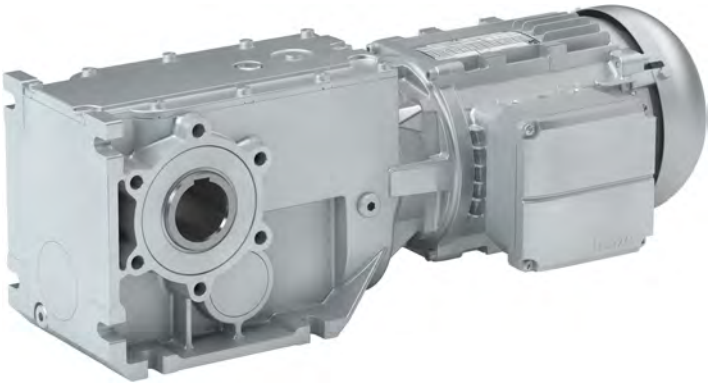
Project planning EN



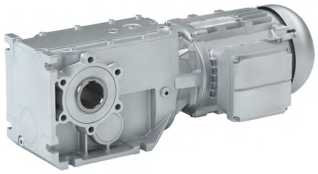
Geared motors

IE2 bevel geared motor g500-B / m550-H Version B
IE3 bevel geared motor g500-B / m550-P Version B

Lenze

Contents

Contents



About this document

Document description

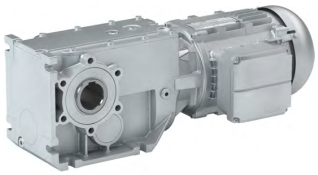
This document addresses to all persons who want to carry out any configurations with the products described.

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

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

Further documents

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



Notations and conventions

This document uses the following conventions to distinguish different types of information:

Numbers			
	Decimal separator	Point	In general, the decimal point is used. Example: 1 234.56
Warning			
	UL warning	UL	Are used in English and French.
	UR warning	UR	
Text			
	Programs	» «	Software Example: »Engineer«, »EASY Starter«
Icons			
	Page reference	🕮	Reference to another page with additional information Example: 🕮 16 = see page 16
	Documentation reference	🌍	Reference to another 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!

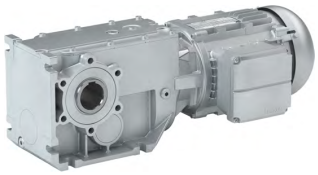
Indicates an extremely hazardous situation. Failure to comply with this instruction may result in severe irreparable injury and even death.

⚠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 bevel gearboxes form a compact, powerful drive unit. Numerous options at the input and output end provide for the drive to be exactly adapted to your application.

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

Versions

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

Three-phase AC motors for line voltage and inverter operation

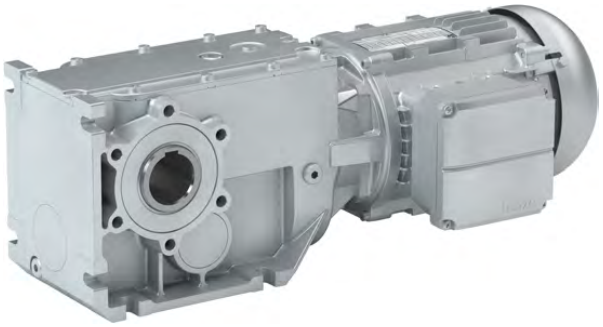
In a power range from 0.12 to 22 KW, Lenze offers three-phase AC motors suitable for inverters for more extensive tasks.

These motors differ in terms of their efficiency class and can be used for the versions required for controlled or uncontrolled inverter operation.

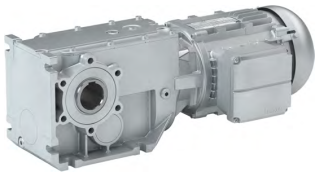
- Efficiency class IE2 in the power range 0.12 ... 0.55 kW
- Efficiency class IE3 in the power range 0.75 ... 22 kW

Customer benefits

- Different efficiency classes for the greatest economic benefit
- Space-saving thanks to compact direct attachment to Lenze gearboxes
- Can be used universally for a wide range of machine tasks due to the market-oriented modular system
- Standard connectors ensure fast connection, even in the event of service



Gearbox g500-B450 with motor m550-P80/M4



Flexible in motor mounting

For motor mounting, Lenze offers a scalable modular system of gearboxes with adapters.

Power is transmitted between the motor and gearbox via a flexible jaw coupling or a plug-in hollow shaft. The shaft holders are available for motor shafts with or without featherkey, depending on the design.

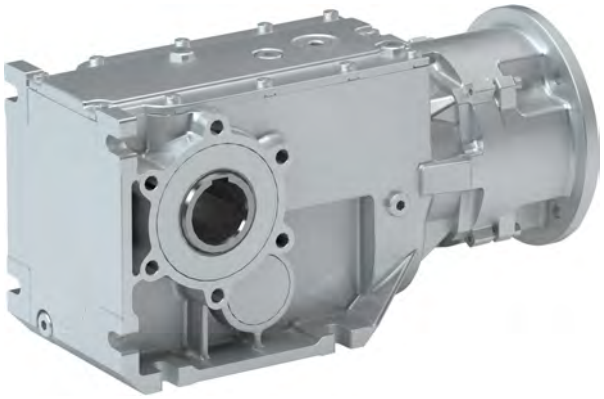
Customer benefit

- Can be used universally for a wide range of machine tasks due to the market-oriented modular system
- Simple plug-in motor mounting
- Mounting motors according to IEC 72/DIN 42948
- Mounting motors according to NEMA C/TC
- Mounting servo motors with square flange according to IEC 72/DIN 42948
- Torsional vibration damping power transmission of the coupling
- Motor shaft connection, low backlash or backlash-free, depending on version

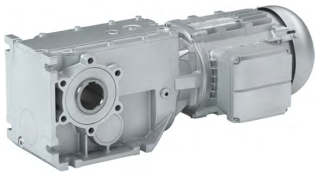
More information can be found under:

▸ Gearbox data 📖 51

▸ Gearboxes with adapter 📖 60



g500-B bevel gearbox with adapter for IEC standard motors



Identification of the products

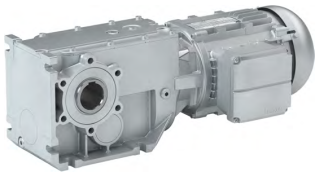
Gearbox product name

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

Three-phase AC motor product name

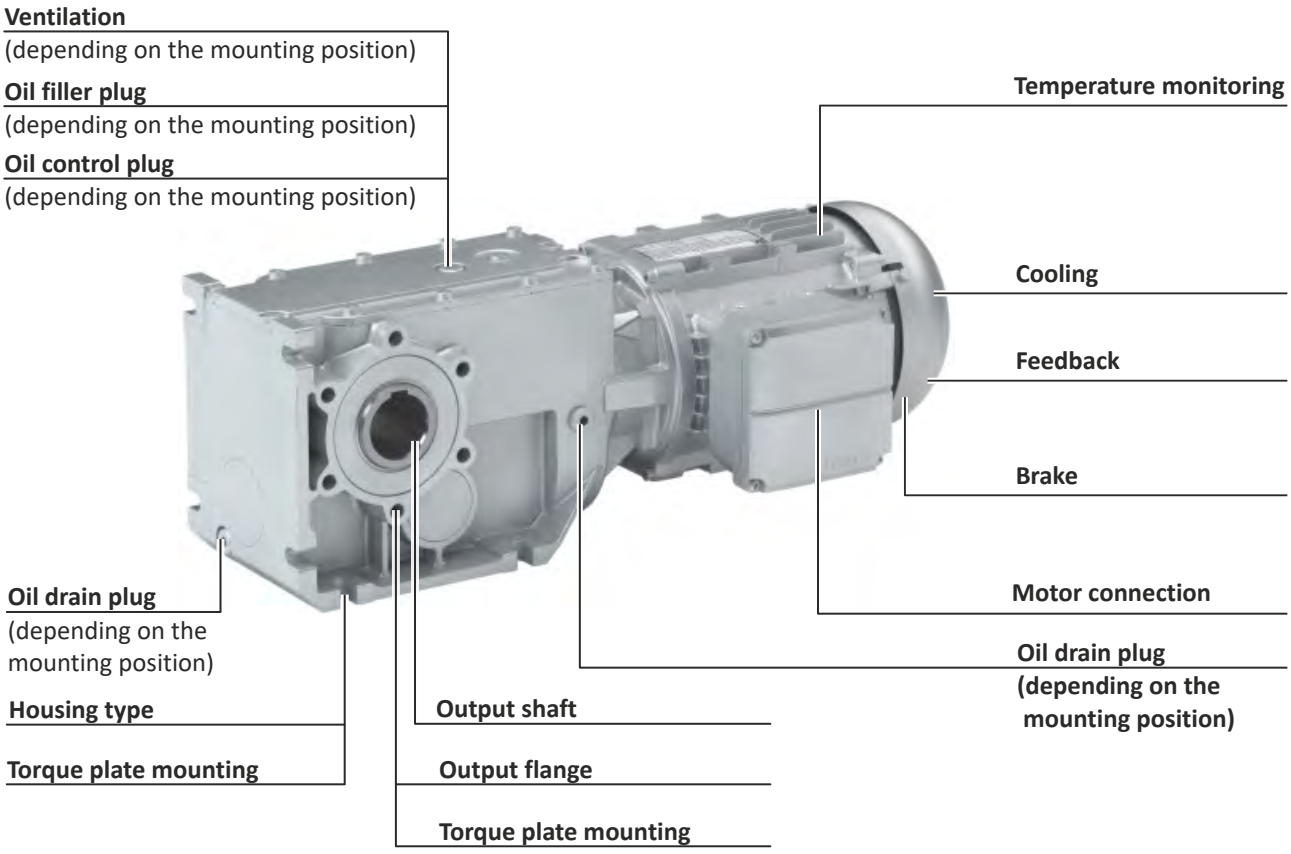
Example	m550	-	P	80	supply	S	4

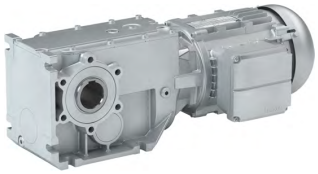
Meaning	Variant	Product name						
Product family		m550						
Efficiency class	IE2			H				
	IE3			P				
Size					63 71 80 90 100 112 132 160 180			
Motor length	Short						S	
	Medium						M	
	Long						L	
Number of pole pairs	4-pole							4



Features

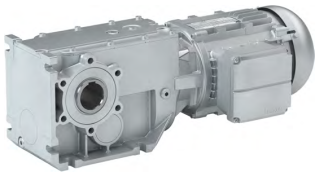
The following figure provides an overview of the elements and connections on the product.
Their position, size and appearance may vary.





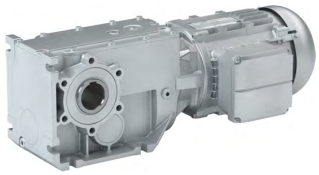
The modular system

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



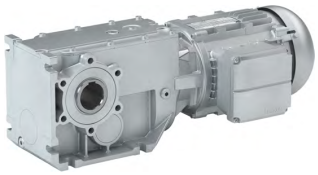
Geared motors up to 450 Nm

Gearbox		**g500-B45**	**g500-B110**	**g500-B240**	**g500-B450**
Min. motor assignment		**m550-H63**	**m550-H63**	**m550-H63**	**m550-H63**
Max. motor assignment		**m550-H71**	**m550-P90**	**m550-P100**	**m550-P132**
Technical data					
Max. output torque	Nm	45	110	240	450
Min. drive power at 50 Hz	kW	0.12	0.12	0.12	0.12
Max. drive power at 50 Hz	kW	0.55	1.5	3.0	7.5
Mounting position					
Standard		**M1, M2, M3, M4, M5, M6 (ABCDEF)**			
Combined		M1-M6 (A-F)	M1/5/6 (AEF)		
Temperature package					
Standard		Ambient temperature: 0 °C … +40 °C			
Deep-freeze		Ambient temperature: -30 °C … +10 °C			
Wide range		Ambient temperature: -30 °C … +40 °C			
Color		**Unpainted** Primed/RAL colors			
Surface and corrosion protection		**Without OKS** Different types of OKS			
Output shaft					
Solid shaft with featherkey (V)	mm	20 x 40	20 x 40	30 x 60	30 x 60
Hollow shaft with keyway (H)	mm	18/20	20/25	30/35	35/40
Hollow shaft with shrink disc (S)	mm	20	20	30/35	35
Shaft material		**Steel** Stainless steel			
Output shaft bearing		**Normal**			
Gearbox version		**With foot (HBR)**/(VBR/SBR) With foot and centring (HAR/VAR/SAR) With foot and output flange (HAK/VAK/SAK)			
Output flange (K)	mm	110/120	120/160	160/200	200
Ventilation		Without			Vent valve
Cooling		**Integral fan** Blower Heavy-Duty fan			
Product extensions					
Torque plate		At threaded pitch circle		On the housing foot	
		Rubber buffers			
Shaft cover		Hollow shaft cover, hoseproof Shrink disc cover			
Connection method		Y/Δ			
Connection type		**Terminal box** ICN connector HAN connector M12 connector			
Spring-applied brake		**Without** Holding brake Application brake Application brake with safety function			
Feedback		**Without** Resolver Incremental encoder Incremental encoder with safety functions Absolute value encoder			
Temperature monitoring		**TKO thermal contact** PT1000 temperature sensor			
Integral fan		Protection cover 2nd shaft end/hand wheel			
Blower		Protection cover			



Geared motors from 600 Nm to 4300 Nm

Gearbox		**g500-B600**	**g500-B820**	**g500-B1500**	**g500-B2700**	**g500-B4300**
Min. motor assignment		**m550-H63**	**m550-H63**	**m550-H63**	**m550-H63**	**m550-H63**
Max. motor assignment		**m550-P132**	**m550-P132**	**m550-P160**	**m550-P160**	**m550-P180**
Technical data						
Max. output torque	Nm	600	820	1500	2700	4300
Min. drive power at 50 Hz	kW	0.12	0.12	0.12	0.12	0.12
Max. drive power at 50 Hz	kW	7.5	7.5	15.0	15.0	22.0
Mounting position						
Standard		**M1, M2, M3, M4, M5, M6 (ABCDEF)**				
Combined		-				
Temperature package						
Standard		Ambient temperature: 0 °C … +40 °C				
Deep-freeze		Ambient temperature: -30 °C … +10 °C				
Wide range		Ambient temperature: -30 °C … +40 °C				
Color		**Primed** Painted in RAL colors				
Surface and corrosion protection		**OKS-S** Different types of OKS				
Output shaft						
Solid shaft with featherkey (V)	mm	35 x 70 40 x 80	40 x 80	50 x 100	60 x 120	70 x 140 80 x160
Hollow shaft with keyway (H)	mm	40/45	40/45	50/55	60/70	70/80
Hollow shaft with shrink disc (S)	mm	40	40	50	65	75/80
Shaft material		**Steel** Stainless steel				
Output shaft bearing		**Normal**				
Gearbox version		**With foot (HBR)**/(VBR/SBR) With foot and centring (HAR/VAR/SAR) With foot and output flange (HAK/VAK/SAK)				
Output flange	mm	200/250	200/250	250/300	350	400/450
Ventilation		**Vent valve**				
				Oil compensation reservoir		
Cooling		**Integral fan** Blower Heavy-Duty fan				
Product extensions						
Torque plate		At threaded pitch circle				
		On the housing foot				
Shaft cover		Hollow shaft cover, hoseproof Shrink disc cover				
Connection method		Y/Δ				
Connection type		**Terminal box** ICN connector HAN connector M12 connector				
Spring-applied brake		**Without** Holding brake Application brake Application brake with safety function				
Feedback		**Without** Resolver Incremental encoder Incremental encoder with safety functions Absolute value encoder				
Temperature monitoring		**TKO thermal contact** PT1000 temperature sensor				
Integral fan		Protection cover 2nd shaft end/hand wheel				
Blower		Protection cover				



Designs

Gearbox designs

Please observe the available gearbox designs!

▸ The modular system 12

g500-B45 ... B4300

Hollow shaft, with foot

Without centring (HBR)

With centring (HAR)

Flange with through holes (HAK)

Hollow shaft with shrink disc, with foot

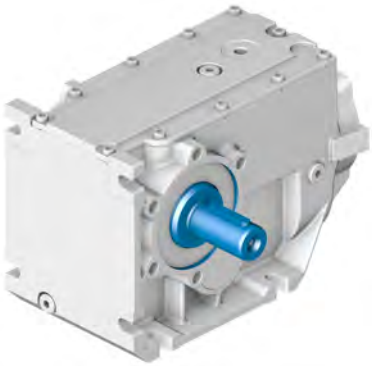
Without centring (SBR)

With centring (SAR)

Flange with through holes (SAK)

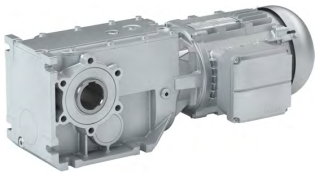
Solid shaft, with foot

Without centring (VBR)



With centring (VAR)

Flange with through holes (VAK)

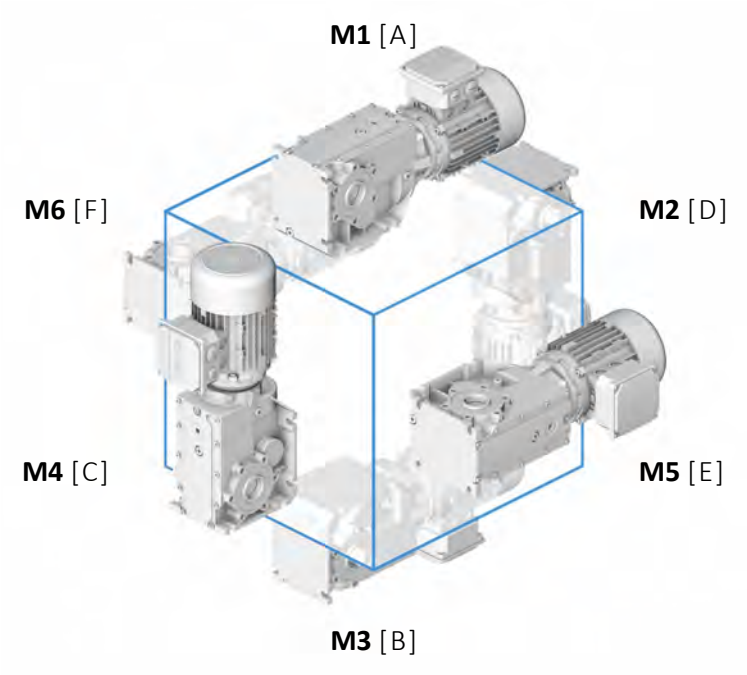


Mounting positions

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

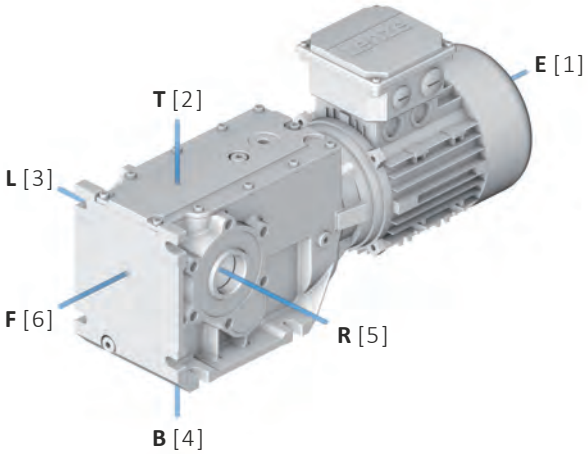
To reduce the number of different versions, the following gearboxes can also be ordered with combined mounting positions:

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



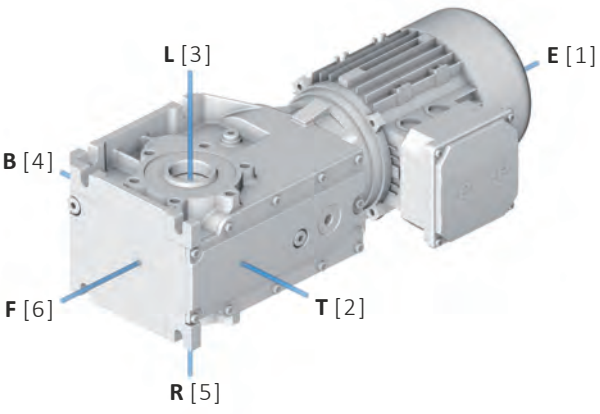
Defined positions on the geared motor

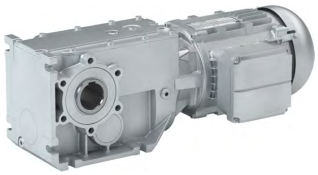
All of the defined positions refer to the areas on the geared motor in mounting position **M1 (A)** .
Position of the built-on accessories with T, L, R, B, F, E (Top, Left, Right, Bottom, Front, and End)



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

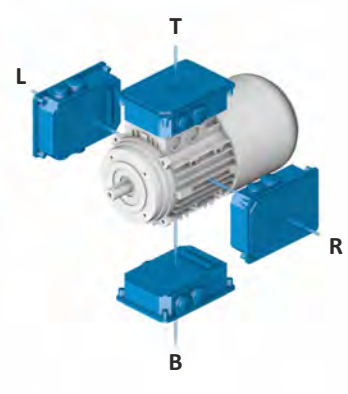
Example: Mounting position M5 (E)

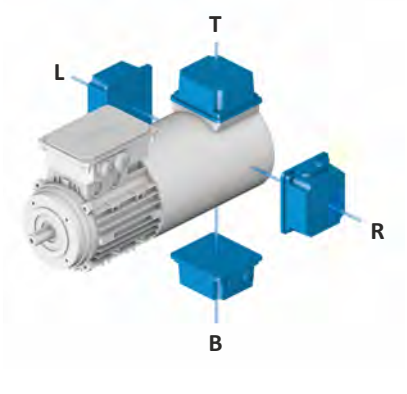


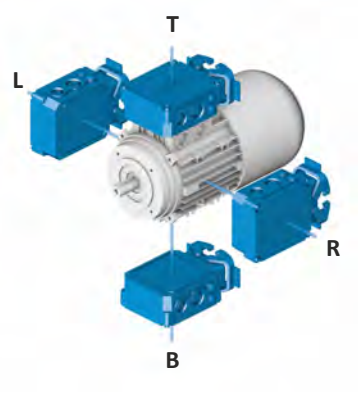


Positions of the terminal boxes/connectors

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





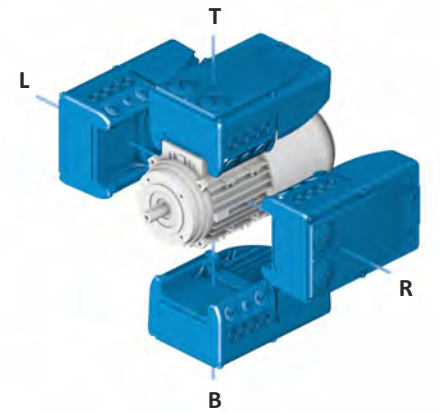


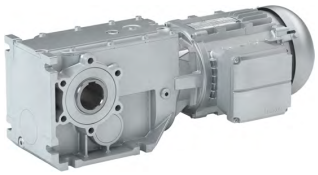
Positions of the connections

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

Positions of the i550/8400 motec frequency inverters

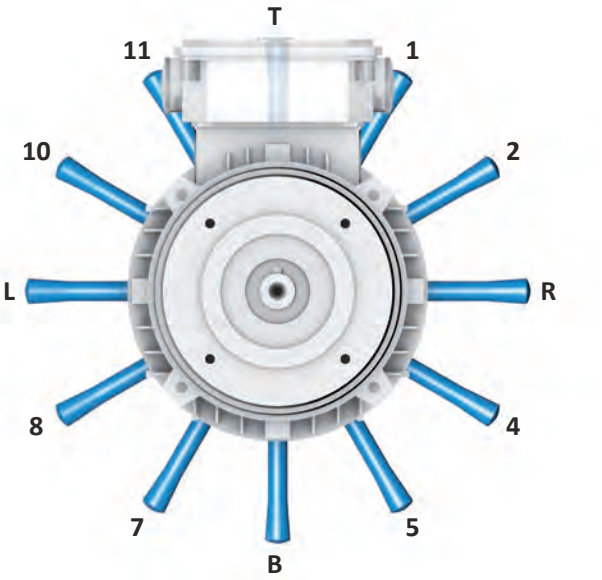
Positions of i550/8400 motec	Positions of the connectors
	8400 motec I/O connection

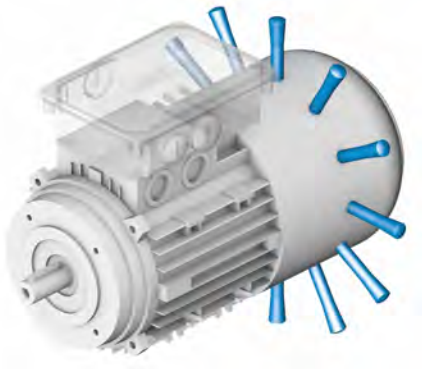




Position of the manual release lever

Only positions T, R, B and L are available for the spring-applied holding brake.





Position of the solid shaft

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

Position of the hollow shaft with shrink disc

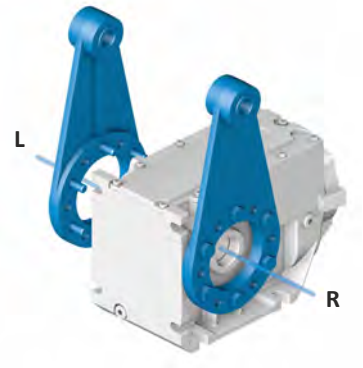
Output flange and shrink disc are not possible in the same position.

Position of the output flange

Output flange on both sides "L+R".

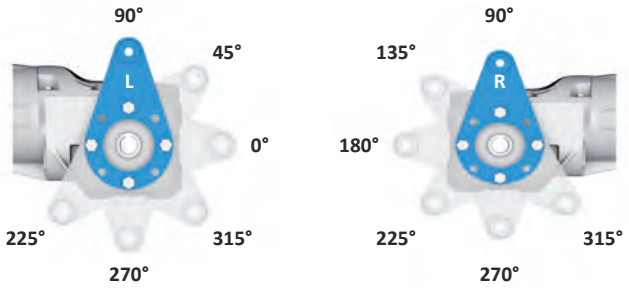
Position of the torque plate on the threaded pitch circle

Position of the torque plate

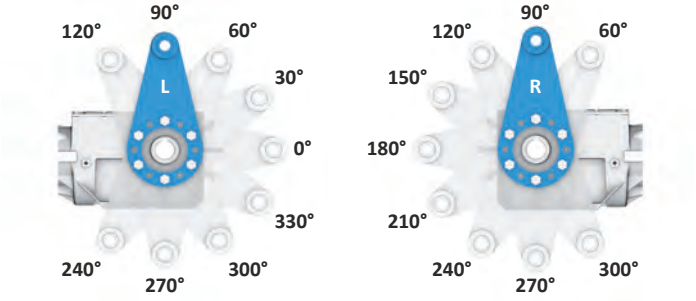


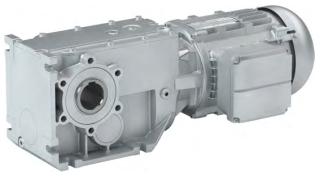
Angle of the torque plate

g500-B45 ... B110



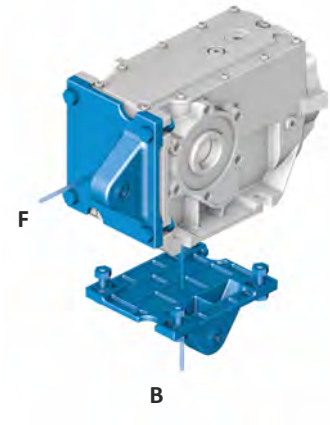
g500-B240 ... B1500



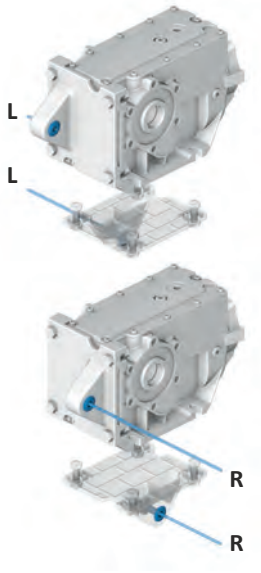


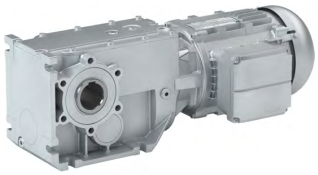
Position of the torque plate on the housing foot

Position of the torque plate



Position of the rubber buffer on the torque plate





Information on project planning

Safety instructions

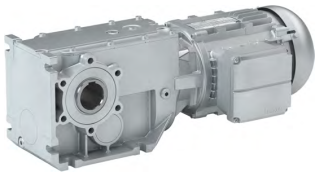
Basic safety instructions

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.

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 be operated on the mains or on the inverter.
- Only certified application brakes may be used as safety brakes for functional safety.
- The product must not be operated in private areas, in potentially explosive atmospheres and in areas with harmful gases, oils, acids and radiation.



Residual hazards

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

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

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

Product

Observe the warning labels on the product!

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

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

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

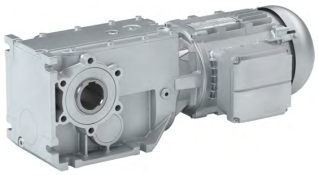
Hot surface:
Use personal protective equipment or wait until the device has cooled down!

Protection of persons

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

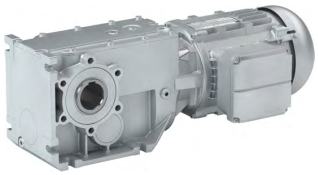
Motor protection

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



Gearbox protection

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



General information

NOTICE

For gearboxes with hollow shaft and shrink disk

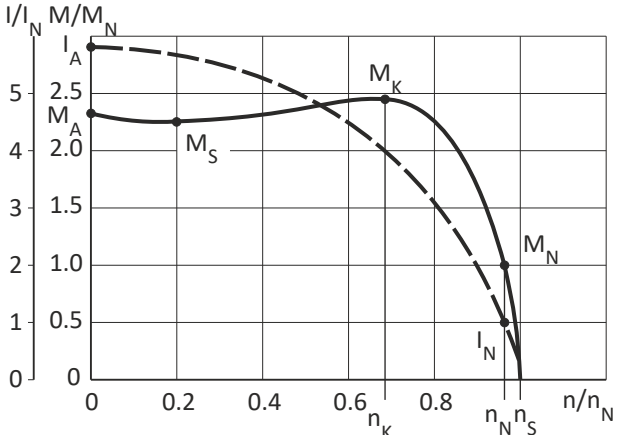
observe the following requirements for the machine shaft:

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

Operation with mains power

If operated with mains power, the three-phase AC motor starts up in accordance with the speed-torque characteristic when switched on. It follows this characteristic until it reaches its stable operating point. The operating point is reached when the load or rated torque (M_N) is smaller than the starting (M_A) and pull-up torque (M_S) . The rated speed (n_N) of the drive is always less than the arithmetic synchronous speed (n_S).

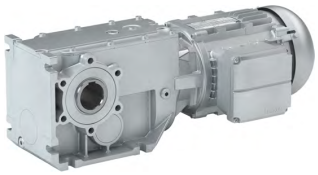
The difference between the rated and synchronous speed relative to the synchronous speed is called the slip.



Supplementary explanation of the service factor:

A motor wound to 50 Hz and 400 V can be operated on 60 Hz mains under rated operating conditions in accordance with the NEMA MG1-2011 standard **for a short time** with 1.15 times the load without suffering damage.

The service factor 1.15 is specified on the nameplate for 60 Hz operation.

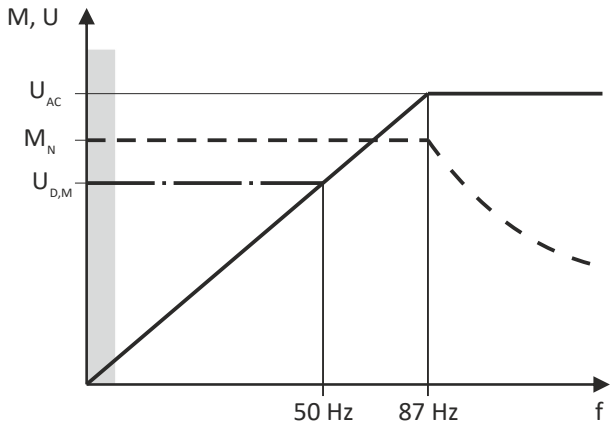


Operation on the frequency inverter
Standard setting

The frequency inverter is set for easy operation on a three-phase AC motor with vector control by default. The rated torque of the motor is available in a setting range up to 50 Hz in this mode of operation.

Extended setting range up to 87 Hz

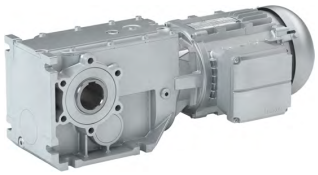
If the frequency inverter's U/f reference point is set to 87 Hz, the rated torque can be taken into account in an extended setting range. A 230/400 V motor is used here, for example, and operated in delta on a 400 V frequency inverter. The setting range is increased by 40 %. The inverter must be dimensioned for a rated motor current of 230 V.



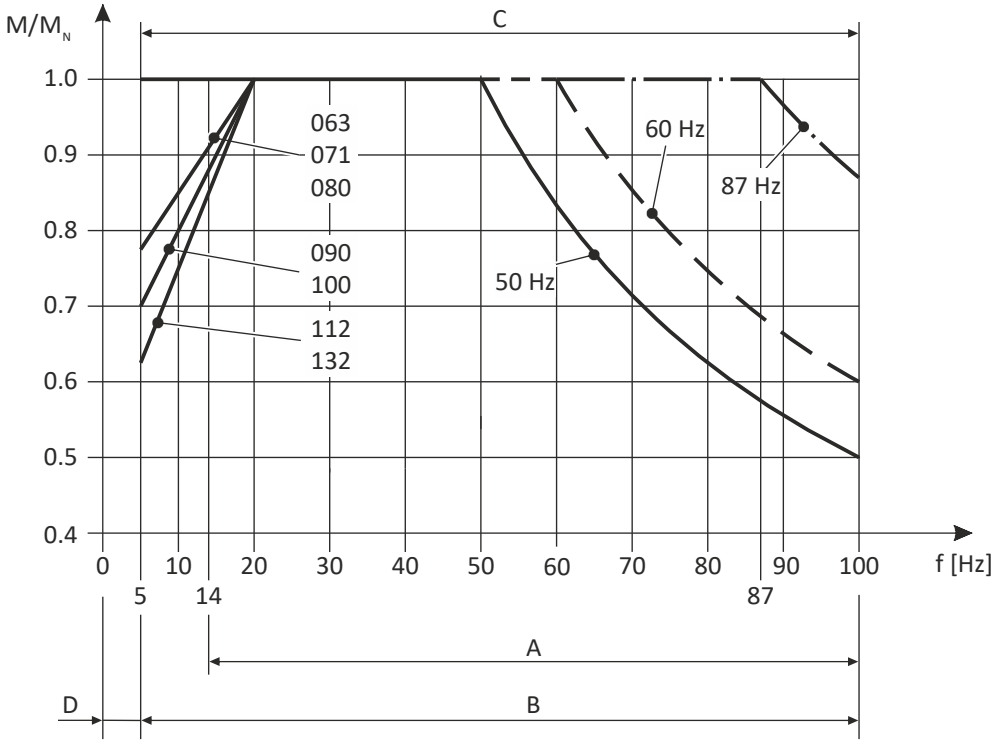
Torque reduction at low motor frequencies

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 torque reduction depending on the motor frame size for self-ventilated motors taking into account the thermal behavior during inverter operation.



A	Operation with integral fan and brake
B	Operation with integral fan and brake with wide-range voltage DC 180 ... 205 V or AC 400 ... 460 V Operation with integral fan and brake control, holding current reduction
C	Operation with blower
D	Operation is possible below 5 Hz depending on the application and control mode. The application case must be checked by Lenze.

Thermal power limit

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

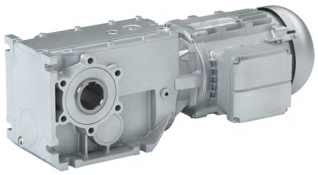
- the churning losses in the lubricant. These are determined by the mounting position and the circumferential speed of the gears
- the load and the speed spectrum.
- the ambient conditions: temperature, air circulation, input or dissipation of heat via shafts and the foundations.

NOTICE

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

- the input speed n_1 > 1500 rpm is fallen below in case of the gearbox ratios given in the following.
- the drive speeds mentioned in the following will be exceeded as a function of the mounting position. For a short period of time up to 5 min, 30 % higher speeds are permissible.
- the ambient temperature is predominantly above +30 °C.

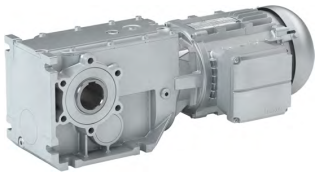
Gearbox	Ratio i
g500-B1500 ... B4300	≤ 25



Motor	Mounting position M1	Mounting position M3, M5, M6	Mounting position M2, M4
m550-H63 ... H71	4000 rpm	3500 rpm	3000 rpm
m550-P80 ... P100	4000 rpm	3500 rpm	3000 rpm
m550-P112 ... P132	3000 rpm	2600 rpm	1500 rpm
m550-P160 ... P180	2000 rpm	1500 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



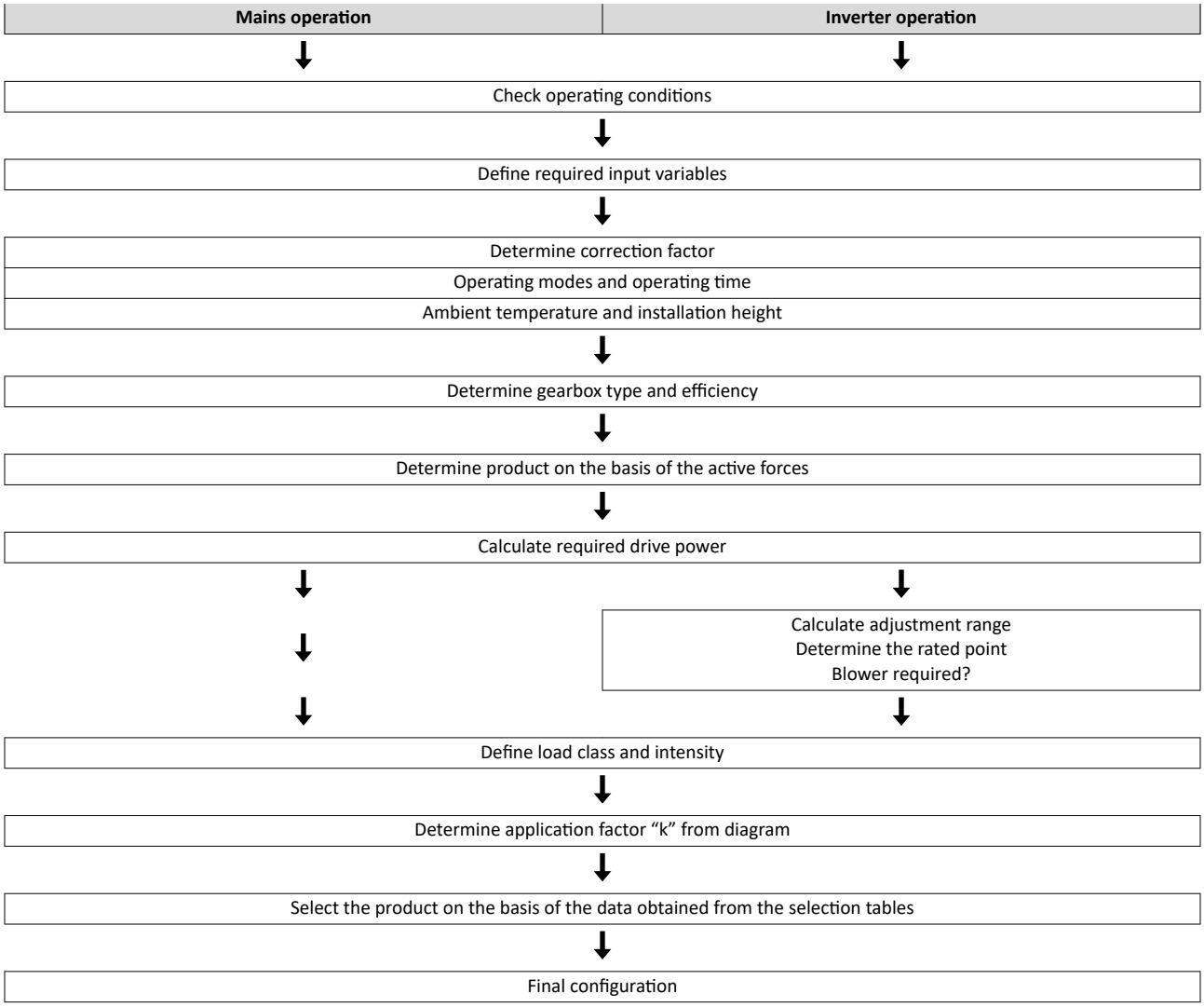
Drive dimensioning

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

With the «Drive Solution 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.

Operation chart

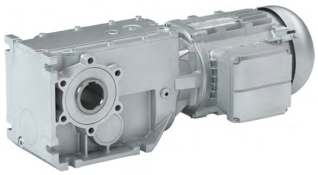


Check operating conditions

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

▸ Standards and operating conditions 📖 49

▸ Surface and corrosion protection 📖 34



Define required input variables

Necessary input variables	Note	Symbol	Unit
Operating time / day		OD	
Ambient temperature		T_V	°C
Site altitude amsl		H	m
Radial force		F_{rad}	N
Axial force		F_{ax}	N
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
	In rated operation	M_L	Nm
	In mains operation, $M_{L,max}/M_L$ should be < 2.0 to guarantee a safe start of the motor		
Load speed		$n_{L,max}$	rpm
	In inverter operation	$n_{L,min}$	rpm
Runtime for $M_{L,max}$	In inverter operation		%
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

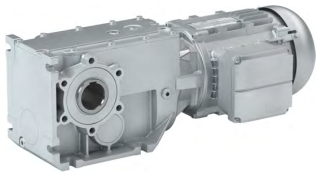
▸ Operating modes of the motor 🕮 232

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 🕮 66



Gearbox efficiency

Gearboxes	Gearbox efficiency
	η_{c1}
g500-B	
2-stage	0.96
3-stage	0.95
4-stage	0.94

Determine product on the basis of the forces

Transmission element			Gear wheels	Sprockets	Toothed belt pulleys (depending on the pretension)	Narrow V-belt (depending on the pretension)
Additional radial force factor	f_Z		≥ 17 teeth: 1.0 < 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 64

Calculate drive power

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

k_L Correction factor - operating mode

k_H Correction factor - site altitude

k_{TU} Correction factor - ambient temperature

η_G Gearbox efficiency

Intensity and load class for mains operation

		Calculation	
Intensity	F_I	$F_I = \frac{\frac{J_L}{i^2} + J_M + J_B + J_Z}{J_M + J_B + J_Z}$	

i Ratio of gearbox

J_L Load moment of inertia

J_M Motor moment of inertia

J_B Moment of inertia of brake

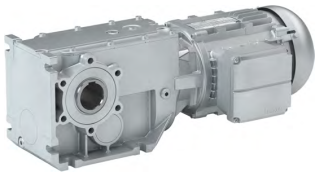
J_Z Additional moment of inertia (handwheel, 2nd shaft end ...)

Intensity	Load type	Load class
$F_I \leq 1.25$	Smooth operation, small or light jolts	I
$1.25 < F_I \leq 4$	Uneven operation, average jolts	II
$F_I > 4$	Uneven operation, severe jolts and/or **alternating load**	III

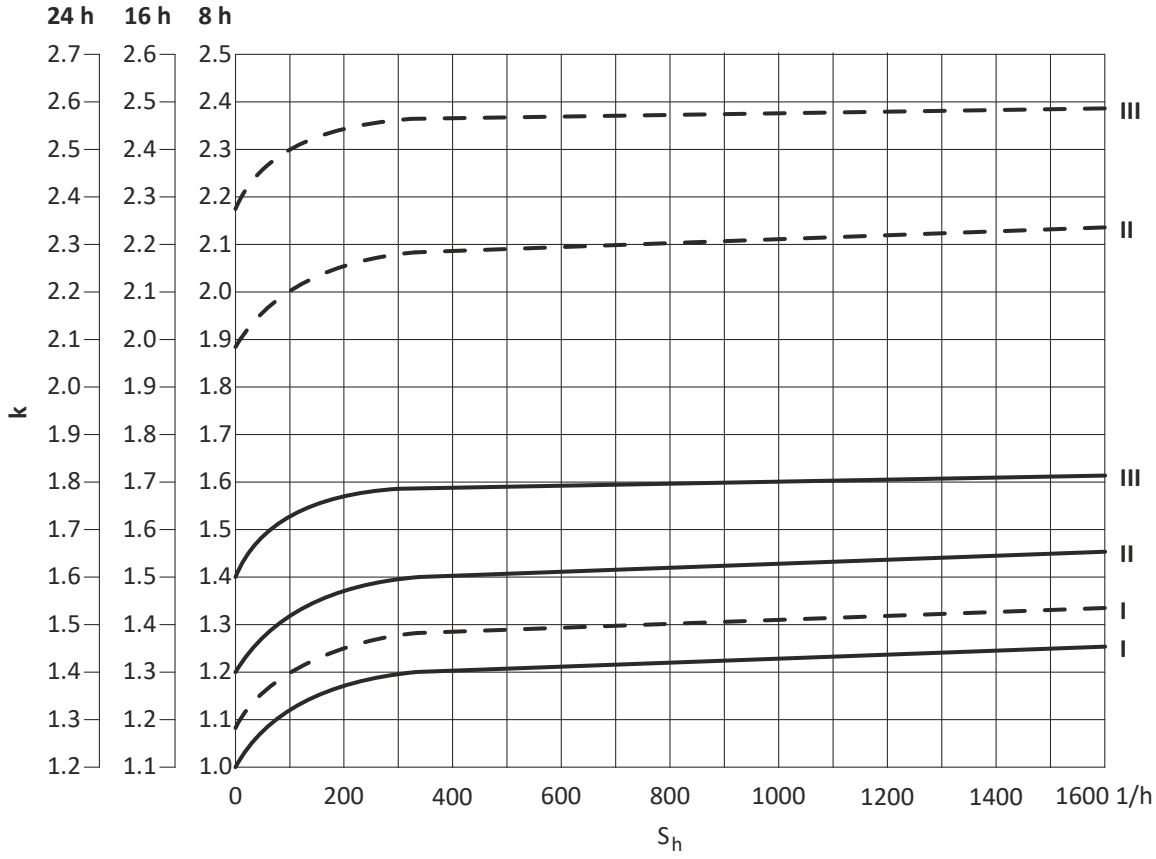
Intensity and load class for inverter operation

	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
———	Ratio of motor stalling torque/rated torque < 2.5
- - - -	Ratio of motor stalling torque/rated torque ≥ 2.5

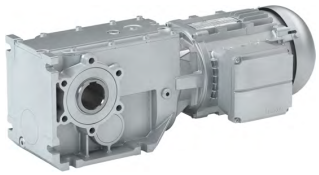
Stalling/rated motor torque ▸ Rated data 🕮 217

Check and select product

Data ▸ Selection tables 🕮 66

Mains operation

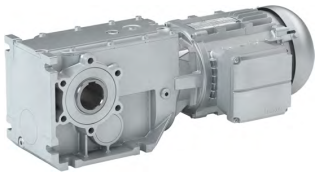
Selection table	Screening	Unit	Note
Rated frequency	50	Hz	
Rated power	$P_{rated} \geq P_1$	kW	
Output torque	$M_2 \geq M_L$	Nm	The geared motor must be able to provide enough torque for $M_{L,max}$.
Output speed	$n_2 \approx n_{L,max}$	rpm	
Load factor	$c \geq k$		



Inverter operation

Selection table	Check	Unit	Note
Rated frequency	50/87	Hz	
Rated power	$P_{rated} \geq P_1$	kW	
Output torque	$M_2 \geq M_L$	Nm	The geared motor must be able to provide enough 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	Adjustment range≤ 2.5 (50 Hz) Adjustment range≤ 4.35 (87 Hz)
Forced-ventilated	$n_{22} \approx n_{L,min}$	rpm	Adjustment range≤ 10 (50 Hz) Adjustment range≤ 17.4 (87 Hz)
Self-ventilated (Output torque reduced)			
Load factor	c ≥ k		

Order information	Example
Geared motor	
Gearboxes	g500-B45
Motor	m550-H63/S4
Gearbox ratio i	10.466
Number of stages	2



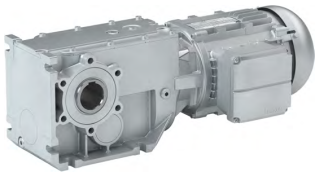
Final configuration

	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 📖 135



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.

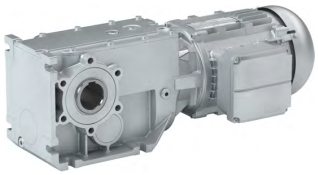
For indoor installation in buildings and if no special corrosion protection is required, the products are also available unpainted (without surface and corrosion protection system).

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 • 2K PUR priming coat • 2K-PUR top coat		110 ... 160 µm
OKS-L (large)	Comparable to C3			140 ... 200 µm



Temperature ranges

Temperature ranges

The following temperature ranges are available matched to your ambient conditions:

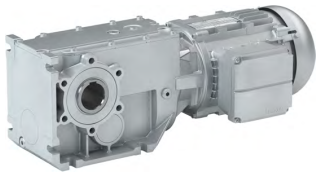
- Default
- Deep-freeze
- Wide range

Specify the temperature package and lubricant when ordering.

Observe the specified notes on the temperature packages!

In case of ambient temperatures < -30 °C or > +40 °C, please get in touch with your Lenze representative

Temperature ranges	
Standard	
Ambient temperature	0 °C … +40 °C
Lubricant	Mineral oil • CLP 460 Synthetic oil • CLP HC 220 Food-compatible oil • CLP HC 220 USDA H1
Note	At an ambient temperature generally over +30 °C: • The application case must be checked by Lenze.
Low-temperature	
Ambient temperature	-30 °C … +10 °C
Lubricant	Food-compatible oil • CLP HC 46 USDA H1
Note	When starting a cold motor at below -20 °C, increased starting torques are to be expected due to the higher viscosity of the roller bearing grease. • During project planning, allow a motor starting torque reserve of about 20%. Commissioning at over +10 °C: • Operate the drive at max. 50% of the rated torque to avoid a reduction in service life.
Wide range	
Ambient temperature	-30 °C … +40 °C
Lubricant	Synthetic oil • CLP HC 220
Note	When starting a cold motor at below -20 °C, increased starting torques are to be expected due to the higher viscosity of the roller bearing grease. • During project planning, allow a motor starting torque reserve of about 30%. At an ambient temperature generally over +30 °C: • The application case must be checked by Lenze. At a constant temperature between -30 °C and -25 °C, the service life is up to 20% lower than with the low-temperature range.



Lubricants

The following gearboxes are lubricated for life:

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

Recommended lubricants:

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

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

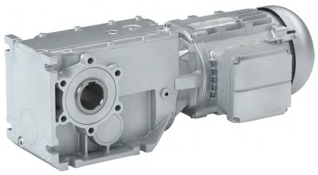
Lubricant amounts for stocking

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

The exact values can be found on the nameplate.

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

▸ Gearbox with pre-stage 🕮 126



Ventilation

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

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

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

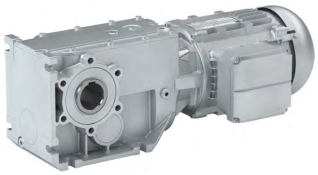
To reduce the number of different versions, the following gearboxes can also be ordered with combined mounting positions:

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

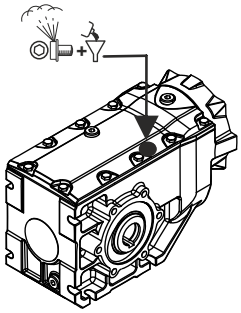
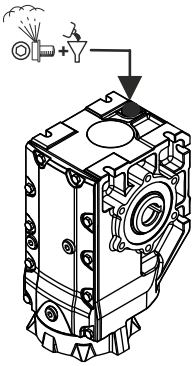
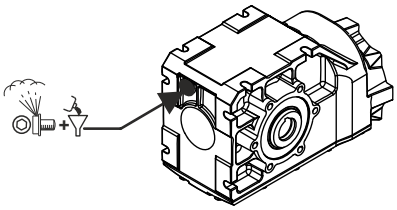
In these gearboxes, the lubricant amount has been optimised for the use in different mounting positions. If required, the breather elements are loosely enclosed and must be mounted before commissioning depending on the mounting position.

NOTICE

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



g500-B240

Mounting position M1 (A)	Mounting position M2 (D)	Mounting position M3 (B)
Filling and ventilation		
		
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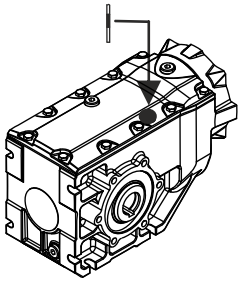	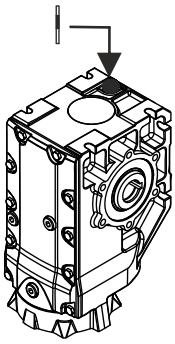	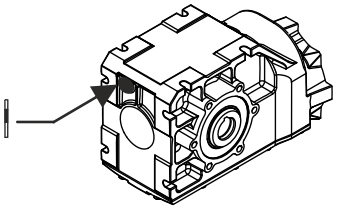
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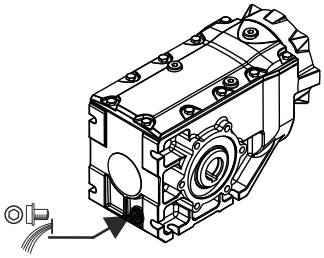
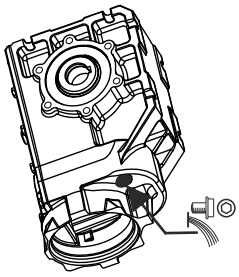
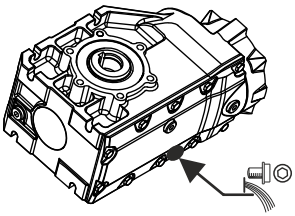
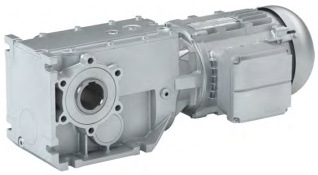
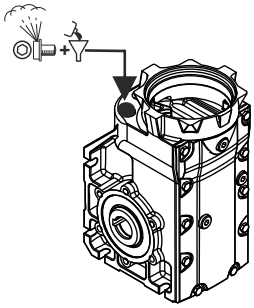
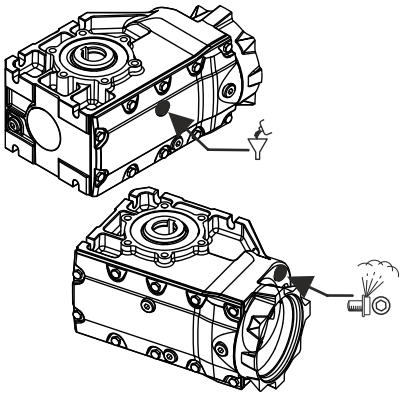
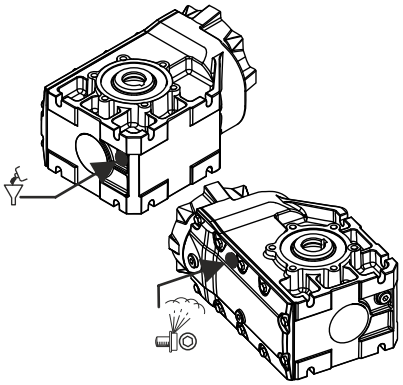
		



Mounting position M4 (C)	Mounting position M5 (E)	Mounting position M6 (F)
Filling and ventilation		
		
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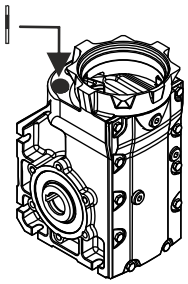	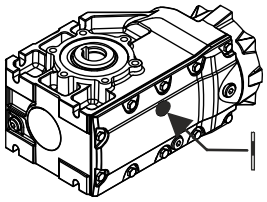	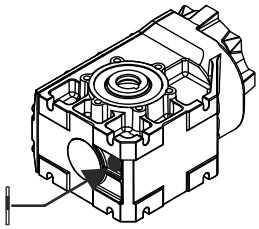
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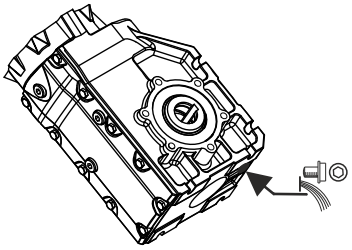	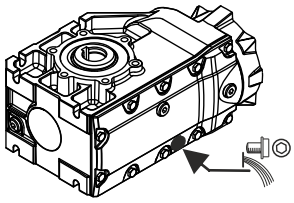	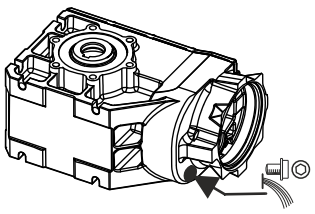

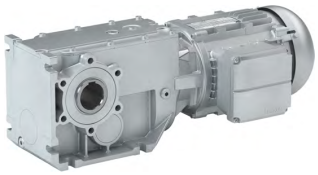

g500-B450

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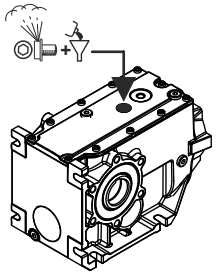	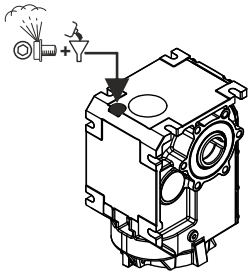	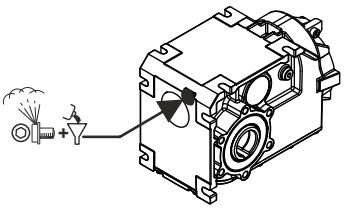
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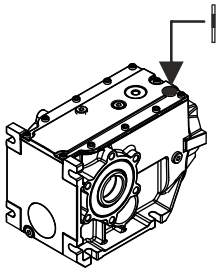	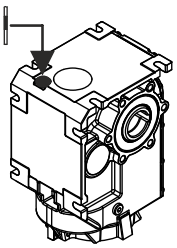	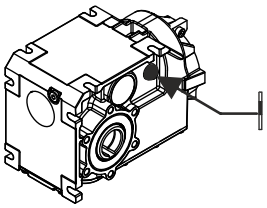
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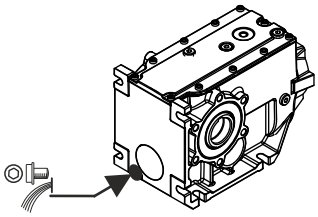	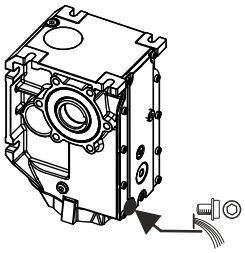	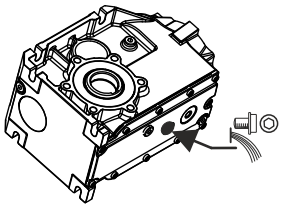

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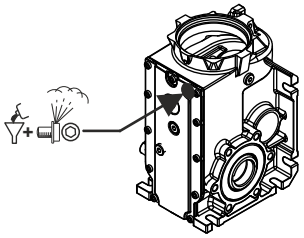
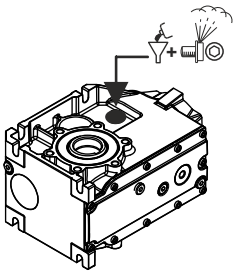
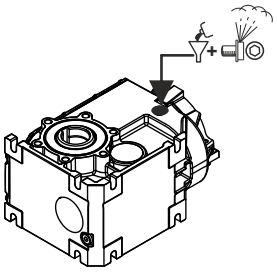
Filling and ventilation		
		
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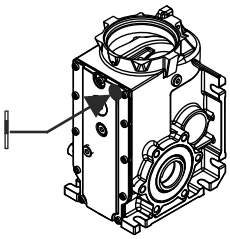	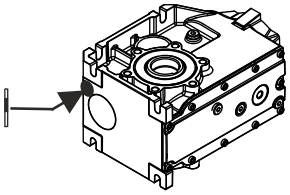	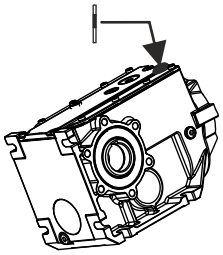
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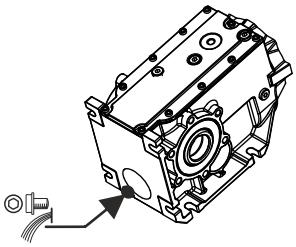
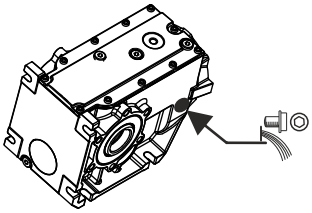
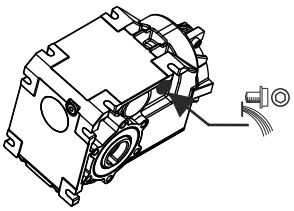
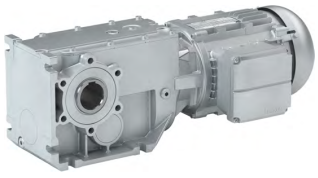
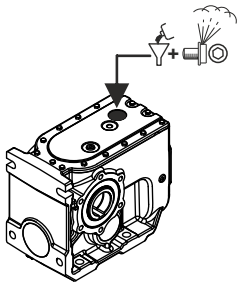
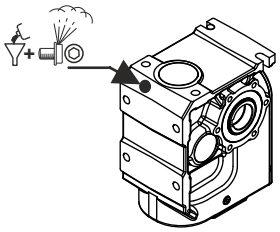
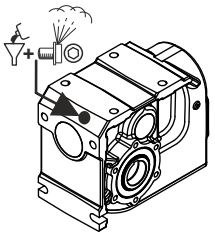
		



g500-B600 ... B4300

Mounting position M1 (A)	Mounting position M2 (D)	Mounting position M3 (B)
Filling and ventilation		
		
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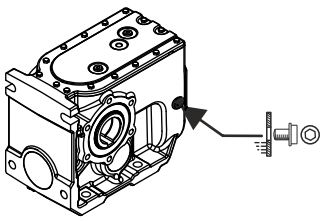	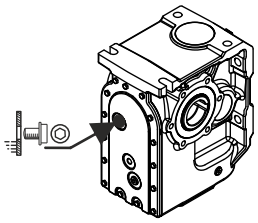	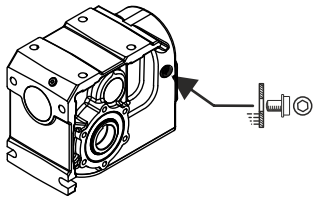
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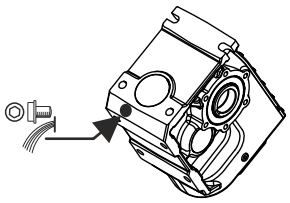
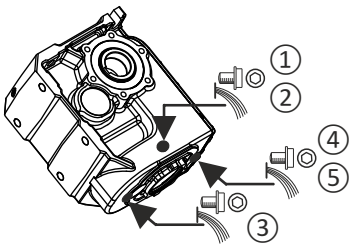
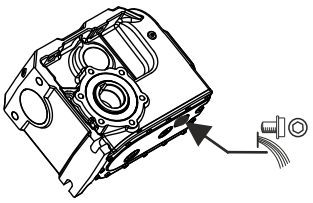
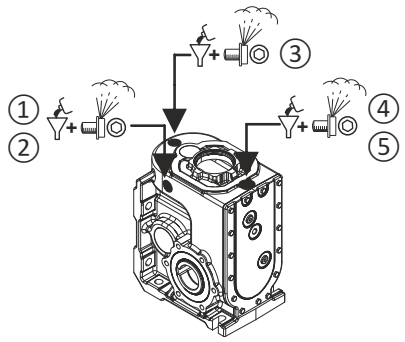
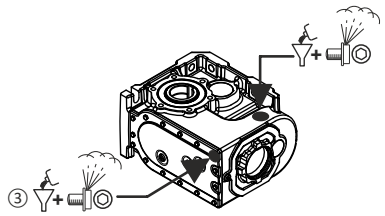
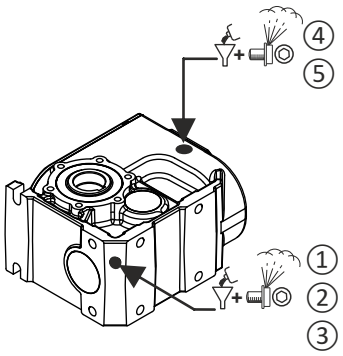
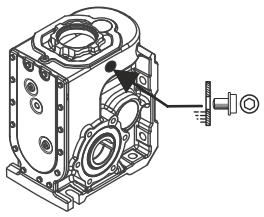
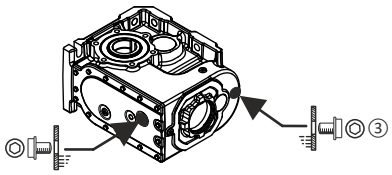
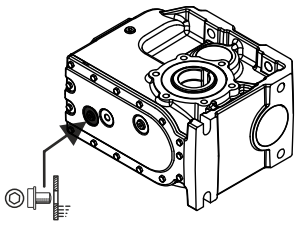
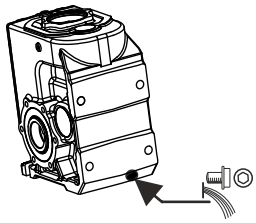
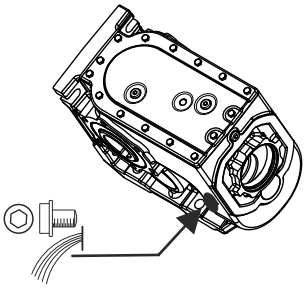
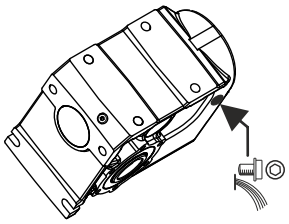
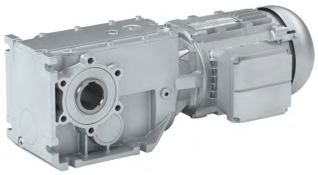
		

① g500-B600
② g500-B820
③ g500-B1500
④ g500-B2700
⑤ g500-B4300

Mounting position M4 (C)	Mounting position M5 (E)	Mounting position M6 (F)
Filling and ventilation		
		
Check		
		
Drain		
		

① g500-B600
② g500-B820
③ g500-B1500
④ g500-B2700
⑤ g500-B4300



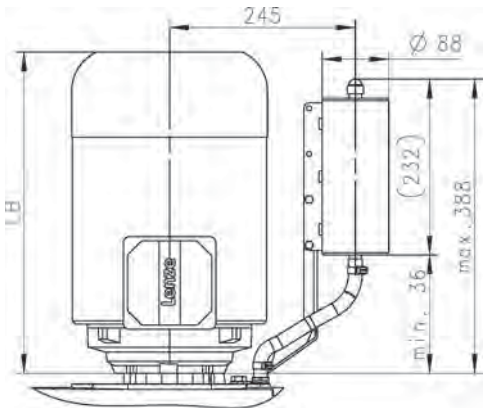
Gearbox with oil compensation reservoir for mounting position M4 (C)

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



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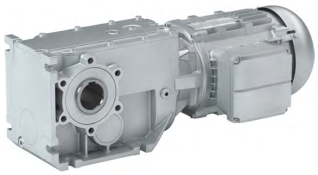
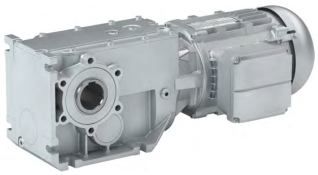
For the following gearboxes in mounting position M4 (C), which exceed the specified min. input speed, an oil expansion reservoir is required depending on the specified gear ratio:



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



Mechanical installation

Important notes

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

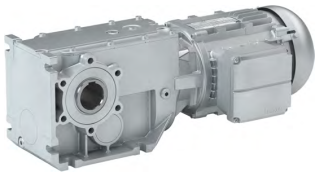
  ▸ Standards and operating conditions 📖 49
- The technical data and the data regarding the supply conditions can be found on the nameplate and in this documentation.
- Ambient media − especially chemically aggressive ones − may damage shaft sealing rings, lacquers and plastics.
- Lenze offers special surface and corrosion protection in this case.

Transport

- 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.

Installation

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



Electrical installation

Important notes

⚠ DANGER!

Risk of injury and risk of burns from dangerous voltage

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

- ▸ Disconnect the product from the mains.
- ▸ Check that the power terminals are deenergized before starting work.

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

Connection for high leakage current

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

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

▸ Connection options 📖 146

Operation on an external inverter

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

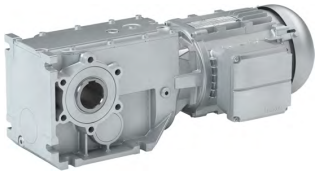
If it cannot be ruled out that the permissible voltage peaks will be exceeded or that the minimum pulse rise time will not be reached, the following measures must be initiated:

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

Preparation

EMC-compliant wiring

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



Technical data

Notes regarding the given data

Catalog data

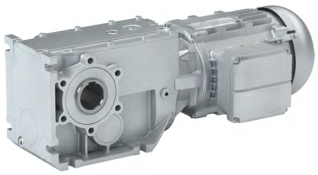
The power values, torques and speeds specified in the configuration are rounded values and apply to:

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

NOTICE

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

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



Standards and operating conditions

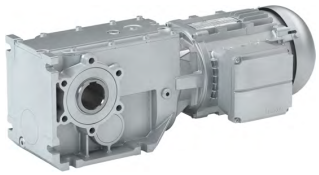
Conformities and approvals

More information and certificates of approval can be found under

g500 + m500 bevel geared motors (Lenze.com)

Europe					
Country	**Conformity/ approval**	**Law/standard**	**Description**	**Special feature**	**Product representation**
Eurasian Economic Union (EAEU)	EAC	TP TC 004/2011	Eurasian conformity: Safety of low voltage equipment	-	EAC mark
		TP TC 020/2011	Eurasian conformity: Electromagnetic compatibility of technical means		
European Union	CE	(EU) 2019/1781	Regulation laying down ecodesign requirements for electric motors and variable speed drives		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		
		S.I. 2021/745	The Ecodesign for Energy-Related Products and Energy Information Regulations 2021		

America					
Country	**Conformity/ approval**	**Law/standard**	**Description**	**Special feature**	**Product representation**
Brazil	INMETRO	ABNT NBR 17094-1	Rotating electrical machinesPart 1: Induction motors three-phase - Requirements	Approved products	INMETRO mark
		Portaria n.º 1, 2017	MEPS		
Canada	CSA	CSA 22.1 No. 100	CSA Standard for Motors and Generators	-	cULus mark
	NrCAN	SOR/2016-311 (Division 12 - Subdivision A)	Energy Efficiency Regulations		UL-Energy mark
USA	DOE	10 CFR Part 431 - Subpart B	Energy Efficiency Program for Certain Commercial and Industrial Equipment		UL-Energy mark + CC number
	UL	UL 1004-1	UL Standard for Rotating Electrical Machines		cULus mark



Asia					
Country	**Conformity/ approval**	**Law/standard**	**Description**	**Special feature**	**Product representation**
China	-	GB 18613	Minimum allowable values of energy effeciency and energy efficiency grades for small and medium three-phase asynchronous motors	-	CEL mark
		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
Singapore	NEA	Energy Conservation Act 2013	Energy Conservation Act (Cap. 92C) - MEPS		-
		IEC 60034-2-1	Rotating electrical machines - Part 2-1: Standard methods for determining losses and efficiency from tests		
South Korea	KEA	KS C IEC 60034-2-1			KEL mark including KC marking
		MOTIE Notification No. 2017-61MOTIE Notification No. 2020-225	Regulation on energy Efficiency Labeling & Standards - MEPS		

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	
		IP65	
		IP66	

Temperature class			
-	EN IEC 60034-1	F (155 °C)	Insulation system
Utilization		B (130 °C)	Utilization

Permissible voltage			
-	IEC 60034-18-41	IVIC C	At 500 V

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

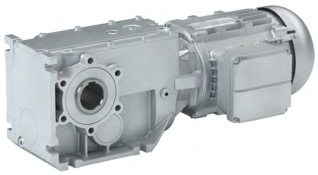
Environmental conditions

Energy efficiency		
High Efficiency	EN IEC 60034-30-1	Class IE2
Premium Efficiency		Class IE3

Climate			
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 (0 ... +40 °C)	
	-	-30 ...+10 °C	Depending on the temperature package! Observe ambient temperature on the nameplate!
		-30 ...+40 °C	

Site altitude		
0 … 1000 m amsl	-	Without current derating
1000 … 4000 m amsl		Reduce power by 5 %/1000 m

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.

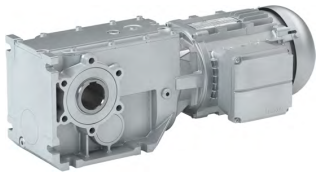
The data given for speed, torque and power are valid if the

- input speed n_1= 1400 rpm
- Application factor c= 1.0

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

g500-B45, 2-stage gearboxes

output speed	Max. output torque	Ratio	Number of teeth		Max. backlash
					Standard
n_2	$M_{2, max}$	i	z_g	z_t	
rpm	Nm				'
259	39.0	5.411	1120	207	26
225	40.5	6.222	56	9	25
197	43.0	7.111	64	9	25
171	44.0	8.178	368	45	24
154	45.0	9.101	1720	189	25
134	45.0	10.466	1978	189	24
120	45.0	11.640	2200	189	24
105	45.0	13.386	2530	189	23
92.6	45.0	15.111	136	9	24
80.6	45.0	17.378	782	45	23
72.3	45.0	19.365	1220	63	23
62.9	45.0	22.270	1403	63	23
55.9	45.0	25.051	2480	99	23
48.6	45.0	28.808	2852	99	22
43.0	45.0	32.593	880	27	23
37.4	45.0	37.481	1012	27	22
33.2	45.0	42.222	380	9	23
28.8	45.0	48.556	437	9	22
26.0	45.0	53.889	485	9	23
22.6	45.0	61.972	2231	36	22



g500-B110, 2-stage gearboxes

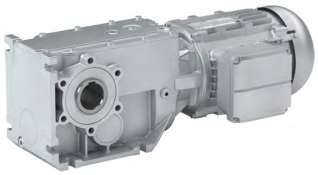
output speed	Max. output torque	Ratio	Number of teeth		Max. backlash
					Standard
n_2	$M_{2, max}$	i	z_g	z_t	
rpm	Nm				'
270	69.0	5.185	140	27	21
197	77.0	7.111	64	9	20
154	84.0	9.101	1720	189	20
110	90.0	12.698	800	63	20
90.0	92.0	15.556	140	9	19
71.6	100	19.556	176	9	19
55.6	108	25.185	680	27	19
43.9	108	31.919	3160	99	18
37.4	106	37.400	187	5	18
35.0	101	40.000	40	1	18
29.1	110	48.167	289	6	18
26.6	69.0	52.698	3320	63	18
22.9	110	61.045	1343	22	18
18.3	110	76.500	153	2	18
13.9	110	100.786	1411	14	18

g500-B110, 3-stage gearboxes

output speed	Max. output torque	Ratio	Number of teeth		Max. backlash
					Standard
n_2	$M_{2, max}$	i	z_g	z_t	
rpm	Nm				'
12.3	108	114.074	3080	27	19
9.8	108	143.407	3872	27	19
7.9	110	178.095	3740	21	19
6.2	108	224.148	6052	27	19
4.9	108	284.081	28124	99	19
3.9	101	356.000	356	1	19
3.1	110	447.667	1343	3	18
2.5	110	561.000	561	1	18
2.1	110	680.850	13617	20	18
1.6	110	870.188	13923	16	18

g500-B240, 2-stage gearboxes

output speed	Max. output torque	Ratio	Number of teeth		Max. backlash
					Standard
n_2	$M_{2, max}$	i	z_g	z_t	
rpm	Nm				'
393	138	3.565	385	108	17
286	147	4.889	44	9	17
224	156	6.257	2365	378	17
179	187	7.817	469	60	12
131	204	10.720	268	25	12
102	217	13.719	2881	210	12
93.3	223	15.008	1876	125	12
73.1	240	19.143	134	7	12
59.7	240	23.450	469	20	12
45.9	240	30.522	2747	90	12
36.9	240	37.967	1139	30	12
28.5	240	49.133	737	15	12
23.5	240	59.630	5963	100	11
18.4	202	76.213	6097	80	11



g500-B240, 3-stage gearboxes

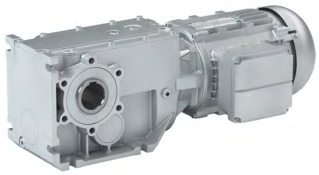
output speed	Max. output torque	Ratio	Number of teeth		Max. backlash
					Standard
n_2	$M_{2, max}$	i	z_g	z_t	
rpm	Nm				'
18.0	240	77.741	48977	630	12
14.1	240	99.437	12529	126	12
10.8	240	129.087	19363	150	12
8.5	240	165.426	69479	420	12
6.5	240	213.994	35309	165	12
5.0	240	278.422	12529	45	12
3.9	240	360.683	21641	60	12

g500-B240, 4-stage gearboxes

output speed	Max. output torque	Ratio	Number of teeth		Max. backlash
					Standard
n_2	$M_{2, max}$	i	z_g	z_t	
rpm	Nm				'
3.1	240	445.476	100232	225	13
2.5	240	570.103	538747	945	13
1.9	240	729.201	137819	189	13
1.5	240	946.636	212993	225	13
1.2	240	1213.125	764269	630	13
0.9	240	1569.289	70618	45	13
0.7	240	2041.763	275638	135	12
0.6	240	2477.958	1115081	450	12
0.4	240	3167.053	1140139	360	12

g500-B450, 3-stage gearboxes

output speed	Max. output torque	Ratio	Number of teeth		Max. backlash
					Standard
n_2	$M_{2, max}$	i	z_g	z_t	
rpm	Nm				'
280	280	5.002	2401	480	21
204	308	6.860	343	50	21
136	384	10.328	2107	204	14
98.8	422	14.165	1204	85	14
70.6	450	19.831	8428	425	13
55.3	450	25.294	430	17	13
45.2	450	30.985	2107	68	13
34.7	450	40.330	12341	306	13
27.9	450	50.167	301	6	13
22.5	450	62.262	13760	221	12
18.4	450	76.271	16856	221	12
14.1	450	99.274	197456	1989	12
11.3	450	123.487	4816	39	12
8.8	450	159.807	105952	663	12
7.2	450	193.948	214312	1105	12
5.6	450	247.882	4214	17	12

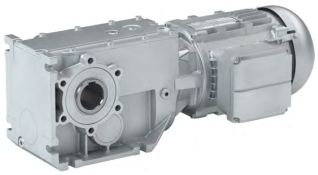


g500-B450, 4-stage gearboxes

output speed	Max. output torque	Ratio	Number of teeth		Max. backlash
					Standard
n_2	$M_{2, max}$	i	z_g	z_t	
rpm	Nm				'
5.5	450	255.691	847616	3315	12
3.9	450	357.968	5933312	16575	12
3.1	450	456.591	302720	663	12
2.5	450	559.324	370832	663	12
1.9	450	728.009	4344032	5967	12
1.5	450	905.573	105952	117	12
1.2	450	1171.918	2330944	1989	12
1.0	450	1422.282	4714864	3315	12
0.8	450	1726.133	9536884	5525	12
0.6	450	2206.153	187523	85	12
0.5	450	2819.662	191737	68	12

g500-B600, 3-stage gearboxes

output speed	Max. output torque	Ratio	Number of teeth		Max. backlash
					Standard
n_2	$M_{2, max}$	i	z_g	z_t	
rpm	Nm				'
276	376	5.067	6293	1242	20
202	398	6.949	7192	1035	19
130	541	10.741	290	27	14
95.0	600	14.730	928	63	14
74.3	600	18.851	24940	1323	14
67.9	600	20.622	928	45	14
53.7	600	26.061	860	33	12
39.2	600	35.740	2752	77	12
33.4	600	41.940	23780	567	13
30.6	600	45.739	73960	1617	12
28.0	600	50.036	2752	55	12
21.9	600	63.822	34400	539	12
20.7	600	67.513	12760	189	13
17.9	600	78.182	860	11	12
17.1	600	81.937	5162	63	13
13.8	600	101.760	70520	693	12
11.1	600	126.580	29240	231	12
8.5	600	163.810	3440	21	12
7.0	600	198.805	15308	77	12
5.6	600	251.299	19350	77	12

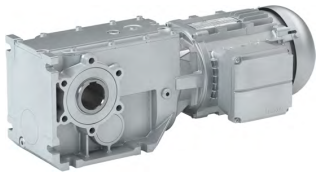


g500-B600, 4-stage gearboxes

output speed	Max. output torque	Ratio	Number of teeth		Max. backlash
					Standard
n_2	$M_{2, max}$	i	z_g	z_t	
rpm	Nm				'
6.1	600	227.943	112832	495	12
4.9	600	283.539	46784	165	12
3.8	600	366.933	5504	15	12
3.0	600	468.027	68800	147	12
2.4	600	573.333	1720	3	12
2.0	600	695.818	7654	11	12
1.9	600	746.243	141040	189	12
1.5	600	928.254	58480	63	12
1.2	600	1126.563	260236	231	12
1.0	600	1457.905	30616	21	12
0.8	600	1769.366	681206	385	12
0.6	600	2261.409	49751	22	12
0.5	600	2858.523	125775	44	12

g500-B820, 3-stage gearboxes

output speed	Max. output torque	Ratio	Number of teeth		Max. backlash
					Standard
n_2	$M_{2, max}$	i	z_g	z_t	
rpm	Nm				'
282	312	4.958	119	24	21
206	391	6.800	34	5	20
164	459	8.517	511	60	15
147	496	9.520	238	25	19
120	569	11.680	292	25	15
115	544	12.143	85	7	19
85.6	708	16.352	2044	125	15
67.1	820	20.857	146	7	15
54.8	820	25.550	511	20	14
53.2	820	26.324	8687	330	12
38.8	820	36.102	9928	275	14
27.7	820	50.543	69496	1375	12
21.7	820	64.468	4964	77	12
17.7	820	78.973	8687	110	12
13.6	820	102.790	50881	495	12
10.9	820	127.861	21097	165	12
8.5	820	165.467	2482	15	12
7.0	820	200.816	110449	550	12
5.5	820	253.841	11169	44	11

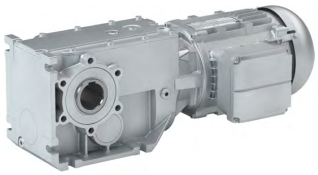


g500-B820, 4-stage gearboxes

output speed	Max. output torque	Ratio	Number of teeth		Max. backlash
					Standard
n_2	$M_{2, max}$	i	z_g	z_t	
rpm	Nm				'
6.2	820	225.636	2482	11	12
4.9	820	286.408	1181432	4125	12
3.9	820	359.765	356167	990	12
3.0	820	468.265	2086121	4455	12
2.4	820	579.133	8687	15	12
1.9	820	753.793	101762	135	12
1.5	820	937.644	42194	45	12
1.2	820	1213.422	54604	45	12
1.0	820	1472.653	110449	75	12
0.8	820	1787.266	9829961	5500	12
0.6	820	2284.286	10050859	4400	12
0.5	820	2887.440	1016379	352	12

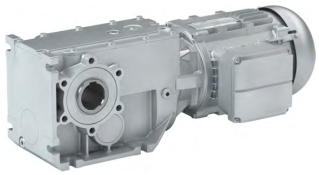
g500-B1500, 3-stage gearboxes

output speed	Max. output torque	Ratio	Number of teeth		Max. backlash
					Standard
n_2	$M_{2, max}$	i	z_g	z_t	
rpm	Nm				'
204	837	6.866	1792	261	15
147	1006	9.516	1456	153	15
117	1461	11.985	3128	261	11
107	1118	13.118	50176	3825	14
84.3	1500	16.611	299	18	11
68.5	1500	20.444	184	9	11
61.1	1500	22.898	5152	225	11
53.1	1500	26.353	16813	638	10
47.9	1500	29.206	1840	63	11
39.1	1500	35.778	322	9	11
38.3	1500	36.526	12857	352	10
31.1	1500	44.955	989	22	10
30.1	1500	46.568	3772	81	11
24.5	1500	57.074	1541	27	11
21.8	1500	64.221	4945	77	10
18.7	1500	74.963	2024	27	11
15.4	1500	90.978	4094	45	10
13.7	1500	102.396	40549	396	10
11.2	1500	125.498	66263	528	10
8.5	1500	164.833	989	6	10
7.0	1500	200.048	88021	440	10
5.5	1500	252.869	44505	176	10



g500-B1500, 4-stage gearboxes

output speed	Max. output torque	Ratio	Number of teeth		Max. backlash
					Standard
n_2	$M_{2, max}$	i	z_g	z_t	
rpm	Nm				'
6.2	1500	224.773	4945	22	10
5.1	1500	275.347	48461	176	10
3.9	1500	358.388	283843	792	10
3.1	1500	445.799	117691	264	10
2.4	1500	571.714	2716783	4752	10
2.0	1500	711.156	1126471	1584	10
1.5	1500	911.329	3608861	3960	10
1.3	1500	1116.933	5897407	5280	10
1.2	1500	1208.778	10879	9	10
1.0	1500	1467.017	88021	60	10
0.8	1500	1780.425	7833869	4400	10
0.6	1500	2275.543	8009911	3520	10
0.5	1500	2876.388	4049955	1408	10

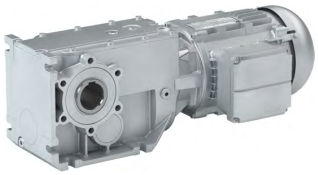


g500-B2700, 3-stage gearboxes

output speed	Max. output torque	Ratio	Number of teeth		Max. backlash
					Standard
n_2	$M_{2, max}$	i	z_g	z_t	
rpm	Nm				'
202	1446	6.918	28917	4180	14
159	1528	8.793	41769	4750	14
120	2212	11.713	2448	209	10
109	2262	12.863	18819	1463	9
94.0	2380	14.888	7072	475	10
85.6	2429	16.351	54366	3325	9
71.6	2579	19.542	23392	1197	9
62.9	2684	22.269	3808	171	9
57.2	2700	24.456	1394	57	9
52.2	2700	26.814	32096	1197	9
47.5	2700	29.447	82246	2793	9
42.6	2700	32.873	16864	513	9
38.8	2700	36.102	43214	1197	9
32.7	2700	42.772	8084	189	9
29.8	2700	46.973	82861	1764	8
28.6	2700	48.912	2788	57	9
25.9	2700	54.082	9248	171	9
23.6	2700	59.393	23698	399	9
21.7	2700	64.452	113693	1764	8
19.5	2700	71.951	5828	81	8
18.2	2700	76.862	30668	399	9
16.5	2700	84.940	24208	285	9
15.0	2700	93.283	62033	665	9
14.4	2700	97.481	2632	27	8
13.1	2700	107.056	1927	18	8
11.8	2700	118.370	3196	27	8
10.8	2700	129.996	32759	252	8
9.1	2700	153.185	4136	27	8
8.3	2700	168.230	21197	126	8
7.5	2700	185.911	8366	45	8
6.9	2700	204.170	171503	840	8
6.0	2700	235.000	235	1	8
5.4	2700	258.080	28905	112	8

g500-B2700, 4-stage gearboxes

output speed	Max. output torque	Ratio	Number of teeth		Max. backlash
					Standard
n_2	$M_{2, max}$	i	z_g	z_t	
rpm	Nm				'
6.2	2700	225.581	113693	504	8
4.8	2700	291.191	65518	225	8
3.8	2700	365.227	1932781	5292	8
3.1	2700	454.986	32759	72	8
2.9	2700	487.698	79007	162	8
2.3	2700	606.648	32759	54	8
1.8	2700	785.074	21197	27	8
1.5	2700	953.304	360349	378	8
1.1	2700	1233.688	233167	189	8
0.8	2700	1817.115	15263767	8400	8
0.6	2700	2322.436	2229539	960	8
0.5	2700	2935.664	375765	128	8

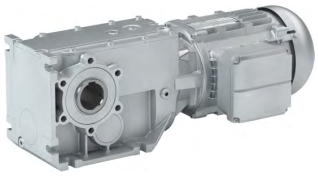


g500-B4300, 3-stage gearboxes

output speed	Max. output torque	Ratio	Number of teeth		Max. backlash
					Standard
n_2	$M_{2, max}$	i	z_g	z_t	
rpm	Nm				'
255	2160	5.488	1147	209	14
201	2400	6.976	29822	4275	13
153	2700	9.156	98642	10773	13
126	4250	11.080	23157	2090	9
99.4	4300	14.084	33449	2375	8
75.7	4300	18.486	110639	5985	8
66.5	4300	21.065	18011	855	8
55.2	4300	25.365	151807	5985	8
50.0	4300	28.013	2241	80	8
45.0	4300	31.097	79763	2565	8
39.3	4300	35.607	35607	1000	8
30.0	4300	46.737	39259	840	8
26.3	4300	53.258	6391	120	8
21.8	4300	64.127	53867	840	8
17.8	4300	78.619	28303	360	8
13.1	4300	106.517	6391	60	7
10.8	4300	129.342	15521	120	7
8.4	4300	167.383	10043	60	7
6.9	4300	203.143	81257	400	7
5.5	4300	256.781	8217	32	7

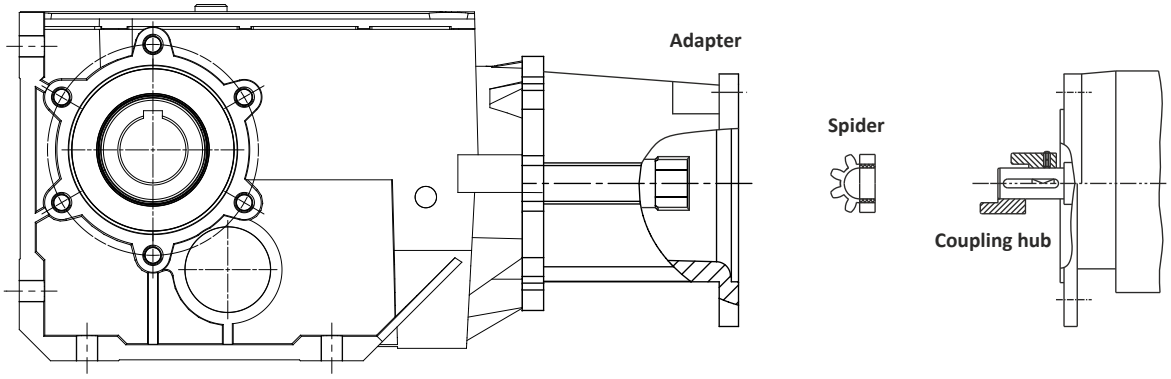
g500-B4300, 4-stage gearboxes

output speed	Max. output torque	Ratio	Number of teeth		Max. backlash
					Standard
n_2	$M_{2, max}$	i	z_g	z_t	
rpm	Nm				'
6.2	4300	224.446	53867	240	8
4.6	4300	304.333	913	3	8
3.8	4300	369.548	15521	42	8
3.1	4300	452.696	108647	240	8
2.9	4300	485.243	262031	540	8
2.3	4300	603.594	108647	180	8
1.8	4300	762.524	411763	540	8
1.5	4300	948.506	170731	180	8
1.1	4300	1227.478	110473	90	8
0.8	4300	1807.968	7231873	4000	8
0.6	4300	2310.746	7394387	3200	8
0.5	4300	2920.887	747747	256	8



Gearboxes with adapter

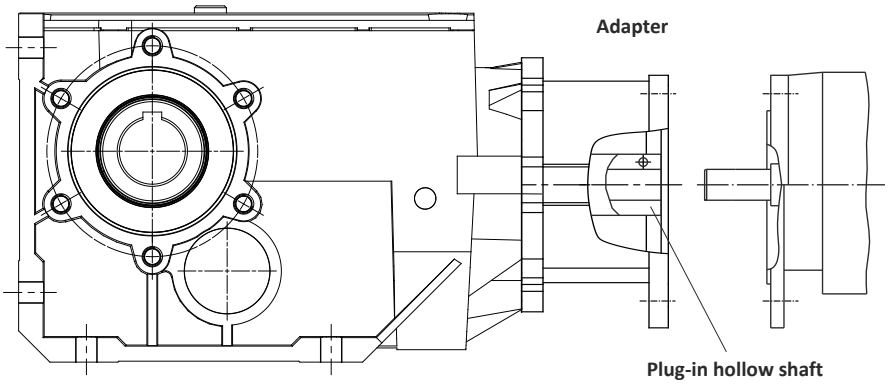
Versions with flexible coupling



Power is transmitted between the motor and gearbox via a flexible coupling. The gearbox shaft is designed as a claw on the motor side. The counterpart, the coupling hub, is placed on the motor shaft and secured axially. A spider is arranged between the two claws, which can absorb shocks and ensures torsional vibration-damping power transmission.

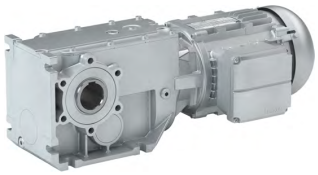
- Coupling hub with keyway
  - Positive power transmission
  - Suitable for normal operation
- Clamping hub with tangential terminal screw and keyway
  - Positive and non-positive power transmission
  - Suitable for reversing duty
- Tension ring hub without keyway
  - Non-positive power transmission
  - Suitable for reversing duty

Versions with servo adapter

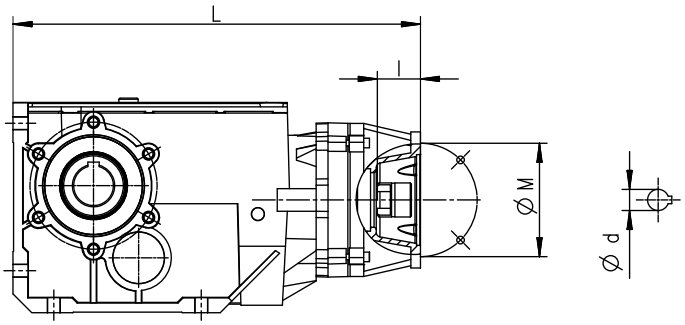


The adapters are designed shorter in these versions. Power is transmitted between the motor and gearbox without a clutch. The motor shaft can be inserted into the hollow shaft without any further assembly work. A lateral opening in the adapter is used to lock the previously aligned tangential clamping screw.

- Shaft clamping hub without keyway with tangential clamping screw
  - Non-positive power transmission
  - Suitable for reversing duty



Dimensions of gearbox with adapter for IEC standard motors



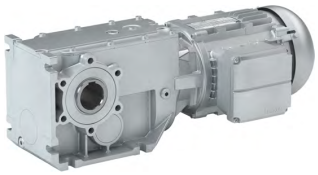
Gearbox dimensions ▸ Basic dimensions 99

Versions with flexible coupling

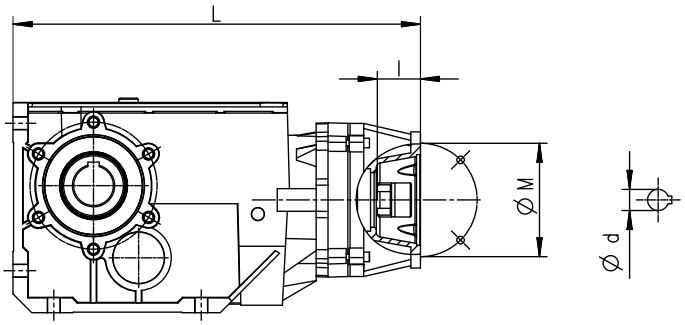
Motor				Adapter		Gearbox g500								
	Size	Shaft			Size	-B45	-B110	-B240	-B450	-B600	-B820	-B1500	-B2700	-B4300
P_1		d	l	M		L	L	L	L	L	L	L	L	L
kW		mm	mm	mm		mm	mm	mm	mm	mm	mm	mm	mm	mm
0.12 0.18	63	11	23	FF75	N1A	208	275	335	-	-	-	-	-	-
					N2B	-	275	335	342	362	387	-	-	-
				FF130	N6C	-	292	352	359	379	404	470	-	-
0.25 0.37	71	14	30	FF85	N1B	-	292	352	359	379	404	-	-	-
					N3C	-	292	352	359	379	404	470	-	-
				FF100	N4C	-	292	352	359	379	404	470	-	-
				FF130	N2C	-	292	352	359	379	404	470	-	-
0.55 0.75	80	19	40	FF100	N7C	-	292	352	359	379	404	470	-	-
				FF130	N1C	-	292	352	359	379	404	470	-	-
					N2D	-	321	381	388	408	433	499	553	592
					N3E	-	-	381	388	408	433	499	553	592
1.1 1.5	90	24	50	FF130	N1D	-	321	381	388	408	433	499	553	592
					N2E	-	-	381	388	408	433	499	553	592
					N2F	-	-	-	-	-	433	499	553	592
				FF165	N4E	-	-	401	408	428	453	519	573	612
					N3F	-	-	-	-	-	453	519	573	612
2.2 3.0	100	28	60	FF130	N1E	-	-	381	388	408	433	499	553	592
					N1F	-	-	-	-	-	433	499	553	592
4.0	112			FF215	N2G	-	-	-	-	-	497	563	617	656
5.5 7.5	132	38	80	FF215	N3G	-	-	-	-	-	517	583	637	676
				FF265	N1G	-	-	-	-	-	517	583	637	676
					N3H	-	-	-	-	-	-	623	677	718
11.0 15.0	160	42	110	FF300	N1H	-	-	-	-	-	-	653	707	746
18.5 22.0	180	48	110	FF300	N2H	-	-	-	-	-	-	653	707	746

The N6C adapter is only available with clamping hub.

The N1D adapter is only available with standard and clamping hub.



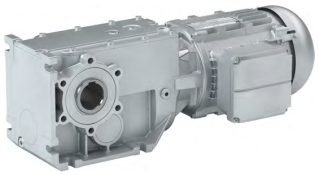
Dimensions of gearbox with adapter for NEMA motors



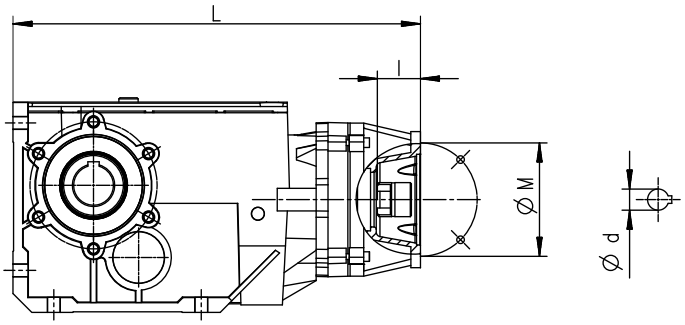
Gearbox dimensions ▸ Basic dimensions 📖 99

Versions with flexible coupling

Motor			Adapter		Gearbox g500							
Size	Shaft			Size	-B110	-B240	-B450	-B600	-B820	-B1500	-B2700	-B4300
	d	l	M		L	L	L	L	L	L	L	L
	inch	inch	inch		mm	mm	mm	mm	mm	mm	mm	mm
56 C	0.625	1.875	5.875	**A5C**	307	367	374	394	419	485	-	-
143/145 TC	0.875	2.250	5.875	**A5D**	345	405	412	432	457	523	577	616
182/184 TC	1.125	2.750	7.252	**A5E**	-	422	430	450	475	541	595	634
213/215 TC	1.375	3.375	7.252	**A5G**	-	-	-	-	543	609	663	702
254/256 TC	1.625	4.000	7.252	**A5H**	-	-	-	-	582	648	702	741
284/286 TC	1.875	4.625	9.000	**A6H**	-	-	-	-	-	658	712	751



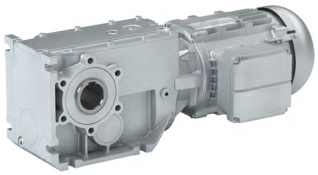
Dimensions of gearboxes with adapter for servo motors



Gearbox dimensions ▸ Basic dimensions 99

Versions with servo adapter

Motor			Adapter		Gearbox g500							
	Shaft			Size	-B110	-B240	-B450	-B600	-B820	-B1500	-B2700	-B4300
M	d	l	M		L	L	L	L	L	L	L	L
mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	mm	mm
75	11	23	FT75	**S2B**	231	291	298	318	343	-	-	-
	14	30		**S3B**	231	291	298	318	343	-	-	-
100	14	30	FF100	**S4C**	246	306	313	333	358	424	-	-
	19	40		**S7C**	246	306	313	333	358	424	-	-
	16	40		**S8C**	246	306	313	333	358	424	-	-
115	19	50	FF115	**S3D**	263	323	330	350	375	441	287	534
	24	50		**S4D**	263	323	330	350	375	441	287	534
130	19	50	FF130	**S2D**	263	323	330	350	375	441	287	534
	24	50		**S1D**	263	323	330	350	375	441	287	534
	24	60		**S2E**	-	323	330	350	375	441	287	534
	28	60		**S1E**	-	323	330	350	375	441	287	534
165	24	50	FF165	**S4E**	-	323	330	350	375	441	287	534
	32	58		**S6E**	-	323	330	350	375	441	287	534
	28	60		**S7E**	-	323	330	350	375	441	287	534



Radial forces and axial forces

Permissible radial force

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

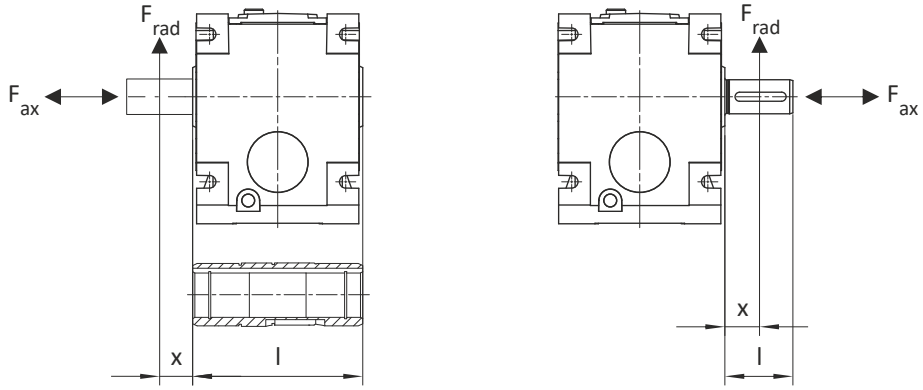
$F_{rad,\ perm} = f_w \times F_{rad,max}$

Permissible axial force

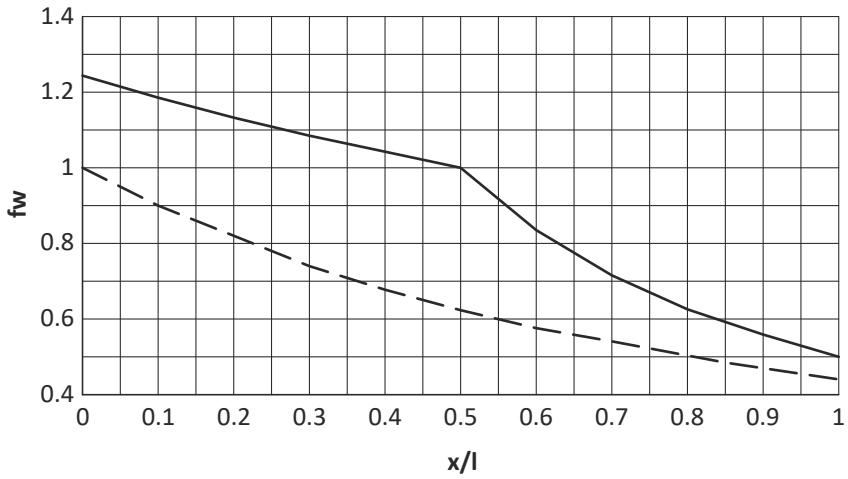
If there is no radial force, the maximum axial force is 50% of the value in the table $F_{rad,max}$

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

Application of forces

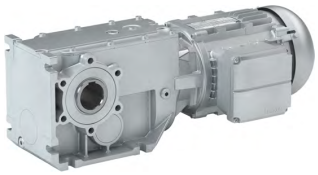


Additional load factor f_w on the drive shaft



Solid shaft

Hollow shaft



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

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

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

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

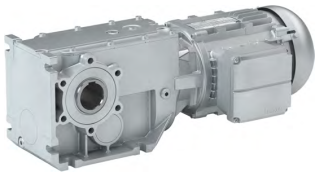
Getriebe	Output speed n_2 [rpm]									
	1000	630	400	250	160	100	63	40	25	16
	Max. Radial force $F_{rad,max}$ [rated]									
g500-B45	900	1200	2200	2500	2800	3000	3000	3000	3000	3000
g500-B110	1000	2200	2600	3000	3300	3600	3600	3600	3600	3600
g500-B240	1500	2300	3800	4500	5100	6200	7400	7800	7800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

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

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

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

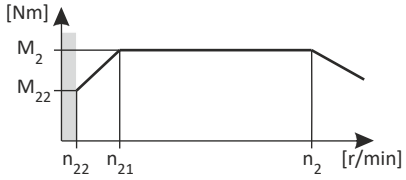
Getriebe	Output speed n_2 [rpm]									
	1000	630	400	250	160	100	63	40	25	16
	Max. Radial force $F_{rad,max}$ [rated]									
g500-B45	900	1200	1800	2100	2400	2800	3000	3000	3000	3000
g500-B110	1000	1800	2100	2500	2700	3000	3000	3000	3000	3000
g500-B240	2400	3600	5200	6000	6500	6500	6500	6500	6500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



Selection tables

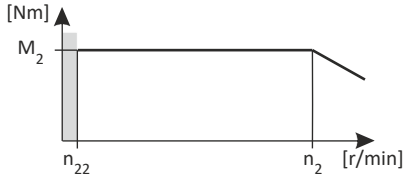
Torque characteristic with inverter operation

Self-ventilated geared motors



20 Hz to 50 or 87 Hz: Operation at constant torque.
Below 20 Hz (n_{21}): Derating without separate fan.
Below 5 Hz (n_{22}): Verification of the application by Lenze required.

Forced ventilated geared motors



5 Hz to 50 or 87 Hz: Operation at constant torque.
Below 5 Hz (n_{22}): Verification of the application by Lenze required.

Notes on the selection tables

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

The following legend shows the layout of the selection tables:

Example	Explanation
50 Hz: P_N = 0.12 kW	Rated motor power at a rated frequency of 50 Hz
87 Hz: P_N = 0.21 kW	Rated motor power at a frequency of 87 Hz

Inverter operation												Geared motor			
				Mains operation											
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		$kgcm^2$					kg
13.6	5.6	57.3	8.0	135	8.0	5.6	241	8.0	4.8	1.823	10.466	g500-B45	m550-H63/S4	2	7.4
12.2	6.3	51.5	9.0	122	9.0	5.0	217	9.0	4.3	1.786	11.640	g500-B45	m550-H63/S4	2	7.4
10.6	7.2	44.8	10.0	106	10.0	4.4	189	10.0	3.8	1.779	13.386	g500-B45	m550-H63/S4	2	7.4

Basic weigh t

Number of gear stages

Motor product name

Gearbox product name

Ratio

Moment of inertia without brake

Data at 87 Hz

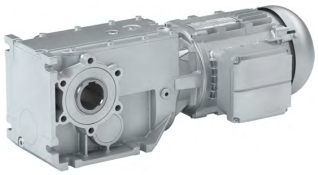
Data at 50 Hz
n_2 = Output speed - M_2 = Output torque

c = the load capacity of the gearbox is the ratio of the permissible rated torque of the gearbox to the rated torque of the motor (converted to the output shaft). **c** must always be greater than the application factor determined for the application. **k**

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

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

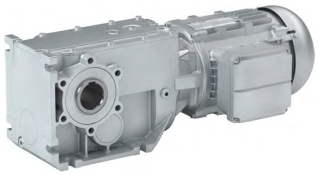
Data at 5 Hz
n_{22} = Output speed - M_{22} = Output torque (Externally cooled motors can deliver the torque M_2 over the entire adjustment range)



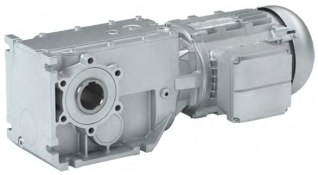
50 Hz: 0.12 kW

87 Hz: 0.21 kW

Inverter operation															
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
10.6	7.2	44.8	10.0	106	10.0	4.4	189	10.0	3.8	2.479	13.386	g500-B45	m550-H63/S4	2	7.4
9.4	8.1	39.7	12.0	93.6	12.0	3.9	167	11.0	3.3	2.459	15.111	g500-B45	m550-H63/S4	2	7.4
8.2	9.4	34.5	13.0	81.4	13.0	3.4	145	13.0	2.9	2.455	17.378	g500-B45	m550-H63/S4	2	7.4
7.3	10.4	31.0	15.0	73.1	15.0	3.0	130	15.0	2.6	2.438	19.365	g500-B45	m550-H63/S4	2	7.4
6.4	12.0	26.9	17.0	63.5	17.0	2.6	113	17.0	2.3	2.454	22.270	g500-B45	m550-H63/S4	2	7.4
5.7	13.5	24.0	19.0	56.5	19.0	2.3	101	19.0	2.3	2.425	25.051	g500-B45	m550-H63/S4	2	7.4
5.6	13.6	23.8	19.0	56.2	19.0	4.6	100	19.0	3.9	2.463	25.185	g500-B110	m550-H63/S4	2	9.0
4.9	15.5	20.8	22.0	49.1	22.0	2.0	87.6	22.0	2.0	2.423	28.808	g500-B45	m550-H63/S4	2	7.4
4.4	17.2	18.8	25.0	44.3	25.0	4.0	79.1	24.0	3.4	2.441	31.919	g500-B110	m550-H63/S4	2	9.0
4.4	17.6	18.4	25.0	43.4	25.0	1.8	77.5	25.0	1.8	2.416	32.593	g500-B45	m550-H63/S4	2	7.4
3.8	20.2	16.0	29.0	37.8	29.0	1.6	67.4	28.0	1.5	2.415	37.481	g500-B45	m550-H63/S4	2	7.4
3.8	20.1	16.0	29.0	37.8	29.0	3.7	67.5	28.0	3.2	2.472	37.400	g500-B110	m550-H63/S4	2	9.0
3.5	21.5	15.0	31.0	35.4	31.0	3.2	63.1	30.0	3.2	2.428	40.000	g500-B110	m550-H63/S4	2	9.0
3.4	22.7	14.2	32.0	33.5	32.0	1.4	59.8	32.0	1.4	2.410	42.222	g500-B45	m550-H63/S4	2	7.4
2.9	25.9	12.5	37.0	29.4	37.0	3.0	52.4	36.0	2.9	2.450	48.167	g500-B110	m550-H63/S4	2	9.0
2.9	26.2	12.4	37.0	29.1	37.0	1.2	52.0	37.0	1.2	2.409	48.556	g500-B45	m550-H63/S4	2	7.4
2.9	26.5	12.2	38.0	28.8	38.0	4.6	51.4	37.0	4.4	2.492	49.133	g500-B240	m550-H63/S4	2	13
2.7	28.4	11.4	41.0	26.9	41.0	1.7	47.9	40.0	1.7	2.417	52.698	g500-B110	m550-H63/S4	2	9.0
2.6	29.0	11.1	41.0	26.3	41.0	1.1	46.9	41.0	1.1	2.406	53.889	g500-B45	m550-H63/S4	2	7.4
2.4	32.1	10.1	46.0	23.7	46.0	4.0	42.3	45.0	3.9	2.467	59.630	g500-B240	m550-H63/S4	2	13
2.3	32.9	9.8	47.0	23.2	47.0	2.3	41.4	46.0	2.4	2.433	61.045	g500-B110	m550-H63/S4	2	9.0
2.3	33.4	9.7	48.0	22.8	48.0	0.9	40.7	47.0	1.0	2.406	61.972	g500-B45	m550-H63/S4	2	7.4
1.8	40.8	7.7	58.0	18.2	58.0	4.1	32.5	57.0	4.0	2.491	77.741	g500-B240	m550-H63/S4	3	14
1.9	41.1	7.9	59.0	18.6	59.0	3.1	33.1	57.0	3.1	2.443	76.213	g500-B240	m550-H63/S4	2	13
1.9	41.2	7.8	59.0	18.5	59.0	1.9	33.0	58.0	1.9	2.423	76.500	g500-B110	m550-H63/S4	2	9.0
1.4	52.2	6.0	75.0	14.2	75.0	3.2	25.4	73.0	3.1	2.461	99.437	g500-B240	m550-H63/S4	3	14
1.4	54.3	6.0	78.0	14.0	78.0	1.4	25.1	76.0	1.5	2.414	100.786	g500-B110	m550-H63/S4	2	9.0
1.2	59.9	5.3	86.0	12.4	86.0	1.3	22.1	84.0	1.3	2.491	114.074	g500-B110	m550-H63/S4	3	12
1.1	67.8	4.6	97.0	11.0	97.0	2.5	19.6	95.0	2.5	2.443	129.087	g500-B240	m550-H63/S4	3	14
1.0	75.3	4.2	108	9.9	108	1.0	17.6	105	1.0	2.490	143.407	g500-B110	m550-H63/S4	3	12
0.9	86.1	3.8	123	8.9	123	3.7	15.8	121	3.7	2.499	159.807	g500-B450	m550-H63/S4	3	17
0.9	86.9	3.6	124	8.6	124	1.9	15.3	122	2.0	2.430	165.426	g500-B240	m550-H63/S4	3	14
0.8	93.5	3.4	134	7.9	134	0.8	14.2	131	0.8	2.491	178.095	g500-B110	m550-H63/S4	3	12
0.7	105	3.1	149	7.3	149	3.0	13.0	146	3.1	2.472	193.948	g500-B450	m550-H63/S4	3	17
0.7	112	2.8	161	6.6	161	1.5	11.8	157	1.5	2.420	213.994	g500-B240	m550-H63/S4	3	14
0.6	134	2.4	191	5.7	191	2.4	10.2	187	2.4	2.446	247.882	g500-B450	m550-H63/S4	3	17
0.6	135	2.3	193	5.5	193	2.3	9.9	190	2.4	2.510	255.691	g500-B450	m550-H63/S4	4	20
0.5	146	2.2	209	5.1	209	1.2	9.1	205	1.2	2.414	278.422	g500-B240	m550-H63/S4	3	14
0.4	190	1.7	271	4.0	271	1.7	7.1	265	1.7	2.501	357.968	g500-B450	m550-H63/S4	4	20
0.4	189	1.7	271	3.9	271	0.9	7.0	265	0.9	2.403	360.683	g500-B240	m550-H63/S4	3	14
0.4	194	1.6	278	3.9	278	2.2	6.9	272	2.2	2.511	366.933	g500-B600	m550-H63/S4	4	38
0.3	242	1.3	345	3.1	345	1.3	5.5	339	1.3	2.497	456.591	g500-B450	m550-H63/S4	4	20
0.3	248	1.3	354	3.0	354	1.7	5.4	347	1.7	2.505	468.027	g500-B600	m550-H63/S4	4	38
0.3	296	1.1	423	2.5	423	1.1	4.5	415	1.1	2.495	559.324	g500-B450	m550-H63/S4	4	20
0.2	304	1.0	434	2.5	434	1.4	4.4	425	1.4	2.501	573.333	g500-B600	m550-H63/S4	4	38
0.2	307	1.0	438	2.4	438	1.9	4.4	429	1.9	2.502	579.133	g500-B820	m550-H63/S4	4	43
0.2	368	0.9	526	2.0	526	1.1	3.6	516	1.2	2.474	695.818	g500-B600	m550-H63/S4	4	38
0.2	385	0.8	551	1.9	551	0.8	3.5	540	0.8	2.492	728.009	g500-B450	m550-H63/S4	4	20
0.2	395	0.8	564	1.9	564	1.1	3.4	553	1.1	2.497	746.243	g500-B600	m550-H63/S4	4	38
0.2	399	0.8	570	1.9	570	1.4	3.3	559	1.5	2.498	753.793	g500-B820	m550-H63/S4	4	43



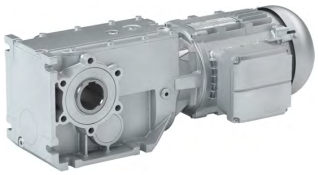
Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
0.2	416	0.8	594	1.8	594	4.6	3.2	582	4.6	2.568	785.074	g500-B2700	m550-H63/S4	4	114
0.2	483	0.7	689	1.6	689	2.2	2.8	676	2.2	2.483	911.329	g500-B1500	m550-H63/S4	4	73
0.2	491	0.6	702	1.5	702	0.9	2.7	688	0.9	2.495	928.254	g500-B600	m550-H63/S4	4	38
0.2	496	0.6	709	1.5	709	1.2	2.7	695	1.2	2.495	937.644	g500-B820	m550-H63/S4	4	43
0.1	505	0.6	721	1.5	721	3.7	2.6	707	3.8	2.549	953.304	g500-B2700	m550-H63/S4	4	114
0.1	591	0.5	845	1.3	845	1.8	2.3	828	1.8	2.478	1116.933	g500-B1500	m550-H63/S4	4	73
0.1	640	0.5	914	1.2	914	1.6	2.1	896	1.7	2.502	1208.778	g500-B1500	m550-H63/S4	4	73
0.1	642	0.5	918	1.2	918	0.9	2.1	900	0.9	2.493	1213.422	g500-B820	m550-H63/S4	4	43
0.1	650	0.5	928	1.2	928	4.6	2.1	910	4.7	2.532	1227.478	g500-B4300	m550-H63/S4	4	176
0.1	653	0.5	933	1.1	933	2.9	2.0	915	3.0	2.529	1233.688	g500-B2700	m550-H63/S4	4	114
0.1	777	0.4	1110	1.0	1110	1.4	1.7	1088	1.4	2.498	1467.017	g500-B1500	m550-H63/S4	4	73
0.1	943	0.3	1347	0.8	1347	1.1	1.4	1320	1.1	2.471	1780.425	g500-B1500	m550-H63/S4	4	73
0.1	957	0.3	1367	0.8	1367	3.1	1.4	1340	3.2	2.487	1807.968	g500-B4300	m550-H63/S4	4	176
0.1	962	0.3	1374	0.8	1374	2.0	1.4	1347	2.0	2.485	1817.115	g500-B2700	m550-H63/S4	4	114
0.1	1205	0.3	1721	0.6	1721	0.9	1.1	1687	0.9	2.446	2275.543	g500-B1500	m550-H63/S4	4	73
0.1	1223	0.3	1748	0.6	1748	2.5	1.1	1713	2.5	2.455	2310.746	g500-B4300	m550-H63/S4	4	176
0.1	1230	0.3	1756	0.6	1756	1.5	1.1	1722	1.6	2.454	2322.436	g500-B2700	m550-H63/S4	4	114
0.0	1546	0.2	2209	0.5	2209	2.0	0.9	2165	2.0	2.451	2920.887	g500-B4300	m550-H63/S4	4	176
0.0	1554	0.2	2220	0.5	2220	1.2	0.9	2176	1.2	2.450	2935.664	g500-B2700	m550-H63/S4	4	114



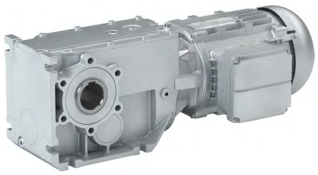
50 Hz: 0.18 kW

87 Hz: 0.33 kW

Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
25.9	4.4	111	6.0	259	6.0	4.8	463	6.0	3.9	3.207	5.411	g500-B45	m550-H63/M4	2	7.9
22.5	5.1	96.4	7.0	225	7.0	4.8	403	7.0	3.9	3.176	6.222	g500-B45	m550-H63/M4	2	7.9
19.7	5.8	84.4	8.0	197	8.0	4.6	352	9.0	3.8	3.096	7.111	g500-B45	m550-H63/M4	2	7.9
17.1	6.7	73.4	10.0	171	10.0	4.6	306	10.0	3.8	3.078	8.178	g500-B45	m550-H63/M4	2	7.9
15.4	7.4	65.9	11.0	154	11.0	4.2	275	11.0	3.5	3.034	9.101	g500-B45	m550-H63/M4	2	7.9
13.4	8.5	57.3	12.0	134	12.0	3.7	239	13.0	3.0	3.023	10.466	g500-B45	m550-H63/M4	2	7.9
12.0	9.5	51.5	14.0	120	14.0	3.3	215	14.0	2.7	2.986	11.640	g500-B45	m550-H63/M4	2	7.9
11.0	10.4	47.3	15.0	110	15.0	4.2	197	15.0	3.5	3.093	12.698	g500-B110	m550-H63/M4	2	9.5
10.5	10.9	44.8	16.0	105	16.0	2.9	187	16.0	2.4	2.979	13.386	g500-B45	m550-H63/M4	2	7.9
9.3	12.3	39.7	18.0	92.6	18.0	2.6	166	18.0	2.1	2.959	15.111	g500-B45	m550-H63/M4	2	7.9
8.1	14.2	34.5	20.0	80.6	20.0	2.2	144	21.0	1.8	2.955	17.378	g500-B45	m550-H63/M4	2	7.9
7.2	15.8	31.0	23.0	72.3	23.0	2.0	129	23.0	1.6	2.938	19.365	g500-B45	m550-H63/M4	2	7.9
7.2	16.0	30.7	23.0	71.6	23.0	3.6	128	23.0	3.0	2.995	19.556	g500-B110	m550-H63/M4	2	9.5
6.3	18.2	26.9	26.0	62.9	26.0	1.7	113	27.0	1.4	2.954	22.270	g500-B45	m550-H63/M4	2	7.9
5.6	20.4	24.0	29.0	55.9	29.0	1.5	100	30.0	1.4	2.925	25.051	g500-B45	m550-H63/M4	2	7.9
5.6	20.6	23.8	29.0	55.6	29.0	3.0	99.5	30.0	2.5	2.963	25.185	g500-B110	m550-H63/M4	2	9.5
4.9	23.5	20.8	34.0	48.6	34.0	1.3	87.0	34.0	1.3	2.923	28.808	g500-B45	m550-H63/M4	2	7.9
4.4	26.0	18.8	37.0	43.9	37.0	2.6	78.5	38.0	2.2	2.941	31.919	g500-B110	m550-H63/M4	2	9.5
4.3	26.6	18.4	38.0	43.0	38.0	1.2	76.9	39.0	1.1	2.916	32.593	g500-B45	m550-H63/M4	2	7.9
3.7	30.6	16.0	44.0	37.4	44.0	1.0	66.8	45.0	1.0	2.915	37.481	g500-B45	m550-H63/M4	2	7.9
3.7	30.5	16.0	44.0	37.4	44.0	2.4	67.0	45.0	2.0	2.972	37.400	g500-B110	m550-H63/M4	2	9.5
3.5	32.6	15.0	47.0	35.0	47.0	2.1	62.6	48.0	2.0	2.928	40.000	g500-B110	m550-H63/M4	2	9.5
3.3	34.5	14.2	49.0	33.2	49.0	0.9	59.3	51.0	0.9	2.910	42.222	g500-B45	m550-H63/M4	2	7.9
2.9	39.3	12.5	56.0	29.1	56.0	2.0	52.0	58.0	1.8	2.950	48.167	g500-B110	m550-H63/M4	2	9.5
2.8	40.1	12.2	57.0	28.5	57.0	3.0	51.0	59.0	2.8	2.992	49.133	g500-B240	m550-H63/M4	2	14
2.7	43.0	11.4	62.0	26.6	62.0	1.1	47.5	63.0	1.0	2.917	52.698	g500-B110	m550-H63/M4	2	9.5
2.3	48.7	10.1	70.0	23.5	70.0	2.6	42.0	71.0	2.5	2.967	59.630	g500-B240	m550-H63/M4	2	14
2.3	49.8	9.8	71.0	22.9	71.0	1.5	41.0	73.0	1.5	2.933	61.045	g500-B110	m550-H63/M4	2	9.5
1.8	62.2	7.9	89.0	18.4	89.0	2.0	32.9	91.0	2.0	2.943	76.213	g500-B240	m550-H63/M4	2	14
1.8	62.4	7.8	89.0	18.3	89.0	1.2	32.7	92.0	1.2	2.923	76.500	g500-B110	m550-H63/M4	2	9.5
1.8	61.8	7.7	89.0	18.0	89.0	2.7	32.2	91.0	2.5	2.991	77.741	g500-B240	m550-H63/M4	3	14
1.4	79.1	6.0	113	14.1	113	2.1	25.2	116	2.0	2.961	99.437	g500-B240	m550-H63/M4	3	14
1.4	82.2	6.0	118	13.9	118	0.9	24.9	121	0.9	2.914	100.786	g500-B110	m550-H63/M4	2	9.5
1.2	90.7	5.3	130	12.3	130	0.8	22.0	133	0.8	2.991	114.074	g500-B110	m550-H63/M4	3	12
1.1	103	4.6	147	10.8	147	1.6	19.4	151	1.6	2.943	129.087	g500-B240	m550-H63/M4	3	14
0.9	130	3.8	187	8.8	187	2.4	15.7	191	2.4	2.999	159.807	g500-B450	m550-H63/M4	3	17
0.8	132	3.6	188	8.5	188	1.3	15.1	193	1.2	2.930	165.426	g500-B240	m550-H63/M4	3	14
0.7	158	3.1	227	7.2	227	2.0	12.9	232	1.9	2.972	193.948	g500-B450	m550-H63/M4	3	17
0.7	170	2.8	244	6.5	244	1.0	11.7	250	1.0	2.920	213.994	g500-B240	m550-H63/M4	3	14
0.6	202	2.4	290	5.6	290	1.6	10.1	297	1.5	2.946	247.882	g500-B450	m550-H63/M4	3	17
0.5	205	2.3	294	5.5	294	1.5	9.8	301	1.5	3.010	255.691	g500-B450	m550-H63/M4	4	20
0.4	287	1.7	411	3.9	411	1.1	7.0	421	1.1	3.001	357.968	g500-B450	m550-H63/M4	4	20
0.4	294	1.6	421	3.8	421	1.4	6.8	432	1.4	3.011	366.933	g500-B600	m550-H63/M4	4	38
0.3	366	1.3	524	3.1	524	0.9	5.5	537	0.8	2.997	456.591	g500-B450	m550-H63/M4	4	20
0.3	375	1.3	538	3.0	538	1.1	5.4	551	1.1	3.005	468.027	g500-B600	m550-H63/M4	4	38
0.2	460	1.0	658	2.4	658	0.9	4.4	675	0.9	3.001	573.333	g500-B600	m550-H63/M4	4	38
0.2	465	1.0	665	2.4	665	1.2	4.3	681	1.2	3.002	579.133	g500-B820	m550-H63/M4	4	43
0.2	605	0.8	866	1.9	866	1.0	3.3	887	0.9	2.998	753.793	g500-B820	m550-H63/M4	4	43
0.2	630	0.8	902	1.8	902	3.0	3.2	924	2.9	3.068	785.074	g500-B2700	m550-H63/M4	4	115
0.2	731	0.7	1047	1.5	1047	1.4	2.7	1072	1.4	2.983	911.329	g500-B1500	m550-H63/M4	4	73



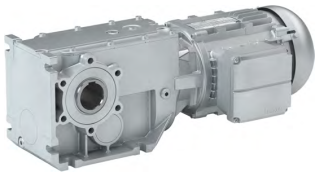
Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
0.1	765	0.6	1095	1.5	1095	2.5	2.6	1122	2.4	3.049	953.304	g500-B2700	m550-H63/M4	4	115
0.1	896	0.5	1283	1.3	1283	1.2	2.2	1314	1.1	2.978	1116.933	g500-B1500	m550-H63/M4	4	73
0.1	970	0.5	1388	1.2	1388	1.1	2.1	1422	1.1	3.002	1208.778	g500-B1500	m550-H63/M4	4	73
0.1	985	0.5	1410	1.1	1410	3.0	2.0	1444	2.9	3.032	1227.478	g500-B4300	m550-H63/M4	4	177
0.1	990	0.5	1417	1.1	1417	1.9	2.0	1451	1.9	3.029	1233.688	g500-B2700	m550-H63/M4	4	115
0.1	1177	0.4	1685	1.0	1685	0.9	1.7	1726	0.9	2.998	1467.017	g500-B1500	m550-H63/M4	4	73
0.1	1450	0.3	2076	0.8	2076	2.1	1.4	2127	2.0	2.987	1807.968	g500-B4300	m550-H63/M4	4	177
0.1	1457	0.3	2087	0.8	2087	1.3	1.4	2138	1.3	2.985	1817.115	g500-B2700	m550-H63/M4	4	115
0.1	1853	0.3	2654	0.6	2654	1.6	1.1	2719	1.6	2.955	2310.746	g500-B4300	m550-H63/M4	4	177
0.1	1863	0.3	2667	0.6	2667	1.0	1.1	2732	1.0	2.954	2322.436	g500-B2700	m550-H63/M4	4	115
0.0	2343	0.2	3355	0.5	3355	1.3	0.9	3436	1.3	2.951	2920.887	g500-B4300	m550-H63/M4	4	177
0.0	2355	0.2	3372	0.5	3372	0.8	0.9	3454	0.8	2.950	2935.664	g500-B2700	m550-H63/M4	4	115



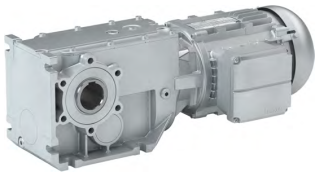
50 Hz: 0.25 kW

87 Hz: 0.45 kW

Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
25.7	6.2	111	8.8	257	8.8	4.4	462	8.8	3.7	4.007	5.411	g500-B45	m550-H63/L4	2	8.9
22.3	7.1	96.4	10.0	223	10.0	4.0	402	10.0	3.4	3.976	6.222	g500-B45	m550-H63/L4	2	8.9
19.5	8.1	84.4	12.0	196	12.0	3.7	352	12.0	3.1	3.896	7.111	g500-B45	m550-H63/L4	2	8.9
17.0	9.3	73.4	13.0	170	13.0	3.3	306	13.0	2.8	3.878	8.178	g500-B45	m550-H63/L4	2	8.9
15.3	10.4	65.9	15.0	153	15.0	3.0	275	15.0	2.6	3.834	9.101	g500-B45	m550-H63/L4	2	8.9
13.3	11.9	57.3	17.0	133	17.0	2.6	239	17.0	2.2	3.823	10.466	g500-B45	m550-H63/L4	2	8.9
11.9	13.3	51.5	19.0	119	19.0	2.4	215	19.0	2.0	3.786	11.640	g500-B45	m550-H63/L4	2	8.9
10.9	14.5	47.3	21.0	110	21.0	4.3	197	21.0	3.7	3.893	12.698	g500-B110	m550-H63/L4	2	10
10.4	15.3	44.8	22.0	104	22.0	2.1	187	22.0	1.7	3.779	13.386	g500-B45	m550-H63/L4	2	8.9
9.2	17.2	39.7	25.0	92.0	25.0	1.8	165	25.0	1.5	3.759	15.111	g500-B45	m550-H63/L4	2	8.9
8.9	17.7	38.6	25.0	89.4	25.0	3.6	161	25.0	3.1	3.843	15.556	g500-B110	m550-H63/L4	2	10
8.0	19.8	34.5	28.0	80.0	28.0	1.6	144	28.0	1.3	3.755	17.378	g500-B45	m550-H63/L4	2	8.9
7.2	22.1	31.0	32.0	71.8	32.0	1.4	129	32.0	1.2	3.738	19.365	g500-B45	m550-H63/L4	2	8.9
7.1	22.3	30.7	32.0	71.1	32.0	3.1	128	32.0	2.6	3.795	19.556	g500-B110	m550-H63/L4	2	10
6.2	25.4	26.9	36.0	62.4	36.0	1.2	112	36.0	1.0	3.754	22.270	g500-B45	m550-H63/L4	2	8.9
5.5	28.6	24.0	41.0	55.5	41.0	1.1	99.8	41.0	1.1	3.725	25.051	g500-B45	m550-H63/L4	2	8.9
5.5	28.7	23.8	41.0	55.2	41.0	2.6	99.3	41.0	2.2	3.763	25.185	g500-B110	m550-H63/L4	2	10
4.8	32.8	20.8	47.0	48.3	47.0	1.0	86.8	47.0	0.9	3.723	28.808	g500-B45	m550-H63/L4	2	8.9
4.6	34.8	19.7	50.0	45.5	50.0	4.4	81.9	50.0	3.7	3.900	30.522	g500-B240	m550-H63/L4	2	15
4.4	36.4	18.8	52.0	43.5	52.0	2.1	78.3	52.0	1.8	3.741	31.919	g500-B110	m550-H63/L4	2	10
4.3	37.2	18.4	53.0	42.6	53.0	0.8	76.7	53.0	0.8	3.716	32.593	g500-B45	m550-H63/L4	2	8.9
3.7	42.6	16.0	61.0	37.2	61.0	1.7	66.8	61.0	1.5	3.772	37.400	g500-B110	m550-H63/L4	2	10
3.7	43.3	15.8	62.0	36.6	62.0	3.7	65.8	62.0	3.1	3.846	37.967	g500-B240	m550-H63/L4	2	15
3.5	45.6	15.0	65.0	34.8	65.0	1.2	62.5	65.0	1.2	3.728	40.000	g500-B110	m550-H63/L4	2	10
3.4	46.0	14.9	66.0	34.5	66.0	4.4	62.0	66.0	4.2	4.002	40.330	g500-B450	m550-H63/L4	3	18
2.9	54.9	12.5	79.0	28.9	79.0	1.4	51.9	79.0	1.3	3.750	48.167	g500-B110	m550-H63/L4	2	10
2.8	56.0	12.2	80.0	28.3	80.0	3.0	50.9	80.0	2.9	3.792	49.133	g500-B240	m550-H63/L4	2	15
2.8	57.2	12.0	82.0	27.7	82.0	3.7	49.8	82.0	3.5	3.911	50.167	g500-B450	m550-H63/L4	3	18
2.3	68.0	10.1	97.0	23.3	97.0	2.5	41.9	97.0	2.4	3.767	59.630	g500-B240	m550-H63/L4	2	15
2.3	69.6	9.8	100	22.8	100	1.1	41.0	100	1.1	3.733	61.045	g500-B110	m550-H63/L4	2	10
2.2	71.0	9.6	102	22.3	102	4.4	40.2	102	4.2	4.171	62.262	g500-B450	m550-H63/L4	3	18
2.1	77.0	8.9	110	20.6	110	3.7	37.0	110	3.5	3.981	67.513	g500-B600	m550-H63/L4	3	36
1.8	86.4	7.7	124	17.9	124	1.9	32.2	124	1.9	3.791	77.741	g500-B240	m550-H63/L4	3	15
1.8	87.2	7.8	125	18.2	125	0.9	32.7	125	0.9	3.723	76.500	g500-B110	m550-H63/L4	2	10
1.8	86.9	7.9	125	18.2	125	1.4	32.8	125	1.4	3.743	76.213	g500-B240	m550-H63/L4	2	15
1.7	93.4	7.3	134	17.0	134	3.2	30.5	134	3.1	3.905	81.937	g500-B600	m550-H63/L4	3	36
1.4	111	6.0	158	14.0	158	1.5	25.1	158	1.5	3.761	99.437	g500-B240	m550-H63/L4	3	15
1.4	113	6.0	162	14.0	162	2.8	25.2	162	2.7	3.920	99.274	g500-B450	m550-H63/L4	3	18
1.1	141	4.9	202	11.3	202	2.2	20.2	202	2.2	3.859	123.487	g500-B450	m550-H63/L4	3	18
1.1	143	4.6	206	10.8	206	1.2	19.4	206	1.2	3.743	129.087	g500-B240	m550-H63/L4	3	15
0.9	182	3.8	261	8.7	261	1.7	15.6	261	1.7	3.799	159.807	g500-B450	m550-H63/L4	3	18
0.8	184	3.6	263	8.4	263	0.9	15.1	263	0.9	3.730	165.426	g500-B240	m550-H63/L4	3	15
0.8	187	3.7	268	8.5	268	2.2	15.3	268	2.2	3.924	163.810	g500-B600	m550-H63/L4	3	36
0.8	189	3.6	270	8.4	270	3.0	15.1	270	3.0	3.929	165.467	g500-B820	m550-H63/L4	3	41
0.7	221	3.1	317	7.2	317	1.4	12.9	317	1.4	3.772	193.948	g500-B450	m550-H63/L4	3	18
0.7	227	3.0	325	7.0	325	1.9	12.6	325	1.9	3.866	198.805	g500-B600	m550-H63/L4	3	36
0.7	229	3.0	328	6.9	328	2.5	12.4	328	2.5	3.869	200.816	g500-B820	m550-H63/L4	3	41
0.6	253	2.7	362	6.2	362	2.3	11.1	362	2.3	4.187	225.636	g500-B820	m550-H63/L4	4	44
0.6	255	2.6	366	6.1	366	1.6	11.0	366	1.6	3.950	227.943	g500-B600	m550-H63/L4	4	39
0.6	283	2.4	405	5.6	405	1.1	10.1	405	1.1	3.746	247.882	g500-B450	m550-H63/L4	3	18



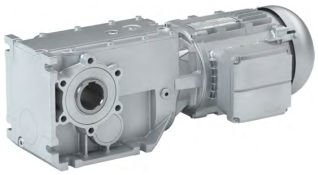
Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
0.6	286	2.4	411	5.5	411	1.5	9.9	411	1.5	3.808	251.299	g500-B600	m550-H63/L4	3	36
0.5	287	2.3	411	5.4	411	1.1	9.8	411	1.1	3.810	255.691	g500-B450	m550-H63/L4	4	21
0.5	289	2.4	415	5.5	415	2.0	9.8	415	2.0	3.810	253.841	g500-B820	m550-H63/L4	3	41
0.5	318	2.1	455	4.9	455	1.3	8.8	455	1.3	3.878	283.539	g500-B600	m550-H63/L4	4	39
0.5	321	2.1	460	4.9	460	1.8	8.7	460	1.8	3.880	286.408	g500-B820	m550-H63/L4	4	44
0.4	402	1.7	576	3.9	576	2.6	7.0	576	2.6	3.995	358.388	g500-B1500	m550-H63/L4	4	74
0.4	403	1.7	578	3.9	578	1.4	6.9	578	1.4	3.926	359.765	g500-B820	m550-H63/L4	4	44
0.4	409	1.6	587	3.8	587	3.7	6.8	587	3.7	4.110	365.227	g500-B2700	m550-H63/L4	4	116
0.4	411	1.6	589	3.8	589	1.0	6.8	589	1.0	3.811	366.933	g500-B600	m550-H63/L4	4	39
0.3	500	1.3	716	3.1	716	2.1	5.6	716	2.1	3.907	445.799	g500-B1500	m550-H63/L4	4	74
0.3	524	1.3	752	3.0	752	0.8	5.3	752	0.8	3.805	468.027	g500-B600	m550-H63/L4	4	39
0.3	525	1.3	752	3.0	752	1.1	5.3	752	1.1	3.915	468.265	g500-B820	m550-H63/L4	4	44
0.3	544	1.2	779	2.9	779	4.4	5.2	779	4.4	4.123	485.243	g500-B4300	m550-H63/L4	4	178
0.3	546	1.2	783	2.9	783	3.5	5.1	783	3.5	4.098	487.698	g500-B2700	m550-H63/L4	4	116
0.2	641	1.0	918	2.4	918	1.6	4.4	918	1.6	3.943	571.714	g500-B1500	m550-H63/L4	4	74
0.2	649	1.0	930	2.4	930	0.9	4.3	930	0.9	3.802	579.133	g500-B820	m550-H63/L4	4	44
0.2	676	1.0	969	2.3	969	3.7	4.1	969	3.7	3.990	603.594	g500-B4300	m550-H63/L4	4	178
0.2	680	1.0	974	2.3	974	2.8	4.1	974	2.8	3.973	606.648	g500-B2700	m550-H63/L4	4	116
0.2	797	0.8	1142	2.0	1142	1.3	3.5	1142	1.3	3.874	711.156	g500-B1500	m550-H63/L4	4	74
0.2	854	0.8	1225	1.8	1225	3.5	3.3	1225	3.5	4.006	762.524	g500-B4300	m550-H63/L4	4	178
0.2	880	0.8	1261	1.8	1261	2.1	3.2	1261	2.1	3.868	785.074	g500-B2700	m550-H63/L4	4	116
0.2	1021	0.7	1464	1.5	1464	1.0	2.7	1464	1.0	3.783	911.329	g500-B1500	m550-H63/L4	4	74
0.1	1063	0.6	1523	1.5	1523	2.8	2.6	1523	2.8	3.914	948.506	g500-B4300	m550-H63/L4	4	178
0.1	1068	0.6	1531	1.5	1531	1.8	2.6	1531	1.8	3.849	953.304	g500-B2700	m550-H63/L4	4	116
0.1	1252	0.5	1794	1.2	1794	0.8	2.2	1794	0.8	3.778	1116.933	g500-B1500	m550-H63/L4	4	74
0.1	1375	0.5	1971	1.1	1971	2.2	2.0	1971	2.2	3.832	1227.478	g500-B4300	m550-H63/L4	4	178
0.1	1382	0.5	1981	1.1	1981	1.4	2.0	1981	1.4	3.829	1233.688	g500-B2700	m550-H63/L4	4	116
0.1	2026	0.3	2904	0.8	2904	1.5	1.4	2904	1.5	3.787	1807.968	g500-B4300	m550-H63/L4	4	178
0.1	2036	0.3	2918	0.8	2918	0.9	1.4	2918	0.9	3.785	1817.115	g500-B2700	m550-H63/L4	4	116
0.1	2589	0.3	3711	0.6	3711	1.2	1.1	3711	1.2	3.755	2310.746	g500-B4300	m550-H63/L4	4	178
0.0	3273	0.2	4691	0.5	4691	0.9	0.9	4691	0.9	3.751	2920.887	g500-B4300	m550-H63/L4	4	178



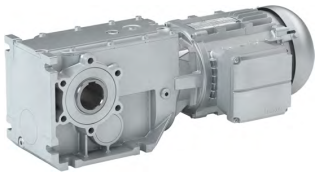
50 Hz: 0.37 kW

87 Hz: 0.66 kW

Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
27.6	8.6	116	12.0	275	12.0	4.9	489	12.0	4.1	9.893	5.185	g500-B110	m550-H71/M4	2	12
26.4	8.9	111	13.0	263	13.0	3.1	469	13.0	2.6	9.407	5.411	g500-B45	m550-H71/M4	2	11
23.0	10.3	96.4	15.0	229	15.0	2.8	407	15.0	2.3	9.376	6.222	g500-B45	m550-H71/M4	2	11
20.1	11.8	84.4	17.0	200	17.0	2.6	357	17.0	2.2	9.296	7.111	g500-B45	m550-H71/M4	2	11
20.1	11.8	84.4	17.0	200	17.0	4.6	357	17.0	3.8	9.578	7.111	g500-B110	m550-H71/M4	2	12
17.5	13.5	73.4	19.0	174	19.0	2.3	310	19.0	1.9	9.278	8.178	g500-B45	m550-H71/M4	2	11
15.7	15.0	65.9	21.0	157	21.0	2.1	279	22.0	1.8	9.234	9.101	g500-B45	m550-H71/M4	2	11
15.7	15.0	65.9	21.0	157	21.0	3.9	279	22.0	3.3	9.423	9.101	g500-B110	m550-H71/M4	2	12
13.7	17.3	57.3	25.0	136	25.0	1.8	242	25.0	1.5	9.223	10.466	g500-B45	m550-H71/M4	2	11
12.3	19.2	51.5	27.0	122	27.0	1.6	218	28.0	1.4	9.186	11.640	g500-B45	m550-H71/M4	2	11
11.3	21.0	47.3	30.0	112	30.0	3.0	200	30.0	2.5	9.293	12.698	g500-B110	m550-H71/M4	2	12
10.7	22.1	44.8	32.0	107	32.0	1.4	189	32.0	1.2	9.179	13.386	g500-B45	m550-H71/M4	2	11
9.5	24.8	40.0	35.0	94.9	35.0	4.9	169	36.0	4.1	9.686	15.008	g500-B240	m550-H71/M4	2	17
9.5	25.0	39.7	36.0	94.3	36.0	1.3	168	36.0	1.1	9.159	15.111	g500-B45	m550-H71/M4	2	11
9.2	25.7	38.6	37.0	91.6	37.0	2.5	163	37.0	2.1	9.243	15.556	g500-B110	m550-H71/M4	2	12
8.2	28.7	34.5	41.0	82.0	41.0	1.1	146	41.0	0.9	9.155	17.378	g500-B45	m550-H71/M4	2	11
7.5	31.6	31.3	45.0	74.4	45.0	4.6	132	45.0	3.8	9.520	19.143	g500-B240	m550-H71/M4	2	17
7.4	32.0	31.0	46.0	73.6	46.0	1.0	131	46.0	0.8	9.138	19.365	g500-B45	m550-H71/M4	2	11
7.3	32.3	30.7	46.0	72.9	46.0	2.2	130	46.0	1.8	9.195	19.556	g500-B110	m550-H71/M4	2	12
7.2	32.8	30.3	47.0	71.9	47.0	4.9	128	47.0	4.1	10.106	19.831	g500-B450	m550-H71/M4	3	20
6.4	36.8	26.9	52.0	64.0	52.0	0.9	114	53.0	0.7	9.154	22.270	g500-B45	m550-H71/M4	2	11
5.7	41.6	23.8	59.0	56.6	59.0	1.8	101	60.0	1.5	9.163	25.185	g500-B110	m550-H71/M4	2	12
5.7	41.8	23.7	60.0	56.3	60.0	4.6	100	60.0	3.8	9.778	25.294	g500-B450	m550-H71/M4	3	20
4.7	50.5	19.7	72.0	46.7	72.0	3.3	83.1	72.0	2.8	9.300	30.522	g500-B240	m550-H71/M4	2	17
4.5	52.8	18.8	75.0	44.6	75.0	1.4	79.4	76.0	1.2	9.141	31.919	g500-B110	m550-H71/M4	2	12
3.8	61.8	16.0	88.0	38.1	88.0	1.2	67.8	88.0	1.0	9.172	37.400	g500-B110	m550-H71/M4	2	12
3.8	62.8	15.8	89.0	37.5	89.0	2.7	66.8	90.0	2.2	9.246	37.967	g500-B240	m550-H71/M4	2	17
3.6	66.1	15.0	94.0	35.6	94.0	1.1	63.4	95.0	1.0	9.128	40.000	g500-B110	m550-H71/M4	2	12
3.5	66.7	14.9	95.0	35.3	95.0	3.8	62.9	95.0	3.6	9.402	40.330	g500-B450	m550-H71/M4	3	20
3.0	79.6	12.5	113	29.6	113	1.0	52.6	114	0.9	9.150	48.167	g500-B110	m550-H71/M4	2	12
2.9	81.2	12.2	116	29.0	116	2.1	51.6	116	2.0	9.192	49.133	g500-B240	m550-H71/M4	2	17
2.9	82.9	12.0	118	28.4	118	3.2	50.5	119	3.1	9.311	50.167	g500-B450	m550-H71/M4	3	20
2.4	98.6	10.1	140	23.9	140	1.7	42.5	141	1.6	9.167	59.630	g500-B240	m550-H71/M4	2	17
2.3	103	9.6	147	22.9	147	3.1	40.7	147	2.9	9.571	62.262	g500-B450	m550-H71/M4	3	20
2.1	112	8.9	159	21.1	159	3.2	37.5	160	3.1	9.381	67.513	g500-B600	m550-H71/M4	3	38
1.8	125	7.7	179	18.3	179	1.3	32.6	179	1.3	9.191	77.741	g500-B240	m550-H71/M4	3	17
1.9	126	7.9	180	18.7	180	1.1	33.3	180	1.1	9.143	76.213	g500-B240	m550-H71/M4	2	17
1.7	135	7.3	193	17.4	193	2.8	30.9	194	2.7	9.305	81.937	g500-B600	m550-H71/M4	3	38
1.4	160	6.0	228	14.3	228	1.1	25.5	229	1.0	9.161	99.437	g500-B240	m550-H71/M4	3	17
1.4	164	6.0	234	14.4	234	1.9	25.5	235	1.8	9.320	99.274	g500-B450	m550-H71/M4	3	20
1.2	204	4.9	291	11.5	291	1.6	20.5	292	1.5	9.259	123.487	g500-B450	m550-H71/M4	3	20
1.1	208	4.6	296	11.0	296	0.8	19.6	298	0.8	9.143	129.087	g500-B240	m550-H71/M4	3	17
0.9	264	3.8	376	8.9	376	1.2	15.9	378	1.2	9.199	159.807	g500-B450	m550-H71/M4	3	20
0.9	271	3.7	386	8.7	386	1.6	15.5	387	1.6	9.324	163.810	g500-B600	m550-H71/M4	3	38
0.9	274	3.6	390	8.6	390	2.1	15.3	391	2.1	9.329	165.467	g500-B820	m550-H71/M4	3	43
0.7	321	3.1	457	7.3	457	1.0	13.1	459	1.0	9.172	193.948	g500-B450	m550-H71/M4	3	20
0.7	329	3.0	468	7.2	468	1.3	12.8	470	1.3	9.266	198.805	g500-B600	m550-H71/M4	3	38
0.7	332	3.0	473	7.1	473	1.7	12.6	475	1.7	9.269	200.816	g500-B820	m550-H71/M4	3	43
0.6	367	2.7	522	6.3	522	1.6	11.2	525	1.6	9.587	225.636	g500-B820	m550-H71/M4	4	46
0.6	370	2.6	528	6.3	528	1.1	11.1	530	1.1	9.350	227.943	g500-B600	m550-H71/M4	4	41



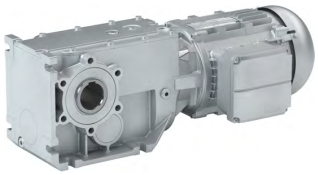
Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
0.6	415	2.4	592	5.7	592	1.0	10.1	594	1.0	9.208	251.299	g500-B600	m550-H71/M4	3	38
0.6	420	2.4	598	5.6	598	1.4	10.0	600	1.4	9.210	253.841	g500-B820	m550-H71/M4	3	43
0.5	461	2.1	657	5.0	657	0.9	8.9	659	0.9	9.278	283.539	g500-B600	m550-H71/M4	4	41
0.5	465	2.1	663	5.0	663	1.2	8.9	666	1.2	9.280	286.408	g500-B820	m550-H71/M4	4	46
0.5	473	2.1	674	4.9	674	4.0	8.7	677	4.0	10.296	291.191	g500-B2700	m550-H71/M4	4	118
0.5	494	2.0	705	4.7	705	4.6	8.3	708	4.6	10.086	304.333	g500-B4300	m550-H71/M4	4	180
0.4	582	1.7	830	4.0	830	1.8	7.1	833	1.8	9.395	358.388	g500-B1500	m550-H71/M4	4	76
0.4	585	1.7	833	4.0	833	1.0	7.0	836	1.0	9.326	359.765	g500-B820	m550-H71/M4	4	46
0.4	593	1.6	846	3.9	846	3.2	6.9	849	3.2	9.510	365.227	g500-B2700	m550-H71/M4	4	118
0.4	600	1.6	856	3.9	856	4.6	6.9	859	4.6	9.938	369.548	g500-B4300	m550-H71/M4	4	180
0.3	724	1.3	1032	3.2	1032	1.5	5.7	1036	1.5	9.307	445.799	g500-B1500	m550-H71/M4	4	76
0.3	788	1.2	1124	2.9	1124	3.8	5.2	1128	3.8	9.523	485.243	g500-B4300	m550-H71/M4	4	180
0.3	792	1.2	1129	2.9	1129	2.4	5.2	1134	2.4	9.498	487.698	g500-B2700	m550-H71/M4	4	118
0.3	929	1.0	1324	2.5	1324	1.1	4.4	1329	1.1	9.343	571.714	g500-B1500	m550-H71/M4	4	76
0.2	981	1.0	1398	2.4	1398	3.1	4.2	1403	3.1	9.390	603.594	g500-B4300	m550-H71/M4	4	180
0.2	986	1.0	1405	2.3	1405	1.9	4.2	1410	1.9	9.373	606.648	g500-B2700	m550-H71/M4	4	118
0.2	1155	0.8	1647	2.0	1647	0.9	3.6	1653	0.9	9.274	711.156	g500-B1500	m550-H71/M4	4	76
0.2	1239	0.8	1766	1.9	1766	2.4	3.3	1773	2.4	9.406	762.524	g500-B4300	m550-H71/M4	4	180
0.2	1276	0.8	1818	1.8	1818	1.5	3.2	1825	1.5	9.268	785.074	g500-B2700	m550-H71/M4	4	118
0.2	1541	0.6	2196	1.5	2196	2.0	2.7	2205	2.0	9.314	948.506	g500-B4300	m550-H71/M4	4	180
0.2	1549	0.6	2207	1.5	2207	1.2	2.7	2216	1.2	9.249	953.304	g500-B2700	m550-H71/M4	4	118
0.1	1994	0.5	2842	1.2	2842	1.5	2.1	2854	1.5	9.232	1227.478	g500-B4300	m550-H71/M4	4	180
0.1	2004	0.5	2857	1.2	2857	1.0	2.1	2868	0.9	9.229	1233.688	g500-B2700	m550-H71/M4	4	118
0.1	2937	0.3	4187	0.8	4187	1.0	1.4	4203	1.0	9.187	1807.968	g500-B4300	m550-H71/M4	4	180
0.1	3754	0.3	5351	0.6	5351	0.8	1.1	5372	0.8	9.155	2310.746	g500-B4300	m550-H71/M4	4	180



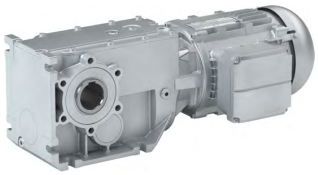
50 Hz: 0.55 kW

87 Hz: 1 kW

Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
27.6	12.7	116	18.0	276	18.0	3.8	490	19.0	3.1	14.093	5.185	g500-B110	m550-H71/L4	2	14
26.4	13.2	111	19.0	264	19.0	2.1	469	19.0	1.7	13.607	5.411	g500-B45	m550-H71/L4	2	12
23.0	15.2	96.4	22.0	230	22.0	1.9	408	22.0	1.5	13.576	6.222	g500-B45	m550-H71/L4	2	12
22.9	15.3	95.9	22.0	229	22.0	4.6	406	22.0	3.8	14.451	6.257	g500-B240	m550-H71/L4	2	18
20.1	17.4	84.4	25.0	201	25.0	1.7	357	25.0	1.4	13.496	7.111	g500-B45	m550-H71/L4	2	12
20.1	17.4	84.4	25.0	201	25.0	3.1	357	25.0	2.5	13.778	7.111	g500-B110	m550-H71/L4	2	14
17.5	20.0	73.4	29.0	175	29.0	1.5	311	29.0	1.3	13.478	8.178	g500-B45	m550-H71/L4	2	12
15.7	22.2	65.9	32.0	157	32.0	1.4	279	33.0	1.2	13.434	9.101	g500-B45	m550-H71/L4	2	12
15.7	22.2	65.9	32.0	157	32.0	2.7	279	33.0	2.2	13.623	9.101	g500-B110	m550-H71/L4	2	14
13.7	25.6	57.3	36.0	137	36.0	1.2	243	37.0	1.0	13.423	10.466	g500-B45	m550-H71/L4	2	12
12.3	28.4	51.5	41.0	123	41.0	1.1	218	42.0	0.9	13.386	11.640	g500-B45	m550-H71/L4	2	12
11.8	29.6	49.4	42.0	118	42.0	4.6	209	43.0	3.8	15.820	12.143	g500-B820	m550-H71/L4	3	44
11.3	31.0	47.3	44.0	113	44.0	2.0	200	45.0	1.7	13.493	12.698	g500-B110	m550-H71/L4	2	14
10.7	32.7	44.8	47.0	107	47.0	1.0	190	48.0	0.8	13.379	13.386	g500-B45	m550-H71/L4	2	12
10.4	33.5	43.7	48.0	104	48.0	4.5	185	49.0	3.7	13.977	13.719	g500-B240	m550-H71/L4	2	18
9.5	36.6	40.0	52.0	95.3	52.0	4.3	169	54.0	3.5	13.886	15.008	g500-B240	m550-H71/L4	2	18
9.5	36.9	39.7	53.0	94.6	53.0	0.9	168	54.0	0.7	13.359	15.111	g500-B45	m550-H71/L4	2	12
9.2	38.0	38.6	54.0	91.9	54.0	1.7	163	56.0	1.4	13.443	15.556	g500-B110	m550-H71/L4	2	14
7.5	46.7	31.3	67.0	74.7	67.0	3.6	133	68.0	2.9	13.720	19.143	g500-B240	m550-H71/L4	2	18
7.3	47.7	30.7	68.0	73.1	68.0	1.5	130	70.0	1.2	13.395	19.556	g500-B110	m550-H71/L4	2	14
7.2	48.4	30.3	69.0	72.1	69.0	4.6	128	71.0	3.8	14.306	19.831	g500-B450	m550-H71/L4	3	21
6.9	50.9	28.8	73.0	68.6	73.0	4.6	122	74.0	3.8	15.411	20.857	g500-B820	m550-H71/L4	3	44
6.1	57.3	25.6	82.0	61.0	82.0	2.9	108	84.0	2.4	13.622	23.450	g500-B240	m550-H71/L4	2	18
5.7	61.5	23.8	88.0	56.8	88.0	1.2	101	90.0	1.0	13.363	25.185	g500-B110	m550-H71/L4	2	14
5.7	61.7	23.7	88.0	56.5	88.0	4.3	100	90.0	3.5	13.978	25.294	g500-B450	m550-H71/L4	3	21
4.7	74.5	19.7	106	46.9	106	2.3	83.2	109	1.9	13.500	30.522	g500-B240	m550-H71/L4	2	18
4.6	75.6	19.4	108	46.2	108	3.8	82.0	111	3.1	13.794	30.985	g500-B450	m550-H71/L4	3	21
3.8	91.3	16.0	130	38.2	130	0.8	67.9	134	0.7	13.372	37.400	g500-B110	m550-H71/L4	2	14
3.8	92.7	15.8	132	37.7	132	1.8	66.9	136	1.5	13.446	37.967	g500-B240	m550-H71/L4	2	18
3.5	98.5	14.9	141	35.5	141	3.2	63.0	144	3.0	13.602	40.330	g500-B450	m550-H71/L4	3	21
3.4	102	14.3	146	34.1	146	3.8	60.6	150	3.6	13.976	41.940	g500-B600	m550-H71/L4	3	39
2.9	120	12.2	171	29.1	171	1.4	51.7	176	1.3	13.392	49.133	g500-B240	m550-H71/L4	2	18
2.9	123	12.0	175	28.5	175	2.6	50.6	179	2.4	13.511	50.167	g500-B450	m550-H71/L4	3	21
2.4	146	10.1	208	24.0	208	1.2	42.6	213	1.1	13.367	59.630	g500-B240	m550-H71/L4	2	18
2.3	152	9.6	217	23.0	217	2.1	40.8	222	1.9	13.771	62.262	g500-B450	m550-H71/L4	3	21
2.2	156	9.4	222	22.4	222	2.7	39.8	228	2.5	14.379	63.822	g500-B600	m550-H71/L4	3	39
2.2	157	9.3	225	22.2	225	3.7	39.4	230	3.4	14.412	64.468	g500-B820	m550-H71/L4	3	44
2.1	165	8.9	235	21.2	235	2.6	37.6	241	2.4	13.581	67.513	g500-B600	m550-H71/L4	3	39
1.9	183	8.0	261	19.1	261	3.2	33.9	268	3.0	14.206	74.963	g500-B1500	m550-H71/L4	3	75
1.8	185	7.7	264	18.4	264	0.9	32.7	271	0.9	13.391	77.741	g500-B240	m550-H71/L4	3	18
1.9	186	7.9	266	18.7	266	1.7	33.3	272	1.6	13.656	76.271	g500-B450	m550-H71/L4	3	21
1.7	200	7.3	286	17.5	286	2.1	31.0	293	2.0	13.505	81.937	g500-B600	m550-H71/L4	3	39
1.6	222	6.6	317	15.7	317	2.8	27.9	325	2.6	13.958	90.978	g500-B1500	m550-H71/L4	3	75
1.4	242	6.0	346	14.4	346	1.3	25.6	355	1.2	13.520	99.274	g500-B450	m550-H71/L4	3	21
1.4	248	5.9	355	14.1	355	1.7	25.0	363	1.6	13.829	101.760	g500-B600	m550-H71/L4	3	39
1.4	251	5.8	358	13.9	358	2.3	24.7	367	2.1	13.789	102.790	g500-B820	m550-H71/L4	3	44
1.2	302	4.9	430	11.6	430	1.1	20.6	441	1.0	13.459	123.487	g500-B450	m550-H71/L4	3	21
1.1	309	4.7	441	11.3	441	1.4	20.1	452	1.3	13.656	126.580	g500-B600	m550-H71/L4	3	39
1.1	312	4.7	446	11.2	446	1.8	19.9	457	1.8	13.665	127.861	g500-B820	m550-H71/L4	3	44
0.9	390	3.8	557	8.9	557	0.8	15.9	571	0.8	13.399	159.807	g500-B450	m550-H71/L4	3	21



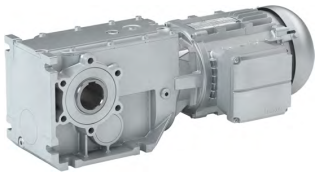
Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
0.9	400	3.7	571	8.7	571	1.1	15.5	585	1.0	13.524	163.810	g500-B600	m550-H71/L4	3	39
0.9	402	3.6	575	8.7	575	2.6	15.4	589	2.6	14.000	164.833	g500-B1500	m550-H71/L4	3	75
0.9	404	3.6	577	8.6	577	1.4	15.4	591	1.4	13.529	165.467	g500-B820	m550-H71/L4	3	44
0.7	485	3.0	693	7.2	693	0.9	12.8	710	0.9	13.466	198.805	g500-B600	m550-H71/L4	3	39
0.7	488	3.0	697	7.1	697	2.2	12.7	714	2.1	13.819	200.048	g500-B1500	m550-H71/L4	3	75
0.7	490	3.0	700	7.1	700	1.2	12.6	717	1.1	13.469	200.816	g500-B820	m550-H71/L4	3	44
0.6	539	2.7	769	6.4	769	3.8	11.3	788	3.7	14.431	224.446	g500-B4300	m550-H71/L4	4	181
0.6	539	2.7	770	6.4	770	2.0	11.3	789	1.9	13.835	224.773	g500-B1500	m550-H71/L4	4	78
0.6	541	2.7	773	6.3	773	1.1	11.3	792	1.0	13.787	225.636	g500-B820	m550-H71/L4	4	47
0.6	541	2.7	773	6.3	773	3.5	11.3	792	3.4	14.314	225.581	g500-B2700	m550-H71/L4	4	119
0.6	617	2.4	882	5.7	882	1.7	10.0	903	1.7	13.635	252.869	g500-B1500	m550-H71/L4	3	75
0.6	620	2.4	885	5.6	885	0.9	10.0	907	0.9	13.410	253.841	g500-B820	m550-H71/L4	3	44
0.5	661	2.2	944	5.2	944	1.6	9.2	967	1.6	13.782	275.347	g500-B1500	m550-H71/L4	4	78
0.5	687	2.1	981	5.0	981	0.8	8.9	1006	0.8	13.480	286.408	g500-B820	m550-H71/L4	4	47
0.5	699	2.1	998	4.9	998	2.7	8.7	1022	2.6	14.496	291.191	g500-B2700	m550-H71/L4	4	119
0.5	730	2.0	1043	4.7	1043	4.1	8.3	1068	4.0	14.286	304.333	g500-B4300	m550-H71/L4	4	181
0.4	860	1.7	1228	4.0	1228	1.2	7.1	1258	1.2	13.595	358.388	g500-B1500	m550-H71/L4	4	78
0.4	876	1.6	1252	3.9	1252	2.2	7.0	1282	2.1	13.710	365.227	g500-B2700	m550-H71/L4	4	119
0.4	887	1.6	1266	3.9	1266	3.4	6.9	1297	3.3	14.138	369.548	g500-B4300	m550-H71/L4	4	181
0.3	1070	1.3	1528	3.2	1528	1.0	5.7	1565	1.0	13.507	445.799	g500-B1500	m550-H71/L4	4	78
0.3	1086	1.3	1551	3.2	1551	2.8	5.6	1589	2.7	13.900	452.696	g500-B4300	m550-H71/L4	4	181
0.3	1092	1.3	1559	3.1	1559	1.7	5.6	1597	1.7	13.871	454.986	g500-B2700	m550-H71/L4	4	119
0.3	1164	1.2	1663	2.9	1663	2.6	5.2	1704	2.5	13.723	485.243	g500-B4300	m550-H71/L4	4	181
0.3	1170	1.2	1671	2.9	1671	1.6	5.2	1712	1.6	13.698	487.698	g500-B2700	m550-H71/L4	4	119
0.2	1448	1.0	2068	2.4	2068	2.1	4.2	2119	2.0	13.590	603.594	g500-B4300	m550-H71/L4	4	181
0.2	1456	1.0	2079	2.4	2079	1.3	4.2	2130	1.3	13.573	606.648	g500-B2700	m550-H71/L4	4	119
0.2	1830	0.8	2613	1.9	2613	1.7	3.3	2677	1.6	13.606	762.524	g500-B4300	m550-H71/L4	4	181
0.2	1884	0.8	2690	1.8	2690	1.0	3.2	2756	1.0	13.468	785.074	g500-B2700	m550-H71/L4	4	119
0.2	2276	0.6	3250	1.5	3250	1.3	2.7	3330	1.3	13.514	948.506	g500-B4300	m550-H71/L4	4	181
0.2	2288	0.6	3267	1.5	3267	0.8	2.7	3347	0.8	13.449	953.304	g500-B2700	m550-H71/L4	4	119
0.1	2946	0.5	4206	1.2	4206	1.0	2.1	4309	1.0	13.432	1227.478	g500-B4300	m550-H71/L4	4	181



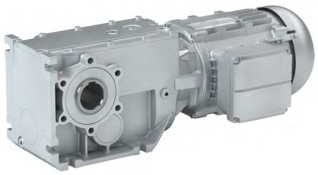
50 Hz: 0.75 kW

87 Hz: 1.35 kW

Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
41.0	11.7	168	17.0	408	17.0	4.9	720	17.0	4.0	30.172	3.565	g500-B240	m550-P80/M4	2	21
29.2	16.4	120	23.0	291	23.0	4.9	513	24.0	4.0	31.560	5.002	g500-B450	m550-P80/M4	3	24
28.2	17.0	116	24.0	281	24.0	2.9	495	25.0	2.3	27.993	5.185	g500-B110	m550-P80/M4	2	17
23.3	20.5	95.9	29.0	233	29.0	4.3	410	30.0	3.5	28.351	6.257	g500-B240	m550-P80/M4	2	21
20.5	23.3	84.4	33.0	205	33.0	2.3	361	34.0	1.9	27.678	7.111	g500-B110	m550-P80/M4	2	17
18.7	25.6	76.8	37.0	186	37.0	4.9	328	37.0	4.0	28.713	7.817	g500-B240	m550-P80/M4	2	21
16.0	29.8	65.9	43.0	160	43.0	2.0	282	43.0	1.6	27.523	9.101	g500-B110	m550-P80/M4	2	17
14.1	33.8	58.1	48.0	141	48.0	4.9	248	49.0	4.0	30.260	10.328	g500-B450	m550-P80/M4	3	24
12.0	39.8	49.4	57.0	120	57.0	4.3	211	58.0	3.5	29.720	12.143	g500-B820	m550-P80/M4	3	48
11.5	41.6	47.3	59.0	115	59.0	1.5	202	61.0	1.2	27.393	12.698	g500-B110	m550-P80/M4	2	17
10.6	45.0	43.7	64.0	106	64.0	3.4	187	66.0	2.8	27.877	13.719	g500-B240	m550-P80/M4	2	21
9.7	49.2	40.0	70.0	96.9	70.0	3.2	171	72.0	2.6	27.786	15.008	g500-B240	m550-P80/M4	2	21
9.4	51.0	38.6	73.0	93.5	73.0	1.3	165	74.0	1.0	27.343	15.556	g500-B110	m550-P80/M4	2	17
7.6	62.7	31.3	89.0	76.0	89.0	2.7	134	91.0	2.2	27.620	19.143	g500-B240	m550-P80/M4	2	21
7.5	64.1	30.7	91.0	74.4	91.0	1.1	131	93.0	0.9	27.295	19.556	g500-B110	m550-P80/M4	2	17
7.4	65.0	30.3	93.0	73.4	93.0	4.3	129	95.0	3.5	28.206	19.831	g500-B450	m550-P80/M4	3	24
7.0	68.3	28.8	97.0	69.8	97.0	4.3	123	100	3.5	29.311	20.857	g500-B820	m550-P80/M4	3	48
6.2	76.9	25.6	110	62.0	110	2.2	109	112	1.8	27.522	23.450	g500-B240	m550-P80/M4	2	21
5.8	82.5	23.8	118	57.8	118	0.9	102	120	0.8	27.263	25.185	g500-B110	m550-P80/M4	2	17
5.8	82.9	23.7	118	57.5	118	3.8	101	121	3.1	27.878	25.294	g500-B450	m550-P80/M4	3	24
4.8	100	19.7	143	47.7	143	1.7	84.0	146	1.4	27.400	30.522	g500-B240	m550-P80/M4	2	21
4.7	102	19.4	145	47.0	145	3.1	82.8	148	2.5	27.694	30.985	g500-B450	m550-P80/M4	3	24
3.8	124	15.8	177	38.3	177	1.4	67.6	181	1.1	27.346	37.967	g500-B240	m550-P80/M4	2	21
3.6	132	14.9	188	36.1	188	2.4	63.6	193	2.2	27.502	40.330	g500-B450	m550-P80/M4	3	24
3.5	137	14.3	196	34.7	196	3.1	61.2	200	2.8	27.876	41.940	g500-B600	m550-P80/M4	3	43
3.0	161	12.2	230	29.6	230	1.1	52.2	235	1.0	27.292	49.133	g500-B240	m550-P80/M4	2	21
2.9	164	12.0	234	29.0	234	1.9	51.1	240	1.8	27.411	50.167	g500-B450	m550-P80/M4	3	24
2.4	195	10.1	279	24.4	279	0.9	43.0	285	0.8	27.267	59.630	g500-B240	m550-P80/M4	2	21
2.3	204	9.6	291	23.4	291	1.6	41.2	297	1.4	27.671	62.262	g500-B450	m550-P80/M4	3	24
2.3	209	9.4	298	22.8	298	2.0	40.2	305	1.9	28.279	63.822	g500-B600	m550-P80/M4	3	43
2.3	211	9.3	301	22.6	301	2.7	39.8	308	2.5	28.312	64.468	g500-B820	m550-P80/M4	3	48
2.2	221	8.9	316	21.6	316	1.9	38.0	323	1.8	27.481	67.513	g500-B600	m550-P80/M4	3	43
1.9	246	8.0	350	19.4	350	3.0	34.2	358	2.8	28.106	74.963	g500-B1500	m550-P80/M4	3	78
1.9	250	7.9	356	19.1	356	1.3	33.6	364	1.2	27.556	76.271	g500-B450	m550-P80/M4	3	24
1.8	269	7.3	383	17.8	383	1.6	31.3	391	1.5	27.405	81.937	g500-B600	m550-P80/M4	3	43
1.6	298	6.6	425	16.0	425	2.6	28.2	435	2.4	27.858	90.978	g500-B1500	m550-P80/M4	3	78
1.5	325	6.0	464	14.7	464	1.0	25.8	474	0.9	27.420	99.274	g500-B450	m550-P80/M4	3	24
1.4	334	5.9	476	14.3	476	1.3	25.2	486	1.2	27.729	101.760	g500-B600	m550-P80/M4	3	43
1.4	337	5.8	480	14.2	480	1.7	25.0	491	1.6	27.689	102.790	g500-B820	m550-P80/M4	3	48
1.2	415	4.7	592	11.5	592	1.0	20.3	605	1.0	27.556	126.580	g500-B600	m550-P80/M4	3	43
1.1	419	4.7	598	11.4	598	1.4	20.1	611	1.3	27.565	127.861	g500-B820	m550-P80/M4	3	48
0.9	540	3.6	770	8.8	770	2.0	15.6	788	1.9	27.900	164.833	g500-B1500	m550-P80/M4	3	78
0.9	542	3.6	773	8.8	773	1.1	15.5	791	1.0	27.429	165.467	g500-B820	m550-P80/M4	3	48
0.7	656	3.0	935	7.3	935	1.6	12.8	956	1.6	27.719	200.048	g500-B1500	m550-P80/M4	3	78
0.7	658	3.0	938	7.2	938	0.9	12.8	959	0.9	27.369	200.816	g500-B820	m550-P80/M4	3	48
0.7	723	2.7	1031	6.5	1031	3.6	11.4	1054	3.5	28.331	224.446	g500-B4300	m550-P80/M4	4	184
0.6	724	2.7	1033	6.5	1033	1.5	11.4	1056	1.4	27.735	224.773	g500-B1500	m550-P80/M4	4	81
0.6	727	2.7	1036	6.5	1036	2.6	11.4	1059	2.6	28.214	225.581	g500-B2700	m550-P80/M4	4	122
0.6	829	2.4	1182	5.8	1182	1.3	10.1	1208	1.2	27.535	252.869	g500-B1500	m550-P80/M4	3	78
0.5	887	2.2	1265	5.3	1265	1.2	9.3	1293	1.2	27.682	275.347	g500-B1500	m550-P80/M4	4	81



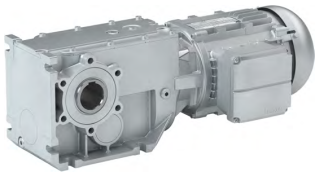
Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
0.5	938	2.1	1338	5.0	1338	2.0	8.8	1368	2.0	28.396	291.191	g500-B2700	m550-P80/M4	4	122
0.5	980	2.0	1398	4.8	1398	3.1	8.4	1429	3.0	28.186	304.333	g500-B4300	m550-P80/M4	4	184
0.4	1155	1.7	1646	4.1	1646	0.9	7.2	1683	0.9	27.495	358.388	g500-B1500	m550-P80/M4	4	81
0.4	1177	1.6	1678	4.0	1678	1.6	7.0	1715	1.6	27.610	365.227	g500-B2700	m550-P80/M4	4	122
0.4	1190	1.6	1698	3.9	1698	2.5	6.9	1736	2.5	28.038	369.548	g500-B4300	m550-P80/M4	4	184
0.3	1458	1.3	2080	3.2	2080	2.1	5.7	2126	2.0	27.800	452.696	g500-B4300	m550-P80/M4	4	184
0.3	1466	1.3	2090	3.2	2090	1.3	5.6	2137	1.3	27.771	454.986	g500-B2700	m550-P80/M4	4	122
0.3	1563	1.2	2229	3.0	2229	1.9	5.3	2279	1.9	27.623	485.243	g500-B4300	m550-P80/M4	4	184
0.3	1571	1.2	2240	3.0	2240	1.2	5.3	2291	1.2	27.598	487.698	g500-B2700	m550-P80/M4	4	122
0.2	1944	1.0	2773	2.4	2773	1.6	4.2	2835	1.5	27.490	603.594	g500-B4300	m550-P80/M4	4	184
0.2	1954	1.0	2787	2.4	2787	1.0	4.2	2849	1.0	27.473	606.648	g500-B2700	m550-P80/M4	4	122
0.2	2456	0.8	3503	1.9	3503	1.2	3.4	3581	1.2	27.506	762.524	g500-B4300	m550-P80/M4	4	184
0.2	3055	0.6	4357	1.5	4357	1.0	2.7	4455	1.0	27.414	948.506	g500-B4300	m550-P80/M4	4	184



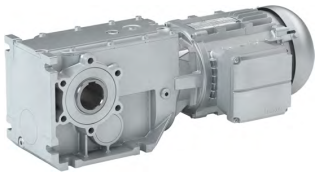
50 Hz: 1.1 kW

87 Hz: 1.9 kW

Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
30.1	23.3	123	33.0	300	33.0	4.4	527	33.0	3.8	55.544	4.889	g500-B240	m550-P90/M4	2	26
28.4	24.7	116	35.0	283	35.0	2.0	497	35.0	1.7	54.593	5.185	g500-B110	m550-P90/M4	2	22
23.5	29.8	95.9	43.0	234	43.0	3.7	412	42.0	3.1	54.951	6.257	g500-B240	m550-P90/M4	2	26
20.7	33.9	84.4	48.0	206	48.0	1.6	362	48.0	1.4	54.278	7.111	g500-B110	m550-P90/M4	2	22
18.8	37.3	76.8	53.0	187	53.0	3.5	329	52.0	3.0	55.313	7.817	g500-B240	m550-P90/M4	2	26
16.2	43.4	65.9	62.0	161	62.0	1.4	283	61.0	1.2	54.123	9.101	g500-B110	m550-P90/M4	2	22
13.7	51.1	56.0	73.0	137	73.0	2.8	240	72.0	2.4	54.768	10.720	g500-B240	m550-P90/M4	2	26
11.6	60.6	47.3	86.0	115	86.0	1.0	203	85.0	0.9	53.993	12.698	g500-B110	m550-P90/M4	2	22
10.7	65.4	43.7	93.0	107	93.0	2.3	188	92.0	2.0	54.477	13.719	g500-B240	m550-P90/M4	2	26
10.4	67.5	42.4	96.0	103	96.0	4.4	182	95.0	3.7	55.591	14.165	g500-B450	m550-P90/M4	3	30
9.8	71.6	40.0	102	97.6	102	2.2	172	101	1.9	54.386	15.008	g500-B240	m550-P90/M4	2	26
9.4	74.2	38.6	106	94.2	106	0.9	166	104	0.7	53.943	15.556	g500-B110	m550-P90/M4	2	22
7.8	89.9	31.8	128	77.7	128	4.7	137	126	4.0	56.088	18.851	g500-B600	m550-P90/M4	3	48
7.7	91.3	31.3	130	76.5	130	1.8	135	128	1.6	54.220	19.143	g500-B240	m550-P90/M4	2	26
7.4	94.6	30.3	135	73.9	135	3.3	130	133	2.8	54.806	19.831	g500-B450	m550-P90/M4	3	30
7.1	98.3	29.1	140	71.0	140	4.3	125	138	3.6	55.823	20.622	g500-B600	m550-P90/M4	3	48
6.3	112	25.6	160	62.5	160	1.5	110	157	1.3	54.122	23.450	g500-B240	m550-P90/M4	2	26
5.8	121	23.7	172	57.9	172	2.6	102	169	2.2	54.478	25.294	g500-B450	m550-P90/M4	3	30
5.8	122	23.5	174	57.3	174	4.7	101	171	4.0	55.353	25.550	g500-B820	m550-P90/M4	3	53
4.8	146	19.7	208	48.0	208	1.2	84.4	204	1.0	54.000	30.522	g500-B240	m550-P90/M4	2	26
4.7	148	19.4	211	47.3	211	2.1	83.1	207	1.8	54.294	30.985	g500-B450	m550-P90/M4	3	30
3.9	181	15.8	259	38.6	259	0.9	67.8	254	0.8	53.946	37.967	g500-B240	m550-P90/M4	2	26
3.6	192	14.9	275	36.3	275	1.6	63.8	270	1.6	54.102	40.330	g500-B450	m550-P90/M4	3	30
3.5	200	14.3	286	34.9	286	2.1	61.4	281	2.0	54.476	41.940	g500-B600	m550-P90/M4	3	48
3.2	218	13.1	312	32.0	312	1.9	56.3	306	1.9	55.362	45.739	g500-B600	m550-P90/M4	3	48
3.2	222	12.9	317	31.5	317	4.7	55.3	312	4.6	55.938	46.568	g500-B1500	m550-P90/M4	3	83
2.9	239	12.0	341	29.3	341	1.8	51.5	335	1.7	55.217	50.036	g500-B600	m550-P90/M4	3	48
2.9	239	12.0	342	29.2	342	1.3	51.3	336	1.3	54.011	50.167	g500-B450	m550-P90/M4	3	30
2.9	241	11.9	344	29.0	344	2.4	50.9	338	2.3	55.270	50.543	g500-B820	m550-P90/M4	3	53
2.6	272	10.5	389	25.7	389	3.9	45.1	382	3.7	55.264	57.074	g500-B1500	m550-P90/M4	3	83
2.4	297	9.6	424	23.5	424	1.1	41.4	417	1.0	54.271	62.262	g500-B450	m550-P90/M4	3	30
2.3	304	9.4	435	23.0	435	1.4	40.3	427	1.3	54.879	63.822	g500-B600	m550-P90/M4	3	48
2.3	306	9.3	437	22.8	437	3.4	40.1	430	3.3	56.740	64.221	g500-B1500	m550-P90/M4	3	83
2.3	307	9.3	439	22.7	439	1.9	39.9	432	1.8	54.912	64.468	g500-B820	m550-P90/M4	3	53
2.2	322	8.9	460	21.7	460	1.3	38.1	452	1.3	54.081	67.513	g500-B600	m550-P90/M4	3	48
2.0	357	8.0	511	19.5	511	2.9	34.4	502	2.8	54.706	74.963	g500-B1500	m550-P90/M4	3	83
1.9	364	7.9	519	19.2	519	0.9	33.8	511	0.8	54.156	76.271	g500-B450	m550-P90/M4	3	30
1.9	367	7.8	523	19.1	523	4.1	33.5	515	3.9	56.409	76.862	g500-B2700	m550-P90/M4	3	124
1.9	373	7.7	532	18.7	532	1.1	32.9	524	1.1	54.665	78.182	g500-B600	m550-P90/M4	3	48
1.9	377	7.6	538	18.6	538	1.5	32.6	529	1.5	54.687	78.973	g500-B820	m550-P90/M4	3	53
1.8	391	7.3	558	17.9	558	1.1	31.4	549	1.0	54.005	81.937	g500-B600	m550-P90/M4	3	48
1.7	405	7.1	578	17.2	578	3.6	30.3	569	3.4	55.723	84.940	g500-B2700	m550-P90/M4	3	124
1.6	434	6.6	620	16.1	620	2.4	28.3	609	2.3	54.458	90.978	g500-B1500	m550-P90/M4	3	83
1.6	445	6.4	635	15.7	635	3.6	27.6	625	3.4	55.704	93.283	g500-B2700	m550-P90/M4	3	124
1.4	485	5.9	693	14.4	693	0.9	25.3	681	0.8	54.329	101.760	g500-B600	m550-P90/M4	3	48
1.4	488	5.9	697	14.3	697	2.2	25.1	686	2.1	55.405	102.396	g500-B1500	m550-P90/M4	3	83
1.4	490	5.8	700	14.3	700	1.2	25.1	688	1.1	54.289	102.790	g500-B820	m550-P90/M4	3	53
1.2	598	4.8	855	11.7	855	1.8	20.5	840	1.8	54.913	125.498	g500-B1500	m550-P90/M4	3	83
1.1	610	4.7	871	11.5	871	0.9	20.1	856	1.0	54.165	127.861	g500-B820	m550-P90/M4	3	53
1.0	730	3.9	1043	9.6	1043	2.6	16.8	1026	2.6	55.999	153.185	g500-B2700	m550-P90/M4	3	124



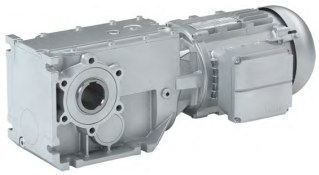
Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
0.9	786	3.6	1123	8.9	1123	1.3	15.6	1104	1.4	54.500	164.833	g500-B1500	m550-P90/M4	3	83
0.9	798	3.6	1140	8.8	1140	3.8	15.4	1121	3.8	56.203	167.383	g500-B4300	m550-P90/M4	3	186
0.9	802	3.6	1146	8.7	1146	2.4	15.3	1127	2.4	55.993	168.230	g500-B2700	m550-P90/M4	3	124
0.8	887	3.2	1266	7.9	1266	2.1	13.9	1245	2.2	55.426	185.911	g500-B2700	m550-P90/M4	3	124
0.7	954	3.0	1362	7.3	1362	1.1	12.9	1340	1.1	54.319	200.048	g500-B1500	m550-P90/M4	3	83
0.7	969	3.0	1384	7.2	1384	3.1	12.7	1360	3.2	55.564	203.143	g500-B4300	m550-P90/M4	3	186
0.7	974	2.9	1391	7.2	1391	1.9	12.6	1367	2.0	55.422	204.170	g500-B2700	m550-P90/M4	3	124
0.7	1052	2.7	1503	6.5	1503	2.9	11.5	1477	2.9	54.931	224.446	g500-B4300	m550-P90/M4	4	189
0.7	1054	2.7	1505	6.5	1505	1.0	11.5	1480	1.0	54.335	224.773	g500-B1500	m550-P90/M4	4	86
0.7	1057	2.7	1510	6.5	1510	1.8	11.4	1485	1.8	54.814	225.581	g500-B2700	m550-P90/M4	4	127
0.6	1121	2.6	1600	6.2	1600	1.7	11.0	1574	1.7	54.880	235.000	g500-B2700	m550-P90/M4	3	124
0.6	1206	2.4	1722	5.8	1722	0.9	10.2	1693	0.9	54.135	252.869	g500-B1500	m550-P90/M4	3	83
0.6	1224	2.3	1749	5.7	1749	2.5	10.0	1720	2.5	54.967	256.781	g500-B4300	m550-P90/M4	3	186
0.6	1231	2.3	1758	5.7	1758	1.5	10.0	1728	1.6	54.878	258.080	g500-B2700	m550-P90/M4	3	124
0.5	1291	2.2	1843	5.3	1843	0.8	9.4	1813	0.8	54.282	275.347	g500-B1500	m550-P90/M4	4	86
0.5	1365	2.1	1949	5.0	1949	1.4	8.8	1917	1.4	54.996	291.191	g500-B2700	m550-P90/M4	4	127
0.5	1427	2.0	2037	4.8	2037	2.1	8.5	2003	2.2	54.786	304.333	g500-B4300	m550-P90/M4	4	189
0.4	1712	1.6	2445	4.0	2445	1.1	7.1	2404	1.1	54.210	365.227	g500-B2700	m550-P90/M4	4	127
0.4	1732	1.6	2474	4.0	2474	1.7	7.0	2433	1.8	54.638	369.548	g500-B4300	m550-P90/M4	4	189
0.3	2122	1.3	3031	3.2	3031	1.4	5.7	2980	1.4	54.400	452.696	g500-B4300	m550-P90/M4	4	189
0.3	2133	1.3	3046	3.2	3046	0.9	5.7	2995	0.9	54.371	454.986	g500-B2700	m550-P90/M4	4	127
0.3	2275	1.2	3249	3.0	3249	1.3	5.3	3194	1.4	54.223	485.243	g500-B4300	m550-P90/M4	4	189
0.3	2286	1.2	3265	3.0	3265	0.8	5.3	3210	0.8	54.198	487.698	g500-B2700	m550-P90/M4	4	127
0.2	2829	1.0	4041	2.4	4041	1.1	4.3	3973	1.1	54.090	603.594	g500-B4300	m550-P90/M4	4	189
0.2	3574	0.8	5105	1.9	5105	0.8	3.4	5019	0.9	54.106	762.524	g500-B4300	m550-P90/M4	4	189



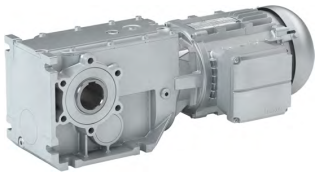
50 Hz: 1.5 kW

87 Hz: 2.6 kW

Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
41.2	23.2	168	33.0	411	33.0	4.2	722	33.0	3.5	61.272	3.565	g500-B240	m550-P90/L4	2	27
30.1	31.8	123	45.0	300	45.0	3.2	527	45.0	2.7	60.044	4.889	g500-B240	m550-P90/L4	2	27
29.4	32.5	120	46.0	293	46.0	4.4	515	46.0	3.7	62.660	5.002	g500-B450	m550-P90/L4	3	31
28.4	33.7	116	48.0	283	48.0	1.4	497	47.0	1.2	59.093	5.185	g500-B110	m550-P90/L4	2	23
23.5	40.7	95.9	58.0	234	58.0	2.7	412	57.0	2.3	59.451	6.257	g500-B240	m550-P90/L4	2	27
21.4	44.6	87.5	64.0	214	64.0	4.4	375	63.0	3.7	60.782	6.860	g500-B450	m550-P90/L4	3	31
20.7	46.2	84.4	66.0	206	66.0	1.2	362	65.0	1.0	58.778	7.111	g500-B110	m550-P90/L4	2	23
18.8	50.8	76.8	73.0	187	73.0	2.6	329	72.0	2.2	59.813	7.817	g500-B240	m550-P90/L4	2	27
16.2	59.1	65.9	85.0	161	85.0	1.0	283	83.0	0.8	58.623	9.101	g500-B110	m550-P90/L4	2	23
15.4	61.9	63.0	88.0	154	88.0	4.4	271	87.0	3.7	62.061	9.520	g500-B820	m550-P90/L4	3	54
14.2	67.1	58.1	96.0	142	96.0	4.0	249	95.0	3.4	61.360	10.328	g500-B450	m550-P90/L4	3	31
13.7	69.7	56.0	100	137	100	2.1	240	98.0	1.7	59.268	10.720	g500-B240	m550-P90/L4	2	27
12.1	78.9	49.4	113	121	113	4.1	212	111	3.4	60.820	12.143	g500-B820	m550-P90/L4	3	54
10.7	89.2	43.7	127	107	127	1.7	188	126	1.4	58.977	13.719	g500-B240	m550-P90/L4	2	27
10.4	92.0	42.4	132	103	132	3.2	182	130	2.7	60.091	14.165	g500-B450	m550-P90/L4	3	31
9.8	97.5	40.0	139	97.6	139	1.6	172	137	1.4	58.886	15.008	g500-B240	m550-P90/L4	2	27
9.0	106	36.7	152	89.6	152	4.4	158	150	3.7	61.396	16.352	g500-B820	m550-P90/L4	3	54
7.8	123	31.8	175	77.7	175	3.4	137	173	2.9	60.588	18.851	g500-B600	m550-P90/L4	3	49
7.7	124	31.3	178	76.5	178	1.4	135	175	1.1	58.720	19.143	g500-B240	m550-P90/L4	2	27
7.4	129	30.3	184	73.9	184	2.4	130	182	2.1	59.306	19.831	g500-B450	m550-P90/L4	3	31
7.1	134	29.1	192	71.0	192	3.1	125	189	2.7	60.323	20.622	g500-B600	m550-P90/L4	3	49
7.0	136	28.8	194	70.2	194	4.1	124	191	3.4	60.411	20.857	g500-B820	m550-P90/L4	3	54
6.3	152	25.6	218	62.5	218	1.1	110	215	0.9	58.622	23.450	g500-B240	m550-P90/L4	2	27
5.8	164	23.7	235	57.9	235	1.9	102	232	1.6	58.978	25.294	g500-B450	m550-P90/L4	3	31
5.8	166	23.5	237	57.3	237	3.5	101	234	2.9	59.853	25.550	g500-B820	m550-P90/L4	3	54
5.0	190	20.5	271	50.2	271	4.3	88.2	267	3.6	62.594	29.206	g500-B1500	m550-P90/L4	3	84
4.8	198	19.7	284	48.0	284	0.9	84.4	280	0.7	58.500	30.522	g500-B240	m550-P90/L4	2	27
4.7	201	19.4	288	47.3	288	1.6	83.1	284	1.3	58.794	30.985	g500-B450	m550-P90/L4	3	31
3.6	262	14.9	375	36.3	375	1.2	63.8	369	1.2	58.602	40.330	g500-B450	m550-P90/L4	3	31
3.5	273	14.3	390	34.9	390	1.5	61.4	384	1.5	58.976	41.940	g500-B600	m550-P90/L4	3	49
3.2	297	13.1	425	32.0	425	1.4	56.3	419	1.4	59.862	45.739	g500-B600	m550-P90/L4	3	49
3.2	303	12.9	433	31.5	433	3.5	55.3	426	3.3	60.438	46.568	g500-B1500	m550-P90/L4	3	84
2.9	325	12.0	465	29.3	465	1.3	51.5	458	1.2	59.717	50.036	g500-B600	m550-P90/L4	3	49
2.9	326	12.0	466	29.2	466	1.0	51.3	459	0.9	58.511	50.167	g500-B450	m550-P90/L4	3	31
2.9	328	11.9	470	29.0	470	1.8	50.9	463	1.7	59.770	50.543	g500-B820	m550-P90/L4	3	54
2.6	371	10.5	530	25.7	530	2.8	45.1	523	2.7	59.764	57.074	g500-B1500	m550-P90/L4	3	84
2.3	415	9.4	593	23.0	593	1.0	40.3	584	1.0	59.379	63.822	g500-B600	m550-P90/L4	3	49
2.3	417	9.3	597	22.8	597	2.5	40.1	588	2.4	61.240	64.221	g500-B1500	m550-P90/L4	3	84
2.3	419	9.3	599	22.7	599	1.4	39.9	590	1.3	59.412	64.468	g500-B820	m550-P90/L4	3	54
2.2	439	8.9	627	21.7	627	1.0	38.1	618	0.9	58.581	67.513	g500-B600	m550-P90/L4	3	49
2.0	487	8.0	696	19.5	696	2.2	34.4	686	2.1	59.206	74.963	g500-B1500	m550-P90/L4	3	84
1.9	499	7.8	714	19.1	714	3.0	33.5	704	2.9	60.909	76.862	g500-B2700	m550-P90/L4	3	125
1.9	508	7.7	726	18.7	726	0.8	32.9	716	0.8	59.165	78.182	g500-B600	m550-P90/L4	3	49
1.9	513	7.6	734	18.6	734	1.1	32.6	723	1.1	59.187	78.973	g500-B820	m550-P90/L4	3	54
1.7	552	7.1	789	17.2	789	2.6	30.3	778	2.5	60.223	84.940	g500-B2700	m550-P90/L4	3	125
1.6	591	6.6	845	16.1	845	1.8	28.3	833	1.7	58.958	90.978	g500-B1500	m550-P90/L4	3	84
1.6	606	6.4	867	15.7	867	2.6	27.6	854	2.5	60.204	93.283	g500-B2700	m550-P90/L4	3	125
1.4	665	5.9	951	14.3	951	1.6	25.1	938	1.5	59.905	102.396	g500-B1500	m550-P90/L4	3	84
1.4	668	5.8	955	14.3	955	0.9	25.1	941	0.8	58.789	102.790	g500-B820	m550-P90/L4	3	54
1.2	815	4.8	1166	11.7	1166	1.3	20.5	1149	1.3	59.413	125.498	g500-B1500	m550-P90/L4	3	84



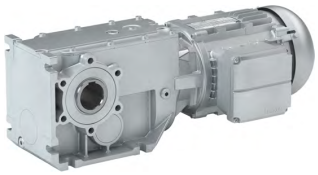
Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
1.0	995	3.9	1423	9.6	1423	1.9	16.8	1403	1.9	60.499	153.185	g500-B2700	m550-P90/L4	3	125
0.9	1071	3.6	1531	8.9	1531	1.0	15.6	1509	1.0	59.000	164.833	g500-B1500	m550-P90/L4	3	84
0.9	1088	3.6	1555	8.8	1555	2.8	15.4	1533	2.8	60.703	167.383	g500-B4300	m550-P90/L4	3	187
0.9	1093	3.6	1563	8.7	1563	1.7	15.3	1540	1.8	60.493	168.230	g500-B2700	m550-P90/L4	3	125
0.8	1208	3.2	1727	7.9	1727	1.6	13.9	1702	1.6	59.926	185.911	g500-B2700	m550-P90/L4	3	125
0.7	1300	3.0	1858	7.3	1858	0.8	12.9	1832	0.8	58.819	200.048	g500-B1500	m550-P90/L4	3	84
0.7	1320	3.0	1887	7.2	1887	2.3	12.7	1860	2.3	60.064	203.143	g500-B4300	m550-P90/L4	3	187
0.7	1327	2.9	1897	7.2	1897	1.4	12.6	1870	1.4	59.922	204.170	g500-B2700	m550-P90/L4	3	125
0.7	1433	2.7	2050	6.5	2050	2.1	11.5	2020	2.1	59.431	224.446	g500-B4300	m550-P90/L4	4	190
0.7	1441	2.7	2060	6.5	2060	1.3	11.4	2030	1.3	59.314	225.581	g500-B2700	m550-P90/L4	4	128
0.6	1527	2.6	2183	6.2	2183	1.2	11.0	2152	1.3	59.380	235.000	g500-B2700	m550-P90/L4	3	125
0.6	1668	2.3	2385	5.7	2385	1.8	10.0	2351	1.8	59.467	256.781	g500-B4300	m550-P90/L4	3	187
0.6	1677	2.3	2397	5.7	2397	1.1	10.0	2363	1.1	59.378	258.080	g500-B2700	m550-P90/L4	3	125
0.5	1860	2.1	2659	5.0	2659	1.0	8.8	2621	1.0	59.496	291.191	g500-B2700	m550-P90/L4	4	128
0.5	1944	2.0	2779	4.8	2779	1.6	8.5	2739	1.6	59.286	304.333	g500-B4300	m550-P90/L4	4	190
0.4	2333	1.6	3335	4.0	3335	0.8	7.1	3287	0.8	58.710	365.227	g500-B2700	m550-P90/L4	4	128
0.4	2360	1.6	3375	4.0	3375	1.3	7.0	3326	1.3	59.138	369.548	g500-B4300	m550-P90/L4	4	190
0.3	2891	1.3	4134	3.2	4134	1.0	5.7	4075	1.1	58.900	452.696	g500-B4300	m550-P90/L4	4	190
0.3	3099	1.2	4431	3.0	4431	1.0	5.3	4368	1.0	58.723	485.243	g500-B4300	m550-P90/L4	4	190



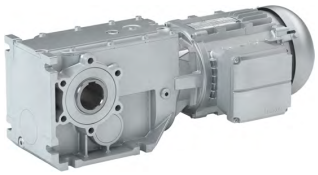
50 Hz: 2.2 kW

87 Hz: 3.9 kW

Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
41.2	33.9	168	48.0	412	48.0	2.9	724	49.0	2.4	125.972	3.565	g500-B240	m550-P100/M4	2	39
30.1	46.4	123	66.0	301	66.0	2.2	528	67.0	1.8	124.744	4.889	g500-B240	m550-P100/M4	2	39
29.6	47.1	121	67.0	297	67.0	4.6	520	68.0	3.8	134.522	4.958	g500-B820	m550-P100/M4	3	66
29.4	47.5	120	68.0	294	68.0	4.1	516	68.0	3.4	127.360	5.002	g500-B450	m550-P100/M4	3	43
23.5	59.4	95.9	85.0	235	85.0	1.8	412	86.0	1.5	124.151	6.257	g500-B240	m550-P100/M4	2	39
21.6	64.6	88.2	92.0	216	92.0	4.2	379	93.0	3.5	129.711	6.800	g500-B820	m550-P100/M4	3	66
21.4	65.2	87.5	93.0	214	93.0	3.3	376	94.0	2.7	125.482	6.860	g500-B450	m550-P100/M4	3	43
21.2	66.0	86.3	94.0	212	94.0	4.2	371	95.0	3.5	127.163	6.949	g500-B600	m550-P100/M4	3	61
18.8	74.3	76.8	106	188	106	1.8	330	107	1.5	124.513	7.817	g500-B240	m550-P100/M4	2	39
17.3	80.9	70.5	116	173	116	4.0	303	116	3.3	132.071	8.517	g500-B820	m550-P100/M4	3	66
15.4	90.4	63.0	129	154	129	3.8	271	130	3.2	126.761	9.520	g500-B820	m550-P100/M4	3	66
14.2	98.1	58.1	140	142	140	2.7	250	141	2.3	126.060	10.328	g500-B450	m550-P100/M4	3	43
13.7	102	56.0	146	137	146	1.4	241	147	1.2	123.968	10.720	g500-B240	m550-P100/M4	2	39
13.7	102	55.9	146	137	146	3.7	240	147	3.1	128.118	10.741	g500-B600	m550-P100/M4	3	61
12.6	111	51.4	159	126	159	3.6	221	160	3.0	128.407	11.680	g500-B820	m550-P100/M4	3	66
12.1	115	49.4	165	121	165	3.3	213	166	2.7	125.520	12.143	g500-B820	m550-P100/M4	3	66
10.7	130	43.7	186	107	186	1.2	188	188	1.0	123.677	13.719	g500-B240	m550-P100/M4	2	39
10.4	135	42.4	192	104	192	2.2	182	194	1.8	124.791	14.165	g500-B450	m550-P100/M4	3	43
10.0	140	40.7	200	99.8	200	3.0	175	201	2.5	126.306	14.730	g500-B600	m550-P100/M4	3	61
9.8	143	40.0	204	97.9	204	1.1	172	205	0.9	123.586	15.008	g500-B240	m550-P100/M4	2	39
9.0	155	36.7	222	89.9	222	3.2	158	224	2.6	126.096	16.352	g500-B820	m550-P100/M4	3	66
7.8	179	31.8	256	78.0	256	2.3	137	258	1.9	125.288	18.851	g500-B600	m550-P100/M4	3	61
7.7	182	31.3	260	76.8	260	0.9	135	262	0.8	123.420	19.143	g500-B240	m550-P100/M4	2	39
7.4	188	30.3	269	74.1	269	1.7	130	271	1.4	124.006	19.831	g500-B450	m550-P100/M4	3	43
7.1	196	29.1	280	71.3	280	2.1	125	282	1.8	125.023	20.622	g500-B600	m550-P100/M4	3	61
7.0	198	28.8	283	70.5	283	2.9	124	285	2.4	125.111	20.857	g500-B820	m550-P100/M4	3	66
6.4	218	26.2	311	64.2	311	4.8	113	313	4.0	129.615	22.898	g500-B1500	m550-P100/M4	3	96
5.8	240	23.7	344	58.1	344	1.3	102	346	1.1	123.678	25.294	g500-B450	m550-P100/M4	3	43
5.8	243	23.5	347	57.5	347	2.4	101	349	2.0	124.553	25.550	g500-B820	m550-P100/M4	3	66
5.6	248	23.0	354	56.4	354	1.7	99.0	356	1.4	125.882	26.061	g500-B600	m550-P100/M4	3	61
5.6	250	22.8	358	55.8	358	2.3	98.0	360	1.9	126.077	26.324	g500-B820	m550-P100/M4	3	66
5.0	277	20.5	397	50.3	397	3.8	88.3	399	3.1	127.294	29.206	g500-B1500	m550-P100/M4	3	96
4.7	294	19.4	421	47.4	421	1.1	83.3	424	0.9	123.494	30.985	g500-B450	m550-P100/M4	3	43
4.1	340	16.8	485	41.1	485	1.2	72.2	489	1.0	125.117	35.740	g500-B600	m550-P100/M4	3	61
4.1	340	16.8	486	41.1	486	3.1	72.1	489	2.6	126.210	35.778	g500-B1500	m550-P100/M4	3	96
4.1	343	16.6	490	40.7	490	1.7	71.5	494	1.4	125.220	36.102	g500-B820	m550-P100/M4	3	66
3.5	398	14.3	570	35.1	570	1.1	61.5	574	1.0	123.676	41.940	g500-B600	m550-P100/M4	3	61
3.3	427	13.3	611	32.7	611	2.5	57.4	615	2.3	128.269	44.955	g500-B1500	m550-P100/M4	3	96
3.2	435	13.1	621	32.1	621	1.0	56.4	626	0.9	124.562	45.739	g500-B600	m550-P100/M4	3	61
3.2	442	12.9	633	31.6	633	2.4	55.4	637	2.2	125.138	46.568	g500-B1500	m550-P100/M4	3	96
3.0	465	12.3	664	30.1	664	4.1	52.7	669	3.8	128.468	48.912	g500-B2700	m550-P100/M4	3	137
2.9	475	12.0	680	29.4	680	0.9	51.6	684	0.8	124.417	50.036	g500-B600	m550-P100/M4	3	61
2.9	480	11.9	687	29.1	687	1.2	51.0	691	1.1	124.470	50.543	g500-B820	m550-P100/M4	3	66
2.7	514	11.1	735	27.2	735	3.5	47.7	740	3.3	124.113	54.082	g500-B2700	m550-P100/M4	3	137
2.6	542	10.5	775	25.8	775	1.9	45.2	781	1.8	124.464	57.074	g500-B1500	m550-P100/M4	3	96
2.5	564	10.1	807	24.8	807	3.4	43.4	812	3.2	124.113	59.393	g500-B2700	m550-P100/M4	3	137
2.3	609	9.4	871	22.9	871	4.9	40.2	877	4.7	133.598	64.127	g500-B4300	m550-P100/M4	3	199
2.3	610	9.3	872	22.9	872	1.7	40.2	878	1.6	125.940	64.221	g500-B1500	m550-P100/M4	3	96
2.3	612	9.3	875	22.8	875	3.1	40.0	882	2.9	132.170	64.452	g500-B2700	m550-P100/M4	3	137
2.3	612	9.3	876	22.8	876	0.9	40.0	882	0.9	124.112	64.468	g500-B820	m550-P100/M4	3	66



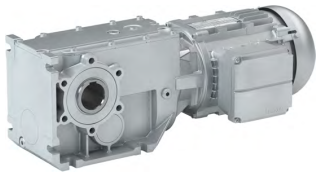
Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
2.0	712	8.0	1018	19.6	1018	1.5	34.4	1025	1.4	123.906	74.963	g500-B1500	m550-P100/M4	3	96
1.9	730	7.8	1044	19.1	1044	2.6	33.6	1051	2.4	125.609	76.862	g500-B2700	m550-P100/M4	3	137
1.7	807	7.1	1154	17.3	1154	2.3	30.4	1162	2.2	124.923	84.940	g500-B2700	m550-P100/M4	3	137
1.6	864	6.6	1236	16.2	1236	1.2	28.4	1244	1.1	123.658	90.978	g500-B1500	m550-P100/M4	3	96
1.6	886	6.4	1267	15.8	1267	2.1	27.7	1276	2.0	124.904	93.283	g500-B2700	m550-P100/M4	3	137
1.5	926	6.2	1324	15.1	1324	2.0	26.5	1333	1.9	127.457	97.481	g500-B2700	m550-P100/M4	3	137
1.4	973	5.9	1391	14.4	1391	1.1	25.2	1401	1.0	124.605	102.396	g500-B1500	m550-P100/M4	3	96
1.4	1012	5.6	1447	13.8	1447	3.0	24.2	1457	2.8	127.960	106.517	g500-B4300	m550-P100/M4	3	199
1.4	1017	5.6	1454	13.7	1454	1.9	24.1	1464	1.8	127.442	107.056	g500-B2700	m550-P100/M4	3	137
1.2	1124	5.1	1608	12.4	1608	1.7	21.8	1619	1.7	124.113	118.370	g500-B2700	m550-P100/M4	3	137
1.2	1192	4.8	1705	11.7	1705	0.9	20.6	1717	0.9	124.113	125.498	g500-B1500	m550-P100/M4	3	96
1.1	1229	4.6	1757	11.4	1757	2.5	19.9	1769	2.4	124.113	129.342	g500-B4300	m550-P100/M4	3	199
1.1	1235	4.6	1766	11.3	1766	1.5	19.8	1778	1.5	124.113	129.996	g500-B2700	m550-P100/M4	3	137
1.0	1455	3.9	2081	9.6	2081	1.3	16.8	2095	1.3	125.199	153.185	g500-B2700	m550-P100/M4	3	137
0.9	1590	3.6	2274	8.8	2274	1.9	15.4	2289	1.9	125.403	167.383	g500-B4300	m550-P100/M4	3	199
0.9	1598	3.6	2285	8.7	2285	1.2	15.3	2301	1.2	125.193	168.230	g500-B2700	m550-P100/M4	3	137
0.8	1766	3.2	2525	7.9	2525	1.1	13.9	2543	1.1	124.626	185.911	g500-B2700	m550-P100/M4	3	137
0.7	1930	3.0	2759	7.2	2759	1.6	12.7	2779	1.6	124.764	203.143	g500-B4300	m550-P100/M4	3	199
0.7	1939	2.9	2773	7.2	2773	1.0	12.6	2793	1.0	124.622	204.170	g500-B2700	m550-P100/M4	3	137
0.7	2096	2.7	2997	6.5	2997	1.4	11.5	3018	1.4	124.131	224.446	g500-B4300	m550-P100/M4	4	202
0.7	2106	2.7	3012	6.5	3012	0.9	11.4	3033	0.9	124.014	225.581	g500-B2700	m550-P100/M4	4	140
0.6	2232	2.6	3192	6.3	3192	0.9	11.0	3214	0.8	124.080	235.000	g500-B2700	m550-P100/M4	3	137
0.6	2439	2.3	3488	5.7	3488	1.2	10.0	3512	1.2	124.167	256.781	g500-B4300	m550-P100/M4	3	199
0.5	2842	2.0	4063	4.8	4063	1.1	8.5	4092	1.1	123.986	304.333	g500-B4300	m550-P100/M4	4	202
0.4	3451	1.6	4934	4.0	4934	0.9	7.0	4969	0.9	123.838	369.548	g500-B4300	m550-P100/M4	4	202



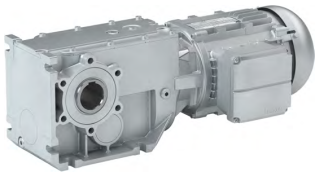
50 Hz: 3 kW

87 Hz: 5.2 kW

Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
41.2	46.1	168	66.0	412	66.0	2.1	724	65.0	1.8	133.272	3.565	g500-B240	m550-P100/L4	2	41
30.1	63.2	123	91.0	301	91.0	1.6	528	89.0	1.4	132.044	4.889	g500-B240	m550-P100/L4	2	41
29.6	64.1	121	92.0	297	92.0	3.4	520	90.0	2.9	141.822	4.958	g500-B820	m550-P100/L4	3	67
29.4	64.6	120	93.0	294	93.0	3.0	516	91.0	2.6	134.660	5.002	g500-B450	m550-P100/L4	3	44
29.0	65.5	118	94.0	290	94.0	4.0	509	92.0	3.4	137.031	5.067	g500-B600	m550-P100/L4	3	62
23.5	80.8	95.9	116	235	116	1.4	412	114	1.1	131.451	6.257	g500-B240	m550-P100/L4	2	41
21.6	87.8	88.2	126	216	126	3.1	379	124	2.6	137.011	6.800	g500-B820	m550-P100/L4	3	67
21.4	88.6	87.5	127	214	127	2.4	376	125	2.1	132.782	6.860	g500-B450	m550-P100/L4	3	44
21.2	89.8	86.3	129	212	129	3.1	371	127	2.6	134.463	6.949	g500-B600	m550-P100/L4	3	62
18.8	101	76.8	145	188	145	1.3	330	143	1.1	131.813	7.817	g500-B240	m550-P100/L4	2	41
17.3	110	70.5	158	173	158	2.9	303	155	2.5	139.371	8.517	g500-B820	m550-P100/L4	3	67
15.4	123	63.0	176	154	176	2.8	271	174	2.4	134.061	9.520	g500-B820	m550-P100/L4	3	67
14.2	133	58.1	191	142	191	2.0	250	188	1.7	133.360	10.328	g500-B450	m550-P100/L4	3	44
13.7	139	56.0	199	137	199	1.0	241	196	0.9	131.268	10.720	g500-B240	m550-P100/L4	2	41
13.7	139	55.9	199	137	199	2.7	240	196	2.3	135.418	10.741	g500-B600	m550-P100/L4	3	62
12.6	151	51.4	216	126	216	2.6	221	213	2.2	135.707	11.680	g500-B820	m550-P100/L4	3	67
12.1	157	49.4	225	121	225	2.4	213	221	2.1	132.820	12.143	g500-B820	m550-P100/L4	3	67
11.2	170	45.7	243	112	243	4.2	197	239	3.5	137.961	13.118	g500-B1500	m550-P100/L4	3	97
10.7	177	43.7	254	107	254	0.9	188	250	0.7	130.977	13.719	g500-B240	m550-P100/L4	2	41
10.4	183	42.4	262	104	262	1.6	182	258	1.4	132.091	14.165	g500-B450	m550-P100/L4	3	44
10.0	190	40.7	273	99.8	273	2.2	175	269	1.9	133.606	14.730	g500-B600	m550-P100/L4	3	62
9.8	194	40.0	278	97.9	278	0.8	172	274	0.7	130.886	15.008	g500-B240	m550-P100/L4	2	41
9.0	211	36.7	303	89.9	303	2.3	158	298	2.0	133.396	16.352	g500-B820	m550-P100/L4	3	67
7.8	244	31.8	349	78.0	349	1.7	137	344	1.5	132.588	18.851	g500-B600	m550-P100/L4	3	62
7.4	256	30.3	367	74.1	367	1.2	130	362	1.0	131.306	19.831	g500-B450	m550-P100/L4	3	44
7.2	264	29.3	379	71.9	379	4.0	126	373	3.4	138.331	20.444	g500-B1500	m550-P100/L4	3	97
7.1	266	29.1	382	71.3	382	1.6	125	376	1.3	132.323	20.622	g500-B600	m550-P100/L4	3	62
7.0	269	28.8	386	70.5	386	2.1	124	380	1.8	132.411	20.857	g500-B820	m550-P100/L4	3	67
6.4	296	26.2	424	64.2	424	3.5	113	418	3.0	136.915	22.898	g500-B1500	m550-P100/L4	3	97
5.8	327	23.7	469	58.1	469	1.0	102	461	0.8	130.978	25.294	g500-B450	m550-P100/L4	3	44
5.8	328	23.7	470	58.0	470	4.3	102	463	3.6	152.470	25.365	g500-B4300	m550-P100/L4	3	201
5.8	330	23.5	473	57.5	473	1.7	101	466	1.5	131.853	25.550	g500-B820	m550-P100/L4	3	67
5.6	337	23.0	483	56.4	483	1.2	99.0	475	1.1	133.182	26.061	g500-B600	m550-P100/L4	3	62
5.6	340	22.8	488	55.8	488	1.7	98.0	480	1.4	133.377	26.324	g500-B820	m550-P100/L4	3	67
5.5	346	22.4	497	54.8	497	4.3	96.2	489	3.6	142.488	26.814	g500-B2700	m550-P100/L4	3	139
5.0	377	20.5	541	50.3	541	2.8	88.3	533	2.4	134.594	29.206	g500-B1500	m550-P100/L4	3	97
5.0	380	20.4	545	49.9	545	4.3	87.6	537	3.6	142.299	29.447	g500-B2700	m550-P100/L4	3	139
4.1	462	16.8	662	41.1	662	0.9	72.2	652	0.8	132.417	35.740	g500-B600	m550-P100/L4	3	62
4.1	462	16.8	663	41.1	663	2.3	72.1	652	1.9	133.510	35.778	g500-B1500	m550-P100/L4	3	97
4.1	466	16.6	669	40.7	669	1.2	71.5	658	1.0	132.520	36.102	g500-B820	m550-P100/L4	3	67
3.3	581	13.3	833	32.7	833	1.8	57.4	820	1.7	135.569	44.955	g500-B1500	m550-P100/L4	3	97
3.2	602	12.9	863	31.6	863	1.7	55.4	849	1.7	132.438	46.568	g500-B1500	m550-P100/L4	3	97
3.0	632	12.3	906	30.1	906	3.0	52.7	892	2.9	135.768	48.912	g500-B2700	m550-P100/L4	3	139
2.9	653	11.9	936	29.1	936	0.9	51.0	922	0.8	131.770	50.543	g500-B820	m550-P100/L4	3	67
2.7	699	11.1	1002	27.2	1002	2.6	47.7	986	2.5	131.413	54.082	g500-B2700	m550-P100/L4	3	139
2.6	737	10.5	1057	25.8	1057	1.4	45.2	1041	1.4	131.764	57.074	g500-B1500	m550-P100/L4	3	97
2.5	767	10.1	1100	24.8	1100	2.5	43.4	1083	2.4	131.413	59.393	g500-B2700	m550-P100/L4	3	139
2.3	828	9.4	1188	22.9	1188	3.6	40.2	1170	3.5	140.898	64.127	g500-B4300	m550-P100/L4	3	201
2.3	830	9.3	1190	22.9	1190	1.3	40.2	1171	1.2	133.240	64.221	g500-B1500	m550-P100/L4	3	97
2.3	833	9.3	1194	22.8	1194	2.3	40.0	1175	2.2	139.470	64.452	g500-B2700	m550-P100/L4	3	139



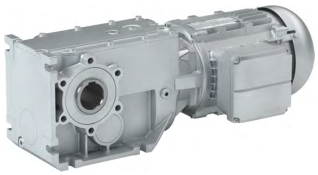
Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
2.0	968	8.0	1388	19.6	1388	1.1	34.4	1367	1.0	131.206	74.963	g500-B1500	m550-P100/L4	3	97
1.9	993	7.8	1424	19.1	1424	1.9	33.6	1402	1.8	132.909	76.862	g500-B2700	m550-P100/L4	3	139
1.7	1097	7.1	1573	17.3	1573	1.7	30.4	1549	1.7	132.223	84.940	g500-B2700	m550-P100/L4	3	139
1.6	1175	6.6	1685	16.2	1685	0.9	28.4	1659	0.9	130.958	90.978	g500-B1500	m550-P100/L4	3	97
1.6	1205	6.4	1728	15.8	1728	1.6	27.7	1701	1.5	132.204	93.283	g500-B2700	m550-P100/L4	3	139
1.5	1259	6.2	1806	15.1	1806	1.5	26.5	1778	1.4	134.757	97.481	g500-B2700	m550-P100/L4	3	139
1.4	1376	5.6	1973	13.8	1973	2.2	24.2	1943	2.1	135.260	106.517	g500-B4300	m550-P100/L4	3	201
1.4	1383	5.6	1983	13.7	1983	1.4	24.1	1952	1.3	134.742	107.056	g500-B2700	m550-P100/L4	3	139
1.2	1529	5.1	2192	12.4	2192	1.2	21.8	2159	1.3	131.413	118.370	g500-B2700	m550-P100/L4	3	139
1.1	1671	4.6	2396	11.4	2396	1.8	19.9	2359	1.8	131.413	129.342	g500-B4300	m550-P100/L4	3	201
1.1	1679	4.6	2408	11.3	2408	1.1	19.8	2371	1.1	131.413	129.996	g500-B2700	m550-P100/L4	3	139
1.0	1979	3.9	2837	9.6	2837	1.0	16.8	2794	1.0	132.499	153.185	g500-B2700	m550-P100/L4	3	139
0.9	2162	3.6	3100	8.8	3100	1.4	15.4	3053	1.4	132.703	167.383	g500-B4300	m550-P100/L4	3	201
0.9	2173	3.6	3116	8.7	3116	0.9	15.3	3068	0.9	132.493	168.230	g500-B2700	m550-P100/L4	3	139
0.7	2624	3.0	3763	7.2	3763	1.1	12.7	3705	1.2	132.064	203.143	g500-B4300	m550-P100/L4	3	201
0.7	2850	2.7	4087	6.5	4087	1.1	11.5	4024	1.1	131.431	224.446	g500-B4300	m550-P100/L4	4	204
0.6	3317	2.3	4756	5.7	4756	0.9	10.0	4683	0.9	131.467	256.781	g500-B4300	m550-P100/L4	3	201



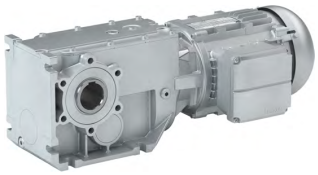
50 Hz: 4 kW

87 Hz: 7.35 kW

Inverter operation															
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
29.6	85.7	121	122	297	122	2.6	520	128	2.0	209.522	4.958	g500-B820	m550-P112/M4	3	76
29.4	86.5	120	124	294	124	2.3	516	129	1.8	202.360	5.002	g500-B450	m550-P112/M4	3	53
29.0	87.6	118	125	290	125	3.0	509	131	2.4	204.731	5.067	g500-B600	m550-P112/M4	3	71
21.6	118	88.2	168	216	168	2.3	379	176	1.9	204.711	6.800	g500-B820	m550-P112/M4	3	76
21.4	119	87.5	169	214	169	1.8	376	177	1.5	200.482	6.860	g500-B450	m550-P112/M4	3	53
21.4	119	87.4	170	214	170	4.3	376	177	3.4	219.952	6.866	g500-B1500	m550-P112/M4	3	106
21.2	120	86.3	172	212	172	2.3	371	180	1.9	202.163	6.949	g500-B600	m550-P112/M4	3	71
17.3	147	70.5	210	173	210	2.2	303	220	1.7	207.071	8.517	g500-B820	m550-P112/M4	3	76
16.1	158	65.5	226	161	226	4.8	282	237	3.8	247.653	9.156	g500-B4300	m550-P112/M4	3	209
15.4	165	63.0	235	155	235	4.3	271	246	3.4	211.064	9.516	g500-B1500	m550-P112/M4	3	106
15.4	165	63.0	235	154	235	2.1	271	246	1.7	201.761	9.520	g500-B820	m550-P112/M4	3	76
14.2	179	58.1	255	142	255	1.5	250	267	1.2	201.060	10.328	g500-B450	m550-P112/M4	3	53
13.7	186	55.9	265	137	265	2.0	240	278	1.6	203.118	10.741	g500-B600	m550-P112/M4	3	71
12.6	202	51.4	288	126	288	2.0	221	302	1.6	203.407	11.680	g500-B820	m550-P112/M4	3	76
12.3	207	50.1	296	123	296	4.3	215	310	3.4	216.132	11.985	g500-B1500	m550-P112/M4	3	106
12.1	210	49.4	300	121	300	1.8	213	314	1.5	200.520	12.143	g500-B820	m550-P112/M4	3	76
11.2	227	45.7	324	112	324	3.5	197	339	2.8	205.661	13.118	g500-B1500	m550-P112/M4	3	106
10.4	245	42.4	350	104	350	1.2	182	366	1.0	199.791	14.165	g500-B450	m550-P112/M4	3	53
10.0	255	40.7	364	99.8	364	1.7	175	381	1.3	201.306	14.730	g500-B600	m550-P112/M4	3	71
9.0	283	36.7	404	89.9	404	1.8	158	422	1.4	201.096	16.352	g500-B820	m550-P112/M4	3	76
8.8	287	36.1	410	88.5	410	3.7	155	429	2.9	209.075	16.611	g500-B1500	m550-P112/M4	3	106
8.0	320	32.5	457	79.5	457	4.8	140	478	3.8	236.539	18.486	g500-B4300	m550-P112/M4	3	209
7.8	326	31.8	466	78.0	466	1.3	137	487	1.0	200.288	18.851	g500-B600	m550-P112/M4	3	71
7.5	338	30.7	483	75.2	483	4.8	132	505	3.8	217.748	19.542	g500-B2700	m550-P112/M4	3	147
7.4	343	30.3	490	74.1	490	0.9	130	512	0.7	199.006	19.831	g500-B450	m550-P112/M4	3	53
7.2	353	29.3	505	71.9	505	3.0	126	528	2.4	206.031	20.444	g500-B1500	m550-P112/M4	3	106
7.1	357	29.1	509	71.3	509	1.2	125	533	0.9	200.023	20.622	g500-B600	m550-P112/M4	3	71
7.0	361	28.8	515	70.5	515	1.6	124	539	1.3	200.111	20.857	g500-B820	m550-P112/M4	3	76
7.0	364	28.5	520	69.8	520	4.4	123	544	3.5	228.359	21.065	g500-B4300	m550-P112/M4	3	209
6.6	385	26.9	550	66.0	550	4.4	116	575	3.5	213.887	22.269	g500-B2700	m550-P112/M4	3	147
6.4	396	26.2	565	64.2	565	2.7	113	592	2.1	204.615	22.898	g500-B1500	m550-P112/M4	3	106
6.0	423	24.5	604	60.1	604	4.4	106	632	3.5	213.613	24.456	g500-B2700	m550-P112/M4	3	147
5.8	439	23.7	626	58.0	626	3.9	102	655	3.1	220.170	25.365	g500-B4300	m550-P112/M4	3	209
5.8	442	23.5	631	57.5	631	1.3	101	660	1.0	199.553	25.550	g500-B820	m550-P112/M4	3	76
5.6	451	23.0	644	56.4	644	0.9	99.0	673	0.7	200.882	26.061	g500-B600	m550-P112/M4	3	71
5.6	455	22.8	650	55.8	650	1.3	98.0	680	1.0	201.077	26.324	g500-B820	m550-P112/M4	3	76
5.6	456	22.8	651	55.8	651	2.3	97.9	681	1.8	208.093	26.353	g500-B1500	m550-P112/M4	3	106
5.5	464	22.4	662	54.8	662	3.9	96.2	693	3.1	210.188	26.814	g500-B2700	m550-P112/M4	3	147
5.0	505	20.5	721	50.3	721	2.1	88.3	755	1.7	202.294	29.206	g500-B1500	m550-P112/M4	3	106
5.0	509	20.4	727	49.9	727	3.7	87.6	761	3.0	209.999	29.447	g500-B2700	m550-P112/M4	3	147
4.7	538	19.3	768	47.3	768	3.3	83.0	803	2.6	213.889	31.097	g500-B4300	m550-P112/M4	3	209
4.5	568	18.3	812	44.7	812	3.3	78.5	849	2.6	207.248	32.873	g500-B2700	m550-P112/M4	3	147
4.1	619	16.8	884	41.1	884	1.7	72.1	924	1.4	201.210	35.778	g500-B1500	m550-P112/M4	3	106
4.1	624	16.6	892	40.7	892	0.9	71.5	933	0.7	200.220	36.102	g500-B820	m550-P112/M4	3	76
4.1	624	16.6	892	40.7	892	3.0	71.5	933	2.4	207.122	36.102	g500-B2700	m550-P112/M4	3	147
4.0	631	16.4	902	40.2	902	1.7	70.6	944	1.3	204.890	36.526	g500-B1500	m550-P112/M4	3	106
3.4	739	14.0	1056	34.4	1056	2.6	60.3	1105	2.3	212.139	42.772	g500-B2700	m550-P112/M4	3	147
3.3	777	13.3	1110	32.7	1110	1.4	57.4	1161	1.2	203.269	44.955	g500-B1500	m550-P112/M4	3	106
3.2	805	12.9	1150	31.6	1150	1.3	55.4	1203	1.2	200.138	46.568	g500-B1500	m550-P112/M4	3	106
3.1	808	12.8	1154	31.5	1154	3.7	55.2	1208	3.4	214.755	46.737	g500-B4300	m550-P112/M4	3	209



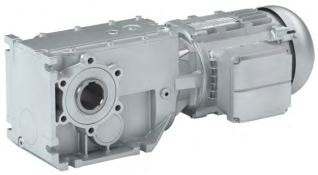
Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
3.1	812	12.8	1160	31.3	1160	2.3	54.9	1214	2.1	212.065	46.973	g500-B2700	m550-P112/M4	3	147
3.0	846	12.3	1208	30.1	1208	2.2	52.7	1264	2.0	203.468	48.912	g500-B2700	m550-P112/M4	3	147
2.8	921	11.3	1315	27.6	1315	3.3	48.4	1376	3.0	211.583	53.258	g500-B4300	m550-P112/M4	3	209
2.7	935	11.1	1336	27.2	1336	2.0	47.7	1397	1.8	199.113	54.082	g500-B2700	m550-P112/M4	3	147
2.6	987	10.5	1410	25.8	1410	1.1	45.2	1475	1.0	199.464	57.074	g500-B1500	m550-P112/M4	3	106
2.5	1027	10.1	1467	24.8	1467	1.8	43.4	1535	1.7	199.113	59.393	g500-B2700	m550-P112/M4	3	147
2.3	1109	9.4	1584	22.9	1584	2.7	40.2	1657	2.5	208.598	64.127	g500-B4300	m550-P112/M4	3	209
2.3	1110	9.3	1586	22.9	1586	1.0	40.2	1659	0.9	200.940	64.221	g500-B1500	m550-P112/M4	3	106
2.3	1114	9.3	1592	22.8	1592	1.7	40.0	1665	1.5	207.170	64.452	g500-B2700	m550-P112/M4	3	147
2.0	1244	8.3	1777	20.4	1777	1.5	35.9	1859	1.4	205.266	71.951	g500-B2700	m550-P112/M4	3	147
1.9	1329	7.8	1898	19.1	1898	1.4	33.6	1986	1.3	200.609	76.862	g500-B2700	m550-P112/M4	3	147
1.9	1359	7.6	1942	18.7	1942	2.2	32.8	2031	2.0	206.191	78.619	g500-B4300	m550-P112/M4	3	209
1.7	1468	7.1	2098	17.3	2098	1.3	30.4	2195	1.2	199.923	84.940	g500-B2700	m550-P112/M4	3	147
1.6	1613	6.4	2304	15.8	2304	1.2	27.7	2410	1.1	199.904	93.283	g500-B2700	m550-P112/M4	3	147
1.5	1685	6.2	2407	15.1	2407	1.1	26.5	2519	1.0	202.457	97.481	g500-B2700	m550-P112/M4	3	147
1.4	1841	5.6	2631	13.8	2631	1.6	24.2	2752	1.5	202.960	106.517	g500-B4300	m550-P112/M4	3	209
1.4	1851	5.6	2644	13.7	2644	1.0	24.1	2766	0.9	202.442	107.056	g500-B2700	m550-P112/M4	3	147
1.2	2046	5.1	2923	12.4	2923	0.9	21.8	3058	0.9	199.113	118.370	g500-B2700	m550-P112/M4	3	147
1.1	2236	4.6	3194	11.4	3194	1.4	19.9	3342	1.3	199.113	129.342	g500-B4300	m550-P112/M4	3	209
1.1	2247	4.6	3210	11.3	3210	0.8	19.8	3359	0.8	199.113	129.996	g500-B2700	m550-P112/M4	3	147
0.9	2894	3.6	4134	8.8	4134	1.0	15.4	4325	1.0	200.403	167.383	g500-B4300	m550-P112/M4	3	209
0.7	3512	3.0	5017	7.2	5017	0.9	12.7	5248	0.8	199.764	203.143	g500-B4300	m550-P112/M4	3	209



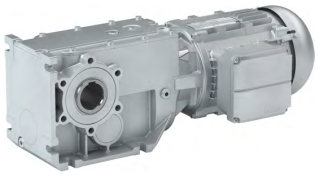
50 Hz: 5.5 kW

87 Hz: 9.6 kW

Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
29.8	117	121	167	299	167	1.9	522	167	1.6	482.122	4.958	g500-B820	m550-P132/M4	3	97
29.6	118	120	169	296	169	1.7	518	168	1.4	474.960	5.002	g500-B450	m550-P132/M4	3	74
29.2	119	118	171	292	171	2.2	511	170	1.8	477.331	5.067	g500-B600	m550-P132/M4	3	92
21.8	160	88.2	229	218	229	1.7	381	229	1.4	477.311	6.800	g500-B820	m550-P132/M4	3	97
21.6	162	87.5	231	216	231	1.3	378	231	1.1	473.082	6.860	g500-B450	m550-P132/M4	3	74
21.6	162	87.4	232	216	232	3.6	377	231	3.0	492.552	6.866	g500-B1500	m550-P132/M4	3	128
21.3	164	86.3	234	213	234	1.7	373	234	1.4	474.763	6.949	g500-B600	m550-P132/M4	3	92
17.4	201	70.5	287	174	287	1.6	304	286	1.3	479.671	8.517	g500-B820	m550-P132/M4	3	97
15.5	224	63.0	321	156	321	1.6	272	320	1.3	474.361	9.520	g500-B820	m550-P132/M4	3	97
15.6	224	63.0	321	156	321	3.1	272	320	2.6	483.664	9.516	g500-B1500	m550-P132/M4	3	128
14.3	243	58.1	348	143	348	1.1	251	347	0.9	473.660	10.328	g500-B450	m550-P132/M4	3	74
13.8	253	55.9	362	138	362	1.5	241	361	1.3	475.718	10.741	g500-B600	m550-P132/M4	3	92
12.7	275	51.4	394	127	394	1.4	222	393	1.2	476.007	11.680	g500-B820	m550-P132/M4	3	97
12.3	282	50.1	404	124	404	3.6	216	403	3.0	488.732	11.985	g500-B1500	m550-P132/M4	3	128
12.2	286	49.4	409	122	409	1.3	213	408	1.1	473.120	12.143	g500-B820	m550-P132/M4	3	97
11.3	309	45.7	442	113	442	2.5	197	441	2.1	478.261	13.118	g500-B1500	m550-P132/M4	3	128
10.4	334	42.4	478	105	478	0.9	183	476	0.7	472.391	14.165	g500-B450	m550-P132/M4	3	74
10.0	347	40.7	497	101	497	1.2	176	495	1.0	473.906	14.730	g500-B600	m550-P132/M4	3	92
9.9	351	40.3	502	99.4	502	4.7	174	501	4.0	500.402	14.888	g500-B2700	m550-P132/M4	3	169
9.1	385	36.7	551	90.5	551	1.3	158	550	1.1	473.696	16.352	g500-B820	m550-P132/M4	3	97
9.1	385	36.7	551	90.5	551	4.4	158	550	3.7	499.788	16.351	g500-B2700	m550-P132/M4	3	169
8.9	391	36.1	560	89.1	560	2.7	156	559	2.2	481.675	16.611	g500-B1500	m550-P132/M4	3	128
7.9	444	31.8	636	78.5	636	0.9	137	634	0.8	472.888	18.851	g500-B600	m550-P132/M4	3	92
7.6	460	30.7	659	75.7	659	3.9	133	657	3.3	490.348	19.542	g500-B2700	m550-P132/M4	3	169
7.2	482	29.3	689	72.4	689	2.2	127	687	1.8	478.631	20.444	g500-B1500	m550-P132/M4	3	128
7.2	486	29.1	695	71.8	695	0.9	126	693	0.7	472.623	20.622	g500-B600	m550-P132/M4	3	92
7.1	491	28.8	703	71.0	703	1.2	124	701	1.0	472.711	20.857	g500-B820	m550-P132/M4	3	97
6.6	525	26.9	751	66.5	751	3.6	116	749	3.0	486.487	22.269	g500-B2700	m550-P132/M4	3	169
6.5	539	26.2	772	64.6	772	1.9	113	770	1.6	477.215	22.898	g500-B1500	m550-P132/M4	3	128
6.1	576	24.5	825	60.5	825	3.3	106	822	2.7	486.213	24.456	g500-B2700	m550-P132/M4	3	169
5.8	602	23.5	862	57.9	862	1.0	101	859	0.8	472.153	25.550	g500-B820	m550-P132/M4	3	97
5.6	620	22.8	888	56.2	888	0.9	98.4	885	0.8	473.677	26.324	g500-B820	m550-P132/M4	3	97
5.6	621	22.8	889	56.2	889	1.7	98.3	886	1.4	480.693	26.353	g500-B1500	m550-P132/M4	3	128
5.5	632	22.4	904	55.2	904	3.0	96.6	902	2.5	482.788	26.814	g500-B2700	m550-P132/M4	3	169
5.3	660	21.4	945	52.8	945	4.6	92.5	942	3.8	504.800	28.013	g500-B4300	m550-P132/M4	3	231
5.1	688	20.5	985	50.7	985	1.5	88.7	982	1.3	474.894	29.206	g500-B1500	m550-P132/M4	3	128
5.0	694	20.4	993	50.3	993	2.7	88.0	990	2.3	482.599	29.447	g500-B2700	m550-P132/M4	3	169
4.8	733	19.3	1049	47.6	1049	4.1	83.3	1046	3.4	486.489	31.097	g500-B4300	m550-P132/M4	3	231
4.5	774	18.3	1108	45.0	1108	2.4	78.8	1105	2.0	479.848	32.873	g500-B2700	m550-P132/M4	3	169
4.2	839	16.9	1201	41.6	1201	3.6	72.7	1197	3.0	495.246	35.607	g500-B4300	m550-P132/M4	3	231
4.1	843	16.8	1206	41.4	1206	1.2	72.4	1203	1.0	473.810	35.778	g500-B1500	m550-P132/M4	3	128
4.1	850	16.6	1217	41.0	1217	2.2	71.7	1214	1.9	479.722	36.102	g500-B2700	m550-P132/M4	3	169
4.1	860	16.4	1232	40.5	1232	1.2	70.9	1228	1.0	477.490	36.526	g500-B1500	m550-P132/M4	3	128
3.5	1008	14.0	1442	34.6	1442	1.9	60.6	1438	1.8	484.739	42.772	g500-B2700	m550-P132/M4	3	169
3.3	1059	13.3	1516	32.9	1516	1.0	57.6	1512	0.9	475.869	44.955	g500-B1500	m550-P132/M4	3	128
3.2	1097	12.9	1570	31.8	1570	1.0	55.6	1566	0.9	472.738	46.568	g500-B1500	m550-P132/M4	3	128
3.2	1101	12.8	1576	31.7	1576	2.7	55.4	1572	2.6	487.355	46.737	g500-B4300	m550-P132/M4	3	231
3.2	1107	12.8	1584	31.5	1584	1.7	55.1	1579	1.6	484.665	46.973	g500-B2700	m550-P132/M4	3	169
3.0	1152	12.3	1649	30.3	1649	1.6	53.0	1645	1.6	476.068	48.912	g500-B2700	m550-P132/M4	3	169
2.8	1255	11.3	1796	27.8	1796	2.4	48.6	1791	2.3	484.183	53.258	g500-B4300	m550-P132/M4	3	231



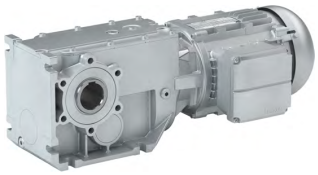
Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
2.7	1274	11.1	1824	27.4	1824	1.5	47.9	1819	1.4	471.713	54.082	g500-B2700	m550-P132/M4	3	169
2.5	1399	10.1	2003	24.9	2003	1.4	43.6	1997	1.3	471.713	59.393	g500-B2700	m550-P132/M4	3	169
2.3	1511	9.4	2162	23.1	2162	2.0	40.4	2156	1.9	481.198	64.127	g500-B4300	m550-P132/M4	3	231
2.3	1518	9.3	2173	23.0	2173	1.2	40.2	2167	1.2	479.770	64.452	g500-B2700	m550-P132/M4	3	169
2.1	1695	8.3	2426	20.6	2426	1.1	36.0	2419	1.1	477.866	71.951	g500-B2700	m550-P132/M4	3	169
1.9	1852	7.6	2651	18.8	2651	1.6	32.9	2644	1.5	478.791	78.619	g500-B4300	m550-P132/M4	3	231
1.5	2296	6.2	3287	15.2	3287	0.8	26.6	3278	0.8	475.057	97.481	g500-B2700	m550-P132/M4	3	169
1.4	2509	5.6	3592	13.9	3592	1.2	24.3	3582	1.1	475.560	106.517	g500-B4300	m550-P132/M4	3	231
1.1	3047	4.6	4361	11.4	4361	1.0	20.0	4349	1.0	471.713	129.342	g500-B4300	m550-P132/M4	3	231



50 Hz: 7.5 kW

87 Hz: 13.1 kW

Inverter operation															
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
29.8	160	121	228	299	228	1.4	522	227	1.1	497.422	4.958	g500-B820	m550-P132/L4	3	100
29.6	161	120	230	296	230	1.2	518	229	1.0	490.260	5.002	g500-B450	m550-P132/L4	3	76
29.2	163	118	233	292	233	1.6	511	232	1.4	492.631	5.067	g500-B600	m550-P132/L4	3	95
21.8	219	88.2	313	218	313	1.3	381	312	1.1	492.611	6.800	g500-B820	m550-P132/L4	3	100
21.6	221	87.5	315	216	315	1.0	378	315	0.8	488.382	6.860	g500-B450	m550-P132/L4	3	76
21.6	221	87.4	316	216	316	2.7	377	315	2.2	507.852	6.866	g500-B1500	m550-P132/L4	3	130
21.4	223	86.7	318	214	318	4.6	374	317	3.8	535.115	6.918	g500-B2700	m550-P132/L4	3	171
21.3	224	86.3	319	213	319	1.3	373	319	1.0	490.063	6.949	g500-B600	m550-P132/L4	3	95
17.4	274	70.5	392	174	392	1.2	304	391	1.0	494.971	8.517	g500-B820	m550-P132/L4	3	100
16.8	283	68.2	404	168	404	3.8	295	403	3.2	519.839	8.793	g500-B2700	m550-P132/L4	3	171
16.2	295	65.5	421	162	421	4.8	283	420	4.0	535.553	9.156	g500-B4300	m550-P132/L4	3	233
15.6	306	63.0	437	156	437	2.3	272	437	1.9	498.964	9.516	g500-B1500	m550-P132/L4	3	130
15.5	307	63.0	438	156	438	1.1	272	437	1.0	489.661	9.520	g500-B820	m550-P132/L4	3	100
14.3	333	58.1	475	143	475	0.8	251	474	0.7	488.960	10.328	g500-B450	m550-P132/L4	3	76
13.8	346	55.9	494	138	494	1.1	241	493	0.9	491.018	10.741	g500-B600	m550-P132/L4	3	95
12.7	376	51.4	537	127	537	1.1	222	536	0.9	491.307	11.680	g500-B820	m550-P132/L4	3	100
12.6	377	51.2	538	126	538	4.1	221	537	3.4	528.431	11.713	g500-B2700	m550-P132/L4	3	171
12.3	386	50.1	551	124	551	2.7	216	550	2.2	504.032	11.985	g500-B1500	m550-P132/L4	3	130
12.2	391	49.4	558	122	558	1.0	213	557	0.8	488.420	12.143	g500-B820	m550-P132/L4	3	100
11.5	414	46.6	591	115	591	3.8	201	590	3.2	527.439	12.863	g500-B2700	m550-P132/L4	3	171
11.3	422	45.7	603	113	603	1.9	197	602	1.6	493.561	13.118	g500-B1500	m550-P132/L4	3	130
10.0	474	40.7	677	101	677	0.9	176	676	0.7	489.206	14.730	g500-B600	m550-P132/L4	3	95
9.9	479	40.3	684	99.4	684	3.5	174	683	2.9	515.702	14.888	g500-B2700	m550-P132/L4	3	171
9.1	527	36.7	752	90.5	752	0.9	158	750	0.8	488.996	16.352	g500-B820	m550-P132/L4	3	100
9.1	527	36.7	752	90.5	752	3.2	158	750	2.7	515.088	16.351	g500-B2700	m550-P132/L4	3	171
8.9	535	36.1	764	89.1	764	2.0	156	762	1.6	496.975	16.611	g500-B1500	m550-P132/L4	3	130
8.0	595	32.5	850	80.1	850	4.8	140	848	4.0	524.439	18.486	g500-B4300	m550-P132/L4	3	233
7.6	629	30.7	898	75.7	898	2.9	133	897	2.4	505.648	19.542	g500-B2700	m550-P132/L4	3	171
7.2	658	29.3	940	72.4	940	1.6	127	938	1.3	493.931	20.444	g500-B1500	m550-P132/L4	3	130
7.1	672	28.8	959	71.0	959	0.9	124	957	0.7	488.011	20.857	g500-B820	m550-P132/L4	3	100
7.0	678	28.5	968	70.3	968	4.4	123	966	3.7	516.259	21.065	g500-B4300	m550-P132/L4	3	233
6.6	717	26.9	1024	66.5	1024	2.6	116	1022	2.2	501.787	22.269	g500-B2700	m550-P132/L4	3	171
6.5	737	26.2	1053	64.6	1053	1.4	113	1051	1.2	492.515	22.898	g500-B1500	m550-P132/L4	3	130
6.1	788	24.5	1124	60.5	1124	2.4	106	1122	2.0	501.513	24.456	g500-B2700	m550-P132/L4	3	171
5.8	817	23.7	1166	58.3	1166	3.7	102	1164	3.1	508.070	25.365	g500-B4300	m550-P132/L4	3	233
5.6	849	22.8	1212	56.2	1212	1.2	98.3	1209	1.0	495.993	26.353	g500-B1500	m550-P132/L4	3	130
5.5	863	22.4	1233	55.2	1233	2.2	96.6	1230	1.8	498.088	26.814	g500-B2700	m550-P132/L4	3	171
5.3	902	21.4	1288	52.8	1288	3.3	92.5	1285	2.8	520.100	28.013	g500-B4300	m550-P132/L4	3	233
5.1	941	20.5	1343	50.7	1343	1.1	88.7	1340	0.9	490.194	29.206	g500-B1500	m550-P132/L4	3	130
5.0	948	20.4	1354	50.3	1354	2.0	88.0	1351	1.7	497.899	29.447	g500-B2700	m550-P132/L4	3	171
4.8	1001	19.3	1430	47.6	1430	3.0	83.3	1427	2.5	501.789	31.097	g500-B4300	m550-P132/L4	3	233
4.5	1059	18.3	1511	45.0	1511	1.8	78.8	1508	1.5	495.148	32.873	g500-B2700	m550-P132/L4	3	171
4.2	1147	16.9	1637	41.6	1637	2.6	72.7	1634	2.2	510.546	35.607	g500-B4300	m550-P132/L4	3	233
4.1	1152	16.8	1645	41.4	1645	0.9	72.4	1641	0.8	489.110	35.778	g500-B1500	m550-P132/L4	3	130
4.1	1163	16.6	1660	41.0	1660	1.6	71.7	1656	1.4	495.022	36.102	g500-B2700	m550-P132/L4	3	171
4.1	1176	16.4	1679	40.5	1679	0.9	70.9	1676	0.8	492.790	36.526	g500-B1500	m550-P132/L4	3	130
3.5	1377	14.0	1966	34.6	1966	1.4	60.6	1962	1.3	500.039	42.772	g500-B2700	m550-P132/L4	3	171
3.2	1505	12.8	2149	31.7	2149	2.0	55.4	2144	1.9	502.655	46.737	g500-B4300	m550-P132/L4	3	233
3.2	1513	12.8	2160	31.5	2160	1.3	55.1	2155	1.2	499.965	46.973	g500-B2700	m550-P132/L4	3	171
3.0	1575	12.3	2249	30.3	2249	1.2	53.0	2244	1.1	491.368	48.912	g500-B2700	m550-P132/L4	3	171

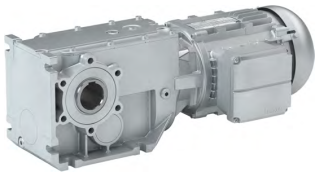


Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
2.8	1715	11.3	2448	27.8	2448	1.8	48.6	2443	1.7	499.483	53.258	g500-B4300	m550-P132/L4	3	233
2.7	1742	11.1	2486	27.4	2486	1.1	47.9	2481	1.0	487.013	54.082	g500-B2700	m550-P132/L4	3	171
2.5	1913	10.1	2731	24.9	2731	1.0	43.6	2725	0.9	487.013	59.393	g500-B2700	m550-P132/L4	3	171
2.3	2065	9.4	2948	23.1	2948	1.5	40.4	2942	1.4	496.498	64.127	g500-B4300	m550-P132/L4	3	233
2.3	2075	9.3	2963	23.0	2963	0.9	40.2	2957	0.9	495.070	64.452	g500-B2700	m550-P132/L4	3	171
2.1	2317	8.3	3308	20.6	3308	0.8	36.0	3301	0.8	493.166	71.951	g500-B2700	m550-P132/L4	3	171
1.9	2532	7.6	3614	18.8	3614	1.2	32.9	3607	1.1	494.091	78.619	g500-B4300	m550-P132/L4	3	233
1.4	3430	5.6	4897	13.9	4897	0.9	24.3	4887	0.8	490.860	106.517	g500-B4300	m550-P132/L4	3	233

50 Hz: 11 kW

87 Hz: 19.2 kW

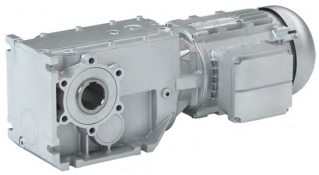
Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
21.7	323	87.4	461	216	461	1.8	378	461	1.5	1381.952	6.866	g500-B1500	m550-P160/M4	3	234
21.5	325	86.7	465	215	465	3.1	375	465	2.6	1409.215	6.918	g500-B2700	m550-P160/M4	3	275
16.9	414	68.2	591	169	591	2.6	295	591	2.2	1393.939	8.793	g500-B2700	m550-P160/M4	3	275
16.3	431	65.5	615	162	615	4.4	283	615	3.7	1409.653	9.156	g500-B4300	m550-P160/M4	3	337
15.7	447	63.0	639	156	639	1.6	273	639	1.3	1373.064	9.516	g500-B1500	m550-P160/M4	3	234
12.7	551	51.2	787	127	787	2.8	222	787	2.3	1402.531	11.713	g500-B2700	m550-P160/M4	3	275
12.4	564	50.1	805	124	805	1.8	217	805	1.5	1378.132	11.985	g500-B1500	m550-P160/M4	3	234
11.6	605	46.6	864	115	864	2.6	202	864	2.2	1401.539	12.863	g500-B2700	m550-P160/M4	3	275
11.4	617	45.7	881	113	881	1.3	198	881	1.1	1367.661	13.118	g500-B1500	m550-P160/M4	3	234
10.6	662	42.6	946	105	946	4.6	184	946	3.8	1422.177	14.084	g500-B4300	m550-P160/M4	3	337
10.0	700	40.3	1000	99.7	1000	2.4	174	1000	2.0	1389.802	14.888	g500-B2700	m550-P160/M4	3	275
9.1	769	36.7	1098	90.8	1098	2.2	159	1098	1.8	1389.188	16.351	g500-B2700	m550-P160/M4	3	275
9.0	781	36.1	1116	89.4	1116	1.3	156	1116	1.1	1371.075	16.611	g500-B1500	m550-P160/M4	3	234
8.1	869	32.5	1241	80.3	1241	3.5	140	1241	2.9	1398.539	18.486	g500-B4300	m550-P160/M4	3	337
7.6	919	30.7	1312	76.0	1312	2.0	133	1312	1.6	1379.748	19.542	g500-B2700	m550-P160/M4	3	275
7.3	961	29.3	1373	72.6	1373	1.1	127	1373	0.9	1368.031	20.444	g500-B1500	m550-P160/M4	3	234
7.1	991	28.5	1415	70.5	1415	3.0	123	1415	2.5	1390.359	21.065	g500-B4300	m550-P160/M4	3	337
6.7	1047	26.9	1495	66.7	1495	1.8	117	1495	1.5	1375.887	22.269	g500-B2700	m550-P160/M4	3	275
6.5	1077	26.2	1538	64.9	1538	1.0	113	1538	0.8	1366.615	22.898	g500-B1500	m550-P160/M4	3	234
6.1	1150	24.5	1642	60.7	1642	1.6	106	1642	1.4	1375.613	24.456	g500-B2700	m550-P160/M4	3	275
5.9	1193	23.7	1703	58.5	1703	2.5	102	1703	2.1	1382.170	25.365	g500-B4300	m550-P160/M4	3	337
5.7	1239	22.8	1770	56.4	1770	0.9	98.5	1770	0.7	1370.093	26.353	g500-B1500	m550-P160/M4	3	234
5.6	1261	22.4	1801	55.4	1801	1.5	96.8	1801	1.3	1372.188	26.814	g500-B2700	m550-P160/M4	3	275
5.3	1317	21.4	1881	53.0	1881	2.3	92.6	1881	1.9	1394.200	28.013	g500-B4300	m550-P160/M4	3	337
5.1	1385	20.4	1978	50.4	1978	1.4	88.1	1978	1.1	1371.999	29.447	g500-B2700	m550-P160/M4	3	275
4.8	1462	19.3	2088	47.8	2088	2.1	83.4	2088	1.7	1375.889	31.097	g500-B4300	m550-P160/M4	3	337
4.5	1546	18.3	2208	45.2	2208	1.2	78.9	2208	1.0	1369.248	32.873	g500-B2700	m550-P160/M4	3	275
4.2	1674	16.9	2391	41.7	2391	1.8	72.9	2391	1.5	1384.646	35.607	g500-B4300	m550-P160/M4	3	337
4.1	1697	16.6	2424	41.1	2424	1.1	71.9	2424	0.9	1369.122	36.102	g500-B2700	m550-P160/M4	3	275
3.5	2011	14.0	2872	34.7	2872	0.9	60.7	2872	0.9	1374.139	42.772	g500-B2700	m550-P160/M4	3	275
3.2	2198	12.8	3139	31.8	3139	1.4	55.5	3139	1.3	1376.755	46.737	g500-B4300	m550-P160/M4	3	337
3.2	2209	12.8	3155	31.6	3155	0.9	55.2	3155	0.8	1374.065	46.973	g500-B2700	m550-P160/M4	3	275
2.8	2504	11.3	3577	27.9	3577	1.2	48.7	3577	1.1	1373.583	53.258	g500-B4300	m550-P160/M4	3	337
2.3	3015	9.4	4306	23.2	4306	1.0	40.5	4306	1.0	1370.598	64.127	g500-B4300	m550-P160/M4	3	337
1.9	3697	7.6	5280	18.9	5280	0.8	33.0	5280	0.8	1368.191	78.619	g500-B4300	m550-P160/M4	3	337



50 Hz: 15 kW

87 Hz: 26.3 kW

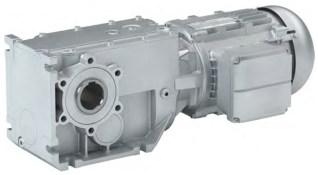
Inverter operation															
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)					Geared motor			
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
27.1	352	109	503	271	503	4.3	473	505	3.6	1675.776	5.488	g500-B4300	m550-P160/L4	3	352
21.7	440	87.4	629	216	629	1.3	378	631	1.1	1571.952	6.866	g500-B1500	m550-P160/L4	3	249
21.5	444	86.7	634	215	634	2.3	375	636	1.9	1599.215	6.918	g500-B2700	m550-P160/L4	3	290
21.4	447	86.0	639	213	639	3.8	372	641	3.1	1631.324	6.976	g500-B4300	m550-P160/L4	3	352
16.9	564	68.2	806	169	806	1.9	295	809	1.6	1583.939	8.793	g500-B2700	m550-P160/L4	3	290
16.3	587	65.5	839	162	839	3.2	283	842	2.7	1599.653	9.156	g500-B4300	m550-P160/L4	3	352
15.7	610	63.0	872	156	872	1.2	273	875	1.0	1563.064	9.516	g500-B1500	m550-P160/L4	3	249
13.4	710	54.2	1016	134	1016	4.2	234	1019	3.5	1644.840	11.080	g500-B4300	m550-P160/L4	3	352
12.7	751	51.2	1074	127	1074	2.1	222	1077	1.7	1592.531	11.713	g500-B2700	m550-P160/L4	3	290
12.4	768	50.1	1099	124	1099	1.3	217	1102	1.1	1568.132	11.985	g500-B1500	m550-P160/L4	3	249
11.6	825	46.6	1179	115	1179	1.9	202	1183	1.6	1591.539	12.863	g500-B2700	m550-P160/L4	3	290
11.4	841	45.7	1202	113	1202	0.9	198	1206	0.8	1557.661	13.118	g500-B1500	m550-P160/L4	3	249
10.6	903	42.6	1291	105	1291	3.3	184	1295	2.8	1612.177	14.084	g500-B4300	m550-P160/L4	3	352
10.0	955	40.3	1365	99.7	1365	1.7	174	1369	1.5	1579.802	14.888	g500-B2700	m550-P160/L4	3	290
9.1	1048	36.7	1499	90.8	1499	1.6	159	1503	1.4	1579.188	16.351	g500-B2700	m550-P160/L4	3	290
9.0	1065	36.1	1523	89.4	1523	1.0	156	1527	0.8	1561.075	16.611	g500-B1500	m550-P160/L4	3	249
8.1	1185	32.5	1694	80.3	1694	2.5	140	1700	2.1	1588.539	18.486	g500-B4300	m550-P160/L4	3	352
7.6	1253	30.7	1791	76.0	1791	1.4	133	1797	1.2	1569.748	19.542	g500-B2700	m550-P160/L4	3	290
7.3	1311	29.3	1874	72.6	1874	0.8	127	1880	0.7	1558.031	20.444	g500-B1500	m550-P160/L4	3	249
7.1	1351	28.5	1931	70.5	1931	2.2	123	1937	1.9	1580.359	21.065	g500-B4300	m550-P160/L4	3	352
6.7	1428	26.9	2041	66.7	2041	1.3	117	2048	1.1	1565.887	22.269	g500-B2700	m550-P160/L4	3	290
6.1	1568	24.5	2242	60.7	2242	1.2	106	2249	1.0	1565.613	24.456	g500-B2700	m550-P160/L4	3	290
5.9	1626	23.7	2325	58.5	2325	1.9	102	2332	1.5	1572.170	25.365	g500-B4300	m550-P160/L4	3	352
5.6	1719	22.4	2458	55.4	2458	1.1	96.8	2465	0.9	1562.188	26.814	g500-B2700	m550-P160/L4	3	290
5.3	1796	21.4	2568	53.0	2568	1.7	92.6	2576	1.4	1584.200	28.013	g500-B4300	m550-P160/L4	3	352
5.1	1888	20.4	2699	50.4	2699	1.0	88.1	2708	0.8	1561.999	29.447	g500-B2700	m550-P160/L4	3	290
4.8	1994	19.3	2850	47.8	2850	1.5	83.4	2859	1.3	1565.889	31.097	g500-B4300	m550-P160/L4	3	352
4.5	2108	18.3	3013	45.2	3013	0.9	78.9	3023	0.7	1559.248	32.873	g500-B2700	m550-P160/L4	3	290
4.2	2283	16.9	3264	41.7	3264	1.3	72.9	3274	1.1	1574.646	35.607	g500-B4300	m550-P160/L4	3	352
4.1	2315	16.6	3309	41.1	3309	0.8	71.9	3319	0.7	1559.122	36.102	g500-B2700	m550-P160/L4	3	290
3.2	2997	12.8	4284	31.8	4284	1.0	55.5	4297	1.0	1566.755	46.737	g500-B4300	m550-P160/L4	3	352
2.8	3415	11.3	4882	27.9	4882	0.9	48.7	4897	0.8	1563.583	53.258	g500-B4300	m550-P160/L4	3	352



50 Hz: 18.5 kW

87 Hz: 32.2 kW

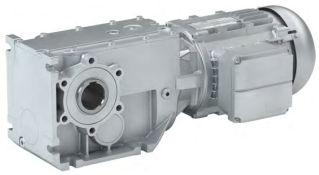
Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
27.1	434	109	620	271	620	3.5	472	620	2.9	2455.776	5.488	g500-B4300	m550-P180/M4	3	414
21.7	543	87.4	776	216	776	1.1	377	776	0.9	2351.952	6.866	g500-B1500	m550-P180/M4	3	310
21.5	547	86.7	782	215	782	1.9	374	782	1.5	2379.215	6.918	g500-B2700	m550-P180/M4	3	352
21.4	552	86.0	789	213	789	3.0	371	789	2.5	2411.324	6.976	g500-B4300	m550-P180/M4	3	414
16.9	696	68.2	994	169	994	1.5	295	994	1.3	2363.939	8.793	g500-B2700	m550-P180/M4	3	352
16.3	725	65.5	1035	162	1035	2.6	283	1035	2.2	2379.653	9.156	g500-B4300	m550-P180/M4	3	414
15.7	753	63.0	1076	156	1076	0.9	272	1076	0.8	2343.064	9.516	g500-B1500	m550-P180/M4	3	310
13.4	877	54.2	1252	134	1252	3.4	234	1252	2.8	2424.840	11.080	g500-B4300	m550-P180/M4	3	414
12.7	927	51.2	1324	127	1324	1.7	221	1324	1.4	2372.531	11.713	g500-B2700	m550-P180/M4	3	352
12.4	948	50.1	1355	124	1355	1.1	216	1355	0.9	2348.132	11.985	g500-B1500	m550-P180/M4	3	310
11.6	1018	46.6	1454	115	1454	1.6	201	1454	1.3	2371.539	12.863	g500-B2700	m550-P180/M4	3	352
10.6	1114	42.6	1592	105	1592	2.7	184	1592	2.3	2392.177	14.084	g500-B4300	m550-P180/M4	3	414
10.0	1178	40.3	1683	99.7	1683	1.4	174	1683	1.2	2359.802	14.888	g500-B2700	m550-P180/M4	3	352
9.1	1294	36.7	1848	90.8	1848	1.3	158	1848	1.1	2359.188	16.351	g500-B2700	m550-P180/M4	3	352
9.0	1314	36.1	1878	89.4	1878	0.8	156	1878	0.7	2341.075	16.611	g500-B1500	m550-P180/M4	3	310
8.1	1463	32.5	2090	80.3	2090	2.1	140	2090	1.7	2368.539	18.486	g500-B4300	m550-P180/M4	3	414
7.6	1546	30.7	2209	76.0	2209	1.2	133	2209	1.0	2349.748	19.542	g500-B2700	m550-P180/M4	3	352
7.1	1667	28.5	2381	70.5	2381	1.8	123	2381	1.5	2360.359	21.065	g500-B4300	m550-P180/M4	3	414
6.7	1762	26.9	2517	66.7	2517	1.1	116	2517	0.9	2345.887	22.269	g500-B2700	m550-P180/M4	3	352
6.1	1935	24.5	2764	60.7	2764	1.0	106	2764	0.8	2345.613	24.456	g500-B2700	m550-P180/M4	3	352
5.9	2007	23.7	2867	58.5	2867	1.5	102	2867	1.3	2352.170	25.365	g500-B4300	m550-P180/M4	3	414
5.6	2122	22.4	3031	55.4	3031	0.9	96.6	3031	0.7	2342.188	26.814	g500-B2700	m550-P180/M4	3	352
5.3	2216	21.4	3166	53.0	3166	1.4	92.5	3166	1.1	2364.200	28.013	g500-B4300	m550-P180/M4	3	414
5.1	2330	20.4	3329	50.4	3329	0.8	88.0	3329	0.7	2341.999	29.447	g500-B2700	m550-P180/M4	3	352
4.8	2461	19.3	3515	47.8	3515	1.2	83.3	3515	1.0	2345.889	31.097	g500-B4300	m550-P180/M4	3	414
4.2	2817	16.9	4025	41.7	4025	1.1	72.7	4025	0.9	2354.646	35.607	g500-B4300	m550-P180/M4	3	414
3.2	3698	12.8	5283	31.8	5283	0.8	55.4	5283	0.8	2346.755	46.737	g500-B4300	m550-P180/M4	3	414



50 Hz: 22 kW

87 Hz: 38.5 kW

Inverter operation												Geared motor			
5 Hz -		- 20 Hz		50 Hz (1:10)			87 Hz (1:17.4)								
n_{22}	M_{22}	n_{21}	M_2	n_2	M_2	c	n_2	M_2	c	J	i			z	m
rpm	Nm	rpm	Nm	rpm	Nm		rpm	Nm		kgcm²					kg
27.0	518	109	740	270	740	2.9	472	740	2.4	2525.776	5.488	g500-B4300	m550-P180/L4	3	424
21.6	648	87.4	926	216	926	0.9	377	926	0.8	2421.952	6.866	g500-B1500	m550-P180/L4	3	321
21.4	653	86.7	933	214	933	1.6	374	933	1.3	2449.215	6.918	g500-B2700	m550-P180/L4	3	362
21.2	659	86.0	941	212	941	2.6	371	941	2.1	2481.324	6.976	g500-B4300	m550-P180/L4	3	424
16.8	830	68.2	1186	168	1186	1.3	295	1186	1.1	2433.939	8.793	g500-B2700	m550-P180/L4	3	362
16.2	865	65.5	1235	162	1235	2.2	283	1235	1.8	2449.653	9.156	g500-B4300	m550-P180/L4	3	424
13.4	1046	54.2	1494	134	1494	2.8	234	1494	2.4	2494.840	11.080	g500-B4300	m550-P180/L4	3	424
12.6	1106	51.2	1580	126	1580	1.4	221	1580	1.2	2442.531	11.713	g500-B2700	m550-P180/L4	3	362
12.3	1132	50.1	1616	124	1616	0.9	216	1616	0.8	2418.132	11.985	g500-B1500	m550-P180/L4	3	321
11.5	1215	46.6	1735	115	1735	1.3	201	1735	1.1	2441.539	12.863	g500-B2700	m550-P180/L4	3	362
10.5	1330	42.6	1900	105	1900	2.3	184	1900	1.9	2462.177	14.084	g500-B4300	m550-P180/L4	3	424
9.9	1406	40.3	2008	99.4	2008	1.2	174	2008	1.0	2429.802	14.888	g500-B2700	m550-P180/L4	3	362
9.1	1544	36.7	2205	90.5	2205	1.1	158	2205	0.9	2429.188	16.351	g500-B2700	m550-P180/L4	3	362
8.0	1745	32.5	2493	80.1	2493	1.7	140	2493	1.4	2438.539	18.486	g500-B4300	m550-P180/L4	3	424
7.6	1845	30.7	2636	75.7	2636	1.0	133	2636	0.8	2419.748	19.542	g500-B2700	m550-P180/L4	3	362
7.0	1989	28.5	2841	70.3	2841	1.5	123	2841	1.3	2430.359	21.065	g500-B4300	m550-P180/L4	3	424
6.6	2103	26.9	3004	66.5	3004	0.9	116	3004	0.7	2415.887	22.269	g500-B2700	m550-P180/L4	3	362
6.1	2309	24.5	3299	60.5	3299	0.8	106	3299	0.7	2415.613	24.456	g500-B2700	m550-P180/L4	3	362
5.8	2395	23.7	3421	58.3	3421	1.3	102	3421	1.1	2422.170	25.365	g500-B4300	m550-P180/L4	3	424
5.3	2645	21.4	3778	52.8	3778	1.1	92.5	3778	1.0	2434.200	28.013	g500-B4300	m550-P180/L4	3	424
4.8	2936	19.3	4194	47.6	4194	1.0	83.3	4194	0.9	2415.889	31.097	g500-B4300	m550-P180/L4	3	424
4.2	3362	16.9	4803	41.6	4803	0.9	72.7	4803	0.8	2424.646	35.607	g500-B4300	m550-P180/L4	3	424



Motor – inverter assignment

Supply voltage 1x 230/240 V

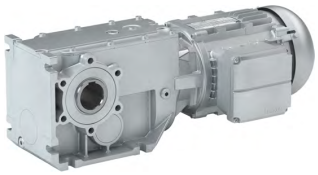
Rated frequency 50/60 Hz

Rated power	Motor	Frequency inverter	
		i510 cabinet	i550 cabinet
P_{rated}			
kW			
0.12	m550-H63/S4	i510-C0.25/230-1	i550-C0.25/230-1
0.12	m550-H63/S4	i510-C0.25/230-2	i550-C0.25/230-2
0.18	m550-H63/M4	i510-C0.25/230-1	i550-C0.25/230-1
0.18	m550-H63/M4	i510-C0.25/230-2	i550-C0.25/230-2
0.25	m550-H63/L4	i510-C0.25/230-1	i550-C0.25/230-1
0.25	m550-H63/L4	i510-C0.25/230-2	i550-C0.25/230-2
0.37	m550-H71/M4	i510-C0.37/230-2	i550-C0.37/230-2
0.37	m550-H71/M4	i510-C0.37/230-1	i550-C0.37/230-1
0.55	m550-H71/L4	i510-C0.55/230-1	i550-C0.55/230-1
0.55	m550-H71/L4	i510-C0.55/230-2	i550-C0.55/230-2
0.75	m550-P80/M4	i510-C0.75/230-1	i550-C0.75/230-1
0.75	m550-P80/M4	i510-C0.75/230-2	i550-C0.75/230-2
1.1	m550-P90/M4	i510-C1.1/230-1	i550-C1.1/230-1
1.1	m550-P90/M4	i510-C1.1/230-2	i550-C1.1/230-2
1.5	m550-P90/L4	i510-C1.5/230-1	i550-C1.5/230-1
1.5	m550-P90/L4	i510-C1.5/230-2	i550-C1.5/230-2
2.2	m550-P100/M4	i510-C2.2/230-1	i550-C2.2/230-1
2.2	m550-P100/M4	i510-C2.2/230-2	i550-C2.2/230-2

Supply voltage 3x 230/240 V

Rated frequency 50/60 Hz

Rated power	Motor	Frequency inverter			
		i510 cabinet	i550 cabinet	i550 motec	8400 motec
P_{rated}					
kW					
0.12	m550-H63/S4	i510-C0.25/230-2	i550-C0.25/230-2	-	-
0.18	m550-H63/M4	i510-C0.25/230-2	i550-C0.25/230-2	-	-
0.25	m550-H63/L4	i510-C0.25/230-2	i550-C0.25/230-2	i550-M0.37/230-3	-
0.37	m550-H71/M4	i510-C0.37/230-2	i550-C0.37/230-2	i550-M0.37/230-3	-
0.55	m550-H71/L4	i510-C0.55/230-2	i550-C0.55/230-2	i550-M0.55/230-3	-
0.75	m550-P80/M4	i510-C0.75/230-2	i550-C0.75/230-2	i550-M0.75/230-3	-
1.1	m550-P90/M4	i510-C1.1/230-2	i550-C1.1/230-2	i550-M1.1/230-3	-
1.5	m550-P90/L4	i510-C1.5/230-2	i550-C1.5/230-2	i550-M1.5/230-3	-
2.2	m550-P100/M4	i510-C2.2/230-2	i550-C2.2/230-2	i550-M2.2/230-3	-
3	m550-P100/L4	i510-C4.0/230-3	i550-C4.0/230-3	i550-M3.0/230-3	-
4	m550-P112/M4	i510-C4.0/230-3	i550-C4.0/230-3	-	-
5.5	m550-P132/M4	i510-C5.5/230-3	i550-C5.5/230-3	-	-



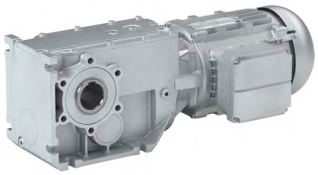
Supply voltage 3x 400/480 V

Rated frequency 50/60 Hz

Rated power	Motor	Frequency inverter			
		i510 cabinet	i550 cabinet	i550 motec	8400 motec
P_{rated}					
kW					
0.25	m550-H63/L4	i510-C0.37/400-3	i550-C0.37/400-3	i550-M0.37/400-3	E84DVB☐3714S☐☐☐2☐
0.37	m550-H71/M4	i510-C0.37/400-3	i550-C0.37/400-3	i550-M0.37/400-3	E84DVB☐3714S☐☐☐2☐
0.55	m550-H71/L4	i510-C0.55/400-3	i550-C0.55/400-3	i550-M0.55/400-3	E84DVB☐5514S☐☐☐2☐
0.75	m550-P80/M4	i510-C0.75/400-3	i550-C0.75/400-3	i550-M0.75/400-3	E84DVB☐7514S☐☐☐2☐
1.1	m550-P90/M4	i510-C1.1/400-3	i550-C1.1/400-3	i550-M1.1/400-3	E84DVB☐1124S☐☐☐2☐
1.5	m550-P90/L4	i510-C1.5/400-3	i550-C1.5/400-3	i550-M1.5/400-3	E84DVB☐1524S☐☐☐2☐
2.2	m550-P100/M4	i510-C2.2/400-3	i550-C2.2/400-3	i550-M2.2/400-3	E84DVB☐2224S☐☐☐2☐
3	m550-P100/L4	i510-C3.0/400-3	i550-C3.0/400-3	i550-M3.0/400-3	E84DVB☐3024S☐☐☐2☐
4	m550-P112/M4	i510-C4.0/400-3	i550-C4.0/400-3	i550-M4.0/400-3	E84DVB☐4024S☐☐☐2☐
5.5	m550-P132/M4	i510-C5.5/400-3	i550-C5.5/400-3	i550-M5.5/400-3	E84DVB☐5524S☐☐☐2☐
7.5	m550-P132/L4	i510-C7.5/400-3	i550-C7.5/400-3	-	E84DVB☐7524S☐☐☐2☐
11	m550-P160/M4	i510-C11/400-3	i550-C11/400-3	-	-
15	m550-P160/L4	-	i550-C15/400-3	-	-
18.5	m550-P180/M4	-	i550-C18/400-3	-	-
22	m550-P180/L4	-	i550-C22/400-3	-	-

Rated frequency 87 Hz

Rated power	Motor	Frequency inverter			
		i510 cabinet	i550 cabinet	i550 motec	8400 motec
P_{rated}					
kW					
0.21	m550-H63/S4	i510-C0.37/400-3	i550-C0.37/400-3	i550-M0.37/400-3	E84DVB☐3714S☐☐☐2☐
0.33	m550-H63/M4	i510-C0.37/400-3	i550-C0.37/400-3	i550-M0.37/400-3	E84DVB☐3714S☐☐☐2☐
0.45	m550-H63/L4	i510-C0.55/400-3	i550-C0.55/400-3	i550-M0.55/400-3	E84DVB☐5514S☐☐☐2☐
0.66	m550-H71/M4	i510-C0.75/400-3	i550-C0.75/400-3	i550-M0.75/400-3	E84DVB☐7514S☐☐☐2☐
1	m550-H71/L4	i510-C1.1/400-3	i550-C1.1/400-3	i550-M1.1/400-3	E84DVB☐1124S☐☐☐2☐
1.35	m550-P80/M4	i510-C1.5/400-3	i550-C1.5/400-3	i550-M1.5/400-3	E84DVB☐1524S☐☐☐2☐
1.9	m550-P90/M4	i510-C2.2/400-3	i550-C2.2/400-3	i550-M2.2/400-3	E84DVB☐2224S☐☐☐2☐
2.6	m550-P90/L4	i510-C3.0/400-3	i550-C3.0/400-3	i550-M3.0/400-3	E84DVB☐3024S☐☐☐2☐
3.9	m550-P100/M4	i510-C4.0/400-3	i550-C4.0/400-3	i550-M4.0/400-3	E84DVB☐4024S☐☐☐2☐
5.2	m550-P100/L4	i510-C5.5/400-3	i550-C5.5/400-3	i550-M5.5/400-3	E84DVB☐5524S☐☐☐2☐
7.35	m550-P112/M4	i510-C7.5/400-3	i550-C7.5/400-3	-	E84DVB☐7524S☐☐☐2☐
9.6	m550-P132/M4	i510-C11/400-3	i550-C11/400-3	-	-
13.1	m550-P132/L4	-	i550-C15/400-3	-	-
19.2	m550-P160/M4	-	i550-C22/400-3	-	-
26.3	m550-P160/L4	-	i550-C30/400-3	-	-
32.2	m550-P180/M4	-	i550-C37/400-3	-	-
38.5	m550-P180/L4	-	i550-C45/400-3	-	-



Dimensions

Notes on the basic dimensions

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

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

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

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

Deviating dimensions: ▸ Gearbox with pre-stage 🕮 126

The following legend shows the structure of the dimension tables:

Motor	m550-H		
	63/S4	63/M4	63/L4

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 terminal box end

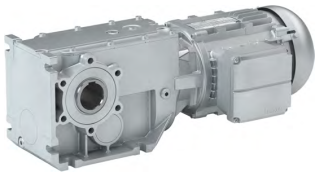
NOTICE

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

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

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

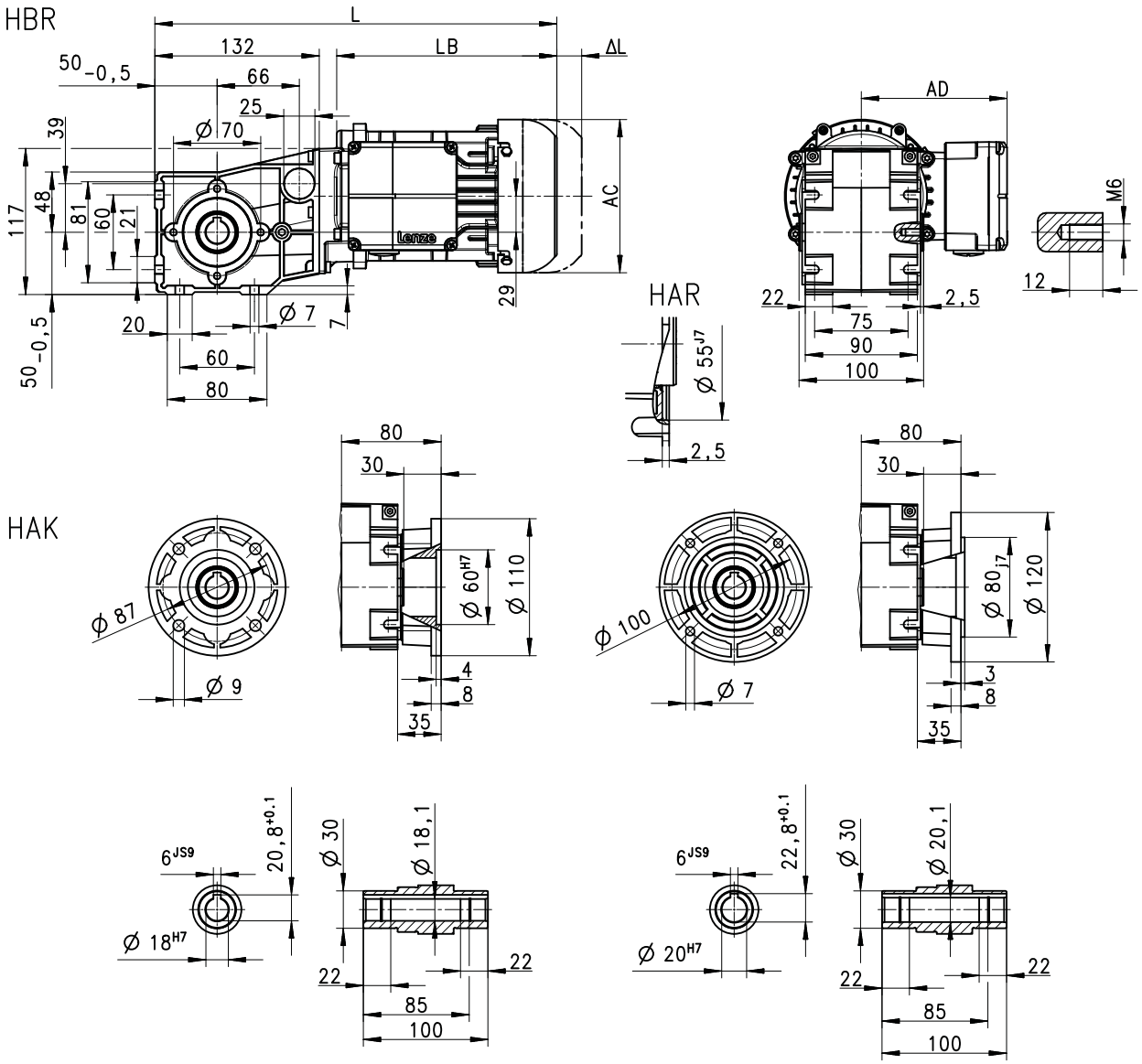
Gearboxes	Min. length of the machine shaft
	mm
g500-B45	85
g500-B110	105
g500-B240	127
g500-B450	100
g500-B600	110
g500-B820	120
g500-B1500	135
g500-B2700	155
g500-B4300	190



Basic dimensions

g500-B45, 2-stage

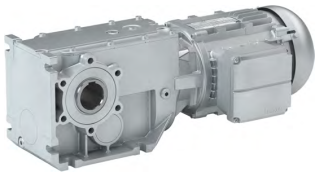
Gearbox design: Hollow shaft, with foot (HBR/HAR/HAK)



8801246-00

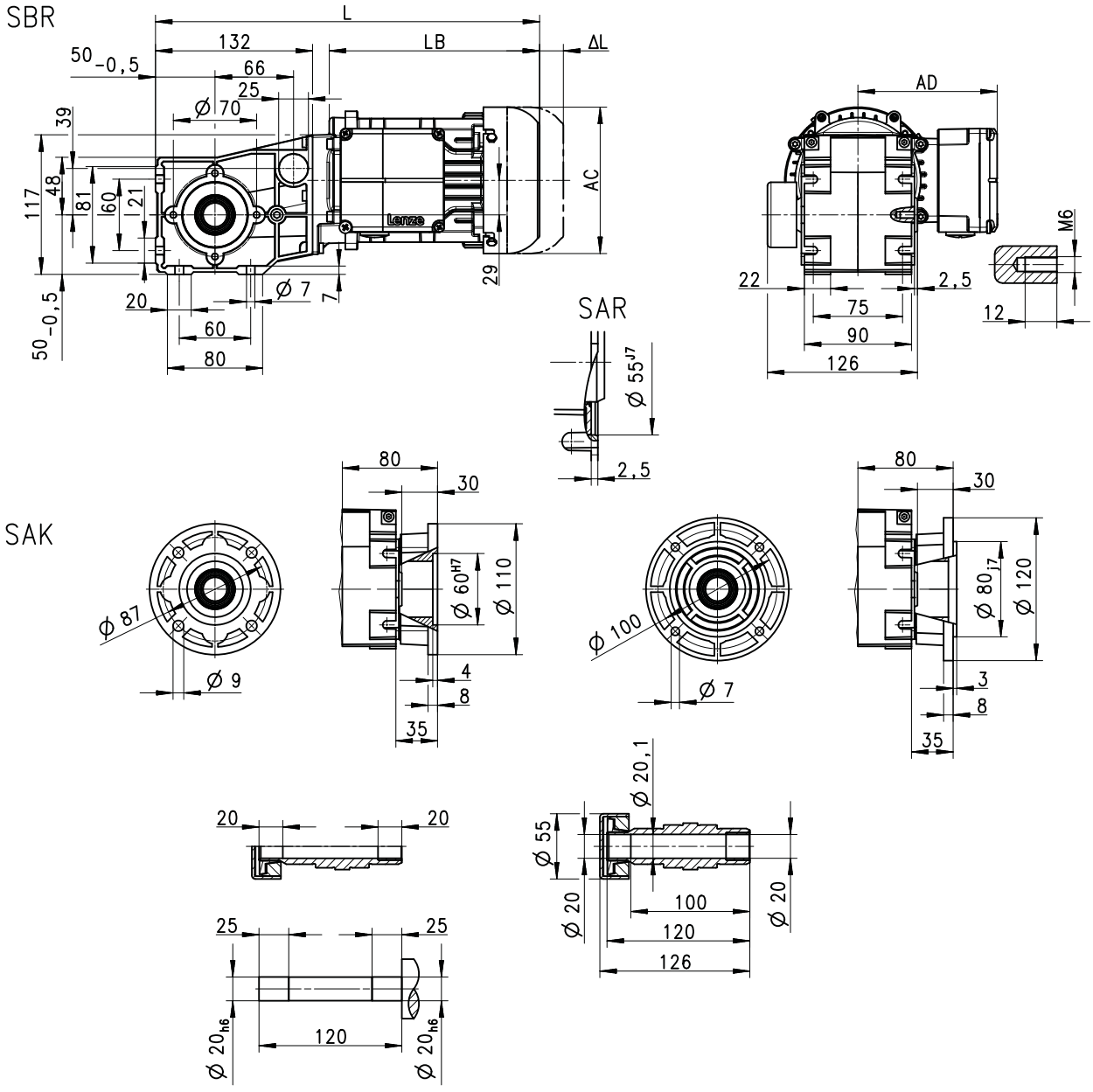
Motor series			m550-H	
Motor			**063S4 063M4 063L4**	**071M4 071L4**
Total length	L	mm	323	358
Motor length	LB	mm	188	217
Motor diameter	AC	mm	123	139
Motor/connection distance	AD	mm	117	129

Δ L ▸ Additional lengths 🕮 130



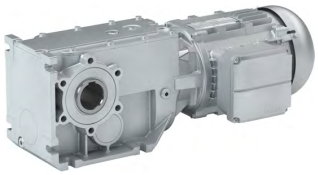
g500-B45, 2-stage

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



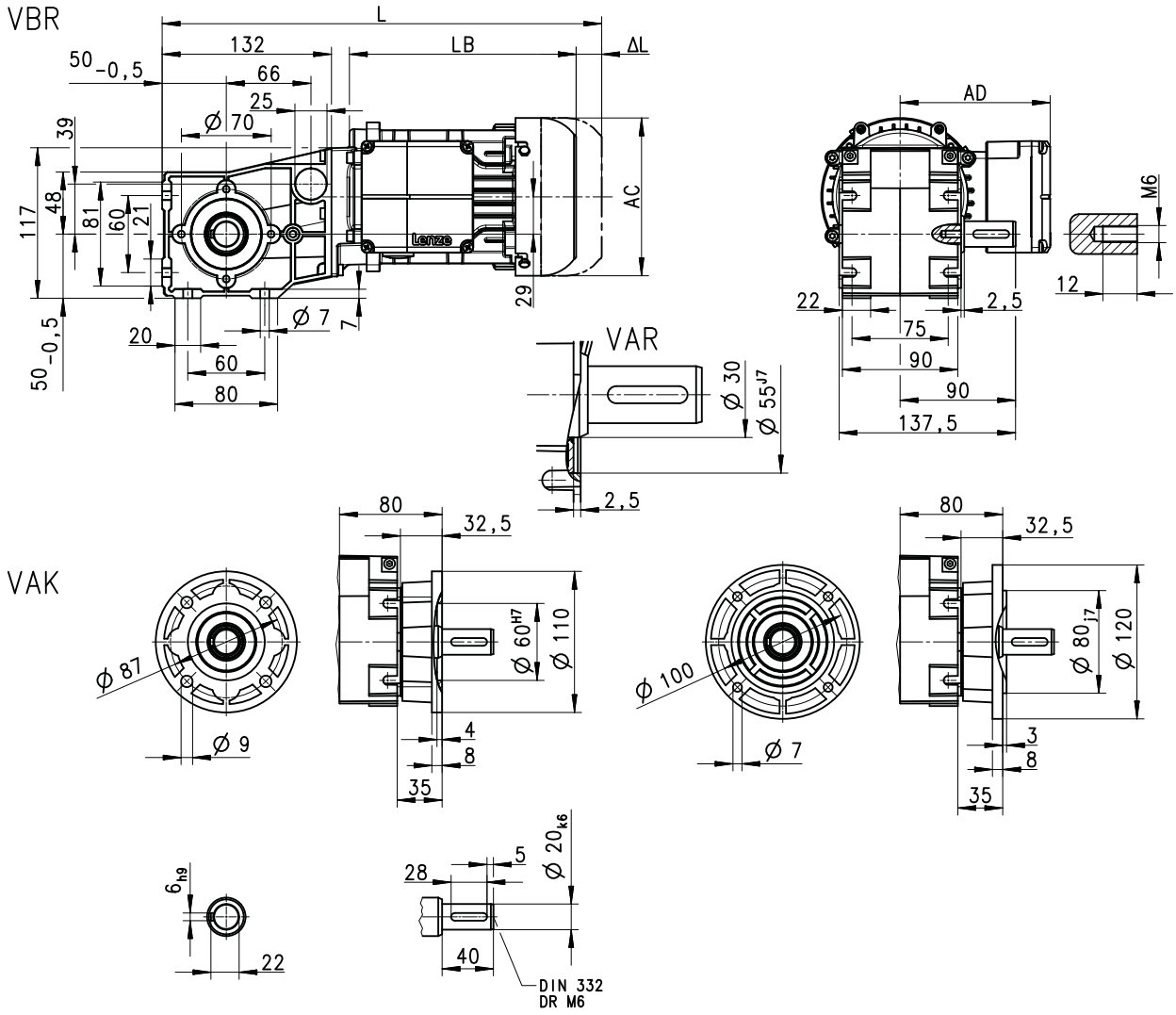
Motor series			m550-H	
Motor			**063S4 063M4 063L4**	**071M4 071L4**
Total length	L	mm	323	358
Motor length	LB	mm	188	217
Motor diameter	AC	mm	123	139
Motor/connection distance	AD	mm	117	129

Δ L ▸ Additional lengths 🕮 130



g500-B45, 2-stage

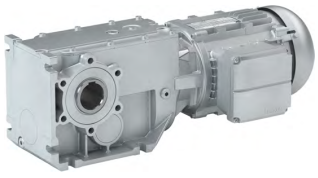
Gearbox design: Solid shaft, with foot (VBR/VAR/VAK)



8801247-00

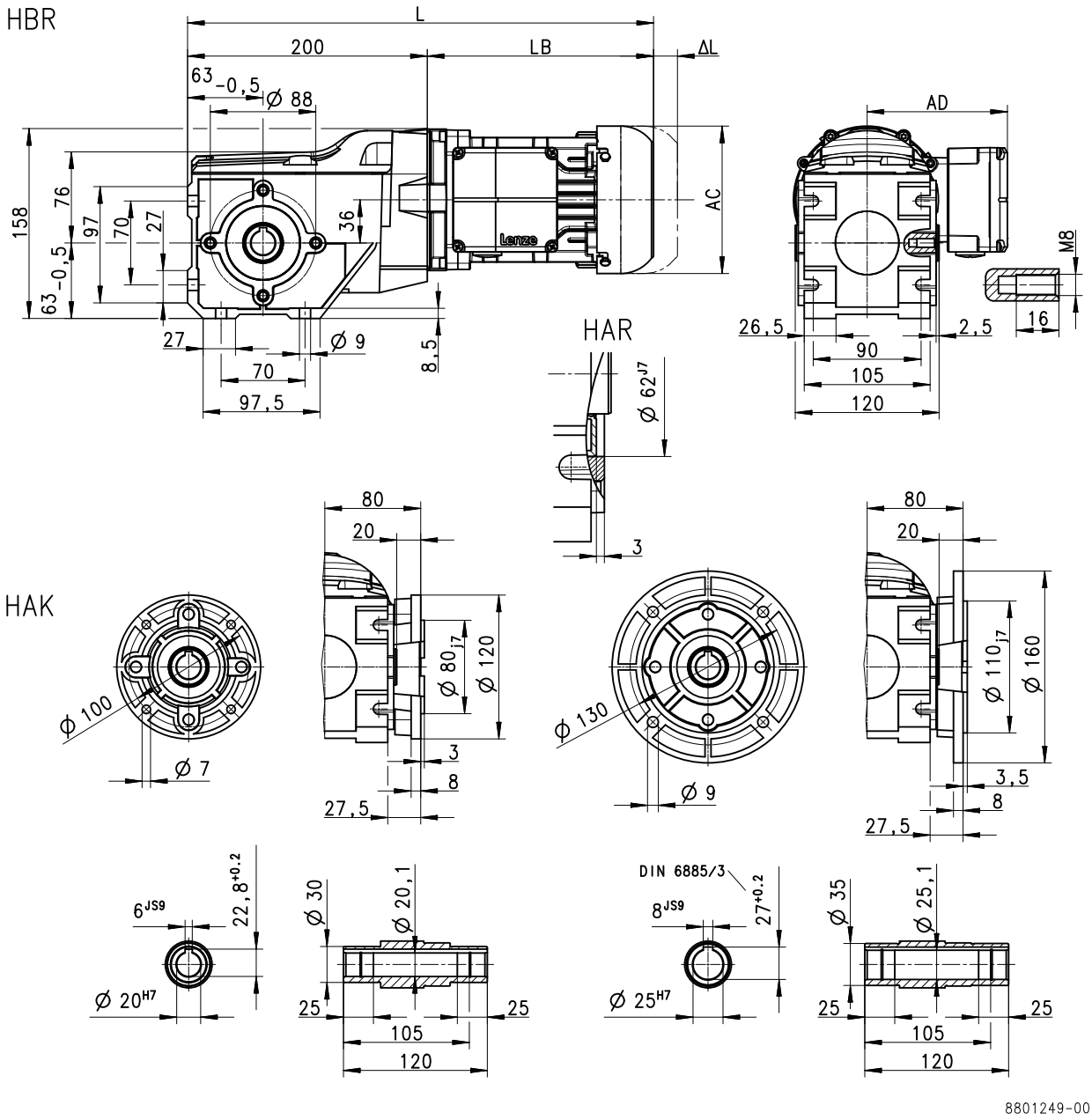
Motor series			m550-H	
Motor			**063S4 063M4 063L4**	**071M4 071L4**
Total length	L	mm	323	358
Motor length	LB	mm	188	217
Motor diameter	AC	mm	123	139
Motor/connection distance	AD	mm	117	129

Δ L ▸ Additional lengths 🕮 130



g500-B110, 2-stage

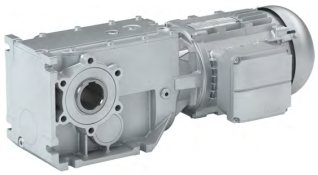
Gearbox design: Hollow shaft, with foot (HBR/HAR/HAK)



8801249-00

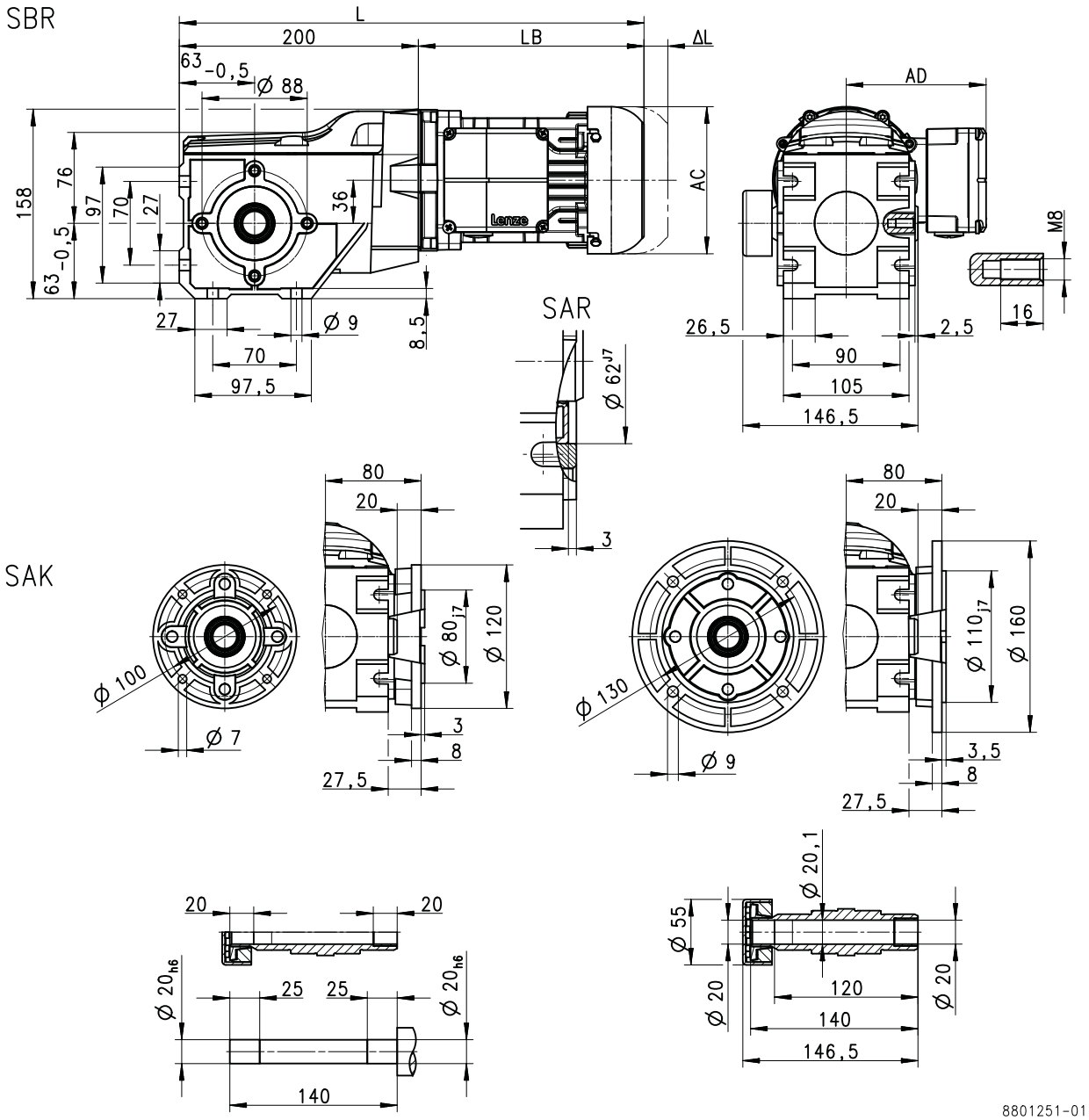
Motor series			m550-H		m550-P	
Motor			**063S4 063M4 063L4**	**071M4 071L4**	**080M4**	**090M4 090L4**
Total length	L	mm	389	418	442	485
Motor length	LB	mm	189	218	242	285
Motor diameter	AC	mm	123	139	156	177
Motor/connection distance	AD	mm	117	129	145	153

Δ L ▸ Additional lengths 130



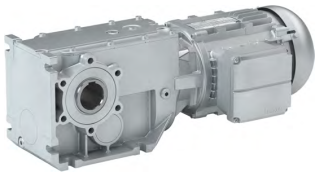
g500-B110, 2-stage

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



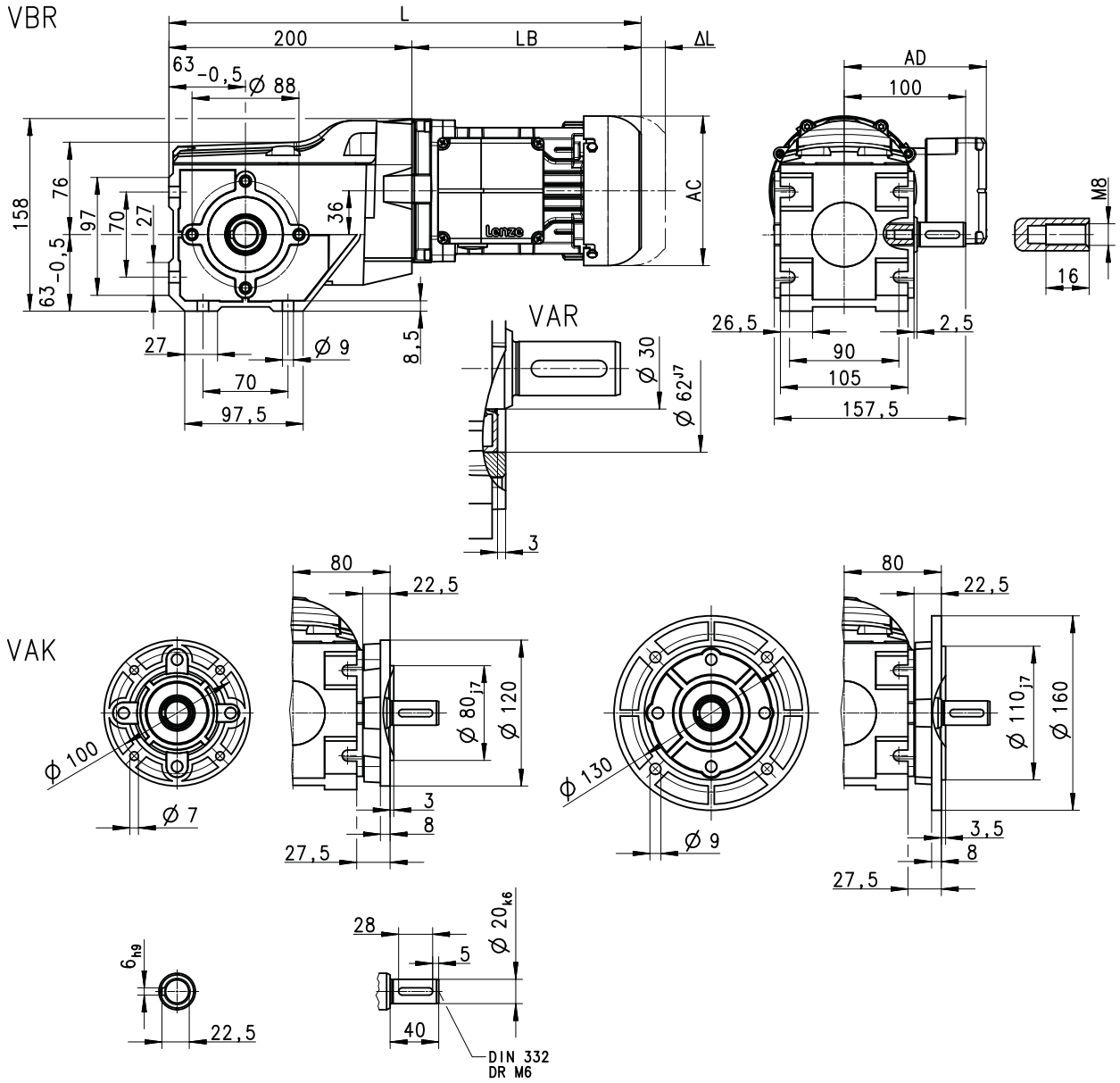
Motor series			m550-H		m550-P	
Motor			**063S4 063M4 063L4**	**071M4 071L4**	**080M4**	**090M4 090L4**
Total length	L	mm	389	418	442	485
Motor length	LB	mm	189	218	242	285
Motor diameter	AC	mm	123	139	156	177
Motor/connection distance	AD	mm	117	129	145	153

Δ L ▸ Additional lengths 🕮 130



g500-B110, 2-stage

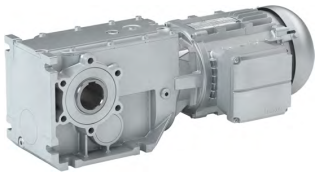
Gearbox design: Solid shaft, with foot (VBR/VAR/VAK)



8801250-00

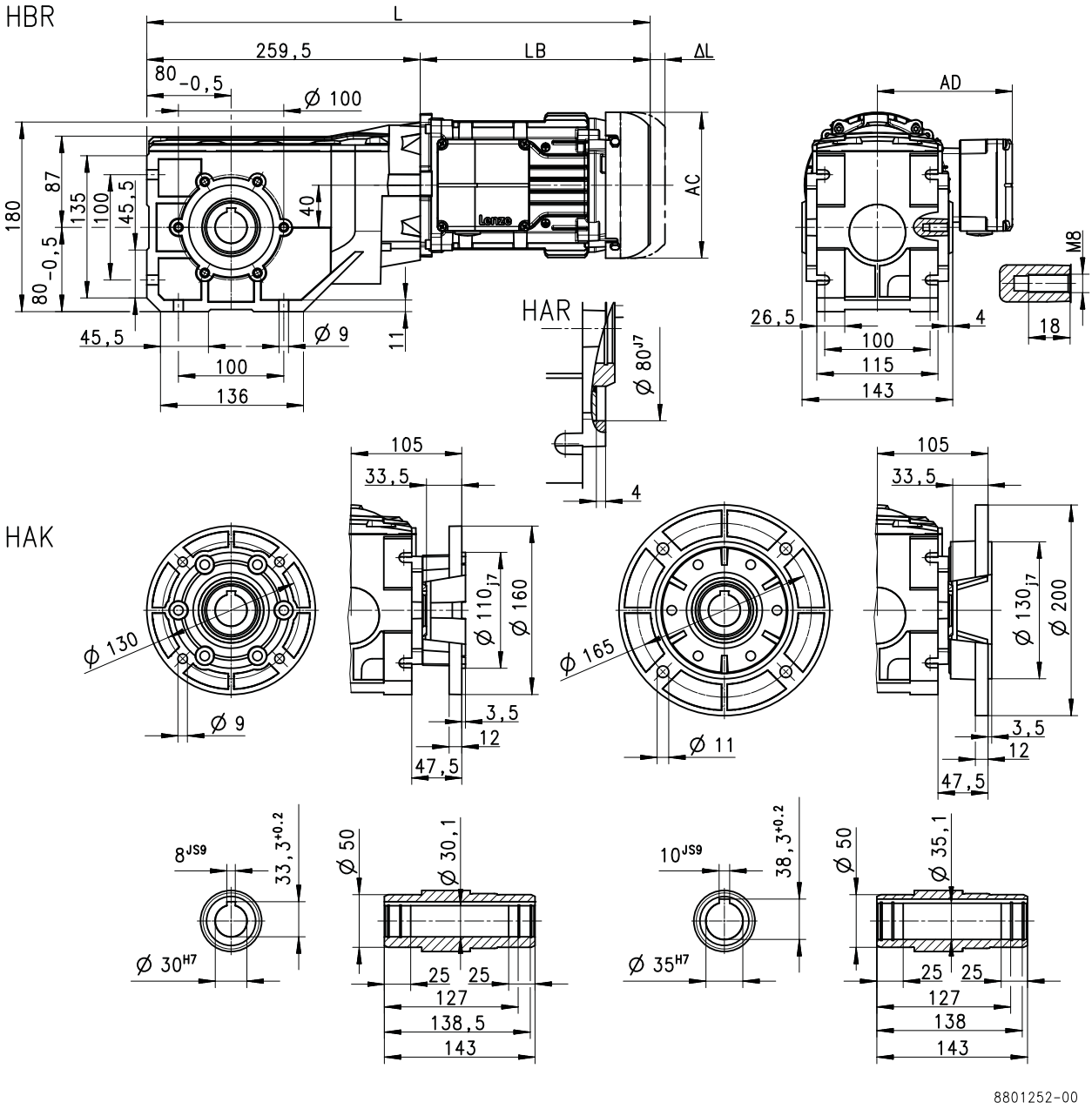
Motor series			m550-H		m550-P	
Motor			**063S4 063M4 063L4**	**071M4 071L4**	**080M4**	**090M4 090L4**
Total length	L	mm	389	418	442	485
Motor length	LB	mm	189	218	242	285
Motor diameter	AC	mm	123	139	156	177
Motor/connection distance	AD	mm	117	129	145	153

Δ L ▸ Additional lengths 130



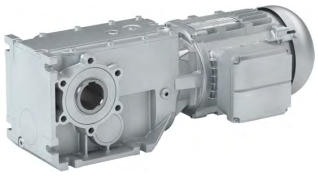
g500-B240, 2-/3-stage

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



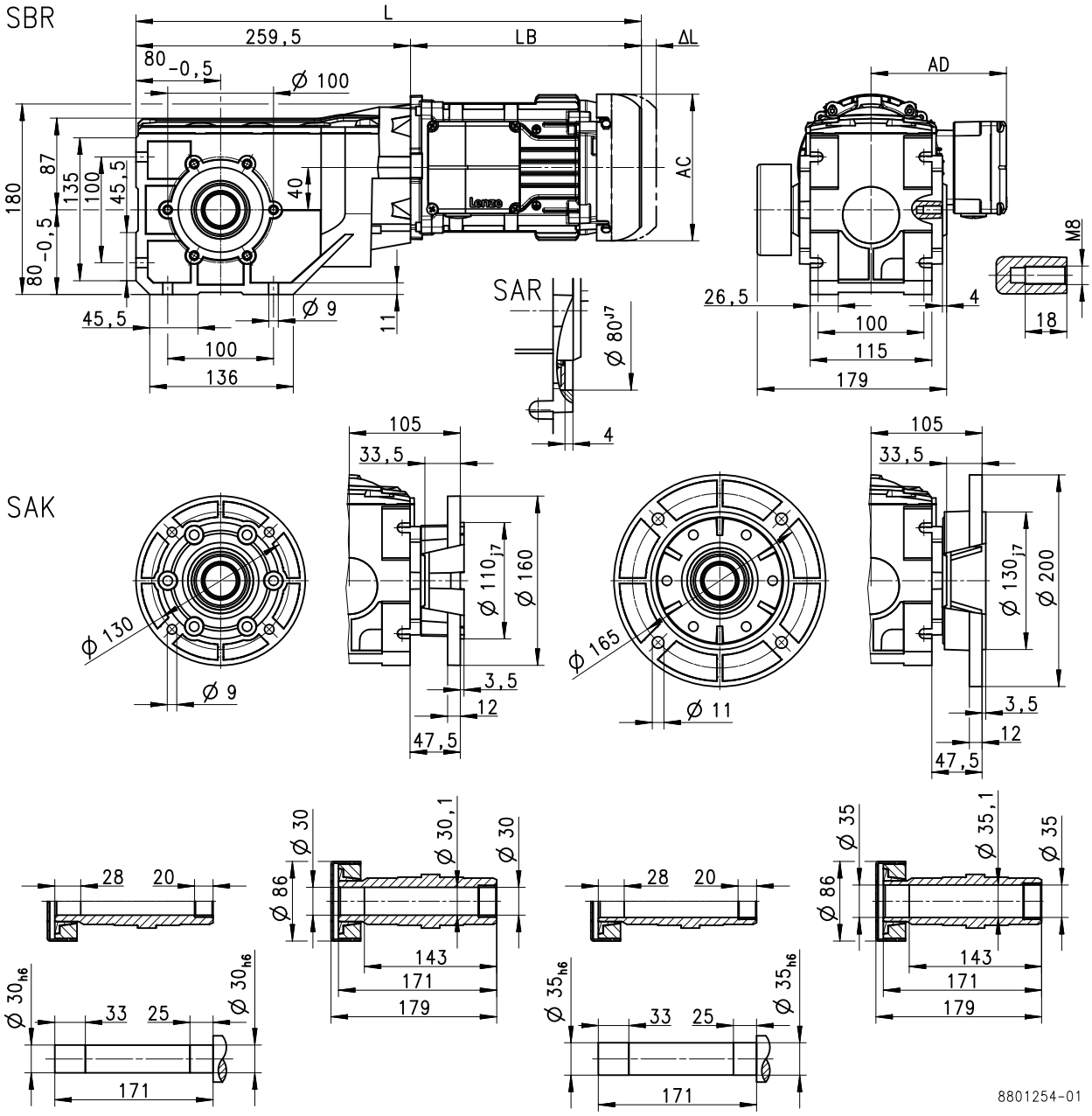
Motor series			m550-H		m550-P		
Motor			**063S4 063M4 063L4**	**071M4 071L4**	**080M4**	**090M4 090L4**	**100M4 100L4**
Total length	L	mm	448	478	502	544	608
Motor length	LB	mm	189	218	242	285	348
Motor diameter	AC	mm	123	139	156	177	194
Motor/connection distance	AD	mm	117	129	145	153	164

Δ L ▸ Additional lengths 130



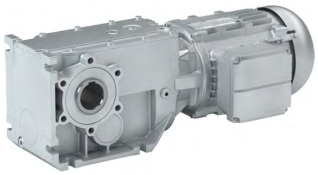
g500-B240, 2-/3-stage

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



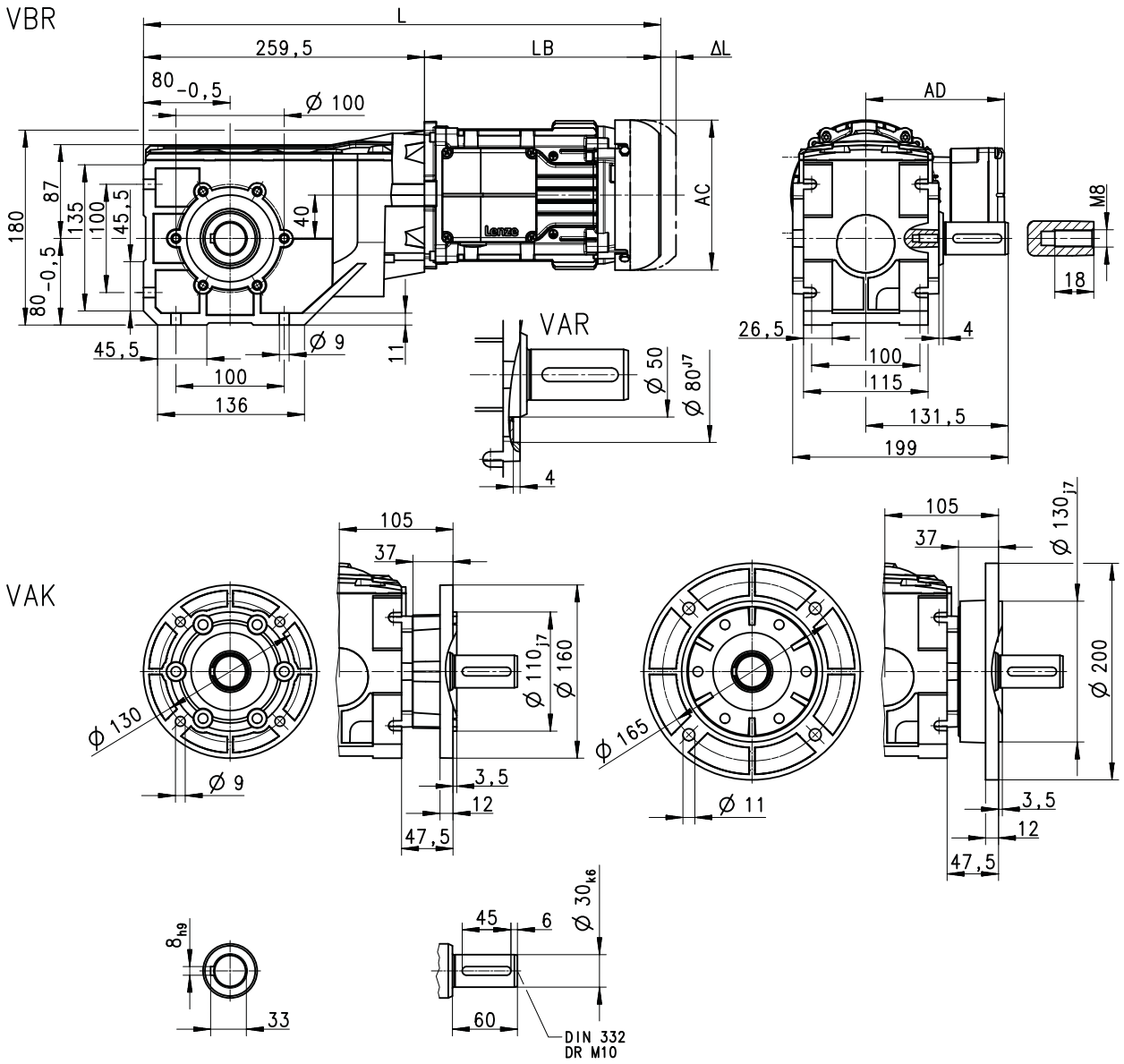
Motor series			m550-H		m550-P		
Motor			**063S4 063M4 063L4**	**071M4 071L4**	**080M4**	**090M4 090L4**	**100M4 100L4**
Total length	L	mm	448	478	502	544	608
Motor length	LB	mm	189	218	242	285	348
Motor diameter	AC	mm	123	139	156	177	194
Motor/connection distance	AD	mm	117	129	145	153	164

Δ L ▸ Additional lengths 130



g500-B240, 2-/3-stage

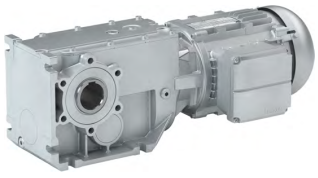
Gearbox design: Solid shaft, with foot (VBR/VAR/VAK)



8801253-00

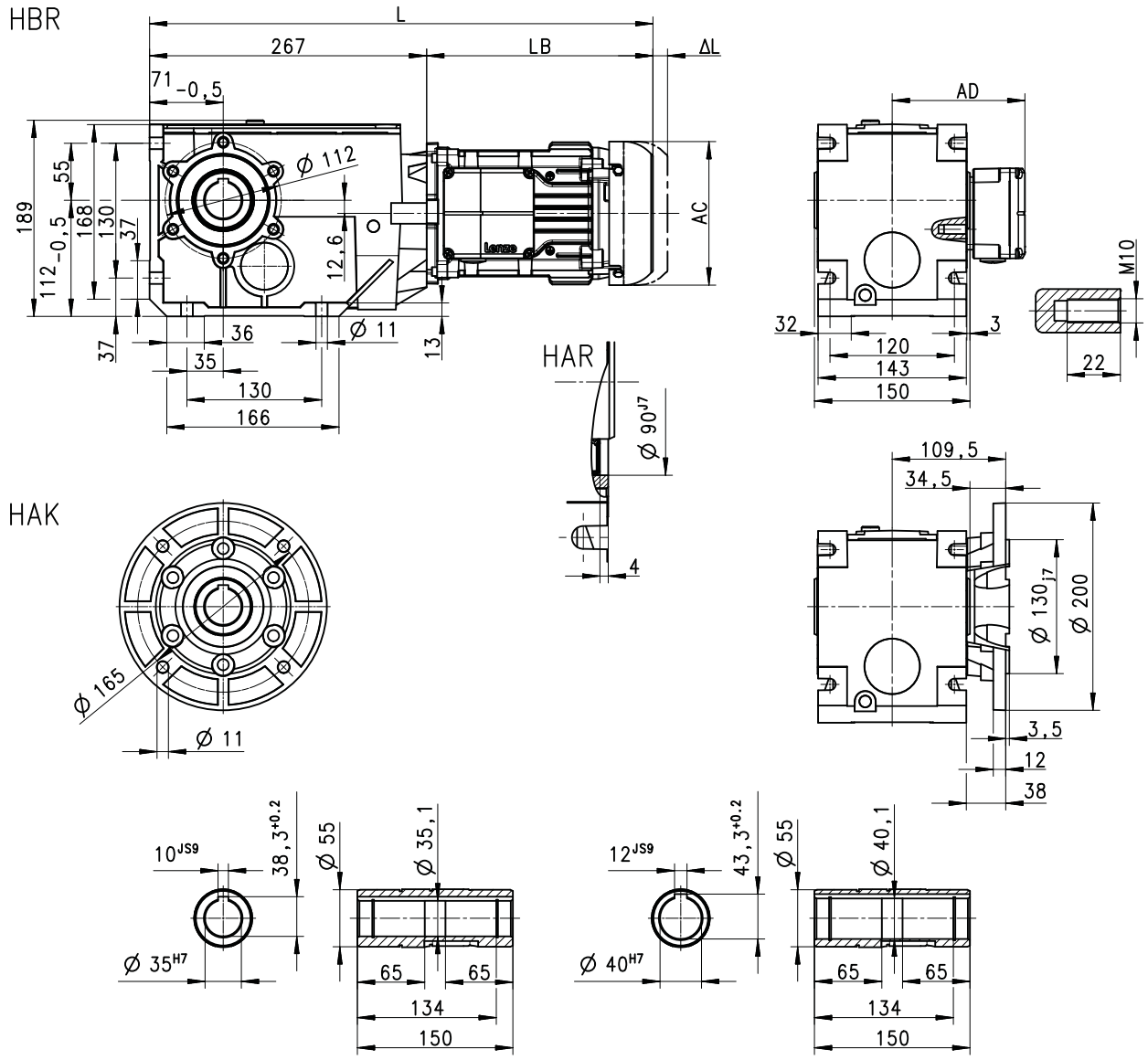
Motor series			m550-H		m550-P		
Motor			**063S4 063M4 063L4**	**071M4 071L4**	**080M4**	**090M4 090L4**	**100M4 100L4**
Total length	L	mm	448	478	502	544	608
Motor length	LB	mm	189	218	242	285	348
Motor diameter	AC	mm	123	139	156	177	194
Motor/connection distance	AD	mm	117	129	145	153	164

Δ L ▸ Additional lengths 🕮 130



g500-B450, 3-stage

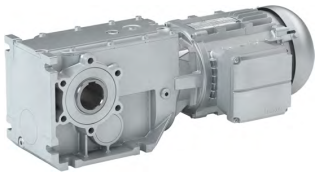
Gearbox design: Hollow shaft, with foot (HBR/HAR/HAK)



8801255-00

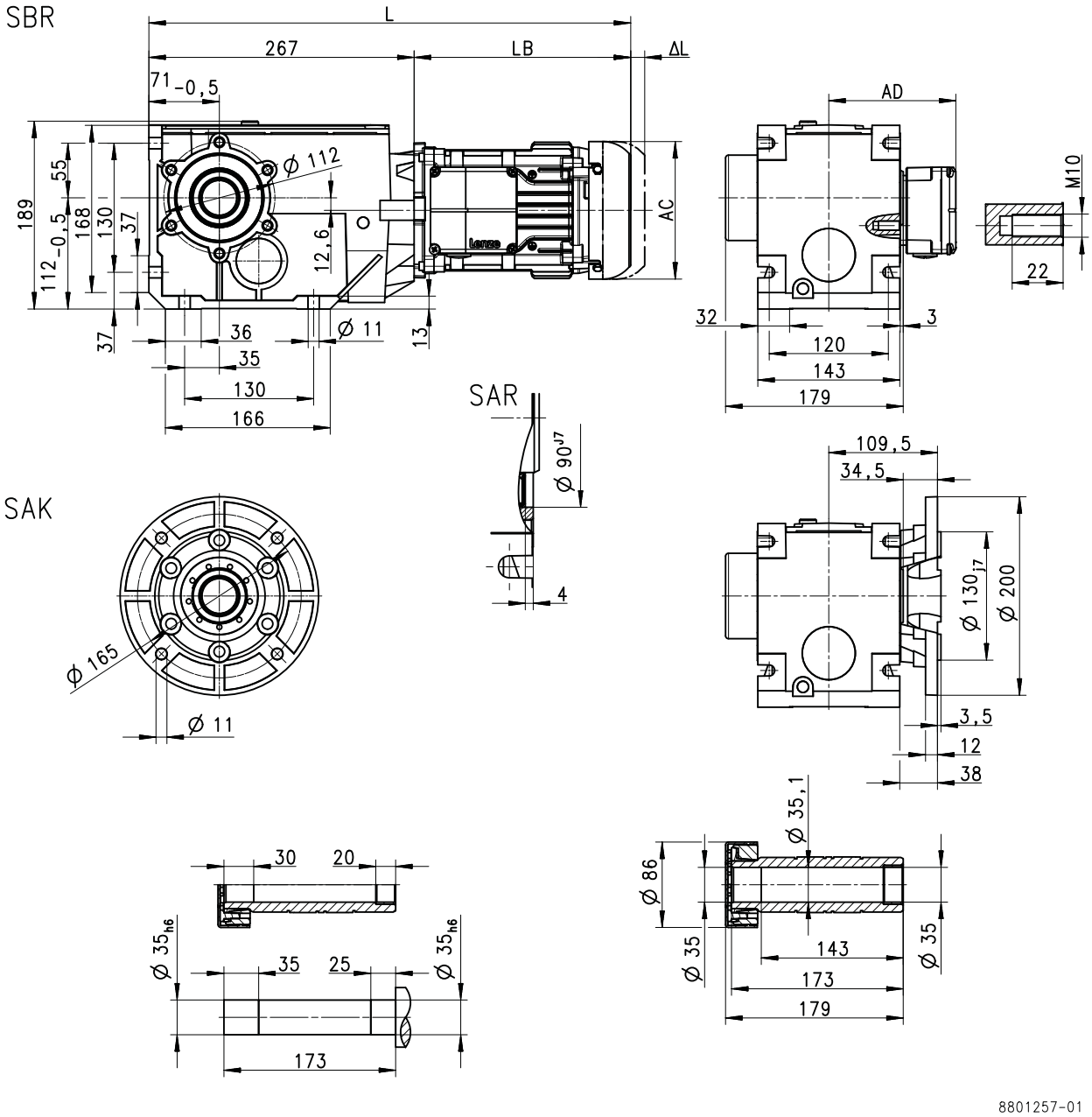
Motor series			m550-H		m550-P				
Motor			**063S4 063M4 063L4**	**071M4 071L4**	**080M4**	**090M4 090L4**	**100M4 100L4**	**112M4**	**132M4 132L4**
Total length	L	mm	456	485	509	552	615	628	692
Motor length	LB	mm	189	218	242	285	348	361	425
Motor diameter	AC	mm	123	139	156	177	194	220	258
Motor/connection distance	AD	mm	117	129	145	153	164	169	197

Δ L ▸ Additional lengths 🕮 130



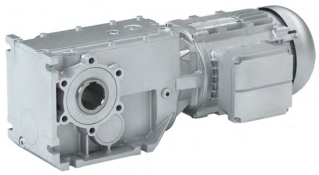
g500-B450, 3-stage

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



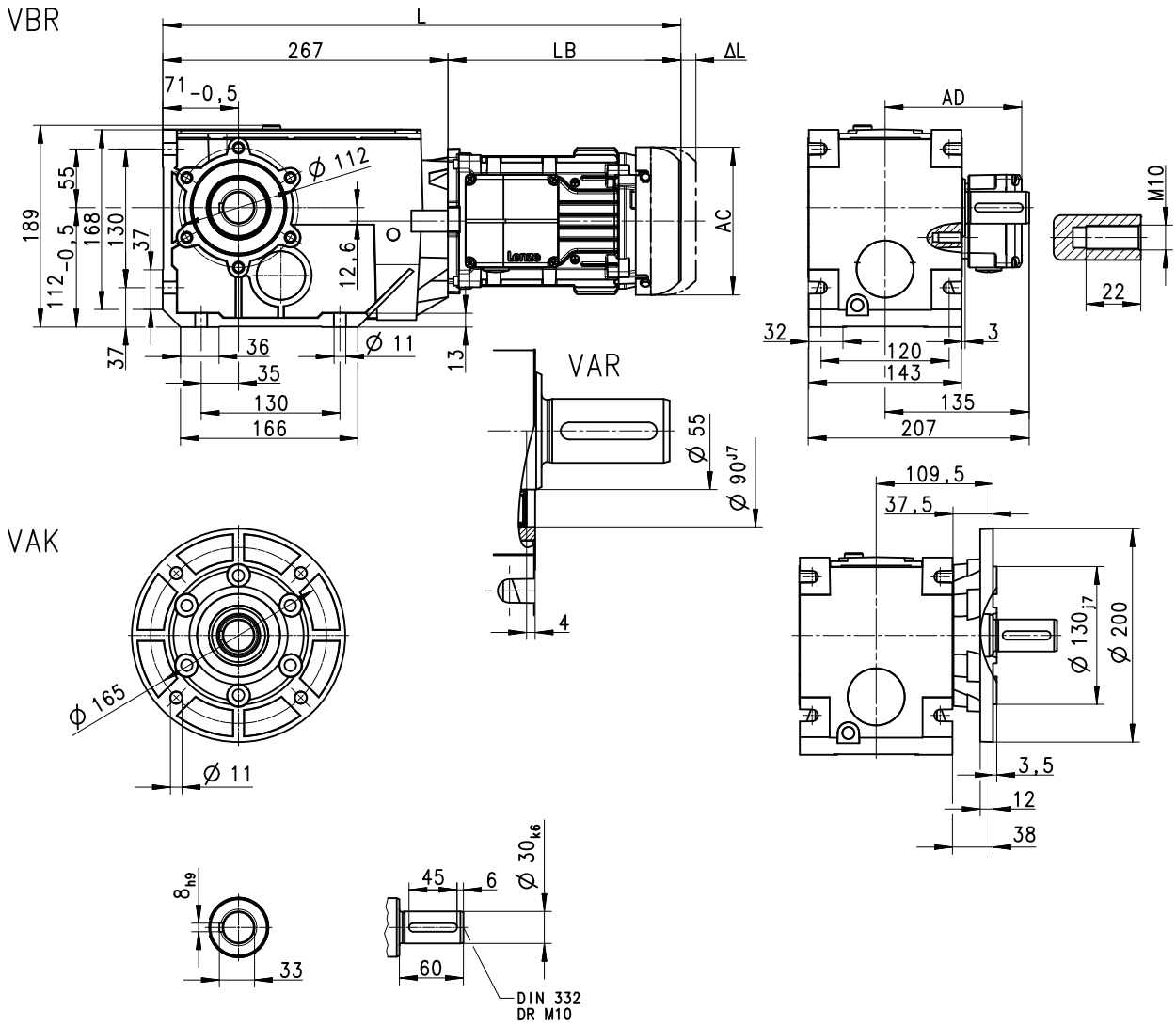
Motor series			m550-H		m550-P				
Motor			063S4 063M4 063L4	071M4 071L4	080M4	090M4 090L4	100M4 100L4	112M4	132M4 132L4
Total length	L	mm	456	485	509	552	615	628	692
Motor length	LB	mm	189	218	242	285	348	361	425
Motor diameter	AC	mm	123	139	156	177	194	220	258
Motor/connection distance	AD	mm	117	129	145	153	164	169	197

Δ L ▸ Additional lengths 130



g500-B450, 3-stage

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



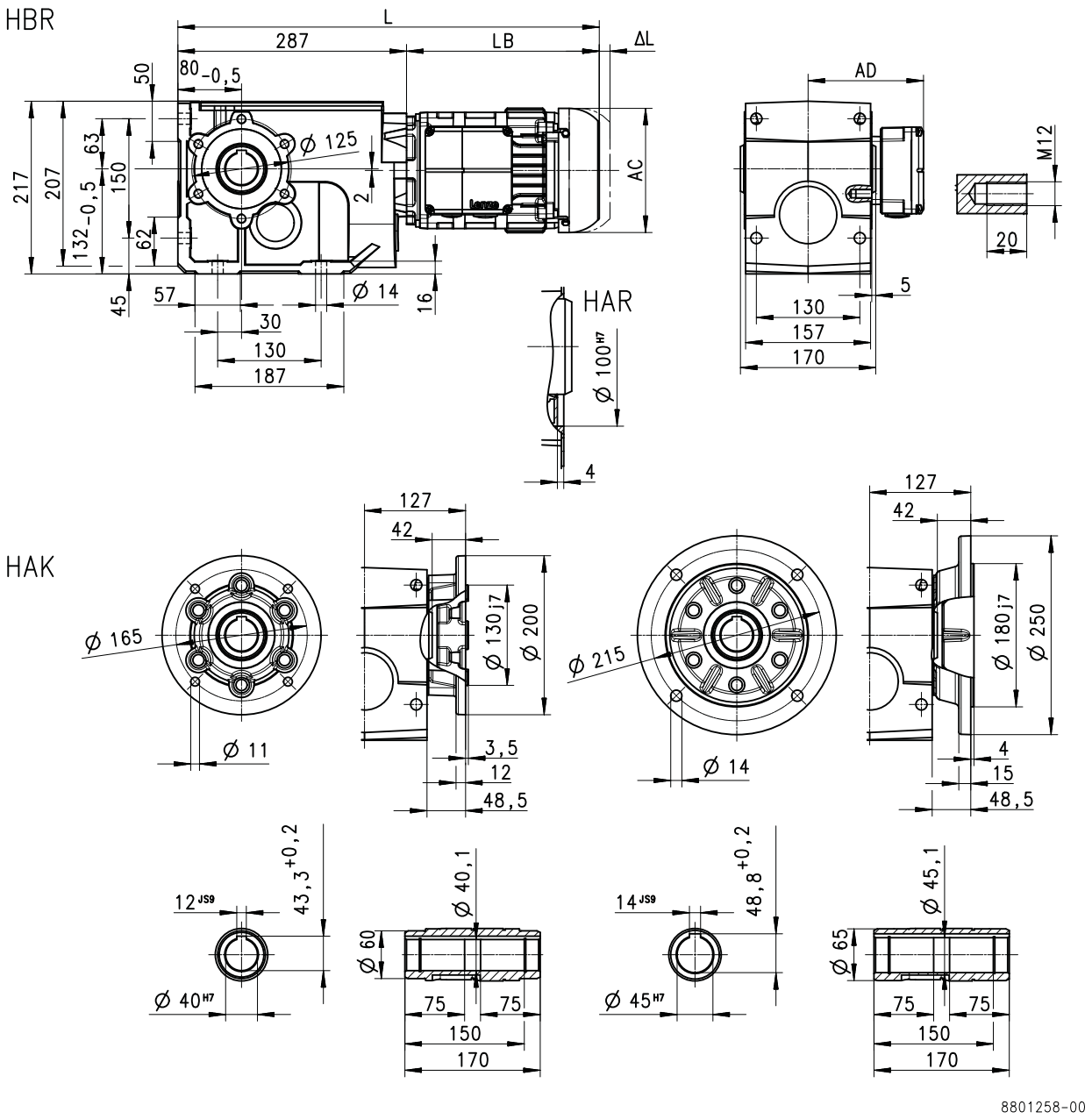
8801256-00

Motor series			m550-H		m550-P				
Motor			**063S4 063M4 063L4**	**071M4 071L4**	**080M4**	**090M4 090L4**	**100M4 100L4**	**112M4**	**132M4 132L4**
Total length	L	mm	456	485	509	552	615	628	692
Motor length	LB	mm	189	218	242	285	348	361	425
Motor diameter	AC	mm	123	139	156	177	194	220	258
Motor/connection distance	AD	mm	117	129	145	153	164	169	197

Δ L ▸ Additional lengths 🕮 130

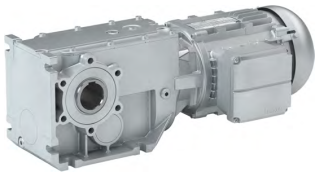
g500-B600, 3-stage

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



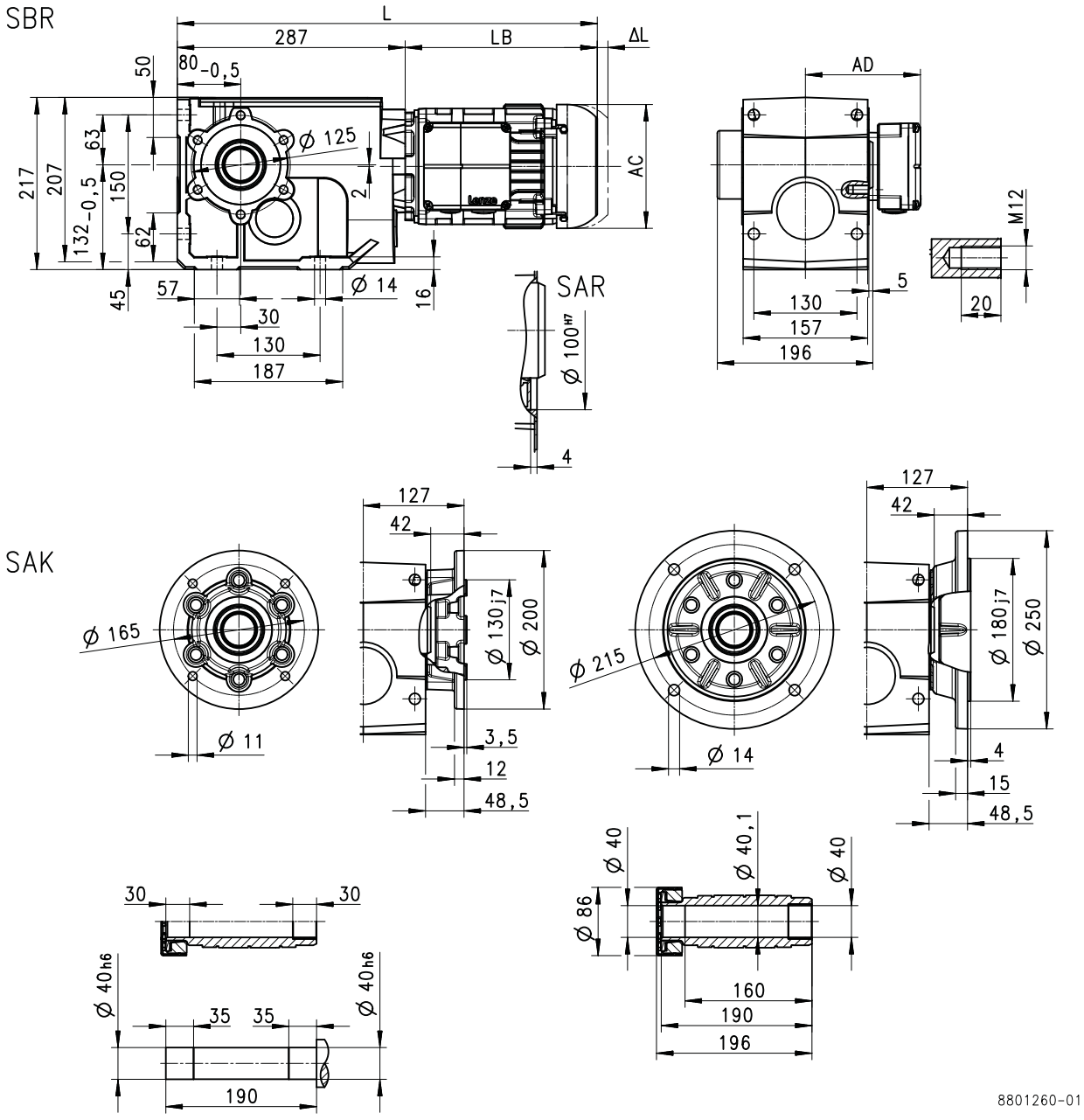
Motor series			m550-H		m550-P				
Motor			**063L4 063S4 063M4**	**071M4 071L4**	**080M4**	**090M4 090L4**	**100M4 100L4**	**112M4**	**132M4 132L4**
Total length	L	mm	476	505	529	572	635	648	712
Motor length	LB	mm	189	218	242	285	348	361	425
Motor diameter	AC	mm	123	139	156	177	194	220	258
Motor/connection distance	AD	mm	117	129	145	153	164	169	197

Δ L ▸ Additional lengths 🕮 130



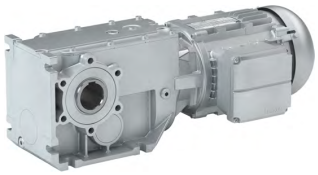
g500-B600, 3-stage

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



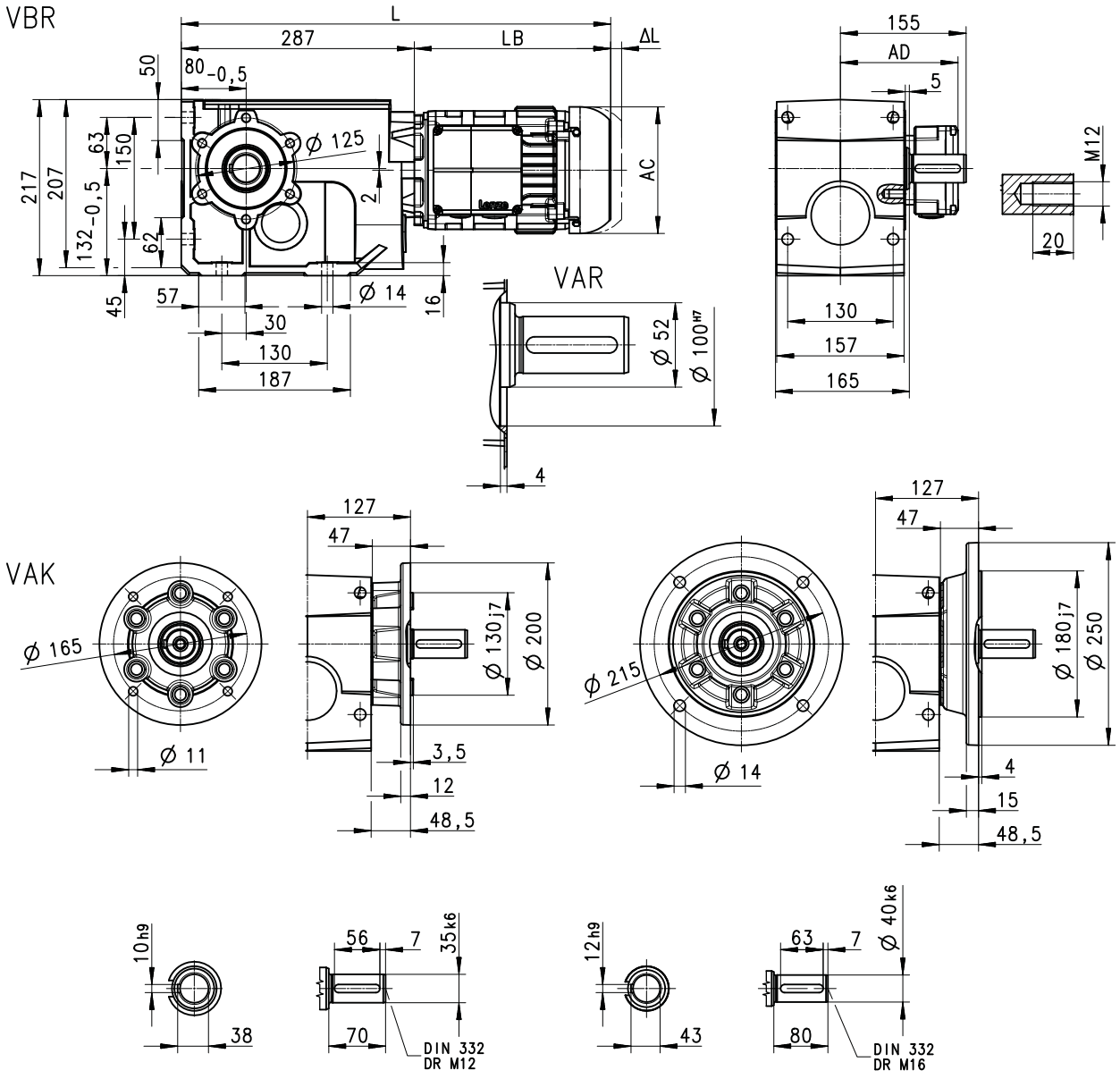
Motor series			m550-H		m550-P				
Motor			**063L4 063S4 063M4**	**071M4 071L4**	**080M4**	**090M4 090L4**	**100M4 100L4**	**112M4**	**132M4 132L4**
Total length	L	mm	476	505	529	572	635	648	712
Motor length	LB	mm	189	218	242	285	348	361	425
Motor diameter	AC	mm	123	139	156	177	194	220	258
Motor/connection distance	AD	mm	117	129	145	153	164	169	197

Δ L ▸ Additional lengths 🕮 130



g500-B600, 3-stage

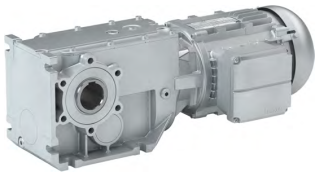
Gearbox design: Solid shaft, with foot (VBR/VAR/VAK)



8801259-00

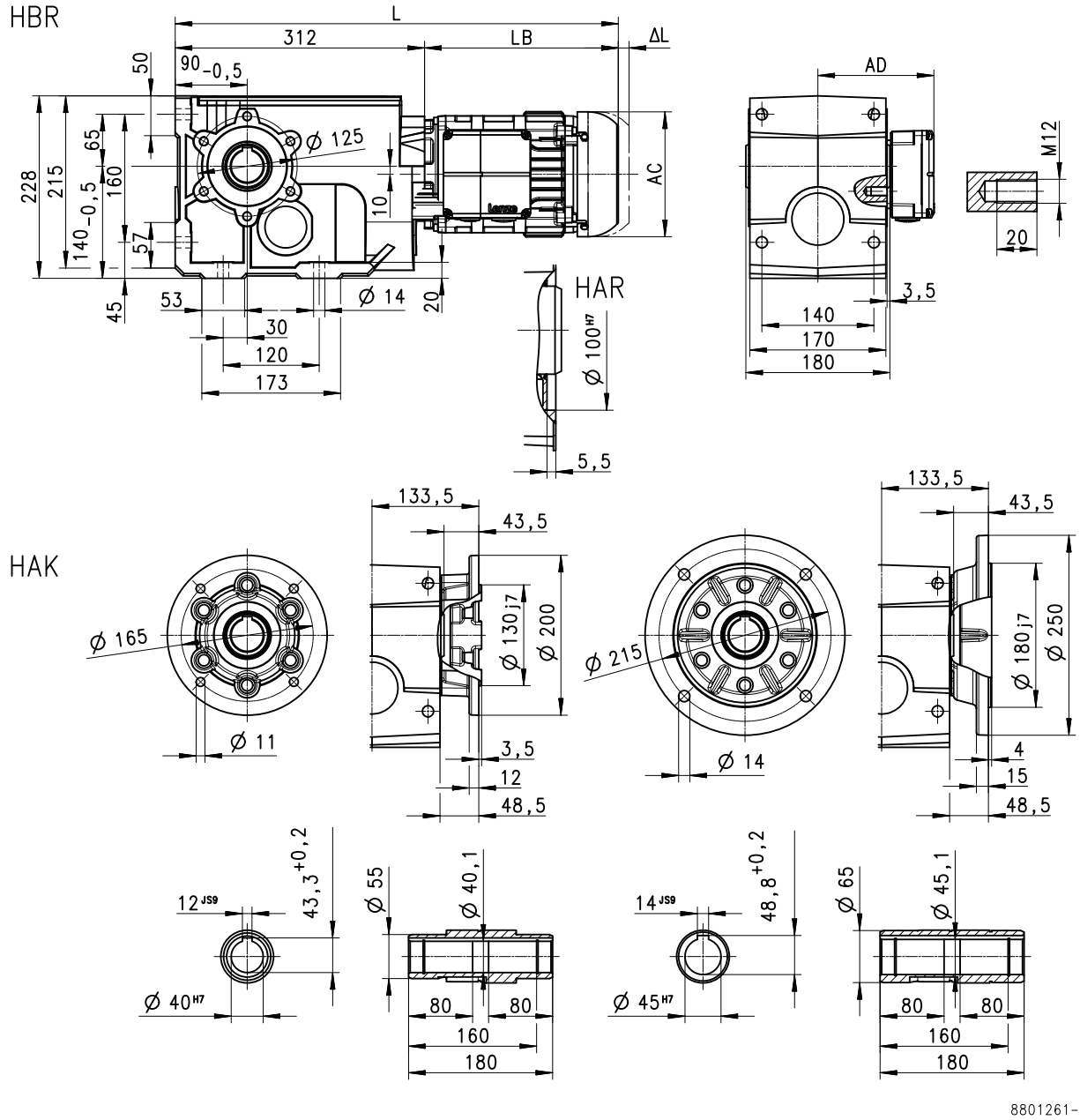
Motor series			m550-H		m550-P				
Motor			**063L4 063S4 063M4**	**071M4 071L4**	**080M4**	**090M4 090L4**	**100M4 100L4**	**112M4**	**132M4 132L4**
Total length	L	mm	476	505	529	572	635	648	712
Motor length	LB	mm	189	218	242	285	348	361	425
Motor diameter	AC	mm	123	139	156	177	194	220	258
Motor/connection distance	AD	mm	117	129	145	153	164	169	197

Δ L ▸ Additional lengths 🕮 130



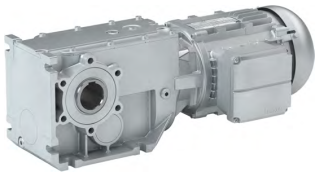
g500-B820, 3-stage

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



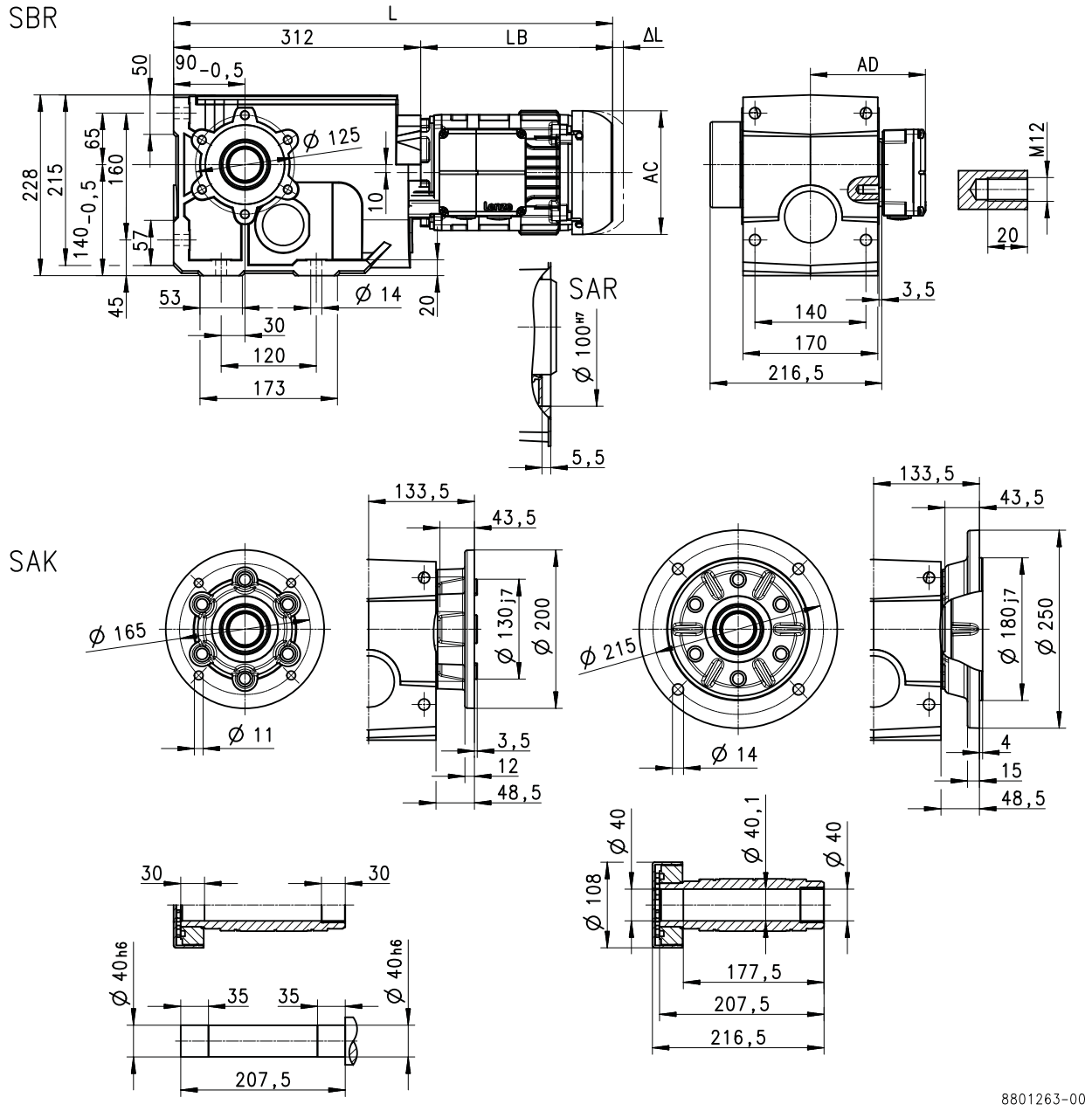
Motor series			m550-H		m550-P				
Motor			**063L4 063S4 063M4**	**071M4 071L4**	**080M4**	**090M4 090L4**	**100M4 100L4**	**112M4**	**132M4 132L4**
Total length	L	mm	501	530	554	597	660	673	737
Motor length	LB	mm	189	218	242	285	348	361	425
Motor diameter	AC	mm	123	139	156	177	194	220	258
Motor/connection distance	AD	mm	117	129	145	153	164	169	197

Δ L ▸ Additional lengths 🕮 130



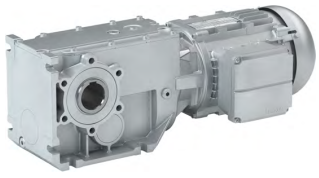
g500-B820, 3-stage

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



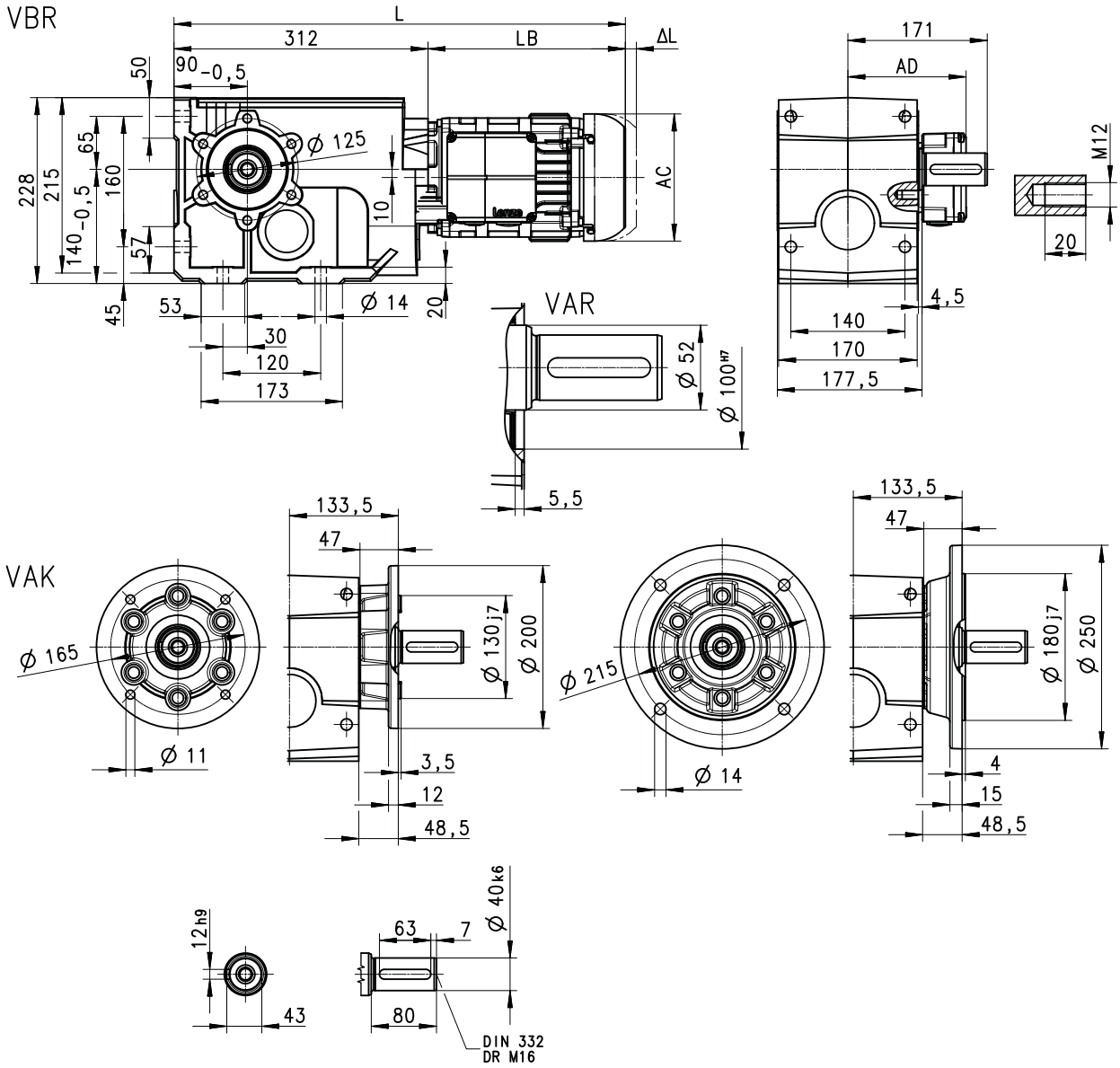
Motor series			m550-H		m550-P				
Motor			**063L4 063S4 063M4**	**071M4 071L4**	**080M4**	**090M4 090L4**	**100M4 100L4**	**112M4**	**132M4 132L4**
Total length	L	mm	501	530	554	597	660	673	737
Motor length	LB	mm	189	218	242	285	348	361	425
Motor diameter	AC	mm	123	139	156	177	194	220	258
Motor/connection distance	AD	mm	117	129	145	153	164	169	197

Δ L ▸ Additional lengths 130



g500-B820, 3-stage

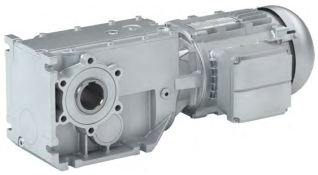
Gearbox design: Solid shaft, with foot (VBR/VAR/VAK)



8801262-00

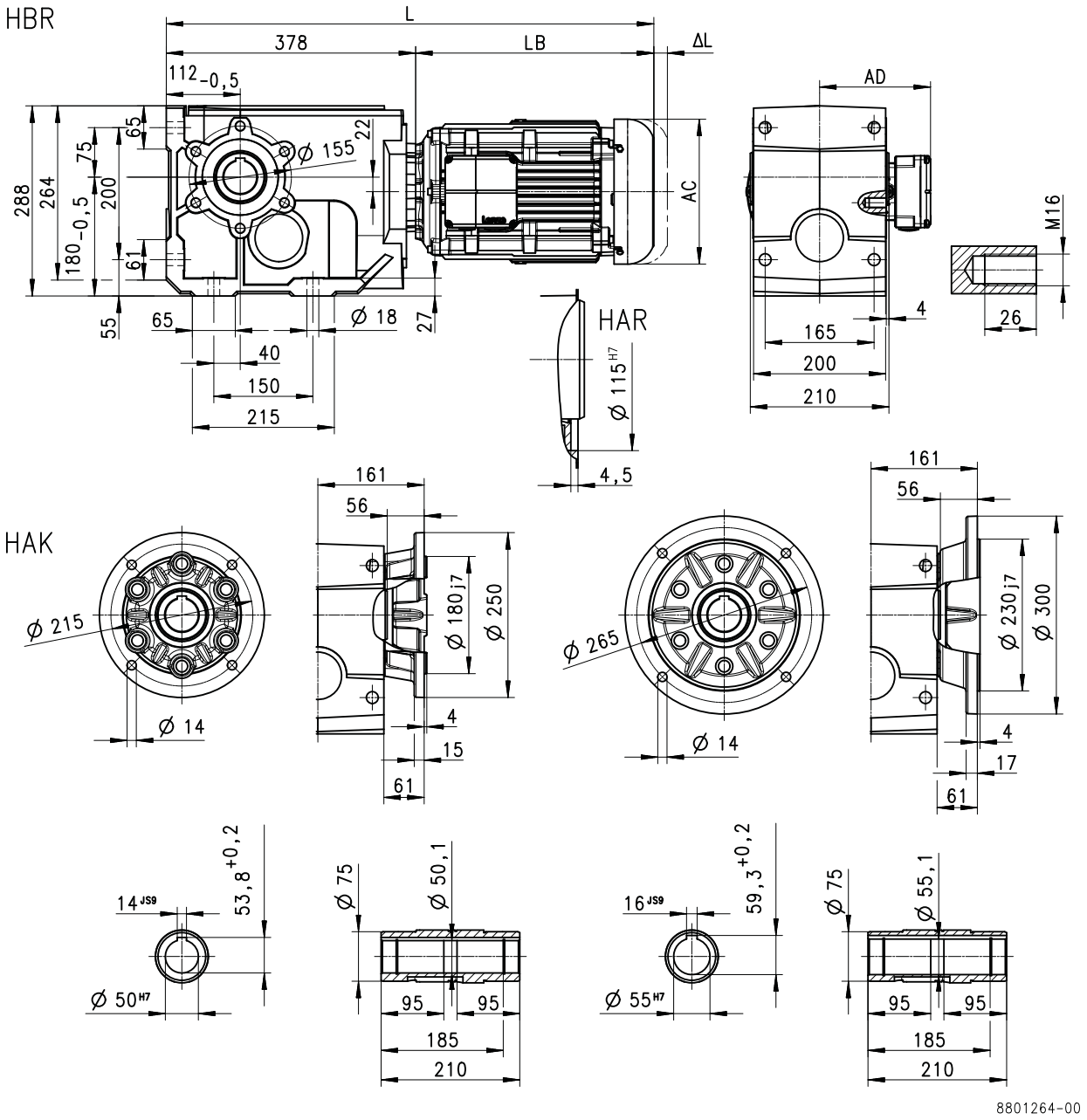
Motor series			m550-H		m550-P				
Motor			**063L4 063S4 063M4**	**071M4 071L4**	**080M4**	**090M4 090L4**	**100M4 100L4**	**112M4**	**132M4 132L4**
Total length	L	mm	501	530	554	597	660	673	737
Motor length	LB	mm	189	218	242	285	348	361	425
Motor diameter	AC	mm	123	139	156	177	194	220	258
Motor/connection distance	AD	mm	117	129	145	153	164	169	197

Δ L ▸ Additional lengths 🕮 130



g500-B1500, 3-stage

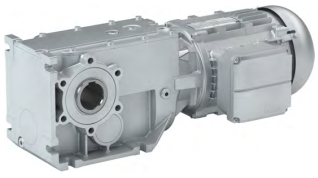
Gearbox design: Hollow shaft, with foot (HBR/HAR/HAK)



8801264-00

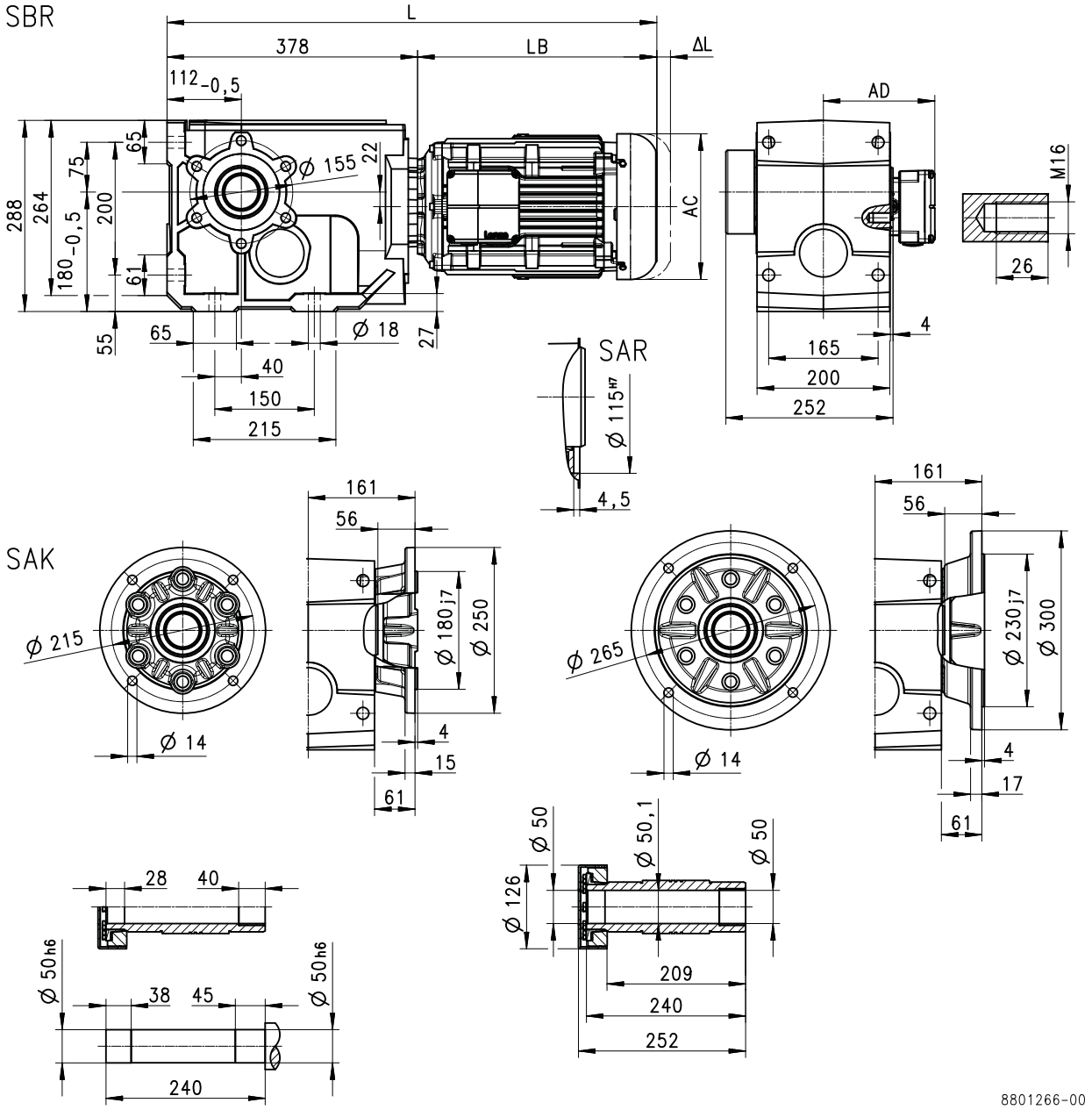
Motor series			m550-H		m550-P						
Motor			**063S4 063M4 063L4**	**071L4 071M4**	**080M4**	**090M4 090L4**	**100M4 100L4**	**112M4**	**132M4 132L4**	**160M4 160L4**	**180M4 180L4**
Total length	L	mm	567	596	620	663	726	739	803	914	992
Motor length	LB	mm	189	218	242	285	348	361	425	536	614
Motor diameter	AC	mm	123	139	156	177	194	220	258	309	349
Motor/connection distance	AD	mm	117	129	145	153	164	169	197	250	272

Δ L ▸ Additional lengths 🕮 130



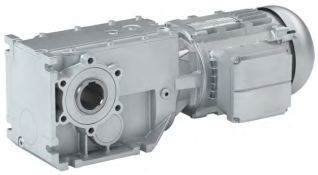
g500-B1500, 3-stage

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



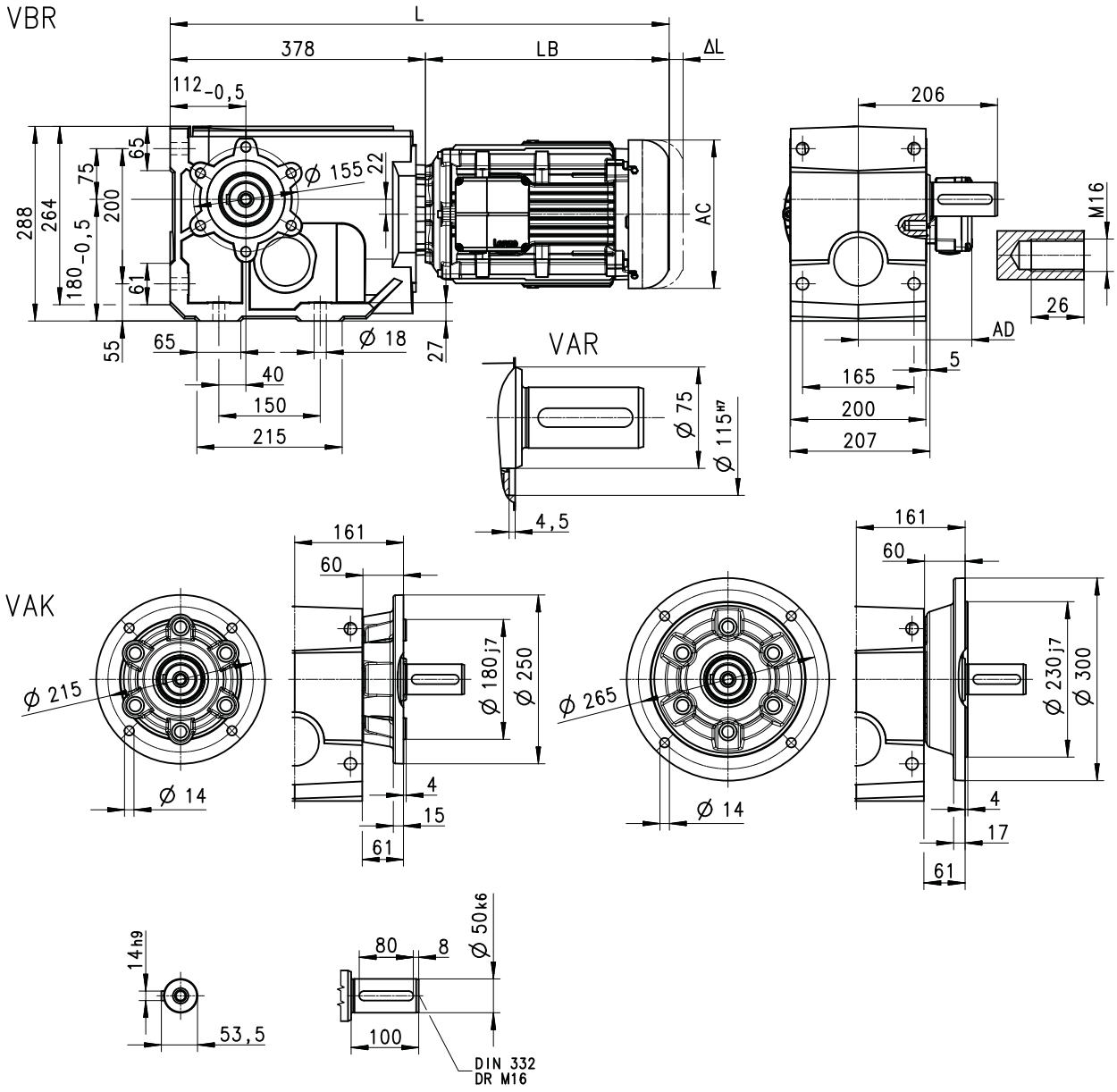
Motor series			m550-H		m550-P						
Motor			**063S4 063M4 063L4**	**071L4 071M4**	**080M4**	**090M4 090L4**	**100M4 100L4**	**112M4**	**132M4 132L4**	**160M4 160L4**	**180M4 180L4**
Total length	L	mm	567	596	620	663	726	739	803	914	992
Motor length	LB	mm	189	218	242	285	348	361	425	536	614
Motor diameter	AC	mm	123	139	156	177	194	220	258	309	349
Motor/connection distance	AD	mm	117	129	145	153	164	169	197	250	272

Δ L ▸ Additional lengths 🕮 130



g500-B1500, 3-stage

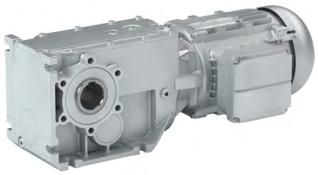
Gearbox design: Solid shaft, with foot (VBR/VAR/VAK)



8801265-00

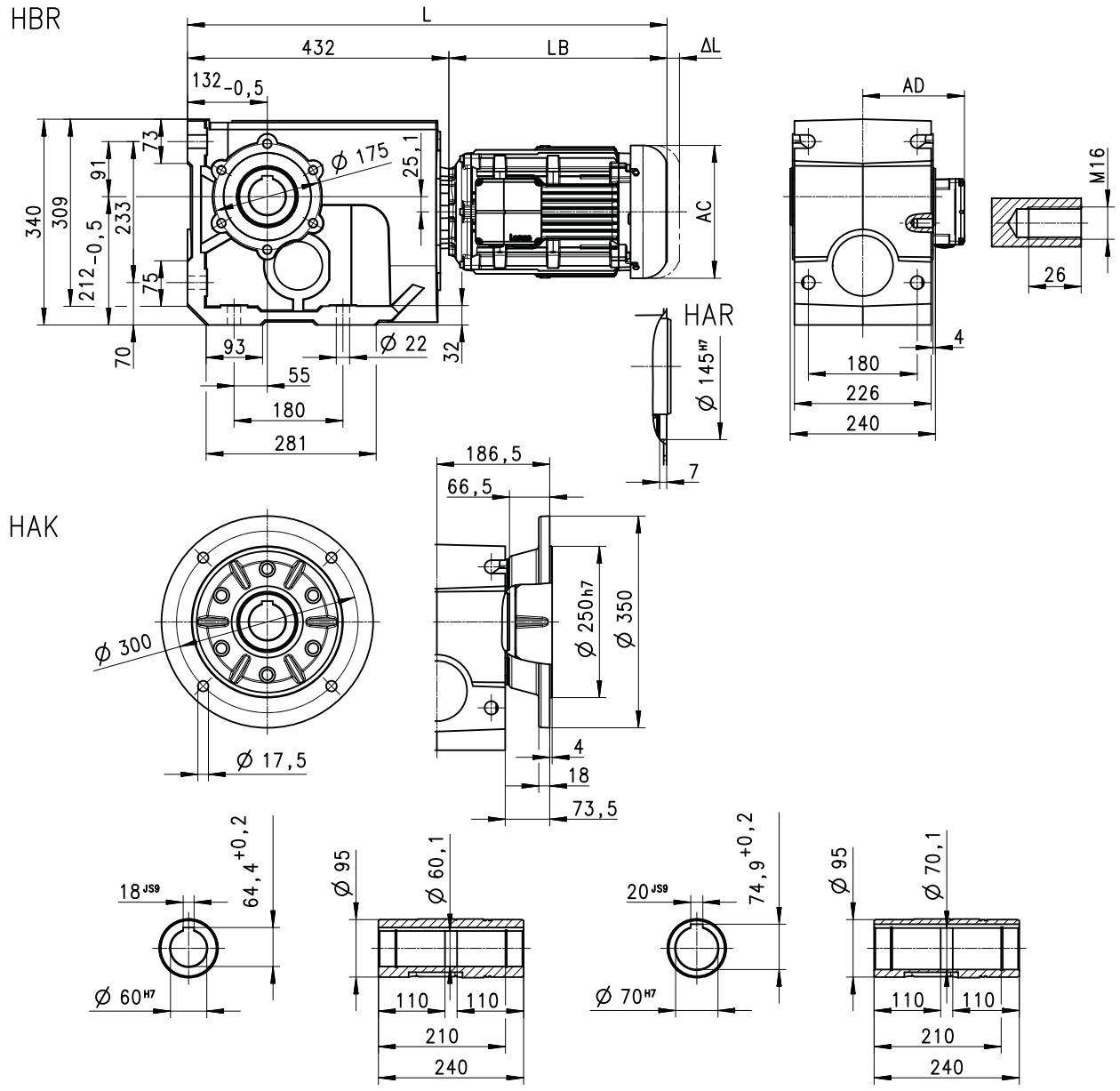
Motor series			m550-H		m550-P						
Motor			**063S4 063M4 063L4**	**071L4 071M4**	**080M4**	**090M4 090L4**	**100M4 100L4**	**112M4**	**132M4 132L4**	**160M4 160L4**	**180M4 180L4**
Total length	L	mm	567	596	620	663	726	739	803	914	992
Motor length	LB	mm	189	218	242	285	348	361	425	536	614
Motor diameter	AC	mm	123	139	156	177	194	220	258	309	349
Motor/connection distance	AD	mm	117	129	145	153	164	169	197	250	272

Δ L ▸ Additional lengths 🕮 130



g500-B2700, 3-stage

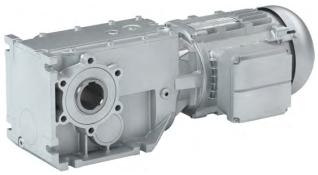
Gearbox design: Hollow shaft, with foot (HBR/HAR/HAK)



8801267-00

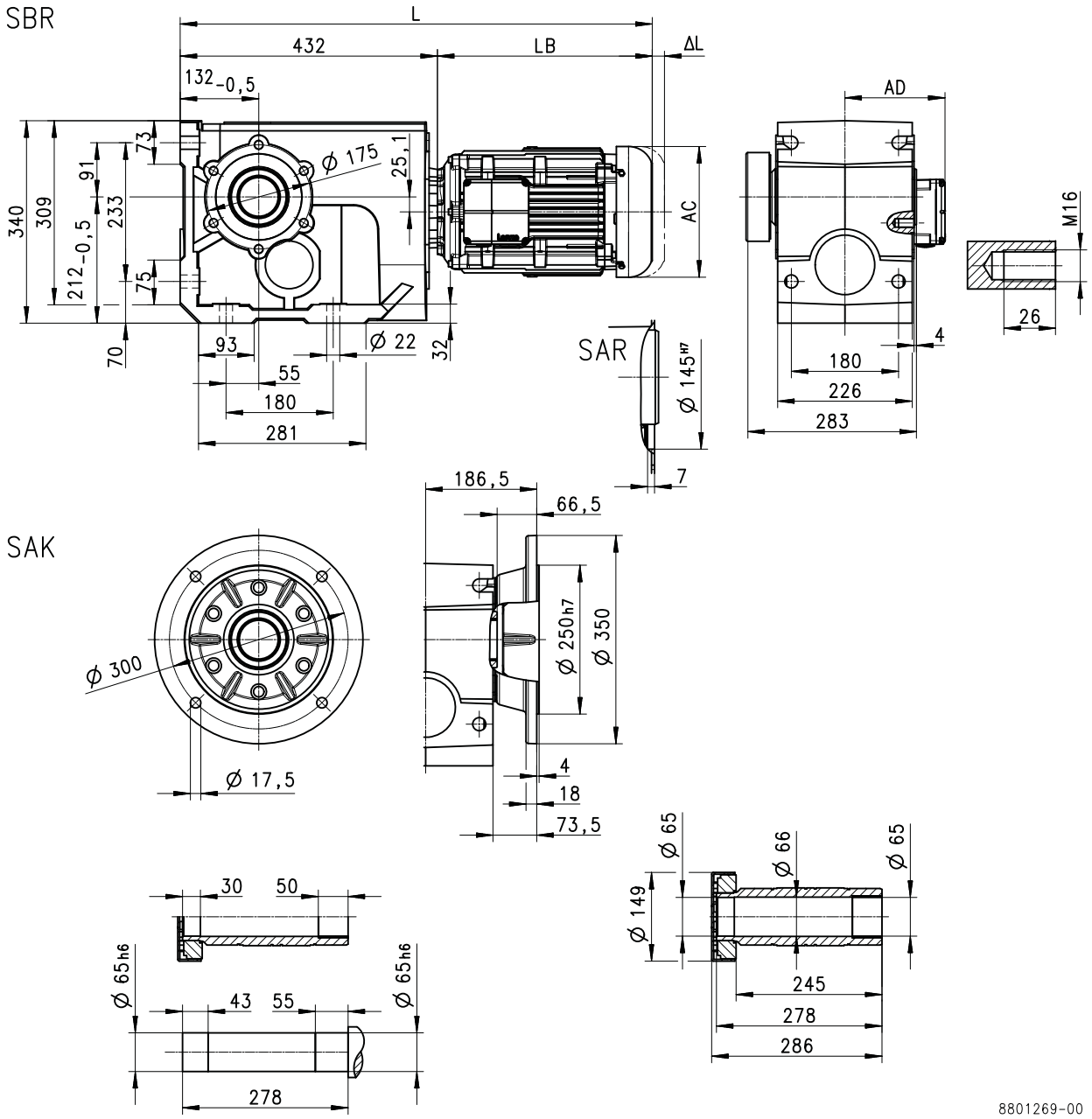
Motor series			m550-H		m550-P						
Motor			**063S4 063M4 063L4**	**071M4 071L4**	**080M4**	**090M4 090L4**	**100M4 100L4**	**112M4**	**132M4 132L4**	**160M4 160L4**	**180M4 180L4**
Total length	L	mm	621	650	674	717	780	793	857	968	1046
Motor length	LB	mm	189	218	242	285	348	361	425	536	614
Motor diameter	AC	mm	123	139	156	177	194	220	258	309	349
Motor/connection distance	AD	mm	117	129	145	153	164	169	197	250	272

Δ L ▸ Additional lengths 130



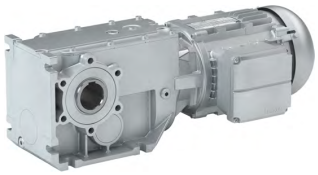
g500-B2700, 3-stage

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



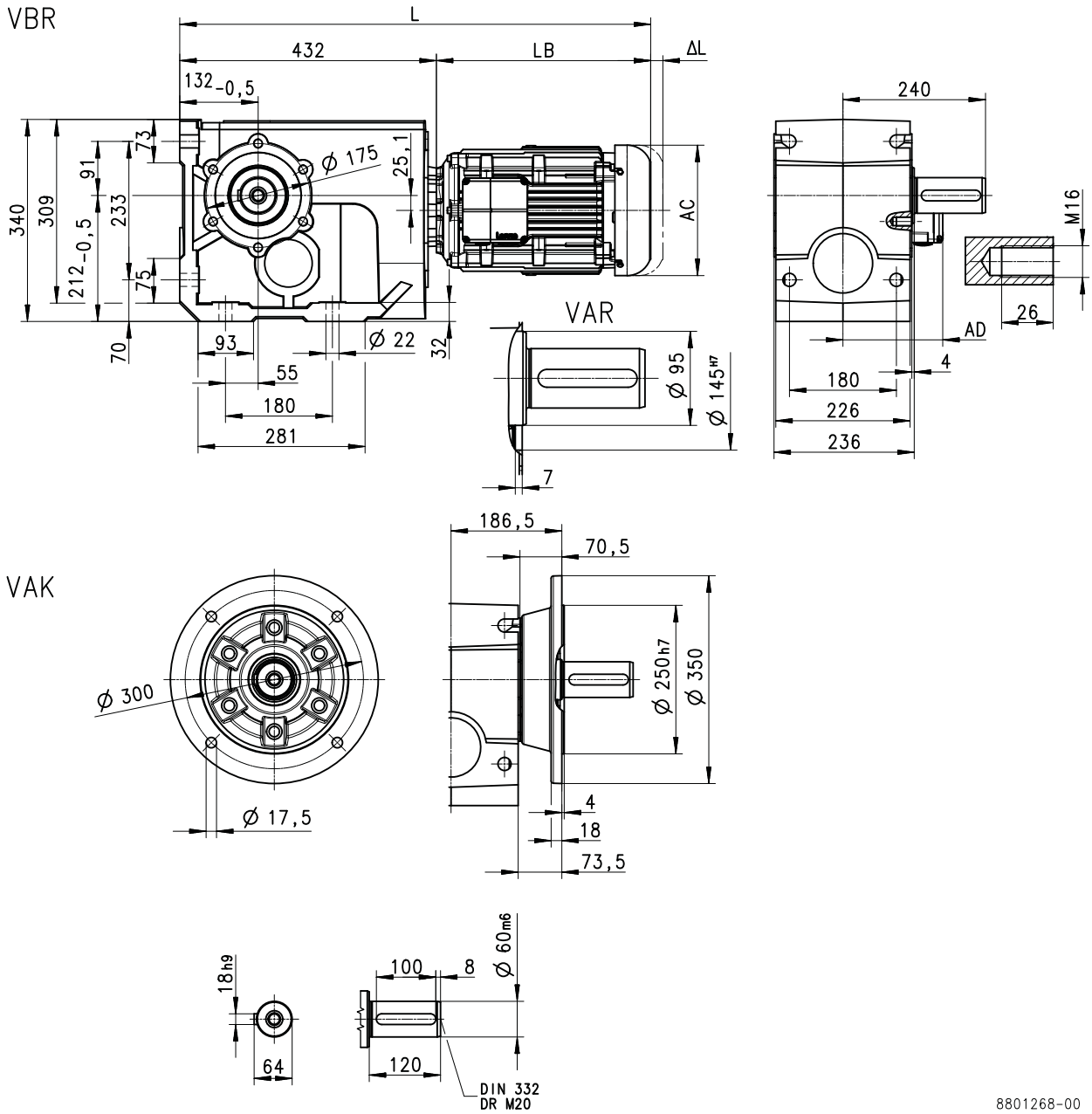
Motor series			m550-H		m550-P						
Motor			**063S4 063M4 063L4**	**071M4 071L4**	**080M4**	**090M4 090L4**	**100M4 100L4**	**112M4**	**132M4 132L4**	**160M4 160L4**	**180M4 180L4**
Total length	L	mm	621	650	674	717	780	793	857	968	1046
Motor length	LB	mm	189	218	242	285	348	361	425	536	614
Motor diameter	AC	mm	123	139	156	177	194	220	258	309	349
Motor/connection distance	AD	mm	117	129	145	153	164	169	197	250	272

Δ L ▸ Additional lengths 130



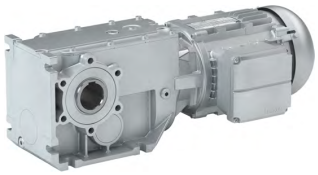
g500-B2700, 3-stage

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



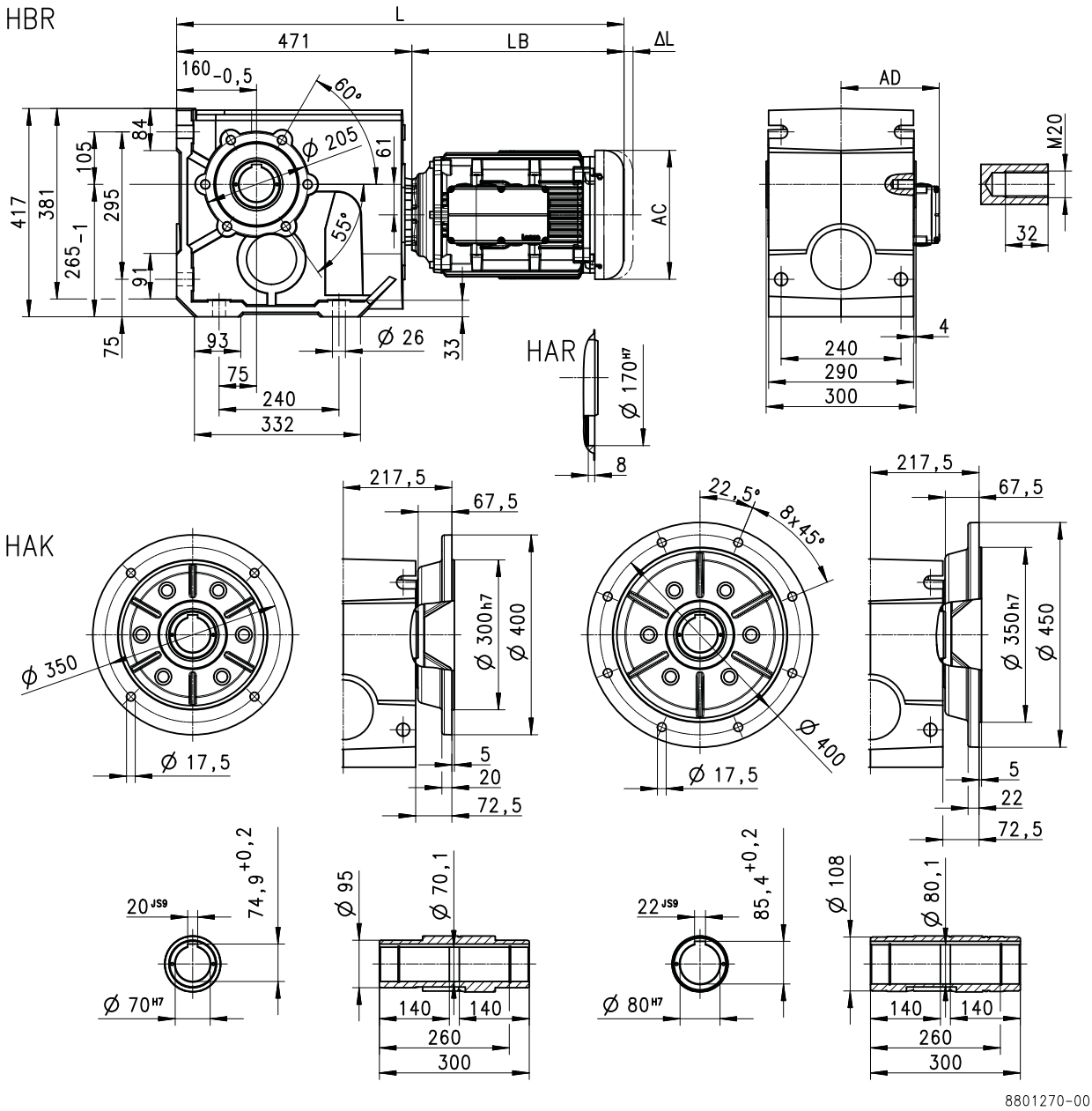
Motor series			m550-H		m550-P						
Motor			**063S4 063M4 063L4**	**071M4 071L4**	**080M4**	**090M4 090L4**	**100M4 100L4**	**112M4**	**132M4 132L4**	**160M4 160L4**	**180M4 180L4**
Total length	L	mm	621	650	674	717	780	793	857	968	1046
Motor length	LB	mm	189	218	242	285	348	361	425	536	614
Motor diameter	AC	mm	123	139	156	177	194	220	258	309	349
Motor/connection distance	AD	mm	117	129	145	153	164	169	197	250	272

Δ L ▸ Additional lengths 130



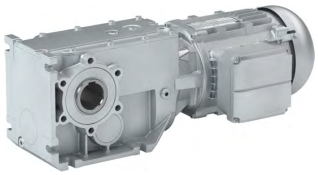
g500-B4300, 3-stage

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



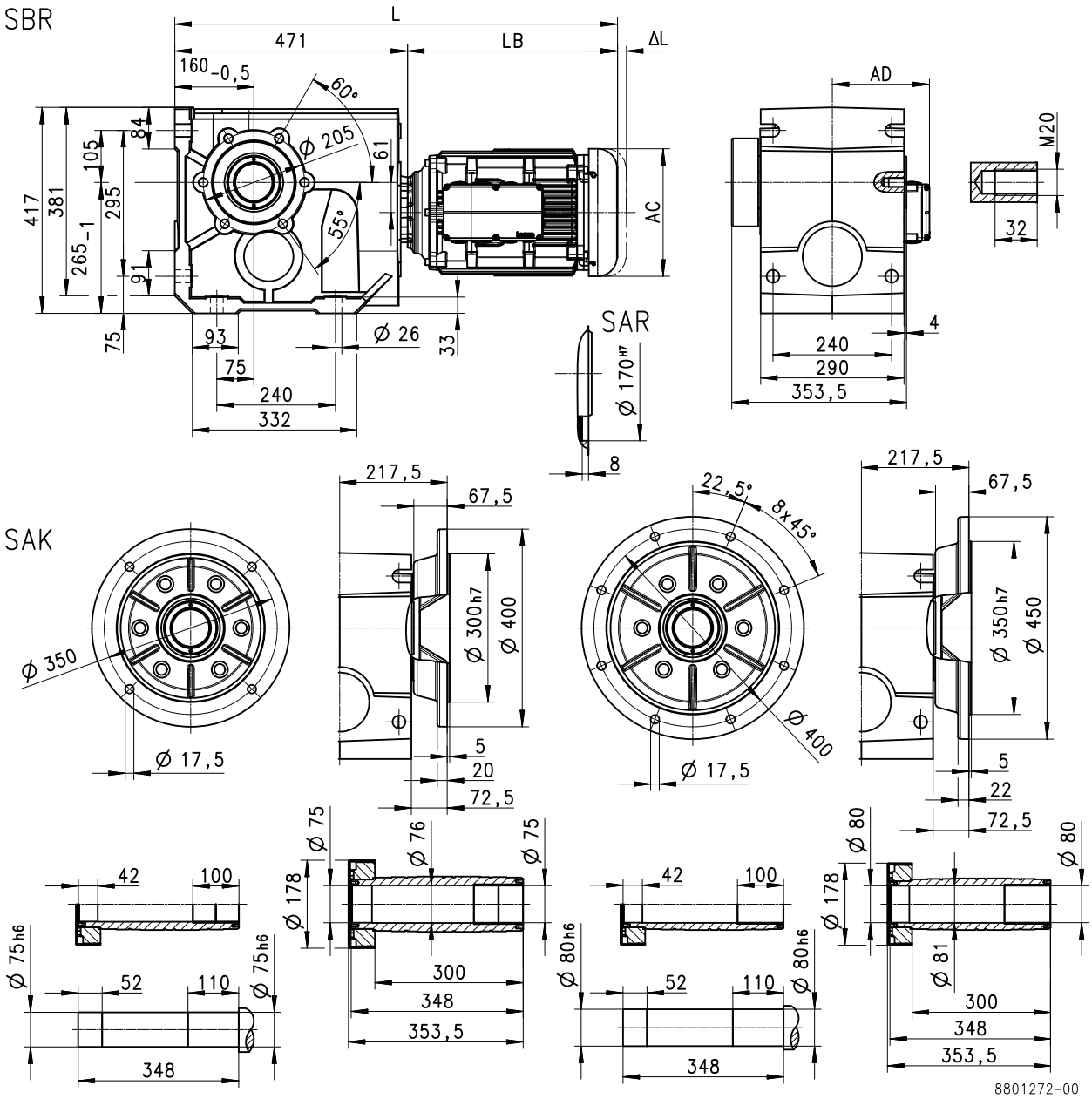
Motor series			m550-H		m550-P						
Motor			**063S4 063M4 063L4**	**071M4 071L4**	**080M4**	**090M4 090L4**	**100M4 100L4**	**112M4**	**132M4 132L4**	**160M4 160L4**	**180M4 180L4**
Total length	L	mm	660	689	713	756	819	832	896	1007	1085
Motor length	LB	mm	189	218	242	285	348	361	425	536	614
Motor diameter	AC	mm	123	139	156	177	194	220	258	309	349
Motor/connection distance	AD	mm	117	129	145	153	164	169	197	250	272

Δ L ▸ Additional lengths 🕮 130



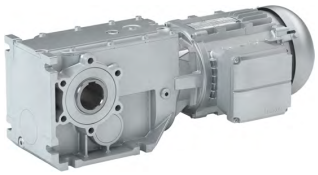
g500-B4300, 3-stage

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



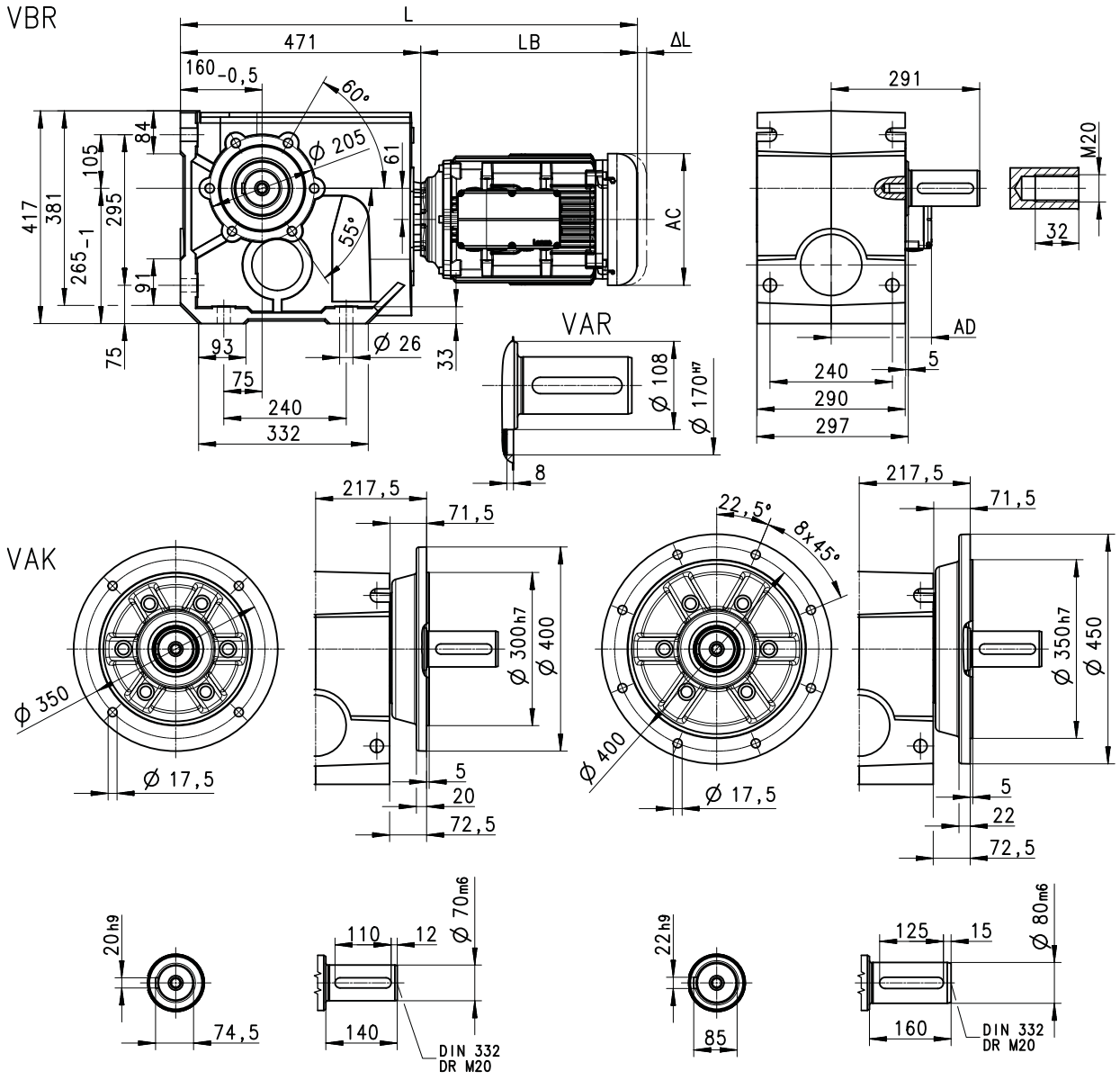
Motor series			m550-H		m550-P						
Motor			**063S4 063M4 063L4**	**071M4 071L4**	**080M4**	**090M4 090L4**	**100M4 100L4**	**112M4**	**132M4 132L4**	**160M4 160L4**	**180M4 180L4**
Total length	L	mm	660	689	713	756	819	832	896	1007	1085
Motor length	LB	mm	189	218	242	285	348	361	425	536	614
Motor diameter	AC	mm	123	139	156	177	194	220	258	309	349
Motor/connection distance	AD	mm	117	129	145	153	164	169	197	250	272

Δ L ▸ Additional lengths 🕮 130



g500-B4300, 3-stage

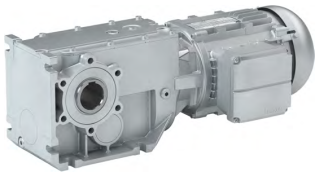
Gearbox design: Solid shaft, with foot (VBR/VAR/VAK)



8801271-00

Motor series			m550-H		m550-P						
Motor			**063S4 063M4 063L4**	**071M4 071L4**	**080M4**	**090M4 090L4**	**100M4 100L4**	**112M4**	**132M4 132L4**	**160M4 160L4**	**180M4 180L4**
Total length	L	mm	660	689	713	756	819	832	896	1007	1085
Motor length	LB	mm	189	218	242	285	348	361	425	536	614
Motor diameter	AC	mm	123	139	156	177	194	220	258	309	349
Motor/connection distance	AD	mm	117	129	145	153	164	169	197	250	272

Δ L ▸ Additional lengths 🕮 130



Gearbox with pre-stage

g500-B110, 3-stage

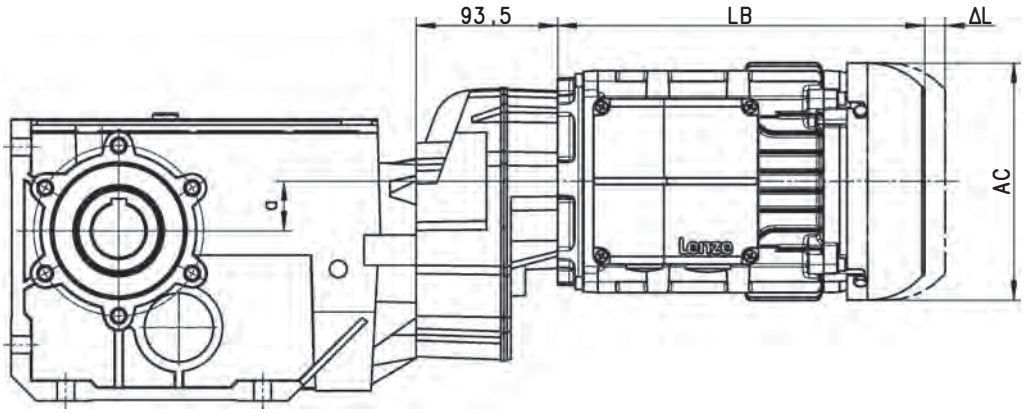
g500-B240 ... B4300, 4-stage

The geared motor dimensions can be found in the basic dimensions, except the total length "L" and the center distance "a".

▸ Basic dimensions 99

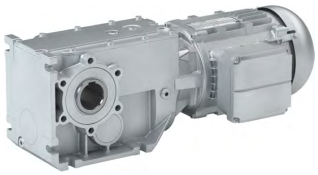
The total length "L" in the basic dimensions is extended by the 93.5 mm of the pre-stage.

Pay attention to the altered center distance "a" between the gearbox and motor shaft.



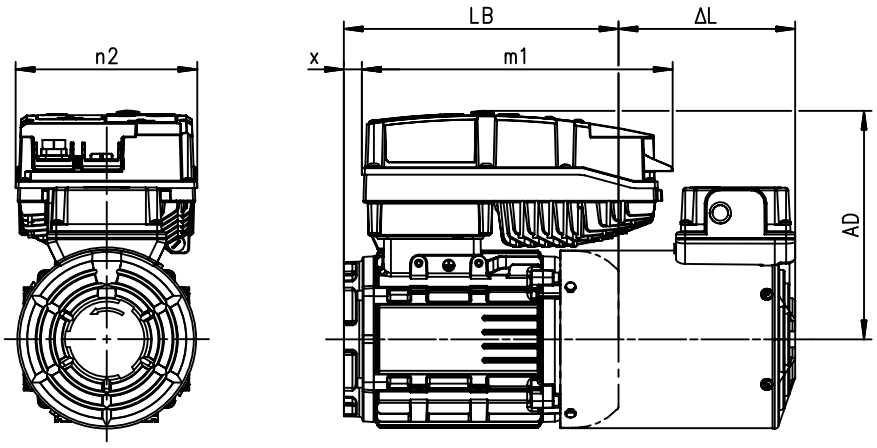
8801277-00

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



Integrated inverters

i550 motec
Supply voltage 3x 230/240 V

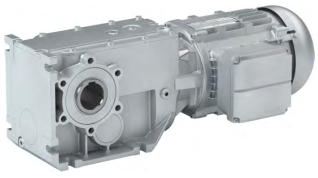


8801670-1

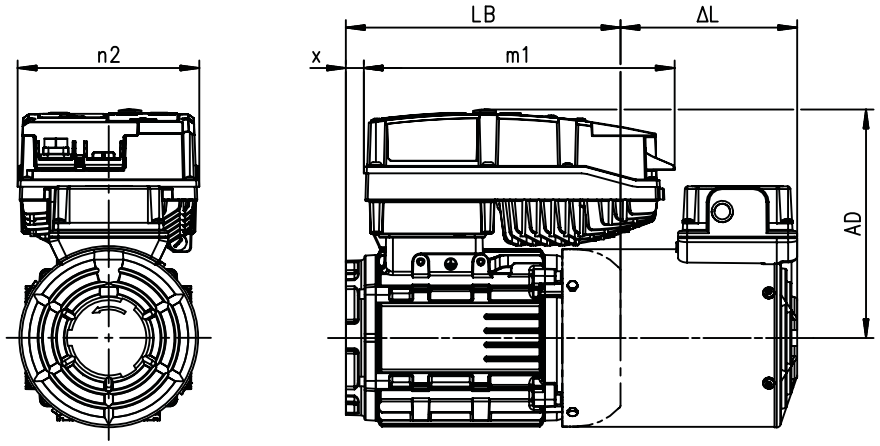
Rated frequency 50/60 Hz

Motor	i550 motec	AD	m1	n2	x
		mm	mm	mm	mm
m550-H63/L4	i550-M0.37/230-3	179	265	159	5
m550-H71/M4	i550-M0.37/230-3	190	265	159	0
m550-H71/L4	i550-M0.55/230-3	190	265	159	0
m550-P80/M4	i550-M0.75/230-3	203	265	159	18
m550-P90/M4	i550-M1.1/230-3	211	265	159	24
m550-P90/L4	i550-M1.5/230-3	229	265	159	24
m550-P100/M4	i550-M2.2/230-3	239	265	159	33
m550-P100/L4	i550-M3.0/230-3	239	265	159	33

Dimensions LB and Δ L ▸ Basic dimensions 🕮 99



i550 motec
Supply voltage 3x 400/480 V



8801670-1

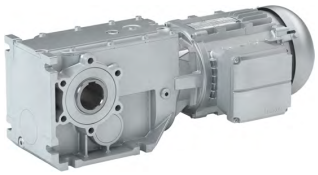
Rated frequency 50/60 Hz

Motor	i550 motec	AD	m1	n2	x
		mm	mm	mm	mm
m550-H63/L4	i550-M0.37/400-3	179	265	159	5
m550-H71/M4	i550-M0.37/400-3	190	265	159	0
m550-H71/L4	i550-M0.55/400-3	190	265	159	0
m550-P80/M4	i550-M0.75/400-3	203	265	159	18
m550-P90/M4	i550-M1.1/400-3	211	265	159	24
m550-P90/L4	i550-M1.5/400-3	211	265	159	24
m550-P100/M4	i550-M2.2/400-3	221	265	159	33
m550-P100/L4	i550-M3.0/400-3	239	265	159	33
m550-P112/M4	i550-M4.0/400-3	244	265	159	39
m550-P132/M4	i550-M5.5/400-3	264	265	159	69

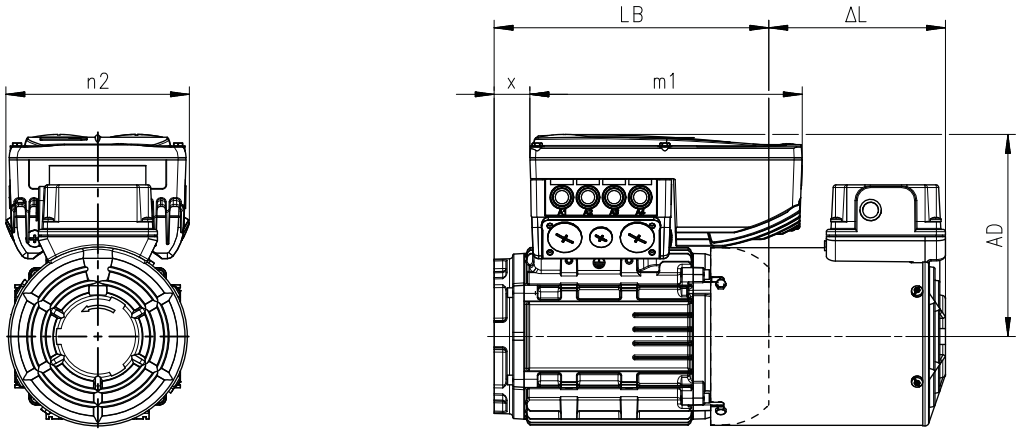
Rated frequency 87 Hz

Motor	i550 motec	AD	m1	n2	x
		mm	mm	mm	mm
m550-H63/S4	i550-M0.37/400-3	179	265	159	5
m550-H63/M4	i550-M0.37/400-3	179	265	159	5
m550-H63/L4	i550-M0.55/400-3	179	265	159	5
m550-H71/M4	i550-M0.75/400-3	190	265	159	0
m550-H71/L4	i550-M1.1/400-3	190	265	159	0
m550-P80/M4	i550-M1.5/400-3	203	265	159	18
m550-P90/M4	i550-M2.2/400-3	211	265	159	24
m550-P90/L4	i550-M3.0/400-3	229	265	159	24
m550-P100/M4	i550-M4.0/400-3	239	265	159	33
m550-P100/L4	i550-M5.5/400-3	239	265	159	33

Dimensions LB and Δ L ▸ Basic dimensions 99



8400 motec
Supply voltage 3x 400/480 V



8801071_00

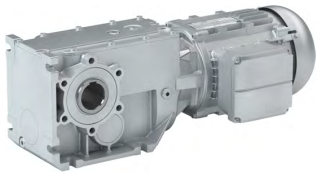
Rated frequency 50/60 Hz

Motor	8400 motec	AD	m1	n2	x
		mm	mm	mm	mm
m550-H63/L4	E84DVB☐3714S☐☐☐2☐	151	240	161	26
m550-H71/M4	E84DVB☐3714S☐☐☐2☐	172	240	161	20
m550-H71/L4	E84DVB☐5514S☐☐☐2☐	172	240	161	20
m550-P80/M4	E84DVB☐7514S☐☐☐2☐	178	240	161	38
m550-P90/M4	E84DVB☐1124S☐☐☐2☐	186	240	161	44
m550-P90/L4	E84DVB☐1524S☐☐☐2☐	186	240	161	44
m550-P100/M4	E84DVB☐2224S☐☐☐2☐	225	260	176	46
m550-P100/L4	E84DVB☐3024S☐☐☐2☐	225	260	176	46
m550-P112/M4	E84DVB☐4024S☐☐☐2☐	284	325	195	39
m550-P132/M4	E84DVB☐5524S☐☐☐2☐	304	325	195	69
m550-P132/L4	E84DVB☐7524S☐☐☐2☐	304	325	195	69

Rated frequency 87 Hz

Motor	8400 motec	AD	m1	n2	x
		mm	mm	mm	mm
m550-H63/S4	E84DVB☐3714S☐☐☐2☐	151	240	161	26
m550-H63/M4	E84DVB☐3714S☐☐☐2☐	151	240	161	26
m550-H63/L4	E84DVB☐5514S☐☐☐2☐	151	240	161	26
m550-H71/M4	E84DVB☐7514S☐☐☐2☐	172	240	161	20
m550-H71/L4	E84DVB☐1124S☐☐☐2☐	172	240	161	20
m550-P80/M4	E84DVB☐1524S☐☐☐2☐	178	240	161	38
m550-P90/M4	E84DVB☐2224S☐☐☐2☐	186	260	176	36
m550-P90/L4	E84DVB☐3024S☐☐☐2☐	186	260	176	36
m550-P100/M4	E84DVB☐4024S☐☐☐2☐	279	325	195	34
m550-P100/L4	E84DVB☐5524S☐☐☐2☐	279	325	195	34
m550-P112/M4	E84DVB☐7524S☐☐☐2☐	284	325	195	39

Dimensions LB and Δ L ▸ Basic dimensions 🕮 99

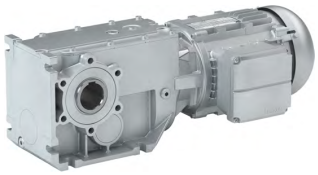


Additional lengths

Self-ventilated motors

Motor			m550-H		m550-P						
			63/S4	71/M4	80/M4	90/M4	100/M4	112/M4	132/M4	160/M4	180/M4
			63/M4	71/L4		90/L4	100/L4		132/L4	160/L4	180/L4
			63/L4								
Without feedback/brake											
IP54/IP55 protection	Δ L	mm	0	0	0	0	0	0	0	0	0
IP65/IP66 protection	Δ L	mm	23	9	7	7	13	0	9	14	9
With integrated feedback											
IP54/IP55 protection	Δ L	mm	23	9	7	7	13	0	9	14	9
IP65/IP66 protection	Δ L	mm	23	9	7	7	13	0	9	14	9
With mounted feedback											
IP54/IP55 protection	Δ L	mm	85	75	68	63	74	77	91	109	118
IP65/IP66 protection	Δ L	mm	85	75	68	63	74	77	91	109	118
With spring-applied brake											
IP54/IP55 protection	Δ L	mm	61	60	68	63	74	77	91	109	118
IP65/IP66 protection	Δ L	mm	135	128	136	131	145	-	-	-	-
With spring-applied brake and integrated feedback											
IP54/IP55 protection	Δ L	mm	61	60	68	63	74	77	91	109	118
IP65/IP66 protection	Δ L	mm	135	128	136	131	145	-	-	-	-
With spring-applied brake and mounted feedback											
IP54/IP55 protection	Δ L	mm	135	128	136	131	145	148	162	195	195
IP65/IP66 protection	Δ L	mm	135	128	136	131	145	-	-	-	-
With spring-applied double brake											
IP54/IP55 protection	Δ L	mm	-	-	-	-	-	-	-	298	313
With spring-applied double brake and mounted feedback											
IP54/IP55 protection	Δ L	mm	-	-	-	-	-	-	-	298	313

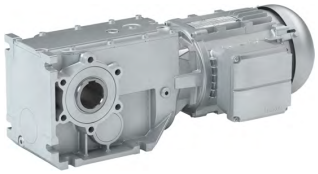
▸ Protection cover 📖 211
▸ Second shaft end 📖 213
▸ Handwheel 📖 214



Forced ventilated motors

Motor			m550-H		m550-P						
			63/S4	71/M4	80/M4	90/M4	100/M4	112/M4	132/M4	160/M4	180/M4
			63/M4	71/L4		90/L4	100/L4		132/L4	160/L4	180/L4
			63/L4								
Without feedback/brake											
IP54/IP55 protection	Δ L	mm	110	102	98	104	105	92	121	158	149
IP65/IP66 protection	Δ L	mm	110	102	98	104	105	92	121	158	149
With integrated feedback											
IP54/IP55 protection	Δ L	mm	110	102	98	104	105	92	121	158	149
IP65/IP66 protection	Δ L	mm	110	102	98	104	105	92	121	158	149
With mounted feedback											
IP54/IP55 protection	Δ L	mm	171	167	156	159	166	169	202	252	257
IP65/IP66 protection	Δ L	mm	171	167	156	159	166	169	202	252	257
With spring-applied brake											
IP54/IP55 protection	Δ L	mm	171	152	156	159	166	169	202	252	257
IP65/IP66 protection	Δ L	mm	217	221	216	227	236	-	-	-	-
With spring-applied brake and integrated feedback											
IP54/IP55 protection	Δ L	mm	171	152	156	159	166	169	202	252	257
IP65/IP66 protection	Δ L	mm	217	221	216	227	236	-	-	-	-
With spring-applied brake and mounted feedback											
IP54/IP55 protection	Δ L	mm	217	221	216	227	236	245	283	343	342
IP65/IP66 protection	Δ L	mm	217	221	216	227	236	-	-	-	-
With spring-applied double brake											
IP54/IP55 protection	Δ L	mm	-	-	-	-	-	-	-	446	460
With spring-applied double brake and mounted feedback											
IP54/IP55 protection	Δ L	mm	-	-	-	-	-	-	-	446	460

▸ Protection cover 🕮 211



Weights

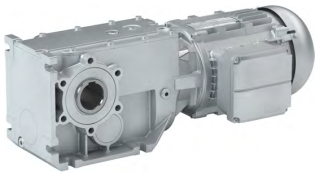
Basic weights

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 66

Observe ▸ Additional weights 133!



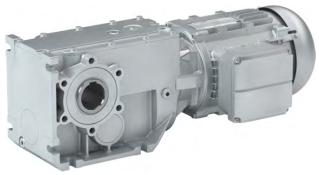
Additional weights

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

Gearboxes

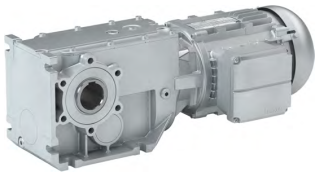
Gearboxes			g500-B45	g500-B110	g500-B240	g500-B450
Solid shaft	m	kg	0.4	0.5	1.4	1.0
Shrink disc	m	kg	0.2	0.2	0.7	0.6
Flange	m	kg	0.3	0.4	0.7	0.9
Torque plate						
Threaded pitch circle	m	kg	0.3	0.5	1.3	2.5
Housing foot	m	kg	-	-	2.4	1.1
Housing foot, GKS compatible	m	kg	-	-	-	-
Shaft cover						
Shrink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

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



Motors

Motor			m550-H		m550-P						
			63/S4 63/M4 63/L4	71/M4 71/L4	80/M4	90/M4 90/L4	100/M4 100/L4	112/M4	132/M4 132/L4	160/M4 160/L4	180/M4 180/L4
Self-ventilated fan cover											
Prepared for product extension											
Spring-applied brake Feedback 2. Shaft end/hand wheel	m	kg	0.4	0.4	0.5	0.6	0.7	0.8	1.0	1.8	2.0
Spring-applied double brake Spring-applied double brake with feedback	m	kg	-	-	-	-	-	-	-	2.7	3.2
Blower											
Without product extension	m	kg	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	1.0
Prepared for product extension											
Spring-applied brake Feedback	m	kg	0.6	0.6	0.7	0.8	0.9	1.0	1.3	1.8	3.3
Spring-applied double brake Spring-applied double brake with feedback	m	kg	-	-	-	-	-	-	-	2.9	4.8
Spring-applied brake											
06	m	kg	1.5	1.5							
08	m	kg		2.2	2.2	2.2					
10	m	kg				3.9	3.9				
12	m	kg					5.6	5.6			
14	m	kg						8.5	8.5		
16	m	kg							13.1	13.1	
18	m	kg								19.1	19.1
20	m	kg									25.7
Brake release lever	m	kg	0.1	0.1	0.2	0.2	0.2	0.4	0.5	0.9	1.4
Spring-applied double brake											
18	m	kg	-	-	-	-	-	-	-	33.2	33.2
20	m	kg	-	-	-	-	-	-	-	-	52.2
Brake release lever	m	kg	-	-	-	-	-	-	-	0.4	0.5
Feedback	m	kg	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Protection cover	m	kg	0.2	0.3	0.3	0.4	0.5	0.7	1.3	1.6	2.0
2nd shaft end	m	kg	0.2	0.3	0.3	0.3	0.4	0.4	0.6	-	-
Handwheel	m	kg	0.3	0.7	0.7	0.7	0.8	0.8	1.0	-	-



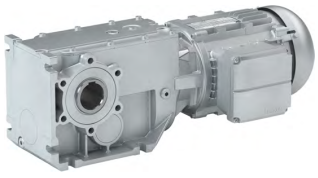
Product extensions

Torque plates

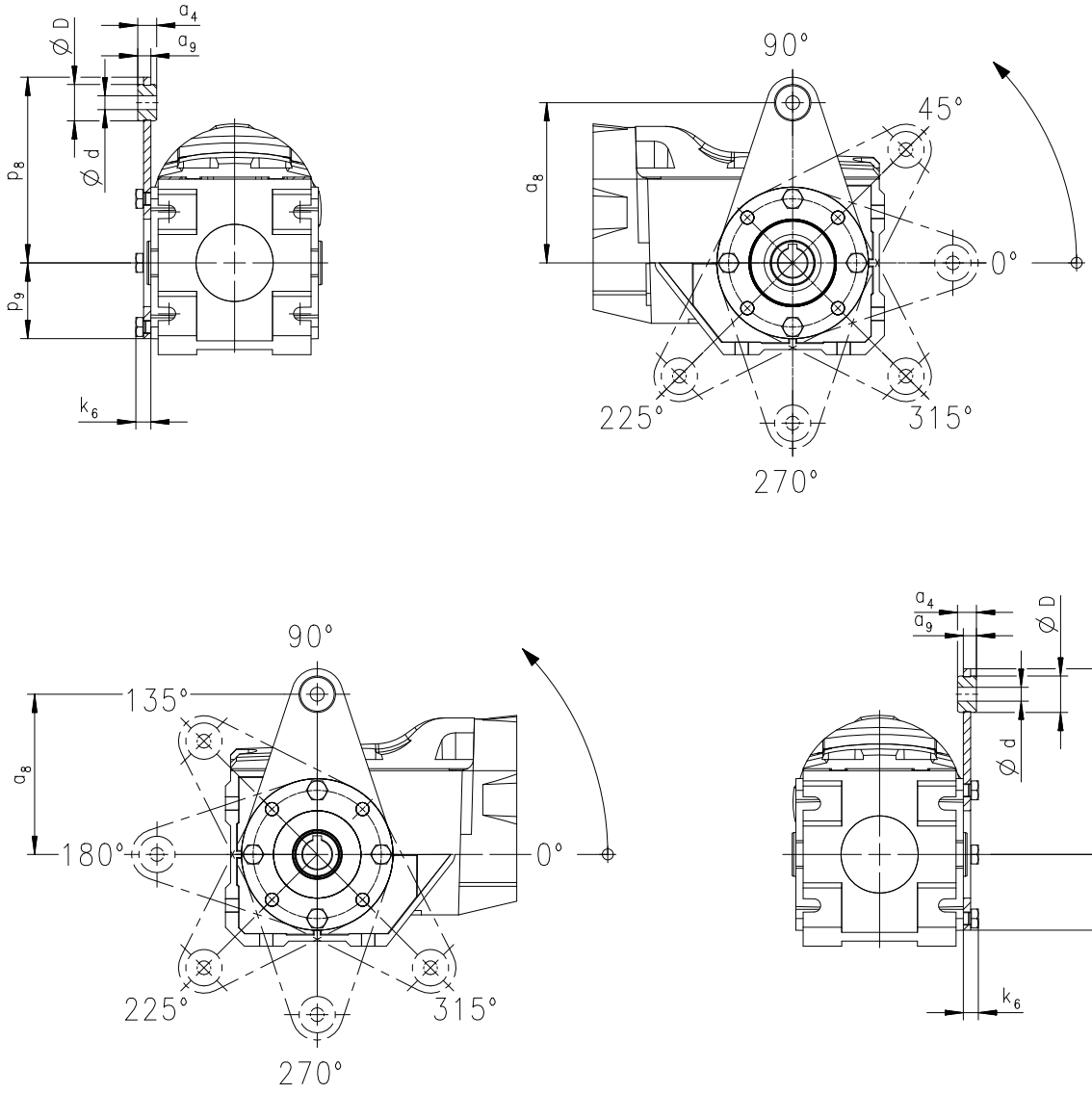
The torque support is usually effected by means of the foot or flange. The torque plates that can be fitted are another possibility. In this case, the torque support is provided only via one point and is suitable for shaft-mounted gearboxes, among other things. Supplied rubber buffers ensure a stress-free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

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

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

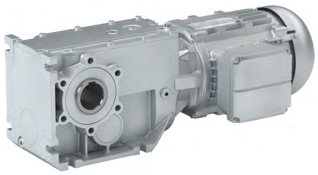


Torque plate on threaded pitch circle
g500-B45 ... B110

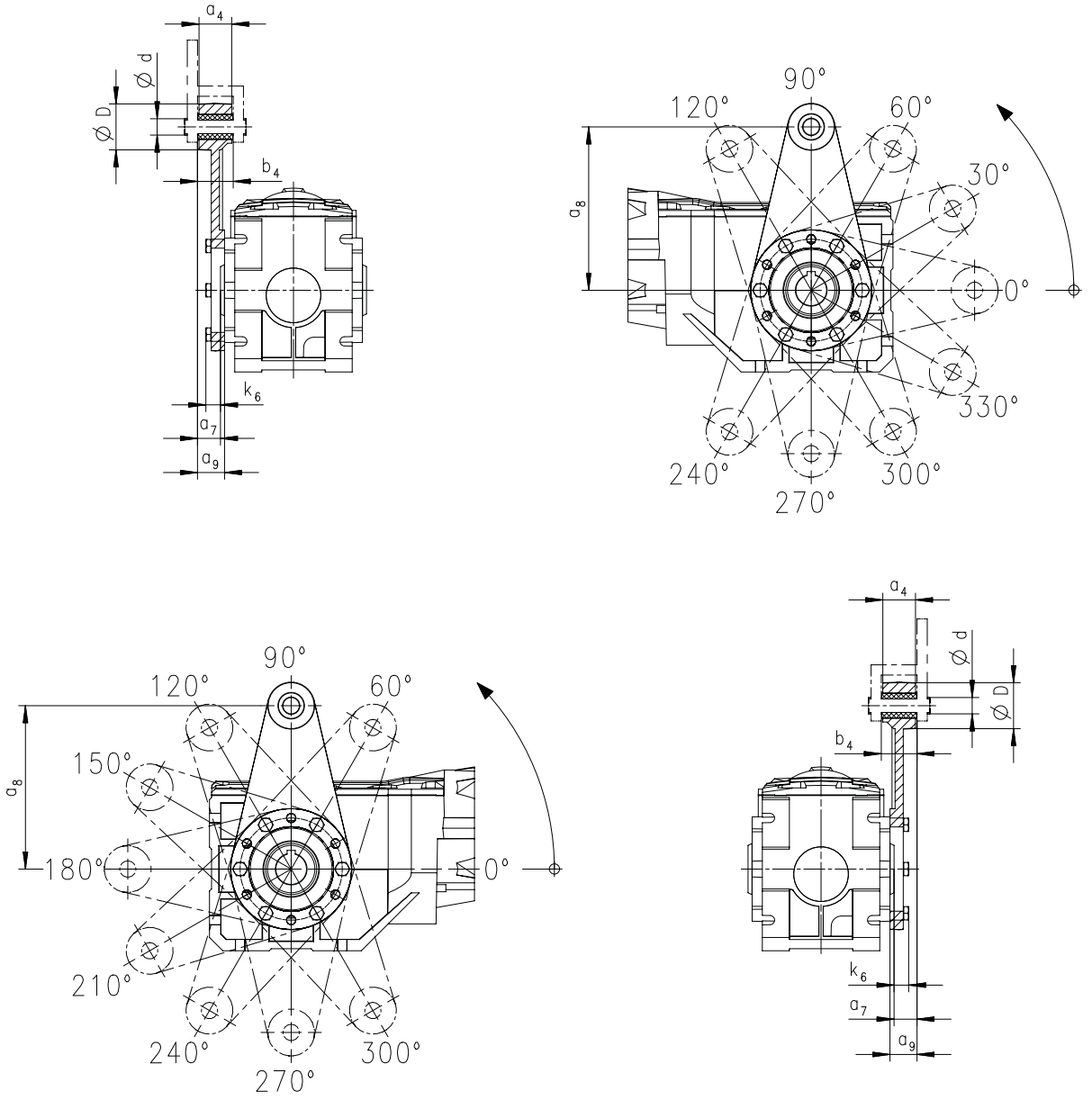


e4001537-00

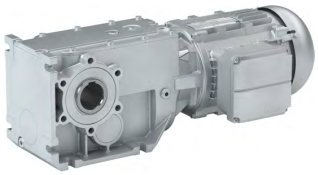
Gearboxes	Dimensions							
	a_4	a_8	a_9	d	D	p_8	p_9	k_6
	mm	mm	mm	mm	mm	mm	mm	mm
g500-B45	12.0	100	8.0	8.0	20,0	115	42.0	9.0
g500-B110	13.0	110	9.0	10.0	25.0	128	54.0	11.0



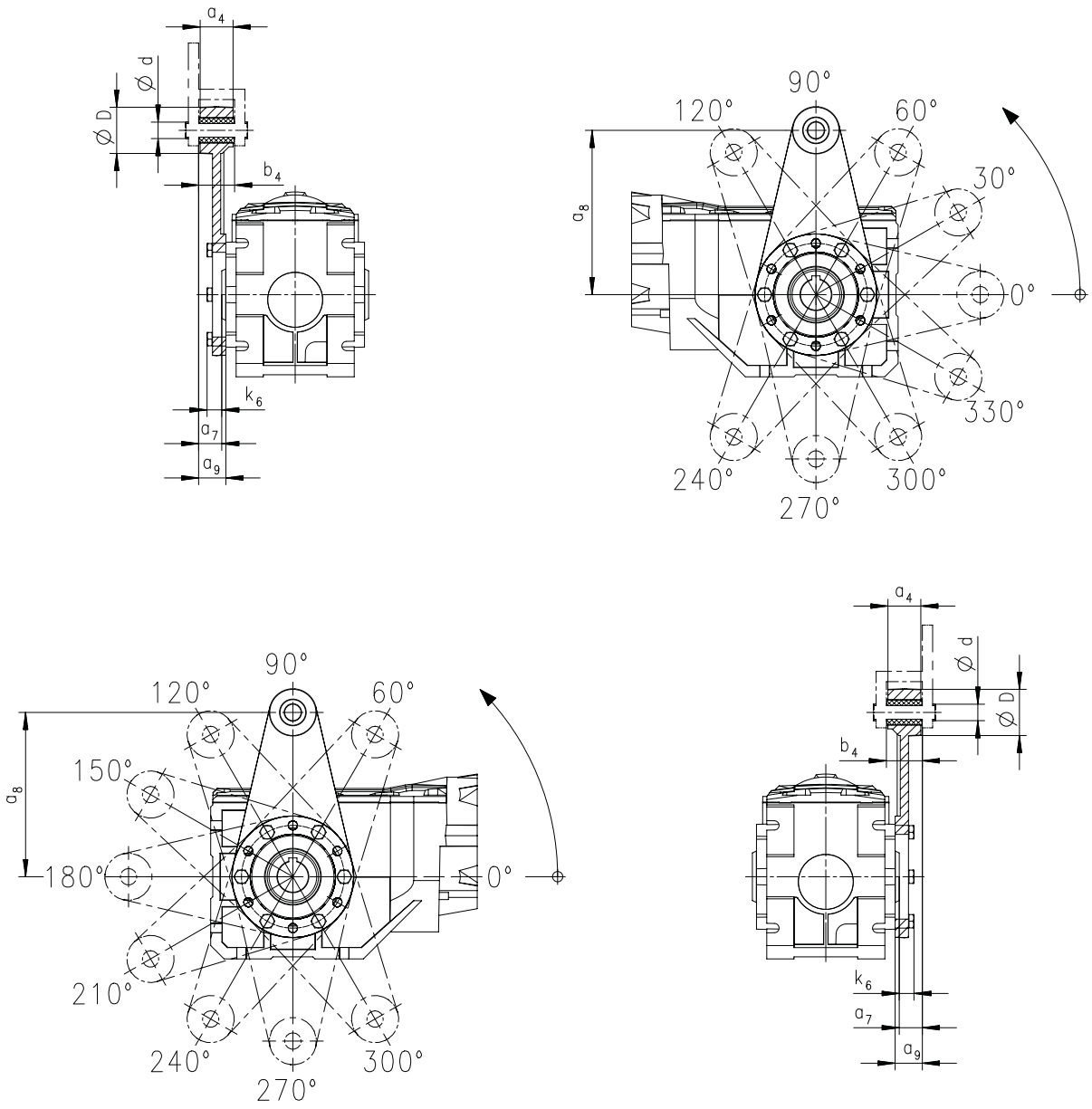
g500-B240 ... B600



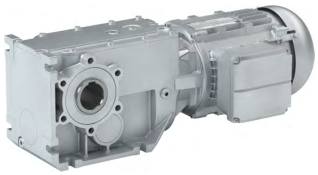
Gearboxes	Dimensions							
	a_4	a_7	a_8	a_9	b_4	d	D	k_6
	mm	mm	mm	mm	mm	mm	mm	mm
g500-B240	34.0	23.5	160	27.5	38.5	16.0	45.0	15.0
g500-B450	40,0	29.0	200	32.0	44.5	20,0	50.0	18.0
g500-B600	38.0	26.5	200	31.5	40,0	20,0	50.0	19.0



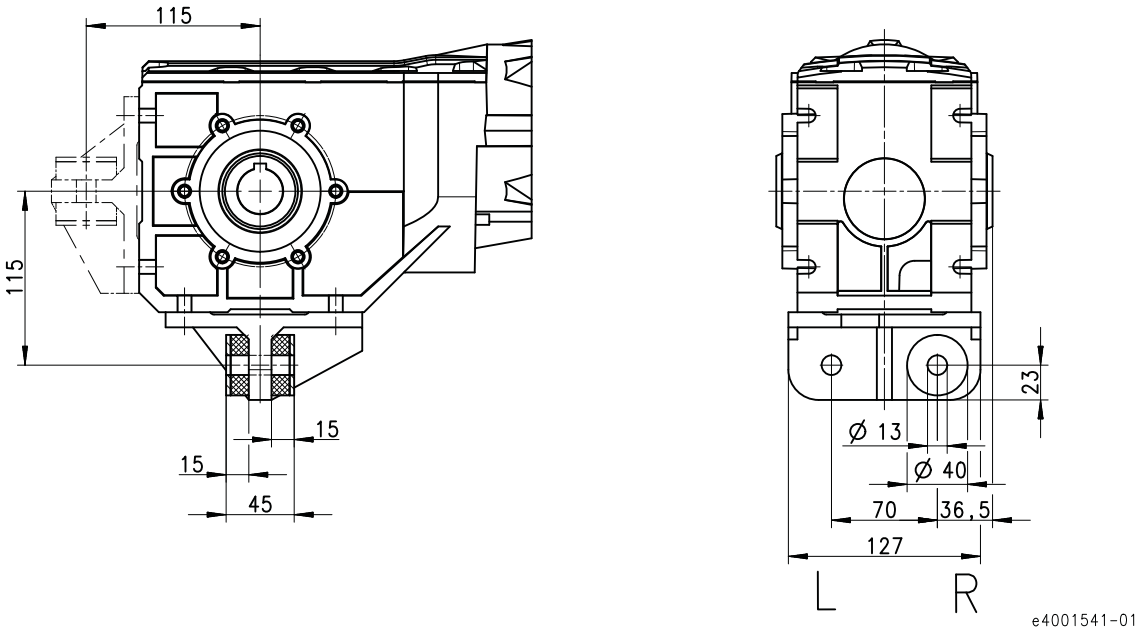
g500-B820 ... B1500

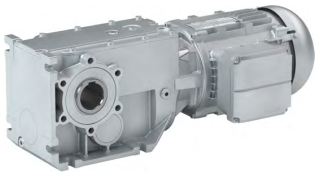


Gearboxes	Dimensions							
	a_4	a_7	a_8	a_9	b_4	d	D	k_6
	mm	mm	mm	mm	mm	mm	mm	mm
g500-B820	38.0	28.0	200	31.5	40,0	20,0	50.0	20.5
g500-B1500	44.0	32.0	250	36.0	46.0	25.0	65.0	24.0

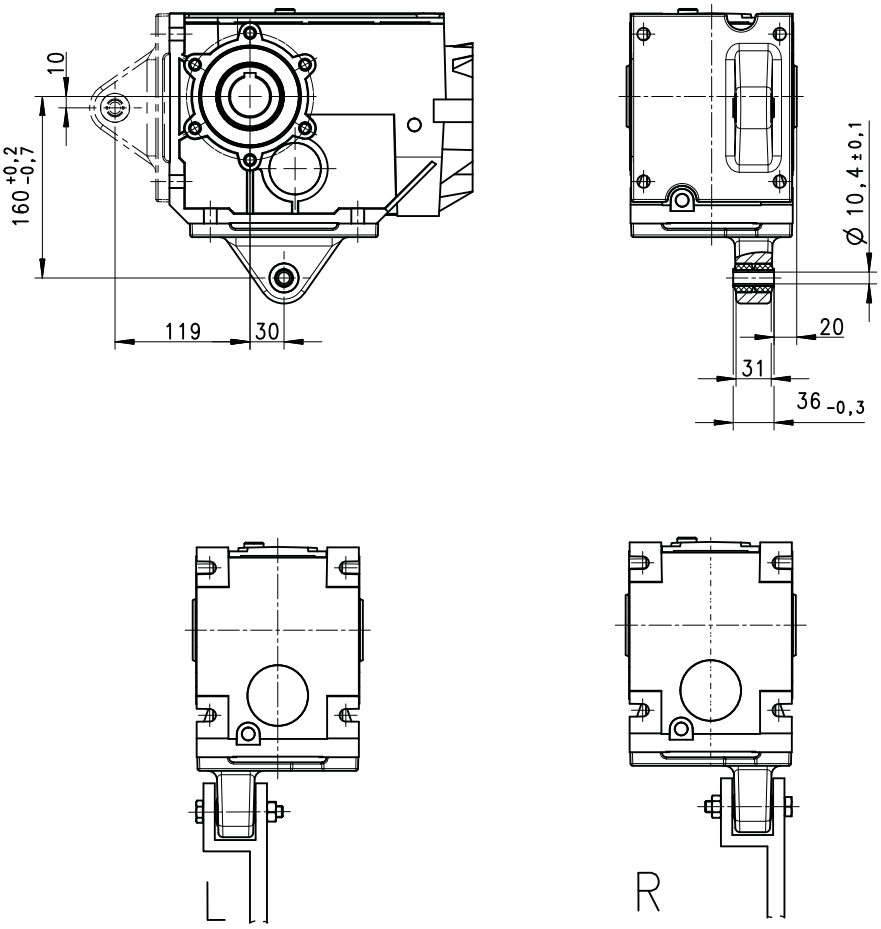


Torque plate on housing foot
g500-B240





g500-B450



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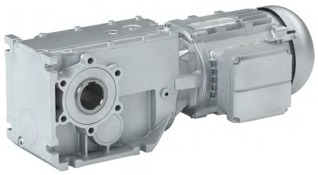
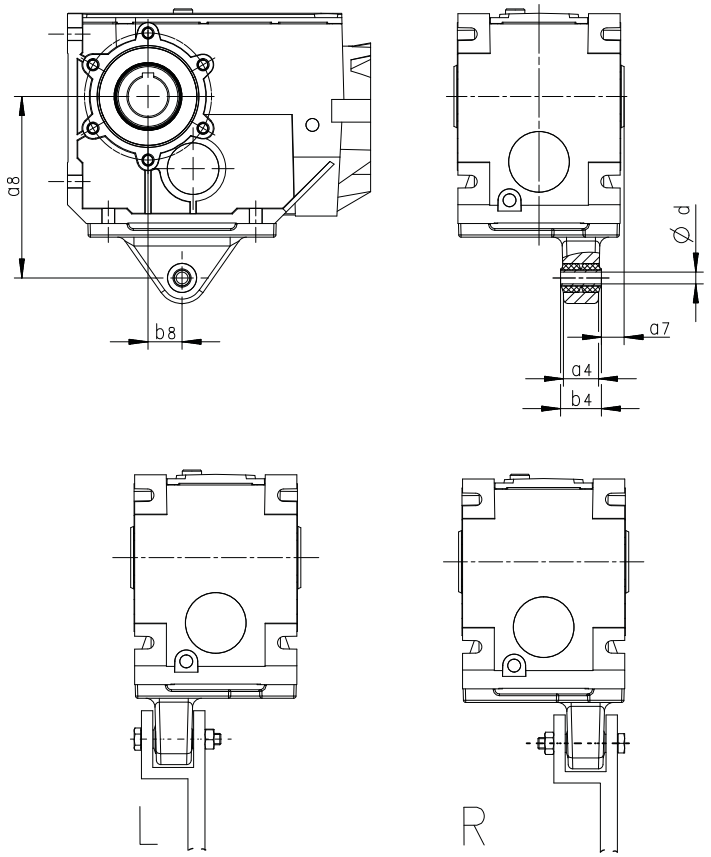
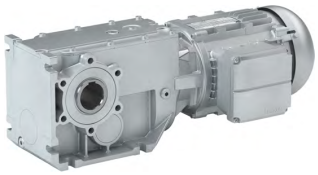


g500-B600 ... B4300



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

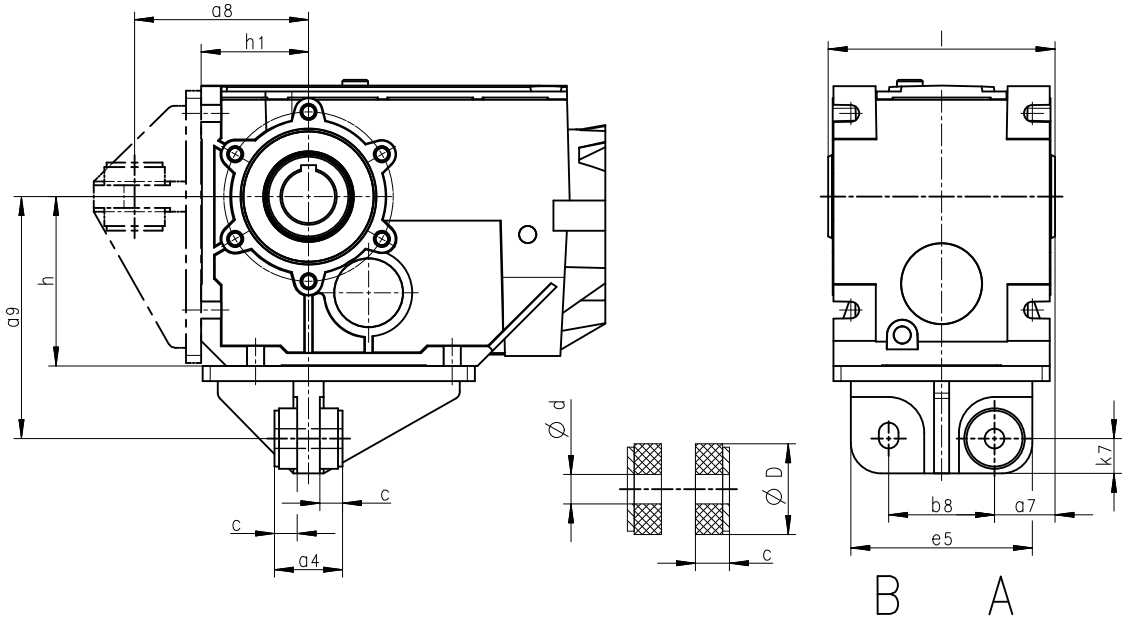


GKS compatible

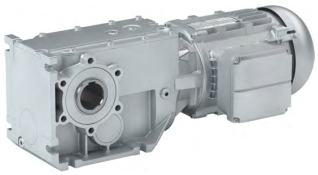
The connection dimensions are identical to the previous product GKS for these torque plates.

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

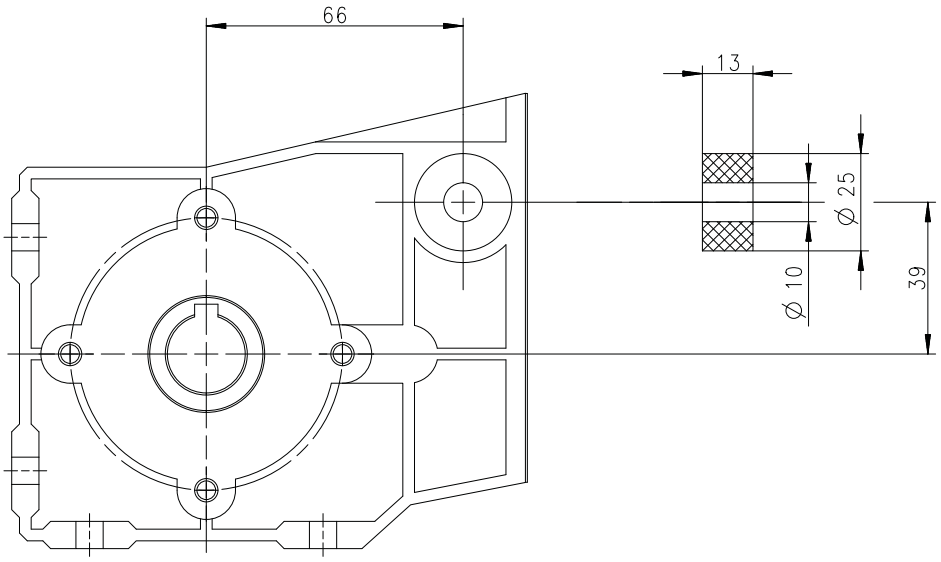
g500-B600 ... B4300

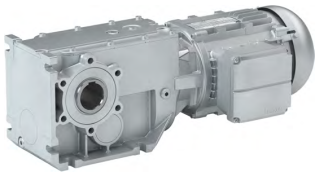


Gearboxes		Dimensions											
	Replacement for	a_4	a_7	a_8	a_9	b_4	b_8	c	Ø d	Ø D	e_5	k_7	k_8
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
g500-B600	GKS06	72	45.0	145	195	72	80	27	17	50	135	28.0	26.0
g500-B820	GKS06	72	50.0	145	195	72	80	27	17	50	140	27.5	27.5
g500-B1500	GKS07	78	55.0	170	240	78	100	28	21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



Rubber buffer for torque plate
g500-B45



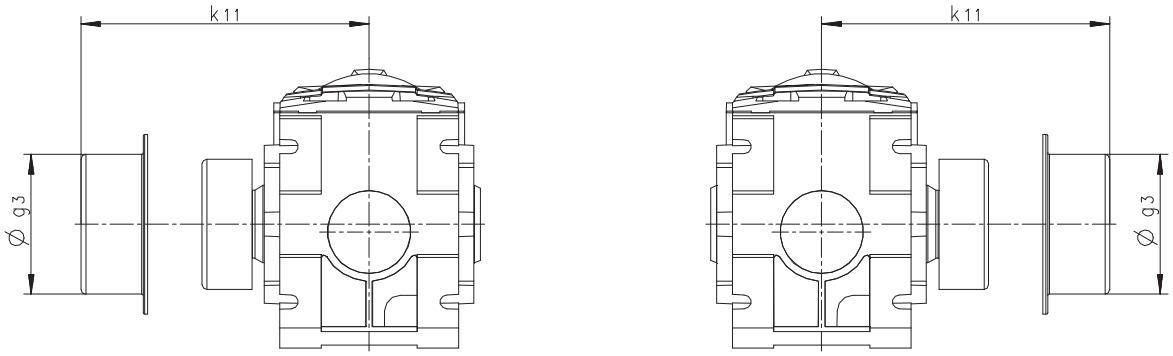


Shaft covers

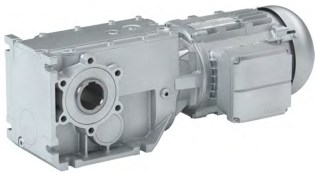
The shrink disc cover is provided for the shrink disc to be protected from contact.

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

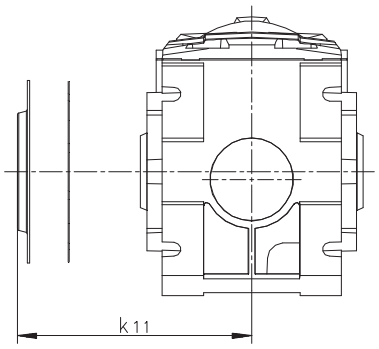
Shrink disc cover
g500-B45 ... B4300



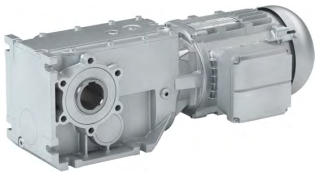
Product	Dimensions	
	g3	k11
	mm	mm
g500-B45	65.0	87.5
g500-B110	79.0	97.5
g500-B240	90.0	111
g500-B450	90.0	108
g500-B600	110	124
g500-B820	110	131
g500-B1500	128	148
g500-B2700	155	171
g500-B4300	188	205



Hollow shaft cover, hoseproof
g500-B45 .... B4300



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

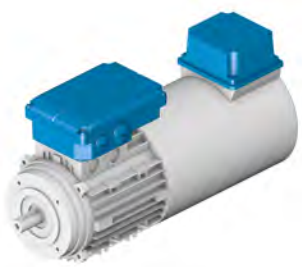


Motor connection

Connection options

The motor are equipped with a terminal box by default.

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



Terminal box with cable gland

Terminal box with ICN connector

HAN connector

The three-phase AC motors are intended for operation on constant mains and an inverter.

Mains operation

For mains operation, the motors are available in the following mains voltages:

Mains frequency	Mains voltage	Mains voltage range	Circuit
Hz	V	V	
50	400	380 ... 420	Y
	230	220 ... 240	Δ
60	460	440 ... 480	Y

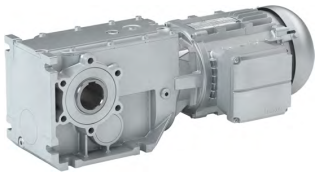
The motors are rated for the specified mains voltage range.

According to EN 60034-1, the motors operate reliably in continuous operation at ±5 % of the line voltage range. This ensures reliable operation in the recommended range ±10 % of the IEC standard voltages 230 V, 400 V and 460 V.

Frequency inverter operation

The base frequencies for frequency inverter operation have been set to the following rated voltages:

Rated frequency	Rated voltage	Circuit
Hz	V	
50	400	Y
	230	Δ
87	400	Δ

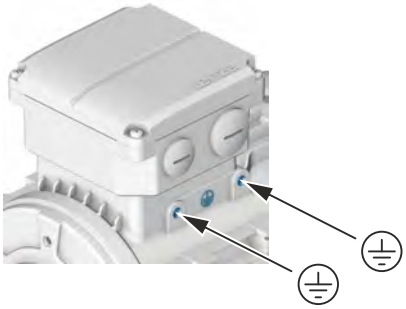


Second ground connection on the motor

According to the EN 61800-5-1 standard, additional measures are required for the protective earth connection if the leakage current is greater than 3.5 mA for alternating current or greater than 10 mA for direct current.

▸ Important notes 47

A possible measure is the execution via a second ground connection.

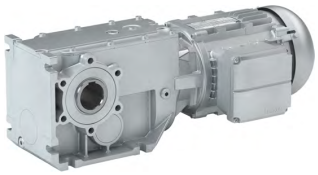


Scope of delivery when a second ground connection is selected:

- Toothed lock washer
- Washer
- Fixing screw

An additional grounding cable is not included in the scope of delivery.

The dimensioning of the grounding is done by the customer.



Assignment of the terminal boxes

Depending on the product extension of the motor, different terminal box sizes (S, M or L) are used.

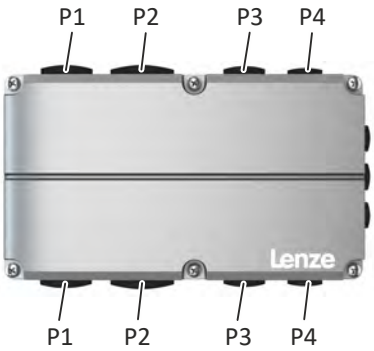
The ICN and M12 connectors are mounted on the terminal boxes (S,M and L) in the positions described. The connector for the separate fan connection is located on the separate fan terminal box.

When brake monitoring is selected, the motor is always supplied with the L terminal box.

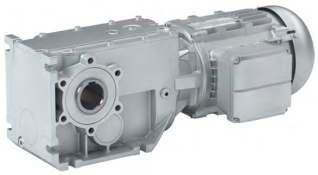
Terminal box S

Terminal box M

Terminal box L



Motor	m550-H		m550-P						
	63/S4 63/M4 63/L4	71/M4 71/L4	80/M4	90/M4 90/L4	100/M4 100/L4	112/M4	132/M4 132/L4	160/M4 160/L4	180/M4 180/L4
Without product extensions									
Terminal box	S	S	S	S	S	S	L	L	L
Power: ICN-M23 connector	P1	P1	P1	P1	P1	P1	P1	-	-
Product extension - brake									
Terminal box	M	M	M	M	M	M	L	L	L
Power + brake: ICN-M23 connector	P2	P2	P1	P1	P1	P1	P1	-	-
Product extension - feedback									
Terminal box	M	M	M	M	M	M	L	L	L
Power: ICN-M23 connector	P2	P2	P1	P1	P1	P1	P1	-	-
Feedback: ICN-M23 connector	P2	P2	P2	P2	P2	P2	P3	P3	P3
Feedback: M12 connector	P1	P1	P2	P2	P2	P2	P4	P4	P4
Product extension - brake + feedback									
Terminal box	L	L	L	L	L	L	L	L	L
Power + brake: ICN-M23 connector	P1	P1	P1	P1	P1	P1	P1	-	-
Feedback: ICN-M23 connector	P3	P3	P3	P3	P3	P3	P3	P3	P3
Feedback: M12 connector	P4	P4	P4	P4	P4	P4	P4	P4	P4
Product extension - separate fan									
ICN-M17 connector	●	●	●	●	●	●	●	●	●

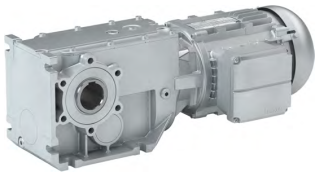


Connection positions

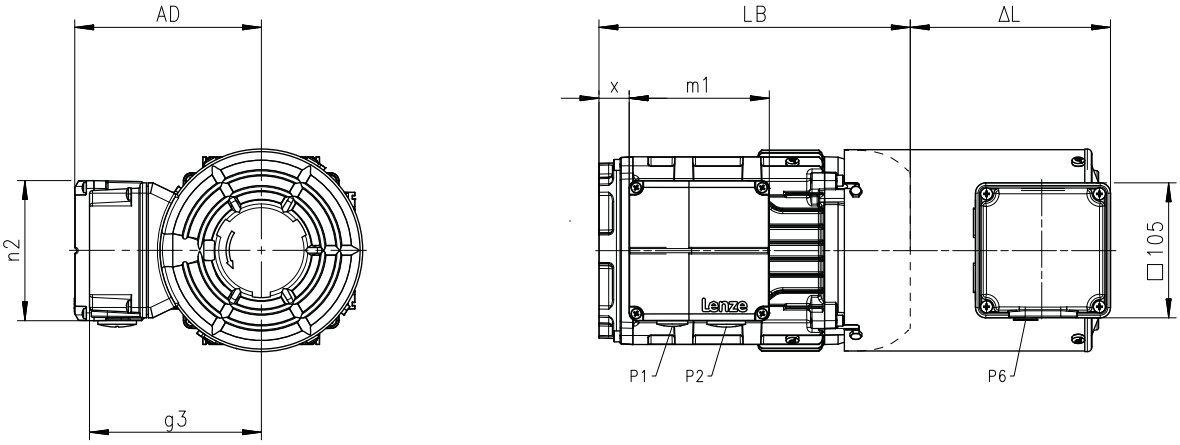
Positions on the motor terminal box

Positions on the blower terminal box

Terminal box	Positions	Note
Motor terminal box S		
Cable glands	L, E or R	
ICN connector: Power	L, E or R	
Motor terminal box M		
Cable glands	L and R	
ICN connector: Power/brake Feedback	L or R R or L	The feedback connector is on the opposite side to the power connector.
M12 connector: Feedback	R or L	
Motor terminal box L		
Cable glands	L and R	
ICN connector: Power/brake Feedback	L or R L or R	The connectors for power/brake and feedback can be arranged on the same or on the opposite side
M12 connector: Feedback	L or R	
Blower terminal box		
Cable glands	L, E or R	
ICN connector	L, E or R	



Power terminal box “S” dimensions



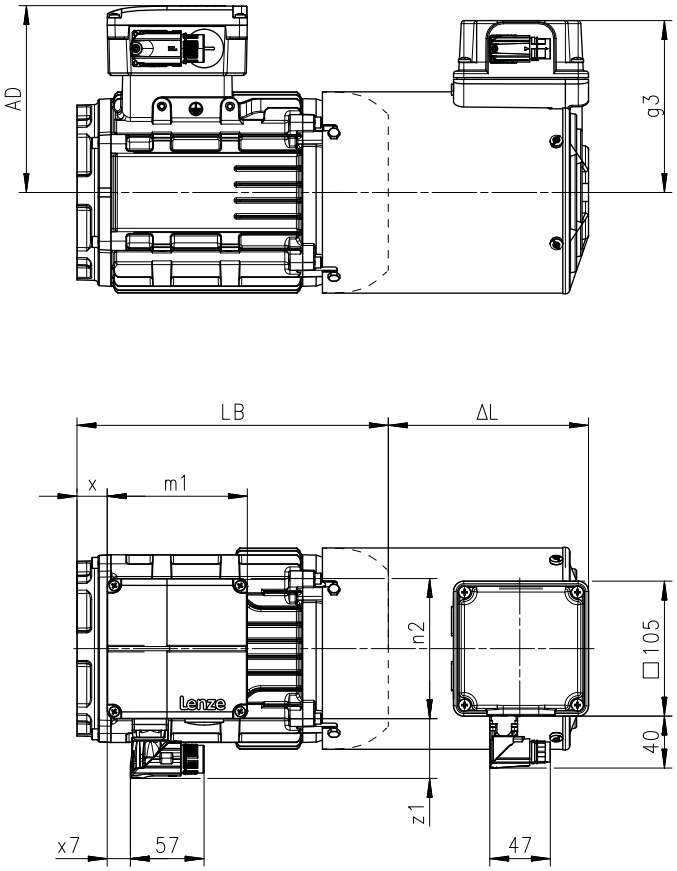
8801072_00

Motor		m550-H		m550-P			
		63/S4 63/M4 63/L4	71/M4 71/L4	80/M4	90/M4 90/L4	100/M4 100/L4	112/M4
Motor terminal box							
AD	mm	117	128	145	153	163	168
x	mm	22	17	24	30	39	45
m_1	mm	87	87	109	109	109	109
n_2	mm	87	87	109	109	109	109
P_1	mm	M20x1.5	M20x1.5	M20x1.5	M20x1.5	M20x1.5	M20x1.5
P_2	mm	-	-	M25x1.5	M25x1.5	M25x1.5	M25x1.5
Blower terminal box							
G_3	mm	118	124	134	143	152	164
P_6	mm	M16x1.5	M16x1.5	M16x1.5	M16x1.5	M16x1.5	M16x1.5

Dimensions LB ▸ Basic dimensions 99

Dimensions Δ L ▸ Additional lengths 130

Power terminal box “S” dimensions with ICN connector

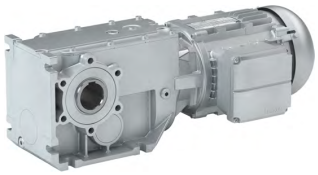


8801075_00

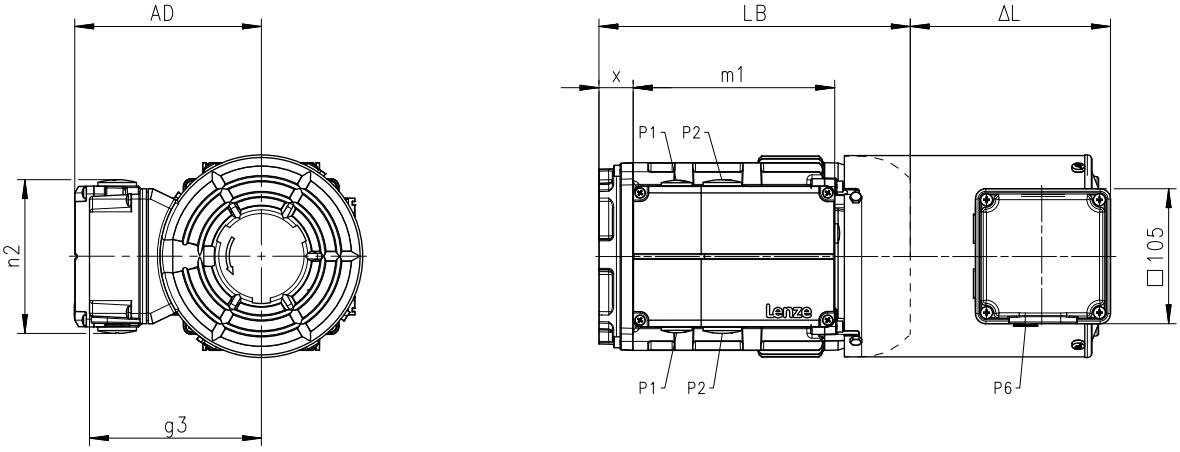
Motor		m550-H		m550-P			
		63/S4 63/M4 63/L4	71/M4 71/L4	80/M4	90/M4 90/L4	100/M4 100/L4	112/M4
Motor terminal box							
AD	mm	117	128	145	153	163	168
x	mm	22	17	24	30	39	45
m_1	mm	87	87	109	109	109	109
n_2	mm	87	87	109	109	109	109
ICN connector Power							
x_7	mm	13	13	18	18	18	18
z_1	mm	42	42	42	42	42	42
Blower terminal box							
G_3	mm	118	124	134	143	152	164

Dimensions LB ▸ Basic dimensions 🕮 99

Dimensions Δ L ▸ Additional lengths 🕮 130



Power terminal box “M” dimensions

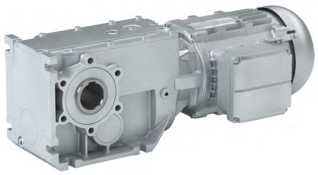


8801073_00

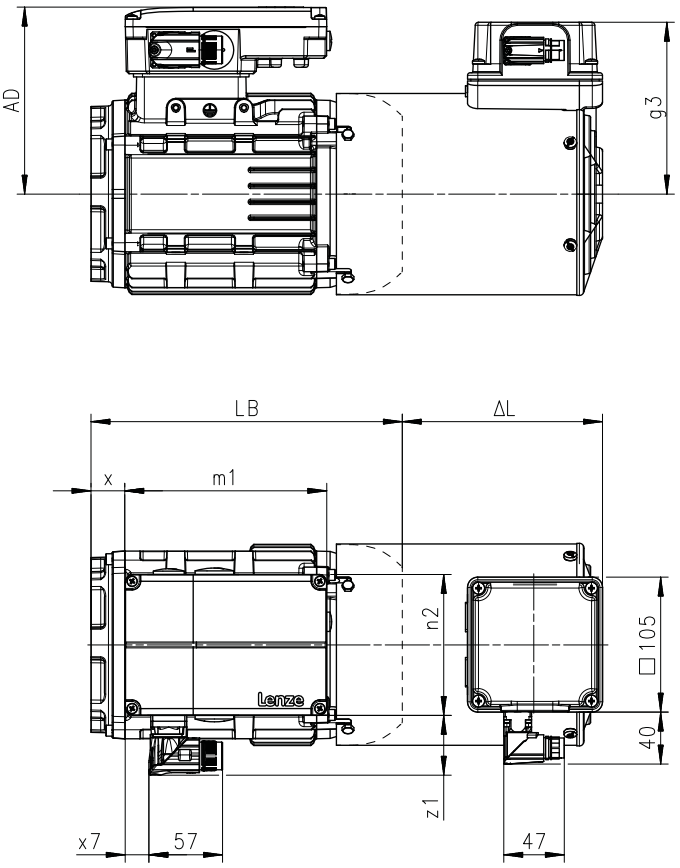
Motor		m550-H		m550-P			
		63/S4 63/M4 63/L4	71/M4 71/L4	80/M4	90/M4 90/L4	100/M4 100/L4	112/M4
Motor terminal box							
AD	mm	113	124	145	153	163	168
x	mm	21	16	27	34	43	49
m_1	mm	141	141	157	157	157	157
n_2	mm	110	110	110	110	110	110
P_1	mm	M16x1.5	M16x1.5	M20x1.5	M20x1.5	M20x1.5	M20x1.5
P_2	mm	M20x1.5	M20x1.5	M25x1.5	M25x1.5	M25x1.5	M25x1.5
Blower terminal box							
G_3	mm	118	124	134	143	152	164
P_6	mm	M16x1.5	M16x1.5	M16x1.5	M16x1.5	M16x1.5	M16x1.5

Dimensions LB ▸ Basic dimensions 99

Dimensions Δ L ▸ Additional lengths 130



Power terminal box “M” dimensions with ICN connector

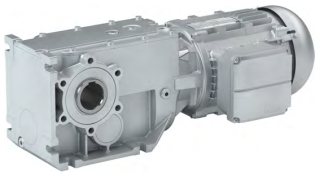


8801076_00

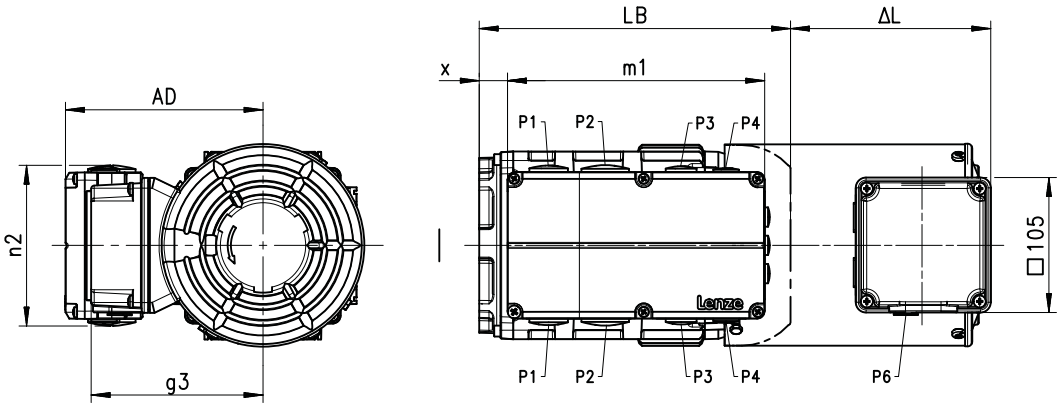
Motor		m550-H		m550-P			
		63/S4 63/M4 63/L4	71/M4 71/L4	80/M4	90/M4 90/L4	100/M4 100/L4	112/M4
Motor terminal box							
AD	mm	113	124	145	153	163	168
x	mm	21	16	27	34	43	49
m_1	mm	141	141	157	157	157	157
n_2	mm	110	110	110	110	110	110
ICN connector Power/brake							
x_7	mm	45.3	45.3	18	18	18	18
z_1	mm	42	42	42	42	42	42
ICN connector Feedback							
x_7	mm	45.3	45.3	53.5	53.5	53.5	53.5
z_1	mm	42	42	46	46	46	46
Blower terminal box							
G_3	mm	118	124	134	143	152	164

Dimensions LB ▸ Basic dimensions 🕮 99

Dimensions Δ L ▸ Additional lengths 🕮 130



Power terminal box “L” dimensions



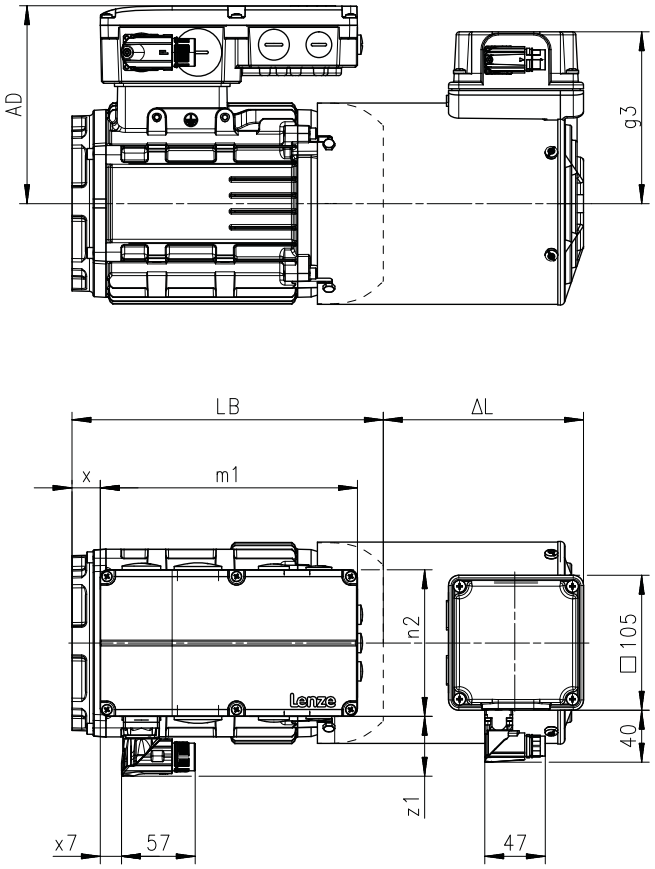
8801074-02

Motor		m550-H		m550-P						
		63/S4 63/M4 63/L4	71/M4 71/L4	80/M4	90/M4 90/L4	100/M4 100/L4	112/M4	132/M4 132/L4	160/M4 160/L4	180/M4 180/L4
Motor terminal box										
AD	mm	113	141	154	162	172	177	197	251	271
x	mm	9	4	22	29	39	44	73	111	139
m_1	mm	141	200	200	200	200	200	200	253	253
n_2	mm	110	114	114	114	114	114	114	143	143
P_1	mm	M25x1.5	M25x1.5	M25x1.5	M25x1.5	M25x1.5	M25x1.5	M25x1.5	M50x1.5	M50x1.5
P_2	mm	M32x1.5	M32x1.5	M32x1.5	M32x1.5	M32x1.5	M32x1.5	M32x1.5	M40x1.5	M40x1.5
P_3	mm	M20x1.5	M20x1.5	M20x1.5	M20x1.5	M20x1.5	M20x1.5	M20x1.5	M20x1.5	M20x1.5
P_4	mm	M16x1.5	M16x1.5	M16x1.5	M16x1.5	M16x1.5	M16x1.5	M16x1.5	M16x1.5	M16x1.5
Blower terminal box										
G_3	mm	118	124	134	143	152	164	185	211	211
P_6	mm	M16x1.5	M16x1.5	M16x1.5	M16x1.5	M16x1.5	M16x1.5	M16x1.5	M16x1.5	M16x1.5

Dimensions LB ▸ Basic dimensions 🕮 99

Dimensions Δ L ▸ Additional lengths 🕮 130

Power terminal box “L” dimensions with ICN connector

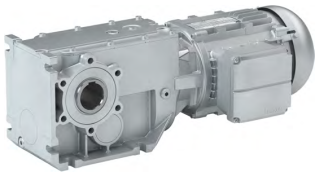


8801077_00

Motor		m550-H		m550-P						
		63/S4 63/M4 63/L4	71/M4 71/L4	80/M4	90/M4 90/L4	100/M4 100/L4	112/M4	132/M4 132/L4	160/M4 160/L4	180/M4 180/L4
Motor terminal box										
AD	mm	113	141	154	162	172	177	197	251	271
x	mm	9	4	22	29	39	44	73	111	139
m_1	mm	141	200	200	200	200	200	200	253	253
n_2	mm	110	114	114	114	114	114	114	143	143
ICN connector Power/brake										
x_7	mm	16	16	16	16	16	16	16	-	-
z_1	mm	46	46	46	46	46	46	46	-	-
ICN connector Feedback										
x_7	mm	120	120	120	120	120	120	120	168	168
z_1	mm	42	42	42	42	42	42	42	42	42
Blower terminal box										
g_3	mm	118	124	134	143	152	164	185	211	211

Dimensions LB ▸ Basic dimensions 99

Dimensions Δ L ▸ Additional lengths 130



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.

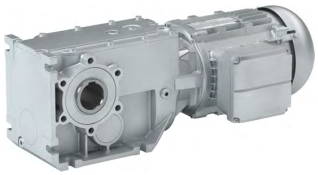
An additional rectifier can be connected with HAN modular.

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

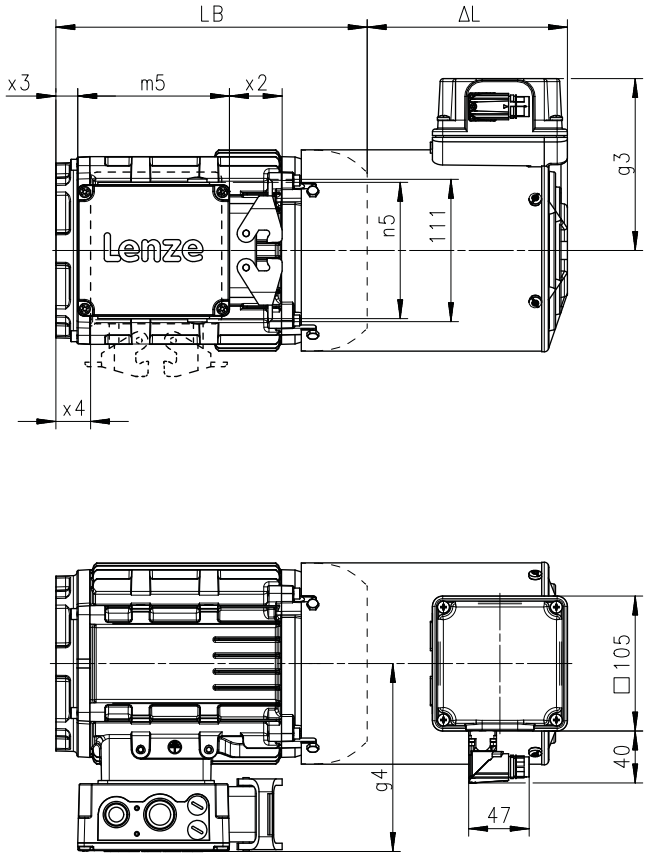
Motor	m550-H		m550-P						
	63/S4 63/M4 63/L4	71/M4 71/L4	80/S4 80/M4	90/M4 90/L4	100/M4 100/L4	112/M4	132/M4 132/L4	160/M4 160/L4	180/M4 180/L4
HAN 10E connector									
Connection: • Power • Brake • Temperature monitoring TK0 or PT1000	•	•	•	•	•	•	-	-	-
HAN modular connector									
Connection: • Power • Brake • Temperature monitoring TK0 or PT1000	•	•	•	•	•	•	•	-	-

Positions of the connections

HAN connector positions



Dimensions of HAN connector

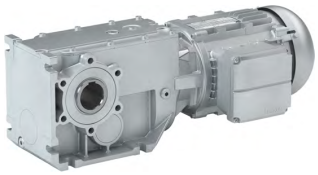


8801078_00

Motor		m550-H		m550-P				
		63/S4 63/M4 63/L4	71/M4 71/L4	80/S4 80/M4 80/L4	90/M4 90/L4	100/M4 100/L4	112/M4	132/M4 132/L4
HAN connector Power/brake								
G_4	mm	123	134	147	155	165	170	237
x_2	mm	41	41	41	41	41	41	47
x_3	mm	6	1	19	25	34.5	40	39
m_5	mm	118	118	118	118	118	118	120
x_4	mm	7	2	20	26	35.5	41	9
n_5	mm	106	106	106	106	106	106	180
Blower terminal box								
G_3	mm	118	124	134	143	152	164	185

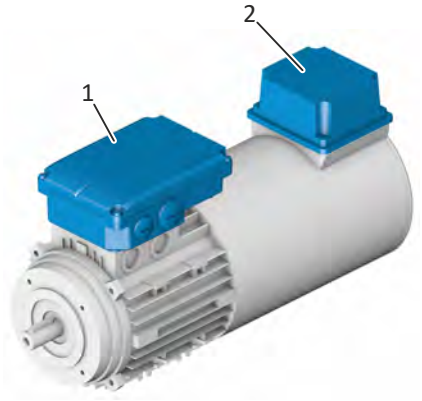
Dimensions LB ▸ Basic dimensions 🕮 99

Dimensions Δ L ▸ Additional lengths 🕮 130



Connection via terminal box

Position of the connections

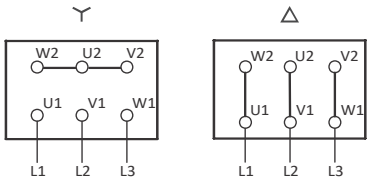


Position	Meaning	Note
1	Power connection Brake connection PE connection Feedback connection Connection of temperature monitoring	For the "S" terminal box, specify the position of the "L", "R" or "E" line connections.
2	Blower connection	When ordering, specify the mounting position of the terminal box: • 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

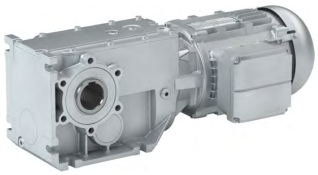
Y/Δ circuit



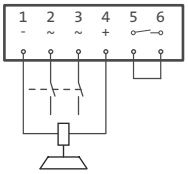
Terminal box, power		
Contact	**Name**	**Meaning**
PE	PE	PE conductor
U1	L1	Motor winding phase
V1	L2	
W1	L3	

DC brake connection

Terminal box, DC brake		
Contact	**Name**	**Meaning**
BD1	+	Brake +
BD2	-	Brake -



AC brake connection



Switching contact - DC switching

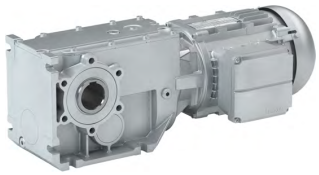
Terminal box, AC brake		
Contact	**Name**	**Meaning**
~	L1	Mains
	N	
+	+	Holding brake (factory-wired)
-	-	
Switch symbol		Switching contact - DC switching

Feedback connection

Terminal box, resolver		
Contact	**Name**	**Meaning**
B1	+Ref	Transformer windings (reference windings)
B2	-Ref	
B3	+VCC ETS	Supply: Electronic nameplate (only for variant with electronic nameplate ETS)
B4	+COS	Cosine stator windings
B5	-COS	
B6	+SIN	Sine stator windings
B7	-SIN	
B8		Not assigned

Terminal box, 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

Terminal box, SinCos absolute value encoder with Hiperface		
Contact	**Name**	**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

Terminal box, temperature monitoring		
Contact	**Name**	**Meaning**
TB1		Temperature monitoring: TCO
TB2		
1TP1		PTC150 thermistor
2TP1		PTC130 thermistor
R1	+	Temperature sensor PT1000 +
R2	-	Temperature sensor PT1000 -
1TP2		PTC150 thermistor
2TP2		PTC130 thermistor

Blower connection

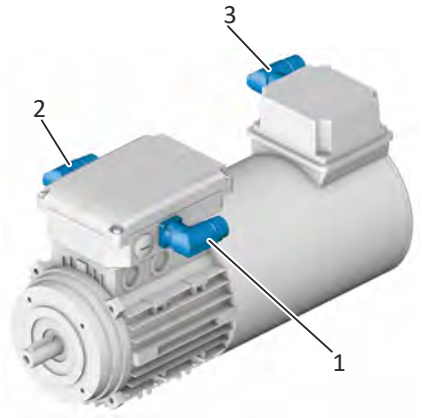
Terminal box, 1-phase separate fan		
Contact	**Name**	**Meaning**
PE	PE	PE conductor
U1	L1	Mains
U2	N	

Terminal box, 3-phase separate fan		
Contact	**Name**	**Meaning**
PE	PE	PE conductor
U1	L1	Mains connection
V1	L2	
W1	L3	

Connection via ICN connector

In order to provide for a quick and error-free connection of Lenze motors to Lenze inverters, we recommend using prefabricated Lenze system cables.

Position of the connections

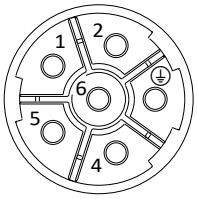


Position	Meaning	Note
1	ICN-M23 6-pin connector • Power connection • Brake connection • PE connection	Indicate the mounting position of connectors in the order: • Shown “R” • On the opposite side “L”
	Additionally for ICN-M23 8-pin connector: • Thermal contact temperature monitoring connection	Caution: Max. Brake connection voltage ≤ 230 V
2	ICN-M23 connector • Feedback connection • PT1000 temperature sensor connection	The mounting position for the feedback connector is on the opposite side to the power connection (position L/R).
3	ICN-M17 connector • Blower connection	Indicate the mounting position of terminal boxes in the order: • Shown “T” • L, R or B If required, the terminal box cover can be gradually rotated by 90° after loosening the screws on the terminal box.

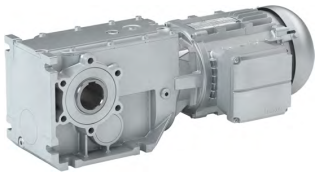
Power and brake connection

ICN-M23 connector assignment

6-pole

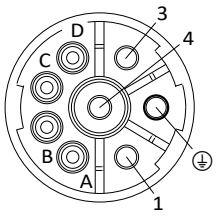


ICN M23 6-pole		
Contact	**Name**	**Meaning**
1	BD1	DC +/AC brake
2	BD2	DC -/AC brake
PE	PE	PE conductor
4	U	Power phase U
5	V	Power phase V
6	W	Power phase W



ICN-M23 connector assignment

8-pole

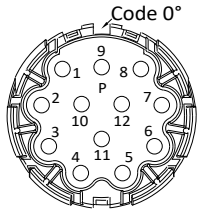


ICN M23 8-pole		
Contact	**Name**	**Meaning**
1	U	Power phase U
PE	PE	PE conductor
3	W	Power phase W
4	V	Power phase V
A	TB1	Temperature monitoring: TCO
B	TB2	Temperature monitoring: TCO
C	BD1 / BA1	Brake DC +/AC ≤ 230 V
D	BD2 / BA2	Brake DC-/AC ≤ 230V

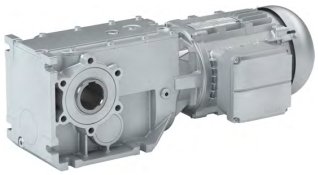
Feedback and temperature monitoring connection

ICN-M23 connector assignment

Resolver

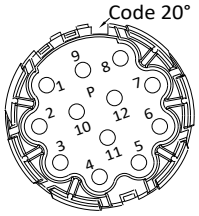


ICN M23 for resolvers		
Contact	**Name**	**Meaning**
1	+Ref	Transformer windings
2	-Ref	Transformer windings
3	+VCC ETS	Supply: Electronic nameplate (Only for motors and inverters that support this function)
4	+COS	Cosine stator windings
5	-COS	Cosine stator windings
6	+SIN	Sine stator windings
7	-SIN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



ICN-M23 connector assignment

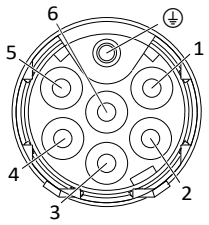
Incremental and SinCos absolute value encoder Hiperface©



ICN M23 for incremental and SinCos absolute value encoder Hiperface		
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

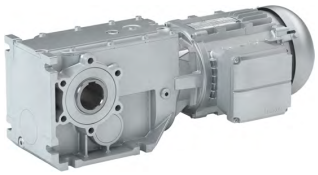
Blower

Pin assignment ICN-M17



ICN 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

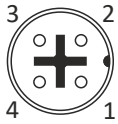
ICN M17 for blowers 3-ph		
Contact	**Name**	**Meaning**
PE	PE	PE conductor
1	U	Power phase U
2		Not assigned
3	V	Power phase V
4		Not assigned
5		Not assigned
6	W	Power phase W



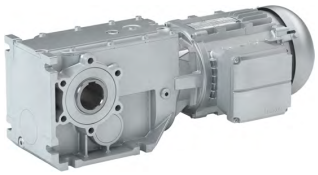
Connection via M12 connector

M12 pin assignment

Incr. encoder IG128-24V-H

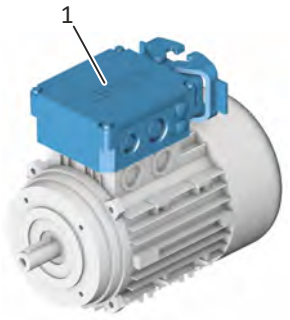


ICN M12		
Contact	**Name**	**Meaning**
1	+UB	Supply +
2	B	Track B
3	GND	Mass
4	A	Track A



Connection via HAN connector

Position of the connections



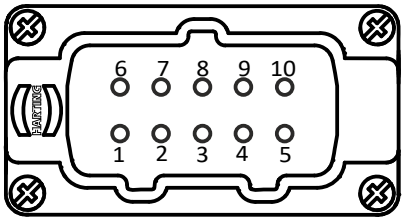
Note	Meaning
1	Power connection Brake connection PE connection Connection of temperature monitoring
	Additionally for HAN-Modular: • Rectifier connection

HAN 10E connector

The motor connection is specified in the counter plug.

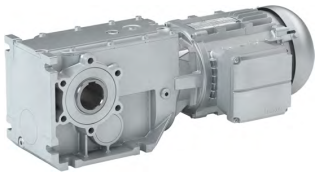
The connector is only suitable for motors with the connection method Y/Δ.

HAN 10E connector assignment



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

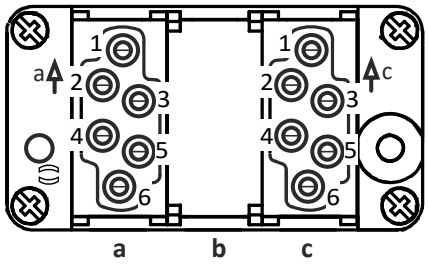
HAN 10 E		
Contact	**Name**	**Meaning**
1	U1	Motor winding phase
2	V1	
3	W1	
4	+/AC	Brake
5	-/AC	
6	W2	Motor winding phase
7	U2	
8	V2	
9	TKO/+PT1000	Temperature monitoring
10	TKO/-PT1000	



HAN modular connector

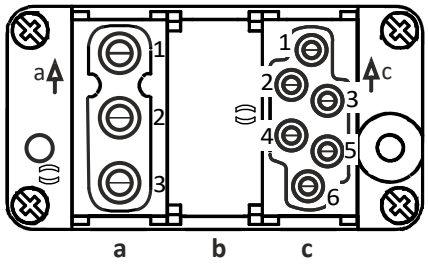
The motor connection is specified in the terminal box.

HAN modular 16 A pin assignment

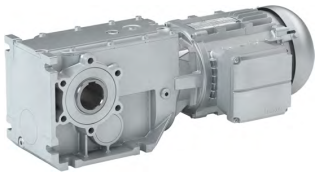


HAN modular 16 A			
Module	**Contact**	**Name**	**Meaning**
a	1	U1	Motor winding phase
	2	V1	
	3	W1	
b			Blank module
c	1	TKO +PT1000	Temperature monitoring
	2	+/AC	Brake
	3	-/AC	
	4	Schaltkontakt	Rectifier
	5		
	6	TKO -PT1000	Temperature monitoring

HAN modular 40 A pin assignment



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



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, preventing possible movement of the motor shaft or the load after switching off or in the event of a power failure.

The spring-applied brakes are available purely as holding brakes or as application brakes. The application brake can be used as a holding brake and service brake.

⚠CAUTION!

The brake may not be used as a safety element (particularly with hoist axes) without additional measures being implemented.

The brakes used are not fail-safe brakes in the sense that prospective disruptive factors, e.g. oil ingress, can lead to a reduction in torque! The friction surfaces must always be free from oil and grease because even small amounts of grease or oil will considerably reduce the braking torque.

Brake connection

If the installation is already supplied with DC voltage, a direct connection without rectifier is possible. High induction peaks may occur and a freewheeling diode or a spark suppressor should be provided.

A rectifier is required if the brake is connected to the mains. This is included in the scope of supply and is located in the motor's terminal box.

Rectifier

The rectifier converts the connection's AC voltage into a DC voltage.

Alternatively, a half-wave bridge rectifier can be used for the application brake. This provides twice the voltage for a very short time (300 ms). As a result, the features of the brake – depending on the assignment of the brake's coil voltage and supply voltage – can be optimized in the form of a short-term overexcitation of the brake coil or a reduction of the holding current.

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.

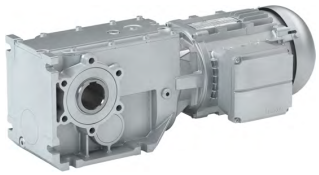
Motor supply cables

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:

$$U[V] = U_B[V] + 0.08\frac{[V]}{[A]\times[m]} \times l_{Lg}[m] \times I_B[A]$$

U	V	Resulting supply voltage
U_B	V	Rated voltage of the brake
l_{Lg}	m	Cable length
I_B	A	Rated current of the brake



Manual release lever

To make positioning and maintenance work easier, the holding and application brake can be ordered with a manual release lever. By using the manual release lever, the brake can be released manually in deenergized operating state.

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.

Spring-applied holding brake

NOTICE

If the specified wide voltage range is not reached (DC 180 V ... 205 V/AC 400 V ... 460 V), this will negatively affect how the brake works.

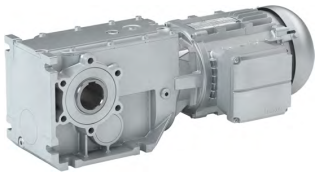
For example, greater wear can be expected.

▸ The application case must be checked by Lenze.

Types	
Degree of protection	IP54/IP55
Control	DC supply AC supply via rectifier in the terminal box
Supply voltages	
DC voltage	DC 24 V ±10% DC 180 V ... 205 V +10%
Mains voltage	AC 230 V ±10% AC 400 V ... 460 V +10%
Switching cycles	
Standard design	Repeating: 1 x 10^6 Reversing: 1 x 10^6
Friction lining	Standard
Options	Manual release UL/CSA approval Low noise during operation (noise-reduced rotor)

Assignment of braking torques

Motor	Standard design						
	HBR 06	HBR 08	HBR 10	HBR 12	HBR 14	HBR 16	HBR 18
	Nm	Nm	Nm	Nm	Nm	Nm	Nm
m550-H63/S4	4						
m550-H63/M4							
m550-H63/L4							
m550-H71/M4							
m550-H71/L4							
m550-P80/M4		8					
m550-P90/M4							
m550-P90/L4			16				
m550-P100/M4			23				
m550-P100/L4							
m550-P112/M4				32			
m550-P132/M4					60		
m550-P132/L4							
m550-P160/M4						80	
m550-P160/L4							150
m550-P180/M4							
m550-P180/L4							



Rated data

Spring-applied holding brake

Holding brake			HBR 06	HBR 08	HBR 10	HBR 10	HBR 12	HBR 14	HBR 16	HBR 18
Moment of inertia		kgcm²	0.128	0.401	2	2	4.5	6.3	15	29
Power input										
DC 24 V		W	20	25	30	30	40	50	55	85
DC 180 V ... 205 V		W	20	25	30	30	40	53	56	85
AC 230 V		W	20	25	30	30	40	53	56	85
AC 400 V ... 460 V		W	20	25	30	30	40	53	56	85
Braking torque is static		Nm	4	8	16	23	32	60	80	150
Min. static braking torque tolerance		%	0	0	0	0	0	0	0	0
Max. static braking torque tolerance		%	80	80	80	80	80	80	80	80
Reversing cycles			1000000	1000000	1000000	1000000	1000000	1000000	1000000	1000000
Repetitive cycles			1000000	1000000	1000000	1000000	1000000	1000000	1000000	1000000
Maximum switching energy	Q_E	J	3000	7500	12000	12000	24000	30000	36000	60000

NOTICE

Maximum switching energy per emergency stop with n= 2700 rpm for at least 100 emergency stops.

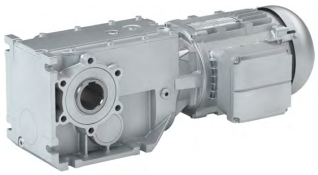
Emergency stops are possible during commissioning of the holding brake - if emergency stops are required during operation, an application brake must be used.

⚠ DANGER!

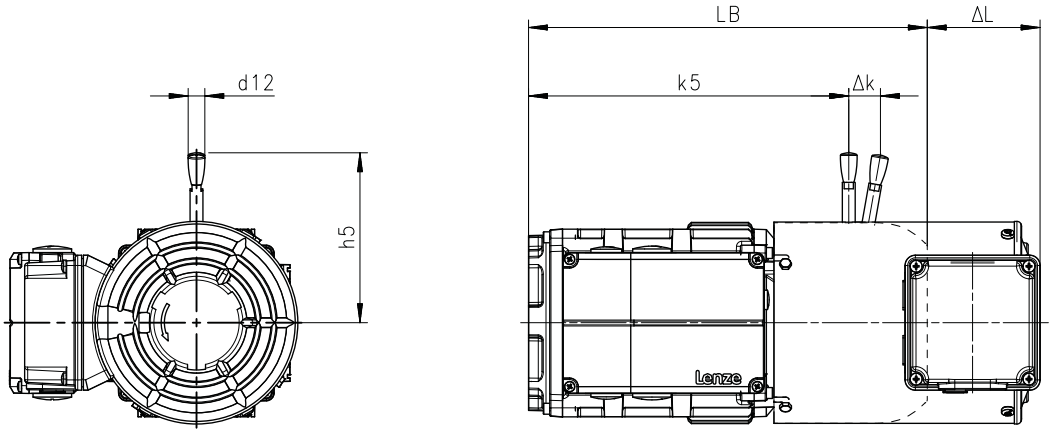
An emergency stop during operation can lead to malfunction of the holding brake.

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

- ▸ After an emergency stop, check the air gap and the friction lining for damage.
- ▸ Change the brake rotor if the air gap is too large or the friction lining is damaged.



Dimensions of the manual release lever



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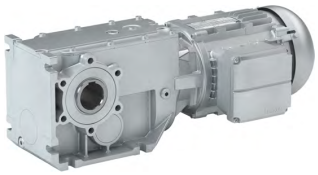
Motor	Brake	Dimensions			
		k_5	Δ k	H_5	d_{12}
		mm	mm	mm	mm
m550-H63/S4 m550-H63/M4 m550-H63/L4	HBR 06	193	25	107	13
m550-H71/M4 m550-H71/L4	HBR 06	211	25	107	13
m550-P80/M4	HBR 08	231	27	116	13
m550-P90/M4	HBR 08	270	27	116	13
m550-P90/L4	HBR 10	286	23	131	13
m550-P100/M4 m550-P100/L4	HBR 10	344	23	131	13
m550-P112/M4	HBR 12	345	37	161	13
m550-P132/M4 m550-P132/L4	HBR 14	408	53	229	20
m550-P160/M4	HBR 16	556	67	267	20
m550-P160/L4	HBR 18		100	347	25
m550-P180/M4 m550-P180/L4	HBR 18	627	100	347	25

Dimensions LB ▸ Basic dimensions 🕮 99

Dimensions Δ L ▸ Additional lengths 🕮 130



Spring-applied application brake

Application brakes in the functional safety environment

Motors can implement the safe brake control (SBC) function in the drive system through Lenze inverters or controllers. In case of inverters, this function is implemented by integrable safety modules and in case of controllers by the additionally required safety controller.

When planning systems/installations of this kind, always observe the following:

- The ABR 06 ... 20 (IP54/55) application brakes can achieve the **SIL 1** safety level in the standard version as a safety brake. The designation of these brakes is: **ABRS1** 06 ... 20.
- The ABR 16 ... 20 (IP54/55) double brakes can achieve the **SIL 2** safety level in the standard version as a safety brake. The designation of these brakes is: **ABRS2** 16 ... 20.
- The extended functions long-life version, holding current reduction (cold brake) and brief overexcitation of the brake coil are not possible as functional safety.

NOTICE

The safety brakes must be designed with at least 20 % more braking torque reserve in the application.

Double brakes with safety level SIL 1 or SIL 2 are available on request.

The technical data can be found in the following tables for the individual brakes.

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.

LongLife version

The application brake is available in a LongLife version for applications with very high switching frequencies. The standard design has a guaranteed service life for the brake mechanism of 1 million switching cycles.

The LongLife version has a reinforced brake mechanism and up to 10 million repeating or 15 million reversing switching cycles possible.

Double brake

With the double brake, two application brakes are arranged one behind the other. The resulting data are given in the tables.

Friction linings

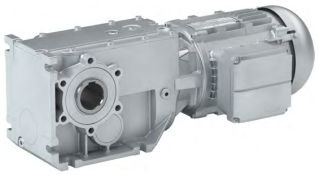
Friction linings are available for the application brake in standard or low-wear versions.

Standard friction lining

- Universally applicable
- Wide speed range
- Short run-in process required
- Can be used for holding and service brake

Low-wear friction lining

- Long service life
- Can be used for standard applications
- Restricted maximum speed
- Short run-in process required
- Preferably used as service brake
- Higher friction work until the brake is replaced
- Higher maximum switching work



Reduction of the holding current (cold brake)

By reducing the holding current, the half-wave bridge rectifier reduces the power input of the released brake. As the brake heats up less, this type of control is known as "cold brake". This is necessary at low speeds to counteract any impermissible heating up. This means that no blower is needed at a speed setting range under 14 Hz. Additionally, only one quarter of the braking power is required, thus saving energy.

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 lifting applications.

Brake monitoring

The application brake is optionally available with a microswitch to monitor the air gap or wear. It is connected in the motor terminal box.

Monitoring of the air gap

A microswitch monitors the air gap between the armature plate and the stator.

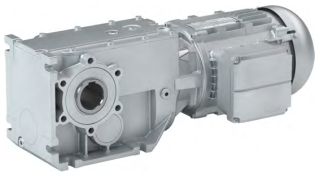
If the microswitch is activated, it e.g. triggers a motor contactor and the motor starts up.

If the brake is switched off, the microswitch opens, the motor contactor is not triggered and the motor does not start up.

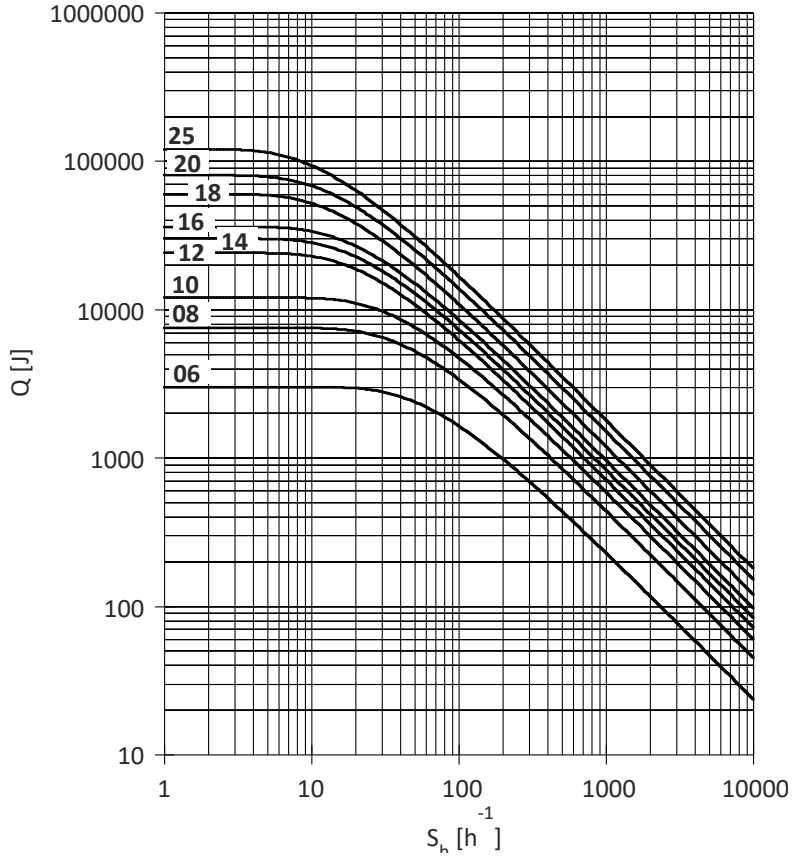
This is used for machines and aggregates that require a precisely defined start-up and brake reaction and for the error monitoring of defective rectifiers, broken connecting cables, defective coils, and an excessively large air gap.

Wear control

A microswitch monitors the wear at the friction lining. If the wear limit is exceeded, the microswitch opens, the motor contactor is not triggered and the motor does not start.

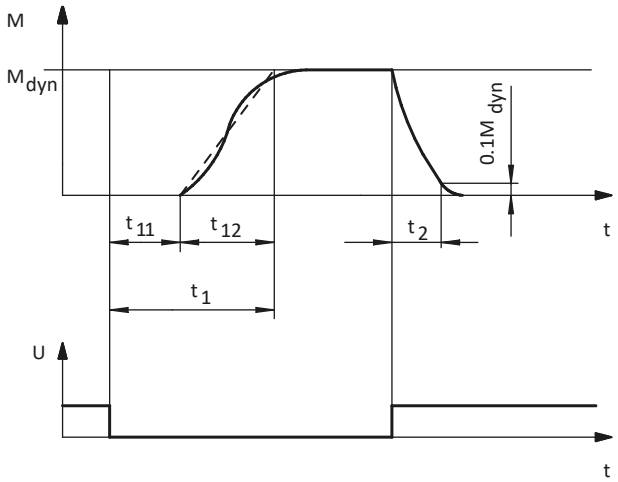


Permissible friction energy

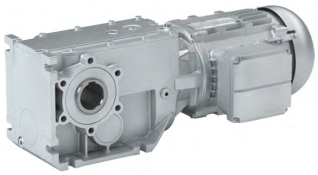


Q	Switching energy per switching cycle
S_h	Switching rate
06 ... 25	Brake size

Switching times of the spring-applied brakes



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



NOTICE

Falling below the specified wide voltage range (DC 180 V ... 205 V/AC 400 V ... 460 V) has a negative influence on the functioning of the brake.

For example, higher wear and tear is to be expected.

▸ A review of the application by Lenze is required.

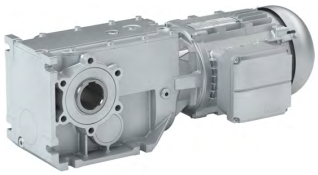
Versions	IP54/55 protection			IP65/66 protection
	Standard	Long-life	Double brake	Standard
Control	DC supply AC supply via rectifier in the terminal box			
Supply voltages				
DC voltage	DC 24 V ±10 % DC 180 V ±10 % DC 205 V ±10 % DC 180 V ... 205 V +10 %			
Mains voltage	AC 115 V ±10 % AC 230 V ±10 % AC 400 V ±10 % AC 460 V ±10 % AC 400 V ... 460 V +10 %			
Switching cycles				
Repetitive	1×10^6	10×10^6	1×10^6	2×10^6
Reversing	1×10^6	15×10^6	1×10^6	2×10^6
Friction lining	Standard Low-wear			
Options	Manual release UL/CSA-approved Low noise during operation (noise-reduced rotor) Low noise during operation and switching on (noise-reduced rotor and noise-reduced armature plate)			
	Air gap control (from brake size ABR 12) Wear control (from brake size ABR 12)		-	-

Braking torques

An application brake with several braking torques is available for every motor frame size for an optimum adjustment of the brake motor to the application. Starting from a standard braking torque, the braking torques can be adjusted up or down.

When the braking torque is reduced, great wear reserves can be attained. A higher braking torque is to be provided for lifting applications. In this case, the earth's gravity acts as an additional acceleration in a negative direction.

In addition, some applications require a 2-fold safety factor for the braking torque.



NOTICE

The following motor and brake combinations may only be used if

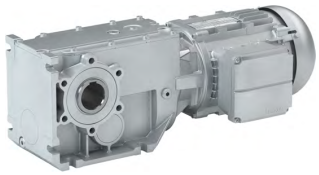
- the motor moment of inertia is at least 40% of the total moment of inertia (motor + gearbox + load).
- no dynamic braking is performed.
- there are no active loads.

Motor	Brake	Braking torque	Calculation
		Nm	
m550-H63/S4 m550-H63/M4	ABR 06	4	$\frac{\frac{J_L}{i^2} + J_M + J_B + J_Z}{J_M + J_B + J_Z} \leq 2.5$
m550-H71/M4	ABR 08	8	
m550-P80/M4	ABR 10	16	

Assignment of braking torques

Motor	Standard design							
	ABR 06	ABR 08	ABR 10	ABR 12	ABR 14	ABR 16	ABR 18	ABR 20
	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm
m550-H63/S4	2.5 4							
m550-H63/M4								
m550-H63/L4								
m550-H71/M4		8						
m550-H71/L4								
m550-P80/M4		3.5 8	16					
m550-P90/M4								
m550-P90/L4		8	16 23					
m550-P100/M4				32				
m550-P100/L4				46				
m550-P112/M4				14 32	60			
m550-P132/M4					35 60	80		
m550-P132/L4						100		
m550-P160/M4						60 80	150	
m550-P160/L4							80 150 200	
m550-P180/M4							80 150	260
m550-P180/L4								315

Motor	LongLife design			
	ABR 06	ABR 08	ABR 10	ABR 12
	Nm	Nm	Nm	Nm
m550-H63/S4	2.5 4			
m550-H63/M4				
m550-H63/L4				
m550-H71/M4		8		
m550-H71/L4				
m550-P80/M4		3.5 8	16	
m550-P90/M4				
m550-P90/L4		8		
m550-P100/M4				32
m550-P100/L4				
m550-P112/M4				14 32

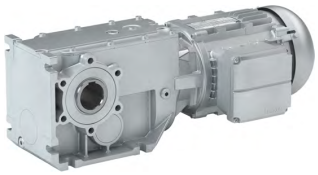


Motor	Double brake		
	ABR 16	ABR 18	ABR 20
	Nm	Nm	Nm
m550-P160/M4	90 110	130 160	
m550-P160/L4		130 160 200	230
m550-P180/M4			
m550-P180/L4			

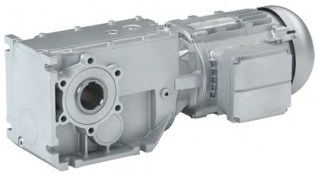
Rated data, Standard design, IP54/55

Application brake ABR 06, ABR 08

Application brake		ABR 06				ABR 08			
Braking torque									
Standard friction lining	Nm	2.5		4		3.5		8	
Low-wear friction lining	Nm		2.5		4		3.5		8
Power input									
DC 24 V	W	20	20	20	20	25	25	25	25
DC 180 V	W	20	20	20	20	25	25	25	25
DC 205 V	W	20	20	20	20	25	25	25	25
DC 180 V … 205 V	W	20	20	20	20	25	25	25	25
AC 115 V	W	20	20	20	20	25	25	25	25
AC 230 V	W	20	20	20	20	25	25	25	25
AC 400 V	W	20	20	20	20	25	25	25	25
AC 460 V	W	20	20	20	20	25	25	25	25
AC 400 V … 460 V	W	20	20	20	20	25	25	25	25
Cold Brake AC 230V	W	20	20	20	20	25	25	25	25
Cold Brake AC 400V	W	23	23	23	23	27	27	27	27
Overexcitation AC 230 V	W	20	20	20	20	25	25	25	25
Overexcitation AC 400 V	W	20	20	20	20	25	25	25	25
Moment of inertia	kgcm²	0.15	0.15	0.15	0.15	0.61	0.61	0.61	0.61
Braking torque is static	Nm	2.5	2.5	4	4	3.5	3.5	8	8
Min. static braking torque tolerance	%	-25	-25	-25	-25	-25	-25	-25	-25
Max. static braking torque tolerance	%	35	35	35	35	35	35	35	35
Dynamic braking torque									
100 rpm	Nm	2.5	2.5	4.0	4.0	3.5	3.5	8.0	8.0
1000 rpm	Nm	2.3	2.3	3.7	3.7	3.1	3.1	7.1	7.1
1200 rpm	Nm	2.3	2.3	3.6	3.6	3.0	3.0	7.0	7.0
1500 rpm	Nm	2.2	2.2	3.5	3.5	3.0	3.0	6.8	6.8
1800 rpm	Nm	2.2	2.2	3.4	3.4	2.9	2.9	6.6	6.6
2500 rpm	Nm	2.1	2.1	3.3	3.3	2.8	2.8	6.4	6.4
3000 rpm	Nm	2.0	2.0	3.2	3.2	2.7	2.7	6.2	6.2
3600 rpm	Nm	2.0	2.0	3.2	3.2	2.7	2.7	6.1	6.1
Min. dynamic braking torque tolerance	%	-25	-25	-25	-25	-25	-25	-25	-25
Max. dynamic braking torque tolerance	%	35	35	35	35	35	35	35	35
Friction energy									
100 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
1000 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
1200 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
1500 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
1800 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
2500 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
3000 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
3600 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
Maximum speed - operation	rpm	6000	3600	6000	3600	5000	3600	5000	3600
Maximum speed - idle state	rpm	10000	10000	10000	10000	10000	10000	10000	10000



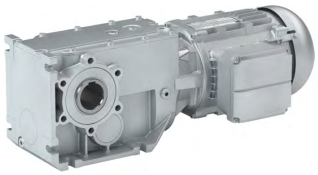
Application brake		**ABR 06**				**ABR 08**			
Braking torque									
Standard friction lining	**Nm**	**2.5**		**4**		**3.5**		**8**	
Low-wear friction lining	**Nm**		**2.5**		**4**		**3.5**		**8**
Delay time t11									
DC voltage	ms	25	25	15	15	14	14	15	15
AC mains voltage	ms	25	25	15	15	14	14	15	15
Cold Brake AC 230V	ms	24	24	16	16	22	22	25	25
Cold Brake AC 400V	ms	27	27	19	19	28	28	28	28
Overexcitation AC 230 V	ms	31	31	20	20	33	33	31	31
Overexcitation AC 400 V	ms	31	31	20	20	33	33	31	31
Rise time t12									
DC voltage	ms	13	13	13	13	10	10	16	16
AC mains voltage	ms	13	13	13	13	10	10	16	16
Cold Brake AC 230V	ms	12	12	14	14	16	16	27	27
Cold Brake AC 400V	ms	14	14	16	16	20	20	30	30
Overexcitation AC 230 V	ms	16	16	17	17	24	24	33	33
Overexcitation AC 400 V	ms	16	16	17	17	24	24	33	33
Engagement time t1									
DC voltage	ms	38	38	28	28	24	24	31	31
AC mains voltage	ms	38	38	28	28	24	24	31	31
Cold Brake AC 230V	ms	36	36	30	30	38	38	52	52
Cold Brake AC 400V	ms	41	41	35	35	48	48	58	58
Overexcitation AC 230 V	ms	47	47	37	37	57	57	64	64
Overexcitation AC 400 V	ms	47	47	37	37	57	57	64	64
Disengagement time t2									
DC voltage	ms	30	30	45	45	37	37	57	57
AC mains voltage	ms	30	30	45	45	37	37	57	57
Cold Brake AC 230V	ms	30	30	45	45	37	37	57	57
Cold Brake AC 400V	ms	21	21	30	30	24	24	36	36
Overexcitation AC 230 V	ms	17	17	22	22	18	18	26	26
Overexcitation AC 400 V	ms	17	17	22	22	18	18	26	26
Overexcitation time									
Cold Brake AC 230V	ms	300	300	300	300	300	300	300	300
Cold Brake AC 400V	ms	300	300	300	300	300	300	300	300
Overexcitation AC 230 V	ms	300	300	300	300	300	300	300	300
Overexcitation AC 400 V	ms	300	300	300	300	300	300	300	300
Friction energy QBW									
DC voltage	MJ	56.5	113.1	42.4	84.8	92.1	210.4	69.1	157.8
AC mains voltage	MJ	56.5	113.1	42.4	84.8	92.1	210.4	69.1	157.8
Cold Brake AC 230V	MJ	56.5	113.1	42.4	84.8	92.1	210.4	69.1	157.8
Cold Brake AC 400V	MJ	56.5	113.1	56.5	113.1	92.1	210.4	92.1	210.4
Overexcitation AC 230 V	MJ	56.5	113.1	56.5	113.1	92.1	210.4	92.1	210.4
Overexcitation AC 400 V	MJ	56.5	113.1	56.5	113.1	92.1	210.4	92.1	210.4
Reversing cycles		$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$
Repetitive cycles		$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$



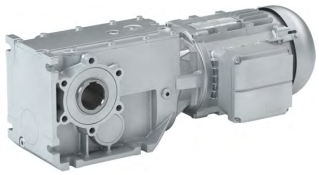
Rated data, Standard design, IP54/55

Application brake ABR 10, ABR 12

Application brake		ABR 10				ABR 12					
Braking torque											
Standard friction lining	**Nm**	**16**		**23**		**14**		**32**		**46**	
Low-wear friction lining	**Nm**		**16**		**23**		**14**		**32**		**46**
Power input											
DC 24 V	W	30	30	30	30	40	40	40	40	40	40
DC 180 V	W	32	32	32	32	40	40	40	40	40	40
DC 205 V	W	33	33	33	33	40	40	40	40	40	40
DC 180 V … 205 V	W	33	33	33	33	40	40	40	40	40	40
AC 115 V	W	32	32	32	32	40	40	40	40	40	40
AC 230 V	W	33	33	33	33	40	40	40	40	40	40
AC 400 V	W	32	32	32	32	40	40	40	40	40	40
AC 460 V	W	33	33	33	33	40	40	40	40	40	40
AC 400 V … 460 V	W	33	33	33	33	40	40	40	40	40	40
Cold Brake AC 230V	W	33	33	33	33	40	40	40	40	40	40
Cold Brake AC 400V	W	30	30	30	30	42	42	42	42	42	42
Overexcitation AC 230 V	W	32	32	32	32	40	40	40	40	40	40
Overexcitation AC 400 V	W	32	32	32	32	40	40	40	40	40	40
Moment of inertia	kgcm²	2	2	2	2	4.5	4.5	4.5	4.5	4.5	4.5
Braking torque is static	Nm	16	16	23	23	14	14	32	32	46	46
Min. static braking torque tolerance	%	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
Max. static braking torque tolerance	%	35	35	35	35	35	35	35	35	35	35
Dynamic braking torque											
100 rpm	Nm	16	16	23	23	14	14	32	32	46	46
1000 rpm	Nm	14	14	20	20	12	12	28	28	40	40
1200 rpm	Nm	14	14	20	20	12	12	27	27	39	39
1500 rpm	Nm	13	13	19	19	11	11	26	26	38	38
1800 rpm	Nm	13	13	19	19	11	11	26	26	37	37
2500 rpm	Nm	12	12	18	18	11	11	24	24	35	35
3000 rpm	Nm	12	12	17	17	11	11	24	24	35	35
3600 rpm	Nm	12	12	17	17	10	10	23	23	34	34
Min. dynamic braking torque tolerance	%	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
Max. dynamic braking torque tolerance	%	35	35	35	35	35	35	35	35	35	35
Friction energy											
100 rpm	kJ	12	12	12	12	24	24	24	24	24	24
1000 rpm	kJ	12	12	12	12	24	24	24	24	24	24
1200 rpm	kJ	12	12	12	12	24	24	24	24	24	24
1500 rpm	kJ	12	12	12	12	24	24	24	24	24	24
1800 rpm	kJ	12	12	12	12	24	24	24	24	24	24
2500 rpm	kJ	12	12	12	12	24	24	24	24	24	24
3000 rpm	kJ	12	12	12	12	24	24	24	24	24	24
3600 rpm	kJ	12	12	12	12	24	7	24	7	24	7
Maximum speed - operation	rpm	4000	3600	4000	3600	3600	3600	3600	3600	3600	3600
Maximum speed - idle state	rpm	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000



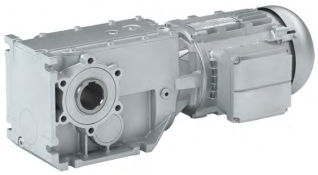
Application brake		**ABR 10**				**ABR 12**					
Braking torque											
Standard friction lining	**Nm**	**16**		**23**		**14**		**32**		**46**	
Low-wear friction lining	**Nm**		**16**		**23**		**14**		**32**		**46**
Delay time t11											
DC voltage	ms	28	28	10	10	21	21	28	28	16	16
AC mains voltage	ms	28	28	10	10	21	21	28	28	16	16
Cold Brake AC 230V	ms	31	31	24	24	49	49	48	48	27	27
Cold Brake AC 400V	ms	34	34	27	27	64	64	55	55	42	42
Overexcitation AC 230 V	ms	44	44	29	29	73	73	62	62	54	54
Overexcitation AC 400 V	ms	44	44	29	29	73	73	62	62	54	54
Rise time t12											
DC voltage	ms	19	19	19	19	19	19	25	25	25	25
AC mains voltage	ms	19	19	19	19	19	19	25	25	25	25
Cold Brake AC 230V	ms	21	21	46	46	44	44	43	43	42	42
Cold Brake AC 400V	ms	23	23	51	51	58	58	49	49	66	66
Overexcitation AC 230 V	ms	30	30	55	55	66	66	55	55	84	84
Overexcitation AC 400 V	ms	30	30	55	55	66	66	55	55	84	84
Engagement time t1											
DC voltage	ms	47	47	29	29	40	40	53	53	41	41
AC mains voltage	ms	47	47	29	29	40	40	53	53	41	41
Cold Brake AC 230V	ms	52	52	70	70	93	93	91	91	69	69
Cold Brake AC 400V	ms	57	57	78	78	122	122	104	104	108	108
Overexcitation AC 230 V	ms	74	74	84	84	139	139	117	117	138	138
Overexcitation AC 400 V	ms	74	74	84	84	139	139	117	117	138	138
Disengagement time t2											
DC voltage	ms	76	76	109	109	65	65	115	115	193	193
AC mains voltage	ms	76	76	109	109	65	65	115	115	193	193
Cold Brake AC 230V	ms	76	76	109	109	65	65	115	115	193	193
Cold Brake AC 400V	ms	53	53	72	72	48	48	78	78	114	114
Overexcitation AC 230 V	ms	41	41	53	53	38	38	59	59	81	81
Overexcitation AC 400 V	ms	41	41	53	53	38	38	59	59	81	81
Overexcitation time											
Cold Brake AC 230V	ms	300	300	300	300	300	300	300	300	300	300
Cold Brake AC 400V	ms	300	300	300	300	300	300	300	300	300	300
Overexcitation AC 230 V	ms	300	300	300	300	300	300	300	300	300	300
Overexcitation AC 400 V	ms	300	300	300	300	300	300	300	300	300	300
Friction energy QBW											
DC voltage	MJ	98	264	50.3	198	236.4	706.2	177.3	529.6	75.7	353.1
AC mains voltage	MJ	98	264	50.3	198	236.4	706.2	177.3	529.6	75.7	353.1
Cold Brake AC 230V	MJ	98	264	50.3	198	236.4	706.2	177.3	529.6	75.7	353.1
Cold Brake AC 400V	MJ	98	264	67.1	264	236.4	706.2	236.4	706.2	151.4	706.2
Overexcitation AC 230 V	MJ	98	264	67.1	264	236.4	706.2	236.4	706.2	151.4	706.2
Overexcitation AC 400 V	MJ	98	264	67.1	264	236.4	706.2	236.4	706.2	151.4	706.2
Reversing cycles		$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$
Repetitive cycles		$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$



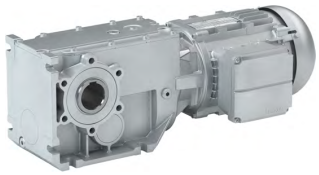
Rated data, Standard design, IP54/55

Application brake ABR 14, ABR 16

Application brake		ABR 14				ABR 16					
Braking torque											
Standard friction lining	**Nm**	**35**		**60**		**60**		**80**		**100**	
Low-wear friction lining	**Nm**		**35**		**60**		**60**		**80**		**100**
Power input											
DC 24 V	W	50	50	50	50	55	55	55	55	55	55
DC 180 V	W	53	53	53	53	55	55	55	55	55	55
DC 205 V	W	53	53	53	53	56	56	56	56	56	56
DC 180 V … 205 V	W	53	53	53	53	56	56	56	56	56	56
AC 115 V	W	53	53	53	53	56	56	56	56	56	56
AC 230 V	W	53	53	53	53	56	56	56	56	56	56
AC 400 V	W	53	53	53	53	55	55	55	55	55	55
AC 460 V	W	53	53	53	53	56	56	56	56	56	56
AC 400 V … 460 V	W	53	53	53	53	56	56	56	56	56	56
Cold Brake AC 230V	W	53	53	53	53	56	56	56	56	56	56
Cold Brake AC 400V	W	54	54	54	54	55	55	55	55	55	55
Overexcitation AC 230 V	W	53	53	53	53	56	56	56	56	56	56
Overexcitation AC 400 V	W	53	53	53	53	55	55	55	55	55	55
Moment of inertia	kgcm²	6.3	6.3	6.3	6.3	15	15	15	15	15	15
Braking torque is static	Nm	35	35	60	60	60	60	80	80	100	100
Min. static braking torque tolerance	%	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
Max. static braking torque tolerance	%	35	35	35	35	35	35	35	35	35	35
Dynamic braking torque											
100 rpm	Nm	35	35	60	60	60	60	80	80	100	100
1000 rpm	Nm	30	30	51	51	50	50	66	66	83	83
1200 rpm	Nm	29	29	50	50	49	49	65	65	81	81
1500 rpm	Nm	28	28	49	49	47	47	63	62	78	78
1800 rpm	Nm	28	28	47	47	46	46	62	62	77	77
2500 rpm	Nm	26	26	45	45	44	44	58	58	73	73
3000 rpm	Nm	26	26	44	44	43	43	57	57	71	71
3600 rpm	Nm	25	-	43	-	42	-	56	-	70	-
Min. dynamic braking torque tolerance	%	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
Max. dynamic braking torque tolerance	%	35	35	35	35	35	35	35	35	35	35
Friction energy											
100 rpm	kJ	30	30	30	30	36	36	36	36	36	36
1000 rpm	kJ	30	30	30	30	36	36	36	36	36	36
1200 rpm	kJ	30	30	30	30	36	36	36	36	36	36
1500 rpm	kJ	30	30	30	30	36	36	36	36	36	36
1800 rpm	kJ	30	30	30	30	36	36	36	36	36	36
2500 rpm	kJ	30	30	30	30	36	36	36	36	36	36
3000 rpm	kJ	30	18	30	18	36	11	36	11	36	11
3600 rpm	kJ	30	-	30	-	36	-	36	-	36	-
Maximum speed - operation	rpm	3600	3000	3600	3000	3600	3000	3600	3000	3600	3000
Maximum speed - idle state	rpm	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000



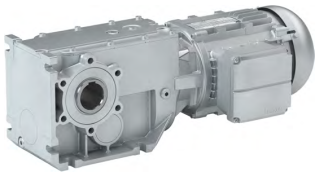
Application brake		**ABR 14**				**ABR 16**					
Braking torque											
Standard friction lining	**Nm**	**35**		**60**		**60**		**80**		**100**	
Low-wear friction lining	**Nm**		**35**		**60**		**60**		**80**		**100**
Delay time t11											
DC voltage	ms	37	37	17	17	53	53	27	27	22	22
AC mains voltage	ms	37	37	17	17	53	53	27	27	22	22
Cold Brake AC 230V	ms	61	61	33	33	114	114	58	58	41	41
Cold Brake AC 400V	ms	69	69	43	43	133	133	74	74	56	56
Overexcitation AC 230 V	ms	76	76	47	47	145	145	89	89	70	70
Overexcitation AC 400 V	ms	76	76	47	47	145	145	89	89	70	70
Rise time t12											
DC voltage	ms	22	22	25	25	30	30	30	30	30	30
AC mains voltage	ms	22	22	25	25	30	30	30	30	30	30
Cold Brake AC 230V	ms	36	36	47	47	65	65	64	64	56	56
Cold Brake AC 400V	ms	41	41	63	63	75	75	82	82	76	76
Overexcitation AC 230 V	ms	45	45	69	69	82	82	99	99	95	95
Overexcitation AC 400 V	ms	45	45	69	69	82	82	99	99	95	95
Engagement time t1											
DC voltage	ms	59	59	42	42	83	83	57	57	52	52
AC mains voltage	ms	59	59	42	42	83	83	57	57	52	52
Cold Brake AC 230V	ms	97	97	80	80	179	179	122	122	97	97
Cold Brake AC 400V	ms	110	110	106	106	208	208	156	156	132	132
Overexcitation AC 230 V	ms	121	121	116	116	227	227	188	188	165	165
Overexcitation AC 400 V	ms	121	121	116	116	227	227	188	188	165	165
Disengagement time t2											
DC voltage	ms	148	148	210	210	169	169	220	220	297	297
AC mains voltage	ms	148	148	210	210	169	169	220	220	297	297
Cold Brake AC 230V	ms	148	148	210	210	169	169	220	220	297	297
Cold Brake AC 400V	ms	98	98	131	131	125	125	154	154	191	191
Overexcitation AC 230 V	ms	71	71	92	92	100	100	119	119	141	141
Overexcitation AC 400 V	ms	71	71	92	92	100	100	119	119	141	141
Overexcitation time											
Cold Brake AC 230V	ms	300	300	300	300	1300	1300	1300	1300	1300	1300
Cold Brake AC 400V	ms	300	300	300	300	300	300	300	300	300	300
Overexcitation AC 230 V	ms	300	300	300	300	300	300	300	300	300	300
Overexcitation AC 400 V	ms	300	300	300	300	300	300	300	300	300	300
Friction energy QBW											
DC voltage	MJ	238.2	761.4	178.7	571	257.9	965.7	257.9	965.7	120.5	643.8
AC mains voltage	MJ	238.2	761.4	178.7	571	257.9	965.7	257.9	965.7	120.5	643.8
Cold Brake AC 230V	MJ	238.2	761.4	178.7	571	257.9	965.7	257.9	965.7	120.5	643.8
Cold Brake AC 400V	MJ	238.2	761.4	238.2	761.4	257.9	965.7	257.9	965.7	180.8	965.7
Overexcitation AC 230 V	MJ	238.2	761.4	238.2	761.4	257.9	965.7	257.9	965.7	180.8	965.7
Overexcitation AC 400 V	MJ	238.2	761.4	238.2	761.4	257.9	965.7	257.9	965.7	180.8	965.7
Reversing cycles		$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$
Repetitive cycles		$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$



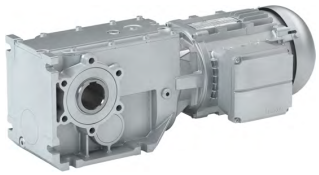
Rated data, Standard design, IP54/55

Application brake ABR 18, ABR 20

Application brake		ABR 18						ABR 20			
Braking torque											
Standard friction lining	**Nm**	**80**		**150**		**200**		**260**		**315**	
Low-wear friction lining	**Nm**		**80**		**150**		**200**		**260**		**315**
Power input											
DC 24 V	W	85	85	85	85	85	85	100	100	100	100
DC 180 V	W	85	85	85	85	85	85	100	100	100	100
DC 205 V	W	85	85	85	85	85	85	100	100	100	100
DC 180 V … 205 V	W	85	85	85	85	85	85	100	100	100	100
AC 115 V	W	85	85	85	85	85	85	100	100	100	100
AC 230 V	W	85	85	85	85	85	85	100	100	100	100
AC 400 V	W	85	85	85	85	85	85	100	100	100	100
AC 460 V	W	85	85	85	85	85	85	100	100	100	100
AC 400 V … 460 V	W	85	85	85	85	85	85	100	100	100	100
Cold Brake AC 230V	W	85	85	85	85	85	85	100	100	100	100
Cold Brake AC 400V	W	85	85	85	85	85	85	100	100	100	100
Overexcitation AC 230 V	W	85	85	85	85	85	85	100	100	100	100
Overexcitation AC 400 V	W	85	85	85	85	85	85	100	100	100	100
Moment of inertia	kgcm²	29	29	29	29	29	29	73	73	73	73
Braking torque is static	Nm	80	80	150	150	200	200	260	260	315	315
Min. static braking torque tolerance	%	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
Max. static braking torque tolerance	%	35	35	35	35	35	35	35	35	35	35
Dynamic braking torque											
100 rpm	Nm	80	80	150	150	200	200	260	260	315	315
1000 rpm	Nm	65	65	122	122	162	162	205	205	249	249
1200 rpm	Nm	63	63	119	119	158	158	200	200	243	243
1500 rpm	Nm	62	62	116	116	154	154	195	195	236	236
1800 rpm	Nm	60	60	113	113	150	150	190	-	230	-
2500 rpm	Nm	58	-	108	-	144	-	182	-	221	-
3000 rpm	Nm	56	-	105	-	140	-	177	-	214	-
3600 rpm	Nm	54	-	102	-	136	-	172	-	208	-
Min. dynamic braking torque tolerance	%	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
Max. dynamic braking torque tolerance	%	35	35	35	35	35	35	35	35	35	35
Friction energy											
100 rpm	kJ	60	60	60	60	60	60	80	80	80	80
1000 rpm	kJ	60	60	60	60	60	60	80	80	80	80
1200 rpm	kJ	60	60	60	60	60	60	80	80	80	80
1500 rpm	kJ	60	60	60	60	60	60	80	24	80	24
1800 rpm	kJ	60	36	60	36	60	36	80	-	80	-
2500 rpm	kJ	60	-	60	-	60	-	80	-	80	-
3000 rpm	kJ	60	-	60	-	60	-	80	-	80	-
3600 rpm	kJ	60	-	60	-	60	-	80	-	80	-
Maximum speed - operation	rpm	3600	1800	3600	1800	3600	1800	3600	1500	3600	1500
Maximum speed - idle state	rpm	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000



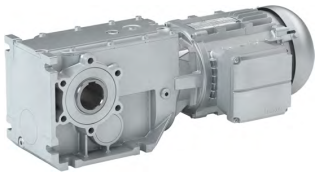
Application brake		**ABR 18**						**ABR 20**			
Braking torque											
Standard friction lining	**Nm**	**80**		**150**		**200**		**260**		**315**	
Low-wear friction lining	**Nm**		**80**		**150**		**200**		**260**		**315**
Delay time t11											
DC voltage	ms	77	77	33	33	24	24	65	65	46	46
AC mains voltage	ms	77	77	33	33	24	24	65	65	46	46
Cold Brake AC 230V	ms	145	145	80	80	60	60	102	102	69	69
Cold Brake AC 400V	ms	160	160	93	93	72	72	121	121	88	88
Overexcitation AC 230 V	ms	174	174	108	108	86	86	133	133	103	103
Overexcitation AC 400 V	ms	174	174	108	108	86	86	133	133	103	103
Rise time t12											
DC voltage	ms	20	20	45	45	45	45	100	100	100	100
AC mains voltage	ms	20	20	45	45	45	45	100	100	100	100
Cold Brake AC 230V	ms	38	38	109	109	113	113	157	157	150	150
Cold Brake AC 400V	ms	42	42	127	127	135	135	186	186	191	191
Overexcitation AC 230 V	ms	45	45	147	147	161	161	205	205	224	224
Overexcitation AC 400 V	ms	45	45	147	147	161	161	205	205	224	224
Engagement time t1											
DC voltage	ms	97	97	78	78	69	69	165	165	146	146
AC mains voltage	ms	97	97	78	78	69	69	165	165	146	146
Cold Brake AC 230V	ms	183	183	189	189	173	173	259	259	219	219
Cold Brake AC 400V	ms	202	202	220	220	207	207	307	307	279	279
Overexcitation AC 230 V	ms	219	219	255	255	247	247	338	338	327	327
Overexcitation AC 400 V	ms	219	219	255	255	247	247	338	338	327	327
Disengagement time t2											
DC voltage	ms	179	179	270	270	356	356	340	340	378	378
AC mains voltage	ms	179	179	270	270	356	356	340	340	378	378
Cold Brake AC 230V	ms	179	179	270	270	356	356	340	340	378	378
Cold Brake AC 400V	ms	129	129	179	179	215	215	218	218	229	229
Overexcitation AC 230 V	ms	101	101	132	132	151	151	157	157	160	160
Overexcitation AC 400 V	ms	101	101	132	132	151	151	157	157	160	160
Overexcitation time											
Cold Brake AC 230V	ms	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300
Cold Brake AC 400V	ms	300	300	300	300	300	300	300	300	300	300
Overexcitation AC 230 V	ms	300	300	300	300	300	300	300	300	300	300
Overexcitation AC 400 V	ms	300	300	300	300	300	300	300	300	300	300
Friction energy QBW											
DC voltage	MJ	358.2	1542.1	358.2	1542.1	81.9	578.3	474.7	2322.1	246.6	1741.6
AC mains voltage	MJ	358.2	1542.1	358.2	1542.1	81.9	578.3	474.7	2322.1	246.6	1741.6
Cold Brake AC 230V	MJ	358.2	1542.1	358.2	1542.1	81.9	578.3	474.7	2322.1	246.6	1741.6
Cold Brake AC 400V	MJ	358.2	1542.1	358.2	1542.1	218.3	1542.1	474.7	2322.1	328.8	2322.1
Overexcitation AC 230 V	MJ	358.2	1542.1	358.2	1542.1	218.3	1542.1	474.7	2322.1	328.8	2322.1
Overexcitation AC 400 V	MJ	358.2	1542.1	358.2	1542.1	218.3	1542.1	474.7	2322.1	328.8	2322.1
Reversing cycles		$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$
Repetitive cycles		$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$



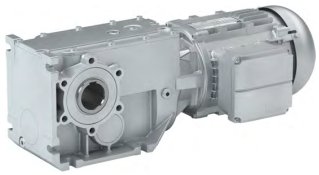
Rated data, Standard design, IP65/66

Application brake ABR 06, ABR 08

Application brake		ABR 06				ABR 08			
Braking torque									
Standard friction lining	**Nm**	**2.5**		**4**		**3.5**		**8**	
Low-wear friction lining	**Nm**		**2.5**		**4**		**3.5**		**8**
Power input									
DC 24 V	W	20	20	20	20	25	25	25	25
DC 180 V	W	20	20	20	20	25	25	25	25
DC 205 V	W	20	20	20	20	25	25	25	25
DC 180 V … 205 V	W	20	20	20	20	25	25	25	25
AC 115 V	W	20	20	20	20	25	25	25	25
AC 230 V	W	20	20	20	20	25	25	25	25
AC 400 V	W	20	20	20	20	25	25	25	25
AC 460 V	W	20	20	20	20	25	25	25	25
AC 400 V … 460 V	W	20	20	20	20	25	25	25	25
Cold Brake AC 230V	W	20	20	20	20	25	25	25	25
Cold Brake AC 400V	W	23	23	23	23	27	27	27	27
Overexcitation AC 230 V	W	20	20	20	20	25	25	25	25
Overexcitation AC 400 V	W	20	20	20	20	25	25	25	25
Moment of inertia	kgcm²	0.15	0.15	0.15	0.15	0.61	0.61	0.61	0.61
Braking torque is static	Nm	2.5	2.5	4	4	3.5	3.5	8	8
Min. static braking torque tolerance	%	-25	-25	-25	-25	-25	-25	-25	-25
Max. static braking torque tolerance	%	35	35	35	35	35	35	35	35
Dynamic braking torque									
100 rpm	Nm	2.5	2.5	4.0	4.0	3.5	3.5	8.0	8.0
1000 rpm	Nm	2.3	2.3	3.7	3.7	3.1	3.1	7.1	7.1
1200 rpm	Nm	2.3	2.3	3.6	3.6	3.0	3.0	7.0	7.0
1500 rpm	Nm	2.2	2.2	3.5	3.5	3.0	3.0	6.8	6.8
1800 rpm	Nm	2.2	2.2	3.4	3.4	2.9	2.9	6.6	6.6
2500 rpm	Nm	2.1	2.1	3.3	3.3	2.8	2.8	6.4	6.4
3000 rpm	Nm	2.0	2.0	3.2	3.2	2.7	2.7	6.2	6.2
3600 rpm	Nm	2.0	2.0	3.2	3.2	2.7	2.7	6.1	6.1
Min. dynamic braking torque tolerance	%	-25	-25	-25	-25	-25	-25	-25	-25
Max. dynamic braking torque tolerance	%	35	35	35	35	35	35	35	35
Friction energy									
100 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
1000 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
1200 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
1500 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
1800 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
2500 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
3000 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
3600 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
Maximum speed - operation	rpm	6000	3600	6000	3600	5000	3600	5000	3600
Maximum speed - idle state	rpm	10000	10000	10000	10000	10000	10000	10000	10000



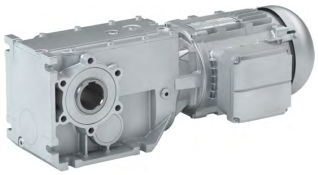
Application brake		**ABR 06**				**ABR 08**			
Braking torque									
Standard friction lining	**Nm**	**2.5**		**4**		**3.5**		**8**	
Low-wear friction lining	**Nm**		**2.5**		**4**		**3.5**		**8**
Delay time t11									
DC voltage	ms	24	24	16	16	38	38	30	30
AC mains voltage	ms	24	24	16	16	38	38	30	30
Cold Brake AC 230V	ms	26	26	17	17	41	41	32	32
Cold Brake AC 400V	ms	28	28	18	18	44	44	34	34
Overexcitation AC 230 V	ms	29	29	19	19	46	46	36	36
Overexcitation AC 400 V	ms	29	29	19	19	46	46	36	36
Rise time t12									
DC voltage	ms	34	34	25	25	46	46	26	26
AC mains voltage	ms	34	34	25	25	46	46	26	26
Cold Brake AC 230V	ms	43	43	31	31	58	58	33	33
Cold Brake AC 400V	ms	43	43	31	31	58	58	33	33
Overexcitation AC 230 V	ms	43	43	31	31	58	58	33	33
Overexcitation AC 400 V	ms	43	43	31	31	58	58	33	33
Engagement time t1									
DC voltage	ms	58	58	41	41	84	84	56	56
AC mains voltage	ms	58	58	41	41	84	84	56	56
Cold Brake AC 230V	ms	69	69	48	48	99	99	65	65
Cold Brake AC 400V	ms	71	71	49	49	102	102	67	67
Overexcitation AC 230 V	ms	72	72	50	50	104	104	69	69
Overexcitation AC 400 V	ms	72	72	50	50	104	104	69	69
Disengagement time t2									
DC voltage	ms	30	30	32	32	32	32	52	52
AC mains voltage	ms	30	30	32	32	32	32	52	52
Cold Brake AC 230V	ms	30	30	32	32	32	32	52	52
Cold Brake AC 400V	ms	20	20	21	21	21	21	35	35
Overexcitation AC 230 V	ms	15	15	16	16	16	16	26	26
Overexcitation AC 400 V	ms	15	15	16	16	16	16	26	26
Overexcitation time									
Cold Brake AC 230V	ms	300	300	300	300	300	300	300	300
Cold Brake AC 400V	ms	300	300	300	300	300	300	300	300
Overexcitation AC 230 V	ms	300	300	300	300	300	300	300	300
Overexcitation AC 400 V	ms	300	300	300	300	300	300	300	300
Friction energy QBW									
DC voltage	MJ	56.5	113.1	42.4	84.8	92.1	210.4	69.1	157.8
AC mains voltage	MJ	56.5	113.1	42.4	84.8	92.1	210.4	69.1	157.8
Cold Brake AC 230V	MJ	56.5	113.1	42.4	84.8	92.1	210.4	69.1	157.8
Cold Brake AC 400V	MJ	56.5	113.1	56.5	113.1	92.1	210.4	92.1	210.4
Overexcitation AC 230 V	MJ	56.5	113.1	56.5	113.1	92.1	210.4	92.1	210.4
Overexcitation AC 400 V	MJ	56.5	113.1	56.5	113.1	92.1	210.4	92.1	210.4
Reversing cycles		$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$
Repetitive cycles		$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$



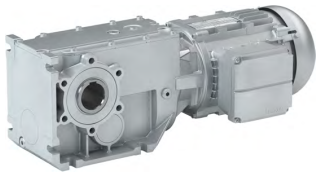
Rated data, Standard design, IP65/66

Application brake ABR 10, ABR 12

Application brake		ABR 10				ABR 12			
Braking torque									
Standard friction lining	**Nm**	**16**		**23**		**32**		**46**	
Low-wear friction lining	**Nm**		**16**		**23**		**32**		**46**
Power input									
DC 24 V	W	30	30	30	30	40	40	40	40
DC 180 V	W	32	32	32	32	40	40	40	40
DC 205 V	W	33	33	33	33	40	40	40	40
DC 180 V … 205 V	W	33	33	33	33	40	40	40	40
AC 115 V	W	32	32	32	32	40	40	40	40
AC 230 V	W	33	33	33	33	40	40	40	40
AC 400 V	W	32	32	32	32	40	40	40	40
AC 460 V	W	33	33	33	33	40	40	40	40
AC 400 V … 460 V	W	33	33	33	33	40	40	40	40
Cold Brake AC 230V	W	33	33	33	33	40	40	40	40
Cold Brake AC 400V	W	30	30	30	30	42	42	42	42
Overexcitation AC 230 V	W	32	32	32	32	40	40	40	40
Overexcitation AC 400 V	W	32	32	32	32	40	40	40	40
Moment of inertia	kgcm²	2	2	2	2	4.5	4.5	4.5	4.5
Braking torque is static	Nm	16	16	23	23	32	32	46	46
Min. static braking torque tolerance	%	-25	-25	-25	-25	-25	-25	-25	-25
Max. static braking torque tolerance	%	35	35	35	35	35	35	35	35
Dynamic braking torque									
100 rpm	Nm	16	16	23	23	32	32	46	46
1000 rpm	Nm	14	14	20	20	28	28	40	40
1200 rpm	Nm	14	14	20	20	27	27	39	39
1500 rpm	Nm	13	13	19	19	26	26	38	38
1800 rpm	Nm	13	13	19	19	26	26	37	37
2500 rpm	Nm	12	12	18	18	24	24	35	35
3000 rpm	Nm	12	12	17	17	24	24	35	35
3600 rpm	Nm	12	12	17	17	23	23	34	34
Min. dynamic braking torque tolerance	%	-25	-25	-25	-25	-25	-25	-25	-25
Max. dynamic braking torque tolerance	%	35	35	35	35	35	35	35	35
Friction energy									
100 rpm	kJ	12	12	12	12	24	24	24	24
1000 rpm	kJ	12	12	12	12	24	24	24	24
1200 rpm	kJ	12	12	12	12	24	24	24	24
1500 rpm	kJ	12	12	12	12	24	24	24	24
1800 rpm	kJ	12	12	12	12	24	24	24	24
2500 rpm	kJ	12	12	12	12	24	24	24	24
3000 rpm	kJ	12	12	12	12	24	24	24	24
3600 rpm	kJ	12	12	12	12	24	7	24	7
Maximum speed - operation	rpm	4000	3600	4000	3600	3600	3600	3600	3600
Maximum speed - idle state	rpm	10000	10000	10000	10000	10000	10000	10000	10000



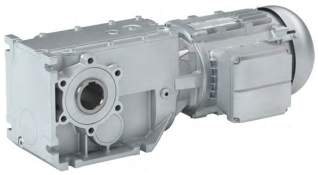
Application brake		**ABR 10**				**ABR 12**			
Braking torque									
Standard friction lining	**Nm**	**16**		**23**		**32**		**46**	
Low-wear friction lining	**Nm**		**16**		**23**		**32**		**46**
Delay time t11									
DC voltage	ms	40	40	23	23	47	47	65	65
AC mains voltage	ms	40	40	23	23	47	47	65	65
Cold Brake AC 230V	ms	43	43	25	25	50	50	70	70
Cold Brake AC 400V	ms	46	46	27	27	53	53	74	74
Overexcitation AC 230 V	ms	48	48	28	28	56	56	78	78
Overexcitation AC 400 V	ms	48	48	28	28	56	56	78	78
Rise time t12									
DC voltage	ms	46	46	46	46	34	34	34	34
AC mains voltage	ms	46	46	46	46	34	34	34	34
Cold Brake AC 230V	ms	58	58	58	58	43	43	43	43
Cold Brake AC 400V	ms	58	58	58	58	43	43	43	43
Overexcitation AC 230 V	ms	58	58	58	58	43	43	43	43
Overexcitation AC 400 V	ms	58	58	58	58	43	43	43	43
Engagement time t1									
DC voltage	ms	86	86	69	69	81	81	99	99
AC mains voltage	ms	86	86	69	69	81	81	99	99
Cold Brake AC 230V	ms	101	101	83	83	93	93	113	113
Cold Brake AC 400V	ms	104	104	85	85	96	96	117	117
Overexcitation AC 230 V	ms	106	106	86	86	99	99	121	121
Overexcitation AC 400 V	ms	106	106	86	86	99	99	121	121
Disengagement time t2									
DC voltage	ms	107	107	154	154	121	121	135	135
AC mains voltage	ms	107	107	154	154	121	121	135	135
Cold Brake AC 230V	ms	107	107	154	154	121	121	135	135
Cold Brake AC 400V	ms	71	71	103	103	81	81	90	90
Overexcitation AC 230 V	ms	54	54	77	77	61	61	68	68
Overexcitation AC 400 V	ms	54	54	77	77	61	61	68	68
Overexcitation time									
Cold Brake AC 230V	ms	300	300	300	300	300	300	300	300
Cold Brake AC 400V	ms	300	300	300	300	300	300	300	300
Overexcitation AC 230 V	ms	300	300	300	300	300	300	300	300
Overexcitation AC 400 V	ms	300	300	300	300	300	300	300	300
Friction energy QBW									
DC voltage	MJ	73.5	198	30.7	121	118.2	353.1	64.1	298.8
AC mains voltage	MJ	73.5	198	30.7	121	118.2	353.1	64.1	298.8
Cold Brake AC 230V	MJ	73.5	198	30.7	121	118.2	353.1	64.1	298.8
Cold Brake AC 400V	MJ	98	264	62.9	247.5	216.7	647.3	134	624.7
Overexcitation AC 230 V	MJ	98	264	67.1	264	216.7	647.3	138.8	647.3
Overexcitation AC 400 V	MJ	98	264	67.1	264	216.7	647.3	138.8	647.3
Reversing cycles		$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$
Repetitive cycles		$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$	$2x\ 10^6$



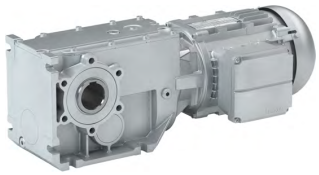
Rated data, LongLife design, IP54/55

Application brake ABR 06, ABR 08

Application brake		ABR 06				ABR 08			
Braking torque									
Standard friction lining	**Nm**	**2.5**		**4**		**3.5**		**8**	
Low-wear friction lining	**Nm**		**2.5**		**4**		**3.5**		**8**
Power input									
DC 24 V	W	20	20	20	20	25	25	25	25
DC 180 V	W	20	20	20	20	25	25	25	25
DC 205 V	W	20	20	20	20	25	25	25	25
DC 180 V … 205 V	W	20	20	20	20	25	25	25	25
AC 115 V	W	20	20	20	20	25	25	25	25
AC 230 V	W	20	20	20	20	25	25	25	25
AC 400 V	W	20	20	20	20	25	25	25	25
AC 460 V	W	20	20	20	20	25	25	25	25
AC 400 V … 460 V	W	20	20	20	20	25	25	25	25
Cold Brake AC 230V	W	20	20	20	20	25	25	25	25
Cold Brake AC 400V	W	23	23	23	23	27	27	27	27
Overexcitation AC 230 V	W	20	20	20	20	25	25	25	25
Overexcitation AC 400 V	W	20	20	20	20	25	25	25	25
Moment of inertia	kgcm²	0.15	0.15	0.15	0.15	0.61	0.61	0.61	0.61
Braking torque is static	Nm	2.5	2.5	4	4	3.5	3.5	8	8
Min. static braking torque tolerance	%	-25	-25	-25	-25	-25	-25	-25	-25
Max. static braking torque tolerance	%	35	35	35	35	35	35	35	35
Dynamic braking torque									
100 rpm	Nm	2.5	2.5	4.0	4.0	3.5	3.5	8.0	8.0
1000 rpm	Nm	2.3	2.3	3.7	3.7	3.1	3.1	7.1	7.1
1200 rpm	Nm	2.3	2.3	3.6	3.6	3.0	3.0	7.0	7.0
1500 rpm	Nm	2.2	2.2	3.5	3.5	3.0	3.0	6.8	6.8
1800 rpm	Nm	2.2	2.2	3.4	3.4	2.9	2.9	6.6	6.6
2500 rpm	Nm	2.1	2.1	3.3	3.3	2.8	2.8	6.4	6.4
3000 rpm	Nm	2.0	2.0	3.2	3.2	2.7	2.7	6.2	6.2
3600 rpm	Nm	2.0	2.0	3.2	3.2	2.7	2.7	6.1	6.1
Min. dynamic braking torque tolerance	%	-25	-25	-25	-25	-25	-25	-25	-25
Max. dynamic braking torque tolerance	%	35	35	35	35	35	35	35	35
Friction energy									
100 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
1000 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
1200 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
1500 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
1800 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
2500 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
3000 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
3600 rpm	kJ	3	3	3	3	7.5	7.5	7.5	7.5
Maximum speed - operation	rpm	6000	3600	6000	3600	5000	3600	5000	3600
Maximum speed - idle state	rpm	10000	10000	10000	10000	10000	10000	10000	10000



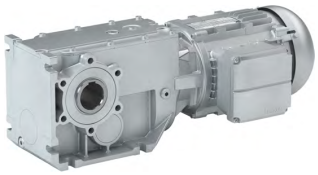
Application brake		**ABR 06**				**ABR 08**			
Braking torque									
Standard friction lining	**Nm**	**2.5**		**4**		**3.5**		**8**	
Low-wear friction lining	**Nm**		**2.5**		**4**		**3.5**		**8**
Delay time t11									
DC voltage	ms	25	25	15	15	14	14	15	15
AC mains voltage	ms	25	25	15	15	14	14	15	15
Cold Brake AC 230V	ms	24	24	16	16	22	22	25	25
Cold Brake AC 400V	ms	27	27	19	19	28	28	28	28
Overexcitation AC 230 V	ms	31	31	20	20	33	33	31	31
Overexcitation AC 400 V	ms	31	31	20	20	33	33	31	31
Rise time t12									
DC voltage	ms	13	13	13	13	10	10	16	16
AC mains voltage	ms	13	13	13	13	10	10	16	16
Cold Brake AC 230V	ms	12	12	14	14	16	16	27	27
Cold Brake AC 400V	ms	14	14	16	16	20	20	30	30
Overexcitation AC 230 V	ms	16	16	17	17	24	24	33	33
Overexcitation AC 400 V	ms	16	16	17	17	24	24	33	33
Engagement time t1									
DC voltage	ms	38	38	28	28	24	24	31	31
AC mains voltage	ms	38	38	28	28	24	24	31	31
Cold Brake AC 230V	ms	36	36	30	30	38	38	52	52
Cold Brake AC 400V	ms	41	41	35	35	48	48	58	58
Overexcitation AC 230 V	ms	47	47	37	37	57	57	64	64
Overexcitation AC 400 V	ms	47	47	37	37	57	57	64	64
Disengagement time t2									
DC voltage	ms	30	30	45	45	37	37	57	57
AC mains voltage	ms	30	30	45	45	37	37	57	57
Cold Brake AC 230V	ms	30	30	45	45	37	37	57	57
Cold Brake AC 400V	ms	21	21	30	30	24	24	36	36
Overexcitation AC 230 V	ms	17	17	22	22	18	18	26	26
Overexcitation AC 400 V	ms	17	17	22	22	18	18	26	26
Overexcitation time									
Cold Brake AC 230V	ms	300	300	300	300	300	300	300	300
Cold Brake AC 400V	ms	300	300	300	300	300	300	300	300
Overexcitation AC 230 V	ms	300	300	300	300	300	300	300	300
Overexcitation AC 400 V	ms	300	300	300	300	300	300	300	300
Friction energy QBW									
DC voltage	MJ	56.5	113.1	42.4	84.8	92.1	210.4	69.1	157.8
AC mains voltage	MJ	56.5	113.1	42.4	84.8	92.1	210.4	69.1	157.8
Cold Brake AC 230V	MJ	56.5	113.1	42.4	84.8	92.1	210.4	69.1	157.8
Cold Brake AC 400V	MJ	56.5	113.1	56.5	113.1	92.1	210.4	92.1	210.4
Overexcitation AC 230 V	MJ	56.5	113.1	56.5	113.1	92.1	210.4	92.1	210.4
Overexcitation AC 400 V	MJ	56.5	113.1	56.5	113.1	92.1	210.4	92.1	210.4
Reversing cycles		$15x\ 10^6$	$15x\ 10^6$	$15x\ 10^6$	$15x\ 10^6$	$15x\ 10^6$	$15x\ 10^6$	$15x\ 10^6$	$15x\ 10^6$
Repetitive cycles		$10x\ 10^6$	$10x\ 10^6$	$10x\ 10^6$	$10x\ 10^6$	$10x\ 10^6$	$10x\ 10^6$	$10x\ 10^6$	$10x\ 10^6$



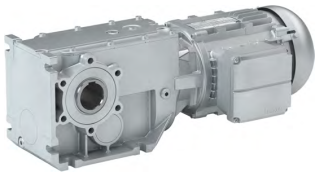
Rated data, LongLife design, IP54/55

Application brake ABR 10, ABR 12

Application brake		ABR 10		ABR 12			
Braking torque							
Standard friction lining	**Nm**	**16**		**14**		**32**	
Low-wear friction lining	**Nm**		**16**		**14**		**32**
Power input							
DC 24 V	W	30	30	40	40	40	40
DC 180 V	W	32	32	40	40	40	40
DC 205 V	W	33	33	40	40	40	40
DC 180 V … 205 V	W	33	33	40	40	40	40
AC 115 V	W	32	32	40	40	40	40
AC 230 V	W	33	33	40	40	40	40
AC 400 V	W	32	32	40	40	40	40
AC 460 V	W	33	33	40	40	40	40
AC 400 V … 460 V	W	33	33	40	40	40	40
Cold Brake AC 230V	W	33	33	40	40	40	40
Cold Brake AC 400V	W	30	30	42	42	42	42
Overexcitation AC 230 V	W	32	32	40	40	40	40
Overexcitation AC 400 V	W	32	32	40	40	40	40
Moment of inertia	kgcm²	2	2	4.5	4.5	4.5	4.5
Braking torque is static	Nm	16	16	14	14	32	32
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	16	16	14	14	32	32
1000 rpm	Nm	14	14	12	12	28	28
1200 rpm	Nm	14	14	12	12	27	27
1500 rpm	Nm	13	13	11	11	26	26
1800 rpm	Nm	13	13	11	11	26	26
2500 rpm	Nm	12	12	11	11	24	24
3000 rpm	Nm	12	12	11	11	24	24
3600 rpm	Nm	12	12	10	10	23	23
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	24	24	24	24
1000 rpm	kJ	12	12	24	24	24	24
1200 rpm	kJ	12	12	24	24	24	24
1500 rpm	kJ	12	12	24	24	24	24
1800 rpm	kJ	12	12	24	24	24	24
2500 rpm	kJ	12	12	24	24	24	24
3000 rpm	kJ	12	12	24	24	24	24
3600 rpm	kJ	12	12	24	7	24	7
Maximum speed - operation	rpm	4000	3600	3600	3600	3600	3600
Maximum speed - idle state	rpm	10000	10000	10000	10000	10000	10000



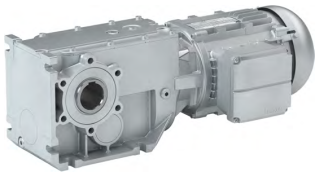
Application brake		**ABR 10**		**ABR 12**			
Braking torque							
Standard friction lining	**Nm**	**16**		**14**		**32**	
Low-wear friction lining	**Nm**		**16**		**14**		**32**
Delay time t11							
DC voltage	ms	28	28	21	21	28	28
AC mains voltage	ms	28	28	21	21	28	28
Cold Brake AC 230V	ms	31	31	49	49	48	48
Cold Brake AC 400V	ms	34	34	64	64	55	55
Overexcitation AC 230 V	ms	44	44	73	73	62	62
Overexcitation AC 400 V	ms	44	44	73	73	62	62
Rise time t12							
DC voltage	ms	19	19	19	19	25	25
AC mains voltage	ms	19	19	19	19	25	25
Cold Brake AC 230V	ms	21	21	44	44	43	43
Cold Brake AC 400V	ms	23	23	58	58	49	49
Overexcitation AC 230 V	ms	30	30	66	66	55	55
Overexcitation AC 400 V	ms	30	30	66	66	55	55
Engagement time t1							
DC voltage	ms	47	47	40	40	53	53
AC mains voltage	ms	47	47	40	40	53	53
Cold Brake AC 230V	ms	52	52	93	93	91	91
Cold Brake AC 400V	ms	57	57	122	122	104	104
Overexcitation AC 230 V	ms	74	74	139	139	117	117
Overexcitation AC 400 V	ms	74	74	139	139	117	117
Disengagement time t2							
DC voltage	ms	76	76	65	65	115	115
AC mains voltage	ms	76	76	65	65	115	115
Cold Brake AC 230V	ms	76	76	65	65	115	115
Cold Brake AC 400V	ms	53	53	48	48	78	78
Overexcitation AC 230 V	ms	41	41	38	38	59	59
Overexcitation AC 400 V	ms	41	41	38	38	59	59
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	98	264	236.4	706.2	177.3	529.6
AC mains voltage	MJ	98	264	236.4	706.2	177.3	529.6
Cold Brake AC 230V	MJ	98	264	236.4	706.2	177.3	529.6
Cold Brake AC 400V	MJ	98	264	236.4	706.2	236.4	706.2
Overexcitation AC 230 V	MJ	98	264	236.4	706.2	236.4	706.2
Overexcitation AC 400 V	MJ	98	264	236.4	706.2	236.4	706.2
Reversing cycles		$15x\ 10^6$	$15x\ 10^6$	$15x\ 10^6$	$15x\ 10^6$	$15x\ 10^6$	$15x\ 10^6$
Repetitive cycles		$10x\ 10^6$	$10x\ 10^6$	$10x\ 10^6$	$10x\ 10^6$	$10x\ 10^6$	$10x\ 10^6$



Rated data, Double brake, IP54/55

Application brake ABR 18, ABR 20

Application brake		ABR 16				ABR 18					
Braking torque											
Standard friction lining	**Nm**	**90**		**110**		**130**		**160**		**200**	
Low-wear friction lining	**Nm**		**90**		**110**		**130**		**160**		**200**
Power input											
DC 24 V	W	110	110	110	110	170	170	170	170	170	170
DC 180 V	W	110	110	110	110	170	170	170	170	170	170
DC 205 V	W	112	112	112	112	170	170	170	170	170	170
DC 180 V … 205 V	W	112	112	112	112	170	170	170	170	170	170
AC 115 V	W	112	112	112	112	170	170	170	170	170	170
AC 230 V	W	112	112	112	112	170	170	170	170	170	170
AC 400 V	W	110	110	110	110	170	170	170	170	170	170
AC 460 V	W	112	112	112	112	170	170	170	170	170	170
AC 400 V … 460 V	W	112	112	112	112	170	170	170	170	170	170
Cold Brake AC 230V	W	112	112	112	112	170	170	170	170	170	170
Cold Brake AC 400V	W	110	110	110	110	170	170	170	170	170	170
Overexcitation AC 230 V	W	112	112	112	112	170	170	170	170	170	170
Overexcitation AC 400 V	W	110	110	110	110	170	170	170	170	170	170
Moment of inertia	kgcm²	30	30	30	30	58	58	58	58	58	58
Braking torque is static	Nm	90	90	110	110	130	130	160	160	200	200
Min. static braking torque tolerance	%	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
Max. static braking torque tolerance	%	35	35	35	35	35	35	35	35	35	35
Dynamic braking torque											
100 rpm	Nm	90	90	110	110	130	130	160	160	200	200
1000 rpm	Nm	75	75	91	91	105	105	130	130	162	162
1200 rpm	Nm	73	73	89	89	103	103	126	126	158	158
1500 rpm	Nm	70	70	86	86	100	100	123	123	154	154
1800 rpm	Nm	69	69	85	85	98	98	120	120	150	150
2500 rpm	Nm	66	66	80	80	94	-	115	-	144	-
3000 rpm	Nm	64	64	78	78	91	-	112	-	140	-
3600 rpm	Nm	63	-	77	77	88	-	109	-	136	-
Min. dynamic braking torque tolerance	%	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
Max. dynamic braking torque tolerance	%	35	35	35	35	35	35	35	35	35	35
Friction energy											
100 rpm	kJ	72	72	72	72	120	120	120	120	120	120
1000 rpm	kJ	72	72	72	72	120	120	120	120	120	120
1200 rpm	kJ	72	72	72	72	120	120	120	120	120	120
1500 rpm	kJ	72	72	72	72	120	120	120	120	120	120
1800 rpm	kJ	72	72	72	72	120	72	120	72	120	72
2500 rpm	kJ	72	72	72	72	120	-	120	-	120	-
3000 rpm	kJ	72	22	72	22	120	-	120	-	120	-
3600 rpm	kJ	72	-	72	22	120	-	120	-	120	-
Maximum speed - operation	rpm	3600	3000	3600	3000	3600	1800	3600	1800	3600	1800
Maximum speed - idle state	rpm	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000

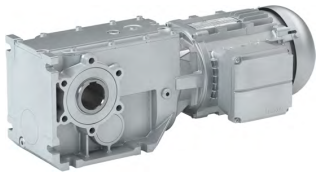


Application brake		**ABR 20**	
Braking torque			
Standard friction lining	**Nm**	**230**	
Low-wear friction lining	**Nm**		**230**
Power input			
DC 24 V	W	200	200
DC 180 V	W	200	200
DC 205 V	W	200	200
DC 180 V … 205 V	W	200	200
AC 115 V	W	200	200
AC 230 V	W	200	200
AC 400 V	W	200	200
AC 460 V	W	200	200
AC 400 V … 460 V	W	200	200
Cold Brake AC 230V	W	200	200
Cold Brake AC 400V	W	200	200
Overexcitation AC 230 V	W	200	200
Overexcitation AC 400 V	W	200	200
Moment of inertia	kgcm²	146	146
Braking torque is static	Nm	230	230
Min. static braking torque tolerance	%	-25	-25
Max. static braking torque tolerance	%	35	35
Dynamic braking torque			
100 rpm	Nm	230	230
1000 rpm	Nm	182	182
1200 rpm	Nm	177	177
1500 rpm	Nm	173	173
1800 rpm	Nm	168	-
2500 rpm	Nm	161	-
3000 rpm	Nm	156	-
3600 rpm	Nm	152	-
Min. dynamic braking torque tolerance	%	-25	-25
Max. dynamic braking torque tolerance	%	35	35
Friction energy			
100 rpm	kJ	160	160
1000 rpm	kJ	160	160
1200 rpm	kJ	160	160
1500 rpm	kJ	160	48
1800 rpm	kJ	160	-
2500 rpm	kJ	160	-
3000 rpm	kJ	160	-
3600 rpm	kJ	160	-
Maximum speed - operation	rpm	3600	1500
Maximum speed - idle state	rpm	10000	10000

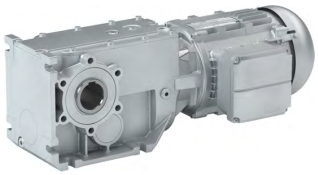
Product extensions

Brakes

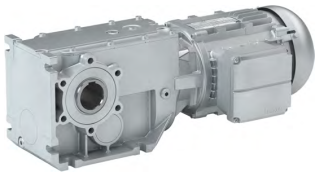
Spring-applied application brake



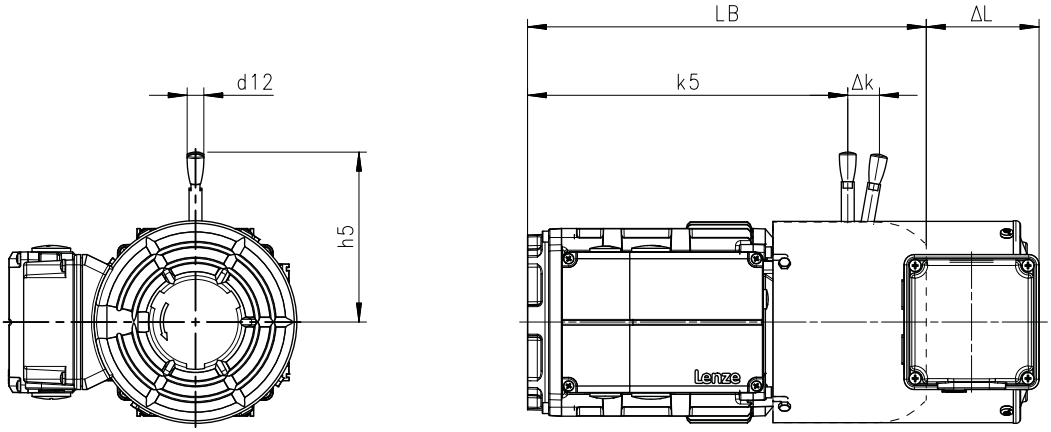
Application brake		**ABR 16**				**ABR 18**					
Braking torque											
Standard friction lining	**Nm**	**90**		**110**		**130**		**160**		**200**	
Low-wear friction lining	**Nm**		**90**		**110**		**130**		**160**		**200**
Delay time t11											
DC voltage	ms	72	72	59	59	35	35	77	77	64	64
AC mains voltage	ms	72	72	59	59	35	35	77	77	64	64
Cold Brake AC 230V	ms	157	157	129	129	101	101	145	145	126	126
Cold Brake AC 400V	ms	178	178	148	148	120	120	160	160	141	141
Overexcitation AC 230 V	ms	186	186	159	159	136	136	174	174	156	156
Overexcitation AC 400 V	ms	186	186	159	159	136	136	174	174	156	156
Rise time t12											
DC voltage	ms	25	25	30	30	35	35	20	20	45	45
AC mains voltage	ms	25	25	30	30	35	35	20	20	45	45
Cold Brake AC 230V	ms	55	55	66	66	101	101	38	38	89	89
Cold Brake AC 400V	ms	62	62	75	75	120	120	42	42	99	99
Overexcitation AC 230 V	ms	65	65	81	81	136	136	45	45	110	110
Overexcitation AC 400 V	ms	65	65	81	81	136	136	45	45	110	110
Engagement time t1											
DC voltage	ms	97	97	89	89	70	70	97	97	109	109
AC mains voltage	ms	97	97	89	89	70	70	97	97	109	109
Cold Brake AC 230V	ms	212	212	195	195	202	202	183	183	215	215
Cold Brake AC 400V	ms	240	240	223	223	240	240	202	202	240	240
Overexcitation AC 230 V	ms	251	251	240	240	272	272	219	219	266	266
Overexcitation AC 400 V	ms	251	251	240	240	272	272	219	219	266	266
Disengagement time t2											
DC voltage	ms	135	135	158	158	205	205	179	179	203	203
AC mains voltage	ms	135	135	158	158	205	205	179	179	203	203
Cold Brake AC 230V	ms	135	135	158	158	205	205	179	179	203	203
Cold Brake AC 400V	ms	104	104	118	118	139	139	129	129	143	143
Overexcitation AC 230 V	ms	86	86	95	95	103	103	101	101	110	110
Overexcitation AC 400 V	ms	86	86	95	95	103	103	101	101	110	110
Overexcitation time											
Cold Brake AC 230V	ms	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300
Cold Brake AC 400V	ms	300	300	300	300	300	300	300	300	300	300
Overexcitation AC 230 V	ms	300	300	300	300	300	300	300	300	300	300
Overexcitation AC 400 V	ms	300	300	300	300	300	300	300	300	300	300
Friction energy QBW											
DC voltage	MJ	515.8	1931.4	515.8	1931.4	716.4	3084.2	716.4	3084.2	716.4	3084.2
AC mains voltage	MJ	515.8	1931.4	515.8	1931.4	716.4	3084.2	716.4	3084.2	716.4	3084.2
Cold Brake AC 230V	MJ	515.8	1931.4	515.8	1931.4	716.4	3084.2	716.4	3084.2	716.4	3084.2
Cold Brake AC 400V	MJ	515.8	1931.4	515.8	1931.4	716.4	3084.2	716.4	3084.2	716.4	3084.2
Overexcitation AC 230 V	MJ	515.8	1931.4	515.8	1931.4	716.4	3084.2	716.4	3084.2	716.4	3084.2
Overexcitation AC 400 V	MJ	515.8	1931.4	515.8	1931.4	716.4	3084.2	716.4	3084.2	716.4	3084.2
Wear limit of brake pad	MJ	3000	11260	3000	11260	2680	11560	2680	11560	2680	11560
Reversing cycles		$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$
Repetitive cycles		$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$	$1x\ 10^6$



Application brake		**ABR 20**	
Braking torque			
Standard friction lining	**Nm**	**230**	
Low-wear friction lining	**Nm**		**230**
Delay time t11			
DC voltage	ms	53	53
AC mains voltage	ms	53	53
Cold Brake AC 230V	ms	151	151
Cold Brake AC 400V	ms	173	173
Overexcitation AC 230 V	ms	195	195
Overexcitation AC 400 V	ms	195	195
Rise time t12			
DC voltage	ms	100	100
AC mains voltage	ms	100	100
Cold Brake AC 230V	ms	285	285
Cold Brake AC 400V	ms	326	326
Overexcitation AC 230 V	ms	368	368
Overexcitation AC 400 V	ms	368	368
Engagement time t1			
DC voltage	ms	153	153
AC mains voltage	ms	153	153
Cold Brake AC 230V	ms	436	436
Cold Brake AC 400V	ms	499	499
Overexcitation AC 230 V	ms	563	563
Overexcitation AC 400 V	ms	563	563
Disengagement time t2			
DC voltage	ms	181	181
AC mains voltage	ms	181	181
Cold Brake AC 230V	ms	181	181
Cold Brake AC 400V	ms	124	124
Overexcitation AC 230 V	ms	93	93
Overexcitation AC 400 V	ms	93	93
Overexcitation time			
Cold Brake AC 230V	ms	1300	1300
Cold Brake AC 400V	ms	300	300
Overexcitation AC 230 V	ms	300	300
Overexcitation AC 400 V	ms	300	300
Friction energy QBW			
DC voltage	MJ	949.4	4644.2
AC mains voltage	MJ	949.4	4644.2
Cold Brake AC 230V	MJ	949.4	4644.2
Cold Brake AC 400V	MJ	949.4	4644.2
Overexcitation AC 230 V	MJ	949.4	4644.2
Overexcitation AC 400 V	MJ	949.4	4644.2
Wear limit of brake pad	MJ	4740	23220
Reversing cycles		$1x\ 10^6$	$1x\ 10^6$
Repetitive cycles		$1x\ 10^6$	$1x\ 10^6$



Dimensions of the manual release lever
Standard design, degree of protection IP54/55



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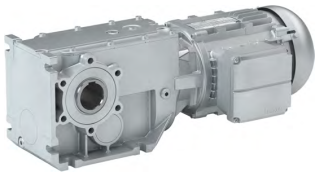
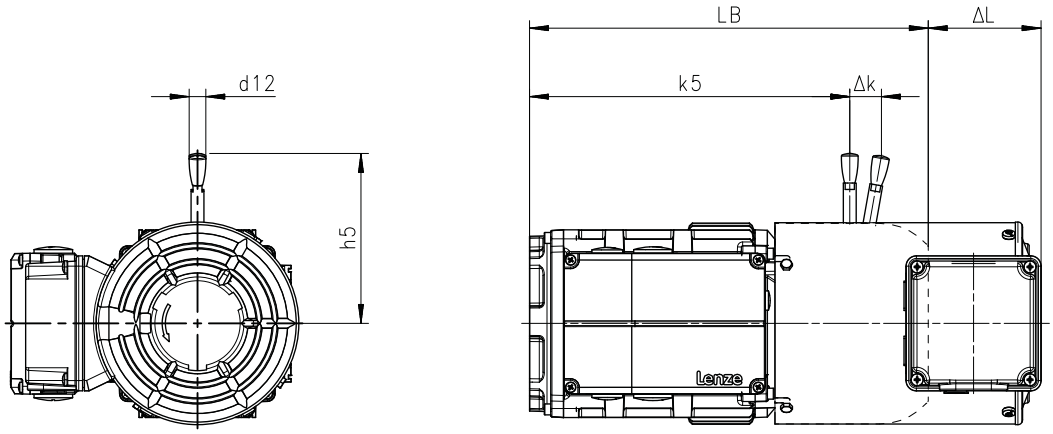
Motor	Brake	Dimensions			
		k_5	Δ k	H_5	d_{12}
		mm	mm	mm	mm
m550-H63/S4 m550-H63/M4 m550-H63/L4	ABR 06	193	25	107	13
m550-H71/M4 m550-H71/L4	ABR 06	211	25	107	13
	ABR 08	212	27	116	13
m550-P80/M4	ABR 08	231	27	116	13
	ABR 10	242	30	132	13
m550-P90/M4 m550-P90/L4	ABR 08	270	27	116	13
	ABR 10	281	30	132	13
m550-P100/M4 m550-P100/L4	ABR 10	346	30	132	13
	ABR 12	348	37	161	13
m550-P112/M4	ABR 12	345	37	161	13
	ABR 14	350	45	195	24
m550-P132/M4 m550-P132/L4	ABR 14	416	45	195	24
	ABR 16	419	55	240	24
m550-P160/M4	ABR 16	551	55	240	24
	ABR 18	565	64	279	24
m550-P160/L4	ABR 18	565	64	279	24
m550-P180/M4 m550-P180/L4	ABR 18	626	64	279	24
	ABR 20	632	74	319	24

Dimensions LB ▸ Basic dimensions 99

Dimensions Δ L ▸ Additional lengths 130



Standard design, degree of protection IP65/66



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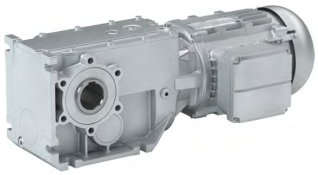
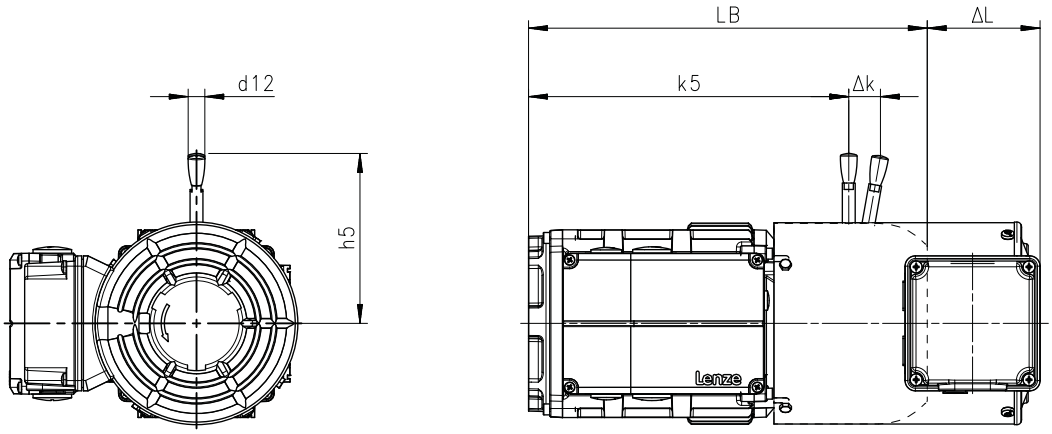
Motor	Brake	Dimensions			
		k_5	Δ k	H_5	d_{12}
		mm	mm	mm	mm
m550-H63/S4 m550-H63/M4 m550-H63/L4	ABR 06	200	22	112	8
m550-H71/M4 m550-H71/L4	ABR 06	218	22	112	8
	ABR 08	223	23	120	8
m550-P80/M4	ABR 08	242	23	120	8
	ABR 10	244	20	143	10
m550-P90/M4 m550-P90/L4	ABR 08	281	23	120	8
	ABR 10	283	20	143	10
m550-P100/M4 m550-P100/L4	ABR 10	348	25	143	10
	ABR 12	352	34	175	12

Dimensions LB ▸ Basic dimensions 🕮 99

Dimensions Δ L ▸ Additional lengths 🕮 130



Longlife design, degree of protection IP54/55



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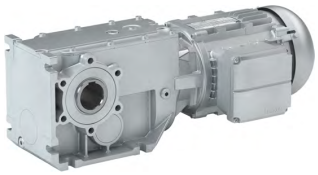
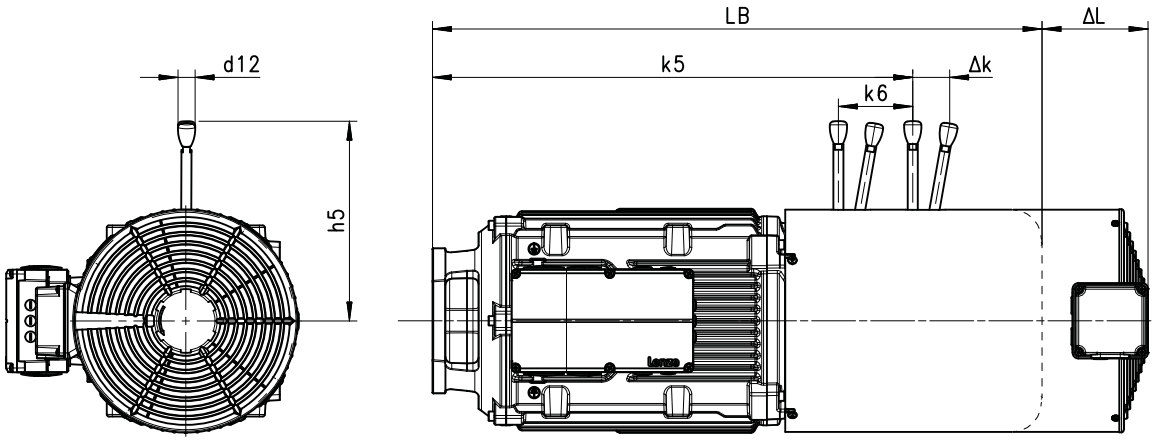
Motor	Brake	Dimensions			
		k_5	Δ k	H_5	d_{12}
		mm	mm	mm	mm
m550-H63/S4 m550-H63/M4 m550-H63/L4	ABR 06	198	25	107	13
m550-H71/M4 m550-H71/L4	ABR 06	216	25	107	13
	ABR 08	217	27	116	13
m550-P80/M4	ABR 08	236	27	116	13
	ABR 10	250	30	132	13
m550-P90/M4 m550-P90/L4	ABR 08	275	27	116	13
	ABR 10	289	30	132	13
m550-P100/M4 m550-P100/L4	ABR 10	354	30	132	13
	ABR 12	355	37	161	13
m550-P112/M4	ABR 12	353	37	161	13

Dimensions LB ▸ Basic dimensions 99

Dimensions Δ L ▸ Additional lengths 130



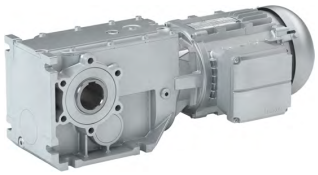
Double brake, IP54/55 protection



Motor	Brake	Dimensions				
		k_5	k_6	Δ k	h_5	d_{12}
		mm	mm	mm	mm	mm
m550-P160/M4	ABR 16	560	93	45	240	24
	ABR 18	565	104	50	279	24
m550-P160/L4	ABR 18	565	104	50	279	24
m550-P180/M4 m550-P180/L4	ABR 18	626	104	50	279	24
	ABR 20	632	118	58	319	24

Dimensions LB ▸ Basic dimensions 🕮 99

Dimensions Δ L ▸ Additional lengths 🕮 130



Feedback

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, absolute encoder and the IG128-24V-H add-on incremental encoder are mounted behind the B-bearing shield under the fan cover.

All other incremental encoders are integrated in the B-bearing shield, which usually makes the drive shorter.

Feedbacks in the environment of functional safety

Motors can perform speed-dependent safety functions for safe speed and/or safe relative position monitoring in a drive system by Lenze inverters or Controllers. In case of inverters, these functions are implemented by integrable safety modules and in case of Controllers by the additionally required Safety Controller.

When planning systems/installations of this kind, always observe the following:

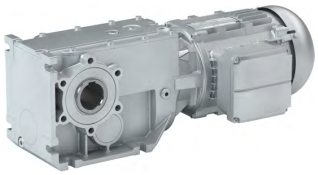
- When using just one single feedback system in the environment of these safety applications, the applicable safety engineering standard EN 61800-5-2 (adjustable speed electrical power drive systems - Part: 5-2: Safety requirements - Functional) stipulates special requirements for the connection between feedback system and motor shaft.
- This is due to the fact that two-channel safety systems at this point in the mechanical system are actually designed as single-channel systems. If this mechanical connection is designed with considerable overdimensioning, the standard permits exclusion of the fault "encoder-shaft breakage" or "encoder-shaft slip". As such, the permissible angular acceleration limit values must not be exceeded for the individual drive solutions.

You can find the limit values in the corresponding feedback data of the individual motor ranges.

Speed-dependent safety functions

Examples of speed-dependent safety functions:

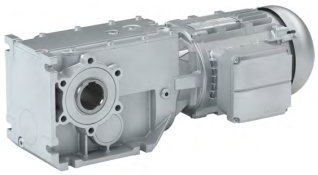
- Safe stop 1 (SS1)
- Safe operational stop (SOS)
- Safely limited speed (SLS)
- Safe maximum speed (SMS)
- Safe direction (SDI)
- Operation mode selector (OMS) with confirmation (ES)
- Safe speed monitor (SSM)
- Safely limited increment (SLI)



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**
Speed-dependent safety functions			nein
Design			Mounting
Resolution - angle		'	0.8
Min. accuracy		'	-10
Max. accuracy		'	10
Absolute positioning			1 revolution
Max. speed	n_{max}	rpm	8000
Max. DC input voltage	$V_{in,max}$	V	10
Max. Input frequency	$f_{in,max}$	kHz	4
Ratio stator/rotor			0.3
Min ratio tolerance		%	-5
Max ratio tolerance		%	5
Rotor impedance	Z_{ro}	Ω	51+j90
Stator impedance	Z_{so}	Ω	102+j150
Impedance	Z_{rs}	Ω	44+j76
Min. Insulation resistance at DC 500 V	R_{min}	MΩ	10
Number of pole pairs			1
Max. Angle error Min		'	-10
Max. Angle error Max		'	10



Incremental encoder

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

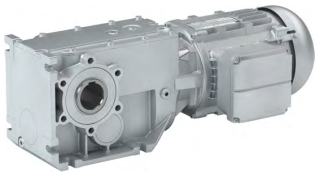
Incremental HTL encoder

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

Feedback type			**Encoder**			
Feedback			**IG128-24V-H**		**IG1024-24V-H**	**IG2048-24V-H**
Design			Mounting	integrated	integrated	integrated
Pulses			128	128	1024	2048
Output signals			HTL	HTL	HTL	HTL
Interfaces			A, B	A, B	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	10	10	10
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	200	200	200

TTL incremental encoder

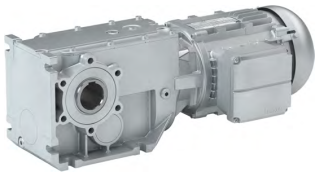
Feedback type			**Encoder**	
Feedback			**IG1024-5V-T**	**IG2048-5V-T**
Design			integrated	
Pulses			1024	2048
Output signals			TTL	TTL
Interfaces			A, B; N; Ai, Bi; Ni	A, B; N; Ai, Bi; Ni
Absolute revolution			0	0
Min. accuracy		'	-2	-2
Max. accuracy		'	2	2
Min. DC input voltage	$V_{in,min}$	V	4.75	4.75
Max. DC input voltage	$V_{in,max}$	V	5.5	5.5
Max. Current consumption	I_{max}	A	0.15	0.15
Limit frequency	f_{max}	kHz	300	300



SinCos-incremental encoder with safety functions

The connection of the safety sensors to the terminal box is only available in conjunction with a ICN connector.

Feedback type			**Encoder**	
Feedback			**IG2048-5V-V2**	**IG2048-5V-V3**
Design			Mounting	
Encoder type			Inkrementalgeber	Inkrementalgeber
Pulses			2048	2048
Output signals			SinCos 1 Vss	SinCos 1 Vss
Interfaces			SinCos	SinCos
Absolute revolution			0	0
Min. accuracy			-	-
Max. accuracy			-	-
Min. DC input voltage	$V_{in,min}$	V	4.75	4.75
Max. DC input voltage	$V_{in,max}$	V	5.25	5.25
Max. Current consumption	I_{max}	A	0.07	0.07
Limit frequency	f_{max}	kHz	400	400
Max. Safety Integrity Level			SIL 2	SIL 3
Max. Safety Performance Level			d	e



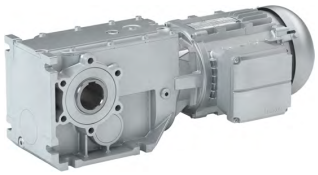
Absolute value encoder

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.

SinCos absolute value encoder

Feedback type			**Absolutwertgeber**
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

Feedback type			**SinCos absolute value encoder**
Feedback			**AM1024-8V-H**
Speed-dependent safety functions			nein
Design			Mounting
Encoder type			Multi-turn
Resolution		bit	-
Pulses			1024
Output signals			SinCos 1 Vss
Interfaces			Hiperface
Absolute revolution			4096
Resolution - angle			0.4
Min. accuracy		'	-0.8
Max. accuracy		'	0.8
Fehlergrenze Positionswert			
System accuracy			-
Integral nonlinearity			-
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

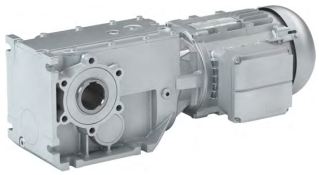
The motor is optionally available with a blower for operation with the rated torque and low motor speeds or a higher switching frequency.

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 24



Standard version

Rated data 50 Hz, 230/400 V

Motor series			m550-H						m550-P		
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

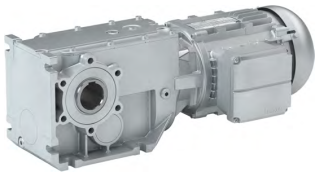
Motor series			m550-P								
Size			090			100			112		
Number of phases			1	3	3	1	3	3	1	3	3
Wiring			-	Delta	Star	-	Delta	Star	-	Delta	Star
Rated voltage	V_{rated}	V	230	230	400	230	230	400	230	230	400
Rated power	P_{rated}	kW	0.038	0.036	0.036	0.044	0.043	0.043	0.05	0.054	0.054
Rated current	I_{rated}	A	0.19	0.19	0.11	0.2	0.19	0.11	0.23	0.2	0.11

Motor series			m550-P								
Size			132			160			180		
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	0.095	0.091	0.091	0.223	0.213	0.213	0.223	0.213	0.213
Rated current	I_{rated}	A	0.42	0.33	0.19	0.97	0.68	0.39	0.97	0.68	0.39

Rated data 50 Hz, 115/200 V

Motor series			m550-H						m550-P		
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	115	115	200	115	115	200	115	115	200
Rated power	P_{rated}	kW	0.047	0.039	0.039	0.047	0.041	0.041	0.048	0.044	0.044
Rated current	I_{rated}	A	0.68	0.67	0.39	0.65	0.67	0.39	0.65	0.66	0.38

Motor series			m550-P								
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	115	115	200	115	115	200	115	115	200
Rated power	P_{rated}	kW	0.051	0.051	0.051	0.057	0.051	0.051	0.064	0.068	0.068
Rated current	I_{rated}	A	0.67	0.67	0.37	0.66	0.64	0.37	0.67	0.64	0.37



Rated data 60 Hz, 115/200 V

Motor series			m550-H						m550-P		
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	115	115	200	115	115	200	115	115	200
Rated power	P_{rated}	kW	0.036	0.029	0.029	0.04	0.032	0.032	0.044	0.04	0.04
Rated current	I_{rated}	A	0.42	0.47	0.27	0.43	0.46	0.27	0.45	0.47	0.27

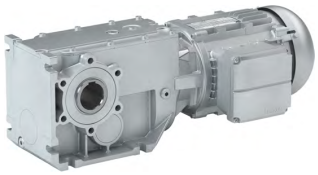
Motor series			m550-P								
Size			**090**			**100**			**112**		
Number of phases			1	3	3	1	3	3	1	3	3
Wiring			-	Delta	Star	-	Delta	Star	-	Delta	Star
Rated voltage	V_{rated}	V	115	115	200	115	115	200	115	115	200
Rated power	P_{rated}	kW	0.053	0.051	0.051	0.064	0.058	0.058	0.083	0.082	0.082
Rated current	I_{rated}	A	0.52	0.51	0.29	0.57	0.51	0.29	0.75	0.56	0.32

Rated data 60 Hz, 265/460 V

Motor series			m550-H						m550-P		
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			m550-P								
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

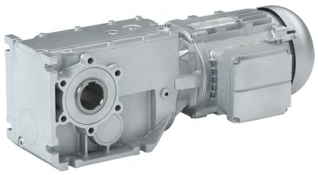
Motor series			m550-P								
Size			**132**			**160**			**180**		
Number of phases			1	3	3	1	3	3	1	3	3
Wiring			-	Delta	Star	-	Delta	Star	-	Delta	Star
Rated voltage	V_{rated}	V	265	265	460	265	265	460	265	265	460
Rated power	P_{rated}	kW	0.156	0.134	0.134	0.379	0.33	0.33	0.379	0.33	0.33
Rated current	I_{rated}	A	0.59	0.36	0.21	1.44	0.81	0.47	1.44	0.81	0.47



Heavy-duty blower

The heavy-duty blower is an optional fan design for operation in environments with higher dust and fiber contamination, e.g. in the textile industry.

Heavy-duty blowers have the same electrical data and dimensions as the standard design.



Temperature monitoring

The thermal sensors are integrated in the windings. We recommend the use of an additional motor protection switch.

Only one temperature monitoring device can be connected with the ICN-M23 8-pin and HAN 10E/modular connectors.

The following temperature monitoring systems are available to protect the motor from overheating:

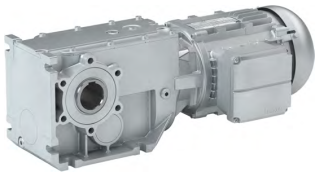
Connection via cable gland in the terminal box
- TCO thermal contact
- TCO thermal contact and PT1000 temperature sensor

Connection via ICN or HAN connector
- TCO thermal contact
- Thermal detectors PT1000

Thermal contacts TC0

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

Function			Normally-closed contact
Operating temperature		°C	150
Min. operating temperature tolerance		°C	-5
Max operating temperature tolerance		°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

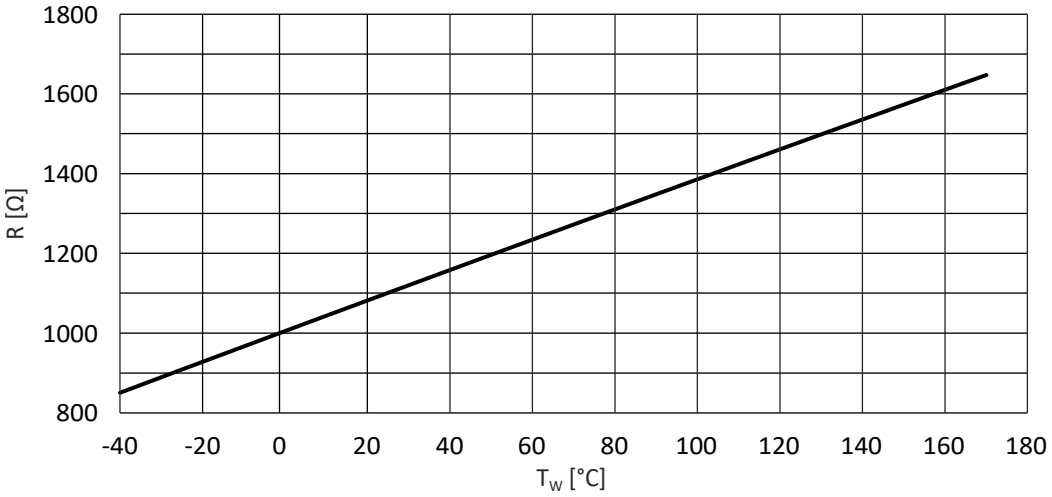


Thermal detectors PT1000

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!**

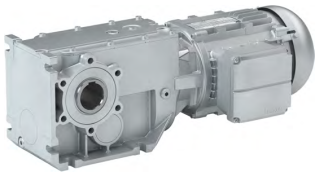
This makes it possible to determine the motor temperature in the permissible operating range with great accuracy.

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



R Resistance

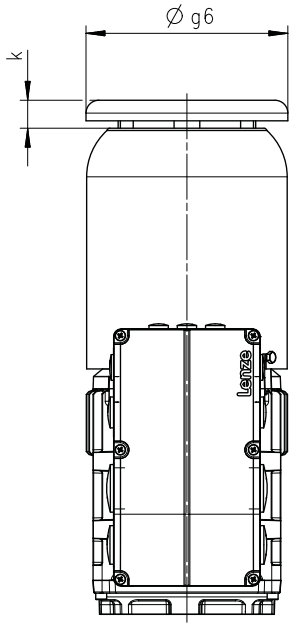
T_W Winding temperature



Protection cover

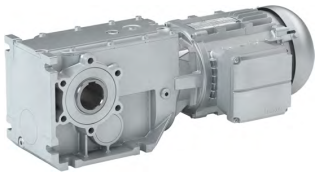
If the motor is installed vertically with the shaft end pointing down, a protection cover is recommended for the fan cover to prevent any foreign bodies falling into the fan.

Protection cover for self-ventilated motors

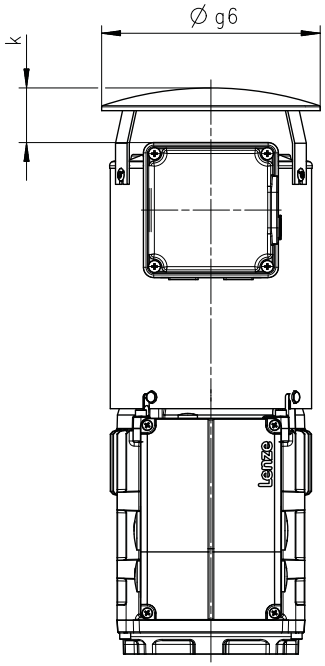


8801079_00

Motor series			m550-H		m550-P						
Motor			**63/S4 63/M4 63/L4**	**71/M4 71/L4**	**80/M4**	**90/M4 90/L4**	**100/M4 100/L4**	**112/M4**	**132/M4 132/L4**	**160/M4 160/L4**	**180/M4 180/L4**
Additional length	k	mm	25	25	25	25	30	30	30	35	35
Diameter	g_6	mm	124	138	157	177	196	218	260	310	348

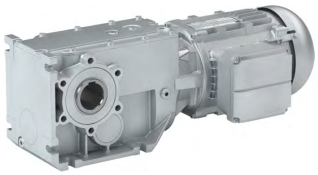


Protection cover for forced ventilation motors



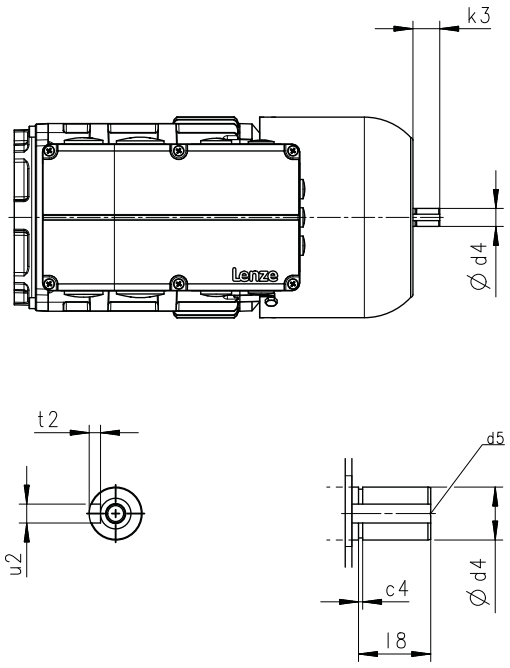
8801083_00

Motor series			m550-H		m550-P						
Motor			**63/S4 63/M4 63/L4**	**71/M4 71/L4**	**80/M4**	**90/M4 90/L4**	**100/M4 100/L4**	**112/M4**	**132/M4 132/L4**	**160/M4 160/L4**	**180/M4 180/L4**
Additional length	k	mm	32	32	32	32	32	42	56	56	56
Diameter	g_6	mm	133	150	170	188	210	249	300	338	338



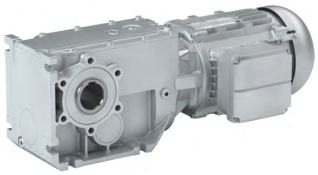
Second shaft end

The second motor shaft end on the drive side is intended for customer applications (e.g. further feedback systems).



8801082_00

Motor series			m550-H		m550-P				
Motor			**63/S4 63/M4 63/L4**	**71/M4 71/L4**	**80/M4**	**90/M4 90/L4**	**100/M4 100/L4**	**112/M4**	**132/M4 132/L4**
Shaft length	k_3	mm	18	18	20.5	24	28	28	32.5
Shaft diameter	d_4	mm	14	14	14	14	14	14	25
	l_8	mm	15	15	19	19	23	23	27
	c_4	mm	1.1	1.1	1.1	1.1	1.1	1.1	
Keyway width	u_2	mm	5	5	5	5	5	5	8
Keyway depth	t_2	mm	3	3	3	3	3	3	4.5
	d_5		M5	M5	M5	M5	M5	M5	M10

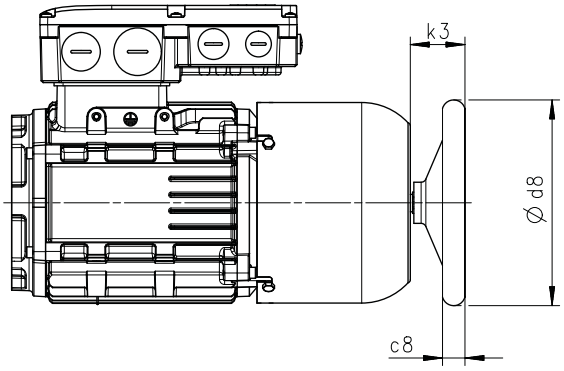


Handwheel

In a deenergized state or during emergency operation, the motor shaft can be rotated with the hand wheel and the machine can be set up.

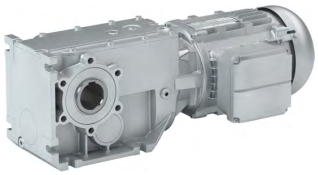
The hand wheel is made of a light alloy and has a smooth surface.

Pay attention to the higher moment of inertia during configuration! With frequent switching operations, in particular when changing the direction of rotation, please contact your Lenze representative.



8801080_00

Motor		m550-H		m550-P				
		63/S4 63/M4 63/L4	71/M4 71/L4	80/M4	90/M4 90/L4	100/M4 100/L4	112/M4	132/M4 132/L4
Dimensions								
k_3	mm	29	40	40	40	45	45	50
d_8	mm	80	160	160	160	200	200	250
c_8	mm	14	18	18	18	22	22	26
Moment of inertia								
J	$kgcm^2$	0.6	18.5	18.5	18.5	25.8	25.8	155.4

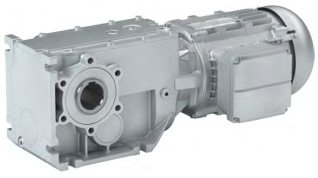


Product codes

Gearbox product code

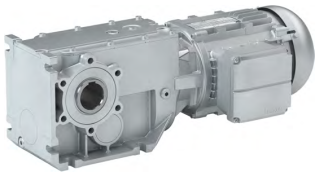
Example		G	50	A	B	045	M	H	B	R	2	C	1A
Product type	Gearboxes	G											
Product family			50										
Generation				A B									
Gearbox type	Bevel gearbox				B								
Output torque	45 Nm					045							
	110 Nm					111							
	240 Nm					124							
	450 Nm					145							
	600 Nm					160							
	820 Nm					182							
	1500 Nm					215							
	2700 Nm					227							
	4300 Nm					243							
	8000 Nm					280							
	13000 Nm					313							
	20000 Nm					320							
Type of construction	Geared motor						M						
	Gearboxes						N						
Shaft type	Solid shaft with featherkey							V					
	Hollow shaft with keyway							H					
	Hollow shaft with shrink disc							S					
Housing type	Foot mounting + centering								A				
	Foot mounting								B				
	With centering								C				
	Threaded pitch circle								D				
Flange mounting	Without flange									R			
	Flange with through holes									K			
Number of stages	2-stage										2		
	3-stage										3		
	4-stage										4		
Motor mounting	Integrated motor											C	
	IEC adapter with jaw coupling											N T	
	IEC adapter with plug-in hollow shaft											H	
	NEMA adapter with jaw coupling											A	
	NEMA adapter with plug-in hollow shaft											B	
	Servomotor adapter with plug-in hollow shaft											S	
	Servomotor adapter with jaw coupling											E D G	
Drive size													1A ... □H 08 ... 82

Product codes



Motor product code

Example		M	55	B	H	063	S	04	5	E	0	0	C	C
Product type	Motor	M												
Product family			55											
Version				B										
Efficiency class	IE2				H									
	IE3				P									
Size						063 071 080 090 100 112 132 160 180								
Overall length	Short						S							
	Medium						M							
	Long						L							
Number of poles	4-pole							04						
Degree of protection	IP54/IP55								5					
	IP65/IP66								6					
Cooling	Self-ventilation									E				
	Forced ventilation									F				
Brake	Without										0			
	Spring-applied brakes										F			
Feedback	Without											0		
	Absolute value encoder											A		
	Incremental encoder											E		
	Resolver											R		
Approvals	None												N	
	CE												C	
	CE, CCC												3	
	CE, cULus												L	
	CE, cULus, CCC												5	
	CE, cURus												U	
	CE, cURus, CCC												W	
Design type	Internal key													C



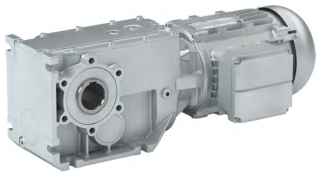
Motor data

Rated data

Rated data 50 Hz

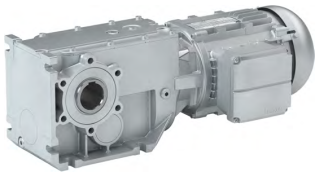
Motor			m550-H				
			63/S4	63/M4	63/L4	71/M4	71/L4
Rated power	P_{rated}	kW	0.12	0.18	0.25	0.37	0.55
Rated speed	n_{rated}	rpm	1415	1400	1390	1425	1430
Max. speed	n_{max}	rpm	4500	4500	4500	4500	4500
Rated voltage							
Delta	$V_{N, \Delta}$	V	230	230	230	230	230
Star	$V_{N, Y}$	V	400	400	400	400	400
Rated current							
230 V	$I_{N, \Delta}$	A	0.710	1.07	1.18	1.71	2.34
400 V	$I_{N, Y}$	A	0.410	0.62	0.680	0.990	1.35
Starting current	I_a	A	1.40	1.94	2.60	4.23	6.32
Rated torque	M_{rated}	Nm	0.810	1.23	1.72	2.48	3.67
Starting torque	M_a	Nm	1.54	2.46	3.44	4.45	6.95
Stalling torque	M_b	Nm	1.94	2.83	3.78	6.92	11.3
Power factor	cos φ		0.68	0.64	0.76	0.74	0.76
Efficiency							
at 75 % P_{rated}	η		0.591	0.647	0.695	0.727	0.758
at 100 % P_{rated}	η		0.591	0.647	0.685	0.695	0.771
at 50 % P_{rated}	η		0.549	0.625	0.685	0.727	0.771
Moment of inertia	J	$kgcm^2$	2.4	2.9	3.7	9.1	13.3
Weight	m	kg	4.32	4.77	5.77	7.77	8.97

Motor data
Rated data
Rated data 50 Hz

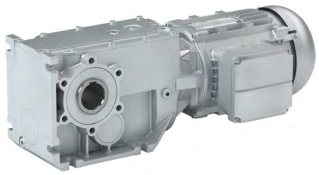


Motor			m550-P				
			80/M4	90/M4	90/L4	100/M4	100/L4
Rated power	P_{rated}	kW	0.75	1.1	1.5	2.2	3
Rated speed	n_{rated}	rpm	1455	1465	1465	1470	1470
Max. speed	n_{max}	rpm	4500	4500	4500	4500	4500
Rated voltage							
Delta	$V_{N, \Delta}$	V	230	230	230	230	230
Star	$V_{N, Y}$	V	400	400	400	400	400
Rated current							
230 V	$I_{N, \Delta}$	A	2.77	4.00	5.51	7.72	10.6
400 V	$I_{N, Y}$	A	1.60	2.31	3.18	4.46	6.10
Starting current	I_a	A	8.91	16.4	22.5	35.8	47.1
Rated torque	M_{rated}	Nm	4.92	7.17	9.78	14.3	19.5
Starting torque	M_a	Nm	7.38	14.4	20.6	31.3	43.1
Stalling torque	M_b	Nm	16.2	25.2	34.3	49.8	66.6
Power factor	cos φ		0.84	0.83	0.82	0.83	0.84
Efficiency							
at 75 % P_{rated}	η		0.825	0.844	0.853	0.867	0.883
at 100 % P_{rated}	η		0.825	0.841	0.853	0.879	0.877
at 50 % P_{rated}	η		0.826	0.841	0.851	0.867	0.877
Moment of inertia	J	$kgcm^2$	27.2	53.8	58.3	123	130.3
Weight	m	kg	12.28	17.33	18.43	30.41	31.61

Motor			m550-P				
			112/M4	132/M4	132/L4	160/M4	160/L4
Rated power	P_{rated}	kW	4	5.5	7.5	11	15
Rated speed	n_{rated}	rpm	1470	1480	1480	1485	1485
Max. speed	n_{max}	rpm	4500	4500	4500	4500	4500
Rated voltage							
Delta	$V_{N, \Delta}$	V	230	230	230	230	230
Star	$V_{N, Y}$	V	400	400	400	400	400
Rated current							
230 V	$I_{N, \Delta}$	A	13.5	18.3	25.4	36.0	49.2
400 V	$I_{N, Y}$	A	7.82	10.6	14.6	20.8	28.4
Starting current	I_a	A	58.3	84.9	117	163	228
Rated torque	M_{rated}	Nm	26.0	35.5	48.4	70.7	96.5
Starting torque	M_a	Nm	44.1	53.3	77.6	98.9	144
Stalling torque	M_b	Nm	83.1	131	179	226	308
Power factor	cos φ		0.86	0.86	0.85	0.86	0.849
Efficiency							
at 75 % P_{rated}	η		0.886	0.896	0.904	0.920	0.921
at 100 % P_{rated}	η		0.886	0.903	0.904	0.914	0.928
at 50 % P_{rated}	η		0.898	0.896	0.908	0.914	0.921
Moment of inertia	J	$kgcm^2$	198	470.6	485.9	1360	1550
Weight	m	kg	40.38	61.82	64.26	168.4	183.2

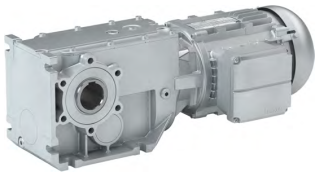


Motor			m550-P	
			180/M4	180/L4
Rated power	P_{rated}	kW	18.5	22
Rated speed	n_{rated}	rpm	1485	1480
Max. speed	n_{max}	rpm	4500	4500
Rated voltage				
Delta	$V_{N, \Delta}$	V	230	230
Star	$V_{N, Y}$	V	400	400
Rated current				
230 V	$I_{N, \Delta}$	A	57.6	67.2
400 V	$I_{N, Y}$	A	33.3	38.8
Starting current	I_a	A	315	312
Rated torque	M_{rated}	Nm	119	142
Starting torque	M_a	Nm	251	241
Stalling torque	M_b	Nm	465	467
Power factor	cos φ		0.893	0.906
Efficiency				
at 75 % P_{rated}	η		0.926	0.937
at 100 % P_{rated}	η		0.932	0.930
at 50 % P_{rated}	η		0.926	0.930
Moment of inertia	J	$kgcm^2$	2330	2400
Weight	m	kg	244.6	255.3



Rated data 60 Hz

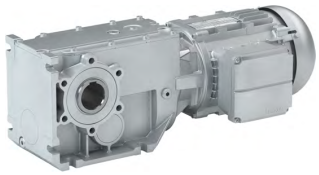
Motor			m550-H				
			63/S4	63/M4	63/L4	71/M4	71/L4
Rated power	P_{rated}	kW	0.12	0.18	0.25	0.37	0.55
Rated speed	n_{rated}	rpm	1725	1715	1710	1735	1740
Max. speed	n_{max}	rpm	4500	4500	4500	4500	4500
Rated voltage							
Star	$V_{N, Y}$	V	460	460	460	460	460
Rated current							
460 V	$I_{N, Y}$	A	0.370	0.56	0.600	0.880	1.21
Starting current	I_a	A	1.47	2.07	2.68	4.28	6.32
Rated torque	M_{rated}	Nm	0.700	1.00	1.40	2.00	3.00
Starting torque	M_a	Nm	1.54	2.32	3.08	3.88	5.74
Stalling torque	M_b	Nm	2.01	2.83	3.78	6.94	10.9
Power factor	cos φ		0.62	0.58	0.71	0.7	0.73
Efficiency							
at 50 % P_{rated}	η		0.564	0.680	0.700	0.720	0.762
at 100 % P_{rated}	η		0.640	0.640	0.700	0.708	0.755
at 75 % P_{rated}	η		0.637	0.680	0.704	0.720	0.755
Moment of inertia	J	$kgcm^2$	2.4	2.9	3.7	9.1	13.3
Weight	m	kg	4.32	4.77	5.77	7.77	8.97



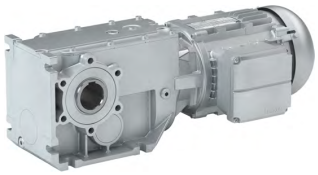
Motor			m550-P				
			80/M4	90/M4	90/L4	100/M4	100/L4
Rated power	P_{rated}	kW	0.75	1.1	1.5	2.2	3
Rated speed	n_{rated}	rpm	1760	1770	1770	1775	1770
Max. speed	n_{max}	rpm	4500	4500	4500	4500	4500
Rated voltage							
Star	$V_{N, Y}$	V	460	460	460	460	460
Rated current							
460 V	$I_{N, Y}$	A	1.40	2.02	2.78	3.93	5.31
Starting current	I_a	A	8.71	16.2	22.0	35.6	46.1
Rated torque	M_{rated}	Nm	4.10	5.90	8.10	11.8	16.2
Starting torque	M_a	Nm	6.09	12.5	17.8	27.3	37.1
Stalling torque	M_b	Nm	15.8	23.8	32.4	46.2	62.9
Power factor	cos φ		0.82	0.81	0.8	0.82	0.82
Efficiency							
at 50 % P_{rated}	η		0.831	0.846	0.865	0.895	0.895
at 75 % P_{rated}	η		0.852	0.865	0.855	0.880	0.885
at 100 % P_{rated}	η		0.855	0.865	0.865	0.895	0.895
Moment of inertia	J	kgcm²	27.2	53.8	58.3	123	130.3
Weight	m	kg	12.28	17.33	18.43	30.41	31.61

Motor			m550-P				
			112/M4	132/M4	132/L4	160/M4	160/L4
Rated power	P_{rated}	kW	4	5.5	7.5	11	15
Rated speed	n_{rated}	rpm	1775	1780	1780	1785	1785
Max. speed	n_{max}	rpm	4500	4500	4500	4500	4500
Rated voltage							
Star	$V_{N, Y}$	V	460	460	460	460	460
Rated current							
460 V	$I_{N, Y}$	A	6.82	9.26	12.8	18.2	24.7
Starting current	I_a	A	57.2	81.3	112	156	216
Rated torque	M_{rated}	Nm	21.5	29.5	40.2	58.8	80.2
Starting torque	M_a	Nm	38.7	44.2	64.5	82.1	120
Stalling torque	M_b	Nm	79.6	121	169	205	281
Power factor	cos φ		0.85	0.85	0.83	0.85	0.843
Efficiency							
at 50 % P_{rated}	η		0.901	0.917	0.909	0.919	0.930
at 75 % P_{rated}	η		0.895	0.902	0.917	0.924	0.926
at 100 % P_{rated}	η		0.895	0.914	0.917	0.924	0.930
Moment of inertia	J	kgcm²	198	470.6	485.9	1360	1550
Weight	m	kg	40.38	61.82	64.26	168.4	183.2

Motor data
Rated data
Rated data 60 Hz



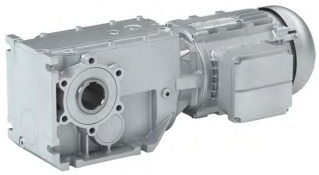
Motor			m550-P	
			180/M4	180/L4
Rated power	P_{rated}	kW	18.5	22
Rated speed	n_{rated}	rpm	1785	1780
Max. speed	n_{max}	rpm	4500	4500
Rated voltage				
Star	$V_{N, Y}$	V	460	460
Rated current				
460 V	$I_{N, Y}$	A	29.0	33.8
Starting current	I_a	A	305	304
Rated torque	M_{rated}	Nm	99.0	118
Starting torque	M_a	Nm	208	212
Stalling torque	M_b	Nm	425	423
Power factor	cos φ		0.885	0.901
Efficiency				
at 50 % P_{rated}	η		0.936	0.936
at 75 % P_{rated}	η		0.936	0.936
at 100 % P_{rated}	η		0.929	0.936
Moment of inertia	J	kgcm²	2330	2400
Weight	m	kg	244.6	255.3



Rated data 87 Hz

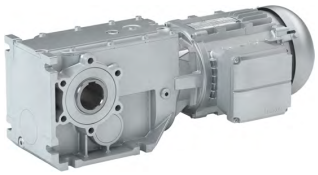
Motor			m550-H				
			63/S4	63/M4	63/L4	71/M4	71/L4
Rated power	P_{rated}	kW	0.21	0.33	0.45	0.66	1
Rated speed	n_{rated}	rpm	2525	2505	2500	2535	2540
Max. speed	n_{max}	rpm	4500	4500	4500	4500	4500
Max. Torque	M_{max}	Nm	3.20	4.90	6.90	9.90	14.7
Rated voltage							
Delta	$V_{N, \Delta}$	V	400	400	400	400	400
Rated current							
400 V	$I_{N, \Delta}$	A	0.740	1.11	1.19	1.75	2.42
Rated torque	M_{rated}	Nm	0.794	1.26	1.72	2.49	3.76
Power factor	cos φ		0.6	0.6	0.72	0.7	0.74
Efficiency							
at 50 % P_{rated}	η		0.598	0.726	0.776	0.792	0.816
at 100 % P_{rated}	η		0.702	0.675	0.768	0.730	0.781
at 75 % P_{rated}	η		0.670	0.744	0.729	0.777	0.826
Moment of inertia	J	$kgcm^2$	2.4	2.9	3.7	9.1	13.3
Weight	m	kg	4.32	4.77	5.77	7.77	8.97

Motor data
Rated data
Rated data 87 Hz

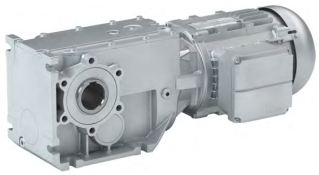


Motor			m550-P				
			80/M4	90/M4	90/L4	100/M4	100/L4
Rated power	P_{rated}	kW	1.35	1.9	2.6	3.9	5.2
Rated speed	n_{rated}	rpm	2565	2575	2575	2580	2580
Max. speed	n_{max}	rpm	4500	4500	4500	4500	4500
Max. Torque	M_{max}	Nm	19.7	28.7	39.1	57.2	78.0
Rated voltage							
Delta	$V_{N, \Delta}$	V	400	400	400	400	400
Rated current							
400 V	$I_{N, \Delta}$	A	2.82	3.94	5.48	7.83	10.4
Rated torque	M_{rated}	Nm	5.03	7.05	9.64	14.4	19.2
Power factor	cos φ		0.83	0.82	0.8	0.83	0.82
Efficiency							
at 100 % P_{rated}	η		0.868	0.878	0.886	0.906	0.893
at 50 % P_{rated}	η		0.845	0.882	0.883	0.889	0.906
at 75 % P_{rated}	η		0.865	0.855	0.864	0.904	0.907
Moment of inertia	J	$kgcm^2$	27.2	53.8	58.3	123	130.3
Weight	m	kg	12.28	17.33	18.43	30.41	31.61

Motor			m550-P				
			112/M4	132/M4	132/L4	160/M4	160/L4
Rated power	P_{rated}	kW	7.35	9.6	13.1	19.2	26.3
Rated speed	n_{rated}	rpm	2580	2590	2590	2595	2595
Max. speed	n_{max}	rpm	4500	4500	4500	4500	4500
Max. Torque	M_{max}	Nm	104	142	194	283	386
Rated voltage							
Delta	$V_{N, \Delta}$	V	400	400	400	400	400
Rated current							
400 V	$I_{N, \Delta}$	A	14.1	18.4	25.4	36.1	49.2
Rated torque	M_{rated}	Nm	27.2	35.4	48.3	70.7	96.8
Power factor	cos φ		0.86	0.85	0.84	0.85	0.847
Efficiency							
at 100 % P_{rated}	η		0.909	0.922	0.925	0.922	0.929
at 50 % P_{rated}	η		0.913	0.920	0.925	0.934	0.940
at 75 % P_{rated}	η		0.917	0.908	0.914	0.935	0.939
Moment of inertia	J	$kgcm^2$	198	470.6	485.9	1360	1550
Weight	m	kg	40.38	61.82	64.26	168.4	183.2



Motor			**m550-P**	
			180/M4	**180/L4**
Rated power	P_{rated}	kW	32.2	38.5
Rated speed	n_{rated}	rpm	2590	2590
Max. speed	n_{max}	rpm	4500	4500
Max. Torque	M_{max}	Nm	476	568
Rated voltage				
Delta	$V_{N, \Delta}$	V	400	400
Rated current				
400 V	$I_{N, \Delta}$	A	57.5	67.6
Rated torque	M_{rated}	Nm	119	142
Power factor	cos φ		0.892	0.906
Efficiency				
at 100 % P_{rated}	η		0.932	0.945
at 50 % P_{rated}	η		0.942	0.939
at 75 % P_{rated}	η		0.941	0.944
Moment of inertia	J	$kgcm^2$	2330	2400
Weight	m	kg	244.6	255.3



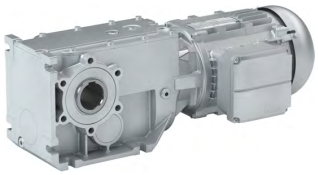
Ecodesign Directive

Product information acc. to REGULATION (EU) 2019/1781 (ANNEX I, Section 2)

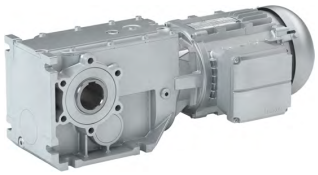
Legend

Efficiency (η_{rated}, η)	The efficiency refers to the rated voltage and an ambient reference temperature of 25 °C.
Operating points (n; M)	n = Speed as a percentage of the rated speed n_{rated}; M= Torque as a percentage of the rated torque M_{rated}
Power losses P_V (n; M)	Power losses as a percentage of the rated output power P_{rated} for the operating points (n; M).

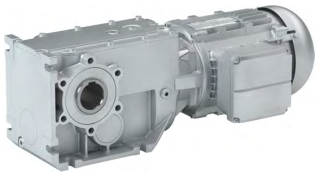
Rated efficiency at full load	η_{rated}	%	59.1	64	64.7	68	68.5	70	72.7	72
Efficiency at 75 % rated load	η	%	59.1	63.7	64.7	68	68.5	70	72.7	72
Efficiency at 50 % rated load	η	%	54.9	56.4	62.5	64	69.5	70.4	69.5	70.8
Efficiency level			IE2							
Name of the manufacturer			Lenze SE · Hans-Lenze-Str. 1 · 31855 Aerzen · GERMANY							
Commercial register number			Hannover HRB 204803							
Model identifier of the product			M55BH063S04		M55BH063M04		M55BH063L04		M55BH071M04	
Number of poles of the motor			4							
Rated output power	P_{rated}	kW	0.12		0.18		0.25		0.37	
Rated input frequency	f_{rated}	Hz	50	60	50	60	50	60	50	60
Rated voltage	V_{rated}	V	400	460	400	460	400	460	400	460
Rated speed	n_{rated}	min^{-1}	1415	1725	1400	1715	1390	1710	1425	1735
Number of motor phases			Three-phase motor							
Altitudes above sea level		m	0 ... 1000							
Ambient air temperature		°C	-30 ... +40							
Maximum operating temperature		°C	155							
Potentially explosive atmospheres			Operation in explosive atmospheres not permitted							
Power losses										
25; 25	P_V (n; M)	%	31.7	31.7	27.8	27.8	16.8	16.8	14.9	14.9
25; 100	P_V (n; M)	%	45	45	41.1	41.1	36.8	36.8	27	27
50; 25	P_V (n; M)	%	34.2	34.2	31.1	31.1	17.6	17.6	14.9	14.9
50; 50	P_V (n; M)	%	34.2	34.2	31.1	31.1	20	20	15.9	15.9
50; 100	P_V (n; M)	%	46.7	46.7	42.8	42.8	35.6	35.6	27.6	27.6
90; 50	P_V (n; M)	%	41.7	41.7	38.3	38.3	24	24	20	20
90; 100	P_V (n; M)	%	54.2	54.2	49.4	49.4	38.8	38.8	31.1	31.1



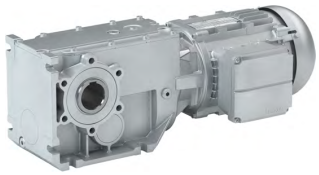
Rated efficiency at full load	η_{rated}	%	77.1	75.5	82.5	85.5	84.1	86.5	85.3	86.5
Efficiency at 75 % rated load	η	%	77.1	75.5	82.5	85.2	84.1	86.5	85.3	86.5
Efficiency at 50 % rated load	η	%	75.8	76.2	82.6	83.1	84.4	84.6	85.1	85.5
Efficiency level			IE2		IE3					
Name of the manufacturer			Lenze SE · Hans-Lenze-Str. 1 · 31855 Aerzen · GERMANY							
Commercial register number			Hannover HRB 204803							
Model identifier of the product			M55BH071L04		M55BP080M04		M55BP090M04		M55BP090L04	
Number of poles of the motor			4							
Rated output power	P_{rated}	kW	0.55		0.75		1.1		1.5	
Rated input frequency	f_{rated}	Hz	50	60	50	60	50	60	50	60
Rated voltage	V_{rated}	V	400	460	400	460	400	460	400	460
Rated speed	n_{rated}	min^{-1}	1430	1740	1455	1760	1465	1770	1465	1770
Number of motor phases			Three-phase motor							
Altitudes above sea level		m	0 ... 1000							
Ambient air temperature		°C	-30 ... +40							
Maximum operating temperature		°C	155							
Potentially explosive atmospheres			Operation in explosive atmospheres not permitted							
Power losses										
25; 25	P_V (n; M)	%	9.1	9.1	5.9	5.9	4.5	4.5	4.9	4.9
25; 100	P_V (n; M)	%	20	20	17.3	17.3	13.1	13.1	13.8	13.8
50; 25	P_V (n; M)	%	10	10	6.3	6.3	5.1	5.1	5.4	5.4
50; 50	P_V (n; M)	%	11.6	11.6	8.1	8.1	6.5	6.5	6.8	6.8
50; 100	P_V (n; M)	%	21.1	21.1	17.2	17.2	13.5	13.5	14.1	14.1
90; 50	P_V (n; M)	%	15.1	15.1	10.3	10.3	8.7	8.7	9	9
90; 100	P_V (n; M)	%	24.4	24.4	18.9	18.9	15.6	15.6	16.3	16.3



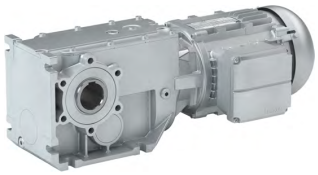
Rated efficiency at full load	η_{rated}	%	86.7	89.5	87.7	89.5	88.6	89.5	89.6	91.7
Efficiency at 75 % rated load	η	%	86.7	89.5	87.7	89.5	88.6	89.5	89.6	91.4
Efficiency at 50 % rated load	η	%	87.9	88	88.3	88.5	89.8	90.1	90.3	90.2
Efficiency level			IE3							
Name of the manufacturer			Lenze SE · Hans-Lenze-Str. 1 · 31855 Aerzen · GERMANY							
Commercial register number			Hannover HRB 204803							
Model identifier of the product			M55BP100M04		M55BP100L04		M55BP112M04		M55BP132M04	
Number of poles of the motor			4							
Rated output power	P_{rated}	kW	2.2		3		4		5.5	
Rated input frequency	f_{rated}	Hz	50	60	50	60	50	60	50	60
Rated voltage	V_{rated}	V	400	460	400	460	400	460	400	460
Rated speed	n_{rated}	min^{-1}	1470	1775	1470	1770	1470	1775	1480	1780
Number of motor phases			Three-phase motor							
Altitudes above sea level		m	0 ... 1000							
Ambient air temperature		°C	-30 ... +40							
Maximum operating temperature		°C	155							
Potentially explosive atmospheres			Operation in explosive atmospheres not permitted							
Power losses										
25; 25	P_V (n; M)	%	3.1	3.1	3.4	3.4	2.7	2.7	1.6	1.6
25; 100	P_V (n; M)	%	9.2	9.2	10.7	10.7	11	11	6.2	6.2
50; 25	P_V (n; M)	%	3.8	3.8	4	4	3.2	3.2	2.2	2.2
50; 50	P_V (n; M)	%	4.9	4.9	5.3	5.3	4.5	4.5	3.1	3.1
50; 100	P_V (n; M)	%	10	10	11.2	11.2	10.9	10.9	6.8	6.8
90; 50	P_V (n; M)	%	6.9	6.9	7.1	7.1	6	6	4.4	4.4
90; 100	P_V (n; M)	%	12	12	13	13	12.3	12.3	8.2	8.2



Rated efficiency at full load	η_{rated}	%	90.4	91.7	91.4	92.4	92.1	93	92.6	93.6
Efficiency at 75 % rated load	η	%	90.4	91.7	91.4	92.4	92.1	93	92.6	93.6
Efficiency at 50 % rated load	η	%	90.8	90.9	92	91.9	92.8	92.6	93.2	92.9
Efficiency level			IE3							
Name of the manufacturer			Lenze SE · Hans-Lenze-Str. 1 · 31855 Aerzen · GERMANY							
Commercial register number			Hannover HRB 204803							
Model identifier of the product			M55BP132L04		M55BP160M04		M55BP160L04		M55BP180M04	
Number of poles of the motor			4							
Rated output power	P_{rated}	kW	7.5		11		15		18.5	
Rated input frequency	f_{rated}	Hz	50	60	50	60	50	60	50	60
Rated voltage	V_{rated}	V	400	460	400	460	400	460	400	460
Rated speed	n_{rated}	min^{-1}	1480	1780	1485	1785	1485	1785	1485	1785
Number of motor phases			Three-phase motor							
Altitudes above sea level		m	0 ... 1000							
Ambient air temperature		°C	-30 ... +40							
Maximum operating temperature		°C	155							
Potentially explosive atmospheres			Operation in explosive atmospheres not permitted							
Power losses										
25; 25	P_V (n; M)	%	1.8	1.8	1.1	1.1	0.9	0.9	0.9	0.9
25; 100	P_V (n; M)	%	7	7	4.2	4.2	4.4	4.4	4.3	4.3
50; 25	P_V (n; M)	%	2.3	2.3	1.6	1.6	1.3	1.3	1.4	1.4
50; 50	P_V (n; M)	%	3.2	3.2	2.2	2.2	1.9	1.9	2	2
50; 100	P_V (n; M)	%	7.3	7.3	4.5	4.5	4.8	4.8	4.7	4.7
90; 50	P_V (n; M)	%	4.4	4.4	3.4	3.4	2.9	2.9	3.2	3.2
90; 100	P_V (n; M)	%	8.8	8.8	6.2	6.2	6.1	6.1	6.2	6.2



Rated efficiency at full load	η_{rated}	%	93	93.6
Efficiency at 75 % rated load	η	%	93	93.6
Efficiency at 50 % rated load	η	%	93.7	93.6
Efficiency level			IE3	
Name of the manufacturer			Lenze SE · Hans-Lenze-Str. 1 · 31855 Aerzen · GERMANY	
Commercial register number			Hannover HRB 204803	
Model identifier of the product			M55BP180L04	
Number of poles of the motor			4	
Rated output power	P_{rated}	kW	22	
Rated input frequency	f_{rated}	Hz	50	60
Rated voltage	V_{rated}	V	400	460
Rated speed	n_{rated}	min^{-1}	1480	1780
Number of motor phases			Three-phase motor	
Altitudes above sea level		m	0 ... 1000	
Ambient air temperature		°C	-30 ... +40	
Maximum operating temperature		°C	155	
Potentially explosive atmospheres			Operation in explosive atmospheres not permitted	
Power losses				
25; 25	P_V (n; M)	%	0.8	0.8
25; 100	P_V (n; M)	%	4.4	4.4
50; 25	P_V (n; M)	%	1.3	1.3
50; 50	P_V (n; M)	%	1.9	1.9
50; 100	P_V (n; M)	%	4.8	4.8
90; 50	P_V (n; M)	%	3	3
90; 100	P_V (n; M)	%	6	6



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.

Lenze products are not subject to 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] , but some 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] . The disposal route, which is separate from household waste, is indicated by corresponding labels with the "crossed-out trash can".
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.

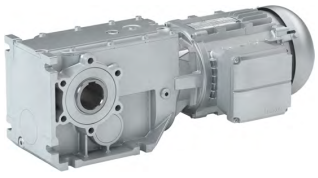
Lenze products are industrial electrical and electronic products and are disposed of professionally. Both the mechanical and electrical components such as electric motors, gearboxes or inverters contain valuable raw materials that can be recycled and reused. Proper recycling and thus maintaining the 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

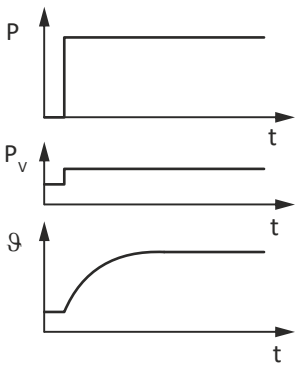
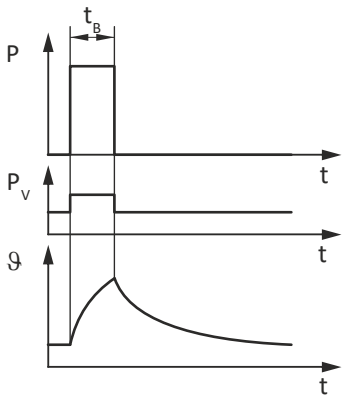
Operating modes of the motor

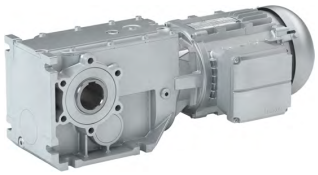
Operating modes S1 ... S10 as specified by EN 60034-1 describe the basic stress of an electrical machine.

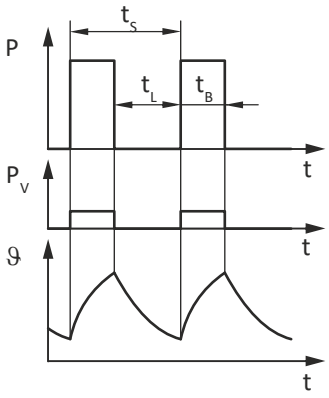
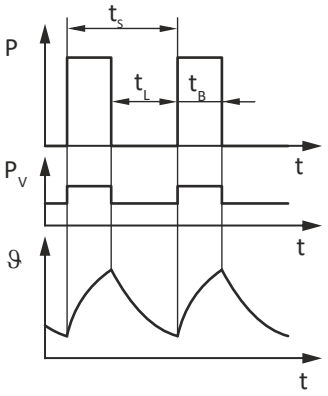
In continuous operation a motor reaches its permissible temperature limit if it outputs the rated power dimensioned for continuous operation. However, if the motor is only subjected to load for a short time, the power output by the motor may be greater without the motor reaching its permissible temperature limit. This behaviour is referred to as overload capacity.

Depending on the duration of the load and the resulting temperature rise, the required motor can be selected reduced by the overload capacity.

The most important operating modes

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



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

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

Enclosures

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

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

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

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