12   | 63   | 11 | 6  | 26 | 96   | 63 | 0,8  | QA/192080/21 |
| 100 | 14,5 | 74   | 13 | 6  | 27 | 116  | 75 | 0,95 | QA/192100/21 |
| 125 | 16   | 90   | 20 | 9  | 45 | 140  | 90 | 2,4  | QM/8125/21   |

### Rear clevis D

Conforms to ISO 15552, type MP2

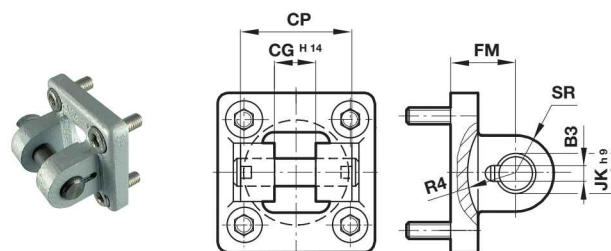


| ø   | CB H14 | ø EK e8 | FL | L  | LH  | MR | UB  | kg   | Model (D)  |
|-----|--------|---------|----|----|-----|----|-----|------|------------|
| 32  | 26     | 10      | 22 | 13 | 52  | 9  | 45  | 0,11 | QA/8032/23 |
| 40  | 28     | 12      | 25 | 16 | 60  | 12 | 52  | 0,16 | QA/8040/23 |
| 50  | 32     | 12      | 27 | 17 | 68  | 12 | 60  | 0,22 | QA/8050/23 |
| 63  | 40     | 16      | 32 | 22 | 79  | 15 | 70  | 0,34 | QA/8063/23 |
| 80  | 50     | 16      | 36 | 22 | 99  | 15 | 90  | 0,54 | QA/8080/23 |
| 100 | 60     | 20      | 41 | 27 | 119 | 20 | 110 | 0,90 | QA/8100/23 |
| 125 | 70     | 25      | 50 | 31 | 139 | 25 | 130 | 2,70 | QM/8125/23 |

### Rear clevis D2

Conforms to ISO 15552, type AB6

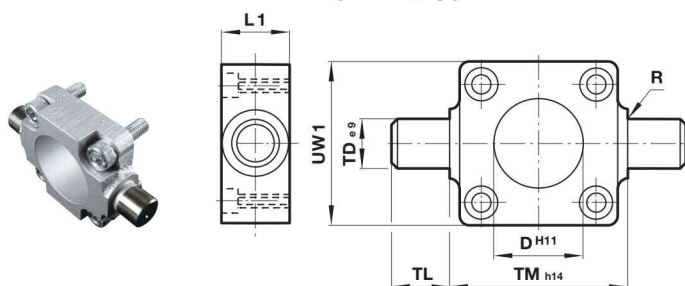
Dimensions in mm  
Projection/First angle



| ø   | B1 H14 | B2 | B3  | ø EK h9 | FL | R1   | R2 | kg   | Model (D2) |
|-----|--------|----|-----|---------|----|------|----|------|------------|
| 32  | 14     | 34 | 3,3 | 10      | 22 | 11   | 17 | 0,20 | QA/8032/42 |
| 40  | 16     | 40 | 4,3 | 12      | 25 | 12   | 20 | 0,23 | QA/8040/42 |
| 50  | 21     | 45 | 4,3 | 16      | 27 | 14,5 | 22 | 0,36 | QA/8050/42 |
| 63  | 21     | 51 | 4,3 | 16      | 32 | 18   | 25 | 0,55 | QA/8063/42 |
| 80  | 25     | 65 | 4,3 | 20      | 36 | 22   | 30 | 0,90 | QA/8080/42 |
| 100 | 25     | 75 | 4,3 | 20      | 41 | 22   | 32 | 1,45 | QA/8100/42 |
| 125 | 37     | 97 | 6,3 | 30      | 50 | 30   | 42 | 2,7  | QA/8125/42 |

### Front or rear detachable trunnion FH

Conforms to VDMA 24562 part 2, type MT 5/6

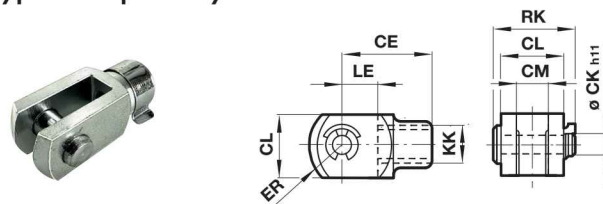


| ø   | ø D h11 | L1 | R   | ø TD e9 | TL | TM h14 | UW1 | kg   | Model (FH) |
|-----|---------|----|-----|---------|----|--------|-----|------|------------|
| 32  | 30      | 16 | 1   | 12      | 12 | 50     | 45  | 0,20 | QA/8032/34 |
| 40  | 35      | 20 | 1,6 | 16      | 16 | 63     | 55  | 0,38 | QA/8040/34 |
| 50  | 40      | 24 | 1,6 | 16      | 16 | 75     | 65  | 0,60 | QA/8050/34 |
| 63  | 45      | 24 | 1,6 | 20      | 20 | 90     | 75  | 1,10 | QA/8063/34 |
| 80  | 45      | 28 | 1,6 | 20      | 20 | 110    | 100 | 1,90 | QA/8080/34 |
| 100 | 55      | 38 | 2   | 25      | 25 | 132    | 120 | 3,50 | QA/8100/34 |
| 125 | 60      | 50 | 2   | 25      | 25 | 160    | 145 | 6,50 | QA/8125/34 |

### Piston rod clevis F

Conforms to DIN ISO 8140

For cylinders with male piston rod thread order nut,  
Type N2 separately

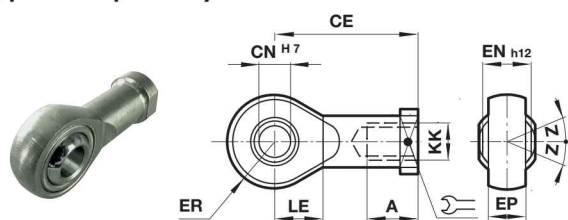


| ø      | KK       | CE  | ø CK h11 | CL | CM | ER | LE | RK   | kg   | Model (F)  |
|--------|----------|-----|----------|----|----|----|----|------|------|------------|
| 20/25  | M8x1,25  | 32  | 8        | 16 | 8  | 13 | 16 | 22   | 0,06 | QM/8020/25 |
| 32/40  | M10x1,25 | 40  | 10       | 20 | 10 | 16 | 20 | 28   | 0,09 | QM/8025/25 |
| 50/63  | M12x1,25 | 48  | 12       | 24 | 12 | 19 | 24 | 32   | 0,13 | QM/8040/25 |
| 80/100 | M16x1,5  | 64  | 16       | 32 | 16 | 25 | 32 | 41,5 | 0,33 | QM/8050/25 |
| 125    | M27x2    | 110 | 30       | 55 | 30 | 45 | 54 | 62   | 1,35 | QM/8125/25 |

### Universal piston rod eye UF

Conforms to DIN ISO 8139

For cylinders with male piston rod thread order nut, Type N2 separately



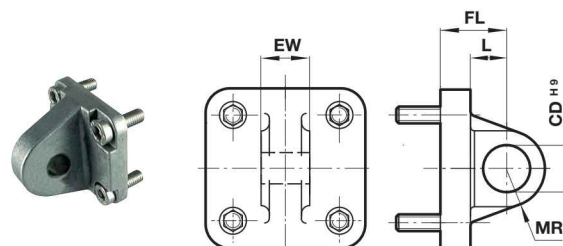
| ø      | Thread<br>KK | AX | CE  | ø<br>CN H7 | EN<br>-0,1 | ER | LE | Z   | kg   | Model (UF) |
|--------|--------------|----|-----|------------|------------|----|----|-----|------|------------|
| 20/25  | M8x1,25      | 16 | 36  | 8          | 12         | 11 | 13 | 5°  | 0,05 | QM/8020/32 |
| 32/40  | M10x1,25     | 20 | 43  | 10         | 14         | 14 | 15 | 13° | 0,09 | QM/8025/32 |
| 50/63  | M12x1,25     | 22 | 50  | 12         | 16         | 16 | 17 | 13° | 0,13 | QM/8040/32 |
| 80/100 | M16x1,5      | 28 | 64  | 16         | 21         | 21 | 22 | 15° | 0,33 | QM/8050/32 |
| 125    | M27x2        | 51 | 110 | 30         | 37         | 35 | 36 | 15° | 1,35 | QM/8125/32 |

### Rear eye R

Conforms to ISO 21 287 (ø 20 and

25 mm) and ISO 15552 (ø 32 to 125 mm), type MP4

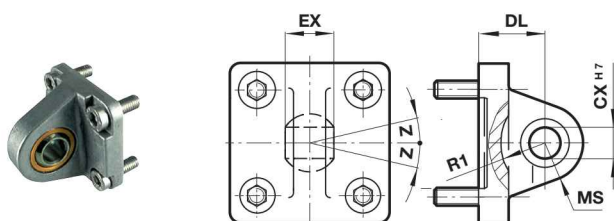
Dimensions in mm  
Projection/First angle



| ø   | øCDH9 | EW   | FL | L  | MR | kg   | Model (R)    |
|-----|-------|------|----|----|----|------|--------------|
| 20  | 8     | 15,8 | 20 | 14 | 8  | 0,02 | QM/192020/27 |
| 25  | 8     | 15,8 | 20 | 14 | 8  | 0,03 | QM/192025/27 |
| 32  | 10    | 25,8 | 22 | 13 | 9  | 0,09 | QA/8032/27   |
| 40  | 12    | 27,8 | 25 | 16 | 12 | 0,11 | QA/8040/27   |
| 50  | 12    | 31,7 | 27 | 17 | 12 | 0,17 | QA/8050/27   |
| 63  | 16    | 39,7 | 32 | 22 | 15 | 0,24 | QA/8063/27   |
| 80  | 16    | 49,7 | 36 | 22 | 15 | 0,37 | QA/8080/27   |
| 100 | 20    | 59,7 | 41 | 27 | 20 | 0,59 | QA/8100/27   |
| 125 | 25    | 69,7 | 50 | 33 | 25 | 3,2  | QM/8125/27   |

### Universal rear eye UR

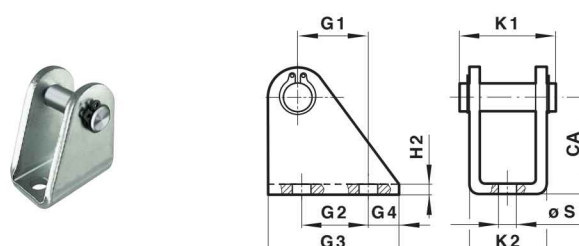
Conforms to ISO 15552, type MP6



| ø   | ø<br>CN H7 | EN | ER | FL | R    | Z   | kg   | Model (UR) |
|-----|------------|----|----|----|------|-----|------|------------|
| 32  | 10         | 14 | 16 | 22 | 14,5 | 13° | 0,15 | QA/8032/33 |
| 40  | 12         | 16 | 18 | 25 | 18   | 13° | 0,25 | QA/8040/33 |
| 50  | 16         | 21 | 21 | 27 | 19   | 15° | 0,40 | QA/8050/33 |
| 63  | 16         | 21 | 23 | 32 | 24   | 15° | 0,55 | QA/8063/33 |
| 80  | 20         | 25 | 28 | 36 | 24   | 15° | 0,90 | QA/8080/33 |
| 100 | 20         | 25 | 30 | 41 | 29   | 15° | 1,50 | QA/8100/33 |
| 125 | 30         | 37 | 40 | 50 | 36   | 15° | 2,70 | QM/8125/33 |

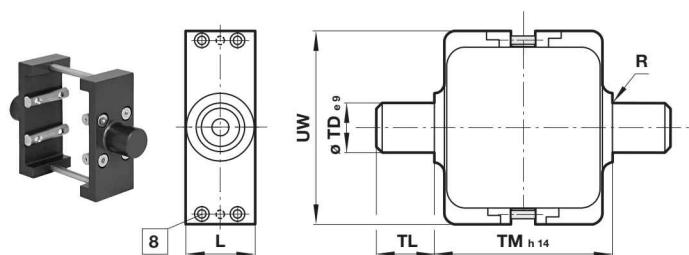
### Bracket hinge L2

For rear eye mounting R



| ø     | CA | G1 | G2 | G3 | G4 | H2 | K1   | K2 | ø S | kg   | Model(L2)  |
|-------|----|----|----|----|----|----|------|----|-----|------|------------|
| 20/25 | 30 | 16 | 20 | 32 | 6  | 4  | 29,5 | 24 | 6,6 | 0,08 | QM/8020/44 |

## Adjustable trunnion mounting UH Conforms to ISO 15552, type MT4

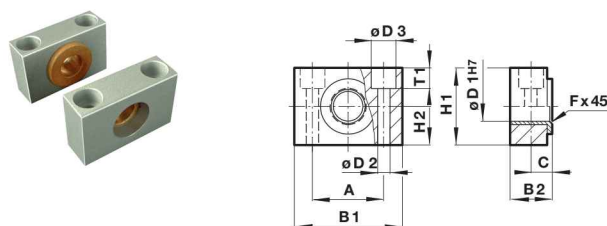


| ø   | L  | R   | ø De9 | TL | TM h14 | UW  | Torque max. (Nm) | kg   | Model (UH)    |
|-----|----|-----|-------|----|--------|-----|------------------|------|---------------|
| 32  | 25 | 1   | 12    | 12 | 50     | 58  | 2                | 0,16 | PQA/182032/40 |
| 40  | 28 | 1,6 | 16    | 16 | 63     | 65  | 3,5              | 0,35 | PQA/182040/40 |
| 50  | 28 | 1,6 | 16    | 16 | 75     | 80  | 3,5              | 0,65 | PQA/182050/40 |
| 63  | 36 | 1,6 | 20    | 20 | 90     | 96  | 5                | 0,85 | PQA/182063/40 |
| 80  | 36 | 1,6 | 20    | 20 | 110    | 116 | 6                | 1,20 | PQA/182080/40 |
| 100 | 48 | 2   | 25    | 25 | 132    | 140 | 6                | 2,30 | PQA/182100/40 |
| 125 | 48 | 2   | 25    | 25 | 160    | 163 | 6                | 3,30 | PQA/182125/40 |

Note: Style UH: It is most important that the locking screws which secure the mounting to the cylinder barrel are tightened to the torque figures shown in the table. For maximum energy input, consult our Technical Service.

## Trunnion support S Conforms to ISO 15552, type AT4

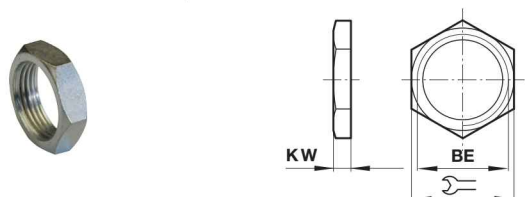
Dimensions in mm  
Projection/First angle



| ø       | A  | B1 | B2   | C    | ø D1h7 | ø D1 | ø D3 | F x 45° | H1 | H2   | T1  | kg   | Model (S)  |
|---------|----|----|------|------|--------|------|------|---------|----|------|-----|------|------------|
| 32      | 32 | 46 | 18   | 10,5 | 12     | 6,6  | 11   | 1       | 30 | 15,3 | 6,8 | 0,11 | QA/8032/41 |
| 40/50   | 36 | 55 | 21   | 12   | 16     | 9    | 15   | 1,6     | 36 | 18   | 9   | 0,16 | QA/8040/41 |
| 63/80   | 42 | 65 | 23   | 13   | 20     | 11   | 18   | 1,6     | 40 | 20   | 11  | 0,23 | QA/8063/41 |
| 100/125 | 50 | 75 | 28,5 | 16   | 25     | 14   | 20   | 2       | 50 | 25   | 13  | 0,42 | QA/8100/41 |

## Nut N2

For cylinder with male piston rod thread

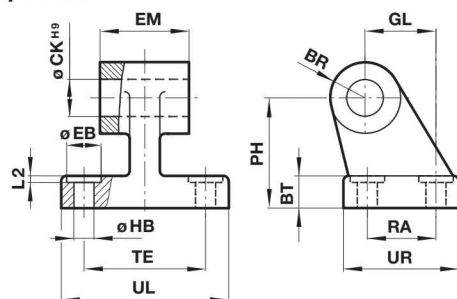


| ø      | BE       | KW   | ⌀  | kg   | Model(N2)   |
|--------|----------|------|----|------|-------------|
| 20/25  | M8x1,25  | 4    | 13 | 0,01 | M/P1501/60  |
| 32/40  | M10x1,25 | 5    | 17 | 0,01 | M/P1501/89  |
| 50/63  | M12x1,25 | 6    | 19 | 0,01 | M/P1501/90  |
| 80/100 | M16x1,5  | 8    | 24 | 0,02 | M/P1501/91  |
| 125    | M27x2    | 13,5 | 41 | 0,09 | M/P1501/105 |

## Wide hinge SW

Conforms to ISO 15552, type AB7

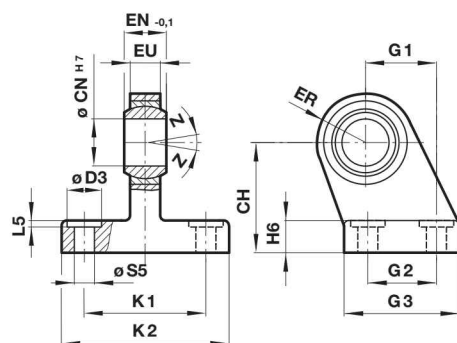
Dimensions in mm  
Projection/First angle



| ø   | CA | ø CK H9 | ø D | H2 | EM   | G1 | G2 | G3 | K1 | K2  | L1  | R  | ø S | kg   | Model (SW) |
|-----|----|---------|-----|----|------|----|----|----|----|-----|-----|----|-----|------|------------|
| 32  | 32 | 10      | 11  | 7  | 25,5 | 21 | 18 | 31 | 38 | 50  | 1,6 | 10 | 6,6 | 0,05 | M/P19493   |
| 40  | 36 | 12      | 11  | 9  | 27,5 | 24 | 22 | 35 | 41 | 54  | 1,6 | 11 | 6,6 | 0,07 | M/P19494   |
| 50  | 45 | 12      | 15  | 11 | 31,5 | 33 | 30 | 45 | 50 | 65  | 1,6 | 13 | 9   | 0,14 | M/P19495   |
| 63  | 50 | 16      | 15  | 12 | 39,5 | 37 | 35 | 50 | 52 | 67  | 1,6 | 15 | 9   | 0,18 | M/P19496   |
| 80  | 63 | 16      | 18  | 14 | 49,5 | 47 | 40 | 60 | 66 | 84  | 2,5 | 15 | 11  | 0,28 | M/P19497   |
| 100 | 71 | 20      | 18  | 15 | 59,5 | 55 | 50 | 70 | 76 | 94  | 2,5 | 19 | 11  | 0,42 | M/P19498   |
| 125 | 90 | 25      | 20  | 20 | 70,5 | 70 | 60 | 90 | 94 | 124 | 3,2 | 22 | 14  | 2,70 | M/P19499   |

## Swivel hinge US

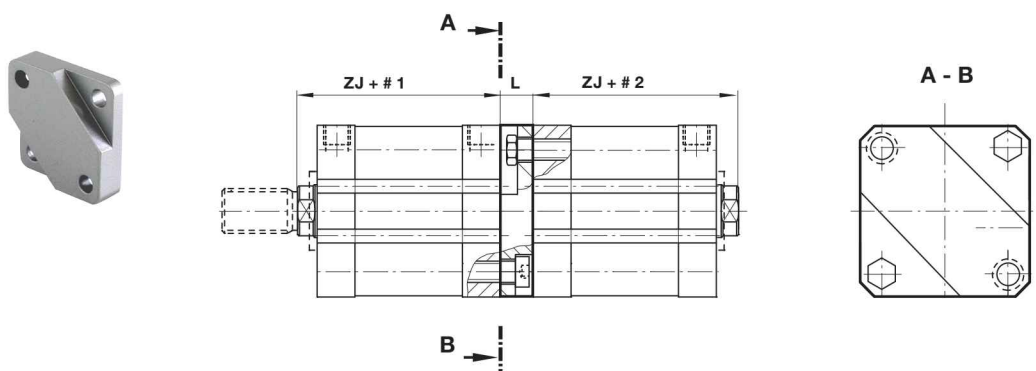
Conforms to VDMA 24562 part 2



| ø   | CH | ø CN H7 | ø D | EN -0,1 | ER | EU   | G1 | G2 | G3 | H2 | K1 | K2  | L1  | ø S | Z    | kg   | Model (US) |
|-----|----|---------|-----|---------|----|------|----|----|----|----|----|-----|-----|-----|------|------|------------|
| 32  | 32 | 10      | 11  | 14      | 16 | 10,5 | 21 | 18 | 31 | 10 | 38 | 51  | 1,6 | 6,6 | 13 ° | 0,19 | M/P40310   |
| 40  | 36 | 12      | 11  | 16      | 18 | 12   | 24 | 22 | 35 | 10 | 41 | 54  | 1,6 | 6,6 | 13 ° | 0,24 | M/P40311   |
| 50  | 45 | 16      | 15  | 21      | 21 | 15   | 33 | 30 | 45 | 12 | 50 | 65  | 1,6 | 9   | 13 ° | 0,46 | M/P40312   |
| 63  | 50 | 16      | 15  | 21      | 23 | 15   | 37 | 35 | 50 | 12 | 52 | 67  | 1,6 | 9   | 15 ° | 0,59 | M/P40313   |
| 80  | 63 | 20      | 18  | 25      | 28 | 18   | 47 | 40 | 60 | 14 | 66 | 86  | 2,5 | 11  | 15 ° | 1,03 | M/P40314   |
| 100 | 71 | 20      | 18  | 25      | 30 | 18   | 55 | 50 | 70 | 15 | 76 | 96  | 2,5 | 11  | 15 ° | 1,4  | M/P40315   |
| 125 | 90 | 30      | 20  | 37      | 40 | 25   | 70 | 60 | 90 | 20 | 94 | 124 | 3,2 | 14  | 15 ° | 3,10 | M/P71355   |

## Assembly kit for four position cylinders

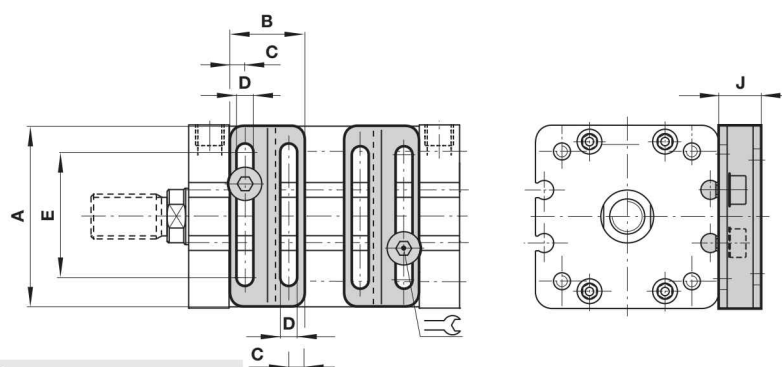
Dimensions in mm  
Projection/First angle



# Stroke

| ø   | L    | ZJ | max. Hublänge = #1 + #2 | kg   | Model        |
|-----|------|----|-------------------------|------|--------------|
| 20  | 10   | 43 | 400                     | 0,03 | QA/192020/55 |
| 25  | 10   | 45 | 400                     | 0,04 | QA/192025/55 |
| 32  | 12,5 | 51 | 600                     | 0,07 | QA/192032/55 |
| 40  | 12,5 | 52 | 600                     | 0,09 | QA/192040/55 |
| 50  | 15   | 53 | 800                     | 0,14 | QA/192050/55 |
| 63  | 15   | 57 | 800                     | 0,19 | QA/192063/55 |
| 80  | 20   | 64 | 1000                    | 0,35 | QA/192080/55 |
| 100 | 20   | 77 | 1000                    | 0,72 | QA/192100/55 |
| 125 | 25   | 89 | 1000                    | 1,03 | QA/192125/55 |

## Valve mounting kit

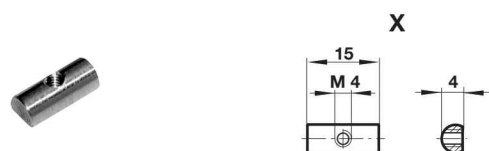


| ø          | A  | B  | C | D   | E  | F   | G   | H | J  | kg   | Model           |
|------------|----|----|---|-----|----|-----|-----|---|----|------|-----------------|
| 50/63      | 60 | 37 | 7 | 4,5 | 46 | 8,5 | 5,5 | 2 | 12 | 0,02 | QA/180050/22/54 |
| 80/100/125 | 90 | 37 | 7 | 4,5 | 76 | 8,5 | 6,5 | 2 | 12 | 0,02 | QA/180080/22/54 |

## Groove key

Model: M/P72816

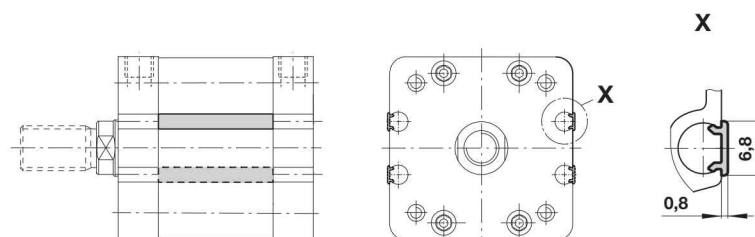
Weight: 0,01 kg



## Groove cover M/P72725/1000

Model: M/P72725/1000

(length: 1m)



- > **Magnetically operating reed switch - Round style**
- > **Suitable for all cylinder ranges with magnetic piston**
- > **Switches can be mounted flush with the delivered special adaptor**
- > **LED indicator on LSU models**
- > **Alternative variants allows a wide range of application**



### Technical features

#### Operation:

M/50/LSU Normally open with LED (yellow)

#### Switching voltage (Ub):

10 ... 240 V a.c./170 V d.c.

#### Switching voltage output:

Ub - 2,7 V

#### Switching current

(see graph overleaf):

0,18 A max.

#### Switching power:

10 W/10 VA max.

#### Contact resistance:

150 mΩ

#### Response time:

1,8 ms

#### Operating temperature:

-25 ... +80 °C (-13 ... +176 °F)

#### High temperature version:

+150 °C max. (+302 °F)

#### Protection rating (EN 60529):

IP66

#### Shock resistance:

50 g (during 11 ms)

#### Vibration resistance:

35 g (at 2000 Hz)

#### Cable type:

2 x 0,25: PVC, PUR or silicone

3 x 0,25 PVC

#### Cable length:

2, 5 or 10 m

#### Electromagnetic compatibility

according to:

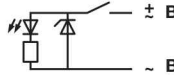
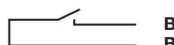
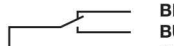
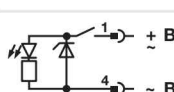
EN 60947-5-2

#### Materials:

Body: plastic

Cable: see table below

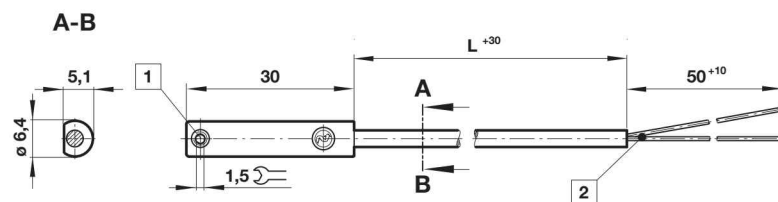
### Technical data - Reed switches - additional information see data sheet en 4.3.005

| Symbol                                                                              | Voltage  |            | Current maximum (mA) | Function | Operating temperature (°C) | LED          | Protection class | Plug  | Cable length (m) | Cable type | Weight (g)       | Model |                 |
|-------------------------------------------------------------------------------------|----------|------------|----------------------|----------|----------------------------|--------------|------------------|-------|------------------|------------|------------------|-------|-----------------|
|                                                                                     | (V a.c.) | (V d.c.)   |                      |          |                            |              |                  |       |                  |            |                  |       |                 |
|  | ± BN     | 10 ... 240 | 10 ... 170           | 180      | Normally open              | -25 ... +80  | •                | IP 66 | —                | 2, 5 or 10 | PVC 2 x 0,25     | 37    | M/50/LSU/*V     |
|                                                                                     | ~ BU     | 10 ... 240 | 10 ... 170           | 180      | Normally open              | -25 ... +80  | •                | IP 66 | —                | 5          | PUR 2 x 0,25     | 37    | M/50/LSU/5U     |
|  | BN       | 10 ... 240 | 10 ... 170           | 180      | Normally open              | -25 ... +150 | —                | IP 66 | —                | 2          | Silicon 2 x 0,25 | 37    | TM/50/RAU/2S    |
|                                                                                     | BU       |            |                      |          |                            |              |                  |       |                  |            |                  |       |                 |
|  | BK       | 10 ... 240 | 10 ... 170           | 180      | Changeover                 | -25 ... +80  | —                | IP 66 | —                | 5          | PVC 3 x 0,25     | 37    | M/50/RAC/5V     |
|                                                                                     | BU<br>BN |            |                      |          |                            |              |                  |       |                  |            |                  |       |                 |
|  | ± BN     | 10 ... 60  | 10 ... 60            | 180      | Normally open              | -25 ... +80  | •                | IP 66 | M8x1             | 0,3        | PVC 3 x 0,25     | 16    | M/50/LSU/CP *1) |
|                                                                                     | ~ BK     | 10 ... 60  | 10 ... 60            | 180      | Normally open              | -25 ... +80  | •                | IP 66 | M12x1            | 0,3        | PVC 3 x 0,25     | 16    | M/50/LSU/CC *1) |

\* Insert cable length; \*1) Plug-in connector see page 12

## Dimensions

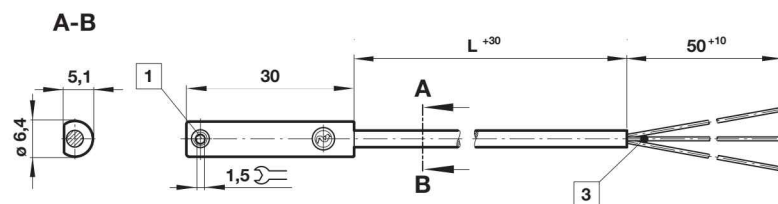
M/50/LSU/\*V, M/50/LSU/5U,  
TM/50/RAU/2S  
Cable length L = 2, 5 or 10 m



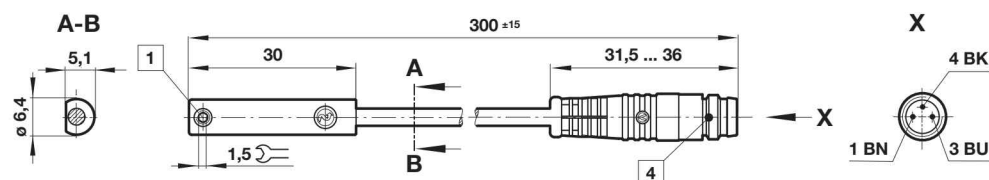
Dimensions in mm  
Projection/First angle



M/50/RAC/5V  
Cable length L = 5 m



M/50/LSU/CP  
M/50/LSU/CC



1 Fixing screw

2 + BN = brown; - BU = blue (output)

3 - BK = black; + BN = brown; - BU = blue

4 Version CP: Plug M8 x 1, color code: BK = +; BN = -; BU = output  
Version CC: Plug M12 x 1, color code: BK = +; BN = -; BU = output

## Accessories

Plug-in connector cable with nut



| Outer cover  | Cable length (m) | Weight (kg) | Connector                  | Connector  |
|--------------|------------------|-------------|----------------------------|------------|
| PVC 3 x 0,25 | 5                | 0,18        | M8 x 1 straight connector  | M/P73001/5 |
| PUR 3 x 0,25 | 5                | 0,18        | M8 x 1 straight connector  | M/P73002/5 |
| PVC 3 x 0,25 | 5                | 0,18        | angled connector 90°       | M/P34615/5 |
| PUR 3 x 0,25 | 5                | 0,18        | angled connector 90°       | M/P34596/5 |
| PUR 3 x 0,34 | 5                | 0,21        | M12 x 1 straight connector | M/P34594/5 |

- > Magnetically operated switch, solid state - round style
- > IO-Link version available
- > Suitable for all cylinder ranges with magnetic piston
- > Switches can be mounted flush in all profile cylinders
- > Reliable switching with a very fast reponse time
- > Particularly suited for use in high levels of vibration
- > LED indicator as standard
- > UL listed



### Technical features

#### Operation:

PNP / NPN (see table)  
Output with LED (yellow)  
Normally open (standard)

#### Switching voltage (U<sub>b</sub>):

10 ... 30 V d.c.  
("supply class 2" acc. to cULus)

#### Voltage drop at output:

< 2,5 V

#### Residual current:

< 0,5 mA

#### Switching current

(see graph):

100 mA max. (standard)  
300 mA max. (M/50/EHP)

#### Switching power:

3,0 W max. (standard)  
9,0 W max. (M/50/EHP)

#### Response time:

< 0,1 ms (standard)  
< 5 ms (M/50/IOP)

#### Operating frequency:

1 kHz (standard)  
200 Hz (M/50/IOP)

#### Responsiveness:

2,8 mT

#### Hysteresis:

0,5 ... 1,5 mT  
0,2 mT (M/50/IOP)

#### Repeatability:

< 0,1 mT

#### Protection rating (EN 60529):

IP67 (standard)  
IP68 (M/50/EAP/5U, M/50/EHP/5U)

#### Operating temperature:

-40 ... +80 °C (-40 ... 176 °F)  
(permanently fixed cable)  
-25 ... +80 °C (-13 ... 176 °F)  
(moving cable)

#### Cable type:

PVC 3 x 0,14 mm<sup>2</sup> (standard)  
PUR 3 x 0,14 mm<sup>2</sup> (M/50/E\*P/\*U  
and all variants with connector)

#### Cable length:

2, 5 and 10 m

#### Electromagnetic compatibility according to:

EN 60947-5-2

#### Materials:

Housing: plastic  
Thread insert: brass  
Set screw: stainless steel  
Cable: see table below

#### Mounting type:

Flush mountable

### Technical data - Solid state - additional information see data sheet en 4.3.007

| Symbol                                                                                                  | Voltage (V DC) | Current maximum (mA) | Function  | IO-Link *1) | Operating temperature (°C) | LED | Protection class | Connector | Cable length (m) | Cable type   | Weight (g) | Model         |
|---------------------------------------------------------------------------------------------------------|----------------|----------------------|-----------|-------------|----------------------------|-----|------------------|-----------|------------------|--------------|------------|---------------|
| <br>+ BN<br>BU<br>BK | 10 ... 30      | 100                  | PNP       |             | -40 ... +80                | •   | IP67             | ---       | 2                | PVC 3 x 0,14 | 23         | M/50/EAP/2V   |
|                                                                                                         | 10 ... 30      | 100                  | PNP       |             | -40 ... +80                | •   | IP67             | ---       | 5                | PVC 3 x 0,14 | 56         | M/50/EAP/5V   |
|                                                                                                         | 10 ... 30      | 100                  | PNP       |             | -40 ... +80                | •   | IP67             | ---       | 10               | PVC 3 x 0,14 | 102        | M/50/EAP/10V  |
|                                                                                                         | 10 ... 30      | 100                  | PNP / NPN | •           | -40 ... +80                | •   | IP67             | ---       | 5                | PVC 3 x 0,14 | 56         | M/50/IOP/5V   |
|                                                                                                         | 10 ... 30      | 100                  | PNP       |             | -40 ... +80                | •   | IP68             | ---       | 5                | PUR 3 x 0,14 | 56         | M/50/EAP/5U   |
|                                                                                                         | 10 ... 30      | 100                  | PNP       |             | -40 ... +80                | •   | IP67             | ---       | 10               | PUR 3 x 0,14 | 102        | M/50/EAP/10U  |
|                                                                                                         | 10 ... 30      | 300                  | PNP       |             | -40 ... +80                | •   | IP67             | ---       | 2                | PVC 3 x 0,14 | 23         | M/50/EHP/2V   |
|                                                                                                         | 10 ... 30      | 300                  | PNP       |             | -40 ... +80                | •   | IP67             | ---       | 5                | PVC 3 x 0,14 | 56         | M/50/EHP/5V   |
|                                                                                                         | 10 ... 30      | 300                  | PNP       |             | -40 ... +80                | •   | IP67             | ---       | 10               | PVC 3 x 0,14 | 102        | M/50/EHP/10V  |
|                                                                                                         | 10 ... 30      | 300                  | PNP       |             | -40 ... +80                | •   | IP68             | ---       | 5                | PUR 3 x 0,14 | 56         | M/50/EHP/5U   |
| <br>+ BN<br>BU<br>BK | 10 ... 30      | 100                  | PNP       |             | -40 ... +80                | •   | IP67             | M8 x 1    | 0,3              | PUR 3 x 0,14 | 7          | M/50/EAP/CP   |
|                                                                                                         | 10 ... 30      | 100                  | PNP / NPN | •           | -40 ... +80                | •   | IP67             | M8 x 1    | 0,3              | PUR 3 x 0,14 | 7          | M/50/IOP/CP   |
|                                                                                                         | 10 ... 30      | 100                  | PNP       |             | -40 ... +80                | •   | IP67             | M12 x 1   | 0,3              | PUR 3 x 0,14 | 16         | M/50/EAP/CC   |
|                                                                                                         | 10 ... 30      | 100                  | PNP       |             | -40 ... +80                | •   | IP67             | M12 x 1   | 2                | PUR 3 x 0,14 | 35         | M/50/EAP/CC/2 |
|                                                                                                         | 10 ... 30      | 100                  | PNP / NPN | •           | -40 ... +80                | •   | IP67             | M12 x 1   | 0,3              | PUR 3 x 0,14 | 16         | M/50/IOP/CC   |
|                                                                                                         | 10 ... 30      | 300                  | PNP       |             | -40 ... +80                | •   | IP67             | M8 x 1    | 0,3              | PUR 3 x 0,14 | 7          | M/50/EHP/CP   |
| <br>- BU<br>BN<br>BK | 10 ... 30      | 100                  | NPN       |             | -40 ... +80                | •   | IP67             | ---       | 2                | PVC 3 x 0,14 | 23         | M/50/EAN/2V   |
|                                                                                                         | 10 ... 30      | 100                  | NPN       |             | -40 ... +80                | •   | IP67             | ---       | 5                | PVC 3 x 0,14 | 56         | M/50/EAN/5V   |
|                                                                                                         | 10 ... 30      | 100                  | NPN       |             | -40 ... +80                | •   | IP67             | ---       | 10               | PVC 3 x 0,14 | 102        | M/50/EAN/10V  |
| <br>+ BU<br>BN<br>BK | 10 ... 30      | 100                  | NPN       |             | -40 ... +80                | •   | IP67             | M8 x 1    | 0,3              | PUR 3 x 0,14 | 7          | M/50/EAN/CP   |

Color code: see next page

\*1) IO-Link functionality: see next page

## IO-Link Switch conforming to IEC 61131-9

| Properties and Functionality    | M/50/EAP, M/50/EAN<br>M/50/EHP | M/50/IOP |
|---------------------------------|--------------------------------|----------|
| Operating Mode                  | Standard                       | Standard |
| Power LED                       |                                | • •      |
| LED sensor signal               | •                              | • •      |
| Normally open (delivery status) | •                              | • •      |
| Normally closed                 |                                | ○ •      |
| Delay mode                      |                                | ○ •      |
| Installation aid                |                                | • •      |
| Temperature measurement         |                                | •        |
| Detection counter               |                                | •        |
| Teach functionality             |                                | •        |
| Responsiveness adjustment       |                                | •        |

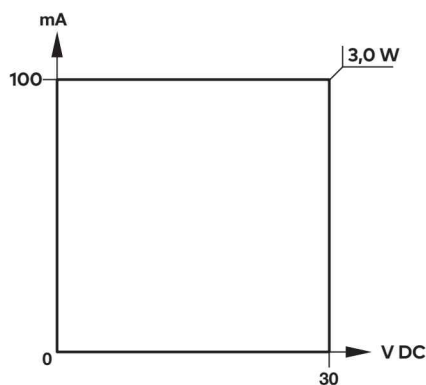
Note: IODD for the M/50/IOP switches available on the Norgren homepage.  
<https://www.norgren.com/uk/en/technical-support/software>

• = included

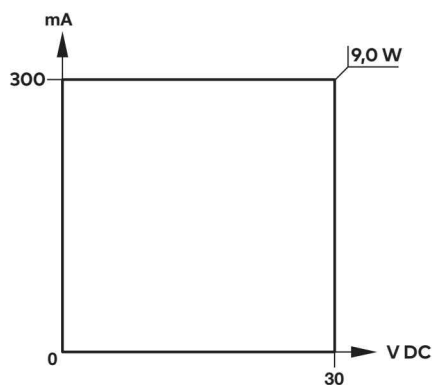
○ = optional (manufacture pre-setting required)

## Switching current and switching voltage

M/50/EAP, M/50/EAN, M/50/IOP



M/50/EHP



## Dimensions

M/50/EAP/\*V,  
M/50/EAP/\*U,  
M/50/IOP/5V,  
M/50/EHP/\*V,  
M/50/EHP/5U,  
M/50/EAN/\*V  
Cable length L = 2, 5 or 10 m



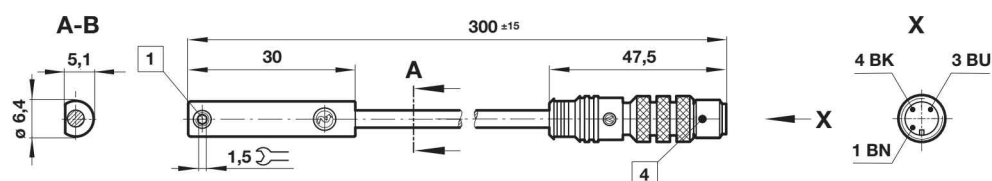
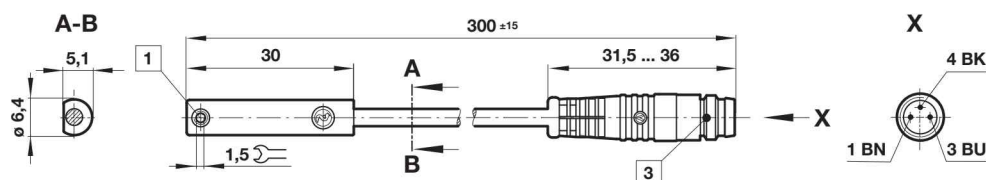
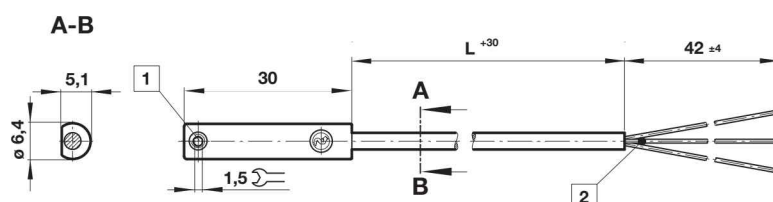
M/50/EAP/CP,  
M/50/EAN/CP,  
M/50/IOP/CP,  
M/50/EHP/CP



M/50/EAP/CC,  
M/50/IOP/CC,  
M/50/EHP/CC



Dimensions in mm  
Projection/First angle



1 Fixing screw

2 Color code: BK = black (output); BN = brown (+); BU = blue (-)

3 Connector M8 x 1; 1 BN = +; 3 BU = -; 4 BK = output

4 Connector M12 x 1; 1 BN = +; 3 BU = -; 4 BK = output

## Accessories

### Plug-in connector cable with nut



| Outer cover  | Cable length (m) | Weight (kg) | Connector                  | Connector  |
|--------------|------------------|-------------|----------------------------|------------|
| PVC 3 x 0,25 | 5                | 0,18        | M8 x 1 straight connector  | M/P73001/5 |
| PUR 3 x 0,25 | 5                | 0,18        | M8 x 1 straight connector  | M/P73002/5 |
| PVC 3 x 0,25 | 5                | 0,18        | angled connector 90°       | M/P34615/5 |
| PUR 3 x 0,25 | 5                | 0,18        | angled connector 90°       | M/P34596/5 |
| PUR 3 x 0,34 | 5                | 0,21        | M12 x 1 straight connector | M/P34594/5 |

Dimensions in mm  
Projection/First angle



## Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under »**Technical features/data**«.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems or other applications not within published specifications, consult Norgren GmbH.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.