# g500-B + MF bevel geared motors, inverter-optimized

# Contents

# Contents

# About this document

## Document description

This document addresses to all persons who want to carry out any configurations with the products described.

The data and information compiled in this document serve to support you in the dimensioning and selection processes and in carrying out the electrical and mechanical installation. You will receive information regarding product extensions and accessories.

- The document includes safety instructions which must be observed.
- All persons working on and with the drives must have the documentation at hand during work and observe the information and notes relevant for it.
- The documentation must always be complete and in a perfectly readable state.

## Further documents

Information and tools with regard to the Lenze products can be found on the Internet:
www.lenze.com → Downloads

## Notations and conventions

Conventions are used in this document to distinguish between different types of information.

| | | |
|---|---|---|
| Numeric notation | | |
| Decimal separator | Point | Generally shown as a decimal point.<br>Example: 1 234.56 |
| Warnings | | |
| UL Warnings | UL | Are used in English and French. |
| UR warnings | UR | |
| Text | | |
| Engineering Tools | " " | Software<br>Example: "EASY Starter", "PLC Designer" |
| Icons | | |
| Page reference | 🕮 | Reference to another page with additional information.<br>Example: 🕮 16 = see page 16 |
| Documentation reference | 🌍 | Reference to other documentation with additional information.<br>Example: 🌍 EDKxxx = see documentation EDKxxx |

**Layout of the safety instructions**

**⚠DANGER!**

Indicates an extremely hazardous situation. Failure to comply with this instruction will result in severe irreparable injury and even death.

**⚠WARNING!**

Indicates an extremely hazardous situation. Failure to comply with this instruction may result in severe irreparable injury and even death.

**⚠CAUTION!**

Indicates a hazardous situation. Failure to comply with this instruction may result in slight to medium injury.

**NOTICE**

Indicates a material hazard. Failure to comply with this instruction may result in material damage.

# Product information

## Product description

When used in combination with three-phase AC motors, our bevel gearboxes form a compact, powerful drive unit. Numerous options at the input and output end provide for the drive to be exactly adapted to your application.

The efficient bevel gearboxes are characterized by high permissible radial forces, closely stepped ratios and a low backlash. They are available in a 2-, 3- and 4-stage design with a torque of up to 4300 Nm and a ratio of up to i= 3167.

**Versions**

- High-efficient right-angle gearbox in a compact design for space-saving installation
- Market standard shaft dimensions and standardized flanges for easy machine integration
- Low backlash and high torsional rigidity during positioning provide for exact results

**Three-phase AC motor for inverter operation**

In a power range from 0.55 to 22 kW, Lenze offers inverter-compatible three-phase AC motors for more extensive tasks.

The energy-efficient, inverter-optimized MF three-phase AC motors are particularly suitable for tasks that demand large setting ranges with minimal sizes.

**Customer benefit**

- Exceed efficiency class IE2
- Four-pole motors in the designs B3, B5 and B14
- Setting range up to 1:24 with constant torque
- More dynamic than conventional three-phase AC motors
- Optimized for use as geared motors with g500 gearboxes and i510 cabinet, i550 cabinet, i550 protec and i550 motec frequency inverters


g500-B600 gearbox with MFEMAXX090-32 motor

# Identification of the products

### Gearbox product name

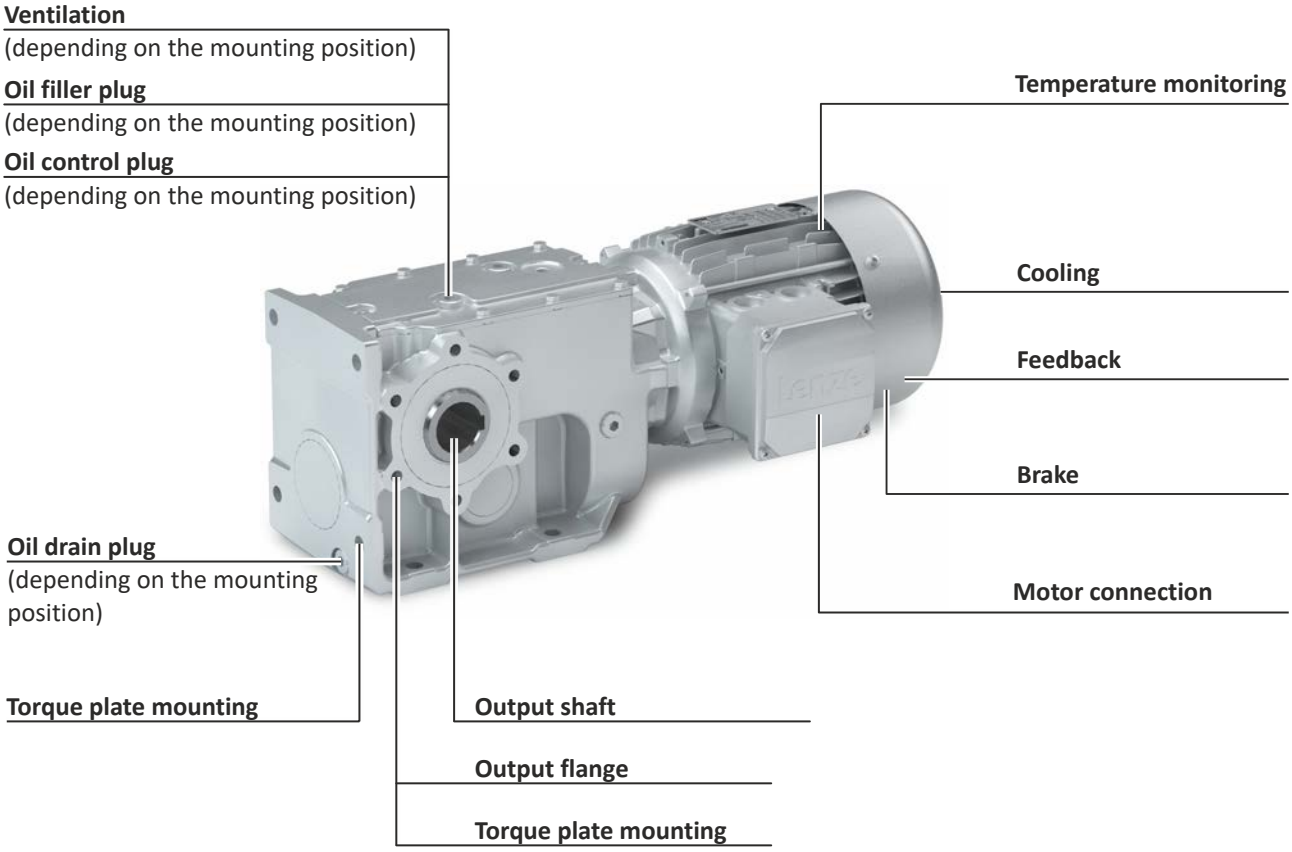
| Gearbox type | Product series | | Type | Rated torque Nm | Product |
|---|---|---|---|---|---|
| Bevel gearbox | g500 | - | B | 45 | g500-B45 |
| | | | | 110 | g500-B110 |
| | | | | 240 | g500-B240 |
| | | | | 450 | g500-B450 |
| | | | | 600 | g500-B600 |
| | | | | 820 | g500-B820 |
| | | | | 1500 | g500-B1500 |
| | | | | 2700 | g500-B2700 |
| | | | | 4300 | g500-B4300 |

### Three-phase AC motor product name

| Meaning | Variant | Product name | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Product family | | MF | | | | | | | |
| Wildcard | Cooling | | □ | | | | | | |
| Internal code | | | | MA | | | | | |
| Wildcard | Brake<br>Feedback | | | | □□ | | | | |
| Size | | | | | | 063<br>080<br>090<br>100<br>112<br>132 | | | |
| Overall length | | | | | | | | 1<br>...<br>4 | |
| Number of pole pairs | 4-pole | | | | | | | | 2 |

## Features

The following figure provides an overview of the elements and connections on the product.
Their position, size and appearance may vary.



## The modular system

Values printed in bold are standard designs. Values that are not printed in bold are potential extensions, some of them including a surcharge.

### Geared motors up to 450 Nm

| **Gearbox** | | **g500-B45** | **g500-B110** | **g500-B240** | **g500-B450** |
|---|---|---|---|---|---|
| **Min. motor assignment** | | **MF□MA□□063** | **MF□MA□□063** | **MF□MA□□063** | **MF□MA□□063** |
| **Max. motor assignment** | | **MF□MA□□063** | **MF□MA□□090** | **MF□MA□□100** | **MF□MA□□132** |
| Technical data | | | | | |
| Max. output torque | Nm | 45 | 110 | 240 | 450 |
| Min. drive power at 50 Hz | kW | 0.55 | 0.55 | 0.55 | 0.55 |
| Max. drive power at 50 Hz | kW | 0.75 | 4.0 | 7.5 | 18.5 |
| Mounting position | | | | | |
| Standard | | **M1/M2/M3/M4/M5/M6 (ABCDEF)** | | | |
| Combined | | M1-M6 (A-F) | M1/5/6 (AEF) | | |
| Color | | **Unpainted**<br>Primed/RAL colors | | | |
| Surface and corrosion protection | | **Without OKS**<br>Different types of OKS | | | |
| Output shaft | | | | | |
| Solid shaft with featherkey (V) | mm | 20 x 40 | 20 x 40 | 30 x 60 | 30 x 60 |
| **Hollow shaft with keyway (H)** | mm | 18/20 | 20/25 | 30/35 | 35/40 |
| Hollow shaft with shrink disc (S) | mm | 20 | 20 | 30/35 | 35 |
| Shaft material | | **Steel**<br>Stainless steel | | | |
| Output shaft bearing | | **Normal** | | | |
| Gearbox design | | **With foot (HBR)**/(VBR/SBR)<br>With foot and centring (HAR/VAR/SAR)<br>With foot and output flange (HAK/VAK/SAK) | | | |
| Output flange (K) | mm | 110/120 | 120/160 | 160/200 | 200 |
| Ventilation | | Without | | | Vent valve |
| Cooling | | **Integral fan**<br>Blower | | | |
| Product extensions | | | | | |
| Torque plate | | At threaded pitch circle | | | |
| | | | | On the housing foot | On the housing foot |
| | | Rubber buffers | - | | |
| Shaft cover | | Hollow shaft cover, hoseproof<br>Shrink disc cover | | | |
| Connection method | | Y/Δ | | | |
| Connection type | | **Terminal box**<br>ICN connector<br>HAN connector<br>M12 connector | | | |
| Spring-applied brake | | **Without**<br>With | | | |
| Feedback | | **Without**<br>Resolver<br>Incremental encoder<br>Absolute value encoder | | | |
| Temperature monitoring | | **TKO thermal contact**<br>PT1000 temperature sensor<br>PTC thermistor | | | |



### Geared motors from 600 Nm to 4300 Nm

| **Gearbox** | | **g500-B600** | **g500-B820** | **g500-B1500** | **g500-B2700** | **g500-B4300** |
|---|---|---|---|---|---|---|
| **Min. motor assignment** | | **MF□MA□□063** | **MF□MA□□063** | **MF□MA□□063** | **MF□MA□□063** | **MF□MA□□063** |
| **Max. motor assignment** | | **MF□MA□□132** | **MF□MA□□132** | **MF□MA□□132** | **MF□MA□□132** | **MF□MA□□132** |
| Technical data | | | | | | |
| Max. output torque | Nm | 600 | 820 | 1500 | 2700 | 4300 |
| Min. drive power at 50 Hz | kW | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| Max. drive power at 50 Hz | kW | 22 | 22 | 22 | 22 | 22 |
| Mounting position | | | | | | |
| Standard | | **M1/M2/M3/M4/M5/M6 (ABCDEF)** | | | | |
| Combined | | - | | | | |
| Color | | **Primed**<br>Painted in RAL colors | | | | |
| Surface and corrosion protection | | **OKS-S**<br>Different types of OKS | | | | |
| Output shaft | | | | | | |
| Solid shaft with featherkey (V) | mm | 35 x 70<br>40 x 80 | 40 x 80 | 50 x 100 | 60 x 120 | 70 x 140<br>80 x160 |
| **Hollow shaft with keyway (H)** | mm | 40/45 | 40/45 | 50/55 | 60/70 | 70/80 |
| Hollow shaft with shrink disc (S) | mm | 40 | 40 | 50 | 65 | 75/80 |
| Shaft material | | **Steel**<br>Stainless steel | | | | |
| Output shaft bearing | | **Normal** | | | | |
| Gearbox design | | **With foot (HBR)**/(VBR/SBR)<br>With foot and centring (HAR/VAR/SAR)<br>With foot and output flange (HAK/VAK/SAK) | | | | |
| Output flange | mm | 200/250 | 200/250 | 250/300 | 350 | 400/450 |
| Ventilation | | **Vent valve** | | | | |
| | | | | Oil compensation reservoir | | |
| Cooling | | **Integral fan**<br>Blower | | | | |
| Product extensions | | | | | | |
| Torque plate | | At threaded pitch circle | | | | |
| | | On the housing foot | | | | |
| Shaft cover | | Hollow shaft cover, hoseproof<br>Shrink disc cover | | | | |
| Connection method | | Y/Δ | | | | |
| Connection type | | **Terminal box**<br>ICN connector<br>HAN connector | | | | |
| Spring-applied brake | | **Without**<br>With | | | | |
| Feedback | | **Without**<br>Resolver<br>Incremental encoder<br>Absolute value encoder | | | | |
| Temperature monitoring | | **TKO thermal contact**<br>PT1000 temperature sensor<br>PTC thermistor | | | | |

## Designs

### Gearbox designs

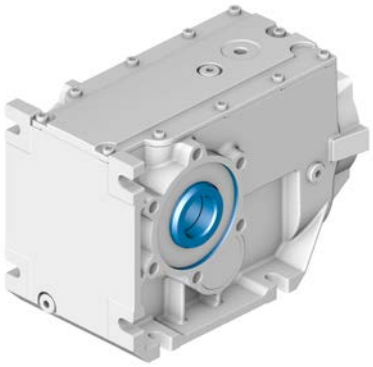
Please observe the available gearbox designs!

▸ The modular system 📖 12

**g500-B45 ... B4300**

**Hollow shaft, with foot**

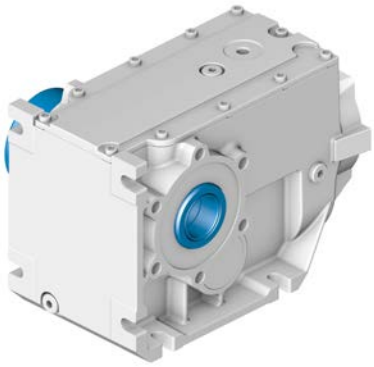
Without centring (HBR)



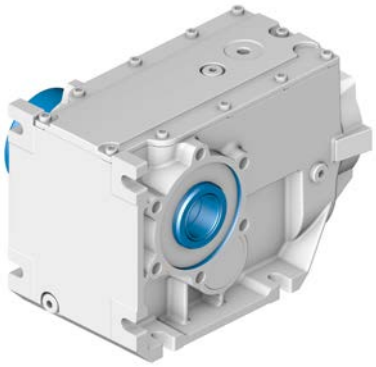
With centring (HAR)

Flange with through holes (HAK)

**Hollow shaft with shrink disc, with foot**



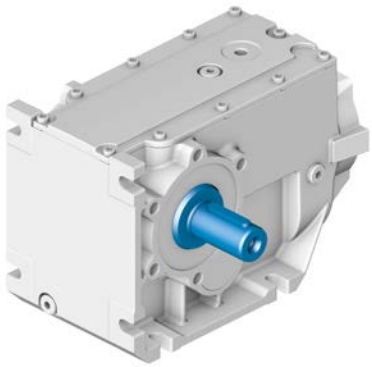
Without centring (SBR)



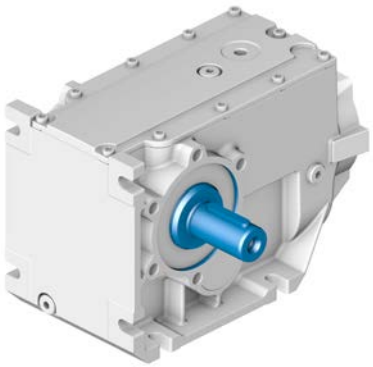
With centring (SAR)

Flange with through holes (SAK)

**Solid shaft, with foot**



Without centring (VBR)



With centring (VAR)

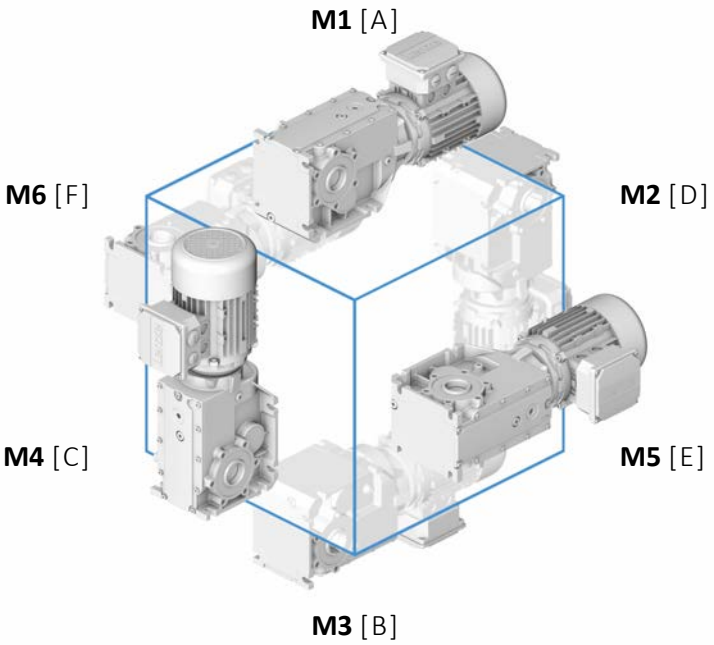
Flange with through holes (VAK)

## Mounting positions

Details of the mounting position are needed to ensure the corresponding lubricant amount, position of the ventilation, oil checks and oil drain plug on the gearbox.

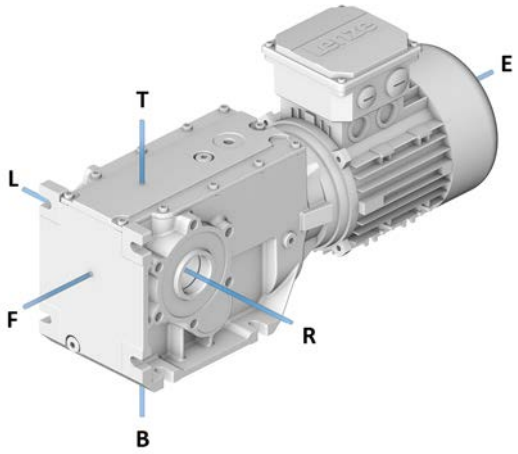
To reduce the number of different versions, the following gearboxes can also be ordered with combined mounting positions:

- g500-B45 in M1-M6 (A-F) mounting position
- g500-B110 ... B450 in M1/5/6 (AEF) mounting position



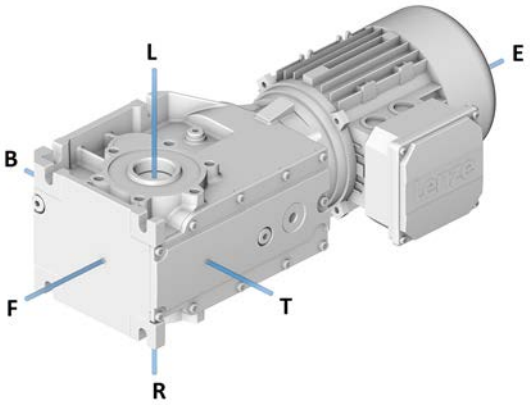

### Defined positions on the geared motor

All of the defined positions refer to the areas on the geared motor in mounting position **M1 (A)** .
Position of the built-on accessories with T, L, R, B, F, E (Top, Left, Right, Bottom, Front, and End)



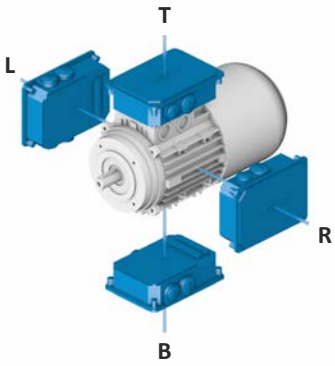

If the geared motor is rotated into a different mounting position M2 ... M6 (B...F), the defined positions on the geared motor are retained.

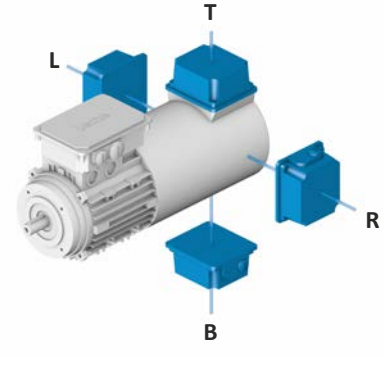
Example: Mounting position M5 (E)

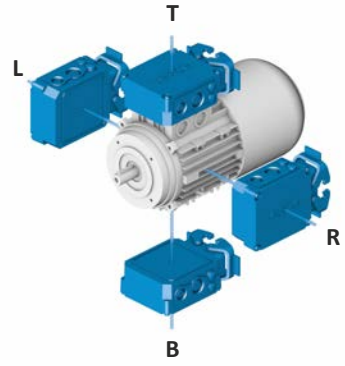


## Positions of the terminal boxes/connectors

| Power terminal box | Blower terminal box | HAN connector |
|---|---|---|
| with/without ICN connector | with/without ICN connector | |

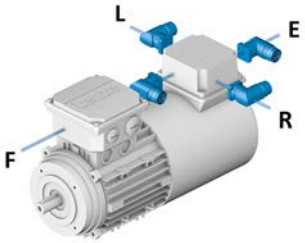



## Positions of the connections

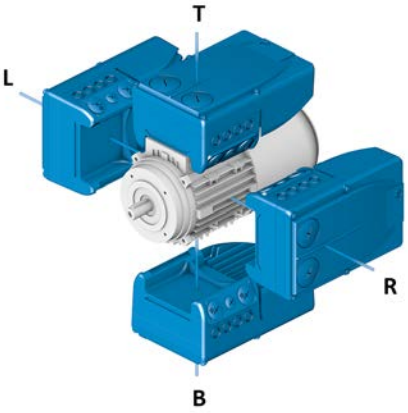
| Power terminal box | Blower terminal box | HAN connector |
|---|---|---|
| ICN cable glands/connectors | ICN cable glands/connectors | |

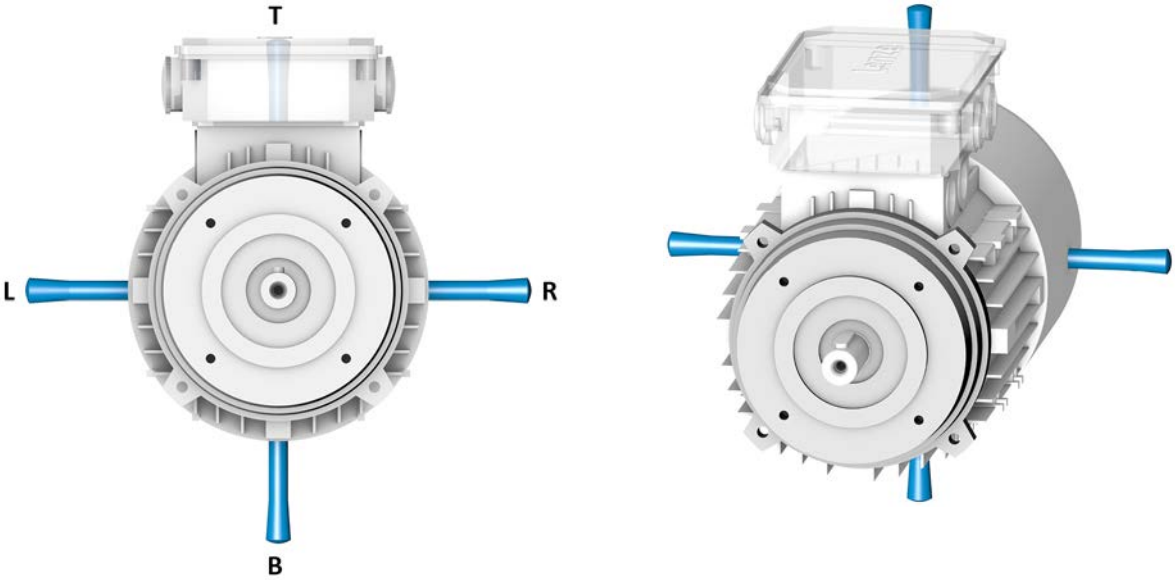


## Positions of the i550/8400 motec frequency inverters

| Positions of i550/8400 motec | Positions of the connectors |
|---|---|
| | 8400 motec I/O connection |

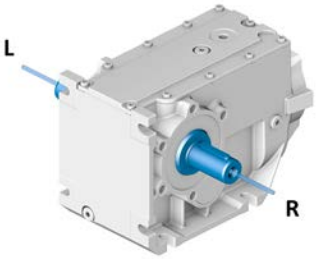



**Position of the manual release lever**



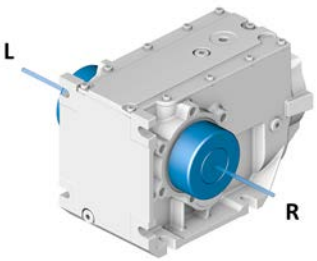

**Position of the solid shaft**

Double-ended output shaft journal "L+R".




**Position of the hollow shaft with shrink disc**

Output flange and shrink disc are not possible in the same position.

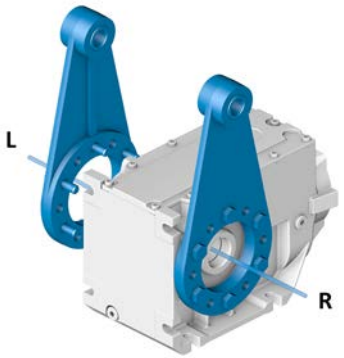


### Position of the output flange

Output flange on both sides "L+R".

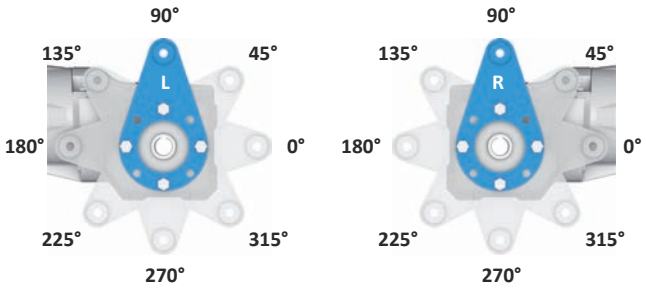

### Position of the torque plate on the threaded pitch circle

Position of the torque plate

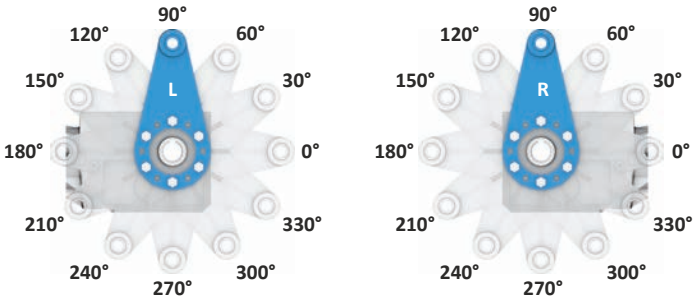



Angle of the torque plate

g500-B45 ... B110

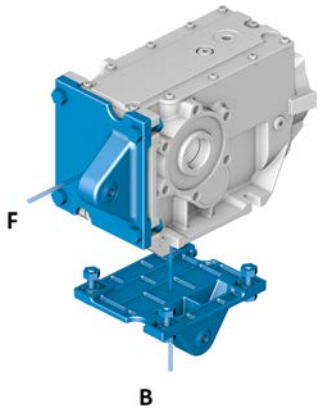



g500-B240 ... B1500

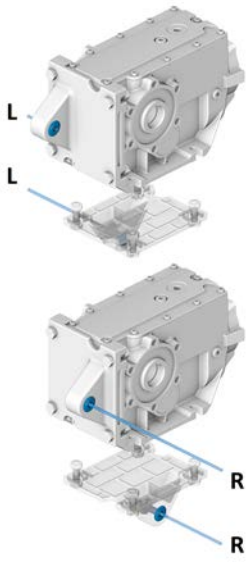


## Position of the torque plate on the housing foot

Position of the torque plate




Position of the rubber buffer on the torque plate



# Safety instructions

## Basic safety instructions

Disregarding the following basic safety instructions and safety information may lead to severe personal injury and damage to property!

- Only use the product as directed.
- Never commission the product in the event of visible damage.
- Never modify the product technically.
- Never commission the product before assembly has been completed.
- Never operate the product without the required covers.
- Connect/disconnect all pluggable connections only in deenergized condition!
- Only remove the product from the installation in the deenergized state.
- The product can – depending on their degree of protection – have live, movable or rotating parts during or after operation. Surfaces can be hot.
- Observe the specifications of the corresponding documentation. This is the condition for safe and trouble-free operation and the achievement of the specified product features.
- The procedural notes and circuit details given in the associated documentation are suggestions and their transferability to the respective application has to be checked. The manufacturer of the product does not take responsibility for the suitability of the process and circuit proposals.
- All work with and on the product may only be carried out by qualified personnel.
  IEC 60364 and CENELEC HD 384 define the qualifications of these persons:
  - They are familiar with installing, mounting, commissioning, and operating the product.
  - They have the corresponding qualifications for their work.
  - They know and can apply all regulations for the prevention of accidents, directives, and laws applicable at the place of use.

Please observe the specific safety information in the other sections!

## Application as directed

- The product is a professional equipment intended for use by trades, specific professions or industry and not for sale to the general public. IEC 60050 [IEV 161-05-05]
- To prevent personal injury and damage to property, higher-level safety and protection systems must be used!
- All transport locks must be removed.
- Mounted eye bolts on the motor are not suitable for transporting geared motors.
- The product may only be operated under the specified operating conditions and in the specified mounting positions.
- The product may only be operated on the inverter.
- Built-in brakes must not be used as safety brakes.
- The product must not be operated in private areas, in potentially explosive atmospheres and in areas with harmful gases, oils, acids and radiation.

## Foreseeable misuse

- Use in potentially explosive areas
- Use in agressive environments
- Use under water
- Use under radiation
- Use in generator mode

## Residual hazards

Even if notes given are taken into consideration and protective measures are implemented, the occurrence of residual risks cannot be fully prevented.

The user must take the residual hazards mentioned into consideration in the risk assessment for his/her machine/system.

If the above is disregarded, this can lead to severe injuries to persons and damage to property!

**Product**

Observe the warning labels on the product!

**Dangerous electrical voltage:**
Before working on the product, make sure there is no voltage applied to the power terminals! After mains disconnection, the power terminals will still carry the hazardous electrical voltage for the time given next to the symbol!

**Electrostatic sensitive devices:**
Before working on the product, the staff must ensure to be free of electrostatic charge!

**High leakage current:**
Carry out fixed installation and PE connection in compliance with:
EN 61800-5-1 / EN 60204-1

**Hot surface:**
Use personal protective equipment or wait until the device has cooled down!

**Protection of persons**

- The power terminals may carry voltage in the switched-off state or when the motor is stopped.
  - Before working, check whether all power terminals are deenergized.
- Voltages may occur on the drive components (e.g. capacitive, caused by inverter supply).
  - Careful earthing in the marked positions of the components must be carried out.
- There is a risk of burns from hot surfaces.
  - Provide protection against accidental contact.
  - Use personal protective equipment or wait until the device has cooled down.
  - Prevent contact with flammable substances.
- There is a risk of injury due to rotating parts.
  - Before working on the drive system, ensure that the motor is at a standstill.
- There is a risk of accidental start-up or electric shock.

**Motor protection**

- Installed temperature sensors are no full protection for the machine.
  - If necessary, limit the maximum current. Parameterize the inverter so that it will be switched off after some seconds of operation with $I > I_{rated}$, especially if there is a risk of blocking.
  - Integrated overload protection does not prevent overloading under all conditions.
- The fuses are no motor protection.
  - Use a current-dependent motor protection switch.
  - Use the built-in temperature sensors.

**Gearbox protection**

- Excessive vibration accelerations and resonances will damage the gearbox.
  - Do not operate the gearbox at vibration accelerations > 2 g (20 $m/s^2$) of the machine.
  - Do not operate the gearbox in the resonance range of the machine.
- Excessive torques will damage the gearboxes.
  - Do not exceed the output torques specified on the nameplate.
- Excessive input speeds lead to increased temperatures.
  - Do not exceed the input speeds specified on the nameplate.
- Avoid excessive lateral forces on the gearbox shaft.
  - Align the shafts of the gearbox and driven machine exactly with each other.
- Machine elements can be damaged by a lack of lubricant.
  - Mount the gearbox only in the mounting position indicated on the nameplate.
  - When changing the lubricant, use the lubricant type and quantity specified on the nameplate.

# Information on project planning

## General information

**NOTICE**

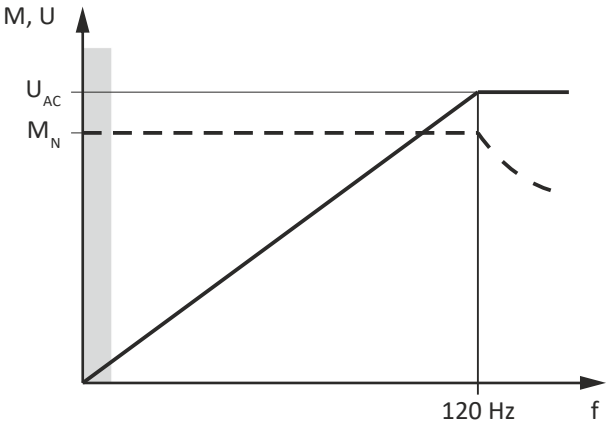
For gearboxes with hollow shaft and shrink disk

observe the following requirements for the machine shaft:

► Fit tolerance h6
► Material yield strength Re ≥ 360 MPa
► Modulus of elasticity approx. 210000 MPa
► Surface roughness Rz ≤ 15 µm
► No radial, axial forces and forces due to stress/rotation permissible

**Operation on a frequency inverter**

Large setting ranges and optimum operation with rated torque. These are the strengths of the MF motor on the frequency inverter. Compared to the 50-Hz operation, the setting range increases by 250 %. It is quite simply not possible for a drive to be operated any more efficiently in a machine.

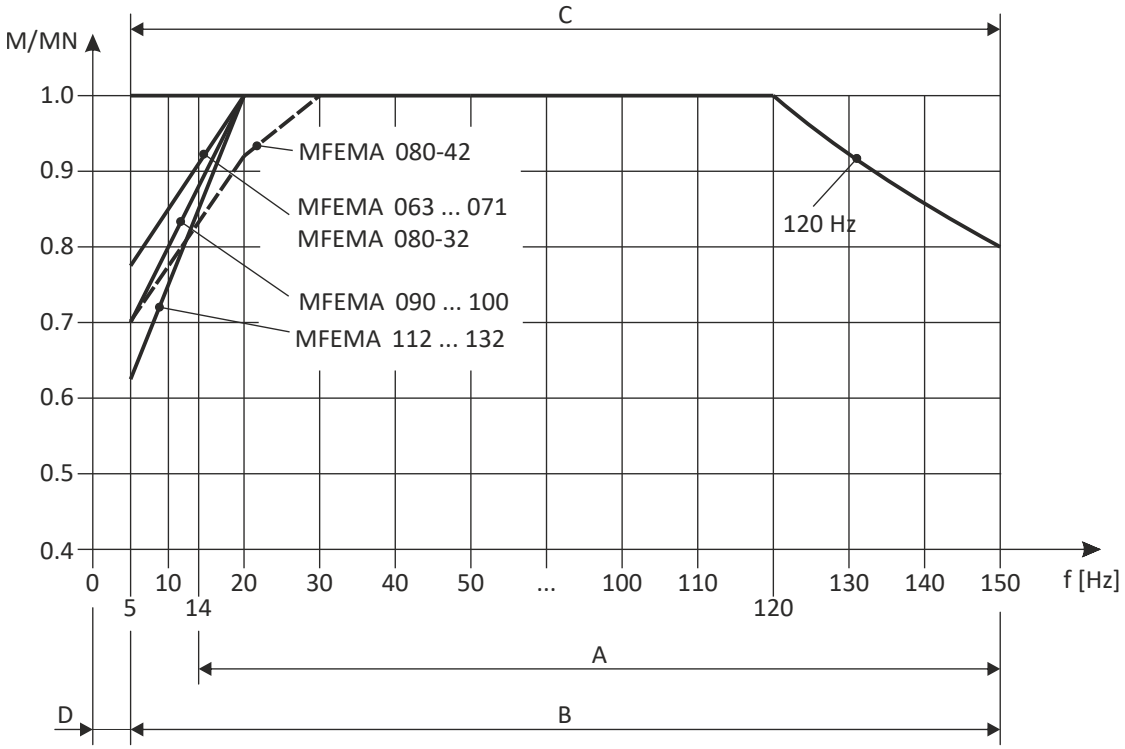



**Torque reduction at low motor frequencies**

At low motor frequencies (usually < 20 Hz) and with an integral fan, the motor is not cooled sufficiently at the rated torque. The motor can be operated from 5 Hz by reducing the torque accordingly.

Constant cooling takes place over the entire speed range in motors with a blower. This means that they can be used with their rated torque from 5 Hz.

The diagram shows the motor size-dependent torque reduction for self-ventilated motors, taking into account the thermal behavior during operation on the inverter.




| | |
|---|---|
| A | Operation with integral fan and brake |
| B | Operation with integral fan and "holding current reduction" brake control |
| C | Operation with blower |
| D | Operation below 5 Hz is possible depending on the application and the control mode. Verification of the application by Lenze required. |

**Thermal power limit**

The thermal power limit, defined by the heat balance, limits the permissible continuous gearbox power. It is affected by

- the churning losses in the lubricant. These are determined by the mounting position and the circumferential speed of the gears
- the load and the speed spectrum.
- the ambient conditions: temperature, air circulation, input or dissipation of heat via shafts and the foundations.

**NOTICE**

A thermal check with the Drive Solution Designer (DSD) or contacting your Lenze representative is required if

► the input speed $n_1$ > 1500 rpm is fallen below in case of the gearbox ratios given in the following.

► the drive speeds mentioned in the following will be exceeded as a function of the mounting position. For a short period of time up to 5 min, 30 % higher speeds are permissible.

► the ambient temperature is predominantly above +30 °C.

| Gearbox | Ratio i |
|---|---|
| g500-B1500 ... B4300 | ≤ 25 |

| Motor | Mounting position M1 | Mounting position M3, M5, M6 | Mounting position M2, M4 |
|---|---|---|---|
| MF☐MA☐☐063 ... 100 | 4000 rpm | 3500 rpm | 3000 rpm |
| MF☐MA☐☐112 ... 132 | 3000 rpm | 2600 rpm | 1500 rpm |

**Possible ways of extending the application area**

- Shaft sealing ring made of FKM material/Viton (option)
- Reducing the lubricant amount (after consultation with Lenze)
- Cooling the geared motor by air convection on the machine/system

## Drive dimensioning

In order to carry out an accurate drive dimensioning process, you can use our configuring software, the »EASY System Designer«.

With the «EASY System Designer«, you can design the drive both quickly and to a high quality. The software contains profound and proven expertise with regard to drive applications and mechatronic drive components.

Please get in touch with your Lenze representative.

### Workflow

| Inverter operation |
|---|
| ↓ |
| Check operating conditions |
| ↓ |
| Define required input variables |
| ↓ |
| Determine correction factor<br>Operating modes and operating time<br>Ambient temperature and installation height |
| ↓ |
| Determine gearbox type and efficiency |
| ↓ |
| Determine product on the basis of the acting forces |
| ↓ |
| Calculate required drive power |
| ↓ |
| Calculate setting range<br>Define rated point<br>Blower required? |
| ↓ |
| Define load class and intensity |
| ↓ |
| Determine application factor k from diagram |
| ↓ |
| Select the product on the basis of the data obtained from the selection tables |
| ↓ |
| Final configuration |

### Check operating conditions

| Check |
|---|
| Approvals |
| Conformities |
| Supply voltage |
| Degree of protection |
| Ambient temperature |
| Surface protection |

▸ Standards and operating conditions 📖 48

▸ Surface and corrosion protection 📖 33

## Define required input variables

| Required input variables | Note | Symbol | Unit |
|---|---|---|---|
| Operating time / day | | BD | |
| Ambient temperature | | $T_V$ | °C |
| Site altitude amsl | | H | m |
| Radial force | | $F_{rad}$ | rated |
| Axial force | | $F_{ax}$ | rated |
| Transmission element at the output<br>Effective diameter of the transmission element | Gear wheels, sprockets … | $d_w$ | mm |
| Load torque | For short-term load peaks | $M_{L,max}$ | Nm |
| | At rated operation | $M_L$ | Nm |
| Load speed | | $n_{L,max}$ | rpm |
| Runtime for $M_{L,max}$ | | | % |
| External moments of inertia | | $J_{ext}$ | $kgcm^2$ |
| Switching operations per hour | | $S_h$ | 1/h |

## Determine correction factor

| Operating modes S1, S2, S3, S6, and operating time | | | | | | | |
|---|---|---|---|---|---|---|---|
| Operating mode S1 | | Operating mode S2 | | Operating mode S3 | | Operating mode S6 | |
| ED | $k_L$ | ED | $k_L$ | ED | $k_L$ | ED | $k_L$ |
| % | | min | | % | | % | |
| 100 | 1.0 | 10 | 1.4 - 1.5 | 15 | 1.4 - 1.5 | 15 | 1.5 - 1.6 |
| | | 30 | 1.15 - 1.2 | 25 | 1.3 - 1.4 | 25 | 1.4 - 1.5 |
| | | 60 | 1.07 - 1.1 | 40 | 1.15 - 1.2 | 40 | 1.3 - 1.4 |
| | | 90 | 1.0 - 1.05 | 60 | 1.05 - 1.1 | 60 | 1.15 - 1.2 |

▸ Operating modes of the motor 🕮 180

| Installation height amsl | | | |
|---|---|---|---|
| ≤ 1000 m | ≤ 2000 m | ≤ 3000 m | ≤ 4000 m |
| Correction factor | | | |
| $k_H$ | $k_H$ | $k_H$ | $k_H$ |
| 1 | 0.95 | .90 | .85 |

| Ambient temperature | | |
|---|---|---|
| ≤ 40 °C | ≤ 45 °C | ≤ 50 °C |
| Correction factor | | |
| $k_{TU}$ | $k_{TU}$ | $k_{TU}$ |
| 1 | 0.95 | 0.90 |

| Mounting position | | | | | | |
|---|---|---|---|---|---|---|
| Gearboxes | Mounting position | | | | | |
| | M1 | M2 | M3 | M4 | M5 | M6 |
| | Correction factor | | | | | |
| | $k_E$ | $k_E$ | $k_E$ | $k_E$ | $k_E$ | $k_E$ |
| g500-H | 1.00 | 0.70 | 0.80 | 0.80 | 1.00 | 1.00 |
| g500-S | 1.00 | 0.70 | 0.80 | 0.85 | 0.80 | 0.90 |
| g500-B | 1.00 | 0.70 | 0.80 | 0.80 | 0.80 | 0.80 |

▸ Selection tables 🕮 60

### Gearbox efficiency

| Gearboxes | Gearbox efficiency |
|---|---|
| | $\eta_{c1}$ |
| g500-B | |
| 2-stage | 0.96 |
| 3-stage | 0.95 |
| 4-stage | 0.94 |

### Determine product on the basis of the forces

| Transmission element | | | Gear wheels | Sprockets | Toothed belt pulleys (depending on the pretension) | Narrow V-belt (depending on the pretension) |
|---|---|---|---|---|---|---|
| Additional radial force factor | $f_Z$ | | ≥ 17 teeth: 1.0<br>< 17 teeth: 1.15 | ≥ 20 teeth: 1.0<br>< 20 teeth: 1.25<br>< 13 teeth: 1.4 | With belt tightener: 2.0 – 2.5<br>Without belt tightener: 2.5 – 3.0 | 1.5 – 2.0 |
| | | | **Calculation** | | **Check** | |
| Radial force | $F_{rad}$ | N | $F_{rad} = 2000 \times \frac{M_{L,max} \times f_z}{dw}$ | | $F_{rad} \leq f_W \times F_{rad,max}$ | |
| Axial force | $F_{ax}$ | N | | | $F_{ax} \leq F_{rad,max} \times 0.5$ | |

dw Effective diameter of transmission element in mm

$f_W$ Additional load factor

▸ Radial forces and axial forces 58

### Calculate drive power

| | | | |
|---|---|---|---|
| Required Drive power | kW | $P_1 = \frac{M_L \times n_{L,max}}{9549 \times k_L \times k_H \times k_{TU} \times \eta_g}$ | |

$k_L$ Correction factor - operating mode

$k_H$ Correction factor - site altitude

$k_{TU}$ Correction factor - ambient temperature

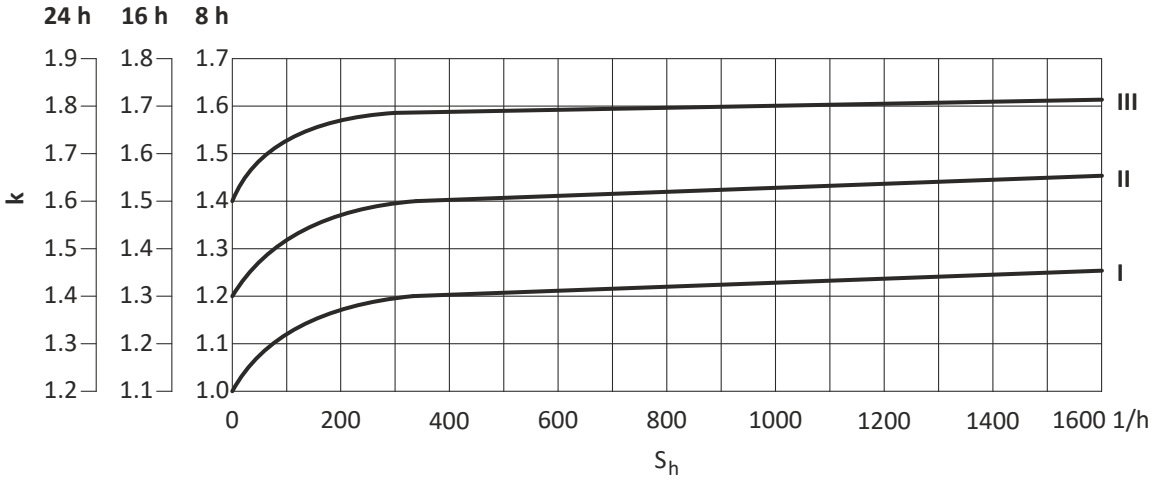
$\eta_G$ Gearbox efficiency

### Intensity and load class for inverter operation

| | Calculation | |
|---|---|---|
| Intensity | $M_I = \frac{M_{L,max}}{M_L}$ | For alternating load, select load class III! |

| Intensity | Load type | Load class |
|---|---|---|
| $M_I \leq 1.5$ | Smooth operation, small or light jolts | I |
| $1.5 < M_I \leq 2$ | Uneven operation, average jolts | II |
| $2 < M_I \leq 2.5$ | Uneven operation, severe jolts and/or **alternating load** | III |

### Application factor k




| | |
|---|---|
| k | Application factor |
| $S_h$ | Switching rate |

### Check and select product

Data ▸ Selection tables 🕮 60

### Inverter operation

| Selection table | Check | Unit | Note |
|---|---|---|---|
| Rated power | $P_{rated} \geq P_1$ | kW | |
| Output torque | $M_2 \geq M_L$ | Nm | The geared motor must be able to provide sufficient torque for $M_{L,max.}$ |
| Max. output speed | $n_2 \approx n_{L,max}$ | rpm | |
| Min. output speed | | | |
| Self-ventilated | $n_{21} \approx n_{L,min}$ | rpm | Setting range≤ 6 (20 ... 120 Hz) |
| Forced ventilated<br>Self-ventilated (reduced output torque) | $n_{22} \approx n_{L,min}$ | rpm | Setting range≤ 24 (5 ... 120 Hz) |
| Load factor | c ≥ k | | |

| Order information | Example |
|---|---|
| Geared motor | |
| Gearbox | g500-B110 |
| Motor | MF☐MA☐☐063-32 |
| Gearbox ratio i | 19.556 |
| Number of stages | 2 |

## Final configuration

| | Screening |
|---|---|
| Connection dimensions | Output shaft<br>Output flange/foot |
| Mounting position | Geared motor<br>Connector/terminal box<br>Driven shaft/output flange |
| Product extensions | Torque plate<br>Shaft cover<br>Connector/terminal box<br>Brake<br>Feedback<br>Blower<br>Temperature monitoring<br>Second shaft end<br>Handwheel<br>Protection cover<br>... |

More information about the final configuration:

▸ The modular system 📖 12

▸ Product extensions 📖 120

## Surface and corrosion protection

Depending on the ambient conditions, the surface and corrosion protection system (called OKS) offers tailor-made solutions for optimum protection.

Various surface coatings ensure reliable functioning even at high air humidity, in outdoor installations, or in the presence of atmospheric contamination. Any color from the "RAL Classic" collection can be chosen for the top coat.

For indoor installation in buildings and if no special corrosion protection is required, the products are also available unpainted (without surface and corrosion protection system).

Without OKS (unpainted):

The aluminum parts are uncoated and cast iron parts primed with gray paint. Slight color differences between the components are possible.

| **Surface and corrosion protection** | **Applications** | **Product** | |
|---|---|---|---|
| | | **g500-H45 ... H450<br>g500-S130 ... S660<br>g500-B45 ... B450** | **g500-H600 ... H1500<br>g500-S950 ... S4500<br>g500-B600 ... B1500** |
| Without OKS (unpainted) | • Indoor installation, no special corrosion protection necessary<br>• Painting by customer | Default | - |
| OKS-G (primed) | • Dependent on subsequent top coat applied | Optionally | Optionally |
| OKS-S (small) | • Standard applications<br>• Indoor installation in heated buildings<br>• Air humidity up to 90 % | | Default |
| OKS-M (medium) | • Indoor installation in unheated buildings<br>• Covered, protected outdoor installation<br>• Air humidity up to 95 % | | Optionally |
| OKS-L (large) | • Outdoor installation<br>• Chemical industrial plants<br>• Food industry<br>• Air humidity above 95 % | | |

| **Surface and corrosion protection** | **Corrosivity category** | **Surface coating** | **Color** | **Coating thickness** |
|---|---|---|---|---|
| | **DIN EN ISO 12944-2** | **Design** | | |
| Without OKS (unpainted) | - | • Dip priming of the gray cast iron parts | - | 30 ... 50 µm |
| OKS-G (primed) | - | • Dip priming of the gray cast iron parts<br>• 2K PUR priming coat | - | 80 ... 120 µm |
| OKS-S (small) | Comparable to C1 | • Dip priming of the gray cast iron parts<br>• 2K-PUR top coat | • Standard: RAL 7012<br>• Optional: According to RAL Classic possible | 80 ... 120 µm |
| OKS-M (medium) | Comparable to C2 | • Dip priming of the gray cast iron parts<br>• 2K PUR priming coat<br>• 2K-PUR top coat | | 110 ... 160 µm |
| OKS-L (large) | Comparable to C3 | | | 140 ... 200 µm |

## Lubricants

Maße LB und Δ L ▸ Basic dimensions 87

The following gearboxes are lubricated for life:

- g500-B45
- g500-B110
- g500-B240

Recommended lubricants:

| Lubricant | CLP 220 | CLP 460 | CLP HC 220 | CLP HC 320 |
|---|---|---|---|---|
| Ambient temperature | 0 … +40 °C | | -30 … +40 °C | -20 … +50 °C |
| Specification | Mineral oil with EP additives | | Synthetic oil (polyalfaolefins basis) | |
| Changing interval | | | | |
| Operating hours | 16000 | | 25000 | |
| Not later than after | 3 years | | 4 years | |
| At an oil temperature of | 70 °C | | 70 °C | |
| FUCHS | Renolin CLP 220 | Renolin CLP 460 | Renolin Unisyn XT 220 | Renolin Unisyn XT 320 |
| KLÜBER | Klüberoil GEM 1-220 N | Klüberoil GEM 1-460 N | Klübersynth GEM 4-220 N | Klübersynth GEM 4-320 N |
| SHELL | Shell Omala S2 GX 220 | Shell Omala S2 GX 460 | Shell Omala S4 GXV 220 | Shell Omala S4 GXV 320 |

| Lubricant | CLP HC 46 USDA H1 | CLP PG 100 USDA H1 | CLP HC 220 USDA H1 | CLP PG 460 USDA H1 |
|---|---|---|---|---|
| Ambient temperature | -30 … +10 °C | | -20 … +40 °C | |
| Specification | Synthetic oil (polyalfaolefins basis) | Synthetic oil (polyglycol basis) | Synthetic oil (polyalfaolefins basis) | Synthetic oil (polyglycol basis) |
| Changing interval | | | | |
| Operating hours | 16000 | | | |
| Not later than after | 3 years | | | |
| At an oil temperature of | 70 °C | | | |
| FUCHS | | | Cassida Fluid GL 220 | Cassida Fluid WG 460 |
| KLÜBER | Klüberoil Summit HYSYN FG-46 | Klübersynth UH1 6-100 | Klüberoil 4 UH1-220 N | Klübersynth UH1 6-460 |
| Castrol | | | | Optileb GT 1800/460 |

### Lubricant amounts for stocking

All lubricant amounts are reference values for a change of lubricant. They serve stocking purposes, for example.

The exact values can be found on the nameplate.

| Mounting position | | M1 (A) | M2 (D) | M3 (B) | M4 (C) | M5 (E) | M6 (F) | M1-M6 (A-F) | M1, M5, M6 (AEF) |
|---|---|---|---|---|---|---|---|---|---|
| Gearboxes | | | | | | | | | |
| g500-B45 | l | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | - |
| g500-B110 | l | .3 | 0.6 | 0.7 | .9 | 0.5 | 0.4 | - | 0.5 |
| g500-B240 | l | .9 | 1.2 | 1.3 | 1.8 | 1.4 | 1.0 | - | 1.4 |
| g500-B450 | l | .9 | 1.6 | 1.9 | 2.3 | 1.8 | 1.7 | - | 1.8 |
| g500-B600 | l | 1.4 | 2.3 | 2.7 | 3.2 | 2.6 | 2.6 | - | - |
| g500-B820 | l | 1.9 | 2.8 | 3.4 | 4.2 | 3.2 | 2.7 | - | - |
| g500-B1500 | l | 3.8 | 5.7 | 6.4 | 8.4 | 5.9 | 3.9 | - | - |
| g500-B2700 | l | 6.0 | 9.0 | 10.0 | 12.7 | 8.5 | 9.5 | - | - |
| g500-B4300 | l | 9.5 | 11.5 | 16.5 | 21.0 | 14.0 | 16.0 | - | - |
| Pre-stage | l | 0.4 | | | | | | | |

▸ Gearbox with pre-stage 114

## Ventilation

No venting measures are required for the g500-B45 … B240 gearboxes.

The g500-B240 gearbox can optionally be equipped with breather elements.

From g500-B450 onwards, the gearboxes are supplied with breather elements as standard.

To reduce the number of different versions, the following gearboxes can also be ordered with combined mounting positions:

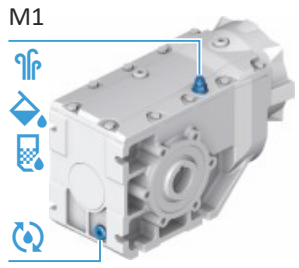
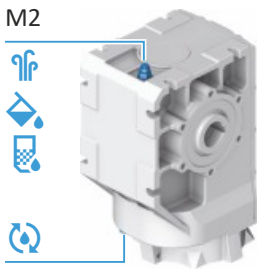
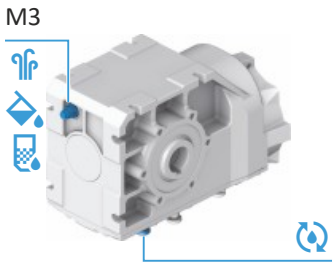
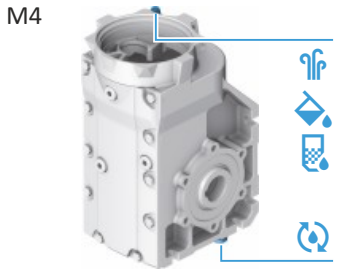
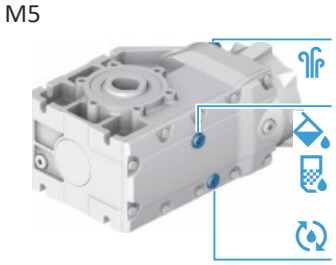
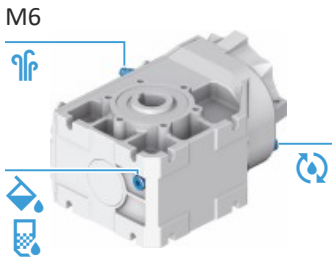
- g500-B45 in M1-M6 (A-F) mounting position
- g500-B110 ... B450 in M1/5/6 (AEF) mounting position

In these gearboxes, the lubricant amount has been optimised for the use in different mounting positions. If required, the breather elements are loosely enclosed and must be mounted before commissioning depending on the mounting position.

**NOTICE**

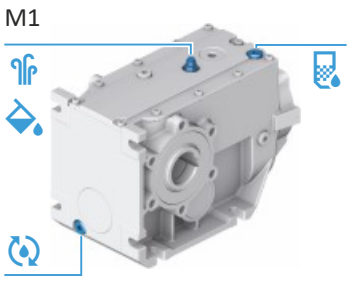
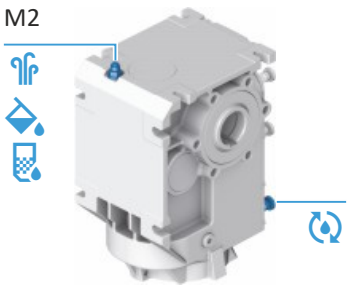
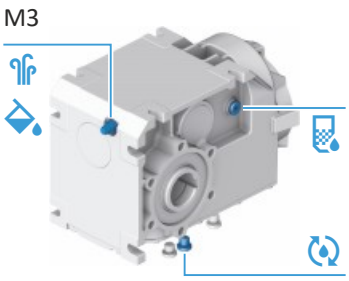
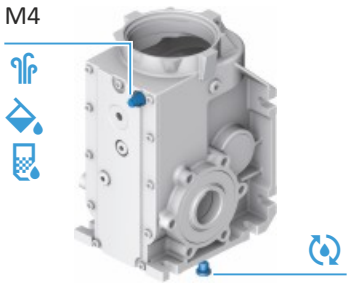
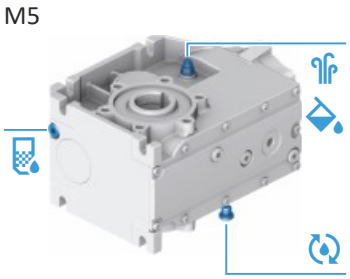
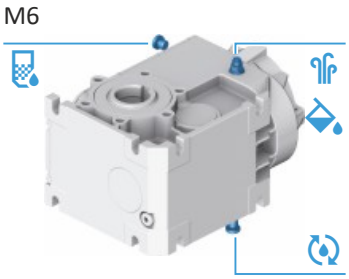
► For gearboxes with ventilation, a gap of at least 30 mm has to be observed to the machine wall on the corresponding gearbox side.

### g500-B240

| Mounting position | | |
|---|---|---|
| **M1 (A)** | **M2 (D)** | **M3 (B)** |
|  |  |  |
| **M4 (C)** | **M5 (E)** | **M6 (F)** |
|  |  |  |

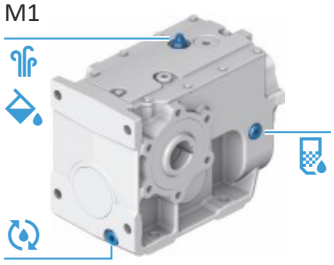
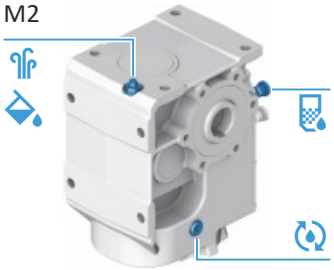
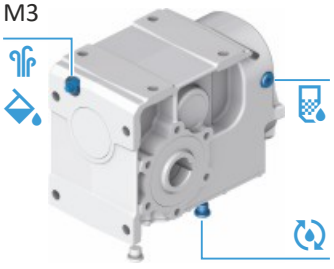
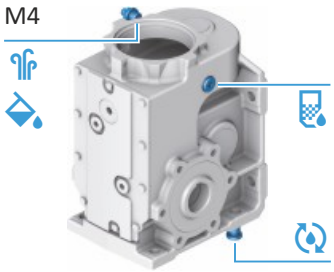
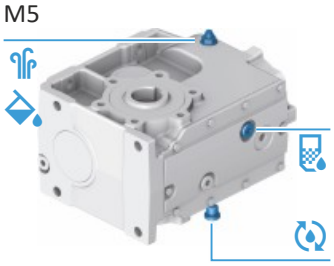
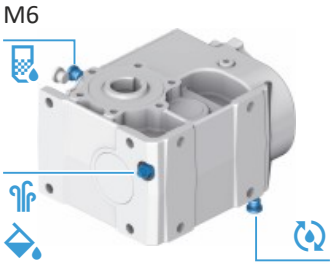
Ventilation  Change oil  Fill oil  Oil level

### g500-B450

| Mounting position | | |
|---|---|---|
| **M1 (A)** | **M2 (D)** | **M3 (B)** |
|  |  |  |
| **M4 (C)** | **M5 (E)** | **M6 (F)** |
|  |  |  |

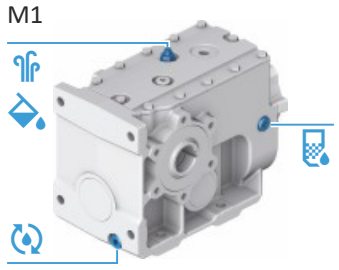
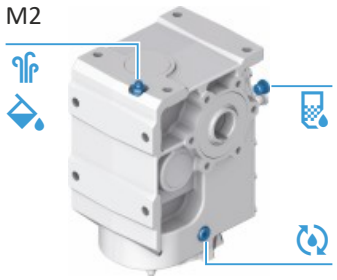
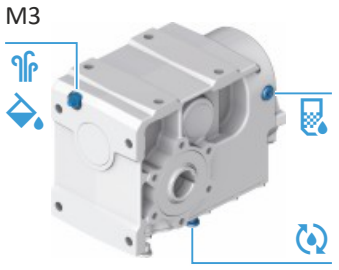
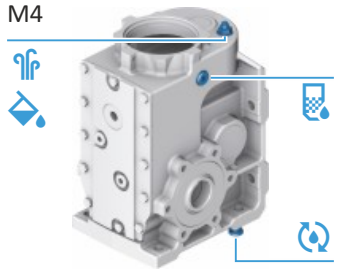
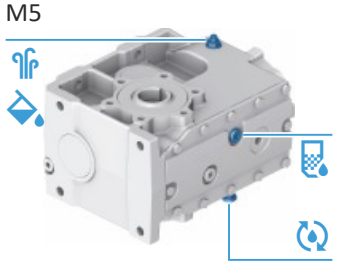
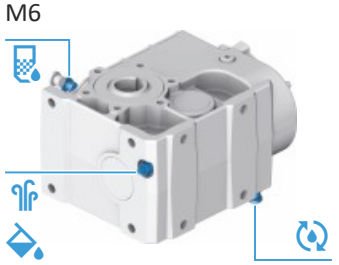
Ventilation  Change oil  Fill oil  Oil level

### g500-B600

| Mounting position | | |
|---|---|---|
| **M1 (A)** | **M2 (D)** | **M3 (B)** |
|  |  |  |
| **M4 (C)** | **M5 (E)** | **M6 (F)** |
|  |  |  |

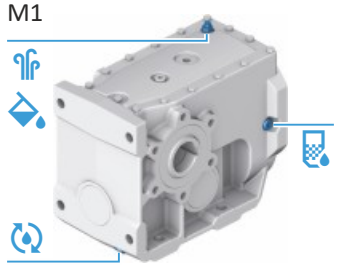
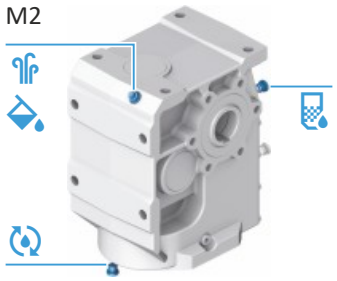
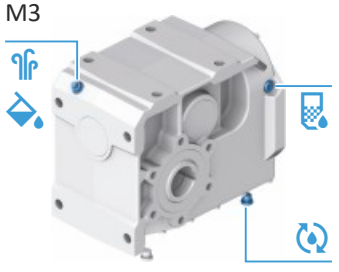
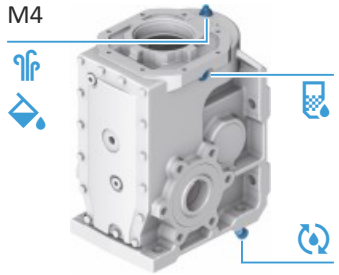
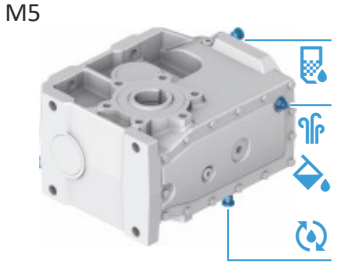
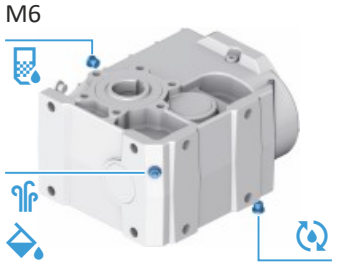
Ventilation  Change oil  Fill oil  Oil level

## g500-B820

| Mounting position | | |
|---|---|---|
| **M1 (A)** | **M2 (D)** | **M3 (B)** |
|  |  |  |
| **M4 (C)** | **M5 (E)** | **M6 (F)** |
|  |  |  |

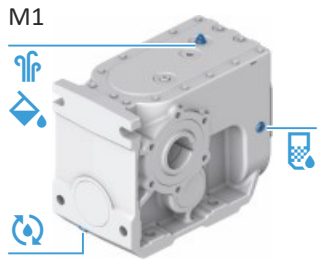
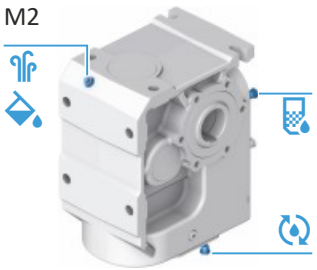
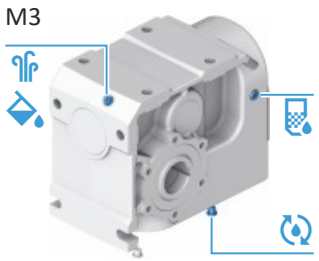
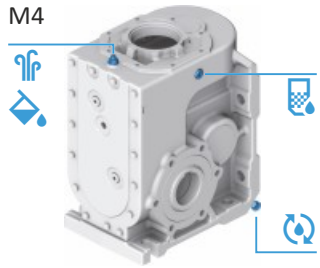
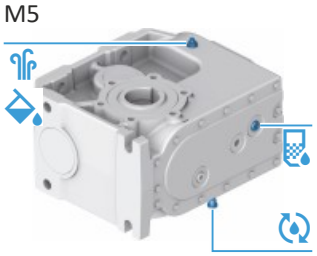
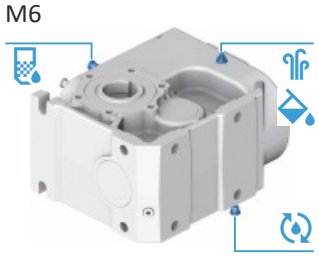
Ventilation  Change oil  Fill oil  Oil level

## g500-B1500

| Mounting position | | |
|---|---|---|
| **M1 (A)** | **M2 (D)** | **M3 (B)** |
|  |  |  |
| **M4 (C)** | **M5 (E)** | **M6 (F)** |
|  |  |  |

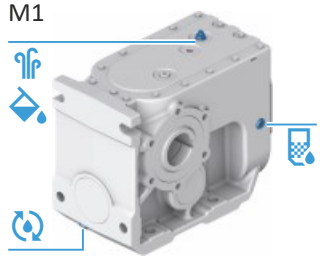
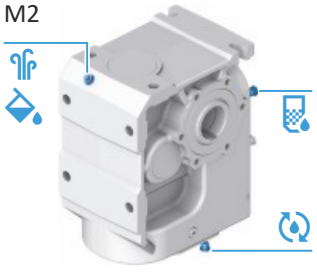
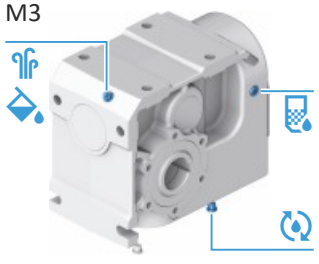
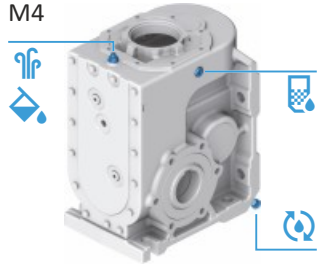
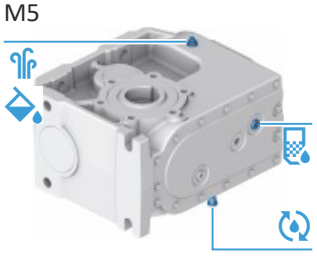
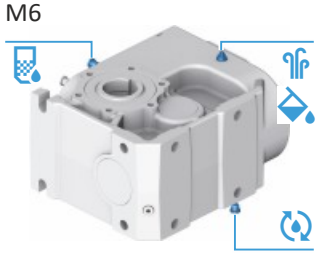
Ventilation  Change oil  Fill oil  Oil level

### g500-B2700

| Mounting position | | |
|---|---|---|
| **M1 (A)** | **M2 (D)** | **M3 (B)** |
|  |  |  |
| **M4 (C)** | **M5 (E)** | **M6 (F)** |
|  |  |  |

Ventilation  Change oil  Fill oil  Oil level

### g500-B4300

| Mounting position | | |
|---|---|---|
| **M1 (A)** | **M2 (D)** | **M3 (B)** |
|  |  |  |
| **M4 (C)** | **M5 (E)** | **M6 (F)** |
|  |  |  |

Ventilation  Change oil  Fill oil  Oil level

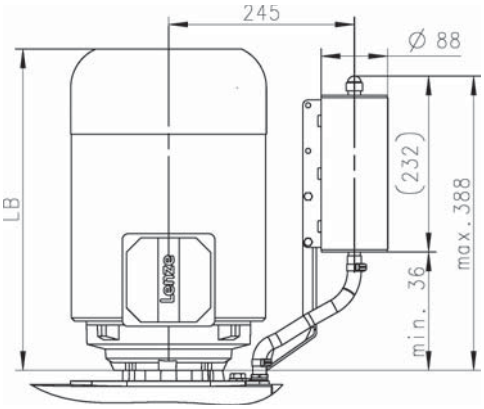
**Gearbox with oil compensation reservoir for mounting position M4 (C)**

In order to guarantee a reliable lubrication of the toothed parts in mounting position M4 (C) (motor is on the gearbox vertical from the top), a high filling level is required in the gearbox. As a result of the reduced volume of air in the gearbox, this may lead to oil escaping from the ventilation at higher input speeds. The oil compensation reservoir increases the expansion space for the lubricant.

The oil compensation reservoir can be ordered as a mounting set for fastening to the gearbox.

If insufficient space is available, the oil compensation reservoir can also be mounted over the gearbox hose connection on nearby system parts.

**Dimensions of the oil compensation reservoir**




8800783-00

For the following gearboxes in mounting position M4 (C), which exceed the specified min. input speed, an oil expansion reservoir is required depending on the specified gear ratio:

| g500-B1500 | | g500-B2700 | | g500-B4300 | |
|---|---|---|---|---|---|
| Gearbox ratio | Min. input speed | Gearbox ratio | Min. input speed | Gearbox ratio | Min. input speed |
| | rpm | | rpm | | rpm |
| 6.866 | 2000 | 6.918 | 2000 | 5.488 | 2000 |
| 9.516 | 2000 | 8.793 | 2000 | 6.976 | 2000 |
| 10.902 | 2000 | 11.713 | 2000 | 9.156 | 2000 |
| 11.985 | 2000 | 12.863 | 2000 | 10.137 | 2000 |
| 13.118 | 2000 | 14.888 | 2000 | 11.080 | 2000 |
| 15.111 | 2000 | 16.351 | 2000 | 12.885 | 2000 |
| 16.611 | 2000 | 19.542 | 2000 | 14.084 | 2000 |
| 18.598 | 2000 | 22.269 | 2000 | 16.913 | 2000 |
| 20.444 | 2000 | 24.456 | 2000 | 18.486 | 2000 |
| 22.898 | 2000 | 26.814 | 3000 | 21.065 | 2000 |
| 23.973 | 3000 | 29.447 | 3000 | 23.206 | 3000 |
| 26.353 | 2000 | 32.873 | 3000 | 25.365 | 3000 |
| 29.206 | 3000 | 36.102 | 3000 | 28.013 | 2000 |
| 32.547 | 3000 | 42.772 | 2000 | 31.097 | 3000 |
| 35.778 | 3000 | 46.973 | 2000 | 35.607 | 2000 |
| 36.526 | 2000 | 48.912 | 3000 | 38.546 | 3000 |
| 40.895 | 2000 | 54.082 | 3000 | 42.760 | 2000 |
| 44.955 | 2000 | 59.393 | 3000 | 46.737 | 2000 |
| 46.568 | 3000 | 64.452 | 3000 | 53.258 | 2000 |
| 51.920 | 3000 | 71.951 | 3000 | 58.671 | 3000 |
| 57.074 | 3000 | 76.862 | 4000 | 64.127 | 3000 |
| 58.422 | 3000 | 84.940 | 4000 | 71.930 | 3000 |
| 64.221 | 3000 | 93.283 | 4000 | 78.619 | 3000 |
| 71.566 | 3000 | 97.481 | 3000 | 97.453 | 3000 |
| 74.963 | 4000 | 107.056 | 3000 | 106.517 | 3000 |
| 82.762 | 4000 | 118.370 | 3000 | 118.336 | 3000 |
| 90.978 | 4000 | 129.996 | 3000 | 129.342 | 3000 |
| 93.150 | 3000 | 153.185 | 4000 | 153.141 | 4000 |
| 102.396 | 3000 | 168.230 | 4000 | 167.383 | 4000 |
| 114.166 | 3000 | 185.911 | 4000 | 185.857 | 4000 |
| 125.498 | 3000 | 204.170 | 4000 | 203.143 | 4000 |
| 149.949 | 4000 | 235.000 | 4000 | 234.932 | 4000 |
| 164.833 | 4000 | 258.080 | 4000 | 256.781 | 4000 |
| 181.983 | 4000 | | | | |
| 200.048 | 4000 | | | | |
| 230.035 | 4000 | | | | |
| 252.869 | 4000 | | | | |

# Mechanical installation

## Important notes

- Install the product according to the information in the chapter "Standards and operating conditions".

  ▸ Standards and operating conditions 📖 48
- The technical data and the data regarding the supply conditions can be found on the nameplate and in this documentation.
- Ambient media − especially chemically aggressive ones − may damage shaft sealing rings, lacquers and plastics.
- Lenze offers special surface and corrosion protection in this case.

## Transport

**⚠CAUTION!**

Danger from tipping and falling loads!

Standing beneath suspended loads is prohibited!

Possible consequences: Minor or moderate injuries.

► To achieve a load direction that is as vertical as possible (maximum load-bearing capacity), use additional, suitable load carriers if necessary. Secure the load carrier against slipping!

► Screw in the transport aids completely. They must lie flat and over the entire surface!

► Load the transport aids vertically in the direction of the screw axis! Inclined or lateral tension reduces the load-bearing capacity! Observe the specifications in the DIN 580!

**NOTICE**

Eye bolts or lifting eyes on the motor are not suitable for transporting geared motors.

Only use these for mounting/dismounting the motor on the gearbox.

Possible consequences: Damage to the geared motor.

► Only use the threads provided on the gearbox for eye bolts or lifting eyes for transporting the geared motor.

**Preconditions**

- Ensure appropriate handling.
- Make sure that all component parts are securely mounted. Secure or remove loose component parts.
- Only use safely fixed transport aids (e.g., eye bolts or support plates).
- Do not damage any components during transport.
- Avoid electrostatic discharges on electronic components and contacts.
- Avoid impacts.
- Check the carrying capacity of the hoists and load handling devices. The weights can be found in the shipping documents.
- Secure the load against tipping and falling down.
- Standing beneath suspended loads is prohibited.

The eye bolt is not included in the scope of supply!

**Position of the eye bolt or lifting eye**

| Geared motor |  |  |  |
|---|---|---|---|
| | Eye bolt on the shaft | Eye bolt on the housing | Lifting eye on the housing |
| G50AB045Mxxxxxx | M6 | - | - |
| G50BB111Mxxxxxx | M6 | - | - |
| G50BB124Mxxxxxx | M10 | - | - |
| G50BB145Mxxxxxx | - | M10 | - |
| G50BB160Mxxxxxx | - | M12 | - |
| G50BB182Mxxxxxx | - | M16 | - |
| G50BB215Mxxxxxx | - | M16 | - |
| G50BB227Mxxxxxx | - | M16 | - |
| G50BB243Mxxxxxx | - | M20 | - |
| G50BB280Mxxxxxx | - | - | ● |
| G50BB313Mxxxxxx | - | - | ● |
| G50BB320Mxxxxxx | - | - | ● |

## Installation

**Ventilation elements**

Gearboxes that are supplied with a pre-assembled ventilation element:

- The ventilation element is identified by a sign on the gearbox.
- Remove the transport lock from the ventilation element before initial commissioning.

Gearboxes that are supplied with a loosely attached ventilation element:

- Before commissioning for the first time, install the ventilation element according to the mounting position.

**Mounting surfaces**

- The mounting surfaces must be plane, torsionally rigid and free from vibrations.
- The mounting areas must be suited to absorb the forces and torques generated during operation.
- Ensure an unhindered ventilation.
- For versions with a fan, keep a minimum distance of 10 % from the outside diameter of the fan cover in intake direction.

# Electrical installation

## Important notes

**⚠ DANGER!**

**Risk of injury and risk of burns from dangerous voltage**

Power terminals may also carry voltage in the switched-off state or when the motor is stopped and may cause life-threatening cardiac arrhythmia and serious burns.

► Disconnect the product from the mains.

► Check that the power terminals are deenergized before starting work.

- When working on energized products, comply with the applicable national accident prevention regulations.
- The electrical installation must be carried out according to the appropriate regulations (e.g. cable cross-sections, fuses, PE connection).
- The manufacturer of the system or machine is responsible for adherence to the limits required in connection with EMC legislation.

**Connection for high leakage current**

If the leakage current is greater than 3.5 mA for alternating current or greater than 10 mA for direct current, the standard EN 61800-5-1 requires that at least one or more of the following measures be met:

- The minimum PE conductor cross-section is 10 $mm^2$ with Cu or 16 $mm^2$ with Al.
- Attachment of an additional protective grounding conductor with the same cross-section as the original protective grounding conductor.
  - Do not place the additional terminal on the same terminal.
- Provide automatic disconnection of the mains in case of interruption of the protective conductor.

▸ Connection options 🕮 131

**Operation on an external inverter**

A max. pulse voltage amplitude of $U_{pk}$ = 1560 V at the motor terminals must not be exceeded. Here, the minimum pulse rise time must be $t_R$ = 0.1 µs.

If it cannot be ruled out that the permissible voltage peaks will be exceeded or that the minimum pulse rise time will not be reached, the following measures must be initiated:

- Reduction of the DC-bus voltage (threshold for brake chopper voltage)
- Use of filters, chokes
- Use of special motor cables

## Preparation

### EMC-compliant wiring

The EMC-compliant wiring is described in detail in the documentation of the Lenze inverters.

# Technical data

## Notes regarding the given data

**Catalog data**

The power values, torques and speeds specified in the configuration are rounded values and apply to:

- Operating time per day = 8 hrs (100 % ED)
- Duty class up to 10 switching operations per hour
- Ambient temperature = -30 ... +40 °C
- Site altitude ≤ 1000 m above mean sea level
- The selection tables indicate the mechanically permissible power levels and torques.
- The ratings apply to the operating mode S1 (acc. to EN 60034-1).

**NOTICE**

In case of other operating conditions, the achievable values can differ for those mentioned.

► In case of extreme operating conditions, please get in touch with your Lenze representative.

# Standards and operating conditions

## Conformities and approvals

More information and certificates of approval can be found under

g500 + MF bevel geared motors (Lenze.com)

| Europe | | | | | |
|---|---|---|---|---|---|
| **Country** | **Conformity/ approval** | **Law/standard** | **Description** | **Special feature** | **Product representation** |
| | | | | | |
| | | | | | |
| European Union | CE | 2006/42/EC | Machinery Directive | Only for safety-relevant components | CE mark |
| | | 2011/65/EU | RoHS | - | |
| | | 2014/30/EU | EMC Directive | | |
| | | 2014/35/EU | Low-Voltage Directive | | |
| Great Britain | UKCA | S.I. 2008/1597 | The Supply of Machinery (Safety) Regulations 2008 | Only for safety-relevant components | UKCA mark |
| | | S.I. 2012/3032 | The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 | - | |
| | | S.I. 2016/1091 | The Electromagnetic Compatibility Regulations 2016 | | |
| | | S.I. 2016/1101 | The Electrical Equipment (Safety) Regulations 2016 | | |

| America | | | | | |
|---|---|---|---|---|---|
| **Country** | **Conformity/ approval** | **Law/standard** | **Description** | **Special feature** | **Product representation** |
| Canada | CSA | CSA 22.1 No. 100 | CSA Standard for Motors and Generators | - | cURus mark |
| USA | UL | UL 1004-1 | UL Standard for Rotating Electrical Machines | | |

| Asia | | | | | |
|---|---|---|---|---|---|
| **Country** | **Conformity/ approval** | **Law/standard** | **Description** | **Special feature** | **Product representation** |
| China | - | GB/T 26572 | Requirements on concentration limits for certain restricted substances in electrical and electronic products | - | EFUP mark |
| | CCC | GB 12350 | Safety requirements of small power motors | | CCC mark |

## Protection of persons and device protection

| Degree of protection | | | |
|---|---|---|---|
| - | EN IEC 60529,EN IEC 60034-5 | IP54 | Information applies to the mounted and ready-for-use state |
| | | IP55 | With resolver RS1 |
| | | | With HTL incremental IG128-24V-H |
| | | | Information applies to the mounted and ready-for-use state |
| | | IP65 | With resolver RS1 |
| | | | With HTL incremental IG128-24V-H |
| | | | With brake |
| | | | Information applies to the mounted and ready-for-use state |
| | | IP66 | With resolver RS1 |
| | | | With HTL incremental IG128-24V-H |
| | | | With brake |
| | | | Information applies to the mounted and ready-for-use state |

## EMC data

| Noise emission | | |
|---|---|---|
| - | EN IEC 60034-1 | A final overall assessment of the drive system is indispensable |

| Noise immunity | | |
|---|---|---|
| - | EN IEC 60034-1 | A final overall assessment of the drive system is indispensable |

## Environmental conditions

| Climate | | | |
|---|---|---|---|
| Operation | EN 60721-3-3:1995 + A2:1997 | - | - |
| Storage | EN 60721-3-1:1997 | 1K3 (-25 ... +60 °C) | |
| Transport | EN 60721-3-2:1997 | 2K3 (-25 ... +70 °C) | |
| Operation | EN 60721-3-3:1995 + A2:1997 | 3K3 (-20 ...+40 °C) | |

| Site altitude | | |
|---|---|---|
| 0 … 1000 m amsl | - | Without current derating |
| 1000 … 4000 m amsl | | 0225 |

| Air humidity | | | |
|---|---|---|---|
| - | - | Average relative humidity 85 % | Without condensation |

## Gearbox data

The following tables contain the most important data of the gearbox for attachable motors of a geared motor.

In order to calculate the exact ratio, the number of teeth $z_g$ (driven) can be divided by the number of teeth $z_t$ (driving).

### g500-B45, 2-stage gearboxes

| Max. output torque | Ratio | Number of teeth | | Max. backlash |
|---|---|---|---|---|
| | | | | Standard |
| $M_{2, max}$ | i | $z_g$ | $z_t$ | |
| Nm | | | | ' |
| 30.2 | 5.411 | 1120 | 207 | 26 |
| 34.8 | 6.222 | 56 | 9 | 25 |
| 37.9 | 7.111 | 64 | 9 | 25 |
| 43.6 | 8.178 | 368 | 45 | 24 |
| 45.0 | 9.101 | 1720 | 189 | 25 |
| 45.0 | 10.466 | 1978 | 189 | 24 |
| 45.0 | 11.640 | 2200 | 189 | 24 |
| 45.0 | 13.386 | 2530 | 189 | 23 |
| 45.0 | 15.111 | 136 | 9 | 24 |
| 45.0 | 17.378 | 782 | 45 | 23 |
| 45.0 | 19.365 | 1220 | 63 | 23 |
| 45.0 | 22.270 | 1403 | 63 | 23 |
| 45.0 | 25.051 | 2480 | 99 | 23 |
| 45.0 | 28.808 | 2852 | 99 | 22 |
| 45.0 | 32.593 | 880 | 27 | 23 |
| 45.0 | 37.481 | 1012 | 27 | 22 |
| 45.0 | 42.222 | 380 | 9 | 23 |
| 45.0 | 48.556 | 437 | 9 | 22 |
| 45.0 | 53.889 | 485 | 9 | 23 |
| 45.0 | 61.972 | 2231 | 36 | 22 |

### g500-B110, 2-stage gearboxes

| Max. output torque | Ratio | Number of teeth | | Max. backlash |
|---|---|---|---|---|
| | | | | Standard |
| $M_{2, max}$ | i | $z_g$ | $z_t$ | |
| Nm | | | | ' |
| 60.0 | 5.185 | 140 | 27 | 21 |
| 77.0 | 7.111 | 64 | 9 | 20 |
| 84.0 | 9.101 | 1720 | 189 | 20 |
| 62.9 | 12.698 | 800 | 63 | 20 |
| 92.0 | 15.556 | 140 | 9 | 19 |
| 81.9 | 19.556 | 176 | 9 | 19 |
| 88.3 | 25.185 | 680 | 27 | 19 |
| 97.9 | 31.919 | 3160 | 99 | 18 |
| 106 | 37.400 | 187 | 5 | 18 |
| 99.6 | 40.000 | 40 | 1 | 18 |
| 110 | 48.167 | 289 | 6 | 18 |
| 68.6 | 52.698 | 3320 | 63 | 18 |
| 110 | 61.045 | 1343 | 22 | 18 |
| 110 | 76.500 | 153 | 2 | 18 |
| 110 | 100.786 | 1411 | 14 | 18 |



### g500-B110, 3-stage gearboxes

| Max. output torque | Ratio | Number of teeth | | Max. backlash |
|---|---|---|---|---|
| | | | | Standard |
| $M_{2, max}$ | i | $z_g$ | $z_t$ | |
| Nm | | | | ' |
| 108 | 114.074 | 3080 | 27 | 19 |
| 108 | 143.407 | 3872 | 27 | 19 |
| 110 | 178.095 | 3740 | 21 | 19 |
| 108 | 224.148 | 6052 | 27 | 19 |
| 108 | 284.081 | 28124 | 99 | 19 |
| 101 | 356.000 | 356 | 1 | 19 |
| 110 | 447.667 | 1343 | 3 | 18 |
| 110 | 561.000 | 561 | 1 | 18 |
| 110 | 680.850 | 13617 | 20 | 18 |
| 110 | 870.188 | 13923 | 16 | 18 |

### g500-B240, 2-stage gearboxes

| Max. output torque | Ratio | Number of teeth | | Max. backlash |
|---|---|---|---|---|
| | | | | Standard |
| $M_{2, max}$ | i | $z_g$ | $z_t$ | |
| Nm | | | | ' |
| 81.1 | 3.565 | 385 | 108 | 17 |
| 147 | 4.889 | 44 | 9 | 17 |
| 125 | 6.257 | 2365 | 378 | 17 |
| 178 | 7.817 | 469 | 60 | 12 |
| 204 | 10.720 | 268 | 25 | 12 |
| 217 | 13.719 | 2881 | 210 | 12 |
| 174 | 15.008 | 1876 | 125 | 12 |
| 207 | 19.143 | 134 | 7 | 12 |
| 240 | 23.450 | 469 | 20 | 12 |
| 240 | 30.522 | 2747 | 90 | 12 |
| 240 | 37.967 | 1139 | 30 | 12 |
| 172 | 49.133 | 737 | 15 | 12 |
| 182 | 59.630 | 5963 | 100 | 11 |
| 180 | 76.213 | 6097 | 80 | 11 |

### g500-B240, 3-stage gearboxes

| Max. output torque | Ratio | Number of teeth | | Max. backlash |
|---|---|---|---|---|
| | | | | Standard |
| $M_{2, max}$ | i | $z_g$ | $z_t$ | |
| Nm | | | | ' |
| 240 | 77.741 | 48977 | 630 | 12 |
| 240 | 99.437 | 12529 | 126 | 12 |
| 240 | 129.087 | 19363 | 150 | 12 |
| 240 | 165.426 | 69479 | 420 | 12 |
| 240 | 213.994 | 35309 | 165 | 12 |
| 240 | 278.422 | 12529 | 45 | 12 |
| 240 | 360.683 | 21641 | 60 | 12 |

### g500-B240, 4-stage gearboxes

| Max. output torque | Ratio | Number of teeth | | Max. backlash |
|---|---|---|---|---|
| | | | | Standard |
| $M_{2, max}$ | i | $z_g$ | $z_t$ | |
| Nm | | | | ' |
| 240 | 445.476 | 100232 | 225 | 13 |
| 240 | 570.103 | 538747 | 945 | 13 |
| 240 | 729.201 | 137819 | 189 | 13 |
| 240 | 946.636 | 212993 | 225 | 13 |
| 240 | 1213.125 | 764269 | 630 | 13 |
| 240 | 1569.289 | 70618 | 45 | 13 |
| 240 | 2041.763 | 275638 | 135 | 12 |
| 240 | 2477.958 | 1115081 | 450 | 12 |
| 240 | 3167.053 | 1140139 | 360 | 12 |

### g500-B450, 3-stage gearboxes

| Max. output torque | Ratio | Number of teeth | | Max. backlash |
|---|---|---|---|---|
| | | | | Standard |
| $M_{2, max}$ | i | $z_g$ | $z_t$ | |
| Nm | | | | ' |
| 114 | 5.002 | 2401 | 480 | 21 |
| 278 | 6.860 | 343 | 50 | 21 |
| 235 | 10.328 | 2107 | 204 | 14 |
| 422 | 14.165 | 1204 | 85 | 14 |
| 229 | 19.831 | 8428 | 425 | 13 |
| 273 | 25.294 | 430 | 17 | 13 |
| 450 | 30.985 | 2107 | 68 | 13 |
| 359 | 40.330 | 12341 | 306 | 13 |
| 379 | 50.167 | 301 | 6 | 13 |
| 450 | 62.262 | 13760 | 221 | 12 |
| 450 | 76.271 | 16856 | 221 | 12 |
| 450 | 99.274 | 197456 | 1989 | 12 |
| 450 | 123.487 | 4816 | 39 | 12 |
| 450 | 159.807 | 105952 | 663 | 12 |
| 450 | 193.948 | 214312 | 1105 | 12 |
| 450 | 247.882 | 4214 | 17 | 12 |

### g500-B450, 4-stage gearboxes

| Max. output torque | Ratio | Number of teeth | | Max. backlash |
|---|---|---|---|---|
| | | | | Standard |
| $M_{2, max}$ | i | $z_g$ | $z_t$ | |
| Nm | | | | ' |
| 450 | 255.691 | 847616 | 3315 | 12 |
| 450 | 357.968 | 5933312 | 16575 | 12 |
| 450 | 456.591 | 302720 | 663 | 12 |
| 450 | 559.324 | 370832 | 663 | 12 |
| 450 | 728.009 | 4344032 | 5967 | 12 |
| 450 | 905.573 | 105952 | 117 | 12 |
| 450 | 1171.918 | 2330944 | 1989 | 12 |
| 450 | 1422.282 | 4714864 | 3315 | 12 |
| 450 | 1726.133 | 9536884 | 5525 | 12 |
| 450 | 2206.153 | 187523 | 85 | 12 |
| 450 | 2819.662 | 191737 | 68 | 12 |



### g500-B600, 3-stage gearboxes

| Max. output torque | Ratio | Number of teeth | | Max. backlash |
|---|---|---|---|---|
| | | | | Standard |
| $M_{2, max}$ | i | $z_g$ | $z_t$ | |
| Nm | | | | ' |
| 376 | 5.067 | 6293 | 1242 | 20 |
| 398 | 6.949 | 7192 | 1035 | 19 |
| 542 | 10.741 | 290 | 27 | 14 |
| 600 | 14.730 | 928 | 63 | 14 |
| 600 | 18.851 | 24940 | 1323 | 14 |
| 600 | 20.622 | 928 | 45 | 14 |
| 600 | 26.061 | 860 | 33 | 12 |
| 600 | 35.740 | 2752 | 77 | 12 |
| 600 | 41.940 | 23780 | 567 | 13 |
| 600 | 45.739 | 73960 | 1617 | 12 |
| 600 | 50.036 | 2752 | 55 | 12 |
| 600 | 63.822 | 34400 | 539 | 12 |
| 510 | 67.513 | 12760 | 189 | 13 |
| 600 | 78.182 | 860 | 11 | 12 |
| 541 | 81.937 | 5162 | 63 | 13 |
| 600 | 101.760 | 70520 | 693 | 12 |
| 600 | 126.580 | 29240 | 231 | 12 |
| 600 | 163.810 | 3440 | 21 | 12 |
| 600 | 198.805 | 15308 | 77 | 12 |
| 600 | 251.299 | 19350 | 77 | 12 |

### g500-B600, 4-stage gearboxes

| Max. output torque | Ratio | Number of teeth | | Max. backlash |
|---|---|---|---|---|
| | | | | Standard |
| $M_{2, max}$ | i | $z_g$ | $z_t$ | |
| Nm | | | | ' |
| 600 | 227.943 | 112832 | 495 | 12 |
| 600 | 283.539 | 46784 | 165 | 12 |
| 600 | 366.933 | 5504 | 15 | 12 |
| 600 | 468.027 | 68800 | 147 | 12 |
| 600 | 573.333 | 1720 | 3 | 12 |
| 600 | 695.818 | 7654 | 11 | 12 |
| 600 | 746.243 | 141040 | 189 | 12 |
| 600 | 928.254 | 58480 | 63 | 12 |
| 600 | 1126.563 | 260236 | 231 | 12 |
| 600 | 1457.905 | 30616 | 21 | 12 |
| 600 | 1769.366 | 681206 | 385 | 12 |
| 600 | 2261.409 | 49751 | 22 | 12 |
| 600 | 2858.523 | 125775 | 44 | 12 |

### g500-B820, 3-stage gearboxes

| Max. output torque | Ratio | Number of teeth | | Max. backlash |
|---|---|---|---|---|
| | | | | Standard |
| $M_{2, max}$ | i | $z_g$ | $z_t$ | |
| Nm | | | | ' |
| 312 | 4.958 | 119 | 24 | 21 |
| 391 | 6.800 | 34 | 5 | 20 |
| 459 | 8.517 | 511 | 60 | 15 |
| 385 | 9.520 | 238 | 25 | 19 |
| 569 | 11.680 | 292 | 25 | 15 |
| 242 | 12.143 | 85 | 7 | 19 |
| 662 | 16.352 | 2044 | 125 | 15 |
| 416 | 20.857 | 146 | 7 | 15 |
| 820 | 25.550 | 511 | 20 | 14 |
| 820 | 26.324 | 8687 | 330 | 12 |
| 820 | 36.102 | 9928 | 275 | 14 |
| 820 | 50.543 | 69496 | 1375 | 12 |
| 820 | 64.468 | 4964 | 77 | 12 |
| 820 | 78.973 | 8687 | 110 | 12 |
| 820 | 102.790 | 50881 | 495 | 12 |
| 820 | 127.861 | 21097 | 165 | 12 |
| 820 | 165.467 | 2482 | 15 | 12 |
| 820 | 200.816 | 110449 | 550 | 12 |
| 820 | 253.841 | 11169 | 44 | 11 |

### g500-B820, 4-stage gearboxes

| Max. output torque | Ratio | Number of teeth | | Max. backlash |
|---|---|---|---|---|
| | | | | Standard |
| $M_{2, max}$ | i | $z_g$ | $z_t$ | |
| Nm | | | | ' |
| 820 | 225.636 | 2482 | 11 | 12 |
| 820 | 286.408 | 1181432 | 4125 | 12 |
| 820 | 359.765 | 356167 | 990 | 12 |
| 820 | 468.265 | 2086121 | 4455 | 12 |
| 820 | 579.133 | 8687 | 15 | 12 |
| 820 | 753.793 | 101762 | 135 | 12 |
| 820 | 937.644 | 42194 | 45 | 12 |
| 820 | 1213.422 | 54604 | 45 | 12 |
| 820 | 1472.653 | 110449 | 75 | 12 |
| 820 | 1787.266 | 9829961 | 5500 | 12 |
| 820 | 2284.286 | 10050859 | 4400 | 12 |
| 820 | 2887.440 | 1016379 | 352 | 12 |



### g500-B1500, 3-stage gearboxes

| Max. output torque | Ratio | Number of teeth | | Max. backlash |
|---|---|---|---|---|
| | | | | Standard |
| $M_{2, max}$ | i | $z_g$ | $z_t$ | |
| Nm | | | | ' |
| 837 | 6.866 | 1792 | 261 | 15 |
| 1006 | 9.516 | 1456 | 153 | 15 |
| 1461 | 11.985 | 3128 | 261 | 11 |
| 1054 | 13.118 | 50176 | 3825 | 14 |
| 1500 | 16.611 | 299 | 18 | 11 |
| 1500 | 20.444 | 184 | 9 | 11 |
| 1500 | 22.898 | 5152 | 225 | 11 |
| 1500 | 26.353 | 16813 | 638 | 10 |
| 1167 | 29.206 | 1840 | 63 | 11 |
| 1500 | 35.778 | 322 | 9 | 11 |
| 1500 | 36.526 | 12857 | 352 | 10 |
| 1500 | 44.955 | 989 | 22 | 10 |
| 1500 | 46.568 | 3772 | 81 | 11 |
| 1500 | 57.074 | 1541 | 27 | 11 |
| 1500 | 64.221 | 4945 | 77 | 10 |
| 1050 | 74.963 | 2024 | 27 | 11 |
| 1117 | 90.978 | 4094 | 45 | 10 |
| 1500 | 102.396 | 40549 | 396 | 10 |
| 1500 | 125.498 | 66263 | 528 | 10 |
| 1500 | 164.833 | 989 | 6 | 10 |
| 1500 | 200.048 | 88021 | 440 | 10 |
| 1500 | 252.869 | 44505 | 176 | 10 |

### g500-B1500, 4-stage gearboxes

| Max. output torque | Ratio | Number of teeth | | Max. backlash |
|---|---|---|---|---|
| | | | | Standard |
| $M_{2, max}$ | i | $z_g$ | $z_t$ | |
| Nm | | | | ' |
| 1500 | 224.773 | 4945 | 22 | 10 |
| 1500 | 275.347 | 48461 | 176 | 10 |
| 1500 | 358.388 | 283843 | 792 | 10 |
| 1500 | 445.799 | 117691 | 264 | 10 |
| 1500 | 571.714 | 2716783 | 4752 | 10 |
| 1500 | 711.156 | 1126471 | 1584 | 10 |
| 1500 | 911.329 | 3608861 | 3960 | 10 |
| 1500 | 1116.933 | 5897407 | 5280 | 10 |
| 1500 | 1208.778 | 10879 | 9 | 10 |
| 1500 | 1467.017 | 88021 | 60 | 10 |
| 1500 | 1780.425 | 7833869 | 4400 | 10 |
| 1500 | 2275.543 | 8009911 | 3520 | 10 |
| 1500 | 2876.388 | 4049955 | 1408 | 10 |

### g500-B2700, 3-stage gearboxes

| Max. output torque | Ratio | Number of teeth | | Max. backlash |
|---|---|---|---|---|
| | | | | Standard |
| $M_{2, max}$ | i | $z_g$ | $z_t$ | |
| Nm | | | | ' |
| 1446 | 6.918 | 28917 | 4180 | 14 |
| 1528 | 8.793 | 41769 | 4750 | 14 |
| 2212 | 11.713 | 2448 | 209 | 10 |
| 2262 | 12.863 | 18819 | 1463 | 9 |
| 2380 | 14.888 | 7072 | 475 | 10 |
| 2429 | 16.351 | 54366 | 3325 | 9 |
| 2373 | 19.542 | 23392 | 1197 | 9 |
| 2684 | 22.269 | 3808 | 171 | 9 |
| 2700 | 24.456 | 1394 | 57 | 9 |
| 2111 | 26.814 | 32096 | 1197 | 9 |
| 2319 | 29.447 | 82246 | 2793 | 9 |
| 2700 | 32.873 | 16864 | 513 | 9 |
| 2700 | 36.102 | 43214 | 1197 | 9 |
| 2700 | 42.772 | 8084 | 189 | 9 |
| 2700 | 46.973 | 82861 | 1764 | 8 |
| 2700 | 48.912 | 2788 | 57 | 9 |
| 2700 | 54.082 | 9248 | 171 | 9 |
| 2700 | 59.393 | 23698 | 399 | 9 |
| 2700 | 64.452 | 113693 | 1764 | 8 |
| 2700 | 71.951 | 5828 | 81 | 8 |
| 2128 | 76.862 | 30668 | 399 | 9 |
| 2061 | 84.940 | 24208 | 285 | 9 |
| 2263 | 93.283 | 62033 | 665 | 9 |
| 2700 | 97.481 | 2632 | 27 | 8 |
| 2700 | 107.056 | 1927 | 18 | 8 |
| 2700 | 118.370 | 3196 | 27 | 8 |
| 2700 | 129.996 | 32759 | 252 | 8 |
| 2700 | 153.185 | 4136 | 27 | 8 |
| 2700 | 168.230 | 21197 | 126 | 8 |
| 2700 | 185.911 | 8366 | 45 | 8 |
| 2700 | 204.170 | 171503 | 840 | 8 |
| 2700 | 235.000 | 235 | 1 | 8 |
| 2700 | 258.080 | 28905 | 112 | 8 |

### g500-B2700, 4-stage gearboxes

| Max. output torque | Ratio | Number of teeth | | Max. backlash |
|---|---|---|---|---|
| | | | | Standard |
| $M_{2, max}$ | i | $z_g$ | $z_t$ | |
| Nm | | | | ' |
| 2700 | 225.581 | 113693 | 504 | 8 |
| 2700 | 291.191 | 65518 | 225 | 8 |
| 2700 | 365.227 | 1932781 | 5292 | 8 |
| 2700 | 454.986 | 32759 | 72 | 8 |
| 2700 | 487.698 | 79007 | 162 | 8 |
| 2700 | 606.648 | 32759 | 54 | 8 |
| 2700 | 785.074 | 21197 | 27 | 8 |
| 2700 | 953.304 | 360349 | 378 | 8 |
| 2700 | 1233.688 | 233167 | 189 | 8 |
| 2700 | 1817.115 | 15263767 | 8400 | 8 |
| 2700 | 2322.436 | 2229539 | 960 | 8 |
| 2700 | 2935.664 | 375765 | 128 | 8 |



### g500-B4300, 3-stage gearboxes

| Max. output torque | Ratio | Number of teeth | | Max. backlash |
|---|---|---|---|---|
| | | | | Standard |
| $M_{2, max}$ | i | $z_g$ | $z_t$ | |
| Nm | | | | ' |
| 1409 | 5.488 | 1147 | 209 | 14 |
| 1653 | 6.976 | 29822 | 4275 | 13 |
| 1112 | 9.156 | 98642 | 10773 | 13 |
| 2845 | 11.080 | 23157 | 2090 | 9 |
| 3338 | 14.084 | 33449 | 2375 | 8 |
| 2245 | 18.486 | 110639 | 5985 | 8 |
| 2570 | 21.065 | 18011 | 855 | 8 |
| 1997 | 25.365 | 151807 | 5985 | 8 |
| 4300 | 28.013 | 2241 | 80 | 8 |
| 3174 | 31.097 | 79763 | 2565 | 8 |
| 4300 | 35.607 | 35607 | 1000 | 8 |
| 4300 | 46.737 | 39259 | 840 | 8 |
| 4300 | 53.258 | 6391 | 120 | 8 |
| 4300 | 64.127 | 53867 | 840 | 8 |
| 4300 | 78.619 | 28303 | 360 | 8 |
| 4300 | 106.517 | 6391 | 60 | 7 |
| 4300 | 129.342 | 15521 | 120 | 7 |
| 4300 | 167.383 | 10043 | 60 | 7 |
| 4300 | 203.143 | 81257 | 400 | 7 |
| 4300 | 256.781 | 8217 | 32 | 7 |

### g500-B4300, 4-stage gearboxes

| Max. output torque | Ratio | Number of teeth | | Max. backlash |
|---|---|---|---|---|
| | | | | Standard |
| $M_{2, max}$ | i | $z_g$ | $z_t$ | |
| Nm | | | | ' |
| 3665 | 224.446 | 53867 | 240 | 8 |
| 3234 | 304.333 | 913 | 3 | 8 |
| 3927 | 369.548 | 15521 | 42 | 8 |
| 4300 | 452.696 | 108647 | 240 | 8 |
| 4245 | 485.243 | 262031 | 540 | 8 |
| 4300 | 603.594 | 108647 | 180 | 8 |
| 4300 | 762.524 | 411763 | 540 | 8 |
| 4300 | 948.506 | 170731 | 180 | 8 |
| 4229 | 1227.478 | 110473 | 90 | 8 |
| 4300 | 1807.968 | 7231873 | 4000 | 8 |
| 4300 | 2310.746 | 7394387 | 3200 | 8 |
| 4300 | 2920.887 | 747747 | 256 | 8 |

# Radial forces and axial forces

**Permissible radial force**

The calculation of the permissible radial force must take account of the additional load factor $f_w$.

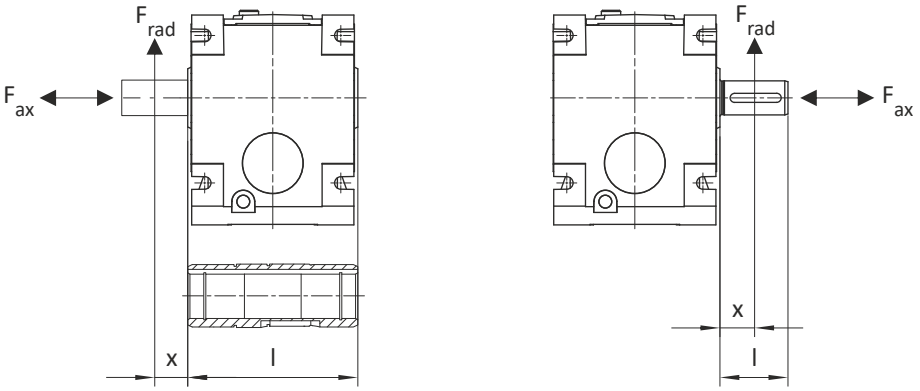
$F_{rad, perm} = f_w \times F_{rad,max}$

**Permissible axial force**

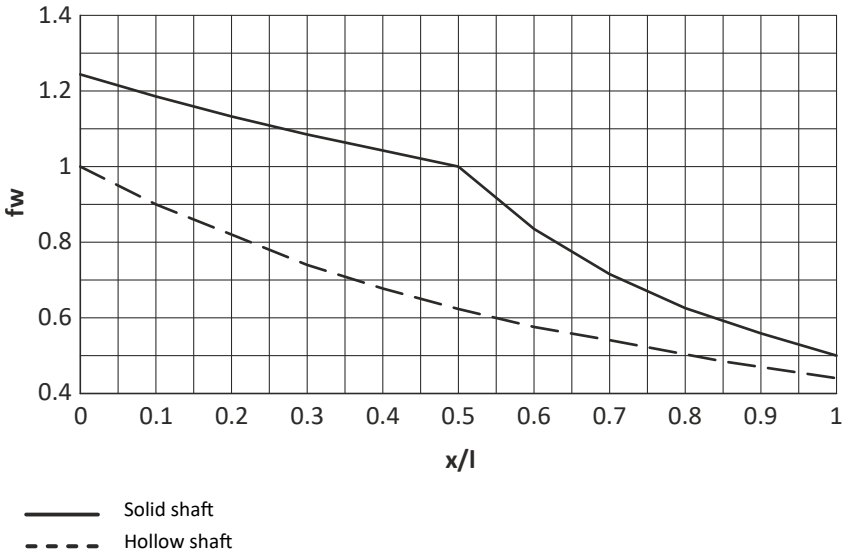
If there is no radial force, the maximum axial force is 50% of the value in the table $F_{rad,max}$

$F_{ax, zul} = 0.5 \times F_{rad,max}$.

**Application of forces**




**Additional load factor $f_w$ on the drive shaft**



The values given in the tables refer to the centre shaft end force application point and are minimum values calculated according to the most unfavourable conditions (force application angle, mounting position, direction of rotation). The values were calculated with a load capacity of c= 1.3 and an input speed of 1400 rpm.

In case of different operating conditions, considerably higher forces can be transmitted. Please get in touch with your Lenze representative

A hollow shaft with shrink disc (SAR/SBR/SCR/SDR/SAK/SCK) requires a check by Lenze.

### Max. radial force, gearbox with hollow shaft (H□□)

| Getriebe | Output speed $n_2$ [rpm] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1000 | 630 | 400 | 250 | 160 | 100 | 63 | 40 | 25 | 16 |
| | Max. radial force $F_{rad,max}$ [rated] | | | | | | | | | |
| g500-B45 | 900 | 1200 | 2200 | 2500 | 2800 | 3000 | 3000 | 3000 | 3000 | 3000 |
| g500-B110 | 1000 | 2200 | 2600 | 3000 | 3300 | 3600 | 3600 | 3600 | 3600 | 3600 |
| g500-B240 | 1500 | 2300 | 3800 | 4500 | 5100 | 6200 | 7400 | 7800 | 7800 | 7800 |
| g500-B450 | 3000 | 3800 | 4500 | 5200 | 5200 | 5500 | 7000 | 9000 | 9000 | 9000 |
| g500-B600 | 3500 | 4000 | 4700 | 5400 | 5600 | 6000 | 8000 | 9400 | 9500 | 9500 |
| g500-B820 | 4000 | 4200 | 5400 | 5800 | 6000 | 7000 | 9000 | 9800 | 10200 | 10200 |
| g500-B1500 | 3700 | 5000 | 6000 | 7000 | 8000 | 9000 | 10500 | 13000 | 16000 | 16000 |
| g500-B2700 | 4400 | 5700 | 7000 | 8200 | 9400 | 10600 | 12200 | 15000 | 18000 | 21900 |
| g500-B4300 | 5000 | 6600 | 8000 | 9000 | 10500 | 12000 | 15500 | 21000 | 27900 | 35100 |

### Max. radial force, gearbox with solid shaft, without flange (V□R)

| Getriebe | Output speed $n_2$ [rpm] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1000 | 630 | 400 | 250 | 160 | 100 | 63 | 40 | 25 | 16 |
| | Max. radial force $F_{rad,max}$ [rated] | | | | | | | | | |
| g500-B45 | 900 | 1200 | 1800 | 2100 | 2400 | 2800 | 3000 | 3000 | 3000 | 3000 |
| g500-B110 | 1000 | 1800 | 2100 | 2500 | 2700 | 3000 | 3000 | 3000 | 3000 | 3000 |
| g500-B240 | 1500 | 2400 | 3000 | 3600 | 4500 | 5000 | 6000 | 6500 | 6500 | 6500 |
| g500-B450 | 2000 | 2800 | 3600 | 3900 | 4300 | 5000 | 6000 | 7600 | 7800 | 7800 |
| g500-B600 | 2500 | 3200 | 4000 | 4700 | 5400 | 6700 | 8300 | 9000 | 9000 | 9000 |
| g500-B820 | 5200 | 6000 | 8200 | 9800 | 11000 | 11000 | 11000 | 11000 | 11000 | 11000 |
| g500-B1500 | 6300 | 8200 | 10000 | 11500 | 13000 | 16000 | 16000 | 16000 | 16000 | 16000 |
| g500-B2700 | 6600 | 8500 | 10400 | 12000 | 14000 | 16500 | 20100 | 22700 | 25500 | 27500 |
| g500-B4300 | 7300 | 9500 | 11600 | 13300 | 14900 | 17300 | 20800 | 25700 | 32200 | 40000 |

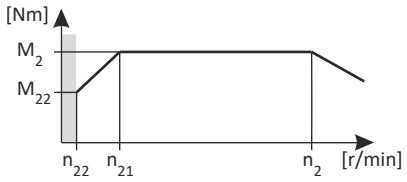
### Max. radial force, gearbox with solid shaft and flange (V□K)

| Getriebe | Output speed $n_2$ [rpm] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1000 | 630 | 400 | 250 | 160 | 100 | 63 | 40 | 25 | 16 |
| | Max. radial force $F_{rad,max}$ [rated] | | | | | | | | | |
| g500-B45 | 900 | 1200 | 1800 | 2100 | 2400 | 2800 | 3000 | 3000 | 3000 | 3000 |
| g500-B110 | 1000 | 1800 | 2100 | 2500 | 2700 | 3000 | 3000 | 3000 | 3000 | 3000 |
| g500-B240 | 2400 | 3600 | 5200 | 6000 | 6500 | 6500 | 6500 | 6500 | 6500 | 6500 |
| g500-B450 | 3000 | 4000 | 4700 | 5100 | 5600 | 6400 | 7700 | 7800 | 7800 | 7800 |
| g500-B600 | 3400 | 4100 | 5000 | 5300 | 6000 | 7300 | 9000 | 9000 | 9000 | 9000 |
| g500-B820 | 6000 | 7000 | 8900 | 10200 | 11000 | 11000 | 11000 | 11000 | 11000 | 11000 |
| g500-B1500 | 7000 | 9000 | 11000 | 12000 | 13000 | 15000 | 16000 | 16000 | 16000 | 16000 |
| g500-B2700 | 8400 | 10900 | 13300 | 14400 | 15800 | 17700 | 20100 | 22700 | 25500 | 27500 |
| g500-B4300 | 9200 | 11700 | 14300 | 15800 | 17800 | 20800 | 24800 | 29500 | 35100 | 40000 |

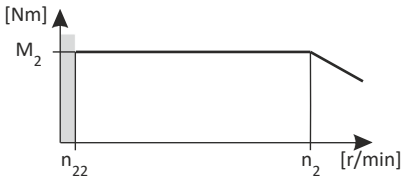
# Selection tables

### Torque characteristic during inverter operation

| Self-ventilated geared motors | Forced ventilated geared motors |
|---|---|




20 Hz to 120 Hz: Operation at constant torque.
Below 20 Hz ($n_{21}$): Derating without blower.
Below 5 Hz ($n_{22}$): Verification of the application by Lenze required.




5 Hz to 120 Hz: Operation at constant torque.
Below 5 Hz ($n_{22}$): Verification of the application by Lenze required.

### Notes on the selection tables

The selection tables represent the available combinations of gearbox, number of stages, ratio and motor for the mounting position M1. They only serve as a rough overview.

The following legend shows the layout of the selection tables:

| Example | Explanation |
|---|---|
| 120 Hz: $P_{rated}$ = 0.55 kW | Rated motor power at a rated frequency of 120 Hz |

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M^{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 28.0 | 5.7 | 116 | 7.5 | 663 | 7.5 | 4.8 | 4.493 | 5.185 | g500-B110 | MFXMAXX 063-32 | 2 | 9.1 |
| 26.8 | 6.0 | 111 | 7.9 | 636 | 7.9 | 3.8 | 4.007 | 5.411 | g500-B45 | MFXMAXX 063-32 | 2 | 7.5 |
| 23.3 | 6.9 | 96.4 | 9.0 | 553 | 9.0 | 3.4 | 3.976 | 6.222 | g500-B45 | MFXMAXX 063-32 | 2 | 7.5 |
| 20.4 | 7.8 | 84.4 | 10.0 | 484 | 10.0 | 3.2 | 3.896 | 7.111 | g500-B45 | MFXMAXX 063-32 | 2 | 7.5 |

Basic weight

Number of gear stages

Motor product name

Gearbox product name

Ratio

Moment of inertia without brake

Data at 120 Hz
$n_2$ = output speed - $M_2$ = output torque
c = the load capacity of the gearbox is the ratio of the permissible rated torque of the gearbox to the rated torque of the motor (converted to the output shaft). **c** must always be greater than the application factor determined for the application **k**

$$c = \frac{M_{2,zul}}{M_{1,N} \times i \times \eta_{Getr}} > k$$

Data at 20 Hz
$n_{21}$ = output speed - $M_2$ = output torque

Data at 5 Hz
$n_{22}$ = output speed - $M_{22}$ = Output torque (forced ventilated motors can deliver the torque $M_2$ over the entire adjustment range)

**120 Hz: 0.55 kW**

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 28.0 | 5.7 | 116 | 7.5 | 663 | 7.5 | 4.8 | 4.493 | 5.185 | g500-B110 | MFXMA 063-32 | 2 | 9.1 |
| 26.8 | 6.0 | 111 | 7.9 | 636 | 7.9 | 3.8 | 4.007 | 5.411 | g500-B45 | MFXMA 063-32 | 2 | 7.5 |
| 23.3 | 6.9 | 96.4 | 9.0 | 553 | 9.0 | 3.4 | 3.976 | 6.222 | g500-B45 | MFXMA 063-32 | 2 | 7.5 |
| 20.4 | 7.8 | 84.4 | 10.0 | 484 | 10.0 | 3.2 | 3.896 | 7.111 | g500-B45 | MFXMA 063-32 | 2 | 7.5 |
| 20.4 | 7.8 | 84.4 | 10.0 | 484 | 10.0 | 4.8 | 4.178 | 7.111 | g500-B110 | MFXMA 063-32 | 2 | 9.1 |
| 17.7 | 9.0 | 73.4 | 12.0 | 421 | 12.0 | 2.8 | 3.878 | 8.178 | g500-B45 | MFXMA 063-32 | 2 | 7.5 |
| 15.9 | 10.0 | 65.9 | 13.0 | 378 | 13.0 | 2.6 | 3.834 | 9.101 | g500-B45 | MFXMA 063-32 | 2 | 7.5 |
| 15.9 | 10.0 | 65.9 | 13.0 | 378 | 13.0 | 4.5 | 4.023 | 9.101 | g500-B110 | MFXMA 063-32 | 2 | 9.1 |
| 13.9 | 11.5 | 57.3 | 15.0 | 329 | 15.0 | 2.2 | 3.823 | 10.466 | g500-B45 | MFXMA 063-32 | 2 | 7.5 |
| 12.5 | 12.8 | 51.5 | 17.0 | 296 | 17.0 | 2.0 | 3.786 | 11.640 | g500-B45 | MFXMA 063-32 | 2 | 7.5 |
| 11.4 | 14.0 | 47.3 | 18.0 | 271 | 18.0 | 3.7 | 3.893 | 12.698 | g500-B110 | MFXMA 063-32 | 2 | 9.1 |
| 10.8 | 14.8 | 44.8 | 19.0 | 257 | 19.0 | 1.8 | 3.779 | 13.386 | g500-B45 | MFXMA 063-32 | 2 | 7.5 |
| 9.7 | 16.5 | 40.0 | 22.0 | 229 | 22.0 | 4.8 | 4.286 | 15.008 | g500-B240 | MFXMA 063-32 | 2 | 13 |
| 9.6 | 16.7 | 39.7 | 22.0 | 228 | 22.0 | 1.6 | 3.759 | 15.111 | g500-B45 | MFXMA 063-32 | 2 | 7.5 |
| 9.3 | 17.1 | 38.6 | 23.0 | 221 | 23.0 | 3.1 | 3.843 | 15.556 | g500-B110 | MFXMA 063-32 | 2 | 9.1 |
| 8.3 | 19.2 | 34.5 | 25.0 | 198 | 25.0 | 1.4 | 3.755 | 17.378 | g500-B45 | MFXMA 063-32 | 2 | 7.5 |
| 7.6 | 21.1 | 31.3 | 28.0 | 180 | 28.0 | 4.5 | 4.120 | 19.143 | g500-B240 | MFXMA 063-32 | 2 | 13 |
| 7.5 | 21.3 | 31.0 | 28.0 | 178 | 28.0 | 1.2 | 3.738 | 19.365 | g500-B45 | MFXMA 063-32 | 2 | 7.5 |
| 7.4 | 21.6 | 30.7 | 28.0 | 176 | 28.0 | 2.7 | 3.795 | 19.556 | g500-B110 | MFXMA 063-32 | 2 | 9.1 |
| 7.3 | 21.9 | 30.3 | 29.0 | 174 | 29.0 | 4.8 | 4.706 | 19.831 | g500-B450 | MFXMA 063-32 | 3 | 17 |
| 6.5 | 24.5 | 26.9 | 32.0 | 155 | 32.0 | 1.1 | 3.754 | 22.270 | g500-B45 | MFXMA 063-32 | 2 | 7.5 |
| 5.8 | 27.6 | 24.0 | 36.0 | 137 | 36.0 | 1.1 | 3.725 | 25.051 | g500-B45 | MFXMA 063-32 | 2 | 7.5 |
| 5.8 | 27.8 | 23.8 | 37.0 | 137 | 37.0 | 2.2 | 3.763 | 25.185 | g500-B110 | MFXMA 063-32 | 2 | 9.1 |
| 5.7 | 27.9 | 23.7 | 37.0 | 136 | 37.0 | 4.5 | 4.378 | 25.294 | g500-B450 | MFXMA 063-32 | 3 | 17 |
| 5.0 | 31.7 | 20.8 | 42.0 | 119 | 42.0 | 0.9 | 3.723 | 28.808 | g500-B45 | MFXMA 063-32 | 2 | 7.5 |
| 4.8 | 33.6 | 19.7 | 44.0 | 113 | 44.0 | 3.7 | 3.900 | 30.522 | g500-B240 | MFXMA 063-32 | 2 | 13 |
| 4.5 | 35.2 | 18.8 | 46.0 | 108 | 46.0 | 1.8 | 3.741 | 31.919 | g500-B110 | MFXMA 063-32 | 2 | 9.1 |
| 4.4 | 35.9 | 18.4 | 47.0 | 106 | 47.0 | 0.8 | 3.716 | 32.593 | g500-B45 | MFXMA 063-32 | 2 | 7.5 |
| 3.9 | 41.2 | 16.0 | 54.0 | 92.0 | 54.0 | 1.5 | 3.772 | 37.400 | g500-B110 | MFXMA 063-32 | 2 | 9.1 |
| 3.8 | 41.8 | 15.8 | 55.0 | 90.6 | 55.0 | 3.2 | 3.846 | 37.967 | g500-B240 | MFXMA 063-32 | 2 | 13 |
| 3.6 | 44.1 | 15.0 | 58.0 | 86.0 | 58.0 | 1.2 | 3.728 | 40.000 | g500-B110 | MFXMA 063-32 | 2 | 9.1 |
| 3.6 | 44.4 | 14.9 | 59.0 | 85.3 | 59.0 | 4.2 | 4.002 | 40.330 | g500-B450 | MFXMA 063-32 | 3 | 17 |
| 3.0 | 53.1 | 12.5 | 70.0 | 71.4 | 70.0 | 1.4 | 3.750 | 48.167 | g500-B110 | MFXMA 063-32 | 2 | 9.1 |
| 3.0 | 54.1 | 12.2 | 71.0 | 70.0 | 71.0 | 2.9 | 3.792 | 49.133 | g500-B240 | MFXMA 063-32 | 2 | 13 |
| 2.9 | 55.3 | 12.0 | 73.0 | 68.6 | 73.0 | 3.6 | 3.911 | 50.167 | g500-B450 | MFXMA 063-32 | 3 | 17 |
| 2.4 | 65.7 | 10.1 | 87.0 | 57.7 | 87.0 | 2.4 | 3.767 | 59.630 | g500-B240 | MFXMA 063-32 | 2 | 13 |
| 2.4 | 67.3 | 9.8 | 89.0 | 56.4 | 89.0 | 1.2 | 3.733 | 61.045 | g500-B110 | MFXMA 063-32 | 2 | 9.1 |
| 2.3 | 68.6 | 9.6 | 90.0 | 55.3 | 90.0 | 4.3 | 4.171 | 62.262 | g500-B450 | MFXMA 063-32 | 3 | 17 |
| 2.1 | 74.4 | 8.9 | 98.0 | 51.0 | 98.0 | 3.6 | 3.981 | 67.513 | g500-B600 | MFXMA 063-32 | 3 | 35 |
| 1.9 | 83.5 | 7.7 | 110 | 44.2 | 110 | 1.9 | 3.791 | 77.741 | g500-B240 | MFXMA 063-32 | 3 | 14 |
| 1.9 | 84.0 | 7.9 | 111 | 45.1 | 111 | 1.5 | 3.743 | 76.213 | g500-B240 | MFXMA 063-32 | 2 | 13 |
| 1.9 | 84.3 | 7.8 | 111 | 45.0 | 111 | 1.0 | 3.723 | 76.500 | g500-B110 | MFXMA 063-32 | 2 | 9.1 |
| 1.8 | 90.3 | 7.3 | 119 | 42.0 | 119 | 3.1 | 3.905 | 81.937 | g500-B600 | MFXMA 063-32 | 3 | 35 |
| 1.5 | 107 | 6.0 | 141 | 34.6 | 141 | 1.5 | 3.761 | 99.437 | g500-B240 | MFXMA 063-32 | 3 | 14 |
| 1.5 | 109 | 6.0 | 144 | 34.7 | 144 | 2.7 | 3.920 | 99.274 | g500-B450 | MFXMA 063-32 | 3 | 17 |
| 1.2 | 136 | 4.9 | 179 | 27.9 | 179 | 2.4 | 3.859 | 123.487 | g500-B450 | MFXMA 063-32 | 3 | 17 |
| 1.1 | 139 | 4.6 | 183 | 26.6 | 183 | 1.3 | 3.743 | 129.087 | g500-B240 | MFXMA 063-32 | 3 | 14 |
| 0.9 | 176 | 3.8 | 232 | 21.5 | 232 | 1.9 | 3.799 | 159.807 | g500-B450 | MFXMA 063-32 | 3 | 17 |
| 0.9 | 178 | 3.6 | 234 | 20.8 | 234 | 1.0 | 3.730 | 165.426 | g500-B240 | MFXMA 063-32 | 3 | 14 |
| 0.9 | 181 | 3.7 | 238 | 21.0 | 238 | 2.4 | 3.924 | 163.810 | g500-B600 | MFXMA 063-32 | 3 | 35 |
| 0.9 | 182 | 3.6 | 240 | 20.8 | 240 | 3.3 | 3.929 | 165.467 | g500-B820 | MFXMA 063-32 | 3 | 40 |

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 0.7 | 214 | 3.1 | 282 | 17.7 | 282 | 1.5 | 3.772 | 193.948 | g500-B450 | MFXMA 063-32 | 3 | 17 |
| 0.7 | 219 | 3.0 | 289 | 17.3 | 289 | 2.0 | 3.866 | 198.805 | g500-B600 | MFXMA 063-32 | 3 | 35 |
| 0.7 | 221 | 3.0 | 292 | 17.1 | 292 | 2.7 | 3.869 | 200.816 | g500-B820 | MFXMA 063-32 | 3 | 40 |
| 0.6 | 244 | 2.7 | 322 | 15.2 | 322 | 2.4 | 4.187 | 225.636 | g500-B820 | MFXMA 063-32 | 4 | 43 |
| 0.6 | 247 | 2.6 | 326 | 15.1 | 326 | 1.8 | 3.950 | 227.943 | g500-B600 | MFXMA 063-32 | 4 | 38 |
| 0.6 | 273 | 2.4 | 360 | 13.9 | 360 | 1.2 | 3.746 | 247.882 | g500-B450 | MFXMA 063-32 | 3 | 17 |
| 0.6 | 277 | 2.4 | 365 | 13.7 | 365 | 1.6 | 3.808 | 251.299 | g500-B600 | MFXMA 063-32 | 3 | 35 |
| 0.6 | 277 | 2.3 | 365 | 13.5 | 365 | 1.2 | 3.810 | 255.691 | g500-B450 | MFXMA 063-32 | 4 | 20 |
| 0.6 | 280 | 2.4 | 369 | 13.6 | 369 | 2.1 | 3.810 | 253.841 | g500-B820 | MFXMA 063-32 | 3 | 40 |
| 0.5 | 307 | 2.1 | 405 | 12.1 | 405 | 1.4 | 3.878 | 283.539 | g500-B600 | MFXMA 063-32 | 4 | 38 |
| 0.5 | 310 | 2.1 | 409 | 12.0 | 409 | 1.9 | 3.880 | 286.408 | g500-B820 | MFXMA 063-32 | 4 | 43 |
| 0.4 | 388 | 1.7 | 511 | 9.6 | 511 | 0.8 | 3.801 | 357.968 | g500-B450 | MFXMA 063-32 | 4 | 20 |
| 0.4 | 388 | 1.7 | 512 | 9.6 | 512 | 2.8 | 3.995 | 358.388 | g500-B1500 | MFXMA 063-32 | 4 | 73 |
| 0.4 | 390 | 1.7 | 514 | 9.6 | 514 | 1.5 | 3.926 | 359.765 | g500-B820 | MFXMA 063-32 | 4 | 43 |
| 0.4 | 396 | 1.6 | 522 | 9.4 | 522 | 4.0 | 4.110 | 365.227 | g500-B2700 | MFXMA 063-32 | 4 | 114 |
| 0.4 | 397 | 1.6 | 524 | 9.4 | 524 | 1.1 | 3.811 | 366.933 | g500-B600 | MFXMA 063-32 | 4 | 38 |
| 0.3 | 483 | 1.3 | 637 | 7.7 | 637 | 2.3 | 3.907 | 445.799 | g500-B1500 | MFXMA 063-32 | 4 | 73 |
| 0.3 | 507 | 1.3 | 669 | 7.3 | 669 | 0.9 | 3.805 | 468.027 | g500-B600 | MFXMA 063-32 | 4 | 38 |
| 0.3 | 507 | 1.3 | 669 | 7.3 | 669 | 1.2 | 3.915 | 468.265 | g500-B820 | MFXMA 063-32 | 4 | 43 |
| 0.3 | 526 | 1.2 | 693 | 7.1 | 693 | 4.7 | 4.123 | 485.243 | g500-B4300 | MFXMA 063-32 | 4 | 176 |
| 0.3 | 528 | 1.2 | 697 | 7.1 | 697 | 3.7 | 4.098 | 487.698 | g500-B2700 | MFXMA 063-32 | 4 | 114 |
| 0.3 | 619 | 1.0 | 817 | 6.0 | 817 | 1.8 | 3.943 | 571.714 | g500-B1500 | MFXMA 063-32 | 4 | 73 |
| 0.3 | 627 | 1.0 | 827 | 5.9 | 827 | 1.0 | 3.802 | 579.133 | g500-B820 | MFXMA 063-32 | 4 | 43 |
| 0.2 | 654 | 1.0 | 862 | 5.7 | 862 | 4.0 | 3.990 | 603.594 | g500-B4300 | MFXMA 063-32 | 4 | 176 |
| 0.2 | 657 | 1.0 | 867 | 5.7 | 867 | 3.0 | 3.973 | 606.648 | g500-B2700 | MFXMA 063-32 | 4 | 114 |
| 0.2 | 770 | 0.8 | 1016 | 4.8 | 1016 | 1.4 | 3.874 | 711.156 | g500-B1500 | MFXMA 063-32 | 4 | 73 |
| 0.2 | 826 | 0.8 | 1089 | 4.5 | 1089 | 3.8 | 4.006 | 762.524 | g500-B4300 | MFXMA 063-32 | 4 | 176 |
| 0.2 | 850 | 0.8 | 1122 | 4.4 | 1122 | 2.3 | 3.868 | 785.074 | g500-B2700 | MFXMA 063-32 | 4 | 114 |
| 0.2 | 987 | 0.7 | 1302 | 3.8 | 1302 | 1.1 | 3.783 | 911.329 | g500-B1500 | MFXMA 063-32 | 4 | 73 |
| 0.2 | 1027 | 0.6 | 1355 | 3.6 | 1355 | 3.0 | 3.914 | 948.506 | g500-B4300 | MFXMA 063-32 | 4 | 176 |
| 0.2 | 1033 | 0.6 | 1362 | 3.6 | 1362 | 1.9 | 3.849 | 953.304 | g500-B2700 | MFXMA 063-32 | 4 | 114 |
| 0.1 | 1210 | 0.5 | 1596 | 3.1 | 1596 | 0.9 | 3.778 | 1116.933 | g500-B1500 | MFXMA 063-32 | 4 | 73 |
| 0.1 | 1309 | 0.5 | 1727 | 2.8 | 1727 | 0.8 | 3.802 | 1208.778 | g500-B1500 | MFXMA 063-32 | 4 | 73 |
| 0.1 | 1330 | 0.5 | 1754 | 2.8 | 1754 | 2.3 | 3.832 | 1227.478 | g500-B4300 | MFXMA 063-32 | 4 | 176 |
| 0.1 | 1336 | 0.5 | 1762 | 2.8 | 1762 | 1.5 | 3.829 | 1233.688 | g500-B2700 | MFXMA 063-32 | 4 | 114 |
| 0.1 | 1958 | 0.3 | 2583 | 1.9 | 2583 | 1.6 | 3.787 | 1807.968 | g500-B4300 | MFXMA 063-32 | 4 | 176 |
| 0.1 | 1968 | 0.3 | 2596 | 1.9 | 2596 | 1.0 | 3.785 | 1817.115 | g500-B2700 | MFXMA 063-32 | 4 | 114 |
| 0.1 | 2503 | 0.3 | 3301 | 1.5 | 3301 | 1.2 | 3.755 | 2310.746 | g500-B4300 | MFXMA 063-32 | 4 | 176 |
| 0.0 | 3164 | 0.2 | 4173 | 1.2 | 4173 | 1.0 | 3.751 | 2920.887 | g500-B4300 | MFXMA 063-32 | 4 | 176 |

**120 Hz: 0.75 kW**

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 28.0 | 7.8 | 116 | 10.0 | 656 | 10.0 | 3.5 | 4.493 | 5.185 | g500-B110 | MFXMA 063-42 | 2 | 9.1 |
| 26.8 | 8.1 | 111 | 11.0 | 628 | 11.0 | 2.7 | 4.007 | 5.411 | g500-B45 | MFXMA 063-42 | 2 | 7.5 |
| 23.3 | 9.3 | 96.4 | 12.0 | 546 | 12.0 | 2.5 | 3.976 | 6.222 | g500-B45 | MFXMA 063-42 | 2 | 7.5 |
| 20.4 | 10.7 | 84.4 | 14.0 | 478 | 14.0 | 2.3 | 3.896 | 7.111 | g500-B45 | MFXMA 063-42 | 2 | 7.5 |
| 20.4 | 10.7 | 84.4 | 14.0 | 478 | 14.0 | 3.5 | 4.178 | 7.111 | g500-B110 | MFXMA 063-42 | 2 | 9.1 |
| 17.7 | 12.3 | 73.4 | 16.0 | 416 | 16.0 | 2.0 | 3.878 | 8.178 | g500-B45 | MFXMA 063-42 | 2 | 7.5 |
| 15.9 | 13.7 | 65.9 | 18.0 | 374 | 18.0 | 1.9 | 3.834 | 9.101 | g500-B45 | MFXMA 063-42 | 2 | 7.5 |
| 15.9 | 13.7 | 65.9 | 18.0 | 374 | 18.0 | 3.3 | 4.023 | 9.101 | g500-B110 | MFXMA 063-42 | 2 | 9.1 |
| 13.9 | 15.7 | 57.3 | 21.0 | 325 | 21.0 | 1.6 | 3.823 | 10.466 | g500-B45 | MFXMA 063-42 | 2 | 7.5 |
| 12.5 | 17.5 | 51.5 | 23.0 | 292 | 23.0 | 1.5 | 3.786 | 11.640 | g500-B45 | MFXMA 063-42 | 2 | 7.5 |
| 11.4 | 19.1 | 47.3 | 25.0 | 268 | 25.0 | 2.7 | 3.893 | 12.698 | g500-B110 | MFXMA 063-42 | 2 | 9.1 |
| 10.8 | 20.1 | 44.8 | 27.0 | 254 | 27.0 | 1.3 | 3.779 | 13.386 | g500-B45 | MFXMA 063-42 | 2 | 7.5 |
| 9.7 | 22.5 | 40.0 | 30.0 | 227 | 30.0 | 3.5 | 4.286 | 15.008 | g500-B240 | MFXMA 063-42 | 2 | 13 |
| 9.6 | 22.7 | 39.7 | 30.0 | 225 | 30.0 | 1.1 | 3.759 | 15.111 | g500-B45 | MFXMA 063-42 | 2 | 7.5 |
| 9.3 | 23.3 | 38.6 | 31.0 | 219 | 31.0 | 2.3 | 3.843 | 15.556 | g500-B110 | MFXMA 063-42 | 2 | 9.1 |
| 8.3 | 26.1 | 34.5 | 35.0 | 196 | 35.0 | 1.0 | 3.755 | 17.378 | g500-B45 | MFXMA 063-42 | 2 | 7.5 |
| 7.6 | 28.7 | 31.3 | 38.0 | 178 | 38.0 | 3.3 | 4.120 | 19.143 | g500-B240 | MFXMA 063-42 | 2 | 13 |
| 7.5 | 29.1 | 31.0 | 39.0 | 176 | 39.0 | 0.9 | 3.738 | 19.365 | g500-B45 | MFXMA 063-42 | 2 | 7.5 |
| 7.4 | 29.4 | 30.7 | 39.0 | 174 | 39.0 | 1.9 | 3.795 | 19.556 | g500-B110 | MFXMA 063-42 | 2 | 9.1 |
| 7.3 | 29.8 | 30.3 | 40.0 | 172 | 40.0 | 3.5 | 4.706 | 19.831 | g500-B450 | MFXMA 063-42 | 3 | 17 |
| 5.8 | 37.8 | 23.8 | 50.0 | 135 | 50.0 | 1.6 | 3.763 | 25.185 | g500-B110 | MFXMA 063-42 | 2 | 9.1 |
| 5.7 | 38.0 | 23.7 | 51.0 | 134 | 51.0 | 3.3 | 4.378 | 25.294 | g500-B450 | MFXMA 063-42 | 3 | 17 |
| 4.8 | 45.8 | 19.7 | 61.0 | 111 | 61.0 | 2.7 | 3.900 | 30.522 | g500-B240 | MFXMA 063-42 | 2 | 13 |
| 4.5 | 47.9 | 18.8 | 64.0 | 107 | 64.0 | 1.3 | 3.741 | 31.919 | g500-B110 | MFXMA 063-42 | 2 | 9.1 |
| 3.9 | 56.1 | 16.0 | 75.0 | 90.9 | 75.0 | 1.1 | 3.772 | 37.400 | g500-B110 | MFXMA 063-42 | 2 | 9.1 |
| 3.8 | 57.0 | 15.8 | 76.0 | 89.6 | 76.0 | 2.3 | 3.846 | 37.967 | g500-B240 | MFXMA 063-42 | 2 | 13 |
| 3.6 | 60.0 | 15.0 | 80.0 | 85.0 | 80.0 | 0.9 | 3.728 | 40.000 | g500-B110 | MFXMA 063-42 | 2 | 9.1 |
| 3.6 | 60.5 | 14.9 | 81.0 | 84.3 | 81.0 | 3.1 | 4.002 | 40.330 | g500-B450 | MFXMA 063-42 | 3 | 17 |
| 3.0 | 72.3 | 12.5 | 97.0 | 70.6 | 97.0 | 1.0 | 3.750 | 48.167 | g500-B110 | MFXMA 063-42 | 2 | 9.1 |
| 3.0 | 73.8 | 12.2 | 98.0 | 69.2 | 98.0 | 2.1 | 3.792 | 49.133 | g500-B240 | MFXMA 063-42 | 2 | 13 |
| 2.9 | 75.3 | 12.0 | 101 | 67.8 | 101 | 2.6 | 3.911 | 50.167 | g500-B450 | MFXMA 063-42 | 3 | 17 |
| 2.4 | 89.5 | 10.1 | 120 | 57.0 | 120 | 1.7 | 3.767 | 59.630 | g500-B240 | MFXMA 063-42 | 2 | 13 |
| 2.4 | 91.6 | 9.8 | 122 | 55.7 | 122 | 0.9 | 3.733 | 61.045 | g500-B110 | MFXMA 063-42 | 2 | 9.1 |
| 2.3 | 93.4 | 9.6 | 125 | 54.6 | 125 | 3.1 | 4.171 | 62.262 | g500-B450 | MFXMA 063-42 | 3 | 17 |
| 2.1 | 101 | 8.9 | 135 | 50.4 | 135 | 2.6 | 3.981 | 67.513 | g500-B600 | MFXMA 063-42 | 3 | 35 |
| 1.9 | 114 | 7.7 | 152 | 43.7 | 152 | 1.4 | 3.791 | 77.741 | g500-B240 | MFXMA 063-42 | 3 | 14 |
| 1.9 | 114 | 7.9 | 153 | 44.6 | 153 | 1.1 | 3.743 | 76.213 | g500-B240 | MFXMA 063-42 | 2 | 13 |
| 1.8 | 123 | 7.3 | 164 | 41.5 | 164 | 2.3 | 3.905 | 81.937 | g500-B600 | MFXMA 063-42 | 3 | 35 |
| 1.5 | 146 | 6.0 | 194 | 34.2 | 194 | 1.1 | 3.761 | 99.437 | g500-B240 | MFXMA 063-42 | 3 | 14 |
| 1.5 | 149 | 6.0 | 199 | 34.2 | 199 | 2.0 | 3.920 | 99.274 | g500-B450 | MFXMA 063-42 | 3 | 17 |
| 1.2 | 185 | 4.9 | 247 | 27.5 | 247 | 1.7 | 3.859 | 123.487 | g500-B450 | MFXMA 063-42 | 3 | 17 |
| 1.1 | 189 | 4.6 | 252 | 26.3 | 252 | 0.9 | 3.743 | 129.087 | g500-B240 | MFXMA 063-42 | 3 | 14 |
| 0.9 | 240 | 3.8 | 320 | 21.3 | 320 | 1.4 | 3.799 | 159.807 | g500-B450 | MFXMA 063-42 | 3 | 17 |
| 0.9 | 246 | 3.7 | 328 | 20.8 | 328 | 1.8 | 3.924 | 163.810 | g500-B600 | MFXMA 063-42 | 3 | 35 |
| 0.9 | 248 | 3.6 | 332 | 20.5 | 332 | 2.4 | 3.929 | 165.467 | g500-B820 | MFXMA 063-42 | 3 | 40 |
| 0.7 | 291 | 3.1 | 389 | 17.5 | 389 | 1.1 | 3.772 | 193.948 | g500-B450 | MFXMA 063-42 | 3 | 17 |
| 0.7 | 298 | 3.0 | 398 | 17.1 | 398 | 1.4 | 3.866 | 198.805 | g500-B600 | MFXMA 063-42 | 3 | 35 |
| 0.7 | 301 | 3.0 | 402 | 16.9 | 402 | 2.0 | 3.869 | 200.816 | g500-B820 | MFXMA 063-42 | 3 | 40 |
| 0.6 | 333 | 2.7 | 445 | 15.1 | 445 | 1.8 | 4.187 | 225.636 | g500-B820 | MFXMA 063-42 | 4 | 43 |
| 0.6 | 336 | 2.6 | 449 | 14.9 | 449 | 1.3 | 3.950 | 227.943 | g500-B600 | MFXMA 063-42 | 4 | 38 |
| 0.6 | 372 | 2.4 | 497 | 13.7 | 497 | 0.9 | 3.746 | 247.882 | g500-B450 | MFXMA 063-42 | 3 | 17 |

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 0.6 | 377 | 2.4 | 504 | 13.5 | 504 | 1.1 | 3.808 | 251.299 | g500-B600 | MFXMA 063-42 | 3 | 35 |
| 0.6 | 377 | 2.3 | 504 | 13.3 | 504 | 0.9 | 3.810 | 255.691 | g500-B450 | MFXMA 063-42 | 4 | 20 |
| 0.6 | 381 | 2.4 | 509 | 13.4 | 509 | 1.6 | 3.810 | 253.841 | g500-B820 | MFXMA 063-42 | 3 | 40 |
| 0.5 | 418 | 2.1 | 559 | 12.0 | 559 | 1.0 | 3.878 | 283.539 | g500-B600 | MFXMA 063-42 | 4 | 38 |
| 0.5 | 423 | 2.1 | 564 | 11.9 | 564 | 1.4 | 3.880 | 286.408 | g500-B820 | MFXMA 063-42 | 4 | 43 |
| 0.5 | 430 | 2.1 | 574 | 11.7 | 574 | 4.4 | 4.896 | 291.191 | g500-B2700 | MFXMA 063-42 | 4 | 114 |
| 0.5 | 449 | 2.0 | 600 | 11.2 | 600 | 4.1 | 4.686 | 304.333 | g500-B4300 | MFXMA 063-42 | 4 | 176 |
| 0.4 | 529 | 1.7 | 706 | 9.5 | 706 | 2.0 | 3.995 | 358.388 | g500-B1500 | MFXMA 063-42 | 4 | 73 |
| 0.4 | 531 | 1.7 | 709 | 9.5 | 709 | 1.1 | 3.926 | 359.765 | g500-B820 | MFXMA 063-42 | 4 | 43 |
| 0.4 | 539 | 1.6 | 720 | 9.3 | 720 | 2.9 | 4.110 | 365.227 | g500-B2700 | MFXMA 063-42 | 4 | 114 |
| 0.4 | 541 | 1.6 | 723 | 9.3 | 723 | 0.8 | 3.811 | 366.933 | g500-B600 | MFXMA 063-42 | 4 | 38 |
| 0.4 | 545 | 1.6 | 728 | 9.2 | 728 | 4.1 | 4.538 | 369.548 | g500-B4300 | MFXMA 063-42 | 4 | 176 |
| 0.3 | 658 | 1.3 | 878 | 7.6 | 878 | 1.6 | 3.907 | 445.799 | g500-B1500 | MFXMA 063-42 | 4 | 73 |
| 0.3 | 691 | 1.3 | 923 | 7.3 | 923 | 0.9 | 3.915 | 468.265 | g500-B820 | MFXMA 063-42 | 4 | 43 |
| 0.3 | 716 | 1.2 | 956 | 7.0 | 956 | 3.4 | 4.123 | 485.243 | g500-B4300 | MFXMA 063-42 | 4 | 176 |
| 0.3 | 720 | 1.2 | 961 | 7.0 | 961 | 2.7 | 4.098 | 487.698 | g500-B2700 | MFXMA 063-42 | 4 | 114 |
| 0.3 | 843 | 1.0 | 1126 | 5.9 | 1126 | 1.3 | 3.943 | 571.714 | g500-B1500 | MFXMA 063-42 | 4 | 73 |
| 0.2 | 891 | 1.0 | 1189 | 5.6 | 1189 | 2.9 | 3.990 | 603.594 | g500-B4300 | MFXMA 063-42 | 4 | 176 |
| 0.2 | 895 | 1.0 | 1195 | 5.6 | 1195 | 2.2 | 3.973 | 606.648 | g500-B2700 | MFXMA 063-42 | 4 | 114 |
| 0.2 | 1049 | 0.8 | 1401 | 4.8 | 1401 | 1.0 | 3.874 | 711.156 | g500-B1500 | MFXMA 063-42 | 4 | 73 |
| 0.2 | 1125 | 0.8 | 1502 | 4.5 | 1502 | 2.8 | 4.006 | 762.524 | g500-B4300 | MFXMA 063-42 | 4 | 176 |
| 0.2 | 1158 | 0.8 | 1547 | 4.3 | 1547 | 1.7 | 3.868 | 785.074 | g500-B2700 | MFXMA 063-42 | 4 | 114 |
| 0.2 | 1345 | 0.7 | 1795 | 3.7 | 1795 | 0.8 | 3.783 | 911.329 | g500-B1500 | MFXMA 063-42 | 4 | 73 |
| 0.2 | 1399 | 0.6 | 1869 | 3.6 | 1869 | 2.2 | 3.914 | 948.506 | g500-B4300 | MFXMA 063-42 | 4 | 176 |
| 0.2 | 1406 | 0.6 | 1878 | 3.6 | 1878 | 1.4 | 3.849 | 953.304 | g500-B2700 | MFXMA 063-42 | 4 | 114 |
| 0.1 | 1811 | 0.5 | 2418 | 2.8 | 2418 | 1.7 | 3.832 | 1227.478 | g500-B4300 | MFXMA 063-42 | 4 | 176 |
| 0.1 | 1820 | 0.5 | 2431 | 2.8 | 2431 | 1.1 | 3.829 | 1233.688 | g500-B2700 | MFXMA 063-42 | 4 | 114 |
| 0.1 | 2667 | 0.3 | 3562 | 1.9 | 3562 | 1.2 | 3.787 | 1807.968 | g500-B4300 | MFXMA 063-42 | 4 | 176 |
| 0.1 | 3409 | 0.3 | 4552 | 1.5 | 4552 | 0.9 | 3.755 | 2310.746 | g500-B4300 | MFXMA 063-42 | 4 | 176 |

**120 Hz: 1.1 kW**

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 40.7 | 7.8 | 168 | 10.0 | 979 | 10.0 | 4.8 | 15.772 | 3.565 | g500-B240 | MFXMA 071-32 | 2 | 15 |
| 29.0 | 11.0 | 120 | 14.0 | 698 | 14.0 | 4.8 | 17.160 | 5.002 | g500-B450 | MFXMA 071-32 | 3 | 19 |
| 28.0 | 11.4 | 116 | 15.0 | 673 | 15.0 | 3.5 | 13.593 | 5.185 | g500-B110 | MFXMA 071-32 | 2 | 11 |
| 23.2 | 13.7 | 95.9 | 18.0 | 558 | 18.0 | 4.2 | 13.951 | 6.257 | g500-B240 | MFXMA 071-32 | 2 | 15 |
| 20.4 | 15.6 | 84.4 | 20.0 | 491 | 20.0 | 2.9 | 13.278 | 7.111 | g500-B110 | MFXMA 071-32 | 2 | 11 |
| 18.6 | 17.2 | 76.8 | 22.0 | 447 | 22.0 | 4.8 | 14.313 | 7.817 | g500-B240 | MFXMA 071-32 | 2 | 15 |
| 15.9 | 20.0 | 65.9 | 26.0 | 384 | 26.0 | 2.4 | 13.123 | 9.101 | g500-B110 | MFXMA 071-32 | 2 | 11 |
| 14.0 | 22.7 | 58.1 | 30.0 | 338 | 30.0 | 4.8 | 15.860 | 10.328 | g500-B450 | MFXMA 071-32 | 3 | 19 |
| 11.9 | 26.6 | 49.4 | 35.0 | 287 | 35.0 | 4.2 | 15.320 | 12.143 | g500-B820 | MFXMA 071-32 | 3 | 42 |
| 11.4 | 27.9 | 47.3 | 36.0 | 275 | 36.0 | 1.9 | 12.993 | 12.698 | g500-B110 | MFXMA 071-32 | 2 | 11 |
| 10.6 | 30.1 | 43.7 | 39.0 | 254 | 39.0 | 4.2 | 13.477 | 13.719 | g500-B240 | MFXMA 071-32 | 2 | 15 |
| 9.7 | 32.9 | 40.0 | 43.0 | 233 | 43.0 | 3.9 | 13.386 | 15.008 | g500-B240 | MFXMA 071-32 | 2 | 15 |
| 9.3 | 34.1 | 38.6 | 44.0 | 224 | 44.0 | 1.6 | 12.943 | 15.556 | g500-B110 | MFXMA 071-32 | 2 | 11 |
| 7.6 | 42.0 | 31.3 | 55.0 | 182 | 55.0 | 3.3 | 13.220 | 19.143 | g500-B240 | MFXMA 071-32 | 2 | 15 |
| 7.4 | 42.9 | 30.7 | 56.0 | 179 | 56.0 | 1.4 | 12.895 | 19.556 | g500-B110 | MFXMA 071-32 | 2 | 11 |
| 7.3 | 43.5 | 30.3 | 57.0 | 176 | 57.0 | 4.2 | 13.806 | 19.831 | g500-B450 | MFXMA 071-32 | 3 | 19 |
| 7.0 | 45.8 | 28.8 | 60.0 | 167 | 60.0 | 4.2 | 14.911 | 20.857 | g500-B820 | MFXMA 071-32 | 3 | 42 |
| 6.2 | 51.5 | 25.6 | 67.0 | 149 | 67.0 | 2.7 | 13.122 | 23.450 | g500-B240 | MFXMA 071-32 | 2 | 15 |
| 5.8 | 55.3 | 23.8 | 72.0 | 139 | 72.0 | 1.1 | 12.863 | 25.185 | g500-B110 | MFXMA 071-32 | 2 | 11 |
| 5.7 | 55.5 | 23.7 | 72.0 | 138 | 72.0 | 3.9 | 13.478 | 25.294 | g500-B450 | MFXMA 071-32 | 3 | 19 |
| 4.8 | 67.0 | 19.7 | 87.0 | 114 | 87.0 | 2.1 | 13.000 | 30.522 | g500-B240 | MFXMA 071-32 | 2 | 15 |
| 4.7 | 68.0 | 19.4 | 89.0 | 113 | 89.0 | 3.5 | 13.294 | 30.985 | g500-B450 | MFXMA 071-32 | 3 | 19 |
| 3.8 | 83.3 | 15.8 | 109 | 91.9 | 109 | 1.7 | 12.946 | 37.967 | g500-B240 | MFXMA 071-32 | 2 | 15 |
| 3.6 | 88.5 | 14.9 | 115 | 86.5 | 115 | 3.4 | 13.102 | 40.330 | g500-B450 | MFXMA 071-32 | 3 | 19 |
| 3.5 | 92.0 | 14.3 | 120 | 83.2 | 120 | 4.0 | 13.476 | 41.940 | g500-B600 | MFXMA 071-32 | 3 | 37 |
| 3.0 | 108 | 12.2 | 141 | 71.0 | 141 | 1.5 | 12.892 | 49.133 | g500-B240 | MFXMA 071-32 | 2 | 15 |
| 2.9 | 110 | 12.0 | 143 | 69.6 | 143 | 2.7 | 13.011 | 50.167 | g500-B450 | MFXMA 071-32 | 3 | 19 |
| 2.4 | 131 | 10.1 | 171 | 58.5 | 171 | 1.2 | 12.867 | 59.630 | g500-B240 | MFXMA 071-32 | 2 | 15 |
| 2.3 | 137 | 9.6 | 178 | 56.1 | 178 | 2.2 | 13.271 | 62.262 | g500-B450 | MFXMA 071-32 | 3 | 19 |
| 2.3 | 140 | 9.4 | 182 | 54.7 | 182 | 2.8 | 13.879 | 63.822 | g500-B600 | MFXMA 071-32 | 3 | 37 |
| 2.2 | 142 | 9.3 | 184 | 54.1 | 184 | 3.8 | 13.912 | 64.468 | g500-B820 | MFXMA 071-32 | 3 | 42 |
| 2.1 | 148 | 8.9 | 193 | 51.7 | 193 | 2.7 | 13.081 | 67.513 | g500-B600 | MFXMA 071-32 | 3 | 37 |
| 1.9 | 165 | 8.0 | 214 | 46.6 | 214 | 3.4 | 13.706 | 74.963 | g500-B1500 | MFXMA 071-32 | 3 | 72 |
| 1.9 | 166 | 7.7 | 217 | 44.9 | 217 | 1.0 | 12.891 | 77.741 | g500-B240 | MFXMA 071-32 | 3 | 16 |
| 1.9 | 167 | 7.9 | 218 | 45.8 | 218 | 1.8 | 13.156 | 76.271 | g500-B450 | MFXMA 071-32 | 3 | 19 |
| 1.8 | 180 | 7.3 | 234 | 42.6 | 234 | 2.2 | 13.005 | 81.937 | g500-B600 | MFXMA 071-32 | 3 | 37 |
| 1.6 | 200 | 6.6 | 260 | 38.4 | 260 | 3.0 | 13.458 | 90.978 | g500-B1500 | MFXMA 071-32 | 3 | 72 |
| 1.5 | 218 | 6.0 | 284 | 35.2 | 284 | 1.4 | 13.020 | 99.274 | g500-B450 | MFXMA 071-32 | 3 | 19 |
| 1.4 | 223 | 5.9 | 291 | 34.3 | 291 | 1.8 | 13.329 | 101.760 | g500-B600 | MFXMA 071-32 | 3 | 37 |
| 1.4 | 226 | 5.8 | 294 | 34.0 | 294 | 2.4 | 13.289 | 102.790 | g500-B820 | MFXMA 071-32 | 3 | 42 |
| 1.2 | 271 | 4.9 | 353 | 28.3 | 353 | 1.2 | 12.959 | 123.487 | g500-B450 | MFXMA 071-32 | 3 | 19 |
| 1.1 | 278 | 4.7 | 362 | 27.6 | 362 | 1.6 | 13.156 | 126.580 | g500-B600 | MFXMA 071-32 | 3 | 37 |
| 1.1 | 281 | 4.7 | 366 | 27.3 | 366 | 2.1 | 13.165 | 127.861 | g500-B820 | MFXMA 071-32 | 3 | 42 |
| 0.9 | 351 | 3.8 | 457 | 21.8 | 457 | 0.9 | 12.899 | 159.807 | g500-B450 | MFXMA 071-32 | 3 | 19 |
| 0.9 | 359 | 3.7 | 468 | 21.3 | 468 | 1.2 | 13.024 | 163.810 | g500-B600 | MFXMA 071-32 | 3 | 37 |
| 0.9 | 362 | 3.6 | 471 | 21.2 | 471 | 3.0 | 13.500 | 164.833 | g500-B1500 | MFXMA 071-32 | 3 | 72 |
| 0.9 | 363 | 3.6 | 473 | 21.1 | 473 | 1.7 | 13.029 | 165.467 | g500-B820 | MFXMA 071-32 | 3 | 42 |
| 0.7 | 436 | 3.0 | 568 | 17.6 | 568 | 1.0 | 12.966 | 198.805 | g500-B600 | MFXMA 071-32 | 3 | 37 |
| 0.7 | 439 | 3.0 | 572 | 17.4 | 572 | 2.5 | 13.319 | 200.048 | g500-B1500 | MFXMA 071-32 | 3 | 72 |
| 0.7 | 441 | 3.0 | 574 | 17.4 | 574 | 1.4 | 12.969 | 200.816 | g500-B820 | MFXMA 071-32 | 3 | 42 |
| 0.6 | 484 | 2.7 | 631 | 15.5 | 631 | 4.4 | 13.931 | 224.446 | g500-B4300 | MFXMA 071-32 | 4 | 178 |

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 0.6 | 485 | 2.7 | 632 | 15.5 | 632 | 2.3 | 13.335 | 224.773 | g500-B1500 | MFXMA 071-32 | 4 | 75 |
| 0.6 | 487 | 2.7 | 634 | 15.5 | 634 | 1.2 | 13.287 | 225.636 | g500-B820 | MFXMA 071-32 | 4 | 45 |
| 0.6 | 487 | 2.7 | 634 | 15.5 | 634 | 4.1 | 13.814 | 225.581 | g500-B2700 | MFXMA 071-32 | 4 | 116 |
| 0.6 | 492 | 2.6 | 641 | 15.3 | 641 | 0.9 | 13.050 | 227.943 | g500-B600 | MFXMA 071-32 | 4 | 40 |
| 0.6 | 555 | 2.4 | 723 | 13.8 | 723 | 2.0 | 13.135 | 252.869 | g500-B1500 | MFXMA 071-32 | 3 | 72 |
| 0.6 | 557 | 2.4 | 726 | 13.7 | 726 | 1.1 | 12.910 | 253.841 | g500-B820 | MFXMA 071-32 | 3 | 42 |
| 0.5 | 594 | 2.2 | 774 | 12.7 | 774 | 1.8 | 13.282 | 275.347 | g500-B1500 | MFXMA 071-32 | 4 | 75 |
| 0.5 | 618 | 2.1 | 805 | 12.2 | 805 | 1.0 | 12.980 | 286.408 | g500-B820 | MFXMA 071-32 | 4 | 45 |
| 0.5 | 628 | 2.1 | 818 | 12.0 | 818 | 3.1 | 13.996 | 291.191 | g500-B2700 | MFXMA 071-32 | 4 | 116 |
| 0.5 | 656 | 2.0 | 855 | 11.5 | 855 | 4.8 | 13.786 | 304.333 | g500-B4300 | MFXMA 071-32 | 4 | 178 |
| 0.4 | 773 | 1.7 | 1007 | 9.7 | 1007 | 1.4 | 13.095 | 358.388 | g500-B1500 | MFXMA 071-32 | 4 | 75 |
| 0.4 | 788 | 1.6 | 1026 | 9.6 | 1026 | 2.5 | 13.210 | 365.227 | g500-B2700 | MFXMA 071-32 | 4 | 116 |
| 0.4 | 797 | 1.6 | 1039 | 9.4 | 1039 | 3.9 | 13.638 | 369.548 | g500-B4300 | MFXMA 071-32 | 4 | 178 |
| 0.3 | 962 | 1.3 | 1253 | 7.8 | 1253 | 1.1 | 13.007 | 445.799 | g500-B1500 | MFXMA 071-32 | 4 | 75 |
| 0.3 | 976 | 1.3 | 1272 | 7.7 | 1272 | 3.2 | 13.400 | 452.696 | g500-B4300 | MFXMA 071-32 | 4 | 178 |
| 0.3 | 981 | 1.3 | 1279 | 7.7 | 1279 | 2.0 | 13.371 | 454.986 | g500-B2700 | MFXMA 071-32 | 4 | 116 |
| 0.3 | 1047 | 1.2 | 1364 | 7.2 | 1364 | 3.0 | 13.223 | 485.243 | g500-B4300 | MFXMA 071-32 | 4 | 178 |
| 0.3 | 1052 | 1.2 | 1371 | 7.2 | 1371 | 1.9 | 13.198 | 487.698 | g500-B2700 | MFXMA 071-32 | 4 | 116 |
| 0.3 | 1233 | 1.0 | 1607 | 6.1 | 1607 | 0.9 | 13.043 | 571.714 | g500-B1500 | MFXMA 071-32 | 4 | 75 |
| 0.2 | 1302 | 1.0 | 1696 | 5.8 | 1696 | 2.4 | 13.090 | 603.594 | g500-B4300 | MFXMA 071-32 | 4 | 178 |
| 0.2 | 1309 | 1.0 | 1705 | 5.8 | 1705 | 1.5 | 13.073 | 606.648 | g500-B2700 | MFXMA 071-32 | 4 | 116 |
| 0.2 | 1645 | 0.8 | 2143 | 4.6 | 2143 | 1.9 | 13.106 | 762.524 | g500-B4300 | MFXMA 071-32 | 4 | 178 |
| 0.2 | 1693 | 0.8 | 2206 | 4.4 | 2206 | 1.2 | 12.968 | 785.074 | g500-B2700 | MFXMA 071-32 | 4 | 116 |
| 0.2 | 2046 | 0.6 | 2666 | 3.7 | 2666 | 1.5 | 13.014 | 948.506 | g500-B4300 | MFXMA 071-32 | 4 | 178 |
| 0.2 | 2056 | 0.6 | 2679 | 3.7 | 2679 | 1.0 | 12.949 | 953.304 | g500-B2700 | MFXMA 071-32 | 4 | 116 |
| 0.1 | 2648 | 0.5 | 3450 | 2.8 | 3450 | 1.2 | 12.932 | 1227.478 | g500-B4300 | MFXMA 071-32 | 4 | 178 |
| 0.1 | 3900 | 0.3 | 5081 | 1.9 | 5081 | 0.8 | 12.887 | 1807.968 | g500-B4300 | MFXMA 071-32 | 4 | 178 |



**120 Hz: 1.5 kW**

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 40.7 | 10.7 | 168 | 14.0 | 968 | 14.0 | 3.5 | 15.772 | 3.565 | g500-B240 | MFXMA 071-42 | 2 | 15 |
| 29.0 | 15.0 | 120 | 20.0 | 690 | 20.0 | 3.5 | 17.160 | 5.002 | g500-B450 | MFXMA 071-42 | 3 | 19 |
| 28.0 | 15.5 | 116 | 20.0 | 665 | 20.0 | 2.6 | 13.593 | 5.185 | g500-B110 | MFXMA 071-42 | 2 | 11 |
| 23.2 | 18.7 | 95.9 | 25.0 | 551 | 25.0 | 3.1 | 13.951 | 6.257 | g500-B240 | MFXMA 071-42 | 2 | 15 |
| 20.4 | 21.3 | 84.4 | 28.0 | 485 | 28.0 | 2.1 | 13.278 | 7.111 | g500-B110 | MFXMA 071-42 | 2 | 11 |
| 18.6 | 23.4 | 76.8 | 31.0 | 441 | 31.0 | 3.5 | 14.313 | 7.817 | g500-B240 | MFXMA 071-42 | 2 | 15 |
| 15.9 | 27.2 | 65.9 | 36.0 | 379 | 36.0 | 1.8 | 13.123 | 9.101 | g500-B110 | MFXMA 071-42 | 2 | 11 |
| 14.0 | 30.9 | 58.1 | 41.0 | 334 | 41.0 | 3.5 | 15.860 | 10.328 | g500-B450 | MFXMA 071-42 | 3 | 19 |
| 11.9 | 36.3 | 49.4 | 48.0 | 284 | 48.0 | 3.1 | 15.320 | 12.143 | g500-B820 | MFXMA 071-42 | 3 | 42 |
| 11.4 | 38.0 | 47.3 | 50.0 | 272 | 50.0 | 1.4 | 12.993 | 12.698 | g500-B110 | MFXMA 071-42 | 2 | 11 |
| 10.6 | 41.1 | 43.7 | 54.0 | 252 | 54.0 | 3.0 | 13.477 | 13.719 | g500-B240 | MFXMA 071-42 | 2 | 15 |
| 9.7 | 44.9 | 40.0 | 59.0 | 230 | 59.0 | 2.9 | 13.386 | 15.008 | g500-B240 | MFXMA 071-42 | 2 | 15 |
| 9.3 | 46.6 | 38.6 | 61.0 | 222 | 61.0 | 1.1 | 12.943 | 15.556 | g500-B110 | MFXMA 071-42 | 2 | 11 |
| 7.6 | 57.3 | 31.3 | 75.0 | 180 | 75.0 | 2.4 | 13.220 | 19.143 | g500-B240 | MFXMA 071-42 | 2 | 15 |
| 7.4 | 58.5 | 30.7 | 77.0 | 176 | 77.0 | 1.0 | 12.895 | 19.556 | g500-B110 | MFXMA 071-42 | 2 | 11 |
| 7.3 | 59.3 | 30.3 | 78.0 | 174 | 78.0 | 3.1 | 13.806 | 19.831 | g500-B450 | MFXMA 071-42 | 3 | 19 |
| 7.0 | 62.4 | 28.8 | 82.0 | 165 | 82.0 | 3.1 | 14.911 | 20.857 | g500-B820 | MFXMA 071-42 | 3 | 42 |
| 6.2 | 70.2 | 25.6 | 92.0 | 147 | 92.0 | 2.0 | 13.122 | 23.450 | g500-B240 | MFXMA 071-42 | 2 | 15 |
| 5.8 | 75.4 | 23.8 | 99.0 | 137 | 99.0 | 0.8 | 12.863 | 25.185 | g500-B110 | MFXMA 071-42 | 2 | 11 |
| 5.7 | 75.7 | 23.7 | 100 | 136 | 100 | 2.9 | 13.478 | 25.294 | g500-B450 | MFXMA 071-42 | 3 | 19 |
| 4.8 | 91.3 | 19.7 | 120 | 113 | 120 | 1.5 | 13.000 | 30.522 | g500-B240 | MFXMA 071-42 | 2 | 15 |
| 4.7 | 92.7 | 19.4 | 122 | 111 | 122 | 2.6 | 13.294 | 30.985 | g500-B450 | MFXMA 071-42 | 3 | 19 |
| 3.8 | 114 | 15.8 | 150 | 90.9 | 150 | 1.2 | 12.946 | 37.967 | g500-B240 | MFXMA 071-42 | 2 | 15 |
| 3.6 | 121 | 14.9 | 159 | 85.5 | 159 | 2.4 | 13.102 | 40.330 | g500-B450 | MFXMA 071-42 | 3 | 19 |
| 3.5 | 126 | 14.3 | 165 | 82.3 | 165 | 2.9 | 13.476 | 41.940 | g500-B600 | MFXMA 071-42 | 3 | 37 |
| 3.0 | 147 | 12.2 | 194 | 70.2 | 194 | 1.1 | 12.892 | 49.133 | g500-B240 | MFXMA 071-42 | 2 | 15 |
| 2.9 | 150 | 12.0 | 198 | 68.8 | 198 | 2.0 | 13.011 | 50.167 | g500-B450 | MFXMA 071-42 | 3 | 19 |
| 2.4 | 179 | 10.1 | 235 | 57.9 | 235 | 0.9 | 12.867 | 59.630 | g500-B240 | MFXMA 071-42 | 2 | 15 |
| 2.3 | 186 | 9.6 | 245 | 55.4 | 245 | 1.6 | 13.271 | 62.262 | g500-B450 | MFXMA 071-42 | 3 | 19 |
| 2.3 | 191 | 9.4 | 252 | 54.1 | 252 | 2.1 | 13.879 | 63.822 | g500-B600 | MFXMA 071-42 | 3 | 37 |
| 2.2 | 193 | 9.3 | 254 | 53.5 | 254 | 2.8 | 13.912 | 64.468 | g500-B820 | MFXMA 071-42 | 3 | 42 |
| 2.1 | 202 | 8.9 | 266 | 51.1 | 266 | 1.9 | 13.081 | 67.513 | g500-B600 | MFXMA 071-42 | 3 | 37 |
| 1.9 | 224 | 8.0 | 295 | 46.0 | 295 | 2.5 | 13.706 | 74.963 | g500-B1500 | MFXMA 071-42 | 3 | 72 |
| 1.9 | 228 | 7.9 | 301 | 45.2 | 301 | 1.3 | 13.156 | 76.271 | g500-B450 | MFXMA 071-42 | 3 | 19 |
| 1.8 | 245 | 7.3 | 323 | 42.1 | 323 | 1.6 | 13.005 | 81.937 | g500-B600 | MFXMA 071-42 | 3 | 37 |
| 1.6 | 272 | 6.6 | 359 | 37.9 | 359 | 2.2 | 13.458 | 90.978 | g500-B1500 | MFXMA 071-42 | 3 | 72 |
| 1.5 | 297 | 6.0 | 391 | 34.8 | 391 | 1.0 | 13.020 | 99.274 | g500-B450 | MFXMA 071-42 | 3 | 19 |
| 1.4 | 305 | 5.9 | 401 | 33.9 | 401 | 1.3 | 13.329 | 101.760 | g500-B600 | MFXMA 071-42 | 3 | 37 |
| 1.4 | 308 | 5.8 | 405 | 33.6 | 405 | 1.7 | 13.289 | 102.790 | g500-B820 | MFXMA 071-42 | 3 | 42 |
| 1.2 | 370 | 4.9 | 487 | 27.9 | 487 | 0.9 | 12.959 | 123.487 | g500-B450 | MFXMA 071-42 | 3 | 19 |
| 1.1 | 379 | 4.7 | 499 | 27.3 | 499 | 1.2 | 13.156 | 126.580 | g500-B600 | MFXMA 071-42 | 3 | 37 |
| 1.1 | 383 | 4.7 | 504 | 27.0 | 504 | 1.6 | 13.165 | 127.861 | g500-B820 | MFXMA 071-42 | 3 | 42 |
| 0.9 | 490 | 3.7 | 646 | 21.1 | 646 | 0.9 | 13.024 | 163.810 | g500-B600 | MFXMA 071-42 | 3 | 37 |
| 0.9 | 493 | 3.6 | 650 | 20.9 | 650 | 2.2 | 13.500 | 164.833 | g500-B1500 | MFXMA 071-42 | 3 | 72 |
| 0.9 | 495 | 3.6 | 652 | 20.9 | 652 | 1.2 | 13.029 | 165.467 | g500-B820 | MFXMA 071-42 | 3 | 42 |
| 0.7 | 599 | 3.0 | 789 | 17.2 | 789 | 1.8 | 13.319 | 200.048 | g500-B1500 | MFXMA 071-42 | 3 | 72 |
| 0.7 | 601 | 3.0 | 792 | 17.2 | 792 | 1.0 | 12.969 | 200.816 | g500-B820 | MFXMA 071-42 | 3 | 42 |
| 0.6 | 660 | 2.7 | 870 | 15.4 | 870 | 3.2 | 13.931 | 224.446 | g500-B4300 | MFXMA 071-42 | 4 | 178 |
| 0.6 | 661 | 2.7 | 871 | 15.3 | 871 | 1.6 | 13.335 | 224.773 | g500-B1500 | MFXMA 071-42 | 4 | 75 |
| 0.6 | 664 | 2.7 | 874 | 15.3 | 874 | 0.9 | 13.287 | 225.636 | g500-B820 | MFXMA 071-42 | 4 | 45 |
| 0.6 | 664 | 2.7 | 874 | 15.3 | 874 | 3.0 | 13.814 | 225.581 | g500-B2700 | MFXMA 071-42 | 4 | 116 |

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 0.6 | 757 | 2.4 | 997 | 13.6 | 997 | 1.4 | 13.135 | 252.869 | g500-B1500 | MFXMA 071-42 | 3 | 72 |
| 0.5 | 810 | 2.2 | 1067 | 12.5 | 1067 | 1.3 | 13.282 | 275.347 | g500-B1500 | MFXMA 071-42 | 4 | 75 |
| 0.5 | 857 | 2.1 | 1128 | 11.8 | 1128 | 2.3 | 13.996 | 291.191 | g500-B2700 | MFXMA 071-42 | 4 | 116 |
| 0.5 | 895 | 2.0 | 1179 | 11.3 | 1179 | 3.5 | 13.786 | 304.333 | g500-B4300 | MFXMA 071-42 | 4 | 178 |
| 0.4 | 1054 | 1.7 | 1389 | 9.6 | 1389 | 1.0 | 13.095 | 358.388 | g500-B1500 | MFXMA 071-42 | 4 | 75 |
| 0.4 | 1074 | 1.6 | 1415 | 9.4 | 1415 | 1.8 | 13.210 | 365.227 | g500-B2700 | MFXMA 071-42 | 4 | 116 |
| 0.4 | 1087 | 1.6 | 1432 | 9.3 | 1432 | 2.9 | 13.638 | 369.548 | g500-B4300 | MFXMA 071-42 | 4 | 178 |
| 0.3 | 1311 | 1.3 | 1727 | 7.7 | 1727 | 0.8 | 13.007 | 445.799 | g500-B1500 | MFXMA 071-42 | 4 | 75 |
| 0.3 | 1332 | 1.3 | 1754 | 7.6 | 1754 | 2.3 | 13.400 | 452.696 | g500-B4300 | MFXMA 071-42 | 4 | 178 |
| 0.3 | 1338 | 1.3 | 1763 | 7.6 | 1763 | 1.5 | 13.371 | 454.986 | g500-B2700 | MFXMA 071-42 | 4 | 116 |
| 0.3 | 1427 | 1.2 | 1880 | 7.1 | 1880 | 2.2 | 13.223 | 485.243 | g500-B4300 | MFXMA 071-42 | 4 | 178 |
| 0.3 | 1434 | 1.2 | 1890 | 7.1 | 1890 | 1.4 | 13.198 | 487.698 | g500-B2700 | MFXMA 071-42 | 4 | 116 |
| 0.2 | 1775 | 1.0 | 2339 | 5.7 | 2339 | 1.8 | 13.090 | 603.594 | g500-B4300 | MFXMA 071-42 | 4 | 178 |
| 0.2 | 1784 | 1.0 | 2351 | 5.7 | 2351 | 1.1 | 13.073 | 606.648 | g500-B2700 | MFXMA 071-42 | 4 | 116 |
| 0.2 | 2243 | 0.8 | 2955 | 4.5 | 2955 | 1.4 | 13.106 | 762.524 | g500-B4300 | MFXMA 071-42 | 4 | 178 |
| 0.2 | 2309 | 0.8 | 3042 | 4.4 | 3042 | 0.9 | 12.968 | 785.074 | g500-B2700 | MFXMA 071-42 | 4 | 116 |
| 0.2 | 2790 | 0.6 | 3675 | 3.6 | 3675 | 1.1 | 13.014 | 948.506 | g500-B4300 | MFXMA 071-42 | 4 | 178 |
| 0.1 | 3610 | 0.5 | 4756 | 2.8 | 4756 | 0.9 | 12.932 | 1227.478 | g500-B4300 | MFXMA 071-42 | 4 | 178 |



**120 Hz: 2.2 kW**

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 40.7 | 15.2 | 168 | 20.0 | 982 | 20.0 | 4.3 | 30.972 | 3.565 | g500-B240 | MFXMA 080-32 | 2 | 20 |
| 29.7 | 20.9 | 123 | 28.0 | 716 | 28.0 | 4.0 | 29.744 | 4.889 | g500-B240 | MFXMA 080-32 | 2 | 20 |
| 29.0 | 21.4 | 120 | 29.0 | 700 | 29.0 | 4.3 | 32.360 | 5.002 | g500-B450 | MFXMA 080-32 | 3 | 23 |
| 28.0 | 22.2 | 116 | 30.0 | 675 | 30.0 | 1.8 | 28.793 | 5.185 | g500-B110 | MFXMA 080-32 | 2 | 16 |
| 23.2 | 26.7 | 95.9 | 36.0 | 559 | 36.0 | 3.3 | 29.151 | 6.257 | g500-B240 | MFXMA 080-32 | 2 | 20 |
| 21.1 | 29.3 | 87.5 | 39.0 | 510 | 39.0 | 4.3 | 30.482 | 6.860 | g500-B450 | MFXMA 080-32 | 3 | 23 |
| 20.4 | 30.4 | 84.4 | 41.0 | 492 | 41.0 | 1.4 | 28.478 | 7.111 | g500-B110 | MFXMA 080-32 | 2 | 16 |
| 18.6 | 33.4 | 76.8 | 45.0 | 448 | 45.0 | 3.2 | 29.513 | 7.817 | g500-B240 | MFXMA 080-32 | 2 | 20 |
| 15.9 | 38.9 | 65.9 | 52.0 | 385 | 52.0 | 1.2 | 28.323 | 9.101 | g500-B110 | MFXMA 080-32 | 2 | 16 |
| 15.2 | 40.7 | 63.0 | 54.0 | 368 | 54.0 | 4.3 | 31.761 | 9.520 | g500-B820 | MFXMA 080-32 | 3 | 46 |
| 14.0 | 44.1 | 58.1 | 59.0 | 339 | 59.0 | 4.3 | 31.060 | 10.328 | g500-B450 | MFXMA 080-32 | 3 | 23 |
| 13.5 | 45.8 | 56.0 | 61.0 | 327 | 61.0 | 2.5 | 28.968 | 10.720 | g500-B240 | MFXMA 080-32 | 2 | 20 |
| 11.9 | 51.9 | 49.4 | 69.0 | 288 | 69.0 | 4.0 | 30.520 | 12.143 | g500-B820 | MFXMA 080-32 | 3 | 46 |
| 11.4 | 54.3 | 47.3 | 72.0 | 276 | 72.0 | 0.9 | 28.193 | 12.698 | g500-B110 | MFXMA 080-32 | 2 | 16 |
| 10.6 | 58.7 | 43.7 | 78.0 | 255 | 78.0 | 2.1 | 28.677 | 13.719 | g500-B240 | MFXMA 080-32 | 2 | 20 |
| 10.2 | 60.5 | 42.4 | 81.0 | 247 | 81.0 | 3.9 | 29.791 | 14.165 | g500-B450 | MFXMA 080-32 | 3 | 23 |
| 9.7 | 64.2 | 40.0 | 86.0 | 233 | 86.0 | 2.0 | 28.586 | 15.008 | g500-B240 | MFXMA 080-32 | 2 | 20 |
| 8.9 | 69.9 | 36.7 | 93.0 | 214 | 93.0 | 4.3 | 31.096 | 16.352 | g500-B820 | MFXMA 080-32 | 3 | 46 |
| 7.7 | 80.6 | 31.8 | 107 | 186 | 107 | 4.2 | 30.288 | 18.851 | g500-B600 | MFXMA 080-32 | 3 | 41 |
| 7.6 | 81.8 | 31.3 | 109 | 183 | 109 | 1.7 | 28.420 | 19.143 | g500-B240 | MFXMA 080-32 | 2 | 20 |
| 7.3 | 84.8 | 30.3 | 113 | 177 | 113 | 3.0 | 29.006 | 19.831 | g500-B450 | MFXMA 080-32 | 3 | 23 |
| 7.0 | 88.1 | 29.1 | 118 | 170 | 118 | 3.9 | 30.023 | 20.622 | g500-B600 | MFXMA 080-32 | 3 | 41 |
| 7.0 | 89.2 | 28.8 | 119 | 168 | 119 | 4.0 | 30.111 | 20.857 | g500-B820 | MFXMA 080-32 | 3 | 46 |
| 6.2 | 100 | 25.6 | 134 | 149 | 134 | 1.4 | 28.322 | 23.450 | g500-B240 | MFXMA 080-32 | 2 | 20 |
| 5.7 | 108 | 23.7 | 144 | 138 | 144 | 2.4 | 28.678 | 25.294 | g500-B450 | MFXMA 080-32 | 3 | 23 |
| 5.7 | 109 | 23.5 | 146 | 137 | 146 | 3.5 | 29.553 | 25.550 | g500-B820 | MFXMA 080-32 | 3 | 46 |
| 5.0 | 125 | 20.5 | 166 | 120 | 166 | 4.2 | 32.294 | 29.206 | g500-B1500 | MFXMA 080-32 | 3 | 77 |
| 4.8 | 131 | 19.7 | 174 | 115 | 174 | 1.0 | 28.200 | 30.522 | g500-B240 | MFXMA 080-32 | 2 | 20 |
| 4.7 | 132 | 19.4 | 177 | 113 | 177 | 1.9 | 28.494 | 30.985 | g500-B450 | MFXMA 080-32 | 3 | 23 |
| 3.8 | 162 | 15.8 | 216 | 92.2 | 216 | 0.8 | 28.146 | 37.967 | g500-B240 | MFXMA 080-32 | 2 | 20 |
| 3.6 | 172 | 14.9 | 230 | 86.8 | 230 | 1.7 | 28.302 | 40.330 | g500-B450 | MFXMA 080-32 | 3 | 23 |
| 3.5 | 179 | 14.3 | 239 | 83.5 | 239 | 2.2 | 28.676 | 41.940 | g500-B600 | MFXMA 080-32 | 3 | 41 |
| 3.2 | 196 | 13.1 | 261 | 76.5 | 261 | 2.0 | 29.562 | 45.739 | g500-B600 | MFXMA 080-32 | 3 | 41 |
| 3.1 | 199 | 12.9 | 265 | 75.2 | 265 | 4.0 | 30.138 | 46.568 | g500-B1500 | MFXMA 080-32 | 3 | 77 |
| 2.9 | 214 | 12.0 | 285 | 69.9 | 285 | 1.8 | 29.417 | 50.036 | g500-B600 | MFXMA 080-32 | 3 | 41 |
| 2.9 | 214 | 12.0 | 286 | 69.8 | 286 | 1.4 | 28.211 | 50.167 | g500-B450 | MFXMA 080-32 | 3 | 23 |
| 2.9 | 216 | 11.9 | 288 | 69.2 | 288 | 2.4 | 29.470 | 50.543 | g500-B820 | MFXMA 080-32 | 3 | 46 |
| 2.5 | 244 | 10.5 | 325 | 61.3 | 325 | 3.3 | 29.464 | 57.074 | g500-B1500 | MFXMA 080-32 | 3 | 77 |
| 2.3 | 266 | 9.6 | 355 | 56.2 | 355 | 1.1 | 28.471 | 62.262 | g500-B450 | MFXMA 080-32 | 3 | 23 |
| 2.3 | 273 | 9.4 | 364 | 54.8 | 364 | 1.4 | 29.079 | 63.822 | g500-B600 | MFXMA 080-32 | 3 | 41 |
| 2.3 | 275 | 9.3 | 366 | 54.5 | 366 | 3.5 | 30.940 | 64.221 | g500-B1500 | MFXMA 080-32 | 3 | 77 |
| 2.2 | 276 | 9.3 | 367 | 54.3 | 367 | 1.9 | 29.112 | 64.468 | g500-B820 | MFXMA 080-32 | 3 | 46 |
| 2.1 | 289 | 8.9 | 385 | 51.8 | 385 | 1.3 | 28.281 | 67.513 | g500-B600 | MFXMA 080-32 | 3 | 41 |
| 1.9 | 320 | 8.0 | 427 | 46.7 | 427 | 3.0 | 28.906 | 74.963 | g500-B1500 | MFXMA 080-32 | 3 | 77 |
| 1.9 | 326 | 7.9 | 435 | 45.9 | 435 | 0.9 | 28.356 | 76.271 | g500-B450 | MFXMA 080-32 | 3 | 23 |
| 1.9 | 329 | 7.8 | 438 | 45.5 | 438 | 3.3 | 30.609 | 76.862 | g500-B2700 | MFXMA 080-32 | 3 | 118 |
| 1.9 | 334 | 7.7 | 446 | 44.8 | 446 | 1.2 | 28.865 | 78.182 | g500-B600 | MFXMA 080-32 | 3 | 41 |
| 1.8 | 338 | 7.6 | 450 | 44.3 | 450 | 1.6 | 28.887 | 78.973 | g500-B820 | MFXMA 080-32 | 3 | 46 |
| 1.8 | 350 | 7.3 | 467 | 42.7 | 467 | 1.1 | 28.205 | 81.937 | g500-B600 | MFXMA 080-32 | 3 | 41 |
| 1.7 | 363 | 7.1 | 484 | 41.2 | 484 | 2.9 | 29.923 | 84.940 | g500-B2700 | MFXMA 080-32 | 3 | 118 |
| 1.6 | 389 | 6.6 | 518 | 38.5 | 518 | 2.5 | 28.658 | 90.978 | g500-B1500 | MFXMA 080-32 | 3 | 77 |

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 1.6 | 399 | 6.4 | 532 | 37.5 | 532 | 2.9 | 29.904 | 93.283 | g500-B2700 | MFXMA 080-32 | 3 | 118 |
| 1.4 | 435 | 5.9 | 580 | 34.4 | 580 | 0.9 | 28.529 | 101.760 | g500-B600 | MFXMA 080-32 | 3 | 41 |
| 1.4 | 438 | 5.9 | 584 | 34.2 | 584 | 2.2 | 29.605 | 102.396 | g500-B1500 | MFXMA 080-32 | 3 | 77 |
| 1.4 | 439 | 5.8 | 586 | 34.1 | 586 | 1.2 | 28.489 | 102.790 | g500-B820 | MFXMA 080-32 | 3 | 46 |
| 1.2 | 536 | 4.8 | 715 | 27.9 | 715 | 2.0 | 29.113 | 125.498 | g500-B1500 | MFXMA 080-32 | 3 | 77 |
| 1.1 | 547 | 4.7 | 729 | 27.4 | 729 | 1.1 | 28.365 | 127.861 | g500-B820 | MFXMA 080-32 | 3 | 46 |
| 0.9 | 655 | 3.9 | 873 | 22.8 | 873 | 2.9 | 30.199 | 153.185 | g500-B2700 | MFXMA 080-32 | 3 | 118 |
| 0.9 | 705 | 3.6 | 939 | 21.2 | 939 | 1.5 | 28.700 | 164.833 | g500-B1500 | MFXMA 080-32 | 3 | 77 |
| 0.9 | 707 | 3.6 | 943 | 21.2 | 943 | 0.8 | 28.229 | 165.467 | g500-B820 | MFXMA 080-32 | 3 | 46 |
| 0.9 | 716 | 3.6 | 954 | 20.9 | 954 | 3.7 | 30.403 | 167.383 | g500-B4300 | MFXMA 080-32 | 3 | 180 |
| 0.9 | 719 | 3.6 | 959 | 20.8 | 959 | 2.7 | 30.193 | 168.230 | g500-B2700 | MFXMA 080-32 | 3 | 118 |
| 0.8 | 795 | 3.2 | 1060 | 18.8 | 1060 | 2.4 | 29.626 | 185.911 | g500-B2700 | MFXMA 080-32 | 3 | 118 |
| 0.7 | 855 | 3.0 | 1140 | 17.5 | 1140 | 1.3 | 28.519 | 200.048 | g500-B1500 | MFXMA 080-32 | 3 | 77 |
| 0.7 | 868 | 3.0 | 1158 | 17.2 | 1158 | 3.2 | 29.764 | 203.143 | g500-B4300 | MFXMA 080-32 | 3 | 180 |
| 0.7 | 873 | 2.9 | 1164 | 17.1 | 1164 | 2.2 | 29.622 | 204.170 | g500-B2700 | MFXMA 080-32 | 3 | 118 |
| 0.6 | 943 | 2.7 | 1257 | 15.6 | 1257 | 3.3 | 29.131 | 224.446 | g500-B4300 | MFXMA 080-32 | 4 | 183 |
| 0.6 | 944 | 2.7 | 1259 | 15.6 | 1259 | 1.1 | 28.535 | 224.773 | g500-B1500 | MFXMA 080-32 | 4 | 80 |
| 0.6 | 948 | 2.7 | 1264 | 15.5 | 1264 | 2.0 | 29.014 | 225.581 | g500-B2700 | MFXMA 080-32 | 4 | 121 |
| 0.6 | 1005 | 2.6 | 1339 | 14.9 | 1339 | 1.9 | 29.080 | 235.000 | g500-B2700 | MFXMA 080-32 | 3 | 118 |
| 0.6 | 1081 | 2.4 | 1441 | 13.8 | 1441 | 1.0 | 28.335 | 252.869 | g500-B1500 | MFXMA 080-32 | 3 | 77 |
| 0.6 | 1098 | 2.3 | 1463 | 13.6 | 1463 | 2.5 | 29.167 | 256.781 | g500-B4300 | MFXMA 080-32 | 3 | 180 |
| 0.6 | 1103 | 2.3 | 1471 | 13.6 | 1471 | 1.7 | 29.078 | 258.080 | g500-B2700 | MFXMA 080-32 | 3 | 118 |
| 0.5 | 1157 | 2.2 | 1543 | 12.7 | 1543 | 0.9 | 28.482 | 275.347 | g500-B1500 | MFXMA 080-32 | 4 | 80 |
| 0.5 | 1224 | 2.1 | 1631 | 12.0 | 1631 | 1.6 | 29.196 | 291.191 | g500-B2700 | MFXMA 080-32 | 4 | 121 |
| 0.5 | 1279 | 2.0 | 1705 | 11.5 | 1705 | 2.4 | 28.986 | 304.333 | g500-B4300 | MFXMA 080-32 | 4 | 183 |
| 0.4 | 1535 | 1.6 | 2046 | 9.6 | 2046 | 1.3 | 28.410 | 365.227 | g500-B2700 | MFXMA 080-32 | 4 | 121 |
| 0.4 | 1553 | 1.6 | 2070 | 9.5 | 2070 | 2.0 | 28.838 | 369.548 | g500-B4300 | MFXMA 080-32 | 4 | 183 |
| 0.3 | 1902 | 1.3 | 2536 | 7.7 | 2536 | 1.6 | 28.600 | 452.696 | g500-B4300 | MFXMA 080-32 | 4 | 183 |
| 0.3 | 1912 | 1.3 | 2549 | 7.7 | 2549 | 1.0 | 28.571 | 454.986 | g500-B2700 | MFXMA 080-32 | 4 | 121 |
| 0.3 | 2039 | 1.2 | 2718 | 7.2 | 2718 | 1.5 | 28.423 | 485.243 | g500-B4300 | MFXMA 080-32 | 4 | 183 |
| 0.3 | 2049 | 1.2 | 2732 | 7.2 | 2732 | 0.9 | 28.398 | 487.698 | g500-B2700 | MFXMA 080-32 | 4 | 121 |
| 0.2 | 2536 | 1.0 | 3382 | 5.8 | 3382 | 1.2 | 28.290 | 603.594 | g500-B4300 | MFXMA 080-32 | 4 | 183 |
| 0.2 | 3204 | 0.8 | 4272 | 4.6 | 4272 | 1.0 | 28.306 | 762.524 | g500-B4300 | MFXMA 080-32 | 4 | 183 |



**120 Hz: 3 kW**

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 40.7 | 21.0 | 168 | 28.0 | 976 | 28.0 | 3.1 | 30.972 | 3.565 | g500-B240 | MFXMA 080-42 | 2 | 20 |
| 29.7 | 28.8 | 123 | 38.0 | 712 | 38.0 | 2.9 | 29.744 | 4.889 | g500-B240 | MFXMA 080-42 | 2 | 20 |
| 29.0 | 29.5 | 120 | 39.0 | 696 | 39.0 | 3.1 | 32.360 | 5.002 | g500-B450 | MFXMA 080-42 | 3 | 23 |
| 28.0 | 30.5 | 116 | 40.0 | 671 | 40.0 | 1.3 | 28.793 | 5.185 | g500-B110 | MFXMA 080-42 | 2 | 16 |
| 23.2 | 36.9 | 95.9 | 49.0 | 556 | 49.0 | 2.4 | 29.151 | 6.257 | g500-B240 | MFXMA 080-42 | 2 | 20 |
| 21.1 | 40.4 | 87.5 | 53.0 | 507 | 53.0 | 3.1 | 30.482 | 6.860 | g500-B450 | MFXMA 080-42 | 3 | 23 |
| 20.4 | 41.9 | 84.4 | 55.0 | 489 | 55.0 | 1.1 | 28.478 | 7.111 | g500-B110 | MFXMA 080-42 | 2 | 16 |
| 18.6 | 46.0 | 76.8 | 61.0 | 445 | 61.0 | 2.3 | 29.513 | 7.817 | g500-B240 | MFXMA 080-42 | 2 | 20 |
| 15.9 | 53.6 | 65.9 | 71.0 | 382 | 71.0 | 0.9 | 28.323 | 9.101 | g500-B110 | MFXMA 080-42 | 2 | 16 |
| 15.2 | 56.1 | 63.0 | 74.0 | 366 | 74.0 | 3.1 | 31.761 | 9.520 | g500-B820 | MFXMA 080-42 | 3 | 46 |
| 14.0 | 60.8 | 58.1 | 80.0 | 337 | 80.0 | 3.1 | 31.060 | 10.328 | g500-B450 | MFXMA 080-42 | 3 | 23 |
| 13.5 | 63.1 | 56.0 | 84.0 | 325 | 84.0 | 1.9 | 28.968 | 10.720 | g500-B240 | MFXMA 080-42 | 2 | 20 |
| 11.9 | 71.5 | 49.4 | 95.0 | 287 | 95.0 | 2.9 | 30.520 | 12.143 | g500-B820 | MFXMA 080-42 | 3 | 46 |
| 10.6 | 80.8 | 43.7 | 107 | 254 | 107 | 1.5 | 28.677 | 13.719 | g500-B240 | MFXMA 080-42 | 2 | 20 |
| 10.2 | 83.4 | 42.4 | 110 | 246 | 110 | 2.9 | 29.791 | 14.165 | g500-B450 | MFXMA 080-42 | 3 | 23 |
| 9.7 | 88.4 | 40.0 | 117 | 232 | 117 | 1.4 | 28.586 | 15.008 | g500-B240 | MFXMA 080-42 | 2 | 20 |
| 8.9 | 96.3 | 36.7 | 127 | 213 | 127 | 3.1 | 31.096 | 16.352 | g500-B820 | MFXMA 080-42 | 3 | 46 |
| 7.7 | 111 | 31.8 | 147 | 185 | 147 | 3.1 | 30.288 | 18.851 | g500-B600 | MFXMA 080-42 | 3 | 41 |
| 7.6 | 113 | 31.3 | 149 | 182 | 149 | 1.2 | 28.420 | 19.143 | g500-B240 | MFXMA 080-42 | 2 | 20 |
| 7.3 | 117 | 30.3 | 154 | 176 | 154 | 2.2 | 29.006 | 19.831 | g500-B450 | MFXMA 080-42 | 3 | 23 |
| 7.0 | 121 | 29.1 | 161 | 169 | 161 | 2.8 | 30.023 | 20.622 | g500-B600 | MFXMA 080-42 | 3 | 41 |
| 7.0 | 123 | 28.8 | 162 | 167 | 162 | 2.9 | 30.111 | 20.857 | g500-B820 | MFXMA 080-42 | 3 | 46 |
| 6.2 | 138 | 25.6 | 183 | 148 | 183 | 1.0 | 28.322 | 23.450 | g500-B240 | MFXMA 080-42 | 2 | 20 |
| 5.7 | 149 | 23.7 | 197 | 138 | 197 | 1.7 | 28.678 | 25.294 | g500-B450 | MFXMA 080-42 | 3 | 23 |
| 5.7 | 151 | 23.5 | 199 | 136 | 199 | 2.6 | 29.553 | 25.550 | g500-B820 | MFXMA 080-42 | 3 | 46 |
| 5.0 | 172 | 20.5 | 227 | 119 | 227 | 3.1 | 32.294 | 29.206 | g500-B1500 | MFXMA 080-42 | 3 | 77 |
| 4.7 | 183 | 19.4 | 241 | 112 | 241 | 1.4 | 28.494 | 30.985 | g500-B450 | MFXMA 080-42 | 3 | 23 |
| 3.6 | 238 | 14.9 | 314 | 86.3 | 314 | 1.2 | 28.302 | 40.330 | g500-B450 | MFXMA 080-42 | 3 | 23 |
| 3.5 | 247 | 14.3 | 327 | 83.0 | 327 | 1.6 | 28.676 | 41.940 | g500-B600 | MFXMA 080-42 | 3 | 41 |
| 3.2 | 269 | 13.1 | 356 | 76.1 | 356 | 1.5 | 29.562 | 45.739 | g500-B600 | MFXMA 080-42 | 3 | 41 |
| 3.1 | 274 | 12.9 | 363 | 74.7 | 363 | 3.0 | 30.138 | 46.568 | g500-B1500 | MFXMA 080-42 | 3 | 77 |
| 2.9 | 295 | 12.0 | 390 | 69.5 | 390 | 1.3 | 29.417 | 50.036 | g500-B600 | MFXMA 080-42 | 3 | 41 |
| 2.9 | 295 | 12.0 | 391 | 69.4 | 391 | 1.0 | 28.211 | 50.167 | g500-B450 | MFXMA 080-42 | 3 | 23 |
| 2.9 | 298 | 11.9 | 394 | 68.9 | 394 | 1.8 | 29.470 | 50.543 | g500-B820 | MFXMA 080-42 | 3 | 46 |
| 2.5 | 336 | 10.5 | 445 | 61.0 | 445 | 2.4 | 29.464 | 57.074 | g500-B1500 | MFXMA 080-42 | 3 | 77 |
| 2.3 | 367 | 9.6 | 485 | 55.9 | 485 | 0.8 | 28.471 | 62.262 | g500-B450 | MFXMA 080-42 | 3 | 23 |
| 2.3 | 376 | 9.4 | 497 | 54.5 | 497 | 1.0 | 29.079 | 63.822 | g500-B600 | MFXMA 080-42 | 3 | 41 |
| 2.3 | 378 | 9.3 | 500 | 54.2 | 500 | 2.6 | 30.940 | 64.221 | g500-B1500 | MFXMA 080-42 | 3 | 77 |
| 2.2 | 380 | 9.3 | 502 | 54.0 | 502 | 1.4 | 29.112 | 64.468 | g500-B820 | MFXMA 080-42 | 3 | 46 |
| 2.1 | 398 | 8.9 | 526 | 51.5 | 526 | 1.0 | 28.281 | 67.513 | g500-B600 | MFXMA 080-42 | 3 | 41 |
| 1.9 | 442 | 8.0 | 584 | 46.4 | 584 | 2.2 | 28.906 | 74.963 | g500-B1500 | MFXMA 080-42 | 3 | 77 |
| 1.9 | 453 | 7.8 | 599 | 45.3 | 599 | 2.4 | 30.609 | 76.862 | g500-B2700 | MFXMA 080-42 | 3 | 118 |
| 1.9 | 460 | 7.7 | 609 | 44.5 | 609 | 0.9 | 28.865 | 78.182 | g500-B600 | MFXMA 080-42 | 3 | 41 |
| 1.8 | 465 | 7.6 | 615 | 44.1 | 615 | 1.1 | 28.887 | 78.973 | g500-B820 | MFXMA 080-42 | 3 | 46 |
| 1.8 | 483 | 7.3 | 638 | 42.5 | 638 | 0.8 | 28.205 | 81.937 | g500-B600 | MFXMA 080-42 | 3 | 41 |
| 1.7 | 500 | 7.1 | 662 | 41.0 | 662 | 2.1 | 29.923 | 84.940 | g500-B2700 | MFXMA 080-42 | 3 | 118 |
| 1.6 | 536 | 6.6 | 709 | 38.3 | 709 | 1.8 | 28.658 | 90.978 | g500-B1500 | MFXMA 080-42 | 3 | 77 |
| 1.6 | 549 | 6.4 | 727 | 37.3 | 727 | 2.1 | 29.904 | 93.283 | g500-B2700 | MFXMA 080-42 | 3 | 118 |
| 1.4 | 603 | 5.9 | 798 | 34.0 | 798 | 1.6 | 29.605 | 102.396 | g500-B1500 | MFXMA 080-42 | 3 | 77 |
| 1.4 | 605 | 5.8 | 801 | 33.9 | 801 | 0.9 | 28.489 | 102.790 | g500-B820 | MFXMA 080-42 | 3 | 46 |
| 1.2 | 739 | 4.8 | 977 | 27.7 | 977 | 1.5 | 29.113 | 125.498 | g500-B1500 | MFXMA 080-42 | 3 | 77 |

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 0.9 | 902 | 3.9 | 1193 | 22.7 | 1193 | 2.2 | 30.199 | 153.185 | g500-B2700 | MFXMA 080-42 | 3 | 118 |
| 0.9 | 971 | 3.6 | 1284 | 21.1 | 1284 | 1.1 | 28.700 | 164.833 | g500-B1500 | MFXMA 080-42 | 3 | 77 |
| 0.9 | 986 | 3.6 | 1304 | 20.8 | 1304 | 2.7 | 30.403 | 167.383 | g500-B4300 | MFXMA 080-42 | 3 | 180 |
| 0.9 | 991 | 3.6 | 1310 | 20.7 | 1310 | 2.0 | 30.193 | 168.230 | g500-B2700 | MFXMA 080-42 | 3 | 118 |
| 0.8 | 1095 | 3.2 | 1448 | 18.7 | 1448 | 1.8 | 29.626 | 185.911 | g500-B2700 | MFXMA 080-42 | 3 | 118 |
| 0.7 | 1178 | 3.0 | 1558 | 17.4 | 1558 | 0.9 | 28.519 | 200.048 | g500-B1500 | MFXMA 080-42 | 3 | 77 |
| 0.7 | 1196 | 3.0 | 1582 | 17.1 | 1582 | 2.4 | 29.764 | 203.143 | g500-B4300 | MFXMA 080-42 | 3 | 180 |
| 0.7 | 1202 | 2.9 | 1590 | 17.0 | 1590 | 1.6 | 29.622 | 204.170 | g500-B2700 | MFXMA 080-42 | 3 | 118 |
| 0.6 | 1299 | 2.7 | 1718 | 15.5 | 1718 | 2.4 | 29.131 | 224.446 | g500-B4300 | MFXMA 080-42 | 4 | 183 |
| 0.6 | 1301 | 2.7 | 1721 | 15.5 | 1721 | 0.8 | 28.535 | 224.773 | g500-B1500 | MFXMA 080-42 | 4 | 80 |
| 0.6 | 1306 | 2.7 | 1727 | 15.4 | 1727 | 1.5 | 29.014 | 225.581 | g500-B2700 | MFXMA 080-42 | 4 | 121 |
| 0.6 | 1384 | 2.6 | 1830 | 14.8 | 1830 | 1.4 | 29.080 | 235.000 | g500-B2700 | MFXMA 080-42 | 3 | 118 |
| 0.6 | 1512 | 2.3 | 2000 | 13.6 | 2000 | 1.8 | 29.167 | 256.781 | g500-B4300 | MFXMA 080-42 | 3 | 180 |
| 0.6 | 1520 | 2.3 | 2010 | 13.5 | 2010 | 1.3 | 29.078 | 258.080 | g500-B2700 | MFXMA 080-42 | 3 | 118 |
| 0.5 | 1686 | 2.1 | 2229 | 12.0 | 2229 | 1.2 | 29.196 | 291.191 | g500-B2700 | MFXMA 080-42 | 4 | 121 |
| 0.5 | 1762 | 2.0 | 2330 | 11.4 | 2330 | 1.8 | 28.986 | 304.333 | g500-B4300 | MFXMA 080-42 | 4 | 183 |
| 0.4 | 2114 | 1.6 | 2796 | 9.5 | 2796 | 0.9 | 28.410 | 365.227 | g500-B2700 | MFXMA 080-42 | 4 | 121 |
| 0.4 | 2139 | 1.6 | 2829 | 9.4 | 2829 | 1.5 | 28.838 | 369.548 | g500-B4300 | MFXMA 080-42 | 4 | 183 |
| 0.3 | 2621 | 1.3 | 3466 | 7.7 | 3466 | 1.2 | 28.600 | 452.696 | g500-B4300 | MFXMA 080-42 | 4 | 183 |
| 0.3 | 2809 | 1.2 | 3715 | 7.2 | 3715 | 1.1 | 28.423 | 485.243 | g500-B4300 | MFXMA 080-42 | 4 | 183 |
| 0.2 | 3494 | 1.0 | 4621 | 5.8 | 4621 | 0.9 | 28.290 | 603.594 | g500-B4300 | MFXMA 080-42 | 4 | 183 |



**120 Hz: 4 kW**

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 40.7 | 26.1 | 168 | 37.0 | 976 | 37.0 | 2.8 | 34.972 | 3.565 | g500-B240 | MFXMA 090-32 | 2 | 27 |
| 29.7 | 35.8 | 123 | 51.0 | 712 | 51.0 | 2.2 | 33.744 | 4.889 | g500-B240 | MFXMA 090-32 | 2 | 27 |
| 29.0 | 36.6 | 120 | 52.0 | 696 | 52.0 | 3.0 | 36.360 | 5.002 | g500-B450 | MFXMA 090-32 | 3 | 30 |
| 28.0 | 37.9 | 116 | 54.0 | 671 | 54.0 | 1.0 | 32.793 | 5.185 | g500-B110 | MFXMA 090-32 | 2 | 23 |
| 23.2 | 45.8 | 95.9 | 65.0 | 556 | 65.0 | 1.8 | 33.151 | 6.257 | g500-B240 | MFXMA 090-32 | 2 | 27 |
| 21.1 | 50.2 | 87.5 | 71.0 | 507 | 71.0 | 3.0 | 34.482 | 6.860 | g500-B450 | MFXMA 090-32 | 3 | 30 |
| 18.6 | 57.2 | 76.8 | 81.0 | 445 | 81.0 | 1.8 | 33.513 | 7.817 | g500-B240 | MFXMA 090-32 | 2 | 27 |
| 15.2 | 69.6 | 63.0 | 99.0 | 366 | 99.0 | 3.0 | 35.761 | 9.520 | g500-B820 | MFXMA 090-32 | 3 | 53 |
| 14.0 | 75.5 | 58.1 | 107 | 337 | 107 | 2.7 | 35.060 | 10.328 | g500-B450 | MFXMA 090-32 | 3 | 30 |
| 13.5 | 78.4 | 56.0 | 111 | 325 | 111 | 1.4 | 32.968 | 10.720 | g500-B240 | MFXMA 090-32 | 2 | 27 |
| 11.9 | 88.8 | 49.4 | 126 | 287 | 126 | 2.8 | 34.520 | 12.143 | g500-B820 | MFXMA 090-32 | 3 | 53 |
| 10.6 | 100 | 43.7 | 142 | 254 | 142 | 1.2 | 32.677 | 13.719 | g500-B240 | MFXMA 090-32 | 2 | 27 |
| 10.2 | 104 | 42.4 | 147 | 246 | 147 | 2.2 | 33.791 | 14.165 | g500-B450 | MFXMA 090-32 | 3 | 30 |
| 9.7 | 110 | 40.0 | 155 | 232 | 155 | 1.1 | 32.586 | 15.008 | g500-B240 | MFXMA 090-32 | 2 | 27 |
| 8.9 | 120 | 36.7 | 169 | 213 | 169 | 3.0 | 35.096 | 16.352 | g500-B820 | MFXMA 090-32 | 3 | 53 |
| 7.7 | 138 | 31.8 | 195 | 185 | 195 | 2.3 | 34.288 | 18.851 | g500-B600 | MFXMA 090-32 | 3 | 48 |
| 7.6 | 140 | 31.3 | 198 | 182 | 198 | 0.9 | 32.420 | 19.143 | g500-B240 | MFXMA 090-32 | 2 | 27 |
| 7.3 | 145 | 30.3 | 205 | 176 | 205 | 1.7 | 33.006 | 19.831 | g500-B450 | MFXMA 090-32 | 3 | 30 |
| 7.0 | 151 | 29.1 | 214 | 169 | 214 | 2.1 | 34.023 | 20.622 | g500-B600 | MFXMA 090-32 | 3 | 48 |
| 7.0 | 153 | 28.8 | 216 | 167 | 216 | 2.8 | 34.111 | 20.857 | g500-B820 | MFXMA 090-32 | 3 | 53 |
| 5.7 | 185 | 23.7 | 262 | 138 | 262 | 1.3 | 32.678 | 25.294 | g500-B450 | MFXMA 090-32 | 3 | 30 |
| 5.7 | 187 | 23.5 | 265 | 136 | 265 | 2.3 | 33.553 | 25.550 | g500-B820 | MFXMA 090-32 | 3 | 53 |
| 5.0 | 214 | 20.5 | 302 | 119 | 302 | 2.9 | 36.294 | 29.206 | g500-B1500 | MFXMA 090-32 | 3 | 84 |
| 4.7 | 227 | 19.4 | 321 | 112 | 321 | 1.1 | 32.494 | 30.985 | g500-B450 | MFXMA 090-32 | 3 | 30 |
| 3.6 | 295 | 14.9 | 418 | 86.3 | 418 | 0.9 | 32.302 | 40.330 | g500-B450 | MFXMA 090-32 | 3 | 30 |
| 3.5 | 307 | 14.3 | 434 | 83.0 | 434 | 1.2 | 32.676 | 41.940 | g500-B600 | MFXMA 090-32 | 3 | 48 |
| 3.2 | 335 | 13.1 | 474 | 76.1 | 474 | 1.1 | 33.562 | 45.739 | g500-B600 | MFXMA 090-32 | 3 | 48 |
| 3.1 | 341 | 12.9 | 482 | 74.7 | 482 | 2.7 | 34.138 | 46.568 | g500-B1500 | MFXMA 090-32 | 3 | 84 |
| 2.9 | 366 | 12.0 | 518 | 69.5 | 518 | 1.0 | 33.417 | 50.036 | g500-B600 | MFXMA 090-32 | 3 | 48 |
| 2.9 | 370 | 11.9 | 523 | 68.9 | 523 | 1.3 | 33.470 | 50.543 | g500-B820 | MFXMA 090-32 | 3 | 53 |
| 2.5 | 417 | 10.5 | 591 | 61.0 | 591 | 2.2 | 33.464 | 57.074 | g500-B1500 | MFXMA 090-32 | 3 | 84 |
| 2.3 | 470 | 9.3 | 665 | 54.2 | 665 | 1.9 | 34.940 | 64.221 | g500-B1500 | MFXMA 090-32 | 3 | 84 |
| 2.2 | 472 | 9.3 | 667 | 54.0 | 667 | 1.1 | 33.112 | 64.468 | g500-B820 | MFXMA 090-32 | 3 | 53 |
| 1.9 | 548 | 8.0 | 776 | 46.4 | 776 | 1.7 | 32.906 | 74.963 | g500-B1500 | MFXMA 090-32 | 3 | 84 |
| 1.9 | 562 | 7.8 | 796 | 45.3 | 796 | 2.3 | 34.609 | 76.862 | g500-B2700 | MFXMA 090-32 | 3 | 125 |
| 1.8 | 578 | 7.6 | 818 | 44.1 | 818 | 0.9 | 32.887 | 78.973 | g500-B820 | MFXMA 090-32 | 3 | 53 |
| 1.7 | 621 | 7.1 | 879 | 41.0 | 879 | 2.0 | 33.923 | 84.940 | g500-B2700 | MFXMA 090-32 | 3 | 125 |
| 1.6 | 665 | 6.6 | 942 | 38.3 | 942 | 1.4 | 32.658 | 90.978 | g500-B1500 | MFXMA 090-32 | 3 | 84 |
| 1.6 | 682 | 6.4 | 966 | 37.3 | 966 | 2.0 | 33.904 | 93.283 | g500-B2700 | MFXMA 090-32 | 3 | 125 |
| 1.4 | 749 | 5.9 | 1060 | 34.0 | 1060 | 1.2 | 33.605 | 102.396 | g500-B1500 | MFXMA 090-32 | 3 | 84 |
| 1.2 | 918 | 4.8 | 1299 | 27.7 | 1299 | 1.1 | 33.113 | 125.498 | g500-B1500 | MFXMA 090-32 | 3 | 84 |
| 0.9 | 1120 | 3.9 | 1586 | 22.7 | 1586 | 1.6 | 34.199 | 153.185 | g500-B2700 | MFXMA 090-32 | 3 | 125 |
| 0.9 | 1206 | 3.6 | 1707 | 21.1 | 1707 | 0.8 | 32.700 | 164.833 | g500-B1500 | MFXMA 090-32 | 3 | 84 |
| 0.9 | 1224 | 3.6 | 1733 | 20.8 | 1733 | 2.4 | 34.403 | 167.383 | g500-B4300 | MFXMA 090-32 | 3 | 187 |
| 0.9 | 1230 | 3.6 | 1742 | 20.7 | 1742 | 1.5 | 34.193 | 168.230 | g500-B2700 | MFXMA 090-32 | 3 | 125 |
| 0.8 | 1360 | 3.2 | 1925 | 18.7 | 1925 | 1.3 | 33.626 | 185.911 | g500-B2700 | MFXMA 090-32 | 3 | 125 |
| 0.7 | 1486 | 3.0 | 2103 | 17.1 | 2103 | 2.0 | 33.764 | 203.143 | g500-B4300 | MFXMA 090-32 | 3 | 187 |
| 0.7 | 1493 | 2.9 | 2114 | 17.0 | 2114 | 1.2 | 33.622 | 204.170 | g500-B2700 | MFXMA 090-32 | 3 | 125 |
| 0.6 | 1614 | 2.7 | 2284 | 15.5 | 2284 | 1.8 | 33.131 | 224.446 | g500-B4300 | MFXMA 090-32 | 4 | 190 |
| 0.6 | 1622 | 2.7 | 2296 | 15.4 | 2296 | 1.1 | 33.014 | 225.581 | g500-B2700 | MFXMA 090-32 | 4 | 128 |
| 0.6 | 1719 | 2.6 | 2433 | 14.8 | 2433 | 1.1 | 33.080 | 235.000 | g500-B2700 | MFXMA 090-32 | 3 | 125 |

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 0.6 | 1878 | 2.3 | 2659 | 13.6 | 2659 | 1.5 | 33.167 | 256.781 | g500-B4300 | MFXMA 090-32 | 3 | 187 |
| 0.6 | 1888 | 2.3 | 2672 | 13.5 | 2672 | 1.0 | 33.078 | 258.080 | g500-B2700 | MFXMA 090-32 | 3 | 125 |
| 0.5 | 2094 | 2.1 | 2964 | 12.0 | 2964 | 0.9 | 33.196 | 291.191 | g500-B2700 | MFXMA 090-32 | 4 | 128 |
| 0.5 | 2188 | 2.0 | 3097 | 11.4 | 3097 | 1.3 | 32.986 | 304.333 | g500-B4300 | MFXMA 090-32 | 4 | 190 |
| 0.4 | 2657 | 1.6 | 3761 | 9.4 | 3761 | 1.1 | 32.838 | 369.548 | g500-B4300 | MFXMA 090-32 | 4 | 190 |
| 0.3 | 3255 | 1.3 | 4607 | 7.7 | 4607 | 0.9 | 32.600 | 452.696 | g500-B4300 | MFXMA 090-32 | 4 | 190 |
| 0.3 | 3489 | 1.2 | 4939 | 7.2 | 4939 | 0.8 | 32.423 | 485.243 | g500-B4300 | MFXMA 090-32 | 4 | 190 |



**120 Hz: 5.5 kW**

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 40.7 | 35.2 | 168 | 50.0 | 989 | 50.0 | 2.1 | 63.972 | 3.565 | g500-B240 | MFXMA 100-12 | 2 | 36 |
| 29.7 | 48.3 | 123 | 69.0 | 721 | 69.0 | 1.6 | 62.744 | 4.889 | g500-B240 | MFXMA 100-12 | 2 | 36 |
| 29.2 | 49.0 | 121 | 70.0 | 711 | 70.0 | 3.3 | 72.522 | 4.958 | g500-B820 | MFXMA 100-12 | 3 | 62 |
| 29.0 | 49.4 | 120 | 71.0 | 705 | 71.0 | 3.0 | 65.360 | 5.002 | g500-B450 | MFXMA 100-12 | 3 | 39 |
| 28.6 | 50.1 | 118 | 72.0 | 696 | 72.0 | 3.9 | 67.731 | 5.067 | g500-B600 | MFXMA 100-12 | 3 | 57 |
| 23.2 | 61.8 | 95.9 | 89.0 | 563 | 89.0 | 1.3 | 62.151 | 6.257 | g500-B240 | MFXMA 100-12 | 2 | 36 |
| 21.3 | 67.2 | 88.2 | 96.0 | 518 | 96.0 | 3.1 | 67.711 | 6.800 | g500-B820 | MFXMA 100-12 | 3 | 62 |
| 21.1 | 67.8 | 87.5 | 97.0 | 514 | 97.0 | 2.4 | 63.482 | 6.860 | g500-B450 | MFXMA 100-12 | 3 | 39 |
| 20.9 | 68.6 | 86.3 | 98.0 | 507 | 98.0 | 3.0 | 65.163 | 6.949 | g500-B600 | MFXMA 100-12 | 3 | 57 |
| 18.6 | 77.2 | 76.8 | 111 | 451 | 111 | 1.3 | 62.513 | 7.817 | g500-B240 | MFXMA 100-12 | 2 | 36 |
| 17.0 | 84.1 | 70.5 | 121 | 414 | 121 | 2.9 | 70.071 | 8.517 | g500-B820 | MFXMA 100-12 | 3 | 62 |
| 15.2 | 94.0 | 63.0 | 135 | 370 | 135 | 2.8 | 64.761 | 9.520 | g500-B820 | MFXMA 100-12 | 3 | 62 |
| 14.0 | 102 | 58.1 | 146 | 341 | 146 | 2.0 | 64.060 | 10.328 | g500-B450 | MFXMA 100-12 | 3 | 39 |
| 13.5 | 106 | 56.0 | 152 | 329 | 152 | 1.0 | 61.968 | 10.720 | g500-B240 | MFXMA 100-12 | 2 | 36 |
| 13.5 | 106 | 55.9 | 152 | 328 | 152 | 2.7 | 66.118 | 10.741 | g500-B600 | MFXMA 100-12 | 3 | 57 |
| 12.4 | 115 | 51.4 | 165 | 302 | 165 | 2.6 | 66.407 | 11.680 | g500-B820 | MFXMA 100-12 | 3 | 62 |
| 11.9 | 120 | 49.4 | 172 | 290 | 172 | 2.4 | 63.520 | 12.143 | g500-B820 | MFXMA 100-12 | 3 | 62 |
| 11.1 | 130 | 45.7 | 186 | 269 | 186 | 4.1 | 68.661 | 13.118 | g500-B1500 | MFXMA 100-12 | 3 | 92 |
| 10.6 | 136 | 43.7 | 194 | 257 | 194 | 0.8 | 61.677 | 13.719 | g500-B240 | MFXMA 100-12 | 2 | 36 |
| 10.2 | 140 | 42.4 | 200 | 249 | 200 | 1.6 | 62.791 | 14.165 | g500-B450 | MFXMA 100-12 | 3 | 39 |
| 9.8 | 146 | 40.7 | 208 | 239 | 208 | 2.2 | 64.306 | 14.730 | g500-B600 | MFXMA 100-12 | 3 | 57 |
| 8.9 | 162 | 36.7 | 231 | 216 | 231 | 2.3 | 64.096 | 16.352 | g500-B820 | MFXMA 100-12 | 3 | 62 |
| 7.7 | 186 | 31.8 | 267 | 187 | 267 | 1.7 | 63.288 | 18.851 | g500-B600 | MFXMA 100-12 | 3 | 57 |
| 7.3 | 196 | 30.3 | 281 | 178 | 281 | 1.2 | 62.006 | 19.831 | g500-B450 | MFXMA 100-12 | 3 | 39 |
| 7.1 | 202 | 29.3 | 289 | 172 | 289 | 3.9 | 69.031 | 20.444 | g500-B1500 | MFXMA 100-12 | 3 | 92 |
| 7.0 | 204 | 29.1 | 292 | 171 | 292 | 1.6 | 63.023 | 20.622 | g500-B600 | MFXMA 100-12 | 3 | 57 |
| 7.0 | 206 | 28.8 | 295 | 169 | 295 | 2.1 | 63.111 | 20.857 | g500-B820 | MFXMA 100-12 | 3 | 62 |
| 6.3 | 226 | 26.2 | 324 | 154 | 324 | 3.5 | 67.615 | 22.898 | g500-B1500 | MFXMA 100-12 | 3 | 92 |
| 5.7 | 250 | 23.7 | 358 | 139 | 358 | 1.0 | 61.678 | 25.294 | g500-B450 | MFXMA 100-12 | 3 | 39 |
| 5.7 | 251 | 23.7 | 359 | 139 | 359 | 4.2 | 83.170 | 25.365 | g500-B4300 | MFXMA 100-12 | 3 | 196 |
| 5.7 | 252 | 23.5 | 362 | 138 | 362 | 1.7 | 62.553 | 25.550 | g500-B820 | MFXMA 100-12 | 3 | 62 |
| 5.6 | 257 | 23.0 | 369 | 135 | 369 | 1.2 | 63.882 | 26.061 | g500-B600 | MFXMA 100-12 | 3 | 57 |
| 5.5 | 260 | 22.8 | 373 | 134 | 373 | 1.7 | 64.077 | 26.324 | g500-B820 | MFXMA 100-12 | 3 | 62 |
| 5.4 | 265 | 22.4 | 379 | 132 | 379 | 4.2 | 73.188 | 26.814 | g500-B2700 | MFXMA 100-12 | 3 | 134 |
| 5.0 | 289 | 20.5 | 413 | 121 | 413 | 2.7 | 65.294 | 29.206 | g500-B1500 | MFXMA 100-12 | 3 | 92 |
| 4.9 | 291 | 20.4 | 417 | 120 | 417 | 4.2 | 72.999 | 29.447 | g500-B2700 | MFXMA 100-12 | 3 | 134 |
| 4.1 | 353 | 16.8 | 506 | 98.6 | 506 | 0.9 | 63.117 | 35.740 | g500-B600 | MFXMA 100-12 | 3 | 57 |
| 4.1 | 353 | 16.8 | 506 | 98.5 | 506 | 2.2 | 64.210 | 35.778 | g500-B1500 | MFXMA 100-12 | 3 | 92 |
| 4.0 | 357 | 16.6 | 511 | 97.6 | 511 | 1.2 | 63.220 | 36.102 | g500-B820 | MFXMA 100-12 | 3 | 62 |
| 3.5 | 414 | 14.3 | 594 | 84.0 | 594 | 0.9 | 61.676 | 41.940 | g500-B600 | MFXMA 100-12 | 3 | 57 |
| 3.2 | 444 | 13.3 | 636 | 78.4 | 636 | 2.0 | 66.269 | 44.955 | g500-B1500 | MFXMA 100-12 | 3 | 92 |
| 3.1 | 460 | 12.9 | 659 | 75.7 | 659 | 1.9 | 63.138 | 46.568 | g500-B1500 | MFXMA 100-12 | 3 | 92 |
| 3.0 | 483 | 12.3 | 692 | 72.1 | 692 | 3.3 | 66.468 | 48.912 | g500-B2700 | MFXMA 100-12 | 3 | 134 |
| 2.9 | 499 | 11.9 | 715 | 69.7 | 715 | 1.0 | 62.470 | 50.543 | g500-B820 | MFXMA 100-12 | 3 | 62 |
| 2.7 | 534 | 11.1 | 765 | 65.2 | 765 | 2.9 | 62.113 | 54.082 | g500-B2700 | MFXMA 100-12 | 3 | 134 |
| 2.5 | 564 | 10.5 | 808 | 61.8 | 808 | 1.6 | 62.464 | 57.074 | g500-B1500 | MFXMA 100-12 | 3 | 92 |
| 2.4 | 587 | 10.1 | 841 | 59.3 | 841 | 2.7 | 62.113 | 59.393 | g500-B2700 | MFXMA 100-12 | 3 | 134 |
| 2.3 | 634 | 9.4 | 908 | 55.0 | 908 | 4.1 | 71.598 | 64.127 | g500-B4300 | MFXMA 100-12 | 3 | 196 |
| 2.3 | 634 | 9.3 | 909 | 54.9 | 909 | 1.4 | 63.940 | 64.221 | g500-B1500 | MFXMA 100-12 | 3 | 92 |
| 2.2 | 637 | 9.3 | 912 | 54.7 | 912 | 2.5 | 70.170 | 64.452 | g500-B2700 | MFXMA 100-12 | 3 | 134 |
| 1.9 | 741 | 8.0 | 1061 | 47.0 | 1061 | 1.2 | 61.906 | 74.963 | g500-B1500 | MFXMA 100-12 | 3 | 92 |

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 1.9 | 759 | 7.8 | 1088 | 45.9 | 1088 | 2.1 | 63.609 | 76.862 | g500-B2700 | MFXMA 100-12 | 3 | 134 |
| 1.7 | 839 | 7.1 | 1202 | 41.5 | 1202 | 1.9 | 62.923 | 84.940 | g500-B2700 | MFXMA 100-12 | 3 | 134 |
| 1.6 | 899 | 6.6 | 1288 | 38.7 | 1288 | 1.0 | 61.658 | 90.978 | g500-B1500 | MFXMA 100-12 | 3 | 92 |
| 1.6 | 922 | 6.4 | 1320 | 37.8 | 1320 | 1.8 | 62.904 | 93.283 | g500-B2700 | MFXMA 100-12 | 3 | 134 |
| 1.5 | 963 | 6.2 | 1380 | 36.2 | 1380 | 1.7 | 65.457 | 97.481 | g500-B2700 | MFXMA 100-12 | 3 | 134 |
| 1.4 | 1012 | 5.9 | 1449 | 34.4 | 1449 | 0.9 | 62.605 | 102.396 | g500-B1500 | MFXMA 100-12 | 3 | 92 |
| 1.4 | 1052 | 5.6 | 1508 | 33.1 | 1508 | 2.4 | 65.960 | 106.517 | g500-B4300 | MFXMA 100-12 | 3 | 196 |
| 1.4 | 1058 | 5.6 | 1515 | 32.9 | 1515 | 1.5 | 65.442 | 107.056 | g500-B2700 | MFXMA 100-12 | 3 | 134 |
| 1.2 | 1169 | 5.1 | 1675 | 29.8 | 1675 | 1.5 | 62.113 | 118.370 | g500-B2700 | MFXMA 100-12 | 3 | 134 |
| 1.2 | 1240 | 4.8 | 1776 | 28.1 | 1776 | 0.8 | 62.113 | 125.498 | g500-B1500 | MFXMA 100-12 | 3 | 92 |
| 1.1 | 1278 | 4.6 | 1831 | 27.3 | 1831 | 2.2 | 62.113 | 129.342 | g500-B4300 | MFXMA 100-12 | 3 | 196 |
| 1.1 | 1284 | 4.6 | 1840 | 27.1 | 1840 | 1.4 | 62.113 | 129.996 | g500-B2700 | MFXMA 100-12 | 3 | 134 |
| 0.9 | 1513 | 3.9 | 2168 | 23.0 | 2168 | 1.2 | 63.199 | 153.185 | g500-B2700 | MFXMA 100-12 | 3 | 134 |
| 0.9 | 1654 | 3.6 | 2369 | 21.1 | 2369 | 1.7 | 63.403 | 167.383 | g500-B4300 | MFXMA 100-12 | 3 | 196 |
| 0.9 | 1662 | 3.6 | 2381 | 21.0 | 2381 | 1.1 | 63.193 | 168.230 | g500-B2700 | MFXMA 100-12 | 3 | 134 |
| 0.8 | 1837 | 3.2 | 2631 | 19.0 | 2631 | 1.0 | 62.626 | 185.911 | g500-B2700 | MFXMA 100-12 | 3 | 134 |
| 0.7 | 2007 | 3.0 | 2875 | 17.4 | 2875 | 1.4 | 62.764 | 203.143 | g500-B4300 | MFXMA 100-12 | 3 | 196 |
| 0.7 | 2017 | 2.9 | 2890 | 17.3 | 2890 | 0.9 | 62.622 | 204.170 | g500-B2700 | MFXMA 100-12 | 3 | 134 |
| 0.6 | 2180 | 2.7 | 3123 | 15.7 | 3123 | 1.3 | 62.131 | 224.446 | g500-B4300 | MFXMA 100-12 | 4 | 199 |
| 0.6 | 2191 | 2.7 | 3138 | 15.6 | 3138 | 0.8 | 62.014 | 225.581 | g500-B2700 | MFXMA 100-12 | 4 | 137 |
| 0.6 | 2537 | 2.3 | 3634 | 13.7 | 3634 | 1.1 | 62.167 | 256.781 | g500-B4300 | MFXMA 100-12 | 3 | 196 |
| 0.5 | 2955 | 2.0 | 4234 | 11.6 | 4234 | 1.0 | 61.986 | 304.333 | g500-B4300 | MFXMA 100-12 | 4 | 199 |



**120 Hz: 7.5 kW**

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 40.7 | 48.4 | 168 | 69.0 | 986 | 69.0 | 1.5 | 63.972 | 3.565 | g500-B240 | MFXMA 100-32 | 2 | 36 |
| 29.7 | 66.4 | 123 | 94.0 | 719 | 94.0 | 1.2 | 62.744 | 4.889 | g500-B240 | MFXMA 100-32 | 2 | 36 |
| 29.2 | 67.3 | 121 | 96.0 | 709 | 96.0 | 2.5 | 72.522 | 4.958 | g500-B820 | MFXMA 100-32 | 3 | 62 |
| 29.0 | 67.9 | 120 | 96.0 | 703 | 96.0 | 2.2 | 65.360 | 5.002 | g500-B450 | MFXMA 100-32 | 3 | 39 |
| 28.6 | 68.8 | 118 | 98.0 | 694 | 98.0 | 2.9 | 67.731 | 5.067 | g500-B600 | MFXMA 100-32 | 3 | 57 |
| 23.2 | 85.0 | 95.9 | 121 | 562 | 121 | 1.0 | 62.151 | 6.257 | g500-B240 | MFXMA 100-32 | 2 | 36 |
| 21.3 | 92.4 | 88.2 | 131 | 517 | 131 | 2.3 | 67.711 | 6.800 | g500-B820 | MFXMA 100-32 | 3 | 62 |
| 21.1 | 93.2 | 87.5 | 132 | 512 | 132 | 1.8 | 63.482 | 6.860 | g500-B450 | MFXMA 100-32 | 3 | 39 |
| 20.9 | 94.4 | 86.3 | 134 | 506 | 134 | 2.2 | 65.163 | 6.949 | g500-B600 | MFXMA 100-32 | 3 | 57 |
| 18.6 | 106 | 76.8 | 151 | 450 | 151 | 0.9 | 62.513 | 7.817 | g500-B240 | MFXMA 100-32 | 2 | 36 |
| 17.0 | 116 | 70.5 | 164 | 413 | 164 | 2.1 | 70.071 | 8.517 | g500-B820 | MFXMA 100-32 | 3 | 62 |
| 15.2 | 129 | 63.0 | 184 | 369 | 184 | 2.0 | 64.761 | 9.520 | g500-B820 | MFXMA 100-32 | 3 | 62 |
| 14.0 | 140 | 58.1 | 199 | 340 | 199 | 1.5 | 64.060 | 10.328 | g500-B450 | MFXMA 100-32 | 3 | 39 |
| 13.5 | 146 | 55.9 | 207 | 327 | 207 | 2.0 | 66.118 | 10.741 | g500-B600 | MFXMA 100-32 | 3 | 57 |
| 12.4 | 159 | 51.4 | 225 | 301 | 225 | 1.9 | 66.407 | 11.680 | g500-B820 | MFXMA 100-32 | 3 | 62 |
| 11.9 | 165 | 49.4 | 234 | 290 | 234 | 1.8 | 63.520 | 12.143 | g500-B820 | MFXMA 100-32 | 3 | 62 |
| 11.1 | 178 | 45.7 | 253 | 268 | 253 | 3.0 | 68.661 | 13.118 | g500-B1500 | MFXMA 100-32 | 3 | 92 |
| 10.2 | 192 | 42.4 | 273 | 248 | 273 | 1.2 | 62.791 | 14.165 | g500-B450 | MFXMA 100-32 | 3 | 39 |
| 9.8 | 200 | 40.7 | 284 | 239 | 284 | 1.6 | 64.306 | 14.730 | g500-B600 | MFXMA 100-32 | 3 | 57 |
| 8.9 | 222 | 36.7 | 315 | 215 | 315 | 1.7 | 64.096 | 16.352 | g500-B820 | MFXMA 100-32 | 3 | 62 |
| 7.7 | 256 | 31.8 | 363 | 187 | 363 | 1.2 | 63.288 | 18.851 | g500-B600 | MFXMA 100-32 | 3 | 57 |
| 7.3 | 269 | 30.3 | 382 | 177 | 382 | 0.9 | 62.006 | 19.831 | g500-B450 | MFXMA 100-32 | 3 | 39 |
| 7.1 | 278 | 29.3 | 394 | 172 | 394 | 2.9 | 69.031 | 20.444 | g500-B1500 | MFXMA 100-32 | 3 | 92 |
| 7.0 | 280 | 29.1 | 398 | 170 | 398 | 1.1 | 63.023 | 20.622 | g500-B600 | MFXMA 100-32 | 3 | 57 |
| 7.0 | 283 | 28.8 | 402 | 169 | 402 | 1.5 | 63.111 | 20.857 | g500-B820 | MFXMA 100-32 | 3 | 62 |
| 6.3 | 311 | 26.2 | 442 | 154 | 442 | 2.6 | 67.615 | 22.898 | g500-B1500 | MFXMA 100-32 | 3 | 92 |
| 5.7 | 345 | 23.7 | 489 | 139 | 489 | 3.1 | 83.170 | 25.365 | g500-B4300 | MFXMA 100-32 | 3 | 196 |
| 5.7 | 347 | 23.5 | 493 | 138 | 493 | 1.3 | 62.553 | 25.550 | g500-B820 | MFXMA 100-32 | 3 | 62 |
| 5.6 | 354 | 23.0 | 503 | 135 | 503 | 0.9 | 63.882 | 26.061 | g500-B600 | MFXMA 100-32 | 3 | 57 |
| 5.5 | 358 | 22.8 | 508 | 134 | 508 | 1.2 | 64.077 | 26.324 | g500-B820 | MFXMA 100-32 | 3 | 62 |
| 5.4 | 364 | 22.4 | 517 | 131 | 517 | 3.1 | 73.188 | 26.814 | g500-B2700 | MFXMA 100-32 | 3 | 134 |
| 5.0 | 397 | 20.5 | 563 | 120 | 563 | 2.0 | 65.294 | 29.206 | g500-B1500 | MFXMA 100-32 | 3 | 92 |
| 4.9 | 400 | 20.4 | 568 | 119 | 568 | 3.1 | 72.999 | 29.447 | g500-B2700 | MFXMA 100-32 | 3 | 134 |
| 4.1 | 486 | 16.8 | 690 | 98.2 | 690 | 1.6 | 64.210 | 35.778 | g500-B1500 | MFXMA 100-32 | 3 | 92 |
| 4.0 | 490 | 16.6 | 696 | 97.4 | 696 | 0.9 | 63.220 | 36.102 | g500-B820 | MFXMA 100-32 | 3 | 62 |
| 3.2 | 611 | 13.3 | 867 | 78.2 | 867 | 1.5 | 66.269 | 44.955 | g500-B1500 | MFXMA 100-32 | 3 | 92 |
| 3.1 | 633 | 12.9 | 898 | 75.5 | 898 | 1.4 | 63.138 | 46.568 | g500-B1500 | MFXMA 100-32 | 3 | 92 |
| 3.0 | 664 | 12.3 | 943 | 71.9 | 943 | 2.5 | 66.468 | 48.912 | g500-B2700 | MFXMA 100-32 | 3 | 134 |
| 2.7 | 735 | 11.1 | 1043 | 65.0 | 1043 | 2.1 | 62.113 | 54.082 | g500-B2700 | MFXMA 100-32 | 3 | 134 |
| 2.5 | 775 | 10.5 | 1101 | 61.6 | 1101 | 1.2 | 62.464 | 57.074 | g500-B1500 | MFXMA 100-32 | 3 | 92 |
| 2.4 | 807 | 10.1 | 1145 | 59.2 | 1145 | 2.0 | 62.113 | 59.393 | g500-B2700 | MFXMA 100-32 | 3 | 134 |
| 2.3 | 871 | 9.4 | 1237 | 54.8 | 1237 | 3.0 | 71.598 | 64.127 | g500-B4300 | MFXMA 100-32 | 3 | 196 |
| 2.3 | 872 | 9.3 | 1238 | 54.7 | 1238 | 1.0 | 63.940 | 64.221 | g500-B1500 | MFXMA 100-32 | 3 | 92 |
| 2.2 | 876 | 9.3 | 1243 | 54.5 | 1243 | 1.9 | 70.170 | 64.452 | g500-B2700 | MFXMA 100-32 | 3 | 134 |
| 1.9 | 1018 | 8.0 | 1445 | 46.9 | 1445 | 0.9 | 61.906 | 74.963 | g500-B1500 | MFXMA 100-32 | 3 | 92 |
| 1.9 | 1044 | 7.8 | 1482 | 45.7 | 1482 | 1.6 | 63.609 | 76.862 | g500-B2700 | MFXMA 100-32 | 3 | 134 |
| 1.7 | 1154 | 7.1 | 1638 | 41.4 | 1638 | 1.4 | 62.923 | 84.940 | g500-B2700 | MFXMA 100-32 | 3 | 134 |
| 1.6 | 1267 | 6.4 | 1799 | 37.7 | 1799 | 1.3 | 62.904 | 93.283 | g500-B2700 | MFXMA 100-32 | 3 | 134 |
| 1.5 | 1324 | 6.2 | 1880 | 36.1 | 1880 | 1.2 | 65.457 | 97.481 | g500-B2700 | MFXMA 100-32 | 3 | 134 |
| 1.4 | 1447 | 5.6 | 2054 | 33.0 | 2054 | 1.8 | 65.960 | 106.517 | g500-B4300 | MFXMA 100-32 | 3 | 196 |
| 1.4 | 1454 | 5.6 | 2064 | 32.8 | 2064 | 1.1 | 65.442 | 107.056 | g500-B2700 | MFXMA 100-32 | 3 | 134 |

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 1.2 | 1608 | 5.1 | 2282 | 29.7 | 2282 | 1.1 | 62.113 | 118.370 | g500-B2700 | MFXMA 100-32 | 3 | 134 |
| 1.1 | 1757 | 4.6 | 2494 | 27.2 | 2494 | 1.6 | 62.113 | 129.342 | g500-B4300 | MFXMA 100-32 | 3 | 196 |
| 1.1 | 1766 | 4.6 | 2507 | 27.0 | 2507 | 1.0 | 62.113 | 129.996 | g500-B2700 | MFXMA 100-32 | 3 | 134 |
| 0.9 | 2081 | 3.9 | 2954 | 22.9 | 2954 | 0.9 | 63.199 | 153.185 | g500-B2700 | MFXMA 100-32 | 3 | 134 |
| 0.9 | 2274 | 3.6 | 3228 | 21.0 | 3228 | 1.3 | 63.403 | 167.383 | g500-B4300 | MFXMA 100-32 | 3 | 196 |
| 0.7 | 2759 | 3.0 | 3917 | 17.3 | 3917 | 1.0 | 62.764 | 203.143 | g500-B4300 | MFXMA 100-32 | 3 | 196 |
| 0.6 | 2997 | 2.7 | 4254 | 15.7 | 4254 | 1.0 | 62.131 | 224.446 | g500-B4300 | MFXMA 100-32 | 4 | 199 |
| 0.6 | 3488 | 2.3 | 4951 | 13.7 | 4951 | 0.8 | 62.167 | 256.781 | g500-B4300 | MFXMA 100-32 | 3 | 196 |



**120 Hz: 11 kW**

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 29.2 | 89.5 | 121 | 140 | 712 | 140 | 1.7 | 118.522 | 4.958 | g500-B820 | MFXMA 112-22 | 3 | 73 |
| 29.0 | 90.3 | 120 | 141 | 706 | 141 | 1.5 | 111.360 | 5.002 | g500-B450 | MFXMA 112-22 | 3 | 50 |
| 28.6 | 91.4 | 118 | 143 | 697 | 143 | 2.0 | 113.731 | 5.067 | g500-B600 | MFXMA 112-22 | 3 | 68 |
| 21.3 | 123 | 88.2 | 192 | 519 | 192 | 1.5 | 113.711 | 6.800 | g500-B820 | MFXMA 112-22 | 3 | 73 |
| 21.1 | 124 | 87.5 | 194 | 515 | 194 | 1.2 | 109.482 | 6.860 | g500-B450 | MFXMA 112-22 | 3 | 50 |
| 21.1 | 124 | 87.4 | 194 | 514 | 194 | 2.8 | 128.952 | 6.866 | g500-B1500 | MFXMA 112-22 | 3 | 104 |
| 20.9 | 125 | 86.3 | 196 | 508 | 196 | 1.5 | 111.163 | 6.949 | g500-B600 | MFXMA 112-22 | 3 | 68 |
| 17.0 | 154 | 70.5 | 240 | 415 | 240 | 1.4 | 116.071 | 8.517 | g500-B820 | MFXMA 112-22 | 3 | 73 |
| 15.8 | 165 | 65.5 | 258 | 386 | 258 | 3.2 | 156.653 | 9.156 | g500-B4300 | MFXMA 112-22 | 3 | 207 |
| 15.2 | 172 | 63.0 | 268 | 371 | 268 | 2.8 | 120.064 | 9.516 | g500-B1500 | MFXMA 112-22 | 3 | 104 |
| 15.2 | 172 | 63.0 | 269 | 371 | 269 | 1.4 | 110.761 | 9.520 | g500-B820 | MFXMA 112-22 | 3 | 73 |
| 14.0 | 186 | 58.1 | 291 | 342 | 291 | 1.0 | 110.060 | 10.328 | g500-B450 | MFXMA 112-22 | 3 | 50 |
| 13.5 | 194 | 55.9 | 303 | 329 | 303 | 1.3 | 112.118 | 10.741 | g500-B600 | MFXMA 112-22 | 3 | 68 |
| 12.4 | 211 | 51.4 | 330 | 302 | 330 | 1.3 | 112.407 | 11.680 | g500-B820 | MFXMA 112-22 | 3 | 73 |
| 12.1 | 216 | 50.1 | 338 | 295 | 338 | 2.8 | 125.132 | 11.985 | g500-B1500 | MFXMA 112-22 | 3 | 104 |
| 11.9 | 219 | 49.4 | 343 | 291 | 343 | 1.2 | 109.520 | 12.143 | g500-B820 | MFXMA 112-22 | 3 | 73 |
| 11.1 | 237 | 45.7 | 370 | 269 | 370 | 2.3 | 114.661 | 13.118 | g500-B1500 | MFXMA 112-22 | 3 | 104 |
| 9.8 | 266 | 40.7 | 416 | 240 | 416 | 1.1 | 110.306 | 14.730 | g500-B600 | MFXMA 112-22 | 3 | 68 |
| 8.9 | 295 | 36.7 | 461 | 216 | 461 | 1.2 | 110.096 | 16.352 | g500-B820 | MFXMA 112-22 | 3 | 73 |
| 8.7 | 300 | 36.1 | 469 | 213 | 469 | 2.4 | 118.075 | 16.611 | g500-B1500 | MFXMA 112-22 | 3 | 104 |
| 7.8 | 334 | 32.5 | 522 | 191 | 522 | 3.2 | 145.539 | 18.486 | g500-B4300 | MFXMA 112-22 | 3 | 207 |
| 7.7 | 340 | 31.8 | 532 | 187 | 532 | 0.9 | 109.288 | 18.851 | g500-B600 | MFXMA 112-22 | 3 | 68 |
| 7.4 | 353 | 30.7 | 551 | 181 | 551 | 3.2 | 126.748 | 19.542 | g500-B2700 | MFXMA 112-22 | 3 | 145 |
| 7.1 | 369 | 29.3 | 577 | 173 | 577 | 2.0 | 115.031 | 20.444 | g500-B1500 | MFXMA 112-22 | 3 | 104 |
| 7.0 | 376 | 28.8 | 588 | 169 | 588 | 1.1 | 109.111 | 20.857 | g500-B820 | MFXMA 112-22 | 3 | 73 |
| 6.9 | 380 | 28.5 | 594 | 168 | 594 | 2.9 | 137.359 | 21.065 | g500-B4300 | MFXMA 112-22 | 3 | 207 |
| 6.5 | 402 | 26.9 | 628 | 159 | 628 | 2.9 | 122.887 | 22.269 | g500-B2700 | MFXMA 112-22 | 3 | 145 |
| 6.3 | 413 | 26.2 | 646 | 154 | 646 | 1.8 | 113.615 | 22.898 | g500-B1500 | MFXMA 112-22 | 3 | 104 |
| 5.9 | 441 | 24.5 | 690 | 144 | 690 | 2.9 | 122.613 | 24.456 | g500-B2700 | MFXMA 112-22 | 3 | 145 |
| 5.7 | 458 | 23.7 | 716 | 139 | 716 | 2.5 | 129.170 | 25.365 | g500-B4300 | MFXMA 112-22 | 3 | 207 |
| 5.7 | 461 | 23.5 | 721 | 138 | 721 | 0.9 | 108.553 | 25.550 | g500-B820 | MFXMA 112-22 | 3 | 73 |
| 5.5 | 475 | 22.8 | 743 | 134 | 743 | 0.8 | 110.077 | 26.324 | g500-B820 | MFXMA 112-22 | 3 | 73 |
| 5.5 | 476 | 22.8 | 743 | 134 | 743 | 1.5 | 117.093 | 26.353 | g500-B1500 | MFXMA 112-22 | 3 | 104 |
| 5.4 | 484 | 22.4 | 756 | 132 | 756 | 2.5 | 119.188 | 26.814 | g500-B2700 | MFXMA 112-22 | 3 | 145 |
| 5.0 | 527 | 20.5 | 824 | 121 | 824 | 1.4 | 111.294 | 29.206 | g500-B1500 | MFXMA 112-22 | 3 | 104 |
| 4.9 | 531 | 20.4 | 831 | 120 | 831 | 2.4 | 118.999 | 29.447 | g500-B2700 | MFXMA 112-22 | 3 | 145 |
| 4.7 | 561 | 19.3 | 877 | 114 | 877 | 2.2 | 122.889 | 31.097 | g500-B4300 | MFXMA 112-22 | 3 | 207 |
| 4.4 | 593 | 18.3 | 927 | 107 | 927 | 2.2 | 116.248 | 32.873 | g500-B2700 | MFXMA 112-22 | 3 | 145 |
| 4.1 | 646 | 16.8 | 1009 | 98.7 | 1009 | 1.1 | 110.210 | 35.778 | g500-B1500 | MFXMA 112-22 | 3 | 104 |
| 4.0 | 652 | 16.6 | 1018 | 97.8 | 1018 | 2.0 | 116.122 | 36.102 | g500-B2700 | MFXMA 112-22 | 3 | 145 |
| 4.0 | 659 | 16.4 | 1030 | 96.6 | 1030 | 1.1 | 113.890 | 36.526 | g500-B1500 | MFXMA 112-22 | 3 | 104 |
| 3.4 | 772 | 14.0 | 1207 | 82.5 | 1207 | 1.9 | 121.139 | 42.772 | g500-B2700 | MFXMA 112-22 | 3 | 145 |
| 3.2 | 811 | 13.3 | 1268 | 78.5 | 1268 | 1.0 | 112.269 | 44.955 | g500-B1500 | MFXMA 112-22 | 3 | 104 |
| 3.1 | 840 | 12.9 | 1314 | 75.8 | 1314 | 1.0 | 109.138 | 46.568 | g500-B1500 | MFXMA 112-22 | 3 | 104 |
| 3.1 | 844 | 12.8 | 1318 | 75.5 | 1318 | 2.8 | 123.755 | 46.737 | g500-B4300 | MFXMA 112-22 | 3 | 207 |
| 3.1 | 848 | 12.8 | 1325 | 75.1 | 1325 | 1.7 | 121.065 | 46.973 | g500-B2700 | MFXMA 112-22 | 3 | 145 |
| 3.0 | 883 | 12.3 | 1380 | 72.2 | 1380 | 1.7 | 112.468 | 48.912 | g500-B2700 | MFXMA 112-22 | 3 | 145 |
| 2.7 | 961 | 11.3 | 1502 | 66.3 | 1502 | 2.4 | 120.583 | 53.258 | g500-B4300 | MFXMA 112-22 | 3 | 207 |
| 2.7 | 976 | 11.1 | 1526 | 65.3 | 1526 | 1.5 | 108.113 | 54.082 | g500-B2700 | MFXMA 112-22 | 3 | 145 |
| 2.5 | 1030 | 10.5 | 1610 | 61.8 | 1610 | 0.8 | 108.464 | 57.074 | g500-B1500 | MFXMA 112-22 | 3 | 104 |
| 2.4 | 1072 | 10.1 | 1676 | 59.4 | 1676 | 1.4 | 108.113 | 59.393 | g500-B2700 | MFXMA 112-22 | 3 | 145 |

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 2.3 | 1157 | 9.4 | 1809 | 55.0 | 1809 | 2.0 | 117.598 | 64.127 | g500-B4300 | MFXMA 112-22 | 3 | 207 |
| 2.2 | 1163 | 9.3 | 1818 | 54.8 | 1818 | 1.3 | 116.170 | 64.452 | g500-B2700 | MFXMA 112-22 | 3 | 145 |
| 2.0 | 1299 | 8.3 | 2030 | 49.1 | 2030 | 1.1 | 114.266 | 71.951 | g500-B2700 | MFXMA 112-22 | 3 | 145 |
| 1.9 | 1387 | 7.8 | 2168 | 45.9 | 2168 | 1.1 | 109.609 | 76.862 | g500-B2700 | MFXMA 112-22 | 3 | 145 |
| 1.8 | 1419 | 7.6 | 2218 | 44.9 | 2218 | 1.7 | 115.191 | 78.619 | g500-B4300 | MFXMA 112-22 | 3 | 207 |
| 1.7 | 1533 | 7.1 | 2396 | 41.6 | 2396 | 1.0 | 108.923 | 84.940 | g500-B2700 | MFXMA 112-22 | 3 | 145 |
| 1.6 | 1684 | 6.4 | 2632 | 37.8 | 2632 | 0.9 | 108.904 | 93.283 | g500-B2700 | MFXMA 112-22 | 3 | 145 |
| 1.5 | 1759 | 6.2 | 2750 | 36.2 | 2750 | 0.8 | 111.457 | 97.481 | g500-B2700 | MFXMA 112-22 | 3 | 145 |
| 1.4 | 1922 | 5.6 | 3005 | 33.1 | 3005 | 1.2 | 111.960 | 106.517 | g500-B4300 | MFXMA 112-22 | 3 | 207 |
| 1.1 | 2334 | 4.6 | 3649 | 27.3 | 3649 | 1.1 | 108.113 | 129.342 | g500-B4300 | MFXMA 112-22 | 3 | 207 |
| 0.9 | 3021 | 3.6 | 4722 | 21.1 | 4722 | 0.9 | 109.403 | 167.383 | g500-B4300 | MFXMA 112-22 | 3 | 207 |

**120 Hz: 15 kW**

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 29.2 | 122 | 121 | 190 | 718 | 190 | 1.2 | 347.522 | 4.958 | g500-B820 | MFXMA 132-12 | 3 | 101 |
| 29.0 | 123 | 120 | 191 | 712 | 191 | 1.1 | 340.360 | 5.002 | g500-B450 | MFXMA 132-12 | 3 | 78 |
| 28.6 | 124 | 118 | 194 | 703 | 194 | 1.5 | 342.731 | 5.067 | g500-B600 | MFXMA 132-12 | 3 | 96 |
| 21.3 | 167 | 88.2 | 260 | 524 | 260 | 1.1 | 342.711 | 6.800 | g500-B820 | MFXMA 132-12 | 3 | 101 |
| 21.1 | 168 | 87.5 | 263 | 519 | 263 | 0.9 | 338.482 | 6.860 | g500-B450 | MFXMA 132-12 | 3 | 78 |
| 21.1 | 168 | 87.4 | 263 | 519 | 263 | 2.4 | 357.952 | 6.866 | g500-B1500 | MFXMA 132-12 | 3 | 132 |
| 21.0 | 170 | 86.7 | 265 | 515 | 265 | 4.1 | 385.215 | 6.918 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 20.9 | 170 | 86.3 | 266 | 512 | 266 | 1.1 | 340.163 | 6.949 | g500-B600 | MFXMA 132-12 | 3 | 96 |
| 20.8 | 171 | 86.0 | 267 | 510 | 267 | 4.6 | 417.324 | 6.976 | g500-B4300 | MFXMA 132-12 | 3 | 235 |
| 17.0 | 209 | 70.5 | 326 | 418 | 326 | 1.1 | 345.071 | 8.517 | g500-B820 | MFXMA 132-12 | 3 | 101 |
| 16.5 | 216 | 68.2 | 337 | 405 | 337 | 3.4 | 369.939 | 8.793 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 15.8 | 224 | 65.5 | 351 | 389 | 351 | 4.3 | 385.653 | 9.156 | g500-B4300 | MFXMA 132-12 | 3 | 235 |
| 15.2 | 233 | 63.0 | 364 | 374 | 364 | 2.1 | 349.064 | 9.516 | g500-B1500 | MFXMA 132-12 | 3 | 132 |
| 15.2 | 233 | 63.0 | 364 | 374 | 364 | 1.0 | 339.761 | 9.520 | g500-B820 | MFXMA 132-12 | 3 | 101 |
| 13.5 | 263 | 55.9 | 411 | 331 | 411 | 1.0 | 341.118 | 10.741 | g500-B600 | MFXMA 132-12 | 3 | 96 |
| 12.4 | 286 | 51.4 | 447 | 305 | 447 | 1.0 | 341.407 | 11.680 | g500-B820 | MFXMA 132-12 | 3 | 101 |
| 12.4 | 287 | 51.2 | 448 | 304 | 448 | 3.7 | 378.531 | 11.713 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 12.1 | 294 | 50.1 | 459 | 297 | 459 | 2.4 | 354.132 | 11.985 | g500-B1500 | MFXMA 132-12 | 3 | 132 |
| 11.9 | 298 | 49.4 | 465 | 293 | 465 | 0.9 | 338.520 | 12.143 | g500-B820 | MFXMA 132-12 | 3 | 101 |
| 11.3 | 315 | 46.6 | 492 | 277 | 492 | 3.4 | 377.539 | 12.863 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 11.1 | 322 | 45.7 | 502 | 271 | 502 | 1.7 | 343.661 | 13.118 | g500-B1500 | MFXMA 132-12 | 3 | 132 |
| 10.3 | 345 | 42.6 | 539 | 253 | 539 | 4.6 | 398.177 | 14.084 | g500-B4300 | MFXMA 132-12 | 3 | 235 |
| 9.8 | 361 | 40.7 | 564 | 242 | 564 | 0.8 | 339.306 | 14.730 | g500-B600 | MFXMA 132-12 | 3 | 96 |
| 9.7 | 365 | 40.3 | 570 | 239 | 570 | 3.1 | 365.802 | 14.888 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 8.9 | 401 | 36.7 | 626 | 218 | 626 | 0.9 | 339.096 | 16.352 | g500-B820 | MFXMA 132-12 | 3 | 101 |
| 8.9 | 401 | 36.7 | 626 | 218 | 626 | 2.9 | 365.188 | 16.351 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 8.7 | 407 | 36.1 | 636 | 214 | 636 | 1.8 | 347.075 | 16.611 | g500-B1500 | MFXMA 132-12 | 3 | 132 |
| 7.8 | 453 | 32.5 | 708 | 193 | 708 | 4.3 | 374.539 | 18.486 | g500-B4300 | MFXMA 132-12 | 3 | 235 |
| 7.4 | 479 | 30.7 | 748 | 182 | 748 | 2.6 | 355.748 | 19.542 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 7.1 | 501 | 29.3 | 783 | 174 | 783 | 1.4 | 344.031 | 20.444 | g500-B1500 | MFXMA 132-12 | 3 | 132 |
| 6.9 | 516 | 28.5 | 806 | 169 | 806 | 4.0 | 366.359 | 21.065 | g500-B4300 | MFXMA 132-12 | 3 | 235 |
| 6.5 | 546 | 26.9 | 852 | 160 | 852 | 2.4 | 351.887 | 22.269 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 6.3 | 561 | 26.2 | 877 | 156 | 877 | 1.3 | 342.615 | 22.898 | g500-B1500 | MFXMA 132-12 | 3 | 132 |
| 5.9 | 599 | 24.5 | 936 | 146 | 936 | 2.2 | 351.613 | 24.456 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 5.7 | 622 | 23.7 | 971 | 140 | 971 | 3.3 | 358.170 | 25.365 | g500-B4300 | MFXMA 132-12 | 3 | 235 |
| 5.5 | 646 | 22.8 | 1009 | 135 | 1009 | 1.1 | 346.093 | 26.353 | g500-B1500 | MFXMA 132-12 | 3 | 132 |
| 5.4 | 657 | 22.4 | 1026 | 133 | 1026 | 2.0 | 348.188 | 26.814 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 5.2 | 687 | 21.4 | 1072 | 127 | 1072 | 3.0 | 370.200 | 28.013 | g500-B4300 | MFXMA 132-12 | 3 | 235 |
| 5.0 | 716 | 20.5 | 1118 | 122 | 1118 | 1.0 | 340.294 | 29.206 | g500-B1500 | MFXMA 132-12 | 3 | 132 |
| 4.9 | 722 | 20.4 | 1127 | 121 | 1127 | 1.8 | 347.999 | 29.447 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 4.7 | 762 | 19.3 | 1190 | 115 | 1190 | 2.7 | 351.889 | 31.097 | g500-B4300 | MFXMA 132-12 | 3 | 235 |
| 4.4 | 806 | 18.3 | 1258 | 108 | 1258 | 1.6 | 345.248 | 32.873 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 4.1 | 873 | 16.9 | 1363 | 100 | 1363 | 2.4 | 360.646 | 35.607 | g500-B4300 | MFXMA 132-12 | 3 | 235 |
| 4.1 | 877 | 16.8 | 1370 | 99.5 | 1370 | 0.8 | 339.210 | 35.778 | g500-B1500 | MFXMA 132-12 | 3 | 132 |
| 4.0 | 885 | 16.6 | 1382 | 98.6 | 1382 | 1.5 | 345.122 | 36.102 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 4.0 | 895 | 16.4 | 1398 | 97.5 | 1398 | 0.8 | 342.890 | 36.526 | g500-B1500 | MFXMA 132-12 | 3 | 132 |
| 3.4 | 1048 | 14.0 | 1637 | 83.2 | 1637 | 1.4 | 350.139 | 42.772 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 3.1 | 1145 | 12.8 | 1789 | 76.2 | 1789 | 2.1 | 352.755 | 46.737 | g500-B4300 | MFXMA 132-12 | 3 | 235 |
| 3.1 | 1151 | 12.8 | 1798 | 75.8 | 1798 | 1.3 | 350.065 | 46.973 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 3.0 | 1199 | 12.3 | 1872 | 72.8 | 1872 | 1.2 | 341.468 | 48.912 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 2.7 | 1305 | 11.3 | 2039 | 66.8 | 2039 | 1.8 | 349.583 | 53.258 | g500-B4300 | MFXMA 132-12 | 3 | 235 |

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 2.7 | 1325 | 11.1 | 2070 | 65.8 | 2070 | 1.1 | 337.113 | 54.082 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 2.4 | 1456 | 10.1 | 2274 | 59.9 | 2274 | 1.0 | 337.113 | 59.393 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 2.3 | 1572 | 9.4 | 2455 | 55.5 | 2455 | 1.5 | 346.598 | 64.127 | g500-B4300 | MFXMA 132-12 | 3 | 235 |
| 2.2 | 1580 | 9.3 | 2467 | 55.2 | 2467 | 0.9 | 345.170 | 64.452 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 2.0 | 1763 | 8.3 | 2754 | 49.5 | 2754 | 0.8 | 343.266 | 71.951 | g500-B2700 | MFXMA 132-12 | 3 | 173 |
| 1.8 | 1927 | 7.6 | 3010 | 45.3 | 3010 | 1.2 | 344.191 | 78.619 | g500-B4300 | MFXMA 132-12 | 3 | 235 |
| 1.4 | 2610 | 5.6 | 4077 | 33.4 | 4077 | 0.9 | 340.960 | 106.517 | g500-B4300 | MFXMA 132-12 | 3 | 235 |
| 1.1 | 3170 | 4.6 | 4951 | 27.5 | 4951 | 0.8 | 337.113 | 129.342 | g500-B4300 | MFXMA 132-12 | 3 | 235 |

**120 Hz: 18.5 kW**

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 29.2 | 150 | 121 | 234 | 718 | 234 | 1.0 | 347.522 | 4.958 | g500-B820 | MFXMA 132-22 | 3 | 101 |
| 29.0 | 151 | 120 | 236 | 712 | 236 | 0.9 | 340.360 | 5.002 | g500-B450 | MFXMA 132-22 | 3 | 78 |
| 28.6 | 153 | 118 | 239 | 703 | 239 | 1.2 | 342.731 | 5.067 | g500-B600 | MFXMA 132-22 | 3 | 96 |
| 26.4 | 166 | 109 | 259 | 649 | 259 | 4.1 | 461.776 | 5.488 | g500-B4300 | MFXMA 132-22 | 3 | 235 |
| 21.3 | 205 | 88.2 | 320 | 524 | 320 | 0.9 | 342.711 | 6.800 | g500-B820 | MFXMA 132-22 | 3 | 101 |
| 21.1 | 207 | 87.4 | 323 | 519 | 323 | 1.9 | 357.952 | 6.866 | g500-B1500 | MFXMA 132-22 | 3 | 132 |
| 21.0 | 209 | 86.7 | 326 | 515 | 326 | 3.3 | 385.215 | 6.918 | g500-B2700 | MFXMA 132-22 | 3 | 173 |
| 20.9 | 210 | 86.3 | 327 | 512 | 327 | 0.9 | 340.163 | 6.949 | g500-B600 | MFXMA 132-22 | 3 | 96 |
| 20.8 | 211 | 86.0 | 329 | 510 | 329 | 3.8 | 417.324 | 6.976 | g500-B4300 | MFXMA 132-22 | 3 | 235 |
| 17.0 | 257 | 70.5 | 401 | 418 | 401 | 0.9 | 345.071 | 8.517 | g500-B820 | MFXMA 132-22 | 3 | 101 |
| 16.5 | 266 | 68.2 | 414 | 405 | 414 | 2.8 | 369.939 | 8.793 | g500-B2700 | MFXMA 132-22 | 3 | 173 |
| 15.8 | 277 | 65.5 | 431 | 389 | 431 | 3.5 | 385.653 | 9.156 | g500-B4300 | MFXMA 132-22 | 3 | 235 |
| 15.2 | 287 | 63.0 | 448 | 374 | 448 | 1.7 | 349.064 | 9.516 | g500-B1500 | MFXMA 132-22 | 3 | 132 |
| 15.2 | 288 | 63.0 | 449 | 374 | 449 | 0.8 | 339.761 | 9.520 | g500-B820 | MFXMA 132-22 | 3 | 101 |
| 13.5 | 324 | 55.9 | 506 | 331 | 506 | 0.8 | 341.118 | 10.741 | g500-B600 | MFXMA 132-22 | 3 | 96 |
| 13.1 | 335 | 54.2 | 522 | 321 | 522 | 4.1 | 430.840 | 11.080 | g500-B4300 | MFXMA 132-22 | 3 | 235 |
| 12.4 | 354 | 51.2 | 552 | 304 | 552 | 3.0 | 378.531 | 11.713 | g500-B2700 | MFXMA 132-22 | 3 | 173 |
| 12.1 | 362 | 50.1 | 565 | 297 | 565 | 1.9 | 354.132 | 11.985 | g500-B1500 | MFXMA 132-22 | 3 | 132 |
| 11.3 | 389 | 46.6 | 606 | 277 | 606 | 2.8 | 377.539 | 12.863 | g500-B2700 | MFXMA 132-22 | 3 | 173 |
| 11.1 | 396 | 45.7 | 618 | 271 | 618 | 1.4 | 343.661 | 13.118 | g500-B1500 | MFXMA 132-22 | 3 | 132 |
| 10.3 | 425 | 42.6 | 664 | 253 | 664 | 3.8 | 398.177 | 14.084 | g500-B4300 | MFXMA 132-22 | 3 | 235 |
| 9.7 | 450 | 40.3 | 701 | 239 | 701 | 2.5 | 365.802 | 14.888 | g500-B2700 | MFXMA 132-22 | 3 | 173 |
| 8.9 | 494 | 36.7 | 770 | 218 | 770 | 2.4 | 365.188 | 16.351 | g500-B2700 | MFXMA 132-22 | 3 | 173 |
| 8.7 | 502 | 36.1 | 783 | 214 | 783 | 1.4 | 347.075 | 16.611 | g500-B1500 | MFXMA 132-22 | 3 | 132 |
| 7.8 | 558 | 32.5 | 871 | 193 | 871 | 3.5 | 374.539 | 18.486 | g500-B4300 | MFXMA 132-22 | 3 | 235 |
| 7.4 | 590 | 30.7 | 921 | 182 | 921 | 2.1 | 355.748 | 19.542 | g500-B2700 | MFXMA 132-22 | 3 | 173 |
| 7.1 | 618 | 29.3 | 963 | 174 | 963 | 1.2 | 344.031 | 20.444 | g500-B1500 | MFXMA 132-22 | 3 | 132 |
| 6.9 | 636 | 28.5 | 992 | 169 | 992 | 3.3 | 366.359 | 21.065 | g500-B4300 | MFXMA 132-22 | 3 | 235 |
| 6.5 | 673 | 26.9 | 1049 | 160 | 1049 | 1.9 | 351.887 | 22.269 | g500-B2700 | MFXMA 132-22 | 3 | 173 |
| 6.3 | 692 | 26.2 | 1079 | 156 | 1079 | 1.0 | 342.615 | 22.898 | g500-B1500 | MFXMA 132-22 | 3 | 132 |
| 5.9 | 739 | 24.5 | 1152 | 146 | 1152 | 1.8 | 351.613 | 24.456 | g500-B2700 | MFXMA 132-22 | 3 | 173 |
| 5.7 | 766 | 23.7 | 1195 | 140 | 1195 | 2.7 | 358.170 | 25.365 | g500-B4300 | MFXMA 132-22 | 3 | 235 |
| 5.5 | 796 | 22.8 | 1242 | 135 | 1242 | 0.9 | 346.093 | 26.353 | g500-B1500 | MFXMA 132-22 | 3 | 132 |
| 5.4 | 810 | 22.4 | 1263 | 133 | 1263 | 1.6 | 348.188 | 26.814 | g500-B2700 | MFXMA 132-22 | 3 | 173 |
| 5.2 | 846 | 21.4 | 1320 | 127 | 1320 | 2.4 | 370.200 | 28.013 | g500-B4300 | MFXMA 132-22 | 3 | 235 |
| 5.0 | 882 | 20.5 | 1376 | 122 | 1376 | 0.8 | 340.294 | 29.206 | g500-B1500 | MFXMA 132-22 | 3 | 132 |
| 4.9 | 890 | 20.4 | 1387 | 121 | 1387 | 1.5 | 347.999 | 29.447 | g500-B2700 | MFXMA 132-22 | 3 | 173 |
| 4.7 | 939 | 19.3 | 1465 | 115 | 1465 | 2.2 | 351.889 | 31.097 | g500-B4300 | MFXMA 132-22 | 3 | 235 |
| 4.4 | 993 | 18.3 | 1549 | 108 | 1549 | 1.3 | 345.248 | 32.873 | g500-B2700 | MFXMA 132-22 | 3 | 173 |
| 4.1 | 1076 | 16.9 | 1678 | 100 | 1678 | 1.9 | 360.646 | 35.607 | g500-B4300 | MFXMA 132-22 | 3 | 235 |
| 4.0 | 1091 | 16.6 | 1701 | 98.6 | 1701 | 1.2 | 345.122 | 36.102 | g500-B2700 | MFXMA 132-22 | 3 | 173 |
| 3.4 | 1292 | 14.0 | 2015 | 83.2 | 2015 | 1.1 | 350.139 | 42.772 | g500-B2700 | MFXMA 132-22 | 3 | 173 |
| 3.1 | 1412 | 12.8 | 2202 | 76.2 | 2202 | 1.7 | 352.755 | 46.737 | g500-B4300 | MFXMA 132-22 | 3 | 235 |
| 3.1 | 1419 | 12.8 | 2213 | 75.8 | 2213 | 1.0 | 350.065 | 46.973 | g500-B2700 | MFXMA 132-22 | 3 | 173 |
| 3.0 | 1477 | 12.3 | 2304 | 72.8 | 2304 | 1.0 | 341.468 | 48.912 | g500-B2700 | MFXMA 132-22 | 3 | 173 |
| 2.7 | 1609 | 11.3 | 2509 | 66.8 | 2509 | 1.5 | 349.583 | 53.258 | g500-B4300 | MFXMA 132-22 | 3 | 235 |
| 2.7 | 1634 | 11.1 | 2548 | 65.8 | 2548 | 0.9 | 337.113 | 54.082 | g500-B2700 | MFXMA 132-22 | 3 | 173 |
| 2.4 | 1794 | 10.1 | 2798 | 59.9 | 2798 | 0.8 | 337.113 | 59.393 | g500-B2700 | MFXMA 132-22 | 3 | 173 |
| 2.3 | 1937 | 9.4 | 3021 | 55.5 | 3021 | 1.2 | 346.598 | 64.127 | g500-B4300 | MFXMA 132-22 | 3 | 235 |
| 1.8 | 2375 | 7.6 | 3704 | 45.3 | 3704 | 1.0 | 344.191 | 78.619 | g500-B4300 | MFXMA 132-22 | 3 | 235 |

**120 Hz: 22 kW**

| Inverter operation | | | | | | | | | Geared motor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 Hz - | | - 20 Hz | | - 120 Hz (1:24) | | | | | | | | |
| $n_{22}$ | $M_{22}$ | $n_{21}$ | $M_2$ | $n_2$ | $M_2$ | c | J | i | | | z | m |
| rpm | Nm | rpm | Nm | rpm | Nm | | kgcm² | | | | | kg |
| 29.2 | 179 | 121 | 279 | 716 | 279 | 0.8 | 347.522 | 4.958 | g500-B820 | MFXMA 132-32 | 3 | 101 |
| 28.6 | 182 | 118 | 285 | 701 | 285 | 1.0 | 342.731 | 5.067 | g500-B600 | MFXMA 132-32 | 3 | 96 |
| 26.4 | 198 | 109 | 309 | 647 | 309 | 3.4 | 461.776 | 5.488 | g500-B4300 | MFXMA 132-32 | 3 | 235 |
| 21.1 | 247 | 87.4 | 386 | 517 | 386 | 1.6 | 357.952 | 6.866 | g500-B1500 | MFXMA 132-32 | 3 | 132 |
| 21.0 | 249 | 86.7 | 389 | 513 | 389 | 2.8 | 385.215 | 6.918 | g500-B2700 | MFXMA 132-32 | 3 | 173 |
| 20.8 | 251 | 86.0 | 392 | 509 | 392 | 3.2 | 417.324 | 6.976 | g500-B4300 | MFXMA 132-32 | 3 | 235 |
| 16.5 | 317 | 68.2 | 494 | 404 | 494 | 2.3 | 369.939 | 8.793 | g500-B2700 | MFXMA 132-32 | 3 | 173 |
| 15.8 | 330 | 65.5 | 515 | 388 | 515 | 3.0 | 385.653 | 9.156 | g500-B4300 | MFXMA 132-32 | 3 | 235 |
| 15.2 | 343 | 63.0 | 535 | 373 | 535 | 1.4 | 349.064 | 9.516 | g500-B1500 | MFXMA 132-32 | 3 | 132 |
| 13.1 | 399 | 54.2 | 623 | 320 | 623 | 3.4 | 430.840 | 11.080 | g500-B4300 | MFXMA 132-32 | 3 | 235 |
| 12.4 | 422 | 51.2 | 659 | 303 | 659 | 2.5 | 378.531 | 11.713 | g500-B2700 | MFXMA 132-32 | 3 | 173 |
| 12.1 | 431 | 50.1 | 674 | 296 | 674 | 1.6 | 354.132 | 11.985 | g500-B1500 | MFXMA 132-32 | 3 | 132 |
| 11.3 | 463 | 46.6 | 723 | 276 | 723 | 2.4 | 377.539 | 12.863 | g500-B2700 | MFXMA 132-32 | 3 | 173 |
| 11.1 | 472 | 45.7 | 738 | 271 | 738 | 1.1 | 343.661 | 13.118 | g500-B1500 | MFXMA 132-32 | 3 | 132 |
| 10.3 | 507 | 42.6 | 792 | 252 | 792 | 3.2 | 398.177 | 14.084 | g500-B4300 | MFXMA 132-32 | 3 | 235 |
| 9.7 | 536 | 40.3 | 837 | 238 | 837 | 2.1 | 365.802 | 14.888 | g500-B2700 | MFXMA 132-32 | 3 | 173 |
| 8.9 | 589 | 36.7 | 919 | 217 | 919 | 2.0 | 365.188 | 16.351 | g500-B2700 | MFXMA 132-32 | 3 | 173 |
| 8.7 | 598 | 36.1 | 934 | 214 | 934 | 1.2 | 347.075 | 16.611 | g500-B1500 | MFXMA 132-32 | 3 | 132 |
| 7.8 | 666 | 32.5 | 1040 | 192 | 1040 | 3.0 | 374.539 | 18.486 | g500-B4300 | MFXMA 132-32 | 3 | 235 |
| 7.4 | 704 | 30.7 | 1099 | 182 | 1099 | 1.8 | 355.748 | 19.542 | g500-B2700 | MFXMA 132-32 | 3 | 173 |
| 7.1 | 736 | 29.3 | 1150 | 174 | 1150 | 1.0 | 344.031 | 20.444 | g500-B1500 | MFXMA 132-32 | 3 | 132 |
| 6.9 | 758 | 28.5 | 1185 | 169 | 1185 | 2.7 | 366.359 | 21.065 | g500-B4300 | MFXMA 132-32 | 3 | 235 |
| 6.5 | 802 | 26.9 | 1252 | 159 | 1252 | 1.6 | 351.887 | 22.269 | g500-B2700 | MFXMA 132-32 | 3 | 173 |
| 6.3 | 824 | 26.2 | 1288 | 155 | 1288 | 0.9 | 342.615 | 22.898 | g500-B1500 | MFXMA 132-32 | 3 | 132 |
| 5.9 | 880 | 24.5 | 1375 | 145 | 1375 | 1.5 | 351.613 | 24.456 | g500-B2700 | MFXMA 132-32 | 3 | 173 |
| 5.7 | 913 | 23.7 | 1426 | 140 | 1426 | 2.3 | 358.170 | 25.365 | g500-B4300 | MFXMA 132-32 | 3 | 235 |
| 5.4 | 965 | 22.4 | 1508 | 132 | 1508 | 1.3 | 348.188 | 26.814 | g500-B2700 | MFXMA 132-32 | 3 | 173 |
| 5.2 | 1008 | 21.4 | 1575 | 127 | 1575 | 2.1 | 370.200 | 28.013 | g500-B4300 | MFXMA 132-32 | 3 | 235 |
| 4.9 | 1060 | 20.4 | 1656 | 121 | 1656 | 1.2 | 347.999 | 29.447 | g500-B2700 | MFXMA 132-32 | 3 | 173 |
| 4.7 | 1120 | 19.3 | 1749 | 114 | 1749 | 1.9 | 351.889 | 31.097 | g500-B4300 | MFXMA 132-32 | 3 | 235 |
| 4.4 | 1183 | 18.3 | 1849 | 108 | 1849 | 1.1 | 345.248 | 32.873 | g500-B2700 | MFXMA 132-32 | 3 | 173 |
| 4.1 | 1282 | 16.9 | 2002 | 99.7 | 2002 | 1.6 | 360.646 | 35.607 | g500-B4300 | MFXMA 132-32 | 3 | 235 |
| 4.0 | 1300 | 16.6 | 2030 | 98.3 | 2030 | 1.0 | 345.122 | 36.102 | g500-B2700 | MFXMA 132-32 | 3 | 173 |
| 3.4 | 1540 | 14.0 | 2405 | 83.0 | 2405 | 1.0 | 350.139 | 42.772 | g500-B2700 | MFXMA 132-32 | 3 | 173 |
| 3.1 | 1683 | 12.8 | 2628 | 76.0 | 2628 | 1.4 | 352.755 | 46.737 | g500-B4300 | MFXMA 132-32 | 3 | 235 |
| 3.1 | 1691 | 12.8 | 2641 | 75.6 | 2641 | 0.9 | 350.065 | 46.973 | g500-B2700 | MFXMA 132-32 | 3 | 173 |
| 3.0 | 1761 | 12.3 | 2750 | 72.6 | 2750 | 0.8 | 341.468 | 48.912 | g500-B2700 | MFXMA 132-32 | 3 | 173 |
| 2.7 | 1917 | 11.3 | 2995 | 66.7 | 2995 | 1.2 | 349.583 | 53.258 | g500-B4300 | MFXMA 132-32 | 3 | 235 |
| 2.3 | 2309 | 9.4 | 3606 | 55.4 | 3606 | 1.0 | 346.598 | 64.127 | g500-B4300 | MFXMA 132-32 | 3 | 235 |
| 1.8 | 2830 | 7.6 | 4421 | 45.2 | 4421 | 0.8 | 344.191 | 78.619 | g500-B4300 | MFXMA 132-32 | 3 | 235 |

# Motor – inverter assignment

Rated frequency 120 Hz

**Supply voltage 3x 230/240 V**

| Motor | | Frequency inverter | | | | |
|---|---|---|---|---|---|---|
| Rated power | MF☐MA☐☐ | i510 cabinet | i550 cabinet | i550 protec | i550 motec | 8400 motec |
| $P_{rated}$ | | | | | | |
| kW | | | | | | |
| 0.55 | 063-32 | i510-C0.55/230-2 | i550-C0.55/230-2 | i550-P0.55/230-1 | i550-M0.55/230-3 | - |
| 0.75 | 063-42 | i510-C0.75/230-2 | i550-C0.75/120-1 | i550-P0.75/230-2 | i550-M0.75/230-3 | - |
| 1.1 | 071-32 | i510-C1.1/230-2 | i550-C1.1/230-2 | i550-P1.1/120-1 | i550-M1.1/230-3 | - |
| 1.5 | 071-42 | i510-C1.5/230-2 | i550-C1.5/230-1 | i550-P1.5/230-1 | i550-M1.5/230-3 | - |
| 2.2 | 080-32 | i510-C2.2/230-2 | i550-C2.2/230-1 | i550-P2.2/230-2 | i550-M2.2/230-3 | - |
| 3 | 080-42 | i510-C4.0/230-3 | i550-C4.0/230-3 | i550-P4.0/230-3 | i550-M3.0/230-3 | - |

**Supply voltage 3x 400/480 V**

| Motor | | Frequency inverter | | | | |
|---|---|---|---|---|---|---|
| Rated power | MF☐MA☐☐ | i510 cabinet | i550 cabinet | i550 protec | i550 motec | 8400 motec |
| $P_{rated}$ | | | | | | |
| kW | | | | | | |
| 0.55 | 063-32 | i510-C0.55/400-3 | i550-C0.55/400-3 | i550-P0.55/400-3 | i550-M0.55/400-3 | E84DVB☐5514S☐☐☐2☐ |
| 0.75 | 063-42 | i510-C0.75/400-3 | i550-C0.75/400-3 | i550-P0.75/400-3 | i550-M0.75/400-3 | E84DVB☐7514S☐☐☐2☐ |
| 1.1 | 071-32 | i510-C1.1/400-3 | i550-C1.1/400-3 | i550-P1.1/400-3 | i550-M1.1/400-3 | E84DVB☐1124S☐☐☐2☐ |
| 1.5 | 071-42 | i510-C1.5/400-3 | i550-C1.5/400-3 | i550-P1.5/400-3 | i550-M1.5/400-3 | E84DVB☐1524S☐☐☐2☐ |
| 2.2 | 080-32 | i510-C2.2/400-3 | i550-C2.2/400-3 | i550-P2.2/400-3 | i550-M2.2/400-3 | E84DVB☐2224S☐☐☐2☐ |
| 3 | 080-42 | i510-C3.0/400-3 | i550-C3.0/400-3 | i550-P3.0/400-3 | i550-M3.0/400-3 | E84DVB☐3024S☐☐☐2☐ |
| 4 | 090-32 | i510-C4.0/400-3 | i550-C4.0/400-3 | i550-P4.0/400-3 | i550-M4.0/400-3 | E84DVB☐4024S☐☐☐2☐ |
| 5.5 | 100-12 | i510-C5.5/400-3 | i550-C5.5/400-3 | i550-P5.5/400-3 | i550-M5.5/400-3 | E84DVB☐5524S☐☐☐2☐ |
| 7.5 | 100-32 | i510-C7.5/400-3 | i550-C7.5/400-3 | i550-P7.5/400-3 | i550-M7.5/400-3 | E84DVB☐7524S☐☐☐2☐ |
| 11 | 112-22 | i510-C11/400-3 | i550-C11/400-3 | i550-P11/400-3 | i550-M11/400-3 | - |
| 15 | 132-12 | - | i550-C15/400-3 | i550-P15/400-3 | i550-M15/400-3 | - |
| 18.5 | 132-22 | - | i550-C18/400-3 | i550-P18/400-3 | i550-M18/400-3 | - |
| 22 | 132-32 | - | i550-C22/400-3 | i550-P22/400-3 | - | - |

## Dimensions

### Notes on the basic dimensions

| Gearboxes | Without pre-stage | With pre-stage |
|---|---|---|
| g500-B45 | 2-stufig | - |
| g500-B110 | 2-stage | 3-stage |
| g500-B240 | 2-/3-stage | 4-stage |
| g500-B450 ... B4300 | 3-stage | 4-stage |

The ratio range of gearboxes with pre-stage is extended via an additional housing with gear stage between the gearbox and motor.

The basic dimensions are shown without pre-stage and are valid up to the following deviating dimensions for gearbox with pre-stage valid:

- Total length “L”
- Center distance “a” (gearbox output shaft – motor shaft)

Deviating dimensions: ▸ Gearbox with pre-stage 🕮 114

The following legend shows the layout of the dimension tables:

| Motor | MF☐MA☐☐ | | |
|---|---|---|---|
| | 063-32 | 063-42 | 071-32 |

| Table content | | Explanation |
|---|---|---|
| Total length | L | Total length of the drive without brake/feedback |
| Motor length | LB | Length of the motor without brake/feedback |
| Motor diameter | AC | Motor diameter |
| Motor/connection distance | AD | Distance from center of motor to end of terminal box |

**NOTICE**

For gearboxes with hollow shaft and keyway (H□□), the hole fitting H7 is interrupted in the middle area of the hollow shaft length by a free rotation.

Ensure the double-ended control of the machine shaft in the hollow shaft.

► The specified min. length of the machine shaft must be reached.

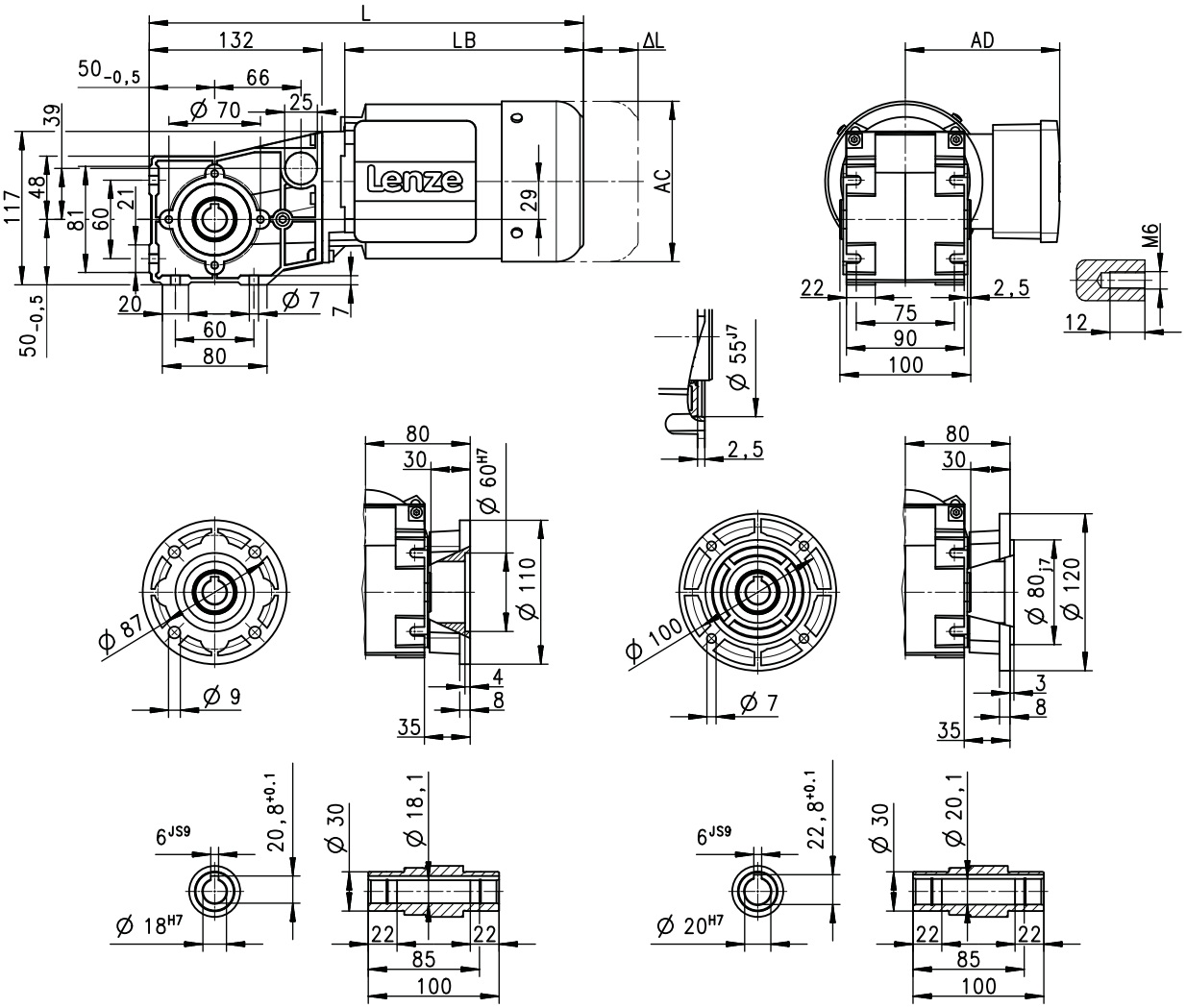
| Gearboxes | Min. length of the machine shaft |
|---|---|
| | mm |
| g500-B45 | 85 |
| g500-B110 | 105 |
| g500-B240 | 127 |
| g500-B450 | 100 |
| g500-B600 | 110 |
| g500-B820 | 120 |
| g500-B1500 | 135 |
| g500-B2700 | 155 |
| g500-B4300 | 190 |

## Basic dimensions

### g500-B45, 2-stage

### g500-B45, 2-stage

Gearbox design: Hollow shaft with foot (HBR/HAR/HAK)



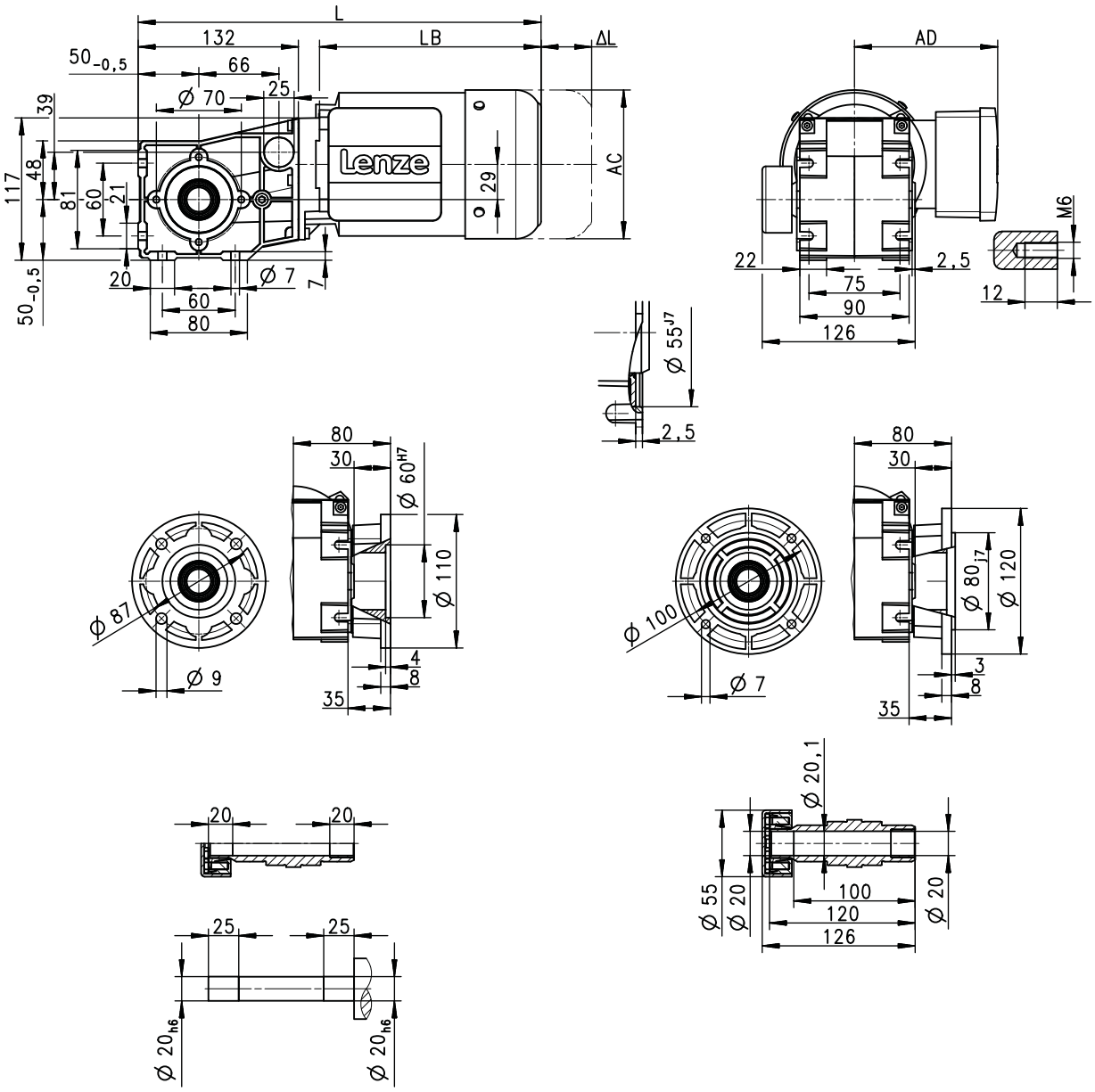

8800139-01

| Motor series | | | MFXMA |
|---|---|---|---|
| **Motor** | | | **063-32**<br>**063-42** |
| Total length | L | mm | 334 |
| Motor length | LB | mm | 199 |
| Motor diameter | AC | mm | 123 |
| Motor/connection distance | AD | mm | 109 |

Δ L ▸ Additional lengths 🕮 118

**g500-B45, 2-stage**

Gearbox design: Hollow shaft with shrink disc, with foot (SBR/SAR/SAK)

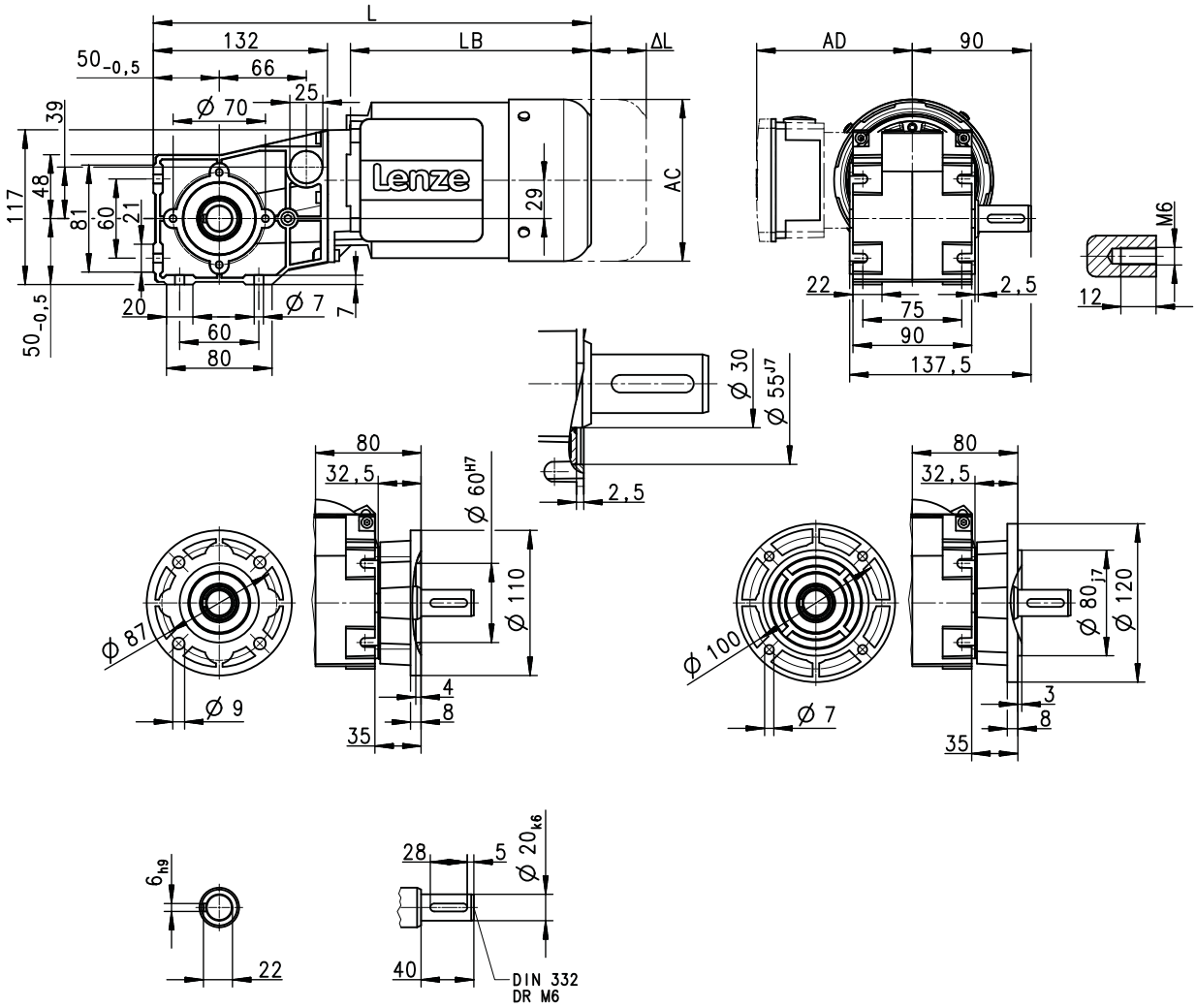



| Motor series | | | MFXMA |
|---|---|---|---|
| **Motor** | | | **063-32**<br>**063-42** |
| Total length | L | mm | 334 |
| Motor length | LB | mm | 199 |
| Motor diameter | AC | mm | 123 |
| Motor/connection distance | AD | mm | 109 |

Δ L ▸ Additional lengths 🕮 118

**g500-B45, 2-stage**

Gearbox design: Solid shaft with foot (VBR/VAR/VAK)




8800140-01

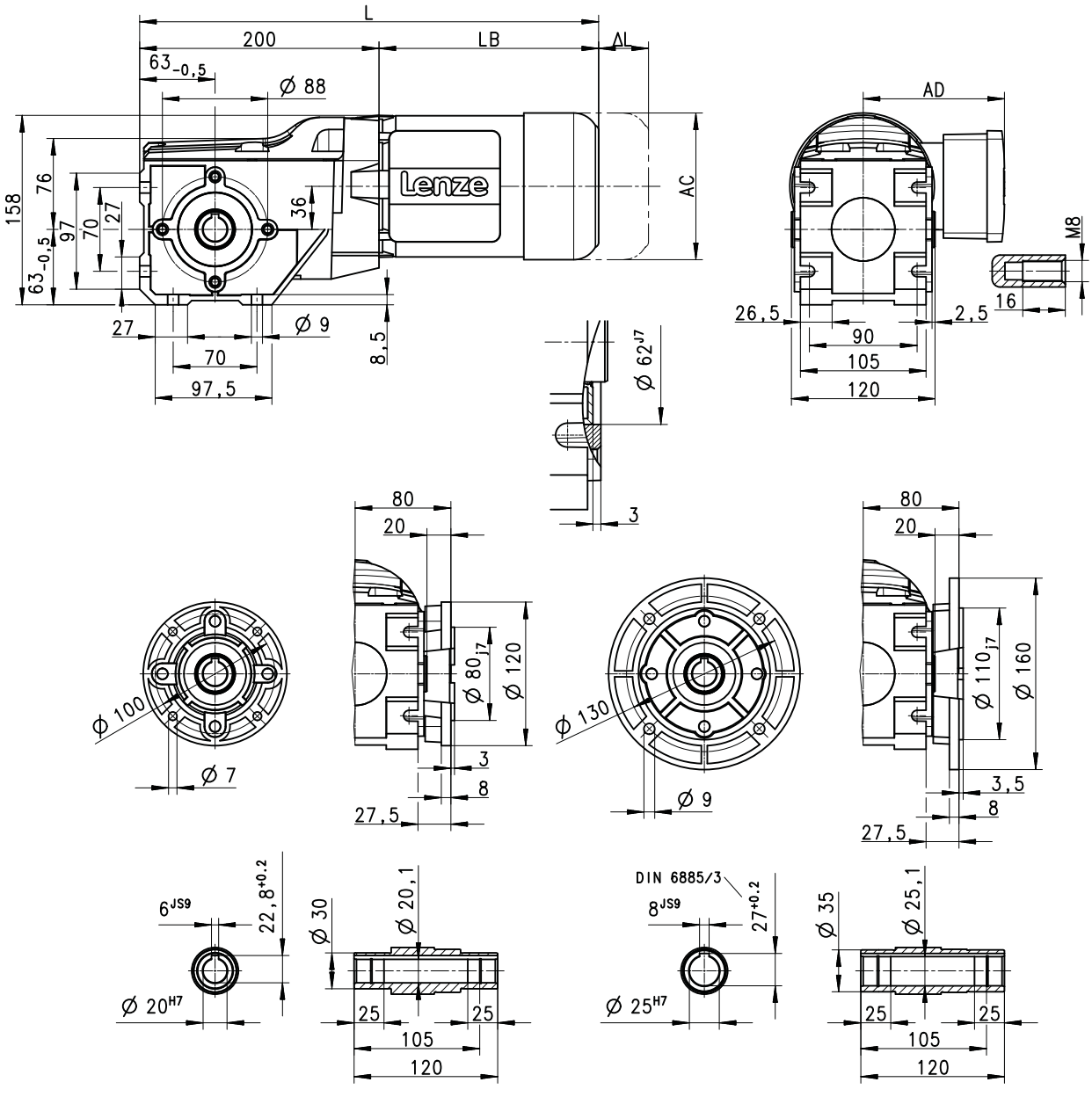
| Motor series | | | MFXMA |
|---|---|---|---|
| **Motor** | | | **063-32**<br>**063-42** |
| Total length | L | mm | 334 |
| Motor length | LB | mm | 199 |
| Motor diameter | AC | mm | 123 |
| Motor/connection distance | AD | mm | 109 |

Δ L ▸ Additional lengths 🕮 118

**g500-B110, 2-stage**

**g500-B110, 2-stage**

Gearbox design: Hollow shaft with foot (HBR/HAR/HAK)

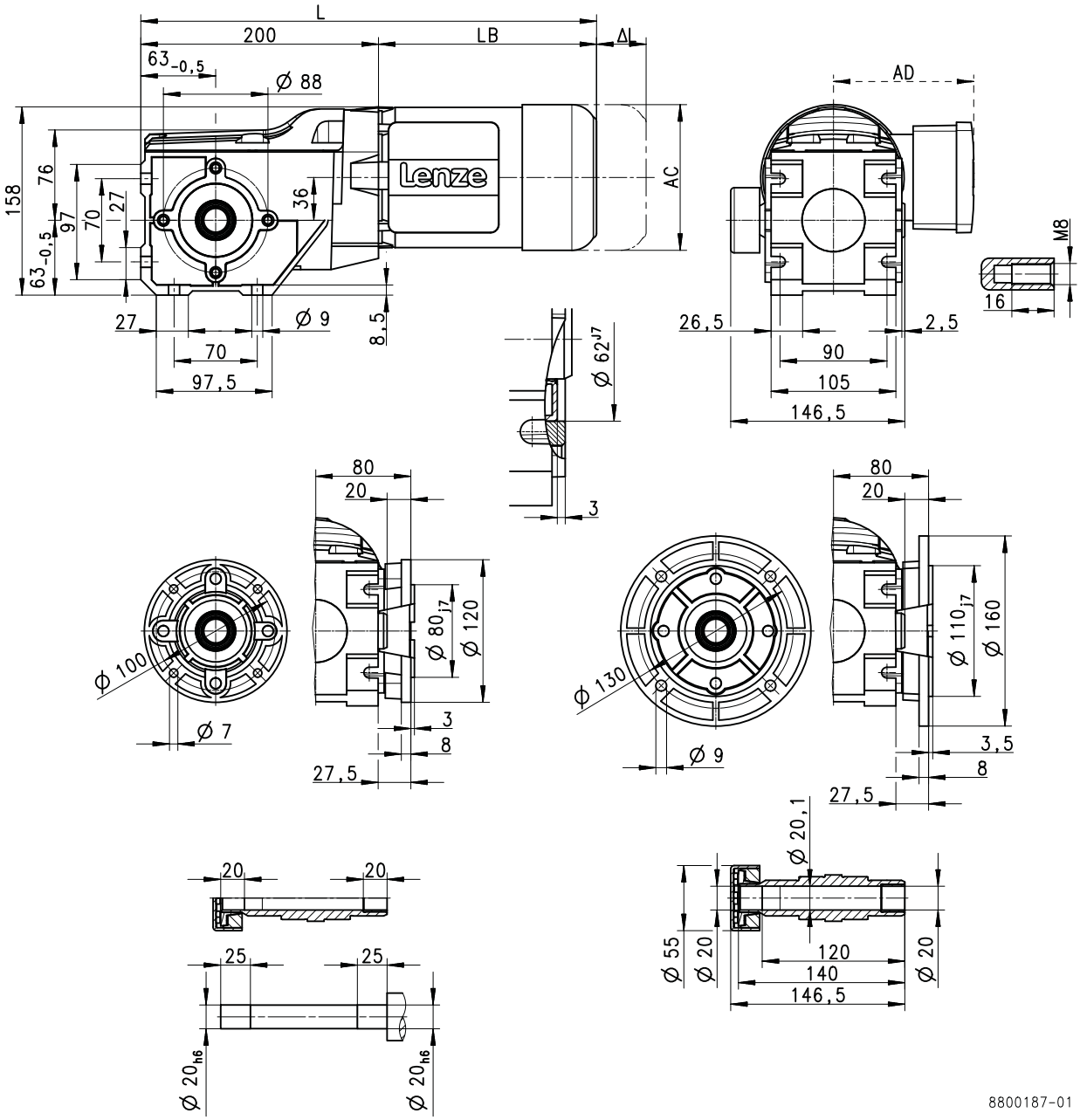



| Motor series | | | MFXMA | | | |
|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** |
| Total length | L | mm | 383 | 404 | 426 | 486 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 |

Δ L ▸ Additional lengths 🕮 118

**g500-B110, 2-stage**

Gearbox design: Hollow shaft with shrink disc, with foot (SBR/SAR/SAK)

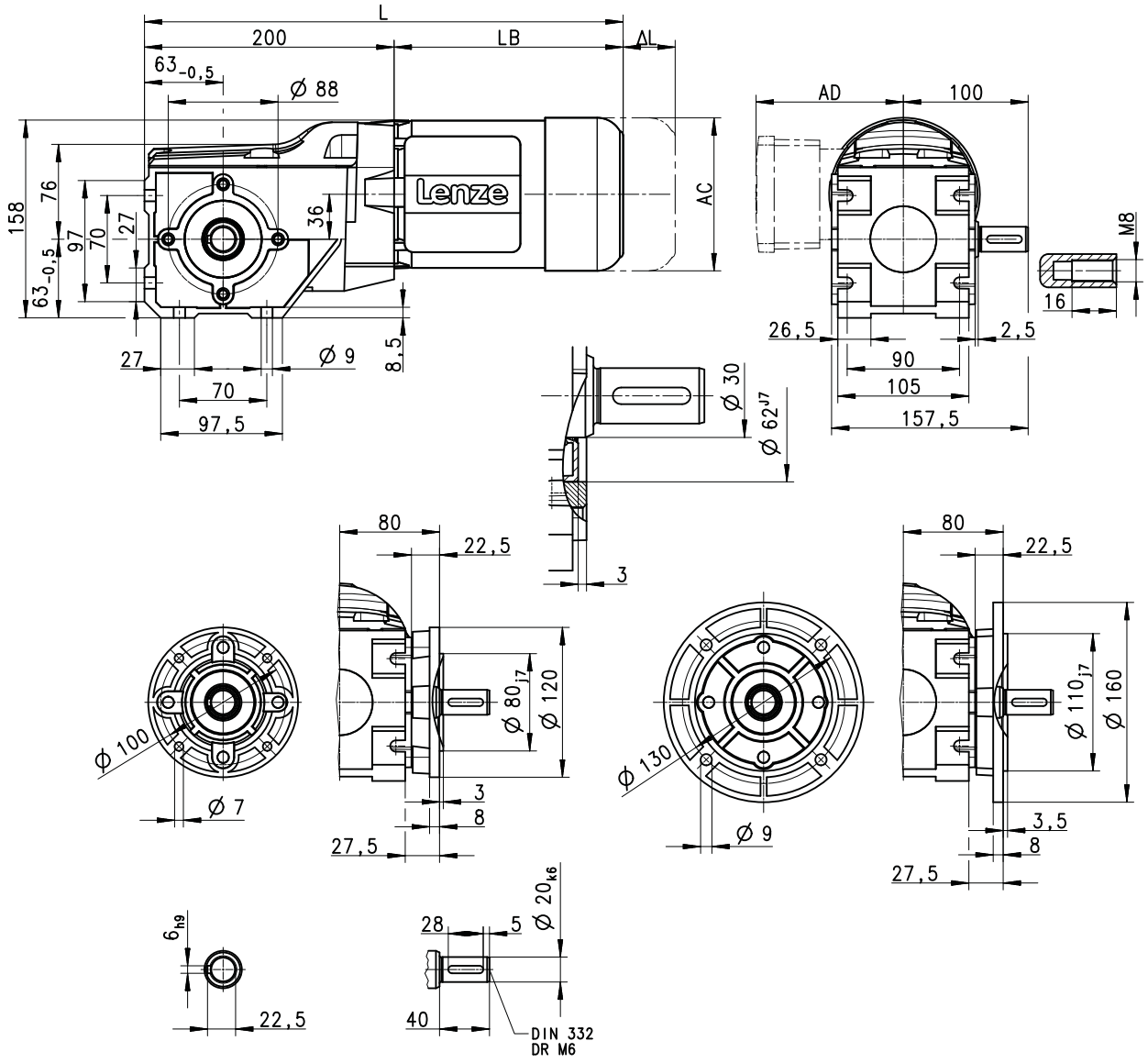



| Motor series | | | MFXMA | | | |
|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** |
| Total length | L | mm | 383 | 404 | 426 | 486 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 |

Δ L ▸ Additional lengths 🕮 118

**g500-B110, 2-stage**

Gearbox design: Solid shaft with foot (VBR/VAR/VAK)




8800148-01

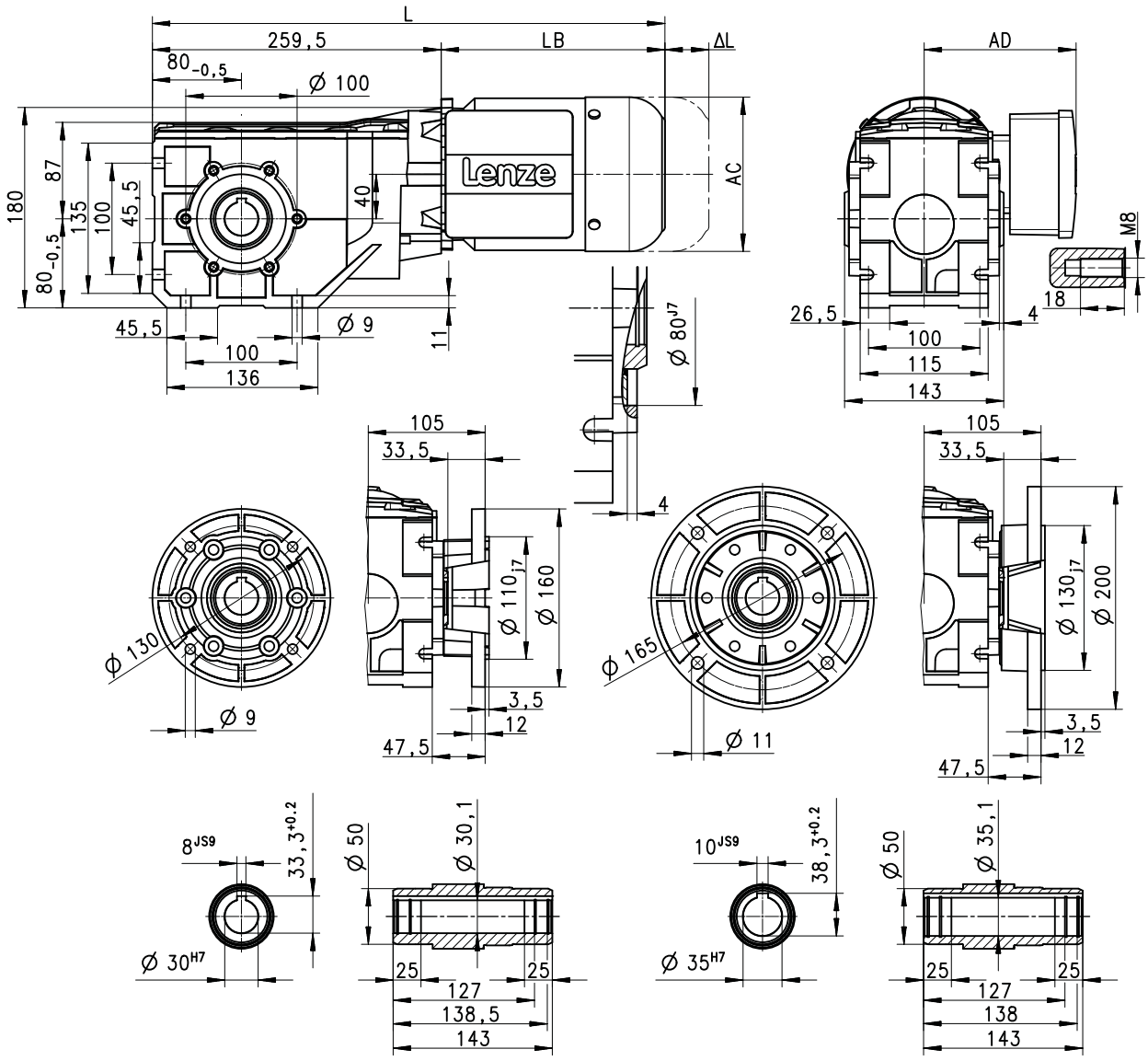
| Motor series | | | MFXMA | | | |
|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** |
| Total length | L | mm | 383 | 404 | 426 | 486 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 |

Δ L ▸ Additional lengths 🕮 118

**g500-B240, 2-/3-stage**

**g500-B240, 2-/3-stage**

Gearbox design: Hollow shaft with foot (HBR/HAR/HAK)



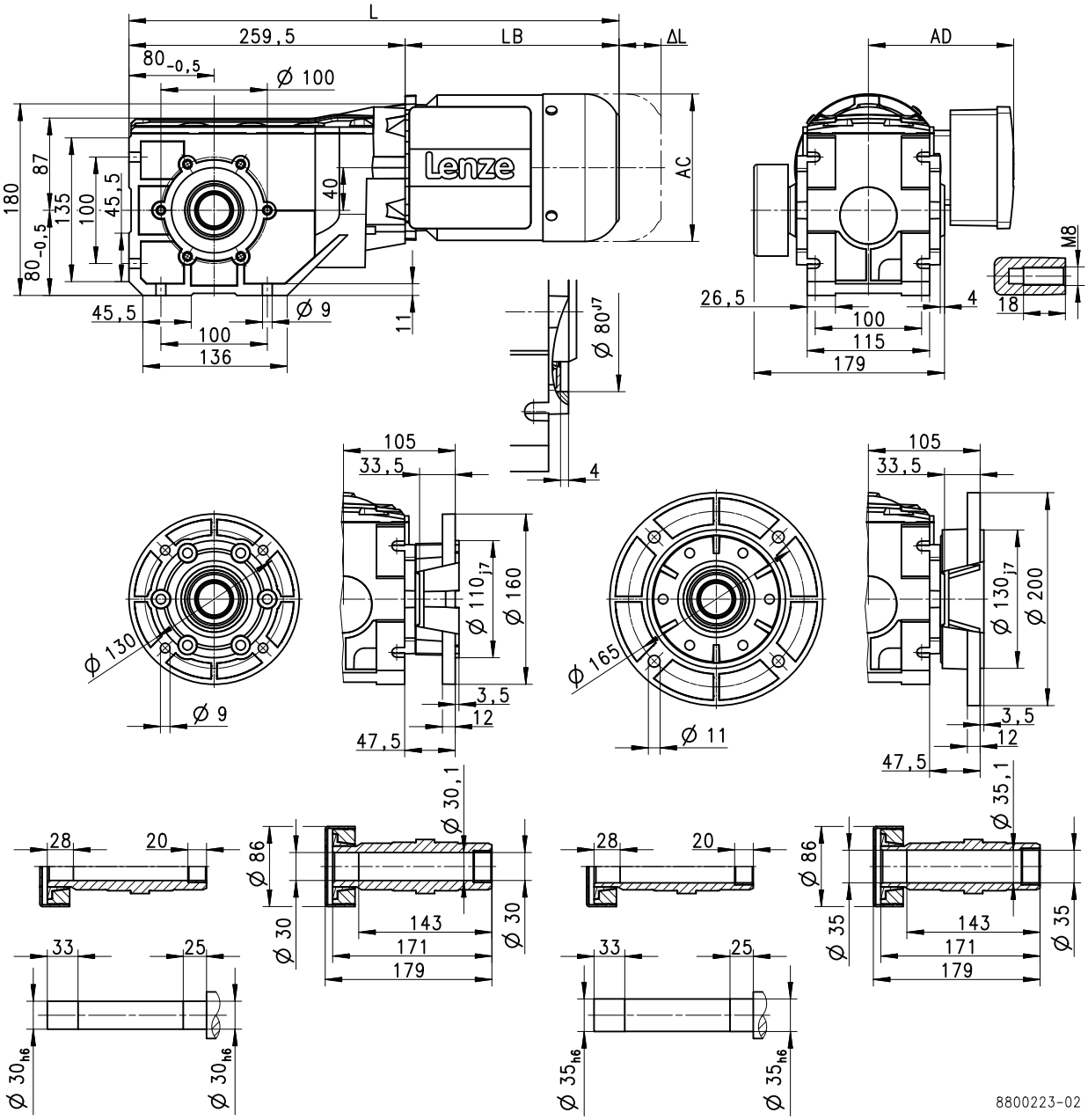

8800155-02

| Motor series | | | MFXMA | | | | |
|---|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** |
| Total length | L | mm | 443 | 464 | 486 | 546 | 595 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 | 335 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 | 194 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 | 147 |

Δ L ▸ Additional lengths 118

**g500-B240, 2-/3-stage**

Gearbox design: Hollow shaft with shrink disc, with foot (SBR/SAR/SAK)

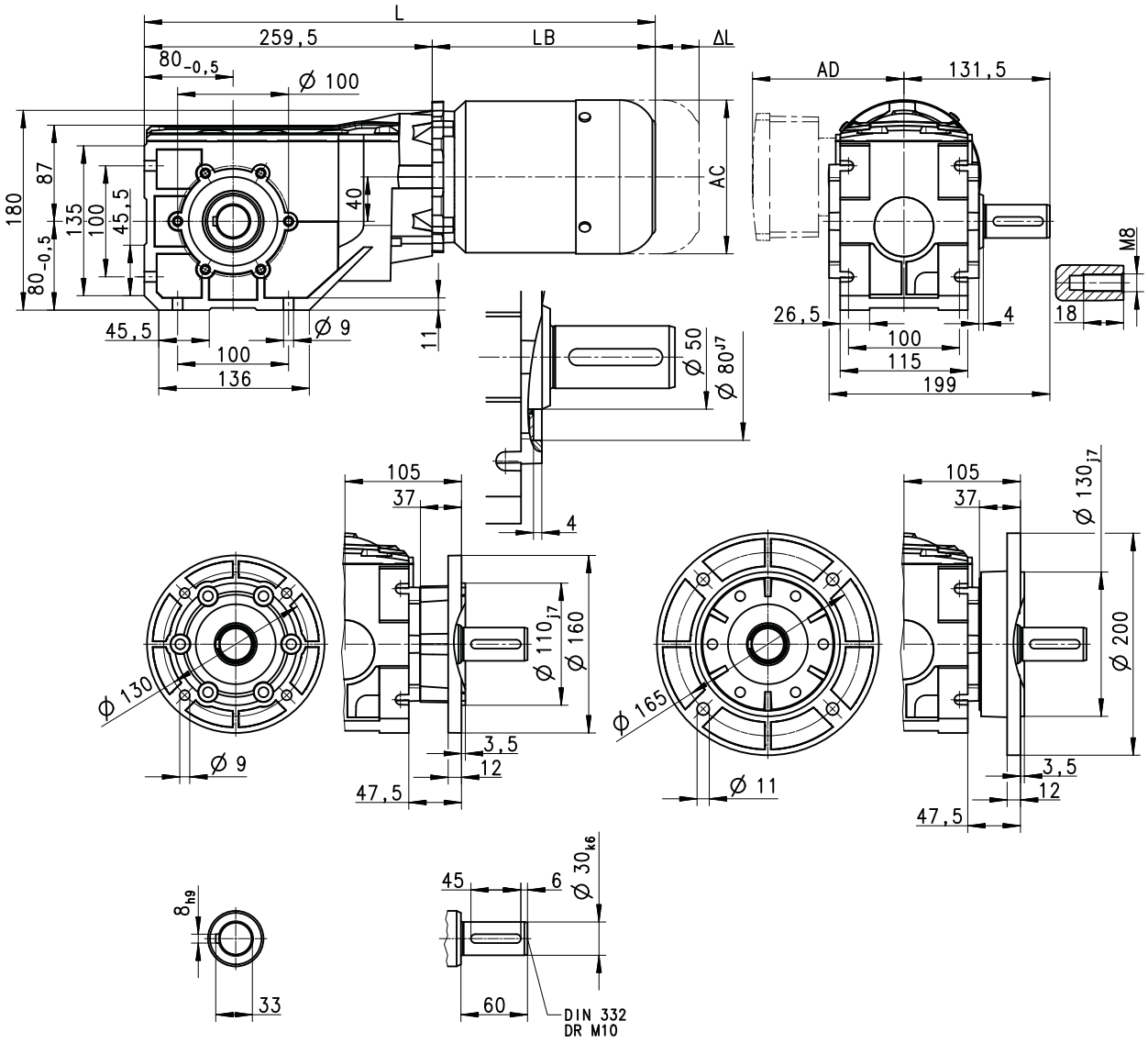



| Motor series | | | MFXMA | | | | |
|---|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** |
| Total length | L | mm | 443 | 464 | 486 | 546 | 595 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 | 335 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 | 194 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 | 147 |

Δ L ▸ Additional lengths 🕮 118

**g500-B240, 2-/3-stage**

Gearbox design: Solid shaft with foot (VBR/VAR/VAK)




8800156-01

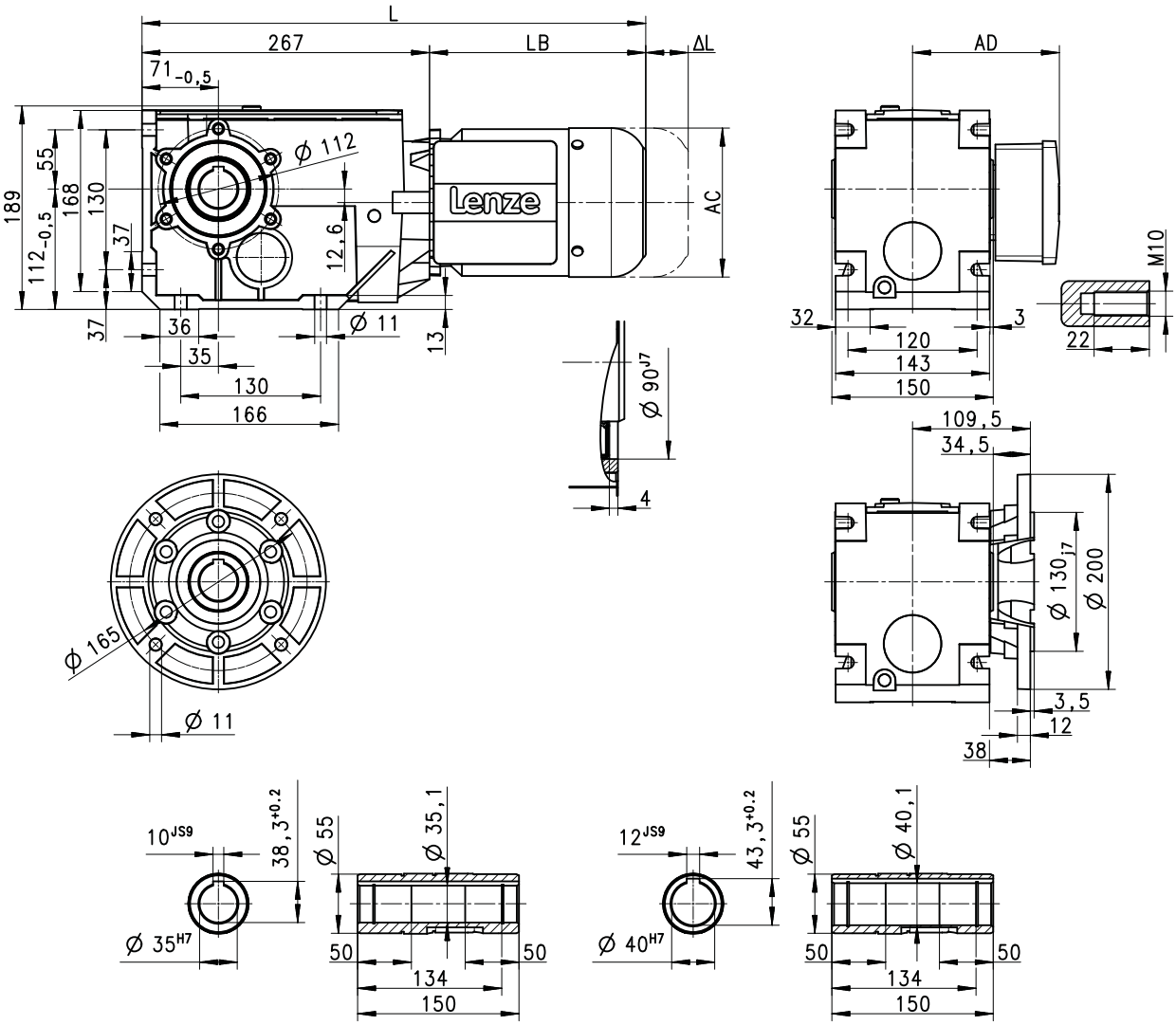
| Motor series | | | MFXMA | | | | |
|---|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** |
| Total length | L | mm | 443 | 464 | 486 | 546 | 595 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 | 335 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 | 194 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 | 147 |

Δ L ▸ Additional lengths 🕮 118

**g500-B450, 3-stage**

**g500-B450, 3-stage**

Gearbox design: Hollow shaft with foot (HBR/HAR/HAK)



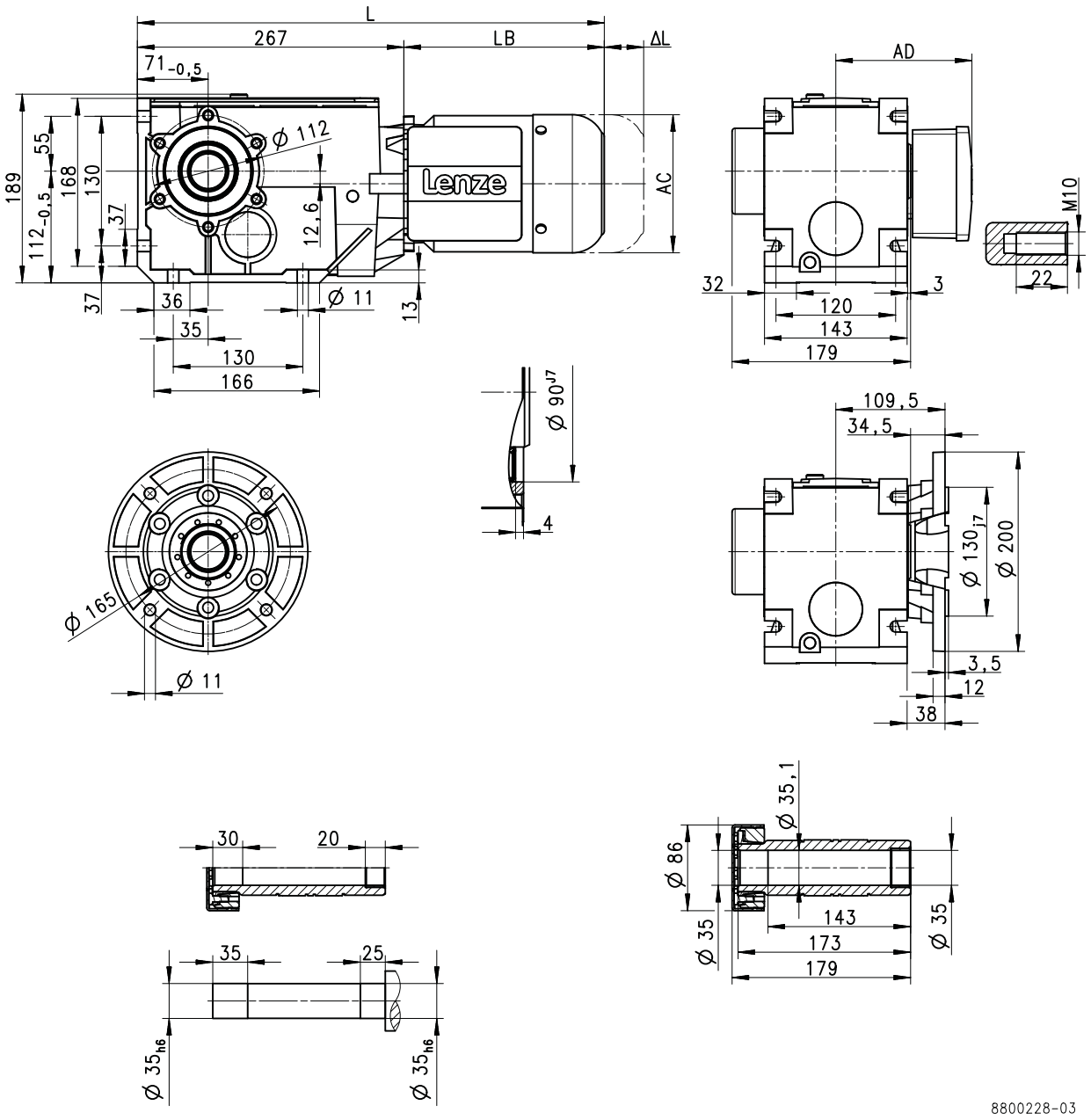

8800163-02

| Motor series | | | MFXMA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** | **112-22** | **132-12<br>132-22<br>132-32** |
| Total length | L | mm | 450 | 471 | 493 | 553 | 602 | 603 | 695 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 | 335 | 336 | 428 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 | 194 | 218 | 258 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 | 147 | 158 | 187 |

Δ L ▸ Additional lengths 🕮 118

**g500-B450, 3-stage**

Gearbox design: Hollow shaft with shrink disc, with foot (SBR/SAR/SAK)

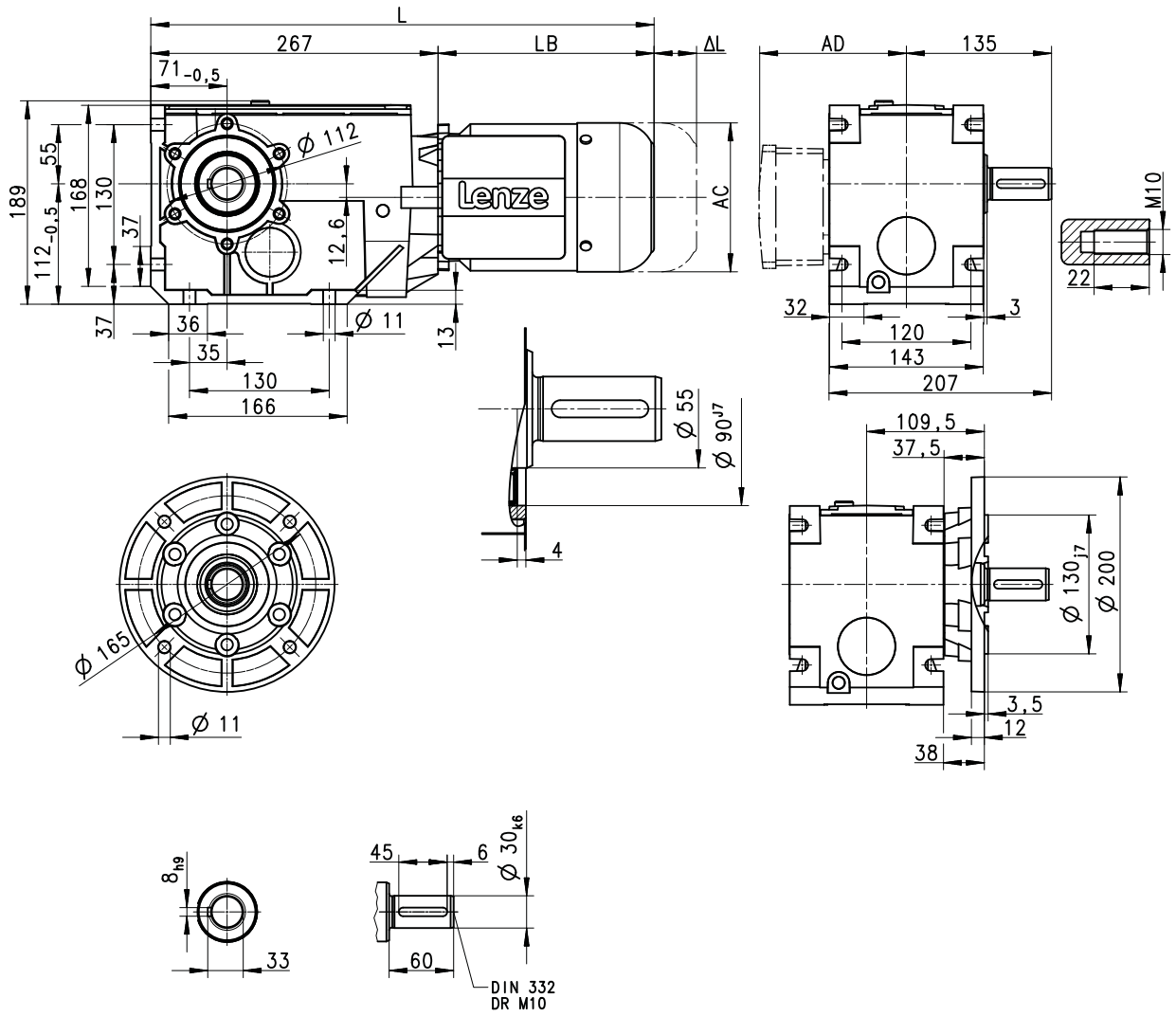



| Motor series | | | MFXMA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** | **112-22** | **132-12<br>132-22<br>132-32** |
| Total length | L | mm | 450 | 471 | 493 | 553 | 602 | 603 | 695 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 | 335 | 336 | 428 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 | 194 | 218 | 258 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 | 147 | 158 | 187 |

Δ L ▸ Additional lengths 🕮 118

**g500-B450, 3-stage**

Gearbox design: Solid shaft with foot (VBR/VAR/VAK)




8800164-02

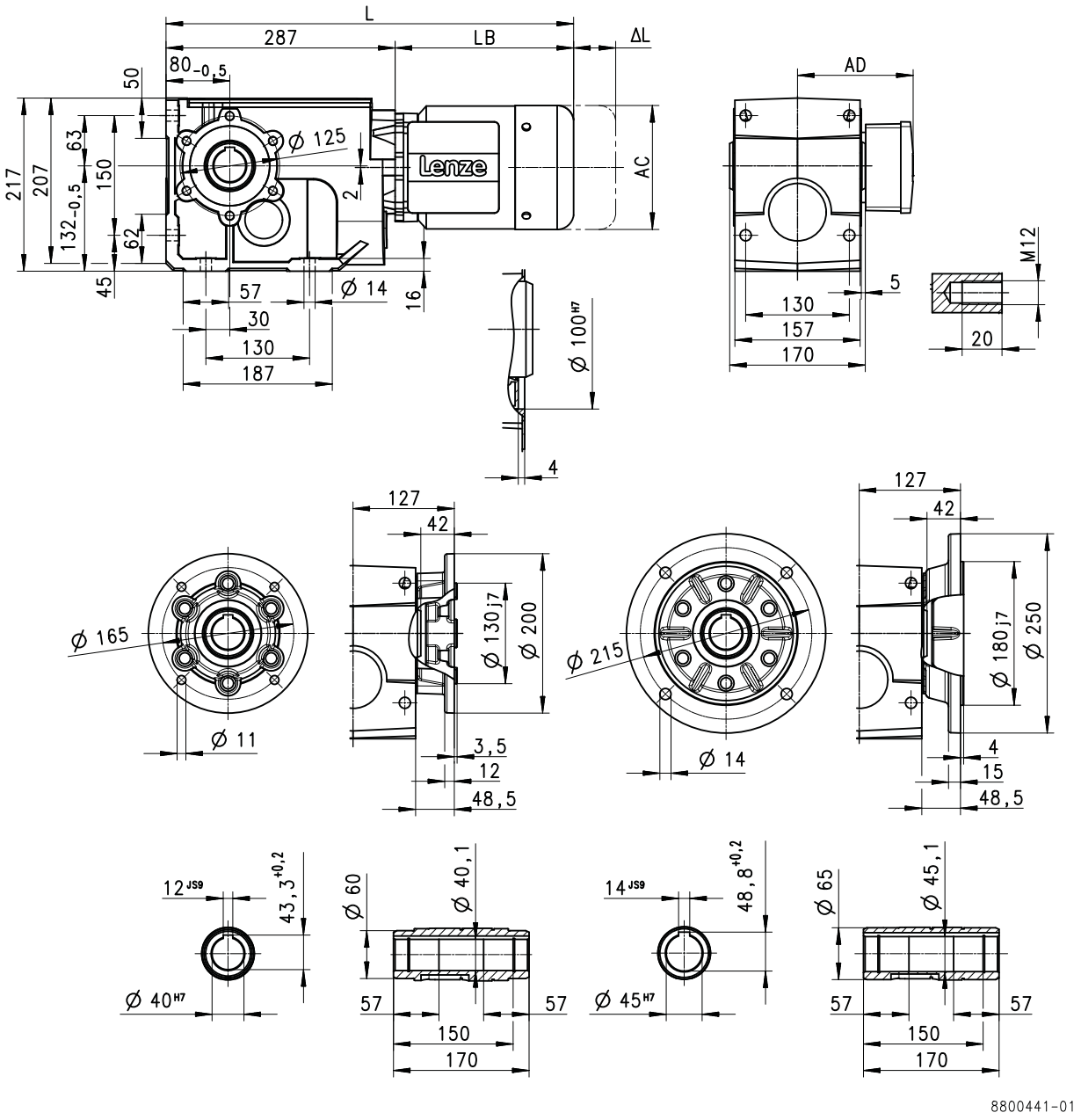
| Motor series | | | MFXMA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** | **112-22** | **132-12<br>132-22<br>132-32** |
| Total length | L | mm | 450 | 471 | 493 | 553 | 602 | 603 | 695 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 | 335 | 336 | 428 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 | 194 | 218 | 258 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 | 147 | 158 | 187 |

Δ L ▸ Additional lengths 📖 118

**g500-B600, 3-stage**

**g500-B600, 3-stage**

Gearbox design: Hollow shaft with foot (HBR/HAR/HAK)

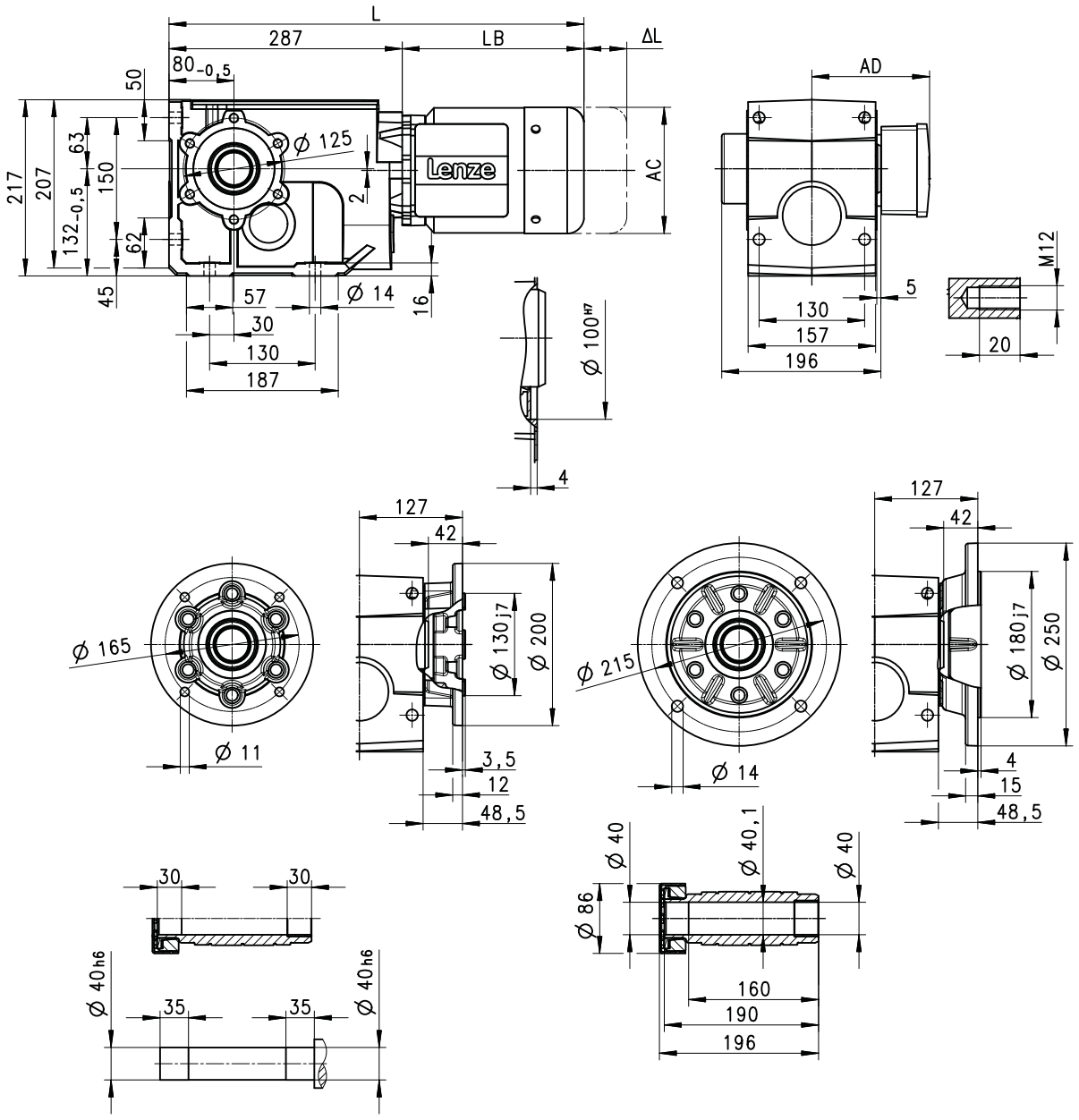



| Motor series | | | MFXMA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** | **112-22** | **132-12<br>132-22<br>132-32** |
| Total length | L | mm | 470 | 491 | 513 | 573 | 622 | 623 | 715 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 | 335 | 336 | 428 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 | 194 | 218 | 258 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 | 147 | 158 | 187 |

Δ L ▸ Additional lengths 🕮 118

**g500-B600, 3-stage**

Gearbox design: Hollow shaft with shrink disc, with foot (SBR/SAR/SAK)

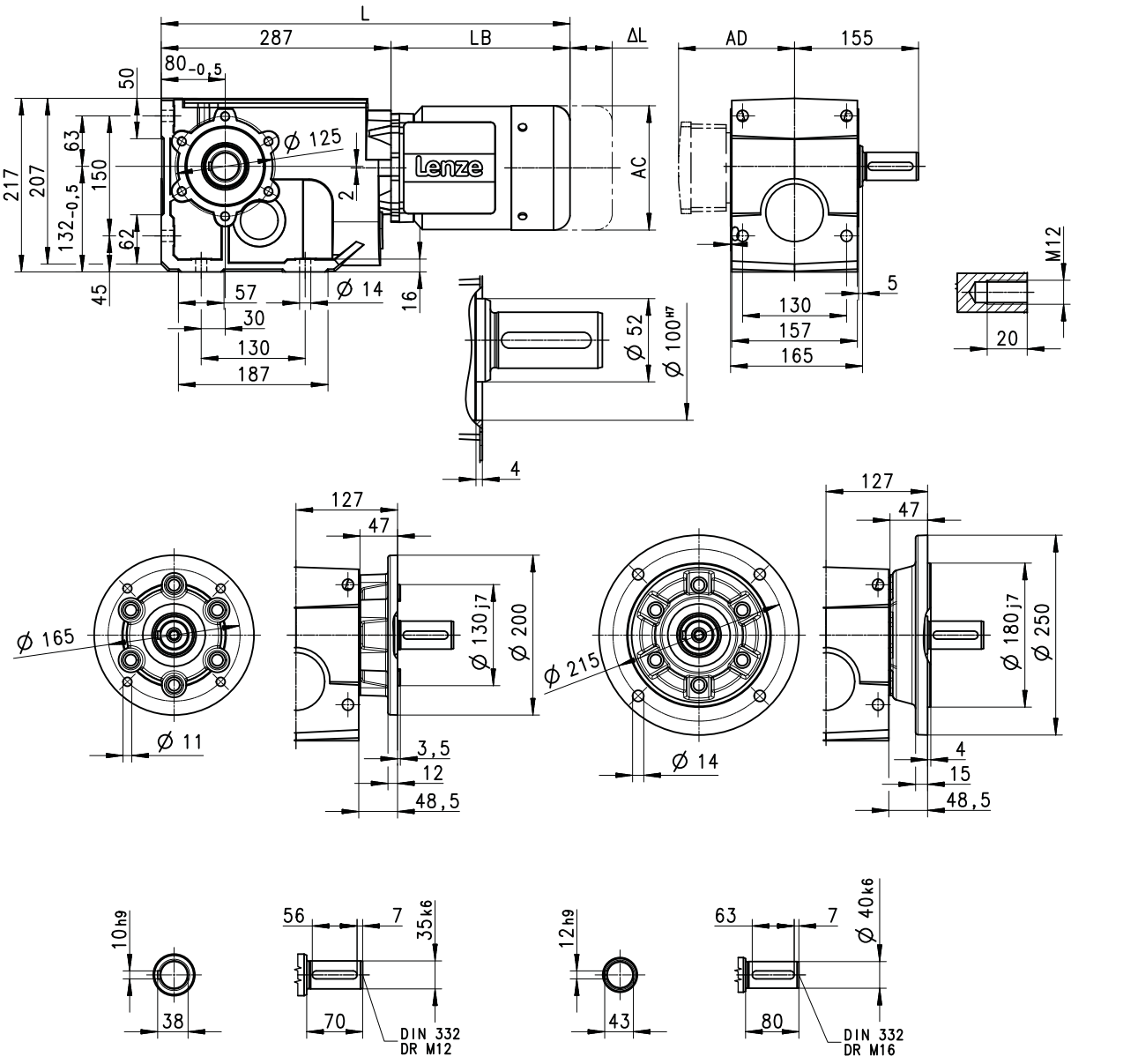



| Motor series | | | MFXMA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** | **112-22** | **132-12<br>132-22<br>132-32** |
| Total length | L | mm | 470 | 491 | 513 | 573 | 622 | 623 | 715 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 | 335 | 336 | 428 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 | 194 | 218 | 258 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 | 147 | 158 | 187 |

Δ L ▸ Additional lengths 🕮 118

**g500-B600, 3-stage**

Gearbox design: Solid shaft with foot (VBR/VAR/VAK)




8800442-02

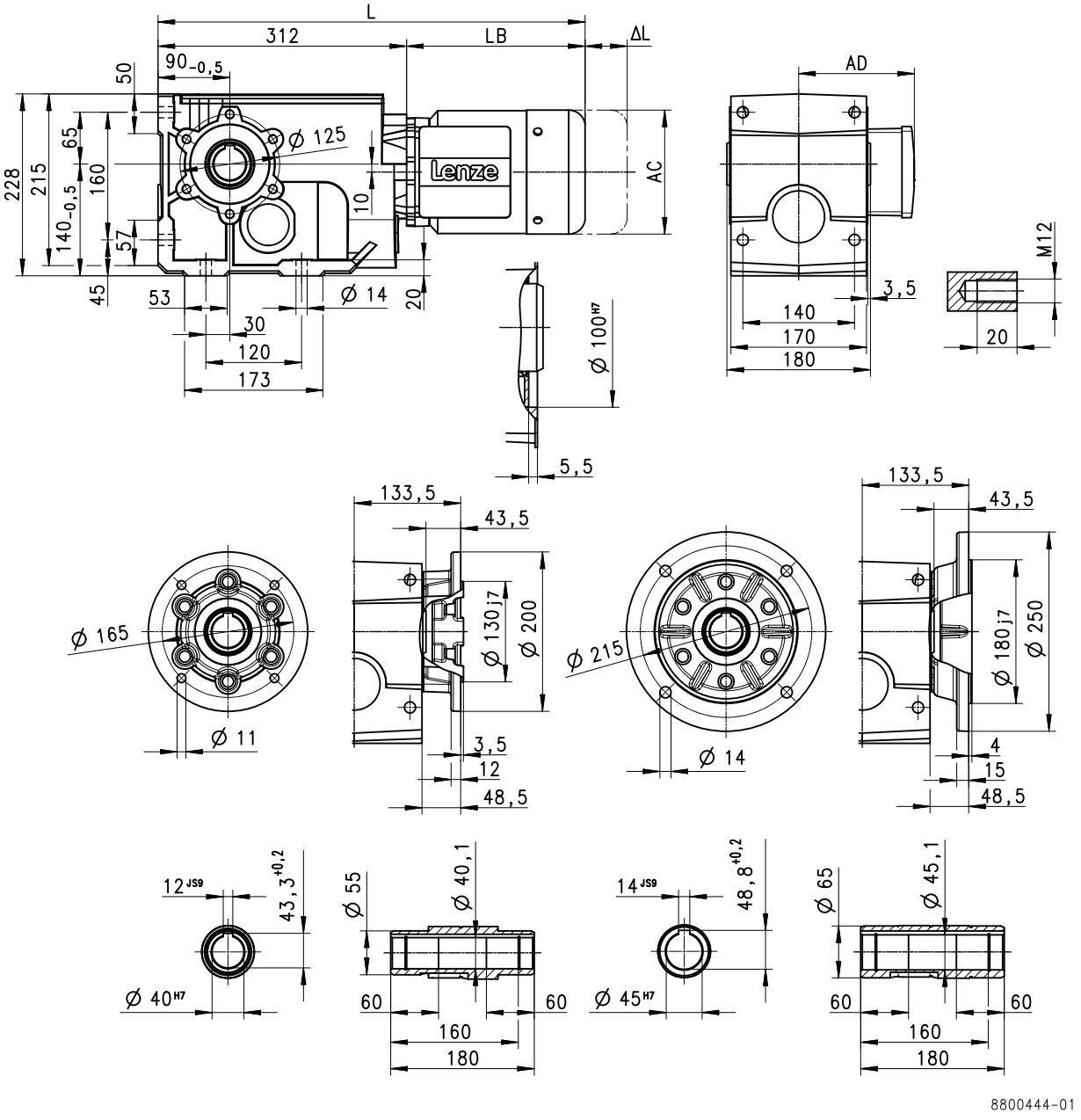
| Motor series | | | MFXMA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** | **112-22** | **132-12<br>132-22<br>132-32** |
| Total length | L | mm | 470 | 491 | 513 | 573 | 622 | 623 | 715 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 | 335 | 336 | 428 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 | 194 | 218 | 258 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 | 147 | 158 | 187 |

Δ L ▸ Additional lengths 🕮 118

**g500-B820, 3-stage**

**g500-B820, 3-stage**

Gearbox design: Hollow shaft with foot (HBR/HAR/HAK)

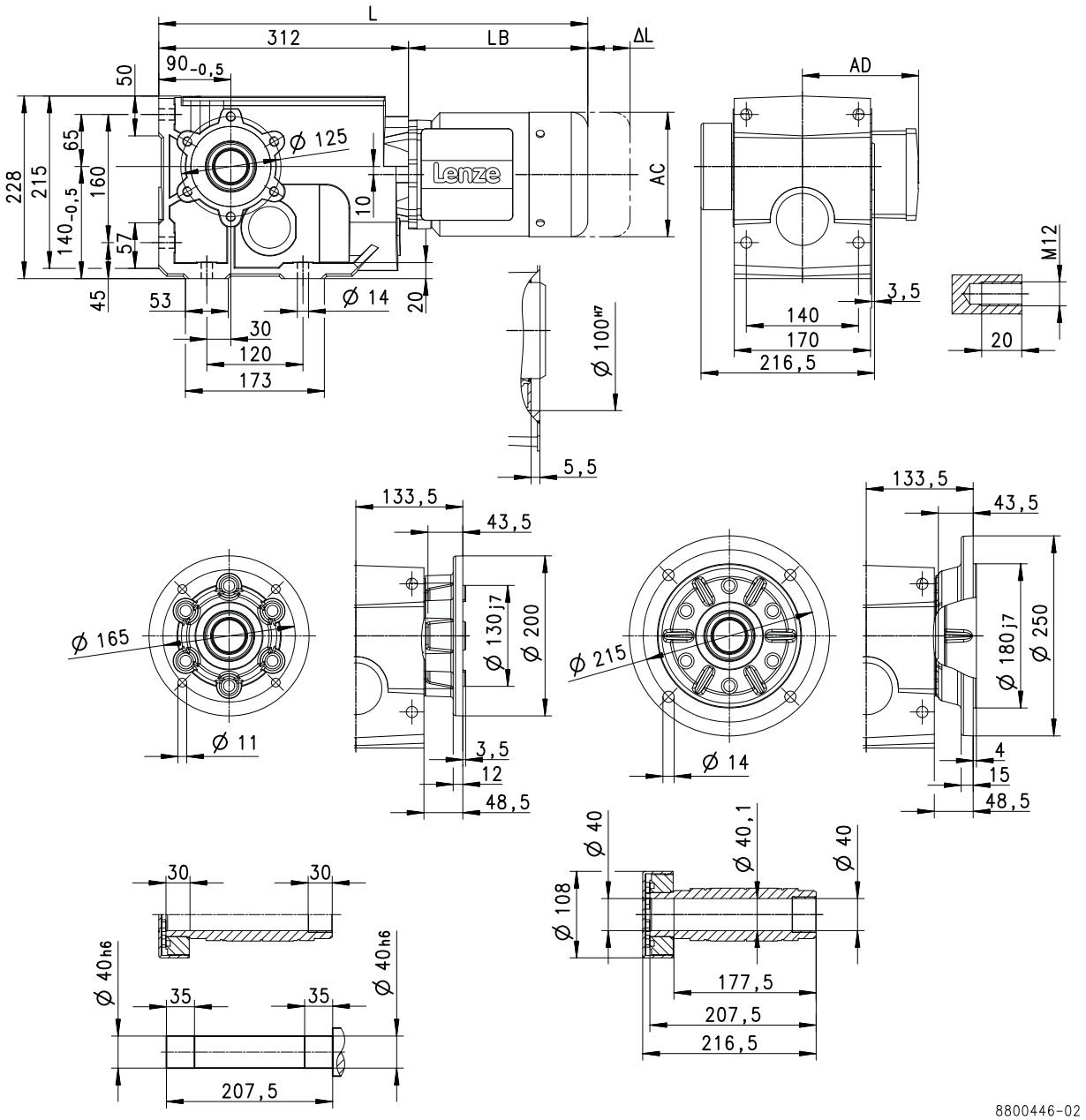



| Motor series | | | MFXMA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** | **112-22** | **132-12<br>132-22<br>132-32** |
| Total length | L | mm | 495 | 516 | 538 | 598 | 647 | 648 | 740 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 | 335 | 336 | 428 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 | 194 | 218 | 258 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 | 147 | 158 | 187 |

Δ L ▸ Additional lengths 🕮 118

**g500-B820, 3-stage**

Gearbox design: Hollow shaft with shrink disc, with foot (SBR/SAR/SAK)

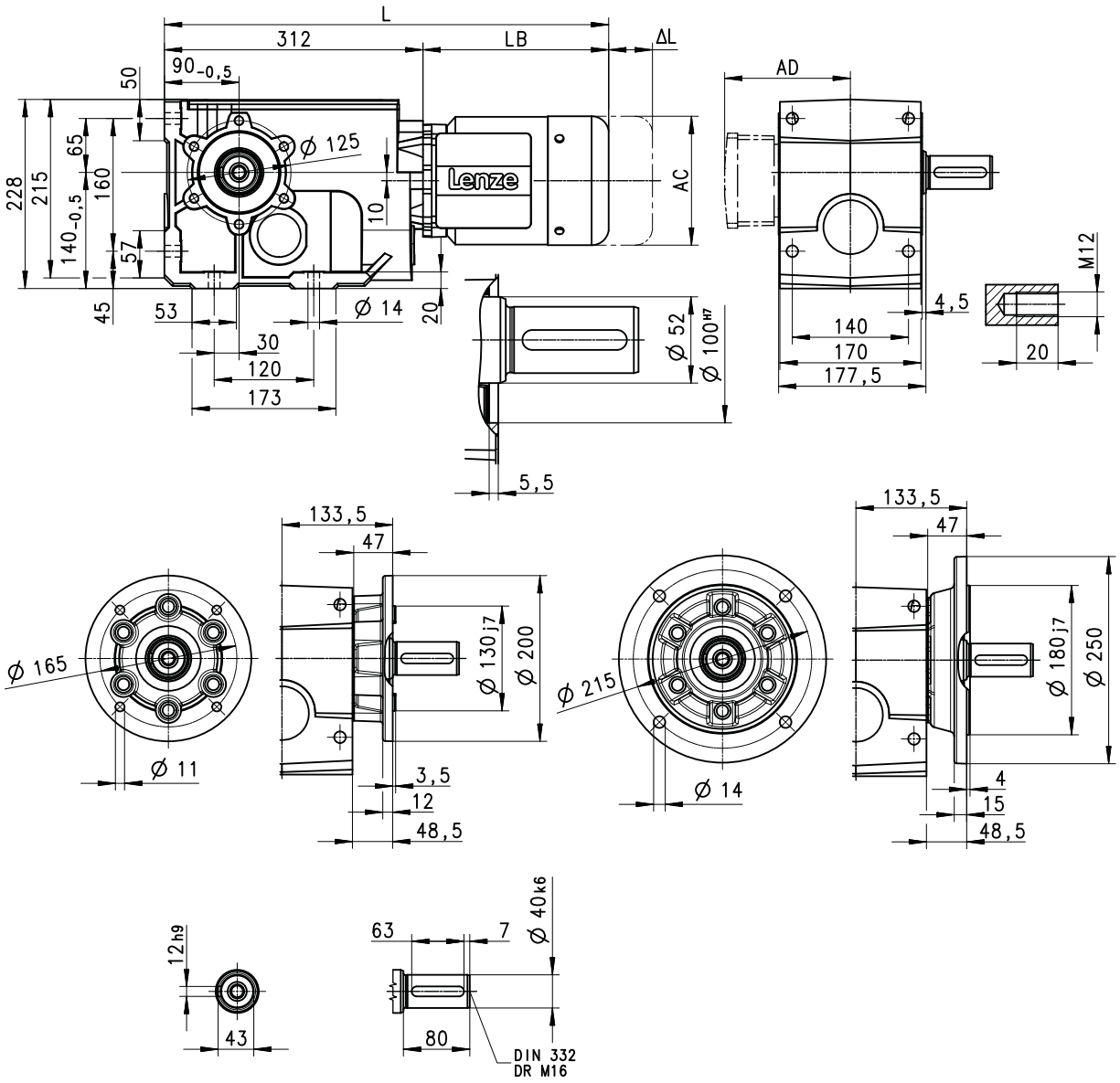



| Motor series | | | MFXMA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** | **112-22** | **132-12<br>132-22<br>132-32** |
| Total length | L | mm | 495 | 516 | 538 | 598 | 647 | 648 | 740 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 | 335 | 336 | 428 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 | 194 | 218 | 258 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 | 147 | 158 | 187 |

Δ L ▸ Additional lengths 🕮 118

**g500-B820, 3-stage**

Gearbox design: Solid shaft with foot (VBR/VAR/VAK)




8800445-01

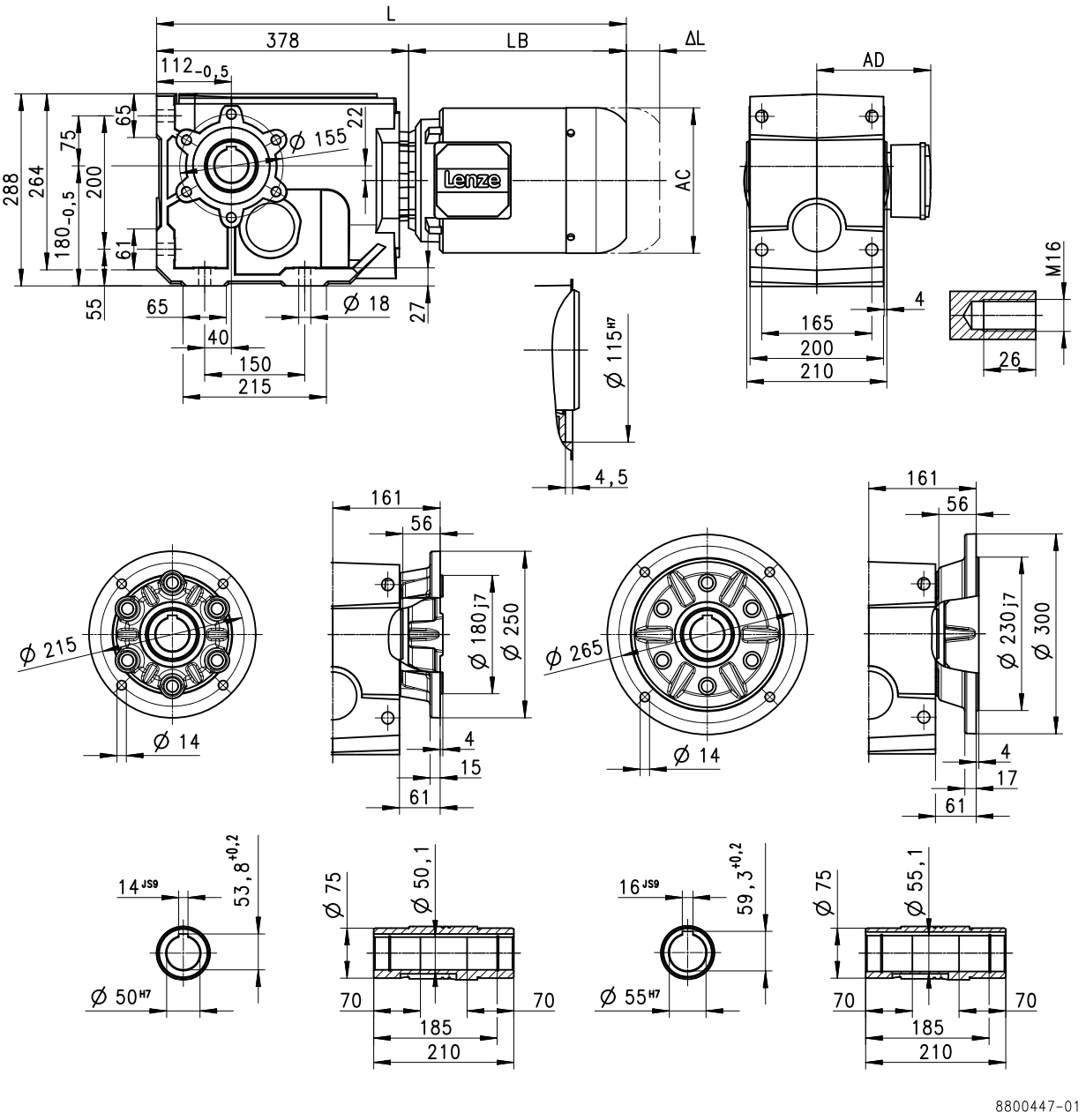
| Motor series | | | MFXMA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** | **112-22** | **132-12<br>132-22<br>132-32** |
| Total length | L | mm | 495 | 516 | 538 | 598 | 647 | 648 | 740 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 | 335 | 336 | 428 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 | 194 | 218 | 258 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 | 147 | 158 | 187 |

Δ L ▸ Additional lengths 🕮 118

**g500-B1500, 3-stage**

**g500-B1500, 3-stage**

Gearbox design: Hollow shaft with foot (HBR/HAR/HAK)



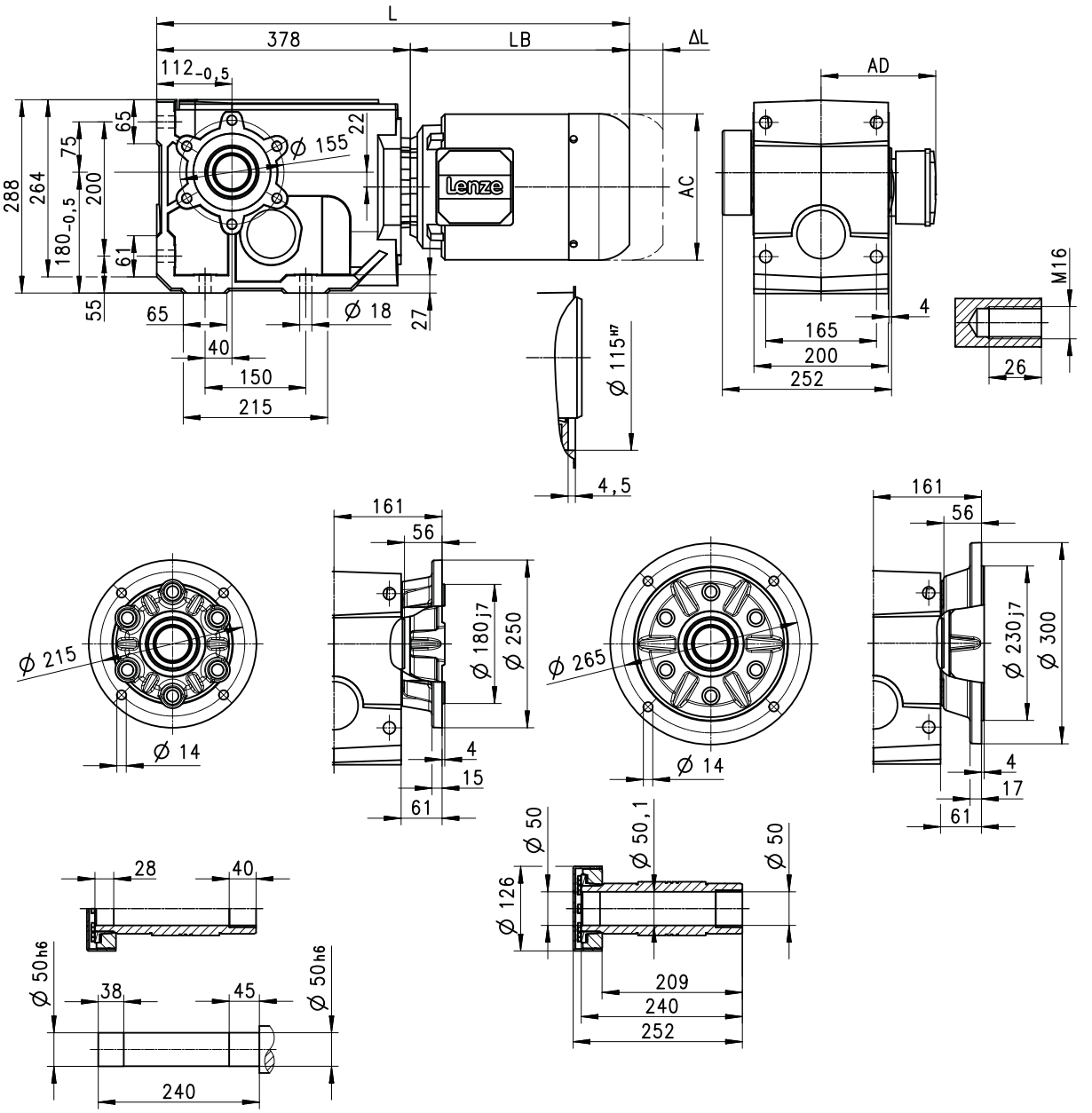

8800447-01

| Motor series | | | MFXMA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Motor** | | | **071-32<br>071-42** | **063-32<br>063-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** | **112-22** | **132-12<br>132-22<br>132-32** |
| Total length | L | mm | 582 | 561 | 604 | 664 | 713 | 714 | 806 |
| Motor length | LB | mm | 204 | 183 | 226 | 286 | 335 | 336 | 428 |
| Motor diameter | AC | mm | 139 | 123 | 156 | 176 | 194 | 218 | 258 |
| Motor/connection distance | AD | mm | 118 | 109 | 132 | 137 | 147 | 158 | 187 |

Δ L ▸ Additional lengths 🕮 118

**g500-B1500, 3-stage**

Gearbox design: Hollow shaft with shrink disc, with foot (SBR/SAR/SAK)

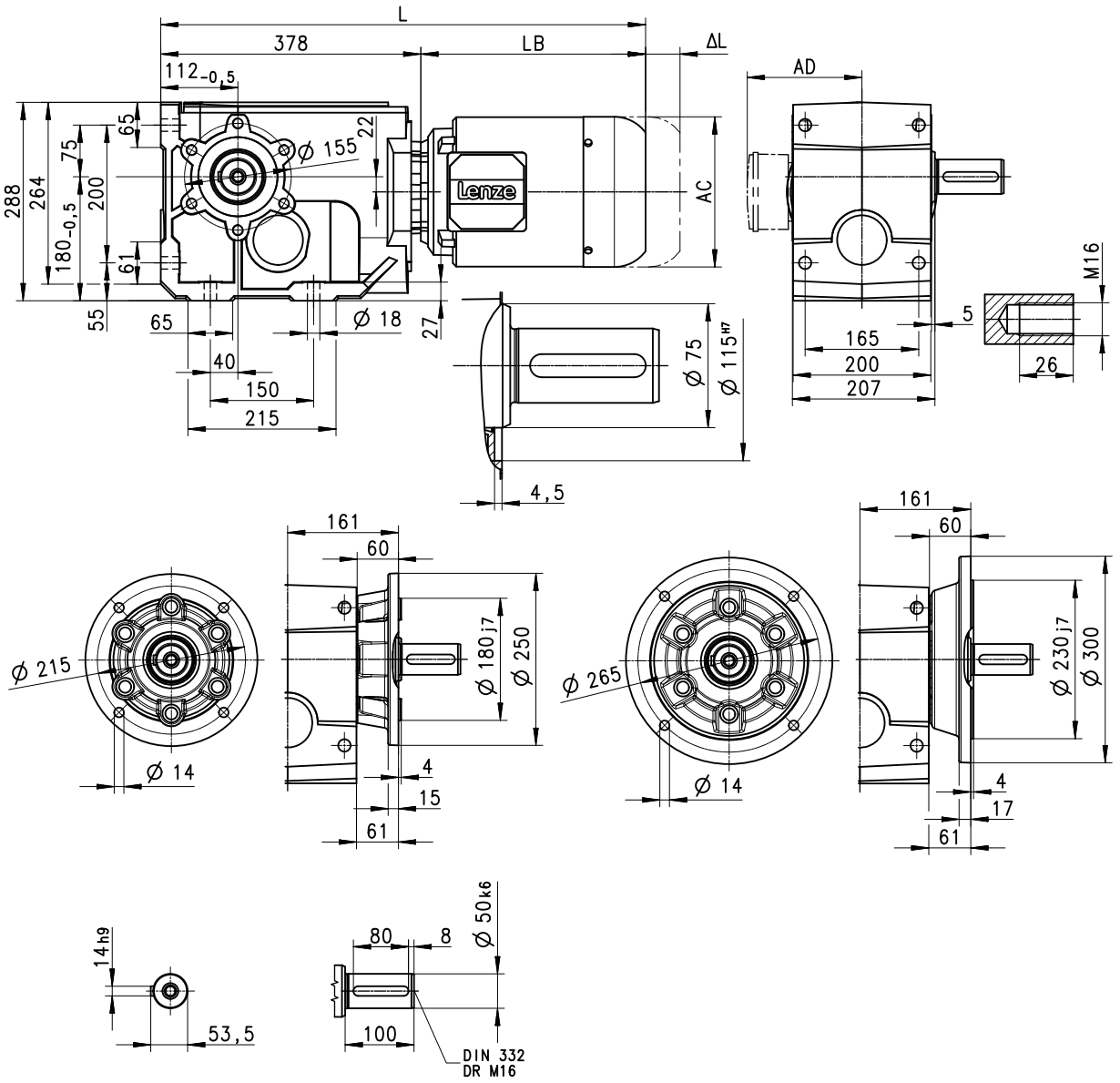



| Motor series | | | MFXMA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Motor** | | | **071-32<br>071-42** | **063-32<br>063-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** | **112-22** | **132-12<br>132-22<br>132-32** |
| Total length | L | mm | 582 | 561 | 604 | 664 | 713 | 714 | 806 |
| Motor length | LB | mm | 204 | 183 | 226 | 286 | 335 | 336 | 428 |
| Motor diameter | AC | mm | 139 | 123 | 156 | 176 | 194 | 218 | 258 |
| Motor/connection distance | AD | mm | 118 | 109 | 132 | 137 | 147 | 158 | 187 |

Δ L ▸ Additional lengths 🕮 118

**g500-B1500, 3-stage**

Gearbox design: Solid shaft with foot (VBR/VAR/VAK)




8800448-01

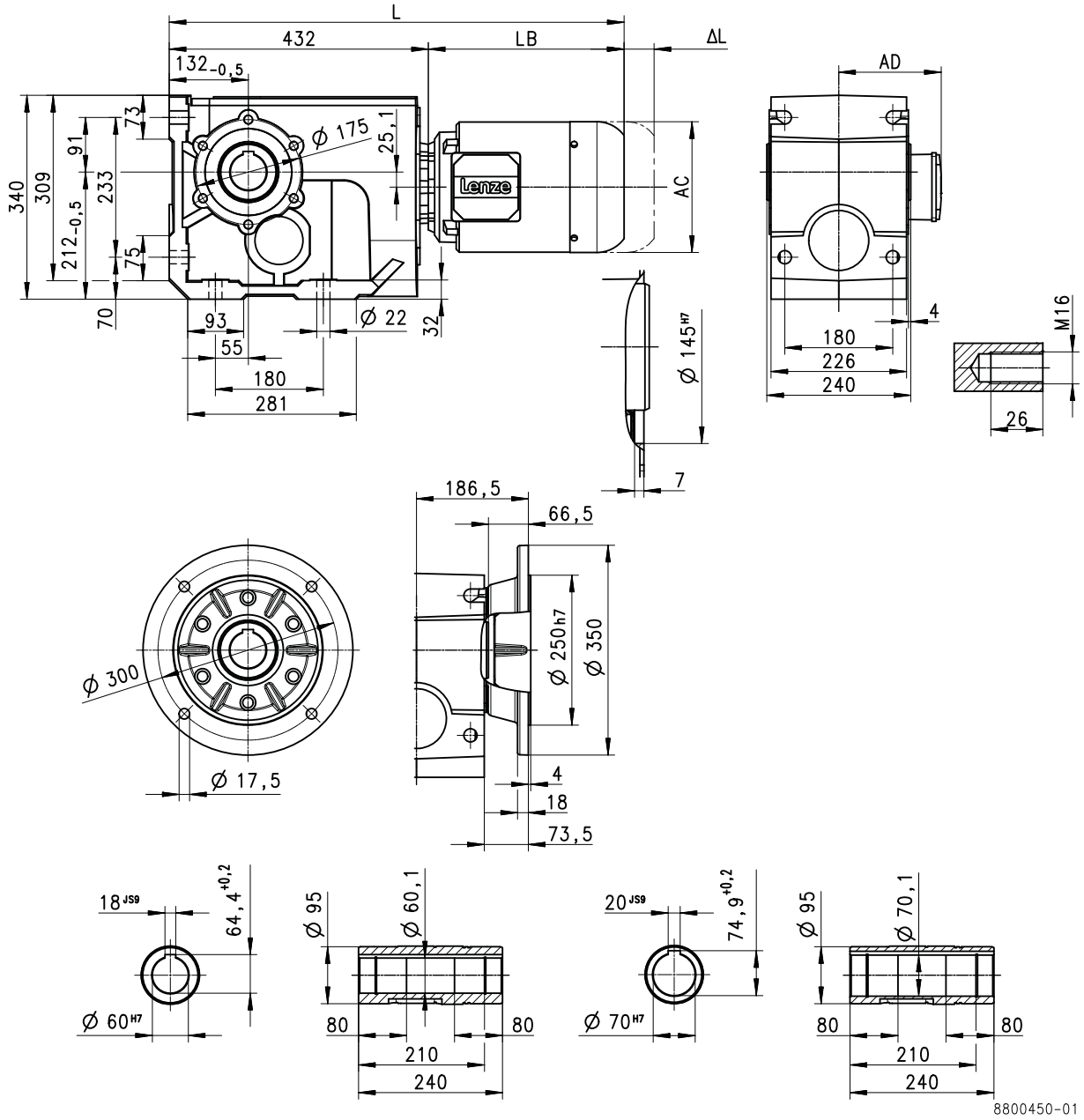
| Motor series | | | MFXMA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Motor** | | | **071-32<br>071-42** | **063-32<br>063-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** | **112-22** | **132-12<br>132-22<br>132-32** |
| Total length | L | mm | 582 | 561 | 604 | 664 | 713 | 714 | 806 |
| Motor length | LB | mm | 204 | 183 | 226 | 286 | 335 | 336 | 428 |
| Motor diameter | AC | mm | 139 | 123 | 156 | 176 | 194 | 218 | 258 |
| Motor/connection distance | AD | mm | 118 | 109 | 132 | 137 | 147 | 158 | 187 |

Δ L ▸ Additional lengths 118

**g500-B2700, 3-stage**

**g500-B2700, 3-stage**

Gearbox design: Hollow shaft with foot (HBR/HAR/HAK)

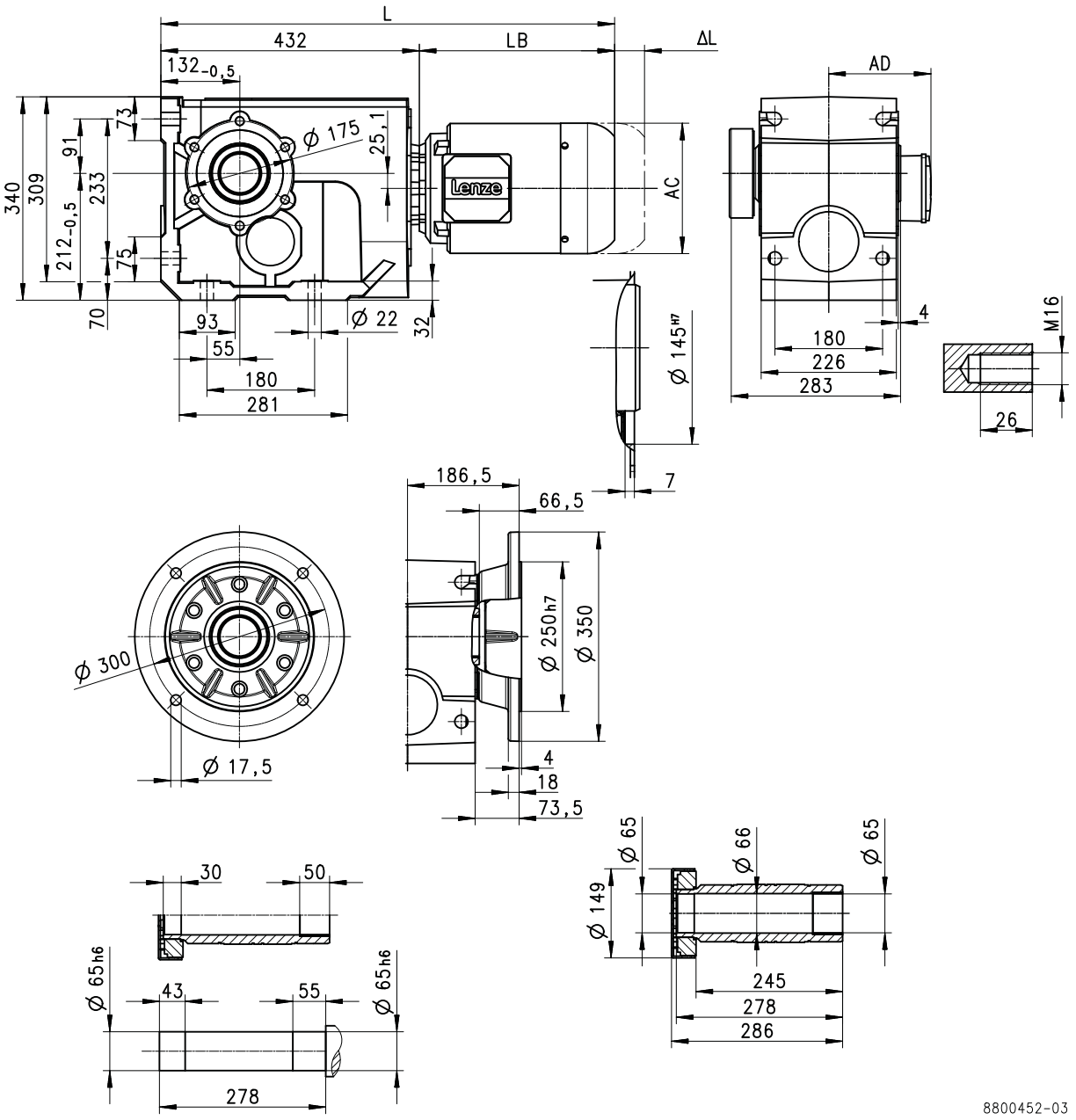



| Motor series | | | MFXMA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** | **112-22** | **132-12<br>132-22<br>132-32** |
| Total length | L | mm | 615 | 636 | 658 | 718 | 767 | 768 | 860 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 | 335 | 336 | 428 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 | 194 | 218 | 258 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 | 147 | 158 | 187 |

Δ L ▸ Additional lengths 🕮 118

**g500-B2700, 3-stage**

Gearbox design: Hollow shaft with shrink disc, with foot (SBR/SAR/SAK)

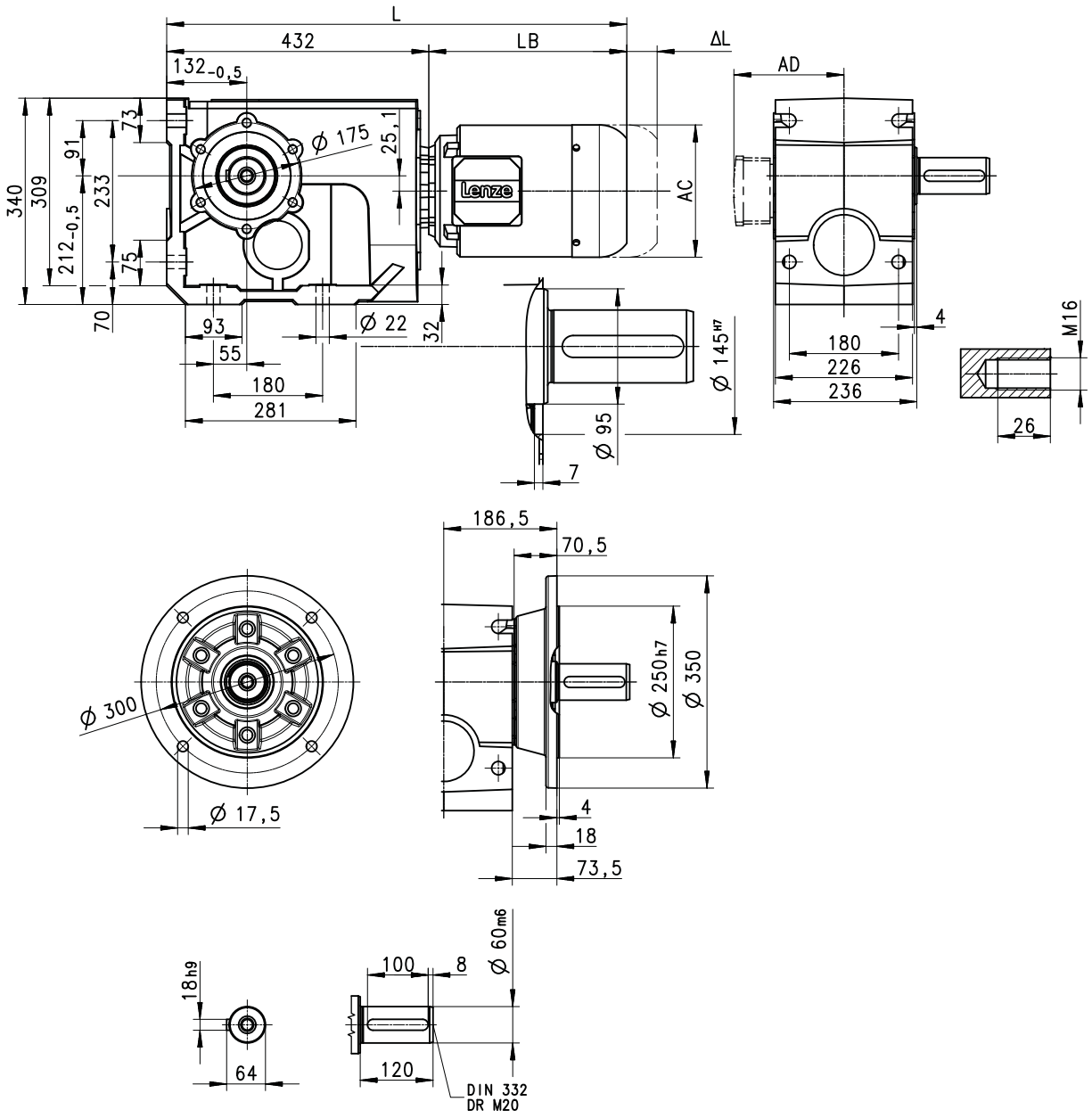



| Motor series | | | MFXMA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** | **112-22** | **132-12<br>132-22<br>132-32** |
| Total length | L | mm | 615 | 636 | 658 | 718 | 767 | 768 | 860 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 | 335 | 336 | 428 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 | 194 | 218 | 258 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 | 147 | 158 | 187 |

Δ L ▸ Additional lengths 🕮 118

**g500-B2700, 3-stage**

Gearbox design: Solid shaft with foot (VBR/VAR/VAK)



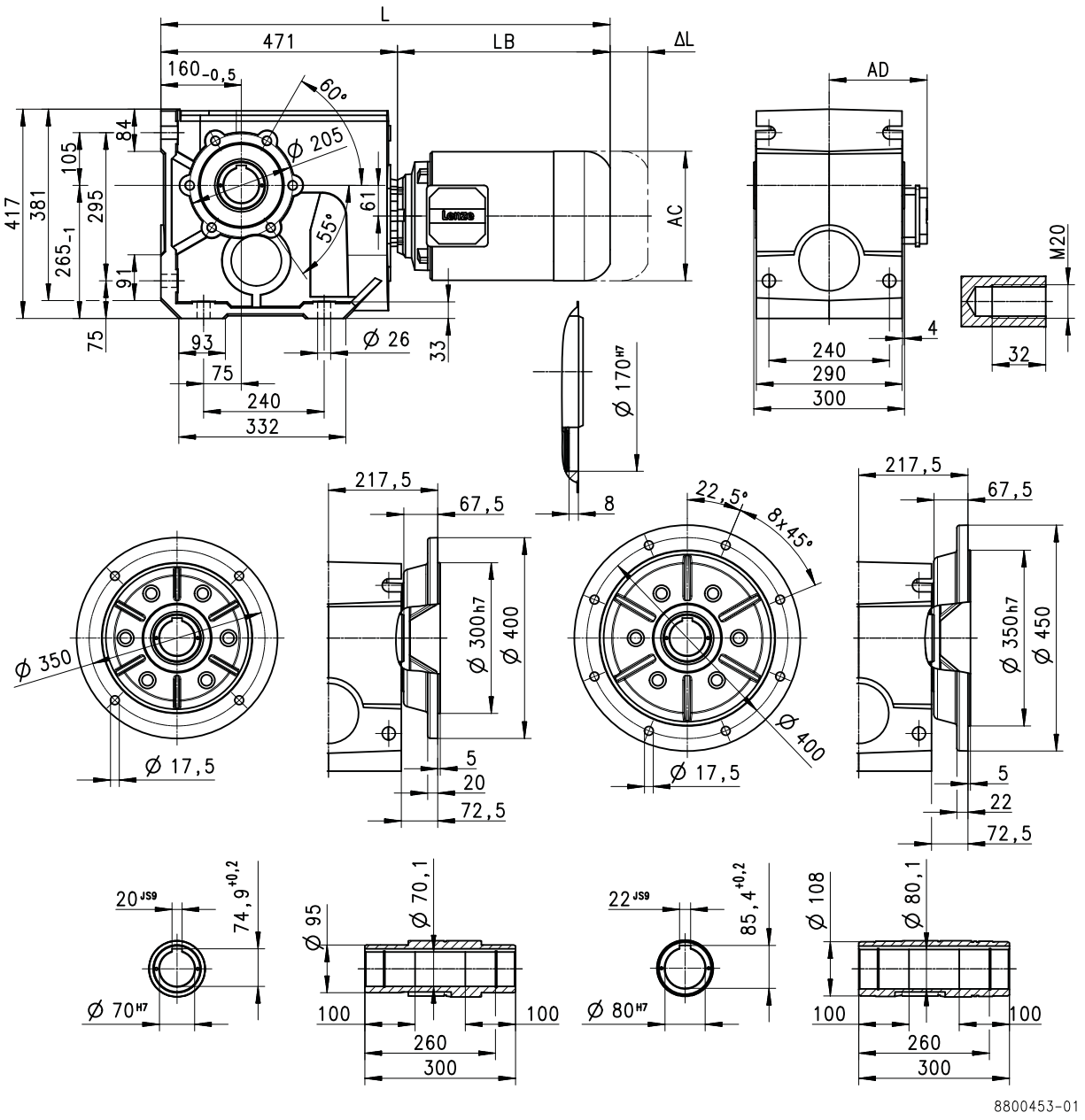

| Motor series | | | MFXMA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** | **112-22** | **132-12<br>132-22<br>132-32** |
| Total length | L | mm | 615 | 636 | 658 | 718 | 767 | 768 | 860 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 | 335 | 336 | 428 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 | 194 | 218 | 258 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 | 147 | 158 | 187 |

Δ L ▸ Additional lengths 118

**g500-B4300, 3-stage**

**g500-B4300, 3-stage**

Gearbox design: Hollow shaft with foot (HBR/HAR/HAK)

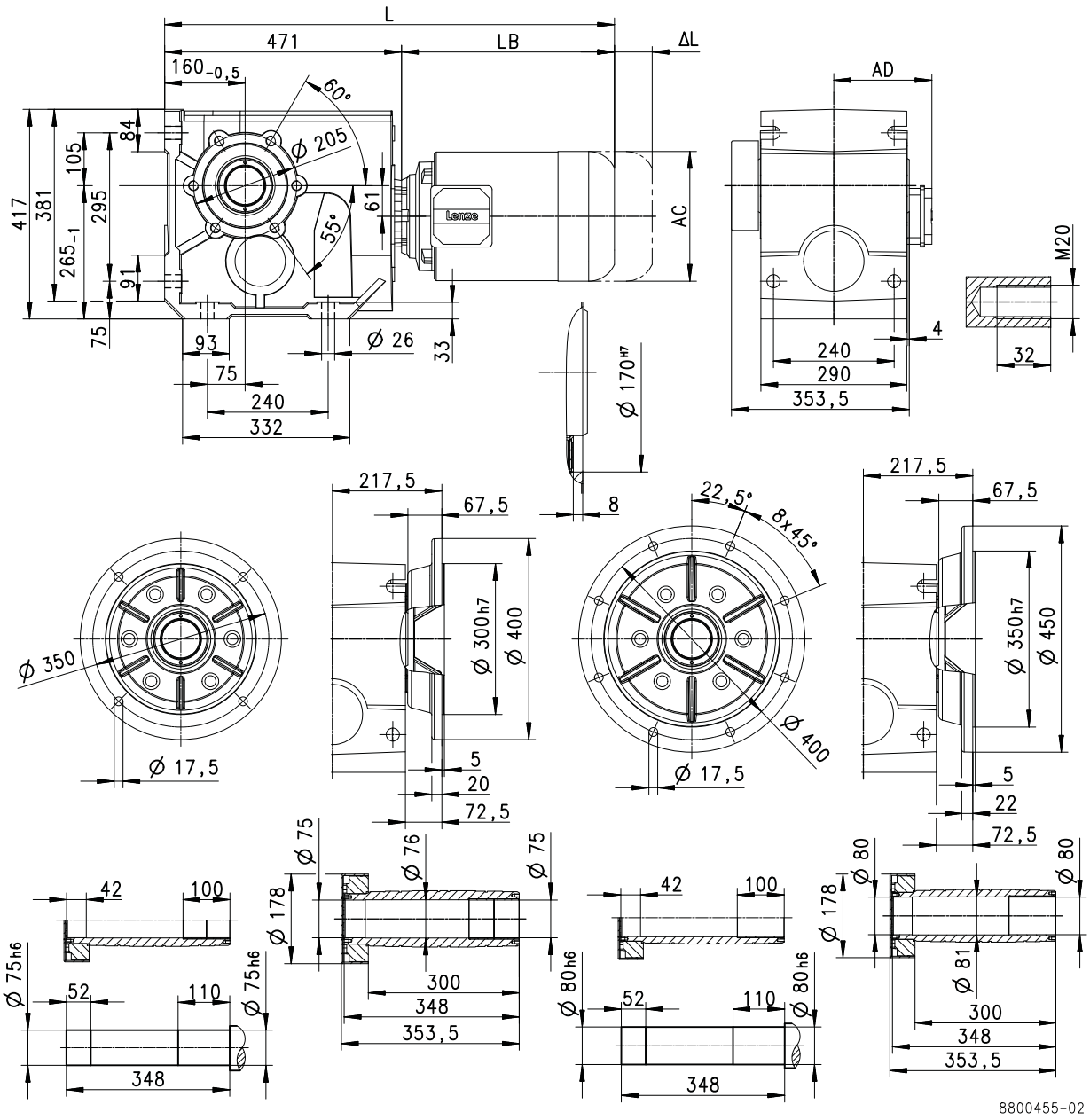



| Motor series | | | MFXMA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** | **112-22** | **132-12<br>132-22<br>132-32** |
| Total length | L | mm | 654 | 675 | 697 | 757 | 806 | 807 | 899 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 | 335 | 336 | 428 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 | 194 | 218 | 258 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 | 147 | 158 | 187 |

Δ L ▸ Additional lengths 🕮 118

**g500-B4300, 3-stage**

Gearbox design: Hollow shaft with shrink disc, with foot (SBR/SAR/SAK)

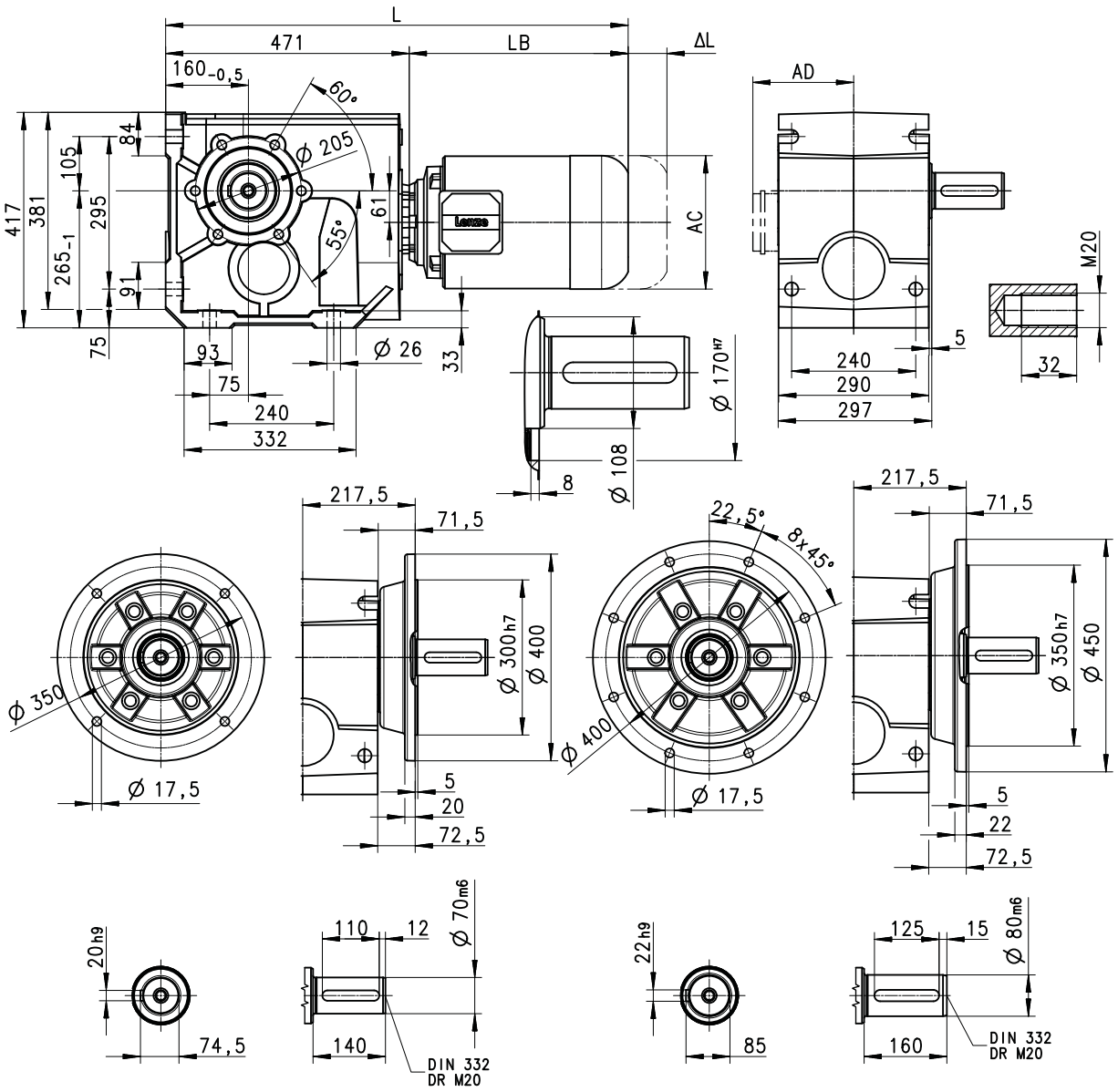



| Motor series | | | MFXMA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** | **112-22** | **132-12<br>132-22<br>132-32** |
| Total length | L | mm | 654 | 675 | 697 | 757 | 806 | 807 | 899 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 | 335 | 336 | 428 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 | 194 | 218 | 258 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 | 147 | 158 | 187 |

Δ L ▸ Additional lengths 🕮 118

**g500-B4300, 3-stage**

Gearbox design: Solid shaft with foot (VBR/VAR/VAK)




8800454-01

| Motor series | | | MFXMA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Motor** | | | **063-32<br>063-42** | **071-32<br>071-42** | **080-32<br>080-42** | **090-32** | **100-12<br>100-32** | **112-22** | **132-12<br>132-22<br>132-32** |
| Total length | L | mm | 654 | 675 | 697 | 757 | 806 | 807 | 899 |
| Motor length | LB | mm | 183 | 204 | 226 | 286 | 335 | 336 | 428 |
| Motor diameter | AC | mm | 123 | 139 | 156 | 176 | 194 | 218 | 258 |
| Motor/connection distance | AD | mm | 109 | 118 | 132 | 137 | 147 | 158 | 187 |

Δ L ▸ Additional lengths 🕮 118

## Gearbox with pre-stage

**g500-B110, 3-stage**

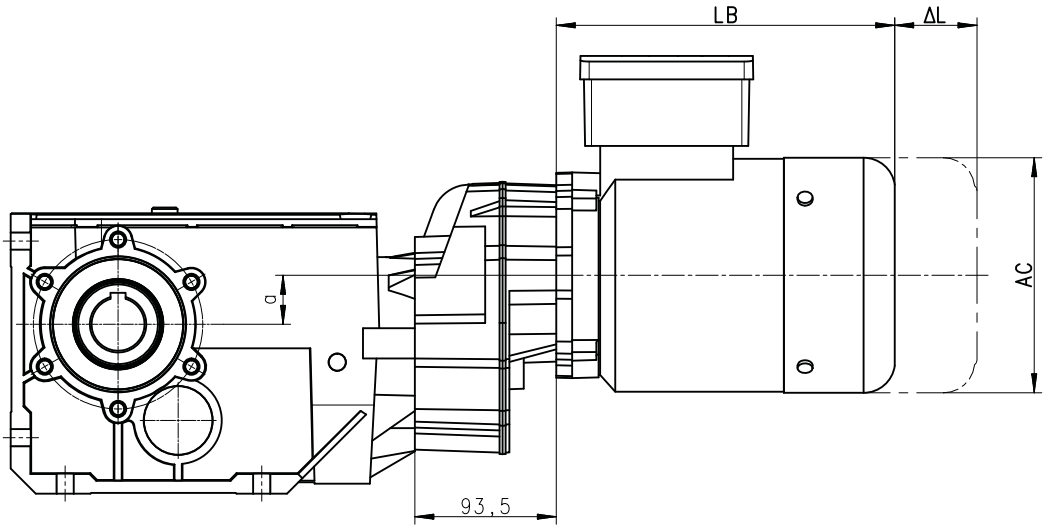
**g500-B240 ... B4300, 4-stage**

The geared motor dimensions are taken from the basic dimensions except for the overall length "L" and the center distance "a".

▸ Basic dimensions 📖 87

The total length "L" of the basic dimensions is extended by the 93.5 mm dimension of the pre-stage.

Note the changed center distance "a" between the gearbox shaft and the motor shaft.

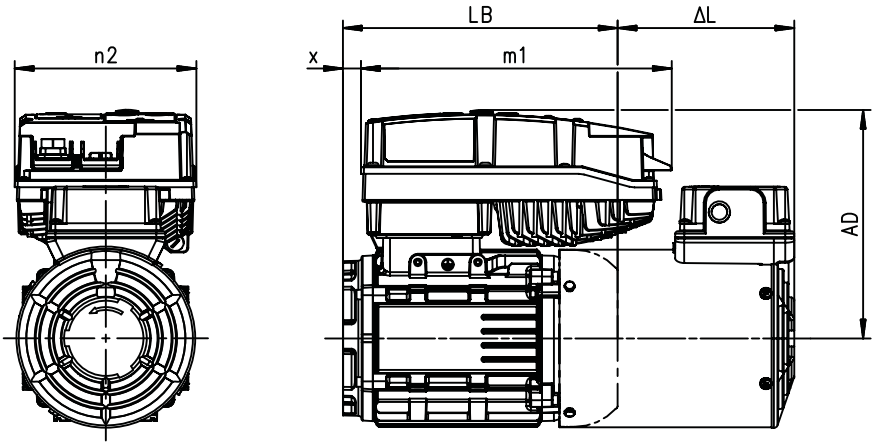



| Gearboxes | | | g500-B110 | g500-B240 | g500-B450 | g500-B600 | g500-B820 | g500-B1500 | g500-B2700 | g500-B4300 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 3-stage | 4-stage | | | | | | |
| Center distance | a | mm | 81 | 85 | 32.4 | 43 | 35 | 23 | 19.9 | 16 |

## Integrated inverters

**i550 motec**

**Supply voltage 3x 230/240 V**



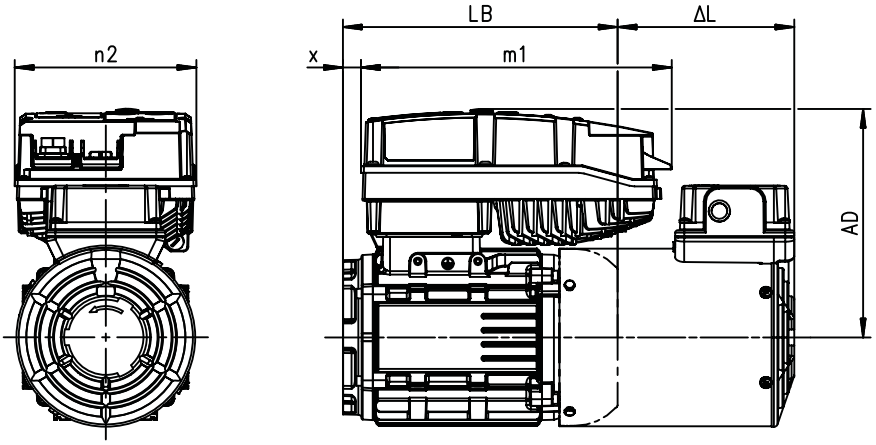

8801670-1

Rated frequency 120 Hz

| Motor | Frequency inverter | | | | |
|---|---|---|---|---|---|
| MF□MA□□ | i550 motec | | | | |
| | | $g_1$ | $m_1$ | $n_2$ | x |
| | | mm | mm | mm | mm |
| 063-32 | i550-M0.55/230-3 | 180 | 265 | 159 | 3 |
| 063-42 | i550-M0.75/230-3 | 180 | 265 | 159 | 3 |
| 071-32 | i550-M1.1/230-3 | 188 | 265 | 159 | 12 |
| 071-42 | i550-M1.5/230-3 | 188 | 265 | 159 | 12 |
| 080-32 | i550-M2.2/230-3 | 215 | 265 | 159 | 19 |
| 080-42 | i550-M3.0/230-3 | 215 | 265 | 159 | 19 |

**i550 motec**

**Supply voltage 3x 400/480 V**



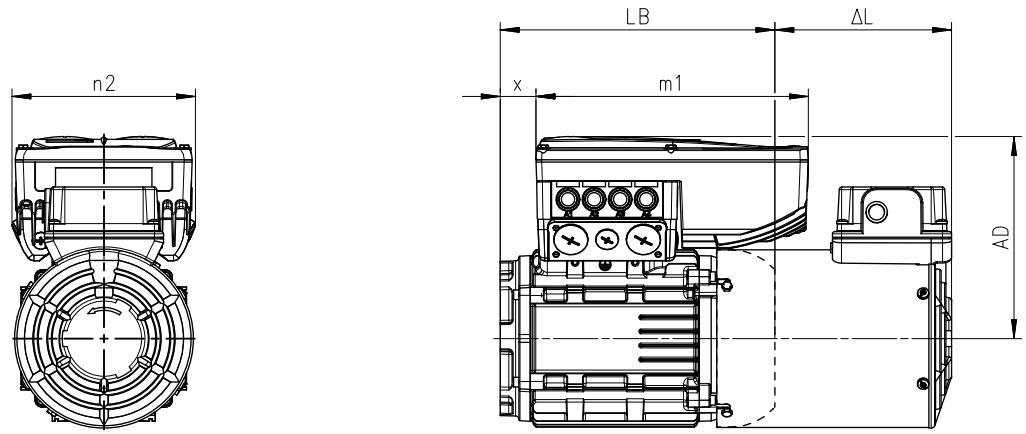

8801670-1

Rated frequency 120 Hz

| Motor | Frequency inverter | | | | |
|---|---|---|---|---|---|
| MF□MA□□ | i550 motec | | | | |
| | | $g_1$ | $m_1$ | $n_2$ | x |
| | | mm | mm | mm | mm |
| 063-32 | i550-M0.55/400-3 | 180 | 265 | 159 | 3 |
| 063-42 | i550-M0.75/400-3 | 180 | 265 | 159 | 3 |
| 071-32 | i550-M1.1/400-3 | 188 | 265 | 159 | 12 |
| 071-42 | i550-M1.5/400-3 | 188 | 265 | 159 | 12 |
| 080-32 | i550-M2.2/400-3 | 197 | 265 | 159 | 19 |
| 080-42 | i550-M3.0/400-3 | 215 | 265 | 159 | 19 |
| 090-32 | i550-M4.0/400-3 | 228 | 265 | 159 | 23 |
| 100-12 | i550-M5.5/400-3 | 228 | 265 | 159 | 30 |
| 100-32 | i550-M7.5/400-3 | 256 | 359 | 211 | 30 |
| 112-22 | i550-M11/400-3 | 256 | 359 | 211 | 32 |
| 132-12 | i550-M15/400-3 | 337 | 443 | 280 | 2 |
| 132-22 | i550-M18/400-3 | 337 | 443 | 280 | 2 |

**8400 motec**

**Supply voltage 3x 400/480 V**




8801071_00

Rated frequency 120 Hz

| Motor | Frequency inverter | | | | |
|---|---|---|---|---|---|
| MF☐MA☐☐ | 8400 motec | | | | |
| | | $g_1$ | $m_1$ | $n_2$ | x |
| | | mm | mm | mm | mm |
| 063-32 | E84DVB☐5514S☐☐☐2☐ | 154 | 240 | 161 | 23.5 |
| 063-42 | E84DVB☐7514S☐☐☐2☐ | 154 | 240 | 161 | 23.5 |
| 071-32 | E84DVB☐1124S☐☐☐2☐ | 163 | 240 | 161 | 29.5 |
| 071-42 | E84DVB☐1524S☐☐☐2☐ | 163 | 240 | 161 | 29.5 |
| 080-32 | E84DVB☐2224S☐☐☐2☐ | 201 | 260 | 176 | 31.5 |
| 080-42 | E84DVB☐3024S☐☐☐2☐ | 201 | 260 | 176 | 31.5 |
| 090-32 | E84DVB☐4024S☐☐☐2☐ | 261 | 325 | 195 | 23.5 |
| 100-12 | E84DVB☐5524S☐☐☐2☐ | 272 | 325 | 195 | 30 |
| 100-32 | E84DVB☐7524S☐☐☐2☐ | 272 | 325 | 195 | 30 |

Maße LB und Δ L ▸ Basic dimensions 📖 87

## Additional lengths

### Self-ventilated motors

| Motor | | | MF☐MA☐☐ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 063-32 | 071-32 | 080-32 | 090-32 | 100-12 | 112-22 | 132-12 |
| | | | 063-42 | 071-42 | 080-42 | | 100-32 | | 132-22 |
| | | | | | | | | | 132-32 |
| Without feedback/brake | Δ L | mm | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Brake | Δ L | [mm] | 40 | 52 | 73 | 68 | 76 | 90 | 80 |
| Feedback | Δ L | [mm] | 56 | 51 | 111 | 87 | 81 | 80 | 103 |
| Brake + feedback | Δ L | [mm] | 103 | 96 | 111 | 105 | 101 | 120 | 125 |

### Forced ventilated motors

| Motor | | | MF☐MA☐☐ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 063-32 | 071-32 | 080-32 | 090-32 | 100-12 | 112-22 | 132-12 |
| | | | 063-42 | 071-42 | 080-42 | | 100-32 | | 132-22 |
| | | | | | | | | | 132-32 |
| Without feedback/brake | Δ L | [mm] | 128 | 128 | 128 | 128 | 109 | 102 | 115 |
| Brake | Δ L | [mm] | 170 | 165 | 183 | 181 | 170 | 183 | 202 |
| Feedback | Δ L | [mm] | 128 | 128 | 128 | 128 | 109 | 183 | 202 |
| Brake + feedback | Δ L | [mm] | 170 | 165 | 183 | 181 | 170 | 183 | 202 |

# Weights

## Basic weights

The basic weights are listed in the selection tables.

Weights with lubricant for mounting position M1, all data approximate values. The exact values can be found in the delivery documents

▸ Selection tables 📖 60

Observe ▸ Additional weights 📖 119!

## Additional weights

Add the individual additional weights to the basic weight depending on the design.

### Gearboxes

| Gearboxes | | | g500-B45 | g500-B110 | g500-B240 | g500-B450 |
|---|---|---|---|---|---|---|
| Solid shaft | m | kg | 0.4 | 0.5 | 1.4 | 1.0 |
| Shrink disc | m | kg | 0.2 | 0.2 | 0.7 | 0.6 |
| Flange | m | kg | 0.3 | 0.4 | 0.7 | 0.9 |
| Torque plate | | | | | | |
| Threaded pitch circle | m | kg | 0.3 | 0.5 | 1.3 | 2.5 |
| Housing foot | m | kg | - | - | 2.4 | 1.1 |
| Housing foot, GKS compatible | m | kg | - | - | - | - |
| Shaft cover | | | | | | |
| Shrink disc cover | m | kg | 0.1 | 0.1 | 0.1 | 0.1 |
| Hollow shaft cover, hoseproof | m | kg | 0.1 | 0.1 | 0.1 | 0.2 |

| Gearboxes | | | g500-B600 | g500-B820 | g500-B1500 | g500-B2700 | g500-B4300 |
|---|---|---|---|---|---|---|---|
| Solid shaft | m | kg | 1.5 | 1.9 | 3.7 | 6.0 | 15.5 |
| Shrink disc | m | kg | 0.6 | 1.2 | 1.7 | 2.3 | 4.3 |
| Flange | m | kg | 6.1 | 6.1 | 11.5 | 15.0 | 29.0 |
| Torque plate | | | | | | | |
| Threaded pitch circle | m | kg | 2.5 | 2.5 | 4.5 | - | - |
| Housing foot | m | kg | 2.8 | 3.0 | 4.3 | 10 | 13 |
| Housing foot, GKS compatible | m | kg | 5,0 | 5,0 | 8.2 | 16.5 | 30.5 |
| Shaft cover | | | | | | | |
| Shrink disc cover | m | kg | 0.1 | 0.1 | 0.2 | 0.3 | 0.4 |
| Hollow shaft cover, hoseproof | m | kg | 0.3 | 0.3 | 0.6 | 0.6 | 0.8 |

### Motors

| Motor | | | MF☐MA☐☐ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 063-32 | 071-32 | 080-32 | 090-32 | 100-12 | 112-22 | 132-12 |
| | | | 063-42 | 071-42 | 080-42 | | 100-32 | | 132--22 |
| | | | | | | | | | 132-32 |
| Brake | | | | | | | | | |
| 06 | m | kg | 0.9 | 0.9 | | | | | |
| 08 | m | kg | | 1.5 | 1.5 | 1.5 | | | |
| 10 | m | kg | | | 2.6 | 2.6 | 2.6 | | |
| 12 | m | kg | | | | | 4.2 | 4.2 | |
| 14 | m | kg | | | | | | 5.8 | 5.8 |
| 16 | m | kg | | | | | | | 8.7 |
| Manual release lever | m | kg | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.4 | 0.5 |
| Blower | m | kg | 2.0 | 2.1 | 2.3 | 2.7 | 3.0 | 3.1 | 4.2 |

# Product extensions

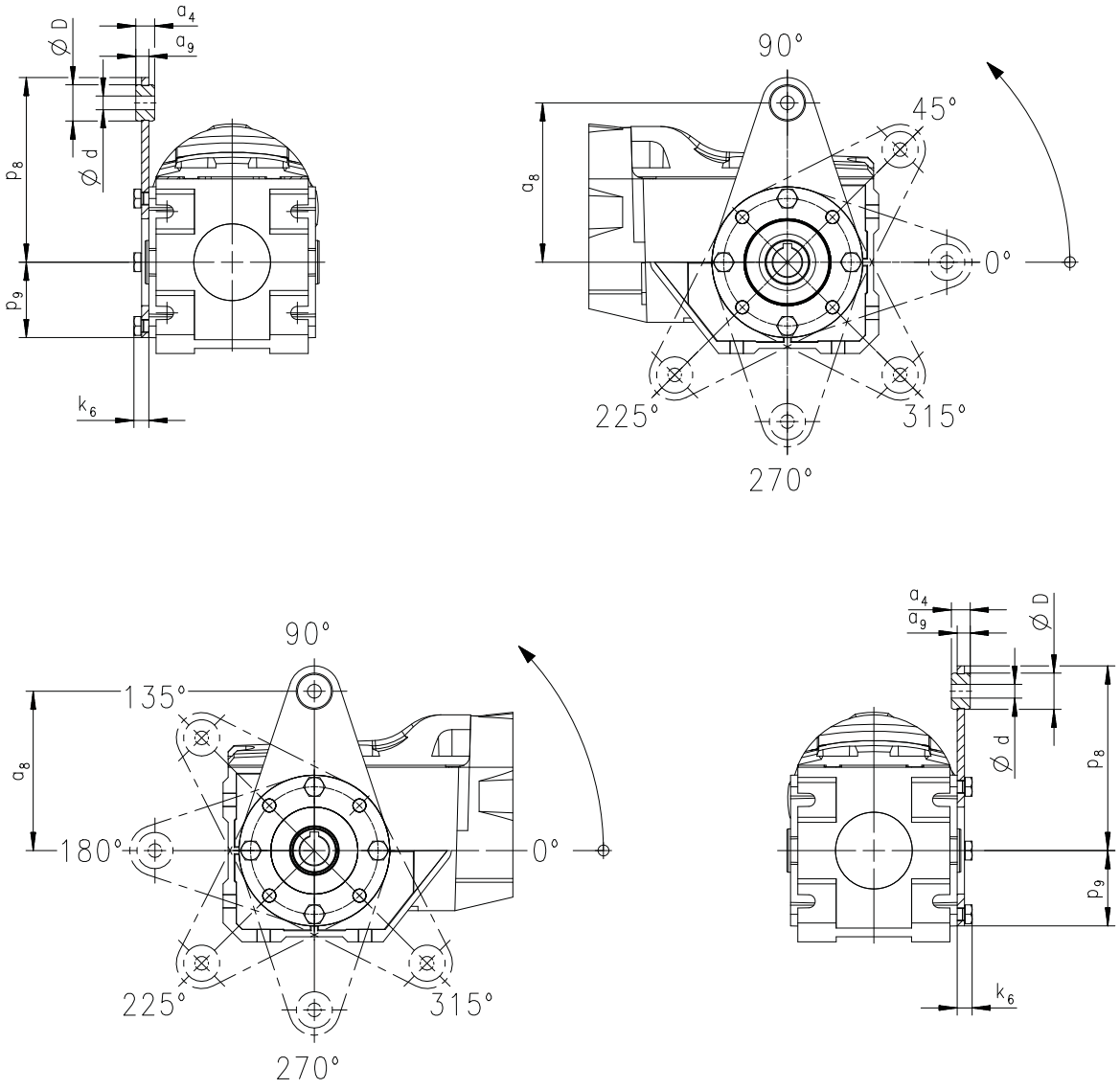
## Torque plates

The torque support is usually effected by means of the foot or flange. The torque plates that can be fitted are another possibility. In this case, the torque support is provided only via one point and is suitable for shaft-mounted gearboxes, among other things. Supplied rubber buffers ensure a stress-free installation and absorb slight impacts.

The torque plates are available in two versions, for being installed at the existing threaded pitch circle or for the foot at the gearbox.

In addition, torque support for the g500-B45 gearbox can be effected via the holding fixture of the housing which is integrated on both sides.

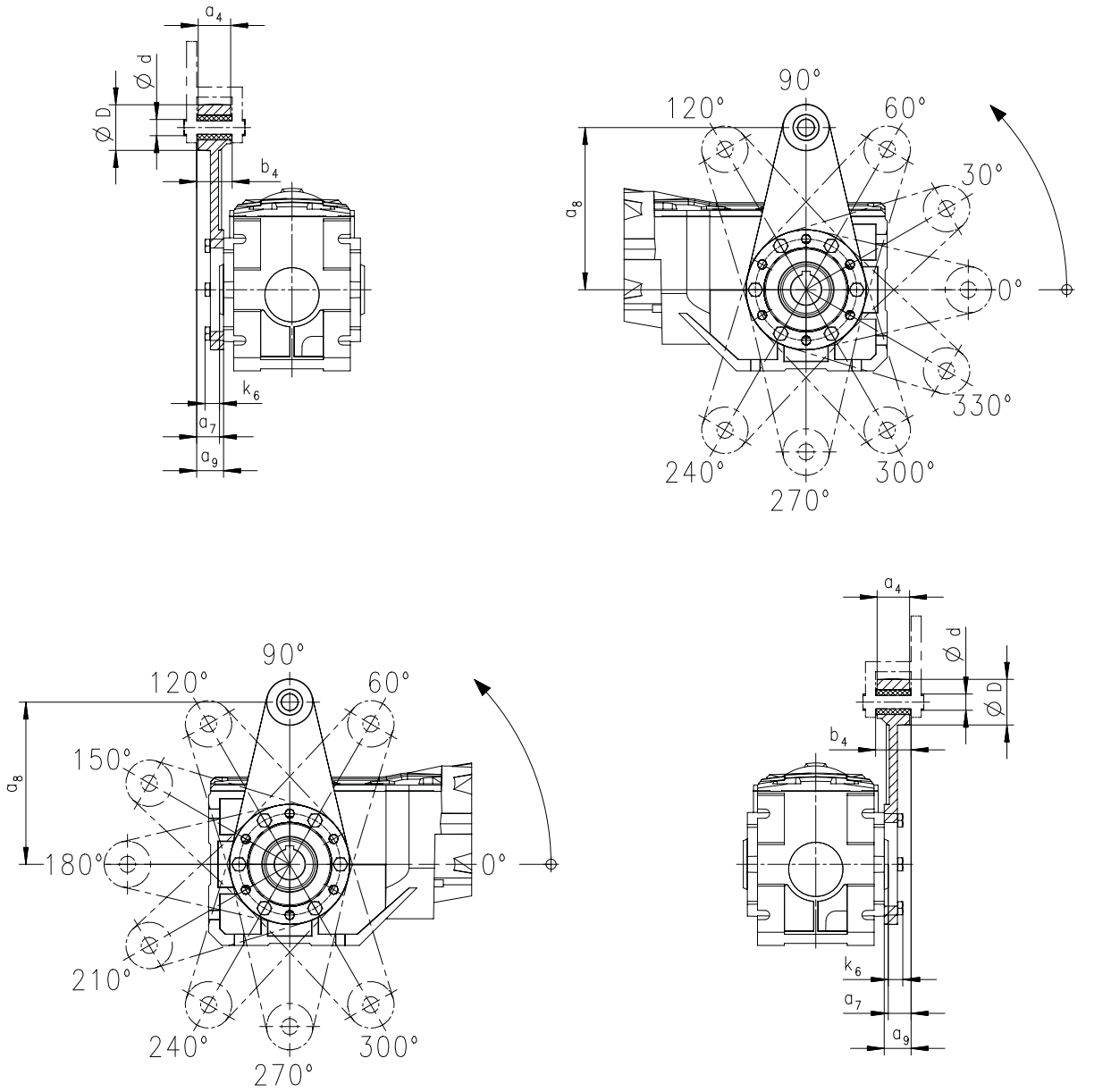
**Torque plate on threaded pitch circle**
**g500-B45 ... B110**




e4001537-00

| Gearboxes | Dimensions | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | $a_4$ | $a_8$ | $a_9$ | d | D | $p_8$ | $p_9$ | $k_6$ |
| | mm | mm | mm | mm | mm | mm | mm | mm |
| g500-B45 | 12.0 | 100 | 8.0 | 8.0 | 20,0 | 115 | 42.0 | 9.0 |
| g500-B110 | 13.0 | 110 | 9.0 | 10.0 | 25.0 | 128 | 54.0 | 11.0 |

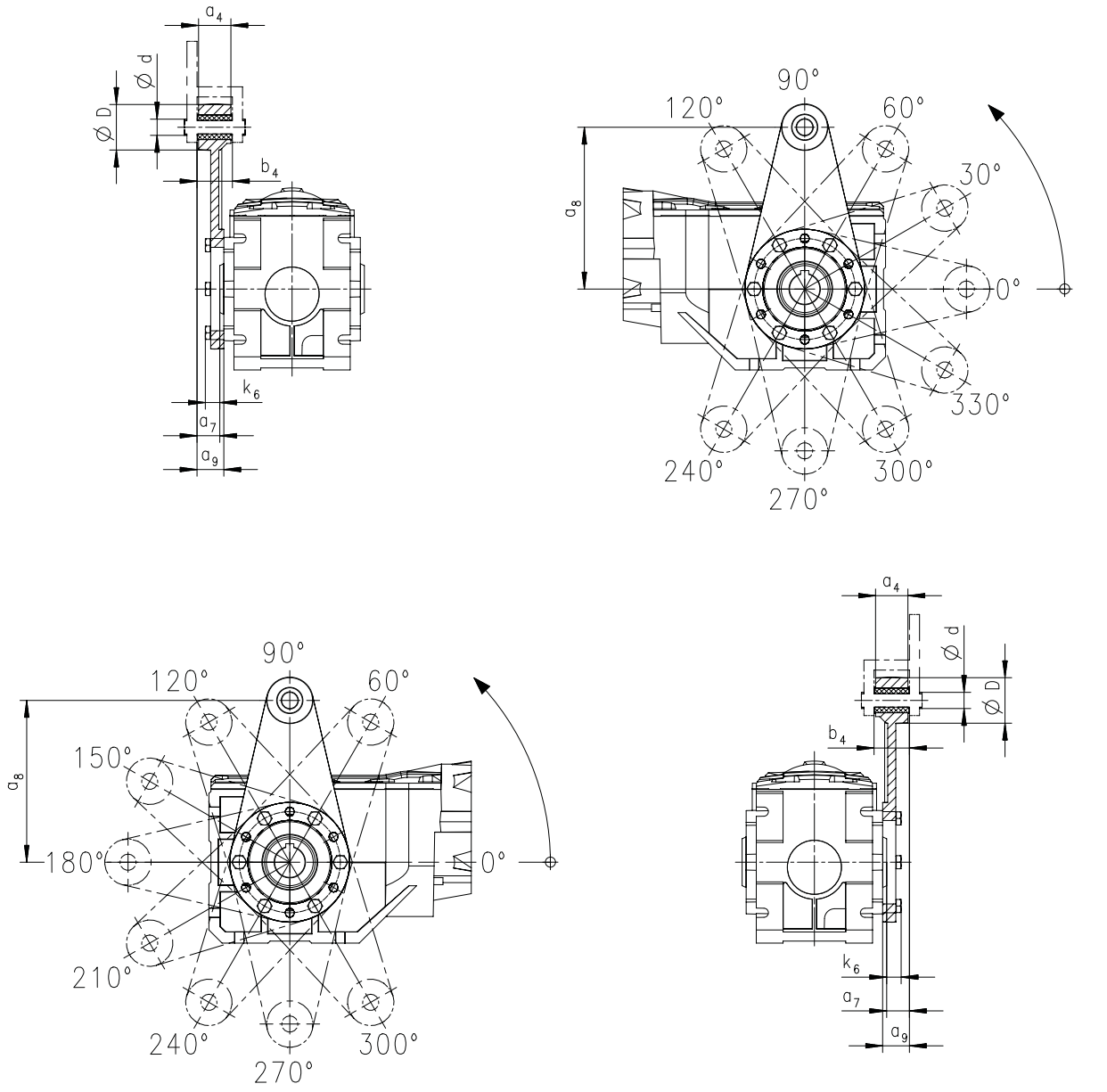
**g500-B240 ... B600**




e4001538-00

| Gearboxes | Dimensions | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | $a_4$ | $a_7$ | $a_8$ | $a_9$ | $b_4$ | d | D | $k_6$ |
| | mm | mm | mm | mm | mm | mm | mm | mm |
| g500-B240 | 34.0 | 23.5 | 160 | 27.5 | 38.5 | 16.0 | 45.0 | 15.0 |
| g500-B450 | 40,0 | 29.0 | 200 | 32.0 | 44.5 | 20,0 | 50.0 | 18.0 |
| g500-B600 | 38.0 | 26.5 | 200 | 31.5 | 40,0 | 20,0 | 50.0 | 19.0 |

**g500-B820 ... B1500**

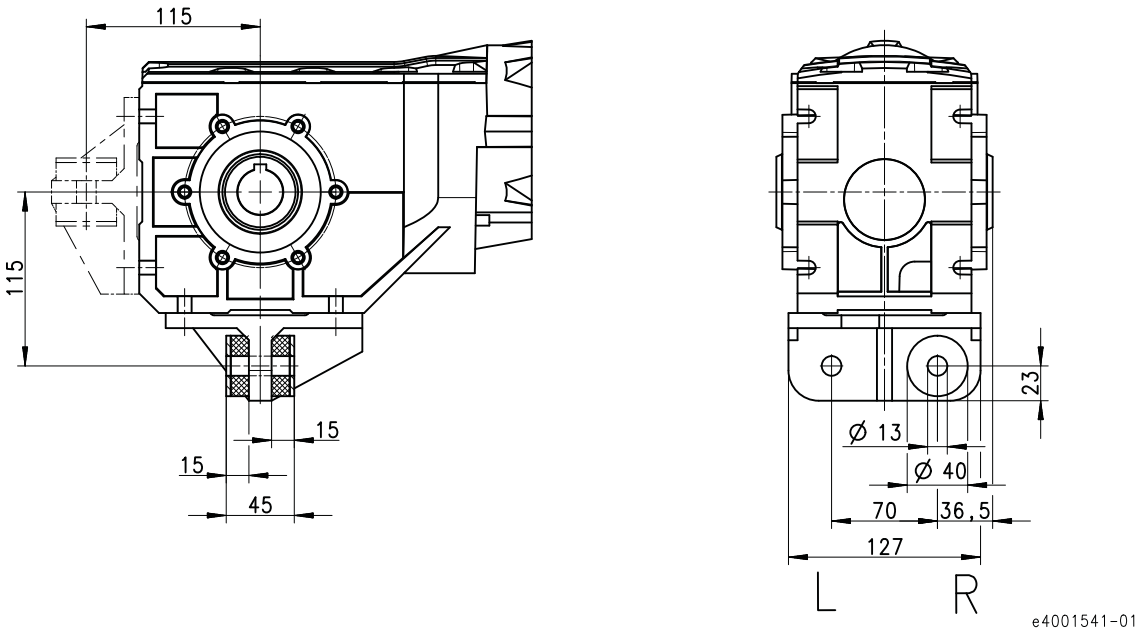



e4001538-00

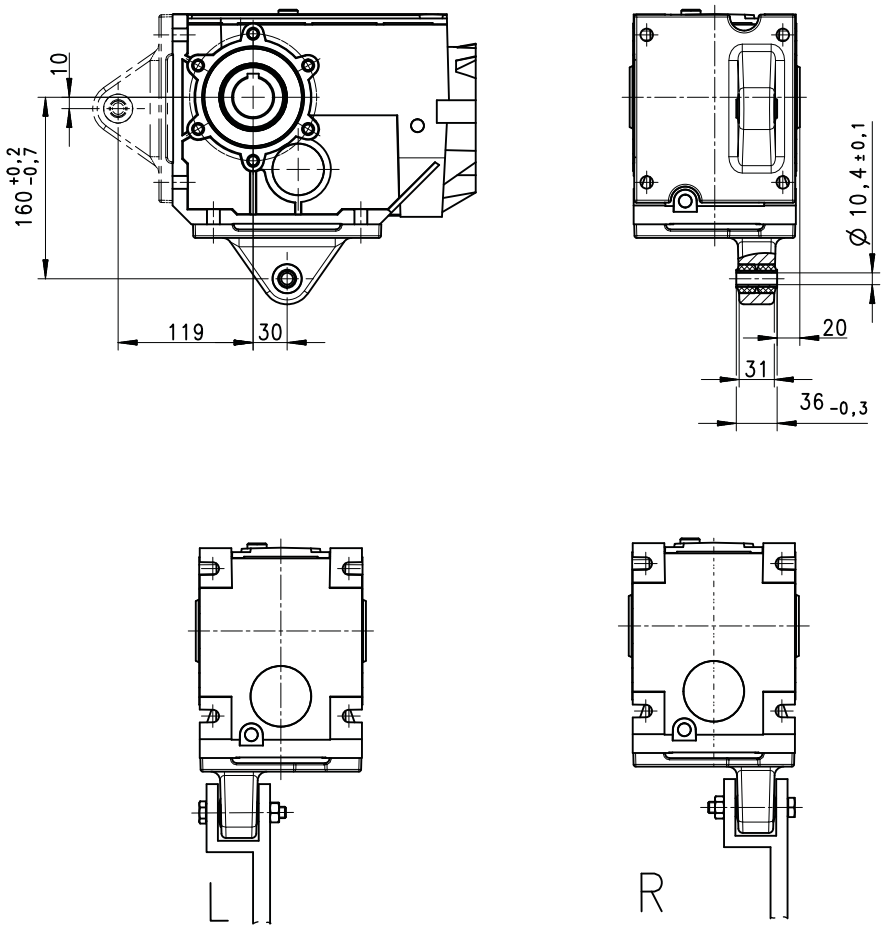
| Gearboxes | Dimensions | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | $a_4$ | $a_7$ | $a_8$ | $a_9$ | $b_4$ | d | D | $k_6$ |
| | mm | mm | mm | mm | mm | mm | mm | mm |
| g500-B820 | 38.0 | 28.0 | 200 | 31.5 | 40,0 | 20,0 | 50.0 | 20.5 |
| g500-B1500 | 44.0 | 32.0 | 250 | 36.0 | 46.0 | 25.0 | 65.0 | 24.0 |

**Torque plate on housing foot**

**g500-B240**

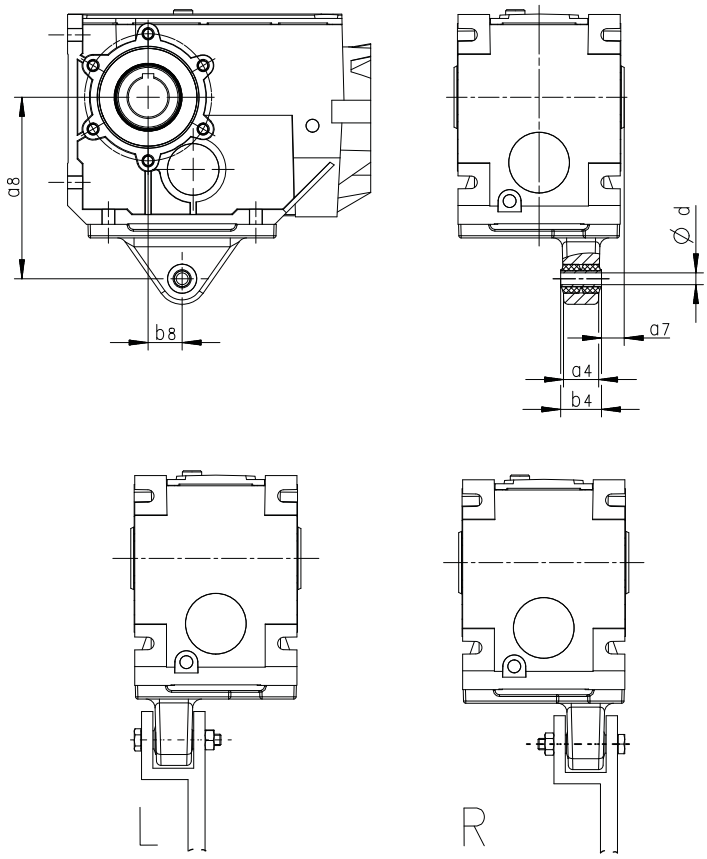


**g500-B450**




e4001554_01

**g500-B600 ... B4300**



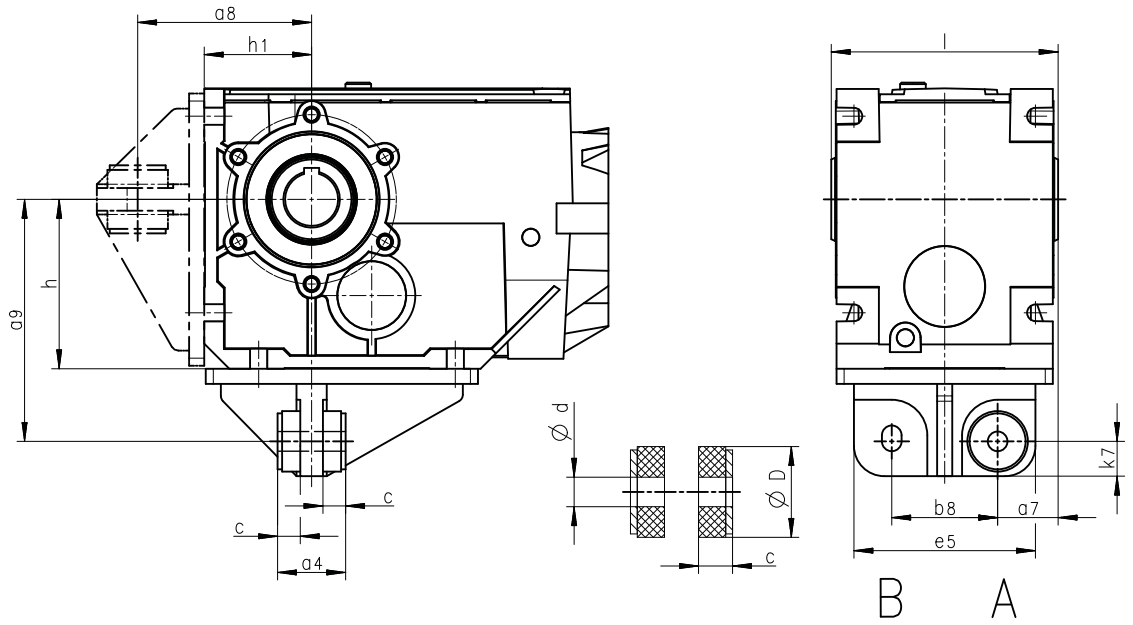

| Gearboxes | Dimensions | | | | | |
|---|---|---|---|---|---|---|
| | d | $a_8$ | $b_8$ | $a_4$ | $b_4$ | $a_7$ |
| | mm | mm | mm | mm | mm | mm |
| g500-B600 | 16.4 | 192 | 40,0 | 55.0 | 60.0 | 18.0 |
| g500-B820 | 16.4 | 200 | 45.0 | 55.0 | 60.0 | 25.0 |
| g500-B1500 | 16.4 | 250 | 52.5 | 55.0 | 60.0 | 25.0 |
| g500-B2700 | 25.0 | 300 | 60.0 | 72.0 | 80.0 | 30.0 |
| g500-B4300 | 25.0 | 350 | 70.0 | 92.0 | 100 | 40,0 |

**GKS compatible**

The connection dimensions are identical to the previous product GKS for these torque plates.

The GKS gearbox can be replaced by the gearbox from the g500-B series.

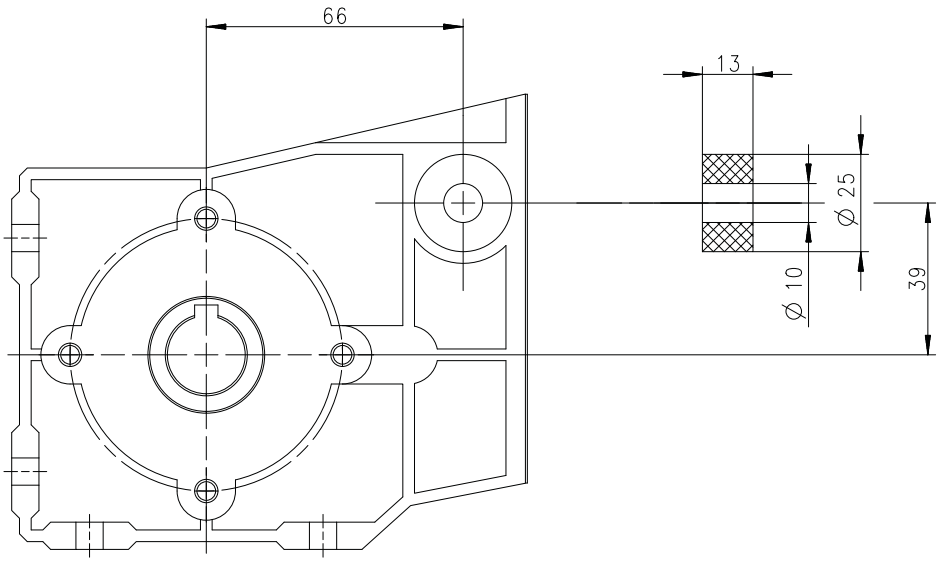
**g500-B600 ... B4300**




| Gearboxes | | Dimensions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Replacement for | $a_4$ | $a_7$ | $a_8$ | $a_9$ | $b_4$ | $b_8$ | c | Ø d | Ø D | $e_5$ | $k_7$ | $k_8$ |
| | | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm |
| g500-B600 | GKS06 | 72 | 45.0 | 145 | 195 | 72 | 80 | 27 | 17 | 50 | 135 | 28.0 | 26.0 |
| g500-B820 | GKS06 | 72 | 50.0 | 145 | 195 | 72 | 80 | 27 | 17 | 50 | 140 | 27.5 | 27.5 |
| g500-B1500 | GKS07 | 78 | 55.0 | 170 | 240 | 78 | 100 | 28 | 21 | 60 | 180 | 30.0 | 32.0 |
| g500-B2700 | GKS09 | 86 | 60.0 | 214 | 300 | 86 | 120 | 29 | 26 | 72 | 205 | 42.0 | 48.0 |
| g500-B4300 | GKS11 | 94 | 77.5 | 260 | 375 | 94 | 145 | 30 | 33 | 92 | 255 | 50.0 | 60.0 |

**Rubber buffer for torque plate**

**g500-B45**



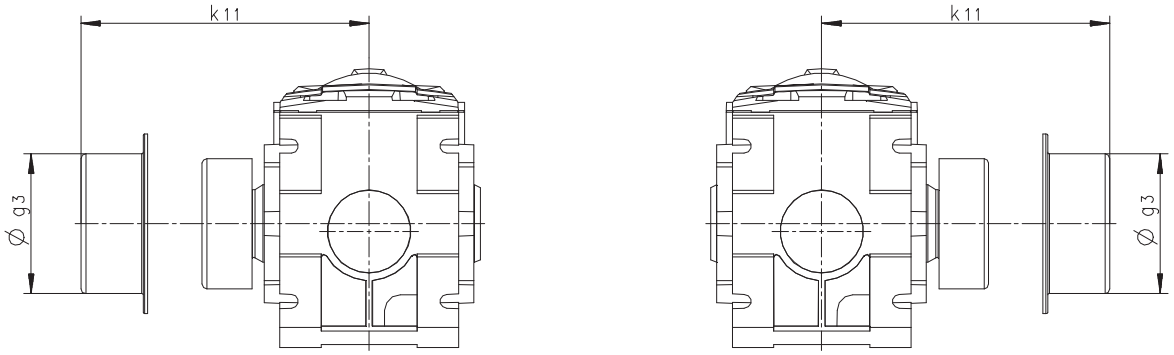
## Shaft covers

The shrink disc cover is provided for the shrink disc to be protected from contact.

The hoseproof hollow shaft cover protects the hollow shaft from objects falling in. It is sealed by a flat gasket between cover and housing. Thus, the hollow shaft is protected from dust and water jets on this side.

**Shrink disc cover**

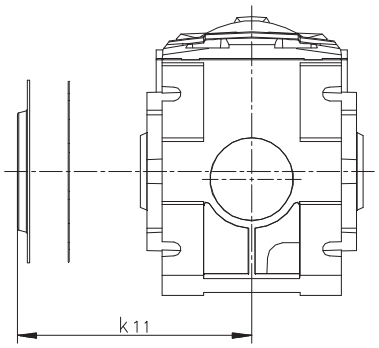
**g500-B45 ... B4300**




| Product | Dimensions | |
|---|---|---|
| | g3 | k11 |
| | mm | mm |
| g500-B45 | 65.0 | 87.5 |
| g500-B110 | 79.0 | 97.5 |
| g500-B240 | 90.0 | 111 |
| g500-B450 | 90.0 | 108 |
| g500-B600 | 110 | 124 |
| g500-B820 | 110 | 131 |
| g500-B1500 | 128 | 148 |
| g500-B2700 | 155 | 171 |
| g500-B4300 | 188 | 205 |

**Hollow shaft cover, hoseproof**

**g500-B45 .... B4300**



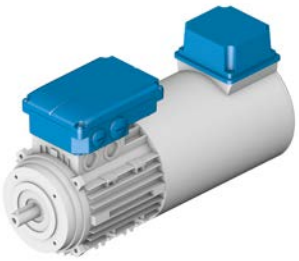

| Product | Dimensions |
|---|---|
| | $k_{11}$ |
| | mm |
| g500-B45 | 55.0 |
| g500-B110 | 65.0 |
| g500-B240 | 75.0 |
| g500-B450 | 79.5 |
| g500-B600 | 90.0 |
| g500-B820 | 97.0 |
| g500-B1500 | 113 |
| g500-B2700 | 131 |
| g500-B4300 | 161 |

# Motor connection

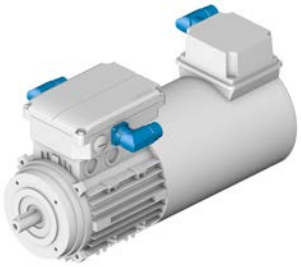
## Connection options

The motor are equipped with a terminal box by default.

Alternatively, different connectors can be selected for fast commissioning or maintenance.



Terminal box with cable gland



Terminal box with ICN connector

HAN connector

### Frequency inverter operation

For frequency inverter operation, the base frequencies were set to the following rated voltages:

| Rated frequency | Motor | Power | Rated voltage | Circuit |
|---|---|---|---|---|
| Hz | | kW | V | |
| 120 | MF☐MA☐☐063-32<br>...<br>MF☐MA☐☐080-32 | 0.55<br>...<br>3.0 | 200 | Δ |
| | MF☐MA☐☐080-42<br>...<br>MF☐MA☐☐132-32 | 4.0<br>...<br>22.0 | 350 | Y |

## Assignment of the terminal boxes

### Assignment of the terminal boxes with one temperature monitor

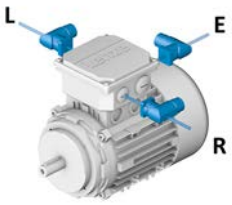
| Motor | MF☐MA☐☐ | | | | | | |
|---|---|---|---|---|---|---|---|
| | 063-32 | 071-32 | 080-32 | 090-32 | 100-12 | 112-22 | 132-12 |
| | 063-42 | 071-42 | 080-42 | | 100-32 | | 132-22 |
| | | | | | | | 132-32 |
| Without product extensions | | | | | | | |
| Terminal box | KK1 | KK1 | KK1 | KK1 | KK1 | KK1 | KK1 |
| ICN connector | | | | | | | |
| Power | ICN-M23 | ICN-M23 | ICN-M23 | ICN-M23 | ICN-M23 | - | - |
| Terminal box | KK1 | KK1 | KK1 | KK1 | KK1 | - | - |
| Product extension - brake | | | | | | | |
| Terminal box | KK2 | KK2 | KK2 | KK2 | KK2 | KK2 | KK3 |
| ICN connector | | | | | | | |
| Power/brake | ICN-M23 | ICN-M23 | ICN-M23 | ICN-M23 | ICN-M23 | - | - |
| Terminal box | KK2 | KK2 | KK2 | KK2 | KK2 | - | - |
| Product extension - feedback | | | | | | | |
| Terminal box | KK2 | KK2 | KK2 | KK2 | KK2 | KK2 | KK3 |
| ICN connector | | | | | | | |
| Power/brake | ICN-M23 | ICN-M23 | ICN-M23 | ICN-M23 | ICN-M23 | - | - |
| Feedback | ICN-M23 | ICN-M23 | ICN-M23 | ICN-M23 | ICN-M23 | - | - |
| Terminal box | KK2 | KK2 | KK2 | KK2 | KK2 | - | - |
| Product extension - brake + feedback | | | | | | | |
| Terminal box | KK3 | KK3 | KK3 | KK3 | KK3 | KK3 | KK3 |
| ICN connector | | | | | | | |
| Power/brake | ICN-M23 | ICN-M23 | ICN-M23 | ICN-M23 | ICN-M23 | - | - |
| Feedback | ICN-M23 | ICN-M23 | ICN-M23 | ICN-M23 | ICN-M23 | ICN-M23 | ICN-M23 |
| Terminal box | KK2 | KK2 | KK2 | KK2 | KK2 | KK2 | KK3 |
| Product extension - blower | | | | | | | |
| Terminal box | ● | ● | ● | ● | ● | ● | ● |
| Power connector | ICN-M17 | ICN-M17 | ICN-M17 | ICN-M17 | ICN-M17 | ICN-M17 | ICN-M17 |

### Assignment of the terminal boxes with two temperature monitors

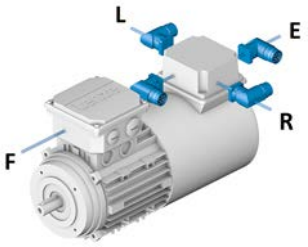
| Motor | MF☐MA☐☐ | | | | | | |
|---|---|---|---|---|---|---|---|
| | 063-32 | 071-32 | 080-32 | 090-32 | 100-12 | 112-22 | 132-12 |
| | 063-42 | 071-42 | 080-42 | | 100-32 | | 132-22 |
| | | | | | | | 132-32 |
| Without product extensions | | | | | | | |
| Terminal box | KK2 | KK2 | KK2 | KK2 | KK2 | KK2 | KK3 |
| Product extension - brake | | | | | | | |
| Terminal box | KK2 | KK2 | KK2 | KK2 | KK2 | KK2 | KK3 |
| Product extension - feedback | | | | | | | |
| Terminal box | KK2 | KK2 | KK2 | KK2 | KK2 | KK2 | KK3 |
| Product extension - brake + feedback | | | | | | | |
| Terminal box | KK3 | KK3 | KK3 | KK3 | KK3 | KK3 | KK3 |

## Positions of the connectors

Positions on the motor terminal box

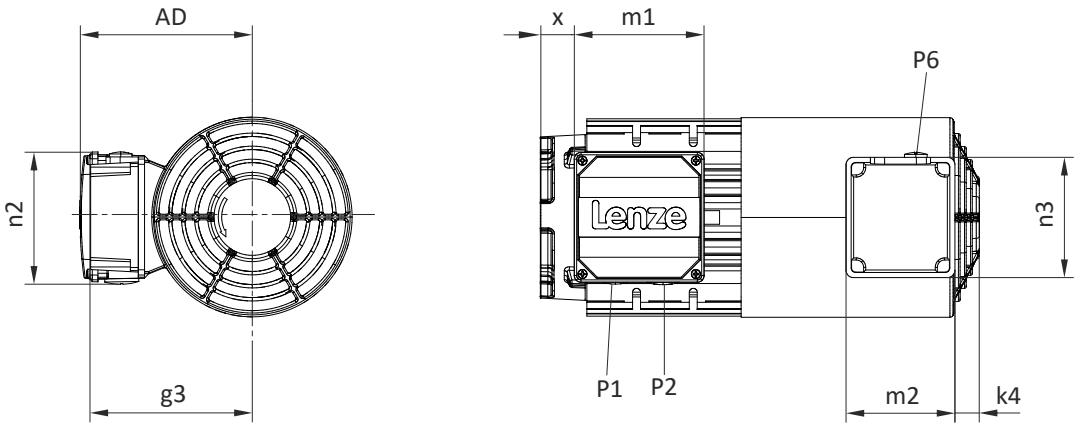



Positions on the blower terminal box



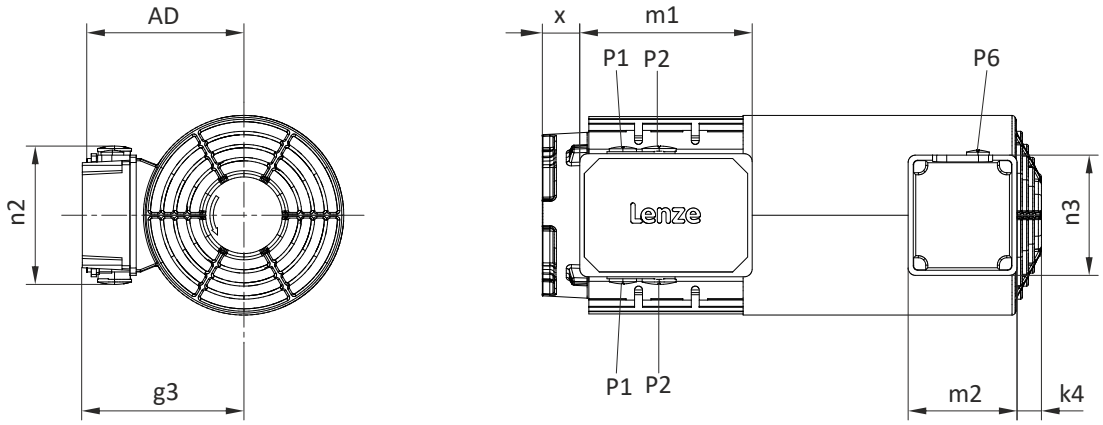

| Terminal box | Positions | Note |
|---|---|---|
| Motor terminal box KK1 | | |
| Cable glands | L, E or R | - |
| ICN connector: Power | L, E or R | - |
| Motor terminal box KK2 | | |
| Cable glands | L and R | - |
| ICN connector: Power/brake | L or R | - |
| ICN connector: Feedback | L or R | The feedback connector is mounted on the terminal box via a plate and is located opposite the power connector. |
| Motor terminal box KK3 | | |
| Cable glands | L and R | - |
| ICN connector: Feedback | L or R | The feedback connector is mounted on the terminal box via a plate. |
| Blower terminal box | | |
| Cable glands | L, E or R | - |
| ICN connector | L, E or R | -- |

**Dimensions of KK1 power terminal box**



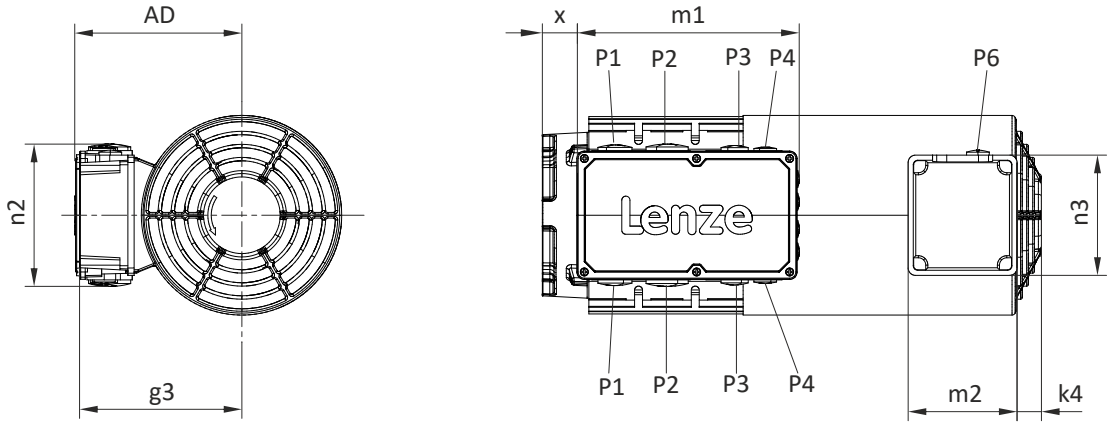

| Motor | | MF□MA□□ | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 063-32 | 071-32 | 080-32 | 090-32 | 100-12 | 112-22 | 132-12 |
| | | 063-42 | 071-42 | 080-42 | | 100-32 | | 132-22 |
| | | | | | | | | 132-32 |
| Motor terminal box | | | | | | | | |
| AD | mm | 100 | 109 | 150 | 157 | 166 | 176 | 195 |
| x | mm | 17 | 20 | 15 | 30 | 31 | 39 | 58 |
| m1 | mm | 75 | 75 | 115 | 115 | 115 | 115 | 122 |
| n2 | mm | 75 | 75 | 115 | 115 | 115 | 115 | 122 |
| P1 | mm | M16x1.5 | M16x1.5 | M20x1.5 | M20x1.5 | M20x1.5 | M20x1.5 | M32x1.5 |
| P2 | mm | M20x1.5 | M20x1.5 | M25x1.5 | M25x1.5 | M25x1.5 | M25x1.5 | M32x1.5 |
| Blower terminal box | | | | | | | | |
| g3 | mm | 115 | 122 | 133 | 141 | 150 | 162 | 182 |
| k4 | mm | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| m2 | mm | 105 | 105 | 105 | 105 | 105 | 105 | 105 |
| n3 | mm | 105 | 105 | 105 | 105 | 105 | 105 | 105 |
| P6 | mm | 1x M16x1.5 | 1x M16x1.5 | 1x M16x1.5 | 1x M16x1.5 | 1x M16x1.5 | 1x M16x1.5 | 1x M16x1.5 |

**Dimensions of KK2 power terminal box**



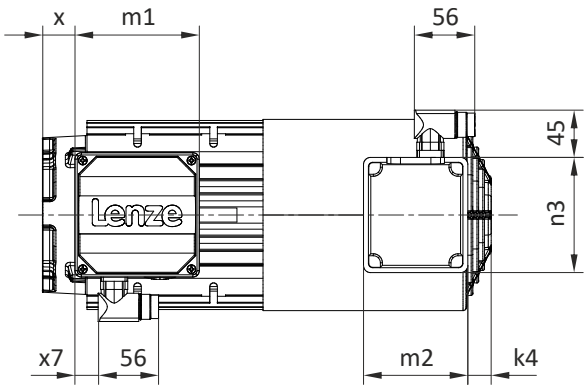

| Motor | | MF□MA□□ | | | | | |
|---|---|---|---|---|---|---|---|
| | | 063-32 | 071-32 | 080-32 | 090-32 | 100-12 | 112-22 |
| | | 063-42 | 071-42 | 080-42 | | 100-32 | |
| Motor terminal box | | | | | | | |
| AD | mm | 107 | 118 | 132 | 137 | 147 | 158 |
| x | mm | 9 | 11 | 18 | 33 | 34 | 42 |
| m1 | mm | 136 | 136 | 152 | 152 | 152 | 152 |
| n2 | mm | 103 | 103 | 121 | 121 | 121 | 121 |
| P1 | mm | M16x1.5 | M16x1.5 | M20x1.5 | M20x1.5 | M20x1.5 | M20x1.5 |
| P2 | mm | M20x1.5 | M20x1.5 | M25x1.5 | M25x1.5 | M25x1.5 | M25x1.5 |
| Blower terminal box | | | | | | | |
| g3 | mm | 115 | 122 | 133 | 141 | 150 | 162 |
| k4 | mm | 0 | 0 | 0 | 0 | 0 | 0 |
| m2 | mm | 105 | 105 | 105 | 105 | 105 | 105 |
| n3 | mm | 105 | 105 | 105 | 105 | 105 | 105 |
| P6 | mm | 1x M16x1.5 | 1x M16x1.5 | 1x M16x1.5 | 1x M16x1.5 | 1x M16x1.5 | 1x M16x1.5 |

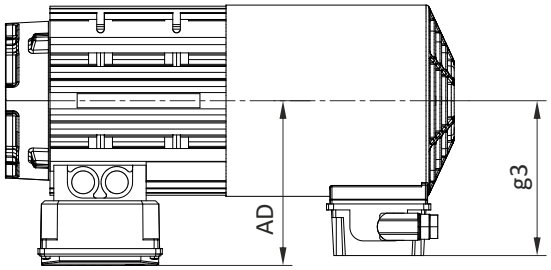
**Dimensions of KK3 power terminal box**




| Motor | | MF☐MA☐☐ | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 063-32 | 071-32 | 080-32 | 090-32 | 100-12 | 112-22 | 132-12 |
| | | 063-42 | 071-42 | 080-42 | | 100-32 | | 132-22 |
| | | | | | | | | 132-32 |
| Motor terminal box | | | | | | | | |
| AD | mm | 124 | 133 | 142 | 147 | 158 | 168 | 187 |
| x | mm | -2 | 1 | 16 | 31 | 32 | 40 | 63 |
| m1 | mm | 195 | 195 | 195 | 195 | 195 | 195 | 195 |
| n2 | mm | 125 | 125 | 125 | 125 | 125 | 125 | 125 |
| P1 | mm | M25x1.5 | M25x1.5 | M25x1.5 | M25x1.5 | M25x1.5 | M25x1.5 | M25x1.5 |
| P2 | mm | M32x1.5 | M32x1.5 | M32x1.5 | M32x1.5 | M32x1.5 | M32x1.5 | M32x1.5 |
| P3 | mm | M20x1.5 | M20x1.5 | M20x1.5 | M20x1.5 | M20x1.5 | M20x1.5 | M20x1.5 |
| P4 | mm | M16x1.5 | M16x1.5 | M16x1.5 | M16x1.5 | M16x1.5 | M16x1.5 | M16x1.5 |
| Blower terminal box | | | | | | | | |
| g3 | mm | 115 | 122 | 133 | 141 | 150 | 162 | 182 |
| k4 | mm | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| m2 | mm | 105 | 105 | 105 | 105 | 105 | 105 | 105 |
| n3 | mm | 105 | 105 | 105 | 105 | 105 | 105 | 105 |
| P6 | mm | 1x M16x1.5 | 1x M16x1.5 | 1x M16x1.5 | 1x M16x1.5 | 1x M16x1.5 | 1x M16x1.5 | 1x M16x1.5 |

**Dimensions of KK1 power terminal box with ICN connector**



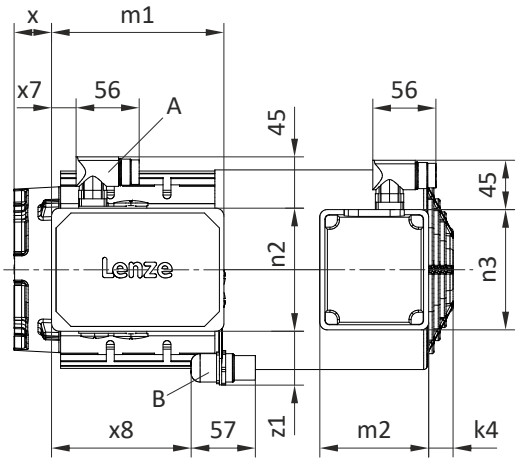

| Motor | | MF☐MA☐☐ | | | | |
|---|---|---|---|---|---|---|
| | | 063-32 | 071-32 | 080-32 | 090-32 | 100-12 |
| | | 063-42 | 071-42 | 080-42 | | 100-32 |
| Motor terminal box | | | | | | |
| AD | mm | 100 | 109 | 150 | 157 | 166 |
| x | mm | 17 | 20 | 15 | 30 | 31 |
| m1 | mm | 75 | 75 | 115 | 115 | 115 |
| n2 | mm | 75 | 75 | 115 | 115 | 115 |
| x7 | mm | 16 | 16 | 23 | 23 | 23 |
| Blower terminal box | | | | | | |
| g3 | mm | 115 | 122 | 133 | 141 | 150 |
| k4 | mm | 0 | 0 | 0 | 0 | 0 |
| m2 | mm | 105 | 105 | 105 | 105 | 105 |
| n3 | mm | 105 | 105 | 105 | 105 | 105 |

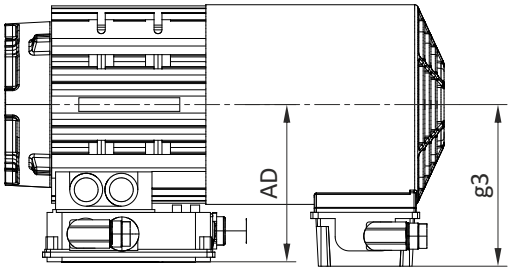
### Dimensions of KK2/KK3 power terminal box with ICN connector

Power/brake connection: Position A.

Feedback connection: Position B.

For the motors MF☐MA☐☐112-22 ... 132-32 only the connector for the feedback connection is available! The connection for power/brake is made via cable glands.




| Motor | | MF☐MA☐☐ | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 063-32 | 071-32 | 080-32 | 090-32 | 100-12 | 112-22 | 132-12 |
| | | 063-42 | 071-42 | 080-42 | | 100-32 | | 132-22 |
| | | | | | | | | 132-32 |
| Motor terminal box | | KK2 | KK2 | KK2 | KK2 | KK2 | KK2 | KK3 |
| AD | mm | 107 | 118 | 132 | 137 | 147 | 158 | 187 |
| x | mm | 9 | 11 | 18 | 33 | 34 | 42 | 63 |
| m1 | mm | 136 | 136 | 152 | 152 | 152 | 152 | 195 |
| n2 | mm | 103 | 103 | 121 | 121 | 121 | 121 | 125 |
| x7 | mm | 16 | 16 | 23 | 23 | 23 | - | - |
| x8 | mm | 109 | 109 | 125 | 125 | 125 | 125 | 166 |
| z1, max | mm | 43 | 43 | 41 | 41 | 41 | 41 | 71 |
| Blower terminal box | | | | | | | | |
| g3 | mm | 115 | 122 | 133 | 141 | 150 | 162 | 182 |
| k4 | mm | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| m2 | mm | 105 | 105 | 105 | 105 | 105 | 105 | 105 |
| n3 | mm | 105 | 105 | 105 | 105 | 105 | 105 | 105 |

## Assignment of the connectors HAN

The power, brake and temperature monitoring can be connected in the HAN connector.

The designs HAN 10E or HAN modular with two power modules (16 A or 40 A) are available.

The HAN 10E connector is only available for motors with the connection method Y/Δ.

An additional rectifier can be connected with HAN modular.

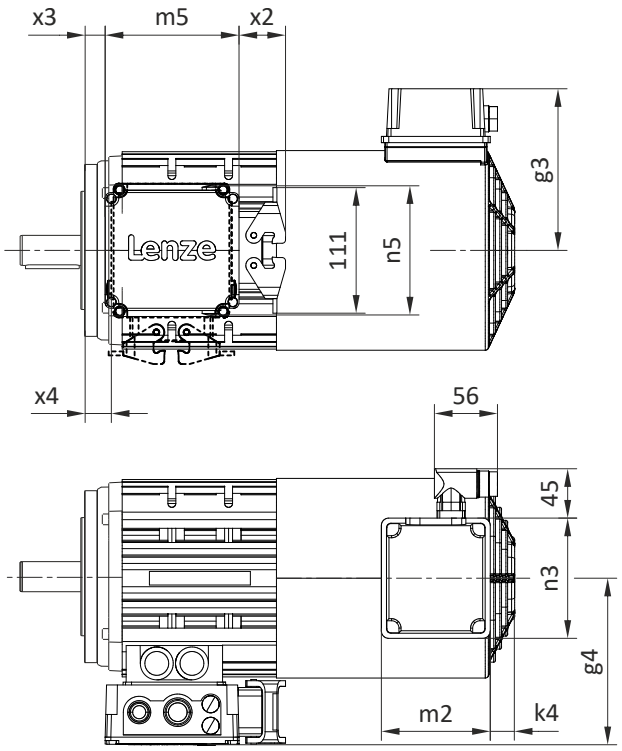
Feedback in conjunction with the HAN plug connector or the integrated i550 motec and 8400 motec is only available with the IG128-24V-H add-on incremental encoder (with 0.5 m cable and M12 plug connector).

| **Motor** | **MF☐MA☐☐** | | | | | | |
|---|---|---|---|---|---|---|---|
| | **063-32** | **071-32** | **080-32** | **090-32** | **100-12** | **112-22** | **132-12** |
| | **063-42** | **071-42** | **080-42** | | **100-32** | | **132-22** |
| HAN 10E connector | | | | | | | |
| Connection:<br>• Power<br>• Brake<br>• Temperature monitoring TK0 or PT1000 | • | • | • | • | • | - | - |
| HAN modular connector | | | | | | | |
| Connection:<br>• Power<br>• Brake<br>• Temperature monitoring TK0 or PT1000 | • | • | • | • | • | - | • |

### Positions of the connections

HAN connector positions

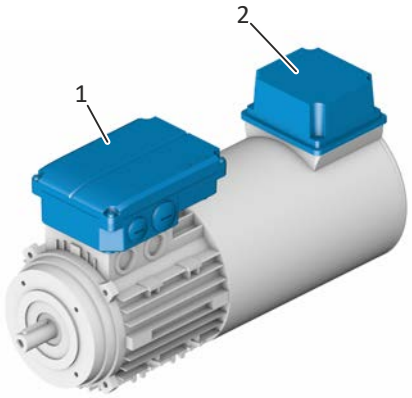
**Dimensions of HAN connector**




| Motor | | MF□MA□□ | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 063-32 | 071-32 | 080-32 | 090-32 | 100-12 | 112-22 | 132-12 |
| | | 063-42 | 071-42 | 080-42 | | 100-32 | | 132-22 |
| HAN connector Power/brake | | | | | | | | |
| g4 | mm | 120 | 129 | 138 | 143 | 157 | - | 233 |
| x3 | mm | 11 | 16 | 18 | 22 | 29 | - | 48 |
| x4 | mm | 12 | 17 | 26 | 30 | 37 | - | 18 |
| x2 | mm | 41 | 41 | 41 | 41 | 41 | - | 47 |
| m5 | mm | 118 | 118 | 118 | 118 | 118 | - | 120 |
| n5 | mm | 102 | 102 | 102 | 102 | 102 | - | 180 |
| Blower terminal box | | | | | | | | |
| g3 | mm | 115 | 122 | 133 | 141 | 150 | - | 182 |
| k4 | mm | 0 | 0 | 0 | 0 | 0 | - | 0 |
| m2 | mm | 105 | 105 | 105 | 105 | 105 | - | 105 |
| n3 | mm | 105 | 105 | 105 | 105 | 105 | - | 105 |

## Connection via terminal box

### Position of the connections

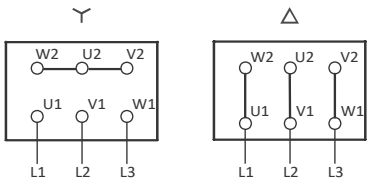



| Position | Meaning | Note |
|---|---|---|
| 1 | Power connection<br>Brake connection<br>PE connection<br>Feedback connection<br>Connection of temperature monitoring | For the terminal box "KK1", the position of the cable connections "L", "R" or "E" must be specified. |
| 2 | Blower connection | When ordering, specify the mounting position of the terminal box:<br>• Shown here: "T"<br>• "L", "R" or "B"<br>If required, the terminal box can be rotated step by step by 90 ° after loosening the screws in the terminal box. |

### Power connection

### Bridge arrangement

**Y/Δ circuit**

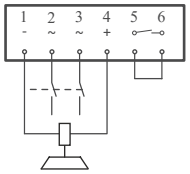



| Terminal box, power | | |
|---|---|---|
| **Contact** | **Name** | **Meaning** |
| PE | PE | PE conductor |
| U1 | L1 | Motor winding phase |
| V1 | L2 | |
| W1 | L3 | |

### DC brake connection

| Contact | Name | Meaning |
|---|---|---|
| BD1 | + | Brake + |
| BD2 | - | Brake - |

### Connection of brake AC




| Connection via rectifiers | | |
|---|---|---|
| **Contact** | **Name** | **Meaning** |
| ~ | L1 | Mains |
| ~ | N | |
| + | + | Holding brake (factory-wired) |
| - | - | |
| | | Switching contact - DC switching |

### Feedback connection

| Resolver | | |
|---|---|---|
| **Contact** | **Name** | **Meaning** |
| B1 | +Ref | Transformer windings (reference windings) |
| B2 | -Ref | |
| B3 | +VCC ETS | Power supply: electronic nameplate (Only for model with electronic nameplate ETS) |
| B4 | +COS | Cosine stator winding |
| B5 | -COS | |
| B6 | +SIN | Sine stator winding |
| B7 | -SIN | |
| B8 | | Not assigned |

| Incremental encoder HTL/TTL | | |
|---|---|---|
| **Contact** | **Name** | **Meaning** |
| + | + UB | Supply + |
| - | GND | Mass |
| A | A/+COS | Track A / + COS |
| $A^-$ | $A^-$/Ref COS | Track A inverse / - COS |
| B | B/+SIN | Track B / + SIN |
| $B^-$ | $B^-$/Ref SIN | Track B inverse/-SIN |
| 0 | 0 | Zero track / + RS485 |
| $0^-$ | $0^-$ | Zero track inverse / - RS485 |

| Incremental encoder<br>SinCos absolute value encoder with Hiperface© | | |
|---|---|---|
| **Contact** | **Designation** | **Meaning** |
| B1 | + UB | Supply + |
| B2 | GND | Mass |
| B3 | A | Track A/+COS |
| B4 | $A^-$ | Track A inverse/-COS |
| B5 | B | Track B/+SIN |
| B6 | $B^-$ | Track B inverse/-SIN |
| B7 | Z | Zero track/+RS485 |
| B8 | $Z^-$ | Zero track inverse/-RS485 |
| B10 | | Incremental encoder shield |

### Connection of temperature monitoring

| Contact | Name | Meaning |
|---|---|---|
| TB1 | | Thermal contact TCO |
| TB2 | | |
| 1TP1 | | PTC thermistor 150 |
| 1TP2 | | |
| 2TP1 | | PTC thermistor 130 |
| 2TP2 | | |
| R1 | + | Thermal detectors PT1000 + |
| R2 | - | Thermal detectors PT1000 - |

### Blower connection

| 1-phase | | |
|---|---|---|
| **Contact** | **Name** | **Meaning** |
| PE | PE | PE conductor |
| U1 | L1 | Mains connection |
| U2 | N | |

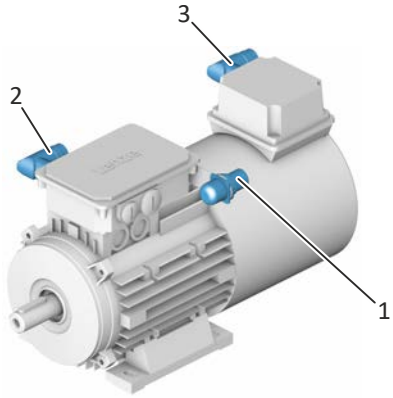
| three-phase | | | |
|---|---|---|---|
| **Contact** | **Name** | **Meaning** | **Note** |
| PE | PE | PE conductor | |
| U1 | L1 | Mains connection | Pay attention to the direction of rotation! Swap L1 and L2 if the direction of rotation is incorrect. |
| V1 | L2 | | |
| W1 | L3 | | |

## Connection via connector

Preassembled Lenze system cables are available for fast and error-free connection of Lenze motors to Lenze inverters.

Details and data can be found in the "Accessories" brochure on the Internet.

### Position of the connections

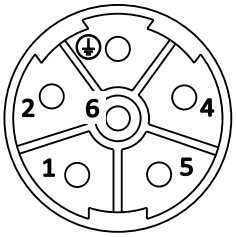



| Position | Meaning | Note |
|---|---|---|
| 1 | ICN-M23 connector, 6-pole<br>• Power connection<br>• Brake connection<br>• PE connection | When ordering, specify the mounting position of the connector:<br>• Shown here: "T"<br>• Opposite "L |
| | In addition to connector ICN-M23, 8-pole:<br>• Connection of TKO temperature monitoring | Caution:<br>Max. brake supply voltage ≤ 230 V |
| 2 | ICN-M23 connector<br>• Feedback connection<br>• Connection of PT1000 temperature sensor | The mounting position of the feedback connector is located on the opposite side from the power connection (position L/R). |
| 3 | ICN-M17 connector<br>• Blower connection | When ordering, specify the mounting position of the terminal box:<br>• Shown here: "T"<br>• L, R or B<br>If required, the terminal box can be rotated step by step by 90 ° after loosening the screws in the terminal box. |

**Power and brake connection**

ICN-M23 connector assignment

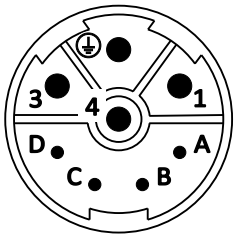
6-pole




| M23 6-pole | | |
|---|---|---|
| **Contact** | **Name** | **Meaning** |
| 1 | BD1 | DC +/AC brake |
| 2 | BD2 | DC -/AC brake |
| PE | PE | PE conductor |
| 4 | U | Power phase U |
| 5 | V | Power phase V |
| 6 | W | Power phase W |

ICN-M23 connector assignment

8-pole

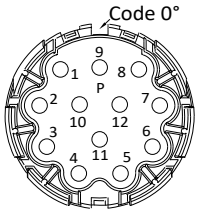



| M23 8-pole | | |
|---|---|---|
| **Contact** | **Name** | **Meaning** |
| 1 | U | Power phase U |
| PE | PE | PE conductor |
| 3 | W | Power phase W |
| 4 | V | Power phase V |
| A | TB1 | Temperature monitoring: TCO |
| B | TB2 | Temperature monitoring: TCO |
| C | BD1 / BA1 | Brake DC +/AC ≤ 230 V |
| D | BD2 / BA2 | Brake DC-/AC ≤ 230V |

**Feedback and temperature monitoring connection**

ICN-M23 connector assignment

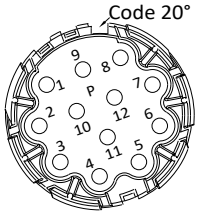
Resolver




| M23 for resolvers | | |
|---|---|---|
| **Contact** | **Name** | **Meaning** |
| 1 | +Ref | Transformer windings |
| 2 | -Ref | Transformer windings |
| 3 | +VCC ETS | Supply: Electronic nameplate (Only for motors and inverters that support this function) |
| 4 | +COS | Cosine stator windings |
| 5 | -COS | Cosine stator windings |
| 6 | +SIN | Sine stator windings |
| 7 | -SIN | Sine stator windings |
| 8 | | Not assigned |
| 9 | | Not assigned |
| 10 | | Not assigned |
| 11 | + | Temperature monitoring: PT1000 |
| 12 | - | Temperature monitoring: PT1000 |

ICN-M23 connector assignment

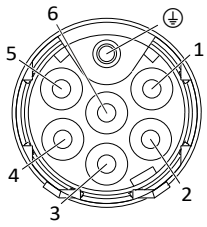
Incremental and SinCos absolute value encoder Hiperface©




| ICN M23 for encoders | | |
|---|---|---|
| **Contact** | **Name** | **Meaning** |
| 1 | B | Track B / +SIN |
| 2 | $A^-$ | Track A inverse /-COS |
| 3 | A | Track A / + COS |
| 4 | +UB | Supply + |
| 5 | GND | Mass |
| 6 | $Z^-$ | Zero track inverse /-RS485 |
| 7 | Z | Zero track / + RS485 |
| 8 | | Not assigned |
| 9 | $B^-$ | Track B inverse/-SIN |
| 10 | | Not assigned |
| 11 | + | Temperature monitoring: PT1000 |
| 12 | - | Temperature monitoring: PT1000 |

**Blower**

Pin assignment ICN-M17

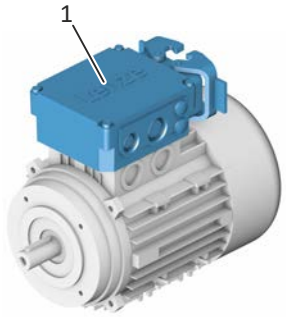



| M17 for blowers 1-ph | | |
|---|---|---|
| **Contact** | **Name** | **Meaning** |
| PE | PE | PE conductor |
| 1 | U1 | Fan |
| 2 | U2 | Fan |
| 3 | | Not assigned |
| 4 | | Not assigned |
| 5 | | Not assigned |
| 6 | | Not assigned |

| M17 for blowers 3-ph | | |
|---|---|---|
| **Contact** | **Name** | **Meaning** |
| PE | PE | PE conductor |
| 1 | U | Power phase U |
| 2 | | Not assigned |
| 3 | V | Power phase V |
| 4 | | Not assigned |
| 5 | | Not assigned |
| 6 | W | Power phase W |

## Connection via HAN connector

### Position of the connections



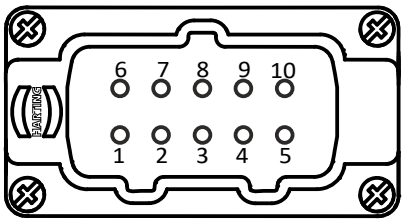

| Note | Meaning |
|---|---|
| 1 | Power connection<br>Brake connection<br>PE connection<br>Connection of temperature monitoring |
| | Additionally for HAN-Modular:<br>• Rectifier connection |

### HAN 10E connector

The motor connection is specified in the counter plug.

The connector is only suitable for motors with the connection method Y/Δ.

HAN 10E connector assignment



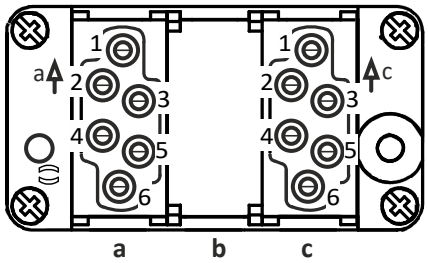

| Bridge arrangement in the HAN 10E mating connector | | |
|---|---|---|
| **Contact** | **Name** | **Meaning** |
| 6-7-8 | Y | Connection |
| 1-6<br>2-7<br>3-8 | Δ | |

| HAN 10 E | | |
|---|---|---|
| **Contact** | **Name** | **Meaning** |
| 1 | U1 | Motor winding phase |
| 2 | V1 | |
| 3 | W1 | |
| 4 | +/AC | Brake |
| 5 | -/AC | |
| 6 | W2 | Motor winding phase |
| 7 | U2 | |
| 8 | V2 | |
| 9 | TKO/+PT1000 | Temperature monitoring |
| 10 | TKO/-PT1000 | |

### HAN modular connector

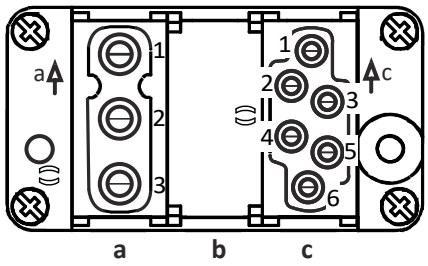
The motor connection is specified in the terminal box.

HAN modular 16 A pin assignment




| HAN modular 16 A | | | |
|---|---|---|---|
| **Module** | **Contact** | **Name** | **Meaning** |
| a | 1 | U1 | Motor winding phase |
| | 2 | V1 | |
| | 3 | W1 | |
| b | | | Blank module |
| c | 1 | TKO/+PT1000 | Temperature monitoring |
| | 2 | +/AC | Brake |
| | 3 | -/AC | |
| | 4 | Schaltkontakt | Rectifier |
| | 5 | | |
| | 6 | TKO/-PT1000 | Temperature monitoring |

HAN modular 40 A pin assignment

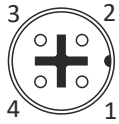



| HAN modular 40 A | | | |
|---|---|---|---|
| **Module** | **Contact** | **Name** | **Meaning** |
| a | 1 | U1 | Motor winding phase |
| | 2 | V1 | |
| | 3 | W1 | |
| b | | | Blank module |
| c | 1 | TKO/+PT1000 | Temperature monitoring |
| | 2 | +/AC | Brake |
| | 3 | -/AC | |
| | 4 | Schaltkontakt | Rectifier |
| | 5 | | |
| | 6 | TKO/-PT1000 | Temperature monitoring |

## Connection via M12 connector

M12 pin assignment

Incr. encoder IG128-24V-H




| ICN M12 | | |
|---|---|---|
| **Contact** | **Name** | **Meaning** |
| 1 | +UB | Supply + |
| 2 | B | Track B |
| 3 | GND | Mass |
| 4 | A | Track A |

## Spring-applied brakes

The motors can be ordered with a spring-applied brake to allow stopping or deceleration of the moving masses. The spring-applied brake operates according to the closed-circuit principle. In the deenergized state, the brake is closed. The spring-applied brakes can be used as holding brakes, application brakes or safety brakes.

### Overview

| Versions | IP54/55 protection | |
|---|---|---|
| | Standard | LongLife |
| Controllers | DC supply<br>AC supply via rectifier in the terminal box | |
| Supply voltages | | |
| DC voltage | DC 24 V ±10 %<br>DC 103 V ±10 %<br>DC 127 V ±10 %<br>DC 180 V ±10 %<br>DC 205 V ±10 %<br>DC 215 V ±10 %<br>AC 460 V ±10 % | |
| Mains voltage | AC 230 V ±10 %<br>AC 400 V ±10 %<br>AC 460 V ±10 % | |
| Switching cycles | | |
| Repetitive | $1 \times 10^6$ | $10 \times 10^6$ |
| Reversing | $1 \times 10^6$ | $15 \times 10^6$ |
| Friction lining | Low-wear | |
| Options | Manual release<br>UL/CSA-approved | |

## Information on project planning

### Important notes

**⚠ DANGER!**

Malfunction of the brake

Even small amounts of oil or grease on the friction surfaces reduce the braking torque considerably.

Possible consequences: Death or severe injuries

► Always keep the friction surfaces free of oil and grease.

### Connection

**NOTICE**

If used as a service brake, the braking torques are dependent on the motor speed to be braked.

► During braking from a high speed and in the event of emergency stops, the braking torque is significantly reduced.

#### Connection of the spring-applied brake

The spring-applied brakes can be ordered for connection to AC or DC voltage.

Connection to AC voltage

- A rectifier is required to convert the AC voltage into a DC voltage.
- The rectifier is included in the scope of supply. It is mounted in the terminal box of the motor.
- Available rectifiers:
  - Half-wave rectifier, 6-pole
  - Bridge rectifier, 6-pole
  - Bridge/half-wave rectifier, 6-pole

    With the holding current reduction or overexcitation option

Connection to DC voltage

- No rectifier is required.
- A freewheeling diode or a spark suppressor must be used to prevent high induction peaks.

#### Motor supply cables

If long motor supply cables are used, pay attention to the ohmic voltage drop along the cable and compensate for it with a higher voltage at the input end of the cable.

The following applies to Lenze system cables:

| | | | |
|---|---|---|---|
| $U[V] = U_B[V] + 0.08\frac{[V]}{[A]\times[m]} \times I_{Lg}[m] \times I_B[A]$ | U | V | Resulting supply voltage |
| | $U_B$ | V | Rated voltage of the brake |
| | $I_{Lg}$ | m | Cable length |
| | $I_B$ | A | Rated current of the brake |

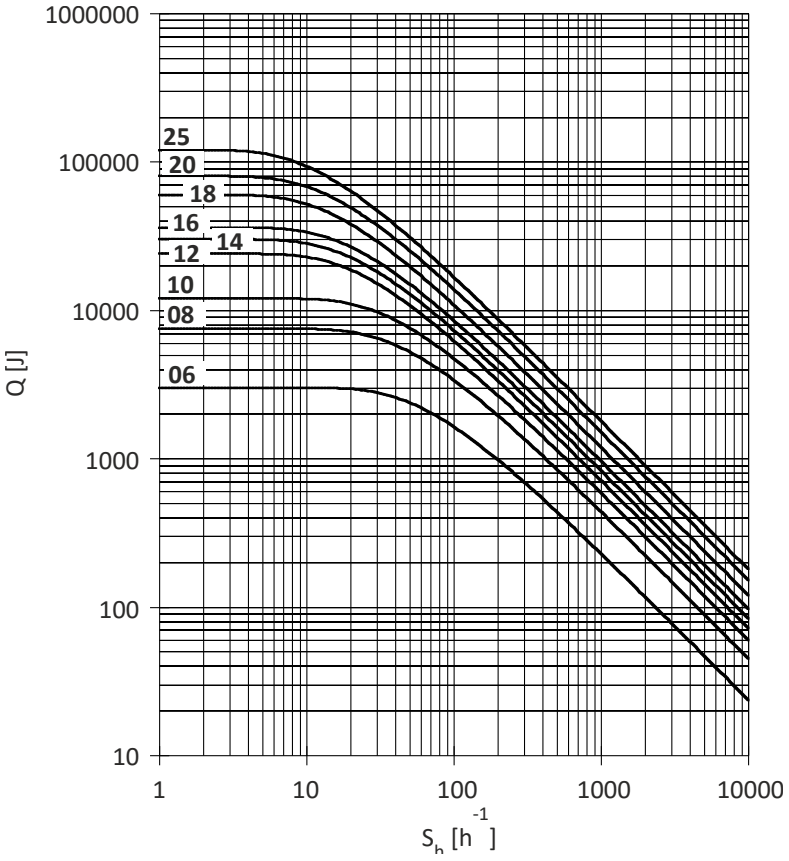
#### AC or DC voltage switching

Brakes can be switched both before the rectifier (AC voltage switching) as well as after the rectifier (DC voltage switching). The choice of control system influences the engagement time of the armature plate, inter alia.

AC switching increases the engagement time by a factor of 5 to 10 compared to DC switching. This is to be observed taken into account when choosing the control system. DC switching is possible by simply removing a bridge and using the switching contact connection. However, this calls for two additional cores in the control cabinet.

DC switching is particularly expedient for lifting applications because a short engagement time is necessary here to guarantee a secure hold without any prior slipping of the load.

**Permissible friction energy**




| | |
|---|---|
| Q | Switching energy per switching cycle |
| $S_h$ | Switching rate |
| 06 ... 25 | Brake size |



## Spring-applied holding brake

The spring-applied brakes are pure holding brakes. Emergency stops are possible.

**⚠ DANGER!**

An emergency stop during operation can cause the holding brake to malfunction.

Possible consequences: Personal injury and/or damage to property.

► After an emergency stop, check the air gap and the friction lining for damage.

► If the air gap is too large or the friction lining is damaged, replace the brake rotor.

### Assignment of braking torques

For optimum adaptation of the brake motor to the application, spring-applied brakes with several braking torques are available for each motor frame size.

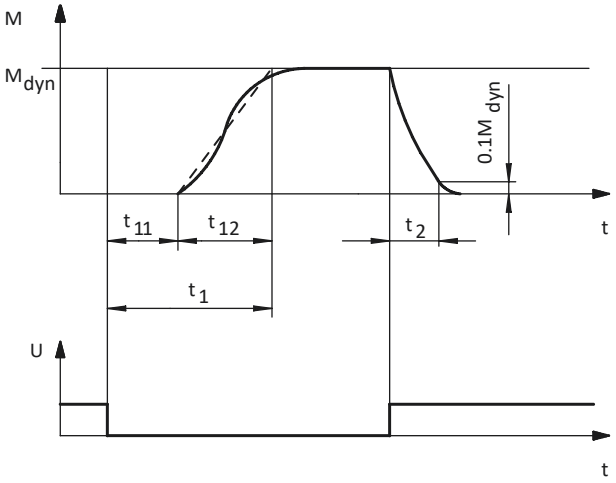
### Assignment of braking torques

| Motor | Single brake | | | | | |
|---|---|---|---|---|---|---|
| | 06 | 08 | 10 | 12 | 14 | 16 |
| | Nm | Nm | Nm | Nm | Nm | Nm |
| MF 063-32 | 2.5<br>4 | | | | | |
| MF 063-42 | | | | | | |
| MF 071-32 | | 3.5 | | | | |
| MF 071-42 | | 3.5<br>8 | | | | |
| MF 080-32 | | | 7 | | | |
| MF 080-42 | | | 7<br>16 | | | |
| MF 090-32 | | | 7<br>16<br>23 | | | |
| MF 100-12 | | | 7<br>16 | 14<br>32 | | |
| MF 100-32 | | | | 14<br>32<br>46 | | |
| MF 112-22 | | | | 14<br>32 | 35<br>60 | |
| MF 132-12 | | | | | | 60<br>80 |
| MF 132-22 | | | | | | 60<br>80<br>100 |
| MF 132-32 | | | | | | |

| Motor | Single brake LongLife | | | |
|---|---|---|---|---|
| | 06 | 08 | 10 | 12 |
| | Nm | Nm | Nm | Nm |
| MF 063-32 | 4 | | | |
| MF 063-42 | | | | |
| MF 071-32 | | 3.5 | | |
| MF 071-42 | | 3.5<br>8 | | |
| MF 080-32 | | 8 | 7 | |
| MF 080-42 | | | 7<br>16 | |
| MF 090-32 | | | | |
| MF 100-12 | | | 16 | 14<br>32 |
| MF 100-32 | | | | |

## Rated data

### Switching times of the spring-applied brakes




| | | | |
|---|---|---|---|
| $t_1$ | Engagement time | $t_{11}$ | Delay time during linking |
| $t_2$ | Disengagement time (up to M = 0.1 $M_{dyn}$) | $t_{12}$ | Rise time of the braking torque |
| $M_{dyn}$ | Braking torque at constant speed | U | Voltage |



**Rated data, Single brake, IP54/55**

Brake 06, 08

| **Brake** | | **06** | | **08** | |
|---|---|---|---|---|---|
| **Braking torque** | | **2.5** | **4** | **3.5** | **8** |
| Power input | | | | | |
| DC 24 V | W | 20 | 20 | 25 | 25 |
| DC 103 V | W | 20 | 20 | 25 | 25 |
| DC 127 V | W | 20 | 20 | 27 | 27 |
| DC 180 V | W | 20 | 20 | 25 | 25 |
| DC 205 V | W | 20 | 20 | 25 | 25 |
| DC 215 V | W | 20 | 20 | 25 | 25 |
| AC 230 V | W | 20 | 20 | 25 | 25 |
| AC 400 V | W | 20 | 20 | 25 | 25 |
| AC 460 V | W | 20 | 20 | 25 | 25 |
| Cold Brake AC 230V | W | 20 | 20 | 25 | 25 |
| Cold Brake AC 400V | W | 23 | 23 | 27 | 27 |
| Overexcitation AC 230 V | W | 20 | 20 | 25 | 25 |
| Overexcitation AC 400 V | W | 20 | 20 | 25 | 25 |
| Moment of inertia | kgcm² | 0.15 | 0.15 | 0.61 | 0.61 |
| Braking torque is static | Nm | 2.5 | 4 | 3.5 | 8 |
| Min. static braking torque tolerance | % | -25 | -25 | -25 | -25 |
| Max. static braking torque tolerance | % | 35 | 35 | 35 | 35 |
| Dynamic braking torque | | | | | |
| 100 rpm | Nm | 2.5 | 4.0 | 3.5 | 8.0 |
| 1000 rpm | Nm | 2.3 | 3.7 | 3.1 | 7.1 |
| 1200 rpm | Nm | 2.3 | 3.6 | 3.0 | 7.0 |
| 1500 rpm | Nm | 2.2 | 3.5 | 3.0 | 6.8 |
| 1800 rpm | Nm | 2.2 | 3.4 | 2.9 | 6.6 |
| 2500 rpm | Nm | 2.1 | 3.3 | 2.8 | 6.4 |
| 3000 rpm | Nm | 2.0 | 3.2 | 2.7 | 6.2 |
| 3600 rpm | Nm | 2.0 | 3.2 | 2.7 | 6.1 |
| Min. dynamic braking torque tolerance | % | -25 | -25 | -25 | -25 |
| Max. dynamic braking torque tolerance | % | 35 | 35 | 35 | 35 |
| Friction energy | | | | | |
| 100 rpm | kJ | 3 | 3 | 7.5 | 7.5 |
| 1000 rpm | kJ | 3 | 3 | 7.5 | 7.5 |
| 1200 rpm | kJ | 3 | 3 | 7.5 | 7.5 |
| 1500 rpm | kJ | 3 | 3 | 7.5 | 7.5 |
| 1800 rpm | kJ | 3 | 3 | 7.5 | 7.5 |
| 2500 rpm | kJ | 3 | 3 | 7.5 | 7.5 |
| 3000 rpm | kJ | 3 | 3 | 7.5 | 7.5 |
| 3600 rpm | kJ | 3 | 3 | 7.5 | 7.5 |
| Maximum speed - operation | rpm | 3600 | 3600 | 3600 | 3600 |
| Maximum speed - idle state | rpm | 10000 | 10000 | 10000 | 10000 |

| **Brake** | | **06** | | **08** | |
|---|---|---|---|---|---|
| **Braking torque** | | **2.5** | **4** | **3.5** | **8** |
| Delay time t11 | | | | | |
| DC voltage | ms | 25 | 15 | 14 | 15 |
| AC mains voltage | ms | 25 | 15 | 14 | 15 |
| Cold Brake AC 230V | ms | 24 | 16 | 22 | 25 |
| Cold Brake AC 400V | ms | 27 | 19 | 28 | 28 |
| Overexcitation AC 230 V | ms | 31 | 20 | 33 | 31 |
| Overexcitation AC 400 V | ms | 24 | 16 | 22 | 25 |
| Rise time t12 | | | | | |
| DC voltage | ms | 13 | 13 | 10 | 16 |
| AC mains voltage | ms | 13 | 13 | 10 | 16 |
| Cold Brake AC 230V | ms | 12 | 14 | 16 | 27 |
| Cold Brake AC 400V | ms | 14 | 16 | 20 | 30 |
| Overexcitation AC 230 V | ms | 16 | 17 | 24 | 33 |
| Overexcitation AC 400 V | ms | 12 | 14 | 16 | 27 |
| Engagement time t1 | | | | | |
| DC voltage | ms | 38 | 28 | 24 | 31 |
| AC mains voltage | ms | 38 | 28 | 24 | 31 |
| Cold Brake AC 230V | ms | 36 | 30 | 38 | 52 |
| Cold Brake AC 400V | ms | 41 | 35 | 48 | 58 |
| Overexcitation AC 230 V | ms | 47 | 37 | 57 | 64 |
| Overexcitation AC 400 V | ms | 36 | 30 | 38 | 52 |
| Disengagement time t2 | | | | | |
| DC voltage | ms | 30 | 45 | 37 | 57 |
| AC mains voltage | ms | 30 | 45 | 37 | 57 |
| Cold Brake AC 230V | ms | 30 | 45 | 37 | 57 |
| Cold Brake AC 400V | ms | 21 | 30 | 24 | 36 |
| Overexcitation AC 230 V | ms | 17 | 22 | 18 | 26 |
| Overexcitation AC 400 V | ms | 17 | 22 | 18 | 26 |
| Overexcitation time | | | | | |
| Cold Brake AC 230V | ms | 300 | 300 | 300 | 300 |
| Cold Brake AC 400V | ms | 300 | 300 | 300 | 300 |
| Overexcitation AC 230 V | ms | 300 | 300 | 300 | 300 |
| Overexcitation AC 400 V | ms | 300 | 300 | 300 | 300 |
| Friction energy QBW | | | | | |
| DC voltage | MJ | 113.1 | 84.8 | 210.4 | 157.8 |
| AC mains voltage | MJ | 113.1 | 84.8 | 210.4 | 157.8 |
| Cold Brake AC 230V | MJ | 113.1 | 84.8 | 210.4 | 157.8 |
| Cold Brake AC 400V | MJ | 113.1 | 113.1 | 210.4 | 210.4 |
| Overexcitation AC 230 V | MJ | 113.1 | 113.1 | 210.4 | 210.4 |
| Overexcitation AC 400 V | MJ | 113.1 | 84.8 | 210.4 | 157.8 |
| Reversing cycles | | $1x\ 10^6$ | $1x\ 10^6$ | $1x\ 10^6$ | $1x\ 10^6$ |
| Repetitive cycles | | $1x\ 10^6$ | $1x\ 10^6$ | $1x\ 10^6$ | $1x\ 10^6$ |



**Rated data, Single brake, IP54/55**

Brake 10, 12

| **Brake** | | **10** | | | **12** | | |
|---|---|---|---|---|---|---|---|
| **Braking torque** | | **7** | **16** | **23** | **14** | **32** | **46** |
| Power input | | | | | | | |
| DC 24 V | W | 30 | 30 | 30 | 40 | 40 | 40 |
| DC 103 V | W | 32 | 32 | 32 | 40 | 40 | 40 |
| DC 127 V | W | 30 | 30 | 30 | 40 | 40 | 40 |
| DC 180 V | W | 32 | 32 | 32 | 40 | 40 | 40 |
| DC 205 V | W | 33 | 33 | 33 | 40 | 40 | 40 |
| DC 215 V | W | 30 | 30 | 30 | 40 | 40 | 40 |
| AC 230 V | W | 33 | 33 | 33 | 40 | 40 | 40 |
| AC 400 V | W | 32 | 32 | 32 | 40 | 40 | 40 |
| AC 460 V | W | 33 | 33 | 33 | 40 | 40 | 40 |
| Cold Brake AC 230V | W | 33 | 33 | 33 | 40 | 40 | 40 |
| Cold Brake AC 400V | W | 30 | 30 | 30 | 42 | 42 | 42 |
| Overexcitation AC 230 V | W | 32 | 32 | 32 | 40 | 40 | 40 |
| Overexcitation AC 400 V | W | 32 | 32 | 32 | 40 | 40 | 40 |
| Moment of inertia | kgcm² | 2 | 2 | 2 | 4.5 | 4.5 | 4.5 |
| Braking torque is static | Nm | 7 | 16 | 23 | 14 | 32 | 46 |
| Min. static braking torque tolerance | % | -25 | -25 | -25 | -25 | -25 | -25 |
| Max. static braking torque tolerance | % | 35 | 35 | 35 | 35 | 35 | 35 |
| Dynamic braking torque | | | | | | | |
| 100 rpm | Nm | 7.0 | 16 | 23 | 14 | 32 | 46 |
| 1000 rpm | Nm | 6.1 | 14 | 20 | 12 | 28 | 40 |
| 1200 rpm | Nm | 6.0 | 14 | 20 | 12 | 27 | 39 |
| 1500 rpm | Nm | 5.8 | 13 | 19 | 11 | 26 | 38 |
| 1800 rpm | Nm | 5.7 | 13 | 19 | 11 | 26 | 37 |
| 2500 rpm | Nm | 5.5 | 12 | 18 | 11 | 24 | 35 |
| 3000 rpm | Nm | 5.3 | 12 | 17 | 11 | 24 | 35 |
| 3600 rpm | Nm | 5.2 | 12 | 17 | 10 | 23 | 34 |
| Min. dynamic braking torque tolerance | % | -25 | -25 | -25 | -25 | -25 | -25 |
| Max. dynamic braking torque tolerance | % | 35 | 35 | 35 | 35 | 35 | 35 |
| Friction energy | | | | | | | |
| 100 rpm | kJ | 12 | 12 | 12 | 24 | 24 | 24 |
| 1000 rpm | kJ | 12 | 12 | 12 | 24 | 24 | 24 |
| 1200 rpm | kJ | 12 | 12 | 12 | 24 | 24 | 24 |
| 1500 rpm | kJ | 12 | 12 | 12 | 24 | 24 | 24 |
| 1800 rpm | kJ | 12 | 12 | 12 | 24 | 24 | 24 |
| 2500 rpm | kJ | 12 | 12 | 12 | 24 | 24 | 24 |
| 3000 rpm | kJ | 12 | 12 | 12 | 24 | 24 | 24 |
| 3600 rpm | kJ | 12 | 12 | 12 | 7 | 7 | 7 |
| Maximum speed - operation | rpm | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 |
| Maximum speed - idle state | rpm | 10000 | 10000 | 10000 | 10000 | 10000 | 10000 |

| **Brake** | | **10** | | | **12** | | |
|---|---|---|---|---|---|---|---|
| **Braking torque** | | **7** | **16** | **23** | **14** | **32** | **46** |
| Delay time t11 | | | | | | | |
| DC voltage | ms | 20 | 28 | 10 | 21 | 28 | 16 |
| AC mains voltage | ms | 20 | 28 | 10 | 21 | 28 | 16 |
| Cold Brake AC 230V | ms | 35 | 31 | 24 | 49 | 48 | 27 |
| Cold Brake AC 400V | ms | 47 | 34 | 27 | 64 | 55 | 42 |
| Overexcitation AC 230 V | ms | 52 | 44 | 29 | 73 | 62 | 54 |
| Overexcitation AC 400 V | ms | 35 | 31 | 24 | 49 | 48 | 27 |
| Rise time t12 | | | | | | | |
| DC voltage | ms | 17 | 19 | 19 | 19 | 25 | 25 |
| AC mains voltage | ms | 17 | 19 | 19 | 19 | 25 | 25 |
| Cold Brake AC 230V | ms | 30 | 21 | 46 | 44 | 43 | 42 |
| Cold Brake AC 400V | ms | 40 | 23 | 51 | 58 | 49 | 66 |
| Overexcitation AC 230 V | ms | 44 | 30 | 55 | 66 | 55 | 84 |
| Overexcitation AC 400 V | ms | 30 | 21 | 46 | 44 | 43 | 42 |
| Engagement time t1 | | | | | | | |
| DC voltage | ms | 37 | 47 | 29 | 40 | 53 | 41 |
| AC mains voltage | ms | 37 | 47 | 29 | 40 | 53 | 41 |
| Cold Brake AC 230V | ms | 65 | 52 | 70 | 93 | 91 | 69 |
| Cold Brake AC 400V | ms | 87 | 57 | 78 | 122 | 104 | 108 |
| Overexcitation AC 230 V | ms | 96 | 74 | 84 | 139 | 117 | 138 |
| Overexcitation AC 400 V | ms | 65 | 52 | 70 | 93 | 91 | 69 |
| Disengagement time t2 | | | | | | | |
| DC voltage | ms | 57 | 76 | 109 | 65 | 115 | 193 |
| AC mains voltage | ms | 57 | 76 | 109 | 65 | 115 | 193 |
| Cold Brake AC 230V | ms | 57 | 76 | 109 | 65 | 115 | 193 |
| Cold Brake AC 400V | ms | 40 | 53 | 72 | 48 | 78 | 114 |
| Overexcitation AC 230 V | ms | 31 | 41 | 53 | 38 | 59 | 81 |
| Overexcitation AC 400 V | ms | 31 | 41 | 53 | 38 | 59 | 81 |
| Overexcitation time | | | | | | | |
| Cold Brake AC 230V | ms | 300 | 300 | 300 | 300 | 300 | 300 |
| Cold Brake AC 400V | ms | 300 | 300 | 300 | 300 | 300 | 300 |
| Overexcitation AC 230 V | ms | 300 | 300 | 300 | 300 | 300 | 300 |
| Overexcitation AC 400 V | ms | 300 | 300 | 300 | 300 | 300 | 300 |
| Friction energy QBW | | | | | | | |
| DC voltage | MJ | 264 | 264 | 198 | 706.2 | 529.6 | 353.1 |
| AC mains voltage | MJ | 264 | 264 | 198 | 706.2 | 529.6 | 353.1 |
| Cold Brake AC 230V | MJ | 264 | 264 | 198 | 706.2 | 529.6 | 353.1 |
| Cold Brake AC 400V | MJ | 264 | 264 | 264 | 706.2 | 706.2 | 706.2 |
| Overexcitation AC 230 V | MJ | 264 | 264 | 264 | 706.2 | 706.2 | 706.2 |
| Overexcitation AC 400 V | MJ | 264 | 264 | 198 | 706.2 | 529.6 | 353.1 |
| Reversing cycles | | $1x\ 10^6$ | $1x\ 10^6$ | $1x\ 10^6$ | $1x\ 10^6$ | $1x\ 10^6$ | $1x\ 10^6$ |
| Repetitive cycles | | $1x\ 10^6$ | $1x\ 10^6$ | $1x\ 10^6$ | $1x\ 10^6$ | $1x\ 10^6$ | $1x\ 10^6$ |



**Rated data, Single brake, IP54/55**

Brake 14, 16

| **Brake** | | **14** | | **16** | | |
|---|---|---|---|---|---|---|
| **Braking torque** | | **35** | **60** | | **80** | **100** |
| Power input | | | | | | |
| DC 24 V | W | 50 | 50 | 55 | 55 | 55 |
| DC 103 V | W | 53 | 53 | 56 | 56 | 56 |
| DC 127 V | W | 50 | 50 | 55 | 55 | 55 |
| DC 180 V | W | 53 | 53 | 55 | 55 | 55 |
| DC 205 V | W | 53 | 53 | 56 | 56 | 56 |
| DC 215 V | W | 53 | 53 | 55 | 55 | 55 |
| AC 230 V | W | 53 | 53 | 56 | 56 | 56 |
| AC 400 V | W | 53 | 53 | 55 | 55 | 55 |
| AC 460 V | W | 53 | 53 | 56 | 56 | 56 |
| Cold Brake AC 230V | W | 53 | 53 | 56 | 56 | 56 |
| Cold Brake AC 400V | W | 54 | 54 | 55 | 55 | 55 |
| Overexcitation AC 230 V | W | 53 | 53 | 56 | 56 | 56 |
| Overexcitation AC 400 V | W | 53 | 53 | 55 | 55 | 55 |
| Moment of inertia | kgcm² | 6.3 | 6.3 | 15 | 15 | 15 |
| Braking torque is static | Nm | 35 | 60 | 60 | 80 | 100 |
| Min. static braking torque tolerance | % | -25 | -25 | -25 | -25 | -25 |
| Max. static braking torque tolerance | % | 35 | 35 | 35 | 35 | 35 |
| Dynamic braking torque | | | | | | |
| 100 rpm | Nm | 35 | 60 | 60 | 80 | 100 |
| 1000 rpm | Nm | 30 | 51 | 50 | 66 | 83 |
| 1200 rpm | Nm | 29 | 50 | 49 | 65 | 81 |
| 1500 rpm | Nm | 28 | 49 | 47 | 62 | 78 |
| 1800 rpm | Nm | 28 | 47 | 46 | 62 | 77 |
| 2500 rpm | Nm | 26 | 45 | 44 | 58 | 73 |
| 3000 rpm | Nm | 26 | 44 | 43 | 57 | 71 |
| 3600 rpm | Nm | - | - | - | - | - |
| Min. dynamic braking torque tolerance | % | -25 | -25 | -25 | -25 | -25 |
| Max. dynamic braking torque tolerance | % | 35 | 35 | 35 | 35 | 35 |
| Friction energy | | | | | | |
| 100 rpm | kJ | 30 | 30 | 36 | 36 | 36 |
| 1000 rpm | kJ | 30 | 30 | 36 | 36 | 36 |
| 1200 rpm | kJ | 30 | 30 | 36 | 36 | 36 |
| 1500 rpm | kJ | 30 | 30 | 36 | 36 | 36 |
| 1800 rpm | kJ | 30 | 30 | 36 | 36 | 36 |
| 2500 rpm | kJ | 30 | 30 | 36 | 36 | 36 |
| 3000 rpm | kJ | 18 | 18 | 11 | 11 | 11 |
| 3600 rpm | kJ | - | - | - | - | - |
| Maximum speed - operation | rpm | 3000 | 3000 | 3000 | 3000 | 3000 |
| Maximum speed - idle state | rpm | 10000 | 10000 | 10000 | 10000 | 10000 |

| **Brake** | | **14** | | **16** | | |
|---|---|---|---|---|---|---|
| **Braking torque** | | **35** | **60** | | **80** | **100** |
| Delay time t11 | | | | | | |
| DC voltage | ms | 37 | 17 | 53 | 27 | 22 |
| AC mains voltage | ms | 37 | 17 | 53 | 27 | 22 |
| Cold Brake AC 230V | ms | 61 | 33 | 114 | 58 | 41 |
| Cold Brake AC 400V | ms | 69 | 43 | 133 | 74 | 56 |
| Overexcitation AC 230 V | ms | 76 | 47 | 145 | 89 | 70 |
| Overexcitation AC 400 V | ms | 61 | 33 | 114 | 58 | 41 |
| Rise time t12 | | | | | | |
| DC voltage | ms | 22 | 25 | 30 | 30 | 30 |
| AC mains voltage | ms | 22 | 25 | 30 | 30 | 30 |
| Cold Brake AC 230V | ms | 36 | 47 | 65 | 64 | 56 |
| Cold Brake AC 400V | ms | 41 | 63 | 75 | 82 | 76 |
| Overexcitation AC 230 V | ms | 45 | 69 | 82 | 99 | 95 |
| Overexcitation AC 400 V | ms | 36 | 47 | 65 | 64 | 56 |
| Engagement time t1 | | | | | | |
| DC voltage | ms | 59 | 42 | 83 | 57 | 52 |
| AC mains voltage | ms | 59 | 42 | 83 | 57 | 52 |
| Cold Brake AC 230V | ms | 97 | 80 | 179 | 122 | 97 |
| Cold Brake AC 400V | ms | 110 | 106 | 208 | 156 | 132 |
| Overexcitation AC 230 V | ms | 121 | 116 | 227 | 188 | 165 |
| Overexcitation AC 400 V | ms | 97 | 80 | 179 | 122 | 97 |
| Disengagement time t2 | | | | | | |
| DC voltage | ms | 148 | 210 | 169 | 220 | 297 |
| AC mains voltage | ms | 148 | 210 | 169 | 220 | 297 |
| Cold Brake AC 230V | ms | 148 | 210 | 169 | 220 | 297 |
| Cold Brake AC 400V | ms | 98 | 131 | 125 | 154 | 191 |
| Overexcitation AC 230 V | ms | 71 | 92 | 100 | 119 | 141 |
| Overexcitation AC 400 V | ms | 71 | 92 | 100 | 119 | 141 |
| Overexcitation time | | | | | | |
| Cold Brake AC 230V | ms | 300 | 300 | 1300 | 1300 | 1300 |
| Cold Brake AC 400V | ms | 300 | 300 | 300 | 300 | 300 |
| Overexcitation AC 230 V | ms | 300 | 300 | 300 | 300 | 300 |
| Overexcitation AC 400 V | ms | 300 | 300 | 1300 | 1300 | 1300 |
| Friction energy QBW | | | | | | |
| DC voltage | MJ | 761.4 | 571 | 965.7 | 965.7 | 643.8 |
| AC mains voltage | MJ | 761.4 | 571 | 965.7 | 965.7 | 643.8 |
| Cold Brake AC 230V | MJ | 761.4 | 571 | 965.7 | 965.7 | 643.8 |
| Cold Brake AC 400V | MJ | 761.4 | 761.4 | 965.7 | 965.7 | 965.7 |
| Overexcitation AC 230 V | MJ | 761.4 | 761.4 | 965.7 | 965.7 | 965.7 |
| Overexcitation AC 400 V | MJ | 761.4 | 571 | 965.7 | 965.7 | 643.8 |
| Reversing cycles | | $1x\ 10^6$ | $1x\ 10^6$ | $1x\ 10^6$ | $1x\ 10^6$ | $1x\ 10^6$ |
| Repetitive cycles | | $1x\ 10^6$ | $1x\ 10^6$ | $1x\ 10^6$ | $1x\ 10^6$ | $1x\ 10^6$ |



**Rated data, Single brake LongLife, IP54/55**

Brake 06, 08

| **Brake** | | **06** | **08** | |
|---|---|---|---|---|
| **Braking torque** | | **4** | **3.5** | **8** |
| Power input | | | | |
| DC 24 V | W | 20 | 25 | 25 |
| DC 103 V | W | 20 | 25 | 25 |
| DC 127 V | W | 20 | 27 | 27 |
| DC 180 V | W | 20 | 25 | 25 |
| DC 205 V | W | 20 | 25 | 25 |
| DC 215 V | W | 20 | 25 | 25 |
| AC 230 V | W | 20 | 25 | 25 |
| AC 400 V | W | 20 | 25 | 25 |
| AC 460 V | W | 20 | 25 | 25 |
| Cold Brake AC 230V | W | 20 | 25 | 25 |
| Cold Brake AC 400V | W | 23 | 27 | 27 |
| Overexcitation AC 230 V | W | 20 | 25 | 25 |
| Overexcitation AC 400 V | W | 20 | 25 | 25 |
| Moment of inertia | kgcm² | 0.15 | 0.61 | 0.61 |
| Braking torque is static | Nm | 4 | 3.5 | 8 |
| Min. static braking torque tolerance | % | -25 | -25 | -25 |
| Max. static braking torque tolerance | % | 35 | 35 | 35 |
| Dynamic braking torque | | | | |
| 100 rpm | Nm | 4.0 | 3.5 | 8.0 |
| 1000 rpm | Nm | 3.7 | 3.1 | 7.1 |
| 1200 rpm | Nm | 3.6 | 3.0 | 7.0 |
| 1500 rpm | Nm | 3.5 | 3.0 | 6.8 |
| 1800 rpm | Nm | 3.4 | 2.9 | 6.6 |
| 2500 rpm | Nm | 3.3 | 2.8 | 6.4 |
| 3000 rpm | Nm | 3.2 | 2.7 | 6.2 |
| 3600 rpm | Nm | 3.2 | 2.7 | 6.1 |
| Min. dynamic braking torque tolerance | % | -25 | -25 | -25 |
| Max. dynamic braking torque tolerance | % | 35 | 35 | 35 |
| Friction energy | | | | |
| 100 rpm | kJ | 3 | 7.5 | 7.5 |
| 1000 rpm | kJ | 3 | 7.5 | 7.5 |
| 1200 rpm | kJ | 3 | 7.5 | 7.5 |
| 1500 rpm | kJ | 3 | 7.5 | 7.5 |
| 1800 rpm | kJ | 3 | 7.5 | 7.5 |
| 2500 rpm | kJ | 3 | 7.5 | 7.5 |
| 3000 rpm | kJ | 3 | 7.5 | 7.5 |
| 3600 rpm | kJ | 3 | 7.5 | 7.5 |
| Maximum speed - operation | rpm | 3600 | 3600 | 3600 |
| Maximum speed - idle state | rpm | 10000 | 10000 | 10000 |

| **Brake** | | **06** | **08** | |
|---|---|---|---|---|
| **Braking torque** | | **4** | **3.5** | **8** |
| Delay time t11 | | | | |
| DC voltage | ms | 15 | 14 | 15 |
| AC mains voltage | ms | 15 | 14 | 15 |
| Cold Brake AC 230V | ms | 16 | 22 | 25 |
| Cold Brake AC 400V | ms | 19 | 28 | 28 |
| Overexcitation AC 230 V | ms | 20 | 33 | 31 |
| Overexcitation AC 400 V | ms | 16 | 22 | 25 |
| Rise time t12 | | | | |
| DC voltage | ms | 13 | 10 | 16 |
| AC mains voltage | ms | 13 | 10 | 16 |
| Cold Brake AC 230V | ms | 14 | 16 | 27 |
| Cold Brake AC 400V | ms | 16 | 20 | 30 |
| Overexcitation AC 230 V | ms | 17 | 24 | 33 |
| Overexcitation AC 400 V | ms | 14 | 16 | 27 |
| Engagement time t1 | | | | |
| DC voltage | ms | 28 | 24 | 31 |
| AC mains voltage | ms | 28 | 24 | 31 |
| Cold Brake AC 230V | ms | 30 | 38 | 52 |
| Cold Brake AC 400V | ms | 35 | 48 | 58 |
| Overexcitation AC 230 V | ms | 37 | 57 | 64 |
| Overexcitation AC 400 V | ms | 30 | 38 | 52 |
| Disengagement time t2 | | | | |
| DC voltage | ms | 45 | 37 | 57 |
| AC mains voltage | ms | 45 | 37 | 57 |
| Cold Brake AC 230V | ms | 45 | 37 | 57 |
| Cold Brake AC 400V | ms | 30 | 24 | 36 |
| Overexcitation AC 230 V | ms | 22 | 18 | 26 |
| Overexcitation AC 400 V | ms | 22 | 18 | 26 |
| Overexcitation time | | | | |
| Cold Brake AC 230V | ms | 300 | 300 | 300 |
| Cold Brake AC 400V | ms | 300 | 300 | 300 |
| Overexcitation AC 230 V | ms | 300 | 300 | 300 |
| Overexcitation AC 400 V | ms | 300 | 300 | 300 |
| Friction energy QBW | | | | |
| DC voltage | MJ | 84.8 | 210.4 | 157.8 |
| AC mains voltage | MJ | 84.8 | 210.4 | 157.8 |
| Cold Brake AC 230V | MJ | 84.8 | 210.4 | 157.8 |
| Cold Brake AC 400V | MJ | 113.1 | 210.4 | 210.4 |
| Overexcitation AC 230 V | MJ | 113.1 | 210.4 | 210.4 |
| Overexcitation AC 400 V | MJ | 84.8 | 210.4 | 157.8 |
| Reversing cycles | | $15x\ 10^6$ | $15x\ 10^6$ | $15x\ 10^6$ |
| Repetitive cycles | | $10x\ 10^6$ | $10x\ 10^6$ | $10x\ 10^6$ |



**Rated data, Single brake LongLife, IP54/55**

Brake 10, 12

| **Brake** | | **10** | | **12** | |
|---|---|---|---|---|---|
| **Braking torque** | | **7** | **16** | **14** | **32** |
| Power input | | | | | |
| DC 24 V | W | 30 | 30 | 40 | 40 |
| DC 103 V | W | 32 | 32 | 40 | 40 |
| DC 127 V | W | 30 | 30 | 40 | 40 |
| DC 180 V | W | 32 | 32 | 40 | 40 |
| DC 205 V | W | 33 | 33 | 40 | 40 |
| DC 215 V | W | 30 | 30 | 40 | 40 |
| AC 230 V | W | 33 | 33 | 40 | 40 |
| AC 400 V | W | 32 | 32 | 40 | 40 |
| AC 460 V | W | 33 | 33 | 40 | 40 |
| Cold Brake AC 230V | W | 33 | 33 | 40 | 40 |
| Cold Brake AC 400V | W | 30 | 30 | 42 | 42 |
| Overexcitation AC 230 V | W | 32 | 32 | 40 | 40 |
| Overexcitation AC 400 V | W | 32 | 32 | 40 | 40 |
| Moment of inertia | kgcm² | 2 | 2 | 4.5 | 4.5 |
| Braking torque is static | Nm | 7 | 16 | 14 | 32 |
| Min. static braking torque tolerance | % | -25 | -25 | -25 | -25 |
| Max. static braking torque tolerance | % | 35 | 35 | 35 | 35 |
| Dynamic braking torque | | | | | |
| 100 rpm | Nm | 7.0 | 16 | 14 | 32 |
| 1000 rpm | Nm | 6.1 | 14 | 12 | 28 |
| 1200 rpm | Nm | 6.0 | 14 | 12 | 27 |
| 1500 rpm | Nm | 5.8 | 13 | 11 | 26 |
| 1800 rpm | Nm | 5.7 | 13 | 11 | 26 |
| 2500 rpm | Nm | 5.5 | 12 | 11 | 24 |
| 3000 rpm | Nm | 5.3 | 12 | 11 | 24 |
| 3600 rpm | Nm | 5.2 | 12 | 10 | 23 |
| Min. dynamic braking torque tolerance | % | -25 | -25 | -25 | -25 |
| Max. dynamic braking torque tolerance | % | 35 | 35 | 35 | 35 |
| Friction energy | | | | | |
| 100 rpm | kJ | 12 | 12 | 24 | 24 |
| 1000 rpm | kJ | 12 | 12 | 24 | 24 |
| 1200 rpm | kJ | 12 | 12 | 24 | 24 |
| 1500 rpm | kJ | 12 | 12 | 24 | 24 |
| 1800 rpm | kJ | 12 | 12 | 24 | 24 |
| 2500 rpm | kJ | 12 | 12 | 24 | 24 |
| 3000 rpm | kJ | 12 | 12 | 24 | 24 |
| 3600 rpm | kJ | 12 | 12 | 7 | 7 |
| Maximum speed - operation | rpm | 3600 | 3600 | 3600 | 3600 |
| Maximum speed - idle state | rpm | 10000 | 10000 | 10000 | 10000 |

| Brake | | 10 | | 12 | |
|---|---|---|---|---|---|
| **Braking torque** | | **7** | **16** | **14** | **32** |
| Delay time t11 | | | | | |
| DC voltage | ms | 20 | 28 | 21 | 28 |
| AC mains voltage | ms | 20 | 28 | 21 | 28 |
| Cold Brake AC 230V | ms | 35 | 31 | 49 | 48 |
| Cold Brake AC 400V | ms | 47 | 34 | 64 | 55 |
| Overexcitation AC 230 V | ms | 52 | 44 | 73 | 62 |
| Overexcitation AC 400 V | ms | 35 | 31 | 49 | 48 |
| Rise time t12 | | | | | |
| DC voltage | ms | 17 | 19 | 19 | 25 |
| AC mains voltage | ms | 17 | 19 | 19 | 25 |
| Cold Brake AC 230V | ms | 30 | 21 | 44 | 43 |
| Cold Brake AC 400V | ms | 40 | 23 | 58 | 49 |
| Overexcitation AC 230 V | ms | 44 | 30 | 66 | 55 |
| Overexcitation AC 400 V | ms | 30 | 21 | 44 | 43 |
| Engagement time t1 | | | | | |
| DC voltage | ms | 37 | 47 | 40 | 53 |
| AC mains voltage | ms | 37 | 47 | 40 | 53 |
| Cold Brake AC 230V | ms | 65 | 52 | 93 | 91 |
| Cold Brake AC 400V | ms | 87 | 57 | 122 | 104 |
| Overexcitation AC 230 V | ms | 96 | 74 | 139 | 117 |
| Overexcitation AC 400 V | ms | 65 | 52 | 93 | 91 |
| Disengagement time t2 | | | | | |
| DC voltage | ms | 57 | 76 | 65 | 115 |
| AC mains voltage | ms | 57 | 76 | 65 | 115 |
| Cold Brake AC 230V | ms | 57 | 76 | 65 | 115 |
| Cold Brake AC 400V | ms | 40 | 53 | 48 | 78 |
| Overexcitation AC 230 V | ms | 31 | 41 | 38 | 59 |
| Overexcitation AC 400 V | ms | 31 | 41 | 38 | 59 |
| Overexcitation time | | | | | |
| Cold Brake AC 230V | ms | 300 | 300 | 300 | 300 |
| Cold Brake AC 400V | ms | 300 | 300 | 300 | 300 |
| Overexcitation AC 230 V | ms | 300 | 300 | 300 | 300 |
| Overexcitation AC 400 V | ms | 300 | 300 | 300 | 300 |
| Friction energy QBW | | | | | |
| DC voltage | MJ | 264 | 264 | 706.2 | 529.6 |
| AC mains voltage | MJ | 264 | 264 | 706.2 | 529.6 |
| Cold Brake AC 230V | MJ | 264 | 264 | 706.2 | 529.6 |
| Cold Brake AC 400V | MJ | 264 | 264 | 706.2 | 706.2 |
| Overexcitation AC 230 V | MJ | 264 | 264 | 706.2 | 706.2 |
| Overexcitation AC 400 V | MJ | 264 | 264 | 706.2 | 529.6 |
| Reversing cycles | | $15x\ 10^6$ | $15x\ 10^6$ | $15x\ 10^6$ | $15x\ 10^6$ |
| Repetitive cycles | | $10x\ 10^6$ | $10x\ 10^6$ | $10x\ 10^6$ | $10x\ 10^6$ |

**Option: Reduction of the holding current (cold brake)**

By reducing the holding current, the bridge/half-wave rectifier reduces the power consumption of the open brake. As the brake heats up less, this control is referred to as a “Cold Brake”. This is necessary at low speeds in order to counteract impermissible heating. This means that no blower is required even with a speed setting range below 14 Hz. In addition, only a quarter of the braking power is required, thus saving energy.

**Option: Short-time overexcitation of the brake coil**

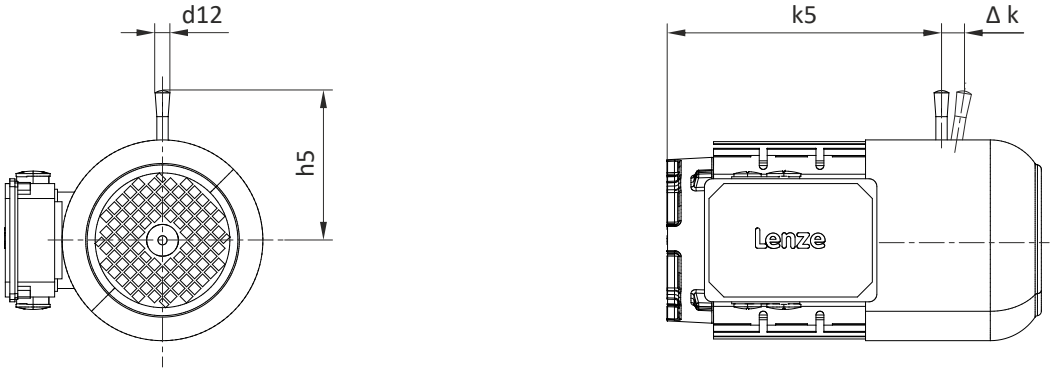
The disengagement time can be reduced by triggering the brake coil with twice the rated voltage for an overexcitation time. The brake releases much faster and the wear on the friction lining decreases. As a result of these features, this control variant is particularly ideal for hoist applications.

**Option: Manual release**

The brake can be ordered with a manual release lever to facilitate positioning and maintenance work. The brake can be released manually in deenergized mode by actuating the manual release lever.

A lockable manual release lever can be ordered as an option. This is equipped with a clamping device to hold the brake in the released position.

**Dimensions of manual release lever**




| Product | Brake | Dimensions | | | |
|---|---|---|---|---|---|
| | | k5 | Δ k | h5 | d12 |
| | | mm | mm | mm | mm |
| MF☐MA☐☐063-32<br>MF☐MA☐☐063-42 | 06 | 169 | 29 | 107 | 13.0 |
| MF☐MA☐☐071-32<br>MF☐MA☐☐071-42 | 06 | 185 | 29 | 107 | 13.0 |
| | 08 | 186 | 27 | 136 | 13.0 |
| MF☐MA☐☐080-32<br>MF☐MA☐☐080-42 | 08 | 223 | 27 | 136 | 13.0 |
| | 10 | 234 | 28 | 132 | 13.0 |
| MF☐MA☐☐090-32 | 08 | 256 | 27 | 136 | 13.0 |
| | 10 | 267 | 28 | 132 | 13.0 |
| MF☐MA☐☐100-12<br>MF☐MA☐☐100-32 | 10 | 305 | 28 | 132 | 13.0 |
| | 12 | 307 | 37 | 161 | 13.0 |
| MF☐MA☐☐112-22 | 12 | 309 | 37 | 161 | 13.0 |
| | 14 | 313 | 41 | 195 | 24.0 |
| MF☐MA☐☐132-12<br>MF☐MA☐☐132-22<br>MF☐MA☐☐132-32 | 14 | 398 | 41 | 195 | 24.0 |
| | 16 | 398 | 45 | 240 | 24.0 |

**Options**

The spring-applied brakes can be used as service brakes or holding brakes. Emergency stops are possible.

The spring-applied brake is available as a LongLife version for applications with very high switching frequencies.

The brake mechanism is reinforced. Up to 10 million repetitive or 15 million reversing switching cycles are possible.

# Feedback

The motor can be equipped with the following feedback systems for speed control via an inverter:

A resolver, incremental encoder and SinCos absolute value encoder are optionally available to evaluate the speed and position of the motor shaft.

The resolver can be used to measure an absolute value within one revolution of the rotor. A SinCos absolute value encoder is used if not only the angle within one revolution is to be made available immediately but also the revolution within a set range. The SinCos absolute value encoder detects not only the speed and rotor position but also the position of the machine. It consists of a speed sensor system, for example TTL, and an absolute value information recorder, for example Hyperface.

The HTL incremental encoder is used in the frequency inverter range for less dynamic applications.

The TTL incremental encoder can generate a higher number of pulses. It is used for dynamic applications with very high requirements regarding accuracy. If the absolute angular position of the drive is required directly after the system is switched on without performing additional homing, this can be realized via a resolver or SinCos absolute value encoder.

## Resolver

The stator-supplied, 2-pole resolver with two stator windings shifted by 90 degrees and a rotor winding with a transformer winding can record both the speed and the rotor position, just like a single-turn absolute value encoder. The rotor position can be determined within one mechanical motor revolution after a voltage failure.

| **Feedback type** | | **Resolver** |
|---|---|---|
| **Feedback** | | **RS1** |
| Accuracy | ' | -10 ... 10 |
| Absolute positioning | | 1 revolution |
| Max. input voltage | | |
| DC | V | 10 |
| Max. input frequency | kHz | 4 |
| Ratio | | |
| Stator / rotor | | 0.3 ± 5% |
| Rotor impedance | Ω | 51 + j90 |
| Stator impedance | Ω | 102 + j150 |
| Impedance | Ω | 44 + j76 |
| Min. insulation resistance | | |
| At DC 500 V | MΩ | 10 |
| Number of pole pairs | | 1 |

## Incremental encoder

Incremental encoders can be used for speed measurement. Homing is required in order to enable positioning later.

### Incremental HTL encoder

Feedback in conjunction with the HAN plug connector or the integrated i550 motec and 8400 motec is only available with the IG128-24V-H add-on incremental encoder (with 0.5 m cable and M12 plug connector).

| **Feedback type** | | | **Encoder** | | | |
|---|---|---|---|---|---|---|
| **Feedback** | | | **IG128-24V-H** | **IG512-24V-H** | **IG1024-24V-H** | **IG2048-24V-H** |
| Design | | | Mounting | Mounting | Mounting | Mounting |
| Pulses | | | 128 | 512 | 1024 | 2048 |
| Output signals | | | HTL | HTL | HTL | HTL |
| Interfaces | | | A, B | A, B; N; Ai, Bi; Ni | A, B; N; Ai, Bi; Ni | A, B; N; Ai, Bi; Ni |
| Absolute revolution | | | 0 | 0 | 0 | 0 |
| Min. accuracy | | ' | -22.5 | -2 | -2 | -2 |
| Max. accuracy | | ' | 22.5 | 2 | 2 | 2 |
| Min. DC input voltage | $V_{in,min}$ | V | 8 | 8 | 8 | 8 |
| Max. DC input voltage | $V_{in,max}$ | V | 26 | 30 | 30 | 30 |
| Max. current consumption | $I_{max}$ | A | 0.04 | 0.15 | 0.15 | 0.15 |
| Limit frequency | $f_{max}$ | kHz | 30 | 160 | 160 | 160 |

### TTL incremental encoder

| **Feedback type** | | | **Encoder** | | **TTL-Inkremental** |
|---|---|---|---|---|---|
| **Feedback** | | | **IG512-5V-T** | **IG1024-5V-T** | **IG2048-5V-T** |
| Design | | | Mounting | | |
| Pulses | | | 512 | 1024 | 2048 |
| Output signals | | | TTL | TTL | TTL |
| Interfaces | | | A, B; N; Ai, Bi; Ni | A, B; N; Ai, Bi; Ni | A, B; N; Ai, Bi; Ni |
| Absolute revolution | | | 0 | 0 | 0 |
| Min. accuracy | | ' | -2 | -2 | -2 |
| Max. accuracy | | ' | 2 | 2 | 2 |
| Min. DC input voltage | $V_{in,min}$ | V | 4.75 | 4.75 | 4.75 |
| Max. DC input voltage | $V_{in,max}$ | V | 5.25 | 5.25 | 5.25 |
| Max. current consumption | $I_{max}$ | A | 0.15 | 0.15 | 0.15 |
| Limit frequency | $f_{max}$ | kHz | 300 | 300 | 300 |

## Absolute value encoder

Absolute value encoders can detect the speed, the rotor position, and the machine position with a very high resolution. They are used for the positioning of dynamic applications and do not require homing.

| **Feedback type** | | | **SinCos absolute value encoder** |
|---|---|---|---|
| **Feedback** | | | **AM1024-8V-H** |
| Design | | | Mounting |
| Encoder type | | | Multi-turn |
| Pulses | | | 1024 |
| Output signals | | | SinCos 1 Vss |
| Interfaces | | | Hiperface |
| Absolute revolution | | | 4096 |
| Min. accuracy | | ' | -0.8 |
| Max. accuracy | | ' | 0.8 |
| Min. DC input voltage | $V_{in,min}$ | V | 7 |
| Max. DC input voltage | $V_{in,max}$ | V | 12 |
| Max. current consumption | $I_{max}$ | A | 0.08 |
| Limit frequency | $f_{max}$ | kHz | 200 |

## Blower

The motor is optionally available with a blower for operation with the rated torque and low motor speeds or a higher switching frequency.

The blower cools the motor independent of the motor speed.

If a blower is used, the torque does not have to be reduced if operated below 20 Hz.

A higher powered motor with simultaneous derating can be used in many cases instead of a blower.

Torque reduction at low motor frequencies ▸ General information 25

## Standard version

### Rated data50Hz, 230/400V

| Motor series | | | MFXMA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Size | | | 063 | | | 071 | | | 080 | | |
| Number of phases | | | 1 | 3 | 3 | 1 | 3 | 3 | 1 | 3 | 3 |
| Wiring | | | - | Delta | Star | - | Delta | Star | - | Delta | Star |
| Rated voltage | $V_{rated}$ | V | 230 | 230 | 400 | 230 | 230 | 400 | 230 | 230 | 400 |
| Rated power | $P_{rated}$ | kW | 0.034 | 0.015 | 0.015 | 0.035 | 0.016 | 0.016 | 0.036 | 0.02 | 0.02 |
| Rated current | $I_{rated}$ | A | 0.15 | 0.083 | 0.05 | 0.15 | 0.083 | 0.05 | 0.16 | 0.088 | 0.05 |

| Motor series | | | MFXMA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Size | | | 090 | | | 100 | | | 112 | | |
| Number of phases | | | 1 | 3 | 3 | 1 | 3 | 3 | 1 | 3 | 3 |
| Wiring | | | - | Delta | Star | - | Delta | Star | - | Delta | Star |
| Rated voltage | $V_{rated}$ | V | 230 | 230 | 400 | 230 | 230 | 400 | 230 | 230 | 400 |
| Rated power | $P_{rated}$ | kW | 0.038 | 0.036 | 0.036 | 0.044 | 0.043 | 0.043 | 0.05 | 0.054 | 0.054 |
| Rated current | $I_{rated}$ | A | 0.19 | 0.19 | 0.11 | 0.2 | 0.19 | 0.11 | 0.23 | 0.2 | 0.11 |

| Motor series | | | MFXMA | | |
|---|---|---|---|---|---|
| Size | | | 132 | | |
| Number of phases | | | 1 | 3 | 3 |
| Wiring | | | - | Delta | Star |
| Rated voltage | $V_{rated}$ | V | 230 | 230 | 400 |
| Rated power | $P_{rated}$ | kW | 0.095 | 0.091 | 0.091 |
| Rated current | $I_{rated}$ | A | 0.42 | 0.33 | 0.19 |

### Rated data60Hz, 265/460V

| Motor series | | | MFXMA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Size | | | 063 | | | 071 | | | 080 | | |
| Number of phases | | | 1 | 3 | 3 | 1 | 3 | 3 | 1 | 3 | 3 |
| Wiring | | | - | Delta | Star | - | Delta | Star | - | Delta | Star |
| Rated voltage | $V_{rated}$ | V | 265 | 265 | 460 | 265 | 265 | 460 | 265 | 265 | 460 |
| Rated power | $P_{rated}$ | kW | 0.05 | 0.018 | 0.018 | 0.052 | 0.02 | 0.02 | 0.055 | 0.028 | 0.028 |
| Rated current | $I_{rated}$ | A | 0.19 | 0.09 | 0.05 | 0.2 | 0.09 | 0.05 | 0.21 | 0.09 | 0.05 |

| Motor series | | | MFXMA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Size | | | 090 | | | 100 | | | 112 | | |
| Number of phases | | | 1 | 3 | 3 | 1 | 3 | 3 | 1 | 3 | 3 |
| Wiring | | | - | Delta | Star | - | Delta | Star | - | Delta | Star |
| Rated voltage | $V_{rated}$ | V | 265 | 265 | 460 | 265 | 265 | 460 | 265 | 265 | 460 |
| Rated power | $P_{rated}$ | kW | 0.058 | 0.047 | 0.047 | 0.069 | 0.059 | 0.059 | 0.085 | 0.074 | 0.074 |
| Rated current | $I_{rated}$ | A | 0.22 | 0.19 | 0.11 | 0.26 | 0.19 | 0.11 | 0.32 | 0.21 | 0.12 |

| Motor series | | | MFXMA | | |
|---|---|---|---|---|---|
| Size | | | 132 | | |
| Number of phases | | | 1 | 3 | 3 |
| Wiring | | | - | Delta | Star |
| Rated voltage | $V_{rated}$ | V | 265 | 265 | 460 |
| Rated power | $P_{rated}$ | kW | 0.156 | 0.134 | 0.134 |
| Rated current | $I_{rated}$ | A | 0.59 | 0.36 | 0.21 |

# Temperature monitoring

## Thermal contacts TC0

The TCO thermal contact (thermal break contact) is a bimetallic switch. The thermal contact monitors the motor winding temperature; e.g., at excessively high temperatures, it switches the upstream motor relay. The motor is disconnected from the line voltage and coasts down via the relay.

| **Functional principle** | | | **Normally-closed contact** |
|---|---|---|---|
| Operating temperature | | °C | 150 |
| Min. switching temperature | | °C | -5 |
| Max. switching temperature | | °C | 5 |
| Min. reset temperature | | °C | 90 |
| Max. reset temperature | | °C | 135 |
| Max. AC switching current | | A | 2.5 |
| Max. AC switching voltage | | V | 250 |
| Max. DC switching current | | A | 40 |
| Max. DC switching voltage | | V | 12 |

## PTC thermistor

The PTC thermistor is operated in conjunction with a tripping unit. If the motor becomes too hot, the motor can be switched off with the aid of a contactor. In contrast to the thermal contact, a quick restart is possible.

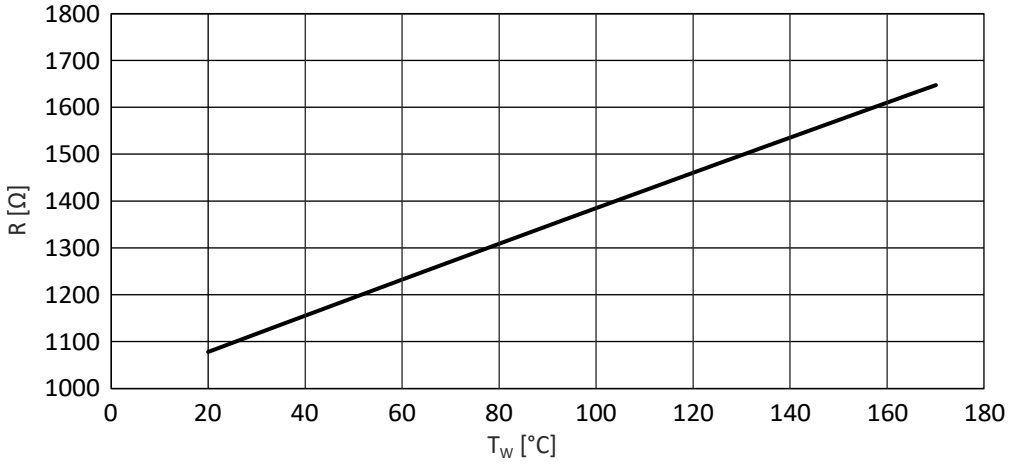
| **Functional principle** | | | **Sprunghafte Widerstandsänderung** |
|---|---|---|---|
| Operating temperature | | °C | 155 |
| Min. switching temperature | | °C | -5 |
| Max. switching temperature | | °C | 5 |
| Temperature | | °C | -20 |
| Rated resistance | | | |
| 155 °C | | | 1330 |
| 140 °C | | | 550 |
| -20 °C | | | 100 |

## Thermal detectors PT1000

The thermal detector used continuously monitors the motor temperature. The temperature information is transferred to the inverter using the system cable of the feedback system. **This is not a full motor protection!**

This makes it possible to determine the motor temperature in the permissible operating range with great accuracy.

When supplying the thermal sensors with a measurement current of 1 mA, the connection between the temperature and the resistance measured applies.



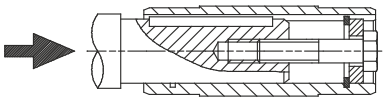

| | |
|---|---|
| R | Resistance |
| $T_W$ | Winding temperature |

# Accessories

## Hollow shaft mounting kit

A mounting kit is available for easy installation of the solid shaft.

**Scope of supply**



- Hexagon head screw
- Circlip
- Washer

| Mounting set | | Solid shaft | Hollow shaft diameter g500- | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Material number | Thread | B45 | | B110 | | B240 | | B450 | | B600 | | B820 | | B1500 | | B2700 | | B4300 | |
| | | | 18 | 20 | 20 | 25 | 30 | 35 | 35 | 40 | 40 | 45 | 40 | 45 | 50 | 55 | 60 | 70 | 70 | 80 |
| Mounting kit B18 | 415783 | M6 | ● | | | | | | | | | | | | | | | | | |
| Mounting kit B20 | 407309 | M6 | | ● | ● | | | | | | | | | | | | | | | |
| Mounting kit B25 | 395903 | M10 | | | | ● | | | | | | | | | | | | | | |
| Mounting kit B30 | 395904 | M10 | | | | | ● | | | | | | | | | | | | | |
| Mounting kit B35 | 395905 | M12 | | | | | | ● | ● | | | | | | | | | | | |
| Mounting kit B40 | 395906 | M16 | | | | | | | | ● | ● | | ● | | | | | | | |
| Mounting kit B45 | 395907 | M16 | | | | | | | | | | ● | | ● | | | | | | |
| Mounting kit B50 | 395908 | M16 | | | | | | | | | | | | | ● | | | | | |
| Mounting kit B55 | 395909 | M20 | | | | | | | | | | | | | | ● | | | | |
| Mounting kit B60 | 395910 | M20 | | | | | | | | | | | | | | | ● | | | |
| Mounting kit B70 | 395911 | M20 | | | | | | | | | | | | | | | | ● | ● | |
| Mounting kit B80 | 395912 | M20 | | | | | | | | | | | | | | | | | | ● |



# Motor data

## Rated data

### Rated data 120 Hz

| Motor | | | MF☐MA☐☐ | | | | |
|---|---|---|---|---|---|---|---|
| | | | 063-32 | 063-42 | 071-32 | 071-42 | 080-32 |
| Rated power | $P_{rated}$ | kW | 0.55 | 0.75 | 1.1 | 1.5 | 2.2 |
| Rated speed | $n_{rated}$ | rpm | 3440 | 3400 | 3490 | 3450 | 3500 |
| Max. speed | $n_{max}$ | rpm | 4500 | 4500 | 4500 | 4500 | 4500 |
| Max. torque | $M_{max}$ | Nm | 6.00 | 8.00 | 12.0 | 16.0 | 24.0 |
| Rated voltage | | | | | | | |
| Delta | $V_{N, \Delta}$ | V | 200 | 210 | 200 | 205 | 200 |
| Star | $V_{N, Y}$ | V | 345 | 370 | 345 | 360 | 345 |
| Rated current | | | | | | | |
| Delta | $I_{N, \Delta}$ | A | 3.20 | 4.00 | 5.50 | 6.80 | 9.10 |
| Star | $I_{N, Y}$ | A | 1.80 | 2.30 | 3.20 | 3.90 | 5.30 |
| Rated torque | $M_{rated}$ | Nm | 1.53 | 2.11 | 3.01 | 4.15 | 6.00 |
| Power factor | cos ϕ | | 0.68 | 0.69 | 0.77 | 0.8 | 0.86 |
| Efficiency | | | | | | | |
| at 75 % $P_{rated}$ | η | | 0.750 | 0.796 | 0.814 | 0.828 | 0.843 |
| at 100 % $P_{rated}$ | η | | 0.750 | 0.796 | 0.814 | 0.828 | 0.843 |
| Moment of inertia | J | kgcm² | 3.70 | 3.70 | 12.8 | 12.8 | 28.0 |
| Weight | m | kg | 4.40 | 4.40 | 6.40 | 6.40 | 11.0 |

| Motor | | | MF☐MA☐☐ | | | | |
|---|---|---|---|---|---|---|---|
| | | | 080-42 | 090-32 | 100-12 | 100-32 | 112-22 |
| Rated power | $P_{rated}$ | kW | 3 | 4 | 5.5 | 7.5 | 11 |
| Rated speed | $n_{rated}$ | rpm | 3480 | 3480 | 3525 | 3515 | 3530 |
| Max. speed | $n_{max}$ | rpm | 4500 | 4500 | 4500 | 4500 | 4500 |
| Max. torque | $M_{max}$ | Nm | 32.0 | 44.0 | 60.0 | 80.0 | 120 |
| Rated voltage | | | | | | | |
| Delta | $V_{N, \Delta}$ | V | 210 | - | - | - | - |
| Star | $V_{N, Y}$ | V | 370 | 370 | 340 | 375 | 370 |
| Rated current | | | | | | | |
| Delta | $I_{N, \Delta}$ | A | 11.4 | - | - | - | - |
| Star | $I_{N, Y}$ | A | 6.60 | 8.50 | 12.9 | 15.9 | 23.5 |
| Rated torque | $M_{rated}$ | Nm | 8.20 | 10.9 | 14.9 | 20.3 | 29.7 |
| Power factor | cos ϕ | | 0.86 | 0.85 | 0.81 | 0.81 | 0.78 |
| Efficiency | | | | | | | |
| at 75 % $P_{rated}$ | η | | 0.855 | 0.870 | 0.879 | 0.889 | 0.898 |
| at 100 % $P_{rated}$ | η | | 0.855 | 0.866 | 0.877 | 0.887 | 0.898 |
| Moment of inertia | J | kgcm² | 28.0 | 32.0 | 61.0 | 61.0 | 107 |
| Weight | m | kg | 11.0 | 18.0 | 26.5 | 26.5 | 38.0 |

# Motor data
Rated data
Rated data 120 Hz

| Motor | | | MF□MA□□ | | |
|---|---|---|---|---|---|
| | | | 132-12 | 132-22 | 132-32 |
| Rated power | $P_{rated}$ | kW | 15 | 18.5 | 22 |
| Rated speed | $n_{rated}$ | rpm | 3560 | 3560 | 3550 |
| Max. speed | $n_{max}$ | rpm | 4500 | 4500 | 4500 |
| Max. torque | $M_{max}$ | Nm | 160 | 200 | 240 |
| Rated voltage | | | | | |
| Delta | $V_{N, \Delta}$ | V | - | - | - |
| Star | $V_{N, Y}$ | V | 370 | 360 | 380 |
| Rated current | | | | | |
| Delta | $I_{N, \Delta}$ | A | - | - | - |
| Star | $I_{N, Y}$ | A | 31.2 | 39.0 | 44.5 |
| Rated torque | $M_{rated}$ | Nm | 40.3 | 49.6 | 59.2 |
| Power factor | cos ϕ | | 0.84 | 0.84 | 0.83 |
| Efficiency | | | | | |
| at 75 % $P_{rated}$ | η | | 0.889 | 0.899 | 0.905 |
| at 100 % $P_{rated}$ | η | | 0.906 | 0.912 | 0.916 |
| Moment of inertia | J | kgcm² | 336 | 336 | 336 |
| Weight | m | kg | 66.0 | 66.0 | 66.0 |

# Environmental notes and recycling

Lenze has been certified to the worldwide environmental management standard for many years (DIN EN ISO 14001). As part of our environmental policy and the associated climate responsibility, please note the following information on hazardous ingredients and the recycling of Lenze products and their packaging:

CE

Lenze products are partly subject to the EU Directive on the restriction of certain hazardous substances in electrical and electronic equipment 2011/65/EU: RoHS Directive [UKCA: S.I. 2012/3032 - The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012] . This is documented accordingly in the EU declaration of conformity and with the CE mark.

The crossed-out wheeled bin symbol is located on the equipment. This information indicates that used electrical and electronic products must not be disposed of with normal household waste.
The EU Directive 2012/19/EU: Directive on waste electrical and electronic equipment (WEEE) [UKCA: S.I. 2013/3113 - The Waste Electrical and Electronic Equipment Regulations 2013] , which has been transposed into national law by the respective EU member states, applies to the disposal of equipment. As a customer, you have the option of disposing of the electrical and electronic equipment that you have purchased from us and that is subject to WEEE via the Lenze branch in your country.
Lenze addresses in Europe: https://www.lenze.com/en-de/company/global-presence

Some Lenze products contain batteries/rechargeable batteries in accordance with EU Directive 2006/66/EC: Battery Directive [UKCA: S.I. 2009/890 - The Waste Batteries and Accumulators Regulations 2009] . Any batteries/rechargeable batteries included are designed to last the life of the product and do not need to be replaced or otherwise removed by the end user.


Lenze products are usually sold with cardboard or plastic packaging. This packaging complies with EU Directive 94/62/EC: Directive on packaging and packaging waste [UKCA: S.I. 1997/648 - The Producer Responsibility Obligations (Packaging Waste) Regulations 1997] . The required disposal route is indicated by material-specific labels with the "recycling triangle". Example: "21 - other cardboard"

REACH

Lenze products are subject to REGULATION (EC) No 1907/2006: REACH Regulation [UKCA: S.I. 2008/2852 - The REACH Enforcement Regulations 2008] . When used as intended, exposure of substances to humans, animals and the environment is excluded.

Lenze products are industrial electrical and electronic products and are disposed of professionally. Both the mechanical and electrical components such as electric motors, gearboxes or inverters contain valuable raw materials that can be recycled and reused. Proper recycling and thus maintaining the highest possible level of recyclability is therefore important and sensible from an economic and ecological point of view.

- Coordinate professional disposal with your waste disposal company.
- Separate mechanical and electrical components, packaging, hazardous waste (e.g. gear oils) and batteries/rechargeable batteries wherever possible.
- Dispose of the separated waste in an environmentally sound and proper manner (no household waste or municipal bulky waste).

| What? | Material | Disposal instructions |
|---|---|---|
| Pallets | Wood | Return to manufacturers, freight forwarders or reusable materials collection system |
| Packaging material | Paper, cardboard, pasteboard, plastics | Collect and dispose of separately |
| Products | | |
| Electronic devices | Metal, plastics, circuit boards, heatsinks | As electronic waste give to professional disposer for recycling |
| Gearbox | Oil | Drain oil and dispose of separately |
| | Casting, steel, aluminium | Dispose as metal scrap |
| Motors | Casting, copper, rotors, magnets, potting compound | As engine scrap give to professional disposer for recycling |
| Dry-cell batteries/rechargeable batteries | | As used batteries give to professional disposer for recycling |

Further information on Lenze's environmental and climate responsibility and on the topic of energy efficiency can be found on the Internet:

www.Lenze.com → search word: "Sustainability"

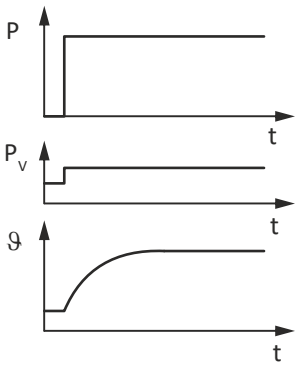
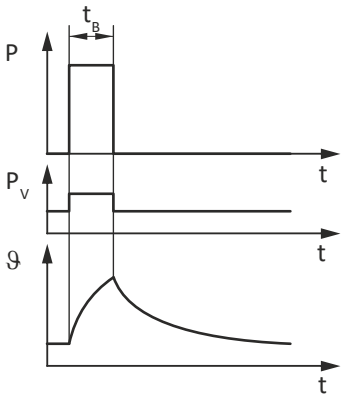
# Appendix

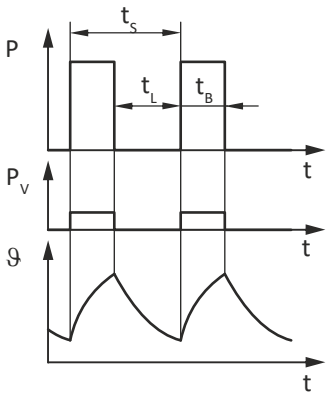
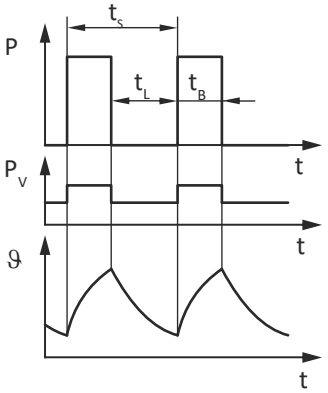
## Good to know

### Operating modes of the motor

Operating modes S1 ... S10 as specified by EN 60034-1 describe the basic stress of an electrical machine.

#### The most important operating modes

| Continuous operation S1 | Short-time operation S2 |
|---|---|
|  |  |
| Operation with a constant load until the motor reaches the thermal steady state. The motor may be actuated continuously with its rated power. | Operation with constant load; however, the motor does not reach the thermal steady state. During the following standstill, the motor winding cools down to the ambient temperature again. The increase in power depends on the load duration. |

| Intermittent operation S3 | Non-intermittent periodic operation S6 |
|---|---|
|  |  |
| Sequence of identical duty cycles comprising operation with a constant load and subsequent standstill. Start-up and braking processes do not have an impact on the winding temperature. The steady-state is not reached. The guide values apply to a cycle duration of 10 minutes. The power increase depends on the cycle duration and on the load period/ downtime ratio. | Sequence of identical duty cycles comprising operation with a constant load and subsequent no-load operation. The motor cools down during the no-load phase. Start-up and braking processes do not have an impact on the winding temperature. The steady-state is not reached. The guide values apply to a cycle duration of 10 minutes. The power increase depends on the cycle duration and on the load period/idle time ratio. |

| | | | |
|---|---|---|---|
| P | Power | $P_V$ | Power loss |
| t | Time | $t_B$ | Load period |
| $t_L$ | Idle time | $t_S$ | Cycle duration |
| ϑ | Temperature | | |



## Enclosures

The protection class indicates the suitability of a product for specific ambient conditions with regard to humidity as well as the protection against contact and the ingress of foreign particles. The protection classes are classified in the EN 60034-5/ EN IEC 60529.

The first code number after the code letters IP indicates the protection against the ingress of foreign particles and dust. The second code number refers to the protection against the ingress of humidity.

| Code number 1 | Degree of protection | Code number 2 | Degree of protection |
|---|---|---|---|
| 0 | No protection | 0 | No protection |
| 1 | Protection against the ingress of foreign particles d > 50 mm. No protection in case of deliberate access. | 1 | Protection against vertically dripping water (dripping water). |
| 2 | Protection against medium-sized foreign particles, d > 12 mm, keeping away fingers or the like. | 2 | Protection against diagonally falling water (dripping water), 15 ° compared to normal service position. |
| 3 | Protection against small foreign particles d > 2.5 mm. Keeping away tools, wires or the like. | 3 | Protection against spraying water, up to 60 ° from vertical. |
| 4 | Protection against granular foreign particles, d > 1 mm, keeping away tools, wire or the like. | 4 | Protection against spraying water from all directions. |
| 5 | Protection against dust deposits (dust-protected), complete protection against contact. | 5 | Protection against water jets from all directions. |
| 6 | Protection against the ingress of dust (dust-proof), complete protection against contact. | 6 | Protection against choppy seas or heavy water jets (flood protection). |

**Lenze SE**
Postfach 101352 · 31763 Hameln
Hans-Lenze-Straße 1 · 31855 Aerzen
GERMANY

Hannover HRB 204803
Phone +49 5154 82-0
Fax +49 5154 82-2800
sales.de@lenze.com
www.lenze.com