

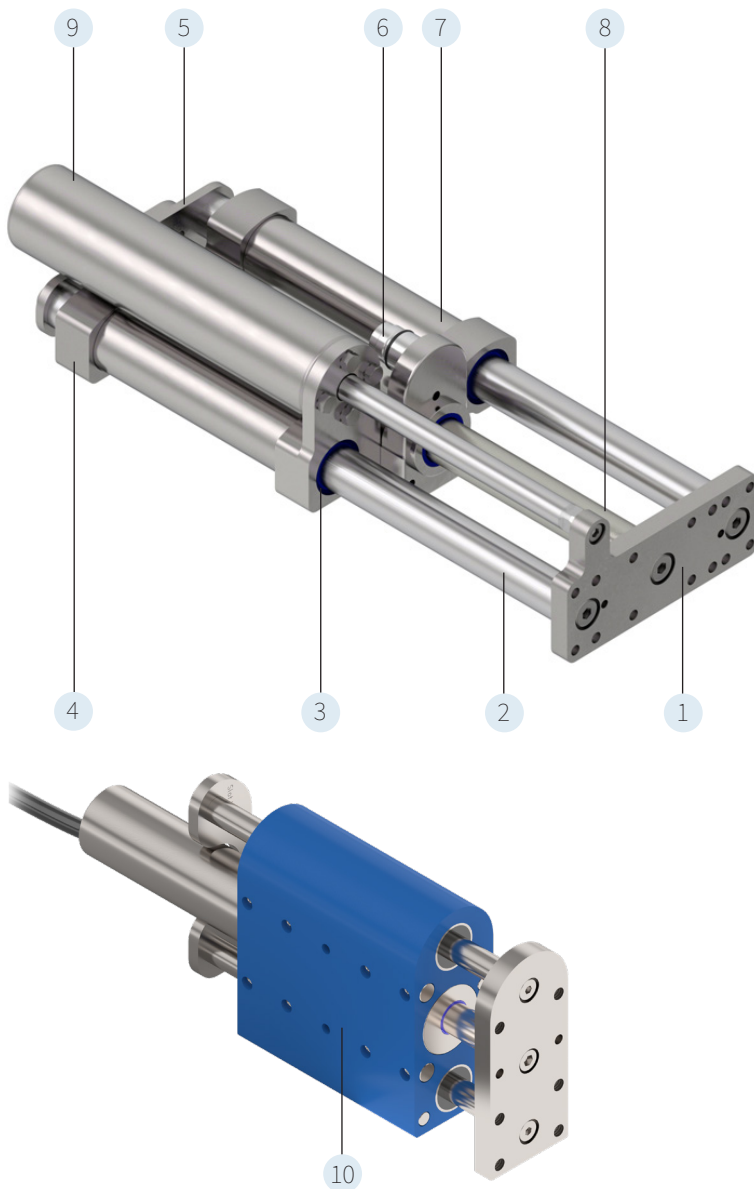
# STAINLESS STEEL LINEAR MODULES SM01



- ✓ Especially for pharmaceutical applications and the food sector
- ✓ Suitable for "wash-down" with protection class IP69
- ✓ High resistance to chemicals
- ✓ Motor housing and mounting parts made of stainless steel 1.4404 (AISI 316L) or Polyoxymethylen (POM, FDA approved)
- ✓ Guide rods optionally in surface-hardened stainless steel 1.4404 (AISI 316L)
- ✓ Guide with stainless linear ball bearings and food-grade lubricant (NSF H1) or plain guide with FDA-approved polymer bearings
- ✓ Equipped with "plug and play" technology
- ✓ Simple load simulation by LinMot Designer software
- ✓ Optional with "stainless steel" MagSpring® for vertical load balancing

## LINEAR MODULES SM01

|                   |    |
|-------------------|----|
| Description       | 3  |
| SM01-23x60F_SSCP  | 6  |
| SM01-23x160H_SSCP | 10 |
| SM01-37Sx60_SSCP  | 14 |
| SM01-37Sx120_SSCP | 20 |
| SM01-48x150_SSCP  | 26 |
| SM01-48x240_SSCP  | 32 |
| Accessories       | 38 |



1. Front plate with counterbore holes for precise load mounting
2. Optional hardened stainless steel shafts with high corrosion resistance or hard chrome-plated shafts
3. Stainless linear ball bearings with food grade lubricant (NSF H1) or polymer bearings
4. Guide block with built-in linear ball bearings or plain bearings
5. Back plate for higher mechanical stiffness of the linear guide
6. Stainless steel linear motor with integrated temperature and position sensors and mounting flange
7. Guide tube (only for linear ball bearing version)
8. Magnetic slider of the linear motor (Magnets are protected in a chrome steel tube.)
9. Magnetic spring MagSpring® for vertical load compensation (Optional)
10. Guide block made of polyoxymethylene (POM, FDA approved) with built-in linear ball bearings (Only for SM01-23)

## Linearmodules SM01

The SM01 linear modules are complete drive solutions consisting of linear guides with integrated "LinMot" linear motors and optionally attached vertical load compensation elements "MagSpring". The modules have been specially developed for applications in the pharmaceutical or food industry which require a solution made of stainless steel with a high degree of protection. Guide variants based on linear ball bearings with food-grade lubricant (NSF H1) are available as well as plain bearings completely manufactured in stainless steel

(1.4404 / AISI 316L) with FDA approved polymer bearings. Each SM01 linear module is supplied to the customer fully assembled and does not have to be assembled from individual parts. Only one article number is required to order. The commissioning of the drives is very easy as all SM01 linear modules are equipped with the "Plug and Play" technology. The required type parameters do not have to be selected manually, but are read in automatically by the servo drive.

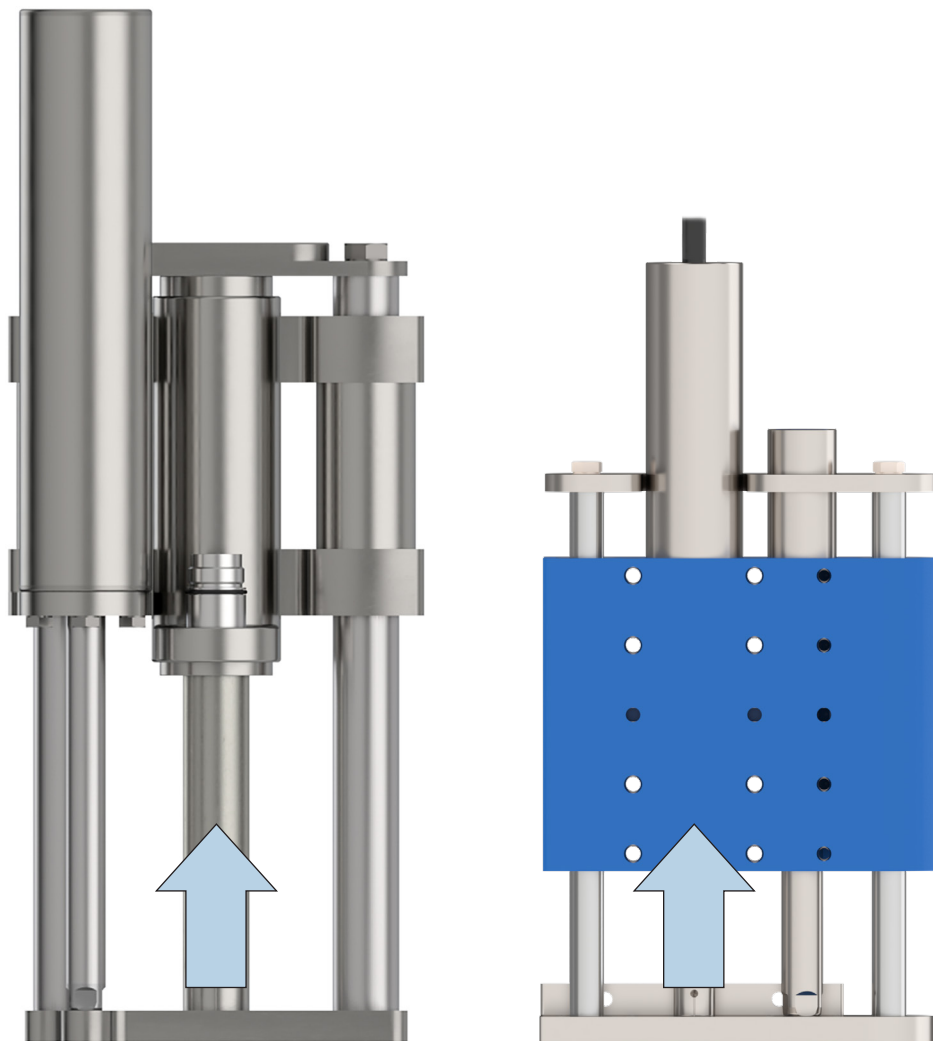
## SM01 linear modules with vertical load compensation «MagSpring®»

In the vertical mounting position, linear modules and other direct drives must constantly apply a constant force to counteract the weight force. A magnetic spring, MagSpring®, installed parallel to the linear motor, can passively compensate for the weight load. The motor is only used for the actual positioning operation or for applying the dynamic forces and can be sized accordingly smaller. Since MagSprings are purely passive elements, a defined function or position of a device can be ensured in the de-energized state. Examples are the lifting of a gripper or print head in vertical arrangements.

The mode of operation is based on the attractive force of permanent magnets. Accordingly, no energy source (electricity, compressed air, etc.) is needed. The special design of the flow-guiding components and the magnets translates the strongly non-linear relationship between force and displacement in magnet-iron arrangements into a constant force

curve. Depending on the strength class of the MagSpring, the permanent magnets are either in the stator, in the slider, or in both components. The slider is guided by an integrated plain bearing, so that MagSprings can be used comparably to gas pressure springs in a design. The effective force is in the range of +/- 10% of the nominal force, due to material and manufacturing tolerances.

The SM01 linear modules are optionally available with permanently installed MagSpring (MSxx option). These cover various strength classes from 40 N to 60 N constant force and are arranged in such a way that a pulling action is exerted on the load axis.

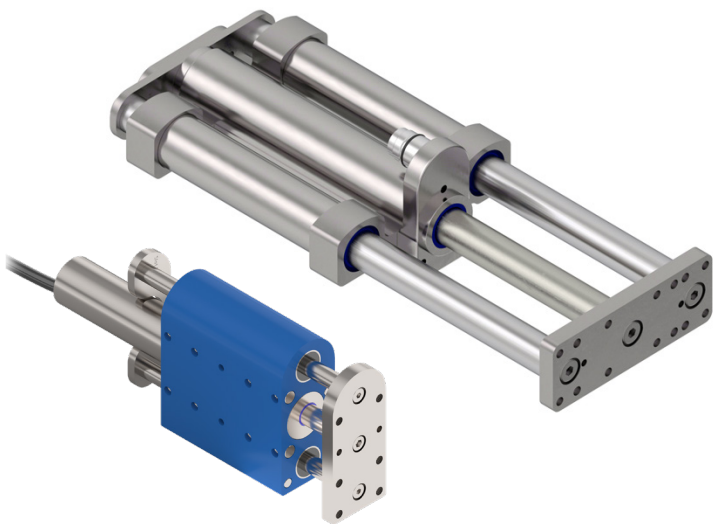


**Bearing variants of the SM01 linear modules**

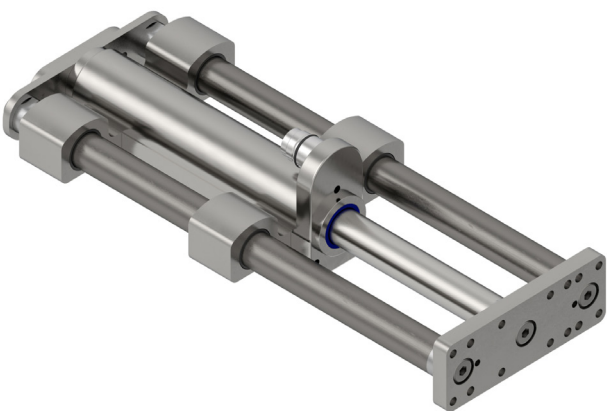
Guide systems based on rolling elements such as linear ball bearings are superior to plain bearings in general with regard to guiding accuracy, load capacity and friction. This is also shown in the respective load diagrams. The stainless steel linear ball bearings used in the SM01 linear modules require lubrication of the balls, which is why seals are necessary in practice to achieve an appropriate degree of protection. The lubricant used is a food grade lubricant (NSF H1) based on medical white oil.

The advantages of slide bearing technology are the higher maximum permissible acceleration compared to linear ball bea-

ings. In addition, the guide rods can also be made of chromium steel 1.4404 (AISI 316L), which means that they can also be used under extremely corrosive conditions. Due to the simple design of linear bearings, they are very easy to clean and can, with certain restrictions, also be operated in dry running, i.e. without grease. The polymer bearings used in the SM01 linear modules conform to FDA regulations and should be selected if frequent cleaning with water or cleaning agents is planned and less emphasis is placed on high guidance accuracy or load capacity.

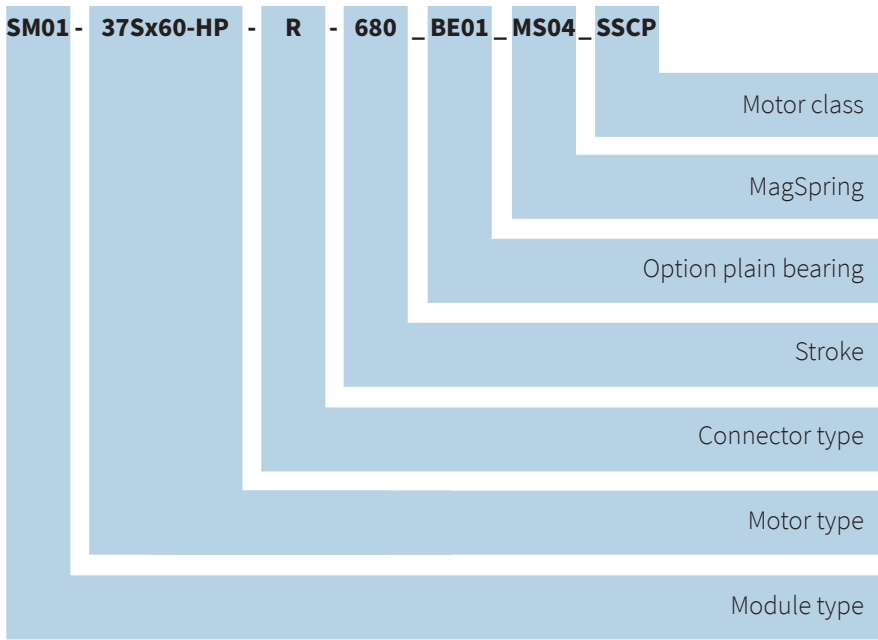


**Linear ball bearing variant**



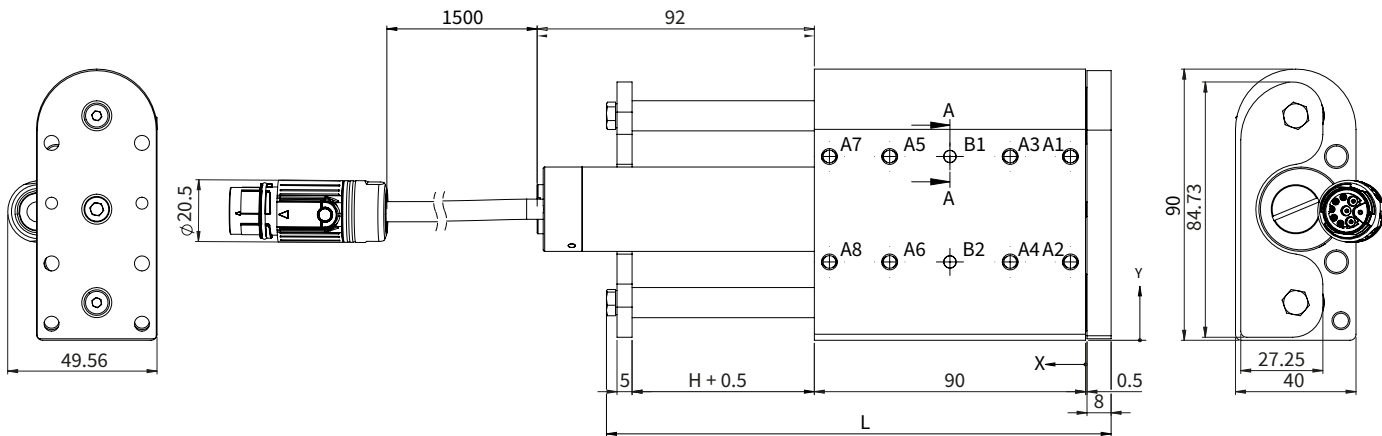
**Plain bearing variant**

**Designation Code Linear Modules SM01**



The SM01 linear module product family currently offers more than 40 product variants. Each variant has its own article number and is delivered fully assembled. The large variety of sizes, strokes, forces and features opens up a very comprehensive range of applications for the user.

SM01-23X80F\_SSCP WITH LINEAR BALL BEARINGS



Dimensions mm

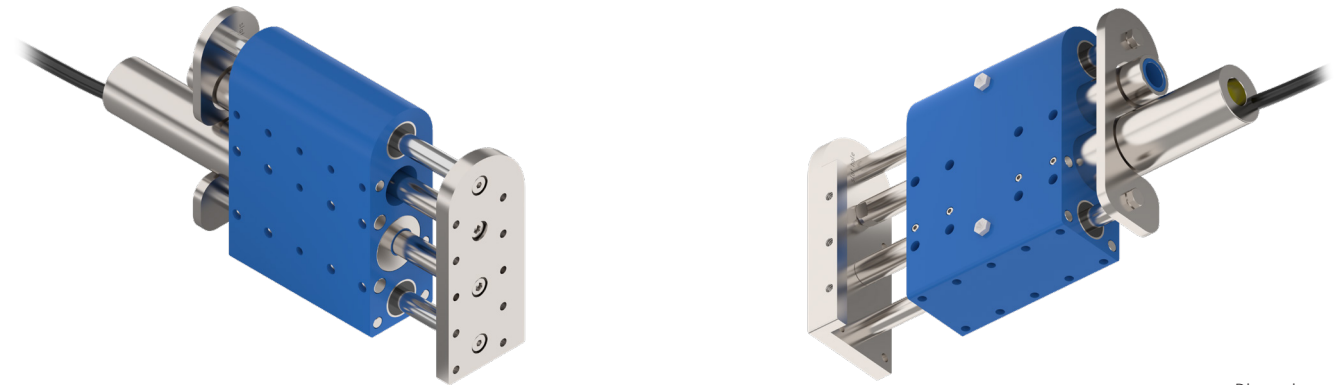
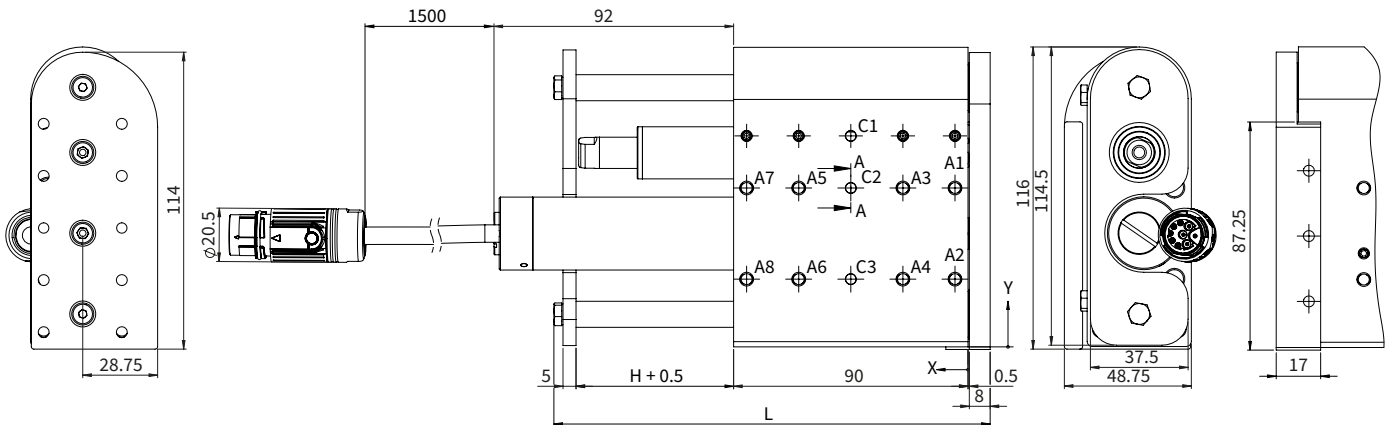
| Linear Module             | Stroke H<br>[mm (inch)] | Carriage length L<br>[mm (inch)] | Moving mass <sup>1)</sup><br>[g (lb)] | Total weight<br>[g (lb)] |
|---------------------------|-------------------------|----------------------------------|---------------------------------------|--------------------------|
| SM01-23x80F-XP-R-60_SSCP  | 60 (2.36)               | 167.5 (6.59)                     | 590 (1.30)                            | 1450 (3.20)              |
| SM01-23x80F-XP-R-150_SSCP | 150 (5.91)              | 257.5 (10.14)                    | 780 (1.72)                            | 1670 (3.68)              |
| SM01-23x80F-XP-R-190_SSCP | 190 (7.48)              | 297.5 (11.71)                    | 860 (1.89)                            | 1760 (3.88)              |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate

MATERIALS

| Guide Block       | Front Plate                         | Guide Shaft                        | Bearing                         | Wipers            |
|-------------------|-------------------------------------|------------------------------------|---------------------------------|-------------------|
| POM (FDA conform) | Stainless Steel Mat. 1.4404 / 316 L | Stainless Steel Mat. 1.4112 / 440B | Linear ball bearing (stainless) | NBR (FDA conform) |

SM01-23X80F\_MS01\_SSCP WITH LINEAR BALL BEARINGS AND VERTICAL LOAD COMPENSATION MAGSPRING®



Dimensions mm

| Linearmodul                                  | Stroke H<br>[mm (inch)] | Carriage length L<br>[mm (inch)] | Moving mass <sup>1)</sup><br>[g (lb)] | Total weight<br>[g (lb)] |
|----------------------------------------------|-------------------------|----------------------------------|---------------------------------------|--------------------------|
| SM01-23x80F-XP-R-60-MS01_SSCP <sup>2)</sup>  | 60 (2.36)               | 167.5 (6.59)                     | 910 (2.00)                            | 2010 (4.43)              |
| SM01-23x80F-XP-R-150-MS01_SSCP <sup>2)</sup> | 150 (5.91)              | 257.5 (10.14)                    | 1150 (2.54)                           | 2380 (5.25)              |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate, MagSpring slider

<sup>2)</sup> MagSpring MS01: Constant force 22N

MATERIALS

| Guide Block       | Front Plate                         | Guide Shaft                        | Bearing                         | Wipers            |
|-------------------|-------------------------------------|------------------------------------|---------------------------------|-------------------|
| POM (FDA conform) | Stainless Steel Mat. 1.4404 / 316 L | Stainless Steel Mat. 1.4112 / 440B | Linear ball bearing (stainless) | NBR (FDA conform) |

PERFORMANCE DATA SM01-23x80F

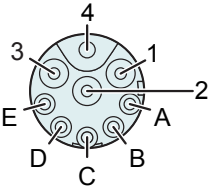
| Performance Data Linear Module SM01-23x80F                                                       |                                          |  |                                     |  |
|--------------------------------------------------------------------------------------------------|------------------------------------------|--|-------------------------------------|--|
| Stroke                                                                                           |                                          |  |                                     |  |
| Maximum Stroke                                                                                   | mm (in)                                  |  | 190 (7.48)                          |  |
| Force                                                                                            |                                          |  |                                     |  |
| Max. Force @ 48VDC                                                                               | N (lbf)                                  |  | 73 (16.41)                          |  |
| Max. Force @ 72VDC                                                                               | N (lbf)                                  |  | 73 (16.41)                          |  |
| Max. Cont. Force [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ]      | N (lbf)                                  |  | 15.2 / 18 / 25 (3.42 / 4.04 / 5.62) |  |
| Force Constant                                                                                   | N/A <sub>pk</sub> (lbf/A <sub>pk</sub> ) |  | 8.95 (2.01)                         |  |
| Position Detection                                                                               |                                          |  |                                     |  |
| Position Resolution                                                                              | mm (in)                                  |  | 0.005 (0.0002)                      |  |
| Repeatability                                                                                    | mm (in)                                  |  | ±0.05 (±0.002)                      |  |
| Position Resolution with ES                                                                      | mm (in)                                  |  | - (-)                               |  |
| Repeatability with ES                                                                            | mm (in)                                  |  | - (-)                               |  |
| Linearity with ES                                                                                | mm (in)                                  |  | - (-)                               |  |
| Electrical Data                                                                                  |                                          |  |                                     |  |
| Max. Current @ 48VDC                                                                             | A <sub>pk</sub>                          |  | 7.4                                 |  |
| Max. Current @ 72VDC                                                                             | A <sub>pk</sub>                          |  | 7.4                                 |  |
| Max. Cont. Current [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ]    | A <sub>pk</sub>                          |  | 1.5 / 1.9 / 2.4                     |  |
| Magnetic Period                                                                                  | mm (in)                                  |  | 20 (787.4)                          |  |
| Thermal Data                                                                                     |                                          |  |                                     |  |
| Max. Winding Temperature (Sensor)                                                                | °C                                       |  | 120                                 |  |
| Thermal Resistance [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ]    | K/W                                      |  | 6.0 / 3.7 / 2.3                     |  |
| Thermal Time Constant [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ] | s                                        |  | 900 / 1500 / 400                    |  |
| Mechanical Data                                                                                  |                                          |  |                                     |  |
| Stator Diameter                                                                                  | mm (in)                                  |  | 28 (1.1)                            |  |
| Slider Diameter                                                                                  | mm (in)                                  |  | 12 (0.47)                           |  |
| IP Code [Plain Bearing / Linear Ball Bearing]                                                    |                                          |  | IP 67S                              |  |

1) Motor is mounted on a stainless steel surface of 0.02 m².  
2) Motor is mounted on a 20°C cold plate.

CONNECTOR

| Motor Connector Wiring | R-Connector | Wire Color Motor Cable |
|------------------------|-------------|------------------------|
| Ph 1+                  | 1           | red                    |
| Ph 1-                  | 2           | pink                   |
| Ph 2+                  | 3           | blue                   |
| Ph 2-                  | 4           | grey                   |
| +5VDC                  | A           | white                  |
| GND                    | B           | inner Shield           |
| Sinus                  | C           | yellow                 |
| Cosinus                | D           | green                  |
| Temp.                  | E           | black                  |
| Shield                 | Case        | outer Shield           |

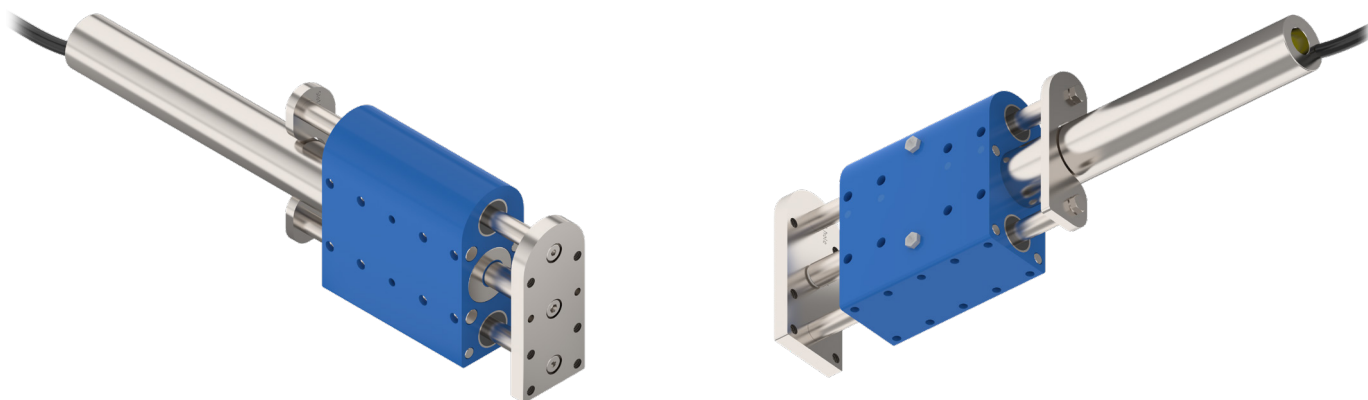
R-Connector



View: Motor connector, plug side

**ORDERING INFORMATION**

| Item                                  | Description                                                               | Item-No.                  |
|---------------------------------------|---------------------------------------------------------------------------|---------------------------|
| <b>SM01-23x80F-XP-R-60_SSCP</b>       | Linear Module SSCP, Linear Ball Bearing, Stroke max 60 mm                 | <a href="#">0150-6717</a> |
| <b>SM01-23x80F-XP-R-60-MS01_SSCP</b>  | Linear Module SSCP, Linear Ball Bearing, MagSpring 22N, stroke max 60 mm  | <a href="#">0150-6845</a> |
|                                       |                                                                           |                           |
| <b>SM01-23x80F-XP-R-150_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, Stroke max 150 mm                | <a href="#">0150-6768</a> |
| <b>SM01-23x80F-XP-R-150-MS01_SSCP</b> | Linear Module SSCP, Linear Ball Bearing, MagSpring 22N, stroke max 150 mm | <a href="#">0150-6846</a> |
|                                       |                                                                           |                           |
| <b>SM01-23x80F-XP-R-190_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, Stroke max 190 mm                | <a href="#">0150-6805</a> |

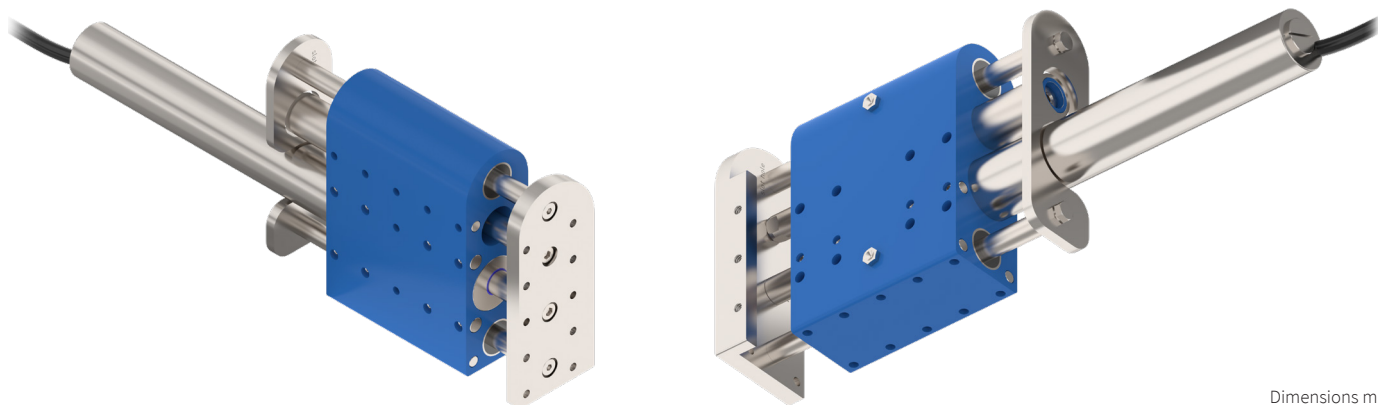
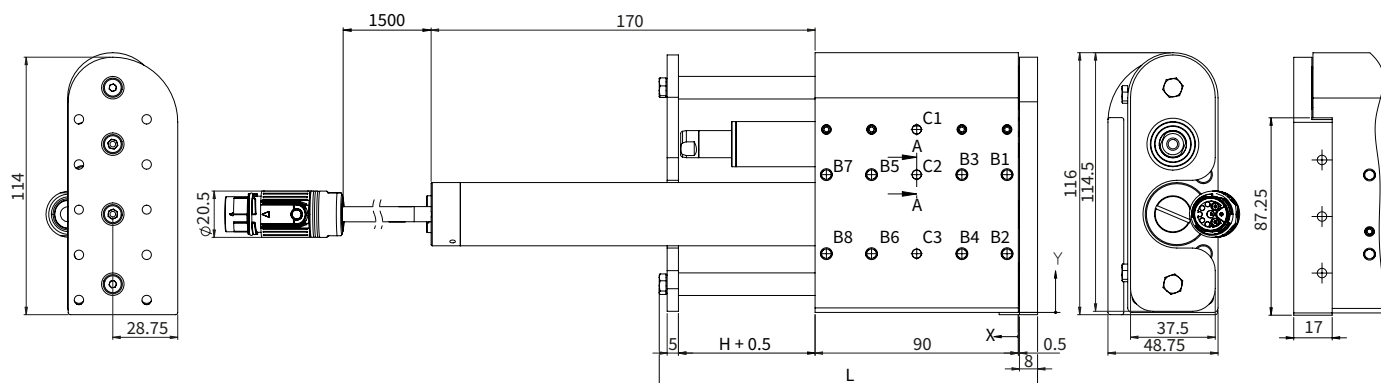
[illegible]

| Linear Module              | Stroke H<br>[mm (inch)] |        | Carriage length L<br>[mm (inch)] |       | Moving mass <sup>1)</sup><br>[g (lb)] |     | Total weight<br>[g (lb)] |      |        |
|----------------------------|-------------------------|--------|----------------------------------|-------|---------------------------------------|-----|--------------------------|------|--------|
| SM01-23x160H-XP-R-60_SSCP  | 60                      | (2.36) |                                  | 167.5 | (6.59)                                | 590 | (1.30)                   | 1620 | (3.57) |
| SM01-23x160H-XP-R-150_SSCP | 150                     | (5.91) |                                  | 257.5 | (10.14)                               | 780 | (1.72)                   | 1850 | (4.08) |
| SM01-23x160H-XP-R-190_SSCP | 190                     | (7.48) |                                  | 297.5 | (11.71)                               | 860 | (1.90)                   | 1940 | (4.28) |

13

| Guide Block       | Front Plate                         | Guide Shaft                        | Bearing                         | Wipers            |
|-------------------|-------------------------------------|------------------------------------|---------------------------------|-------------------|
| POM (FDA conform) | Stainless Steel Mat. 1.4404 / 316 L | Stainless Steel Mat. 1.4112 / 440B | Linear ball bearing (stainless) | NBR (FDA conform) |

## SM01-23X160H\_MS01\_SSCP WITH LINEAR BALL BEARINGS AND VERTICAL LOAD COMPENSATION MAGSPRING®



Dimensions mm

| Linearmodul                                   | Stroke H<br>[mm (inch)] |        | Carriage length L<br>[mm (inch)] |         | Moving mass <sup>1)</sup><br>[g (lb)] |        | Total weight<br>[g (lb)] |        |
|-----------------------------------------------|-------------------------|--------|----------------------------------|---------|---------------------------------------|--------|--------------------------|--------|
| SM01-23x160H-XP-R-60-MS01_SSCP <sup>2)</sup>  | 60                      | (2.36) | 167.5                            | (6.59)  | 910                                   | (2.00) | 2200                     | (4.85) |
| SM01-23x160H-XP-R-150-MS01_SSCP <sup>2)</sup> | 150                     | (5.91) | 257.5                            | (10.14) | 1150                                  | (2.54) | 2560                     | (5.64) |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate, MagSpring slider

2) MagSpring MS01: Constant force 22N

## MATERIALS

| Guide Block       | Front Plate                         | Guide Shaft                        | Bearing                         | Wipers            |
|-------------------|-------------------------------------|------------------------------------|---------------------------------|-------------------|
| POM (FDA conform) | Stainless Steel Mat. 1.4404 / 316 L | Stainless Steel Mat. 1.4112 / 440B | Linear ball bearing (stainless) | NBR (FDA conform) |

PERFORMANCE DATA SM01-23x160H

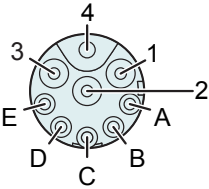
| Performance Data Linear Module SM01-23x160H                                                      |                                          |  |                                         |  |
|--------------------------------------------------------------------------------------------------|------------------------------------------|--|-----------------------------------------|--|
| Stroke                                                                                           |                                          |  |                                         |  |
| Maximum Stroke                                                                                   | mm (in)                                  |  | 190 (7.48)                              |  |
| Force                                                                                            |                                          |  |                                         |  |
| Max. Force @ 48VDC                                                                               | N (lbf)                                  |  | 137.5 (30.91)                           |  |
| Max. Force @ 72VDC                                                                               | N (lbf)                                  |  | 137.5 (30.91)                           |  |
| Max. Cont. Force [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ]      | N (lbf)                                  |  | 25.6 / 32.7 / 38.2 (5.76 / 7.35 / 8.59) |  |
| Force Constant                                                                                   | N/A <sub>pk</sub> (lbf/A <sub>pk</sub> ) |  | 12.5 (2.81)                             |  |
| Position Detection                                                                               |                                          |  |                                         |  |
| Position Resolution                                                                              | mm (in)                                  |  | 0.005 (0.0002)                          |  |
| Repeatability                                                                                    | mm (in)                                  |  | ±0.05 (±0.002)                          |  |
| Position Resolution with ES                                                                      | mm (in)                                  |  | - (-)                                   |  |
| Repeatability with ES                                                                            | mm (in)                                  |  | - (-)                                   |  |
| Linearity with ES                                                                                | mm (in)                                  |  | - (-)                                   |  |
| Electrical Data                                                                                  |                                          |  |                                         |  |
| Max. Current @ 48VDC                                                                             | A <sub>pk</sub>                          |  | 10                                      |  |
| Max. Current @ 72VDC                                                                             | A <sub>pk</sub>                          |  | 10                                      |  |
| Max. Cont. Current [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ]    | A <sub>pk</sub>                          |  | 1.9 / 2.4 / 2.9                         |  |
| Magnetic Period                                                                                  | mm (in)                                  |  | 20 (787.4)                              |  |
| Thermal Data                                                                                     |                                          |  |                                         |  |
| Max. Winding Temperature (Sensor)                                                                | °C                                       |  | 120                                     |  |
| Thermal Resistance [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ]    | K/W                                      |  | 4.3 / 2.7 / 2                           |  |
| Thermal Time Constant [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ] | s                                        |  | 800 / 1500 / 400                        |  |
| Mechanical Data                                                                                  |                                          |  |                                         |  |
| Stator Diameter                                                                                  | mm (in)                                  |  | 28 (1.1)                                |  |
| Slider Diameter                                                                                  | mm (in)                                  |  | 12 (0.47)                               |  |
| IP Code [Plain Bearing / Linear Ball Bearing]                                                    |                                          |  | IP 67S                                  |  |

1) Motor is mounted on a stainless steel surface of 0.02 m².  
2) Motor is mounted on a 20°C cold plate.

CONNECTOR

| Motor Connector Wiring | R-Connector | Wire Color Motor Cable |
|------------------------|-------------|------------------------|
| Ph 1+                  | 1           | red                    |
| Ph 1-                  | 2           | pink                   |
| Ph 2+                  | 3           | blue                   |
| Ph 2-                  | 4           | grey                   |
| +5VDC                  | A           | white                  |
| GND                    | B           | inner Shield           |
| Sinus                  | C           | yellow                 |
| Cosinus                | D           | green                  |
| Temp.                  | E           | black                  |
| Shield                 | Case        | outer Shield           |

R-Connector

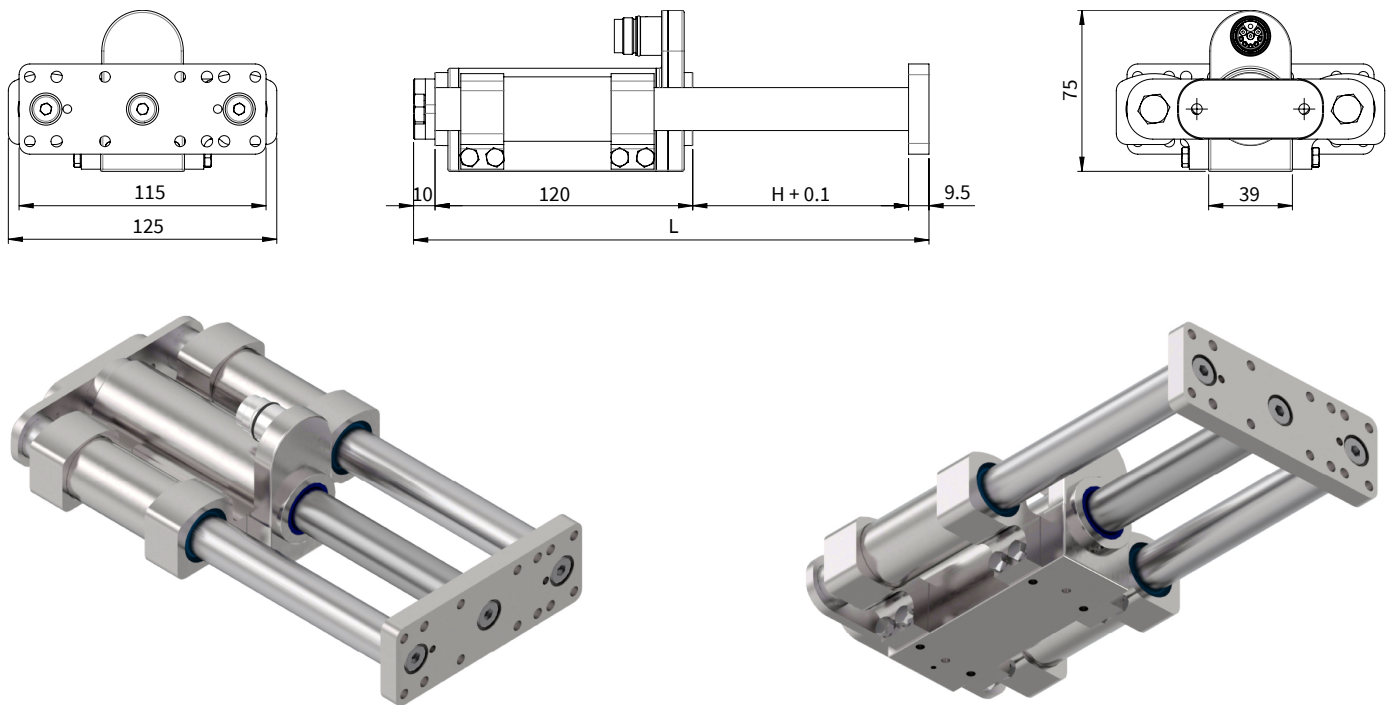


View: Motor connector, plug side

**ORDERING INFORMATION**

| Item                                   | Description                                                               | Item-No.                  |
|----------------------------------------|---------------------------------------------------------------------------|---------------------------|
| <b>SM01-23x160H-XP-R-60_SSCP</b>       | Linear Module SSCP, Linear Ball Bearing, Stroke max 60 mm                 | <a href="#">0150-6853</a> |
| <b>SM01-23x160H-XP-R-60-MS01_SSCP</b>  | Linear Module SSCP, Linear Ball Bearing, MagSpring 22N, stroke max 60 mm  | <a href="#">0150-6850</a> |
|                                        |                                                                           |                           |
| <b>SM01-23x160H-XP-R-150_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, Stroke max 150 mm                | <a href="#">0150-6854</a> |
| <b>SM01-23x160H-XP-R-150-MS01_SSCP</b> | Linear Module SSCP, Linear Ball Bearing, MagSpring 22N, stroke max 150 mm | <a href="#">0150-6851</a> |
|                                        |                                                                           |                           |
| <b>SM01-23x160H-XP-R-190_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, Stroke max 190 mm                | <a href="#">0150-6855</a> |

SM01-37Sx60\_SSCP WITH LINEAR BALL BEARINGS



Dimensions mm

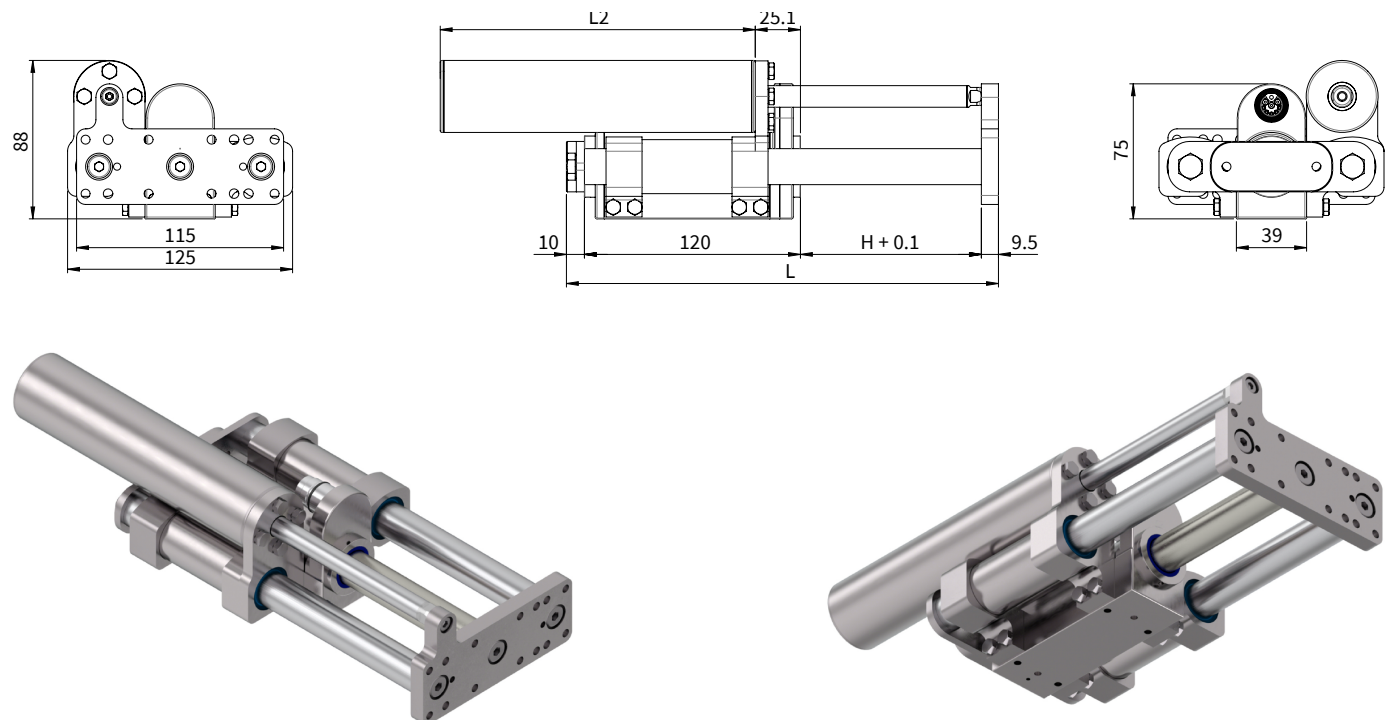
| Linear Module             | Stroke H<br>[mm (inch)] |         | Carriage length L<br>[mm (inch)] |         | Moving mass <sup>1)</sup><br>[g (lb)] |        | Total weight<br>[g (lb)] |         |
|---------------------------|-------------------------|---------|----------------------------------|---------|---------------------------------------|--------|--------------------------|---------|
| SM01-37Sx60-HP-R-100_SSCP | 100                     | (3.94)  | 240                              | (9.45)  | 1615                                  | (3.56) | 2852                     | (6.29)  |
| SM01-37Sx60-HP-R-180_SSCP | 180                     | (7.09)  | 320                              | (12.60) | 1997                                  | (4.4)  | 3234                     | (7.13)  |
| SM01-37Sx60-HP-R-280_SSCP | 280                     | (11.02) | 420                              | (16.54) | 2485                                  | (5.48) | 3722                     | (8.21)  |
| SM01-37Sx60-HP-R-380_SSCP | 380                     | (14.96) | 520                              | (20.47) | 2973                                  | (6.55) | 4210                     | (9.28)  |
| SM01-37Sx60-HP-R-480_SSCP | 480                     | (18.90) | 620                              | (24.41) | 3461                                  | (7.63) | 4698                     | (10.36) |
| SM01-37Sx60-HP-R-580_SSCP | 580                     | (22.83) | 720                              | (28.35) | 3949                                  | (8.71) | 5186                     | (11.43) |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate

MATERIALS

| Guide Block & Front Plate           | Guide Shaft        | Bearing                         | Wipers            |
|-------------------------------------|--------------------|---------------------------------|-------------------|
| Stainless Steel Mat. 1.4404 / 316 L | Hard chrome-plated | Linear ball bearing (stainless) | NBR (FDA conform) |

**SM01-37Sx60\_MSxx\_SSCP WITH LINEAR BALL BEARINGS AND VERTICAL LOAD COMPENSATION MAGSPRING®**



Dimensions mm

| Linear Module with MagSpring                        | Stroke H<br>[mm (inch)] | MS Stator length L2<br>[mm (inch)] | Carriage length L<br>[mm (inch)] | Moving mass <sup>1)</sup><br>[g (lb)] | Total weight<br>[g (lb)] |
|-----------------------------------------------------|-------------------------|------------------------------------|----------------------------------|---------------------------------------|--------------------------|
| <b>SM01-37Sx60-HP-R-100_MSxx_SSCP <sup>2)</sup></b> | 100 (2.36)              | 175 (6.89)                         | 240 (9.45)                       | 1769 (3.9)                            | 3986 (8.79)              |
| <b>SM01-37Sx60-HP-R-180_MSxx_SSCP <sup>2)</sup></b> | 180 (3.93)              | 250 (9.84)                         | 320 (12.60)                      | 2221 (4.9)                            | 4778 (10.53)             |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate, MagSpring slider

<sup>2)</sup> MagSpring variants with different constant forces

MS11: Constant force 40N

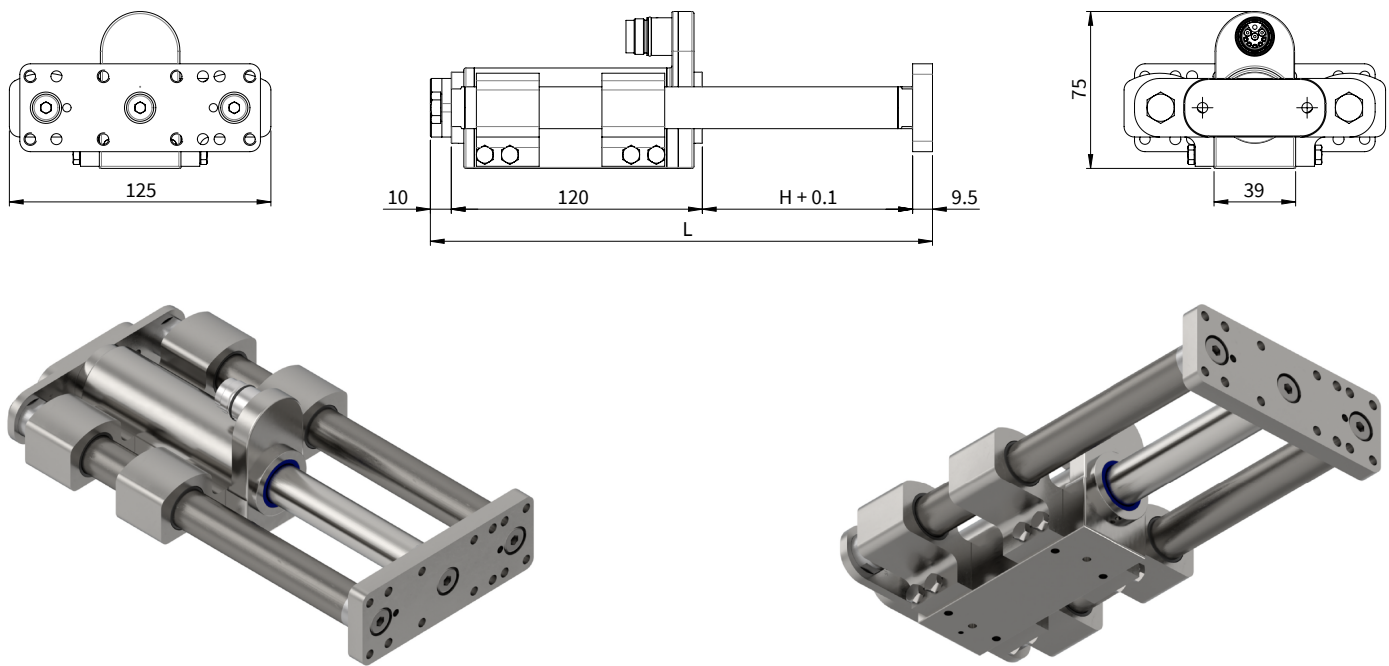
MS12: Constant force 50N

MS13: Constant force 60N

**MATERIALS**

| Guide Block & Front Plate           | Guide Shaft        | Bearing                         | Wipers            |
|-------------------------------------|--------------------|---------------------------------|-------------------|
| Stainless Steel Mat. 1.4404 / 316 L | Hard chrome-plated | Linear ball bearing (stainless) | NBR (FDA conform) |

SM01-37Sx60\_BE01\_SSCP WITH PLAIN BEARINGS



Dimensions mm

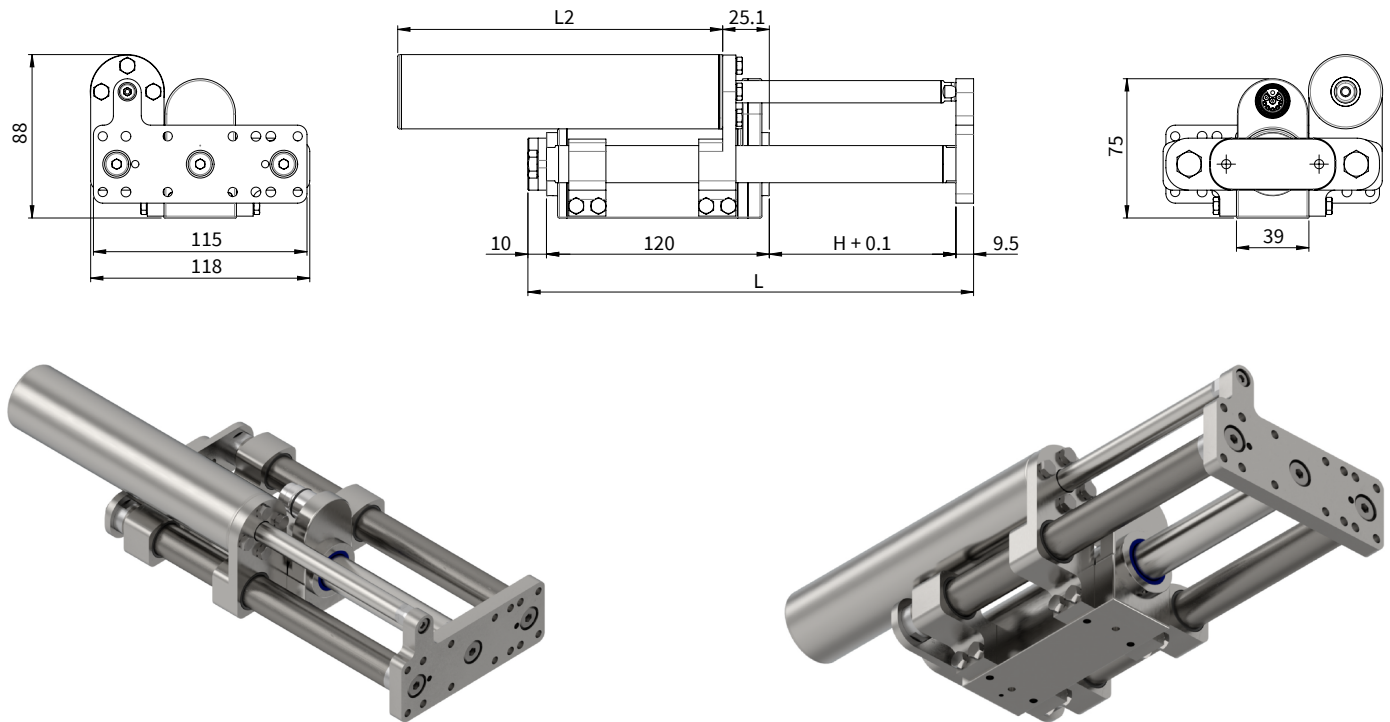
| Linear Module                  | Stroke H<br>[mm (inch)] |        | Carriage length L<br>[mm (inch)] |         | Moving mass <sup>1)</sup><br>[g (lb)] |        | Total weight<br>[g (lb)] |        |
|--------------------------------|-------------------------|--------|----------------------------------|---------|---------------------------------------|--------|--------------------------|--------|
| SM01-37Sx60-HP-R-100_BE01_SSCP | 100                     | (3.94) | 240                              | (9.45)  | 1501                                  | (3.31) | 3137                     | (6.92) |
| SM01-37Sx60-HP-R-180_BE01_SSCP | 180                     | (7.09) | 320                              | (12.60) | 1831                                  | (4.04) | 3467                     | (7.64) |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate

MATERIALS

| Guide Block & Front Plate           | Guide Shaft                         | Bearing                            | Wipers |
|-------------------------------------|-------------------------------------|------------------------------------|--------|
| Stainless Steel Mat. 1.4404 / 316 L | Stainless Steel Mat. 1.4404 / 316 L | Polymer plain bearings FDA conform | None   |

SM01-37Sx60\_BE01\_MSxx\_SSCP WITH PLAIN BEARINGS AND VERTICAL LOAD COMPENSATION MAGSPRING®



Dimensions mm

| Linear Module with MagSpring                      | Stroke H [mm (inch)] | MS Stator length L2 [mm (inch)] | Carriage length L [mm (inch)] | Moving mass <sup>1)</sup> [g (lb)] | Total weight [g (lb)] |
|---------------------------------------------------|----------------------|---------------------------------|-------------------------------|------------------------------------|-----------------------|
| SM01-37Sx60-HP-R-100_BE01_MSxx_SSCP <sup>2)</sup> | 100 (2.36)           | 175 (6.89)                      | 240 (9.45)                    | 1655 (3.65)                        | 3965 (8.74)           |
| SM01-37Sx60-HP-R-180_BE01_MSxx_SSCP <sup>2)</sup> | 180 (3.93)           | 250 (9.84)                      | 320 (12.60)                   | 2055 (4.53)                        | 4705 (10.37)          |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate, MagSpring slider

<sup>2)</sup> MagSpring variants with different constant forces

MS11: Constant force 40N

MS12: Constant force 50N

MS13: Constant force 60N

MATERIALS

| Guide Block & Front Plate           | Guide Shaft                         | Bearing                            | Wipers |
|-------------------------------------|-------------------------------------|------------------------------------|--------|
| Stainless Steel Mat. 1.4404 / 316 L | Stainless Steel Mat. 1.4404 / 316 L | Polymer plain bearings FDA conform | None   |

PERFORMANCE DATA SM01-37Sx60

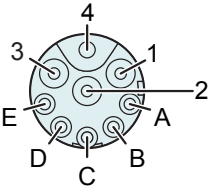
| Performance Data Linear Module SM01-37Sx60                                                       |                                          |  |                                |  |
|--------------------------------------------------------------------------------------------------|------------------------------------------|--|--------------------------------|--|
| Stroke                                                                                           |                                          |  |                                |  |
| Maximum Stroke                                                                                   | mm (in)                                  |  | 580 (22.83)                    |  |
| Force                                                                                            |                                          |  |                                |  |
| Max. Force @ 48VDC                                                                               | N (lbf)                                  |  | 128 (28.8)                     |  |
| Max. Force @ 72VDC                                                                               | N (lbf)                                  |  | 128 (28.8)                     |  |
| Max. Cont. Force [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ]      | N (lbf)                                  |  | 25 / 33 / 39 (5.6 / 7.4 / 8.8) |  |
| Force Constant                                                                                   | N/A <sub>pk</sub> (lbf/A <sub>pk</sub> ) |  | 13.4 (3.01)                    |  |
| Position Detection                                                                               |                                          |  |                                |  |
| Position Resolution                                                                              | mm (in)                                  |  | 0.005 (0.0002)                 |  |
| Repeatability                                                                                    | mm (in)                                  |  | ±0.05 (±0.002)                 |  |
| Position Resolution with ES                                                                      | mm (in)                                  |  | - (-)                          |  |
| Repeatability with ES                                                                            | mm (in)                                  |  | - (-)                          |  |
| Linearity with ES                                                                                | mm (in)                                  |  | - (-)                          |  |
| Electrical Data                                                                                  |                                          |  |                                |  |
| Max. Current @ 48VDC                                                                             | A <sub>pk</sub>                          |  | 9.4                            |  |
| Max. Current @ 72VDC                                                                             | A <sub>pk</sub>                          |  | 9.4                            |  |
| Max. Cont. Current [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ]    | A <sub>pk</sub>                          |  | 1.9 / 2.5 / 2.9                |  |
| Terminal Resistance 25 °C / 150 °C                                                               | Ohm                                      |  | 3.2 / 4.7                      |  |
| Terminal Inductivity                                                                             | mH                                       |  | 1.6                            |  |
| Magnetic Period                                                                                  | mm (in)                                  |  | 40 (1.57)                      |  |
| Thermal Data                                                                                     |                                          |  |                                |  |
| Max. Winding Temperature (Sensor)                                                                | °C                                       |  | 120                            |  |
| Thermal Resistance [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ]    | K/W                                      |  | 4.7 / 3 / 2.2                  |  |
| Thermal Time Constant [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ] | s                                        |  | 1300 / 3200 / 800              |  |
| Mechanical Data                                                                                  |                                          |  |                                |  |
| Stator Diameter                                                                                  | mm (in)                                  |  | 39 (1.5)                       |  |
| Slider Diameter                                                                                  | mm (in)                                  |  | 20 (0.79)                      |  |
| IP Code [Plain Bearing / Linear Ball Bearing]                                                    |                                          |  | IP 69 / IP 67S                 |  |

1) Motor is mounted on a stainless steel surface of 0.02 m².  
2) Motor is mounted on a 20°C cold plate.

CONNECTOR

| Motor Connector Wiring | R-Connector | Wire Color Motor Cable |
|------------------------|-------------|------------------------|
| Ph 1+                  | 1           | red                    |
| Ph 1-                  | 2           | pink                   |
| Ph 2+                  | 3           | blue                   |
| Ph 2-                  | 4           | grey                   |
| +5VDC                  | A           | white                  |
| GND                    | B           | inner Shield           |
| Sinus                  | C           | yellow                 |
| Cosinus                | D           | green                  |
| Temp.                  | E           | black                  |
| Shield                 | Case        | outer Shield           |

R-Connector

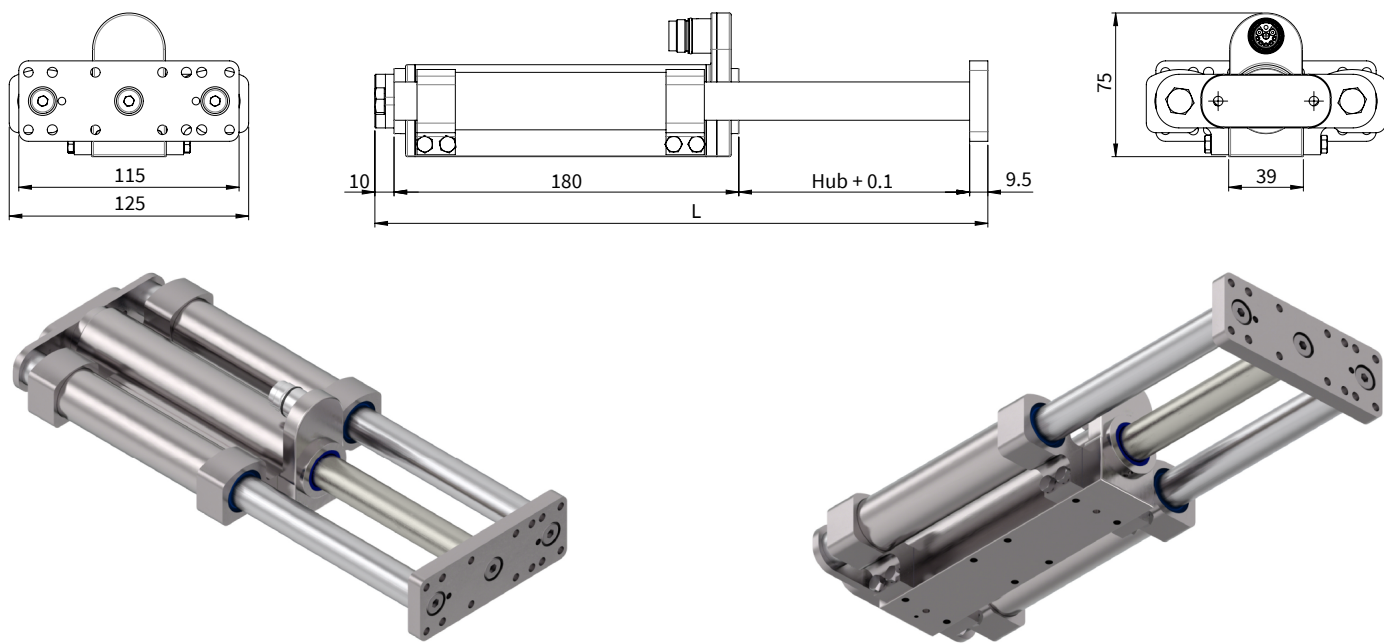


View: Motor connector, plug side

## ORDERING INFORMATION

| Item                                       | Description                                                              | Item-No.                  |
|--------------------------------------------|--------------------------------------------------------------------------|---------------------------|
| <b>SM01-37Sx60-HP-R-100_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max 100mm                | <a href="#">0150-4413</a> |
| <b>SM01-37Sx60-HP-R-100_MS02_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, MagSpring 40N, stroke max 100mm | <a href="#">0150-4437</a> |
| <b>SM01-37Sx60-HP-R-100_MS03_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, MagSpring 50N, stroke max 100mm | <a href="#">0150-4438</a> |
| <b>SM01-37Sx60-HP-R-100_MS04_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, MagSpring 60N, stroke max 100mm | <a href="#">0150-4439</a> |
|                                            |                                                                          |                           |
| <b>SM01-37Sx60-HP-R-180_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max 180mm                | <a href="#">0150-4414</a> |
| <b>SM01-37Sx60-HP-R-180_MS02_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, MagSpring 40N, stroke max 180mm | <a href="#">0150-4440</a> |
| <b>SM01-37Sx60-HP-R-180_MS03_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, MagSpring 50N, stroke max 180mm | <a href="#">0150-4441</a> |
| <b>SM01-37Sx60-HP-R-180_MS04_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, MagSpring 60N, stroke max 180mm | <a href="#">0150-4442</a> |
|                                            |                                                                          |                           |
| <b>SM01-37Sx60-HP-R-280_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max 280mm                | <a href="#">0150-4415</a> |
| <b>SM01-37Sx60-HP-R-380_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max 380mm                | <a href="#">0150-4416</a> |
| <b>SM01-37Sx60-HP-R-480_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max 480mm                | <a href="#">0150-4417</a> |
| <b>SM01-37Sx60-HP-R-580_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max 580mm                | <a href="#">0150-4418</a> |
|                                            |                                                                          |                           |
| <b>SM01-37Sx60-HP-R-100_BE01_SSCP</b>      | Linear Module SSCP, Plain Bearing, Stroke max 100mm                      | <a href="#">0150-4351</a> |
| <b>SM01-37Sx60-HP-R-100_BE01_MS02_SSCP</b> | Linear Module SSCP, Plain Bearing, MagSpring 40N, Stroke max 100mm       | <a href="#">0150-4352</a> |
| <b>SM01-37Sx60-HP-R-100_BE01_MS03_SSCP</b> | Linear Module SSCP, Plain Bearing, MagSpring 50N, Stroke max 100mm       | <a href="#">0150-4353</a> |
| <b>SM01-37Sx60-HP-R-100_BE01_MS04_SSCP</b> | Linear Module SSCP, Plain Bearing, MagSpring 60N, Stroke max 100mm       | <a href="#">0150-4354</a> |
|                                            |                                                                          |                           |
| <b>SM01-37Sx60-HP-R-180_BE01_SSCP</b>      | Linear Module SSCP, Plain Bearing, Stroke max 180mm                      | <a href="#">0150-4210</a> |
| <b>SM01-37Sx60-HP-R-180_BE01_MS02_SSCP</b> | Linear Module SSCP, Plain Bearing, MagSpring 40N, Stroke max 180mm       | <a href="#">0150-4355</a> |
| <b>SM01-37Sx60-HP-R-180_BE01_MS03_SSCP</b> | Linear Module SSCP, Plain Bearing, MagSpring 50N, Stroke max 180mm       | <a href="#">0150-4356</a> |
| <b>SM01-37Sx60-HP-R-180_BE01_MS04_SSCP</b> | Linear Module SSCP, Plain Bearing, MagSpring 60N, Stroke max 180mm       | <a href="#">0150-4357</a> |

SM01-37Sx120 \_SSCP WITH LINEAR BALL BEARINGS



Dimensions mm

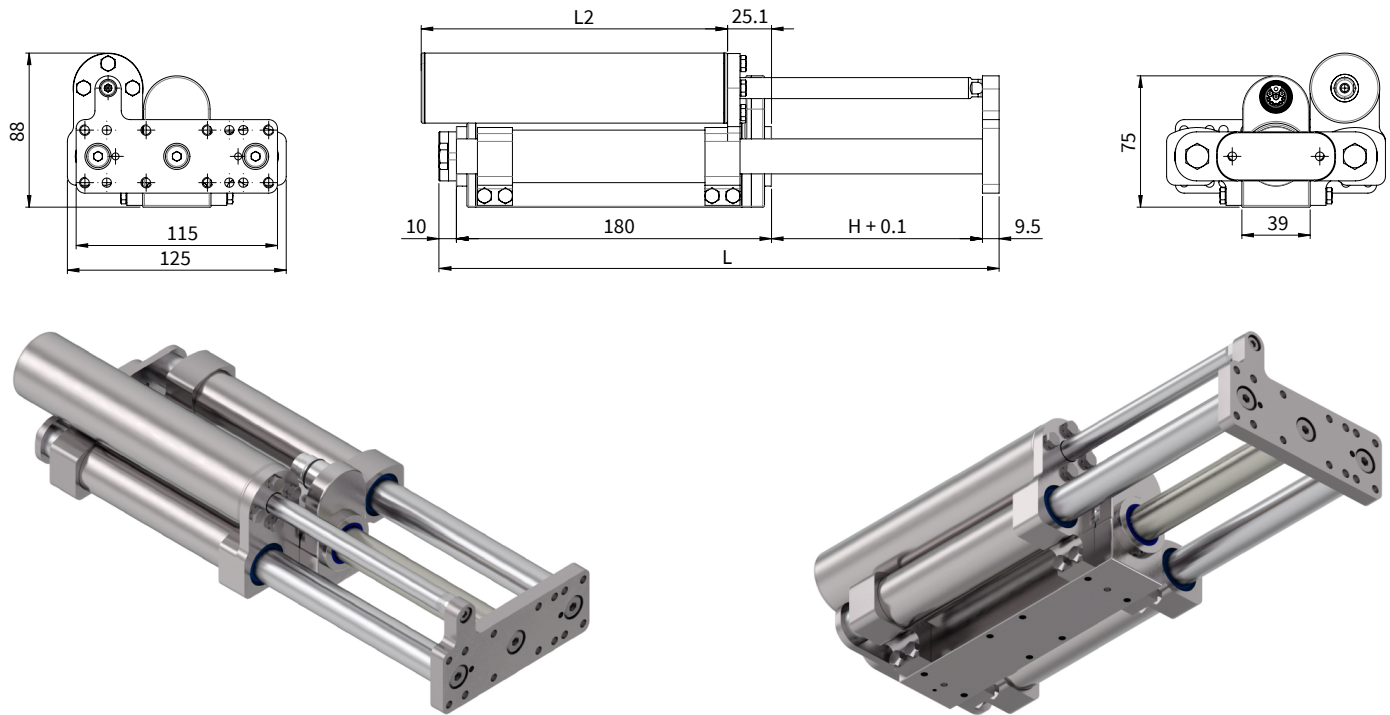
| Linear Module               | Stroke H<br>[mm (inch)] | Carriage length L<br>[mm (inch)] | Moving mass <sup>1)</sup><br>[g (lb)] | Total weight<br>[g (lb)] |
|-----------------------------|-------------------------|----------------------------------|---------------------------------------|--------------------------|
| SM01-37Sx120F-HP-R-120_SSCP | 120 (4.72)              | 320 (12.60)                      | 1997 (4.4)                            | 4142 (9.13)              |
| SM01-37Sx120F-HP-R-220_SSCP | 220 (8.66)              | 420 (16.54)                      | 2485 (5.48)                           | 4630 (10.21)             |
| SM01-37Sx120F-HP-R-320_SSCP | 320 (12.60)             | 520 (20.47)                      | 2973 (6.55)                           | 5118 (11.28)             |
| SM01-37Sx120F-HP-R-420_SSCP | 420 (16.54)             | 620 (24.41)                      | 3461 (7.63)                           | 5606 (12.36)             |
| SM01-37Sx120F-HP-R-520_SSCP | 520 (20.47)             | 720 (28.35)                      | 3949 (8.71)                           | 6094 (13.43)             |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate

MATERIALS

| Guide Block & Front Plate           | Guide Shaft        | Bearing                         | Wipers            |
|-------------------------------------|--------------------|---------------------------------|-------------------|
| Stainless Steel Mat. 1.4404 / 316 L | Hard chrome-plated | Linear ball bearing (stainless) | NBR (FDA conform) |

**SM01-37Sx120\_MSxx\_SSCP WITH LINEAR BALL BEARINGS AND VERTICAL LOAD COMPENSATION MAGSPRING®**



Dimensions mm

| Linear Module with MagSpring                          | Stroke H<br>[mm (inch)] | MS Stator length L2<br>[mm (inch)] | Carriage length L<br>[mm (inch)] | Moving mass <sup>1)</sup><br>[g (lb)] | Total weight<br>[g (lb)] |
|-------------------------------------------------------|-------------------------|------------------------------------|----------------------------------|---------------------------------------|--------------------------|
| <b>SM01-37Sx120F-HP-R-120_MSxx_SSCP <sup>2)</sup></b> | 120 (4.72)              | 175 (6.89)                         | 320 (12.60)                      | 1985 (4.38)                           | 4745 (10.46)             |
| <b>SM01-37Sx120F-HP-R-220_MSxx_SSCP <sup>2)</sup></b> | 220 (8.66)              | 325 (12.8)                         | 420 (16.54)                      | 2535 (5.59)                           | 6115 (13.48)             |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate, MagSpring slider

<sup>2)</sup> MagSpring variants with different constant forces

MS11: Constant force 40N

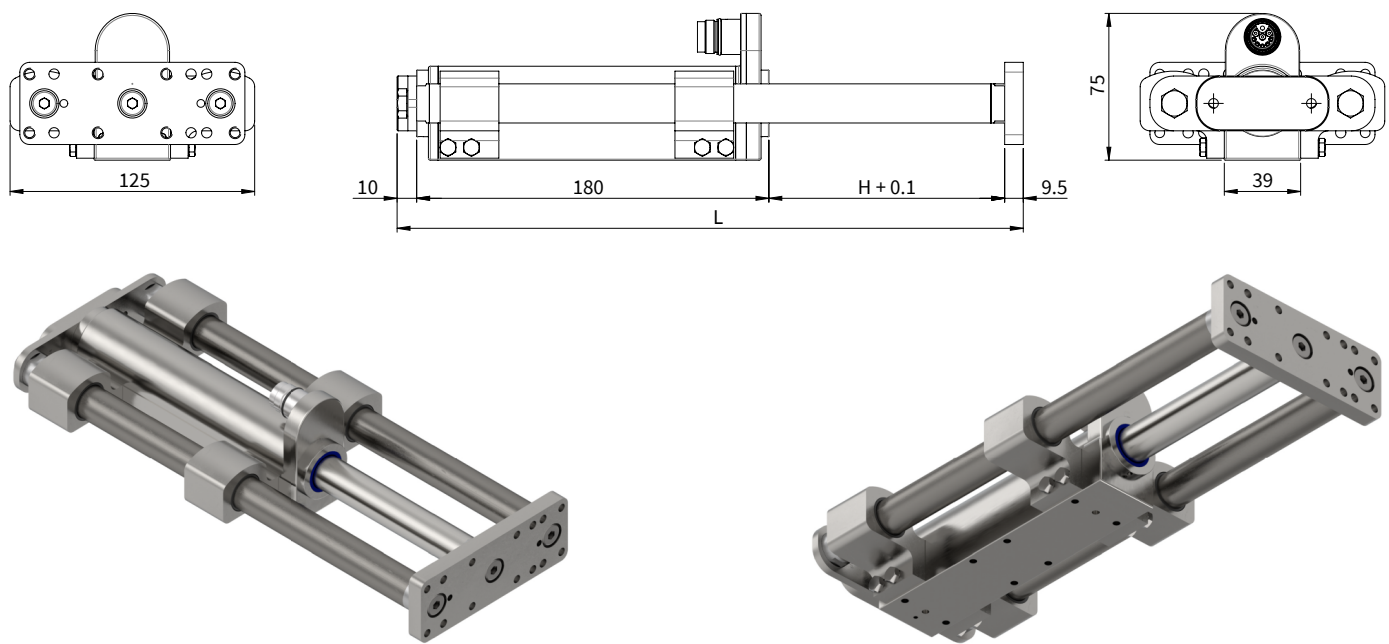
MS12: Constant force 50N

MS13: Constant force 60N

**MATERIALS**

| Guide Block & Front Plate           | Guide Shaft        | Bearing                         | Wipers            |
|-------------------------------------|--------------------|---------------------------------|-------------------|
| Stainless Steel Mat. 1.4404 / 316 L | Hard chrome-plated | Linear ball bearing (stainless) | NBR (FDA conform) |

SM01-37Sx120\_BE01\_SSCP WITH PLAIN BEARINGS



Dimensions mm

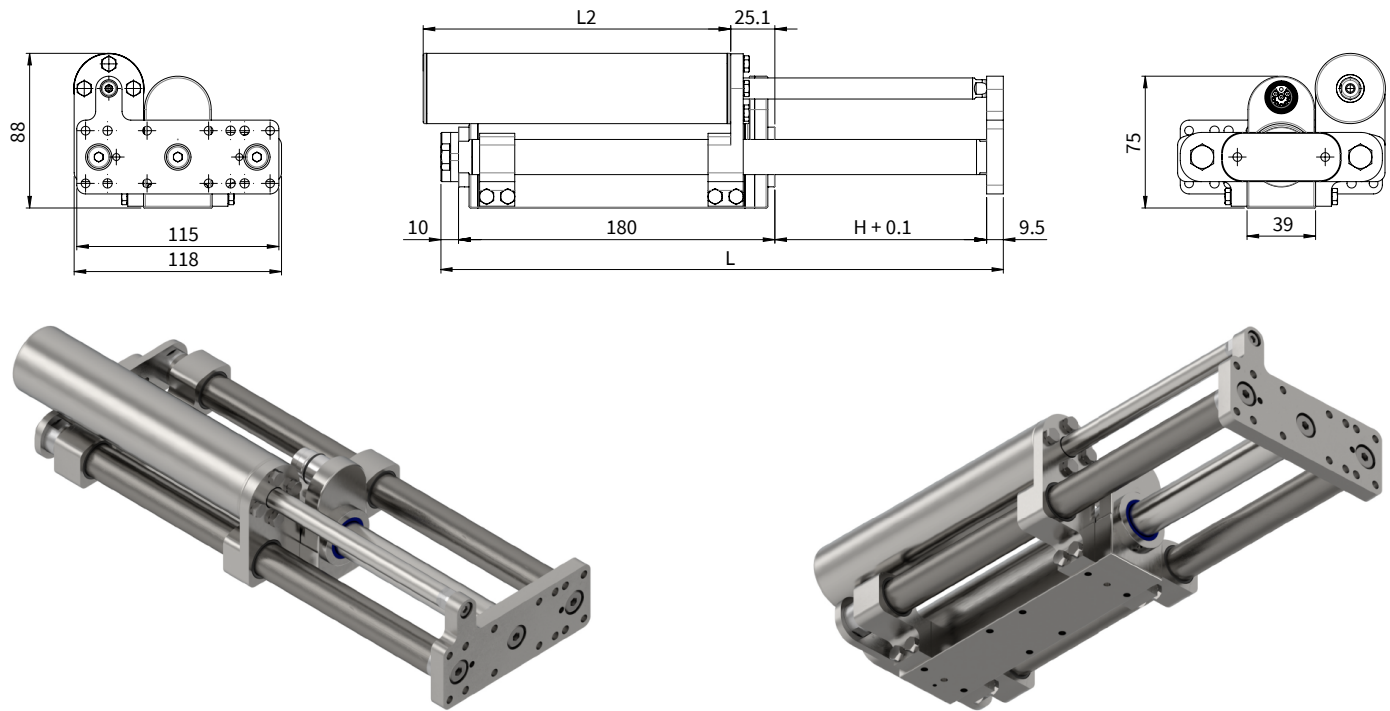
| Linear Module                    | Stroke H<br>[mm (inch)] |         | Carriage length L<br>[mm (inch)] |         | Moving mass <sup>1)</sup><br>[g (lb)] |        | Total weight<br>[g (lb)] |         |
|----------------------------------|-------------------------|---------|----------------------------------|---------|---------------------------------------|--------|--------------------------|---------|
| SM01-37Sx120F-HP-R-120_BE01_SSCP | 120                     | (4.72)  | 320                              | (12.60) | 1831                                  | (4.04) | 3917                     | (8.64)  |
| SM01-37Sx120F-HP-R-220_BE01_SSCP | 220                     | (8.66)  | 420                              | (16.54) | 2249                                  | (4.96) | 4335                     | (9.56)  |
| SM01-37Sx120F-HP-R-320_BE01_SSCP | 320                     | (12.60) | 520                              | (20.47) | 2649                                  | (5.84) | 4735                     | (10.44) |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate

MATERIALS

| Guide Block & Front Plate           | Guide Shaft                         | Bearing                            | Wipers |
|-------------------------------------|-------------------------------------|------------------------------------|--------|
| Stainless Steel Mat. 1.4404 / 316 L | Stainless Steel Mat. 1.4404 / 316 L | Polymer plain bearings FDA conform | None   |

**SM01-37Sx120\_BE01\_MSxx\_SSCP WITH PLAIN BEARINGS AND VERTICAL LOAD COMPENSATION MAGSPRING®**



Dimensions mm

| Linear Module with MagSpring                               | Stroke H<br>[mm (inch)] | MS Stator length L2<br>[mm (inch)] | Carriage length L<br>[mm (inch)] | Moving mass <sup>1)</sup><br>[g (lb)] | Total weight<br>[g (lb)] |
|------------------------------------------------------------|-------------------------|------------------------------------|----------------------------------|---------------------------------------|--------------------------|
| <b>SM01-37Sx120F-HP-R-120_BE01_MSxx_SSCP <sup>2)</sup></b> | 120 (4.72)              | 175 (6.89)                         | 320 (12.60)                      | 1985 (4.38)                           | 4745 (10.46)             |
| <b>SM01-37Sx120F-HP-R-220_BE01_MSxx_SSCP <sup>2)</sup></b> | 220 (8.66)              | 325 (12.8)                         | 420 (16.54)                      | 2535 (5.59)                           | 6115 (13.48)             |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate, MagSpring slider

<sup>2)</sup> MagSpring variants with different constant forces

MS11: Constant force 40N

MS12: Constant force 50N

MS13: Constant force 60N

**MATERIALS**

| Guide Block & Front Plate           | Guide Shaft                         | Bearing                            | Wipers |
|-------------------------------------|-------------------------------------|------------------------------------|--------|
| Stainless Steel Mat. 1.4404 / 316 L | Stainless Steel Mat. 1.4404 / 316 L | Polymer plain bearings FDA conform | None   |

PERFORMANCE DATA SM01-37Sx120

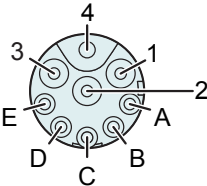
| Performance Data Linear Module SM01-37Sx120                                                      |                                          |  |                   |                      |
|--------------------------------------------------------------------------------------------------|------------------------------------------|--|-------------------|----------------------|
| Stroke                                                                                           |                                          |  |                   |                      |
| Maximum Stroke                                                                                   | mm (in)                                  |  | 520               | (20.47)              |
| Force                                                                                            |                                          |  |                   |                      |
| Max. Force @ 48VDC                                                                               | N (lbf)                                  |  | 255               | (57.3)               |
| Max. Force @ 72VDC                                                                               | N (lbf)                                  |  | 255               | (57.3)               |
| Max. Cont. Force [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ]      | N (lbf)                                  |  | 46 / 58 / 78      | (10.2 / 12.9 / 17.4) |
| Force Constant                                                                                   | N/A <sub>pk</sub> (lbf/A <sub>pk</sub> ) |  | 17                | (3.82)               |
| Position Detection                                                                               |                                          |  |                   |                      |
| Position Resolution                                                                              | mm (in)                                  |  | 0.005             | (0.0002)             |
| Repeatability                                                                                    | mm (in)                                  |  | ±0.05             | (±0.002)             |
| Position Resolution with ES                                                                      | mm (in)                                  |  | -                 | (-)                  |
| Repeatability with ES                                                                            | mm (in)                                  |  | -                 | (-)                  |
| Linearity with ES                                                                                | mm (in)                                  |  | -                 | (-)                  |
| Electrical Data                                                                                  |                                          |  |                   |                      |
| Max. Current @ 48VDC                                                                             | A <sub>pk</sub>                          |  | 14.9              |                      |
| Max. Current @ 72VDC                                                                             | A <sub>pk</sub>                          |  | 14.9              |                      |
| Max. Cont. Current [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ]    | A <sub>pk</sub>                          |  | 2.7 / 3.4 / 4.6   |                      |
| Terminal Resistance 25 °C / 150 °C                                                               | Ohm                                      |  | 2.4 / 3.5         |                      |
| Terminal Inductivity                                                                             | mH                                       |  | 1.6               |                      |
| Magnetic Period                                                                                  | mm (in)                                  |  | 40                | (1.57)               |
| Thermal Data                                                                                     |                                          |  |                   |                      |
| Max. Winding Temperature (Sensor)                                                                | °C                                       |  | 120               |                      |
| Thermal Resistance [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ]    | K/W                                      |  | 3 / 2 / 1.1       |                      |
| Thermal Time Constant [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ] | s                                        |  | 1000 / 2700 / 800 |                      |
| Mechanical Data                                                                                  |                                          |  |                   |                      |
| Stator Diameter                                                                                  | mm (in)                                  |  | 39                | (1.5)                |
| Slider Diameter                                                                                  | mm (in)                                  |  | 20                | (0.79)               |
| IP Code [Plain Bearing / Linear Ball Bearing]                                                    |                                          |  | IP 69 / IP 67S    |                      |

1) Motor is mounted on a stainless steel surface of 0.03 m².  
2) Motor is mounted on a 20°C cold plate.

CONNECTOR

| Motor Connector Wiring | R-Connector | Wire Color Motor Cable |
|------------------------|-------------|------------------------|
| Ph 1+                  | 1           | red                    |
| Ph 1-                  | 2           | pink                   |
| Ph 2+                  | 3           | blue                   |
| Ph 2-                  | 4           | grey                   |
| +5VDC                  | A           | white                  |
| GND                    | B           | inner Shield           |
| Sinus                  | C           | yellow                 |
| Cosinus                | D           | green                  |
| Temp.                  | E           | black                  |
| Shield                 | Case        | outer Shield           |

R-Connector

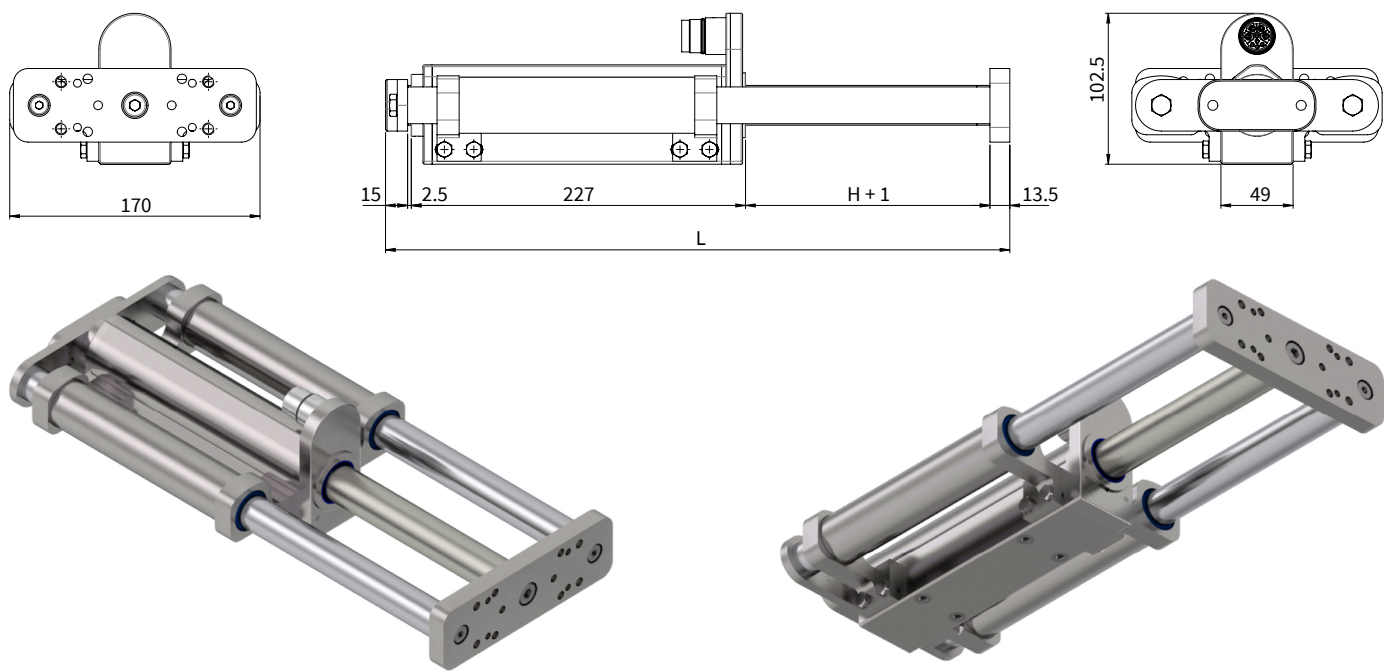


View: Motor connector, plug side

## ORDERING INFORMATION

| Item                                         | Description                                                              | Item-No.                  |
|----------------------------------------------|--------------------------------------------------------------------------|---------------------------|
| <b>SM01-37Sx120F-HP-R-120_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max 120mm                | <a href="#">0150-4402</a> |
| <b>SM01-37Sx120F-HP-R-120_MS02_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, MagSpring 40N, Stroke max 120mm | <a href="#">0150-4431</a> |
| <b>SM01-37Sx120F-HP-R-120_MS03_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, MagSpring 50N, Stroke max 120mm | <a href="#">0150-4432</a> |
| <b>SM01-37Sx120F-HP-R-120_MS04_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, MagSpring 60N, Stroke max 120mm | <a href="#">0150-4433</a> |
|                                              |                                                                          |                           |
| <b>SM01-37Sx120F-HP-R-220_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max 220mm                | <a href="#">0150-4405</a> |
| <b>SM01-37Sx120F-HP-R-220_MS02_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, MagSpring 40N, Stroke max 220mm | <a href="#">0150-4434</a> |
| <b>SM01-37Sx120F-HP-R-220_MS03_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, MagSpring 50N, Stroke max 220mm | <a href="#">0150-4435</a> |
| <b>SM01-37Sx120F-HP-R-220_MS04_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, MagSpring 60N, Stroke max 220mm | <a href="#">0150-4436</a> |
|                                              |                                                                          |                           |
| <b>SM01-37Sx120F-HP-R-320_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max 320mm                | <a href="#">0150-4406</a> |
| <b>SM01-37Sx120F-HP-R-420_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max 420mm                | <a href="#">0150-4407</a> |
| <b>SM01-37Sx120F-HP-R-520_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max 520mm                | <a href="#">0150-4412</a> |
|                                              |                                                                          |                           |
| <b>SM01-37Sx120F-HP-R-120_BE01_SSCP</b>      | Linear Module SSCP, Plain Bearing, Stroke max 120mm                      | <a href="#">0150-3879</a> |
| <b>SM01-37Sx120F-HP-R-120_BE01_MS02_SSCP</b> | Linear Module SSCP, Plain Bearing, MagSpring 40N, Stroke max 120mm       | <a href="#">0150-4344</a> |
| <b>SM01-37Sx120F-HP-R-120_BE01_MS03_SSCP</b> | Linear Module SSCP, Plain Bearing, MagSpring 50N, Stroke max 120mm       | <a href="#">0150-4345</a> |
| <b>SM01-37Sx120F-HP-R-120_BE01_MS04_SSCP</b> | Linear Module SSCP, Plain Bearing, MagSpring 60N, Stroke max 120mm       | <a href="#">0150-4346</a> |
|                                              |                                                                          |                           |
| <b>SM01-37Sx120F-HP-R-220_BE01_SSCP</b>      | Linear Module SSCP, Plain Bearing, Stroke max 220mm                      | <a href="#">0150-4307</a> |
| <b>SM01-37Sx120F-HP-R-220_BE01_MS02_SSCP</b> | Linear Module SSCP, Plain Bearing, MagSpring 40N, Stroke max 220mm       | <a href="#">0150-4347</a> |
| <b>SM01-37Sx120F-HP-R-220_BE01_MS03_SSCP</b> | Linear Module SSCP, Plain Bearing, MagSpring 50N, Stroke max 220mm       | <a href="#">0150-4348</a> |
| <b>SM01-37Sx120F-HP-R-220_BE01_MS04_SSCP</b> | Linear Module SSCP, Plain Bearing, MagSpring 60N, Stroke max 220mm       | <a href="#">0150-4349</a> |
|                                              |                                                                          |                           |
| <b>SM01-37Sx120F-HP-R-320_BE01_SSCP</b>      | Linear Module SSCP, Plain Bearing, Stroke max 320mm                      | <a href="#">0150-4308</a> |

SM01-48x150 \_SSCP WITH LINEAR BALL BEARINGS



Dimensions mm

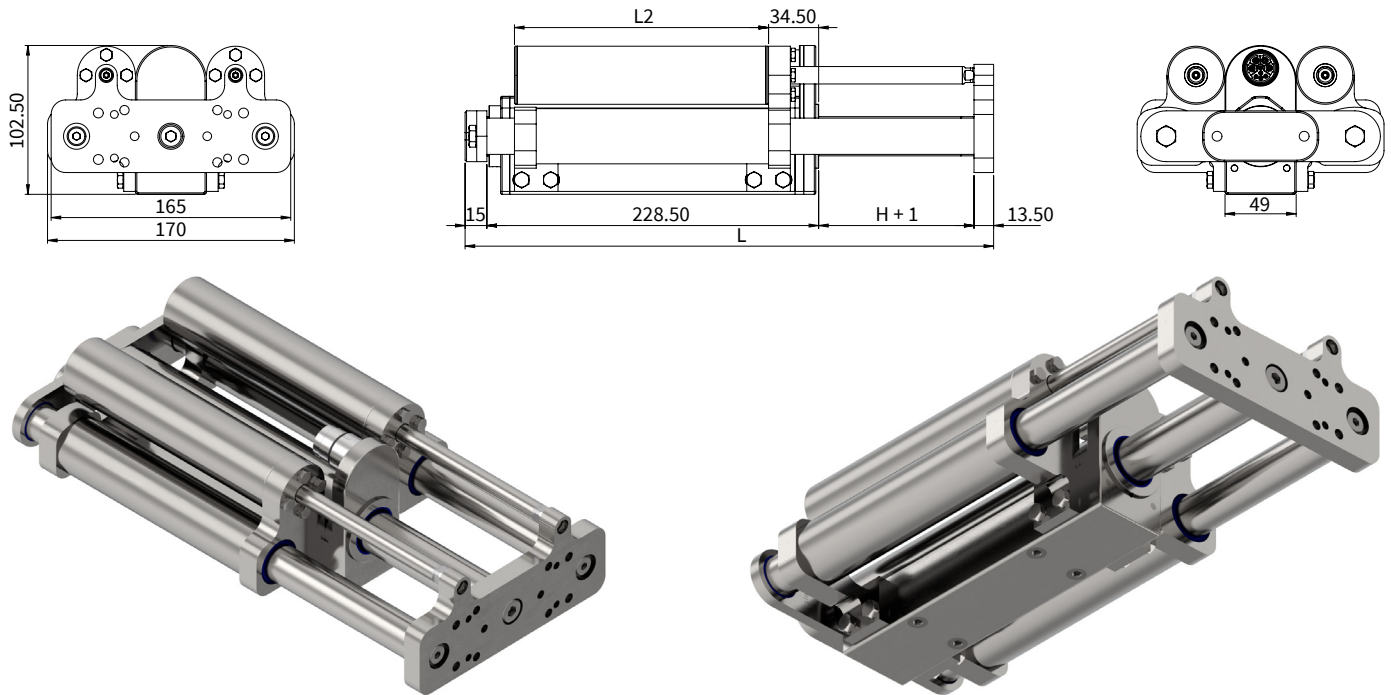
| Linear Module              | Stroke H<br>[mm (inch)] | Carriage length L<br>[mm (inch)] | Moving mass <sup>1)</sup><br>[g (lb)] | Total weight<br>[g (lb)] |
|----------------------------|-------------------------|----------------------------------|---------------------------------------|--------------------------|
| SM01-48x150G-HP-C-105_SSCP | 105 (4.13)              | 363 (14.29)                      | 4209 (9.28)                           | 8949 (19.73)             |
| SM01-48x150G-HP-C-165_SSCP | 165 (6.5)               | 423 (16.65)                      | 4748 (10.47)                          | 9488 (20.92)             |
| SM01-48x150G-HP-C-255_SSCP | 255 (10.04)             | 513 (20.2)                       | 5565 (12.27)                          | 10305 (22.72)            |
| SM01-48x150G-HP-C-375_SSCP | 375 (14.76)             | 633 (24.92)                      | 6648 (14.66)                          | 11388 (25.11)            |
| SM01-48x150G-HP-C-465_SSCP | 465 (18.31)             | 723 (28.46)                      | 7465 (16.46)                          | 12205 (26.91)            |
| SM01-48x150G-HP-C-555_SSCP | 555 (21.85)             | 813 (32.01)                      | 8274 (18.24)                          | 13014 (28.69)            |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate

MATERIALS

| Guide Block & Front Plate           | Guide Shaft        | Bearing                         | Wipers            |
|-------------------------------------|--------------------|---------------------------------|-------------------|
| Stainless Steel Mat. 1.4404 / 316 L | Hard chrome-plated | Linear ball bearing (stainless) | NBR (FDA conform) |

**SM01-48x150\_MSxx\_SSCP WITH LINEAR BALL BEARINGS AND VERTICAL LOAD COMPENSATION MAGSPRING®**



Dimensions mm

| Linear Module with MagSpring                         | Stroke H<br>[mm (inch)] | MS Stator length L2<br>[mm (inch)] | Carriage length L<br>[mm (inch)] | Moving mass <sup>1)</sup><br>[g (lb)] | Total weight<br>[g (lb)] |
|------------------------------------------------------|-------------------------|------------------------------------|----------------------------------|---------------------------------------|--------------------------|
| <b>SM01-48x150G-HP-C-105_MS08_SSCP <sup>2)</sup></b> | 105 (4.13)              | 175 (6.89)                         | 363 (14.29)                      | 4517 (9.96)                           | 11217 (24.73)            |
| <b>SM01-48x150G-HP-C-165_MS08_SSCP <sup>2)</sup></b> | 165 (6.5)               | 250 (9.84)                         | 423 (16.65)                      | 5196 (11.46)                          | 12576 (27.73)            |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate, MagSpring slider

<sup>2)</sup> MagSpring variants with different constant forces

MS05: Constant force 80N (on request)

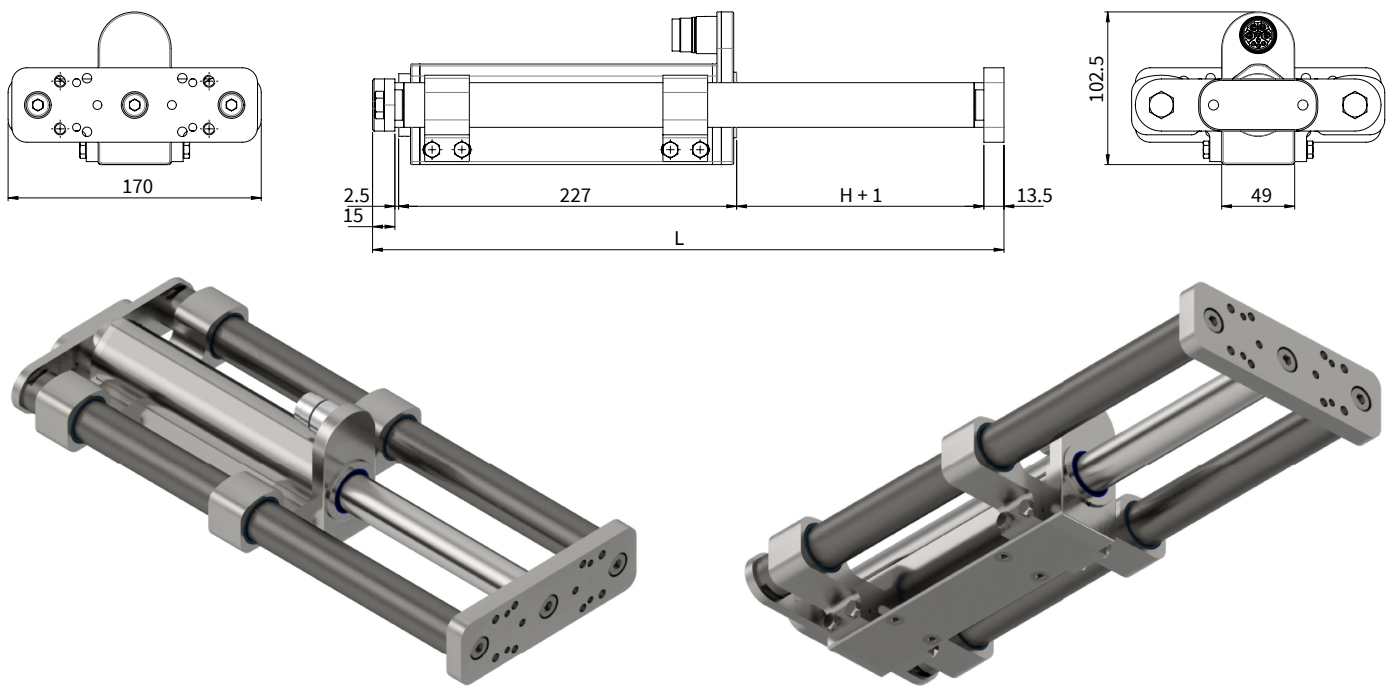
MS06: Constant force 100N (on request)

MS08: Constant force 120N

**MATERIALS**

| Guide Block & Front Plate           | Guide Shaft        | Bearing                         | Wipers            |
|-------------------------------------|--------------------|---------------------------------|-------------------|
| Stainless Steel Mat. 1.4404 / 316 L | Hard chrome-plated | Linear ball bearing (stainless) | NBR (FDA conform) |

SM01-48x150\_BE01\_SSCP WITH PLAIN BEARINGS



Dimensions mm

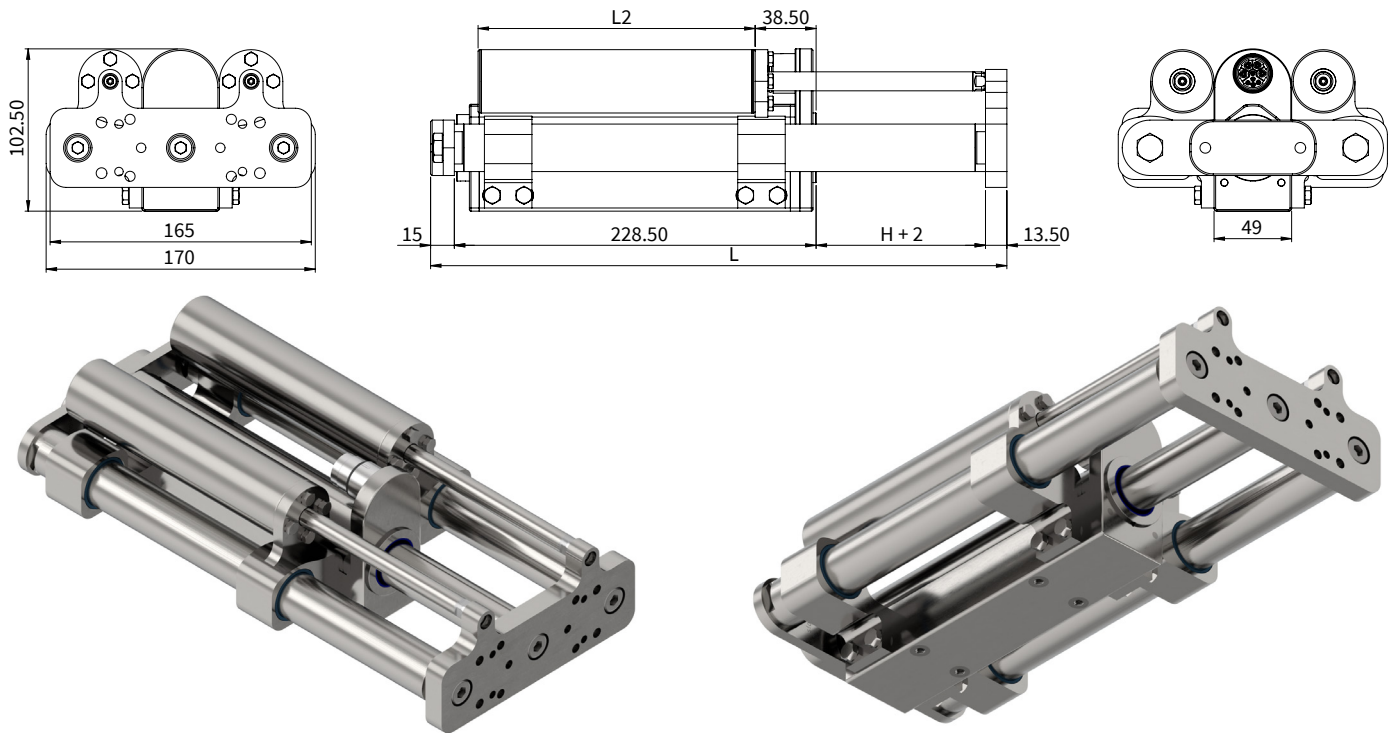
| Linearmodul                     | Stroke H<br>[mm (inch)] | Carriage length L<br>[mm (inch)] | Moving mass <sup>1)</sup><br>[g (lb)] | Total weight<br>[g (lb)] |
|---------------------------------|-------------------------|----------------------------------|---------------------------------------|--------------------------|
| SM01-48x150G-HP-C-105_BE01_SSCP | 105 (4.13)              | 363 (14.29)                      | 4227 (9.32)                           | 8967 (19.77)             |
| SM01-48x150G-HP-C-165_BE01_SSCP | 165 (6.5)               | 423 (16.65)                      | 4794 (10.57)                          | 9534 (21.02)             |
| SM01-48x150G-HP-C-255_BE01_SSCP | 255 (10.04)             | 513 (20.2)                       | 5591 (12.33)                          | 10331 (22.78)            |
| SM01-48x150G-HP-C-375_BE01_SSCP | 375 (14.76)             | 633 (24.92)                      | 6418 (14.15)                          | 11158 (24.6)             |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate

MATERIALS

| Guide Block & Front Plate           | Guide Shaft                         | Bearing                            | Wipers |
|-------------------------------------|-------------------------------------|------------------------------------|--------|
| Stainless Steel Mat. 1.4404 / 316 L | Stainless Steel Mat. 1.4404 / 316 L | Polymer plain bearings FDA conform | None   |

**SM01-48x150\_BE01\_MSxx\_SSCP WITH PLAIN BEARINGS AND VERTICAL LOAD COMPENSATION MAGSPRING®**



Dimensions mm

| Linear Module with MagSpring                       | Stroke H<br>[mm (inch)] | MS Stator length L2<br>[mm (inch)] | Carriage length L<br>[mm (inch)] | Moving mass <sup>1)</sup><br>[g (lb)] | Total weight<br>[g (lb)] |
|----------------------------------------------------|-------------------------|------------------------------------|----------------------------------|---------------------------------------|--------------------------|
| SM01-48x150G-HP-C-105_BE01_MS08_SSCP <sup>2)</sup> | 105 (4.13)              | 175 (6.89)                         | 363 (14.29)                      | 4535 (10)                             | 11235 (24.77)            |
| SM01-48x150G-HP-C-165_BE01_MS08_SSCP <sup>2)</sup> | 165 (6.5)               | 250 (9.84)                         | 423 (16.65)                      | 5242 (11.56)                          | 12622 (27.83)            |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate, MagSpring slider

<sup>2)</sup> MagSpring variants with different constant forces

MS05: Constant force 80N (on request)

MS06: Constant force 100N (on request)

MS08: Constant force 120N

**MATERIALS**

| Guide Block & Front Plate           | Guide Shaft                         | Bearing                            | Wipers |
|-------------------------------------|-------------------------------------|------------------------------------|--------|
| Stainless Steel Mat. 1.4404 / 316 L | Stainless Steel Mat. 1.4404 / 316 L | Polymer plain bearings FDA conform | None   |

PERFORMANCE DATA SM01-48x150

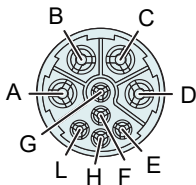
| Performance Data Linear Module SM01-48x150                                                       |                                          |  |                   |                    |
|--------------------------------------------------------------------------------------------------|------------------------------------------|--|-------------------|--------------------|
| Stroke                                                                                           |                                          |  |                   |                    |
| Maximum Stroke                                                                                   | mm (in)                                  |  | 555               | (21.85)            |
| Force                                                                                            |                                          |  |                   |                    |
| Max. Force @ 48VDC                                                                               | N (lbf)                                  |  | 312               | (69.64)            |
| Max. Force @ 72VDC                                                                               | N (lbf)                                  |  | 312               | (69.64)            |
| Max. Cont. Force [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ]      | N (lbf)                                  |  | 75 / 87 / 120     | (16.9 / 19.6 / 27) |
| Force Constant                                                                                   | N/A <sub>pk</sub> (lbf/A <sub>pk</sub> ) |  | 15.65             | (3.52)             |
| Position Detection                                                                               |                                          |  |                   |                    |
| Position Resolution                                                                              | mm (in)                                  |  | 0.007             | (0.0003)           |
| Repeatability                                                                                    | mm (in)                                  |  | ±0.05             | (0.002)            |
| Position Resolution with ES                                                                      | mm (in)                                  |  | -                 | (-)                |
| Repeatability with ES                                                                            | mm (in)                                  |  | -                 | (-)                |
| Linearity with ES                                                                                | mm (in)                                  |  | -                 | (-)                |
| Electrical Data                                                                                  |                                          |  |                   |                    |
| Max. Current @ 48VDC                                                                             | A <sub>pk</sub>                          |  | 23                |                    |
| Max. Current @ 72VDC                                                                             | A <sub>pk</sub>                          |  | 23                |                    |
| Max. Cont. Current [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ]    | A <sub>pk</sub>                          |  | 5.5 / 6.6 / 8.8   |                    |
| Terminal Resistance 25 °C / 150 °C                                                               | Ohm                                      |  | 0.81 / 1.2        |                    |
| Terminal Inductivity                                                                             | mH                                       |  | 0.7               |                    |
| Magnetic Period                                                                                  | mm (in)                                  |  | 60                | (2.36)             |
| Thermal Data                                                                                     |                                          |  |                   |                    |
| Max. Winding Temperature (Sensor)                                                                | °C                                       |  | 120               |                    |
| Thermal Resistance [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ]    | K/W                                      |  | 2.3 / 1.7 / 0.95  |                    |
| Thermal Time Constant [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ] | s                                        |  | 1400 / 1.7 / 0.95 |                    |
| Mechanical Data                                                                                  |                                          |  |                   |                    |
| Stator Diameter                                                                                  | mm (in)                                  |  | 49                | (1.93)             |
| Slider Diameter                                                                                  | mm (in)                                  |  | 27                | (1.06)             |
| IP Code [Plain Bearing / Linear Ball Bearing]                                                    |                                          |  | IP 69 / IP 67S    |                    |

1) Motor ist auf einer Edelstahloberfläche von 0.03 m² montiert.  
2) Motor ist auf einer Kühlplatte (Temp. 20 °C) montiert.

CONNECTOR

| Motor Connector Wiring | C-Connector | Wire Color Motor Cable |
|------------------------|-------------|------------------------|
| Ph 1+                  | A           | red                    |
| Ph 1-                  | B           | pink                   |
| Ph 2+                  | C           | blue                   |
| Ph 2-                  | D           | grey                   |
| +5VDC                  | E           | white                  |
| GND                    | F           | inner Shield           |
| Sinus                  | G           | yellow                 |
| Cosinus                | H           | green                  |
| Temp.                  | L           | black                  |
| Shield                 | Case        | outer Shield           |

C-Connector

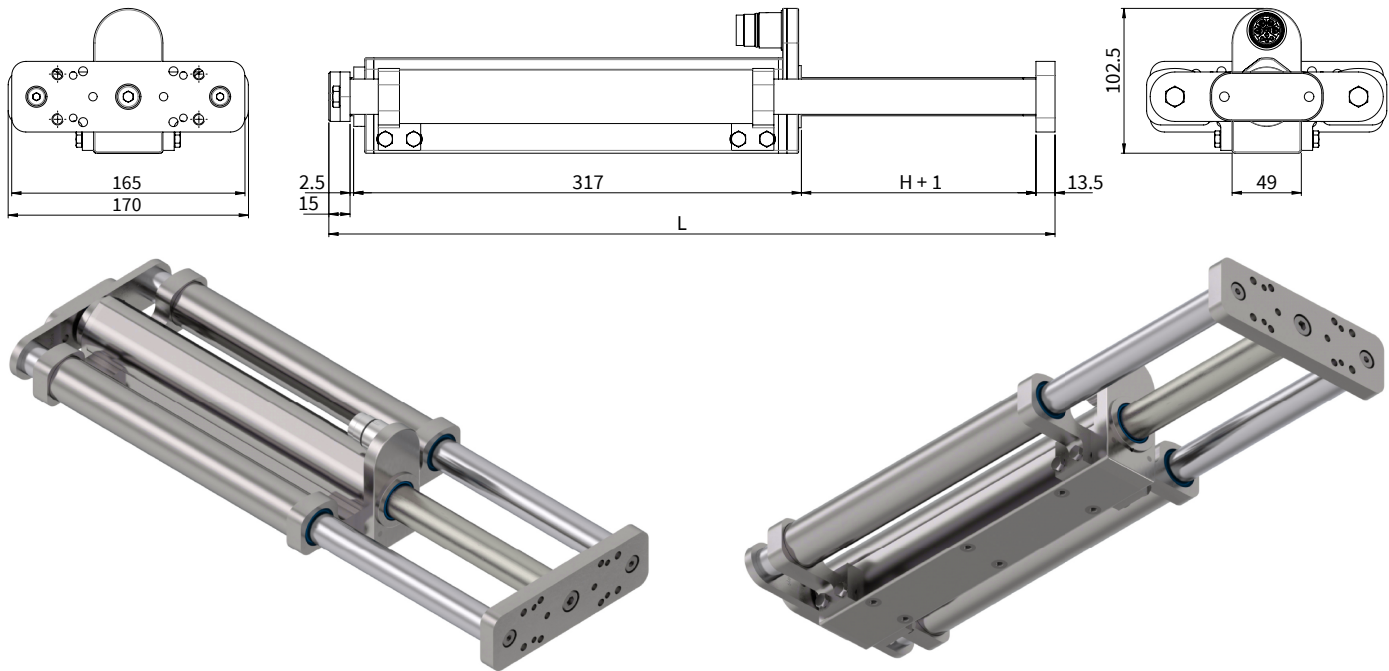


View: Motor connector, plug side  
Material: Stainless steel (Housing)  
IP Code: IP 69K

**ORDERING INFORMATION**

| Item                                        | Description                                                                 | Item-No.                  |
|---------------------------------------------|-----------------------------------------------------------------------------|---------------------------|
| <b>SM01-48x150G-HP-C-105_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max. 105 mm                 | <a href="#">0150-4483</a> |
| <b>SM01-48x150G-HP-C-105_MS08_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, MagSpring 120N, Stroke max. 105 mm | <a href="#">0150-4834</a> |
| <b>SM01-48x150G-HP-C-105_BE01_SSCP</b>      | Linear Module SSCP, Plain Bearing, Stroke max. 105 mm                       | <a href="#">0150-4399</a> |
| <b>SM01-48x150G-HP-C-105_BE01_MS08_SSCP</b> | Linear Module SSCP, Plain Bearing, MagSpring 120N, Stroke max. 105 mm       | <a href="#">0150-4833</a> |
|                                             |                                                                             |                           |
| <b>SM01-48x150G-HP-C-165_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max. 165 mm                 | <a href="#">0150-4453</a> |
| <b>SM01-48x150G-HP-C-165_MS08_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, MagSpring 120N, Stroke max. 165 mm | <a href="#">0150-4836</a> |
| <b>SM01-48x150G-HP-C-165_BE01_SSCP</b>      | Linear Module SSCP, Plain Bearing, Stroke max. 165 mm                       | <a href="#">0150-4340</a> |
| <b>SM01-48x150G-HP-C-165_BE01_MS08_SSCP</b> | Linear Module SSCP, Plain Bearing, MagSpring 120N, Stroke max. 165 mm       | <a href="#">0150-4835</a> |
|                                             |                                                                             |                           |
| <b>SM01-48x150G-HP-C-255_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max. 255 mm                 | <a href="#">0150-4484</a> |
| <b>SM01-48x150G-HP-C-255_BE01_SSCP</b>      | Linear Module SSCP, Plain Bearing, Stroke max. 255 mm                       | <a href="#">0150-4393</a> |
|                                             |                                                                             |                           |
| <b>SM01-48x150G-HP-C-375_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max. 375 mm                 | <a href="#">0150-4485</a> |
| <b>SM01-48x150G-HP-C-375_BE01_SSCP</b>      | Linear Module SSCP, Plain Bearing, Stroke max. 375 mm                       | <a href="#">0150-4394</a> |
|                                             |                                                                             |                           |
| <b>SM01-48x150G-HP-C-465_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max. 465 mm                 | <a href="#">0150-4486</a> |
| <b>SM01-48x150G-HP-C-555_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max. 555 mm                 | <a href="#">0150-4487</a> |

SM01-48x240 \_SSCP WITH LINEAR BALL BEARINGS



Dimensions mm

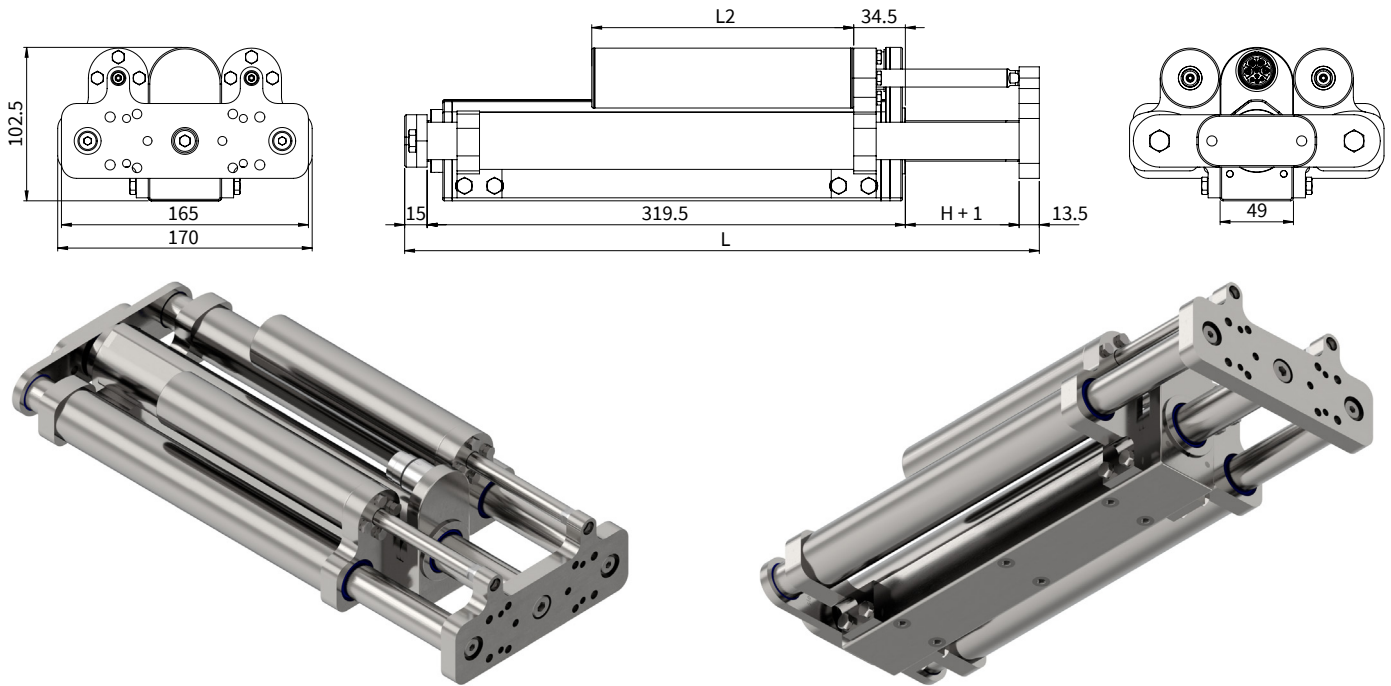
| Linear Module              | Stroke H<br>[mm (inch)] | Carriage length L<br>[mm (inch)] | Moving mass <sup>1)</sup><br>[g (lb)] | Total weight<br>[g (lb)] |
|----------------------------|-------------------------|----------------------------------|---------------------------------------|--------------------------|
| SM01-48x240F-HP-C-75_SSCP  | 75 (2.95)               | 423 (16.65)                      | 4748 (10.47)                          | 9960 (21.96)             |
| SM01-48x240F-HP-C-165_SSCP | 165 (6.5)               | 513 (20.2)                       | 5565 (12.27)                          | 10777 (23.76)            |
| SM01-48x240F-HP-C-285_SSCP | 285 (11.22)             | 633 (24.92)                      | 6648 (14.66)                          | 11860 (26.15)            |
| SM01-48x240F-HP-C-375_SSCP | 375 (14.76)             | 723 (28.46)                      | 7465 (16.46)                          | 12677 (27.95)            |
| SM01-48x240F-HP-C-465_SSCP | 465 (18.31)             | 813 (32.01)                      | 8274 (18.24)                          | 13486 (29.73)            |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate

MATERIALS

| Guide Block & Front Plate           | Guide Shaft        | Bearing                         | Wipers            |
|-------------------------------------|--------------------|---------------------------------|-------------------|
| Stainless Steel Mat. 1.4404 / 316 L | Hard chrome-plated | Linear ball bearing (stainless) | NBR (FDA conform) |

**SM01-48x240\_MSxx\_SSCP WITH LINEAR BALL BEARINGS AND VERTICAL LOAD COMPENSATION MAGSPRING®**



Dimensions mm

| Linear Module with MagSpring                         | Stroke H<br>[mm (inch)] | MS Stator length L2<br>[mm (inch)] | Carriage length L<br>[mm (inch)] | Moving mass <sup>1)</sup><br>[g (lb)] | Total weight<br>[g (lb)] |
|------------------------------------------------------|-------------------------|------------------------------------|----------------------------------|---------------------------------------|--------------------------|
| <b>SM01-48x240F-HP-C-75_MS08_SSCP <sup>2)</sup></b>  | 75 (2.95)               | 175 (6.89)                         | 423 (16.65)                      | 5056 (11.15)                          | 13246 (29.2)             |
| <b>SM01-48x240F-HP-C-165_MS08_SSCP <sup>2)</sup></b> | 165 (6.5)               | 250 (9.84)                         | 513 (20.2)                       | 6013 (13.26)                          | 14883 (32.81)            |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate, MagSpring slider

<sup>2)</sup> MagSpring variants with different constant forces

MS05: Constant force 80N (on request)

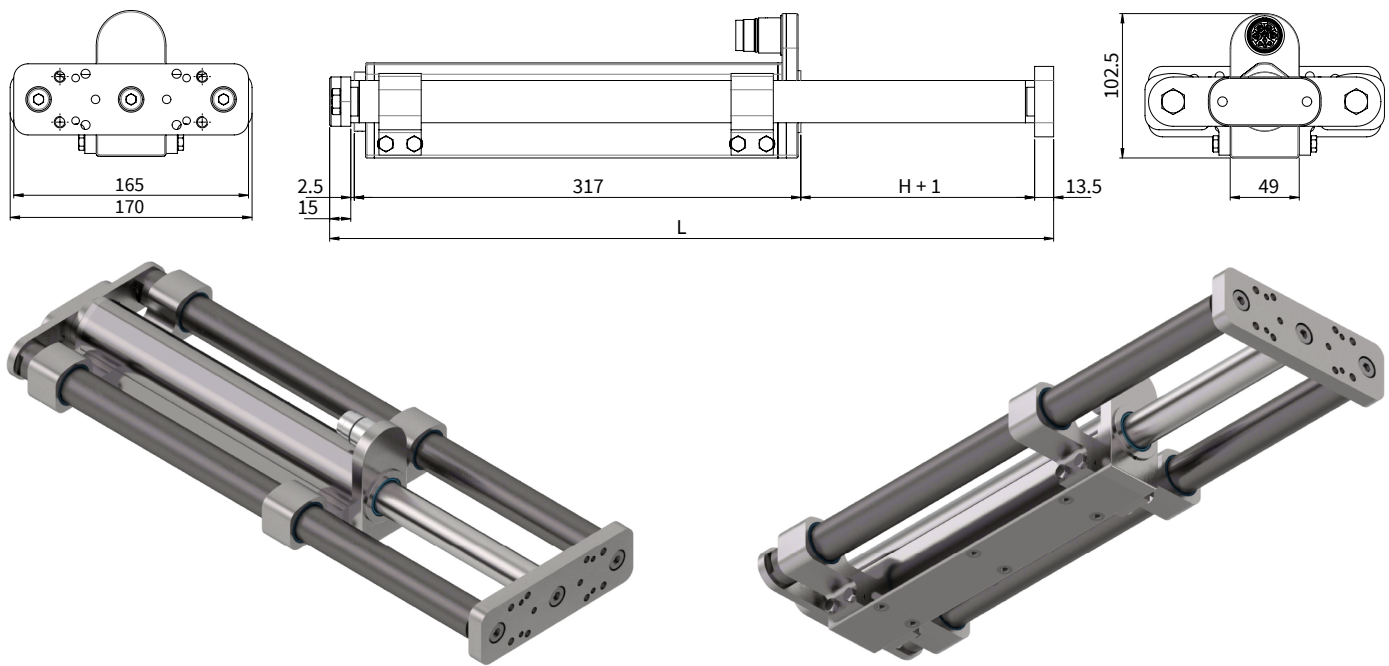
MS06: Constant force 100N (on request)

MS08: Constant force 120N

**MATERIALS**

| Guide Block & Front Plate           | Guide Shaft        | Bearing                         | Wipers            |
|-------------------------------------|--------------------|---------------------------------|-------------------|
| Stainless Steel Mat. 1.4404 / 316 L | Hard chrome-plated | Linear ball bearing (stainless) | NBR (FDA conform) |

SM01-48x240\_BE01\_SSCP WITH PLAIN BEARINGS



Dimensions mm

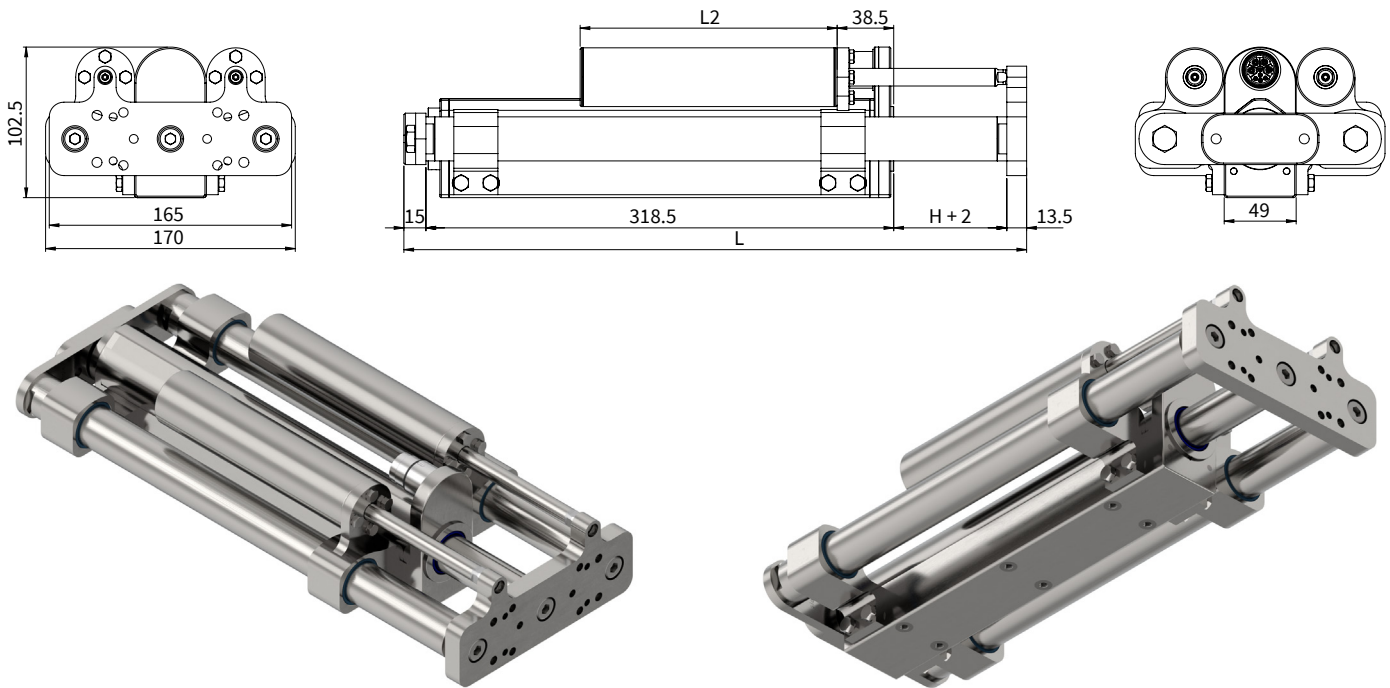
| Linear Module                   | Stroke H<br>[mm (inch)] | Carriage length L<br>[mm (inch)] | Moving mass <sup>1)</sup><br>[g (lb)] | Total weight<br>[g (lb)] |
|---------------------------------|-------------------------|----------------------------------|---------------------------------------|--------------------------|
| SM01-48x240F-HP-C-75_BE01_SSCP  | 75 (2.95)               | 423 (16.65)                      | 4794 (10.57)                          | 10006 (22.06)            |
| SM01-48x240F-HP-C-165_BE01_SSCP | 165 (6.5)               | 513 (20.2)                       | 5591 (12.33)                          | 10803 (23.82)            |
| SM01-48x240F-HP-C-285_BE01_SSCP | 285 (11.22)             | 633 (24.92)                      | 6418 (14.15)                          | 11630 (25.64)            |
| SM01-48x240F-HP-C-375_BE01_SSCP | 375 (14.76)             | 723 (28.46)                      | 7111 (15.68)                          | 12323 (27.17)            |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate

MATERIALS

| Führungsblock & Frontplatte   | Führungswelle                 | Lager                         | Abstreifer |
|-------------------------------|-------------------------------|-------------------------------|------------|
| Edelstahl Mat. 1.4404 / 316 L | Edelstahl Mat. 1.4404 / 316 L | Polymergleitlager FDA konform | (-)        |

**SM01-48x240\_BE01\_MSxx\_SSCP WITH PLAIN BEARINGS AND VERTICAL LOAD COMPENSATION MAGSPRING®**



Dimensions mm

| Linear Module with MagSpring                       | Stroke H<br>[mm (inch)] | MS Stator length L2<br>[mm (inch)] | Carriage length L<br>[mm (inch)] | Moving mass <sup>1)</sup><br>[g (lb)] | Total weight<br>[g (lb)] |
|----------------------------------------------------|-------------------------|------------------------------------|----------------------------------|---------------------------------------|--------------------------|
| SM01-48x240F-HP-C-75_BE01_MS08_SSCP <sup>2)</sup>  | 75 (2.95)               | 175 (6.89)                         | 423 (16.65)                      | 5102 (11.25)                          | 13292 (29.3)             |
| SM01-48x240F-HP-C-165_BE01_MS08_SSCP <sup>2)</sup> | 165 (6.5)               | 250 (9.84)                         | 513 (20.2)                       | 6039 (13.31)                          | 14909 (32.87)            |

<sup>1)</sup> Mass: Slider, Shafts, Front plate, Back plate, MagSpring slider

<sup>2)</sup> MagSpring variants with different constant forces

MS05: Constant force 80N (on request)

MS06: Constant force 100N (on request)

MS08: Constant force 120N

**MATERIALS**

| Guide Block & Front Plate           | Guide Shaft                         | Bearing                            | Wipers |
|-------------------------------------|-------------------------------------|------------------------------------|--------|
| Stainless Steel Mat. 1.4404 / 316 L | Stainless Steel Mat. 1.4404 / 316 L | Polymer plain bearings FDA conform | None   |

PERFORMANCE DATA SM01-48x240

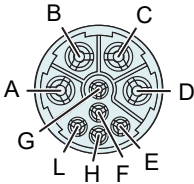
| Performance Data Linear Module SM01-48x240                                                       |                                          |  |                   |                      |
|--------------------------------------------------------------------------------------------------|------------------------------------------|--|-------------------|----------------------|
| Stroke                                                                                           |                                          |  |                   |                      |
| Maximum Stroke                                                                                   | mm (in)                                  |  | 465               | (18.31)              |
| Force                                                                                            |                                          |  |                   |                      |
| Max. Force @ 48VDC                                                                               | N (lbf)                                  |  | 477               | (106.47)             |
| Max. Force @ 72VDC                                                                               | N (lbf)                                  |  | 477               | (106.47)             |
| Max. Cont. Force [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ]      | N (lbf)                                  |  | 115 / 139 / 172   | (25.9 / 31.3 / 38.7) |
| Force Constant                                                                                   | N/A <sub>pk</sub> (lbf/A <sub>pk</sub> ) |  | 22                | (4.95)               |
| Position Detection                                                                               |                                          |  |                   |                      |
| Position Resolution                                                                              | mm (in)                                  |  | 0.007             | (0.0003)             |
| Repeatability                                                                                    | mm (in)                                  |  | ±0.05             | (0.002)              |
| Position Resolution with ES                                                                      | mm (in)                                  |  | -                 | (-)                  |
| Repeatability with ES                                                                            | mm (in)                                  |  | -                 | (-)                  |
| Linearity with ES                                                                                | mm (in)                                  |  | -                 | (-)                  |
| Electrical Data                                                                                  |                                          |  |                   |                      |
| Max. Current @ 48VDC                                                                             | A <sub>pk</sub>                          |  | 25.9              |                      |
| Max. Current @ 72VDC                                                                             | A <sub>pk</sub>                          |  | 25.9              |                      |
| Max. Cont. Current [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ]    | A <sub>pk</sub>                          |  | 6 / 7.2 / 8.9     |                      |
| Terminal Resistance 25 °C / 150 °C                                                               | Ohm                                      |  | 0.97 / 1.4        |                      |
| Terminal Inductivity                                                                             | mH                                       |  | 1.1               |                      |
| Magnetic Period                                                                                  | mm (in)                                  |  | 60                | (2.36)               |
| Thermal Data                                                                                     |                                          |  |                   |                      |
| Max. Winding Temperature (Sensor)                                                                | °C                                       |  | 120               |                      |
| Thermal Resistance [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ]    | K/W                                      |  | 1.6 / 1.1 / 0.72  |                      |
| Thermal Time Constant [Passive cooling/ Passive mounted <sup>1</sup> / Cold Plate <sup>2</sup> ] | s                                        |  | 1410 / 1.1 / 0.72 |                      |
| Mechanical Data                                                                                  |                                          |  |                   |                      |
| Stator Diameter                                                                                  | mm (in)                                  |  | 49                | (1.93)               |
| Slider Diameter                                                                                  | mm (in)                                  |  | 27                | (1.06)               |
| IP Code [Plain Bearing / Linear Ball Bearing]                                                    |                                          |  | IP 69 / IP 67S    |                      |

1) Motor ist auf einer Edelstahloberfläche von 0.03 m² montiert.  
2) Motor ist auf einer Kühlplatte (Temp. 20 °C) montiert.

CONNECTOR

| Motor Connector Wiring | C-Connector | Wire Color Motor Cable |
|------------------------|-------------|------------------------|
| Ph 1+                  | A           | red                    |
| Ph 1-                  | B           | pink                   |
| Ph 2+                  | C           | blue                   |
| Ph 2-                  | D           | grey                   |
| +5VDC                  | E           | white                  |
| GND                    | F           | inner Shield           |
| Sinus                  | G           | yellow                 |
| Cosinus                | H           | green                  |
| Temp.                  | L           | black                  |
| Shield                 | Case        | outer Shield           |

C-Connector



View: Motor connector, plug side  
Material: Stainless steel (Housing)  
IP Code: IP 69K

**ORDERING INFORMATION**

| Item                                        | Description                                                                 | Item-No.                  |
|---------------------------------------------|-----------------------------------------------------------------------------|---------------------------|
| <b>SM01-48x240F-HP-C-75_SSCP</b>            | Linear Module SSCP, Linear Ball Bearing, Stroke max. 75 mm                  | <a href="#">0150-4454</a> |
| <b>SM01-48x240F-HP-C-75_MS08_SSCP</b>       | Linear Module SSCP, Linear Ball Bearing, MagSpring 120N, Stroke max. 75 mm  | <a href="#">0150-4838</a> |
| <b>SM01-48x240F-HP-C-75_BE01_SSCP</b>       | Linear Module SSCP, Plain Bearing, Stroke max. 75 mm                        | <a href="#">0150-4395</a> |
| <b>SM01-48x240F-HP-C-75_BE01_MS08_SSCP</b>  | Linear Module SSCP, Plain Bearing, MagSpring 120N, Stroke max. 75 mm        | <a href="#">0150-4837</a> |
|                                             |                                                                             |                           |
| <b>SM01-48x240F-HP-C-165_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max. 165 mm                 | <a href="#">0150-4490</a> |
| <b>SM01-48x240F-HP-C-165_MS08_SSCP</b>      | Linear Module SSCP, Linear Ball Bearing, MagSpring 120N, Stroke max. 165 mm | <a href="#">0150-4793</a> |
| <b>SM01-48x240F-HP-C-165_BE01_SSCP</b>      | Linear Module SSCP, Plain Bearing, Stroke max. 165 mm                       | <a href="#">0150-4396</a> |
| <b>SM01-48x240F-HP-C-165_BE01_MS08_SSCP</b> | Linear Module SSCP, Plain Bearing, MagSpring 120N, Stroke max. 165 mm       | <a href="#">0150-4788</a> |
|                                             |                                                                             |                           |
| <b>SM01-48x240F-HP-C-285_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max. 285 mm                 | <a href="#">0150-4491</a> |
| <b>SM01-48x240F-HP-C-285_BE01_SSCP</b>      | Linear Module SSCP, Plain Bearing, Stroke max. 285 mm                       | <a href="#">0150-4397</a> |
|                                             |                                                                             |                           |
| <b>SM01-48x240F-HP-C-375_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max. 375 mm                 | <a href="#">0150-4492</a> |
| <b>SM01-48x240F-HP-C-375_BE01_SSCP</b>      | Linear Module SSCP, Plain Bearing, Stroke max. 375 mm                       | <a href="#">0150-4398</a> |
|                                             |                                                                             |                           |
| <b>SM01-48x240F-HP-C-465_SSCP</b>           | Linear Module SSCP, Linear Ball Bearing, Stroke max. 465 mm                 | <a href="#">0150-4493</a> |

SM01 LINEAR MODULES AS COMBINED YZ MOTION UNITS

SM01 linear modules can be directly screwed together using the LinMot mounting kit, so that any YZ combinations can be realized. In addition, a classic pillar system is available, with which the units can be flexibly adjusted in height if required.



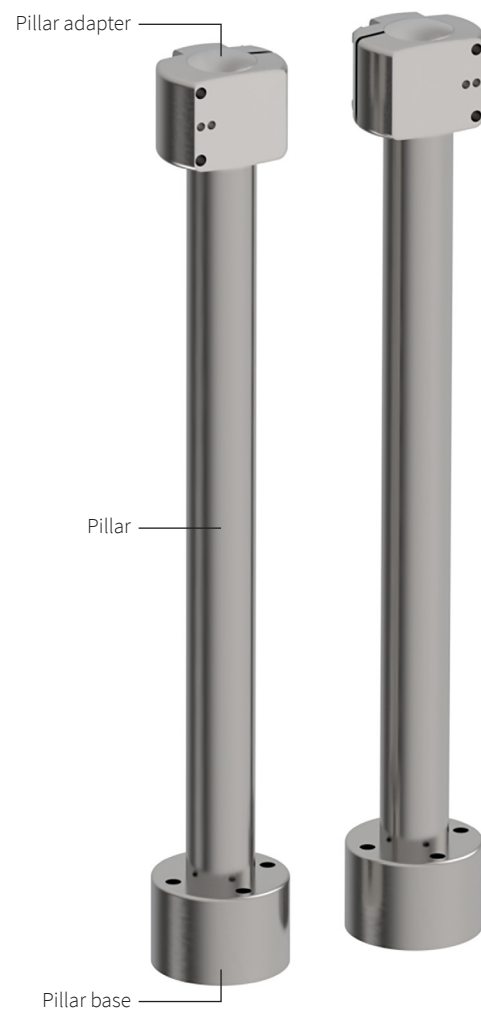
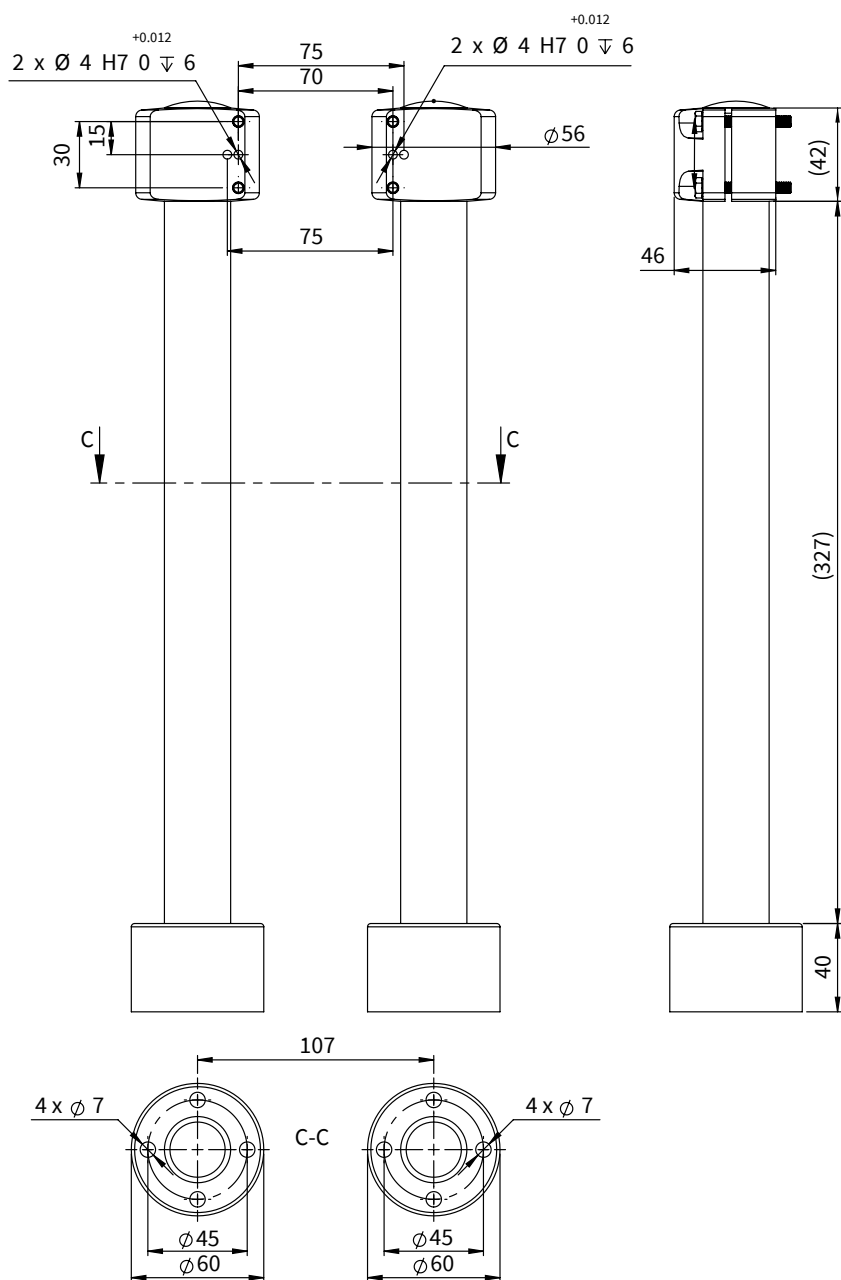
SM01 to SM01 with pillars

MOUNTING ACCESSORIES

The mounting kit includes all necessary screws to mount SM01-37S with SM01-37S and SM01-37Sx120 with SM01-48. The adapter plate is needed to mount SM01-37Sx60 with SM01-48.

| Item                       | Description                                                                                                                                        | Item-No.                  |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| <b>Z01-AsKit-SM01-SM01</b> | Mounting kit for SM01 on SM0x Linear Modules includes:<br>4 x Hexagon head screw M5x16 A4 (ISO 4017)<br>4 x Hexagon head screw M5x40 A4 (ISO 4017) | <a href="#">0150-4507</a> |
| <b>SM01-48-AP-37Sx60</b>   | Adapter Plate-Kit for SM01-37Sx60 to SM01-48                                                                                                       | <a href="#">0150-4187</a> |

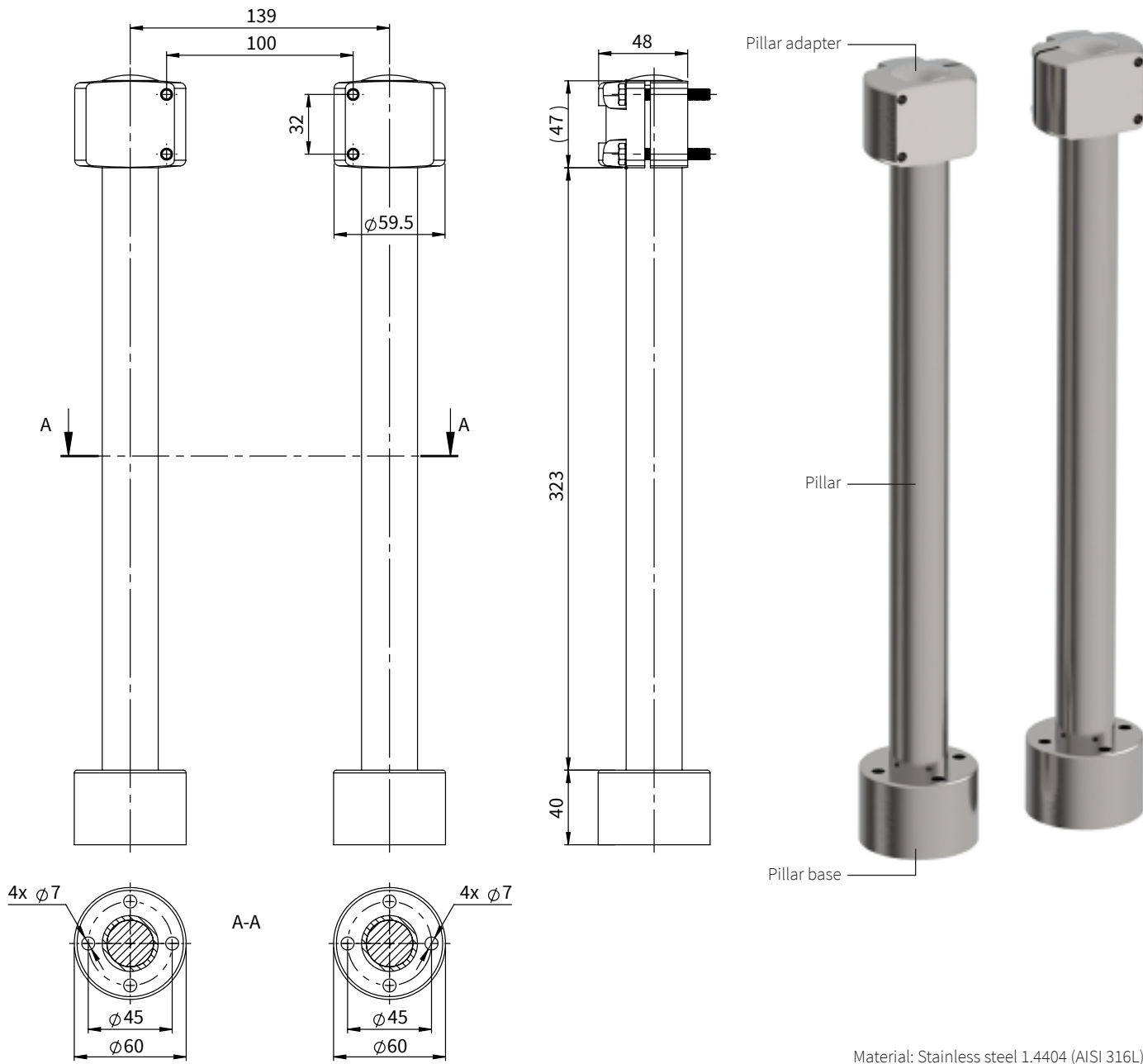
## PILLAR SYSTEM FOR SM01-37 LINEAR MODULE



Material: Stainless steel 1.4404 (AISI 316L)

| Item                        | Description                                          | Item-No.                  |
|-----------------------------|------------------------------------------------------|---------------------------|
| <b>Z01-VF-30-SSC</b>        | Pillar adapter 30                                    | <a href="#">0150-4501</a> |
| <b>Z01-SL30x400-HP-SSC</b>  | Pillar SSC Ø30 Length=400 mm, Mat. 1.4112            | <a href="#">0150-4508</a> |
| <b>Z01-SL30-25x400-SSCP</b> | Pillar Ø30 Length=400 mm, Mat. 1.4404 with Heat Pipe | <a href="#">0150-4502</a> |
| <b>Z01-SF-30-SSC</b>        | Pillar base                                          | <a href="#">0150-4500</a> |

PILLAR SYSTEM FOR SM01-48 LINEAR MODULE



| Item                 | Description                                          | Item-No.                  |
|----------------------|------------------------------------------------------|---------------------------|
| Z01-VF-32-SSC        | Pillar adapter 32                                    | <a href="#">0150-4787</a> |
| Z01-SL30x400-HP-SSC  | Pillar SSC Ø30 Length=400 mm, Mat. 1.4112            | <a href="#">0150-4508</a> |
| Z01-SL30-25x400-SSCP | Pillar Ø30 Length=400 mm, Mat. 1.4404 with Heat Pipe | <a href="#">0150-4502</a> |
| Z01-SF-30-SSC        | Pillar base                                          | <a href="#">0150-4500</a> |



# ALL LINEAR MOTION FROM A SINGLE SOURCE

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