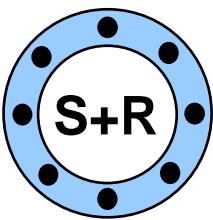


# Electric lifting cylinder

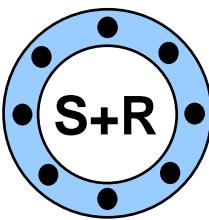
## Compact Series





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## Glossary

### Anti Coast Brake

Depending on the load, AC ball screw actuators may coast to a stop when power is removed. This overrun is eliminated by an anti coast brake. The anti coast brake will allow up to one revolution of the motor after power is removed.

### Anti Rotation Mechanism

A feature available on some actuators that resolves the restraining torque within the actuator. The extension tube will not rotate on actuators with this feature.

### Duty Cycle

$$\text{Duty cycle} = \frac{\text{on time}}{(\text{on time} + \text{off time})}$$

Example: 15 seconds on, 45 seconds off

$$\frac{15\text{s}}{(15\text{s} + 45\text{s})} = 25\% \text{ duty cycle}$$

The duty cycle is a function of the maximum rated load and the ambient temperature. Ambient temperatures above the stated will affect the duty cycle negatively while lower temperatures and/or lower load will affect it positively.

### Protection Class

The protection class refers to the environmental rating of the enclosure. The first digit applies to airborne contaminants and the second digit to water/moisture.

**IP33:** protected against the penetration of solid objects with a diameter greater than 12 mm and against direct sprays of water up to 60 degrees from vertical.

**IP44:** protected against the penetration of solid objects with a diameter greater than 1 mm and against water sprayed from any direction.

**IP45:** protected against the penetration of solid objects with a diameter greater than 1 mm and low pressure water jets from any direction.

**IP51:** protected from dust and vertical dripping water/condensation.

**IP56:** protected from dust and high pressure water jets from any direction.

**IP65:** dust tight and protected against low pressure water jets from any direction.

### Limit Switches

End of stroke limit switches are switches that are incorporated in some actuator models, either as standard or as an option, that will shut off power when the end of stroke is achieved.

**The fixed end of stroke limit switches** allow the full stroke of the actuator to be used and will shut off power when the end of stroke is achieved.

**The adjustable end of stroke limit switches** may be moved to positions inside the full stroke of the actuator and will shut off the actuator when it reaches the limit switch.

### Maximum on Time

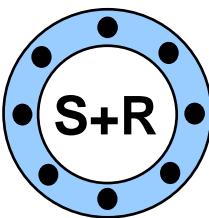
The maximum amount of time an actuator may operate without stopping to "cool off". For high load and long stroke actuators this may be one extend and retract cycle. The actuator should not exceed 25% duty cycle at full rated load. If no maximum on time is stated then the maximum on time are equal to one full cycle at the maximum dynamic load for the actuator in question.

### Potentiometer Feedback

Potentiometers provide an analog output signal that can be used to determine the position of the extension tube. A potentiometer will "remember" its position if power is removed and restored. All potentiometers are set to a minimum value on full retract except for the EU versions of SR 5 and SR 10 where the minimum value are set on full extend.

### Restraining Torque

The torque which is developed between the clevis on the extension tube and rear mount (clevis or trunnion) when the unit extends or retracts and ratchets the clutch.



## Performance Overview

**SR 1**



**Load up to 340 N**

- 12, 24 and 36 V DC input voltages
- Maximum Stroke length 150 mm
- Integrated end of stroke limit switches
- Self-locking acme screw drive system
- IP 65

**SR 1 SP**



**Load up to 340 N**

- 12, 24 and 36 V DC input voltages
- Maximum Stroke length 150 mm
- Potentiometer feedback
- Self-locking acme screw drive system
- IP 65

**SR 5**



**Load up to 6800 N**

- 1 × 230 V AC and 3 × 400 V AC input voltages
- Maximum Stroke length 600 mm
- Acme or ball screw models
- IP 65

**SR 10**



**Load up to 6800 N**

- 12, 24 and 36 V DC input voltages
- Maximum Stroke length 600 mm
- Acme or ball screw models
- IP 65

**SR 14**



**Load up to 6800 N**

- 12, 24 and 36 V DC input voltages
- Maximum Stroke length 600 mm
- Acme or ball screw models
- Anti Rotation Mechanism
- T-slot grooves in the cover tube for magnetic sensors
- IP 65

**SR 24**



**Load up to 6800 N**

- 1 × 230 V AC and 3 × 400 V AC input voltages
- Maximum Stroke length 600 mm
- Acme or ball screw models
- Anti Rotation Mechanism
- T-slot grooves in the cover tube for magnetic sensors
- IP 65

**SR 050**



**Load up to 510 N**

- 12 and 24 V DC input voltages
- Maximum Stroke length 200 mm
- Integrated end of stroke limit switches
- Self-locking acme screw drive system
- IP 56

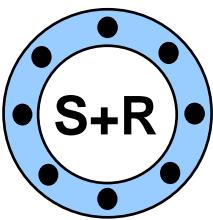
**SR 150**



**Load up to 2000 N**

- 12, 24 and 36 V DC input voltages
- Maximum Stroke length 400 mm
- Integrated end of stroke limit switches
- IP 56

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## Compact serie SR 1

12, 24 and 36 VDC – load up to 340N

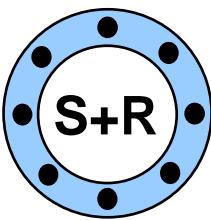


### Standard Features and Benefits

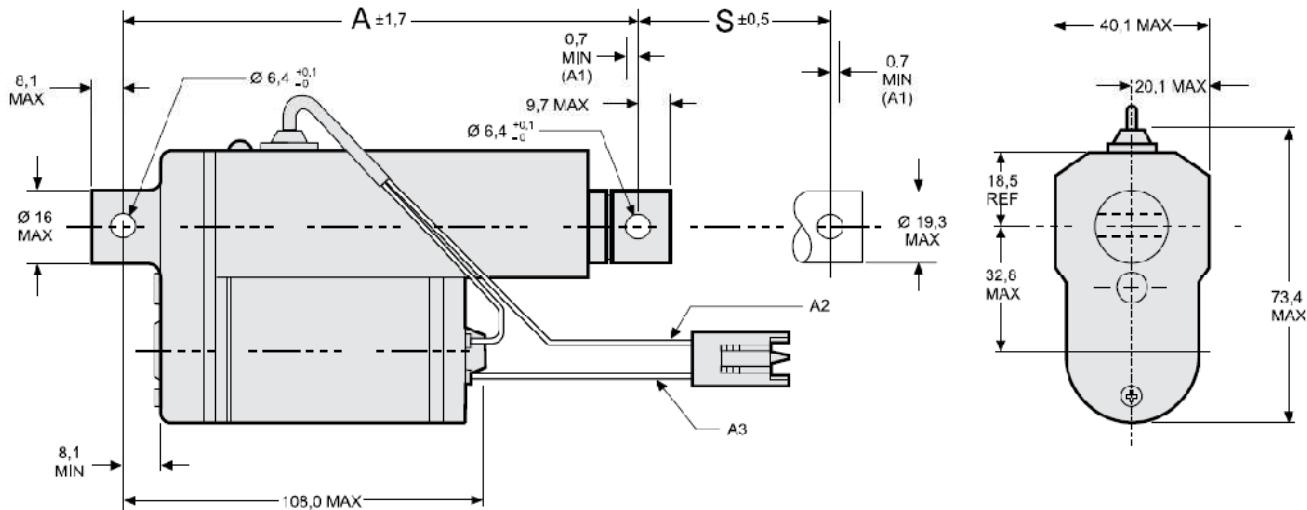
- Very compact and lightweight
- Integrated end of stroke limit switches
- Corrosion resistant housing
- Self-locking acme screw drive system
- Maintenance free

| General Specifications |  |
|------------------------|--|
| Screw type             | acme                                   |
| Internally restrained  | no                                     |
| Manual override        | no                                     |
| Holding brake          | no                                     |
| limit switches         | end of stroke                          |
| Motor protection       | Thermoschalter,<br>selbst rückstellend |
| Motoranschluss         | auto reset thermal<br>switch           |
| Certificates           | CE                                     |
| Options                | none                                   |

| Leistungsdaten               |                                 |
|------------------------------|---------------------------------|
| Maximum load                 | dynamic / static<br>[ N ]       |
| S xx-09A04                   | 110 / 1300                      |
| S xx-09A08                   | 225 / 1300                      |
| S xx-17A08                   | 340 / 1300                      |
| S xx-17A16                   | 340 / 1300                      |
| Speed                        | at no, at max. load<br>[ mm/s ] |
| S xx-09A04                   | 75 / 52                         |
| S xx-09A08                   | 45 / 33                         |
| S xx-17A08                   | 26 / 17                         |
| S xx-17A16                   | 14 / 7                          |
| Available input voltages     | 12, 24, 36 VDC                  |
| Standard stroke lengths      | 1, 2, 3, 4, 5, 6 Inch           |
| Operating temperature limits | -25 bis +65 °C                  |
| Full load duty cycle @ 25 °C | 25 %                            |
| End play, maximum            | 0,9 mm                          |
| Restraining torque           | 2,3 Nm                          |
| Lead cross section           | 1 mm <sup>2</sup>               |
| Protection class             | IP 65                           |



## Dimension SR 1



S: Stroke

A2: black lead for 12 Vdc units, white lead for 24 Vdc units, blue lead for 36 Vdc

A: retracted length

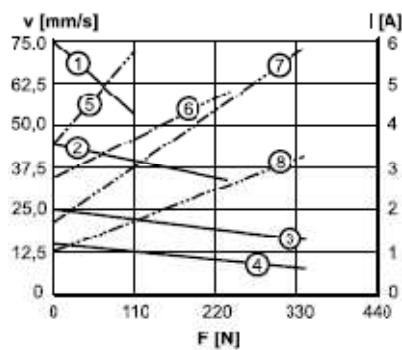
A3: yellow lead

A1: installation must include at least this much coast beyond limit switch shut off

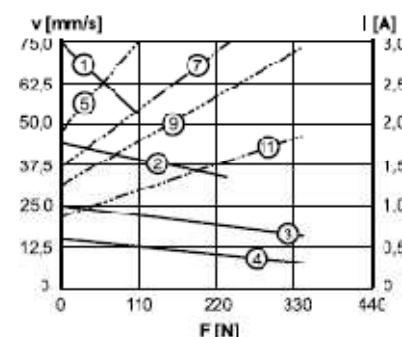
| Ordering stroke         | [Zoll] | 1     | 2     | 3     | 4     | 5     | 6     |
|-------------------------|--------|-------|-------|-------|-------|-------|-------|
| Electrical stroke (S) * | [mm]   | 20,8  | 46,2  | 71,6  | 97    | 122,4 | 147,8 |
| Retracted length (A)    | [mm]   | 134,5 | 159,9 | 185,3 | 210,7 | 236,1 | 261,5 |
| Weight                  | [kg]   | 0,52  | 0,54  | 0,6   | 0,63  | 0,66  | 0,68  |

\* The electrical stroke is the stroke when the internal limit switches switch off the power to the motor. The installation then must allow the extension tube to coast at least 0,7 mm beyond that position before it becomes mechanically blocked to travel any further (distance A1). If there is no mechanical block the extension tube coasting distance will depend on the load, no load means the longest coasting distance while the distance becomes shorter as the load becomes higher. The exact coasting distance depends on the load, in which direction the load acts (push or pull), the mounting orientation of the actuator and any added friction to the system by guides or other installations and has to be determined on a case to case basis.

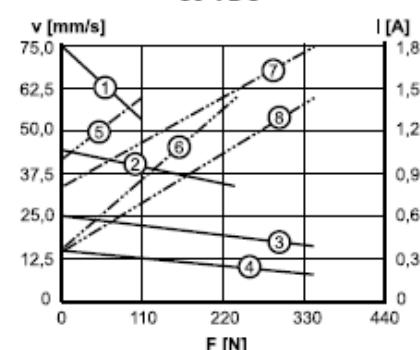
12 VDC



24 VDC



36 VDC



1- speed: S12-09A04

2- speed: S12-09A08

3- speed: S12-17A08

4- speed: S12-17A16

5- current: S12-09A04

6- current: S12-09A08

7- current: S12-17A08

8- current: S12-17A16

1- speed: S24-09A04

2- speed: S24-09A08

3- speed: S24-17A08

4- speed: S24-17A16

5- current: S24-09A04

6- current: S24-09A08

7- current: S24-17A08

8- current: S24-17A16

1- speed: S36-09A04

2- speed: S36-09A08

3- speed: S36-17A08

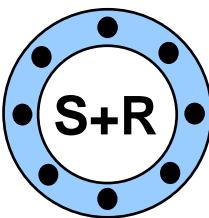
4- speed: S36-17A16

5- current: S36-09A04

6- current: S36-09A08

7- current: S36-17A08

8- current: S36-17A16



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## Compact Serie SR 1SP

12, 24 and 36 VDC – load up to 340N



### Standard Features and Benefits

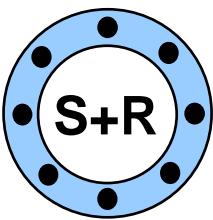
- Very compact and lightweight
- Potentiometer feedback
- Corrosion resistant housing
- Self-locking acme screw drive system
- Internally restrained extension tube
- Maintenance free

| General Specifications |                            |
|------------------------|----------------------------|
| Screw type             | acme                       |
| Internally restrained  | yes                        |
| Manual override        | no                         |
| Holding brake          | no                         |
| limit switches         | no                         |
| Motor protection       | auto reset thermal switch  |
| Motor connection       | flying leads and connector |
| Certificates           | CE                         |
| Options                | none                       |

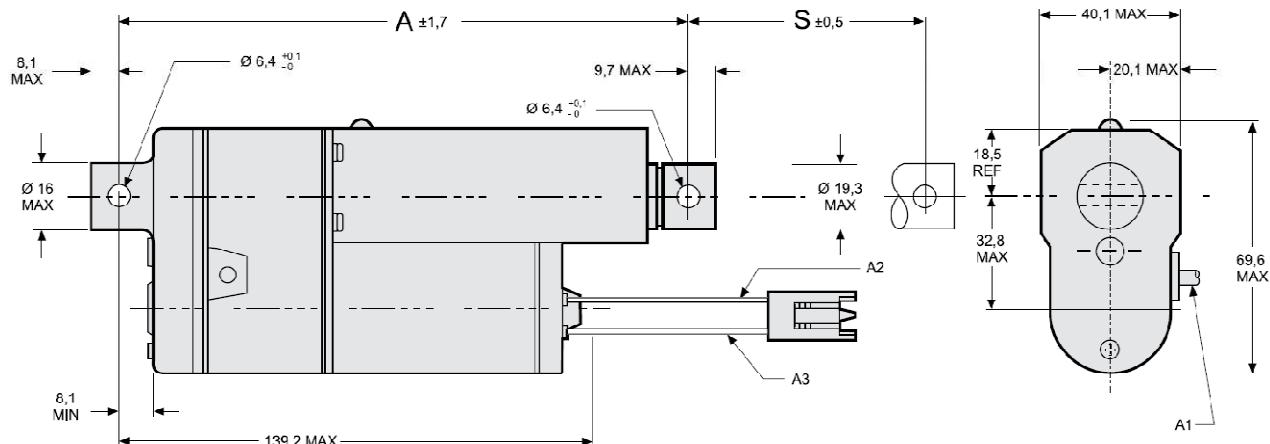
| Performance Specifications   |                               |
|------------------------------|-------------------------------|
| Maximum load                 | dynamic / static [ N ]        |
| SP xx-09A04                  | 110 / 1300                    |
| SP xx-09A08                  | 225 / 1300                    |
| SP xx-17A08                  | 340 / 1300                    |
| SP xx-17A16                  | 340 / 1300                    |
| Spedd                        | at no / at max. load [ mm/s ] |
| SP xx-09A04                  | 75 / 52                       |
| SP xx-09A08                  | 45 / 33                       |
| SP xx-17A08                  | 26 / 17                       |
| SP xx-17A16                  | 14 / 7                        |
| Available input voltages     | 12, 24, 36 VDC                |
| Standard stroke lengths      | 2, 4, 6* Inch                 |
| Operating temperature limits | -25 bis +65 °C                |
| Full load duty cycle @ 25 °C | 25 %                          |
| End play, maximum            | 0,9 mm                        |
| Restraining torque           | 0 Nm                          |
| Lead cross section           | 1 mm <sup>2</sup>             |
| Lead length                  | 110 mm                        |
| Protection class             | IP 65                         |
| Potentiometer                | 10 kΩ**                       |

\* 6 inch stroke lenght not possible for SP xx17A16

\*\* See dimension sheet for resistance change per mm



## Dimension SR 1SP



S: Stroke

A: retracted length

A1: cable for potentiometer feedback, length = 635 mm

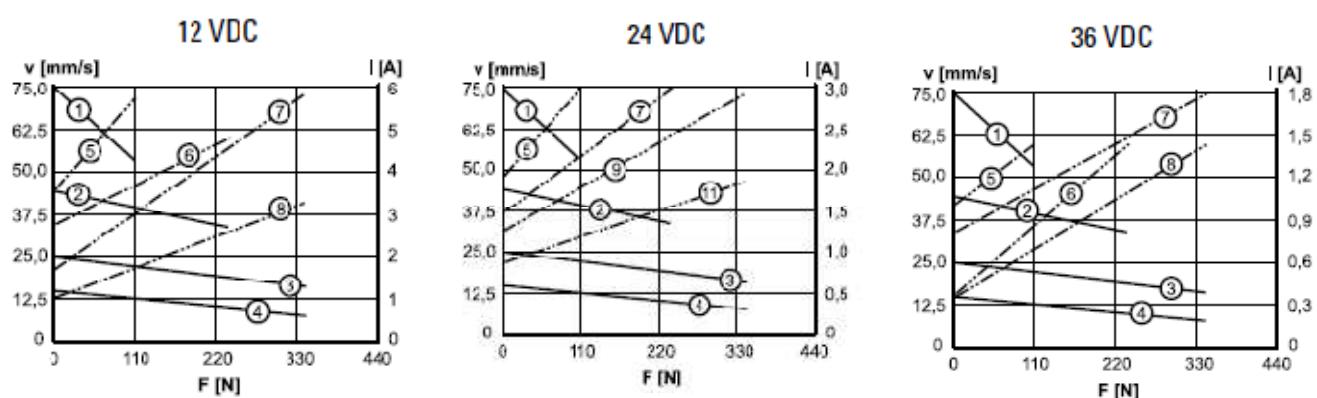
A2: black lead for 12 Vdc units, white lead for 24 Vdc units, blue lead for 36 Vdc

A3: yellow lead

| Ordering stroke         | [Zoll] | 2     | 4           | 6*    |
|-------------------------|--------|-------|-------------|-------|
| Electrical stroke (S) * | [mm]   | 58,7  | 115,1       | 171,5 |
| Retracted length (A)    | [mm]   | 197,9 | 254,3       | 310,7 |
| Weight                  | [kg]   | 0,54  | 0,64        | 0,68  |
| resistance change       | Ω/mm   | 94    | 47 / (63**) | 31    |

\* 6 inch stroke lenght not possible for SP xx-17A16

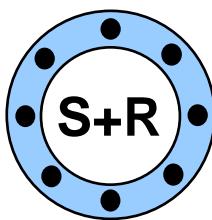
\*\* SP xx-17A16 with 4 inch stroke = 63 ohm/mm, all other stroke lengths has 47 ohm/mm



- 1-speed: SP12-09A04
- 2-speed: SP12-09A08
- 3-speed: SP12-17A08
- 4-speed: SP12-17A16
- 5-current: SP12-09A04
- 6-current: SP12-09A08
- 7-current: SP12-17A08
- 8-current: SP12-17A16

- 1-speed: SP24-09A04
- 2-speed: SP24-09A08
- 3-speed: SP24-17A08
- 4-speed: SP24-17A16
- 5-current: SP24-09A04
- 6-current: SP24-09A08
- 7-current: SP24-17A08
- 8-current: SP24-17A16

- 1-speed: SP36-09A04
- 2-speed: SP36-09A08
- 3-speed: SP36-17A08
- 4-speed: SP36-17A16
- 5-current: SP36-09A04
- 6-current: SP36-09A08
- 7-current: SP36-17A08
- 8-current: SP36-17A16



## Compact Serie SR 5

1 × 230 V AC and 3 × 400 V AC

load up to 6800N



### Standard Features and Benefits

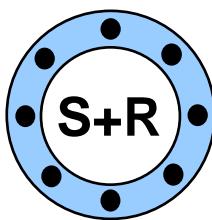
- Robust, strong and reliable
- Stainless steel extension tube
- Acme or ball screw models
- Overload clutch
- Anti-coast brake for repeatable positioning on all ball screw models. Optional on acme screw models
- Maintenance free

| General Specifications      |                           |
|-----------------------------|---------------------------|
| Screw type                  | acme or ball              |
| Internally restrained       | no                        |
| Manual override             | no, optional              |
| Holding brake<br>acme screw | no, self locking          |
| ball screw                  | yes                       |
| limit switches              | no                        |
| End of stroke protection    | overload clutch           |
| Potentiometer               | optional                  |
| Motor protection            | auto reset thermal switch |
| Zertifikate                 | UL, CSA, CE               |

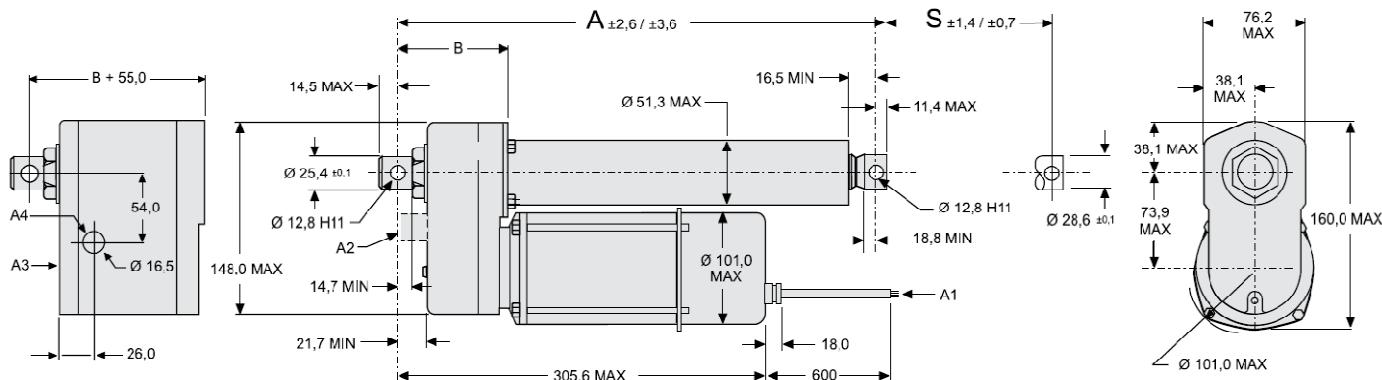
| Performance Specifications   |                                  |
|------------------------------|----------------------------------|
| Maximum load                 | dynamic / static [ N ]           |
| Axx05A05 acme screw          | 1100 / 11350                     |
| Axx10A05 acme screw          | 2250 / 11350                     |
| Axx20A05 Trapezgewinde       | 2250 / 11350                     |
| Axx05B05 ball screw          | 2250 / 18000                     |
| Axx10B05 ball screw          | 4500 / 18000                     |
| Axx20B05 ball screw          | 4500 / 18000                     |
| Axx21B05 ball screw          | 6800 / 18000                     |
| Speed                        | at no / at max. load<br>[ mm/s ] |
| Axx05A05* acme screw         | 48* / 38*                        |
| Axx10A05 acme screw          | 30 / 18                          |
| Axx20A05 acme screw          | 15 / 12                          |
| Axx05B05 ball screw          | 61 / 37                          |
| Axx10B05 ball screw          | 30 / 19                          |
| Axx20B05 ball screw          | 15 / 12                          |
| Axx21B05 ball screw          | 15 / 11                          |
| Available input voltages     | 230** / 400 VAC                  |
| Standard stroke lengths      | 4, 6, 8, ..., 20, 24<br>[inch]   |
| Operating temperature limits | -25 bis +65 °C                   |
| Full load duty cycle @ 25 °C | 25 %                             |
| Maximum on time              | 45 sec                           |
| End play, maximum            | 1 mm                             |
| Restraining torque           | 11,3 Nm                          |
| Lead cross section           | 1,5 mm <sup>2</sup>              |
| Cable length                 | 600 mm                           |
| Protection class             | IP 45                            |

\* Not possible with 400 Vac input voltage

\*\* 10 µF capacitor required to run the actuator



## Dimension SR 5



S: stroke, tolerance acme / ball screw

A2: manual override input (optional)

A: retracted length, tolerance acme / ball screw

A3: housing dimensions for potentiometer option

A1: cable

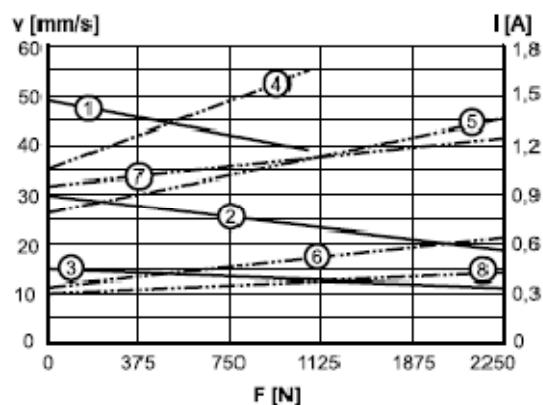
A4: potentiometer cable output, cable length = 600 mm

| Stroke (S)                              | [mm]   | 101,6 | 152,4 | 203,2 | 254   | 304,8 | 355,6 | 406,4 | 457,2 | 508   | 609,6 |
|---|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Retracted length, acme screw models (A) | [mm]   | 262,3 | 313,1 | 363,9 | 141,7 | 465,5 | 567,1 | 617,9 | 668,7 | 719,5 | 821,1 |
| Retracted length, ball screw models (A) | [mm]   | 302,3 | 353,1 | 403,9 | 454,7 | 505,5 | 607,1 | 657,9 | 708,7 | 759,5 | 861,1 |
| Add on length for potentiometer*        | [mm]   | 55    | 55    | 55    | 55    | 55    | 55    | 55    | 55    | 55    | 55    |
| Weight, acme screw models               | [kg]   | 5,9   | 6,1   | 6,3   | 6,5   | 6,7   | 6,9   | 7,1   | 7,3   | 7,5   | 7,8   |
| Weight, ball screw models               | [kg]   | 6,5   | 6,7   | 6,9   | 7,1   | 7,3   | 7,5   | 7,7   | 7,9   | 8,1   | 8,4   |
| Add on weight for potentiometer*        | [kg]   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   |
| resistance change*                      | [Ω/mm] | 39    | 39    | 39    | 39    | 20    | 20    | 20    | 20    | 20    | 10    |

\* Potentiometer is optional

### Acme Screw Models

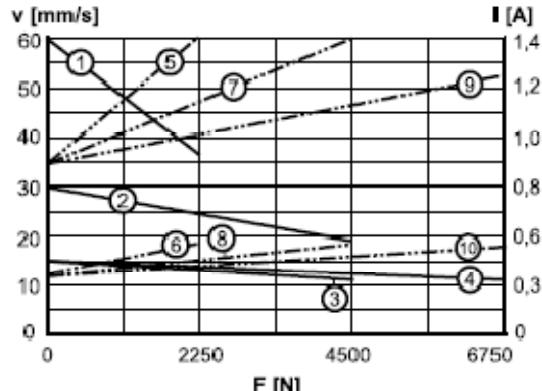
Speed and Current vs. Load



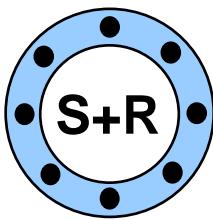
- 1: V [mm/s] A22-05A5
- 2: V [mm/s] Axx-10A5
- 3: V [mm/s] Axx-20A5
- 4: I [A] 230VAC, A22-05A5
- 5: I [A] 230VAC, A22-10A5
- 6: I [A] 400VAC, A42-10A5
- 7: I [A] 230VAC, A22-20A5
- 8: I [A] 400VAC, A42-20A5

### Ball Screw Models

Speed and Current vs. Load



- 1: V [mm/s] Axx-05B5
- 2: V [mm/s] Axx-10B5
- 3: V [mm/s] Axx-20B5
- 4: V [mm/s] Axx-21B5
- 5: I [A] 230VAC, A22-05B5
- 6: I [A] 400VAC, A42-05B5
- 7: I [A] 230VAC, A22-10B5/20B5
- 8: I [A] 400VAC, A42-10B5/20B5
- 9: I [A] 230VAC, A22-21B5
- 10: I [A] 400VAC, A42-21B5



## Compact Serie SR 10

12, 24 and 36 VDC, load up to 6800N



### Standard Features and Benefits

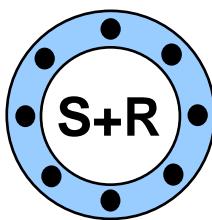
- Robust, strong and reliable
- Stainless steel extension tube
- Acme or ball screw models
- Overload clutch
- Anti-coast brake for repeatable positioning on all ball screw models.
- Maintenance free

### General Specifications

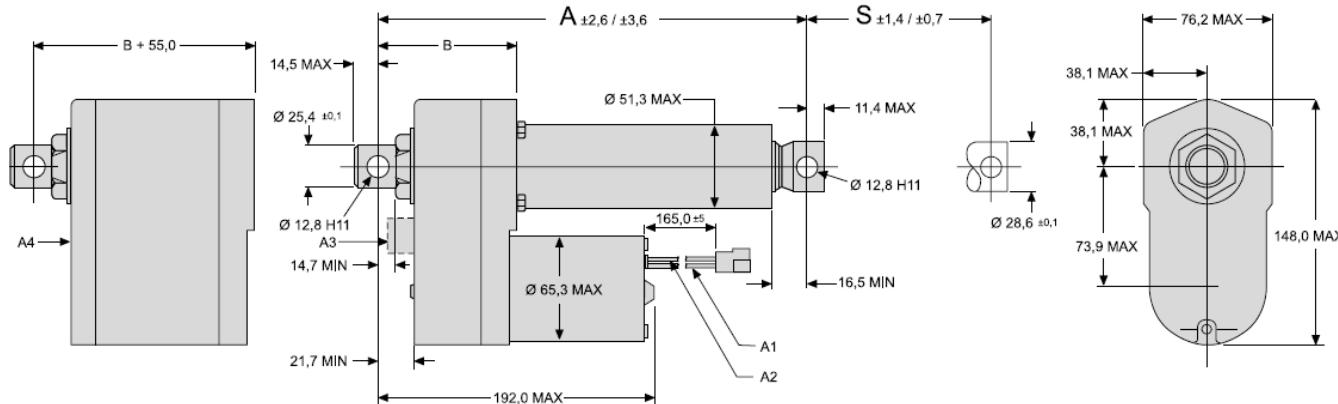
|   |                            |
|---|----------------------------|
| Screw type                                | acme or ball               |
| Internally restrained                     | no                         |
| Manual override                           | no, optional               |
| Holding brake<br>acme screw<br>ball screw | no, self locking<br>yes    |
| End of stroke protection                  | overload clutch            |
| Potentiometer                             | option                     |
| Motor protection                          | auto reset thermal switch  |
| Motor connection                          | flying leads and connector |
| Certificates                              | CE                         |

### Performance Specifications

|                                |                              |
|--------------------------------|------------------------------|
| Maximum load                   | dynamic / static [ N ]       |
| Dxx05A05 acme screw            | 1100 / 11350                 |
| Dxx10A05 acme screw            | 2250 / 11350                 |
| Dxx20A05 acme screw            | 2250 / 11350                 |
| Dxx05B05 ball screw            | 2250 / 18000                 |
| Dxx10B05 ball screw            | 4500 / 18000                 |
| Dxx20B05 ball screw            | 4500 / 18000                 |
| Dxx21B05 ball screw            | 6800 / 18000                 |
| Speed                          | no load / max. load [ mm/s ] |
| Dxx05A05 acme screw            | 54 / 32                      |
| Dxx10A05 acme screw            | 30 / 18                      |
| Dxx20A05 acme screw            | 15 / 12                      |
| Dxx05B05 ball screw            | 61 / 37                      |
| Dxx10B05 ball screw            | 30 / 19                      |
| Dxx20B05 ball screw            | 15 / 12                      |
| Dxx21B05 ball screw            | 15 / 11                      |
| input voltages                 | 12, 24, 36 VDC               |
| Standard stroke lengths [Inch] | 4, 6, 8, ..., 20, 24         |
| Operating temperature          | -25 bis +65 °C               |
| Full load duty cycle @ 25 °C   | 25 %                         |
| End play, maximum              | 1 mm                         |
| Restraining torque             | 11,3 Nm                      |
| Lead cross section             | 2 mm <sup>2</sup>            |
| Lead length                    | 165 mm                       |
| Protection class               | IP 65                        |



## Dimension SR 10



S: stroke, tolerance acme / ball screw

A: retracted length, tolerance acme / ball screw

A1: black lead

A2: red lead

A3: manual override input (optional)

A4: housing dimensions for potentiometer option

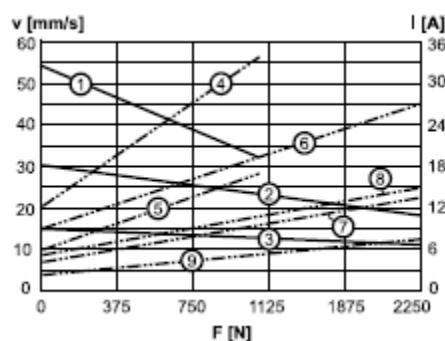
A5: potentiometer cable output, cable length = 600 mm

| Stroke (S)                              | [mm]   | 101,6 | 152,4 | 203,2 | 254   | 304,8 | 355,6 | 406,4 | 457,2 | 508   | 609,6 |
|---|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Retracted length, acme screw models (A) | [mm]   | 262,3 | 313,1 | 363,9 | 411,7 | 465,5 | 567,1 | 617,9 | 668,7 | 719,5 | 821,1 |
| Retracted length, ball screw models (A) | [mm]   | 302,3 | 353,1 | 403,9 | 454,7 | 505,5 | 607,1 | 657,9 | 708,7 | 759,5 | 861,1 |
| Add on length for potentiometer*        | [mm]   | 55    | 55    | 55    | 55    | 55    | 55    | 55    | 55    | 55    | 55    |
| Weight, acme screw models               | [kg]   | 4,5   | 4,7   | 4,9   | 5,0   | 5,2   | 5,4   | 5,5   | 5,7   | 5,8   | 6,2   |
| Weight, ball screw models               | [kg]   | 5,1   | 5,3   | 5,5   | 5,6   | 5,8   | 5,9   | 6,1   | 6,3   | 6,4   | 6,8   |
| Weight for potentiometer*               | [kg]   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   |
| resistance change*                      | [Ω/mm] | 39    | 39    | 39    | 39    | 20    | 20    | 20    | 20    | 20    | 10    |

\* Potentiometer optional

### Acme Screw Models

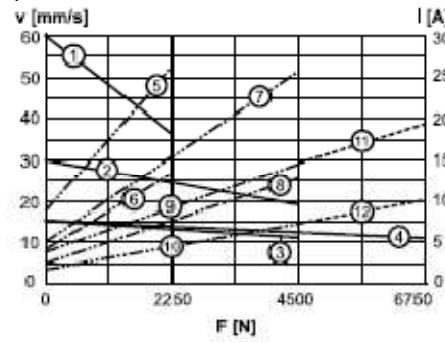
#### Speed and Current vs. Load



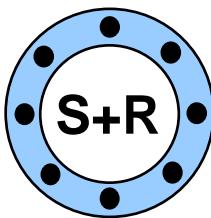
- 1: V [mm/s] Dxx-05A5
- 2: V [mm/s] Dxx-10A5
- 3: V [mm/s] Dxx-20A5
- 4: I [A] 12VDC, D12-05A5
- 5: I [A] 12VDC, D24-05A5
- 6: I [A] 12VDC, D12-10A5
- 7: I [A] 24VDC, D24-10A5
- 8: I [A] 12VDC, D12-20A5
- 9: I [A] 24VDC, D24-20A5

### Ball Screw Models

#### Speed and Current vs. Load



- 1: V [mm/s] Dxx-05B5
- 2: V [mm/s] Dxx-10B5
- 3: V [mm/s] Dxx-20B5
- 4: V [mm/s] Dxx-21B5
- 5: I [A] 12VDC, D12-05B5
- 6: I [A] 24VDC, D24-05B5
- 7: I [A] 12VDC, D12-10B5
- 8: I [A] 24VDC, D24-10B5
- 9: I [A] 12VDC, D12-20B5
- 10: I [A] 24VDC, D24-20B5
- 11: I [A] 12VDC, D12-21B5
- 12: I [A] 24VDC, D24-21B5



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www.sr-gmbh.de

## Compact Serie SR 14

12, 24 and 36 VDC, load up to 6800N



### Standard Features and Benefits

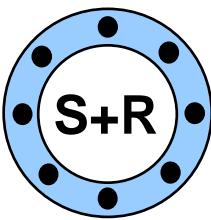
- Rugged and robust
- Stainless steel extension tube
- Acme or ball screw drive
- Overload clutch
- T-slot grooves for magnetic sensors
- Anbau von Drehlagerbolzen möglich
- Maintenance free

### General Specifications

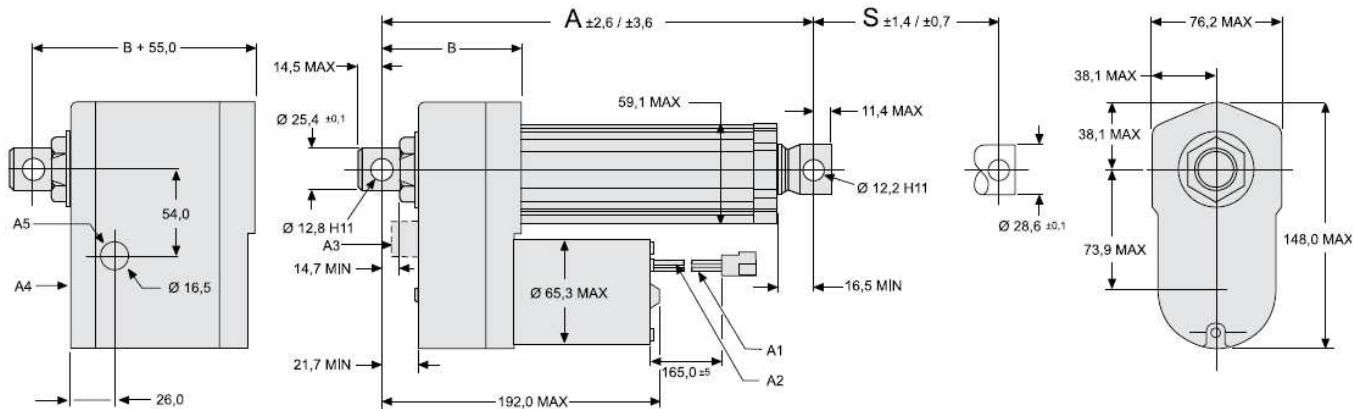
|   |                               |
|---|-------------------------------|
| Screw type                                | acme or ball                  |
| Internally restrained                     | yes                           |
| Manual override                           | no, optional                  |
| Holding brake<br>acme screw<br>ball screw | no, self locking<br>yes       |
| End of stroke<br>protection               | overload clutch               |
| Potentiometer                             | optional                      |
| Motor protection                          | auto reset thermal<br>switch  |
| Motor connection                          | flying leads and<br>connector |
| Certificates                              | CE                            |

### Performance Specifications

|                              |   |
|------------------------------|---|
| Maximum load                 | dynamic / static<br>[ N ]                                       |
| DAxx05A65M acme screw        | 1100 / 11350  |
| DAxx10A65M acme screw        | 2250 / 11350  |
| DAxx20A65M acme screw        | 2250 / 11350  |
| DAxx05B65M ball screw        | 2250 / 18000  |
| DAxx10B65M ball screw        | 4500 / 18000  |
| DAxx20B65M ball screw        | 4500 / 18000  |
| DAxx21B65M ball screw        | 6800 / 18000  |
| Speed                        | no load / max. load<br>[ mm/s ]                                 |
| DAxx05A65M acme screw        | 54 / 32   |
| DAxx10A65M acme screw e      | 30 / 18   |
| DAxx20A65M acme screw        | 15 / 12   |
| DAxx05B65M ball screw        | 61 / 37   |
| DAxx10B65M ball screw        | 30 / 19   |
| DAxx20B65M ball screw        | 15 / 12   |
| DAxx21B65M ball screw        | 15 / 11   |
| Eingangsspannung             | 12, 24, 36 VDC  |
| Standard stroke lengths [mm] | 50, 100, 150, 200,<br>250, 300, 350, 400,<br>450, 500, 550, 600 |
| Operating temperature limits | -25 bis +65 °C  |
| Full load duty cycle @ 25 °C | 25 %  |
| End play, maximum            | 1 mm  |
| Restraining torque           | 0 Nm  |
| Lead cross section           | 2 mm <sup>2</sup>   |
| Lead length                  | 165 mm  |
| Protection class             | IP 65   |



## Dimension SR 14



S: stroke, tolerance acme / ball screw

A: retracted length, tolerance acme / ball screw

A1: black lead

A2: red lead

A3: manual override input (optional)

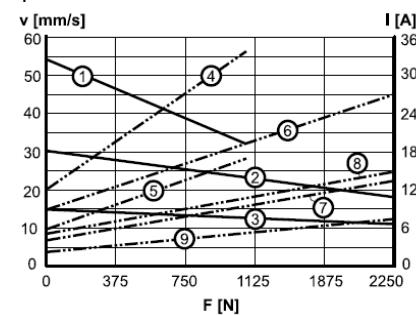
A4: potentiometer cable output, cable length = 600 mm

| Stroke (S)                              | [mm]   | 50    | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   |
|---|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Retracted length, acme screw models (A) | [mm]   | 216,7 | 266,7 | 316,7 | 366,7 | 416,7 | 466,7 | 566,7 | 616,7 | 666,7 | 716,7 | 766,7 | 816,7 |
| Retracted length, ball screw models (A) | [mm]   | 269,6 | 319,6 | 369,6 | 419,6 | 469,6 | 519,6 | 619,6 | 669,6 | 719,6 | 769,6 | 819,6 | 869,6 |
| Add on length for potentiometer*        | [mm]   | 55    | 55    | 55    | 55    | 55    | 55    | 55    | 55    | 55    | 55    | 55    | 55    |
| Weight, acme screw models               | [kg]   | 4,5   | 4,7   | 4,9   | 5,1   | 5,3   | 5,5   | 5,8   | 6,0   | 6,2   | 6,4   | 6,6   | 6,8   |
| Weight, ball screw models               | [kg]   | 5,3   | 5,5   | 5,7   | 5,9   | 6,1   | 6,3   | 6,6   | 6,8   | 7,0   | 7,2   | 7,4   | 7,6   |
| Add on weight for potentiometer*        | [kg]   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   |
| Resistance change*                      | [Ω/mm] | 39    | 39    | 39    | 39    | 39    | 20    | 20    | 20    | 20    | 20    | 10    | 10    |

\* Potentiometer is optional

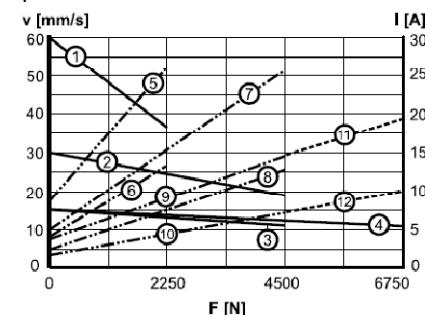
### Acme screw

#### Speed and Current vs. Load



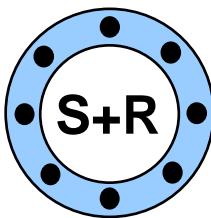
### Ball screw

#### Speed and Current vs. Load



- 1: V [mm/s] DAxx-05A65M
- 2: V [mm/s] DAxx-10A65M
- 3: V [mm/s] DAxx-20A65M
- 4: I [A] 12VDC, DA12-05A65M
- 5: I [A] 12VDC, DA24-05A65M
- 6: I [A] 12VDC, DA12-10A65M
- 7: I [A] 24VDC, DA24-10A65M
- 8: I [A] 12VDC, DA12-20A65M
- 9: I [A] 24VDC, DA24-20A65M

- 1: V [mm/s] DAxx-05B65M
- 2: V [mm/s] DAxx-10B65M
- 3: V [mm/s] DAxx-20B65M
- 4: I [A] 12VDC, DA12-05B65M
- 5: I [A] 12VDC, DA12-05B65M
- 6: I [A] 24VDC, DA24-05B65M
- 7: I [A] 12VDC, DA12-10B65M
- 8: I [A] 24VDC, DA24-10B65M
- 9: I [A] 12VDC, DA12-20B65M
- 10: I [A] 24VDC, DA24-20B65M
- 11: I [A] 12VDC, DA12-21B65M
- 12: I [A] 24VDC, DA24-21B65



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## Compact Serie SR 24

1 × 230 V AC and 3 × 400 V AC load up to 6800N



### Standard Features and Benefits

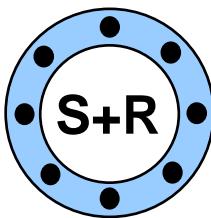
- Robust, strong and reliable
- Stainless steel extension tube
- Acme or ball screw models
- T-slot grooves for magnetic sensors
- Overload clutch
- Maintenance free

| General Specifications   |                           |
|--------------------------|---------------------------|
| Screw type               | acme or ball              |
| Internally restrained    | yes                       |
| Manual override          | no, optional              |
| Holding brake            |                           |
| acme screw               | no, self locking          |
| ball screw               | yes                       |
| End of stroke protection | overload clutch           |
| Potentiometer            | optional                  |
| Motor protection         | auto reset thermal switch |
| Motor connection         | cable                     |
| Certificates             | UL, CSA, CE               |

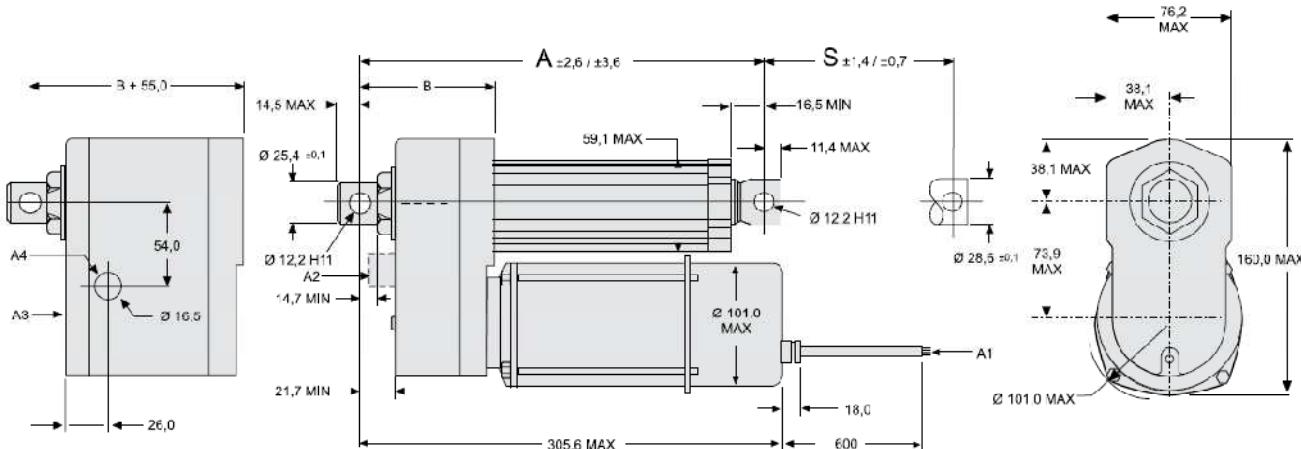
| Performance Specifications   |   |
|------------------------------|---|
| Maximum load                 | dynamic / static [ N ]                                    |
| AAxx05A65M acme screw        | 1100 / 11350  |
| AAxx10A65M acme screw        | 2250 / 11350  |
| AAxx20A65M acme screw e      | 2250 / 11350  |
| AAxx05B65M ball screw        | 2250 / 18000  |
| AAxx10B65M ball screw        | 4500 / 18000  |
| AAxx20B65M ball screw        | 4500 / 18000  |
| AAxx21B65M ball screw        | 6800 / 18000  |
| Speed                        | no load / max. load [ mm/s ]                              |
| AAxx05A65M* acme screw       | 48* / 38*   |
| AAxx10A65M acme screw        | 30 / 18   |
| AAxx20A65M acme screw        | 15 / 12   |
| AAxx05B65M ball screw        | 61 / 37   |
| AAxx10B65M ball screw        | 30 / 19   |
| AAxx20B65M ball screw        | 15 / 12   |
| AAxx21B65M ball screw        | 15 / 11   |
| input voltages               | 230** / 400 VAC   |
| Standard stroke lengths [mm] | 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600 |
| Operating temperature        | -25 bis +65 °C  |
| Full load duty cycle @ 25 °C | 25 %  |
| Maximum on time              | 45 sec  |
| End play, maximum            | 1 mm  |
| Restraining torque           | 0 Nm  |
| Lead cross section           | 1,5 mm <sup>2</sup>                                       |
| Cable length                 | 600 mm  |
| Protection class             | IP 45   |

\* Not possible with 400 Vac input voltage

\*\* 10 µF capacitor required to run the actuator



## Dimension SR 24



S: stroke, tolerance acme / ball screw

A: retracted length, tolerance acme / ball screw

A3: housing dimensions for potentiometer option

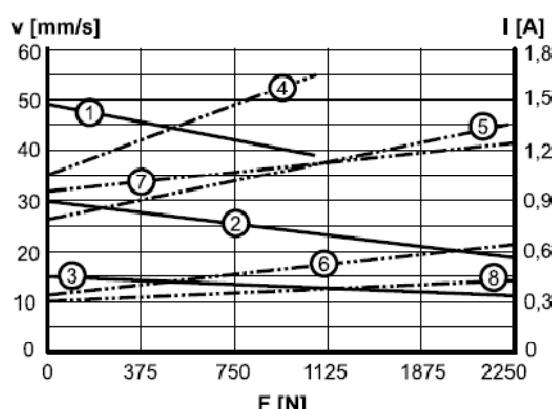
A4: potentiometer cable output, cable length = 600 mm

| Stroke (S)                              | [mm]   | 50    | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   |
|---|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Retracted length, acme screw models (A) | [mm]   | 216,7 | 266,7 | 316,7 | 366,7 | 416,7 | 466,7 | 566,7 | 616,7 | 666,7 | 716,7 | 766,7 | 816,7 |
| Retracted length, ball screw models (A) | [mm]   | 269,6 | 319,6 | 369,6 | 419,6 | 469,6 | 519,6 | 619,6 | 669,6 | 719,6 | 769,6 | 819,6 | 869,6 |
| Add on length for potentiometer*        | [mm]   | 55    | 55    | 55    | 55    | 55    | 55    | 55    | 55    | 55    | 55    | 55    | 55    |
| Weight, acme screw models               | [kg]   | 6,0   | 6,2   | 6,4   | 6,6   | 6,8   | 7,0   | 7,3   | 7,5   | 7,7   | 7,9   | 8,1   | 8,3   |
| Weight, ball screw models               | [kg]   | 6,8   | 7,0   | 7,2   | 7,4   | 7,6   | 7,8   | 8,1   | 8,3   | 8,5   | 8,7   | 8,9   | 9,1   |
| Weight for potentiometer*               | [kg]   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   | 1,3   |
| Resistance change*                      | [Ω/mm] | 39    | 39    | 39    | 39    | 39    | 39    | 20    | 20    | 20    | 20    | 10    | 10    |

\* Potentiometer is optional

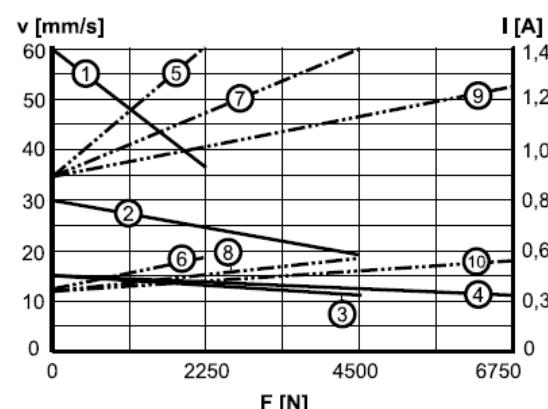
### Acme Screw Models

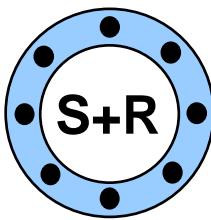
Speed and Current vs. Load



### Ball Screw Models

Speed and Current vs. Load





## Compact Serie SR 050/Q

12, 24 ande 36 VDC, load up to 510N

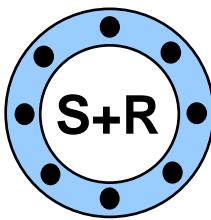


### Standard Features and Benefits

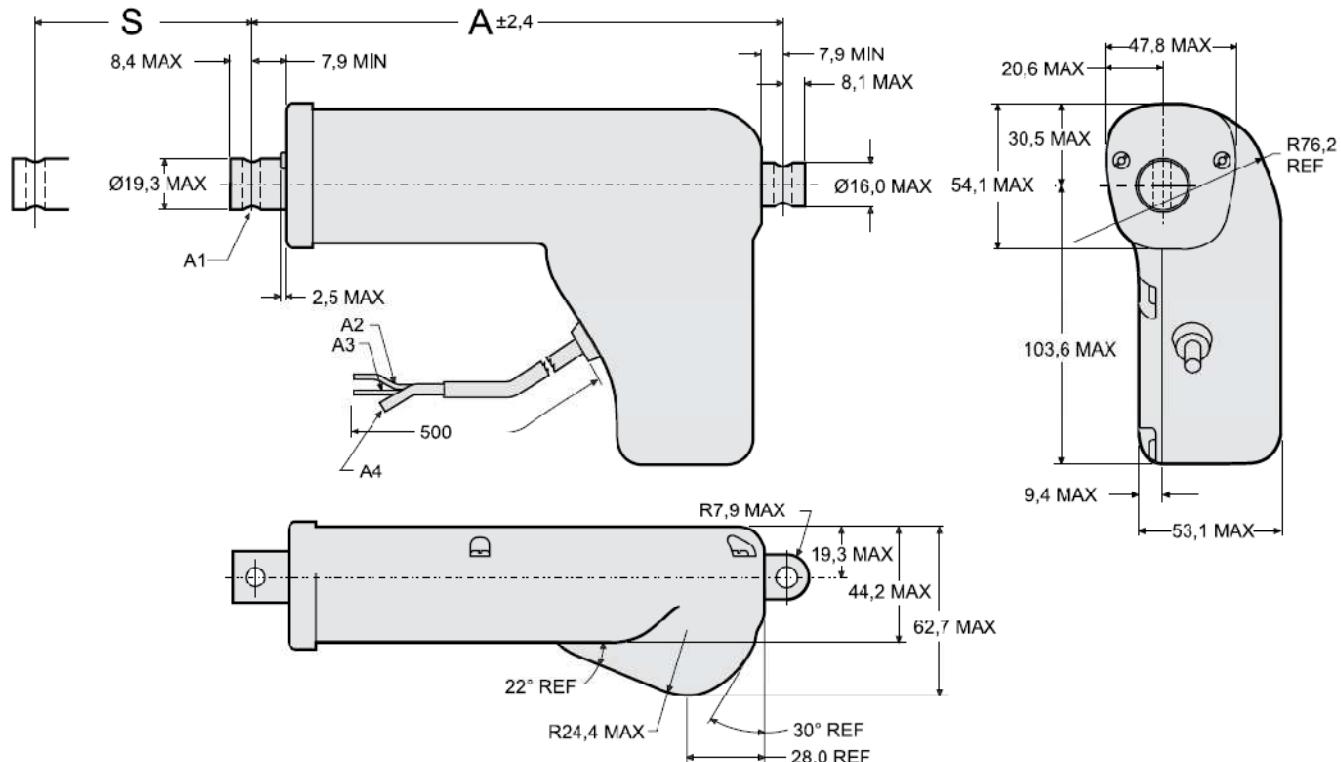
- Small, quiet and lightweight
- Very short retracted length
- Low cost
- Durable and corrosion free plastic housing
- Q-version for noise sensitive applications

| General Specifications   |                           |
|--------------------------|---------------------------|
| Screw type               | acme                      |
| Internally restrained    | yes                       |
| Manual override          | no                        |
| Holding brake            | no, self-locking          |
| End of stroke protection | internal limit switches   |
| Mid stroke protection    | overload clutch           |
| Potentiometer            | optional                  |
| Motor protection         | auto reset thermal switch |
| Motor connection         | flying leads              |
| Certificates             | CE                        |

| Performance Specifications   |                                     |
|------------------------------|-------------------------------------|
| Maximum load                 | dynamic / static [ N ]              |
| DExx17W41                    | 510 / 1020                          |
| DExx17W42                    | 275 / 550                           |
| DExx17W44                    | 140 / 280                           |
| Speed                        | no load / max. load [ mm/s ]        |
| DExx-17W41                   | 12 / 9                              |
| DExx-17W42                   | 24 / 18                             |
| DExx-17W44                   | 48 / 37                             |
| DExxQ17W41                   | 9 / 7,5                             |
| DExxQ17W42                   | 18 / 14                             |
| DExxQ17W44                   | 38 / 30                             |
| input voltages               | 12, 24, 36 VDC                      |
| Standard stroke lengths [mm] | 25, 50, 75, 100, 125, 150, 175, 200 |
| Operating temperature        | -30 bis +80 °C                      |
| Full load duty cycle @ 20 °C | 25 %                                |
| End play, maximum            | 1,5 mm                              |
| Restraining torque           | 0 Nm                                |
| Lead cross section           | 1 mm <sup>2</sup>                   |
| Lead length                  | 500 mm                              |
| Protection class             |                                     |
| standard version             | IP 56                               |
| Q-version                    | IP 51                               |
| resistance change            | [Ω/mm]                              |
| DExx17W41                    | 22                                  |
| DExx17W42                    | 21,9                                |
| DExx17W44                    | 21,2                                |



## Dimension SR 050/Q



S: stroke (tolerances: 17W41 =  $\pm 3,23$  mm, 17W42 =  $\pm 4,25$  mm, 17W44 =  $\pm 5,26$  mm)

A2: red lead

A: retracted length

A3: yellow lead

A1:  $\varnothing 6$  mm +0,15/-0 mounting cross holes (2 x) in standard position

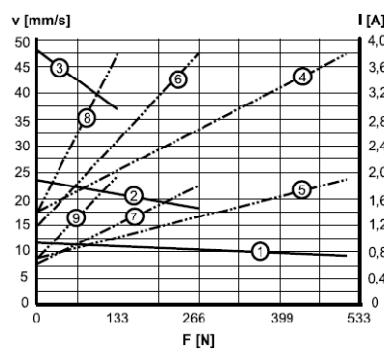
A4: vent tube  $\varnothing 3$  mm

| Stroke (S)                               | [mm] | 25    | 50    | 75    | 100   | 125   | 150   | 175   | 200   |
|--|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Retracted length (A)                     | [mm] | 114,2 | 139,2 | 164,2 | 189,2 | 214,2 | 239,2 | 264,2 | 289,2 |
| Retracted length, with potentiometer (A) | [mm] | 145,7 | 170,7 | 195,7 | 220,7 | 245,7 | 270,7 | 295,7 | -*    |
| Weight                                   | [kg] | 0,59  | 0,64  | 0,69  | 0,73  | 0,78  | 0,82  | 0,87  | 0,91  |
| Weight with potentiometer                | [kg] | 0,69  | 0,74  | 0,79  | 0,83  | 0,88  | 0,92  | 0,97  | -*    |

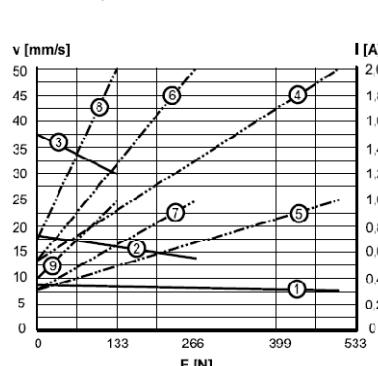
\* 200 mm stroke not possible with potentiometer

### Speed and Current vs. Load

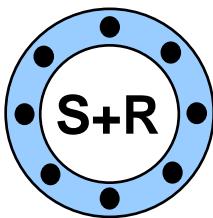
#### SR 050 Standard Version



#### SR 050 Q - Version



- 1: V [mm/s] DExxx17W41
- 2: V [mm/s] DExxx17W42
- 3: V [mm/s] DExxx17W44
- 4: I [A] 12VDC, DE12x17W41
- 5: I [A] 24VDC, DE24x17W41
- 6: I [A] 12VDC, DE12x17W42
- 7: I [A] 24VDC, DE24x17W42
- 8: I [A] 12VDC, DE12x17W44
- 9: I [A] 24VDC, DE24x17W44



## Compact Serie SR 150

12, 24 and 36 VDC, load up to 2000N



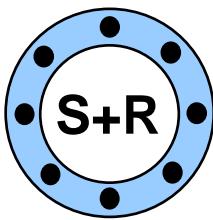
### Standard Features and Benefits

- Small, quiet and lightweight
- Very short retracted length
- Low cost
- Durable and corrosion free plastic housing

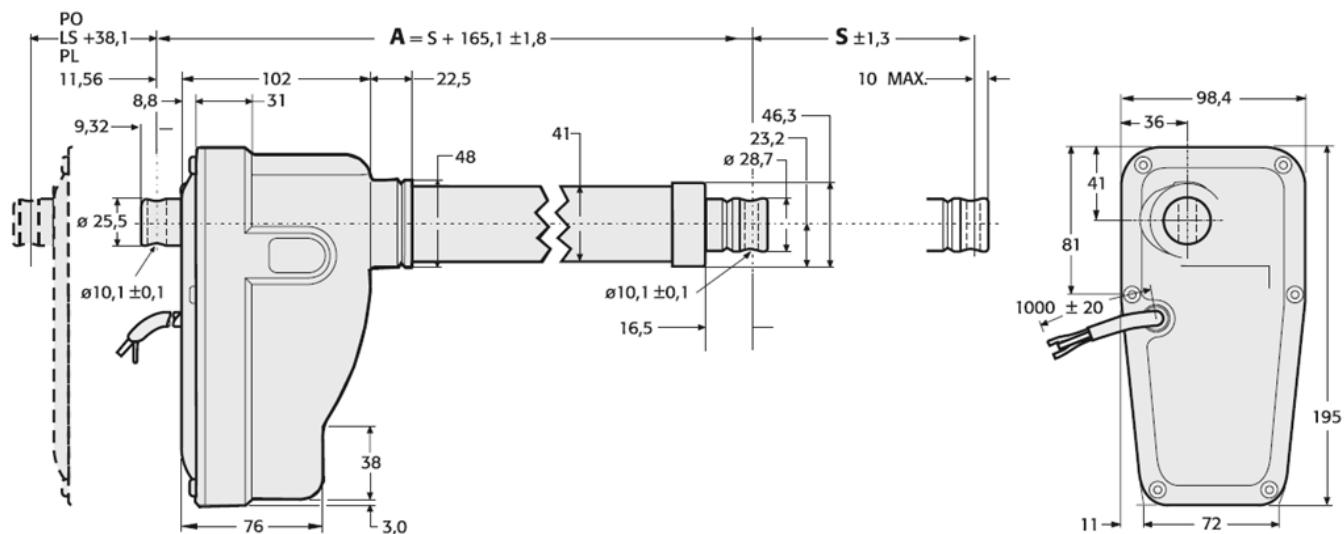
| General Specifications |                           |
|------------------------|---------------------------|
| Screw type             | acme                      |
| Internally restrained  | yes                       |
| Manual override        | no                        |
| Holding brake          | no, self-locking          |
| limit switches         | yes, adjustable           |
| Potentiometer          | optional                  |
| Motor protection       | auto reset thermal switch |
| Motor connection       | flying leads              |
| Certificates           | CE                        |

| Performance Specifications      |                                      |
|---------------------------------|--------------------------------------|
| Maximum load                    | dynamic / static*<br>[ N ]           |
| DFxxxx10W51                     | 2000 / 4000*                         |
| DFxxxx10W52                     | 1000 / 2000*                         |
| DFxxxx10W54                     | 500 / 1000*                          |
| Speed                           | no load / max. load<br>[ mm/s ]      |
| DFxxxx10W51                     | 19 / 13                              |
| DFxxxx10W52                     | 35 / 25                              |
| DFxxxx10W54                     | 71 / 51                              |
| input voltages                  | 12, 24, 36 VDC                       |
| Standard stroke lengths<br>[mm] | 100, 150, 200, 250,<br>300, 350, 400 |
| Operating temperature           | -30 bis +65 °C                       |
| Full load duty cycle @<br>20 °C | 25 %                                 |
| End play, maximum               | [mm]                                 |
| DFxxxx10W51                     | 0,5                                  |
| DFxxxx10W52                     | 0,5                                  |
| DFxxxx10W54                     | 1,2                                  |
| Restraining torque              | 0 Nm                                 |
| Lead cross section              | 1,5 mm <sup>2</sup>                  |
| Lead length                     | 1000 mm                              |
| Protection class                | IP 56                                |
| resistance change               | [Ω/mm]                               |
| DExxx17W41                      | 22                                   |
| DExxx17W42                      | 21,9                                 |
| DExxx17W42                      | 21,2                                 |

\* upper position (retracted)



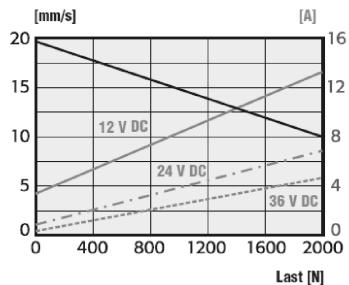
## Dimension SR 150



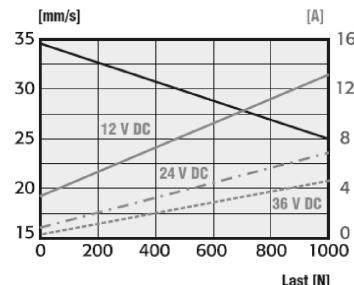
|  |      |       |       |       |       |       |       |       |
|--|------|-------|-------|-------|-------|-------|-------|-------|
| Stroke (S)                               | [mm] | 100   | 150   | 200   | 250   | 300   | 350   | 400   |
| Retracted length (A)                     | [mm] | 265,1 | 315,1 | 365,1 | 415,1 | 465,1 | 515,1 | 565,1 |
| Retracted length, with potentiometer (A) | [mm] | 303,2 | 353,2 | 403,2 | 453,2 | 503,2 | 553,2 | 603,2 |

### Geschwindigkeit und Strom lastabhängig

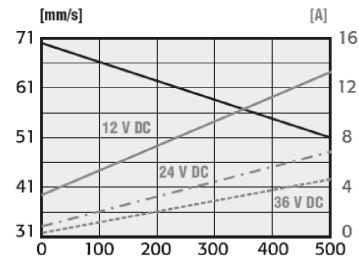
DFxxxx10W51

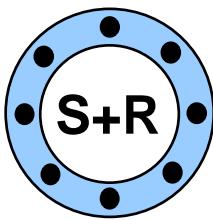


DFxxxx10W52



DFxxxx10W54

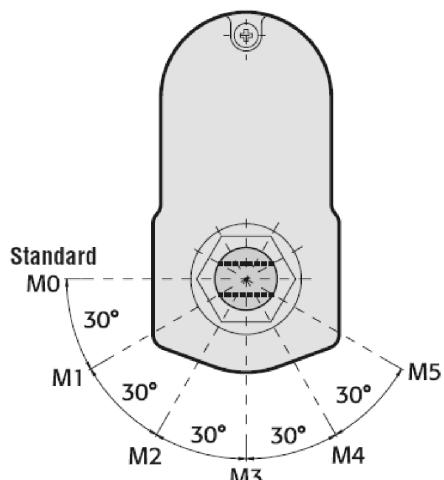




## Options and Accessories

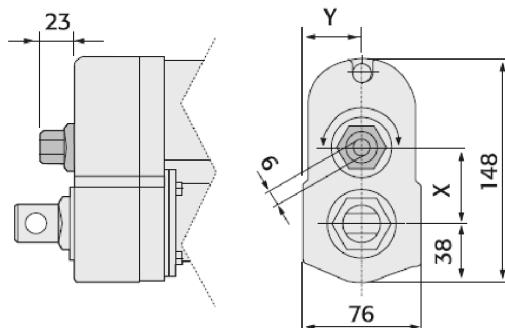
Definition of rear adapter hole positions

Compatible Actuators SR 5 and SR 10



Dimensions for manual override option.

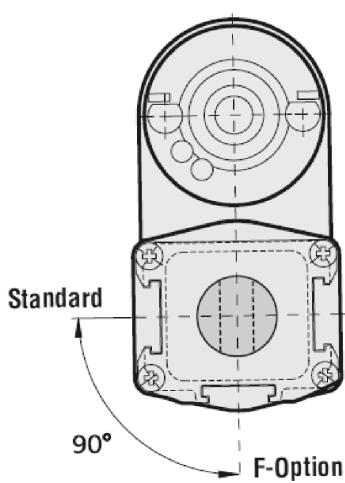
Compatible Actuators SR 5, SR 10, SR 14, SR24



| Übersetzungs-verhältnis | X    | Y    |
|-------------------------|------|------|
| 5:1                     | 49,6 | 38,0 |
| 10:1                    | 43,3 | 43,2 |
| 20:1                    | 38,9 | 38,0 |

Definition of adapter hole positions

Compatible Actuators SR 14 und SR 24

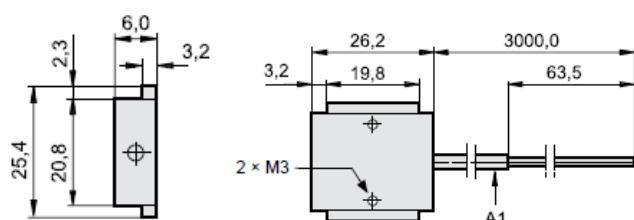


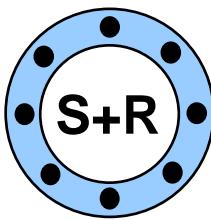
Magnetic Sensor

Compatible Actuators SR 14 und SR24

Contact Type: **normally open or normally closed**

|                            |                    |          |
|----------------------------|--------------------|----------|
| Maximum power              | [W]                | 10       |
| Maximum voltage            | [Vdc]              | 43       |
| Maximum current            | [A]                | 0,5      |
| Maximum contact resistance | [ohm]              | 0,2      |
| Lead cross section         | [mm <sup>2</sup> ] | 2 x 0,12 |
| Cable length               | [mm]               | 3000     |
| Protection class           |                    | IP67     |

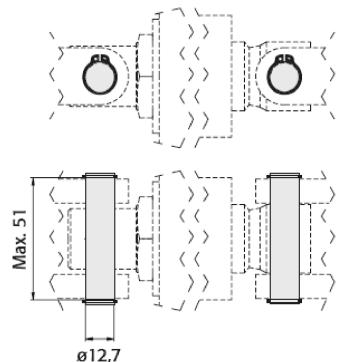




## Options and Accessories

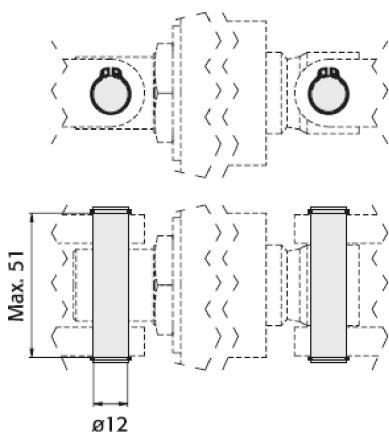
### Mounting Pin Kits

#### Compatible Actuators SR 5 und SR 10



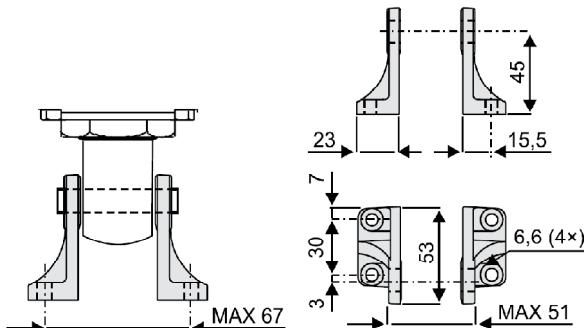
### Mounting Pin Kits

#### Compatible Actuators SR 14 und SR 24



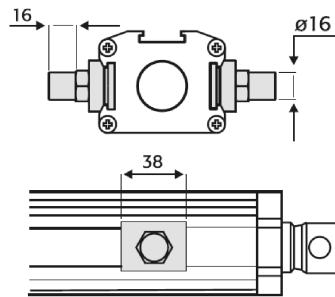
### Mounting Pin Bracket Kits

#### Compatible Actuators SR 14 und SR 24



### Trunnions

#### Compatible Actuators SR 14 und SR 24



### Trunnion Brackets

#### Compatible Actuators SR 14 und SR 24

