

g500-H + MF helical geared motors, inverter-optimized



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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. Example: 1 234.56
Warnings		
UL Warnings	UL	Are used in English and French.
UR warnings	UR	
Text		
Engineering Tools	" "	Software Example: "EASY Starter", "PLC Designer"
Icons		
Page reference		Reference to another page with additional information. Example:  16 = see page 16
Documentation reference		Reference to other documentation with additional information. 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 helical 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 robust helical 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 an output torque of up to 3000 Nm and a ratio of up to $i = 3529$.

Versions

- Fine-scaling of size/torque provides for an optimum machine adaptation
- Market standard shaft dimensions and standardized flanges for easy machine integration
- High efficiency

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-H600 gearbox with MFEMAXX090-32 motor



Identification of the products

Gearbox product name

Gearbox type	Product series		Type	Rated torque Nm	Gearbox
Helical gearbox	g500	-	H	45	g500-H45
				100	g500-H100
				140	g500-H140
				210	g500-H210
				320	g500-H320
				450	g500-H450
				600	g500-H600
				850	g500-H850
				1500	g500-H1500
				3000	g500-H3000

Three-phase AC motor product name

Meaning	Variant	Product name							
Product family		MF							
Wildcard	Cooling		□						
Internal code				MA					
Wildcard	Brake Feedback				□□				
Size						063 080 090 100 112 132			
Overall length								1 ... 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.

Ventilation

(depending on the mounting position)

Oil filler plug

(depending on the mounting position)

Oil control plug

(depending on the mounting position)

Output shaft

Output flange

Housing type

Temperature monitoring

Cooling

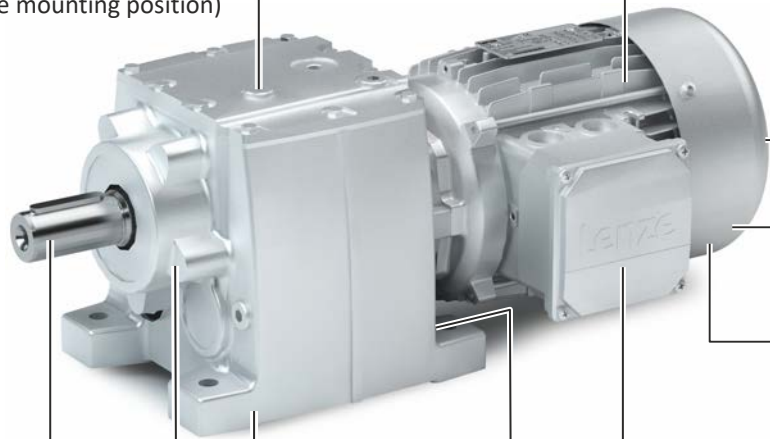
Feedback

Brake

Motor connection

Oil drain plug

(depending on the mounting position)





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

Gearboxes		g500-H45	g500-H100	g500-H140	g500-H210	g500-H320	g500-H450
Min. motor assignment		MF□MA□□063	MF□MA□□063	MF□MA□□063	MF□MA□□063	MF□MA□□063	MF□MA□□063
Max. motor assignment		MF□MA□□063	MF□MA□□090	MF□MA□□090	MF□MA□□100	MF□MA□□112	MF□MA□□132
Technical data							
Max. output torque	Nm	45	100	140	210	320	450
Min. drive power	kW	0.55	0.55	0.55	0.55	0.55	0.55
Max. drive power	kW	0.75	4.0	4.0	7.5	11	22
Mounting position							
Standard		M1/M2/M3/M4/M5/M6 (ABCDEF)					
Combined		M1-M6 (A-F)	M1/5/6 (AEF)				
Color		Unpainted Primed/RAL colors					
Surface and corrosion protection		Without OKS Different types of OKS					
Output shaft							
Solid shaft with featherkey	mm	14 x 28 20 x 40	20 x 40	25 x 50	25 x 50	30 x 60	30 x 60 35 x 70
Solid shaft without keyway	mm	20 x 40	20 x 40	25 x 50	25 x 50	30 x 60	35 x 70
Shaft material		Steel Stainless steel					
Output shaft bearing		Standard Reinforced					
Gearbox design		With foot (VBR)					
			With foot and centering (VAR)	With foot and centering (VAR)	With foot and centering (VAR)	With foot and centering (VAR)	With foot and centering (VAR)
			With foot and output flange (VAK)	With foot and output flange (VAK)	With foot and output flange (VAK)	With foot and output flange (VAK)	With foot and output flange (VAK)
		With centering (VCR)					
		With output flange (VCK)					
			With output flange (VCP)	With output flange (VCP)	With output flange (VCP)	With output flange (VCP)	With output flange (VCP)
Output flange	mm	120/140/160	120/140/160	120/140/160	120/140 160/200	160/200	160/200/250
Ventilation		Without				Vent valve	
Cooling		Integral fan Blower					
Product extensions							
Connection method		Y/Δ					
Connection type		Terminal box ICN connector HAN connector M12 connector					
Spring-applied brake		Without With					
Feedback		Without Resolver Incremental encoder Absolute value encoder					
Temperature monitoring		TKO thermal contact PT1000 temperature sensor PTC thermistor					



Geared motors 600 Nm to 3000 Nm

Gearboxes		g500-H600	g500-H850	g500-H1500	g500-H3000
Min. motor assignment		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
Technical data					
Max. output torque	Nm	600	850	1500	3000
Min. drive power	kW	0.55	0.55	0.55	0.55
Max. drive power	kW	22	22	22	22
Mounting position					
Standard		M1/M2/M3/M4/M5/M6 (ABCDEF)			
Combined					
Color		Primed Painted in RAL colors			
Surface and corrosion protection		OKS-S Different types of OKS			
Output shaft					
Solid shaft with featherkey	mm	35 x 70 40 x 80	40 x 80	50 x 100	60 x 120
Solid shaft without keyway	mm	35 x 70	40 x 80	50 x 100	60 x 120
Shaft material		Steel Stainless steel			
Output shaft bearing		Standard Reinforced			
Gearbox design					
		With foot (VBR) With foot and centering (VAR) With foot and output flange (VAK) With centering (VCR) With output flange (VCK)			
Output flange	mm	200/250	250/300	250/300/350	300/350/450
Ventilation					
		Vent valve Oil compensation reservoir			
Cooling					
		Integral fan Blower			
Product extensions					
Connection method		Y/Δ			
Connection type		Terminal box ICN connector HAN connector M12 connector			
Spring-applied brake		Without With			
Feedback		Without Resolver Incremental encoder Absolute value encoder			
Temperature monitoring		TKO thermal contact PT1000 temperature sensor PTC thermistor			



Designs

Gearbox designs

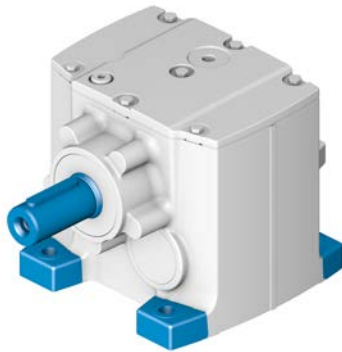


Observe the available gearbox designs!

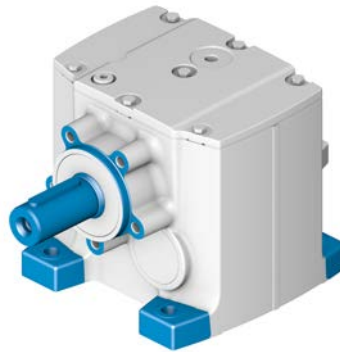
► [The modular system](#) 12

The VCP design (reinforced flange) is suitable for absorbing high radial and axial forces 57 .

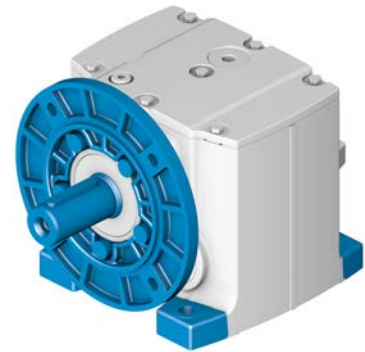
Solid shaft, with foot



Without centring (VBR)

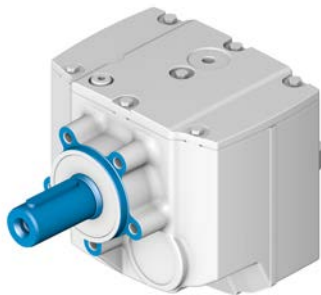


With centring (VAR)



Flange with through holes (VAK)

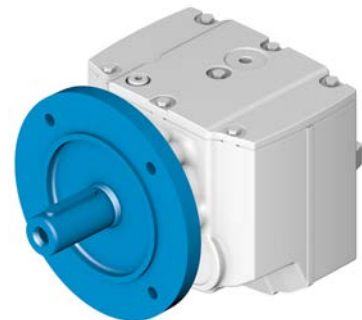
Solid shaft, without foot



With centering (VCR)



Flange with through holes (VCK)

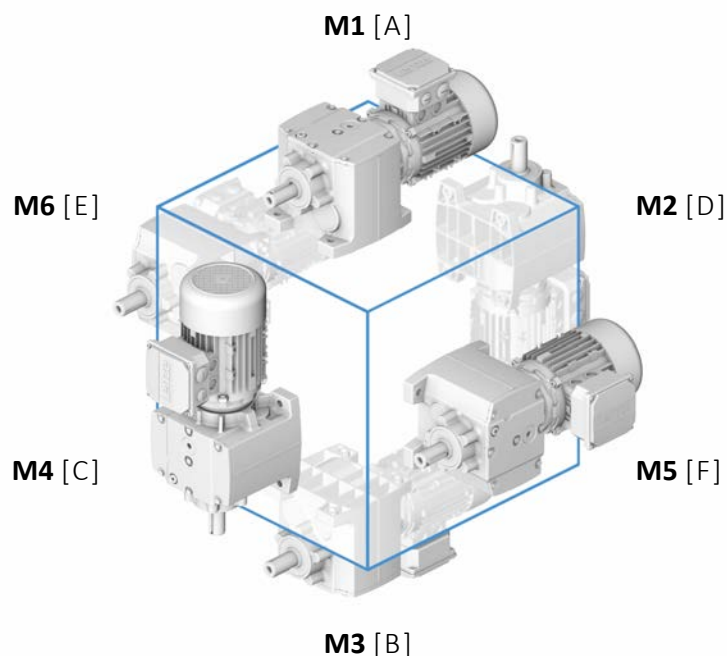


Reinforced flange with through holes (VCP)



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.

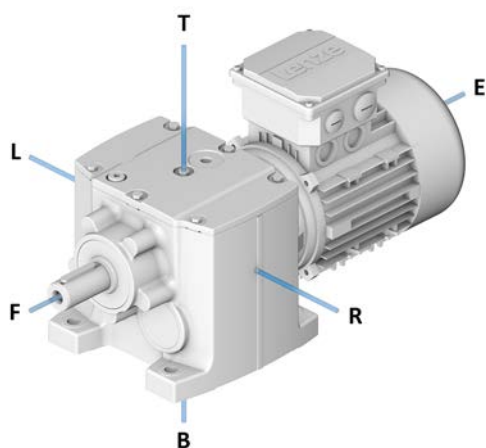


Defined positions on the geared motor

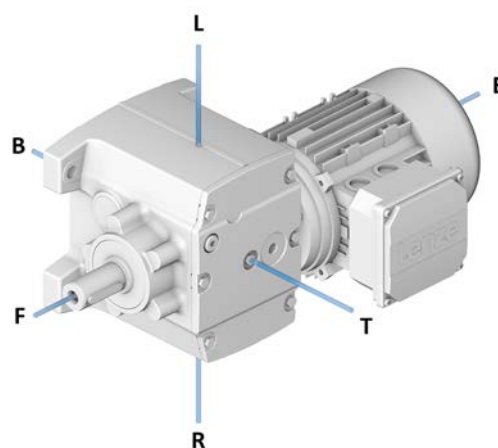
All of the defined positions refer to the areas on the geared motor in mounting position **M1 (A)**.

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 (F)

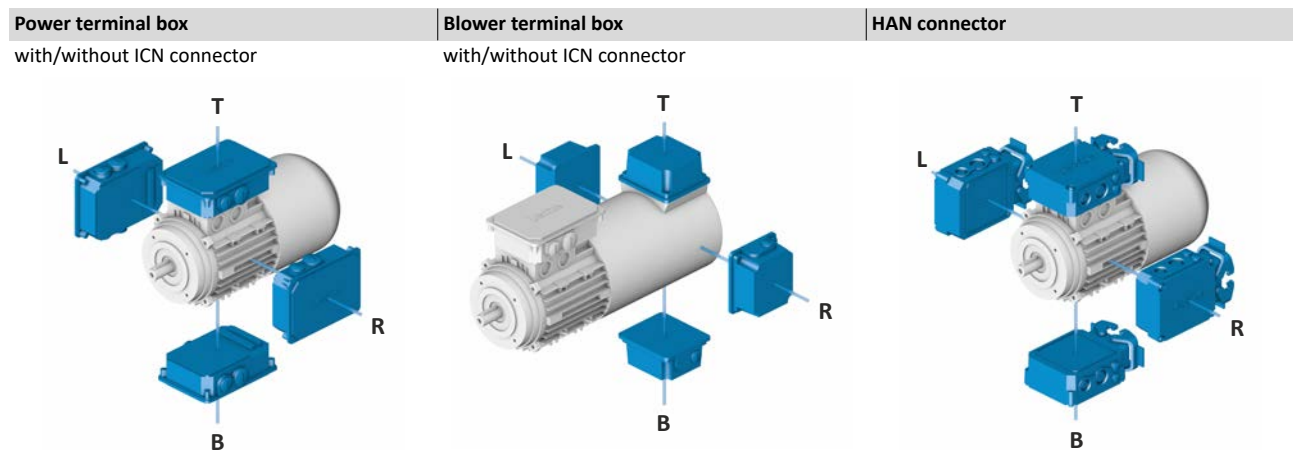


Product information

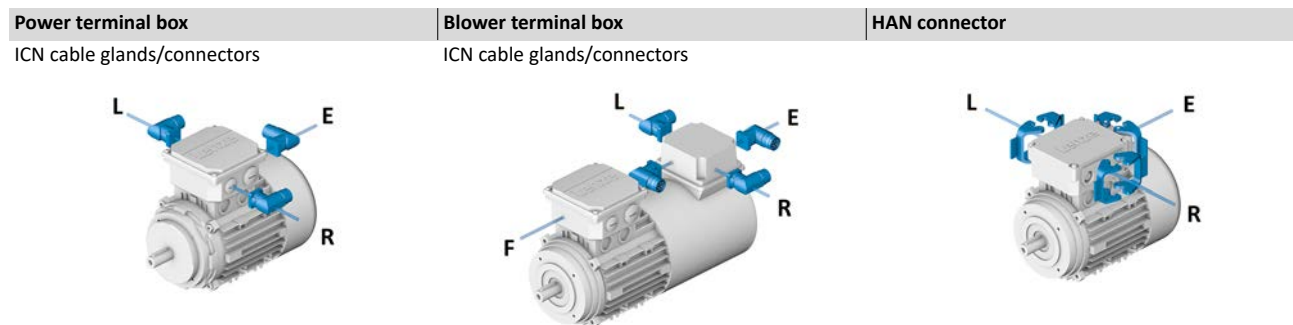
The modular system
Mounting positions



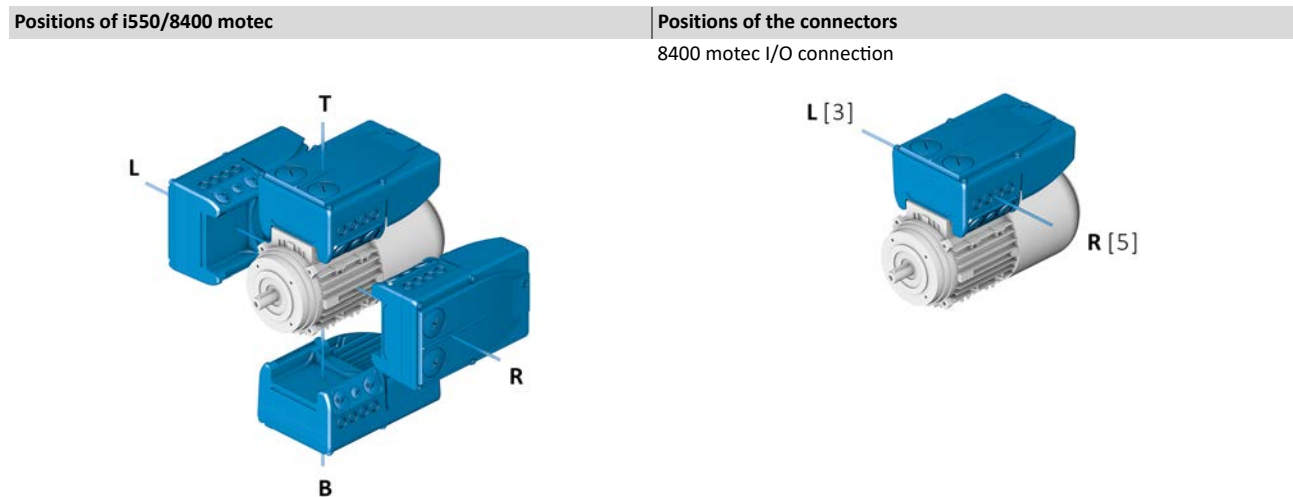
Positions of the terminal boxes/connectors



Positions of the connections

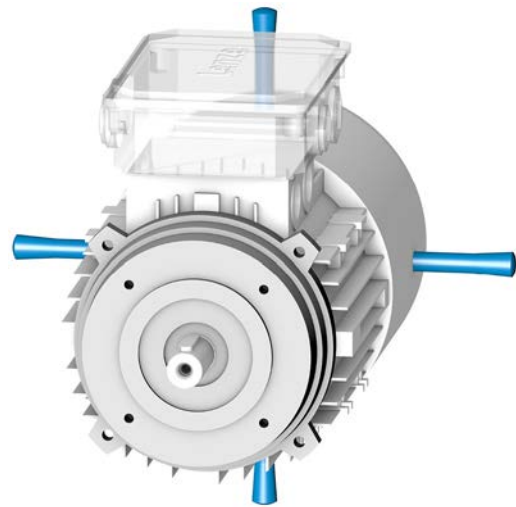
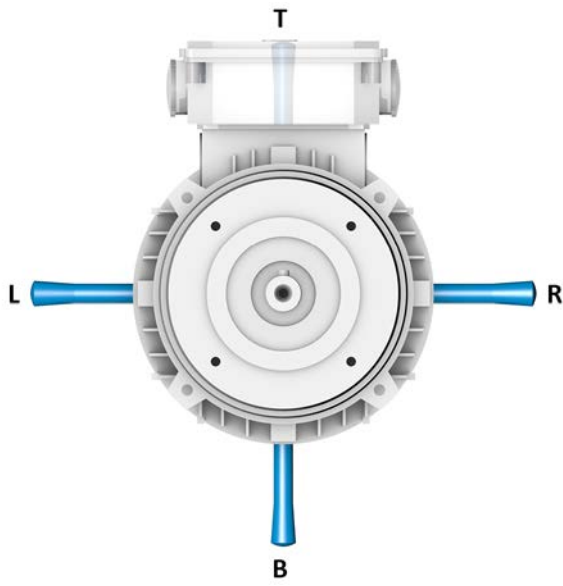


Positions of the i550/8400 motec frequency inverters





Position of the manual release lever





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 aggressive 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 $> 2 \text{ g}$ (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.

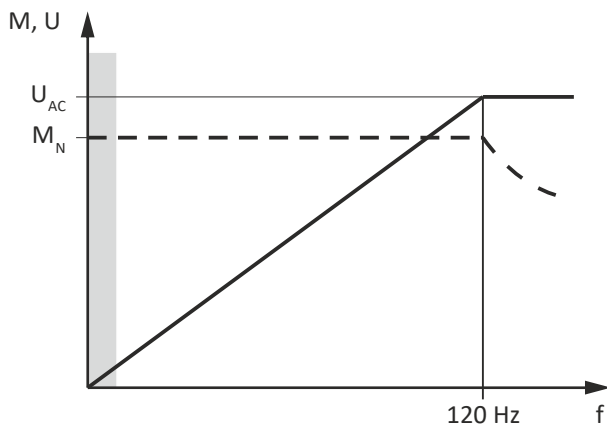


Information on project planning

General information

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.



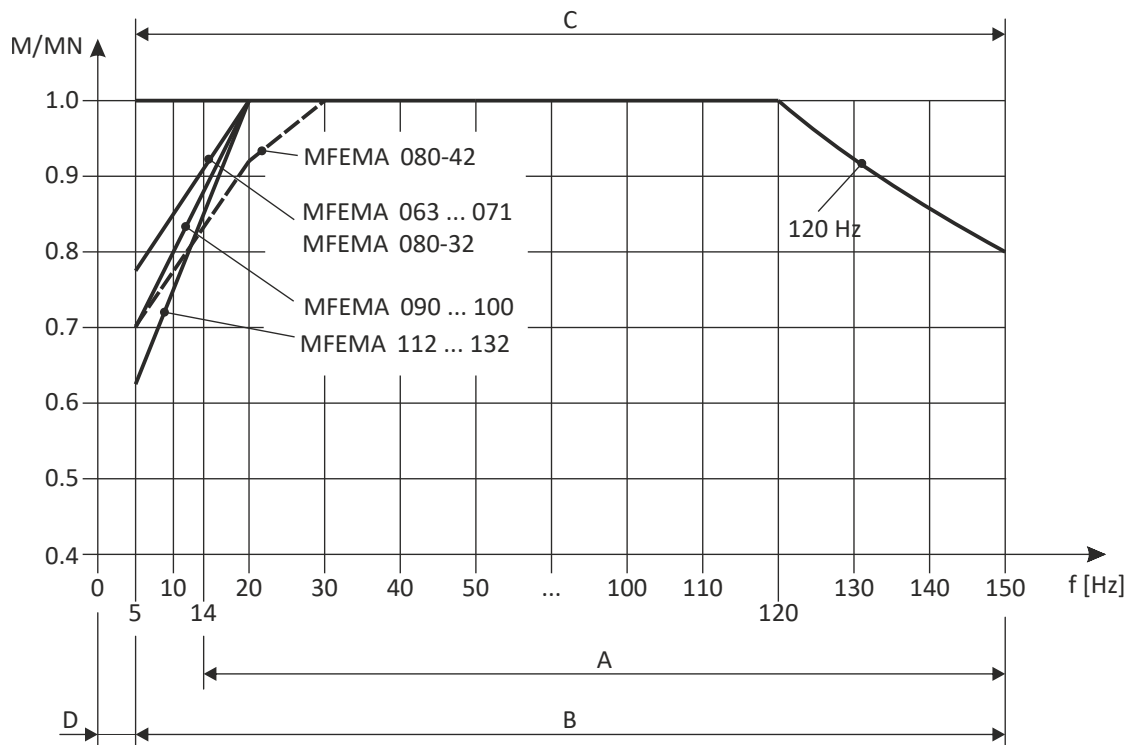
Torque reduction at low motor frequencies

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-H850 ... H3000		≤ 10	

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



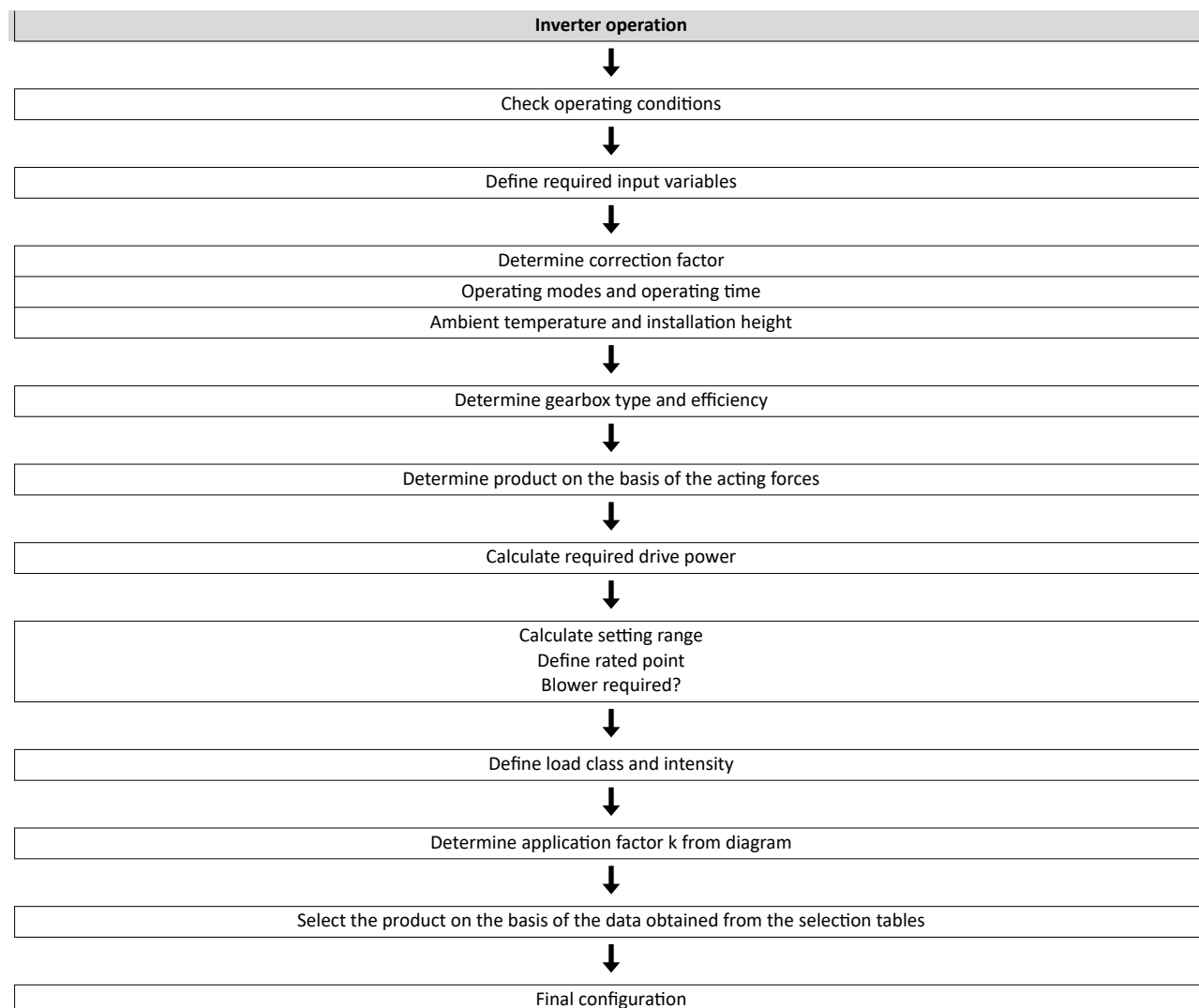
Drive dimensioning

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



Check operating conditions

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

► Standards and operating conditions [45](#)

► Surface and corrosion protection [31](#)



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 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 [179](#)

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 [62](#)



Gearbox efficiency

Gearboxes	Gearbox efficiency	
	η_{c1}	
g500-H		
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 < 17 teeth: 1.15	≥ 20 teeth: 1.0 < 20 teeth: 1.25 < 13 teeth: 1.4	With belt tightener: 2.0 – 2.5 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](#) 57

Calculate drive power

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

k_L Correction factor - operating mode

k_{TU} Correction factor - ambient temperature

k_H Correction factor - site altitude

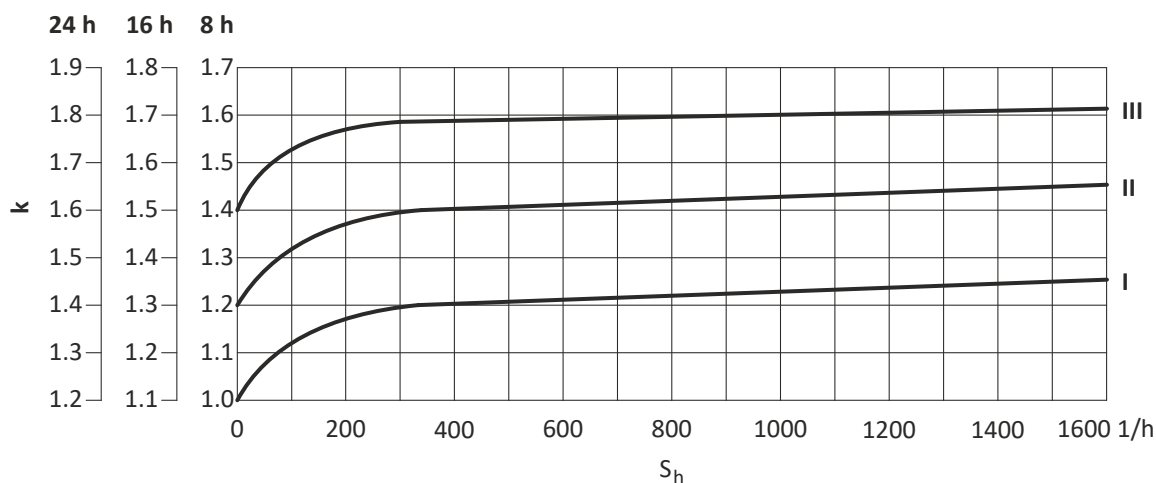
η_g Gearbox efficiency

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](#) 62

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 ranges ≤ 6 (20 ... 120 Hz)
Forced ventilated			
Self-ventilated (reduced output torque)	$n_{22} \approx n_{L,min}$	rpm	Setting ranges ≤ 24 (5 ... 120 Hz)
Load factor	$c \geq k$		

Order information	Example
Geared motor	
Gearboxes	g500-H100
Motor	MF□MA□□063-32
Gearbox ratio i	19.486
Number of stages	2



Final configuration

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

More information about the final configuration:

► [The modular system](#) 12

► [Product extensions](#) 131



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 g500-S130 ... S660 g500-B45 ... B450	g500-H600 ... H1500 g500-S950 ... S4500 g500-B600 ... B1500
Without OKS (unpainted)	- Indoor installation, no special corrosion protection necessary - Painting by customer	Default	-
OKS-G (primed)	Dependent on subsequent top coat applied	Optionally	Optionally
OKS-S (small)	- Standard applications - Indoor installation in heated buildings - Air humidity up to 90 %		Default
OKS-M (medium)	- Indoor installation in unheated buildings - Covered, protected outdoor installation - Air humidity up to 95 %		Optionally
OKS-L (large)	- Outdoor installation - Chemical industrial plants - Food industry - 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 2K PUR priming coat	-	80 ... 120 µm
OKS-S (small)	Comparable to C1	- Dip priming of the gray cast iron parts 2K-PUR top coat	- Standard: RAL 7012 - Optional: According to RAL Classic possible	80 ... 120 µm
OKS-M (medium)	Comparable to C2	Dip priming of the gray cast iron parts		110 ... 160 µm
OKS-L (large)	Comparable to C3	2K PUR priming coat 2K-PUR top coat		140 ... 200 µm



Lubricants

Maße LB und Δ L ▶ [Basic dimensions](#) 90

The following gearboxes are lubricated for life:

- g500-H45
- g500-H100
- g500-H140

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 (F)	M6 (E)	M1-M6 (A-F)	M1, M5, M6 (AEF)
Gearbox									
g500-H45	I	0.2	0.2	0.2	0.2	0.2	0.2	0.2	-
g500-H100	I	0.5	0.7	0.8	0.7	0.5	0.7	-	0.7
g500-H140	I	0.5	0.8	0.9	0.7	0.5	0.8	-	0.8
g500-H210	I	0.8	1.1	1.2	1.3	0.9	1.2	-	1.2
g500-H320	I	0.8	1.2	1.3	1.3	1.0	1.2	-	1.2
g500-H450	I	1.1	1.6	1.7	1.8	1.4	1.6	-	1.6
g500-H600	I	1.7	2.6	2.4	3.0	1.9	2.3	-	-
g500-H850	I	2.3	3.5	3.0	4.0	2.5	3.2	-	-
g500-H1500	I	4.6	7.0	6.0	7.7	5.0	6.0	-	-
g500-H3000	I	8.0	12.6	10.0	13.2	9.5	9.8	-	-
Pre-stage	I	0.4							

▶ [Gearbox with pre-stage](#) 125



Ventilation



No ventilation is required for the gearboxes g500-H45 ...H210.

The gearbox g500-H210 can optionally be fitted with ventilation units.

From g500-H320 onwards, the gearboxes are supplied with ventilation units as standard.

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

- g500-H45 in mounting position M1-M6 (A-F)
- g500-H100 ... H450 in mounting position M1/5/6 (AEF)



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-H210

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

Ventilation

Change oil

Fill oil

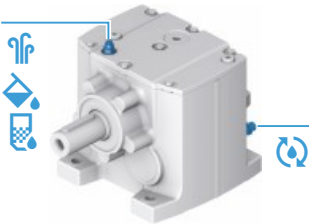
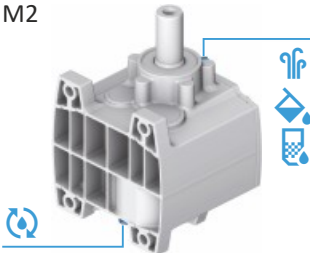
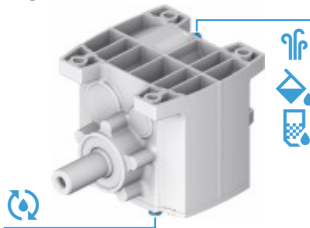
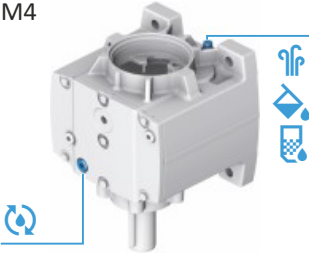
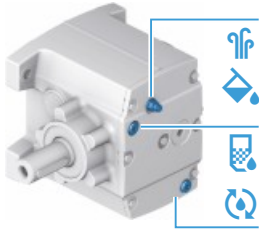
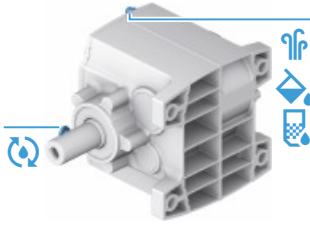
Oil level



g500-H320

Mounting position			
M1 (A)	M2 (D)	M3 (B)	
M1	M2	M3	
M4 (C)	M5 (F)	M6 (E)	
M4	M5	M6	
Ventilation	Change oil	Fill oil	Oil level

g500-H450

Mounting position			
M1 (A)	M2 (D)	M3 (B)	
M1 	M2 	M3 	
M4 (C)	M5 (F)	M6 (E)	
M4 	M5 	M6 	
 Ventilation	 Change oil	 Fill oil	 Oil level



g500-H600

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

🌀 Ventilation

🔄 Change oil

⬇️ Fill oil

📏 Oil level

g500-H850

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

🌀 Ventilation

🔄 Change oil

⬇️ Fill oil

📏 Oil level



g500-H1500

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

Ventilation

Change oil

Fill oil

Oil level

g500-H3000

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

Ventilation

Change oil

Fill oil

Oil level



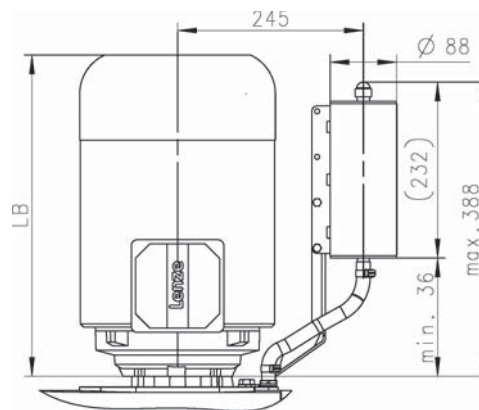
Gearbox with oil compensation reservoir for mounting position M4 (C)

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-H1500		g500-H3000	
Gearbox ratio	Min. input speed	Gearbox ratio	Min. input speed
	rpm		rpm
3.743	2000	4.496	2000
4.758	2000	5.902	2000
5.400	2000	6.344	2000
6.245	2000	6.968	2000
6.864	2000	8.327	2000
7.592	2000	9.146	2000
9.010	2000	10.005	2000
10.267	2000	11.619	2000
11.356	2000	12.762	2000
12.362	3000	14.233	2000
13.673	3000	15.633	2000
15.156	3000	18.752	3000
16.763	3000	20.596	3000
20.533	3000	23.044	3000
22.711	3000	25.311	3000
24.933	3000	29.822	3000
27.578	3000	32.756	3000
32.267	4000	36.193	4000
35.689	4000	39.753	4000
39.160	4000	45.750	4000
43.313	4000	50.250	4000
49.500	4000		
54.750	4000		



Mechanical installation

Important notes

- Install the product according to the information in the chapter "Standards and operating conditions".
 - ▶ [Standards and operating conditions](#)  45
- 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

Geared motor		
	Eye bolt on the shaft	Eye bolt on the housing
G50AH045Mxxxxxx	M5 ... M6	-
G50BH110Mxxxxxx	M6	-
G50BH114Mxxxxxx	M10	-
G50BH121Mxxxxxx	-	M8
G50BH132Mxxxxxx	-	M10
G50BH145Mxxxxxx	-	M12
G50BH160Mxxxxxx	-	M12
G50BH185Mxxxxxx	-	M16
G50BH215Mxxxxxx	-	M16
G50BH230Mxxxxxx	-	M20
G50BH250Mxxxxxx	-	M20
G50BH280Mxxxxxx	-	M24
G50BH314Mxxxxxx	-	M24



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 mm² with Cu or 16 mm² 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 $U_{pk} = 1560 \text{ V}$ at the motor terminals must not be exceeded.

Here, the minimum pulse rise time must be $t_r = 0.1 \text{ } \mu\text{s}$.

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 $\leq$ 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 helical geared motors \(Lenze.com\)](https://www.lenze.com/g500+MFhelicalgearedmotors)

Europe					
Country	Conformity/ approval	Law/standard	Description	Special feature	Product representation
European Union	CE				CE mark
		2006/42/EC	Machinery Directive	Only for safety-relevant components	
		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

Technical data

Standards and operating conditions
Protection of persons and device protection



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-H45, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
14.8	2.597	896	345	41
18.6	3.413	256	75	39
21.0	4.368	1376	315	38
29.0	5.965	686	115	28
32.0	7.840	196	25	27
35.0	10.033	301	30	26
38.0	12.833	77	6	26
41.0	16.660	833	50	25
44.0	21.350	427	20	25
45.0	27.618	1519	55	25
45.0	35.933	539	15	25
45.0	46.550	931	20	25
45.0	59.413	4753	80	25

g500-H100, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
49.0	2.108	120	253	30
39.6	3.354	161	48	29
54.4	4.600	23	5	27
65.0	5.887	989	168	27
35.1	6.440	161	25	27
41.5	8.214	115	14	27
91.5	10.063	161	16	27
61.8	11.360	284	25	22
73.2	14.490	710	49	22
100	17.750	71	4	22
95.5	22.314	781	35	22
100	28.738	1207	42	21
100	36.422	5609	154	21
100	45.643	639	14	21
79.9	60.133	5893	98	21



g500-H100, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
100	59.505	6248	105	22
100	83.307	6248	75	22
100	106.259	15620	147	22
100	130.167	781	6	22
100	163.638	17182	105	21
100	198.597	69509	350	21
100	255.769	107423	420	21
100	324.156	499201	1540	21
100	406.221	56871	140	21
100	519.188	8307	16	21

g500-H140, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
63.0	2.053	75	154	27
83.0	2.912	125	364	26
38.6	3.267	49	15	25
52.9	4.480	112	25	24
63.3	5.733	86	15	23
34.1	6.272	784	125	23
40.4	8.000	8	1	23
107	9.029	316	35	18
89.1	9.800	49	5	23
128	11.554	3397	294	18
68.8	12.640	316	25	18
81.5	16.122	790	49	18
140	19.750	79	4	18
106	24.829	869	35	18
115	31.976	1343	42	18
127	40.526	6241	154	17
129	50.786	711	14	17
88.9	66.908	6557	98	17



g500-H140, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
140	57.582	12956	225	18
140	73.447	32390	441	18
140	84.732	37367	441	18
140	92.693	6952	75	18
140	118.231	17380	147	18
140	144.833	869	6	18
140	182.076	19118	105	18
140	220.974	77341	350	18
140	284.588	119527	420	18
140	360.681	555449	1540	18
129	451.993	63279	140	18
129	577.688	9243	16	17

g500-H210, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
78.8	3.389	61	18	22
143	4.648	488	105	22
145	6.250	25	4	17
171	8.571	60	7	17
142	12.000	12	1	17
169	15.306	750	49	17
210	18.750	75	4	16
210	24.405	1025	42	16
210	30.357	425	14	16
141	39.286	275	7	16
149	47.679	1335	28	16
147	60.938	975	16	16

g500-H210, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
210	48.571	340	7	16
210	62.160	18275	294	16
210	79.507	23375	294	16
210	103.214	1445	14	16
210	132.270	25925	196	15
210	171.104	13175	77	15
210	222.619	4675	21	15
210	288.393	8075	28	15
210	368.080	41225	112	15



g500-H210, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
210	318.197	100232	315	17
210	407.216	538747	1323	17
210	494.212	4358953	8820	17
210	632.132	1115081	1764	17
210	820.622	1723307	2100	17
210	969.983	285175	294	16
210	1254.762	26350	21	16
210	1522.825	234515	154	16
210	1946.307	171275	88	16
210	2532.292	60775	24	16

g500-H320, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
78.8	3.389	61	18	20
189	4.648	488	105	20
141	6.083	73	12	16
249	8.343	292	35	16
218	10.677	3139	294	15
138	11.680	292	25	15
165	14.898	730	49	15
310	18.250	73	4	15
216	23.754	2993	126	15
228	29.548	1241	42	15
137	38.238	803	21	15
145	46.407	6497	140	14

g500-H320, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
254	47.276	4964	105	15
301	60.502	53363	882	15
320	77.387	68255	882	15
320	100.462	21097	210	15
320	128.743	75701	588	15
320	166.541	38471	231	15
315	216.683	13651	63	15
269	280.702	23579	84	15



g500-H320, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
320	346.692	109208	315	15
320	443.683	586993	1323	15
320	567.502	750805	1323	15
320	736.721	232067	315	15
320	894.111	1877633	2100	15
320	1221.302	76942	63	15
287	1589.005	300322	189	15
287	1928.475	1214939	630	15
287	2464.764	177463	72	15

g500-H450, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
256	3.444	31	9	19
293	4.724	496	105	17
247	6.045	2666	441	17
273	6.613	496	75	17
370	8.800	44	5	13
400	11.262	473	42	13
411	12.320	308	25	13
321	15.714	110	7	13
448	19.250	77	4	13
425	25.056	451	18	13
446	31.167	187	6	13
311	40.333	121	3	12
330	48.950	979	20	12
307	61.875	495	8	12

g500-H450, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
450	49.867	748	15	13
374	69.813	5236	75	13
443	89.048	1870	21	13
450	109.083	1309	12	13
450	137.133	2057	15	13
450	176.611	3179	18	13
450	223.833	1343	6	13
450	280.500	561	2	13
450	369.548	15521	42	13



g500-H450, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
450	365.689	16456	45	14
450	511.964	115192	225	13
450	653.016	41140	63	13
450	799.944	14399	18	13
450	1005.644	45254	45	13
450	1295.148	34969	27	13
450	1641.444	14773	9	13
450	1992.117	119527	60	13
450	2496.450	49929	20	13
450	3190.688	51051	16	13

g500-H600, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
220	2.917	12	35	18
240	3.267	49	15	17
297	4.480	112	25	15
234	5.733	86	15	15
404	6.456	581	90	13
487	8.853	664	75	12
463	11.330	3569	315	12
512	12.395	4648	375	12
322	15.810	332	21	12
600	19.367	581	30	12
428	25.207	3403	135	12
448	31.356	1411	45	12
313	40.578	1826	45	11
332	49.247	7387	150	11
339	62.250	249	4	11

g500-H600, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
600	31.197	49136	1575	13
600	39.925	264106	6615	13
508	43.676	49136	1125	12
600	55.710	24568	441	12
600	68.244	3071	45	12
600	88.826	251822	2835	12
600	110.491	104414	945	12
504	142.988	135124	945	12
534	173.536	273319	1575	12
528	221.794	39923	180	12



g500-H600, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
600	198.970	2014576	10125	13
600	253.789	1007288	3969	13
600	320.294	1080992	3375	12
600	408.538	540496	1323	12
600	500.459	67562	135	12
600	651.391	5540084	8505	12
600	810.267	2297108	2835	12
600	1048.581	2972728	2835	12
600	1272.596	6013018	4725	12
600	1544.469	24325391	15750	12
600	1973.971	3553147	1800	12
600	2522.912	3632993	1440	12

g500-H850, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
306	3.147	1734	551	15
379	4.362	663	152	15
430	5.368	102	19	14
551	5.946	1207	203	13
615	8.241	923	112	12
667	10.143	71	7	12
696	11.360	284	25	12
591	14.490	710	49	11
814	17.750	71	4	11
789	23.103	2911	126	11
801	28.315	4757	168	11
532	37.190	781	21	11
566	45.136	6319	140	11

g500-H850, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
850	29.536	3692	125	12
850	37.799	39689	1050	12
850	41.350	25844	625	12
850	52.743	1846	35	12
850	64.610	6461	100	12
850	84.096	37843	450	12
850	104.607	15691	150	12
850	135.373	10153	75	12
850	164.294	82147	500	12
850	207.675	8307	40	12



g500-H850, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
850	234.319	439348	1875	12
850	294.334	264901	900	12
850	368.019	1150058	3125	12
850	473.807	71071	150	12
850	575.029	575029	1000	12
850	616.701	416273	675	12
850	767.116	172601	225	12
850	992.738	223366	225	12
850	1204.823	903617	750	12
850	1462.217	7311083	5000	12
850	1868.844	7475377	4000	12
850	2362.303	755937	320	12

g500-H1500, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
775	3.743	1647	440	14
924	4.758	2379	500	13
775	6.245	2623	420	13
1217	7.592	949	125	10
1400	11.356	511	45	9
1100	13.673	4307	315	9
1450	16.763	2263	135	9
1500	22.711	1022	45	9
1500	27.578	1241	45	9
1009	35.689	1606	45	9
1073	43.313	6497	150	9
1044	54.750	219	4	9

g500-H1500, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
1500	44.814	16133	360	10
1500	61.774	69496	1125	10
1500	78.794	4964	63	10
1500	96.522	8687	90	10
1500	125.632	50881	405	10
1500	153.976	83147	540	10
1500	202.237	27302	135	10
1500	245.442	110449	450	10
1500	310.250	1241	4	10



g500-H1500, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
1500	225.125	99280	441	10
1500	281.416	2849336	10125	10
1500	350.054	1181432	3375	10
1500	446.497	84388	189	10
1500	572.324	2086121	3645	10
1500	701.446	3409027	4860	10
1500	872.530	1413499	1620	10
1500	921.302	1119382	1215	10
1500	1129.157	914617	810	10
1500	1483.072	600644	405	10
1500	1799.910	1214939	675	10
1500	2184.436	9829961	4500	10
1500	2791.905	10050859	3600	10
1500	3529.094	112931	32	10

g500-H3000, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
1360	4.496	1911	425	12
1610	5.902	301	51	12
1910	6.344	793	125	9
2155	8.327	2623	315	9
1441	11.619	244	21	9
2530	14.233	427	30	8
1955	18.752	5063	270	8
1969	23.044	1037	45	8
1664	29.822	1342	45	8
1770	36.193	5429	150	8
1671	45.750	183	4	8

g500-H3000, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
2830	47.186	44591	945	9
2950	53.770	7259	135	9
3000	64.744	61183	945	9
3000	79.375	32147	405	9
3000	107.541	14518	135	9
3000	130.585	17629	135	9
3000	168.993	22814	135	9
3000	205.096	92293	450	9
3000	259.250	1037	4	9



g500-H3000, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
2650	226.604	61183	270	9
3000	292.511	987224	3375	9
3000	376.393	50813	135	9
3000	457.048	123403	270	9
3000	489.908	595238	1215	9
3000	594.888	722789	1215	9
3000	739.983	299693	405	9
2739	788.632	319396	405	9
3000	957.625	387838	405	9
3000	1239.279	501908	405	9
3000	1504.034	1015223	675	9
3000	1825.350	8214077	4500	9
3000	2332.962	8398663	3600	9
3000	2948.969	94367	32	9



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 .

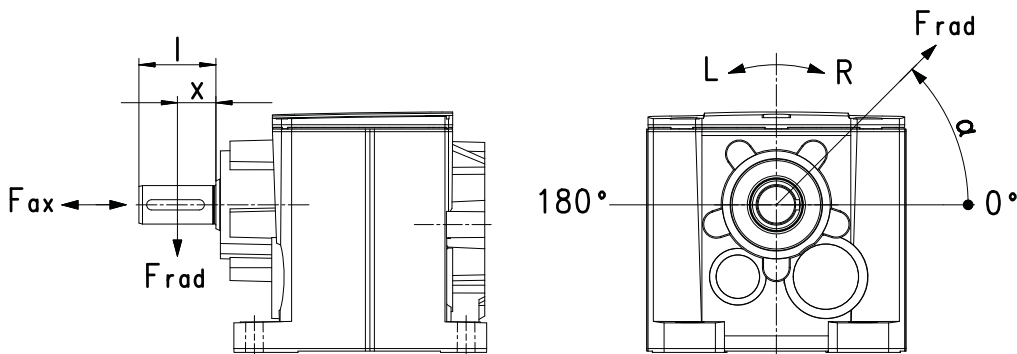
$$F_{\text{rad, perm}} = f_w \times F_{\text{rad, max}}$$

Permissible axial force

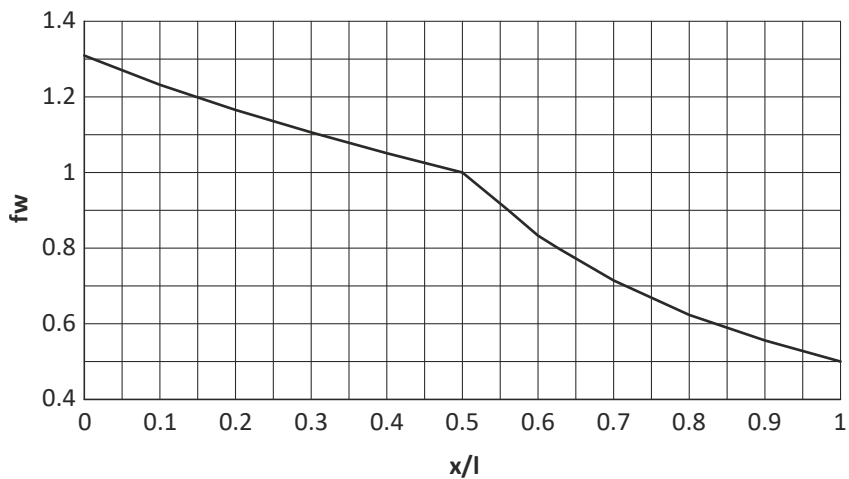
If there is no radial force, the maximum axial force is 50% of the value in the table $F_{\text{rad, max}}$

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

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

Max. radial force, gearbox with foot (VBR)

Getriebe	Output speed n_2 [rpm]									
	1000	630	400	250	160	100	63	40	25	16
	Max. radial force $F_{\text{rad,max}}$ [rated]									
g500-H45	300	400	600	700	800	900	1100	1400	1500	1500
g500-H100	800	1000	1200	1500	1800	2100	2600	2700	2700	2700
g500-H140	1000	1440	1800	2200	2500	3000	3300	3700	4100	4200
g500-H210	1100	1600	2000	2400	2800	3400	3900	4100	4400	4800
g500-H320	1760	2090	2480	3000	3520	4190	5000	5700	5700	5700
g500-H450	2440	2820	3340	4020	4660	5540	6500	7100	7100	7100
g500-H600	3820	4480	5250	6100	7260	8450	9500	9500	9500	9500
g500-H850	4700	5510	6430	7500	8860	10400	11500	11500	11500	11500
g500-H1500	6300	7440	8790	10300	12200	14500	17000	17000	17000	17000
g500-H3000	7510	8880	10100	12400	14600	17200	20000	20000	20000	20000

Reinforced bearings

Getriebe	Output speed n_2 [rpm]									
	1000	630	400	250	160	100	63	40	25	16
	Max. radial force $F_{\text{rad,max}}$ [rated]									
g500-H100	1000	1200	1500	1800	2200	2700	3200	3300	3300	3300
g500-H140	1300	1800	2300	2700	3100	3700	4100	4600	5100	5300
g500-H210	1400	2000	2500	3000	3500	4200	4900	5100	5500	6000
g500-H320	2380	3250	4380	5600	6800	7100	7100	7100	7100	7100
g500-H450	4030	5100	6870	8650	8900	8900	8900	8900	8900	8900
g500-H600	7180	8710	9860	11300	12000	12000	12000	12000	12000	12000
g500-H850	9520	10500	11900	13300	15400	15600	15600	15600	15600	15600
g500-H1500	12600	14600	16500	19100	21000	21000	21000	21000	21000	21000
g500-H3000	16100	18000	20200	23600	25000	25000	25000	25000	25000	25000



Max. radial force, gearbox with/without foot with threaded pitch circle (V□R/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-H45	300	400	600	700	800	900	1100	1400	1500	1500
g500-H100	800	1000	1200	1500	1700	1700	1700	1700	1700	1700
g500-H140	1000	1400	1800	2200	2500	2600	2600	2600	2600	2600
g500-H210	1100	1600	2000	2400	2800	3000	3000	3000	3000	3000
g500-H320	1760	2090	2480	3000	3520	3600	3600	3600	3600	3600
g500-H450	2440	2820	3340	4020	4400	4400	4400	4400	4400	4400
g500-H600	3820	4480	5250	6100	7260	8450	8500	8500	8500	8500
g500-H850	4700	5510	6430	7500	8860	10000	10000	10000	10000	10000
g500-H1500	6300	7440	8790	10300	12200	14000	14000	14000	14000	14000
g500-H3000	7510	8880	10100	12400	14600	17000	17000	17000	17000	17000

Reinforced bearings

Getriebe	Output speed n_2 [rpm]									
	1000	630	400	250	160	100	63	40	25	16
	Max. radial force $F_{rad,max}$ [rated]									
g500-H100	1000	1200	1500	1700	1700	1700	1700	1700	1700	1700
g500-H140	1300	1800	2300	2600	2600	2600	2600	2600	2600	2600
g500-H210	1400	2000	2500	3000	3000	3000	3000	3000	3000	3000
g500-H320	2380	3250	3600	3600	3600	3600	3600	3600	3600	3600
g500-H450	4030	4400	4400	4400	4400	4400	4400	4400	4400	4400
g500-H600	7180	8500	8500	8500	8500	8500	8500	8500	8500	8500
g500-H850	9250	10000	10000	10000	10000	10000	10000	10000	10000	10000
g500-H1500	12600	14000	14000	14000	14000	14000	14000	14000	14000	14000
g500-H3000	16100	17000	17000	17000	17000	17000	17000	17000	17000	17000

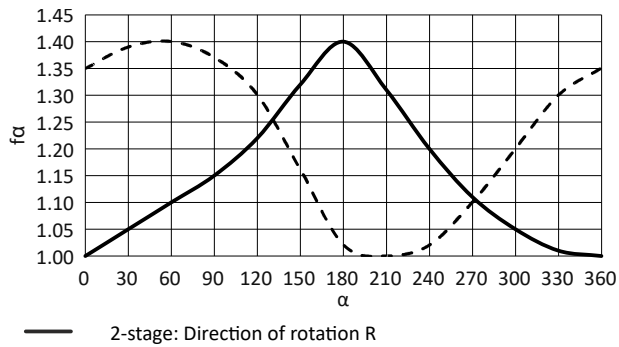
Max. radial force, gearbox with reinforced flange (VCP)

Getriebe	Output speed n_2 [rpm]									
	1000	630	400	250	160	100	63	40	25	16
	Max. radial force $F_{rad,max}$ [rated]									
g500-H100	1900	2400	2900	3330	3650	3890	4060	4160	4240	4280
g500-H140	3000	3500	4000	5510	5950	6270	6480	6620	6710	6770
g500-H210	3400	4000	5000	6170	6670	7060	7330	7500	7620	7700
g500-H320	3900	4500	6000	7040	7690	8210	8570	8810	8970	9080
g500-H450	4300	5200	6400	7810	8550	9160	9590	9880	10100	10200

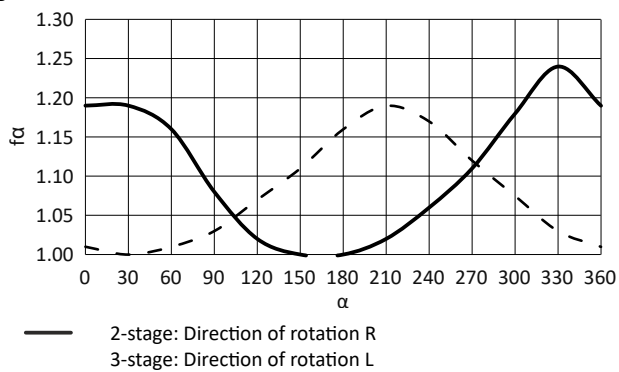


Effective direction factor f_α on the output shaft

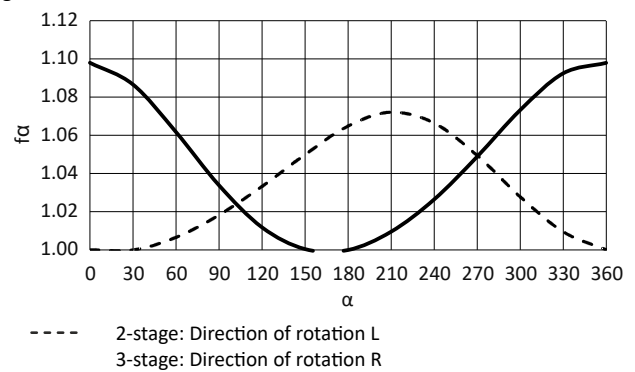
g500-H45



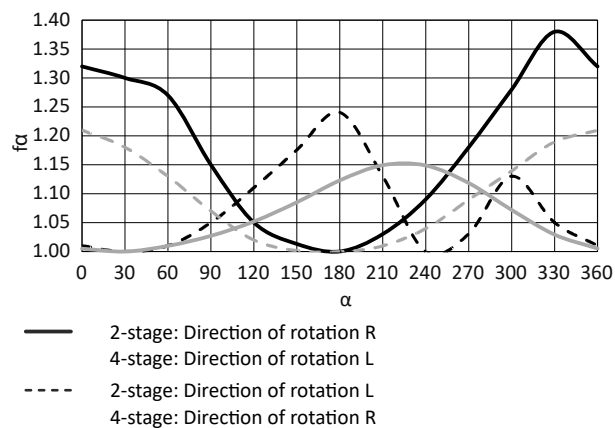
g500-H100



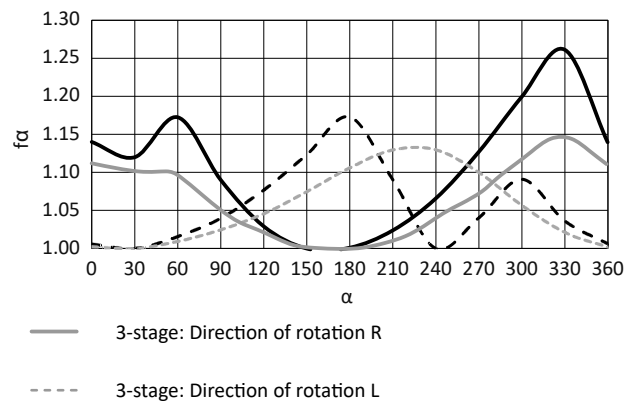
g500-H140



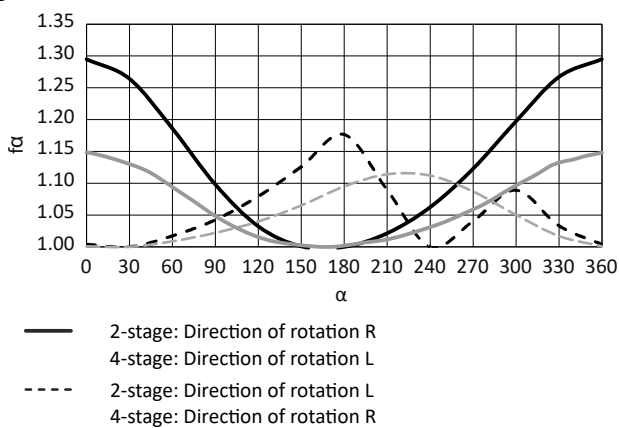
g500-H210



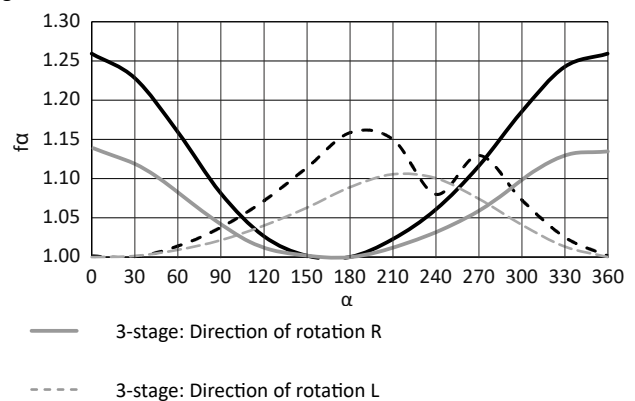
g500-H320



g500-H450

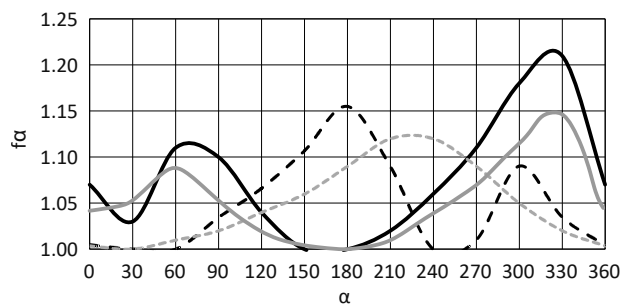


g500-H600



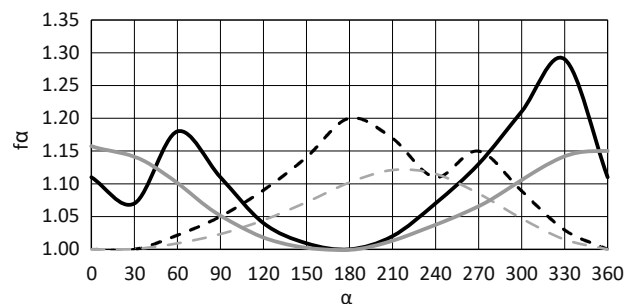


g500-H850



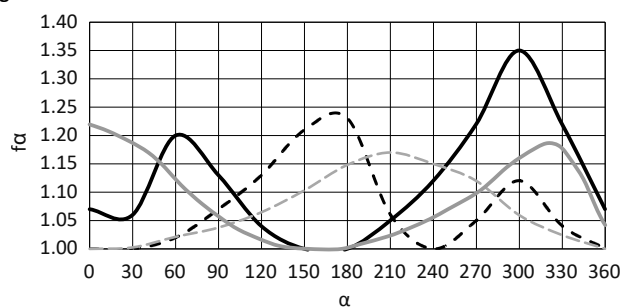
— 2-stage: Direction of rotation R
 — 4-stage: Direction of rotation L
 - - - 2-stage: Direction of rotation L
 - - - 4-stage: Direction of rotation R

g500-H1500



— 3-stage: Direction of rotation R
 — 3-stage: Direction of rotation L
 - - - 3-stage: Direction of rotation R
 - - - 3-stage: Direction of rotation L

g500-H3000



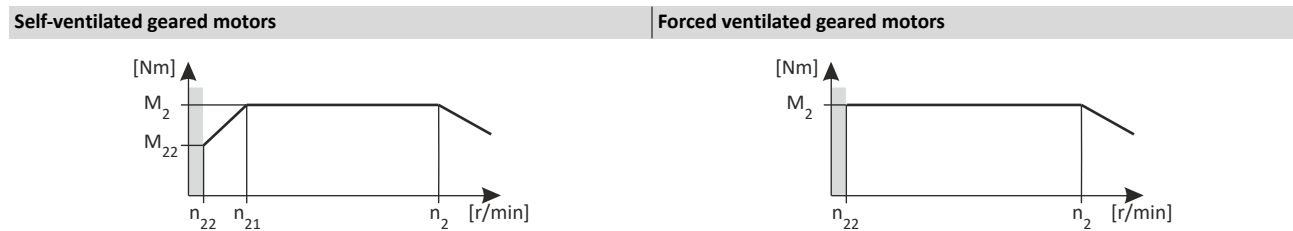
— 2-stage: Direction of rotation R
 — 4-stage: Direction of rotation L
 - - - 2-stage: Direction of rotation L
 - - - 4-stage: Direction of rotation R

— 3-stage: Direction of rotation R
 — 3-stage: Direction of rotation L
 - - - 3-stage: Direction of rotation R
 - - - 3-stage: Direction of rotation L



Selection tables

Torque characteristic during inverter operation



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

120 Hz: $P_{\text{rated}} = 0.55 \text{ kW}$

Explanation

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		kgcm ²					kg
55.8	2.9	231	3.9	1325	3.9	3.5	3.960	2.597	g500-H45	MFxMA 063-32	2	5.9
44.4	3.7	184	4.8	1053	4.8	4.8	4.602	3.267	g500-H140	MFxMA 063-32	2	9.0
43.2	3.8	179	5.0	1026	5.0	4.8	4.225	3.354	g500-H100	MFxMA 063-32	2	7.9
42.5	3.8	176	5.1	1008	5.1	2.8	3.869	3.413	g500-H45	MFxMA 063-32	2	5.9

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 $c = \frac{M_{2,zul}}{M_{1,N} \times i \times \eta_{Getr}} > k$	Ratio Moment of inertia without brake	Motor product name Gearbox product name	Number of gear stages	Basic weight
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)							z	m
n ₂₂	M ₂₂	n ₂₁	M ₂	n ₂	M ₂	c	J	i				
rpm	Nm	rpm	Nm	rpm	Nm		kgcm ²					kg
55.8	2.9	231	3.9	1325	3.9	3.5	3.960	2.597	g500-H45	MFXXMA 063-32	2	5.9
44.4	3.7	184	4.8	1053	4.8	4.8	4.602	3.267	g500-H140	MFXXMA 063-32	2	9.0
43.2	3.8	179	5.0	1026	5.0	4.8	4.225	3.354	g500-H100	MFXXMA 063-32	2	7.9
42.5	3.8	176	5.1	1008	5.1	2.8	3.869	3.413	g500-H45	MFXXMA 063-32	2	5.9
33.2	4.9	137	6.5	788	6.5	2.5	3.817	4.368	g500-H45	MFXXMA 063-32	2	5.9
32.4	5.0	134	6.7	768	6.7	4.8	4.236	4.480	g500-H140	MFXXMA 063-32	2	9.0
31.5	5.2	130	6.8	748	6.8	4.8	4.035	4.600	g500-H100	MFXXMA 063-32	2	7.9
25.3	6.5	105	8.5	600	8.5	4.5	4.059	5.733	g500-H140	MFXXMA 063-32	2	9.0
24.6	6.6	102	8.7	584	8.7	4.5	3.936	5.887	g500-H100	MFXXMA 063-32	2	7.9
24.3	6.7	101	8.9	577	8.9	2.5	3.873	5.965	g500-H45	MFXXMA 063-32	2	5.9
23.1	7.1	95.7	9.3	549	9.3	4.5	4.009	6.272	g500-H140	MFXXMA 063-32	2	9.0
22.5	7.2	93.2	9.6	534	9.6	4.5	3.907	6.440	g500-H100	MFXXMA 063-32	2	7.9
18.5	8.8	76.5	12.0	439	12.0	2.1	3.819	7.840	g500-H45	MFXXMA 063-32	2	5.9
18.1	9.0	75.0	12.0	430	12.0	4.1	3.911	8.000	g500-H140	MFXXMA 063-32	2	9.0
17.7	9.2	73.0	12.0	419	12.0	4.1	3.848	8.214	g500-H100	MFXXMA 063-32	2	7.9
16.1	10.2	66.5	13.0	381	13.0	4.8	4.042	9.029	g500-H140	MFXXMA 063-32	2	9.0
14.8	11.0	61.2	15.0	351	15.0	3.7	3.855	9.800	g500-H140	MFXXMA 063-32	2	9.0
14.5	11.3	59.8	15.0	343	15.0	1.8	3.786	10.033	g500-H45	MFXXMA 063-32	2	5.9
14.4	11.3	59.6	15.0	342	15.0	3.7	3.813	10.063	g500-H100	MFXXMA 063-32	2	7.9
12.8	12.8	52.8	17.0	303	17.0	4.5	3.875	11.360	g500-H100	MFXXMA 063-32	2	7.9
12.5	13.0	51.9	17.0	298	17.0	4.5	3.940	11.554	g500-H140	MFXXMA 063-32	2	9.0
12.4	13.1	51.4	17.0	295	17.0	4.8	4.325	11.680	g500-H320	MFXXMA 063-32	2	12
12.1	13.5	50.0	18.0	287	18.0	4.8	4.197	12.000	g500-H210	MFXXMA 063-32	2	10
11.5	14.2	47.5	19.0	272	19.0	4.5	3.910	12.640	g500-H140	MFXXMA 063-32	2	9.0
11.3	14.4	46.8	19.0	268	19.0	1.5	3.757	12.833	g500-H45	MFXXMA 063-32	2	5.9
10.0	16.3	41.4	22.0	237	22.0	3.5	3.829	14.490	g500-H100	MFXXMA 063-32	2	7.9
9.7	16.8	40.3	22.0	231	22.0	4.5	4.144	14.898	g500-H320	MFXXMA 063-32	2	12
9.5	17.2	39.2	23.0	225	23.0	4.5	4.065	15.306	g500-H210	MFXXMA 063-32	2	10
9.0	18.1	37.2	24.0	213	24.0	4.1	3.850	16.122	g500-H140	MFXXMA 063-32	2	9.0
8.7	18.8	36.0	25.0	207	25.0	1.4	3.740	16.660	g500-H45	MFXXMA 063-32	2	5.9
8.2	20.0	33.8	26.0	194	26.0	2.9	3.800	17.750	g500-H100	MFXXMA 063-32	2	7.9
7.3	22.2	30.4	29.0	174	29.0	3.6	3.814	19.750	g500-H140	MFXXMA 063-32	2	9.0
6.8	24.0	28.1	32.0	161	32.0	1.2	3.727	21.350	g500-H45	MFXXMA 063-32	2	5.9
6.5	25.1	26.9	33.0	154	33.0	2.3	3.767	22.314	g500-H100	MFXXMA 063-32	2	7.9
6.1	26.7	25.3	35.0	145	35.0	3.7	3.909	23.754	g500-H320	MFXXMA 063-32	2	12
5.9	27.5	24.6	36.0	141	36.0	3.7	3.879	24.405	g500-H210	MFXXMA 063-32	2	10
5.8	27.9	24.2	37.0	139	37.0	2.9	3.777	24.829	g500-H140	MFXXMA 063-32	2	9.0
5.3	31.1	21.7	41.0	125	41.0	1.0	3.719	27.618	g500-H45	MFXXMA 063-32	2	5.9
5.0	32.3	20.9	43.0	120	43.0	2.0	3.747	28.738	g500-H100	MFXXMA 063-32	2	7.9
4.9	33.3	20.3	44.0	116	44.0	3.6	3.852	29.548	g500-H320	MFXXMA 063-32	2	12
4.8	34.2	19.8	45.0	113	45.0	3.6	3.832	30.357	g500-H210	MFXXMA 063-32	2	10
4.5	36.0	18.8	47.0	108	47.0	2.5	3.753	31.976	g500-H140	MFXXMA 063-32	2	9.0
4.0	41.0	16.5	54.0	94.4	54.0	1.6	3.731	36.422	g500-H100	MFXXMA 063-32	2	7.9
3.8	43.0	15.7	57.0	90.0	57.0	3.2	3.795	38.238	g500-H320	MFXXMA 063-32	2	12
3.7	44.2	15.3	58.0	87.6	58.0	3.1	3.783	39.286	g500-H210	MFXXMA 063-32	2	10
3.6	45.4	14.9	60.0	85.3	60.0	4.0	3.938	40.333	g500-H450	MFXXMA 063-32	2	16
3.6	45.6	14.8	60.0	84.9	60.0	2.2	3.735	40.526	g500-H140	MFXXMA 063-32	2	9.0
3.6	45.7	14.8	60.0	84.8	60.0	4.0	3.964	40.578	g500-H600	MFXXMA 063-32	2	27
3.3	48.4	13.7	64.0	78.8	64.0	4.8	4.358	43.676	g500-H600	MFXXMA 063-32	3	28
3.2	51.4	13.1	68.0	75.4	68.0	1.3	3.722	45.643	g500-H100	MFXXMA 063-32	2	7.9
3.1	52.2	12.9	69.0	74.1	69.0	3.0	3.770	46.407	g500-H320	MFXXMA 063-32	2	12



Inverter operation									Geared motor			
5 Hz -		- 20 Hz		- 120 Hz (1:24)								
n_{22}	M_{22}	n_{21}	M_{21}	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		kgcm ²					kg
3.1	52.4	12.7	69.0	72.8	69.0	4.0	3.834	47.276	g500-H320	MFXXMA 063-32	3	13
3.0	53.7	12.6	71.0	72.1	71.0	2.8	3.761	47.679	g500-H210	MFXXMA 063-32	2	10
3.0	53.8	12.4	71.0	70.8	71.0	2.6	3.826	48.571	g500-H210	MFXXMA 063-32	3	11
3.0	55.1	12.3	73.0	70.3	73.0	3.5	3.875	48.950	g500-H450	MFXXMA 063-32	2	16
2.9	55.4	12.2	73.0	69.9	73.0	3.5	3.893	49.247	g500-H600	MFXXMA 063-32	2	27
2.9	57.2	11.8	75.0	67.7	75.0	1.3	3.724	50.786	g500-H140	MFXXMA 063-32	2	9.0
2.5	63.8	10.4	84.0	59.7	84.0	1.4	3.902	57.582	g500-H140	MFXXMA 063-32	3	12
2.4	66.0	10.1	87.0	57.8	87.0	1.0	3.793	59.505	g500-H100	MFXXMA 063-32	3	11
2.4	67.1	9.9	88.0	56.9	88.0	3.1	3.793	60.502	g500-H320	MFXXMA 063-32	3	13
2.4	68.6	9.8	90.0	56.5	90.0	1.5	3.739	60.938	g500-H210	MFXXMA 063-32	2	10
2.3	68.9	9.7	91.0	55.3	91.0	2.0	3.788	62.160	g500-H210	MFXXMA 063-32	3	11
2.3	69.6	9.7	92.0	55.6	92.0	2.8	3.814	61.875	g500-H450	MFXXMA 063-32	2	16
2.3	70.1	9.6	92.0	55.3	92.0	2.8	3.825	62.250	g500-H600	MFXXMA 063-32	2	27
2.1	77.4	8.6	102	49.3	102	3.8	3.917	69.813	g500-H450	MFXXMA 063-32	3	16
2.0	81.4	8.2	107	46.8	107	1.1	3.899	73.447	g500-H140	MFXXMA 063-32	3	12
1.9	85.8	7.8	113	44.5	113	2.4	3.762	77.387	g500-H320	MFXXMA 063-32	3	13
1.8	88.1	7.5	116	43.3	116	1.6	3.759	79.507	g500-H210	MFXXMA 063-32	3	11
1.7	93.9	7.1	124	40.6	124	1.1	3.793	84.732	g500-H140	MFXXMA 063-32	3	12
1.6	98.5	6.8	130	38.7	130	4.4	3.917	88.826	g500-H600	MFXXMA 063-32	3	28
1.6	98.7	6.7	130	38.6	130	3.3	3.855	89.048	g500-H450	MFXXMA 063-32	3	16
1.6	103	6.5	136	37.1	136	1.0	3.792	92.693	g500-H140	MFXXMA 063-32	3	12
1.4	111	6.0	147	34.2	147	2.1	3.744	100.462	g500-H320	MFXXMA 063-32	3	13
1.4	114	5.8	151	33.3	151	1.3	3.742	103.214	g500-H210	MFXXMA 063-32	3	11
1.3	121	5.5	159	31.5	159	2.7	3.817	109.083	g500-H450	MFXXMA 063-32	3	16
1.3	123	5.4	162	31.1	162	3.6	3.857	110.491	g500-H600	MFXXMA 063-32	3	28
1.1	143	4.7	188	26.7	188	1.6	3.730	128.743	g500-H320	MFXXMA 063-32	3	13
1.1	147	4.5	193	26.0	193	1.0	3.729	132.270	g500-H210	MFXXMA 063-32	3	11
1.1	150	4.4	198	25.4	198	4.0	3.953	135.373	g500-H850	MFXXMA 063-32	3	37
1.1	152	4.4	201	25.1	201	2.1	3.778	137.133	g500-H450	MFXXMA 063-32	3	16
1.0	159	4.2	209	24.1	209	2.7	3.798	142.988	g500-H600	MFXXMA 063-32	3	28
0.9	182	3.7	240	20.9	240	3.4	3.886	164.294	g500-H850	MFXXMA 063-32	3	37
0.9	185	3.6	244	20.7	244	1.3	3.721	166.541	g500-H320	MFXXMA 063-32	3	13
0.8	190	3.5	250	20.1	250	0.8	3.720	171.104	g500-H210	MFXXMA 063-32	3	11
0.8	192	3.5	254	19.8	254	2.3	3.772	173.536	g500-H600	MFXXMA 063-32	3	28
0.8	196	3.4	258	19.5	258	1.7	3.754	176.611	g500-H450	MFXXMA 063-32	3	16
0.7	217	3.0	287	17.3	287	2.0	3.924	198.970	g500-H600	MFXXMA 063-32	4	31
0.7	230	2.9	304	16.6	304	2.7	3.820	207.675	g500-H850	MFXXMA 063-32	3	37
0.7	240	2.8	317	15.9	317	1.0	3.714	216.683	g500-H320	MFXXMA 063-32	3	13
0.7	246	2.7	324	15.5	324	1.5	3.746	221.794	g500-H600	MFXXMA 063-32	3	28
0.6	246	2.7	324	15.3	324	4.4	4.422	225.125	g500-H1500	MFXXMA 063-32	4	70
0.6	248	2.7	327	15.4	327	1.3	3.735	223.833	g500-H450	MFXXMA 063-32	3	16
0.6	256	2.6	337	14.7	337	2.4	3.888	234.319	g500-H850	MFXXMA 063-32	4	40
0.6	277	2.4	366	13.6	366	1.6	3.914	253.789	g500-H600	MFXXMA 063-32	4	31
0.5	307	2.1	405	12.2	405	3.5	4.066	281.416	g500-H1500	MFXXMA 063-32	4	70
0.5	311	2.1	410	12.3	410	1.1	3.725	280.500	g500-H450	MFXXMA 063-32	3	16
0.5	321	2.0	424	11.7	424	1.9	3.932	294.334	g500-H850	MFXXMA 063-32	4	40
0.5	350	1.9	461	10.7	461	1.2	3.801	320.294	g500-H600	MFXXMA 063-32	4	31
0.4	382	1.7	504	9.8	504	2.8	3.953	350.054	g500-H1500	MFXXMA 063-32	4	70
0.4	399	1.6	527	9.4	527	0.8	3.795	365.689	g500-H450	MFXXMA 063-32	4	19
0.4	402	1.6	530	9.3	530	1.5	3.784	368.019	g500-H850	MFXXMA 063-32	4	40
0.4	446	1.5	588	8.4	588	1.0	3.797	408.538	g500-H600	MFXXMA 063-32	4	31
0.3	488	1.3	643	7.7	643	2.2	3.922	446.497	g500-H1500	MFXXMA 063-32	4	70



Inverter operation									Geared motor			
5 Hz -		- 20 Hz		- 120 Hz (1:24)							z	m
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	J	i				
rpm	Nm	rpm	Nm	rpm	Nm		kgcm ²					kg
0.3	517	1.3	682	7.3	682	1.2	3.804	473.807	g500-H850	MFXMA 063-32	4	40
0.3	535	1.2	706	7.0	706	4.1	4.106	489.908	g500-H3000	MFXMA 063-32	4	115
0.3	547	1.2	721	6.9	721	0.8	3.795	500.459	g500-H600	MFXMA 063-32	4	31
0.3	625	1.0	824	6.0	824	1.7	3.958	572.324	g500-H1500	MFXMA 063-32	4	70
0.3	628	1.0	828	6.0	828	1.0	3.775	575.029	g500-H850	MFXMA 063-32	4	40
0.2	650	1.0	857	5.8	857	3.4	4.053	594.888	g500-H3000	MFXMA 063-32	4	115
0.2	673	1.0	888	5.6	888	0.9	3.799	616.701	g500-H850	MFXMA 063-32	4	40
0.2	766	0.9	1010	4.9	1010	1.4	3.941	701.446	g500-H1500	MFXMA 063-32	4	70
0.2	808	0.8	1066	4.6	1066	2.7	3.944	739.983	g500-H3000	MFXMA 063-32	4	115
0.2	861	0.8	1136	4.4	1136	2.5	3.871	788.632	g500-H3000	MFXMA 063-32	4	115
0.2	953	0.7	1257	3.9	1257	1.1	3.872	872.530	g500-H1500	MFXMA 063-32	4	70
0.2	1006	0.7	1327	3.7	1327	1.1	3.814	921.302	g500-H1500	MFXMA 063-32	4	70
0.2	1046	0.6	1379	3.6	1379	2.1	3.851	957.625	g500-H3000	MFXMA 063-32	4	115
0.1	1233	0.5	1626	3.0	1626	0.9	3.808	1129.157	g500-H1500	MFXMA 063-32	4	70
0.1	1353	0.5	1785	2.8	1785	1.6	3.830	1239.279	g500-H3000	MFXMA 063-32	4	115
0.1	1642	0.4	2166	2.3	2166	1.3	3.793	1504.034	g500-H3000	MFXMA 063-32	4	115
0.1	1993	0.3	2629	1.9	2629	1.1	3.785	1825.350	g500-H3000	MFXMA 063-32	4	115
0.1	2548	0.3	3360	1.5	3360	0.9	3.754	2332.962	g500-H3000	MFXMA 063-32	4	115



120 Hz: 0.75 kW

Inverter operation									Geared motor			
5 Hz -		- 20 Hz		- 120 Hz (1:24)							z	m
n ₂₂	M ₂₂	n ₂₁	M ₂	n ₂	M ₂	c	J	i				
rpm	Nm	rpm	Nm	rpm	Nm		kgcm ²					kg
55.8	4.0	231	5.3	1309	5.3	2.6	3.960	2.597	g500-H45	MFXXMA 063-42	2	5.9
44.4	5.0	184	6.7	1041	6.7	3.5	4.602	3.267	g500-H140	MFXXMA 063-42	2	9.0
43.2	5.1	179	6.9	1014	6.9	3.5	4.225	3.354	g500-H100	MFXXMA 063-42	2	7.9
42.5	5.2	176	7.0	996	7.0	2.1	3.869	3.413	g500-H45	MFXXMA 063-42	2	5.9
33.2	6.7	137	8.9	778	8.9	1.8	3.817	4.368	g500-H45	MFXXMA 063-42	2	5.9
32.4	6.9	134	9.2	759	9.2	3.5	4.236	4.480	g500-H140	MFXXMA 063-42	2	9.0
31.5	7.1	130	9.4	739	9.4	3.5	4.035	4.600	g500-H100	MFXXMA 063-42	2	7.9
25.3	8.8	105	12.0	593	12.0	3.3	4.059	5.733	g500-H140	MFXXMA 063-42	2	9.0
24.6	9.0	102	12.0	578	12.0	3.3	3.936	5.887	g500-H100	MFXXMA 063-42	2	7.9
24.3	9.1	101	12.0	570	12.0	1.8	3.873	5.965	g500-H45	MFXXMA 063-42	2	5.9
23.1	9.6	95.7	13.0	542	13.0	3.3	4.009	6.272	g500-H140	MFXXMA 063-42	2	9.0
22.5	9.9	93.2	13.0	528	13.0	3.3	3.907	6.440	g500-H100	MFXXMA 063-42	2	7.9
18.5	12.0	76.5	16.0	434	16.0	1.5	3.819	7.840	g500-H45	MFXXMA 063-42	2	5.9
18.1	12.3	75.0	16.0	425	16.0	3.0	3.911	8.000	g500-H140	MFXXMA 063-42	2	9.0
17.7	12.6	73.0	17.0	414	17.0	3.0	3.848	8.214	g500-H100	MFXXMA 063-42	2	7.9
16.1	13.8	66.5	18.0	377	18.0	3.5	4.042	9.029	g500-H140	MFXXMA 063-42	2	9.0
14.8	15.0	61.2	20.0	347	20.0	2.7	3.855	9.800	g500-H140	MFXXMA 063-42	2	9.0
14.5	15.4	59.8	21.0	339	21.0	1.3	3.786	10.033	g500-H45	MFXXMA 063-42	2	5.9
14.4	15.4	59.6	21.0	338	21.0	2.7	3.813	10.063	g500-H100	MFXXMA 063-42	2	7.9
12.8	17.4	52.8	23.0	299	23.0	3.3	3.875	11.360	g500-H100	MFXXMA 063-42	2	7.9
12.5	17.7	51.9	24.0	294	24.0	3.3	3.940	11.554	g500-H140	MFXXMA 063-42	2	9.0
12.4	17.9	51.4	24.0	291	24.0	3.5	4.325	11.680	g500-H320	MFXXMA 063-42	2	12
12.1	18.4	50.0	25.0	283	25.0	3.5	4.197	12.000	g500-H210	MFXXMA 063-42	2	10
11.5	19.4	47.5	26.0	269	26.0	3.3	3.910	12.640	g500-H140	MFXXMA 063-42	2	9.0
11.3	19.7	46.8	26.0	265	26.0	1.1	3.757	12.833	g500-H45	MFXXMA 063-42	2	5.9
10.0	22.2	41.4	30.0	235	30.0	2.6	3.829	14.490	g500-H100	MFXXMA 063-42	2	7.9
9.7	22.8	40.3	30.0	228	30.0	3.3	4.144	14.898	g500-H320	MFXXMA 063-42	2	12
9.5	23.5	39.2	31.0	222	31.0	3.3	4.065	15.306	g500-H210	MFXXMA 063-42	2	10
9.0	24.7	37.2	33.0	211	33.0	3.0	3.850	16.122	g500-H140	MFXXMA 063-42	2	9.0
8.7	25.5	36.0	34.0	204	34.0	1.0	3.740	16.660	g500-H45	MFXXMA 063-42	2	5.9
8.2	27.2	33.8	36.0	192	36.0	2.1	3.800	17.750	g500-H100	MFXXMA 063-42	2	7.9
7.3	30.3	30.4	40.0	172	40.0	2.6	3.814	19.750	g500-H140	MFXXMA 063-42	2	9.0
6.8	32.7	28.1	44.0	159	44.0	0.9	3.727	21.350	g500-H45	MFXXMA 063-42	2	5.9
6.5	34.2	26.9	46.0	152	46.0	1.7	3.767	22.314	g500-H100	MFXXMA 063-42	2	7.9
6.1	36.4	25.3	49.0	143	49.0	2.7	3.909	23.754	g500-H320	MFXXMA 063-42	2	12
5.9	37.4	24.6	50.0	139	50.0	2.7	3.879	24.405	g500-H210	MFXXMA 063-42	2	10
5.8	38.1	24.2	51.0	137	51.0	2.1	3.777	24.829	g500-H140	MFXXMA 063-42	2	9.0
5.0	44.1	20.9	59.0	118	59.0	1.5	3.747	28.738	g500-H100	MFXXMA 063-42	2	7.9
4.9	45.3	20.3	60.0	115	60.0	2.6	3.852	29.548	g500-H320	MFXXMA 063-42	2	12
4.8	46.5	19.8	62.0	112	62.0	2.6	3.832	30.357	g500-H210	MFXXMA 063-42	2	10
4.5	49.0	18.8	65.0	106	65.0	1.9	3.753	31.976	g500-H140	MFXXMA 063-42	2	9.0
4.0	55.8	16.5	75.0	93.3	75.0	1.2	3.731	36.422	g500-H100	MFXXMA 063-42	2	7.9
3.8	58.6	15.7	78.0	88.9	78.0	2.3	3.795	38.238	g500-H320	MFXXMA 063-42	2	12
3.7	60.2	15.3	80.0	86.5	80.0	2.3	3.783	39.286	g500-H210	MFXXMA 063-42	2	10
3.6	61.8	14.9	83.0	84.3	83.0	2.9	3.938	40.333	g500-H450	MFXXMA 063-42	2	16
3.6	62.1	14.8	83.0	83.9	83.0	1.6	3.735	40.526	g500-H140	MFXXMA 063-42	2	9.0
3.6	62.2	14.8	83.0	83.8	83.0	2.9	3.964	40.578	g500-H600	MFXXMA 063-42	2	27
3.3	65.9	13.7	88.0	77.8	88.0	3.5	4.358	43.676	g500-H600	MFXXMA 063-42	3	28
3.2	70.0	13.1	93.0	74.5	93.0	1.0	3.722	45.643	g500-H100	MFXXMA 063-42	2	7.9
3.1	71.1	12.9	95.0	73.3	95.0	2.2	3.770	46.407	g500-H320	MFXXMA 063-42	2	12
3.1	71.4	12.7	95.0	71.9	95.0	2.9	3.834	47.276	g500-H320	MFXXMA 063-42	3	13



Inverter operation									Geared motor			
5 Hz -		- 20 Hz		- 120 Hz (1:24)			J	i			z	m
n ₂₂	M ₂₂	n ₂₁	M ₂	n ₂	M ₂	c	kgcm ²					kg
rpm	Nm	rpm	Nm	rpm	Nm							
3.0	73.1	12.6	98.0	71.3	98.0	2.0	3.761	47.679	g500-H210	MFXMA 063-42	2	10
3.0	73.3	12.4	98.0	70.0	98.0	1.9	3.826	48.571	g500-H210	MFXMA 063-42	3	11
3.0	75.0	12.3	100	69.5	100	2.5	3.875	48.950	g500-H450	MFXMA 063-42	2	16
2.9	75.5	12.2	101	69.0	101	2.5	3.893	49.247	g500-H600	MFXMA 063-42	2	27
2.9	75.3	12.0	101	68.2	101	3.9	4.056	49.867	g500-H450	MFXMA 063-42	3	16
2.9	77.9	11.8	104	66.9	104	1.0	3.724	50.786	g500-H140	MFXMA 063-42	2	9.0
2.6	84.1	10.8	112	61.0	112	3.7	4.164	55.710	g500-H600	MFXMA 063-42	3	28
2.5	86.9	10.4	116	59.0	116	1.0	3.902	57.582	g500-H140	MFXMA 063-42	3	12
2.4	91.4	9.9	122	56.2	122	2.3	3.793	60.502	g500-H320	MFXMA 063-42	3	13
2.4	93.4	9.8	125	55.8	125	1.1	3.739	60.938	g500-H210	MFXMA 063-42	2	10
2.3	93.9	9.7	125	54.7	125	1.5	3.788	62.160	g500-H210	MFXMA 063-42	3	11
2.3	94.9	9.7	127	54.9	127	2.0	3.814	61.875	g500-H450	MFXMA 063-42	2	16
2.3	95.4	9.6	127	54.6	127	2.0	3.825	62.250	g500-H600	MFXMA 063-42	2	27
2.1	105	8.6	141	48.7	141	2.8	3.917	69.813	g500-H450	MFXMA 063-42	3	16
2.0	111	8.2	148	46.3	148	0.8	3.899	73.447	g500-H140	MFXMA 063-42	3	12
1.9	117	7.8	156	43.9	156	1.8	3.762	77.387	g500-H320	MFXMA 063-42	3	13
1.8	120	7.5	160	42.8	160	1.1	3.759	79.507	g500-H210	MFXMA 063-42	3	11
1.6	134	6.8	179	38.3	179	3.2	3.917	88.826	g500-H600	MFXMA 063-42	3	28
1.6	135	6.7	180	38.2	180	2.4	3.855	89.048	g500-H450	MFXMA 063-42	3	16
1.4	152	6.0	203	33.8	203	1.5	3.744	100.462	g500-H320	MFXMA 063-42	3	13
1.4	156	5.8	208	32.9	208	1.0	3.742	103.214	g500-H210	MFXMA 063-42	3	11
1.3	165	5.5	220	31.2	220	2.0	3.817	109.083	g500-H450	MFXMA 063-42	3	16
1.3	167	5.4	223	30.8	223	2.6	3.857	110.491	g500-H600	MFXMA 063-42	3	28
1.1	194	4.7	260	26.4	260	1.2	3.730	128.743	g500-H320	MFXMA 063-42	3	13
1.1	204	4.4	273	25.1	273	2.9	3.953	135.373	g500-H850	MFXMA 063-42	3	37
1.1	207	4.4	277	24.8	277	1.6	3.778	137.133	g500-H450	MFXMA 063-42	3	16
1.0	216	4.2	288	23.8	288	2.0	3.798	142.988	g500-H600	MFXMA 063-42	3	28
0.9	248	3.7	331	20.7	331	2.5	3.886	164.294	g500-H850	MFXMA 063-42	3	37
0.9	252	3.6	336	20.4	336	0.9	3.721	166.541	g500-H320	MFXMA 063-42	3	13
0.8	262	3.5	350	19.6	350	1.6	3.772	173.536	g500-H600	MFXMA 063-42	3	28
0.8	267	3.4	356	19.3	356	1.2	3.754	176.611	g500-H450	MFXMA 063-42	3	16
0.7	296	3.0	395	17.1	395	1.5	3.924	198.970	g500-H600	MFXMA 063-42	4	31
0.7	314	2.9	419	16.4	419	2.0	3.820	207.675	g500-H850	MFXMA 063-42	3	37
0.7	335	2.7	447	15.3	447	1.1	3.746	221.794	g500-H600	MFXMA 063-42	3	28
0.6	335	2.7	447	15.1	447	3.2	4.422	225.125	g500-H1500	MFXMA 063-42	4	70
0.6	338	2.7	451	15.2	451	1.0	3.735	223.833	g500-H450	MFXMA 063-42	3	16
0.6	349	2.6	465	14.5	465	1.8	3.888	234.319	g500-H850	MFXMA 063-42	4	40
0.6	378	2.4	504	13.4	504	1.1	3.914	253.789	g500-H600	MFXMA 063-42	4	31
0.5	419	2.1	559	12.1	559	2.6	4.066	281.416	g500-H1500	MFXMA 063-42	4	70
0.5	435	2.1	581	11.6	581	4.4	4.919	292.511	g500-H3000	MFXMA 063-42	4	115
0.5	438	2.0	585	11.6	585	1.4	3.932	294.334	g500-H850	MFXMA 063-42	4	40
0.5	476	1.9	636	10.6	636	0.9	3.801	320.294	g500-H600	MFXMA 063-42	4	31
0.4	521	1.7	695	9.7	695	2.1	3.953	350.054	g500-H1500	MFXMA 063-42	4	70
0.4	547	1.6	731	9.2	731	1.1	3.784	368.019	g500-H850	MFXMA 063-42	4	40
0.3	664	1.3	887	7.6	887	1.6	3.922	446.497	g500-H1500	MFXMA 063-42	4	70
0.3	705	1.3	941	7.2	941	0.9	3.804	473.807	g500-H850	MFXMA 063-42	4	40
0.3	729	1.2	973	6.9	973	3.0	4.106	489.908	g500-H3000	MFXMA 063-42	4	115
0.3	851	1.0	1137	5.9	1137	1.3	3.958	572.324	g500-H1500	MFXMA 063-42	4	70
0.2	885	1.0	1182	5.7	1182	2.4	4.053	594.888	g500-H3000	MFXMA 063-42	4	115
0.2	1043	0.9	1393	4.8	1393	1.0	3.941	701.446	g500-H1500	MFXMA 063-42	4	70
0.2	1101	0.8	1470	4.6	1470	2.0	3.944	739.983	g500-H3000	MFXMA 063-42	4	115
0.2	1173	0.8	1566	4.3	1566	1.8	3.871	788.632	g500-H3000	MFXMA 063-42	4	115



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		kgcm ²					kg
0.2	1298	0.7	1733	3.9	1733	0.8	3.872	872.530	g500-H1500	MFXMA 063-42	4	70
0.2	1424	0.6	1902	3.6	1902	1.5	3.851	957.625	g500-H3000	MFXMA 063-42	4	115
0.1	1843	0.5	2461	2.7	2461	1.2	3.830	1239.279	g500-H3000	MFXMA 063-42	4	115
0.1	2237	0.4	2987	2.3	2987	1.0	3.793	1504.034	g500-H3000	MFXMA 063-42	4	115



120 Hz: 1.1 kW

Inverter operation									Geared motor			
5 Hz -		- 20 Hz		- 120 Hz (1:24)							z	m
n ₂₂	M ₂₂	n ₂₁	M ₂	n ₂	M ₂	c	J	i				
rpm	Nm	rpm	Nm	rpm	Nm		kgcm ²					kg
44.4	7.3	184	9.5	1068	9.5	4.2	13.702	3.267	g500-H140	MFXXMA 071-32	2	11
43.2	7.5	179	9.8	1041	9.8	4.2	13.325	3.354	g500-H100	MFXXMA 071-32	2	9.9
42.8	7.6	177	9.9	1030	9.9	4.8	14.330	3.389	g500-H210	MFXXMA 071-32	2	12
42.8	7.6	177	9.9	1030	9.9	4.8	14.025	3.389	g500-H320	MFXXMA 071-32	2	14
32.4	10.0	134	13.0	779	13.0	4.2	13.336	4.480	g500-H140	MFXXMA 071-32	2	11
31.5	10.3	130	13.0	759	13.0	4.0	13.135	4.600	g500-H100	MFXXMA 071-32	2	9.9
25.3	12.8	105	17.0	609	17.0	3.9	13.159	5.733	g500-H140	MFXXMA 071-32	2	11
24.6	13.2	102	17.0	593	17.0	3.6	13.036	5.887	g500-H100	MFXXMA 071-32	2	9.9
23.8	13.6	98.6	18.0	574	18.0	4.8	14.455	6.083	g500-H320	MFXXMA 071-32	2	14
23.2	14.0	96.0	18.0	558	18.0	4.8	13.984	6.250	g500-H210	MFXXMA 071-32	2	12
23.1	14.1	95.7	18.0	556	18.0	3.9	13.109	6.272	g500-H140	MFXXMA 071-32	2	11
22.5	14.4	93.2	19.0	542	19.0	3.3	13.007	6.440	g500-H100	MFXXMA 071-32	2	9.9
18.1	17.9	75.0	23.0	436	23.0	3.6	13.011	8.000	g500-H140	MFXXMA 071-32	2	11
17.7	18.4	73.0	24.0	425	24.0	2.9	12.948	8.214	g500-H100	MFXXMA 071-32	2	9.9
16.1	20.2	66.5	26.0	387	26.0	3.4	13.142	9.029	g500-H140	MFXXMA 071-32	2	11
14.8	22.0	61.2	29.0	356	29.0	3.2	12.955	9.800	g500-H140	MFXXMA 071-32	2	11
14.4	22.6	59.6	29.0	347	29.0	2.5	12.913	10.063	g500-H100	MFXXMA 071-32	2	9.9
13.6	23.9	56.2	31.0	327	31.0	4.2	13.523	10.677	g500-H320	MFXXMA 071-32	2	14
12.8	25.5	52.8	33.0	307	33.0	2.3	12.975	11.360	g500-H100	MFXXMA 071-32	2	9.9
12.5	25.9	51.9	34.0	302	34.0	2.9	13.040	11.554	g500-H140	MFXXMA 071-32	2	11
12.4	26.2	51.4	34.0	299	34.0	4.2	13.425	11.680	g500-H320	MFXXMA 071-32	2	14
12.1	26.9	50.0	35.0	291	35.0	4.0	13.297	12.000	g500-H210	MFXXMA 071-32	2	12
11.5	28.3	47.5	37.0	276	37.0	2.7	13.010	12.640	g500-H140	MFXXMA 071-32	2	11
10.0	32.5	41.4	42.0	241	42.0	1.8	12.929	14.490	g500-H100	MFXXMA 071-32	2	9.9
9.7	33.4	40.3	44.0	234	44.0	3.9	13.244	14.898	g500-H320	MFXXMA 071-32	2	14
9.5	34.3	39.2	45.0	228	45.0	3.4	13.165	15.306	g500-H210	MFXXMA 071-32	2	12
9.2	35.2	38.2	46.0	222	46.0	4.2	13.969	15.714	g500-H450	MFXXMA 071-32	2	18
9.2	35.4	38.0	46.0	221	46.0	4.2	14.140	15.810	g500-H600	MFXXMA 071-32	2	29
9.0	36.1	37.2	47.0	217	47.0	2.2	12.950	16.122	g500-H140	MFXXMA 071-32	2	11
8.2	39.8	33.8	52.0	197	52.0	1.5	12.900	17.750	g500-H100	MFXXMA 071-32	2	9.9
7.9	40.9	32.9	53.0	191	53.0	3.5	13.138	18.250	g500-H320	MFXXMA 071-32	2	14
7.7	42.0	32.0	55.0	186	55.0	2.9	13.085	18.750	g500-H210	MFXXMA 071-32	2	12
7.3	44.3	30.4	58.0	177	58.0	1.8	12.914	19.750	g500-H140	MFXXMA 071-32	2	11
6.5	50.0	26.9	65.0	156	65.0	1.2	12.867	22.314	g500-H100	MFXXMA 071-32	2	9.9
6.1	53.2	25.3	69.0	147	69.0	3.2	13.009	23.754	g500-H320	MFXXMA 071-32	2	14
5.9	54.7	24.6	71.0	143	71.0	2.2	12.979	24.405	g500-H210	MFXXMA 071-32	2	12
5.8	55.6	24.2	73.0	141	73.0	1.5	12.877	24.829	g500-H140	MFXXMA 071-32	2	11
5.8	56.2	23.9	73.0	139	73.0	3.5	13.312	25.056	g500-H450	MFXXMA 071-32	2	18
5.8	56.5	23.8	74.0	139	74.0	3.5	13.379	25.207	g500-H600	MFXXMA 071-32	2	29
5.0	64.4	20.9	84.0	121	84.0	1.0	12.847	28.738	g500-H100	MFXXMA 071-32	2	9.9
4.9	66.2	20.3	86.0	118	86.0	3.1	12.952	29.548	g500-H320	MFXXMA 071-32	2	14
4.8	68.0	19.8	89.0	115	89.0	2.0	12.932	30.357	g500-H210	MFXXMA 071-32	2	12
4.7	69.9	19.3	91.0	112	91.0	3.4	13.179	31.167	g500-H450	MFXXMA 071-32	2	18
4.6	70.3	19.1	92.0	111	92.0	3.4	13.223	31.356	g500-H600	MFXXMA 071-32	2	29
4.5	71.7	18.8	93.0	109	93.0	1.3	12.853	31.976	g500-H140	MFXXMA 071-32	2	11
3.9	83.4	16.1	109	93.8	109	3.4	13.519	37.190	g500-H850	MFXXMA 071-32	2	38
3.8	85.7	15.7	112	91.3	112	1.9	12.895	38.238	g500-H320	MFXXMA 071-32	2	14
3.7	88.0	15.3	115	88.8	115	1.6	12.883	39.286	g500-H210	MFXXMA 071-32	2	12
3.6	88.1	15.0	115	87.4	115	3.9	13.562	39.925	g500-H600	MFXXMA 071-32	3	30
3.6	90.4	14.9	118	86.5	118	3.4	13.038	40.333	g500-H450	MFXXMA 071-32	2	18
3.6	90.9	14.8	119	86.0	119	3.4	13.064	40.578	g500-H600	MFXXMA 071-32	2	29



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		kgcm ²					kg
3.3	96.4	13.7	126	79.9	126	3.6	13.458	43.676	g500-H600	MFXMA 071-32	3	30
3.2	101	13.3	132	77.3	132	3.3	13.331	45.136	g500-H850	MFXMA 071-32	2	38
3.1	104	12.9	136	75.2	136	1.5	12.870	46.407	g500-H320	MFXMA 071-32	2	14
3.1	104	12.7	136	73.8	136	2.0	12.934	47.276	g500-H320	MFXMA 071-32	3	15
3.0	107	12.6	139	73.2	139	1.4	12.861	47.679	g500-H210	MFXMA 071-32	2	12
3.0	107	12.4	140	71.9	140	1.3	12.926	48.571	g500-H210	MFXMA 071-32	3	13
3.0	110	12.3	143	71.3	143	2.4	12.975	48.950	g500-H450	MFXMA 071-32	2	18
2.9	110	12.0	143	70.0	143	2.7	13.156	49.867	g500-H450	MFXMA 071-32	3	18
2.9	110	12.2	144	70.9	144	2.8	12.993	49.247	g500-H600	MFXMA 071-32	2	29
2.7	116	11.4	152	66.2	152	4.8	14.069	52.743	g500-H850	MFXMA 071-32	3	39
2.6	123	10.8	160	62.6	160	3.2	13.264	55.710	g500-H600	MFXMA 071-32	3	30
2.4	134	9.9	174	57.7	174	1.6	12.893	60.502	g500-H320	MFXMA 071-32	3	15
2.3	137	9.7	179	56.1	179	1.0	12.888	62.160	g500-H210	MFXMA 071-32	3	13
2.3	139	9.7	181	56.4	181	1.6	12.914	61.875	g500-H450	MFXMA 071-32	2	18
2.3	140	9.6	182	56.1	182	1.6	12.925	62.250	g500-H600	MFXMA 071-32	2	29
2.1	151	8.8	196	51.1	196	2.6	13.151	68.244	g500-H600	MFXMA 071-32	3	30
2.1	154	8.6	201	50.0	201	1.9	13.017	69.813	g500-H450	MFXMA 071-32	3	18
1.9	171	7.8	223	45.1	223	1.2	12.862	77.387	g500-H320	MFXMA 071-32	3	15
1.7	186	7.1	242	41.5	242	3.3	13.351	84.096	g500-H850	MFXMA 071-32	3	39
1.6	196	6.8	256	39.3	256	2.2	13.017	88.826	g500-H600	MFXMA 071-32	3	30
1.6	197	6.7	256	39.2	256	1.7	12.955	89.048	g500-H450	MFXMA 071-32	3	18
1.4	222	6.0	289	34.7	289	1.1	12.844	100.462	g500-H320	MFXMA 071-32	3	15
1.4	231	5.7	301	33.4	301	2.7	13.205	104.607	g500-H850	MFXMA 071-32	3	39
1.3	241	5.5	314	32.0	314	1.4	12.917	109.083	g500-H450	MFXMA 071-32	3	18
1.3	244	5.4	318	31.6	318	1.8	12.957	110.491	g500-H600	MFXMA 071-32	3	30
1.1	299	4.4	389	25.8	389	2.1	13.053	135.373	g500-H850	MFXMA 071-32	3	39
1.1	303	4.4	394	25.4	394	1.1	12.878	137.133	g500-H450	MFXMA 071-32	3	18
1.0	316	4.2	411	24.4	411	1.4	12.898	142.988	g500-H600	MFXMA 071-32	3	30
0.9	363	3.7	473	21.2	473	1.7	12.986	164.294	g500-H850	MFXMA 071-32	3	39
0.8	383	3.5	499	20.1	499	1.1	12.872	173.536	g500-H600	MFXMA 071-32	3	30
0.8	390	3.4	508	19.8	508	0.8	12.854	176.611	g500-H450	MFXMA 071-32	3	18
0.7	433	3.0	564	17.5	564	1.0	13.024	198.970	g500-H600	MFXMA 071-32	4	33
0.7	447	3.0	582	17.3	582	2.5	13.476	202.237	g500-H1500	MFXMA 071-32	3	69
0.7	459	2.9	597	16.8	597	1.4	12.920	207.675	g500-H850	MFXMA 071-32	3	39
0.6	490	2.7	638	15.5	638	2.2	13.522	225.125	g500-H1500	MFXMA 071-32	4	72
0.6	493	2.6	642	15.4	642	3.9	13.852	226.604	g500-H3000	MFXMA 071-32	4	117
0.6	510	2.6	664	14.9	664	1.2	12.988	234.319	g500-H850	MFXMA 071-32	4	42
0.6	542	2.4	706	14.2	706	2.0	13.303	245.442	g500-H1500	MFXMA 071-32	3	69
0.5	612	2.1	797	12.4	797	1.8	13.166	281.416	g500-H1500	MFXMA 071-32	4	72
0.5	636	2.1	829	11.9	829	3.4	14.019	292.511	g500-H3000	MFXMA 071-32	4	117
0.5	640	2.0	834	11.9	834	1.0	13.032	294.334	g500-H850	MFXMA 071-32	4	42
0.5	685	1.9	892	11.2	892	1.6	13.125	310.250	g500-H1500	MFXMA 071-32	3	69
0.4	761	1.7	992	10.0	992	1.4	13.053	350.054	g500-H1500	MFXMA 071-32	4	72
0.4	819	1.6	1066	9.3	1066	2.7	13.470	376.393	g500-H3000	MFXMA 071-32	4	117
0.3	971	1.3	1265	7.8	1265	1.1	13.022	446.497	g500-H1500	MFXMA 071-32	4	72
0.3	994	1.3	1295	7.6	1295	2.2	13.381	457.048	g500-H3000	MFXMA 071-32	4	117
0.3	1065	1.2	1388	7.1	1388	2.1	13.206	489.908	g500-H3000	MFXMA 071-32	4	117
0.3	1245	1.0	1622	6.1	1622	0.9	13.058	572.324	g500-H1500	MFXMA 071-32	4	72
0.2	1294	1.0	1686	5.9	1686	1.7	13.153	594.888	g500-H3000	MFXMA 071-32	4	117
0.2	1609	0.8	2097	4.7	2097	1.4	13.044	739.983	g500-H3000	MFXMA 071-32	4	117
0.2	1715	0.8	2235	4.4	2235	1.3	12.971	788.632	g500-H3000	MFXMA 071-32	4	117
0.2	2082	0.6	2713	3.6	2713	1.1	12.951	957.625	g500-H3000	MFXMA 071-32	4	117



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		kgcm ²					kg
0.1	2695	0.5	3511	2.8	3511	0.8	12.930	1239.279	g500-H3000	MFXMA 071-32	4	117



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		kgcm ²					kg
44.4	10.0	184	13.0	1056	13.0	3.1	13.702	3.267	g500-H140	MFXXMA 071-42	2	11
43.2	10.3	179	14.0	1029	14.0	3.1	13.325	3.354	g500-H100	MFXXMA 071-42	2	9.9
42.8	10.4	177	14.0	1018	14.0	3.5	14.330	3.389	g500-H210	MFXXMA 071-42	2	12
42.8	10.4	177	14.0	1018	14.0	3.5	14.025	3.389	g500-H320	MFXXMA 071-42	2	14
32.4	13.7	134	18.0	770	18.0	3.1	13.336	4.480	g500-H140	MFXXMA 071-42	2	11
31.5	14.1	130	19.0	750	19.0	2.9	13.135	4.600	g500-H100	MFXXMA 071-42	2	9.9
25.3	17.5	105	23.0	602	23.0	2.9	13.159	5.733	g500-H140	MFXXMA 071-42	2	11
24.6	18.0	102	24.0	586	24.0	2.6	13.036	5.887	g500-H100	MFXXMA 071-42	2	9.9
23.8	18.6	98.6	24.0	567	24.0	3.5	14.455	6.083	g500-H320	MFXXMA 071-42	2	14
23.2	19.1	96.0	25.0	552	25.0	3.5	13.984	6.250	g500-H210	MFXXMA 071-42	2	12
23.1	19.2	95.7	25.0	550	25.0	2.8	13.109	6.272	g500-H140	MFXXMA 071-42	2	11
22.5	19.7	93.2	26.0	536	26.0	2.4	13.007	6.440	g500-H100	MFXXMA 071-42	2	9.9
18.1	24.4	75.0	32.0	431	32.0	2.6	13.011	8.000	g500-H140	MFXXMA 071-42	2	11
17.7	25.1	73.0	33.0	420	33.0	2.1	12.948	8.214	g500-H100	MFXXMA 071-42	2	9.9
16.1	27.6	66.5	36.0	382	36.0	2.4	13.142	9.029	g500-H140	MFXXMA 071-42	2	11
14.8	30.0	61.2	39.0	352	39.0	2.3	12.955	9.800	g500-H140	MFXXMA 071-42	2	11
14.4	30.8	59.6	41.0	343	41.0	1.9	12.913	10.063	g500-H100	MFXXMA 071-42	2	9.9
13.6	32.6	56.2	43.0	323	43.0	3.1	13.523	10.677	g500-H320	MFXXMA 071-42	2	14
12.8	34.7	52.8	46.0	304	46.0	1.7	12.975	11.360	g500-H100	MFXXMA 071-42	2	9.9
12.5	35.3	51.9	47.0	299	47.0	2.1	13.040	11.554	g500-H140	MFXXMA 071-42	2	11
12.4	35.7	51.4	47.0	295	47.0	3.1	13.425	11.680	g500-H320	MFXXMA 071-42	2	14
12.1	36.7	50.0	48.0	288	48.0	2.9	13.297	12.000	g500-H210	MFXXMA 071-42	2	12
11.5	38.6	47.5	51.0	273	51.0	2.0	13.010	12.640	g500-H140	MFXXMA 071-42	2	11
10.0	44.3	41.4	58.0	238	58.0	1.3	12.929	14.490	g500-H100	MFXXMA 071-42	2	9.9
9.7	45.5	40.3	60.0	232	60.0	2.9	13.244	14.898	g500-H320	MFXXMA 071-42	2	14
9.5	46.8	39.2	62.0	225	62.0	2.5	13.165	15.306	g500-H210	MFXXMA 071-42	2	12
9.2	48.0	38.2	63.0	220	63.0	3.1	13.969	15.714	g500-H450	MFXXMA 071-42	2	18
9.2	48.3	38.0	64.0	218	64.0	3.1	14.140	15.810	g500-H600	MFXXMA 071-42	2	29
9.0	49.3	37.2	65.0	214	65.0	1.6	12.950	16.122	g500-H140	MFXXMA 071-42	2	11
8.2	54.2	33.8	71.0	194	71.0	1.1	12.900	17.750	g500-H100	MFXXMA 071-42	2	9.9
7.9	55.8	32.9	73.0	189	73.0	2.6	13.138	18.250	g500-H320	MFXXMA 071-42	2	14
7.7	57.3	32.0	75.0	184	75.0	2.1	13.085	18.750	g500-H210	MFXXMA 071-42	2	12
7.3	60.4	30.4	80.0	175	80.0	1.3	12.914	19.750	g500-H140	MFXXMA 071-42	2	11
6.5	68.2	26.9	90.0	155	90.0	0.8	12.867	22.314	g500-H100	MFXXMA 071-42	2	9.9
6.1	72.6	25.3	96.0	145	96.0	2.3	13.009	23.754	g500-H320	MFXXMA 071-42	2	14
5.9	74.6	24.6	98.0	141	98.0	1.6	12.979	24.405	g500-H210	MFXXMA 071-42	2	12
5.8	75.9	24.2	100	139	100	1.1	12.877	24.829	g500-H140	MFXXMA 071-42	2	11
5.8	76.6	23.9	101	138	101	2.6	13.312	25.056	g500-H450	MFXXMA 071-42	2	18
5.8	77.0	23.8	101	137	101	2.6	13.379	25.207	g500-H600	MFXXMA 071-42	2	29
4.9	90.3	20.3	119	117	119	2.2	12.952	29.548	g500-H320	MFXXMA 071-42	2	14
4.8	92.8	19.8	122	114	122	1.5	12.932	30.357	g500-H210	MFXXMA 071-42	2	12
4.7	95.3	19.3	125	111	125	2.5	13.179	31.167	g500-H450	MFXXMA 071-42	2	18
4.6	95.8	19.1	126	110	126	2.5	13.223	31.356	g500-H600	MFXXMA 071-42	2	29
4.5	97.7	18.8	129	108	129	0.9	12.853	31.976	g500-H140	MFXXMA 071-42	2	11
3.9	114	16.1	150	92.8	150	2.5	13.519	37.190	g500-H850	MFXXMA 071-42	2	38
3.8	117	15.7	154	90.2	154	1.4	12.895	38.238	g500-H320	MFXXMA 071-42	2	14
3.7	120	15.3	158	87.8	158	1.1	12.883	39.286	g500-H210	MFXXMA 071-42	2	12
3.6	120	15.0	158	86.4	158	2.9	13.562	39.925	g500-H600	MFXXMA 071-42	3	30
3.6	123	14.9	162	85.5	162	2.5	13.038	40.333	g500-H450	MFXXMA 071-42	2	18
3.6	124	14.8	163	85.0	163	2.5	13.064	40.578	g500-H600	MFXXMA 071-42	2	29
3.3	132	13.7	173	79.0	173	2.6	13.458	43.676	g500-H600	MFXXMA 071-42	3	30



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		kgcm ²					kg
3.2	138	13.3	182	76.4	182	2.4	13.331	45.136	g500-H850	MFXXMA 071-42	2	38
3.1	142	12.9	187	74.3	187	1.1	12.870	46.407	g500-H320	MFXXMA 071-42	2	14
3.1	142	12.7	187	73.0	187	1.5	12.934	47.276	g500-H320	MFXXMA 071-42	3	15
3.0	146	12.6	192	72.4	192	1.0	12.861	47.679	g500-H210	MFXXMA 071-42	2	12
3.0	146	12.4	193	71.0	193	0.9	12.926	48.571	g500-H210	MFXXMA 071-42	3	13
3.0	150	12.3	197	70.5	197	1.8	12.975	48.950	g500-H450	MFXXMA 071-42	2	18
2.9	151	12.2	198	70.1	198	2.1	12.993	49.247	g500-H600	MFXXMA 071-42	2	29
2.9	150	12.0	198	69.2	198	2.0	13.156	49.867	g500-H450	MFXXMA 071-42	3	18
2.7	159	11.4	209	65.4	209	3.5	14.069	52.743	g500-H850	MFXXMA 071-42	3	39
2.6	168	10.8	221	61.9	221	2.3	13.264	55.710	g500-H600	MFXXMA 071-42	3	30
2.4	182	9.9	240	57.0	240	1.2	12.893	60.502	g500-H320	MFXXMA 071-42	3	15
2.3	189	9.7	249	55.8	249	1.2	12.914	61.875	g500-H450	MFXXMA 071-42	2	18
2.3	190	9.6	251	55.4	251	1.2	12.925	62.250	g500-H600	MFXXMA 071-42	2	29
2.1	205	8.8	271	50.6	271	1.9	13.151	68.244	g500-H600	MFXXMA 071-42	3	30
2.1	210	8.6	277	49.4	277	1.4	13.017	69.813	g500-H450	MFXXMA 071-42	3	18
1.9	233	7.8	307	44.6	307	0.9	12.862	77.387	g500-H320	MFXXMA 071-42	3	15
1.7	253	7.1	334	41.0	334	2.4	13.351	84.096	g500-H850	MFXXMA 071-42	3	39
1.6	267	6.8	352	38.8	352	1.6	13.017	88.826	g500-H600	MFXXMA 071-42	3	30
1.6	268	6.7	353	38.7	353	1.2	12.955	89.048	g500-H450	MFXXMA 071-42	3	18
1.4	315	5.7	415	33.0	415	2.0	13.205	104.607	g500-H850	MFXXMA 071-42	3	39
1.3	328	5.5	433	31.6	433	1.0	12.917	109.083	g500-H450	MFXXMA 071-42	3	18
1.3	333	5.4	438	31.2	438	1.3	12.957	110.491	g500-H600	MFXXMA 071-42	3	30
1.1	408	4.4	537	25.5	537	1.5	13.053	135.373	g500-H850	MFXXMA 071-42	3	39
1.0	430	4.2	567	24.1	567	1.0	12.898	142.988	g500-H600	MFXXMA 071-42	3	30
0.9	495	3.7	652	21.0	652	1.3	12.986	164.294	g500-H850	MFXXMA 071-42	3	39
0.8	522	3.5	688	19.9	688	0.8	12.872	173.536	g500-H600	MFXXMA 071-42	3	30
0.7	609	3.0	802	17.1	802	1.8	13.476	202.237	g500-H1500	MFXXMA 071-42	3	69
0.7	625	2.9	824	16.6	824	1.0	12.920	207.675	g500-H850	MFXXMA 071-42	3	39
0.6	668	2.7	879	15.3	879	1.6	13.522	225.125	g500-H1500	MFXXMA 071-42	4	72
0.6	672	2.6	885	15.2	885	2.9	13.852	226.604	g500-H3000	MFXXMA 071-42	4	117
0.6	695	2.6	915	14.7	915	0.9	12.988	234.319	g500-H850	MFXXMA 071-42	4	42
0.6	739	2.4	973	14.1	973	1.5	13.303	245.442	g500-H1500	MFXXMA 071-42	3	69
0.5	835	2.1	1099	12.3	1099	1.3	13.166	281.416	g500-H1500	MFXXMA 071-42	4	72
0.5	867	2.1	1143	11.8	1143	2.5	14.019	292.511	g500-H3000	MFXXMA 071-42	4	117
0.5	934	1.9	1230	11.1	1230	1.2	13.125	310.250	g500-H1500	MFXXMA 071-42	3	69
0.4	1038	1.7	1368	9.9	1368	1.1	13.053	350.054	g500-H1500	MFXXMA 071-42	4	72
0.4	1116	1.6	1470	9.2	1470	2.0	13.470	376.393	g500-H3000	MFXXMA 071-42	4	117
0.3	1324	1.3	1744	7.7	1744	0.8	13.022	446.497	g500-H1500	MFXXMA 071-42	4	72
0.3	1355	1.3	1785	7.5	1785	1.6	13.381	457.048	g500-H3000	MFXXMA 071-42	4	117
0.3	1453	1.2	1914	7.0	1914	1.5	13.206	489.908	g500-H3000	MFXXMA 071-42	4	117
0.2	1764	1.0	2324	5.8	2324	1.2	13.153	594.888	g500-H3000	MFXXMA 071-42	4	117
0.2	2194	0.8	2891	4.7	2891	1.0	13.044	739.983	g500-H3000	MFXXMA 071-42	4	117
0.2	2339	0.8	3081	4.4	3081	0.9	12.971	788.632	g500-H3000	MFXXMA 071-42	4	117



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		kgcm ²					kg
44.4	14.3	184	19.0	1071	19.0	3.3	28.902	3.267	g500-H140	MFXXMA 080-32	2	16
43.2	14.6	179	20.0	1044	20.0	2.4	28.525	3.354	g500-H100	MFXXMA 080-32	2	15
42.8	14.8	177	20.0	1033	20.0	4.3	29.530	3.389	g500-H210	MFXXMA 080-32	2	17
42.8	14.8	177	20.0	1033	20.0	4.3	29.225	3.389	g500-H320	MFXXMA 080-32	2	19
32.4	19.6	134	26.0	781	26.0	2.7	28.536	4.480	g500-H140	MFXXMA 080-32	2	16
31.5	20.1	130	27.0	761	27.0	2.0	28.335	4.600	g500-H100	MFXXMA 080-32	2	15
31.2	20.3	129	27.0	753	27.0	4.0	28.977	4.648	g500-H210	MFXXMA 080-32	2	17
31.2	20.3	129	27.0	753	27.0	4.3	28.815	4.648	g500-H320	MFXXMA 080-32	2	19
25.3	25.0	105	33.0	611	33.0	2.3	28.359	5.733	g500-H140	MFXXMA 080-32	2	16
25.3	25.0	105	33.0	611	33.0	4.2	30.866	5.733	g500-H600	MFXXMA 080-32	2	34
24.6	25.7	102	34.0	595	34.0	1.8	28.236	5.887	g500-H100	MFXXMA 080-32	2	15
24.0	26.4	99.2	35.0	579	35.0	4.2	30.231	6.045	g500-H450	MFXXMA 080-32	2	22
23.8	26.6	98.6	35.0	575	35.0	4.3	29.655	6.083	g500-H320	MFXXMA 080-32	2	19
23.2	27.3	96.0	36.0	560	36.0	3.3	29.184	6.250	g500-H210	MFXXMA 080-32	2	17
23.1	27.4	95.7	37.0	558	37.0	2.2	28.309	6.272	g500-H140	MFXXMA 080-32	2	16
22.5	28.1	93.2	37.0	544	37.0	1.7	28.207	6.440	g500-H100	MFXXMA 080-32	2	15
21.9	28.9	90.7	38.0	529	38.0	4.3	29.976	6.613	g500-H450	MFXXMA 080-32	2	22
18.1	34.9	75.0	47.0	438	47.0	1.9	28.211	8.000	g500-H140	MFXXMA 080-32	2	16
17.7	35.9	73.0	48.0	426	48.0	1.5	28.148	8.214	g500-H100	MFXXMA 080-32	2	15
17.4	36.4	71.9	49.0	420	49.0	3.9	29.044	8.343	g500-H320	MFXXMA 080-32	2	19
16.9	37.4	70.0	50.0	408	50.0	2.6	28.793	8.571	g500-H210	MFXXMA 080-32	2	17
16.1	39.4	66.5	53.0	388	53.0	1.7	28.342	9.029	g500-H140	MFXXMA 080-32	2	16
14.8	42.8	61.2	57.0	357	57.0	1.7	28.155	9.800	g500-H140	MFXXMA 080-32	2	16
14.4	43.9	59.6	59.0	348	59.0	1.3	28.113	10.063	g500-H100	MFXXMA 080-32	2	15
13.6	46.6	56.2	62.0	328	62.0	3.2	28.723	10.677	g500-H320	MFXXMA 080-32	2	19
12.9	49.2	53.3	66.0	311	66.0	4.2	29.737	11.262	g500-H450	MFXXMA 080-32	2	22
12.8	49.5	53.0	66.0	309	66.0	4.2	30.069	11.330	g500-H600	MFXXMA 080-32	2	34
12.8	49.6	52.8	66.0	308	66.0	1.1	28.175	11.360	g500-H100	MFXXMA 080-32	2	15
12.5	50.4	51.9	67.0	303	67.0	1.4	28.240	11.554	g500-H140	MFXXMA 080-32	2	16
12.4	51.0	51.4	68.0	300	68.0	3.0	28.625	11.680	g500-H320	MFXXMA 080-32	2	19
12.1	52.4	50.0	70.0	292	70.0	2.0	28.497	12.000	g500-H210	MFXXMA 080-32	2	17
11.8	53.8	48.7	72.0	284	72.0	4.3	29.563	12.320	g500-H450	MFXXMA 080-32	2	22
11.7	54.1	48.4	72.0	282	72.0	4.3	29.841	12.395	g500-H600	MFXXMA 080-32	2	34
11.5	55.2	47.5	74.0	277	74.0	1.4	28.210	12.640	g500-H140	MFXXMA 080-32	2	16
10.0	63.3	41.4	84.0	242	84.0	0.9	28.129	14.490	g500-H100	MFXXMA 080-32	2	15
10.0	63.3	41.4	84.0	242	84.0	4.2	31.061	14.490	g500-H850	MFXXMA 080-32	2	42
9.7	65.0	40.3	87.0	235	87.0	2.6	28.444	14.898	g500-H320	MFXXMA 080-32	2	19
9.5	66.8	39.2	89.0	229	89.0	1.7	28.365	15.306	g500-H210	MFXXMA 080-32	2	17
9.2	68.6	38.2	91.0	223	91.0	3.6	29.169	15.714	g500-H450	MFXXMA 080-32	2	22
9.2	69.0	38.0	92.0	221	92.0	4.0	29.340	15.810	g500-H600	MFXXMA 080-32	2	34
9.0	70.4	37.2	94.0	217	94.0	1.1	28.150	16.122	g500-H140	MFXXMA 080-32	2	16
7.9	79.7	32.9	106	192	106	2.2	28.338	18.250	g500-H320	MFXXMA 080-32	2	19
7.7	81.9	32.0	109	187	109	1.5	28.285	18.750	g500-H210	MFXXMA 080-32	2	17
7.5	84.0	31.2	112	182	112	3.0	28.925	19.250	g500-H450	MFXXMA 080-32	2	22
7.5	84.6	31.0	113	181	113	3.5	29.038	19.367	g500-H600	MFXXMA 080-32	2	34
7.3	86.2	30.4	115	177	115	0.9	28.114	19.750	g500-H140	MFXXMA 080-32	2	16
6.3	101	26.0	134	152	134	3.5	29.653	23.103	g500-H850	MFXXMA 080-32	2	42
6.1	104	25.3	138	147	138	1.7	28.209	23.754	g500-H320	MFXXMA 080-32	2	19
5.9	107	24.6	142	143	142	1.1	28.179	24.405	g500-H210	MFXXMA 080-32	2	17
5.8	109	23.9	146	140	146	2.3	28.512	25.056	g500-H450	MFXXMA 080-32	2	22
5.8	110	23.8	147	139	147	3.1	28.579	25.207	g500-H600	MFXXMA 080-32	2	34



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		kgcm ²					kg
5.1	124	21.2	165	124	165	3.3	29.141	28.315	g500-H850	MFXMA 080-32	2	42
4.9	129	20.3	172	119	172	1.6	28.152	29.548	g500-H320	MFXMA 080-32	2	19
4.8	133	19.8	177	115	177	1.0	28.132	30.357	g500-H210	MFXMA 080-32	2	17
4.6	134	19.2	179	112	179	2.5	29.108	31.197	g500-H600	MFXMA 080-32	3	34
4.7	136	19.3	181	112	181	2.1	28.379	31.167	g500-H450	MFXMA 080-32	2	22
4.6	137	19.1	183	112	183	2.8	28.423	31.356	g500-H600	MFXMA 080-32	2	34
4.1	156	16.8	208	98.1	208	3.3	30.325	35.689	g500-H1500	MFXMA 080-32	2	73
3.9	162	16.1	216	94.1	216	3.1	28.719	37.190	g500-H850	MFXMA 080-32	2	42
3.8	163	15.9	217	92.6	217	3.0	29.932	37.799	g500-H850	MFXMA 080-32	3	44
3.6	172	15.0	229	87.7	229	2.0	28.762	39.925	g500-H600	MFXMA 080-32	3	34
3.6	176	14.9	235	86.8	235	1.8	28.238	40.333	g500-H450	MFXMA 080-32	2	22
3.6	177	14.8	236	86.3	236	2.3	28.264	40.578	g500-H600	MFXMA 080-32	2	34
3.5	178	14.5	237	84.6	237	2.7	29.726	41.350	g500-H850	MFXMA 080-32	3	44
3.3	188	13.7	250	80.1	250	1.8	28.658	43.676	g500-H600	MFXMA 080-32	3	34
3.3	189	13.9	252	80.8	252	3.2	29.711	43.313	g500-H1500	MFXMA 080-32	2	73
3.2	197	13.3	263	77.5	263	2.7	28.531	45.136	g500-H850	MFXMA 080-32	2	42
3.1	203	12.7	271	74.0	271	1.0	28.134	47.276	g500-H320	MFXMA 080-32	3	19
3.0	214	12.3	285	71.5	285	1.2	28.175	48.950	g500-H450	MFXMA 080-32	2	22
2.9	215	12.0	286	70.2	286	1.4	28.356	49.867	g500-H450	MFXMA 080-32	3	23
2.9	215	12.2	287	71.1	287	1.5	28.193	49.247	g500-H600	MFXMA 080-32	2	34
2.7	227	11.4	302	66.4	302	2.4	29.269	52.743	g500-H850	MFXMA 080-32	3	44
2.6	239	11.0	319	63.9	319	2.5	29.134	54.750	g500-H1500	MFXMA 080-32	2	73
2.6	240	10.8	319	62.8	319	1.6	28.464	55.710	g500-H600	MFXMA 080-32	3	34
2.2	278	9.3	370	54.2	370	2.0	28.992	64.610	g500-H850	MFXMA 080-32	3	44
2.1	294	8.8	391	51.3	391	1.3	28.351	68.244	g500-H600	MFXMA 080-32	3	34
2.1	300	8.6	400	50.1	400	1.0	28.217	69.813	g500-H450	MFXMA 080-32	3	23
1.8	339	7.6	452	44.4	452	2.8	30.783	78.794	g500-H1500	MFXMA 080-32	3	74
1.7	362	7.1	482	41.6	482	1.7	28.551	84.096	g500-H850	MFXMA 080-32	3	44
1.6	382	6.8	509	39.4	509	1.1	28.217	88.826	g500-H600	MFXMA 080-32	3	34
1.6	383	6.7	511	39.3	511	0.8	28.155	89.048	g500-H450	MFXMA 080-32	3	23
1.4	450	5.7	600	33.5	600	1.4	28.405	104.607	g500-H850	MFXMA 080-32	3	44
1.3	475	5.4	634	31.7	634	0.9	28.157	110.491	g500-H600	MFXMA 080-32	3	34
1.2	540	4.8	720	27.9	720	2.0	29.672	125.632	g500-H1500	MFXMA 080-32	3	74
1.1	582	4.4	776	25.9	776	1.0	28.253	135.373	g500-H850	MFXMA 080-32	3	44
0.9	662	3.9	883	22.7	883	1.6	29.068	153.976	g500-H1500	MFXMA 080-32	3	74
0.9	707	3.7	942	21.3	942	0.9	28.186	164.294	g500-H850	MFXMA 080-32	3	44
0.9	727	3.6	969	20.7	969	2.9	30.261	168.993	g500-H3000	MFXMA 080-32	3	119
0.7	870	3.0	1160	17.3	1160	1.2	28.676	202.237	g500-H1500	MFXMA 080-32	3	74
0.7	882	2.9	1176	17.1	1176	2.4	29.667	205.096	g500-H3000	MFXMA 080-32	3	119
0.6	954	2.7	1272	15.5	1272	1.1	28.722	225.125	g500-H1500	MFXMA 080-32	4	77
0.6	960	2.6	1280	15.4	1280	2.0	29.052	226.604	g500-H3000	MFXMA 080-32	4	122
0.6	1056	2.4	1407	14.3	1407	1.0	28.503	245.442	g500-H1500	MFXMA 080-32	3	74
0.6	1115	2.3	1487	13.5	1487	1.9	29.107	259.250	g500-H3000	MFXMA 080-32	3	119
0.5	1192	2.1	1589	12.4	1589	0.9	28.366	281.416	g500-H1500	MFXMA 080-32	4	77
0.5	1239	2.1	1652	12.0	1652	1.7	29.219	292.511	g500-H3000	MFXMA 080-32	4	122
0.5	1334	1.9	1779	11.3	1779	0.8	28.325	310.250	g500-H1500	MFXMA 080-32	3	74
0.4	1594	1.6	2126	9.3	2126	1.3	28.670	376.393	g500-H3000	MFXMA 080-32	4	122
0.3	1936	1.3	2581	7.7	2581	1.1	28.581	457.048	g500-H3000	MFXMA 080-32	4	122
0.3	2075	1.2	2767	7.1	2767	1.0	28.406	489.908	g500-H3000	MFXMA 080-32	4	122
0.2	2520	1.0	3360	5.9	3360	0.9	28.353	594.888	g500-H3000	MFXMA 080-32	4	122



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		kgcm ²					kg
44.4	19.7	184	26.0	1065	26.0	2.4	28.902	3.267	g500-H140	MFXXMA 080-42	2	16
43.2	20.2	179	27.0	1038	27.0	1.8	28.525	3.354	g500-H100	MFXXMA 080-42	2	15
42.8	20.4	177	27.0	1027	27.0	3.1	29.530	3.389	g500-H210	MFXXMA 080-42	2	17
42.8	20.4	177	27.0	1027	27.0	3.1	29.225	3.389	g500-H320	MFXXMA 080-42	2	19
32.4	26.9	134	36.0	777	36.0	2.0	28.536	4.480	g500-H140	MFXXMA 080-42	2	16
31.5	27.7	130	37.0	757	37.0	1.5	28.335	4.600	g500-H100	MFXXMA 080-42	2	15
31.2	28.0	129	37.0	749	37.0	2.9	28.977	4.648	g500-H210	MFXXMA 080-42	2	17
31.2	28.0	129	37.0	749	37.0	3.1	28.815	4.648	g500-H320	MFXXMA 080-42	2	19
25.3	34.5	105	46.0	607	46.0	1.7	28.359	5.733	g500-H140	MFXXMA 080-42	2	16
25.3	34.5	105	46.0	607	46.0	3.1	30.866	5.733	g500-H600	MFXXMA 080-42	2	34
24.6	35.4	102	47.0	591	47.0	1.3	28.236	5.887	g500-H100	MFXXMA 080-42	2	15
24.0	36.4	99.2	48.0	576	48.0	3.1	30.231	6.045	g500-H450	MFXXMA 080-42	2	22
23.8	36.6	98.6	48.0	572	48.0	3.1	29.655	6.083	g500-H320	MFXXMA 080-42	2	19
23.2	37.6	96.0	50.0	557	50.0	2.4	29.184	6.250	g500-H210	MFXXMA 080-42	2	17
23.1	37.7	95.7	50.0	555	50.0	1.6	28.309	6.272	g500-H140	MFXXMA 080-42	2	16
22.5	38.7	93.2	51.0	540	51.0	1.2	28.207	6.440	g500-H100	MFXXMA 080-42	2	15
21.9	39.8	90.7	53.0	526	53.0	3.1	29.976	6.613	g500-H450	MFXXMA 080-42	2	22
18.1	48.1	75.0	64.0	435	64.0	1.4	28.211	8.000	g500-H140	MFXXMA 080-42	2	16
17.7	49.4	73.0	65.0	424	65.0	1.1	28.148	8.214	g500-H100	MFXXMA 080-42	2	15
17.4	50.2	71.9	66.0	417	66.0	2.8	29.044	8.343	g500-H320	MFXXMA 080-42	2	19
16.9	51.6	70.0	68.0	406	68.0	1.9	28.793	8.571	g500-H210	MFXXMA 080-42	2	17
16.1	54.3	66.5	72.0	385	72.0	1.2	28.342	9.029	g500-H140	MFXXMA 080-42	2	16
14.8	59.0	61.2	78.0	355	78.0	1.2	28.155	9.800	g500-H140	MFXXMA 080-42	2	16
14.4	60.5	59.6	80.0	346	80.0	0.9	28.113	10.063	g500-H100	MFXXMA 080-42	2	15
13.6	64.2	56.2	85.0	326	85.0	2.4	28.723	10.677	g500-H320	MFXXMA 080-42	2	19
12.9	67.7	53.3	90.0	309	90.0	3.1	29.737	11.262	g500-H450	MFXXMA 080-42	2	22
12.8	68.2	53.0	90.0	307	90.0	3.1	30.069	11.330	g500-H600	MFXXMA 080-42	2	34
12.8	68.3	52.8	90.0	306	90.0	0.8	28.175	11.360	g500-H100	MFXXMA 080-42	2	15
12.5	69.5	51.9	92.0	301	92.0	1.1	28.240	11.554	g500-H140	MFXXMA 080-42	2	16
12.4	70.3	51.4	93.0	298	93.0	2.2	28.625	11.680	g500-H320	MFXXMA 080-42	2	19
12.1	72.2	50.0	95.0	290	95.0	1.5	28.497	12.000	g500-H210	MFXXMA 080-42	2	17
11.8	74.1	48.7	98.0	283	98.0	3.1	29.563	12.320	g500-H450	MFXXMA 080-42	2	22
11.7	74.6	48.4	99.0	281	99.0	3.1	29.841	12.395	g500-H600	MFXXMA 080-42	2	34
11.5	76.0	47.5	101	275	101	1.0	28.210	12.640	g500-H140	MFXXMA 080-42	2	16
10.0	87.2	41.4	115	240	115	3.1	31.061	14.490	g500-H850	MFXXMA 080-42	2	42
9.7	89.6	40.3	119	234	119	1.9	28.444	14.898	g500-H320	MFXXMA 080-42	2	19
9.5	92.1	39.2	122	227	122	1.2	28.365	15.306	g500-H210	MFXXMA 080-42	2	17
9.2	94.5	38.2	125	222	125	2.7	29.169	15.714	g500-H450	MFXXMA 080-42	2	22
9.2	95.1	38.0	126	220	126	2.9	29.340	15.810	g500-H600	MFXXMA 080-42	2	34
9.0	97.0	37.2	128	216	128	0.8	28.150	16.122	g500-H140	MFXXMA 080-42	2	16
7.9	110	32.9	145	191	145	1.6	28.338	18.250	g500-H320	MFXXMA 080-42	2	19
7.7	113	32.0	149	186	149	1.1	28.285	18.750	g500-H210	MFXXMA 080-42	2	17
7.5	116	31.2	153	181	153	2.2	28.925	19.250	g500-H450	MFXXMA 080-42	2	22
7.5	117	31.0	154	180	154	2.6	29.038	19.367	g500-H600	MFXXMA 080-42	2	34
6.3	139	26.0	184	151	184	2.6	29.653	23.103	g500-H850	MFXXMA 080-42	2	42
6.1	143	25.3	189	147	189	1.3	28.209	23.754	g500-H320	MFXXMA 080-42	2	19
5.9	147	24.6	194	143	194	0.8	28.179	24.405	g500-H210	MFXXMA 080-42	2	17
5.8	151	23.9	199	139	199	1.7	28.512	25.056	g500-H450	MFXXMA 080-42	2	22
5.8	152	23.8	201	138	201	2.3	28.579	25.207	g500-H600	MFXXMA 080-42	2	34
5.1	170	21.2	225	123	225	2.4	29.141	28.315	g500-H850	MFXXMA 080-42	2	42
4.9	178	20.3	235	118	235	1.2	28.152	29.548	g500-H320	MFXXMA 080-42	2	19



Inverter operation									Geared motor			
5 Hz -		- 20 Hz		- 120 Hz (1:24)			J	i			z	m
n ₂₂	M ₂₂	n ₂₁	M ₂	n ₂	M ₂	c	J	i				
rpm	Nm	rpm	Nm	rpm	Nm		kgcm ²					kg
4.6	185	19.2	244	112	244	1.9	29.108	31.197	g500-H600	MFXXMA 080-42	3	34
4.7	188	19.3	248	112	248	1.6	28.379	31.167	g500-H450	MFXXMA 080-42	2	22
4.6	189	19.1	249	111	249	2.1	28.423	31.356	g500-H600	MFXXMA 080-42	2	34
4.1	215	16.8	284	97.5	284	2.4	30.325	35.689	g500-H1500	MFXXMA 080-42	2	73
3.9	224	16.1	296	93.6	296	2.3	28.719	37.190	g500-H850	MFXXMA 080-42	2	42
3.8	224	15.9	296	92.1	296	2.2	29.932	37.799	g500-H850	MFXXMA 080-42	3	44
3.6	237	15.0	313	87.2	313	1.5	28.762	39.925	g500-H600	MFXXMA 080-42	3	34
3.6	243	14.9	321	86.3	321	1.3	28.238	40.333	g500-H450	MFXXMA 080-42	2	22
3.6	244	14.8	323	85.8	323	1.7	28.264	40.578	g500-H600	MFXXMA 080-42	2	34
3.5	245	14.5	324	84.2	324	2.0	29.726	41.350	g500-H850	MFXXMA 080-42	3	44
3.3	259	13.7	342	79.7	342	1.3	28.658	43.676	g500-H600	MFXXMA 080-42	3	34
3.3	261	13.9	345	80.3	345	2.4	29.711	43.313	g500-H1500	MFXXMA 080-42	2	73
3.2	272	13.3	359	77.1	359	2.0	28.531	45.136	g500-H850	MFXXMA 080-42	2	42
3.0	295	12.3	389	71.1	389	0.9	28.175	48.950	g500-H450	MFXXMA 080-42	2	22
2.9	296	12.0	391	69.8	391	1.0	28.356	49.867	g500-H450	MFXXMA 080-42	3	23
2.9	296	12.2	392	70.7	392	1.1	28.193	49.247	g500-H600	MFXXMA 080-42	2	34
2.7	313	11.4	413	66.0	413	1.8	29.269	52.743	g500-H850	MFXXMA 080-42	3	44
2.6	329	11.0	436	63.6	436	1.8	29.134	54.750	g500-H1500	MFXXMA 080-42	2	73
2.6	330	10.8	437	62.5	437	1.2	28.464	55.710	g500-H600	MFXXMA 080-42	3	34
2.2	383	9.3	506	53.9	506	1.4	28.992	64.610	g500-H850	MFXXMA 080-42	3	44
2.1	404	8.8	535	51.0	535	1.0	28.351	68.244	g500-H600	MFXXMA 080-42	3	34
1.8	467	7.6	617	44.2	617	2.1	30.783	78.794	g500-H1500	MFXXMA 080-42	3	74
1.7	498	7.1	659	41.4	659	1.2	28.551	84.096	g500-H850	MFXXMA 080-42	3	44
1.6	526	6.8	696	39.2	696	0.8	28.217	88.826	g500-H600	MFXXMA 080-42	3	34
1.4	620	5.7	820	33.3	820	1.0	28.405	104.607	g500-H850	MFXXMA 080-42	3	44
1.2	744	4.8	985	27.7	985	1.5	29.672	125.632	g500-H1500	MFXXMA 080-42	3	74
0.9	912	3.9	1207	22.6	1207	1.2	29.068	153.976	g500-H1500	MFXXMA 080-42	3	74
0.9	1001	3.6	1324	20.6	1324	2.2	30.261	168.993	g500-H3000	MFXXMA 080-42	3	119
0.7	1198	3.0	1585	17.2	1585	0.9	28.676	202.237	g500-H1500	MFXXMA 080-42	3	74
0.7	1215	2.9	1607	17.0	1607	1.8	29.667	205.096	g500-H3000	MFXXMA 080-42	3	119
0.6	1314	2.7	1738	15.5	1738	0.8	28.722	225.125	g500-H1500	MFXXMA 080-42	4	77
0.6	1323	2.6	1749	15.4	1749	1.4	29.052	226.604	g500-H3000	MFXXMA 080-42	4	122
0.6	1536	2.3	2032	13.4	2032	1.4	29.107	259.250	g500-H3000	MFXXMA 080-42	3	119
0.5	1707	2.1	2258	11.9	2258	1.3	29.219	292.511	g500-H3000	MFXXMA 080-42	4	122
0.4	2197	1.6	2905	9.2	2905	1.0	28.670	376.393	g500-H3000	MFXXMA 080-42	4	122
0.3	2668	1.3	3528	7.6	3528	0.8	28.581	457.048	g500-H3000	MFXXMA 080-42	4	122



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		kgcm ²					kg
44.4	24.4	184	35.0	1065	35.0	1.8	32.902	3.267	g500-H140	MFXMA 090-32	2	23
43.2	25.1	179	35.0	1038	35.0	1.3	32.525	3.354	g500-H100	MFXMA 090-32	2	22
42.8	25.3	177	36.0	1027	36.0	2.7	33.530	3.389	g500-H210	MFXMA 090-32	2	24
42.8	25.3	177	36.0	1027	36.0	3.0	33.225	3.389	g500-H320	MFXMA 090-32	2	26
32.4	33.5	134	47.0	777	47.0	1.5	32.536	4.480	g500-H140	MFXMA 090-32	2	23
31.5	34.4	130	49.0	757	49.0	1.1	32.335	4.600	g500-H100	MFXMA 090-32	2	22
31.2	34.7	129	49.0	749	49.0	2.2	32.977	4.648	g500-H210	MFXMA 090-32	2	24
31.2	34.7	129	49.0	749	49.0	2.9	32.815	4.648	g500-H320	MFXMA 090-32	2	26
25.3	42.8	105	61.0	607	61.0	1.3	32.359	5.733	g500-H140	MFXMA 090-32	2	23
25.3	42.8	105	61.0	607	61.0	2.9	34.866	5.733	g500-H600	MFXMA 090-32	2	41
24.6	44.0	102	62.0	591	62.0	1.0	32.236	5.887	g500-H100	MFXMA 090-32	2	22
24.0	45.2	99.2	64.0	576	64.0	2.9	34.231	6.045	g500-H450	MFXMA 090-32	2	29
23.8	45.4	98.6	64.0	572	64.0	2.7	33.655	6.083	g500-H320	MFXMA 090-32	2	26
23.2	46.7	96.0	66.0	557	66.0	1.8	33.184	6.250	g500-H210	MFXMA 090-32	2	24
23.1	46.9	95.7	66.0	555	66.0	1.2	32.309	6.272	g500-H140	MFXMA 090-32	2	23
22.5	48.1	93.2	68.0	540	68.0	0.9	32.207	6.440	g500-H100	MFXMA 090-32	2	22
21.9	49.4	90.7	70.0	526	70.0	3.0	33.976	6.613	g500-H450	MFXMA 090-32	2	29
18.1	59.8	75.0	85.0	435	85.0	1.0	32.211	8.000	g500-H140	MFXMA 090-32	2	23
17.7	61.4	73.0	87.0	424	87.0	0.8	32.148	8.214	g500-H100	MFXMA 090-32	2	22
17.4	62.3	71.9	88.0	417	88.0	2.1	33.044	8.343	g500-H320	MFXMA 090-32	2	26
16.9	64.0	70.0	91.0	406	91.0	1.4	32.793	8.571	g500-H210	MFXMA 090-32	2	24
16.1	67.5	66.5	95.0	385	95.0	0.9	32.342	9.029	g500-H140	MFXMA 090-32	2	23
14.8	73.2	61.2	104	355	104	0.9	32.155	9.800	g500-H140	MFXMA 090-32	2	23
13.6	79.8	56.2	113	326	113	1.8	32.723	10.677	g500-H320	MFXMA 090-32	2	26
12.9	84.1	53.3	119	309	119	2.5	33.737	11.262	g500-H450	MFXMA 090-32	2	29
12.8	84.6	53.0	120	307	120	2.9	34.069	11.330	g500-H600	MFXMA 090-32	2	41
12.4	87.3	51.4	124	298	124	1.7	32.625	11.680	g500-H320	MFXMA 090-32	2	26
12.1	89.6	50.0	127	290	127	1.1	32.497	12.000	g500-H210	MFXMA 090-32	2	24
11.8	92.0	48.7	130	283	130	2.4	33.563	12.320	g500-H450	MFXMA 090-32	2	29
11.7	92.6	48.4	131	281	131	3.0	33.841	12.395	g500-H600	MFXMA 090-32	2	41
10.0	108	41.4	153	240	153	2.9	35.061	14.490	g500-H850	MFXMA 090-32	2	49
9.7	111	40.3	158	234	158	1.4	32.444	14.898	g500-H320	MFXMA 090-32	2	26
9.5	114	39.2	162	227	162	0.9	32.365	15.306	g500-H210	MFXMA 090-32	2	24
9.2	117	38.2	166	222	166	2.0	33.169	15.714	g500-H450	MFXMA 090-32	2	29
9.2	118	38.0	167	220	167	2.7	33.340	15.810	g500-H600	MFXMA 090-32	2	41
7.9	136	32.9	193	191	193	1.2	32.338	18.250	g500-H320	MFXMA 090-32	2	26
7.7	140	32.0	198	186	198	0.8	32.285	18.750	g500-H210	MFXMA 090-32	2	24
7.5	144	31.2	204	181	204	1.7	32.925	19.250	g500-H450	MFXMA 090-32	2	29
7.5	145	31.0	205	180	205	2.2	33.038	19.367	g500-H600	MFXMA 090-32	2	41
6.3	173	26.0	244	151	244	2.4	33.653	23.103	g500-H850	MFXMA 090-32	2	49
6.1	178	25.3	251	147	251	1.0	32.209	23.754	g500-H320	MFXMA 090-32	2	26
5.8	187	23.9	265	139	265	1.3	32.512	25.056	g500-H450	MFXMA 090-32	2	29
5.8	188	23.8	267	138	267	1.7	32.579	25.207	g500-H600	MFXMA 090-32	2	41
5.1	212	21.2	299	123	299	2.3	33.141	28.315	g500-H850	MFXMA 090-32	2	49
4.9	221	20.3	312	118	312	0.9	32.152	29.548	g500-H320	MFXMA 090-32	2	26
4.6	230	19.2	325	112	325	1.4	33.108	31.197	g500-H600	MFXMA 090-32	3	41
4.7	233	19.3	330	112	330	1.2	32.379	31.167	g500-H450	MFXMA 090-32	2	29
4.6	234	19.1	332	111	332	1.6	32.423	31.356	g500-H600	MFXMA 090-32	2	41
4.1	267	16.8	377	97.5	377	2.3	34.325	35.689	g500-H1500	MFXMA 090-32	2	80
3.9	278	16.1	393	93.6	393	1.9	32.719	37.190	g500-H850	MFXMA 090-32	2	49
3.8	278	15.9	394	92.1	394	1.6	33.932	37.799	g500-H850	MFXMA 090-32	3	51



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		kgcm ²					kg
3.6	294	15.0	416	87.2	416	1.1	32.762	39.925	g500-H600	MFXMA 090-32	3	41
3.6	301	14.9	427	86.3	427	1.0	32.238	40.333	g500-H450	MFXMA 090-32	2	29
3.6	303	14.8	429	85.8	429	1.2	32.264	40.578	g500-H600	MFXMA 090-32	2	41
3.5	304	14.5	431	84.2	431	1.5	33.726	41.350	g500-H850	MFXMA 090-32	3	51
3.3	321	13.7	455	79.7	455	1.0	32.658	43.676	g500-H600	MFXMA 090-32	3	41
3.3	324	13.9	458	80.3	458	2.2	33.711	43.313	g500-H1500	MFXMA 090-32	2	80
3.2	337	13.3	477	77.1	477	1.7	32.531	45.136	g500-H850	MFXMA 090-32	2	49
2.9	368	12.2	521	70.7	521	0.8	32.193	49.247	g500-H600	MFXMA 090-32	2	41
2.7	388	11.4	549	66.0	549	1.3	33.269	52.743	g500-H850	MFXMA 090-32	3	51
2.6	409	11.0	579	63.6	579	1.7	33.134	54.750	g500-H1500	MFXMA 090-32	2	80
2.6	410	10.8	580	62.5	580	0.9	32.464	55.710	g500-H600	MFXMA 090-32	3	41
2.2	475	9.3	673	53.9	673	1.1	32.992	64.610	g500-H850	MFXMA 090-32	3	51
1.8	580	7.6	821	44.2	821	1.6	34.783	78.794	g500-H1500	MFXMA 090-32	3	81
1.7	619	7.1	876	41.4	876	0.9	32.551	84.096	g500-H850	MFXMA 090-32	3	51
1.2	925	4.8	1309	27.7	1309	1.1	33.672	125.632	g500-H1500	MFXMA 090-32	3	81
0.9	1133	3.9	1604	22.6	1604	0.9	33.068	153.976	g500-H1500	MFXMA 090-32	3	81
0.9	1244	3.6	1760	20.6	1760	1.6	34.261	168.993	g500-H3000	MFXMA 090-32	3	126
0.7	1509	2.9	2136	17.0	2136	1.3	33.667	205.096	g500-H3000	MFXMA 090-32	3	126
0.6	1643	2.6	2325	15.4	2325	1.1	33.052	226.604	g500-H3000	MFXMA 090-32	4	129
0.6	1908	2.3	2701	13.4	2701	1.1	33.107	259.250	g500-H3000	MFXMA 090-32	3	126
0.5	2120	2.1	3001	11.9	3001	1.0	33.219	292.511	g500-H3000	MFXMA 090-32	4	129



120 Hz: 5.5 kW

Inverter operation									Geared motor			
5 Hz -		- 20 Hz		- 120 Hz (1:24)							z	m
n ₂₂	M ₂₂	n ₂₁	M ₂	n ₂	M ₂	c	J	i				
rpm	Nm	rpm	Nm	rpm	Nm		kgcm ²					kg
44.4	33.0	184	47.0	1079	47.0	3.8	67.900	3.267	g500-H600	MFXMA 100-12	2	49
42.8	34.2	177	49.0	1040	49.0	1.9	62.530	3.389	g500-H210	MFXMA 100-12	2	33
42.8	34.2	177	49.0	1040	49.0	2.5	62.225	3.389	g500-H320	MFXMA 100-12	2	34
42.1	34.8	174	50.0	1023	50.0	3.9	65.943	3.444	g500-H450	MFXMA 100-12	2	38
32.4	45.2	134	65.0	787	65.0	3.5	65.253	4.480	g500-H600	MFXMA 100-12	2	49
31.2	46.9	129	67.0	759	67.0	1.6	61.977	4.648	g500-H210	MFXMA 100-12	2	33
31.2	46.9	129	67.0	759	67.0	2.1	61.815	4.648	g500-H320	MFXMA 100-12	2	34
30.7	47.7	127	68.0	746	68.0	3.2	64.213	4.724	g500-H450	MFXMA 100-12	2	38
27.0	54.2	112	78.0	657	78.0	4.2	67.388	5.368	g500-H850	MFXMA 100-12	2	58
25.3	57.9	105	83.0	615	83.0	3.1	63.866	5.733	g500-H600	MFXMA 100-12	2	49
24.0	61.0	99.2	87.0	583	87.0	2.8	63.231	6.045	g500-H450	MFXMA 100-12	2	38
23.8	61.4	98.6	88.0	580	88.0	1.9	62.655	6.083	g500-H320	MFXMA 100-12	2	34
23.2	63.1	96.0	90.0	564	90.0	1.3	62.184	6.250	g500-H210	MFXMA 100-12	2	33
22.5	65.1	92.9	93.0	546	93.0	3.3	65.444	6.456	g500-H600	MFXMA 100-12	2	49
21.9	66.7	90.7	96.0	533	96.0	2.6	62.976	6.613	g500-H450	MFXMA 100-12	2	38
17.4	84.2	71.9	121	423	121	1.6	62.044	8.343	g500-H320	MFXMA 100-12	2	34
16.9	86.5	70.0	124	411	124	1.0	61.793	8.571	g500-H210	MFXMA 100-12	2	33
16.5	88.8	68.2	127	401	127	2.2	63.404	8.800	g500-H450	MFXMA 100-12	2	38
16.4	89.3	67.8	128	398	128	2.9	63.947	8.853	g500-H600	MFXMA 100-12	2	49
14.3	102	59.2	147	348	147	3.4	66.129	10.143	g500-H850	MFXMA 100-12	2	58
13.6	108	56.2	154	330	154	1.3	61.723	10.677	g500-H320	MFXMA 100-12	2	34
12.9	114	53.3	163	313	163	1.9	62.737	11.262	g500-H450	MFXMA 100-12	2	38
12.8	114	53.0	164	311	164	2.5	63.069	11.330	g500-H600	MFXMA 100-12	2	49
12.8	115	52.8	164	310	164	3.2	65.223	11.360	g500-H850	MFXMA 100-12	2	58
12.4	118	51.4	169	302	169	1.2	61.625	11.680	g500-H320	MFXMA 100-12	2	34
12.1	121	50.0	173	294	173	0.8	61.497	12.000	g500-H210	MFXMA 100-12	2	33
11.8	124	48.7	178	286	178	1.7	62.563	12.320	g500-H450	MFXMA 100-12	2	38
11.7	125	48.4	179	284	179	2.3	62.841	12.395	g500-H600	MFXMA 100-12	2	49
10.6	138	43.9	198	258	198	4.2	71.063	13.673	g500-H1500	MFXMA 100-12	2	88
10.0	146	41.4	209	243	209	2.7	64.061	14.490	g500-H850	MFXMA 100-12	2	58
9.7	150	40.3	215	237	215	1.0	61.444	14.898	g500-H320	MFXMA 100-12	2	34
9.2	159	38.2	227	224	227	1.5	62.169	15.714	g500-H450	MFXMA 100-12	2	38
9.2	160	38.0	229	223	229	2.0	62.340	15.810	g500-H600	MFXMA 100-12	2	49
8.2	179	33.8	257	199	257	2.4	63.387	17.750	g500-H850	MFXMA 100-12	2	58
7.9	184	32.9	264	193	264	0.9	61.338	18.250	g500-H320	MFXMA 100-12	2	34
7.5	194	31.2	278	183	278	1.2	61.925	19.250	g500-H450	MFXMA 100-12	2	38
7.5	195	31.0	280	182	280	1.6	62.038	19.367	g500-H600	MFXMA 100-12	2	49
6.4	229	26.4	328	155	328	3.0	65.766	22.711	g500-H1500	MFXMA 100-12	2	88
6.3	233	26.0	334	153	334	1.9	62.653	23.103	g500-H850	MFXMA 100-12	2	58
5.8	253	23.9	362	141	362	0.9	61.512	25.056	g500-H450	MFXMA 100-12	2	38
5.8	254	23.8	364	140	364	1.2	61.579	25.207	g500-H600	MFXMA 100-12	2	49
5.3	278	21.8	399	128	399	2.9	64.627	27.578	g500-H1500	MFXMA 100-12	2	88
5.1	286	21.2	409	125	409	1.8	62.141	28.315	g500-H850	MFXMA 100-12	2	58
4.9	294	20.3	421	119	421	1.5	63.723	29.536	g500-H850	MFXMA 100-12	3	59
4.9	301	20.1	431	118	431	2.9	68.304	29.822	g500-H3000	MFXMA 100-12	2	130
4.6	310	19.2	444	113	444	1.0	62.108	31.197	g500-H600	MFXMA 100-12	3	50
4.7	315	19.3	451	113	451	0.9	61.379	31.167	g500-H450	MFXMA 100-12	2	38
4.6	316	19.1	453	112	453	1.1	61.423	31.356	g500-H600	MFXMA 100-12	2	49
4.1	360	16.8	516	98.8	516	2.3	63.325	35.689	g500-H1500	MFXMA 100-12	2	88
4.0	365	16.6	523	97.4	523	2.4	66.377	36.193	g500-H3000	MFXMA 100-12	2	130
3.9	375	16.1	538	94.8	538	1.4	61.719	37.190	g500-H850	MFXMA 100-12	2	58



Inverter operation									Geared motor			
5 Hz -		- 20 Hz		- 120 Hz (1:24)							z	m
n ₂₂	M ₂₂	n ₂₁	M ₂	n ₂	M ₂	c	J	i				
rpm	Nm	rpm	Nm	rpm	Nm		kgcm ²					kg
3.8	376	15.9	538	93.3	538	1.2	62.932	37.799	g500-H850	MFXMA 100-12	3	59
3.5	411	14.5	589	85.2	589	1.1	62.726	41.350	g500-H850	MFXMA 100-12	3	59
3.3	437	13.9	626	81.4	626	2.2	62.711	43.313	g500-H1500	MFXMA 100-12	2	88
3.2	455	13.3	652	78.1	652	1.2	61.531	45.136	g500-H850	MFXMA 100-12	2	58
3.2	462	13.1	661	77.0	661	2.2	64.543	45.750	g500-H3000	MFXMA 100-12	2	130
2.7	524	11.4	751	66.8	751	1.0	62.269	52.743	g500-H850	MFXMA 100-12	3	59
2.6	552	11.0	791	64.4	791	1.7	62.134	54.750	g500-H1500	MFXMA 100-12	2	88
2.3	614	9.7	880	57.1	880	1.5	65.157	61.774	g500-H1500	MFXMA 100-12	3	90
2.2	644	9.3	922	54.4	922	2.8	70.627	64.744	g500-H3000	MFXMA 100-12	3	135
1.8	783	7.6	1122	44.7	1122	1.1	63.783	78.794	g500-H1500	MFXMA 100-12	3	90
1.5	959	6.2	1374	36.5	1374	1.0	63.202	96.522	g500-H1500	MFXMA 100-12	3	90
1.3	1069	5.6	1531	32.8	1531	1.9	65.608	107.541	g500-H3000	MFXMA 100-12	3	135
1.1	1298	4.6	1859	27.0	1859	1.5	64.519	130.585	g500-H3000	MFXMA 100-12	3	135
0.9	1680	3.6	2406	20.9	2406	1.2	63.261	168.993	g500-H3000	MFXMA 100-12	3	135
0.7	2038	2.9	2920	17.2	2920	1.0	62.667	205.096	g500-H3000	MFXMA 100-12	3	135



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		kgcm ²					kg
44.4	45.3	184	64.0	1076	64.0	2.8	67.900	3.267	g500-H600	MFXMA 100-32	2	49
42.8	47.0	177	67.0	1037	67.0	1.4	62.530	3.389	g500-H210	MFXMA 100-32	2	33
42.8	47.0	177	67.0	1037	67.0	1.9	62.225	3.389	g500-H320	MFXMA 100-32	2	34
42.1	47.8	174	68.0	1021	68.0	2.8	65.943	3.444	g500-H450	MFXMA 100-32	2	38
32.4	62.2	134	88.0	785	88.0	2.5	65.253	4.480	g500-H600	MFXMA 100-32	2	49
31.2	64.5	129	92.0	756	92.0	1.2	61.977	4.648	g500-H210	MFXMA 100-32	2	33
31.2	64.5	129	92.0	756	92.0	1.6	61.815	4.648	g500-H320	MFXMA 100-32	2	34
30.7	65.5	127	93.0	744	93.0	2.4	64.213	4.724	g500-H450	MFXMA 100-32	2	38
27.0	74.5	112	106	655	106	3.1	67.388	5.368	g500-H850	MFXMA 100-32	2	58
25.3	79.5	105	113	613	113	2.3	63.866	5.733	g500-H600	MFXMA 100-32	2	49
24.0	83.9	99.2	119	581	119	2.0	63.231	6.045	g500-H450	MFXMA 100-32	2	38
23.8	84.4	98.6	120	578	120	1.4	62.655	6.083	g500-H320	MFXMA 100-32	2	34
23.2	86.7	96.0	123	562	123	1.0	62.184	6.250	g500-H210	MFXMA 100-32	2	33
22.5	89.6	92.9	127	545	127	2.4	65.444	6.456	g500-H600	MFXMA 100-32	2	49
21.9	91.8	90.7	130	532	130	1.9	62.976	6.613	g500-H450	MFXMA 100-32	2	38
17.4	116	71.9	164	421	164	1.1	62.044	8.343	g500-H320	MFXMA 100-32	2	34
16.5	122	68.2	173	399	173	1.6	63.404	8.800	g500-H450	MFXMA 100-32	2	38
16.4	123	67.8	174	397	174	2.1	63.947	8.853	g500-H600	MFXMA 100-32	2	49
14.3	141	59.2	200	347	200	2.5	66.129	10.143	g500-H850	MFXMA 100-32	2	58
13.6	148	56.2	210	329	210	1.0	61.723	10.677	g500-H320	MFXMA 100-32	2	34
12.9	156	53.3	222	312	222	1.4	62.737	11.262	g500-H450	MFXMA 100-32	2	38
12.8	157	53.0	223	310	223	1.8	63.069	11.330	g500-H600	MFXMA 100-32	2	49
12.8	158	52.8	224	309	224	2.3	65.223	11.360	g500-H850	MFXMA 100-32	2	58
12.4	162	51.4	230	301	230	0.9	61.625	11.680	g500-H320	MFXMA 100-32	2	34
11.8	171	48.7	243	285	243	1.3	62.563	12.320	g500-H450	MFXMA 100-32	2	38
11.7	172	48.4	244	284	244	1.7	62.841	12.395	g500-H600	MFXMA 100-32	2	49
10.6	190	43.9	269	257	269	3.1	71.063	13.673	g500-H1500	MFXMA 100-32	2	88
10.0	201	41.4	285	243	285	2.0	64.061	14.490	g500-H850	MFXMA 100-32	2	58
9.2	218	38.2	310	224	310	1.1	62.169	15.714	g500-H450	MFXMA 100-32	2	38
9.2	219	38.0	311	222	311	1.5	62.340	15.810	g500-H600	MFXMA 100-32	2	49
8.2	246	33.8	350	198	350	1.8	63.387	17.750	g500-H850	MFXMA 100-32	2	58
7.5	267	31.2	379	183	379	0.9	61.925	19.250	g500-H450	MFXMA 100-32	2	38
7.5	269	31.0	381	182	381	1.2	62.038	19.367	g500-H600	MFXMA 100-32	2	49
6.4	315	26.4	447	155	447	2.2	65.766	22.711	g500-H1500	MFXMA 100-32	2	88
6.3	321	26.0	455	152	455	1.4	62.653	23.103	g500-H850	MFXMA 100-32	2	58
5.8	350	23.8	496	139	496	0.9	61.579	25.207	g500-H600	MFXMA 100-32	2	49
5.3	383	21.8	543	128	543	2.1	64.627	27.578	g500-H1500	MFXMA 100-32	2	88
5.1	393	21.2	558	124	558	1.3	62.141	28.315	g500-H850	MFXMA 100-32	2	58
4.9	404	20.3	573	119	573	1.1	63.723	29.536	g500-H850	MFXMA 100-32	3	59
4.9	414	20.1	587	118	587	2.1	68.304	29.822	g500-H3000	MFXMA 100-32	2	130
4.6	435	19.1	618	112	618	0.8	61.423	31.356	g500-H600	MFXMA 100-32	2	49
4.1	495	16.8	703	98.5	703	1.7	63.325	35.689	g500-H1500	MFXMA 100-32	2	88
4.0	502	16.6	713	97.1	713	1.8	66.377	36.193	g500-H3000	MFXMA 100-32	2	130
3.9	516	16.1	732	94.5	732	1.0	61.719	37.190	g500-H850	MFXMA 100-32	2	58
3.8	517	15.9	733	93.0	733	0.9	62.932	37.799	g500-H850	MFXMA 100-32	3	59
3.5	565	14.5	802	85.0	802	0.8	62.726	41.350	g500-H850	MFXMA 100-32	3	59
3.3	601	13.9	853	81.2	853	1.6	62.711	43.313	g500-H1500	MFXMA 100-32	2	88
3.2	626	13.3	889	77.9	889	0.9	61.531	45.136	g500-H850	MFXMA 100-32	2	58
3.2	635	13.1	901	76.8	901	1.6	64.543	45.750	g500-H3000	MFXMA 100-32	2	130
2.6	760	11.0	1078	64.2	1078	1.2	62.134	54.750	g500-H1500	MFXMA 100-32	2	88
2.3	844	9.7	1198	56.9	1198	1.1	65.157	61.774	g500-H1500	MFXMA 100-32	3	90



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		kgcm ²					kg
2.2	885	9.3	1256	54.3	1256	2.0	70.627	64.744	g500-H3000	MFXMA 100-32	3	135
1.8	1077	7.6	1529	44.6	1529	0.8	63.783	78.794	g500-H1500	MFXMA 100-32	3	90
1.3	1470	5.6	2086	32.7	2086	1.4	65.608	107.541	g500-H3000	MFXMA 100-32	3	135
1.1	1785	4.6	2533	26.9	2533	1.1	64.519	130.585	g500-H3000	MFXMA 100-32	3	135
0.9	2310	3.6	3278	20.8	3278	0.9	63.261	168.993	g500-H3000	MFXMA 100-32	3	135



120 Hz: 11 kW

Inverter operation									Geared motor			
5 Hz -		- 20 Hz		- 120 Hz (1:24)							z	m
n ₂₂	M ₂₂	n ₂₁	M ₂	n ₂	M ₂	c	J	i				
rpm	Nm	rpm	Nm	rpm	Nm		kgcm ²					kg
46.1	58.0	191	91.0	1122	91.0	2.5	121.097	3.147	g500-H850	MFXXMA 112-22	2	69
44.4	60.2	184	94.0	1081	94.0	1.9	113.900	3.267	g500-H600	MFXXMA 112-22	2	61
42.8	62.5	177	98.0	1042	98.0	1.3	108.225	3.389	g500-H320	MFXXMA 112-22	2	46
42.1	63.5	174	99.0	1025	99.0	1.9	111.943	3.444	g500-H450	MFXXMA 112-22	2	49
33.2	80.4	138	126	809	126	2.3	115.786	4.362	g500-H850	MFXXMA 112-22	2	69
32.4	82.6	134	129	788	129	1.7	111.253	4.480	g500-H600	MFXXMA 112-22	2	61
31.2	85.7	129	134	760	134	1.1	107.815	4.648	g500-H320	MFXXMA 112-22	2	46
30.7	87.1	127	136	747	136	1.6	110.213	4.724	g500-H450	MFXXMA 112-22	2	49
27.0	99.0	112	155	658	155	2.1	113.388	5.368	g500-H850	MFXXMA 112-22	2	69
25.3	106	105	165	616	165	1.5	109.866	5.733	g500-H600	MFXXMA 112-22	2	61
24.4	110	101	171	594	171	2.4	117.432	5.946	g500-H850	MFXXMA 112-22	2	69
24.0	111	99.2	174	584	174	1.4	109.231	6.045	g500-H450	MFXXMA 112-22	2	49
23.8	112	98.6	175	580	175	1.0	108.655	6.083	g500-H320	MFXXMA 112-22	2	46
23.2	115	96.1	180	565	180	3.2	125.863	6.245	g500-H1500	MFXXMA 112-22	2	100
22.5	119	92.9	186	547	186	1.6	111.444	6.456	g500-H600	MFXXMA 112-22	2	61
21.9	122	90.7	191	534	191	1.3	108.976	6.613	g500-H450	MFXXMA 112-22	2	49
17.6	152	72.8	237	428	237	2.0	113.878	8.241	g500-H850	MFXXMA 112-22	2	69
16.5	162	68.2	254	401	254	1.1	109.404	8.800	g500-H450	MFXXMA 112-22	2	49
16.4	163	67.8	255	399	255	1.4	109.947	8.853	g500-H600	MFXXMA 112-22	2	61
14.3	187	59.2	292	348	292	1.7	112.129	10.143	g500-H850	MFXXMA 112-22	2	69
12.9	208	53.3	325	313	325	0.9	108.737	11.262	g500-H450	MFXXMA 112-22	2	49
12.8	209	53.0	326	312	326	1.2	109.069	11.330	g500-H600	MFXXMA 112-22	2	61
12.8	209	52.8	327	311	327	2.9	119.806	11.356	g500-H1500	MFXXMA 112-22	2	100
12.8	209	52.8	327	311	327	1.6	111.223	11.360	g500-H850	MFXXMA 112-22	2	69
12.5	214	51.6	335	304	335	3.1	137.315	11.619	g500-H3000	MFXXMA 112-22	2	141
11.8	227	48.7	355	287	355	0.9	108.563	12.320	g500-H450	MFXXMA 112-22	2	49
11.7	229	48.4	357	285	357	1.2	108.841	12.395	g500-H600	MFXXMA 112-22	2	61
10.6	252	43.9	394	258	394	2.5	117.063	13.673	g500-H1500	MFXXMA 112-22	2	100
10.0	267	41.4	418	244	418	1.4	110.061	14.490	g500-H850	MFXXMA 112-22	2	69
9.2	291	38.0	456	223	456	1.0	108.340	15.810	g500-H600	MFXXMA 112-22	2	61
8.7	309	35.8	483	211	483	2.2	114.834	16.763	g500-H1500	MFXXMA 112-22	2	100
8.2	327	33.8	511	199	511	1.2	109.387	17.750	g500-H850	MFXXMA 112-22	2	69
7.7	346	32.0	540	188	540	2.2	122.200	18.752	g500-H3000	MFXXMA 112-22	2	141
7.5	357	31.0	558	182	558	0.8	108.038	19.367	g500-H600	MFXXMA 112-22	2	61
6.4	419	26.4	654	155	654	1.7	111.766	22.711	g500-H1500	MFXXMA 112-22	2	100
6.3	425	26.0	664	153	664	1.8	118.350	23.044	g500-H3000	MFXXMA 112-22	2	141
6.3	426	26.0	666	153	666	1.0	108.653	23.103	g500-H850	MFXXMA 112-22	2	69
5.3	508	21.8	795	128	795	1.6	110.627	27.578	g500-H1500	MFXXMA 112-22	2	100
5.1	522	21.2	816	125	816	0.9	108.141	28.315	g500-H850	MFXXMA 112-22	2	69
4.9	550	20.1	859	118	859	1.7	114.304	29.822	g500-H3000	MFXXMA 112-22	2	141
4.1	658	16.8	1028	98.9	1028	1.3	109.325	35.689	g500-H1500	MFXXMA 112-22	2	100
4.0	667	16.6	1043	97.5	1043	1.4	112.377	36.193	g500-H3000	MFXXMA 112-22	2	141
3.3	798	13.9	1248	81.5	1248	1.1	108.711	43.313	g500-H1500	MFXXMA 112-22	2	100
3.2	814	13.4	1272	78.8	1272	0.9	113.404	44.814	g500-H1500	MFXXMA 112-22	3	101
3.2	843	13.1	1318	77.2	1318	1.2	110.543	45.750	g500-H3000	MFXXMA 112-22	2	141
3.1	857	12.7	1339	74.8	1339	1.8	122.742	47.186	g500-H3000	MFXXMA 112-22	3	146
2.7	976	11.2	1526	65.6	1526	1.7	119.174	53.770	g500-H3000	MFXXMA 112-22	3	146
2.2	1176	9.3	1838	54.5	1838	1.4	116.627	64.744	g500-H3000	MFXXMA 112-22	3	146
1.8	1441	7.6	2253	44.5	2253	1.1	114.544	79.375	g500-H3000	MFXXMA 112-22	3	146
1.3	1953	5.6	3052	32.8	3052	0.9	111.608	107.541	g500-H3000	MFXXMA 112-22	3	146



120 Hz: 15 kW

Inverter operation									Geared motor			
5 Hz -		- 20 Hz		- 120 Hz (1:24)							z	m
n ₂₂	M ₂₂	n ₂₁	M ₂	n ₂	M ₂	c	J	i				
rpm	Nm	rpm	Nm	rpm	Nm		kgcm ²					kg
46.1	78.8	191	123	1131	123	1.9	350.097	3.147	g500-H850	MFXXMA 132-12	2	97
44.4	81.8	184	128	1090	128	1.4	342.900	3.267	g500-H600	MFXXMA 132-12	2	89
42.1	86.2	174	135	1034	135	1.4	340.943	3.444	g500-H450	MFXXMA 132-12	2	77
38.7	93.7	160	146	951	146	4.0	373.796	3.743	g500-H1500	MFXXMA 132-12	2	128
33.2	109	138	171	816	171	1.7	344.786	4.362	g500-H850	MFXXMA 132-12	2	97
32.4	112	134	175	795	175	1.3	340.253	4.480	g500-H600	MFXXMA 132-12	2	89
30.7	118	127	185	754	185	1.2	339.213	4.724	g500-H450	MFXXMA 132-12	2	77
30.5	119	126	186	748	186	3.7	363.688	4.758	g500-H1500	MFXXMA 132-12	2	128
27.0	134	112	210	663	210	1.5	342.388	5.368	g500-H850	MFXXMA 132-12	2	97
25.3	144	105	224	621	224	1.1	338.866	5.733	g500-H600	MFXXMA 132-12	2	89
24.4	149	101	232	599	232	1.8	346.432	5.946	g500-H850	MFXXMA 132-12	2	97
24.0	151	99.2	236	589	236	1.0	338.231	6.045	g500-H450	MFXXMA 132-12	2	77
23.2	156	96.1	244	570	244	3.4	354.863	6.245	g500-H1500	MFXXMA 132-12	2	128
22.5	162	92.9	252	552	252	1.2	340.444	6.456	g500-H600	MFXXMA 132-12	2	89
21.9	166	90.7	259	538	259	1.0	337.976	6.613	g500-H450	MFXXMA 132-12	2	77
19.1	190	79.0	297	469	297	3.1	359.724	7.592	g500-H1500	MFXXMA 132-12	2	128
17.6	206	72.8	322	432	322	1.4	342.878	8.241	g500-H850	MFXXMA 132-12	2	97
16.5	220	68.2	344	405	344	0.8	338.404	8.800	g500-H450	MFXXMA 132-12	2	77
16.4	222	67.8	346	402	346	1.1	338.947	8.853	g500-H600	MFXXMA 132-12	2	89
14.3	254	59.2	397	351	397	1.3	341.129	10.143	g500-H850	MFXXMA 132-12	2	97
12.8	284	53.0	443	314	443	0.9	338.069	11.330	g500-H600	MFXXMA 132-12	2	89
12.8	284	52.8	444	314	444	2.4	348.806	11.356	g500-H1500	MFXXMA 132-12	2	128
12.8	284	52.8	444	313	444	1.2	340.223	11.360	g500-H850	MFXXMA 132-12	2	97
12.5	291	51.6	454	306	454	4.0	366.315	11.619	g500-H3000	MFXXMA 132-12	2	169
11.7	310	48.4	485	287	485	0.9	337.841	12.395	g500-H600	MFXXMA 132-12	2	89
10.6	342	43.9	535	260	535	2.0	346.063	13.673	g500-H1500	MFXXMA 132-12	2	128
10.2	356	42.2	557	250	557	3.4	359.535	14.233	g500-H3000	MFXXMA 132-12	2	169
10.0	363	41.4	567	246	567	1.0	339.061	14.490	g500-H850	MFXXMA 132-12	2	97
8.7	420	35.8	655	212	655	1.7	343.834	16.763	g500-H1500	MFXXMA 132-12	2	128
8.2	444	33.8	694	201	694	0.9	338.387	17.750	g500-H850	MFXXMA 132-12	2	97
7.7	469	32.0	733	190	733	2.8	351.200	18.752	g500-H3000	MFXXMA 132-12	2	169
6.4	569	26.4	888	157	888	1.3	340.766	22.711	g500-H1500	MFXXMA 132-12	2	128
6.3	577	26.0	901	155	901	2.4	347.350	23.044	g500-H3000	MFXXMA 132-12	2	169
5.3	690	21.8	1078	129	1078	1.2	339.627	27.578	g500-H1500	MFXXMA 132-12	2	128
4.9	747	20.1	1166	119	1166	2.2	343.304	29.822	g500-H3000	MFXXMA 132-12	2	169
4.0	906	16.6	1415	98.4	1415	1.8	341.377	36.193	g500-H3000	MFXXMA 132-12	2	169
3.1	1163	12.7	1817	75.4	1817	1.3	351.742	47.186	g500-H3000	MFXXMA 132-12	3	174
2.7	1326	11.2	2071	66.2	2071	1.2	348.174	53.770	g500-H3000	MFXXMA 132-12	3	174
2.2	1596	9.3	2494	55.0	2494	1.0	345.627	64.744	g500-H3000	MFXXMA 132-12	3	174
1.8	1957	7.6	3057	44.9	3057	0.8	343.544	79.375	g500-H3000	MFXXMA 132-12	3	174



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		kgcm ²					kg
46.1	97.1	191	151	1131	151	1.5	350.097	3.147	g500-H850	MFXXMA 132-22	2	97
44.4	101	184	157	1090	157	1.1	342.900	3.267	g500-H600	MFXXMA 132-22	2	89
42.1	106	174	166	1034	166	1.2	340.943	3.444	g500-H450	MFXXMA 132-22	2	77
38.7	116	160	180	951	180	3.2	373.796	3.743	g500-H1500	MFXXMA 132-22	2	128
33.2	135	138	210	816	210	1.4	344.786	4.362	g500-H850	MFXXMA 132-22	2	97
32.4	138	134	216	795	216	1.0	340.253	4.480	g500-H600	MFXXMA 132-22	2	89
30.7	146	127	227	754	227	1.0	339.213	4.724	g500-H450	MFXXMA 132-22	2	77
30.5	147	126	229	748	229	3.0	363.688	4.758	g500-H1500	MFXXMA 132-22	2	128
27.0	166	112	258	663	258	1.3	342.388	5.368	g500-H850	MFXXMA 132-22	2	97
25.3	177	105	276	621	276	0.9	338.866	5.733	g500-H600	MFXXMA 132-22	2	89
24.4	183	101	286	599	286	1.4	346.432	5.946	g500-H850	MFXXMA 132-22	2	97
24.0	187	99.2	291	589	291	0.8	338.231	6.045	g500-H450	MFXXMA 132-22	2	77
23.2	193	96.1	301	570	301	2.7	354.863	6.245	g500-H1500	MFXXMA 132-22	2	128
22.5	199	92.9	311	552	311	1.0	340.444	6.456	g500-H600	MFXXMA 132-22	2	89
19.1	234	79.0	365	469	365	2.5	359.724	7.592	g500-H1500	MFXXMA 132-22	2	128
17.6	254	72.8	397	432	397	1.2	342.878	8.241	g500-H850	MFXXMA 132-22	2	97
16.4	273	67.8	426	402	426	0.9	338.947	8.853	g500-H600	MFXXMA 132-22	2	89
14.3	313	59.2	488	351	488	1.0	341.129	10.143	g500-H850	MFXXMA 132-22	2	97
12.8	350	52.8	546	314	546	1.9	348.806	11.356	g500-H1500	MFXXMA 132-22	2	128
12.8	351	52.8	547	313	547	1.0	340.223	11.360	g500-H850	MFXXMA 132-22	2	97
12.5	359	51.6	559	306	559	3.2	366.315	11.619	g500-H3000	MFXXMA 132-22	2	169
10.6	422	43.9	658	260	658	1.6	346.063	13.673	g500-H1500	MFXXMA 132-22	2	128
10.2	439	42.2	685	250	685	2.8	359.535	14.233	g500-H3000	MFXXMA 132-22	2	169
10.0	447	41.4	697	246	697	0.8	339.061	14.490	g500-H850	MFXXMA 132-22	2	97
8.7	517	35.8	807	212	807	1.4	343.834	16.763	g500-H1500	MFXXMA 132-22	2	128
7.7	579	32.0	902	190	902	2.3	351.200	18.752	g500-H3000	MFXXMA 132-22	2	169
6.4	701	26.4	1093	157	1093	1.0	340.766	22.711	g500-H1500	MFXXMA 132-22	2	128
6.3	711	26.0	1109	155	1109	2.0	347.350	23.044	g500-H3000	MFXXMA 132-22	2	169
5.3	851	21.8	1327	129	1327	1.0	339.627	27.578	g500-H1500	MFXXMA 132-22	2	128
4.9	920	20.1	1435	119	1435	1.8	343.304	29.822	g500-H3000	MFXXMA 132-22	2	169
4.0	1117	16.6	1742	98.4	1742	1.5	341.377	36.193	g500-H3000	MFXXMA 132-22	2	169
3.1	1434	12.7	2237	75.4	2237	1.1	351.742	47.186	g500-H3000	MFXXMA 132-22	3	174
2.7	1634	11.2	2549	66.2	2549	1.0	348.174	53.770	g500-H3000	MFXXMA 132-22	3	174
2.2	1968	9.3	3069	55.0	3069	0.8	345.627	64.744	g500-H3000	MFXXMA 132-22	3	174



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		kgcm ²					kg
46.1	116	191	181	1128	181	1.3	350.097	3.147	g500-H850	MFXMA 132-32	2	97
44.4	120	184	188	1087	188	1.0	342.900	3.267	g500-H600	MFXMA 132-32	2	89
42.1	127	174	198	1031	198	1.0	340.943	3.444	g500-H450	MFXMA 132-32	2	77
38.7	138	160	215	948	215	2.7	373.796	3.743	g500-H1500	MFXMA 132-32	2	128
33.2	160	138	251	814	251	1.1	344.786	4.362	g500-H850	MFXMA 132-32	2	97
32.4	165	134	257	792	257	0.9	340.253	4.480	g500-H600	MFXMA 132-32	2	89
30.7	174	127	271	752	271	0.8	339.213	4.724	g500-H450	MFXMA 132-32	2	77
30.5	175	126	273	746	273	2.5	363.688	4.758	g500-H1500	MFXMA 132-32	2	128
27.0	197	112	308	661	308	1.1	342.388	5.368	g500-H850	MFXMA 132-32	2	97
24.4	219	101	342	597	342	1.2	346.432	5.946	g500-H850	MFXMA 132-32	2	97
23.2	230	96.1	359	568	359	2.3	354.863	6.245	g500-H1500	MFXMA 132-32	2	128
22.5	237	92.9	371	550	371	0.8	340.444	6.456	g500-H600	MFXMA 132-32	2	89
19.1	279	79.0	436	468	436	2.1	359.724	7.592	g500-H1500	MFXMA 132-32	2	128
17.6	303	72.8	473	431	473	1.0	342.878	8.241	g500-H850	MFXMA 132-32	2	97
14.3	373	59.2	583	350	583	0.9	341.129	10.143	g500-H850	MFXMA 132-32	2	97
12.8	418	52.8	652	313	652	1.6	348.806	11.356	g500-H1500	MFXMA 132-32	2	128
12.8	418	52.8	652	313	652	0.8	340.223	11.360	g500-H850	MFXMA 132-32	2	97
12.5	427	51.6	667	306	667	2.7	366.315	11.619	g500-H3000	MFXMA 132-32	2	169
10.6	503	43.9	785	260	785	1.4	346.063	13.673	g500-H1500	MFXMA 132-32	2	128
10.2	523	42.2	818	249	818	2.3	359.535	14.233	g500-H3000	MFXMA 132-32	2	169
8.7	616	35.8	963	212	963	1.1	343.834	16.763	g500-H1500	MFXMA 132-32	2	128
7.7	690	32.0	1077	189	1077	1.9	351.200	18.752	g500-H3000	MFXMA 132-32	2	169
6.4	835	26.4	1304	156	1304	0.9	340.766	22.711	g500-H1500	MFXMA 132-32	2	128
6.3	847	26.0	1324	154	1324	1.6	347.350	23.044	g500-H3000	MFXMA 132-32	2	169
5.3	1014	21.8	1584	129	1584	0.8	339.627	27.578	g500-H1500	MFXMA 132-32	2	128
4.9	1097	20.1	1713	119	1713	1.5	343.304	29.822	g500-H3000	MFXMA 132-32	2	169
4.0	1331	16.6	2079	98.1	2079	1.2	341.377	36.193	g500-H3000	MFXMA 132-32	2	169
3.1	1709	12.7	2670	75.2	2670	0.9	351.742	47.186	g500-H3000	MFXMA 132-32	3	174
2.7	1948	11.2	3042	66.0	3042	0.8	348.174	53.770	g500-H3000	MFXMA 132-32	3	174



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

Gearbox	Without pre-stage	With pre-stage
g500-H45	2-stage	-
g500-H100 ... g500-H140	2-stage	3-stage
g500-H210 ... g500-H3000	2-/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](#) 125

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



The dimensions shown in the dimensional drawings for the solid shafts with featherkey (V□□) also apply for solid shafts without a keyway (G□□).

Please observe the available output shaft designs!

▶ [The modular system](#) 12



If the mounting area (foot support) towards the motor is longer than the gearbox foot, some motors collide with the mounting area!

For an accurate check of the geometrical data, Lenze recommends the use of the »Product Finder« at www.Lenze.com.

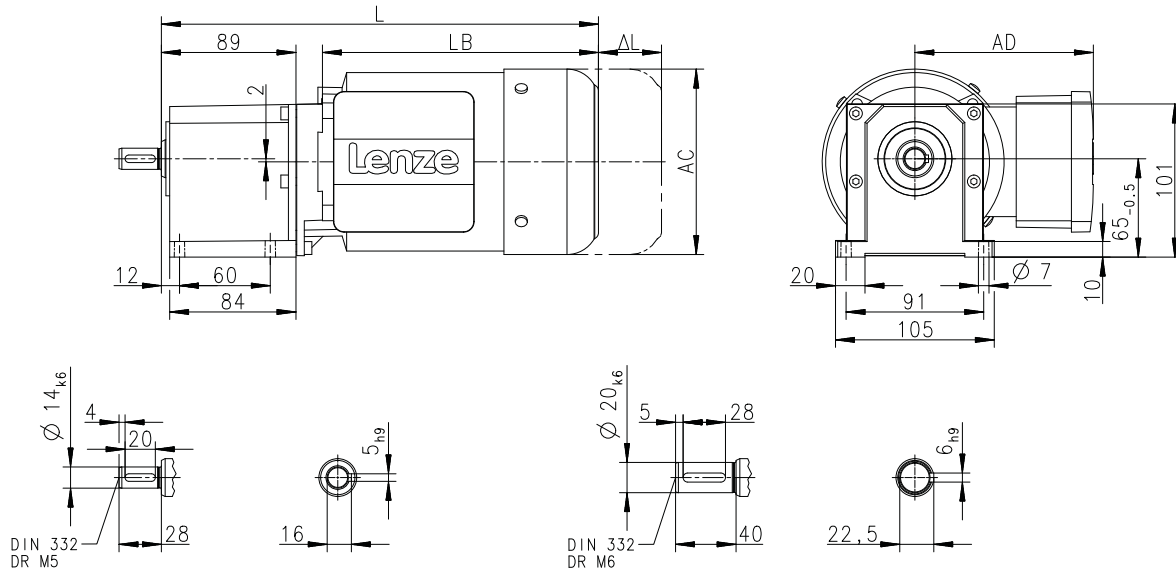


Basic dimensions

g500-H45, 2-stage

Gearbox design: Solid shaft with foot (VBR)

The dimensions are also valid for solid shaft without keyway $\varnothing 20 \times 40$ (G□□)!



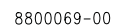
8800067-00

Motor series			MFXMA
Motor			063-32 063-42
Total length	L	mm	291
Motor length	LB	mm	199
Motor diameter	AC	mm	123
Motor/connection distance	AD	mm	109

ΔL ▶ Additional lengths 129



The dimensions are also valid for solid shaft without keyway Ø20 x 40 (G□□)!



Δ L ▶ Additional lengths  129

Technical data

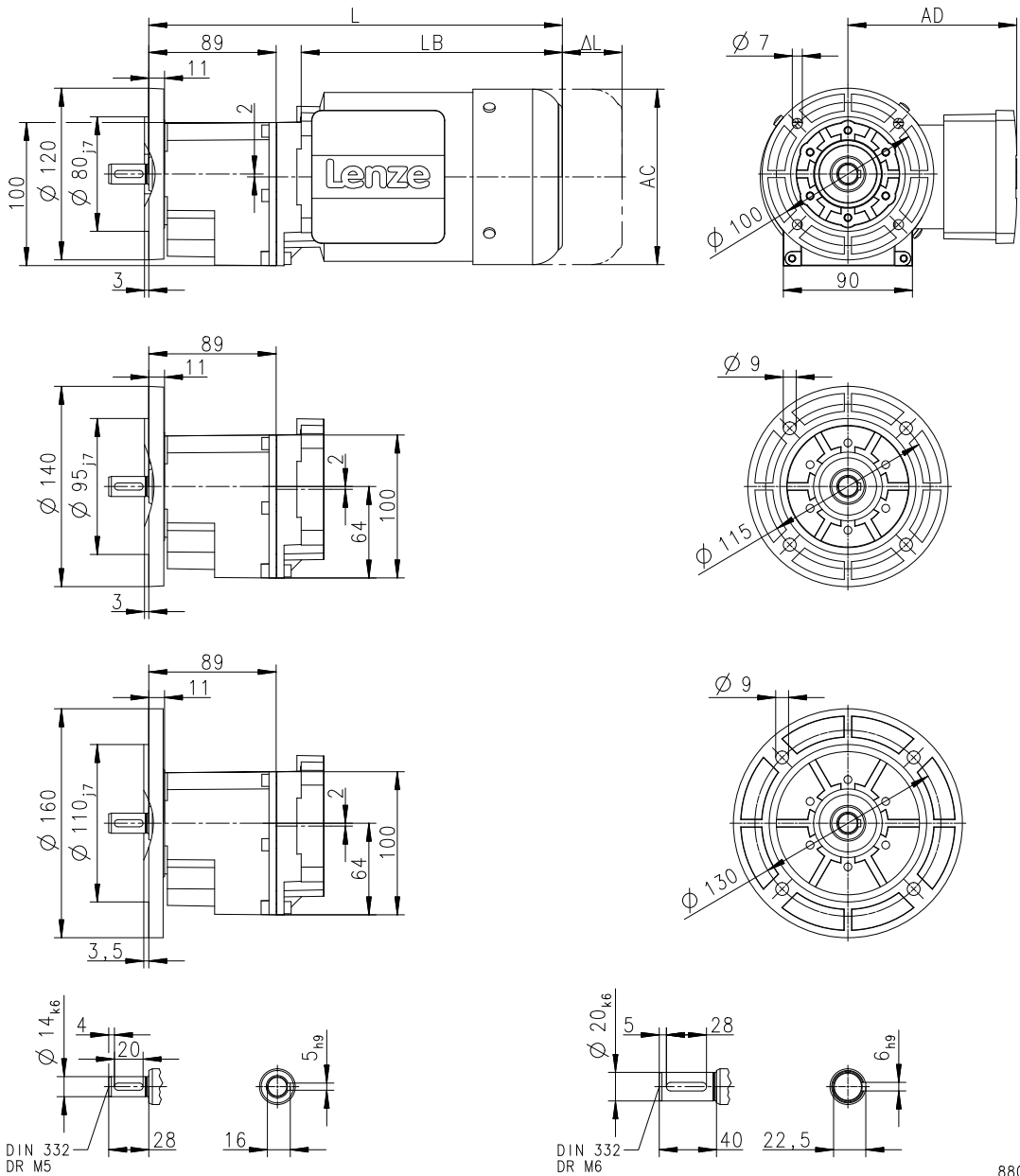
Dimensions
Basic dimensions



g500-H45, 2-stage

Gearbox design: Solid shaft with flange (VCK)

The dimensions are also valid for solid shaft without keyway $\varnothing 20 \times 40$ (G□□)!



8800068-00

Motor series			MFXMA
Motor			063-32 063-42
Total length	L	mm	291
Motor length	LB	mm	199
Motor diameter	AC	mm	123
Motor/connection distance	AD	mm	109

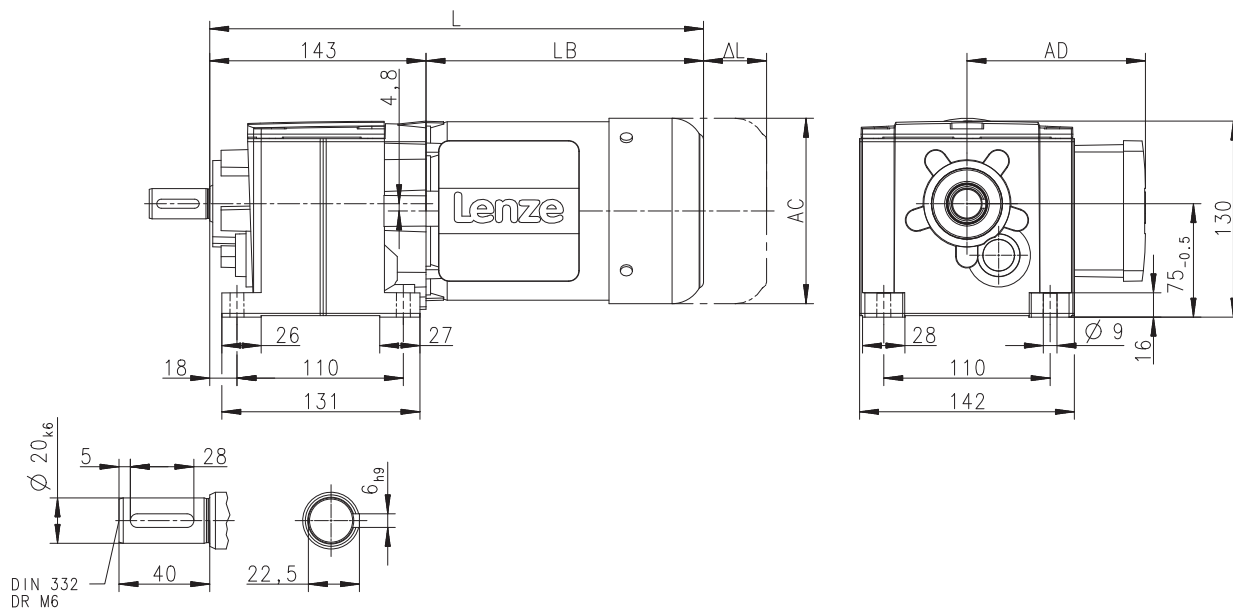
Δ L ▶ [Additional lengths](#) 129



g500-H100, 2-stage

Gearbox design: Solid shaft with foot (VBR)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800079-00

Motor series			MFXMA			
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32
Total length	L	mm	326	347	369	429
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

ΔL ▶ Additional lengths [129](#)

Technical data

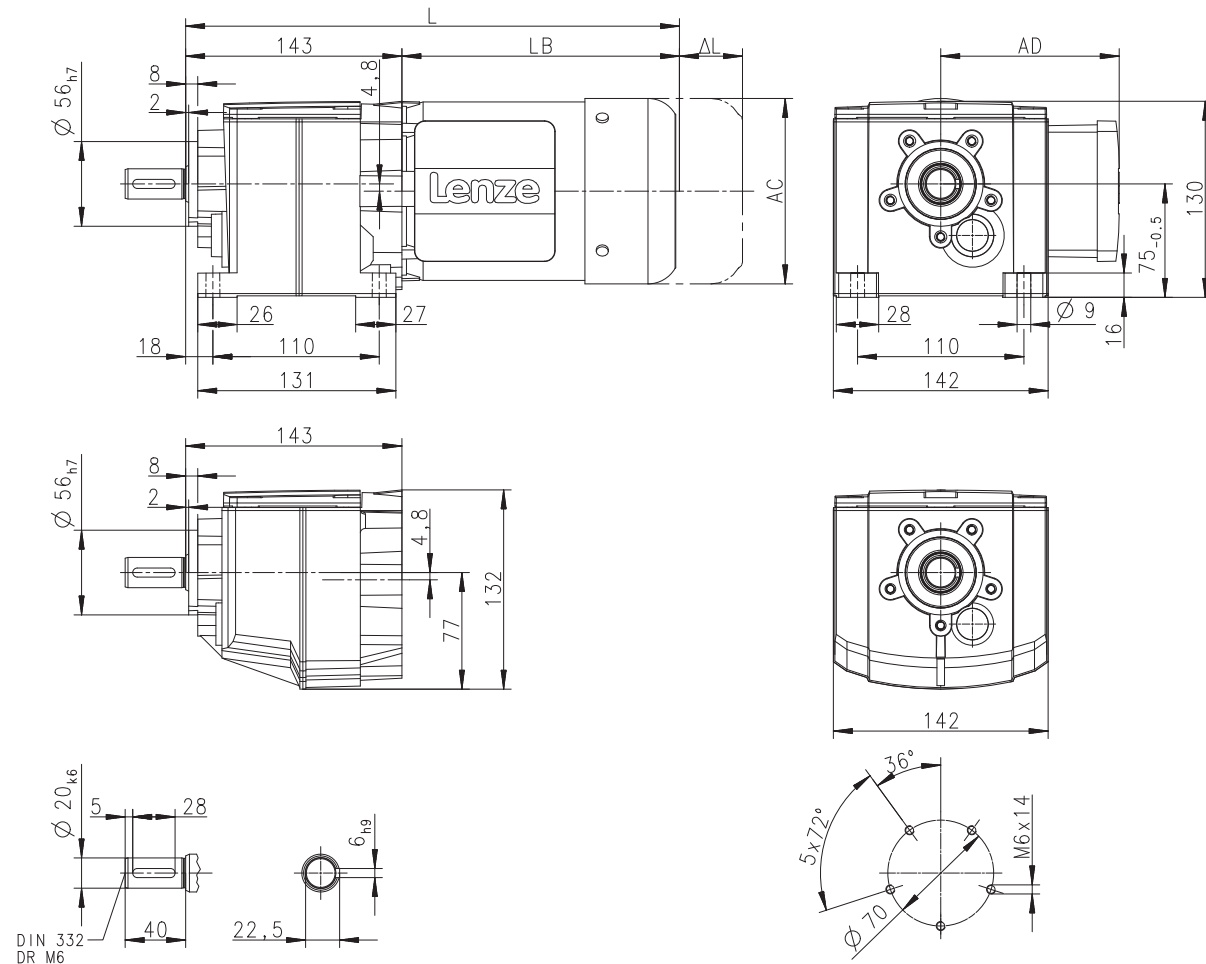
Dimensions
Basic dimensions



g500-H100, 2-stage

Gearbox design: Solid shaft with centering (VAR/VCR)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800081-00

Motor series			MFXMA			
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32
Total length	L	mm	326	347	369	429
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

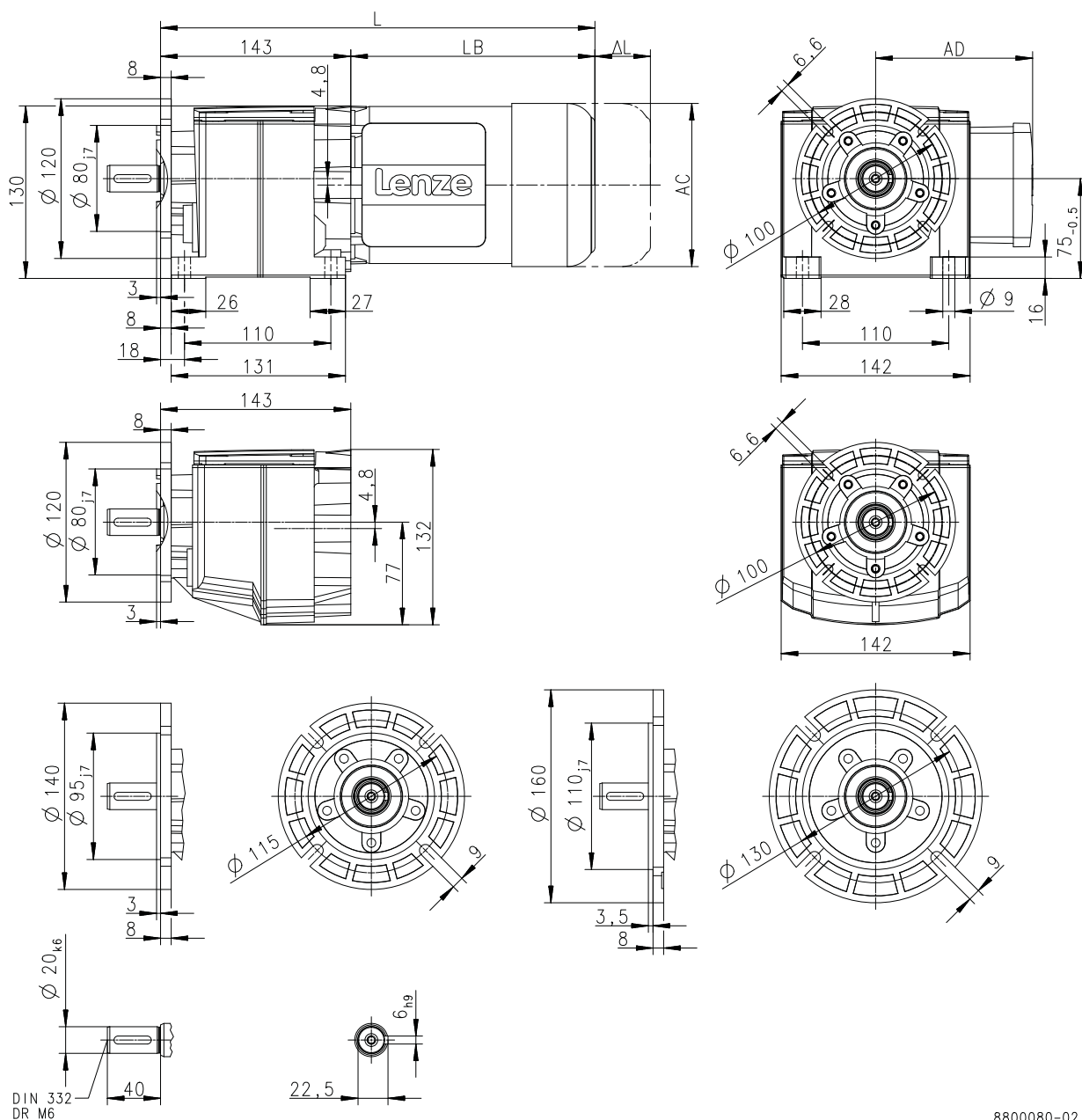
Δ L ▶ Additional lengths 129



g500-H100, 2-stage

Gearbox design: Solid shaft with flange (VAK/VCK)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800080-02

Motor series			MFXMA			
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32
Total length	L	mm	326	347	369	429
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

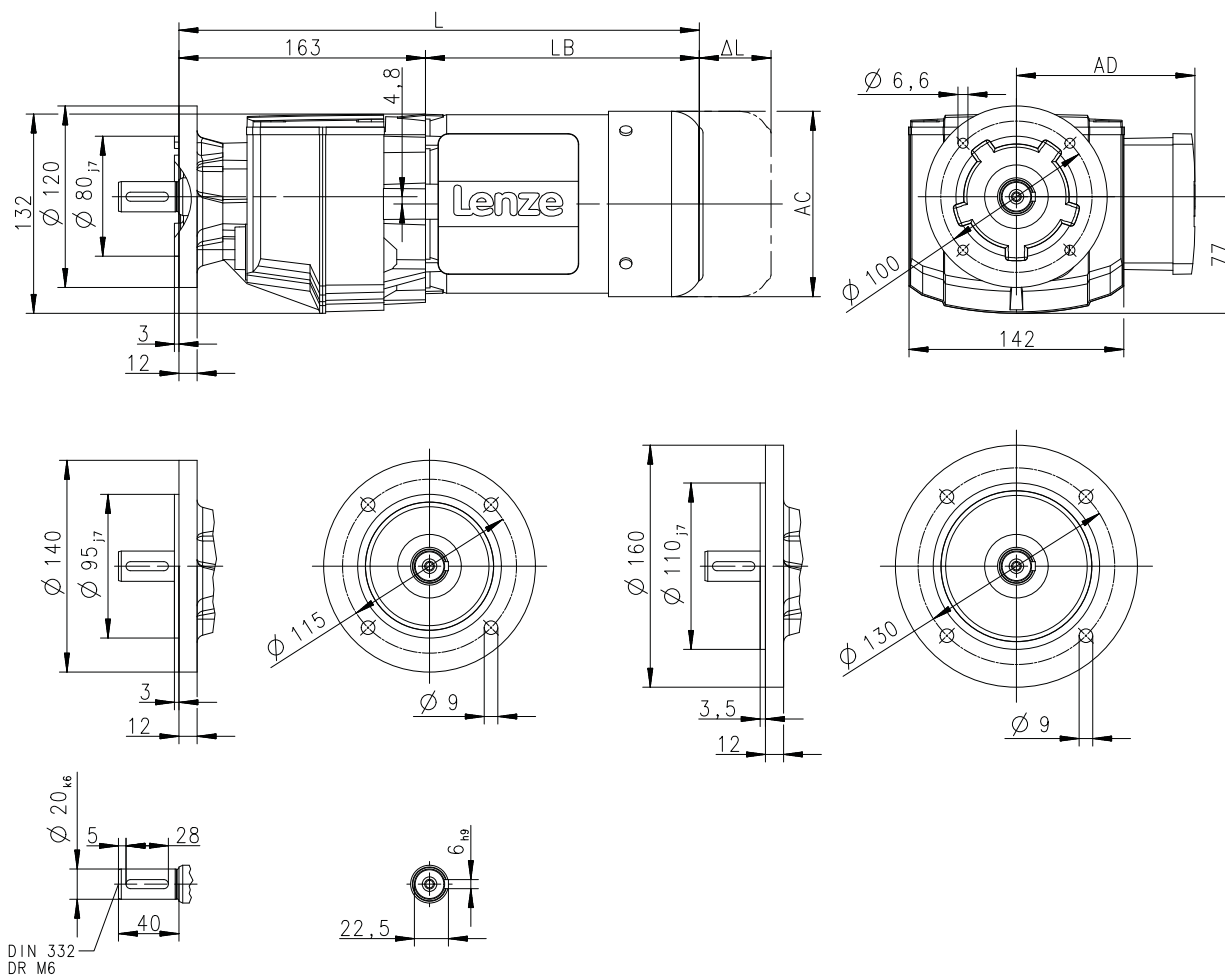
Δ L ▶ Additional lengths 129



g500-H100, 2-stage

Gearbox design: Solid shaft with flange in reinforced design (VCP)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800308-00

Motor series			MFXMA			
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32
Total length	L	mm	346	367	389	449
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

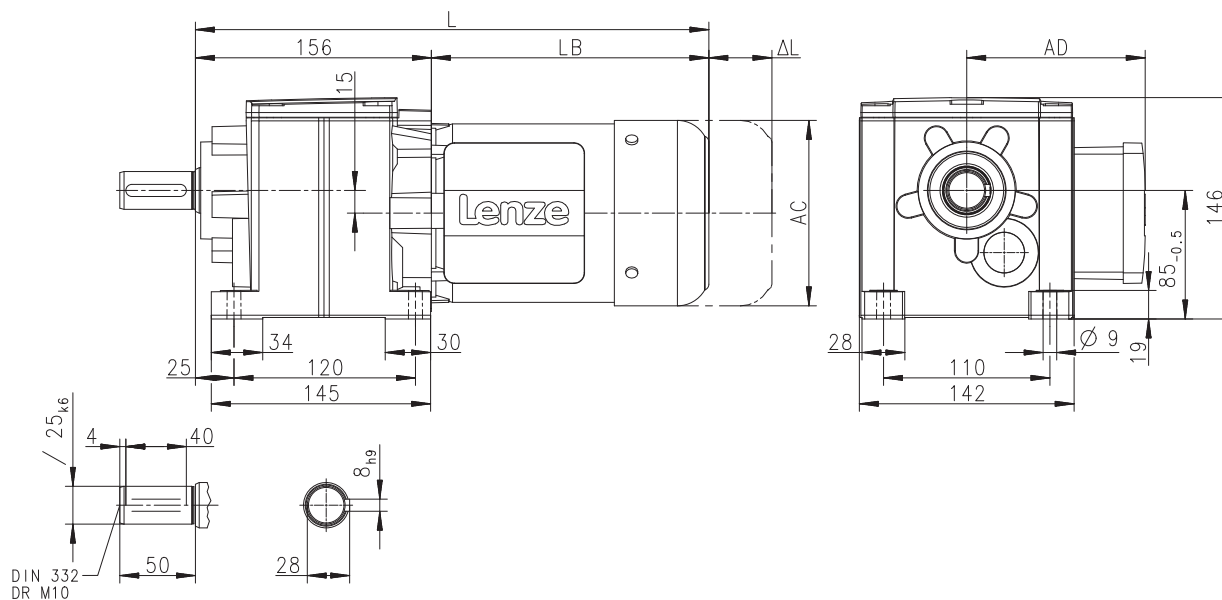
Δ L ▶ Additional lengths 129



g500-H140, 2-stage

Gearbox design: Solid shaft with foot (VBR)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800091-00

Motor series			MFXMA			
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32
Total length	L	mm	339	360	382	442
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 [129](#)

Technical data

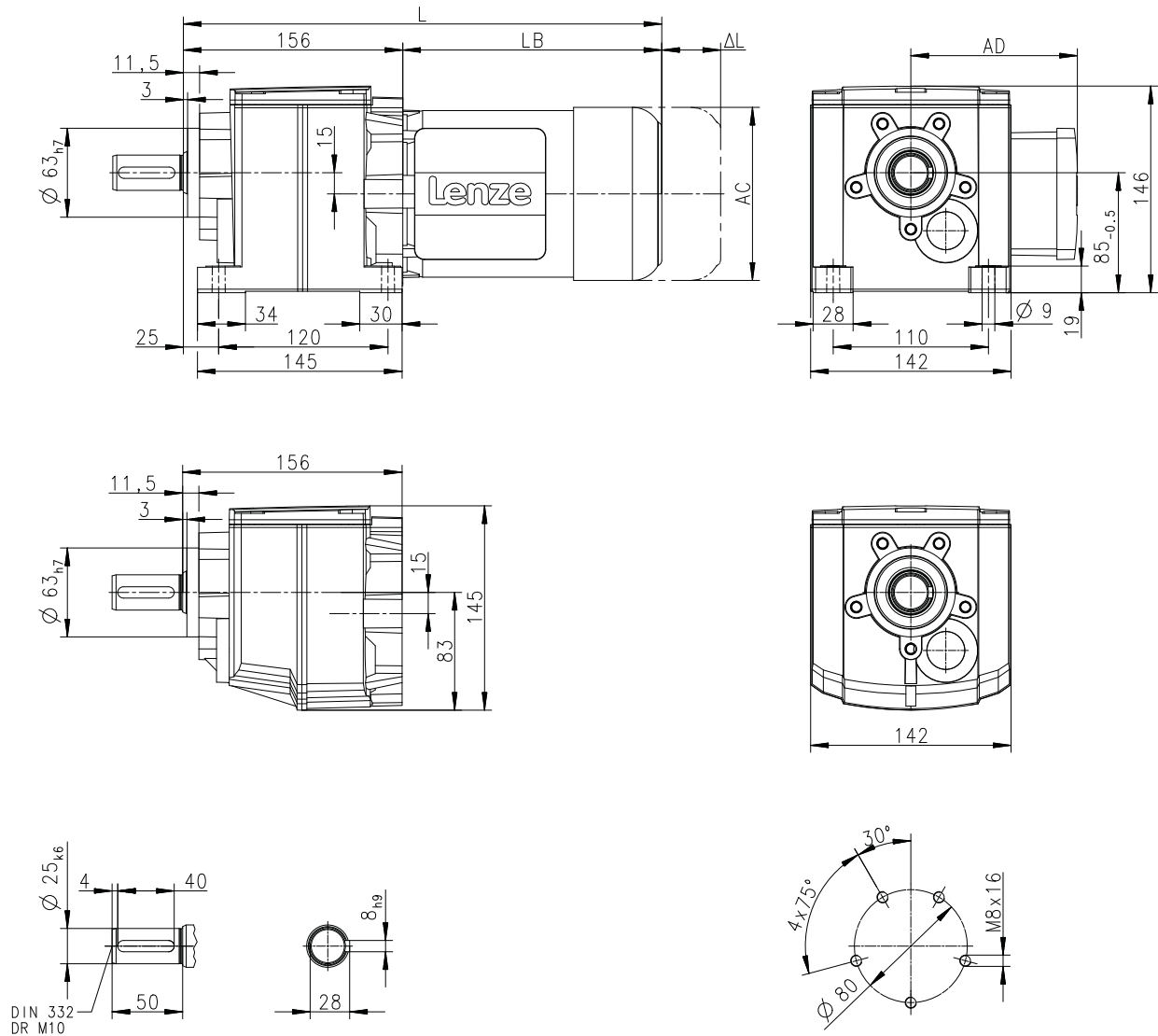
Dimensions
Basic dimensions



g500-H140, 2-stage

Gearbox design: Solid shaft with centering (VAR/VCR)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800093-01

Motor series			MFXMA			
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32
Total length	L	mm	339	360	382	442
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

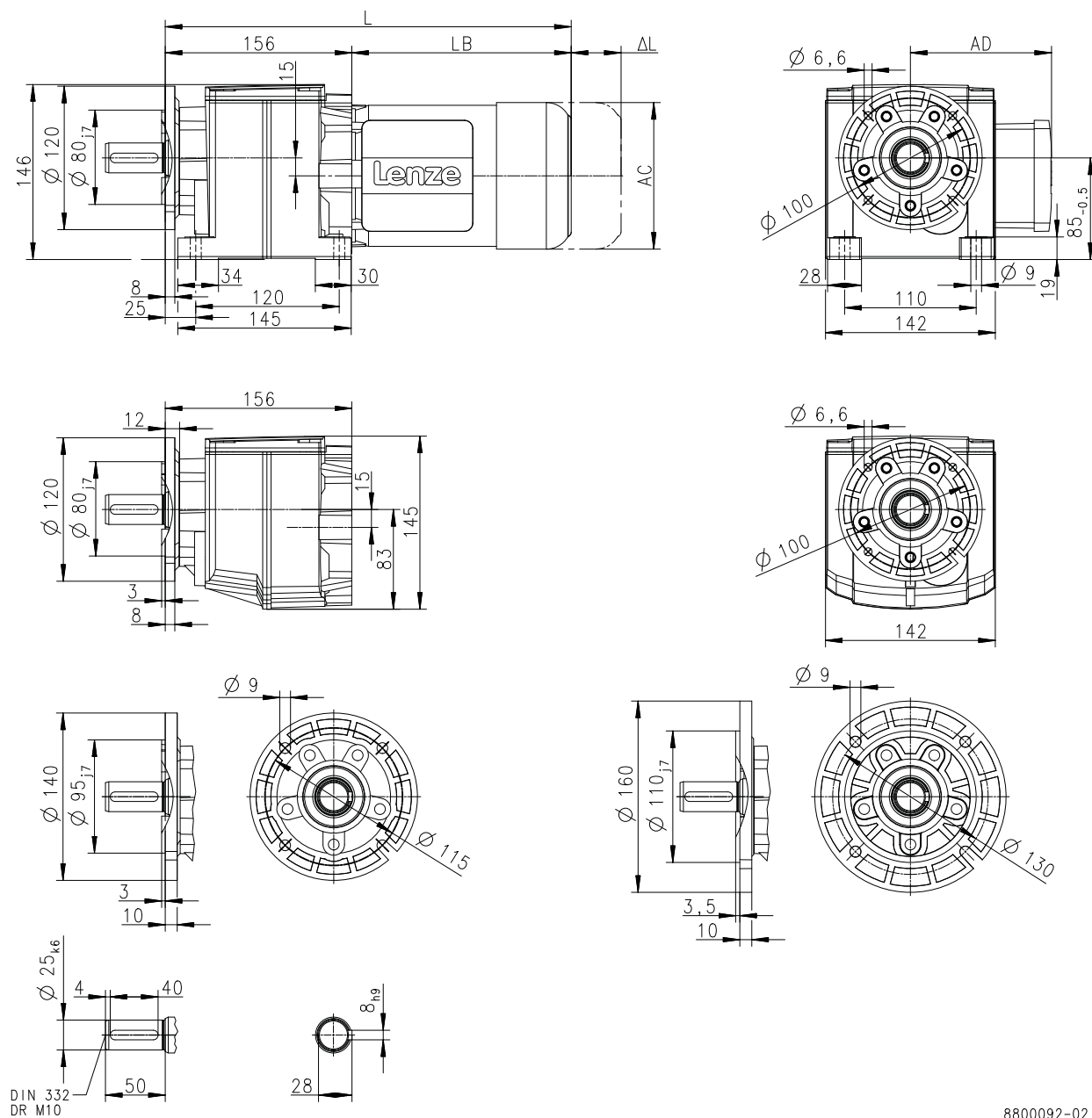
Δ L ▶ Additional lengths 129



g500-H140, 2-stage

Gearbox design: Solid shaft with flange (VAK/VCK)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800092-02

Motor series			MFXMA			
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32
Total length	L	mm	339	360	382	442
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 129

Technical data

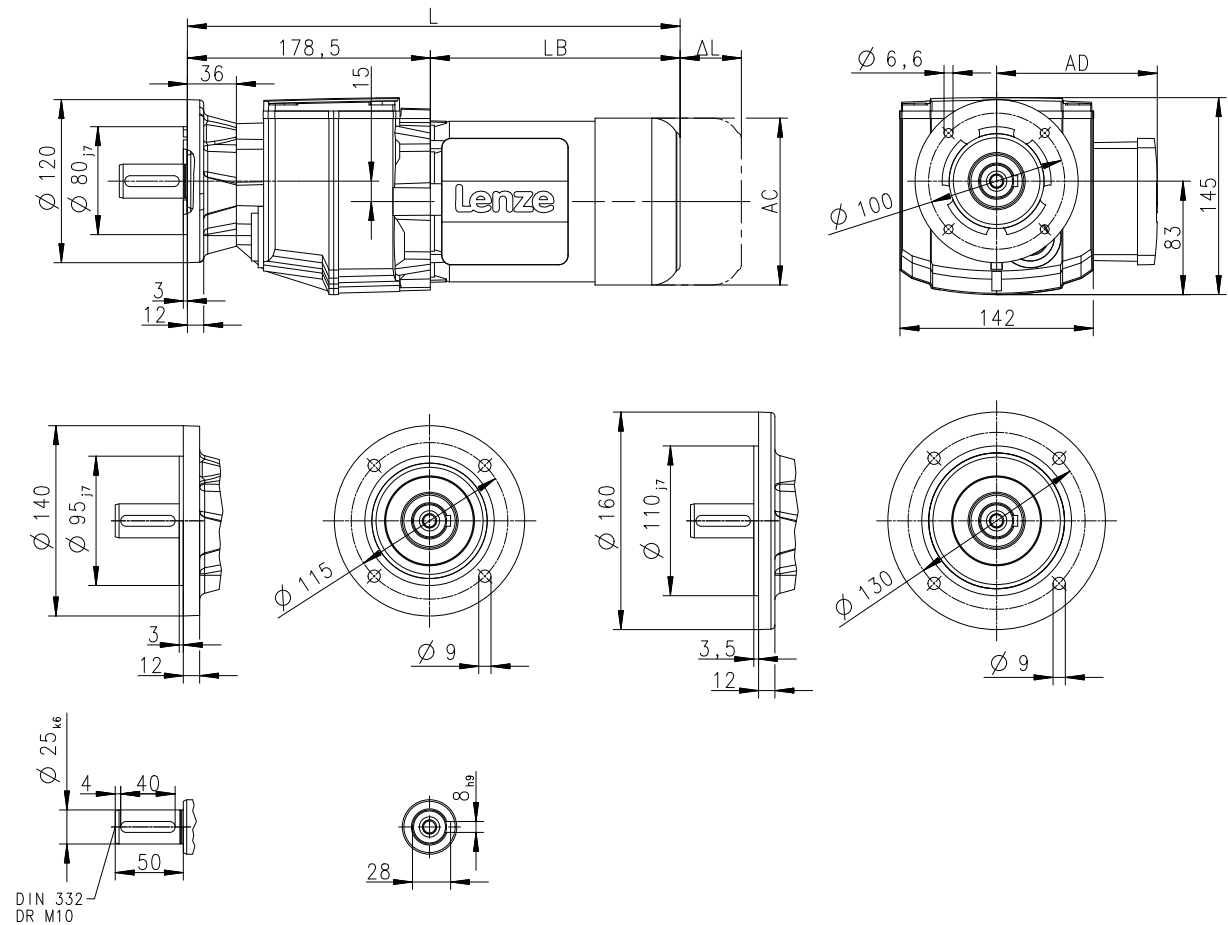
Dimensions
Basic dimensions



g500-H140, 2-stage

Gearbox design: Solid shaft with flange in reinforced design (VCP)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800309-01

Motor series			MFXMA			
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32
Total length	L	mm	362	383	405	465
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

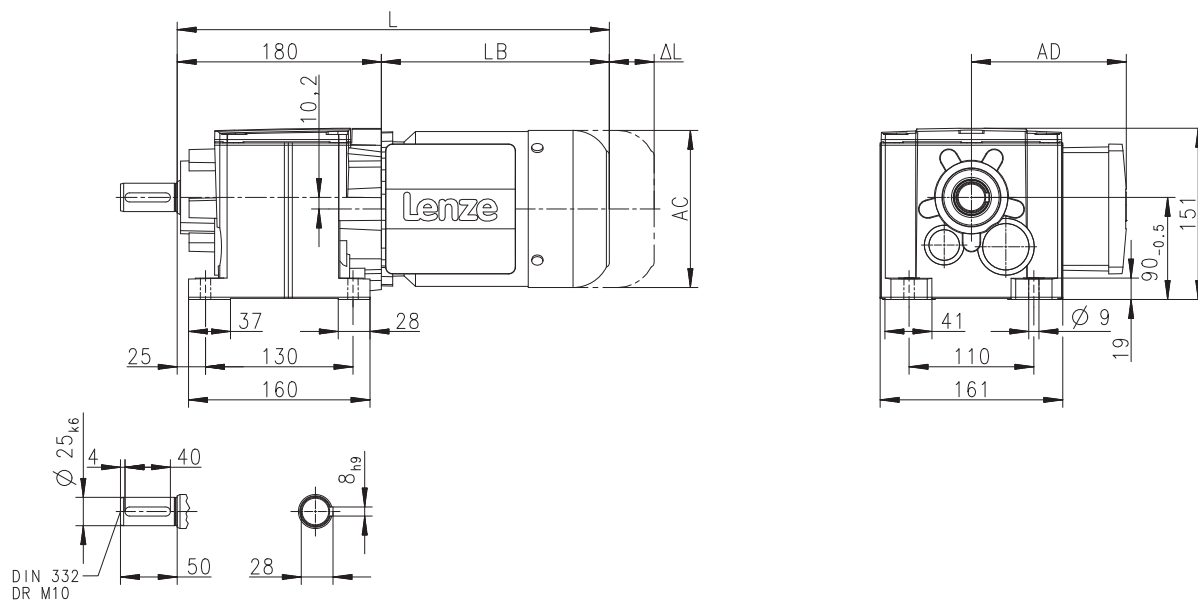
Δ L ▶ Additional lengths 129



g500-H210, 2-/3-stage

Gearbox design: Solid shaft with foot (VBR)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800103-00

Motor series			MFXMA				
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32
Total length	L	mm	363	384	406	466	515
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](#) 129

Technical data

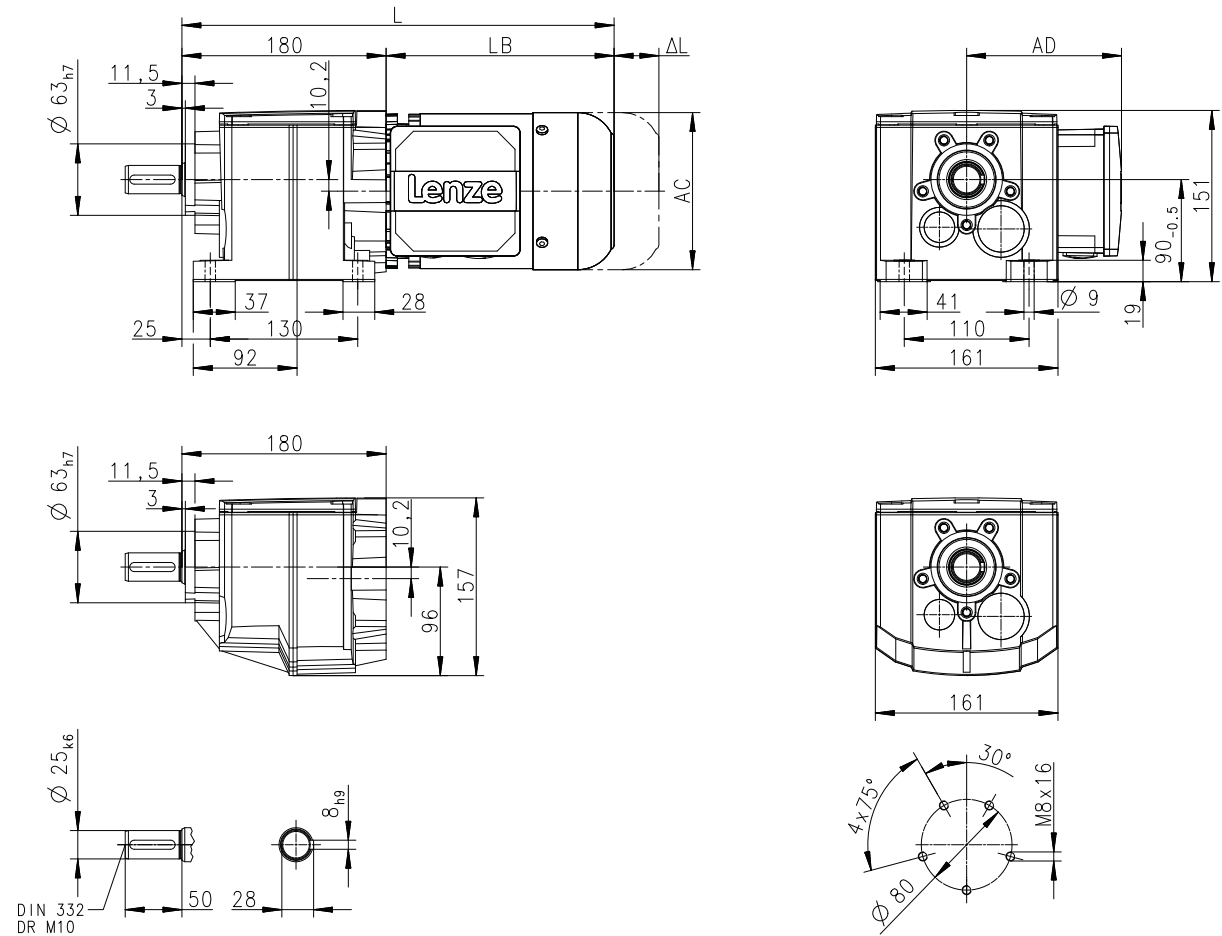
Dimensions
Basic dimensions



g500-H210, 2-/3-stage

Gearbox design: Solid shaft with centering (VAR/VCR)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800105-01

Motor series			MFXMA				
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32
Total length	L	mm	363	384	406	466	515
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

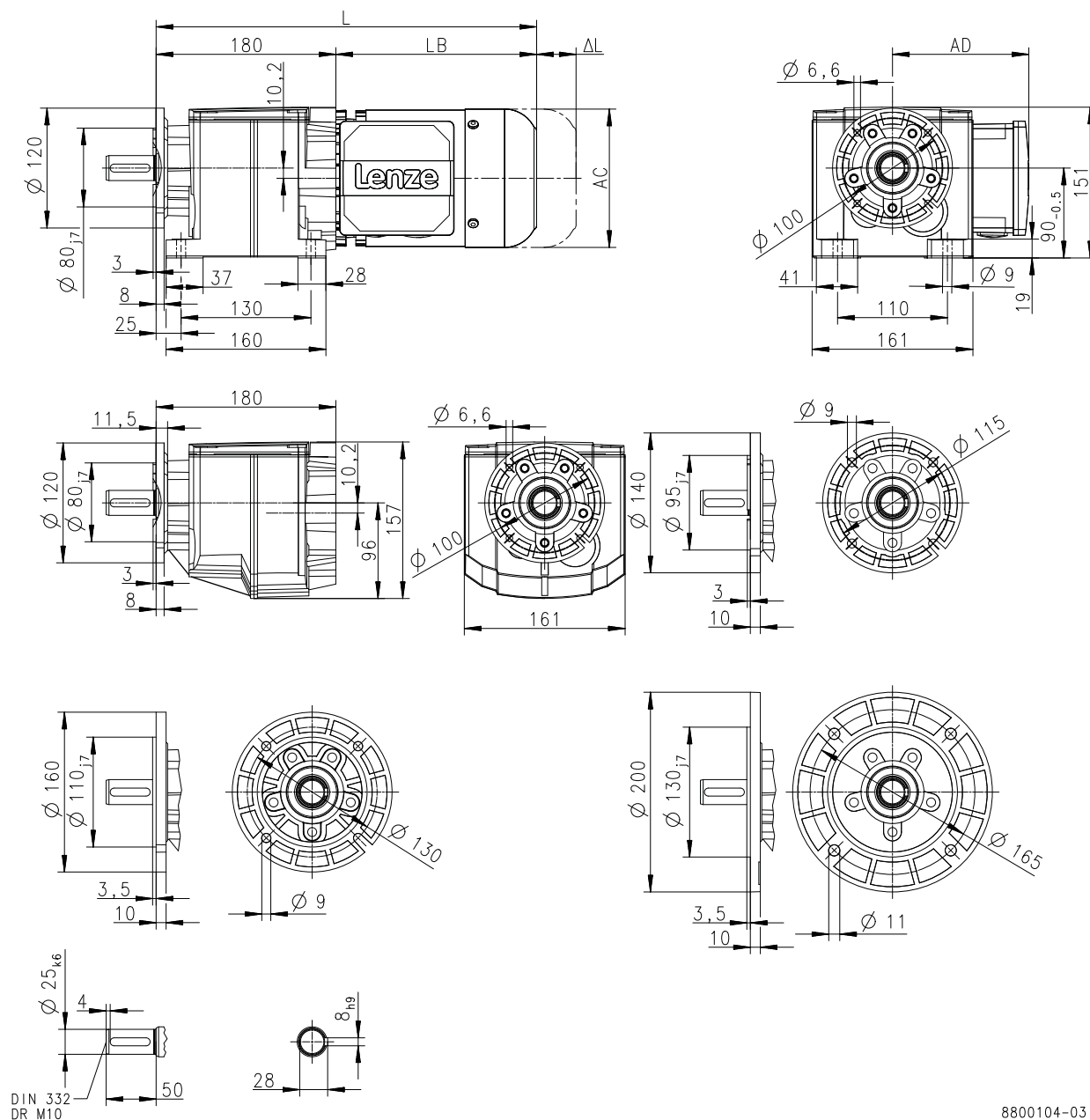
Δ L ▶ Additional lengths 129



g500-H210, 2-/3-stage

Gearbox design: Solid shaft with flange (VAK/VCK)

The dimensions are also valid for solid shaft without keyway (G□□)!



Motor series			MFXMA				
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32
Total length	L	mm	363	384	406	466	515
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

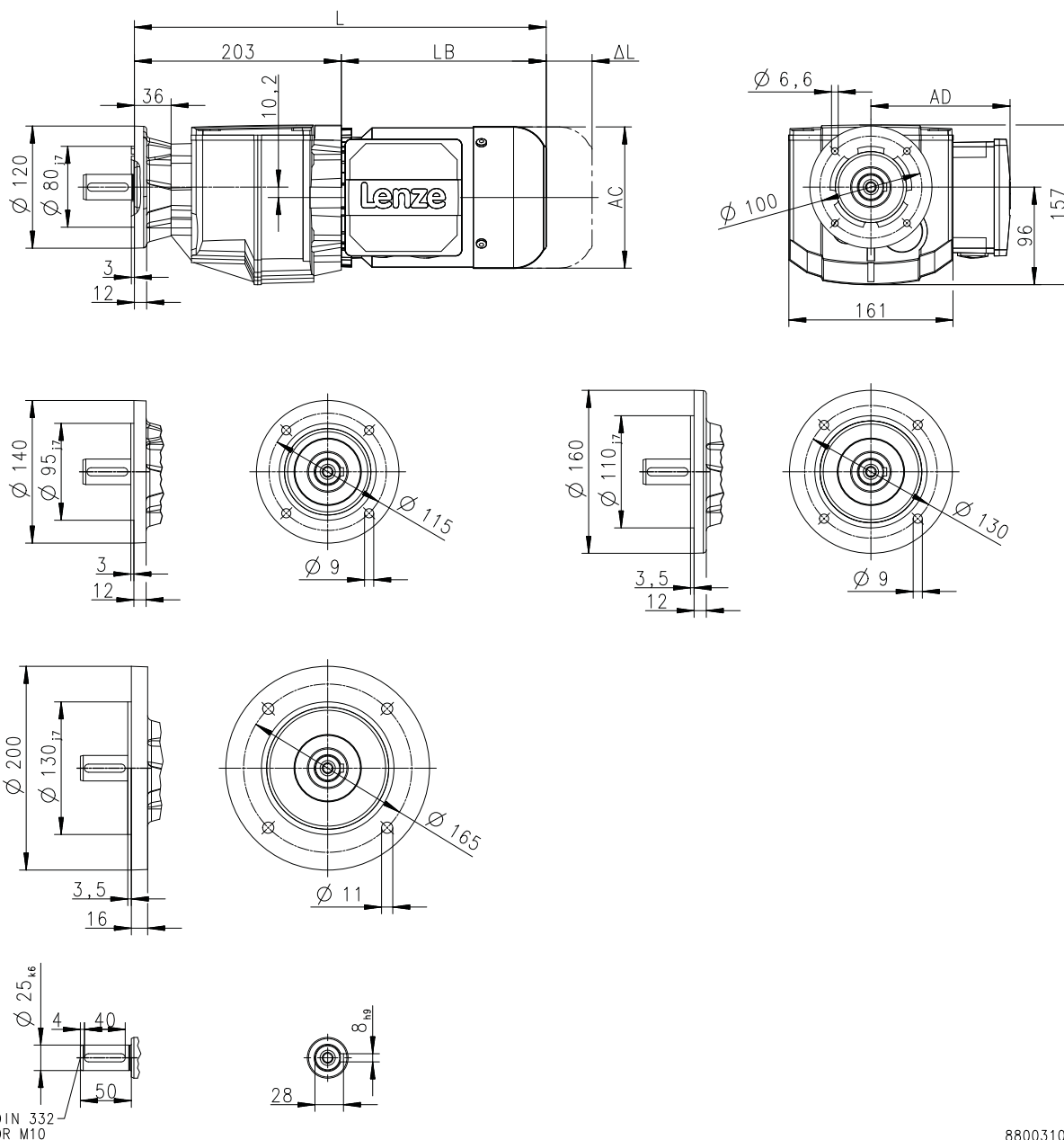
Δ L ▶ Additional lengths [129](#)



g500-H210, 2-/3-stage

Gearbox design: Solid shaft with flange in reinforced design (VCP)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800310-01

Motor series			MFXMA				
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32
Total length	L	mm	386	407	429	489	538
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

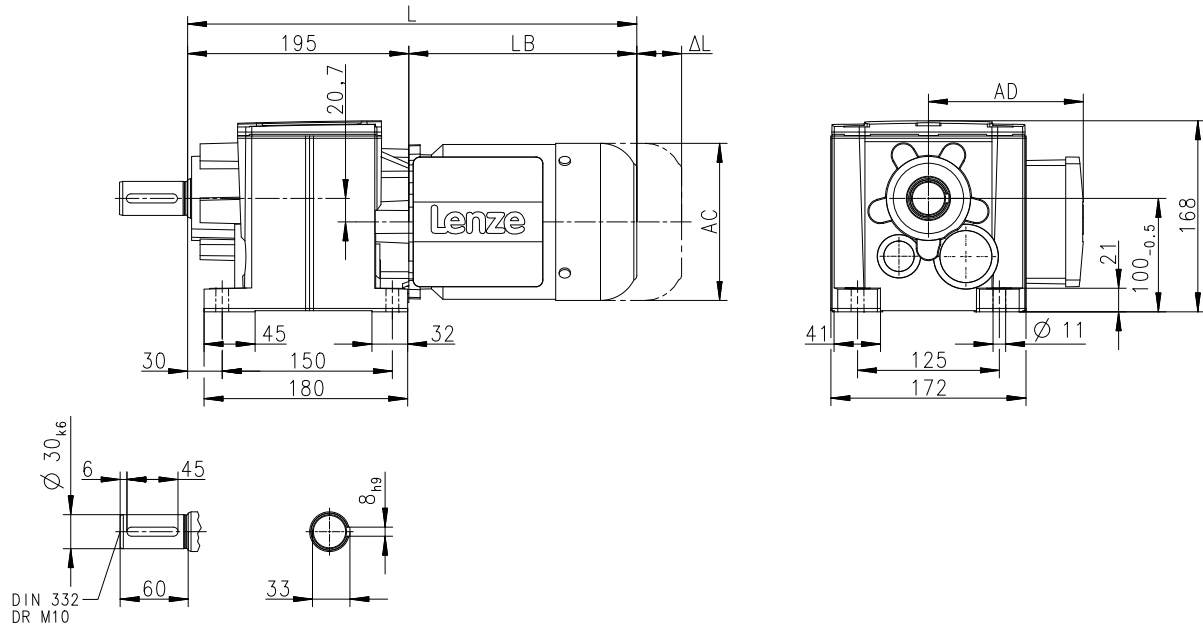
ΔL ▶ Additional lengths 129



g500-H320, 2-/3-stage

Gearbox design: Solid shaft with foot (VBR)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800115-00

Motor series			MFXMA					
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32	112-22
Total length	L	mm	378	399	421	481	530	531
Motor length	LB	mm	183	204	226	286	335	336
Motor diameter	AC	mm	123	139	156	176	194	218
Motor/connection distance	AD	mm	109	118	132	137	147	158

Δ L ▶ Additional lengths 129

Technical data

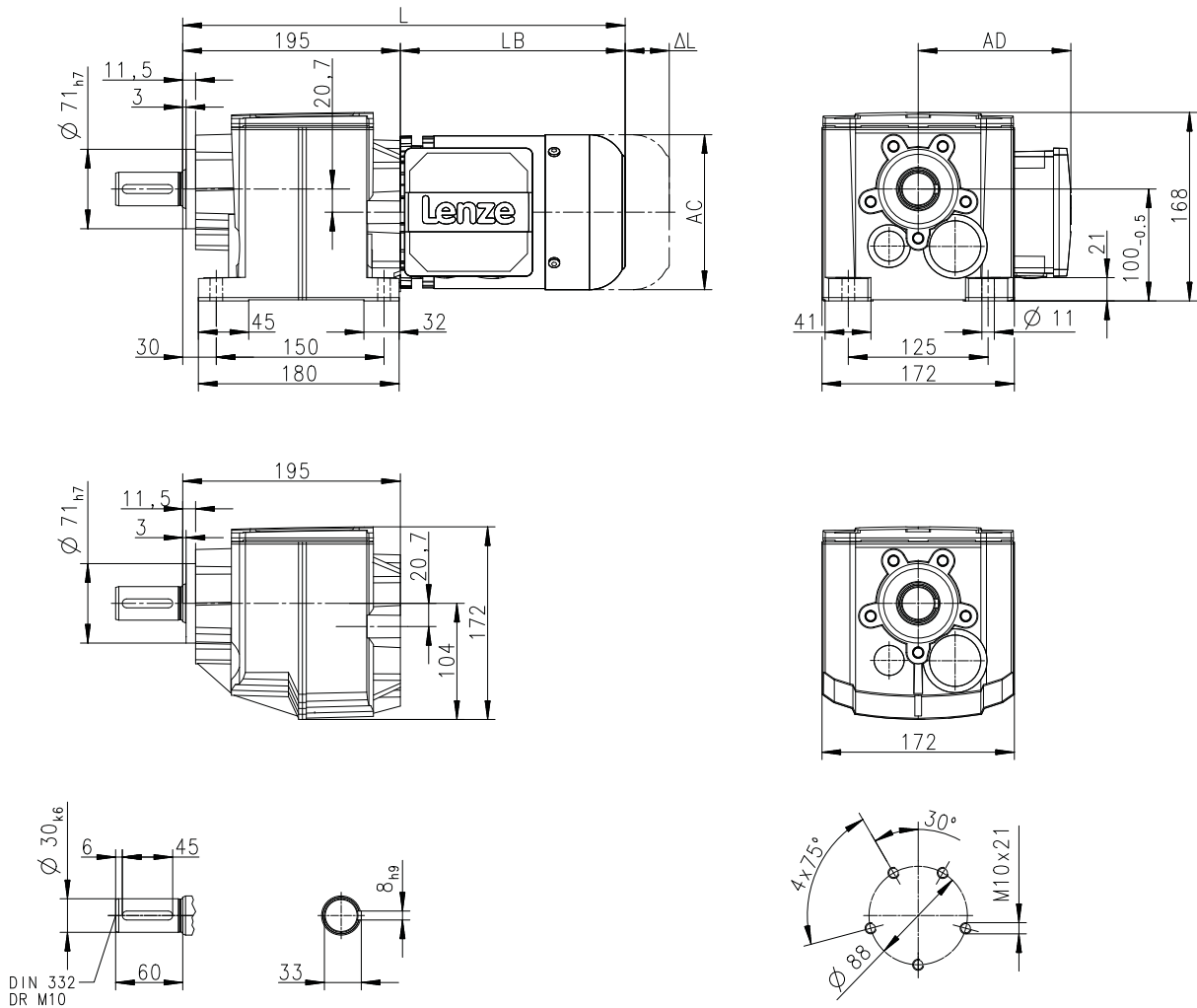
Dimensions
Basic dimensions



g500-H320, 2-/3-stage

Gearbox design: Solid shaft with centering (VAR/VCR)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800117-01

Motor series			MFXMA					
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32	112-22
Total length	L	mm	378	399	421	481	530	531
Motor length	LB	mm	183	204	226	286	335	336
Motor diameter	AC	mm	123	139	156	176	194	218
Motor/connection distance	AD	mm	109	118	132	137	147	158

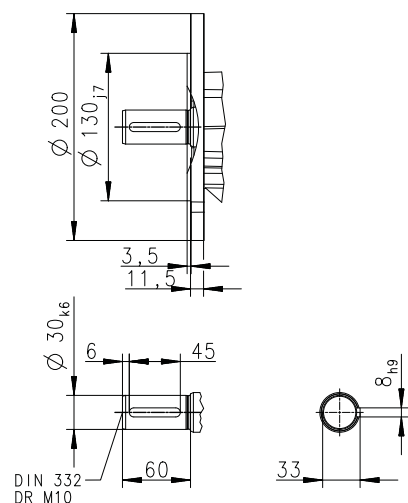
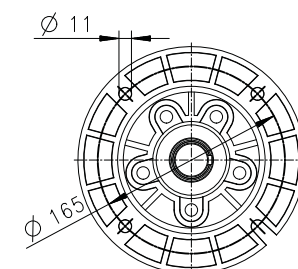
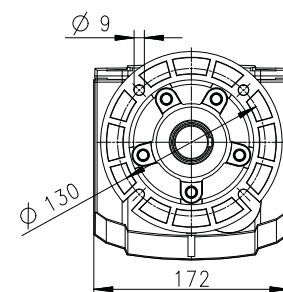
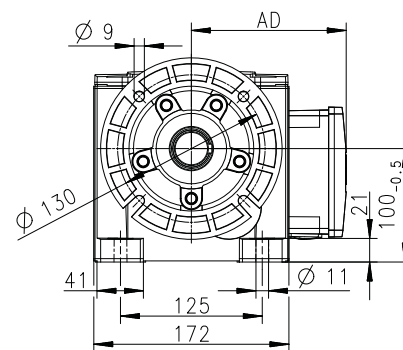
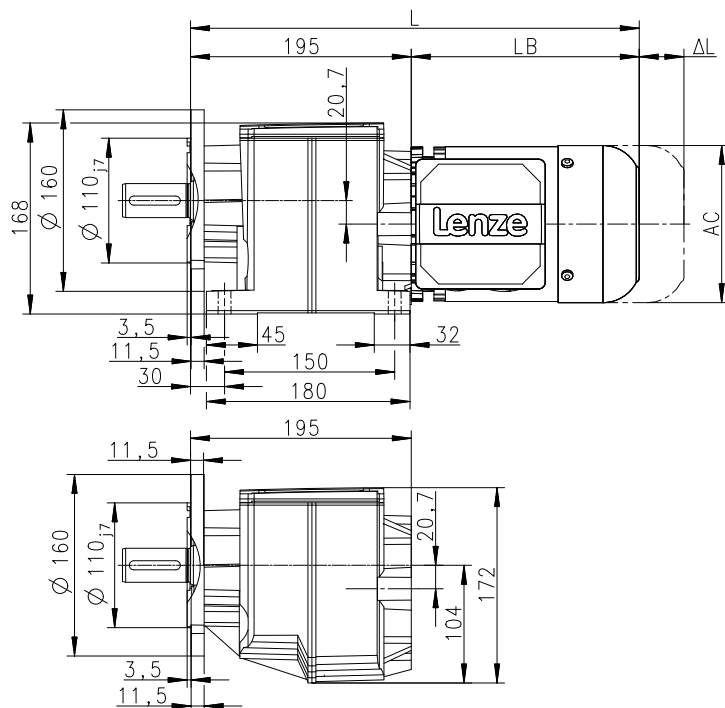
Δ L ▶ Additional lengths 129



g500-H320, 2-/3-stage

Gearbox design: Solid shaft with flange (VAK/VCK)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800116-02

Motor series			MFXMA					
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32	112-22
Total length	L	mm	378	399	421	481	530	531
Motor length	LB	mm	183	204	226	286	335	336
Motor diameter	AC	mm	123	139	156	176	194	218
Motor/connection distance	AD	mm	109	118	132	137	147	158

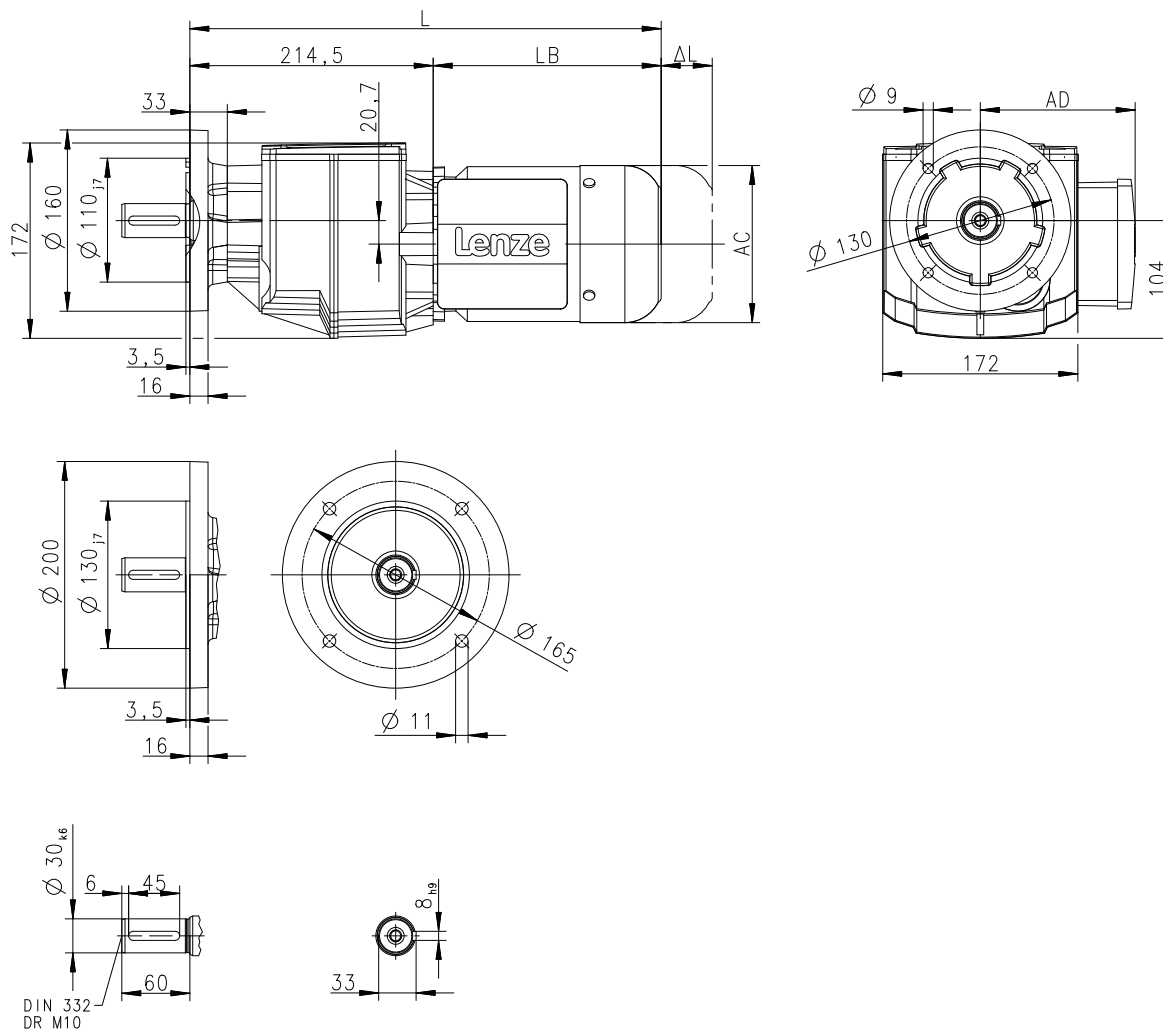
Δ L ▶ Additional lengths 129



g500-H320, 2-/3-stage

Gearbox design: Solid shaft with flange in reinforced design (VCP)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800311-00

Motor series			MFXMA					
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32	112-22
Total length	L	mm	398	419	441	501	550	551
Motor length	LB	mm	183	204	226	286	335	336
Motor diameter	AC	mm	123	139	156	176	194	218
Motor/connection distance	AD	mm	109	118	132	137	147	158

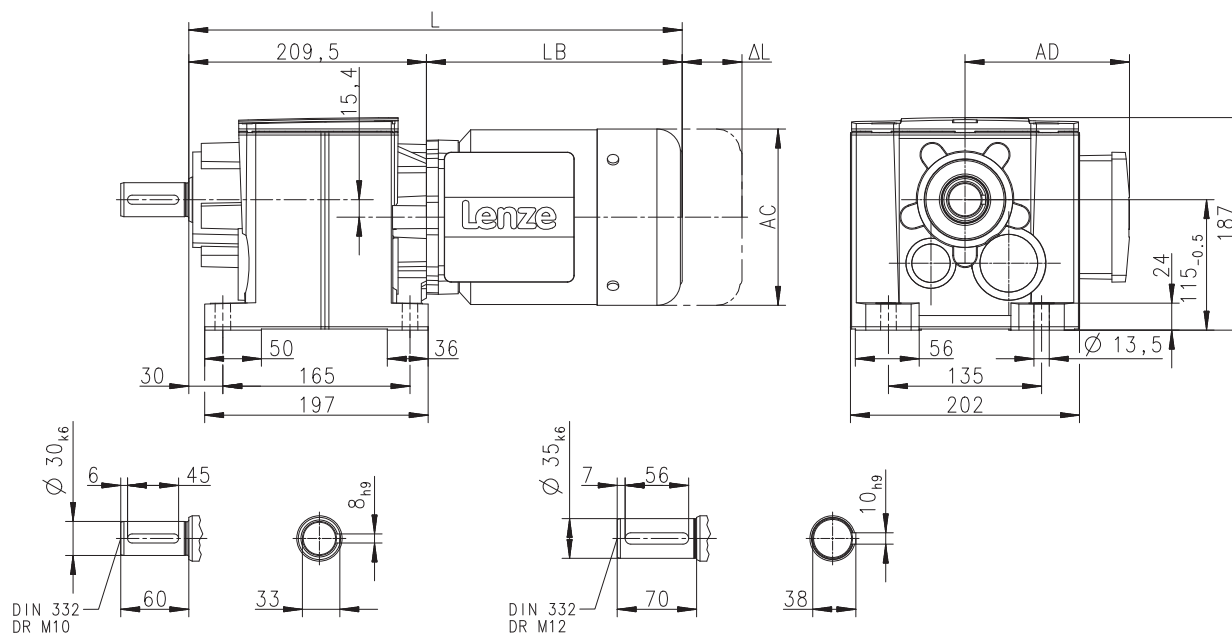
Δ L ▶ Additional lengths 129



g500-H450, 2-/3-stage

Gearbox design: Solid shaft with foot (VBR)

The dimensions are also valid for solid shaft without keyway $\varnothing 35 \times 70$ (G□□)!



8800127-00

Motor series			MFXMA						
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32	112-22	132-12 132-22 132-32
Total length	L	mm	393	414	436	496	545	546	638
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 [129](#)

Technical data

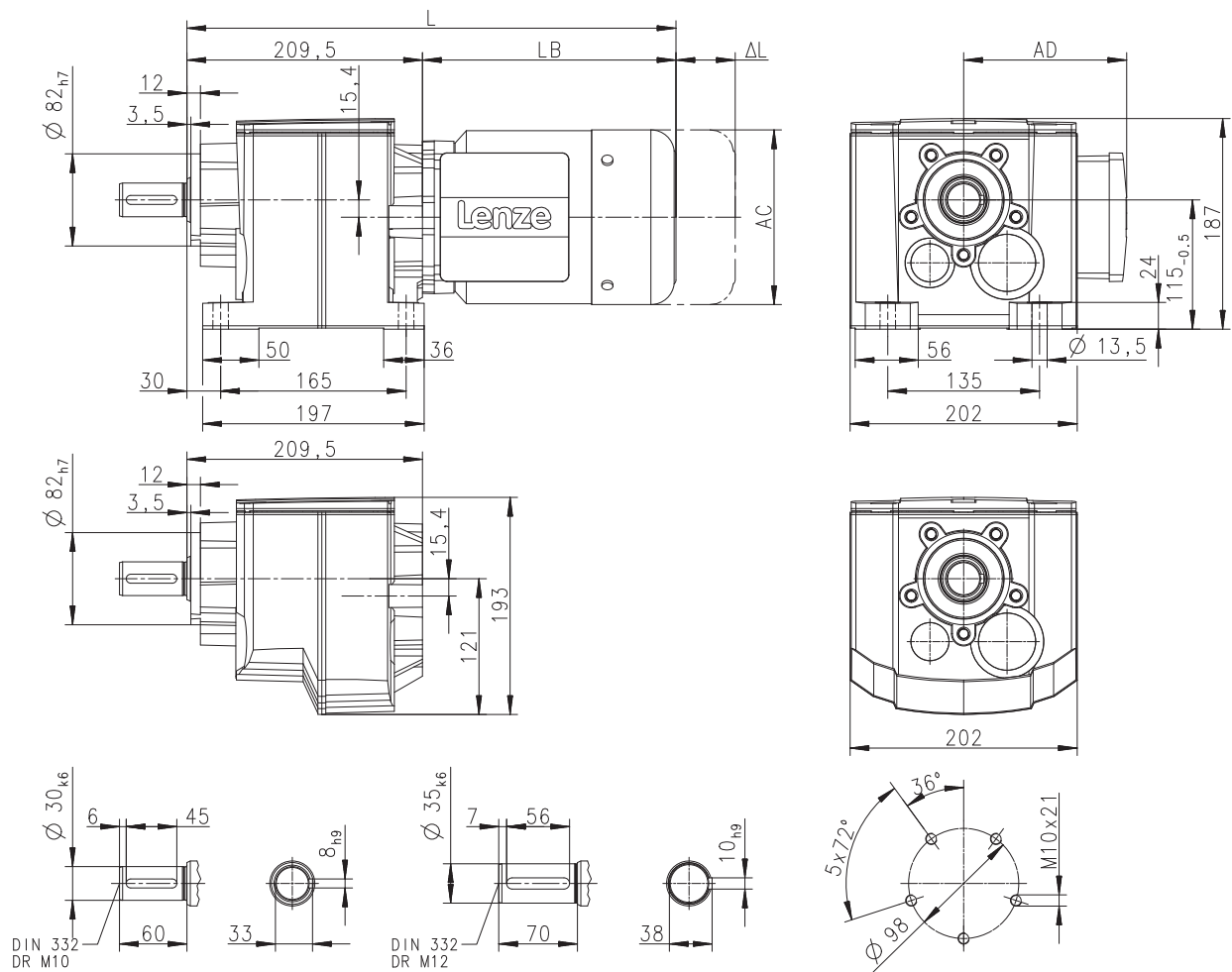
Dimensions
Basic dimensions



g500-H450, 2-/3-stage

Gearbox design: Solid shaft with centering (VAR/VCR)

The dimensions are also valid for solid shaft without keyway $\varnothing 35 \times 70$ (G□□)!



8800129-00

Motor series			MFXMA						
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32	112-22	132-12 132-22 132-32
Total length	L	mm	393	414	436	496	545	546	638
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

ΔL ▶ Additional lengths 129



The dimensions are also valid for solid shaft without keyway Ø35 x 70 (G□□)!



Motor series			MFXMA						
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32	112-22	132-12 132-22 132-32
Total length	L	mm	393	414	436	496	545	546	638
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

111

Technical data

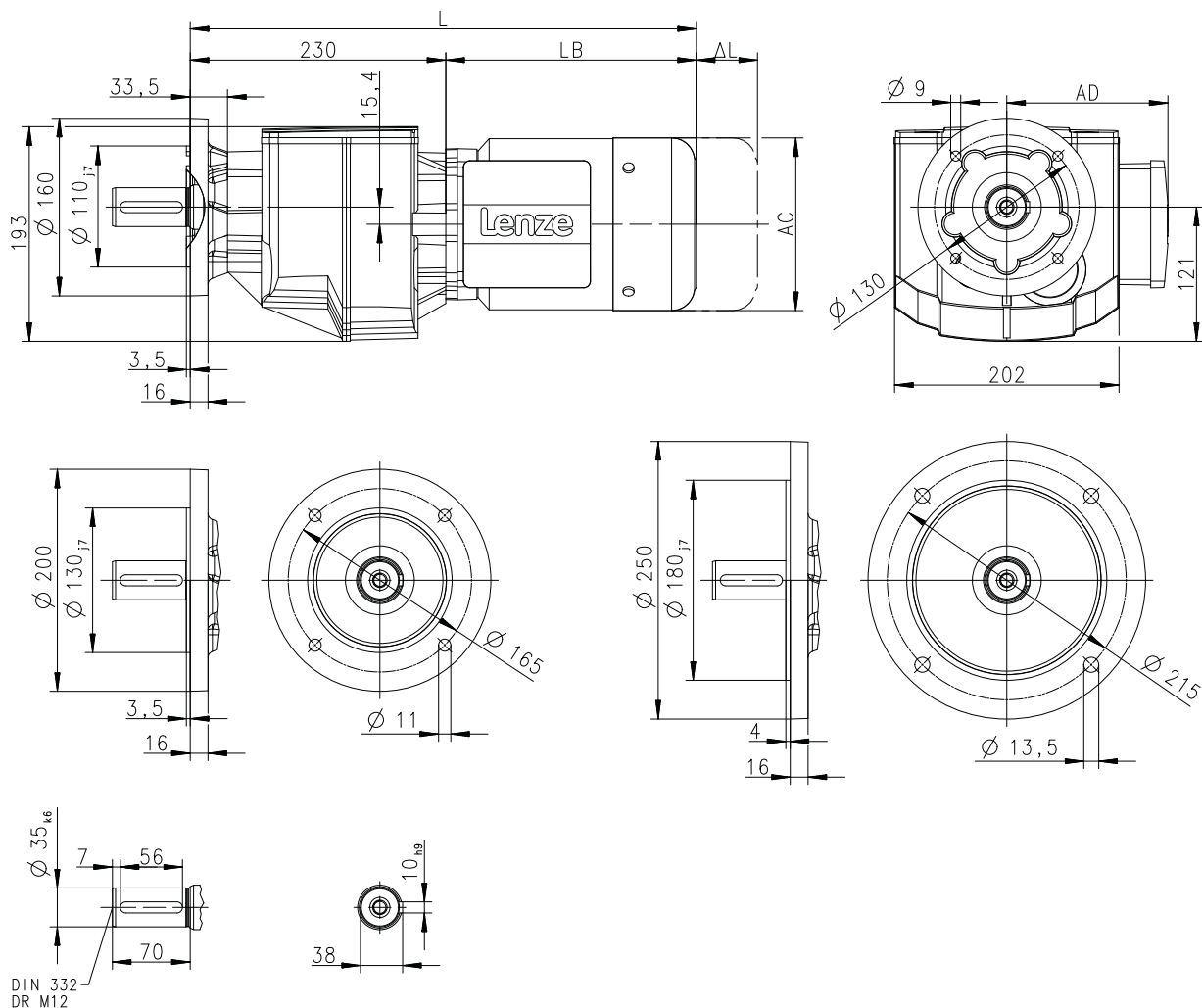
Dimensions
Basic dimensions



g500-H450, 2-/3-stage

Gearbox design: Solid shaft with flange in reinforced design (VCP)

The dimensions are also valid for solid shaft without keyway $\varnothing 35 \times 70$ (G□□)!



8800312-00

Motor series			MFXMA						
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32	112-22	132-12 132-22 132-32
Total length	L	mm	413	434	456	516	565	566	658
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

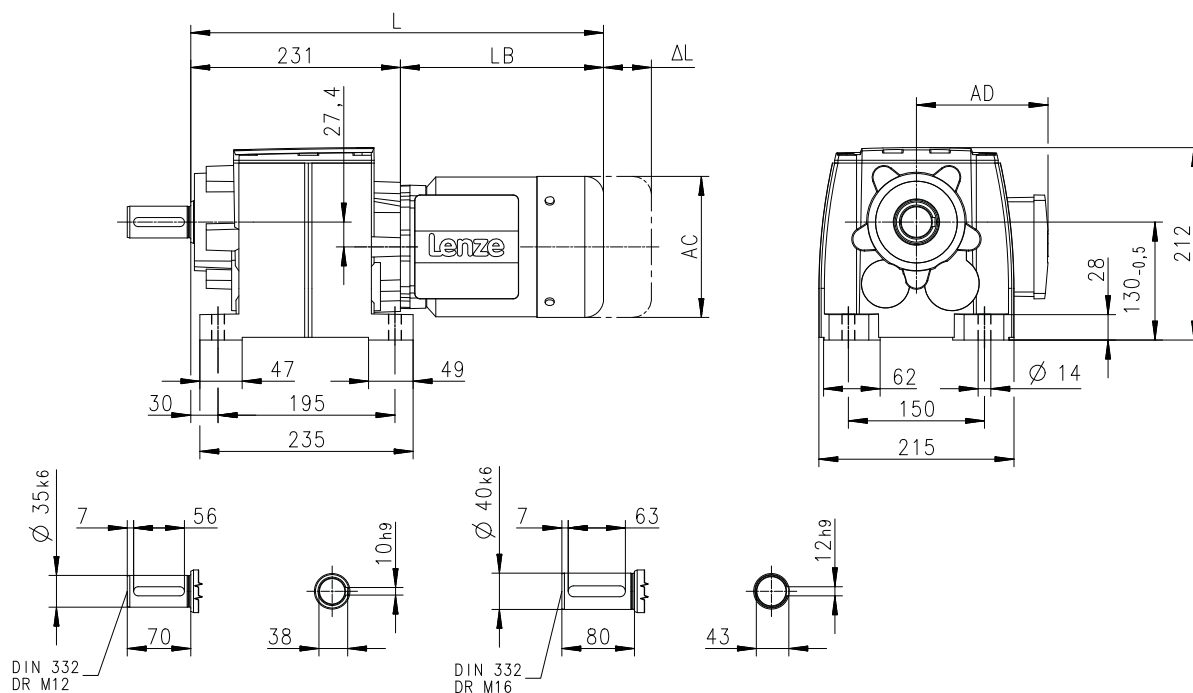
Δ L ▶ Additional lengths □ 129



g500-H600, 2-/3-stage

Gearbox design: Solid shaft with foot (VBR)

The dimensions are also valid for solid shaft without keyway $\varnothing 35 \times 70$ (G□□)!



8800402-00

Motor series			MFXMA						
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32	112-22	132-12 132-22 132-32
Total length	L	mm	414	435	457	517	566	567	659
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

ΔL ▶ Additional lengths 129

Technical data

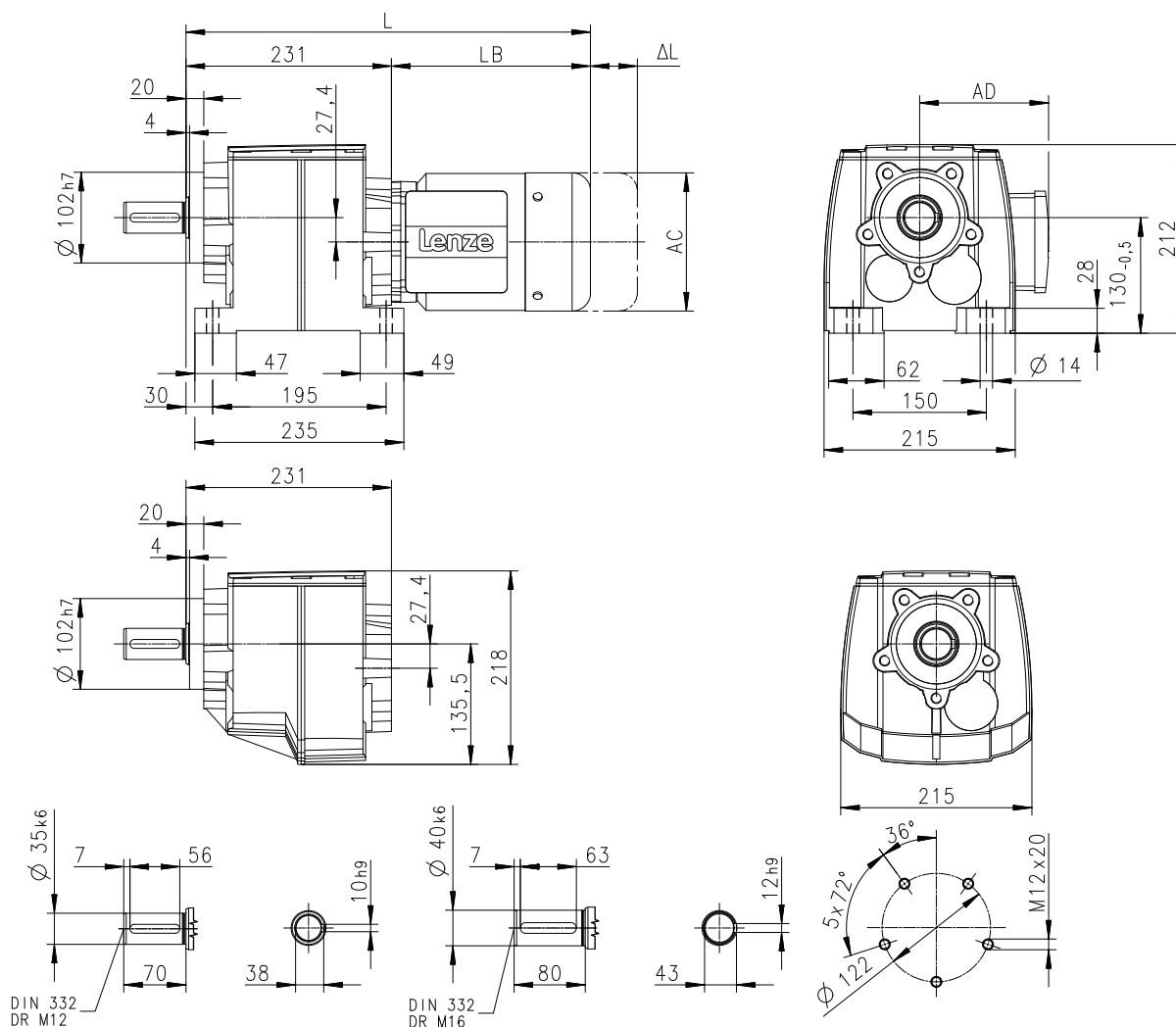
Dimensions
Basic dimensions



g500-H600, 2-/3-stage

Gearbox design: Solid shaft with centering (VAR/VCR)

The dimensions are also valid for solid shaft without keyway $\varnothing 35 \times 70$ (G□□)!



8800403-00

Motor series			MFXMA						
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32	112-22	132-12 132-22 132-32
Total length	L	mm	414	435	457	517	566	567	659
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

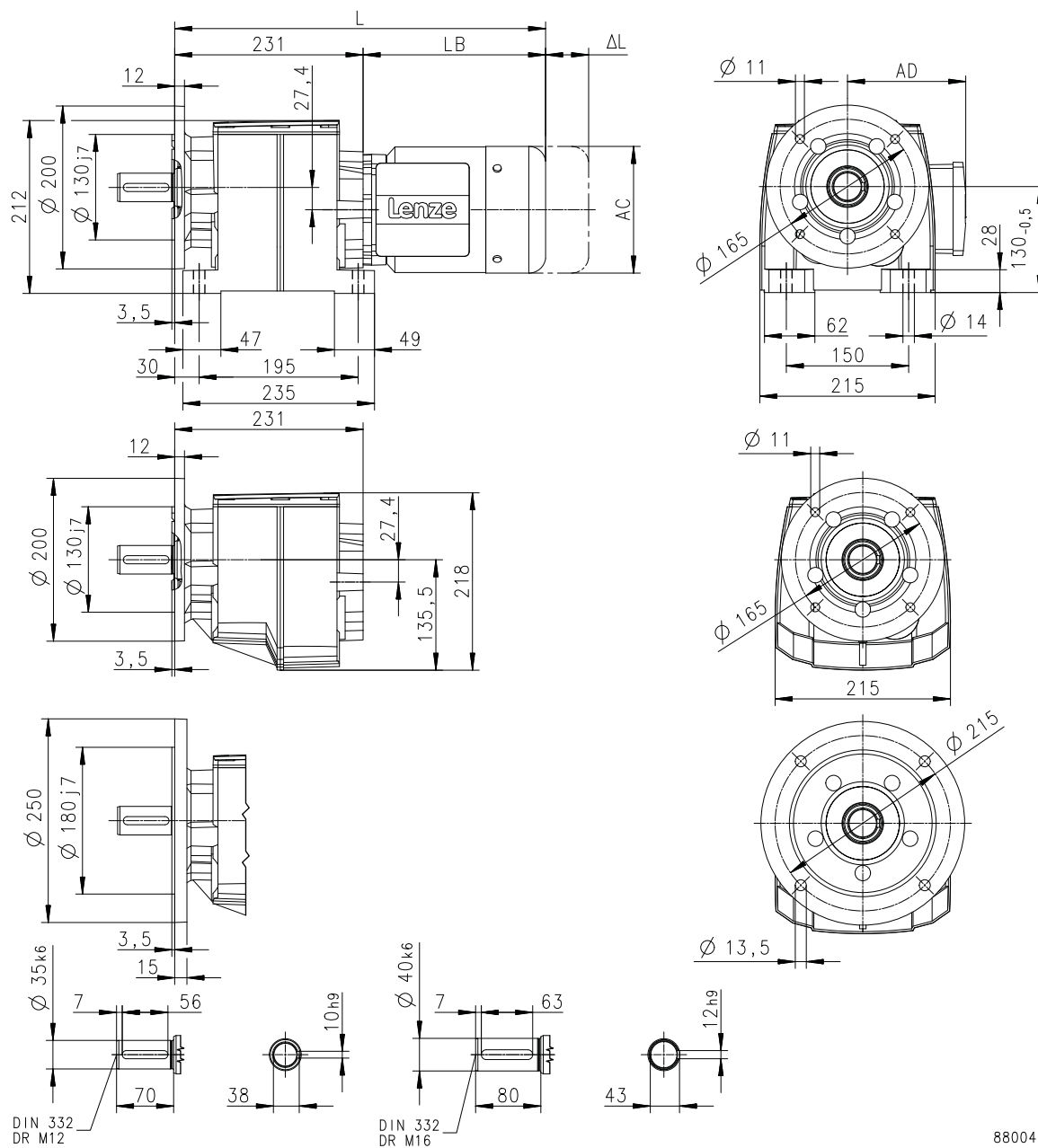
ΔL ▶ Additional lengths □ 129



g500-H600, 2-/3-stage

Gearbox design: Solid shaft with flange (VAK/VCK)

The dimensions are also valid for solid shaft without keyway $\varnothing 35 \times 70$ (G□□)!



8800404-00

Motor series			MFXMA						
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32	112-22	132-12 132-22 132-32
Total length	L	mm	414	435	457	517	566	567	659
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 □ 129

Technical data

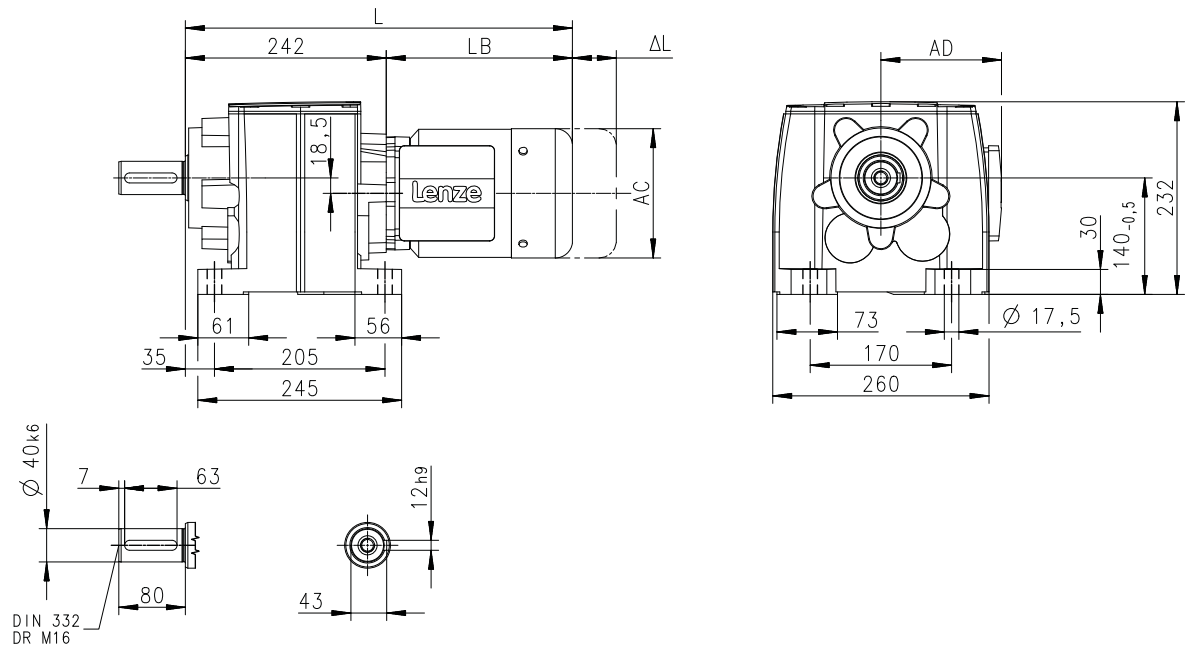
Dimensions
Basic dimensions



g500-H850, 2-/3-stage

Gearbox design: Solid shaft with foot (VBR)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800405-00

Motor series			MFXMA						
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32	112-22	132-12 132-22 132-32
Total length	L	mm	425	446	468	528	577	578	670
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

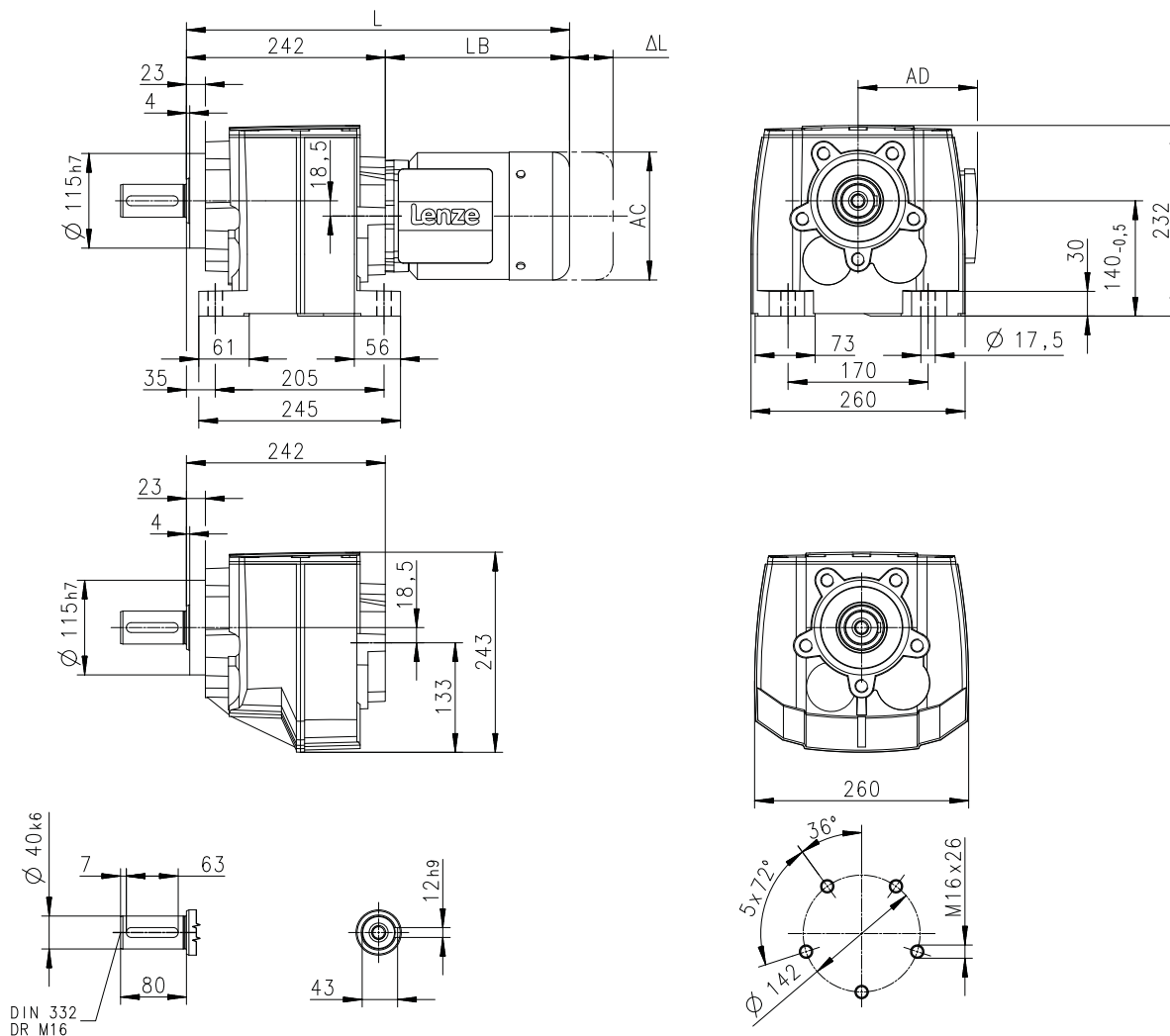
ΔL ▶ Additional lengths 129



g500-H850, 2-/3-stage

Gearbox design: Solid shaft with centering (VAR/VCR)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800406-00

Motor series			MFXMA						
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32	112-22	132-12 132-22 132-32
Total length	L	mm	425	446	468	528	577	578	670
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 □ 129

Technical data

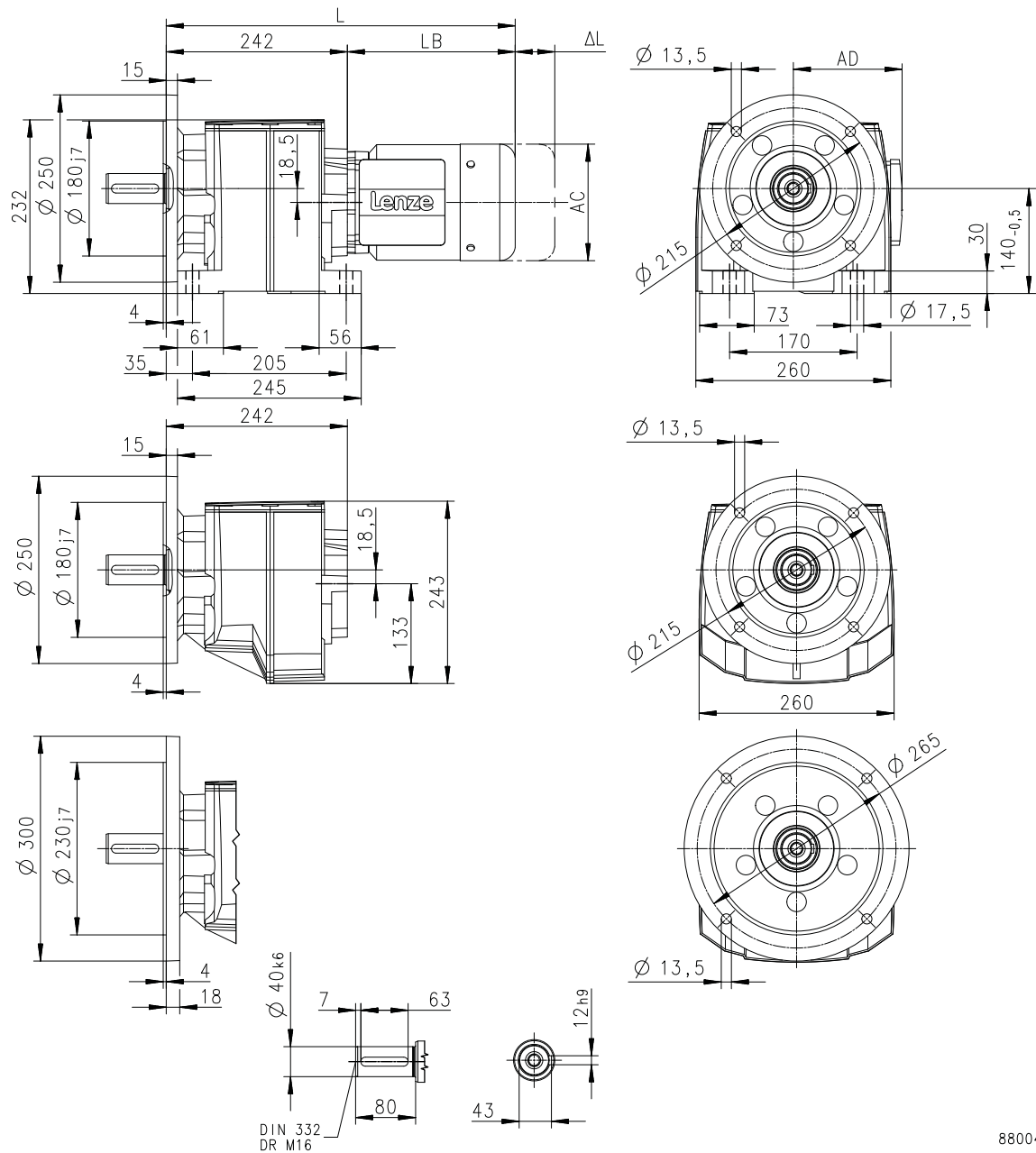
Dimensions
Basic dimensions



g500-H850, 2-/3-stage

Gearbox design: Solid shaft with flange (VAK/VCK)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800407-00

Motor series			MFXMA						
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32	112-22	132-12 132-22 132-32
Total length	L	mm	425	446	468	528	577	578	670
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

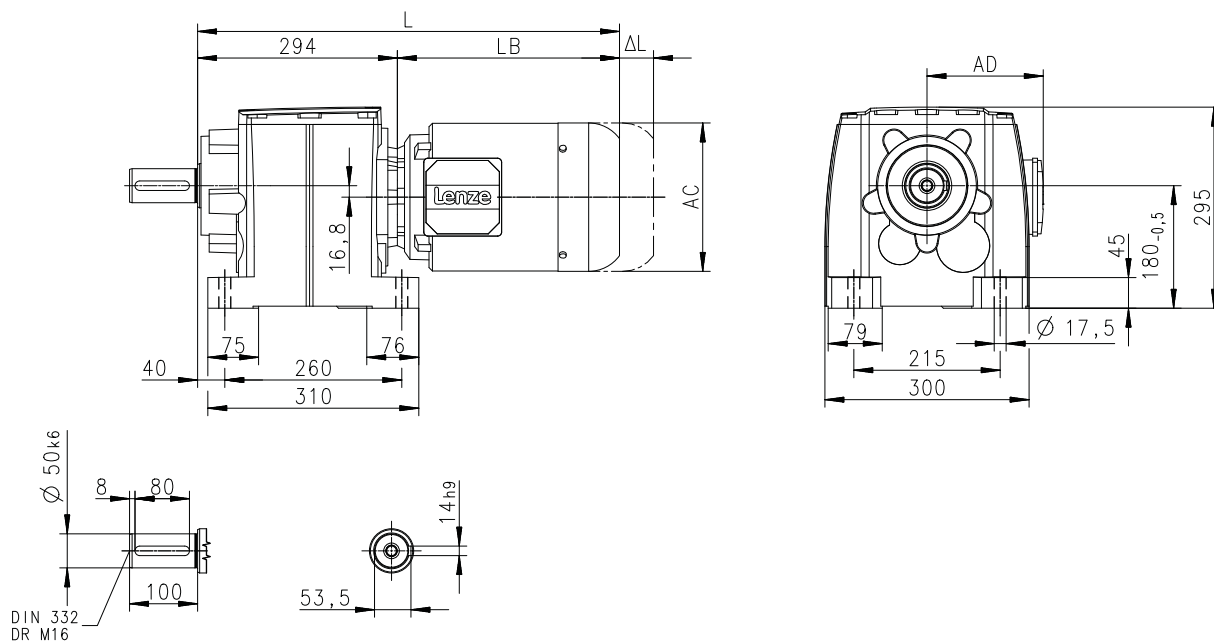
ΔL ▶ Additional lengths 129



g500-H1500, 2-/3-stage

Gearbox design: Solid shaft with foot (VBR)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800408-00

Motor series			MFXMA						
Motor			071-32 071-42	063-32 063-42	080-32 080-42	090-32	100-12 100-32	112-22	132-12 132-22 132-32
Total length	L	mm	498	477	520	580	629	630	722
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 129

Technical data

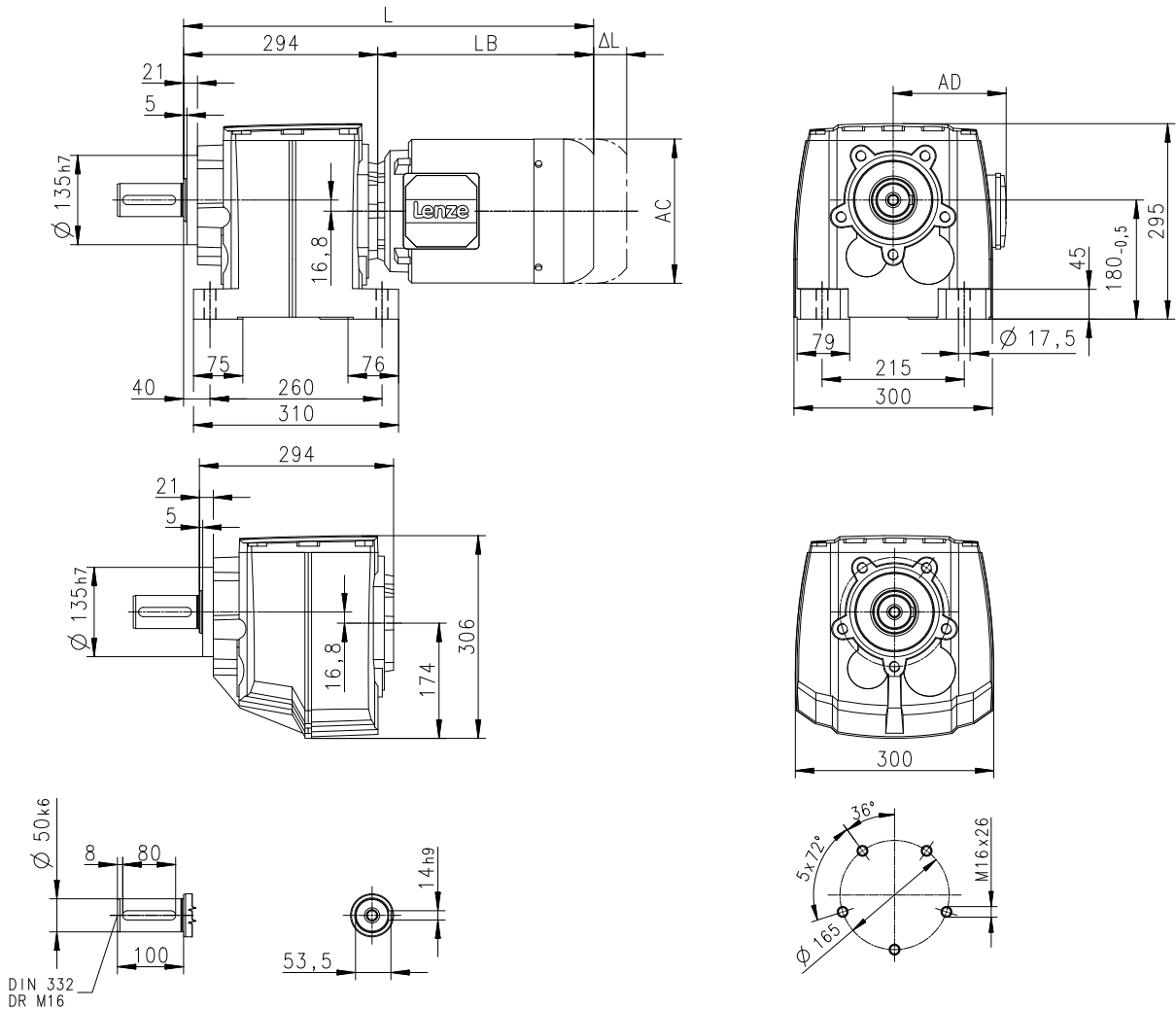
Dimensions
Basic dimensions



g500-H1500, 2-/3-stage

Gearbox design: Solid shaft with centering (VAR/VCR)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800409-00

Motor series			MFXMA						
Motor			071-32 071-42	063-32 063-42	080-32 080-42	090-32	100-12 100-32	112-22	132-12 132-22 132-32
Total length	L	mm	498	477	520	580	629	630	722
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

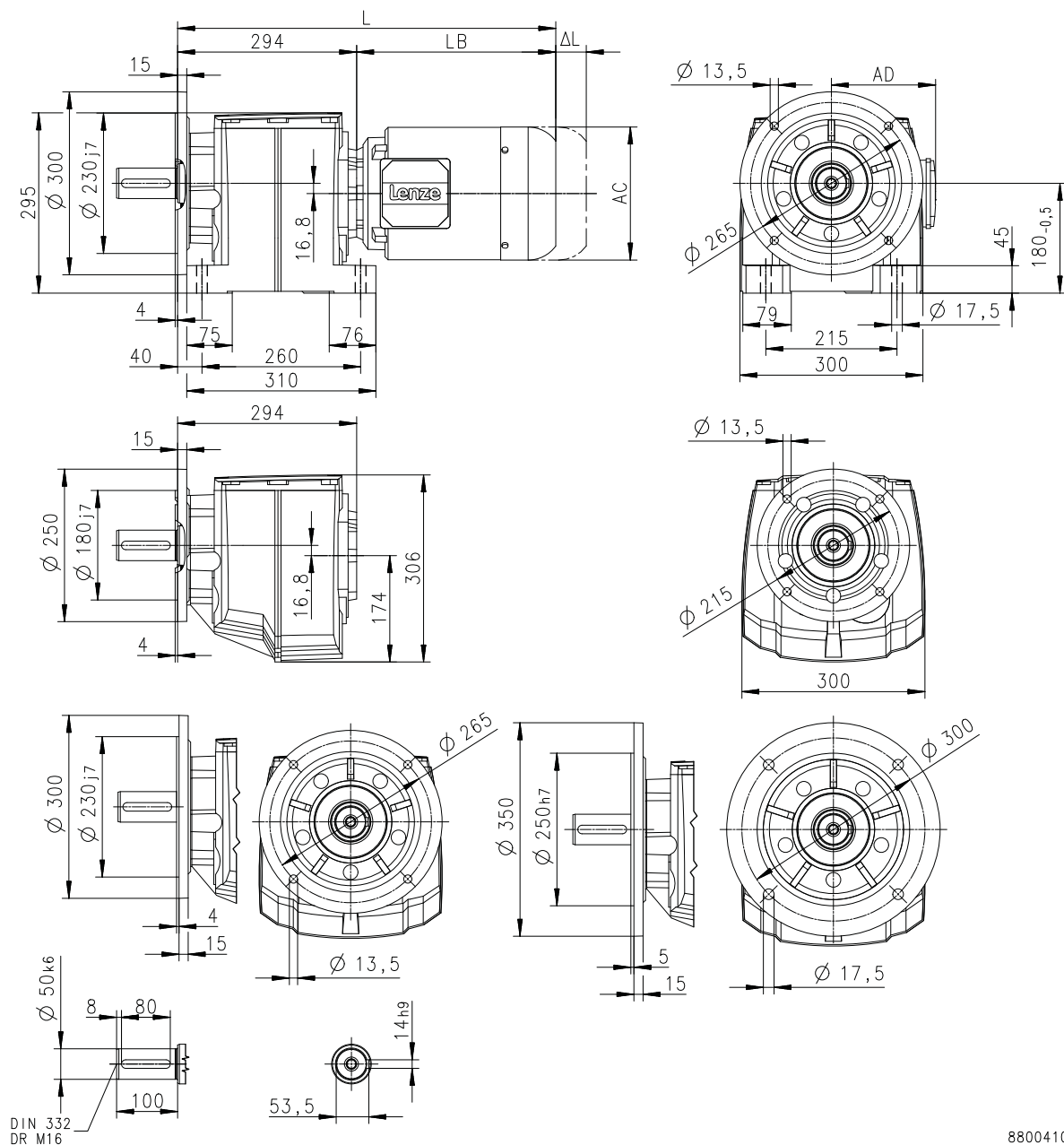
Δ L ▶ Additional lengths 129



g500-H1500, 2-/3-stage

Gearbox design: Solid shaft with flange (VAK/VCK)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800410-00

Motor series			MFXMA						
Motor			071-32 071-42	063-32 063-42	080-32 080-42	090-32	100-12 100-32	112-22	132-12 132-22 132-32
Total length	L	mm	498	477	520	580	629	630	722
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 □ 129

Technical data

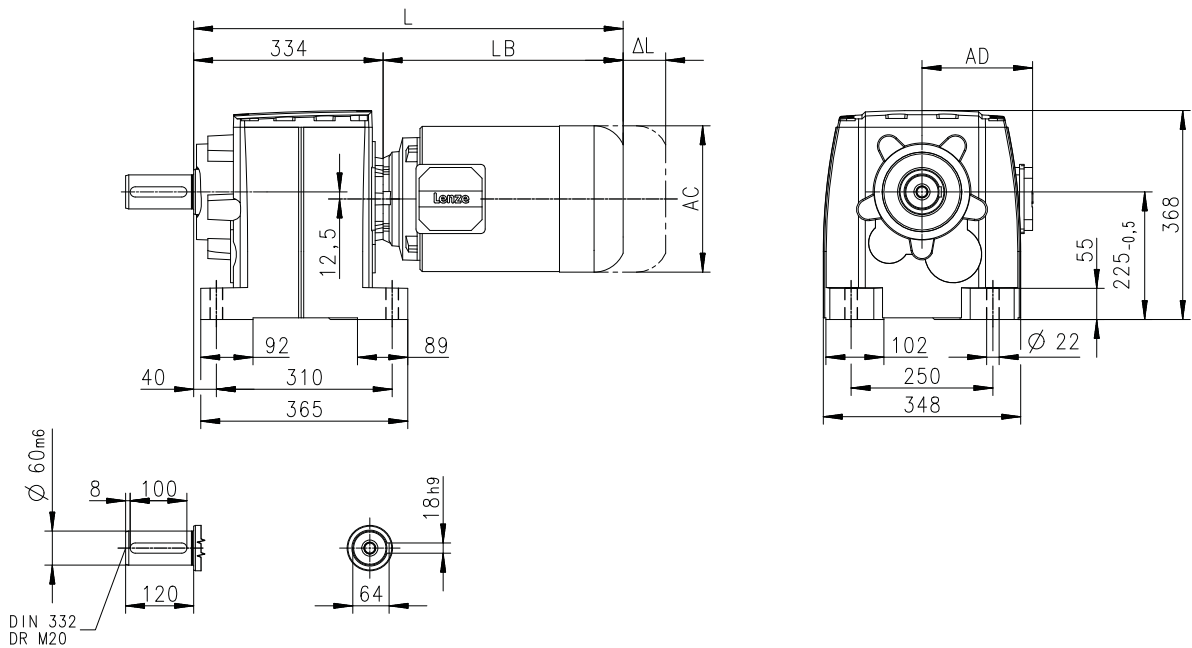
Dimensions
Basic dimensions



g500-H3000, 2-/3-stage

Gearbox design: Solid shaft with foot (VBR)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800411-00

Motor series			MFXMA						
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32	112-22	132-12 132-22 132-32
Total length	L	mm	517	538	560	620	669	670	762
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

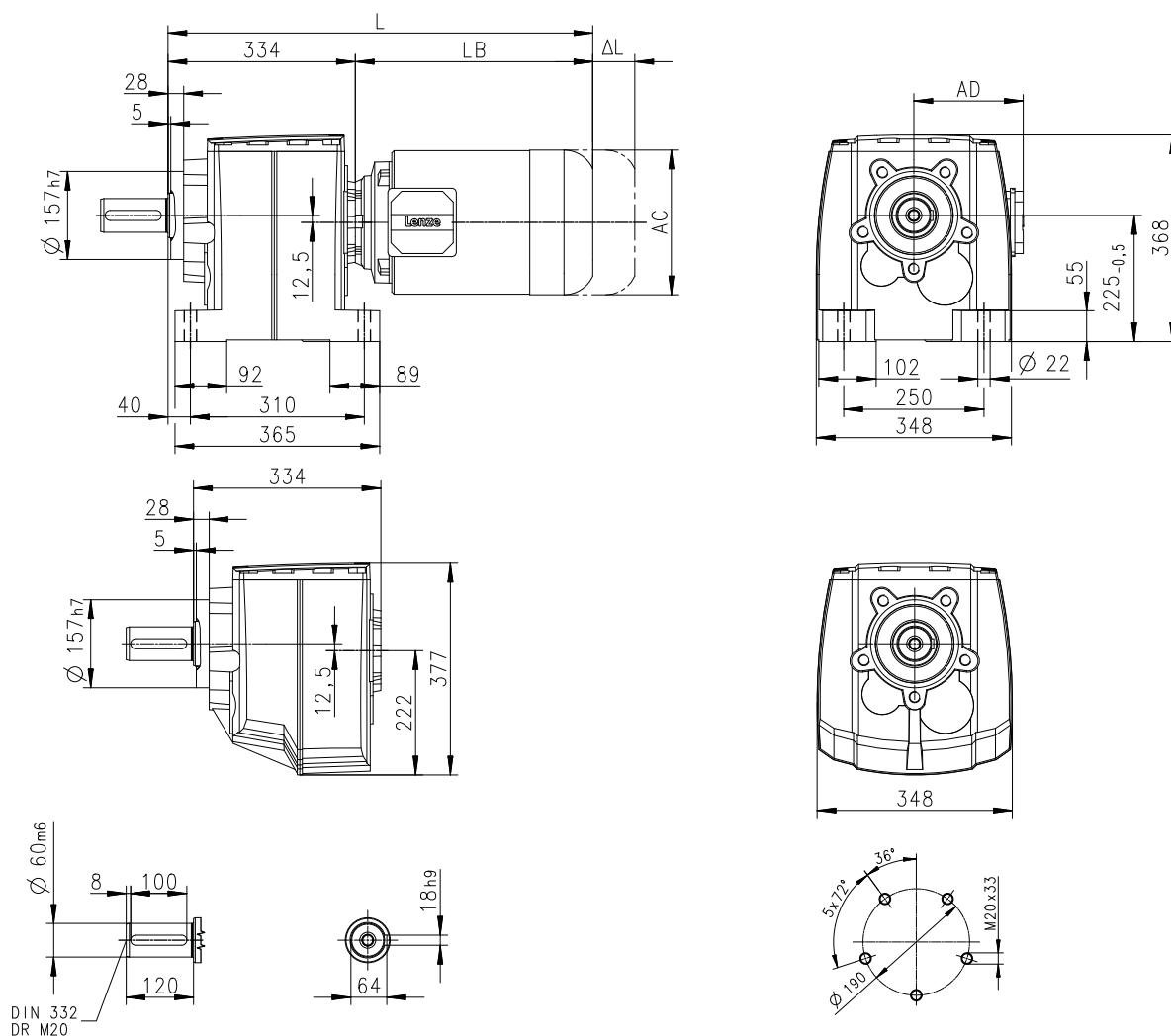
Δ L ▶ Additional lengths 129



g500-H3000, 2-/3-stage

Gearbox design: Solid shaft with centering (VAR/VCR)

The dimensions are also valid for solid shaft without keyway (G□□)!



8800412-00

Motor series			MFXMA						
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32	112-22	132-12 132-22 132-32
Total length	L	mm	517	538	560	620	669	670	762
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 129

Technical data

Dimensions
Basic dimensions



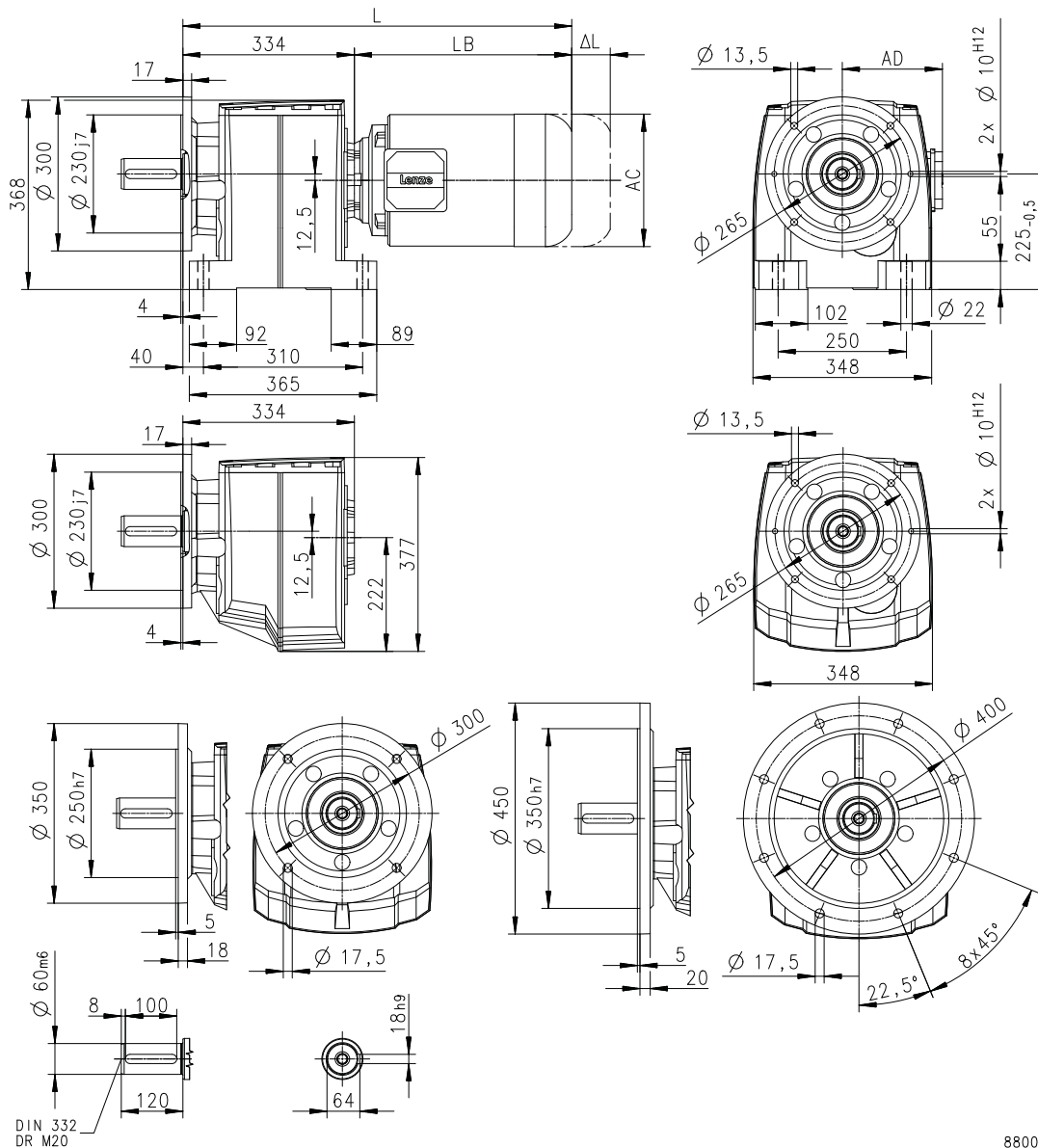
g500-H3000, 2-/3-stage

Gearbox design: Solid shaft with flange (VAK/VCK)

The dimensions are also valid for solid shaft without keyway (G□□)!

NOTICE

► Additionally secure the Ø300 output flange with two spiral pins.



8800413-02

Motor series			MFXMA						
Motor			063-32 063-42	071-32 071-42	080-32 080-42	090-32	100-12 100-32	112-22	132-12 132-22 132-32
Total length	L	mm	517	538	560	620	669	670	762
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 129



Gearbox with pre-stage

g500-H100 ... H140, 3-stage

g500-H210 ... H3000, 4-stage

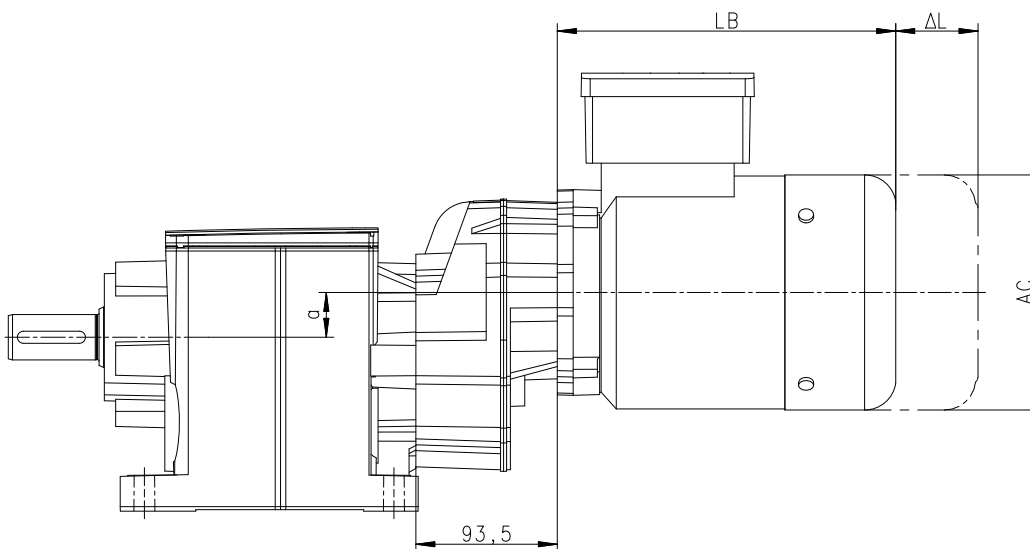


The geared motor dimensions are taken from the basic dimensions except for the overall length "L" and the center distance "a".

► [Basic dimensions](#) 90

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.



8800899-00

Gearboxes			g500-H100	g500-H140	g500-H210	g500-H320	g500-H450	g500-H600	g500-H850	g500-H1500	g500-H3000
			3-stage		4-stage						
Center distance	a	mm	40.2	30	34.8	24.3	29.6	17.6	26.5	28.2	32.5

Technical data

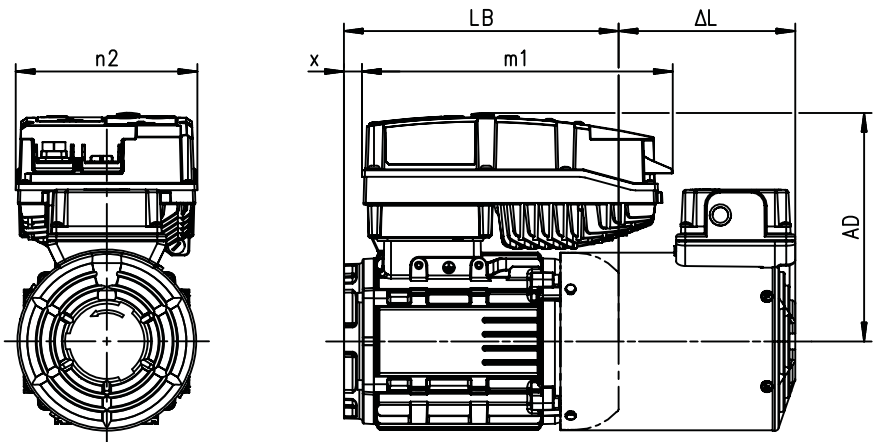
Dimensions
Integrated inverters



Integrated inverters

i550 motec

Supply voltage 3x 230/240 V



8801670-1

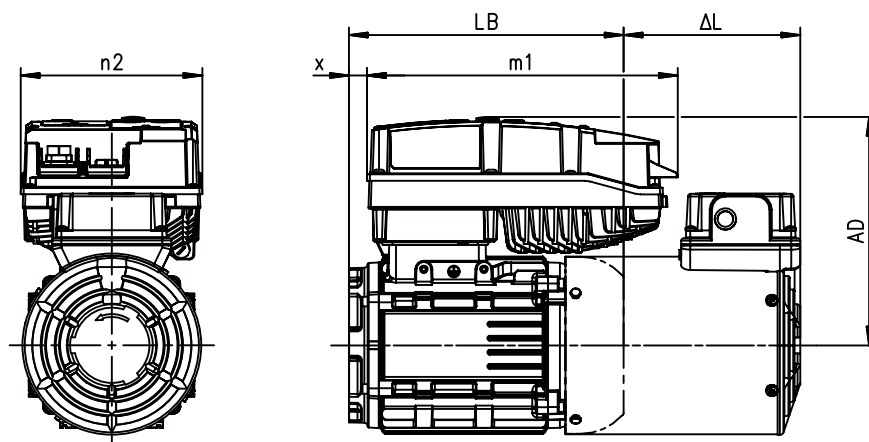
Rated frequency 120 Hz

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

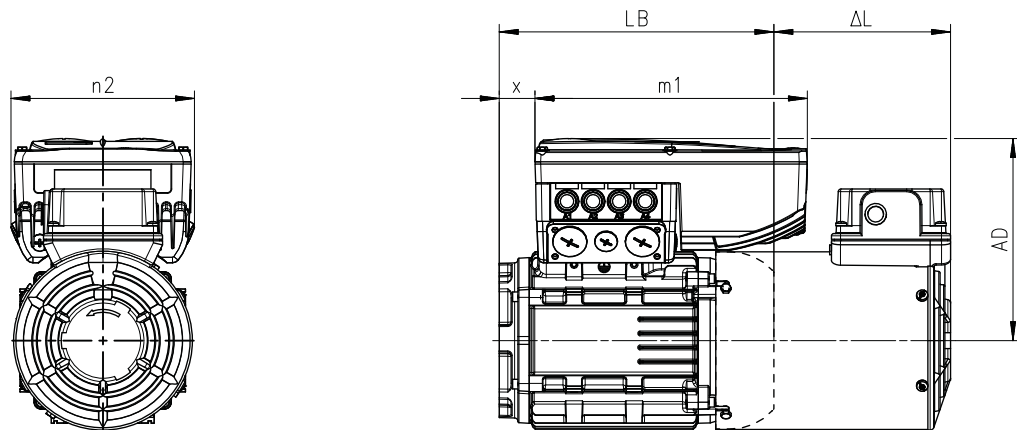
Technical data

Dimensions
Integrated inverters



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](#) 90



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](#)  62

Observe ► [Additional weights](#)  130!

Additional weights



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

Gearbox

Gearbox			g500-H45	g500-H100	g500-H140	g500-H210	g500-H320	g500-H450
Foot	m	kg	0.1	0.1	0.2	0.1	0.1	0.2
Flange	m	kg	0.3	0.4	0.6	0.6	0.8	0.9
Flange (VCP)	m	kg		2.0	3.9	3.9	4.1	6.1

Gearbox			g500-H600	g500-H850	g500-H1500	g500-H3000
Foot	m	kg	2.0	2.8	4.3	5.8
Flange	m	kg	4.3	7.6	8.3	20
Flange (VCP)	m	kg				

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

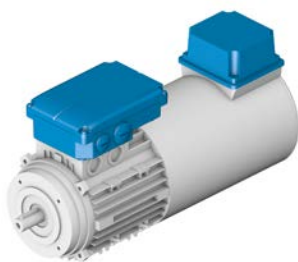
Motor connection

Connection options

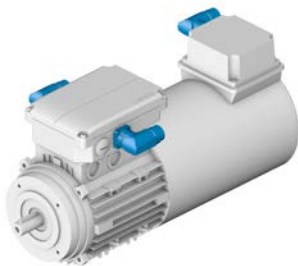


The motor are equipped with a terminal box by default.

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	0.55	200	Δ
	...	...		
	MF□MA□□080-32	3.0	350	Y
	MF□MA□□080-42	4.0		
	...	...		
	MF□MA□□132-32	22.0		

Product extensions

Motor connection
Assignment of the terminal boxes



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

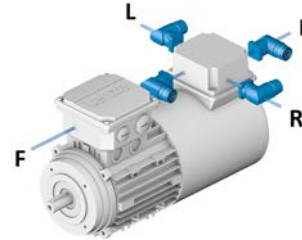


Positions of the connectors

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	--

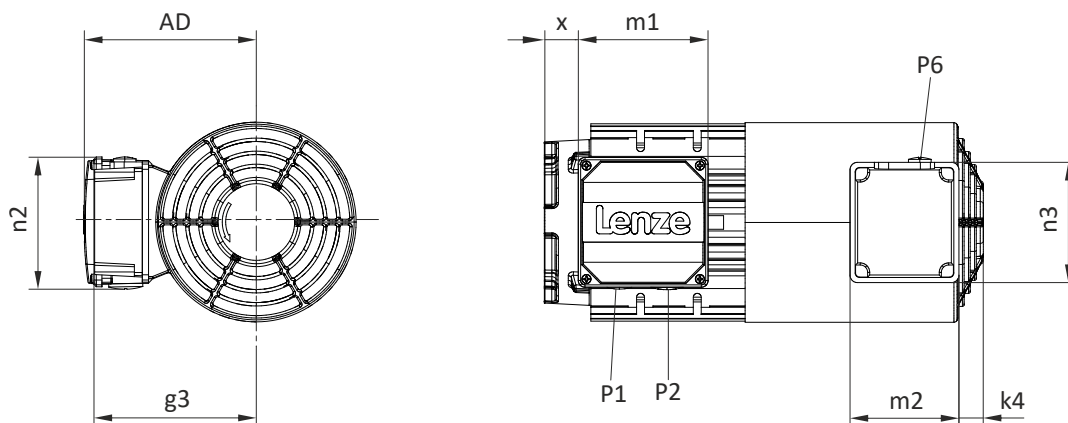
Product extensions

Motor connection

Assignment of the terminal boxes



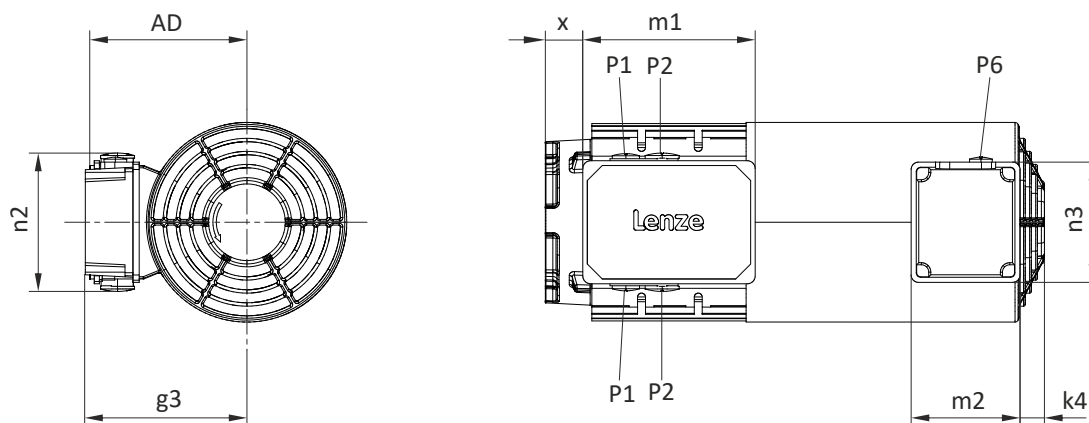
Dimensions of KK1 power terminal box



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

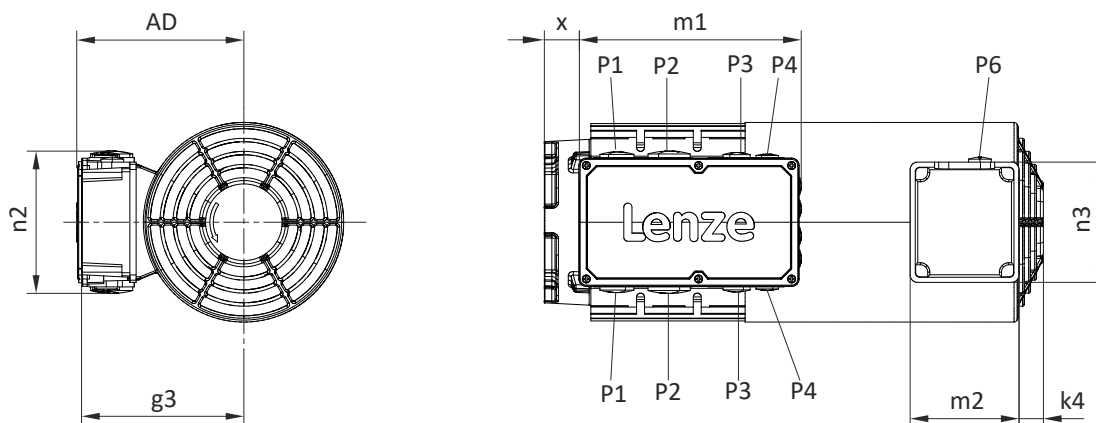
Product extensions

Motor connection

Assignment of the terminal boxes



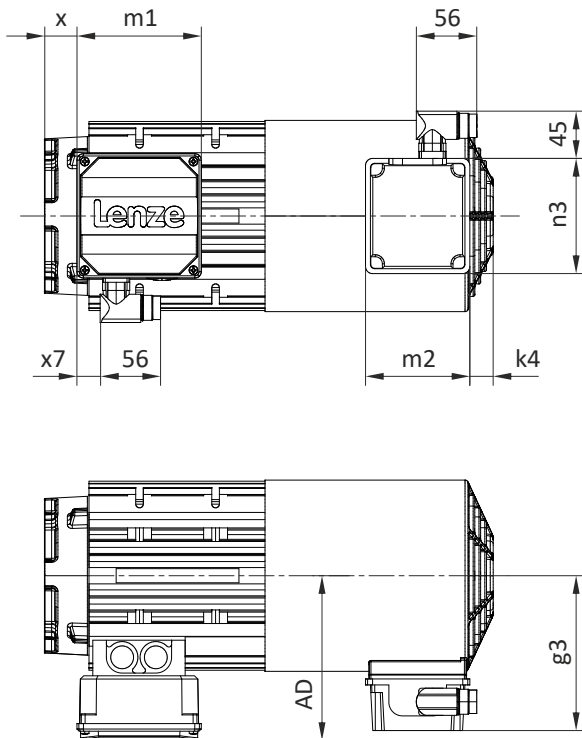
Dimensions of KK3 power terminal box



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

Product extensions

Motor connection
Assignment of the terminal boxes



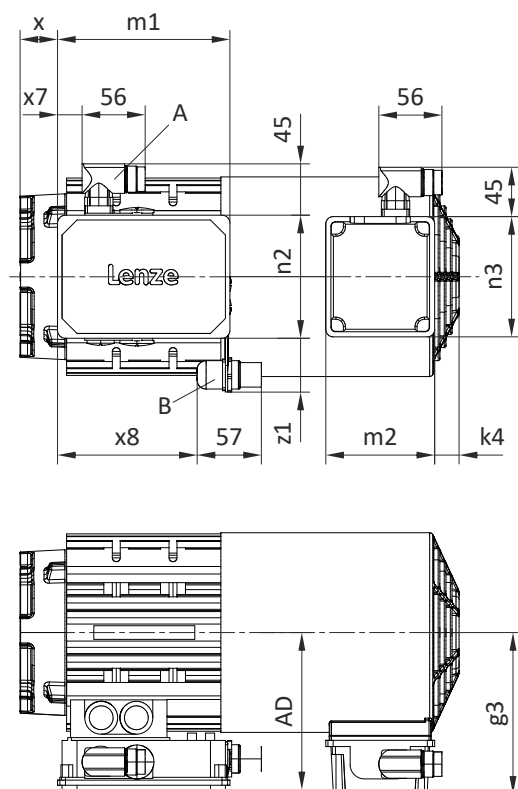
Dimensions of KK2/KK3 power terminal box with ICN connector



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: • Power • Brake • Temperature monitoring TK0 or PT1000	•	•	•	•	•	-	-
HAN modular connector							
Connection: • Power • Brake • Temperature monitoring TK0 or PT1000	•	•	•	•	•	-	•

Positions of the connections

HAN connector positions



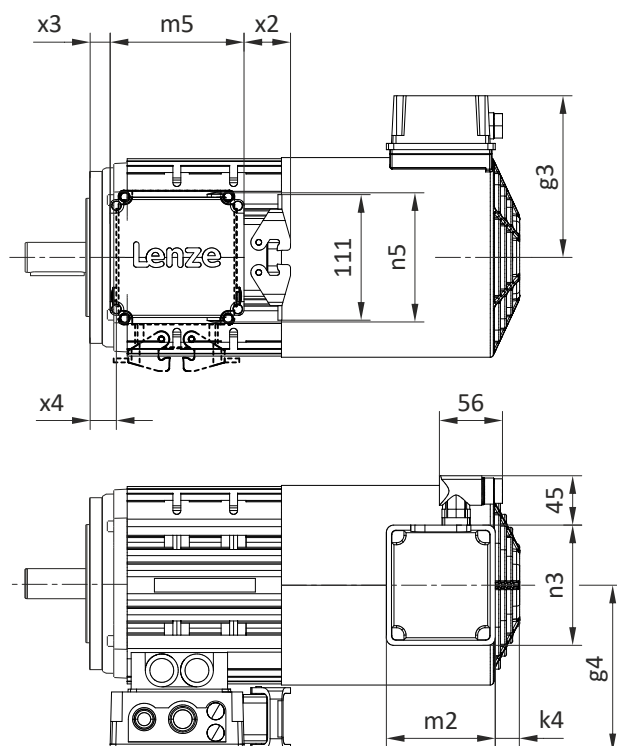
Product extensions

Motor connection

Assignment of the connectors HAN



Dimensions of HAN connector

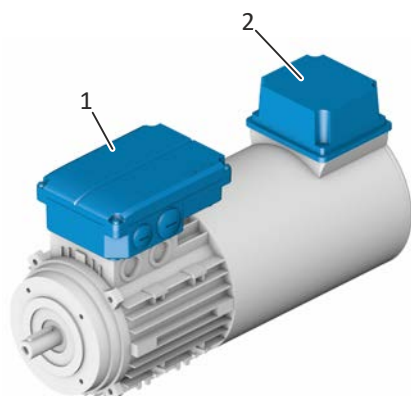


Motor		MF□MA□□						
		063-32	071-32	080-32	090-32	100-12	112-22	132-12
		063-42	071-42	080-42		100-32		132-22
HAN connector								
Power/brake								
g4	mm	120	129	138	143	157	-	233
x3	mm	11	16	18	22	29	-	48
x4	mm	12	17	26	30	37	-	18
x2	mm	41	41	41	41	41	-	47
m5	mm	118	118	118	118	118	-	120
n5	mm	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

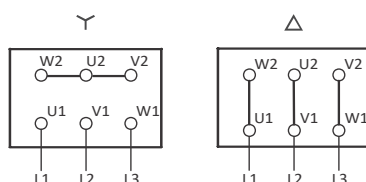


Position	Meaning	Note
1	Power connection Brake connection PE connection Feedback connection Connection of temperature monitoring	For the terminal box "KK1", the position of the cable connections "L", "R" or "E" must be specified.
2	Blower connection	When ordering, specify the mounting position of the terminal box: • Shown here: "T" • "L", "R" or "B" 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

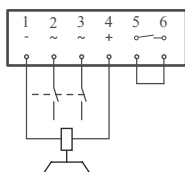
Contact	Name	Meaning
BD1	+	Brake +
BD2	-	Brake -

Product extensions

Motor connection
Connection via terminal box



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 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		



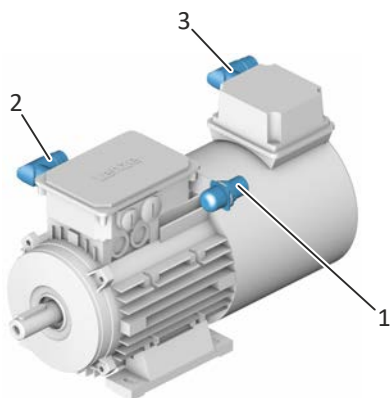
Connection via connector



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



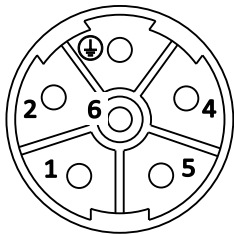
Position	Meaning	Note
1	ICN-M23 connector, 6-pole - Power connection - Brake connection - PE connection	When ordering, specify the mounting position of the connector: - Shown here: "T" - Opposite "L"
	In addition to connector ICN-M23, 8-pole: Connection of TKO temperature monitoring	Caution: Max. brake supply voltage $\leq 230\text{ V}$
2	ICN-M23 connector - Feedback connection - 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 Blower connection	When ordering, specify the mounting position of the terminal box: - Shown here: "T" - L, R or B 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

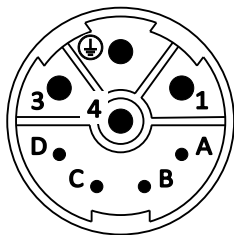
6-pole



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

Product extensions

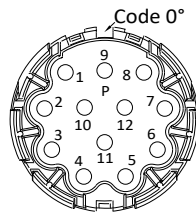
Motor connection
Connection via connector



Feedback and temperature monitoring connection

ICN-M23 connector assignment

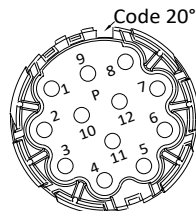
Resolver



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®

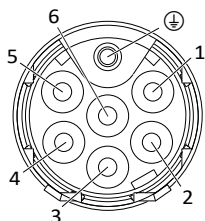


ICN M23 for encoders		
Contact	Name	Meaning
1	B	Track B / +SIN
2	A ⁻	Track A inverse /-COS
3	A	Track A / + COS
4	+UB	Supply +
5	GND	Mass
6	Z ⁻	Zero track inverse /-RS485
7	Z	Zero track / + RS485
8		Not assigned
9	B ⁻	Track B inverse/-SIN
10		Not assigned
11	+	Temperature monitoring: PT1000
12	-	Temperature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

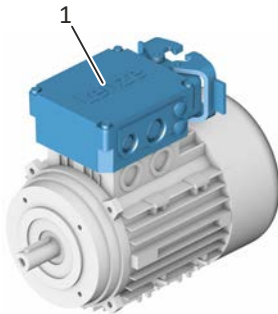
Product extensions

Motor connection
Connection via HAN connector



Connection via HAN connector

Position of the connections

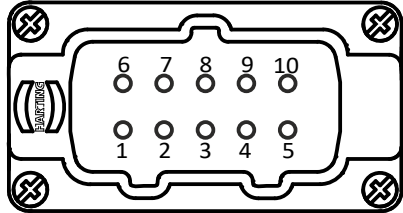


Note	Meaning
1	Power connection Brake connection PE connection Connection of temperature monitoring Additionally for HAN-Modular: Rectifier connection

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	Δ	
2-7		
3-8		

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	

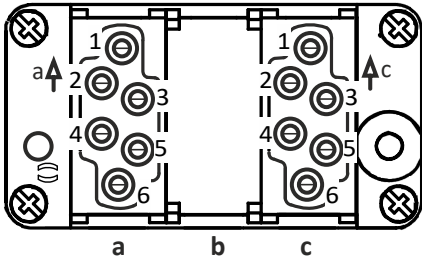


HAN modular connector



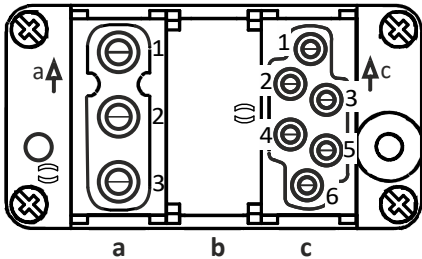
The motor connection is specified in the terminal box.

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

Product extensions

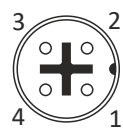
Motor connection
Connection via M12 connector



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 AC supply via rectifier in the terminal box	
Supply voltages		
DC voltage	DC 24 V ±10 % DC 103 V ±10 % DC 127 V ±10 % DC 180 V ±10 % DC 205 V ±10 % DC 215 V ±10 % AC 460 V ±10 %	
Mains voltage	AC 230 V ±10 % AC 400 V ±10 % AC 460 V ±10 %	
Switching cycles		
Repetitive	1 x 10 ⁶	10 x 10 ⁶
Reversing	1 x 10 ⁶	15 x 10 ⁶
Friction lining	Low-wear	
Options	Manual release UL/CSA-approved	

Product extensions

Spring-applied brakes
Information on project planning



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.

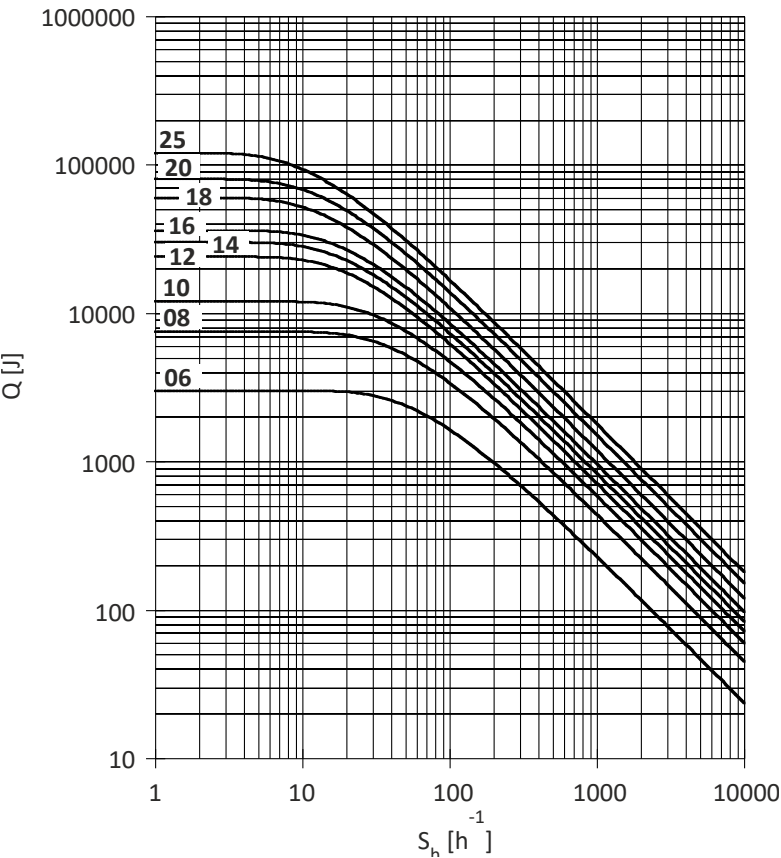
DC switching is particularly expedient for lifting applications because a short engagement time is necessary here to guarantee a secure hold without any prior slipping of the load.

Product extensions

Spring-applied brakes
Information on project planning



Permissible friction energy



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



Product extensions

Spring-applied brakes
Spring-applied holding brake
Assignment of braking torques

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 4					
MF 063-42						
MF 071-32						
MF 071-42		3.5				
MF 080-32		3.5 8	7			
MF 080-42			7 16			
MF 090-32			7 16 23			
MF 100-12			7 16	14 32		
MF 100-32				14 32 46		
MF 112-22				14 32		
MF 132-12					35 60	60 80
MF 132-22						60 80 100
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 8		
MF 080-32		8	7	
MF 080-42			7	
MF 090-32			16	
MF 100-12		16	14 32	
MF 100-32				

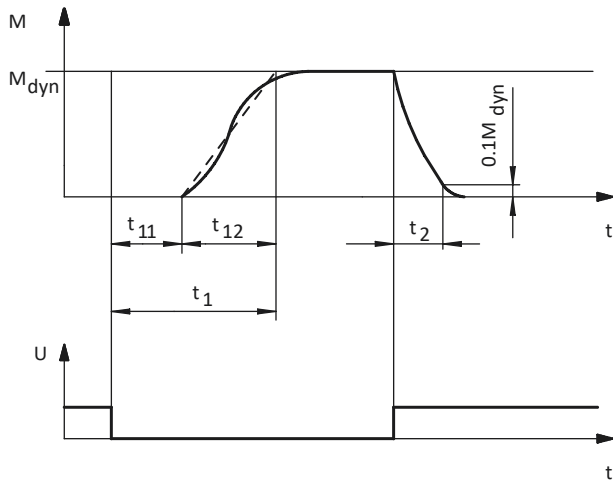
Product extensions

Spring-applied brakes
Spring-applied holding brake
Rated data



Rated data

Switching times of the spring-applied brakes



t_1 Engagement time

t_2 Disengagement time (up to $M = 0.1 M_{dyn}$)

M_{dyn} Braking torque at constant speed

t_{11} Delay time during linking

t_{12} Rise time of the braking torque

U Voltage



Product extensions

Spring-applied brakes
Spring-applied holding brake
Rated data

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	kgcm ²	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

Product extensions

Spring-applied brakes
Spring-applied holding brake
Rated data



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



Product extensions

Spring-applied brakes
Spring-applied holding brake
Rated data

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	kgcm ²	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

Product extensions

Spring-applied brakes
Spring-applied holding brake
Rated data



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



Product extensions

Spring-applied brakes
Spring-applied holding brake
Rated data

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	kgcm ²	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

Product extensions

Spring-applied brakes
Spring-applied holding brake
Rated data



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



Product extensions

Spring-applied brakes
Spring-applied holding brake
Rated data

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	kgcm ²	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

Product extensions

Spring-applied brakes
Spring-applied holding brake
Rated data



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



Product extensions

Spring-applied brakes
Spring-applied holding brake
Rated data

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	kgcm ²	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

Product extensions

Spring-applied brakes
Spring-applied holding brake
Rated data



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



Product extensions

Spring-applied brakes
Spring-applied holding brake
Rated data

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

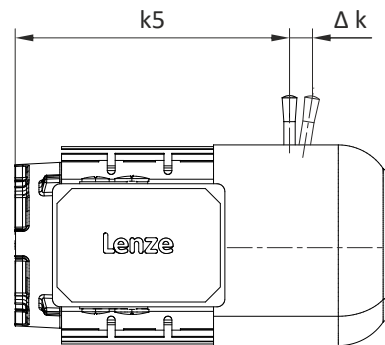
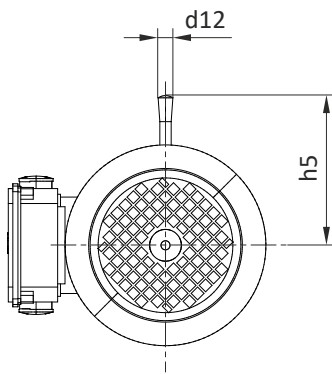
The disengagement time can be reduced by triggering the brake coil with twice the rated voltage for an overexcitation time. The brake releases much faster and the wear on the friction lining decreases. As a result of these features, this control variant is particularly ideal for hoist applications.

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 MF□MA□□063-42	06	169	29	107	13.0
MF□MA□□071-32 MF□MA□□071-42	06	185	29	107	13.0
	08	186	27	136	13.0
MF□MA□□080-32 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 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 MF□MA□□132-22 MF□MA□□132-32	14	398	41	195	24.0
	16	398	45	240	24.0

Product extensions

Spring-applied brakes
Spring-applied holding brake
Options



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	M Ω	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](#)  23



Standard version

Rated data 50Hz, 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 data 60Hz, 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 TCO

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



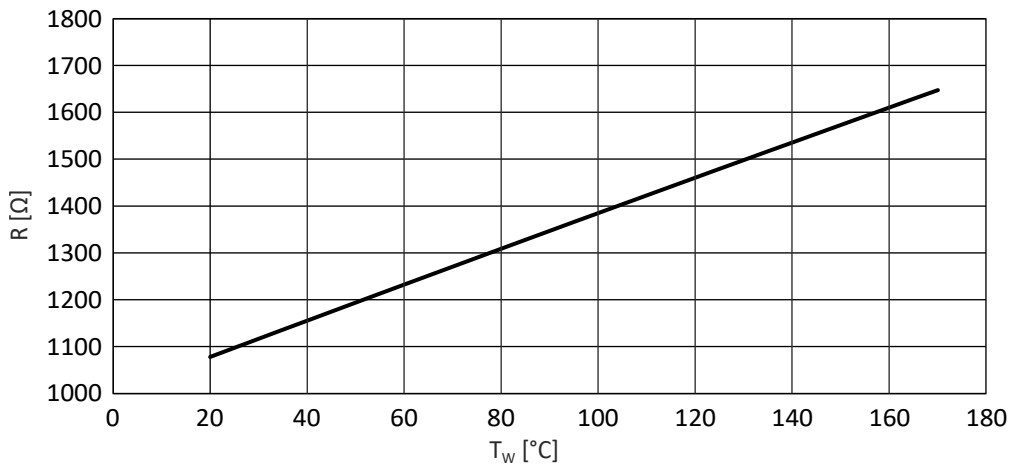
Thermal detectors PT1000

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

Motor data

Rated data
Rated data 120 Hz



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	$\cos \phi$		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	kgcm ²	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	$\cos \phi$		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	kgcm ²	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	$\cos \phi$		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	kgcm ²	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:



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
t Time
 t_L Idle time
 θ Temperature

P_V Power loss
 t_B Load period
 t_S Cycle duration



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).

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