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## MGBS

The MGBS is a ball screw driven mini linear unit where the rotary motion (rotation) of the drive shaft is converted to the linear motion (translation) of the carriage with high mechanical efficiency and low internal friction.

High-performance features such as high speed, good positioning accuracy, and high repeatability are ensured through a precision ball screw drive and a linear guiding system.

A preassembled standard motor (in-line with a motor adapter and a coupling or in-parallel with a motor side drive and a timing belt) together with a standard drive, makes the system plug and drive ready. Compact dimensions and optimally selected motor combinations cover a wide range of applications.

Options, such as different ball screw leads, together with a wide range of accessories and possible multi-axis system combinations make this product highly flexible.

□ = Square cross section

Dimensions in mm.

For other CAD files, please contact Rollco.

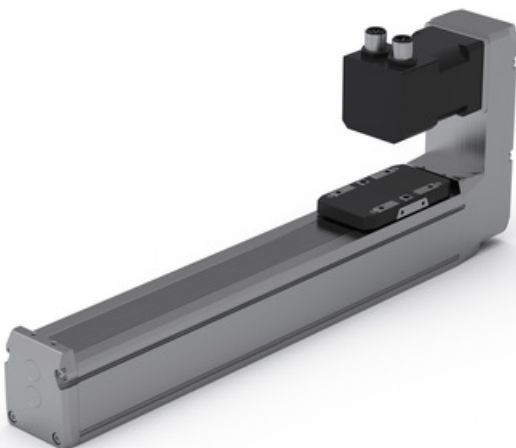
**Ambient Temperature (°C):** 0 °C ~ +50 °C

**Ambient Temperature without a Motor (°C):** 0 °C ~ +60 °C

**Protection Class:** IP40

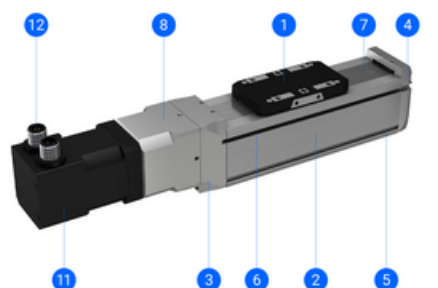
**Duty Cycle:** 100 %

**Maintenance:** Life-time pre-lubricated



# MGBS

MGBS with motor and motor adapter VK



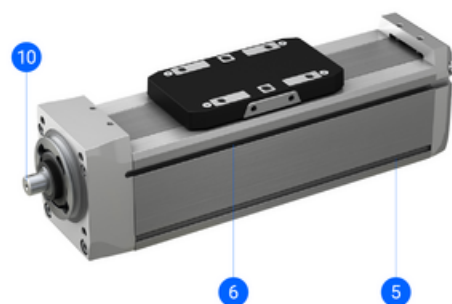
1. Carriage
2. Aluminium profile
3. Drive block
4. End block
5. Mounting slots
6. Slot for the magnetic field sensors
7. Corrosion-resistance protection strip
8. Motor adapter VK with a coupling
11. Preassembled motor (with/without a brake)
12. Standard connectors (motor, encoder and brake - optionally)

MGBS with motor and motor side drive MSD



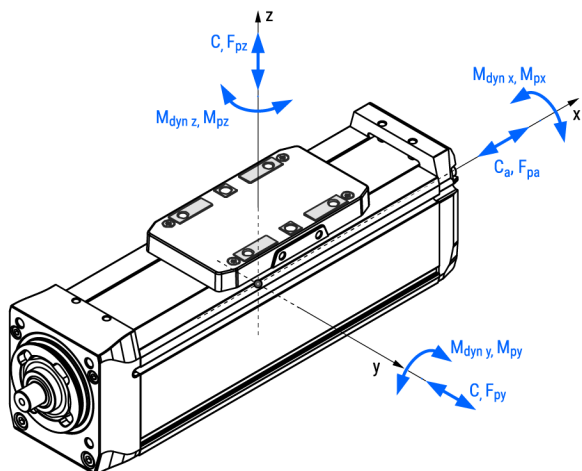
9. Motor side drive MSD with a timing belt
11. Preassembled motor (with/without a brake)
12. Standard connectors (motor, encoder and brake - optionally)

MGBS without motor



5. Mounting slots
6. Slot for the magnetic field sensors
10. Drive shaft of the precision ball screw drive

## General Data



The moved mass is already considered in the equation for calculating the mass of the linear unit  $m_{\text{MGBS}}$  and the mass moment of inertia  $J_{\text{MGBS}}$ . The moved mass includes the mass of the carriage together with the ball nut.

For the combination with a standard motor and motor adapter VK or motor side drive MSD the mass  $m_{\text{MGBS}}$  should be increased by  $m_{\text{VK+m}}$  or  $m_{\text{MSD+m}}$  respectively.

|                                     |                               |
|-------------------------------------|-------------------------------|
| <b>Abs. stroke</b>                  | Absolute stroke [mm]          |
| <b><math>m_{\text{load}}</math></b> | Applied mass to be moved [kg] |

| Designation            | Description     | Ball Screw (d x l) | Axial Dynamic Load Capacity $C_a$ (N) | Dynamic Load Capacity $C$ (N) | Dynamic Moment $M_x$ (Nm) |
|------------------------|-----------------|--------------------|---------------------------------------|-------------------------------|---------------------------|
| <b>MGBS 32 - 8x2</b>   | Without a motor | 8 x 2              | 2000                                  | 1310                          | 4.8                       |
| <b>MGBS 32 - 8x8</b>   | Without a motor | 8 x 8              | 1500                                  | 1310                          | 4.8                       |
| <b>MGBS 45 - 10x3</b>  | Without a motor | 10 x 3             | 3500                                  | 3240                          | 20.1                      |
| <b>MGBS 45 - 10x10</b> | Without a motor | 10 x 10            | 3200                                  | 3240                          | 20.1                      |
| <b>MGBS 60 - 12x5</b>  | Without a motor | 12 x 5             | 5000                                  | 11190                         | 77.4                      |
| <b>MGBS 60 - 12x10</b> | Without a motor | 12 x 10            | 3800                                  | 11190                         | 77.4                      |

| Designation            | Dynamic Moment $M_y$ (Nm) | Dynamic Moment $M_z$ (Nm) | Max. Permissible Loads Forces $F_{py}$ (N) | Max. Permissible Loads Forces $F_{pz}$ (N) | Max. Permissible Loads Moments $M_{px}$ (Nm) | Max. Permissible Loads Moments $M_{py}$ (Nm) |
|------------------------|---------------------------|---------------------------|--------------------------------------------|--------------------------------------------|----------------------------------------------|----------------------------------------------|
| <b>MGBS 32 - 8x2</b>   | 4.1                       | 4.1                       | 200                                        | 300                                        | 2.0                                          | 1.8                                          |
| <b>MGBS 32 - 8x8</b>   | 4.1                       | 4.1                       | 200                                        | 300                                        | 2.0                                          | 1.8                                          |
| <b>MGBS 45 - 10x3</b>  | 17.4                      | 17.4                      | 400                                        | 700                                        | 7.4                                          | 6.3                                          |
| <b>MGBS 45 - 10x10</b> | 17.4                      | 17.4                      | 400                                        | 700                                        | 7.4                                          | 6.3                                          |
| <b>MGBS 60 - 12x5</b>  | 79.8                      | 79.8                      | 850                                        | 2000                                       | 29.2                                         | 30.8                                         |
| <b>MGBS 60 - 12x10</b> | 79.8                      | 79.8                      | 850                                        | 2000                                       | 29.2                                         | 30.8                                         |

| Designation            | Max.<br>Permissible<br>Loads Moments<br>Mpz (Nm) | Axial Backlash<br>(mm) | Max.<br>Repeatability<br>(mm) | Absolute Stroke                                               | Max.<br>Permissible<br>Axial Load Fpa<br>(N) | Max.<br>Permissible<br>Payload<br>Horizontal mph<br>(kg) |
|------------------------|--------------------------------------------------|------------------------|-------------------------------|---------------------------------------------------------------|----------------------------------------------|----------------------------------------------------------|
| <b>MGBS 32 - 8×2</b>   | 1.3                                              | ≤ 0.06                 | ± 0.015                       | 50, 100, 150, 200,<br>250, 300, 400,<br>500, 600, 700,<br>800 | 285                                          | 31                                                       |
| <b>MGBS 32 - 8×8</b>   | 1.3                                              | ≤ 0.06                 | ± 0.015                       | 50, 100, 150, 200,<br>250, 300, 400,<br>500, 600, 700,<br>800 | 285                                          | 31                                                       |
| <b>MGBS 45 - 10×3</b>  | 4.7                                              | ≤ 0.06                 | ± 0.015                       | 50, 100, 150, 200,<br>250, 300, 400,<br>500, 600, 700,<br>800 | 695                                          | 71                                                       |
| <b>MGBS 45 - 10×10</b> | 4.7                                              | ≤ 0.06                 | ± 0.015                       | 50, 100, 150, 200,<br>250, 300, 400,<br>500, 600, 700,<br>800 | 695                                          | 71                                                       |

## General Data

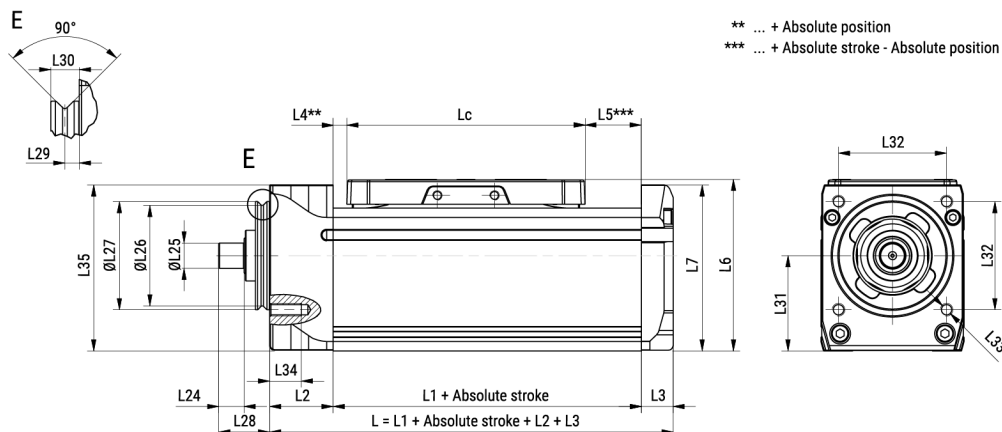
| Designation            | Max. Permissible Loads Moments Mpz (Nm) | Axial Backlash (mm) | Max. Repeatability (mm) | Absolute Stroke                                                 | Max. Permissible Axial Load Fpa (N) | Max. Permissible Payload Horizontal mph (kg) |
|------------------------|-----------------------------------------|---------------------|-------------------------|-----------------------------------------------------------------|-------------------------------------|----------------------------------------------|
| <b>MGBS 60 - 12×5</b>  | 31.8                                    | ≤ 0.06              | ± 0.010                 | 50, 100, 150, 200, 250, 300, 400, 500, 600, 700, 800, 900, 1000 | 1100                                | 204                                          |
| <b>MGBS 60 - 12×10</b> | 31.8                                    | ≤ 0.06              | ± 0.010                 | 50, 100, 150, 200, 250, 300, 400, 500, 600, 700, 800, 900, 1000 | 1100                                | 204                                          |

| Designation            | Max. Permissible Payload Vertical mpv (kg) | Max. Drive Torque Mp (Nm) | No Load Torque Mo (Nm) | Max. Permissible Radial Load on Shaft Fpr (N) | Max. Travel Speed Vmax (m/s) | Max. Rotational Speed (rev/min) |
|------------------------|--------------------------------------------|---------------------------|------------------------|-----------------------------------------------|------------------------------|---------------------------------|
| <b>MGBS 32 - 8×2</b>   | 24                                         | 0.10                      | 0.04                   | 50                                            | 0.150                        | 4500                            |
| <b>MGBS 32 - 8×8</b>   | 24                                         | 0.40                      | 0.05                   | 50                                            | 0.600                        | 4500                            |
| <b>MGBS 45 - 10×3</b>  | 59                                         | 0.37                      | 0.10                   | 100                                           | 0.225                        | 4500                            |
| <b>MGBS 45 - 10×10</b> | 59                                         | 1.23                      | 0.11                   | 100                                           | 0.750                        | 4500                            |
| <b>MGBS 60 - 12×5</b>  | 93                                         | 0.97                      | 0.16                   | 200                                           | 0.483                        | 5800                            |
| <b>MGBS 60 - 12×10</b> | 93                                         | 1.95                      | 0.17                   | 200                                           | 0.967                        | 5800                            |

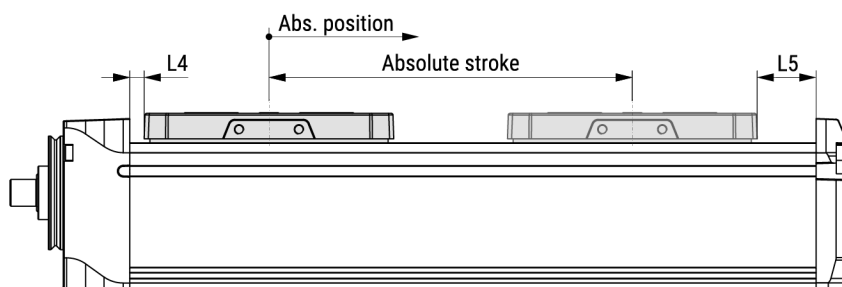
| Designation            | Max. Acceleration (m/s <sup>2</sup> ) | Moved Mass (kg) | Mass of Linear Unit (kg)    | Mass Moment of Inertia JMGBS (10 <sup>-2</sup> kg cm <sup>2</sup> ) | Planar Moment of Inertia Iy (cm <sup>4</sup> ) | Planar Moment of Inertia Iz (cm <sup>4</sup> ) |
|------------------------|---------------------------------------|-----------------|-----------------------------|---------------------------------------------------------------------|------------------------------------------------|------------------------------------------------|
| <b>MGBS 32 - 8×2</b>   | 20                                    | 0.12            | 0.36 + 0.0015 × Abs. Stroke | 0.85 + 0.0024 × Abs. Stroke + 0.1013 × mload                        | 4.3                                            | 4.6                                            |
| <b>MGBS 32 - 8×8</b>   | 20                                    | 0.12            | 0.36 + 0.0015 × Abs. Stroke | 1.04 + 0.0025 × Abs. Stroke + 1.6211 × mload                        | 4.3                                            | 4.6                                            |
| <b>MGBS 45 - 10×3</b>  | 20                                    | 0.23            | 0.80 + 0.0028 × Abs. Stroke | 3.17 + 0.0055 × Abs. Stroke + 0.2280 × mload                        | 14.3                                           | 15.9                                           |
| <b>MGBS 45 - 10×10</b> | 20                                    | 0.23            | 0.80 + 0.0028 × Abs. Stroke | 3.72 + 0.0056 × Abs. Stroke + 2.5330 × mload                        | 14.3                                           | 15.9                                           |
| <b>MGBS 60 - 12×5</b>  | 20                                    | 0.53            | 1.80 + 0.0049 × Abs. Stroke | 11.04 + 0.0132 × Abs. Stroke + 0.6333 × mload                       | 43.8                                           | 50.3                                           |
| <b>MGBS 60 - 12×10</b> | 20                                    | 0.53            | 1.80 + 0.0049 × Abs. Stroke | 11.97 + 0.0126 × Abs. Stroke + 2.5330 × mload                       | 43.8                                           | 50.3                                           |

## Dimensions

### MGBS without motor



### Absolute stroke of the MGBS definition



| Designation            | Lc | L1   | L2 | L3 | L4  | L5   | L6   | L7    | L8 |
|------------------------|----|------|----|----|-----|------|------|-------|----|
| <b>MGBS 32 - 8×2</b>   | 65 | 81.5 | 16 | 8  | 2.5 | 14   | 38.5 | 35.75 | 32 |
| <b>MGBS 32 - 8×8</b>   | 65 | 81.5 | 16 | 8  | 2.5 | 14   | 38.5 | 35.75 | 32 |
| <b>MGBS 45 - 10×3</b>  | 75 | 97   | 20 | 10 | 4.3 | 17.7 | 54   | 52.25 | 45 |
| <b>MGBS 45 - 10×10</b> | 75 | 97   | 20 | 10 | 4.3 | 17.7 | 54   | 52.25 | 45 |
| <b>MGBS 60 - 12×5</b>  | 90 | 133  | 24 | 12 | 3.2 | 39.8 | 72   | 68.75 | 60 |
| <b>MGBS 60 - 12×10</b> | 90 | 133  | 24 | 12 | 3.2 | 39.8 | 72   | 68.75 | 60 |

| Designation            | L9  | L10  | L11 | L12 | L13 | L14 | L15 | L16  | L17  | L18  |
|------------------------|-----|------|-----|-----|-----|-----|-----|------|------|------|
| <b>MGBS 32 - 8×2</b>   | 4.4 | 23.7 | 4   | 5.9 | 18  | M2  | 4   | 14.6 | 18.4 | 22.5 |
| <b>MGBS 32 - 8×8</b>   | 4.4 | 23.7 | 4   | 5.9 | 18  | M2  | 4   | 14.6 | 18.4 | 22.5 |
| <b>MGBS 45 - 10×3</b>  | 4.4 | 36.5 | 5   | 7.8 | 18  | M3  | 6   | 18.6 | 26.4 | 32   |
| <b>MGBS 45 - 10×10</b> | 4.4 | 36.5 | 5   | 7.8 | 18  | M3  | 6   | 18.6 | 26.4 | 32   |
| <b>MGBS 60 - 12×5</b>  | 4.4 | 45   | 6   | 11  | 30  | M4  | 6   | 25.4 | 38.4 | 45   |
| <b>MGBS 60 - 12×10</b> | 4.4 | 45   | 6   | 11  | 30  | M4  | 6   | 25.4 | 38.4 | 45   |

| Designation          | L19 | L20 | L21 | L22    | L23 | L24 | L25    | L26  | L27     | L28 |
|----------------------|-----|-----|-----|--------|-----|-----|--------|------|---------|-----|
| <b>MGBS 32 - 8×2</b> | 30  | 35  | M3  | 2 (H7) | 5   | 7   | 5 (h7) | 22.6 | 25 (h7) | 14  |
| <b>MGBS 32 - 8×8</b> | 30  | 35  | M3  | 2 (H7) | 5   | 7   | 5 (h7) | 22.6 | 25 (h7) | 14  |

## Dimensions

| Designation            | L19 | L20 | L21 | L22    | L23 | L24 | L25     | L26  | L27 | L28 |
|------------------------|-----|-----|-----|--------|-----|-----|---------|------|-----|-----|
| <b>MGBS 45 - 10×3</b>  | 42  | 42  | M4  | 4 (H7) | 6   | 8   | 8 (h7)  | 31.6 | 34  | 16  |
| <b>MGBS 45 - 10×10</b> | 42  | 42  | M4  | 4 (H7) | 6   | 8   | 8 (h7)  | 31.6 | 34  | 16  |
| <b>MGBS 60 - 12×5</b>  | 57  | 55  | M5  | 5 (H7) | 8   | 10  | 10 (h7) | 39.6 | 42  | 20  |
| <b>MGBS 60 - 12×10</b> | 57  | 55  | M5  | 5 (H7) | 8   | 10  | 10 (h7) | 39.6 | 42  | 20  |

| Designation            | L29 | L30 | L31 | L32  | L33 | L34 | L35   |
|------------------------|-----|-----|-----|------|-----|-----|-------|
| <b>MGBS 32 - 8×2</b>   | 2.3 | 4.5 | 20  | 24.5 | M3  | 6   | 35.75 |
| <b>MGBS 32 - 8×8</b>   | 2.3 | 4.5 | 20  | 24.5 | M3  | 6   | 35.75 |
| <b>MGBS 45 - 10×3</b>  | 2.3 | 4.5 | 30  | 34   | M4  | 10  | 52.25 |
| <b>MGBS 45 - 10×10</b> | 2.3 | 4.5 | 30  | 34   | M4  | 10  | 52.25 |
| <b>MGBS 60 - 12×5</b>  | 2.3 | 4.5 | 39  | 48   | M5  | 10  | 68.75 |
| <b>MGBS 60 - 12×10</b> | 2.3 | 4.5 | 39  | 48   | M5  | 10  | 68.75 |



## MGTB

The MGTB is a toothed belt driven mini linear unit where the rotary motion (rotation) of the drive shaft is converted to the linear motion (translation) of the carriage with high mechanical efficiency and low internal friction.

High-performance features such as high speed, good positioning accuracy, and high repeatability are ensured through a zero-backlash toothed belt drive and a linear guiding system.

A preassembled standard motor (with a motor adapter and a coupling) together with the standard drive, makes the system plug and drive ready. Compact dimensions and optimally selected motor combinations cover a wide range of applications.

Options, such as different motor sizes, together with a wide range of accessories and possible multi-axis system combinations make this product highly flexible.

□ = Square cross section

Dimensions in mm.

For other CAD files, please contact Rollco.

**Ambient Temperature (°C):** 0 °C ~ +50 °C

**Ambient Temperature without a Motor (°C):** 0 °C ~ +60 °C

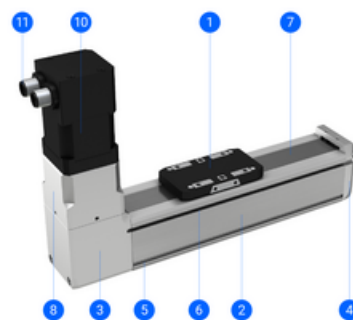
**Protection Class:** IP40

**Duty Cycle:** 100 %

**Maintenance:** Life-time pre-lubricated



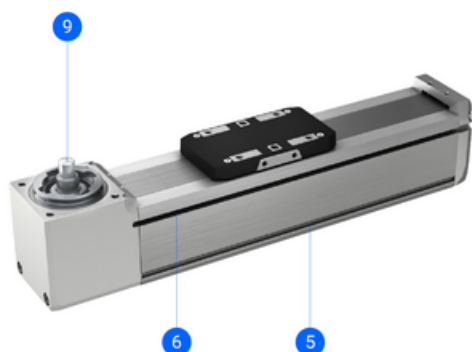
MGTB with motor and motor adapter VK



1. Carriage
2. Aluminium profile
3. Drive block with a pulley
4. End block
5. Mounting slots
6. Slot for the magnetic field sensors
7. Corrosion-resistance protection strip
8. Motor adapter VK with a coupling
10. Preassembled motor (with/without a brake)
11. Standard connectors (motor, encoder and brake - optionally)

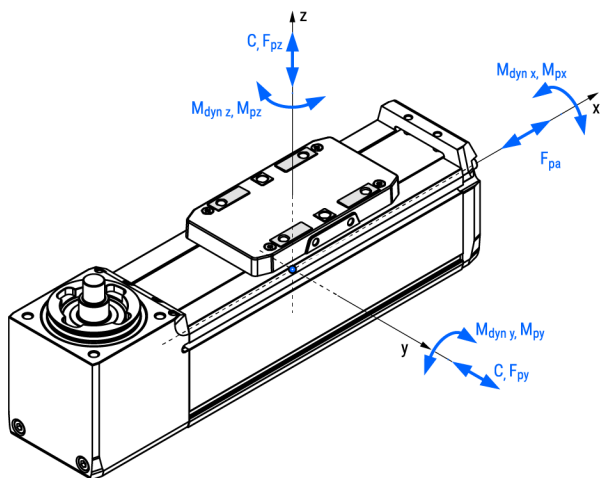
## MGTB

MGTB without motor



- 5. Mounting slots
- 6. Slot for the magnetic field sensors
- 9. The drive shaft of the pulley

## General Data



The moved mass is already considered in the equation for calculating the mass of the linear unit  $m_{MGTB}$  and the mass moment of inertia  $J_{MGTB}$ . The moved mass includes the mass of the carriage.

For the combination with a standard motor and motor adapter VK the mass  $m_{MGTB}$  should be increased by  $m_{VK+m}$ .

|             |                               |
|-------------|-------------------------------|
| Abs. stroke | Absolute stroke [mm]          |
| $m_{load}$  | Applied mass to be moved [kg] |

| Designation | Description     | Dynamic Load Capacity C (N) | Dynamic Moment Mx (Nm) | Dynamic Moment My (Nm) | Dynamic Moment Mz (Nm) |
|-------------|-----------------|-----------------------------|------------------------|------------------------|------------------------|
| MGTB 32     | Without a motor | 1310                        | 4.8                    | 4.1                    | 4.1                    |
| MGTB 45     | Without a motor | 3240                        | 20.1                   | 17.4                   | 17.4                   |
| MGTB 60     | Without a motor | 11190                       | 77.4                   | 79.8                   | 79.8                   |

| Designation | Max. Permissible Loads Forces Fpy (N) | Max. Permissible Loads Forces Fpz (N) | Max. Permissible Loads Moments Mpx (Nm) | Max. Permissible Loads Moments Mpy (Nm) | Max. Permissible Loads Moments Mpz (Nm) | Max. Repeatability (mm) |
|-------------|---------------------------------------|---------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|-------------------------|
| MGTB 32     | 200                                   | 300                                   | 2.0                                     | 1.8                                     | 1.3                                     | ± 0.08                  |
| MGTB 45     | 400                                   | 700                                   | 7.4                                     | 6.3                                     | 4.7                                     | ± 0.08                  |
| MGTB 60     | 850                                   | 2000                                  | 29.2                                    | 30.8                                    | 31.8                                    | ± 0.08                  |

| Designation | Absolute Stroke                                                            | Pulley Drive Ratio (mm/rev) | Pulley Diameter (mm) | Max. Permissible Axial Load Fpa (N) | Max. Permissible Payload Horizontal mpy (kg) | Max. Permissible Payload Vertical mpv (kg) |
|-------------|----------------------------------------------------------------------------|-----------------------------|----------------------|-------------------------------------|----------------------------------------------|--------------------------------------------|
| MGTB 32     | 100, 200, 300, 400, 500, 600, 700, 800, 1000, 1200, 1400, 1600             | 66                          | 21.00                | 65                                  | 31                                           | 5.4                                        |
| MGTB 45     | 100, 200, 300, 400, 500, 600, 700, 800, 1000, 1200, 1400, 1600             | 63                          | 20.05                | 85                                  | 42                                           | 7.1                                        |
| MGTB 60     | 100, 200, 300, 400, 500, 600, 700, 800, 1000, 1200, 1400, 1600, 1800, 2000 | 78                          | 24.83                | 130                                 | 65                                           | 11                                         |

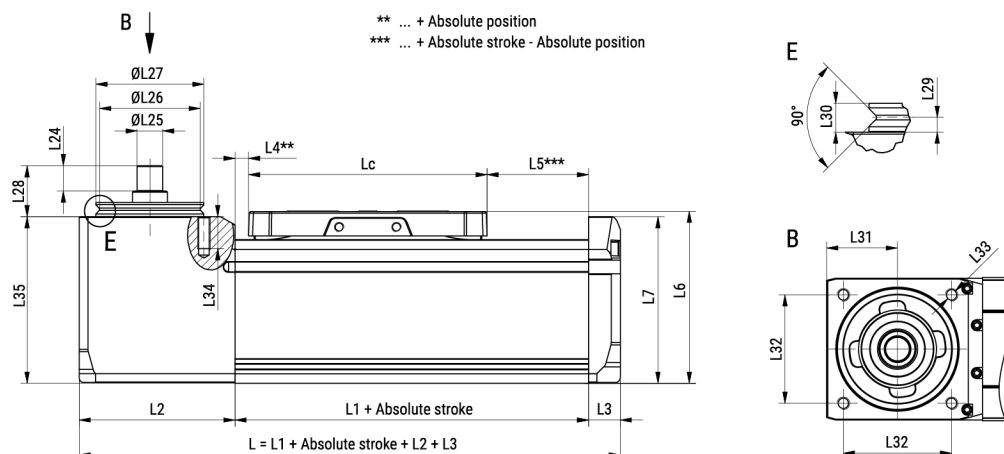
| Designation | Max. Drive Torque Mp (Nm) | No Load Torque Mo (Nm) | Max. Permissible Radial Load on Shaft Fpr (N) | Max. Travel Speed Vmax (m/s) | Max. Rotational Speed (rev/min) | Max. Acceleration (m/s²) |
|-------------|---------------------------|------------------------|-----------------------------------------------|------------------------------|---------------------------------|--------------------------|
| MGTB 32     | 0.68                      | 0.07                   | 50                                            | 1500                         | 1365                            | 20                       |
| MGTB 45     | 0.85                      | 0.20                   | 100                                           | 1500                         | 1430                            | 20                       |
| MGTB 60     | 1.61                      | 0.40                   | 200                                           | 1500                         | 1155                            | 20                       |

## General Data

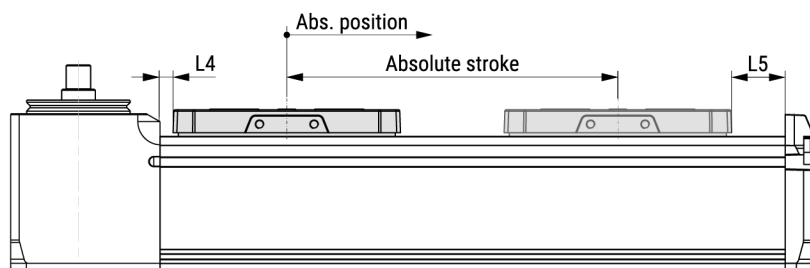
| Designation    | Moved Mass (kg) | Mass of Linear Unit (kg)                  | Mass Moment of Inertia JMGTB ( $10^{-2}$ kg cm <sup>2</sup> )            | Planar Moment of Inertia I <sub>y</sub> (cm <sup>4</sup> ) | Planar Moment of Inertia I <sub>z</sub> (cm <sup>4</sup> ) |
|----------------|-----------------|-------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|
| <b>MGTB 32</b> | 0.06            | $0.37 + 0.0012 \times \text{Abs. Stroke}$ | $9.19 + 0.0024 \times \text{Abs. Stroke} + 110.339 \times \text{mload}$  | 4.3                                                        | 4.6                                                        |
| <b>MGTB 45</b> | 0.15            | $0.92 + 0.0023 \times \text{Abs. Stroke}$ | $18.80 + 0.0022 \times \text{Abs. Stroke} + 100.536 \times \text{mload}$ | 14.3                                                       | 15.9                                                       |
| <b>MGTB 60</b> | 0.45            | $2.12 + 0.0041 \times \text{Abs. Stroke}$ | $81.72 + 0.0040 \times \text{Abs. Stroke} + 154.110 \times \text{mload}$ | 43.8                                                       | 50.3                                                       |

## Dimensions

### MGTB without motor



### Absolute stroke of the MGTB definition



| Designation | Lc | L1  | L2    | L3 | L4  | L5   | L6   | L7    | L8 |
|-------------|----|-----|-------|----|-----|------|------|-------|----|
| MGTB 32     | 65 | 104 | 32.75 | 8  | 2.5 | 36.5 | 38.5 | 35.75 | 32 |
| MGTB 45     | 75 | 124 | 49    | 10 | 4.3 | 44.7 | 54   | 52.25 | 45 |
| MGTB 60     | 90 | 139 | 64    | 12 | 3.2 | 45.8 | 72   | 68.75 | 60 |

| Designation | L9  | L10  | L11 | L12 | L13 | L14 | L15 | L16  | L17  | L18  |
|-------------|-----|------|-----|-----|-----|-----|-----|------|------|------|
| MGTB 32     | 4.4 | 23.7 | 4   | 5.9 | 18  | M2  | 4   | 14.6 | 18.4 | 22.5 |
| MGTB 45     | 4.4 | 36.5 | 5   | 7.8 | 18  | M3  | 6   | 18.6 | 16.4 | 32   |
| MGTB 60     | 4.4 | 45   | 6   | 11  | 30  | M4  | 6   | 25.4 | 38.4 | 45   |

| Designation | L19 | L20 | L21 | L22    | L23 | L24 | L25     | L26  | L27     | L28 |
|-------------|-----|-----|-----|--------|-----|-----|---------|------|---------|-----|
| MGTB 32     | 30  | 35  | M3  | 2 (H7) | 5   | 7   | 5 (h7)  | 22.6 | 25 (h7) | 14  |
| MGTB 45     | 42  | 42  | M4  | 4 (H7) | 6   | 8   | 8 (h7)  | 31.6 | 34 (h7) | 16  |
| MGTB 60     | 57  | 55  | M5  | 5 (H7) | 8   | 10  | 10 (h7) | 39.6 | 42 (h7) | 20  |

| Designation | L29 | L30 | L31   | L32  | L33 | L34 | L35   |
|-------------|-----|-----|-------|------|-----|-----|-------|
| MGTB 32     | 2.3 | 4.5 | 15.75 | 24.5 | M3  | 3   | 37.75 |
| MGTB 45     | 2.3 | 4.5 | 22.25 | 34   | M4  | 10  | 54.85 |
| MGTB 60     | 2.3 | 4.5 | 29.75 | 48   | M5  | 10  | 72.50 |

## Motor adapter VK

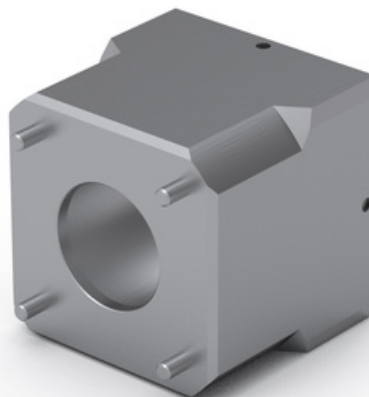
For Mini Linear Units MGBS & MGTB and MCE & MSCE  
Mini Electric Cylinders & Sliders.

The standard motor adapter VK is made out of one piece.  
It is important to note when ordering it, that the coupling is included.

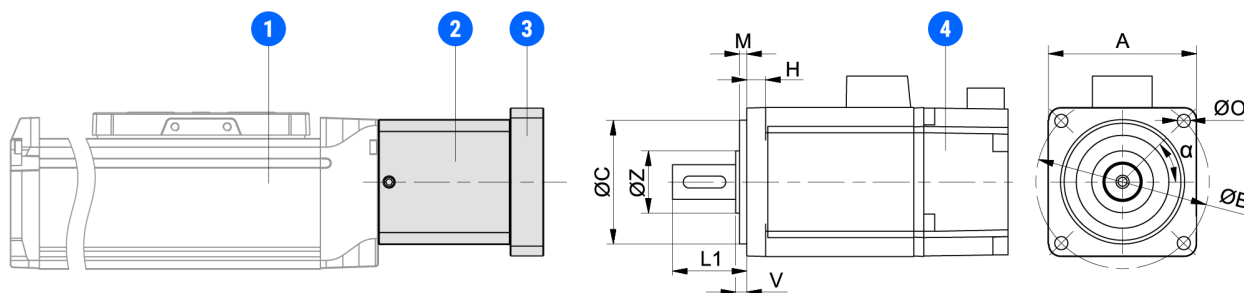
Note! If you order a custom motor adapter VK for a non-standard motor the coupling is not included.

□ = Square cross section

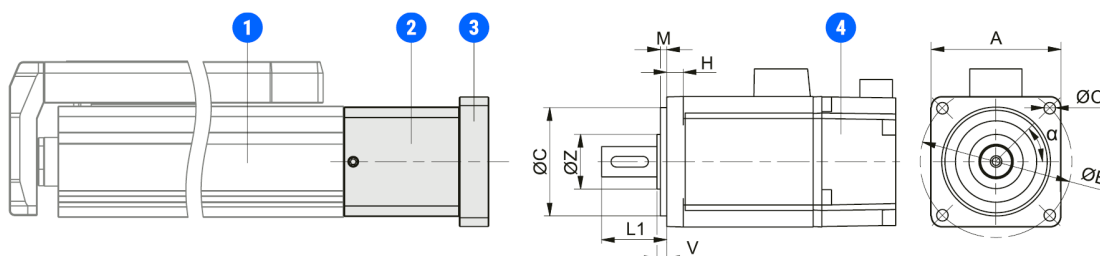
Dimensions in mm.



## General Data



1. MGBS/MGTB
  2. Motor adapter housing
  3. Motor adapter flange
  4. Motor
- Motor adapter VK



Coupling is not included.

- 1 - MCE/MSCE
  - 2 - Motor adapter housing
  - 3 - Motor adapter flange
  - 4 - Motor
- Motor adapter VK

| Designation                     | Compatible with              | Motor Type | Motor Size (mm) | Motor Standard | Motor Shaft Length L1 Min. (mm) |
|---------------------------------|------------------------------|------------|-----------------|----------------|---------------------------------|
| <b>VK - MG 25 - T1 - 108256</b> | MCE/MSCE 25                  | Stepper    | 28              | NEMA 11        | 15                              |
| <b>VK - MG 32 - T1 - 108257</b> | MGBS/MGTB 32,<br>MCE/MSCE 32 | Stepper    | 28              | NEMA 11        | 15                              |
| <b>VK - MG 32 - T2 - 108258</b> | MGBS/MGTB 32,<br>MCE/MSCE 32 | Stepper    | 42              | NEMA 17        | 20                              |
| <b>VK - MG 45 - T1 - 108259</b> | MGBS/MGTB 45,<br>MCE/MSCE 45 | Stepper    | 42              | NEMA 17        | 20                              |
| <b>VK - MG 45 - T2 - 108260</b> | MGBS/MGTB 45,<br>MCE/MSCE 45 | Stepper    | 56              | NEMA 23        | 20                              |
| <b>VK - MG 60 - T1 - 112537</b> | MGBS/MGTB 60                 | Stepper    | 56              | NEMA 23        | 20                              |
| <b>VK - MG 60 - T2 - 112536</b> | MGBS/MGTB 60                 | Stepper    | 86              | NEMA 34        | 32                              |

| Designation                     | Motor Shaft Length L1 Max. (mm) | Motor Shaft Diameter (mm) | Motor Mounting Holes ØO × H (mm) | Mass (kg) |
|---------------------------------|---------------------------------|---------------------------|----------------------------------|-----------|
| <b>VK - MG 25 - T1 - 108256</b> | 20                              | 5.0                       | M2,5 × 2,5 (min.)                | 0.04      |
| <b>VK - MG 32 - T1 - 108257</b> | 20                              | 5.0                       | M2.5 × 2.5 (min.)                | 0.06      |
| <b>VK - MG 32 - T2 - 108258</b> | 25                              | 5.0                       | M3 × 4.5 (min.)                  | 0.09      |
| <b>VK - MG 45 - T1 - 108259</b> | 25                              | 6.35                      | M3 × 4.5 (min.)                  | 0.14      |
| <b>VK - MG 45 - T2 - 108260</b> | 25                              | 6.35                      | 5 × 9.0 (max.)                   | 0.18      |

## General Data

| Designation              | Motor Shaft Length L1<br>Max. (mm) | Motor Shaft Diameter<br>(mm) | Motor Mounting Holes<br>ØO × H (mm) | Mass (kg) |
|--------------------------|------------------------------------|------------------------------|-------------------------------------|-----------|
| VK - MG 60 - T1 - 112537 | 25                                 | 6.35                         | 5 × 9.0 (max.)                      | 0.36      |
| VK - MG 60 - T2 - 112536 | 37                                 | 14                           | 7 × 10.0 (max.)                     | 0.58      |



## Couplings

For Mini Linear Units MGBS & MGTB.

Dimensions in mm.

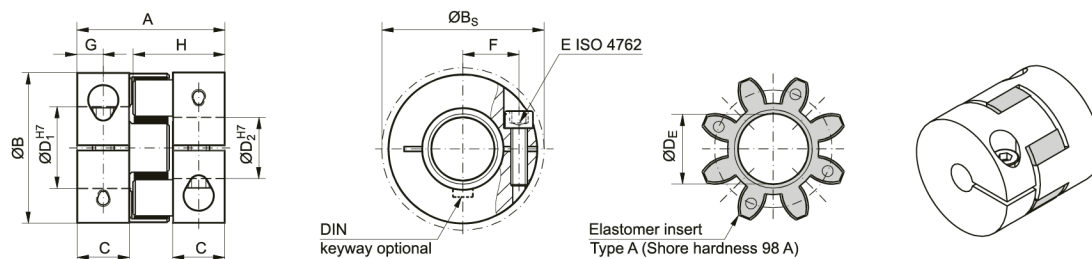


## General Data

| Designation | Compatible with | Rated Torque (Nm) | Max. Torque (Nm) | Tightening Torque of the Clamping Screw (Nm) | Moment of inertia per hub ( $10^{-3}$ kg m <sup>2</sup> ) |
|-------------|-----------------|-------------------|------------------|----------------------------------------------|-----------------------------------------------------------|
| EKL 2       | VK 32           | 2                 | 4                | 0.6                                          | 0.003                                                     |
| EKL 5       | VK 45           | 9                 | 18               | 2                                            | 0.02                                                      |
| EKL 10      | VK 60           | 12.5              | 25               | 4                                            | 0.03                                                      |

| Designation | Weight (kg) | Speed standard (min <sup>-1</sup> ) |
|-------------|-------------|-------------------------------------|
| EKL 2       | 0.008       | 15000                               |
| EKL 5       | 0.02        | 15000                               |
| EKL 10      | 0.05        | 13000                               |

## Dimensions



| Designation | A  | B  | BS | C    | D1 | D2   | DE   | E  | F    |
|-------------|----|----|----|------|----|------|------|----|------|
| EKL 2       | 20 | 16 | 17 | 6    | 3  | 8    | 6.2  | M2 | 5.5  |
| EKL 5       | 26 | 25 | 25 | 8    | 4  | 12.7 | 10.2 | M3 | 8    |
| EKL 10      | 32 | 32 | 32 | 10.3 | 4  | 16   | 14.2 | M4 | 10.5 |

| Designation | G | H    |
|-------------|---|------|
| EKL 2       | 3 | 12   |
| EKL 5       | 4 | 16.7 |
| EKL 10      | 5 | 20.7 |

## Motor side drive MSD

For Mini Linear Units MGBS and MCE & MSCE Mini Electric Cylinders & Sliders.

Dimensions in mm.



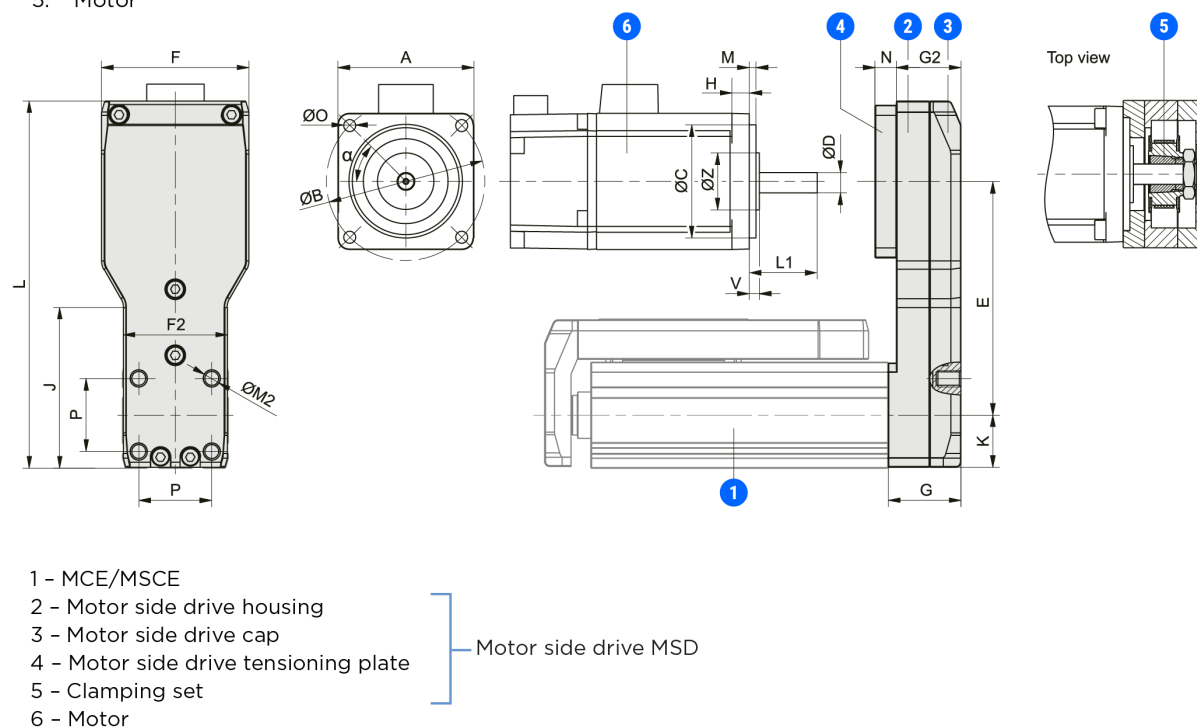
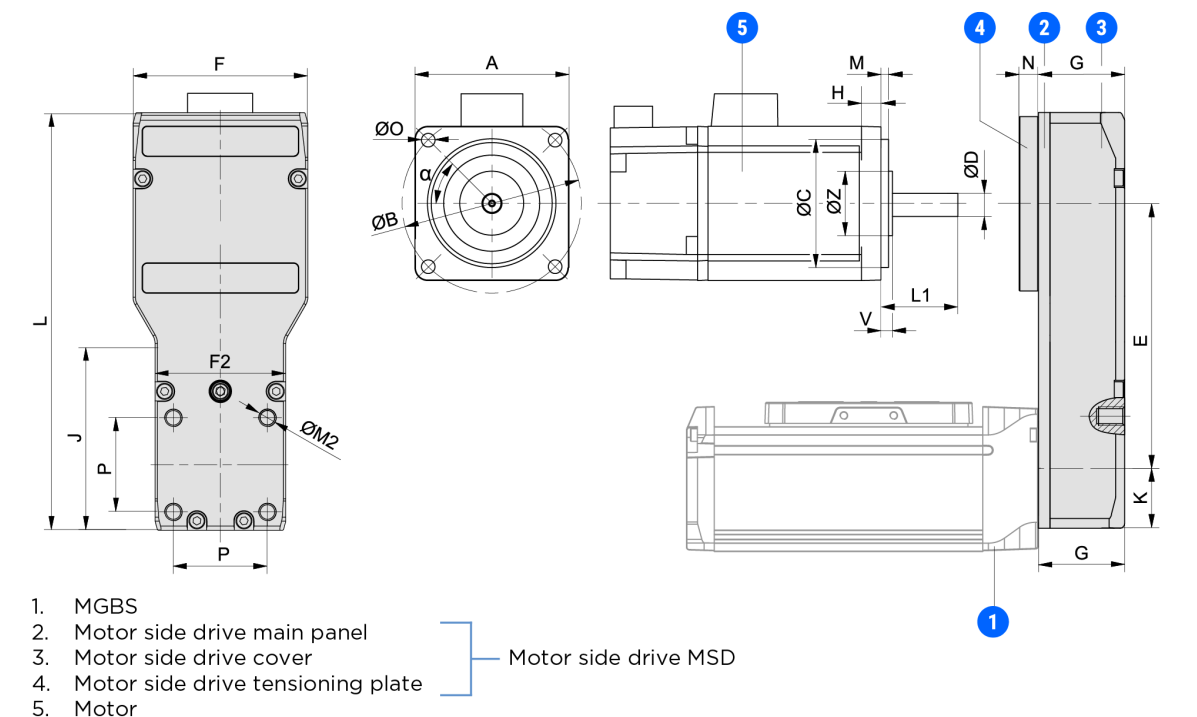
## General Data

| Designation               | Type | Compatible with         | Motor Type | Motor Size (mm) | Motor Standard |
|---------------------------|------|-------------------------|------------|-----------------|----------------|
| MSD - MG 25 - T1 - 108261 | T1   | MCE/MSCE 25             | Stepper    | 28              | NEMA 11        |
| MSD - MG 32 - T1 - 108262 | T1   | MGBS 32,<br>MCE/MSCE 32 | Stepper    | 28              | NEMA 11        |
| MSD - MG 32 - T2 - 108263 | T2   | MGBS 32,<br>MCE/MSCE 32 | Stepper    | 42              | NEMA 17        |
| MSD - MG 45 - T1 - 108264 | T1   | MGBS 45,<br>MCE/MSCE 45 | Stepper    | 42              | NEMA 17        |
| MSD - MG 45 - T2 - 108265 | T2   | MGBS 45,<br>MCE/MSCE 45 | Stepper    | 56              | NEMA 23        |
| MSD - MG 60 - T1 - 112515 | T1   | MGBS 60                 | Stepper    | 56              | NEMA 23        |
| MSD - MG 60 - T2 - 112516 | T2   | MGBS 60                 | Stepper    | 86              | NEMA 32        |

| Designation               | Motor Shaft<br>Length L1 Min.<br>(mm) | Motor Shaft<br>Length L1 Max.<br>(mm) | Motor Shaft<br>Diameter (mm) | Motor Mounting<br>Holes ØO × H<br>(mm) | Mass (kg) | Gear ratio (I) |
|---------------------------|---------------------------------------|---------------------------------------|------------------------------|----------------------------------------|-----------|----------------|
| MSD - MG 25 - T1 - 108261 | 14                                    | 20                                    | 5.0                          | M2,5 × 2,5 (min.)                      | 0.1       | 1              |
| MSD - MG 32 - T1 - 108262 | 14                                    | 20                                    | 5.0                          | M2.5 × 2.5 (min.)                      | 0.12      | 1              |
| MSD - MG 32 - T2 - 108263 | 17.5                                  | 24                                    | 5.0                          | M3 × 4.5 (min.)                        | 0.18      | 1              |
| MSD - MG 45 - T1 - 108264 | 20.5                                  | 28                                    | 5.0                          | M3 × 4.5 (min.)                        | 0.28      | 1              |
| MSD - MG 45 - T2 - 108265 | 20                                    | 28                                    | 6.35                         | 5 × 4.5 (min.) ~<br>5.5 (max.)         | 0.36      | 1              |
| MSD - MG 60 - T1 - 112515 | 25                                    | 38                                    | 6.35                         | 5 × 4.5 (min.) ~<br>5.5 (max.)         | 0.60      | 1              |
| MSD - MG 60 - T2 - 112516 | 28.5                                  | 38                                    | 14                           | 7 × 8.0 (min.) ~<br>9.8 (max.)         | 0.88      | 1              |

| Designation               | Max. Drive Torque (Nm) | Max. Radial Load on<br>Shaft (N) | No Load Torque (Nm) | Mass Moment of Inertia<br>JMSD (10 <sup>-2</sup> kg cm <sup>2</sup> ) |
|---------------------------|------------------------|----------------------------------|---------------------|-----------------------------------------------------------------------|
| MSD - MG 25 - T1 - 108261 | 0.1                    | 15                               | 0.01                | 0.39                                                                  |
| MSD - MG 32 - T1 - 108262 | 0.10                   | 15                               | 0.015               | 0.39                                                                  |
| MSD - MG 32 - T2 - 108263 | 0.25                   | 15                               | 0.015               | 1.04                                                                  |
| MSD - MG 45 - T1 - 108264 | 0.30                   | 15                               | 0.020               | 4.16                                                                  |
| MSD - MG 45 - T2 - 108265 | 0.80                   | 45                               | 0.020               | 4.20                                                                  |
| MSD - MG 60 - T1 - 112515 | 0.80                   | 35                               | 0.025               | 7.52                                                                  |
| MSD - MG 60 - T2 - 112516 | 1.94                   | 90                               | 0.035               | 10.30                                                                 |

## Dimensions



| Designation                      | A         | B         | C         | D           | E            | F    | F2   | G    | J    |
|----------------------------------|-----------|-----------|-----------|-------------|--------------|------|------|------|------|
| <b>MSD - MG 25 - T1 - 108261</b> | max 34    | max 35    | max 25    | max 5       | 52.5 (±0.5)  | 31.5 | 24.5 | 22   | 38.5 |
| <b>MSD - MG 32 - T1 - 108262</b> | 34 (max.) | 35 (max.) | 25 (max.) | 5 (max.)    | 52.5 (± 0.5) | 31.5 | 31.5 | 22   | 0    |
| <b>MSD - MG 32 - T2 - 108263</b> | 46 (max.) | 50 (max.) | 36 (max.) | 6.35 (max.) | 70.5 (± 0.5) | 44.5 | 31.5 | 22   | 48   |
| <b>MSD - MG 45 - T1 - 108264</b> | 46 (max.) | 50 (max.) | 36 (max.) | 15 (max.)   | 81 (± 0.5)   | 44.5 | 44.5 | 27.5 | 0    |

## Dimensions

| Designation                      | A           | B          | C         | D         | E             | F    | F2   | G    | J    |
|----------------------------------|-------------|------------|-----------|-----------|---------------|------|------|------|------|
| <b>MSD - MG 45 - T2 - 108265</b> | 59.5 (max.) | 70 (max.)  | 50 (max.) | 15 (max.) | 88.5 (± 0.5)  | 59.5 | 44.5 | 27.5 | 63.5 |
| <b>MSD - MG 60 - T1 - 112515</b> | 59.5 (max.) | 70 (max.)  | 50 (max.) | 9 (max.)  | 96 (± 0.5)    | 59.5 | 59.5 | 33   | 0    |
| <b>MSD - MG 60 - T2 - 112516</b> | 85.5 (max.) | 100 (max.) | 75 (max.) | 19 (max.) | 121.5 (± 0.5) | 85.5 | 59.5 | 33   | 81.5 |

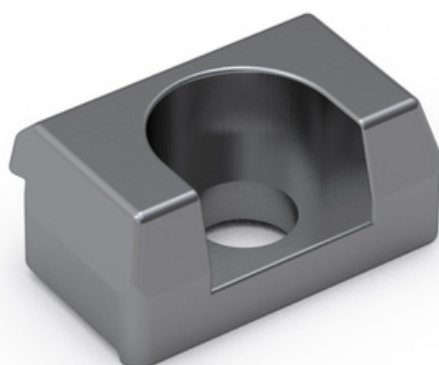
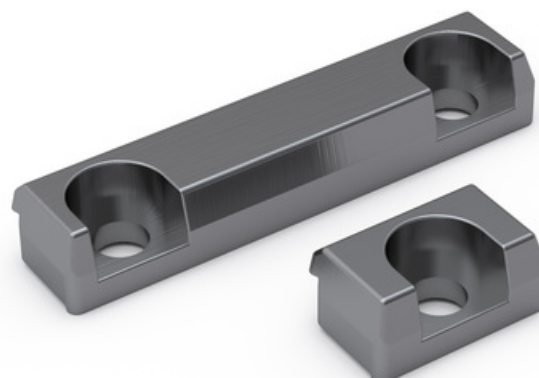
| Designation                      | K     | L     | M2       | N   | P  |
|----------------------------------|-------|-------|----------|-----|----|
| <b>MSD - MG 25 - T1 - 108261</b> | 12.25 | 83    | M4 × 6   | 4   | 18 |
| <b>MSD - MG 32 - T1 - 108262</b> | 15.75 | 85.5  | M5 × 6   | 4   | 22 |
| <b>MSD - MG 32 - T2 - 108263</b> | 15.75 | 110   | M5 × 6.5 | 4.5 | 22 |
| <b>MSD - MG 45 - T1 - 108264</b> | 22.25 | 127   | M6 × 8.5 | 4.5 | 32 |
| <b>MSD - MG 45 - T2 - 108265</b> | 22.25 | 142   | M6 × 8.5 | 6.5 | 32 |
| <b>MSD - MG 60 - T1 - 112515</b> | 29.75 | 157   | M6 × 8   | 6.5 | 38 |
| <b>MSD - MG 60 - T2 - 112516</b> | 29.75 | 195.5 | M6 × 8   | 8.5 | 38 |

## Clamping fixtures

Mini linear units MGBS & MGTB and Mini electric cylinders & sliders MCE & MSCE can be mounted by clamps, which are placed in the slot on the side of the profile. Clamps can also attach to the carriage of the mini linear unit, fixing another mini linear unit (or mini electric cylinder MCE or slider MSCE) to the carriage at an angle of 90° (i.e. for multi-axis systems).

Material: powder coated zinc alloy

Dimensions in mm.

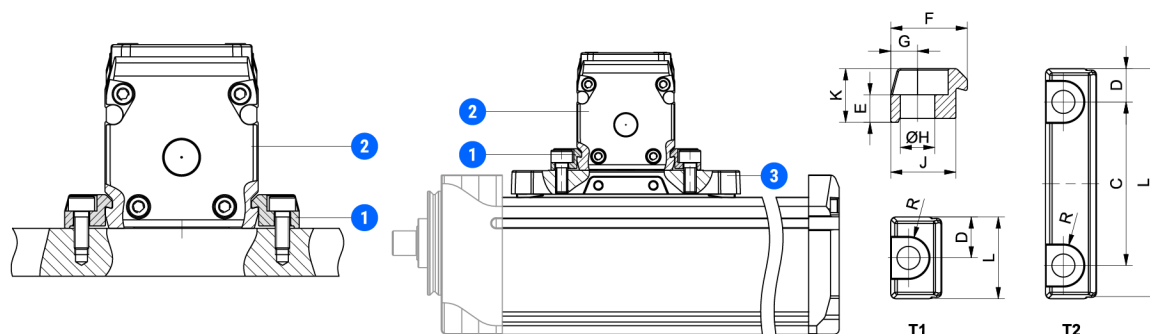




## General Data

| Designation                  | Screw Type | Type | Compatible with       | Countersink for | Mass (g) |
|------------------------------|------------|------|-----------------------|-----------------|----------|
| <b>MG - M3 - T1 - 108216</b> | M3         | T1   | MGBS, MGTB, MCE, MSCE | DIN 912         | 6        |
| <b>MG - M3 - T2 - 108218</b> | M3         | T2   | MGBS, MGTB, MCE, MSCE | DIN 912         | 12       |
| <b>MG - M4 - T1 - 108217</b> | M4         | T1   | MGBS, MGTB, MCE, MSCE | DIN 912         | 5        |
| <b>MG - M4 - T2 - 108219</b> | M4         | T2   | MGBS, MGTB, MCE, MSCE | DIN 912         | 16       |
| <b>MG - M5 - T1 - 112526</b> | M5         | T1   | MGBS, MGTB            | DIN 912         | 6        |
| <b>MG - M5 - T2 - 112527</b> | M5         | T2   | MGBS, MGTB            | DIN 912         | 27       |

## Dimensions



1. Clamping fixture
2. Profile
3. Carriage

| Designation                  | C    | D    | E   | F  | G   | H   | J   | K   | L  |
|------------------------------|------|------|-----|----|-----|-----|-----|-----|----|
| <b>MG - M3 - T1 - 108216</b> | -    | 8    | 3.6 | 10 | 3.5 | 3.4 | 8.5 | 7   | 16 |
| <b>MG - M3 - T2 - 108218</b> | 22.5 | 4.75 | 3.6 | 10 | 3.5 | 3.4 | 8.5 | 7   | 32 |
| <b>MG - M4 - T1 - 108217</b> | -    | 8    | 2.5 | 10 | 3.5 | 4.5 | 8.5 | 7   | 16 |
| <b>MG - M4 - T2 - 108219</b> | 32   | 6.5  | 2.5 | 10 | 3.5 | 4.5 | 8.5 | 7   | 45 |
| <b>MG - M5 - T1 - 112526</b> | -    | 8    | 4   | 11 | 4.5 | 5.5 | 9.5 | 7.5 | 16 |
| <b>MG - M5 - T2 - 112527</b> | 45   | 7.5  | 4   | 11 | 4.5 | 5.5 | 9.5 | 7.5 | 60 |

| Designation                  | R    |
|------------------------------|------|
| <b>MG - M3 - T1 - 108216</b> | 3.25 |
| <b>MG - M3 - T2 - 108218</b> | 3.25 |
| <b>MG - M4 - T1 - 108217</b> | 4    |
| <b>MG - M4 - T2 - 108219</b> | 4    |
| <b>MG - M5 - T1 - 112526</b> | 4.5  |
| <b>MG - M5 - T2 - 112527</b> | 4.5  |

## Motor

For Mini Linear Units MGBS & MGTB and MCE & MSCE  
Mini Electric Cylinders & Sliders.

See documentation below for more information.

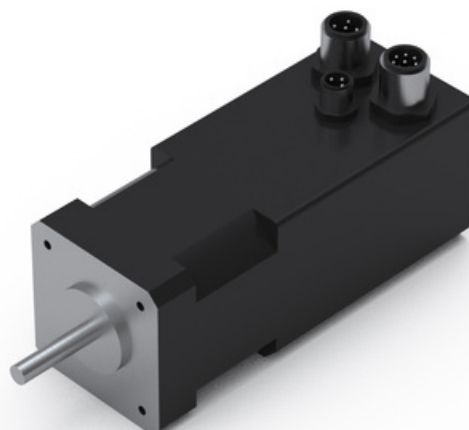
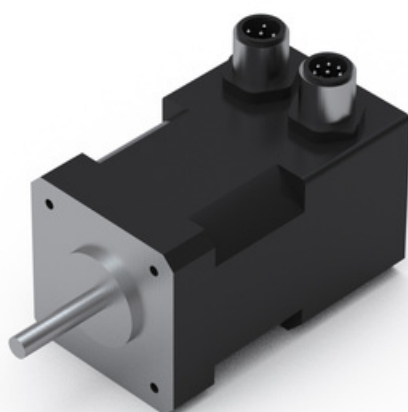
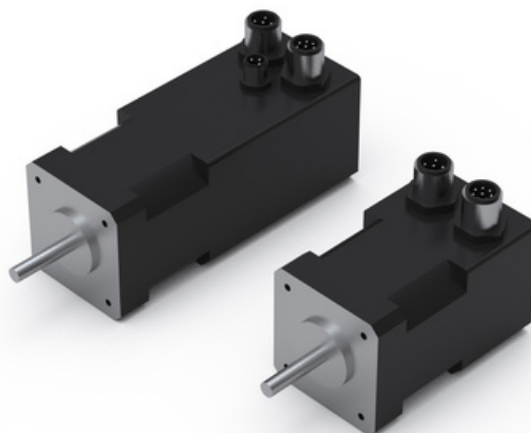
Dimensions in mm.

**Ambient Temperature (°C):** -10 ~ +50

**Ambient Humidity:** Max. 85 % (non-condensing)

**Protection Class:** IP65

**Duty Cycle:** 100 %



## General Data

| Designation   | Compatible with                     | Motor Type | Motor Size (mm) | Brake   | Voltage (V DC) |
|---------------|-------------------------------------|------------|-----------------|---------|----------------|
| STMN-42-L-E   | MGBS/MGTB 32 & 45, MCE/MSCE 32 & 45 | Stepper    | 42              | Without | 3.15           |
| STMN-42-L-E-B | MGBS/MGTB 32 & 45, MCE/MSCE 32 & 45 | Stepper    | 42              | With    | 3.15           |
| STMN-56-L-E   | MGBS/MGTB 45 & 60, MCE/MSCE 45      | Stepper    | 56              | Without | 2.4            |
| STMN-56-L-E-B | MGBS/MGTB 45 & 60, MCE/MSCE 45      | Stepper    | 56              | With    | 2.4            |

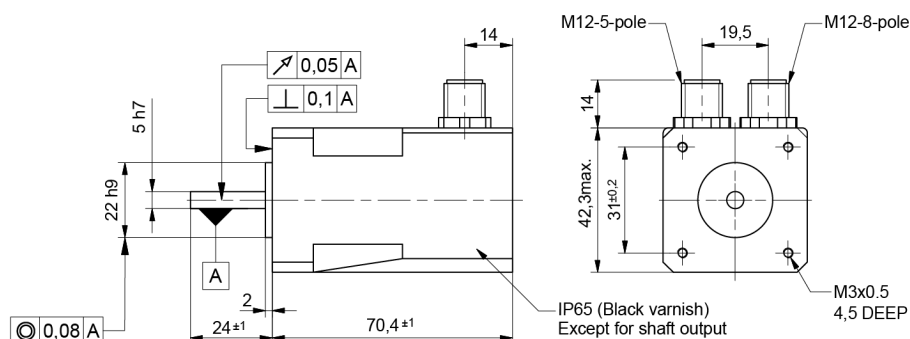
| Designation   | Current per Phase (A) | Mass Moment of Inertia (kg cm <sup>2</sup> ) | Holding Torque (Nm)        | Step Angle (°) | Resistance per Phase (Ohm) | Inductance per Phase (mH) |
|---------------|-----------------------|----------------------------------------------|----------------------------|----------------|----------------------------|---------------------------|
| STMN-42-L-E   | 1.8                   | 0.082                                        | 0.5                        | 1.8 ± 5 %      | 1.75 ± 15 %                | 3.3 ± 20 %                |
| STMN-42-L-E-B | 1.8                   | 0.095                                        | 0.5 (motor); 0.4 (brake)   | 1.8 ± 5 %      | 1.75 ± 15 %                | 3.3 ± 20 %                |
| STMN-56-L-E   | 4.2                   | 0.480                                        | 1.87                       | 1.8 ± 5 %      | 0.58 ± 15 %                | 1.9 ± 20 %                |
| STMN-56-L-E-B | 4.2                   | 0.501                                        | 1.87 (motor) ; 1.0 (brake) | 1.8 ± 5 %      | 0.58 ± 15 %                | 1.9 ± 20 %                |

| Designation   | Voltage Constant (mV/min <sup>-1</sup> ) | Mass (kg) | Type        | Measuring Principle | Interface  | Resolution         |
|---------------|------------------------------------------|-----------|-------------|---------------------|------------|--------------------|
| STMN-42-L-E   | 23                                       | 0.44      | Incremental | Opto-electrical     | Line drive | 500/2000 (cpr/ppr) |
| STMN-42-L-E-B | 23                                       | 0.57      | Incremental | Opto-electrical     | Line drive | 500/2000 (cpr/ppr) |
| STMN-56-L-E   | 32.5                                     | 1.14      | Incremental | Opto-electrical     | Line drive | 500/2000 (cpr/ppr) |
| STMN-56-L-E-B | 32.5                                     | 1.33      | Incremental | Opto-electrical     | Line drive | 500/2000 (cpr/ppr) |

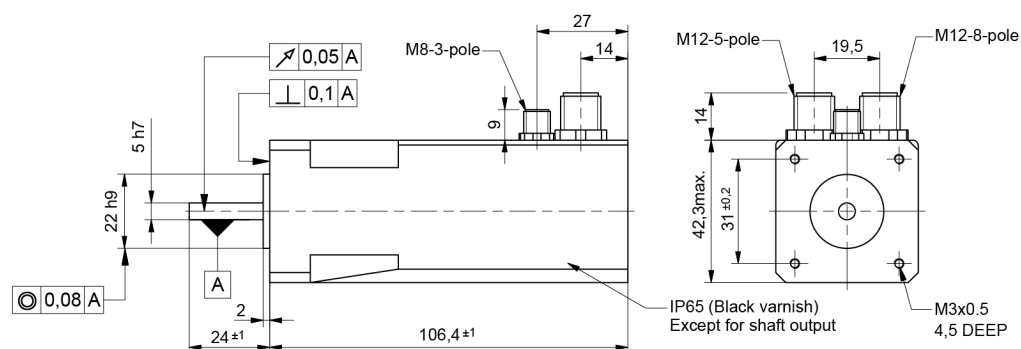
| Designation   | Operating Voltage (V DC)            | Rated Output (W) |
|---------------|-------------------------------------|------------------|
| STMN-42-L-E   | 5                                   | 8                |
| STMN-42-L-E-B | 5 (encoder) ; 24 (+6/-10 %) (brake) | 8                |
| STMN-56-L-E   | 5                                   | 10               |
| STMN-56-L-E-B | 5 (encoder) ; 24 (+6/-10 %) (brake) | 10               |

## Dimensions

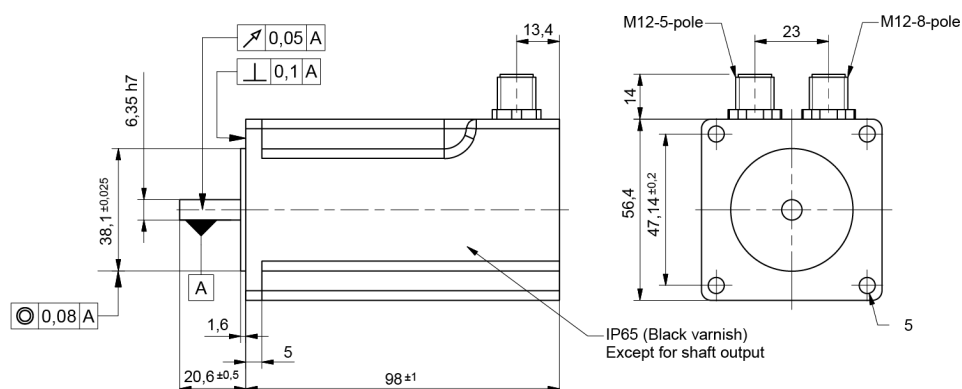
### Motor without brake STMN-42-L-E



### Motor with brake STMN-42-L-E-B

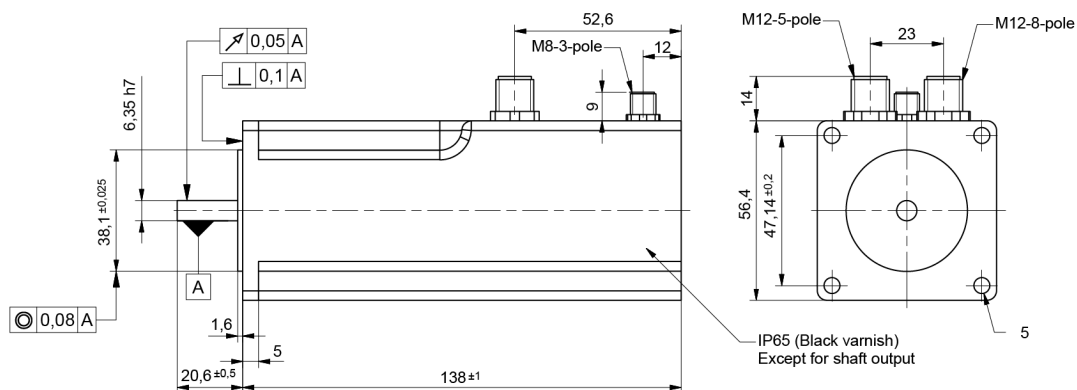


### Motor without brake STMN-56-L-E



## Dimensions

### Motor with brake STMN-56-L-E-B



| Designation   | E1         | E2         | E3        | E4 | E5   | E6   | E7 | E8 | E9    |
|---------------|------------|------------|-----------|----|------|------|----|----|-------|
| STMN-42-L-E   | M12 5-pole | M12 8-pole | -         | 14 | 14   | 19.5 | -  | -  | 70.4  |
| STMN-42-L-E-B | M12 5-pole | M12 8-pole | M8 3-pole | 14 | 14   | 19.5 | 9  | 27 | 106.4 |
| STMN-56-L-E   | M12 5-pole | M12 8-pole | -         | 14 | 13.4 | 23   | -  | -  | 98    |
| STMN-56-L-E-B | M12 5-pole | M12 8-pole | M8 3-pole | 14 | 52.4 | 23   | 9  | 12 | 138   |

| Designation   | E10  |
|---------------|------|
| STMN-42-L-E   | 42.3 |
| STMN-42-L-E-B | 42.3 |
| STMN-56-L-E   | 56.4 |
| STMN-56-L-E-B | 56.4 |

## Drive

For Mini Linear Units MGBS & MGTB and MCE & MSCE  
Mini Electric Cylinders & Sliders.

See documentation below for more information.

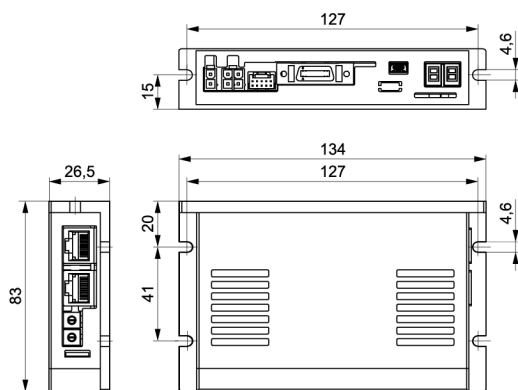
Dimensions in mm.

**Duty Cycle:** 100 %

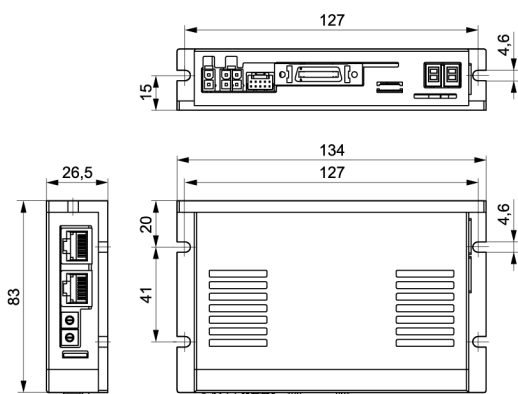


## General Data

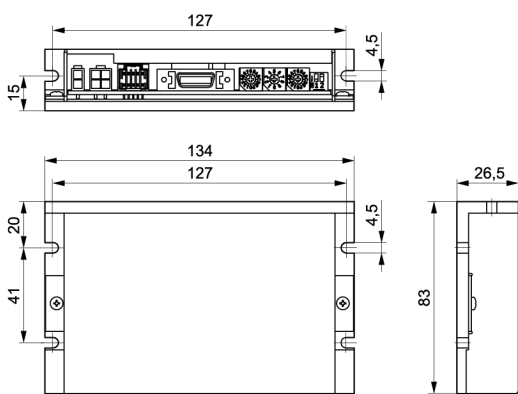
### Stepper drive EtherCAT protocol



### Stepper drive Ethernet based communication



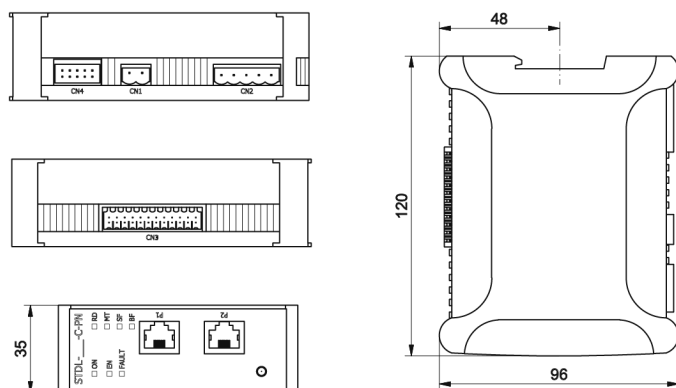
### Stepper drive Pulse-direction control





## General Data

### Stepper drive Profinet



| Designation          | Compatible with | Operating Voltage (V DC) | Protocol/Control             | Ambient Temperature (°C) | Ambient Humidity |
|----------------------|-----------------|--------------------------|------------------------------|--------------------------|------------------|
| <b>STDF-28-A-EC</b>  | STMN-28-L-...   | 24 ± 10 %                | EtherCAT                     | 0 ~ +50                  | 35 ~ 80 %        |
| <b>STDF-28-A-EN</b>  | STMN-28-L-...   | 24 ± 10 %                | Ethernet based communication | 0 ~ +50                  | 35 ~ 80 %        |
| <b>STDF-28-A-PD</b>  | STMN-28-L-...   | 24 ± 10 %                | Pulse/direction control      | 0 ~ +50                  | 35 ~ 80 %        |
| <b>STDF-42-A-EC</b>  | STMN-42-L-...   | 24 ± 10 %                | EtherCAT                     | 0 ~ +50                  | 35 ~ 80 %        |
| <b>STDF-42-A-EN</b>  | STMN-42-L-...   | 24 ± 10 %                | Ethernet based communication | 0 ~ +50                  | 35 ~ 80 %        |
| <b>STDF-42-A-PD</b>  | STMN-42-L-...   | 24 ± 10 %                | Pulse/direction control      | 0 ~ +50                  | 35 ~ 80 %        |
| <b>STDF-56-A-EC</b>  | STMN-56-L-...   | 24 ± 10 %                | EtherCAT                     | 0 ~ +50                  | 35 ~ 80 %        |
| <b>STDF-56-A-EN</b>  | STMN-56-L-...   | 24 ± 10 %                | Ethernet based communication | 0 ~ +50                  | 35 ~ 80 %        |
| <b>STDF-56-A-PD</b>  | STMN-56-L-...   | 24 ± 10 %                | Pulse/direction control      | 0 ~ +50                  | 35 ~ 80 %        |
| <b>STDL-040-C-PN</b> | STMN-...        | 20–50                    | Profinet                     | 0–40                     | 10–90 %          |

| Designation         | Current Consumption (mA) | Rotational Speed (rpm) | Supported Resolution (ppr)                           | Input Signals                                                                      | Output Signals                                                                   | Vibration Resistance (G) |
|---------------------|--------------------------|------------------------|------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------|
| <b>STDF-28-A-EC</b> | Max. 500                 | 0 ~ 3000               | 500, 1000, 1600, 2000, 3600, 5000, 6400, 7200, 10000 | 3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN) ; 7 user inputs (Photocoupler)         | 6 user outputs (Photocoupler) ; Brake                                            | 0.5                      |
| <b>STDF-28-A-EN</b> | Max. 500                 | 0 ~ 3000               | 500, 1000, 1600, 2000, 3600, 5000, 6400, 7200, 10000 | 3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN) ; 9 Programmable inputs (Photocoupler) | 1 dedicated output (Compare out) ; 9 programmable outputs (Photocoupler) ; Brake | 0.5                      |
| <b>STDF-28-A-PD</b> | Max. 500                 | 0 ~ 3000               | 500, 1000, 1600, 2000, 3600, 5000, 6400, 7200, 10000 | Position command pulse ; Servo on/off ; Alarm reset (Photocoupler input)           | In-position ; Alarm (Photocoupler output) ; Encoder signal, brake                | 0.5                      |
| <b>STDF-42-A-EC</b> | Max. 500                 | 0 ~ 3000               | 500, 1000, 1600, 2000, 3600, 5000, 6400, 7200, 10000 | 3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN) ; 7 user inputs (Photocoupler)         | 6 user outputs (Photocoupler) ; Brake                                            | 0.5                      |

## General Data

| Designation          | Current Consumption (mA) | Rotational Speed (rpm)     | Supported Resolution (ppr)                           | Input Signals                                                                      | Output Signals                                                                   | Vibration Resistance (G) |
|----------------------|--------------------------|----------------------------|------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------|
| <b>STDF-42-A-EN</b>  | Max. 500                 | 0 ~ 3000                   | 500, 1000, 1600, 2000, 3600, 5000, 6400, 7200, 10000 | 3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN) ; 9 Programmable inputs (Photocoupler) | 1 dedicated output (Compare out) ; 9 programmable outputs (Photocoupler) ; Brake | 0.5                      |
| <b>STDF-42-A-PD</b>  | Max. 500                 | 0 ~ 3000                   | 500, 1000, 1600, 2000, 3600, 5000, 6400, 7200, 10000 | Position command pulse ; Servo on/off ; Alarm reset (Photocoupler input)           | In-position ; Alarm (Photocoupler output) ; Encoder signal, brake                | 0.5                      |
| <b>STDF-56-A-EC</b>  | Max. 500                 | 0 ~ 3000                   | 500, 1000, 1600, 2000, 3600, 5000, 6400, 7200, 10000 | 3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN) ; 7 user inputs (Photocoupler)         | 6 user outputs (Photocoupler) ; Brake                                            | 0.5                      |
| <b>STDF-56-A-EN</b>  | Max. 500                 | 0 ~ 3000                   | 500, 1000, 1600, 2000, 3600, 5000, 6400, 7200, 10000 | 3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN) ; 9 Programmable inputs (Photocoupler) | 1 dedicated output (Compare out) ; 9 programmable outputs (Photocoupler) ; Brake | 0.5                      |
| <b>STDF-56-A-PD</b>  | Max. 500                 | 0 ~ 3000                   | 500, 1000, 1600, 2000, 3600, 5000, 6400, 7200, 10000 | Position command pulse ; Servo on/off ; Alarm reset (Photocoupler input)           | In-position ; Alarm (Photocoupler output) ; Encoder signal, brake                | 0.5                      |
| <b>STDL-040-C-PN</b> | Max. 160                 | Depending on stepper motor | -                                                    | 8 Digital inputs : 1 Analog input ; 1 Encoder input A, B, I                        | 3 Digital outputs                                                                | <1                       |

| Designation          | Motor Current (A) |
|----------------------|-------------------|
| <b>STDF-28-A-EC</b>  | -                 |
| <b>STDF-28-A-EN</b>  | -                 |
| <b>STDF-28-A-PD</b>  | -                 |
| <b>STDF-42-A-EC</b>  | -                 |
| <b>STDF-42-A-EN</b>  | -                 |
| <b>STDF-42-A-PD</b>  | -                 |
| <b>STDF-56-A-EC</b>  | -                 |
| <b>STDF-56-A-EN</b>  | -                 |
| <b>STDF-56-A-PD</b>  | -                 |
| <b>STDL-040-C-PN</b> | 1.0–4.5           |

## Cables

For Mini Linear Units MGBS & MGTB and MCE & MSCE  
Mini Electric Cylinders & Sliders.

See documentation below for more information.

Drive to motor cables in general consist of:

- a motor cable,
- an encoder cable,
- a brake cable (only if a motor with a brake is used).

Power cable is used for supplying the power from power supply to the drive.

Signal cable is mandatory for the following cases:

- if a motor with a brake is used,
- if a pulse/direction drive control is used,
- if the limit switches are used.

Dimensions in mm.



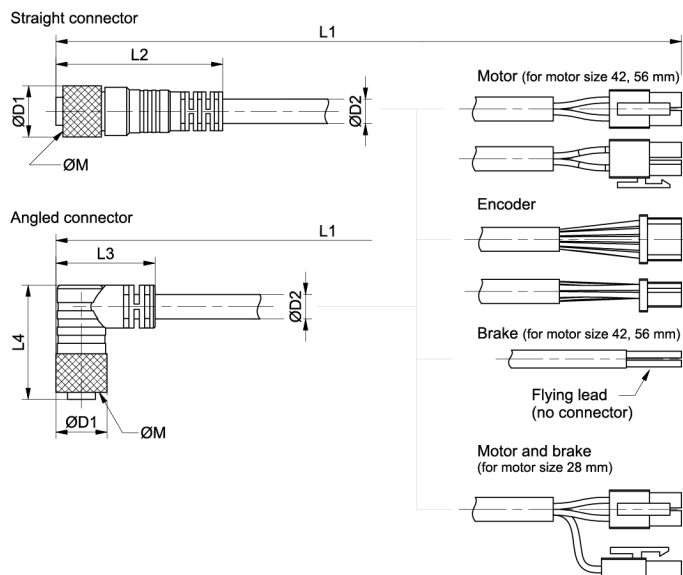
## General Data

| Designation           | Compatible with                      | Type                                       | Cable Length (m) | Cable Diameter D (mm) | Material   |
|-----------------------|--------------------------------------|--------------------------------------------|------------------|-----------------------|------------|
| <b>STCF-M-A12-...</b> | STMN-42-... ; STMN-56-... ; STDF-... | Motor cable, angled connector              | 3, 5, 10         | 5.1                   | TPE, black |
| <b>STCF-M-S12-...</b> | STMN-42-... ; STMN-56-... ; STDF-... | Motor cable, straight connector            | 3, 5, 10         | 5.1                   | TPE, black |
| <b>STCF-B-A8-...</b>  | STMN-42-...-B ; STDF-...             | Brake cable, angled connector              | 3, 5, 10         | 4.5                   | TPE, black |
| <b>STCF-B-S8-...</b>  | STMN-42-...-B ; STDF-...             | Brake cable, straight connector            | 3, 5, 10         | 4.5                   | TPE, black |
| <b>STCF-E-A12-...</b> | STMN-42-... ; STMN-56-... ; STDF-... | Encoder cable, angled connector            | 3, 5, 10         | 6.7                   | TPE, black |
| <b>STCF-E-S12-...</b> | STMN-42-... ; STMN-56-... ; STDF-... | Encoder cable, straight connector          | 3, 5, 10         | 6.7                   | TPE, black |
| <b>STCF-P-02</b>      | STDF-...                             | Power cable                                | 2                | 4.6                   | PVC, black |
| <b>STCF-S-EC-02</b>   | STDF-...-EC                          | Signal cable, EtherCAT                     | 2                | 6.4                   | PVC, black |
| <b>STCF-S-EN-02</b>   | STDF-...-EN                          | Signal cable, Ethernet based communication | 2                | 6.9                   | PVC, black |
| <b>STCF-S-PD-02</b>   | STDF-...-PD                          | Signal cable, Pulse-direction control      | 2                | 6.4                   | PVC, black |
| <b>STCS-E-A12-...</b> | STD-L-040-C-PN                       | Encoder cable                              | 3, 5, 10         | 6.3                   | -          |
| <b>STCS-E-S12-...</b> | STD-L-040-C-PN                       | Encoder cable                              | 3, 5, 10         | 6.3                   | -          |
| <b>STCS-M-A12-...</b> | STD-L-040-C-PN                       | Motor cable                                | 3, 5, 10         | 5.7                   | -          |
| <b>STCS-M-S12-...</b> | STD-L-040-C-PN                       | Motor cable                                | 3, 5, 10         | 5.7                   | -          |
| <b>STCS-B-A8-...</b>  | STD-L-040-C-PN                       | Brake cable                                | 3, 5, 10         | 4.5                   | -          |
| <b>STCS-B-S8-...</b>  | STD-L-040-C-PN                       | Brake cable                                | 3, 5, 10         | 4.5                   | -          |

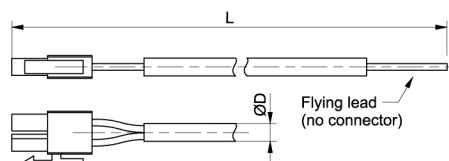
| Designation           | Bending Radius (mm) | Shielded | Connector Size | Temperature Range Fixed (°C) | Temperature Range Flexing (°C) |
|-----------------------|---------------------|----------|----------------|------------------------------|--------------------------------|
| <b>STCF-M-A12-...</b> | min. 7,5 × D        | Yes      | M12            | -40/+70                      | +5/+70                         |
| <b>STCF-M-S12-...</b> | min. 7,5 × D        | Yes      | M12            | -40/+70                      | +5/+70                         |
| <b>STCF-B-A8-...</b>  | min. 7,5 × D        | Yes      | M8             | -40/+70                      | +5/+70                         |
| <b>STCF-B-S8-...</b>  | min. 7,5 × D        | Yes      | M8             | -40/+70                      | +5/+70                         |
| <b>STCF-E-A12-...</b> | min. 7,5 × D        | Yes      | M12            | -40/+70                      | +5/+70                         |
| <b>STCF-E-S12-...</b> | min. 7,5 × D        | Yes      | M12            | -40/+70                      | +5/+70                         |
| <b>STCF-P-02</b>      | -                   | Yes      | -              | -                            | -                              |
| <b>STCF-S-EC-02</b>   | -                   | Yes      | -              | -                            | -                              |
| <b>STCF-S-EN-02</b>   | -                   | Yes      | -              | -                            | -                              |
| <b>STCF-S-PD-02</b>   | -                   | Yes      | -              | -                            | -                              |
| <b>STCS-E-A12-...</b> | Min. 63             | -        | -              | -20/+80                      | -25/+60                        |
| <b>STCS-E-S12-...</b> | Min. 63             | -        | -              | -20/+80                      | -25/+60                        |
| <b>STCS-M-A12-...</b> | Min. 57             | -        | -              | -20/+80                      | -25/+60                        |
| <b>STCS-M-S12-...</b> | Min. 57             | -        | -              | -20/+80                      | -25/+60                        |
| <b>STCS-B-A8-...</b>  | Min. 45             | -        | -              | -20/+80                      | -5/+60                         |
| <b>STCS-B-S8-...</b>  | Min. 45             | -        | -              | -20/+80                      | -5/+60                         |

## Dimensions

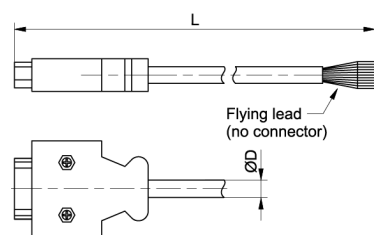
### Motor, encoder and brake cables (motor and drive side)



### Power cables for the stepper motors (only for the STDF drives)



### Signal cables for the stepper motors (only for the STDF drives)



| Designation    | L1           | L2   | L3   | L4   | D1   | D2  | M   | L     | D   |
|----------------|--------------|------|------|------|------|-----|-----|-------|-----|
| STCF-M-A12-... | 3, 5, 10 (m) | 47.7 | 28.4 | 32.6 | 14.6 | 5.1 | M12 | -     | -   |
| STCF-M-S12-... | 3, 5, 10 (m) | 47.7 | 28.4 | 32.6 | 14.6 | 5.1 | M12 | -     | -   |
| STCF-B-A8-...  | 3, 5, 10 (m) | 41.7 | 30.9 | 25.2 | 9.9  | 4.5 | M8  | -     | -   |
| STCF-B-S8-...  | 3, 5, 10 (m) | 41.7 | 30.9 | 25.2 | 9.9  | 4.5 | M8  | -     | -   |
| STCF-E-A12-... | 3, 5, 10 (m) | 47.7 | 28.4 | 32.6 | 14.6 | 6.7 | M12 | -     | -   |
| STCF-E-S12-... | 3, 5, 10 (m) | 47.7 | 28.4 | 32.6 | 14.6 | 6.7 | M12 | -     | -   |
| STCF-P-02      | -            | -    | -    | -    | -    | -   | -   | 2 (m) | 4.6 |

## Dimensions

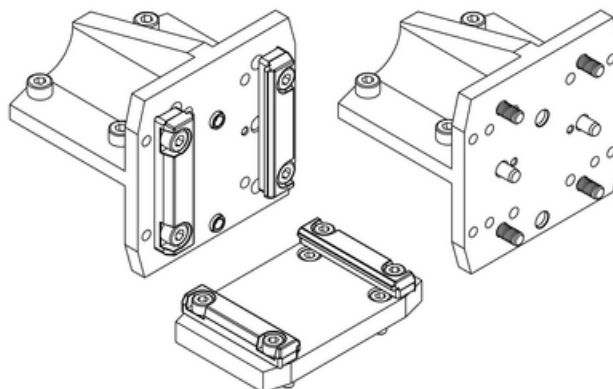
| Designation    | L1 | L2 | L3 | L4 | D1 | D2 | M | L     | D   |
|----------------|----|----|----|----|----|----|---|-------|-----|
| STCF-S-EC-02   | -  | -  | -  | -  | -  | -  | - | 2 (m) | 6.4 |
| STCF-S-EN-02   | -  | -  | -  | -  | -  | -  | - | 2 (m) | 6.9 |
| STCF-S-PD-02   | -  | -  | -  | -  | -  | -  | - | 2 (m) | 6.4 |
| STCS-E-A12-... | -  | -  | -  | -  | -  | -  | - | -     | -   |
| STCS-E-S12-... | -  | -  | -  | -  | -  | -  | - | -     | -   |
| STCS-M-A12-... | -  | -  | -  | -  | -  | -  | - | -     | -   |
| STCS-M-S12-... | -  | -  | -  | -  | -  | -  | - | -     | -   |
| STCS-B-A8-...  | -  | -  | -  | -  | -  | -  | - | -     | -   |
| STCS-B-S8-...  | -  | -  | -  | -  | -  | -  | - | -     | -   |

## Connection plates

Mini linear units MGBS and MGTB can be mounted to one another using the standard connection plates CP. The standard connection plates support mounting with clamps (profile to carriage) or with screws (carriage to carriage). Mounting of the mini electric cylinders MCE or the mini electric sliders MSCE is also possible.

Components needed for mounting (i.e.: screws, clamping fixtures, centering rings) are included.

Dimensions in mm.





## General Data

| Designation                    | Compatible with           | Mass (kg) | Mounting          | X-Axis       | Y-Axis       |
|--------------------------------|---------------------------|-----------|-------------------|--------------|--------------|
| CP MG32 XY MG32 KPL - 110994   | MGBS/MGTB 32              | 0.057     | Carriage-profile  | MGBS/MGTB 32 | MGBS/MGTB 32 |
| CP MG45 XY MG45 KPL - 111005   | MGBS/MGTB 45              | 0.115     | Carriage-profile  | MGBS/MGTB 45 | MGBS/MGTB 45 |
| CP MG60 XY MG32 KPL - 112563   | MGBS/MGTB 32, 60          | 0.165     | Carriage-profile  | MGBS/MGTB 60 | MGBS/MGTB 32 |
| CP MG60 XY MG60 KPL - 112562   | MGBS/MGTB 60              | 0.191     | Carriage-profile  | MGBS/MGTB 60 | MGBS/MGTB 60 |
| CP MG32 XZ MG32 KPL - 111001   | MGBS/MGTB 32              | 0.095     | Carriage-profile  | MGBS/MGTB 32 | -            |
| CP MG45 XZ MG32 KPL - 111006   | MGBS/MGTB 32, 45          | 0.161     | Carriage-profile  | MGBS/MGTB 45 | -            |
| CP MG45 XZ MG45 KPL - 111008   | MGBS/MGTB 45              | 0.161     | Carriage-profile  | MGBS/MGTB 45 | -            |
| CP MG60 XZ MG32 KPL - 112569   | MGBS/MGTB 32, 60          | 0.320     | Carriage-profile  | MGBS/MGTB 60 | -            |
| CP MG60 XZ MG45 KPL - 112568   | MGBS/MGTB 45, 60          | 0.320     | Carriage-profile  | MGBS/MGTB 60 | -            |
| CP MG60 XZ MG60 KPL - 112567   | MGBS/MGTB 60              | 0.346     | Carriage-profile  | MGBS/MGTB 60 | -            |
| CP MG32 XZ MSCE25 KPL - 111003 | MGBS/MGTB 32, MCE/MSCE 25 | 0.095     | Carriage-profile  | MGBS/MGTB 32 | -            |
| CP MG32 XZ MSCE32 KPL - 111004 | MGBS/MGTB 32, MCE/MSCE 32 | 0.095     | Carriage-profile  | MGBS/MGTB 32 | -            |
| CP MG45 XZ MSCE32 KPL - 111010 | MGBS/MGTB 32, MCE/MSCE 32 | 0.162     | Carriage-profile  | MGBS/MGTB 45 | -            |
| CP MG45 XZ MSCE45 KPL - 111011 | MGBS/MGTB 32, MCE/MSCE 45 | 0.162     | Carriage-profile  | MGBS/MGTB 45 | -            |
| CP MG60 XZ MSCE32 KPL - 112570 | MGBS/MGTB 32, MCE/MSCE 32 | 0.320     | Carriage-profile  | MGBS/MGTB 60 | -            |
| CP MG60 XZ MSCE45 KPL - 112571 | MGBS/MGTB 32, MCE/MSCE 45 | 0.321     | Carriage-profile  | MGBS/MGTB 60 | -            |
| CP MG32 XZ MG32Z KPL - 111002  | MGBS/MGTB 32              | 0.071     | Carriage-carriage | MGBS/MGTB 32 | -            |
| CP MG45 XZ MG32Z KPL - 111007  | MGBS/MGTB 32, 45          | 0.126     | Carriage-carriage | MGBS/MGTB 45 | -            |
| CP MG45 XZ MG45Z KPL - 111009  | MGBS/MGTB 45              | 0.131     | Carriage-carriage | MGBS/MGTB 45 | -            |
| CP MG60 XZ MG32Z KPL - 112566  | MGBS/MGTB 32, 60          | 0.285     | Carriage-carriage | MGBS/MGTB 60 | -            |
| CP MG60 XZ MG45Z KPL - 112565  | MGBS/MGTB 45, 60          | 0.291     | Carriage-carriage | MGBS/MGTB 60 | -            |
| CP MG60 XZ MG60Z KPL - 112564  | MGBS/MGTB 60              | 0.297     | Carriage-carriage | MGBS/MGTB 60 | -            |

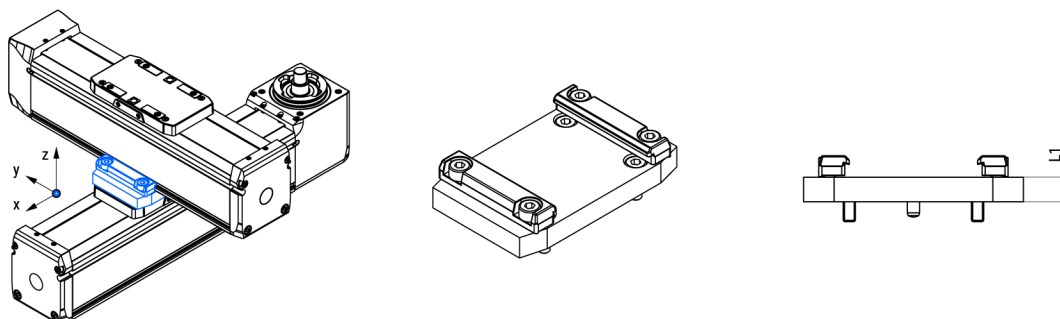
| Designation                    | Z-Axis       |
|--------------------------------|--------------|
| CP MG32 XY MG32 KPL - 110994   | -            |
| CP MG45 XY MG45 KPL - 111005   | -            |
| CP MG60 XY MG32 KPL - 112563   | -            |
| CP MG60 XY MG60 KPL - 112562   | -            |
| CP MG32 XZ MG32 KPL - 111001   | MGBS/MGTB 32 |
| CP MG45 XZ MG32 KPL - 111006   | MGBS/MGTB 32 |
| CP MG45 XZ MG45 KPL - 111008   | MGBS/MGTB 45 |
| CP MG60 XZ MG32 KPL - 112569   | MGBS/MGTB 32 |
| CP MG60 XZ MG45 KPL - 112568   | MGBS/MGTB 45 |
| CP MG60 XZ MG60 KPL - 112567   | MGBS/MGTB 60 |
| CP MG32 XZ MSCE25 KPL - 111003 | MCE/MSCE 25  |
| CP MG32 XZ MSCE32 KPL - 111004 | MCE/MSCE 32  |
| CP MG45 XZ MSCE32 KPL - 111010 | MCE/MSCE 32  |
| CP MG45 XZ MSCE45 KPL - 111011 | MCE/MSCE 45  |

## General Data

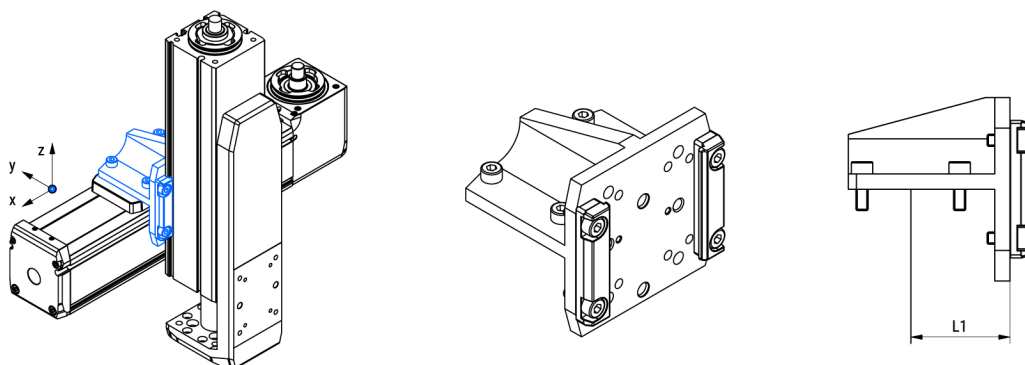
| Designation                    | Z-Axis       |
|--------------------------------|--------------|
| CP MG60 XZ MSCE32 KPL - 112570 | MCE/MSCE 32  |
| CP MG60 XZ MSCE45 KPL - 112571 | MCE/MSCE 45  |
| CP MG32 XZ MG32Z KPL - 111002  | MGBS/MGTB 32 |
| CP MG45 XZ MG32Z KPL - 111007  | MGBS/MGTB 32 |
| CP MG45 XZ MG45Z KPL - 111009  | MGBS/MGTB 45 |
| CP MG60 XZ MG32Z KPL - 112566  | MGBS/MGTB 32 |
| CP MG60 XZ MG45Z KPL - 112565  | MGBS/MGTB 45 |
| CP MG60 XZ MG60Z KPL - 112564  | MGBS/MGTB 60 |

## Dimensions

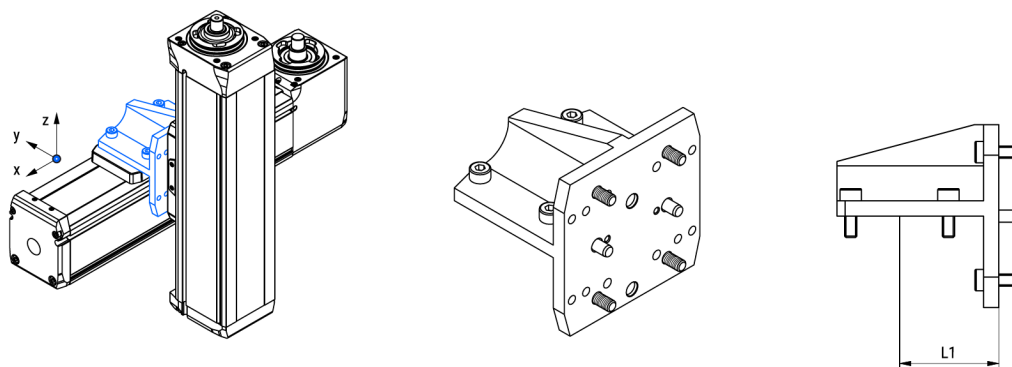
### Connection plates for the XY combinations (carriage-profile mounting)



### Connection plates for the XZ combinations (carriage-profile mounting)



### Connection plates for the XZ combinations (carriage-carriage mounting)



| Designation                  | L1  |
|------------------------------|-----|
| CP MG32 XY MG32 KPL - 110994 | 8.0 |
| CP MG45 XY MG45 KPL - 111005 | 8.0 |
| CP MG60 XY MG32 KPL - 112563 | 8.0 |
| CP MG60 XY MG60 KPL - 112562 | 8.0 |
| CP MG32 XZ MG32 KPL - 111001 | 26  |
| CP MG45 XZ MG32 KPL - 111006 | 32  |
| CP MG45 XZ MG45 KPL - 111008 | 32  |
| CP MG60 XZ MG32 KPL - 112569 | 45  |
| CP MG60 XZ MG45 KPL - 112568 | 45  |

## Dimensions

| Designation                    | L1 |
|--------------------------------|----|
| CP MG60 XZ MG60 KPL - 112567   | 45 |
| CP MG32 XZ MSCE25 KPL - 111003 | 26 |
| CP MG32 XZ MSCE32 KPL - 111004 | 26 |
| CP MG45 XZ MSCE32 KPL - 111010 | 32 |
| CP MG45 XZ MSCE45 KPL - 111011 | 32 |
| CP MG60 XZ MSCE32 KPL - 112570 | 45 |
| CP MG60 XZ MSCE45 KPL - 112571 | 45 |
| CP MG32 XZ MG32Z KPL - 111002  | 26 |
| CP MG45 XZ MG32Z KPL - 111007  | 32 |
| CP MG45 XZ MG45Z KPL - 111009  | 32 |
| CP MG60 XZ MG32Z KPL - 112566  | 45 |
| CP MG60 XZ MG45Z KPL - 112565  | 45 |
| CP MG60 XZ MG60Z KPL - 112564  | 45 |

## Magnetic field sensors

Magnetic field sensors can be mounted using the slot for the magnetic field sensor, placed on both sides of the MGBS / MGTB profile.

Dimensions in mm.

**Function principle:** Magnetic

**Switching function:** NC normally close ; NO normally open

**Wiring method:** 3-wire type

**Sensor Type:** PNP current sourcing

**Operating Voltage (V DC):** 5 ~ 30

**Max. Switching Current (mA):** 200

**Contact rating:** 6 W max.

**Voltage drop:** 0,5 V @ 200 mA max.

**Current consumption:** 6 mA @ 24 V DC max.

**Max. Leakage Current (mA):** 0,01

**Operating Frequency (Hz):** 1000 max.

**Ambient Temperature (°C):** -10 ~ +70

**Shock/vibration:** 50 G / 9 G

**Protection Class:** IP67

**LED indicator:** Green

**Electrical connection:** M8, 3-pin

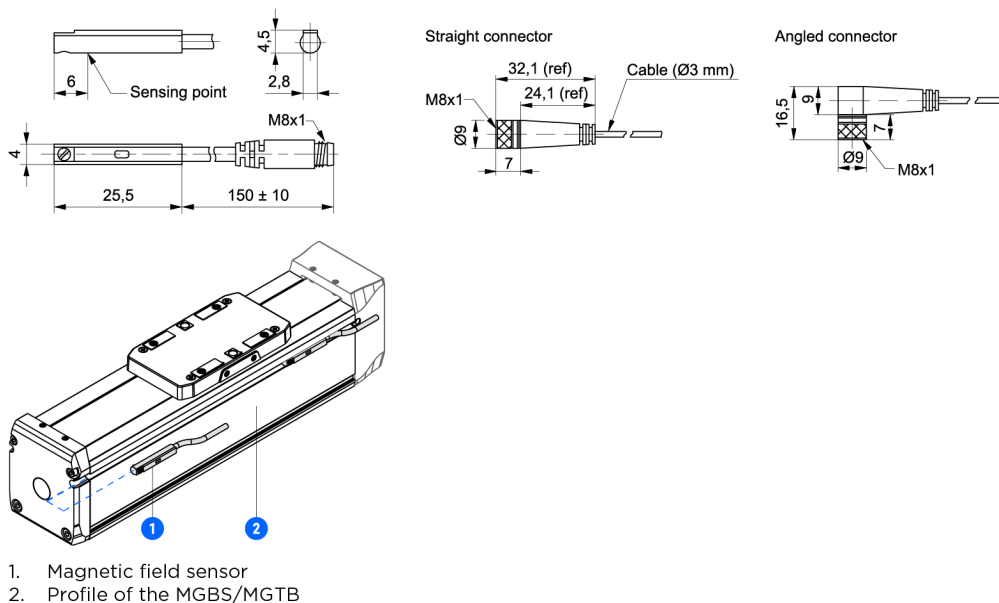
**Extension cable:** Energy chain compliant

**Cable (Diameter, Material, Length):** Ø2,8 mm, PUR, 150 mm



## General Data

### Magnetic field sensor and extension cable



| Designation                    | Type                               | Compatible with               | Length (m) |
|--------------------------------|------------------------------------|-------------------------------|------------|
| <b>SMO 40 TP K NC - 109125</b> | -                                  | MGBS/MGTB                     | -          |
| <b>SMO 40 TP K NO - 12259</b>  | -                                  | MGBS/MGTB                     | -          |
| <b>Extension cable - 8146</b>  | Straight connector extension cable | SMO 40 TP K NC/SMO 40 TP K NO | 2          |
| <b>Extension cable - 8147</b>  | Straight connector extension cable | SMO 40 TP K NC/SMO 40 TP K NO | 5          |
| <b>Extension cable - 9017</b>  | Angled connector extension cable   | SMO 40 TP K NC/SMO 40 TP K NO | 2          |
| <b>Extension cable - 9019</b>  | Angled connector extension cable   | SMO 40 TP K NC/SMO 40 TP K NO | 5          |