

g7xx-P and g8xx-P + m850 planetary geared servo motor



Contents

About this document	7
Document description	7
Further documents.....	8
Notations and conventions	9
Product information	10
Product description	10
Identification of the products.....	11
Designs.....	13
Information on project planning	15
Safety instructions	15
Basic safety instructions	15
Application as directed	15
Residual hazards.....	16
Drive dimensioning.....	18
Final configuration.....	23
Surface and corrosion protection.....	23
Lubricants.....	23
Mechanical installation	24
Important notes.....	24
Transport.....	25
Installation.....	26
Electrical installation	27
Important notes.....	27
Preparation.....	28

Contents

Technical data	29
Notes regarding the given data	29
Standards and operating conditions	31
Conformities and approvals	31
Protection of persons and device protection	32
EMC data	32
Environmental conditions	32
Planetary gearbox g700-P	33
The modular system	33
Gearbox data	34
Radial forces and axial forces	37
Selection tables	38
Inverter mains connection 400 V, self-ventilated motors	38
Basic dimensions	48
Planetary gearbox g720-P	56
The modular system	56
Gearbox data	57
Radial forces and axial forces	60
Selection tables	61
Inverter mains connection 400 V, self-ventilated motors	61
Basic dimensions	69
Planetary gearbox g730-P	75
The modular system	75
Gearbox data	76
Radial forces and axial forces	78
Selection tables	79
Inverter mains connection 400 V, self-ventilated motors	79
Basic dimensions	86
Planetary gearbox g750-P	95
The modular system	95
Gearbox data	96
Radial forces and axial forces	97
Selection tables	98
Inverter mains connection 400 V, self-ventilated motors	98
Basic dimensions	104
Planetary gearbox g780-P	109
The modular system	109
Gearbox data	110
Radial forces and axial forces	112
Selection tables	113
Inverter mains connection 400 V, self-ventilated motors	113
Basic dimensions	119
Planetary gearbox g820-P	125
The modular system	125
Gearbox data	126
Radial forces and axial forces	128
Selection tables	129
Inverter mains connection 400 V, self-ventilated motors	129
Basic dimensions	138

Planetary gearbox g840-P	144
The modular system	144
Gearbox data.....	145
Radial forces and axial forces.....	147
Selection tables	148
Inverter mains connection 400 V, self-ventilated motors.....	148
Basic dimensions	159
Planetary gearbox g850-P	168
The modular system	168
Gearbox data.....	169
Radial forces and axial forces.....	171
Selection tables	172
Inverter mains connection 400 V, self-ventilated motors.....	172
Basic dimensions	183
Planetary gearbox g870-P	191
The modular system	191
Gearbox data.....	192
Radial forces and axial forces.....	194
Selection tables	195
Inverter mains connection 400 V, self-ventilated motors.....	195
Basic dimensions	205
Planetary gearbox g880-P	214
The modular system	214
Gearbox data.....	215
Radial forces and axial forces.....	217
Selection tables	218
Inverter mains connection 400 V, self-ventilated motors.....	218
Basic dimensions	227
Additional lengths.....	236
Additional weights.....	237
Product extensions	238
Motor connection.....	238
Connection via connector.....	238
Brakes.....	244
Permanent magnet brakes.....	246
Spring-applied brakes.....	247
Feedback	248
Resolver	249
Absolute value encoder.....	250
Temperature monitoring.....	251
Thermal detectors PT1000.....	251
Product codes	252
Motor data	255
Rated data	255
Inverter mains connection 400 V, Self-ventilated motors.....	255
Torque characteristics	257
Environmental notes and recycling.....	264

Contents

Appendix	265
Good to know	265
Operating modes of the motor	265
Enclosures	266



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.

Numeric notation		
Decimal separator	Point	Generally shown as a decimal point. Example: 1 234.56
Warning		
UL warning	UL	Are used in English and French.
UR warning	UR	
Text		
Engineering tools	» «	Software, Example: »Engineer«, »EASY Starter«
Icons		
Page reference		Refers to another page with additional information. Example:  16 = see page 16
Documentation reference		Refers 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 servo motors, our planetary gearboxes form a compact, powerful drive unit. Numerous options at the input and output ends ensure that the drive can be easily and precisely adjusted to suit your application.

The planetary gearboxes are the ideal solution for demanding, dynamic tasks. With their high reliability, long service life and outstanding scalability, they provide everything you need to manage demanding machine tasks.

The planetary gearboxes are available as standard and precision gearboxes.

General differences between precision gearboxes and standard gearboxes:

- Reduced backlash
- Higher radial and axial forces
- Higher degree of protection

Synchronous servo motors as a basis for geared motors

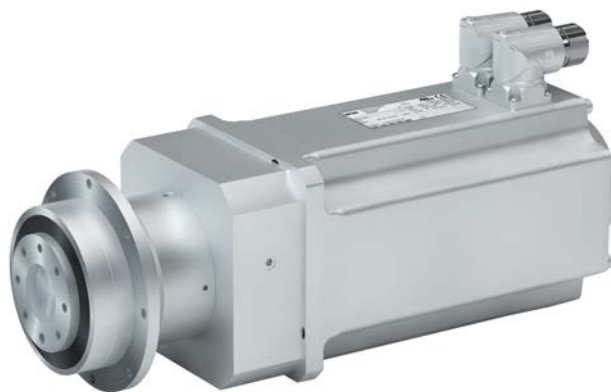
In a power range of 2.0 to 9.2 kW, Lenze offers servo motors with a scalable modular design.

The drives are designed for the open-loop or closed-loop controlled servo inverter operation.

Medium dynamics and simple controllability due to favorable mass inertia ratio of the load to the motor characterize this motor.

Customer benefit

- Easy assembly and easy servicing by connectors with bayonet lock and swivel connector boxes
- Reduced cabling by One Cable Technology (OCT) in connection with a digital absolute value encoder
- Easy controllability by an advantageous ratio of the mass inertia of the load and that of the motor
- Optimal smooth running characteristics for exact work results
- Space-saving thanks to compact direct attachment
- High efficiency
- Suitable for any mounting position
- Can be used universally for a wide range of machine tasks due to the market-oriented modular system



g720-P260 planetary gearbox with m850-S140 synchronous servo motor g780-P130 planetary gearbox with m850-S120 synchronous servo motor



Identification of the products

When listing the technical data of the various variants, the easily legible product names are used. This also applies to the assignment of product extensions.

Product name g7x0 standard gearbox

Gearbox type	Product range		Version	Rated torque [Nm]	Product
Planetary gearbox	g700	-	P	20	g700-P20
				44	g700-P44
				130	g700-P130
				260	g700-P260
				800	g700-P800
	g720	-	P	44	g720-P44
				130	g720-P130
				260	g720-P260
	g730	-	P	15	g730-P15
				33	g730-P33
				97	g730-P97
				195	g730-P195
				460	g730-P460
	g750	-	P	44	g750-P44
				130	g750-P130
				260	g750-P260
	g780	-	P	44	g780-P44
				130	g780-P130
				260	g780-P260

Product name g8x0 precision gearbox

Gearbox type	Product range		Version	Rated torque [Nm]	Product
Planetary gearbox	g820	-	P	40	g820-P40
				80	g820-P80
				180	g820-P180
				470	g820-P470
	g840	-	P	77	g840-P77
				150	g840-P150
				300	g840-P300
				1000	g840-P1000
				1800	g840-P1800
	g850	-	P	40	g850-P40
				80	g850-P80
				180	g850-P180
				470	g850-P470
				950	g850-P950
	g870	-	P	77	g870-P77
				150	g870-P150
				300	g870-P300
				1000	g870-P1000
				1800	g870-P1800
	g880	-	P	40	g880-P40
				80	g880-P80
				180	g880-P180
				470	g880-P470
				950	g880-P950



Product name m850 synchronous servo motor

Product series		Design	Flange height		Overall length	Rated speed	Motor
			mm			rpm	
m850	-	S (synchronous)	40	/	S (short)	9000	m850-S40/S9000
					L (long)	9000	m850-S40/L9000
			60		S (short)	6000	m850-S60/S6000
					L (long)	6000	m850-S60/L6000
			80		S (short)	5500	m850-S80/S5500
					L (long)	5500	m850-S80/L5500
			120		S (short)	3960	m850-S120/S3960
					M (medium)	3960	m850-S120/M3960
					L (long)	3960	m850-S120/L3960
			140		S (short)	3240	m850-S140/S3240
					M (medium)	3240	m850-S140/M3240
					L (long)	3240	m850-S140/L3240
			190		S (short)	3000	m850-S190/S3000
					M (medium)	3000	m850-S190/M3000
					L (long)	2520	m850-S190/L2520



Designs

Standard gearboxes



g700-P

- Basic gearboxes
- Good price/performance ratio
- Permanently high speeds



g720-P

- Reinforced deep-groove ball bearings
- Flange at the output end
- Broad ratio range



g730-P

- Reinforced deep-groove ball bearings
- Reinforced housing



g750-P

- Robust taper roller bearings
- Protection against dust and water jets
- Degree of protection IP65



g780-P

- Flange output shaft
- Very torsionally stiff
- Compact

Gearboxes		g700-P	g720-P	g730-P	g750-P	g780-P
Rated torque	Nm	5 ... 800	15 ... 260	5 ... 460	15 ... 260	15 ... 260
Max. backlash	'	6 ... 22	7 ... 15	7 ... 19	7 ... 12	7 ... 12
Static radial force	N	200 ... 5000	1500 ... 4000	1300 ... 8400	3200 ... 6000	900 ... 3800
Static axial force	N	240 ... 11000	1950 ... 3800	1000 ... 11000	4400 ... 8000	1200 ... 5200
Tooth system		straight toothed				
Output flange		FT	FF	FT	FF	FF



Precision gearbox



g820-P

- Basic gearboxes
- Low noise generation
- High input speeds possible



g840-P

- Very high rated torque
- Robust taper roller bearings
- Very low backlash



g850-P

- Low noise generation
- Robust taper roller bearings
- Very low backlash



g870-P

- Very compact
- Highest bearing forces
- Extremely torsionally stiff



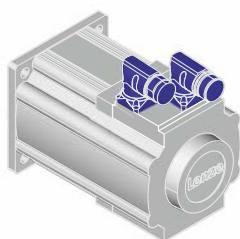
g880-P

- Very compact
- Low noise generation
- Extremely torsionally stiff

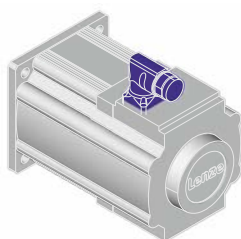
Gearboxes		g820-P	g840-P	g850-P	g870-P	g880-P
Rated torque	Nm	28 ... 470	27 ... 1800	28 ... 950	27 ... 1800	28 ... 950
Max. backlash	'	1 ... 5	1 ... 5	1 ... 5	1 ... 5	1 ... 5
Static radial force	N	1600 ... 9500	3200 ... 21000	3200 ... 20000	2400 ... 33000	2400 ... 23000
Static axial force	N	1500 ... 9600	4400 ... 21000	4400 ... 19000	4300 ... 15000	4300 ... 16000
Tooth system		helical toothed	straight toothed	helical toothed	straight toothed	helical toothed
Output flange		FF				

Models at the output

Motor connection

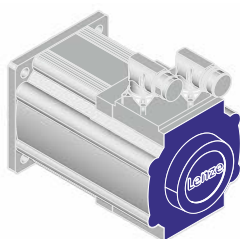


ICN connector

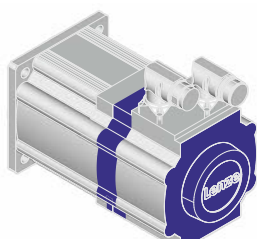


ICN hybrid connector for One Cable Technology (OCT)

Cooling: Self-ventilated



Feedback



Feedback and brake



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 only be operated on the inverter.
- Built-in brakes must not be used as safety brakes.
- The product must not be operated in private areas, in potentially explosive atmospheres and in areas with harmful gases, oils, acids and radiation.



Residual hazards

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

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

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

Product

Observe the warning labels on the product!



Dangerous electrical voltage:

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



Electrostatic sensitive devices:

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



High leakage current:

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



Hot surface:

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

Protection of persons

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

Motor protection

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



Gearbox protection

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



Drive dimensioning

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

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

Please get in touch with your Lenze representative.

Workflow

S1 operation		S2, S3 and S6 operation	
1	Check operating conditions	1	Check operating conditions
2	Define required input variables	2	Define required input variables
3	Determine correction factor	3	Determine correction factor
4	Determine gearbox on the basis of the acting forces	4	Determine gearbox on the basis of the acting forces
5	Determine required gearbox load capacity	5	Determine gearbox efficiency
6	Calculate required drive power	6	Determine required gearbox load capacity
7	Check and select geared motor	7	Calculate required drive power
8	Final configuration	8	Check and select geared motor
		9	Check servo motor based on the motor torque characteristic
		10	Final configuration

Check operating conditions

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

► Standards and operating conditions [31](#)

► Surface and corrosion protection [23](#)

Define required input variables

Necessary input variables	Note	Symbol	Unit
Operating time/day		BD	h
Mean speed utilization of the geared motor	Relating to the load speed n_L		%
Ambient temperature		T_V	°C
Site altitude Amsl		H	m
Radial force		F_{rad}	rated
Axial force		F_{ax}	rated
Transmission element at the output	Gear wheels, sprockets ...		
Effective diameter of the transmission element		d_w	mm
Load torque	Only with S1, S2, S3, and S6 operating modes	M_L	Nm
Load speed	Only with S1, S2, S3, and S6 operating modes	n_L	rpm
Short-time maximum torque	Emergency off, quick stop, occasional high starting duty	$M_{L,max}$	Nm
Runtime with maximum torque		t_L	%



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 265

Ambient temperature and installation height		
Ambient temperature	Installation height amsl	
	≤ 1000 m	≤ 2000 m
	Correction factor	
T_U	k_H	k_H
≤ 20 °C	1.10	1.04
30 °C	1.05	1.00
40 °C	1.00	0.95
50 °C	0.80	0.76
60 °C	0.60	0.57

Mean speed utilisation					
Daily operating time	Mean speed utilisation relating to the load speed n_L				
	100 %	80 %	60 %	50 %	25 %
	Correction factor				
	k_N	k_N	k_N	k_N	k_N
1.0 h	1.29	1.33	1.38	1.42	1.55
2.0 h	1.15	1.20	1.25	1.29	1.42
3.0 h	1.08	1.12	1.17	1.21	1.34
4.0 h	1.02	1.06	1.12	1.15	1.29
5.5 h	0.96	1.00	1.06	1.09	1.22
8.0 h	0.89	0.93	0.99	1.02	1.15
12.0 h	0.81	0.85	0.91	0.94	1.08
16.0 h	0.76	0.80	0.85	0.89	1.02
22.0 h	0.71	0.76	0.81	0.85	0.98
24.0 h	0.68	0.72	0.78	0.81	0.94

Mean speed					
Operating mode S2		Operating mode S3		Operating mode S6	
ED	k_M	ED	k_M	ED	k_M
min		%		%]	
10	0.16	15	0.15	15	1.00
30	0.50	25	0.25	25	
60	1.00	40	0.40	40	
90		60	0.60	60	



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](#) 37

Determine gearbox efficiency

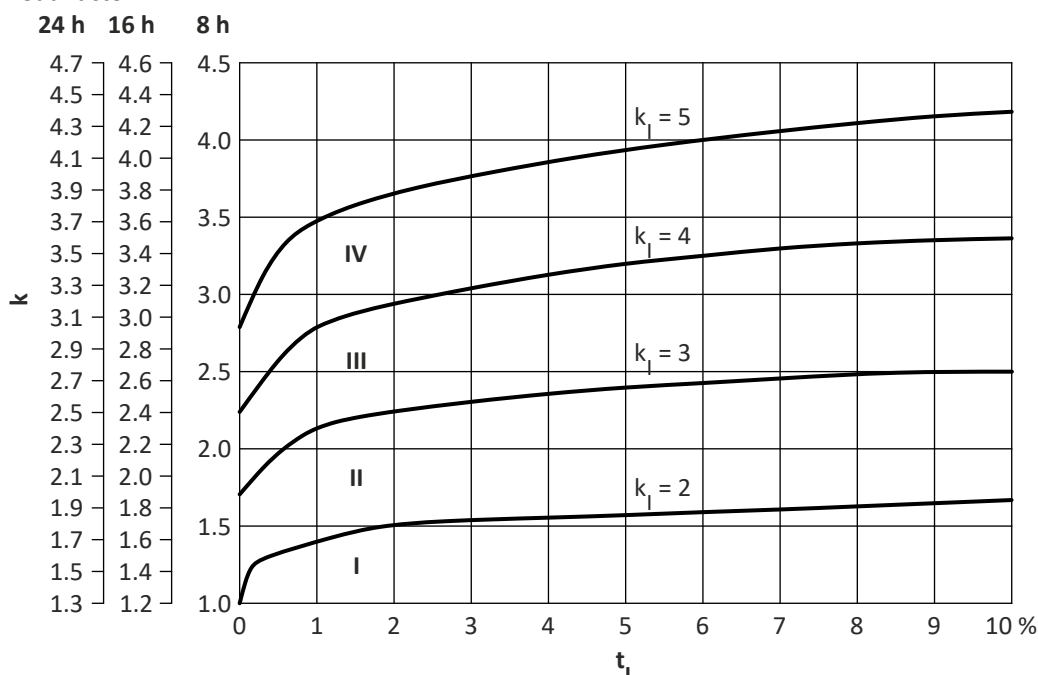
Gearboxes	Gearbox stages		
	1-stage	2-stage	3-stage
	Gearbox efficiency		
	η_{c1}	η_{c1}	η_{c1}
g700-P	0.98	0.97	0.92
g720-P	0.98	0.97	0.92
g730-P	0.98	0.97	-
g750-P	0.97	0.96	-
g780-P	0.98	0.97	-
g820-P	0.98	0.96	-
g840-P	0.98	0.95	-
g850-P	0.98	0.97	-
g870-P	0.97	0.96	-
g880-P	0.97	0.96	-



Determination of the required gearbox load capacity

Define the required load factor at runtime t_L		
Runtime $t_L \leq 10\%$	Take the load factor k from diagram into account	
Runtime $t_L > 10\%$	Take intensity k_I from calculation into account	
Calculate intensity		
no alternating load	$k_I = M_{L,max} / M_L$	$k_I =$
at alternating load	$k_I = M_{L,max} / M_L \times 1.4$	$k_I =$

Load factor k



Operating mode S1

Calculation of the required drive power			
	Calculation	Result	Unit
Output torque	$M_R \geq M_L / (k_L \times k_H)$	$M_R =$	Nm
Output speed	$n_R \geq n_L / k_E$	$n_R =$	rpm
Drive power	$P_R \geq M_R \times n_R / 9549$	$P_R =$	kW

Check geared servo motor and determine from the selection table			
	Check	Selection	Unit
Drive power	$P_1 \geq P_R$	$P_1 =$	kW
Output torque	$M_2 \geq M_L$	$M_2 =$	Nm
Output speed	$n_{2,th} \geq n_L$	$n_{2,th} =$	rpm
Load capacity of the geared motor	$c \geq k$ $c \geq k_I$	$c =$	
Short-time maximum torque			
no alternating load	$M_{2,max} \geq M_{L,max}$	$M_{2,max} =$	Nm
at alternating load	$M_{2,max} \times 1.5 \geq M_{L,max}$	$M_{2,max} =$	Nm
Ratio		$i =$	

► Selection tables 38



Operating modes S2, S3, and S6

Calculation of the required drive power			
	Calculation	Result	Unit
Output torque	$M_R \geq M_L / (k_L \times k_H)$	$M_R =$	Nm
Output speed	$n_R \geq (n_L \times k_M) / (k_E \times k_{rated})$	$n_R =$	rpm
Drive power	$P_R \geq M_R \times n_R / 9549$	$p_R =$	kW

Check geared servo motor and determine from the selection table			
	Check	Selection	Unit
Drive power	$P_1 \geq P_R$	$p_1 =$	kW
Output torque	$M_2 \geq M_L$	$M_2 =$	Nm
Output speed	$n_2 \geq n_L$	$n_2 =$	rpm
Load capacity of the geared motor	$c \geq k$ $c \geq k_l$	$c =$	
Short-time maximum torque			
no alternating load	$M_{2,max} \geq M_{L,max}$	$M_{2,max} =$	Nm
at alternating load	$M_{2,max} \times 1.5 \geq M_{L,max}$	$M_{2,max} =$	Nm
Ratio		$i =$	

► Selection tables [38](#)

Check servo motor based on the motor torque characteristic		
Gearbox efficiency	$\eta_G = \eta_{c1} - (c - 1) \times 0.01$	$\eta_G =$
All operating points (●)		$i \times n_L$
below the maximum torque characteristic of the servo motor/ inverter combination here, $M_{L,max}$ must be considered		$M_L / (i \times \eta_G)$
Thermally effective operating point (○)		$(i \times n_L \times k_M) / (k_E \times k_{rated})$
below the S1 torque characteristic of the servo motor		$M_L / (k_L \times k_H \times i \times \eta_G)$

► Torque characteristics [257](#)



Final configuration

	Check
Connection dimensions	Output shaft Output flange
Product extensions	Connector Brake Feedback Temperature monitoring

More information about the final configuration:

► [The modular system](#) 33

► [Product extensions](#) 238

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 that the motors operate reliably even at high air humidity, in outdoor installation or in the presence of atmospheric impurities. Any color from the "RAL Classic" collection can be chosen for the top coat.



The OKS-XL (extra Large) version requires a check by your responsible Lenze subsidiary.

Surface and corrosion protection (called OKS)	Applications	Type
without OKS (unpainted)	- Indoor installation, no special corrosion protection necessary - Painting by customer	Standard
OKS-G (primed)	Dependent on subsequent top coat applied	Optional
OKS-S (small)	- Standard applications - Internal installation in heated buildings - Air humidity up to 90 %	
OKS-M (medium)	- Internal installation in non-heated buildings - Covered, protected external installation - Air humidity up to 95 %	
OKS-L (large)	- External installation - Air humidity above 95 % - Chemical industrial plants - Food industry	

Surface and corrosion protection	Corrosivity category	Surface coating	Color	Coating thickness
	DIN EN ISO 12944-2	Design		
OKS-G (primed)		2K PUR priming coat		60 ... 90 µm
OKS-S (small)	Comparable to C1	2K-PUR top coat	- Standard: RAL 7012 - Optional: RAL Classic	80 ... 120 µm
OKS-M (medium)	Comparable to C2	2K PUR priming coat		110 ... 160 µm
OKS-L (large)	Comparable to C3	2K-PUR top coat		140 ... 200 µm
OKS-XL (extra large)	Comparable to C4	2K-EP priming coat (two times) 2K-PUR top coat		160 ... 240 µm

Lubricants



The g7x0 and g8x0 planetary gearbox series are lubricated for life.



Mechanical installation

Important notes

- Install the product according to the information in the chapter "Standards and operating conditions".
 - ▶ [Standards and operating conditions](#)  31
- 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

Mounting surfaces

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



Electrical installation

Important notes

DANGER!

Risk of injury and risk of burns from dangerous voltage

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

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

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

Operation on an external inverter

A max. pulse voltage amplitude of $U_{pk} = 1560 \text{ V}$ at the motor terminals must not be exceeded.

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

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

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



Preparation



The notes for the electrical connection can be found in the enclosed mounting instructions.

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

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 T_V and max. permissible thermal output speed $n_{2,th}$
 - $T_V = -20 \dots +40 \text{ }^\circ\text{C}$
 - $n_{2,th}$ is valid for $T_V = +20 \text{ }^\circ\text{C}$
- 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).

Selection tables

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

The following legend shows an example of the layout of the selection tables:

Example

Inverter mains connection 400 V, self-ventilated motors
0.25 kW

Explanation

Voltage of inverter mains connection, motor cooling type
Rated motor power

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2,max}	n _{2,th}	J	i	g700-	MCS	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
1.7	1350	2.4	11.0	124	0.213	3.000	P20	06C41-	1	2.7
2.5	810	4.8	14.0	124	0.205	5.000	P20	06C41-	1	2.7
3.5	579	5.0	25.0	124	0.209	7.000	P44	06C41-	1	3.2
4.0	579	2.1	8.5	124	0.203	7.000	P20	06C41-	1	2.7

										Mass
										Number of gear stages
										Motor product name
										Gearbox product name
										Ratio
										Moment of inertia
										With feedback, without brake
										Max. permissible output speed in S1 operation
										Max. permissible acceleration torque
										Dependent on inverter
										Load capacity of the gearbox
										c is the ratio of permissible rated torque of the gearbox to the rated torque of the motor (converted to the driven shaft).
										c must always be higher than the application factor detected for the application k.
										$c = \frac{M_{2,zul}}{M_{1,N} \times i \times \eta_{Getr}} > k$
										Output speed
										Output torque

Technical data

Notes regarding the given data



Basic dimensions

In the basic dimensions, the total lengths (L) of the drive with resolver are given.

Note the extra length (ΔL) of the product extensions.

► [Additional lengths](#)  236



Standards and operating conditions

Conformities and approvals

More information and certificates of approval can be found under

[g7x0-P/g8x0-P + m850 planetary geared motors \(Lenze.com\)](https://www.lenze.com/g7x0-P/g8x0-P+m850-planetary-geared-motors)

Europe					
Country	Conformity/ approval	Law/standard	Description	Special feature	Product representation
European Union	CE	2006/42/EC	Machinery Directive	Only for safety-relevant components	CE mark
		2011/65/EU	RoHS	-	
		2014/30/EU	EMC Directive		
		2014/35/EU	Low-Voltage Directive		
Great Britain	UKCA	S.I. 2008/1597	The Supply of Machinery (Safety) Regulations 2008	Only for safety-relevant components	UKCA mark
		S.I. 2012/3032	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012	-	
		S.I. 2016/1091	The Electromagnetic Compatibility Regulations 2016		
		S.I. 2016/1101	The Electrical Equipment (Safety) Regulations 2016		
America					
Country	Conformity/ approval	Law/standard	Description	Special feature	Product representation
Canada	CSA	CSA 22.1 No. 100	CSA Standard for Motors and Generators	S120, S140, S190	cULus mark
USA	UL	UL 1004-1	UL Standard for Rotating Electrical Machines	S40 ,S60, S80	cURus mark
				S120, S140, S190	cULus mark
Asia					
Country	Conformity/ approval	Law/standard	Description	Special feature	Product representation
China	-	GB 30253	Minimum allowable values of energy efficiency and energy efficiency grades for permanent magnet synchronous motors	-	CEL mark
		GB/T 26572	Requirements on concentration limits for certain restricted substances in electrical and electronic products		EFUP mark

Technical data

Standards and operating conditions
Protection of persons and device protection



Protection of persons and device protection

Degree of protection			
EN	EN IEC 60529, EN IEC 60034-5	IP54	Specification applies to the ready-to-use mounted state for S120, S140, S190
		IP65	
		IP65/IP21 (IP65 except for AS side, here IP21)	Specification applies to the ready-to-use mounted state for S40, S60, S80

Insulation resistance			
Overvoltage category II	EN IEC 60664-1	II	0 ... 2000 m amsl, S40, S60, S80. Use a surge protection device for a high level of protection against overvoltage.
Overvoltage category III		III	0 ... 2000 m amsl, S120, S140, S190

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

Permissible voltage			
-	IEC 60034-18-41	IVIC C	At 500 V
	IEC/TS 60034-25:2007	Of the pulse voltage	
IVIC B	IEC 60034-18-41	S40, S60, S80	At 500 V
IVIC C		S120, S140, S190	

EMC data

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

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

Environmental conditions

Climate			
Storage	EN 60721-3-1:1997	1K3 (-20 ... +40 °C)	> 3 months
		1K3 (-20 ... +60 °C)	< 3 months
Transport	EN 60721-3-2:1997	2K3 (-20 ... +70 °C)	
Operation	EN 60721-3-3:1995 + A2:1997	3K3 (-10 ... +40 °C)	Operation, without brake
		3K3 (-15 ... +40 °C)	Operation without brake, forced ventilated
			Operation without brake, self-ventilated
		3K3 (-20 ... +40 °C)	Operation, without brake

Site altitude		
0 ... 1000 m amsl	-	Without current derating
1000 ... 2000 m. amsl		Reduce rated output current by 5 %/1000 m

Air humidity			
-	-	Average relative humidity 85 %	Without condensation



Planetary gearbox g700-P

The modular system

g700-P planetary gearbox with m850 synchronous servo motor

Gearbox		g700-P20	g700-P44	g700-P130	g700-P260	g700-P800
Min. motor assignment		m850-S40S	m850-S40S	m850-S60S	m850-S60S	m850-S80L
Max. motor assignment		m850-S40L	m850-S80L	m850-120M	m850-S140L	m850-S190L
Technical data						
Max. output torque	Nm	20	44	130	260	800
Mounting position		Any				
Color		Unpainted 40/60/80 Primed 120/140/190 RAL9005 120/140/190				
Surface and corrosion protection		Without 40/60/80 OKS-G 120/140/190				
Output shaft						
Solid shaft with featherkey	mm	10 x 23	14 x 30	20 x 36	25 x 50	40 x 80
Smooth solid shaft	mm	10 x 23	14 x 30	20 x 36	25 x 50	40 x 80
Shaft material		Steel				
Shaft sealing ring material		NBR				
Gearbox design		Without foot with centering				
Gearbox stages		1/2/3	1/2/3	1/2/3	1/2/3	1/2
Output flange	mm	40	40	80	120	160
Lubricant		Standard Food compatible				
Cooling		Self-ventilated				
Motor connection		Connector				
Holding brake		Without With				
Feedback						
Without functional safety		Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)				
With functional safety			Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)			
Temperature monitoring		PT1000 thermal sensor 40/60/80 PT1000 thermal sensor and 2x PTC thermistor 120/140/190				



Gearbox data

g700-P20, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	11.0	15	1
7	8.0	15	1
8	6.0	15	1
10	5.0	15	1

g700-P20, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
9	16.0	19	1
15	18.0	19	1
16	20.0	19	1
20	20.0	19	1
25	18.0	19	1
32	20.0	19	1
40	18.0	19	1
64	8.0	19	1

g700-P20, 3-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
60	20.0	22	1
80	20.0	22	1
100	20.0	22	1
120	18.0	22	1
160	20.0	22	1

g700-P44, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	28.0	10	3
4	38.0	10	3
5	40.0	10	3
7	25.0	10	3
8	18.0	10	2
10	15.0	10	2



g700-P44, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
9	44.0	12	3
12	44.0	12	3
15	44.0	12	3
16	44.0	12	3
20	44.0	12	3
32	44.0	12	3
25	40.0	12	3
40	40.0	12	3
64	18.0	12	3

g700-P44, 3-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
60	44.0	15	3
80	44.0	15	3
100	44.0	15	3
120	44.0	15	3
160	44.0	15	3
200	40.0	15	3
256	44.0	15	3
320	40.0	15	3

g700-P130, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	85.0	7	8
4	115	7	10
5	110	7	10
7	65.0	7	9
8	50.0	7	8
10	38.0	7	8

g700-P130, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
9	130	9	8
12	120	9	10
15	110	9	10
16	120	9	10
20	120	9	10
25	110	9	10
32	120	9	10
40	110	9	10
64	50.0	9	8



g700-P130, 3-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
60	110	11	10
80	120	11	11
100	120	11	10
120	110	11	10
160	120	11	10
200	110	11	10
256	120	11	10

g700-P260, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
3	115	7	19
4	155	7	21
5	195	7	21
7	135	7	19
10	95.0	7	16
8	120	7	18

g700-P260, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
9	210	9	20
12	260	9	22
15	230	9	22
16	260	9	22
25	230	9	22
20	260	9	22
32	260	9	22
40	230	9	22
64	120	9	19

g700-P260, 3-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
60	260	11	22
80	260	11	22
100	260	11	22
120	230	11	22
160	260	11	22
200	230	11	22
256	260	11	22
320	230	11	22



g700-P800, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	400	6	60
4	450	6	68
5	450	6	69
8	450	6	62

g700-P800, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
12	800	9	73
15	700	9	73
16	800	9	75
20	800	9	75
25	700	9	74
32	800	9	75
40	700	9	73
64	450	9	63

Radial forces and axial forces

Gearbox			g700-P20	g700-P44	g700-P130	g700-P260	g700-P800
Bearing service life 20000 h							
Speed		rpm	100	100	100	100	100
Radial force	F_{rad}	rated	200	400	750	1750	5000
axial force	F_{ax}	rated	200	500	1000	2500	7000
Bearing service life 30000 h							
Speed		rpm	100	100	100	100	100
Radial force	F_{rad}	rated	160	340	650	1500	4200
axial force	F_{ax}	rated	160	450	900	2100	6000
Max. radial force	$F_{\text{rad, max}}$	rated	200	700	1250	2000	5000
Max. axial force	$F_{\text{ax, max}}$	rated	240	800	1600	3800	11000

Technical data

Planetary gearbox g700-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



Selection tables

Inverter mains connection 400 V, self-ventilated motors

0.11 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g700-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
1.0	900	4.4	5.0	450	0.044	10	P20	S40/S9000	1	1.1
2.7	281	5.5	20.0	141	0.045	32	P20	S40/S9000	2	1.2
3.8	225	4.0	18.0	113	0.045	40	P20	S40/S9000	2	1.2
5.7	150	3.0	20.0	75.0	0.055	60	P20	S40/S9000	3	1.3
5.7	113	5.0	44.0	125	0.105	80	P44	S40/S9000	3	2.3
6.6	141	1.2	8.0	70.0	0.045	64	P20	S40/S9000	2	1.2
6.7	141	2.7	18.0	156	0.096	64	P44	S40/S9000	2	2.4
8.3	113	2.3	20.0	56.0	0.048	80	P20	S40/S9000	3	1.3
8.3	90.0	4.1	44.0	100	0.104	100	P44	S40/S9000	3	2.3
11.0	90.0	1.9	20.0	45.0	0.048	100	P20	S40/S9000	3	1.3
11.0	75.0	3.5	44.0	83	0.096	120	P44	S40/S9000	3	2.3
13.0	75.0	1.4	18.0	38.0	0.055	120	P20	S40/S9000	3	1.3
16.0	56.3	2.7	44.0	63	0.096	160	P44	S40/S9000	3	2.3
17.0	56.3	1.2	20.0	28.0	0.045	160	P20	S40/S9000	3	1.3
20.0	45.0	2.0	40.0	50	0.096	200	P44	S40/S9000	3	2.3
25.0	35.2	1.8	44.0	39	0.096	256	P44	S40/S9000	3	2.3
30.0	28.1	1.4	40.0	31	0.096	320	P44	S40/S9000	3	2.3

0.2 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g700-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
0.5	3000	5.4	11.0	1500	0.081	3	P20	S40/L9000	1	1.3
1.2	1286	5.6	8.0	643	0.069	7	P20	S40/L9000	1	1.3
1.4	1000	4.9	16.0	500	0.080	9	P20	S40/L9000	2	1.4
1.5	1125	3.7	6.0	563	0.069	8	P20	S40/L9000	1	1.3
2.0	900	2.5	5.0	450	0.068	10	P20	S40/L9000	1	1.3
2.1	600	6.0	18.0	300	0.079	15	P20	S40/L9000	2	1.4
2.2	563	6.0	20.0	281	0.074	16	P20	S40/L9000	2	1.4
3.1	450	5.0	20.0	225	0.072	20	P20	S40/L9000	2	1.4
4.3	360	3.6	18.0	180	0.072	25	P20	S40/L9000	2	1.4
4.6	281	5.6	44.0	313	0.120	32	P44	S40/L9000	2	2.6
5.8	281	3.1	20.0	141	0.069	32	P20	S40/L9000	2	1.4
6.3	225	4.7	40.0	250	0.120	40	P44	S40/L9000	2	2.6
7.7	225	2.3	18.0	113	0.069	40	P20	S40/L9000	2	1.4
9.2	150	3.7	44.0	167	0.130	60	P44	S40/L9000	3	2.5
11.0	150	1.7	20.0	75.0	0.079	60	P20	S40/L9000	3	1.5
12.0	141	1.5	18.0	156	0.120	64	P44	S40/L9000	2	2.6
14.0	113	2.9	44.0	125	0.129	80	P44	S40/L9000	3	2.5
15.0	113	1.3	20.0	56.0	0.072	80	P20	S40/L9000	3	1.5
18.0	90.0	2.4	44.0	100	0.128	100	P44	S40/L9000	3	2.5
19.0	90.0	1.1	20.0	45.0	0.072	100	P20	S40/L9000	3	1.5
22.0	75.0	2.0	44.0	83	0.120	120	P44	S40/L9000	3	2.5
29.0	56.3	1.5	44.0	63	0.120	160	P44	S40/L9000	3	2.5
35.0	45.0	1.2	40.0	50	0.120	200	P44	S40/L9000	3	2.5
44.0	35.2	1.0	44.0	39	0.120	256	P44	S40/L9000	3	2.5



Technical data

Planetary gearbox g700-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

0.325 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g700-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
2.9	857	5.3	25.0	429	0.310	7	P44	S60/S6000	1	3.2
3.4	750	4.6	18.0	375	0.308	8	P44	S60/S6000	1	3.2
4.3	500	5.2	44.0	250	0.358	12	P44	S60/S6000	2	3.4
4.6	600	3.1	15.0	300	0.305	10	P44	S60/S6000	1	3.2
5.7	400	4.6	44.0	200	0.317	15	P44	S60/S6000	2	3.4
6.3	375	4.3	44.0	188	0.326	16	P44	S60/S6000	2	3.4
8.3	300	3.6	44.0	150	0.316	20	P44	S60/S6000	2	3.4
11.0	240	3.1	40.0	120	0.315	25	P44	S60/S6000	2	3.4
13.0	150	5.9	110	75.0	0.585	40	P130	S60/S6000	2	5.3
14.0	188	2.6	44.0	94.0	0.307	32	P44	S60/S6000	2	3.4
19.0	150	2.1	40.0	75.0	0.307	40	P44	S60/S6000	2	3.4
21.0	100	4.0	110	50.0	0.804	60	P130	S60/S6000	3	5.8
25.0	93.8	4.2	120	102	1.634	64	P260	S60/S6000	2	11
26.0	60.0	5.8	260	65	1.783	100	P260	S60/S6000	3	13
27.0	100	1.6	44.0	50.0	0.316	60	P44	S60/S6000	3	3.3
28.0	93.8	1.8	50.0	47.0	0.586	64	P130	S60/S6000	2	5.3
31.0	75.0	3.3	120	38.0	0.625	80	P130	S60/S6000	3	5.8
36.0	75.0	1.2	44.0	38.0	0.316	80	P44	S60/S6000	3	3.3
40.0	50.0	4.4	230	54	2.399	120	P260	S60/S6000	3	13
42.0	60.0	2.7	120	30.0	0.624	100	P130	S60/S6000	3	5.8
53.0	50.0	2.1	110	25.0	0.810	120	P130	S60/S6000	3	5.8
58.0	37.5	3.7	260	41	1.636	160	P260	S60/S6000	3	13
70.0	37.5	1.7	120	19.0	0.585	160	P130	S60/S6000	3	5.8
83.0	30.0	2.7	230	33	1.636	200	P260	S60/S6000	3	13
85.0	30.0	1.3	110	15.0	0.585	200	P130	S60/S6000	3	5.8
106	23.4	2.5	260	25	1.633	256	P260	S60/S6000	3	13
108	23.4	1.1	120	12.0	0.586	256	P130	S60/S6000	3	5.8
126	18.8	1.8	230	20	1.633	320	P260	S60/S6000	3	13

Technical data

Planetary gearbox g700-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



0.55 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g700-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
3.8	1200	5.1	40.0	600	0.513	5	P44	S60/L6000	1	3.7
5.8	857	2.9	25.0	429	0.503	7	P44	S60/L6000	1	3.7
6.7	750	2.6	18.0	375	0.501	8	P44	S60/L6000	1	3.7
6.7	667	3.6	44.0	333	0.555	9	P44	S60/L6000	2	3.9
7.8	600	4.4	38.0	300	0.772	10	P130	S60/L6000	1	5.3
8.6	600	1.7	15.0	300	0.498	10	P44	S60/L6000	1	3.7
9.5	500	2.9	44.0	250	0.551	12	P44	S60/L6000	2	3.9
12.0	400	2.5	44.0	200	0.510	15	P44	S60/L6000	2	3.9
13.0	375	2.4	44.0	188	0.519	16	P44	S60/L6000	2	3.9
16.0	240	5.2	110	120	0.817	25	P130	S60/L6000	2	5.8
17.0	300	2.0	44.0	150	0.509	20	P44	S60/L6000	2	3.9
21.0	240	1.7	40.0	120	0.508	25	P44	S60/L6000	2	3.9
22.0	188	4.4	120	94.0	0.779	32	P130	S60/L6000	2	5.8
27.0	188	1.5	44.0	94.0	0.500	32	P44	S60/L6000	2	3.9
31.0	150	3.3	110	75.0	0.778	40	P130	S60/L6000	2	5.8
31.0	100	5.2	260	108	2.609	60	P260	S60/L6000	3	13
34.0	150	1.2	40.0	75.0	0.500	40	P44	S60/L6000	2	3.9
47.0	100	2.2	110	50.0	0.997	60	P130	S60/L6000	3	6.3
51.0	93.8	2.3	120	102	1.827	64	P260	S60/L6000	2	12
51.0	75.0	4.0	260	81	1.983	80	P260	S60/L6000	3	13
65.0	75.0	1.8	120	38.0	0.818	80	P130	S60/L6000	3	6.3
70.0	60.0	3.2	260	65	1.976	100	P260	S60/L6000	3	13
81.0	60.0	1.5	120	30.0	0.817	100	P130	S60/L6000	3	6.3
93.0	50.0	2.4	230	54	2.592	120	P260	S60/L6000	3	13
96.0	50.0	1.1	110	25.0	1.003	120	P130	S60/L6000	3	6.3
125	37.5	2.1	260	41	1.829	160	P260	S60/L6000	3	13
151	30.0	1.5	230	33	1.829	200	P260	S60/L6000	3	13
191	23.4	1.4	260	25	1.826	256	P260	S60/L6000	3	13
228	18.8	1.0	230	20	1.826	320	P260	S60/L6000	3	13



Technical data

Planetary gearbox g700-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

1 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, max}	J	i	g700-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
4.5	1833	4.2	28.0	3333	1.796	3	P44	S80/S5500	1	4.9
6.2	1375	3.3	38.0	2500	1.760	4	P44	S80/S5500	1	4.9
7.9	1100	2.8	40.0	2000	1.747	5	P44	S80/S5500	1	4.9
9.8	786	5.4	65.0	393	1.779	7	P130	S80/S5500	1	6.5
11.0	786	1.6	25.0	1429	1.749	7	P44	S80/S5500	1	4.9
11.0	611	5.5	130	306	2.013	9	P130	S80/S5500	2	7.0
12.0	688	3.8	50.0	344	1.770	8	P130	S80/S5500	1	6.5
13.0	688	1.4	18.0	1250	1.747	8	P44	S80/S5500	1	4.9
14.0	611	2.0	44.0	1111	1.789	9	P44	S80/S5500	2	5.1
14.0	550	5.8	95.0	650	2.778	10	P260	S80/S5500	1	11
15.0	458	5.3	120	229	1.989	12	P130	S80/S5500	2	7.0
16.0	550	2.3	38.0	275	1.759	10	P130	S80/S5500	1	6.5
19.0	458	1.6	44.0	833	1.786	12	P44	S80/S5500	2	5.1
20.0	367	4.4	110	183	1.986	15	P130	S80/S5500	2	7.0
21.0	344	4.4	120	172	1.846	16	P130	S80/S5500	2	7.0
24.0	367	1.4	44.0	667	1.744	15	P44	S80/S5500	2	5.1
26.0	344	1.3	44.0	625	1.753	16	P44	S80/S5500	2	5.1
28.0	275	3.7	120	138	1.806	20	P130	S80/S5500	2	7.0
29.0	220	5.7	230	260	2.966	25	P260	S80/S5500	2	13
32.0	275	1.1	44.0	500	1.743	20	P44	S80/S5500	2	5.1
38.0	220	2.7	110	110	1.804	25	P130	S80/S5500	2	7.0
40.0	172	5.0	260	203	2.820	32	P260	S80/S5500	2	13
50.0	172	2.3	120	86.0	1.766	32	P130	S80/S5500	2	7.0
56.0	138	3.6	230	163	2.817	40	P260	S80/S5500	2	13
64.0	138	1.7	110	69.0	1.765	40	P130	S80/S5500	2	7.0
83.0	85.9	4.6	450	102	4.902	64	P800	S80/S5500	2	27
84.0	91.7	2.8	260	108	3.596	60	P260	S80/S5500	3	15
92.0	91.7	1.2	110	46.0	1.984	60	P130	S80/S5500	3	7.5
97.0	85.9	1.2	120	102	2.814	64	P260	S80/S5500	2	13
121	68.8	2.1	260	81	2.970	80	P260	S80/S5500	3	15
153	55.0	1.7	260	65	2.963	100	P260	S80/S5500	3	15
180	45.8	1.3	230	54	3.579	120	P260	S80/S5500	3	15
237	34.4	1.1	260	41	2.816	160	P260	S80/S5500	3	15

Technical data

Planetary gearbox g700-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



1.2 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g700-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
5.1	1833	5.7	85.0	917	2.584	3	P130	S80/L5500	1	7.2
5.7	1833	3.4	28.0	3333	2.326	3	P44	S80/L5500	1	5.6
7.8	1375	2.7	38.0	2500	2.290	4	P44	S80/L5500	1	5.6
10.0	1100	2.2	40.0	2000	2.277	5	P44	S80/L5500	1	5.6
13.0	786	4.4	65.0	393	2.309	7	P130	S80/L5500	1	7.2
14.0	786	1.3	25.0	1429	2.279	7	P44	S80/L5500	1	5.6
15.0	688	3.1	50.0	344	2.300	8	P130	S80/L5500	1	7.2
15.0	611	4.4	130	306	2.543	9	P130	S80/L5500	2	7.7
16.0	688	1.1	18.0	1250	2.277	8	P44	S80/L5500	1	5.6
18.0	611	1.6	44.0	1111	2.319	9	P44	S80/L5500	2	5.8
18.0	550	4.7	95.0	650	3.308	10	P260	S80/L5500	1	12
20.0	550	1.9	38.0	275	2.289	10	P130	S80/L5500	1	7.2
20.0	458	4.3	120	229	2.519	12	P130	S80/L5500	2	7.7
24.0	458	1.3	44.0	833	2.316	12	P44	S80/L5500	2	5.8
26.0	367	3.6	110	183	2.516	15	P130	S80/L5500	2	7.7
28.0	344	3.5	120	172	2.376	16	P130	S80/L5500	2	7.7
30.0	367	1.1	44.0	667	2.274	15	P44	S80/L5500	2	5.8
32.0	344	1.1	44.0	625	2.283	16	P44	S80/L5500	2	5.8
37.0	275	3.0	120	138	2.336	20	P130	S80/L5500	2	7.7
40.0	220	4.6	230	260	3.496	25	P260	S80/L5500	2	13
49.0	220	2.2	110	110	2.334	25	P130	S80/L5500	2	7.7
53.0	172	4.1	260	203	3.350	32	P260	S80/L5500	2	13
63.0	172	1.9	120	86.0	2.296	32	P130	S80/L5500	2	7.7
74.0	138	2.9	230	163	3.347	40	P260	S80/L5500	2	13
79.0	138	1.4	110	69.0	2.295	40	P130	S80/L5500	2	7.7
110	91.7	2.2	260	108	4.126	60	P260	S80/L5500	3	15
110	85.9	3.7	450	102	5.432	64	P800	S80/L5500	2	27
120	85.9	1.0	120	102	3.344	64	P260	S80/L5500	2	13
151	68.8	1.7	260	81	3.500	80	P260	S80/L5500	3	15
189	55.0	1.4	260	65	3.493	100	P260	S80/L5500	3	15
222	45.8	1.0	230	54	4.109	120	P260	S80/L5500	3	15



Technical data

Planetary gearbox g700-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

2 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g700-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
13.0	1320	2.7	85.0	660	7.154	3	P130	S120/S3960	1	9.8
14.0	1320	1.6	28.0	660	6.896	3	P44	S120/S3960	1	8.2
17.0	990	4.4	115	495	6.955	4	P130	S120/S3960	1	9.8
18.0	990	1.3	38.0	495	6.860	4	P44	S120/S3960	1	8.2
21.0	792	3.7	110	396	6.923	5	P130	S120/S3960	1	9.8
23.0	792	1.1	40.0	396	6.847	5	P44	S120/S3960	1	8.2
29.0	566	4.1	135	283	7.963	7	P260	S120/S3960	1	14
32.0	566	2.0	65.0	283	6.879	7	P130	S120/S3960	1	9.8
35.0	495	3.2	120	248	7.931	8	P260	S120/S3960	1	14
36.0	440	3.6	210	220	8.788	9	P260	S120/S3960	2	16
37.0	495	1.3	50.0	248	6.870	8	P130	S120/S3960	1	9.8
40.0	440	2.1	130	220	7.113	9	P130	S120/S3960	2	10
43.0	330	4.7	260	165	8.724	12	P260	S120/S3960	2	16
46.0	396	2.0	95.0	198	7.878	10	P260	S120/S3960	1	14
54.0	330	2.1	120	165	7.089	12	P130	S120/S3960	2	10
61.0	264	3.3	230	132	8.703	15	P260	S120/S3960	2	16
64.0	248	3.5	260	124	8.247	16	P260	S120/S3960	2	16
68.0	264	1.6	110	132	7.086	15	P130	S120/S3960	2	10
72.0	248	1.6	120	124	6.946	16	P130	S120/S3960	2	10
85.0	198	2.8	260	99.0	8.073	20	P260	S120/S3960	2	16
90.0	198	1.3	120	99.0	6.906	20	P130	S120/S3960	2	10
107	124	5.5	800	62.0	10.049	32	P800	S120/S3960	2	30
113	158	2.0	230	79.0	8.066	25	P260	S120/S3960	2	16
144	124	1.8	260	62.0	7.920	32	P260	S120/S3960	2	16
155	99.0	3.9	700	50.0	10.024	40	P800	S120/S3960	2	30
180	99.0	1.3	230	50.0	7.917	40	P260	S120/S3960	2	16
276	61.9	1.6	450	31.0	10.002	64	P800	S120/S3960	2	30

Technical data

Planetary gearbox g700-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



2.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g700-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
22.0	1080	4.6	115	540	18.061	3	P260	S140/S3240	1	35
24.0	1080	1.6	85.0	540	17.221	3	P130	S140/S3240	1	31
29.0	810	4.7	155	405	17.535	4	P260	S140/S3240	1	35
32.0	810	2.6	115	405	17.025	4	P130	S140/S3240	1	31
36.0	648	4.7	195	324	17.333	5	P260	S140/S3240	1	35
40.0	648	2.2	110	324	16.990	5	P130	S140/S3240	1	31
56.0	463	2.3	135	231	17.163	7	P260	S140/S3240	1	35
57.0	463	1.1	65.0	231	16.965	7	P130	S140/S3240	1	31
65.0	405	1.8	120	203	17.131	8	P260	S140/S3240	1	35
71.0	360	2.2	210	180	17.988	9	P260	S140/S3240	2	37
72.0	360	1.3	130	180	17.180	9	P130	S140/S3240	2	31
82.0	324	1.2	95.0	162	17.078	10	P260	S140/S3240	1	35
87.0	216	5.7	700	108	25.613	15	P800	S140/S3240	2	51
91.0	270	2.7	260	135	17.924	12	P260	S140/S3240	2	37
94.0	203	5.6	800	101	21.759	16	P800	S140/S3240	2	51
96.0	270	1.2	120	135	17.156	12	P130	S140/S3240	2	31
120	216	1.9	230	108	17.903	15	P260	S140/S3240	2	37
127	162	4.8	800	81.0	20.395	20	P800	S140/S3240	2	51
128	203	2.0	260	101	17.447	16	P260	S140/S3240	2	37
160	162	1.6	260	81.0	17.273	20	P260	S140/S3240	2	37
178	130	3.5	700	65.0	20.332	25	P800	S140/S3240	2	51
200	130	1.1	230	65.0	17.266	25	P260	S140/S3240	2	37
235	101	3.1	800	51.0	19.249	32	P800	S140/S3240	2	51
256	101	1.0	260	51.0	17.120	32	P260	S140/S3240	2	37
315	81.0	2.2	700	41.0	19.224	40	P800	S140/S3240	2	51



Technical data

Planetary gearbox g700-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

3.1 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g700-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
19.0	1320	5.0	115	660	14.761	3	P260	S120/M3960	1	17
21.0	1320	1.1	28.0	660	12.796	3	P44	S120/M3960	1	11
21.0	1320	1.8	85.0	660	13.054	3	P130	S120/M3960	1	13
24.0	990	5.3	155	495	14.235	4	P260	S120/M3960	1	17
27.0	990	2.9	115	495	12.855	4	P130	S120/M3960	1	13
31.0	792	5.4	195	396	14.033	5	P260	S120/M3960	1	17
35.0	792	2.4	110	396	12.823	5	P130	S120/M3960	1	13
48.0	566	2.7	135	283	13.863	7	P260	S120/M3960	1	17
50.0	566	1.3	65.0	283	12.779	7	P130	S120/M3960	1	13
57.0	495	2.1	120	248	13.831	8	P260	S120/M3960	1	17
61.0	440	2.4	210	220	14.688	9	P260	S120/M3960	2	19
63.0	440	1.4	130	220	13.013	9	P130	S120/M3960	2	13
71.0	396	1.3	95.0	198	13.778	10	P260	S120/M3960	1	17
77.0	330	3.1	260	165	14.624	12	P260	S120/M3960	2	19
83.0	330	1.3	120	165	12.989	12	P130	S120/M3960	2	13
103	264	2.2	230	132	14.603	15	P260	S120/M3960	2	19
104	264	1.0	110	132	12.986	15	P130	S120/M3960	2	13
106	198	5.2	800	99.0	17.095	20	P800	S120/M3960	2	33
109	248	2.3	260	124	14.147	16	P260	S120/M3960	2	19
111	248	1.1	120	124	12.846	16	P130	S120/M3960	2	13
139	198	1.8	260	99.0	13.973	20	P260	S120/M3960	2	19
148	158	4.0	700	79.0	17.032	25	P800	S120/M3960	2	33
174	158	1.3	230	79.0	13.966	25	P260	S120/M3960	2	19
197	124	3.6	800	62.0	15.949	32	P800	S120/M3960	2	33
223	124	1.2	260	62.0	13.820	32	P260	S120/M3960	2	19
268	99.0	2.5	700	50.0	15.924	40	P800	S120/M3960	2	33
426	61.9	1.1	450	31.0	15.902	64	P800	S120/M3960	2	33

3.7 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g700-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
24.0	1320	4.1	115	660	20.561	3	P260	S120/L3960	1	20
31.0	990	4.4	155	495	20.035	4	P260	S120/L3960	1	20
39.0	792	4.4	195	396	19.833	5	P260	S120/L3960	1	20
60.0	566	2.2	135	283	19.663	7	P260	S120/L3960	1	20
69.0	495	1.7	120	248	19.631	8	P260	S120/L3960	1	20
76.0	440	1.9	210	220	20.488	9	P260	S120/L3960	2	22
86.0	396	1.1	95.0	198	19.578	10	P260	S120/L3960	1	20
98.0	330	2.5	260	165	20.424	12	P260	S120/L3960	2	22
98.0	264	5.0	700	132	28.113	15	P800	S120/L3960	2	36
106	248	5.0	800	124	24.259	16	P800	S120/L3960	2	36
127	264	1.8	230	132	20.403	15	P260	S120/L3960	2	22
135	248	1.9	260	124	19.947	16	P260	S120/L3960	2	22
141	198	4.2	800	99.0	22.895	20	P800	S120/L3960	2	36
169	198	1.5	260	99.0	19.773	20	P260	S120/L3960	2	22
191	158	3.3	700	79.0	22.832	25	P800	S120/L3960	2	36
212	158	1.1	230	79.0	19.766	25	P260	S120/L3960	2	22
252	124	2.9	800	62.0	21.749	32	P800	S120/L3960	2	36
337	99.0	2.1	700	50.0	21.724	40	P800	S120/L3960	2	36

Technical data

Planetary gearbox g700-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



4.8 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g700-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
35.0	1080	5.1	400	540	42.099	3	P800	S140/M3240	1	50
39.0	1080	2.8	115	540	32.461	3	P260	S140/M3240	1	40
52.0	810	2.8	155	405	31.935	4	P260	S140/M3240	1	40
54.0	810	1.6	115	405	31.425	4	P130	S140/M3240	1	36
65.0	648	2.8	195	324	31.733	5	P260	S140/M3240	1	40
67.0	648	1.3	110	324	31.390	5	P130	S140/M3240	1	36
94.0	463	1.4	135	231	31.563	7	P260	S140/M3240	1	40
98.0	405	4.1	450	203	33.826	8	P800	S140/M3240	1	50
108	405	1.1	120	203	31.531	8	P260	S140/M3240	1	40
118	360	1.3	210	180	32.388	9	P260	S140/M3240	2	42
133	270	4.1	800	135	40.187	12	P800	S140/M3240	2	56
158	270	1.6	260	135	32.324	12	P260	S140/M3240	2	42
176	216	3.4	700	108	40.013	15	P800	S140/M3240	2	56
189	203	3.4	800	101	36.159	16	P800	S140/M3240	2	56
197	216	1.1	230	108	32.303	15	P260	S140/M3240	2	42
211	203	1.2	260	101	31.847	16	P260	S140/M3240	2	42
246	162	2.9	800	81.0	34.795	20	P800	S140/M3240	2	56
326	130	2.1	700	65.0	34.732	25	P800	S140/M3240	2	56
421	101	1.9	800	51.0	33.649	32	P800	S140/M3240	2	56
526	81.0	1.3	700	41.0	33.624	40	P800	S140/M3240	2	56

5 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g700-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
41.0	1000	4.6	400	500	72.799	3	P800	S190/S3000	1	62
45.0	1000	2.4	115	500	65.523	3	P260	S190/S3000	1	53
60.0	750	2.5	155	375	64.997	4	P260	S190/S3000	1	53
65.0	600	5.7	450	300	65.988	5	P800	S190/S3000	1	62
75.0	600	2.5	195	300	64.795	5	P260	S190/S3000	1	53
108	429	1.2	135	214	64.629	7	P260	S190/S3000	1	53
115	375	3.6	450	188	64.526	8	P800	S190/S3000	1	62
135	333	1.2	210	167	65.450	9	P260	S190/S3000	2	54
158	250	3.7	800	125	70.887	12	P800	S190/S3000	2	68
180	250	1.4	260	125	65.386	12	P260	S190/S3000	2	54
208	200	3.0	700	100	70.713	15	P800	S190/S3000	2	68
222	188	3.0	800	94.0	66.859	16	P800	S190/S3000	2	68
241	188	1.1	260	94.0	64.908	16	P260	S190/S3000	2	54
288	150	2.6	800	75.0	65.495	20	P800	S190/S3000	2	68
376	120	1.8	700	60.0	65.432	25	P800	S190/S3000	2	68
481	93.8	1.6	800	47.0	64.349	32	P800	S190/S3000	2	68
602	75.0	1.2	700	38.0	64.324	40	P800	S190/S3000	2	68



Technical data

Planetary gearbox g700-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

5.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g700-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
46.0	1080	4.1	400	540	56.599	3	P800	S140/L3240	1	55
50.0	1080	2.3	115	540	46.961	3	P260	S140/L3240	1	45
66.0	810	2.3	155	405	46.435	4	P260	S140/L3240	1	45
72.0	648	5.3	450	324	49.788	5	P800	S140/L3240	1	55
83.0	648	2.3	195	324	46.233	5	P260	S140/L3240	1	45
117	463	1.1	135	231	46.063	7	P260	S140/L3240	1	45
126	405	3.3	450	203	48.326	8	P800	S140/L3240	1	55
147	360	1.1	210	180	46.888	9	P260	S140/L3240	2	47
177	270	3.3	800	135	54.687	12	P800	S140/L3240	2	61
196	270	1.3	260	135	46.824	12	P260	S140/L3240	2	47
231	216	2.8	700	108	54.513	15	P800	S140/L3240	2	61
248	203	2.7	800	101	50.659	16	P800	S140/L3240	2	61
319	162	2.3	800	81.0	49.295	20	P800	S140/L3240	2	61
409	130	1.7	700	65.0	49.232	25	P800	S140/L3240	2	61
523	101	1.5	800	51.0	48.149	32	P800	S140/L3240	2	61
654	81.0	1.1	700	41.0	48.124	40	P800	S140/L3240	2	61

7.5 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g700-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
66.0	1000	3.0	400	500	129.099	3	P800	S190/M3000	1	71
69.0	1000	1.6	115	500	121.823	3	P260	S190/M3000	1	61
81.0	750	4.8	450	375	124.012	4	P800	S190/M3000	1	71
92.0	750	1.7	155	375	121.297	4	P260	S190/M3000	1	61
106	600	3.8	450	300	122.288	5	P800	S190/M3000	1	71
115	600	1.7	195	300	121.095	5	P260	S190/M3000	1	61
181	375	2.4	450	188	120.826	8	P800	S190/M3000	1	71
261	250	2.5	800	125	127.187	12	P800	S190/M3000	2	77
338	200	2.0	700	100	127.013	15	P800	S190/M3000	2	77
360	188	2.0	800	94.0	123.159	16	P800	S190/M3000	2	77
451	150	1.7	800	75.0	121.795	20	P800	S190/M3000	2	77
564	120	1.2	700	60.0	121.732	25	P800	S190/M3000	2	77
722	93.8	1.1	800	47.0	120.649	32	P800	S190/M3000	2	77

9.2 kW

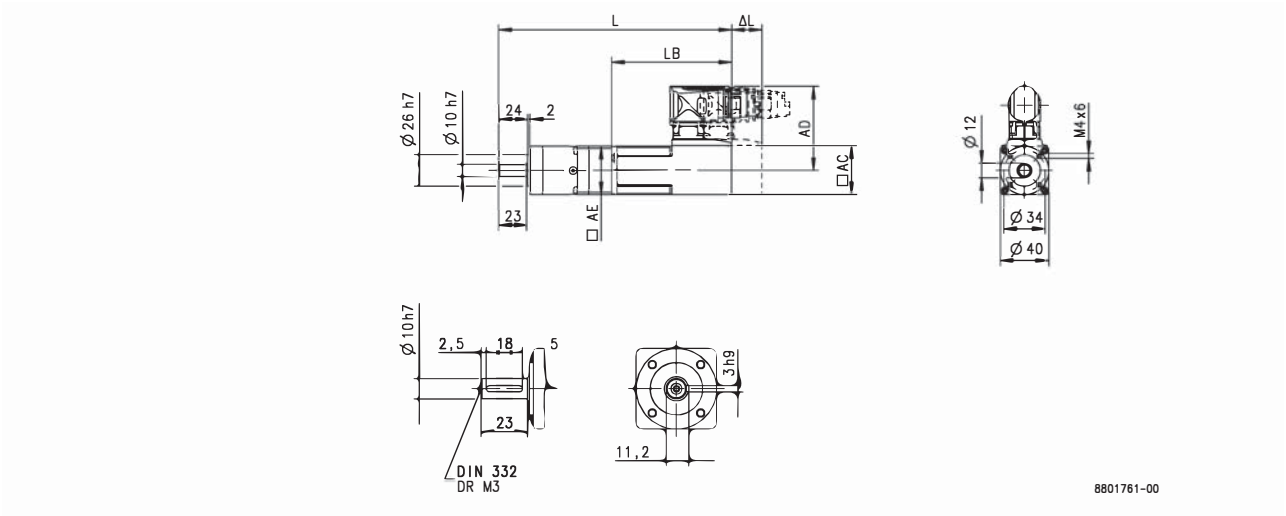
Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g700-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
100	840	2.2	400	420	204.499	3	P800	S190/L2520	1	84
127	630	3.3	450	315	199.412	4	P800	S190/L2520	1	84
164	504	2.6	450	252	197.688	5	P800	S190/L2520	1	84
269	315	1.7	450	158	196.226	8	P800	S190/L2520	1	84
395	210	1.8	800	105	202.587	12	P800	S190/L2520	2	90
494	168	1.4	700	84.0	202.413	15	P800	S190/L2520	2	90
526	158	1.5	800	79.0	198.559	16	P800	S190/L2520	2	90
658	126	1.2	800	63.0	197.195	20	P800	S190/L2520	2	90



Basic dimensions

g700-P20 with m850

Gearbox design: Solid shaft, without foot with centering

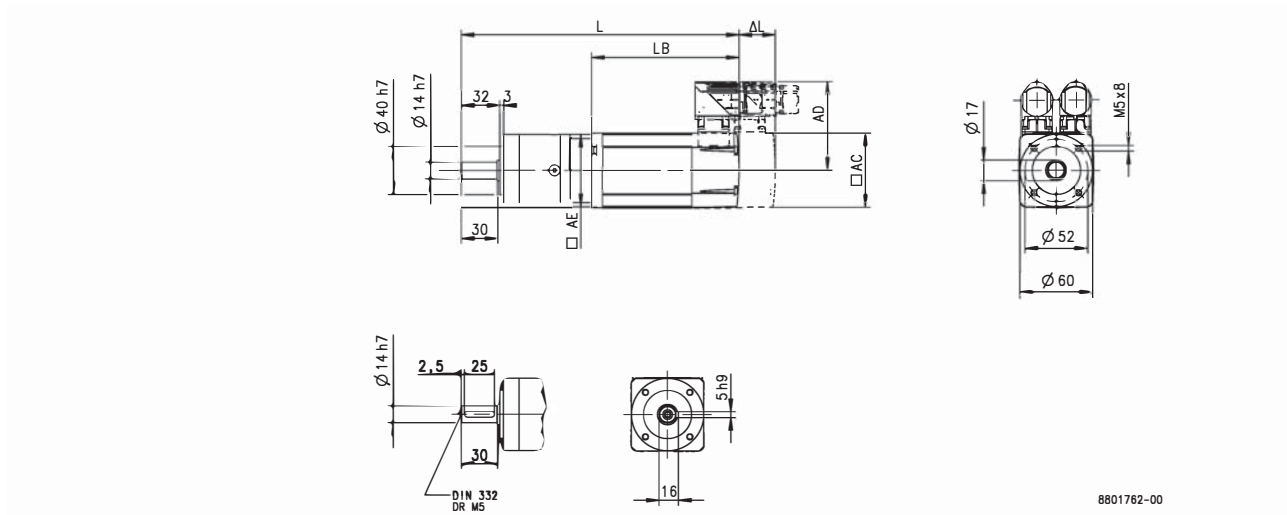


Motor			m850-	
			S40/S9000	S40/L9000
Total length	L	mm	192.5	217.5
Motor length	LB	mm	99	124
Motor diameter	AC	mm	40	40
Motor/connection distance	AD	mm	70	70
Gearbox diameter	AE	mm	40	40



g700-P44 with m850

Gearbox design: Solid shaft, without foot with centering

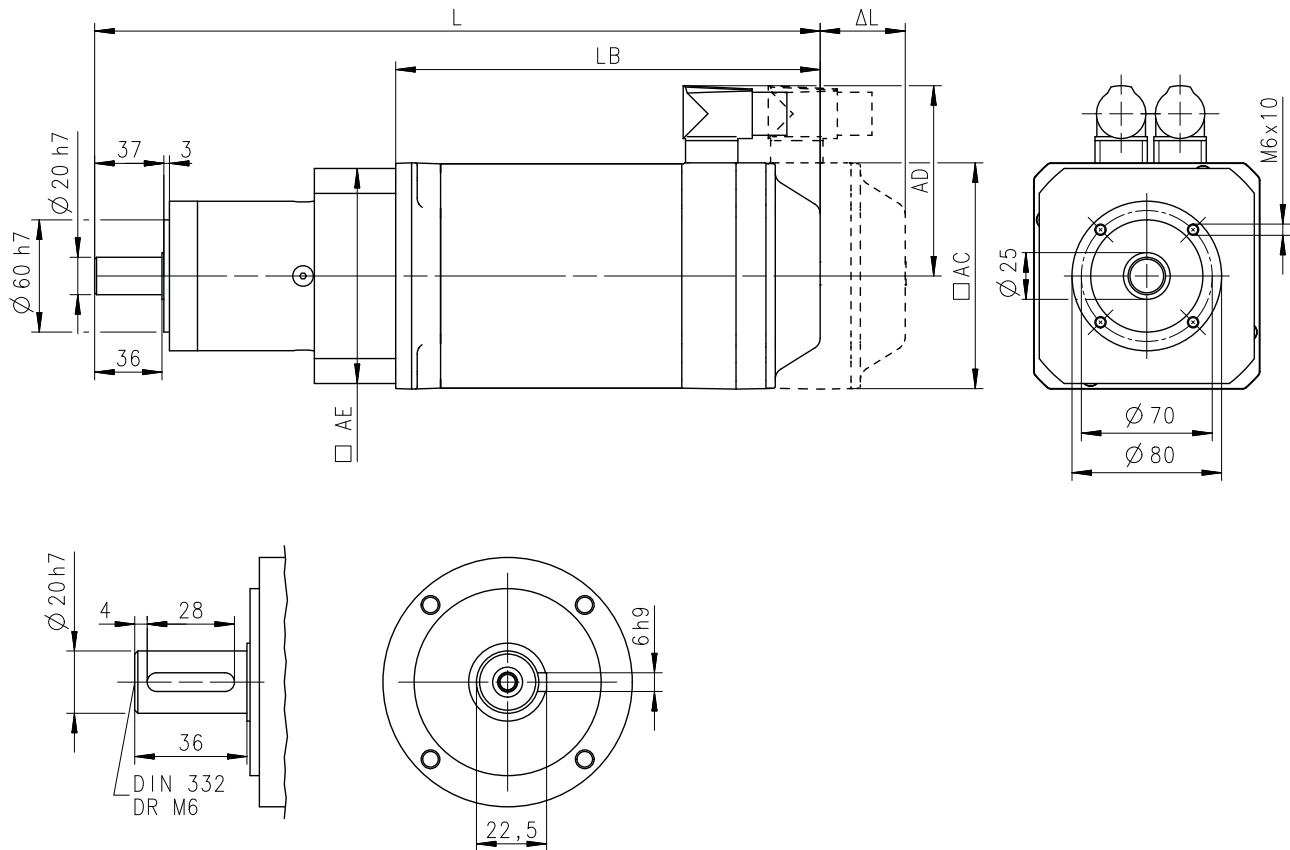


Motor			m850-					
			S60/S6000	S60/L6000	S80/S5500	S80/L5500	S120/S3960	S120/M3960
Total length	L	mm	235	265	276.5	296.5	312.5	350.5
Motor length	LB	mm	122	152	158	178	189	227
Motor diameter	AC	mm	60	60	80	80	121	121
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102	102
Gearbox diameter	AE	mm	60	60	80	80	115	115



g700-P130 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



8801014-00

Motor			m850-						
			S60/L6000	S80/S5500	S80/L5500	S120/S3960	S120/M3960	S140/S3240	S140/M3240
Total length	L	mm	285.5	296.5	316.5	332.5	370.5	335.5	375.5
Motor length	LB	mm	152	158	178	189	227	182	222
Motor diameter	AC	mm	60	80	80	121	121	142	142
Motor/connection distance	AD	mm	73.4	83.4	83.4	102	102	114	114
Gearbox diameter	AE	mm	80	80	80	115	115	140	140

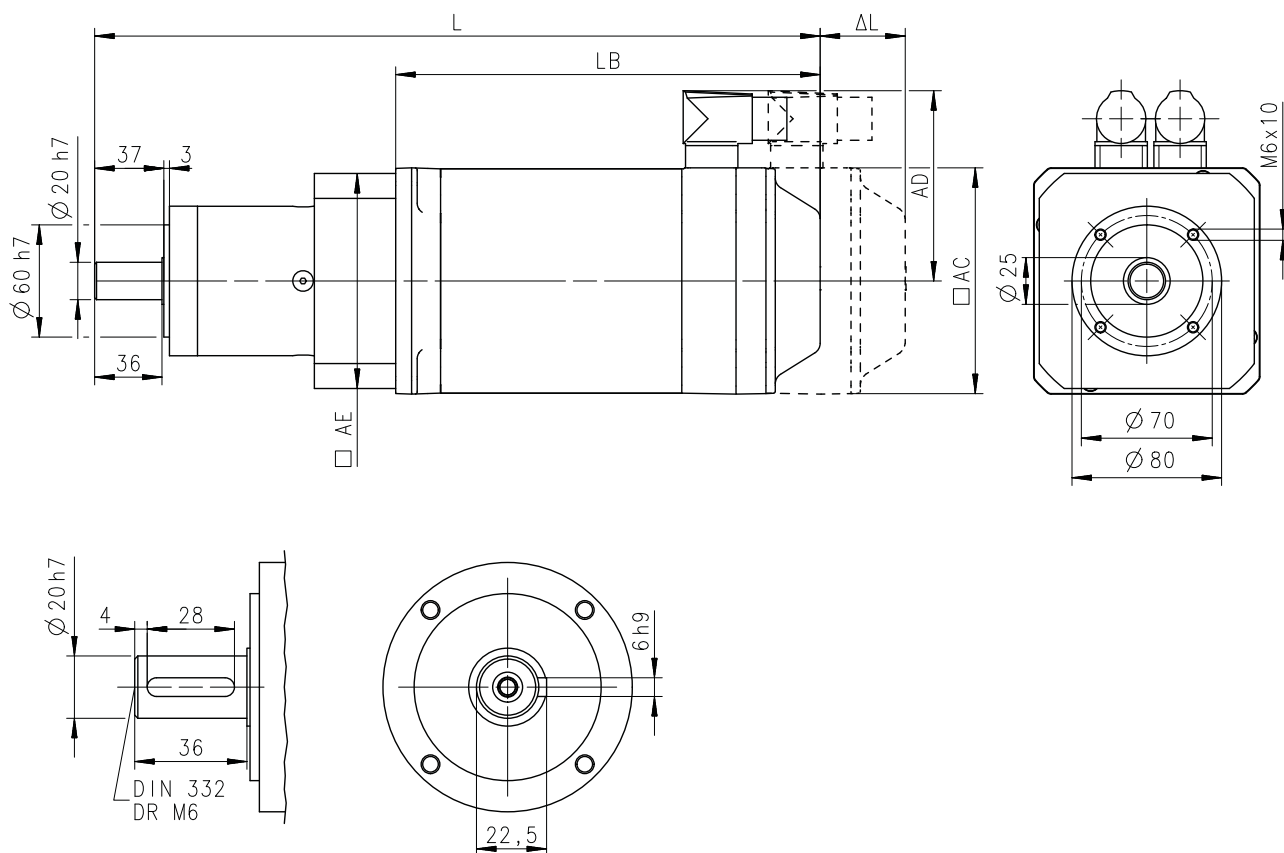


Technical data

Planetary gearbox g700-P
Basic dimensions

g700-P130 with m850

Gearbox design: Solid shaft, without foot with centering, 2-stage



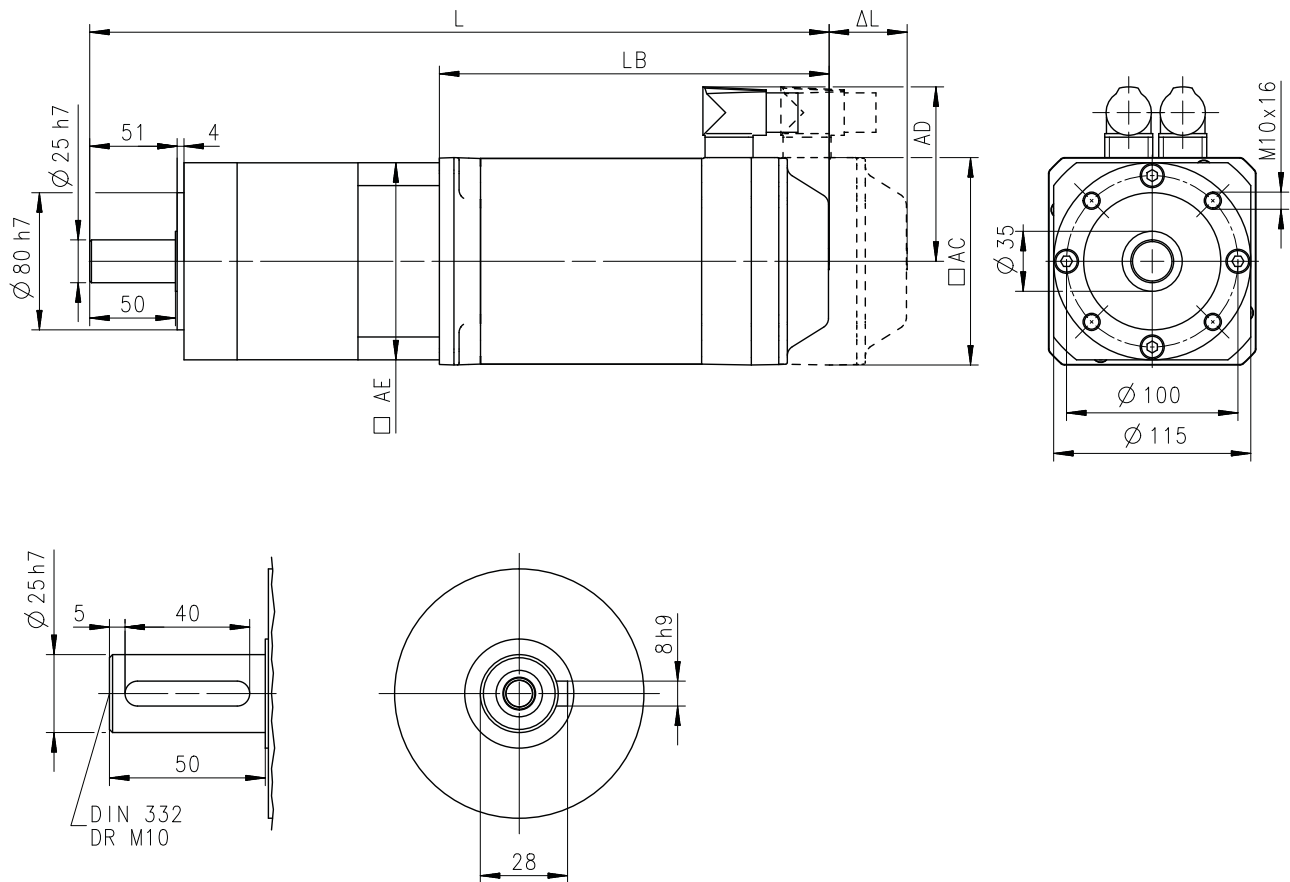
8801014-00

Motor			m850-						
			S60/S6000	S60/L6000	S80/S5500	S80/L5500	S120/S3960	S120/M3960	S140/S3240
Total length	L	mm	273.5	303.5	314.5	334.5	350.5	388.5	353.5
Motor length	LB	mm	122	152	158	178	189	227	182
Motor diameter	AC	mm	60	60	80	80	121	121	142
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102	102	114
Gearbox diameter	AE	mm	80	80	80	80	115	115	140



g700-P260 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



8801015-00

Motor			m850-									
			S80/ S5500	S80/ L5500	S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000
Total length	L	mm	334.5	354.5	365.5	403.5	441.5	368.5	408.5	448.5	408	456
Motor length	LB	mm	158	178	189	227	265	182	222	262	204	252
Motor diameter	AC	mm	80	80	121	121	121	142	142	142	190	190
Motor/connection distance	AD	mm	83.4	83.4	102	102	102	114	114	135	137	158
Gearbox diameter	AE	mm	115	115	115	115	115	140	140	140	190	190

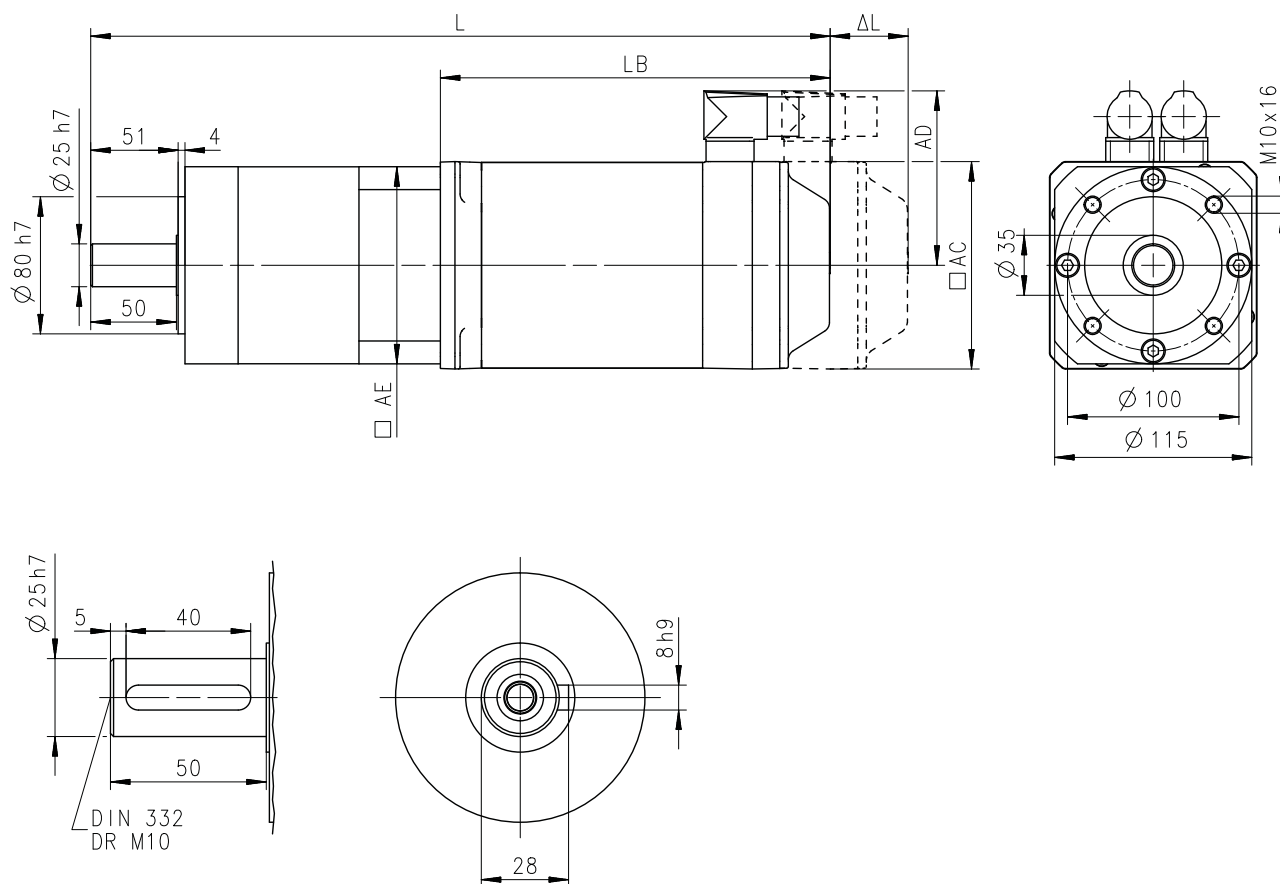


Technical data

Planetary gearbox g700-P
Basic dimensions

g700-P260 with m850

Gearbox design: Solid shaft, without foot with centering, 2-stage



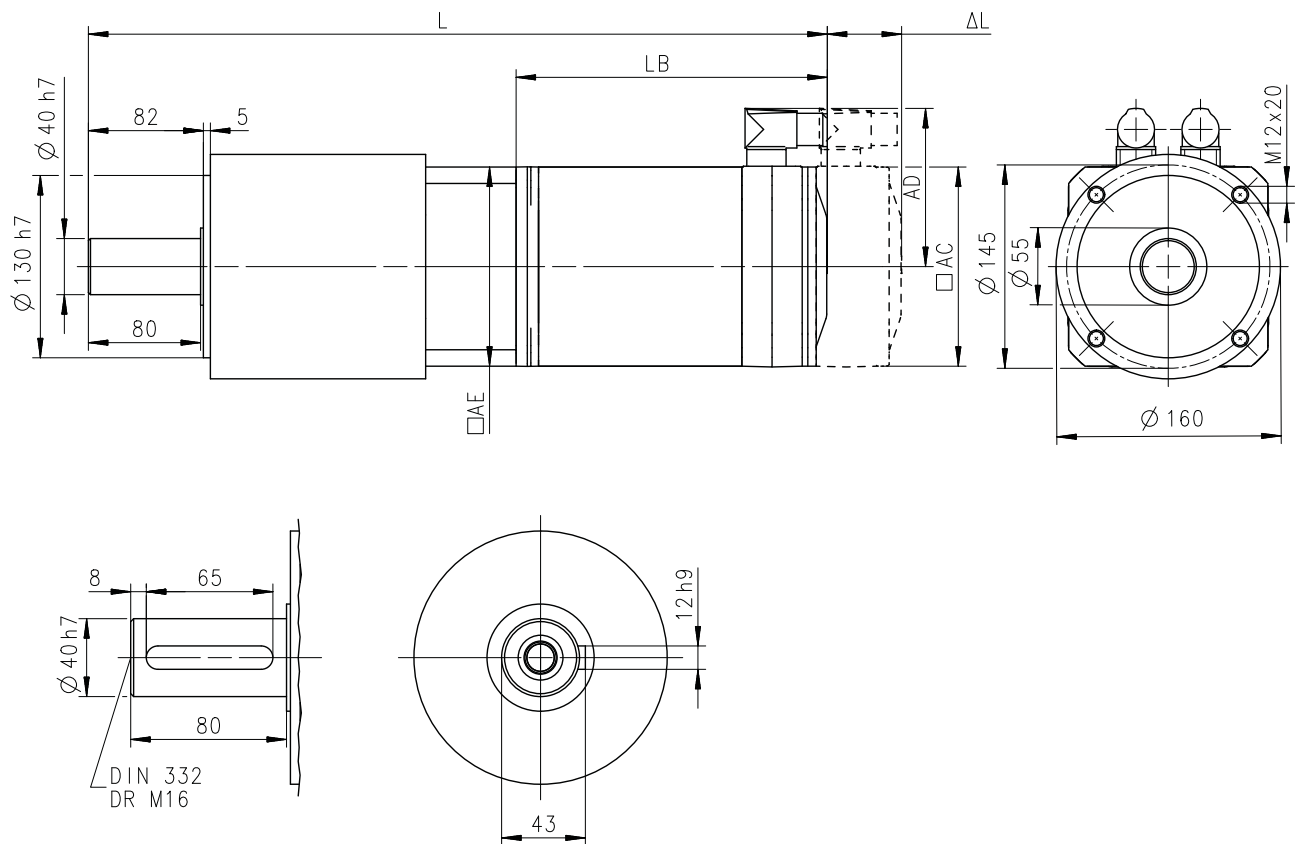
8801015-00

Motor			m850-										
			S60/ S6000	S60/ L6000	S80/ S5500	S80/ L5500	S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000
Total length	L	mm	326.5	356.5	362.5	382.5	393.5	431.5	469.5	396.5	436.5	476.5	436
Motor length	LB	mm	122	152	158	178	189	227	265	182	222	262	204
Motor diameter	AC	mm	60	60	80	80	121	121	121	142	142	142	190
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102	102	102	114	114	135	137
Gearbox diameter	AE	mm	115	115	115	115	115	115	115	140	140	140	190



g700-P800 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



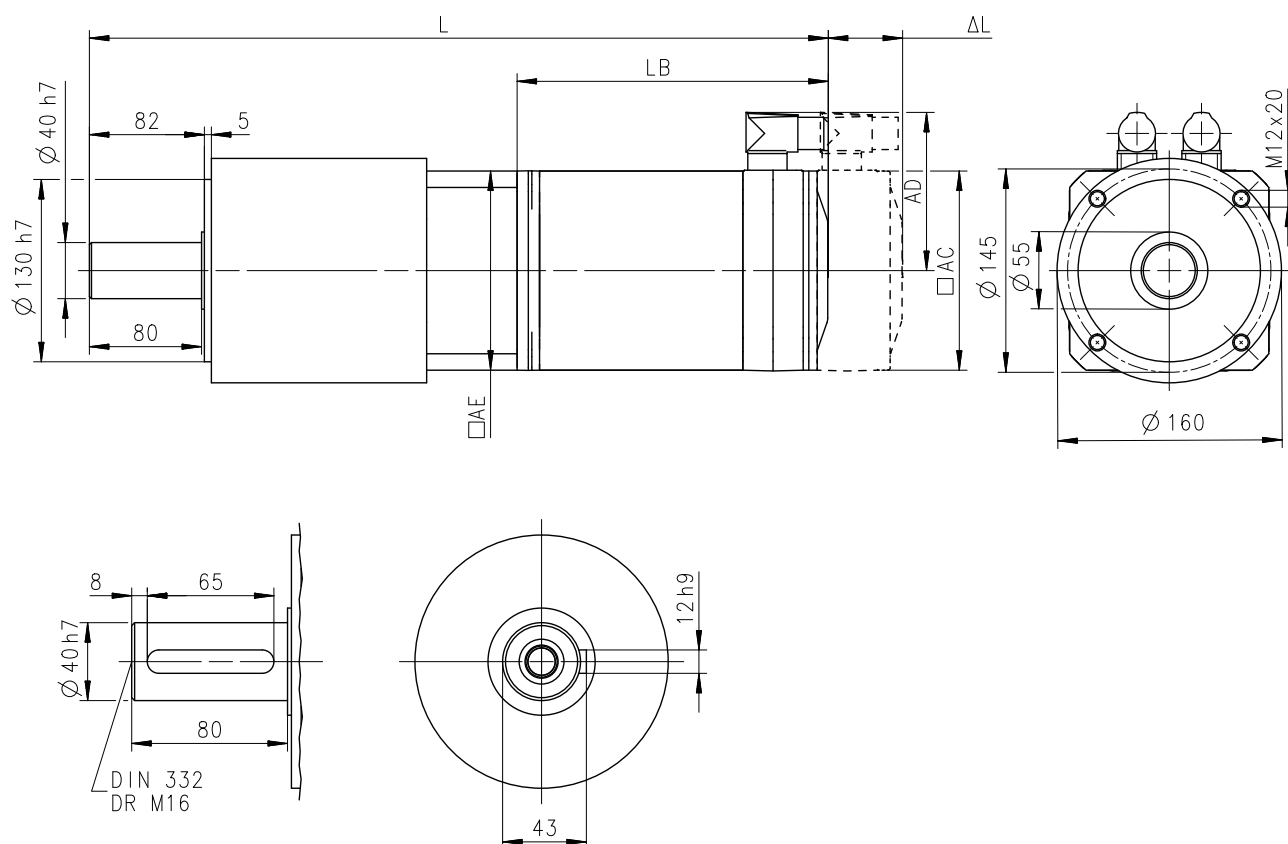
8801016-00

Motor			m850-				
			S140/M3240	S140/L3240	S190/S3000	S190/M3000	S190/L2520
Total length	L	mm	477.5	517.5	469.5	517.5	581.5
Motor length	LB	mm	222	262	204	252	316
Motor diameter	AC	mm	142	142	190	190	190
Motor/connection distance	AD	mm	114	135	137	158	158
Gearbox diameter	AE	mm	140	140	190	190	190



g700-P800 with m850

Gearbox design: Solid shaft, without foot with centering, 2-stage



8801016-00

Motor			m850-										
			S80/ S5500	S80/ L5500	S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	463	483	494	532	570	487	527	567	519	567	631
Motor length	LB	mm	158	178	189	227	265	182	222	262	204	252	316
Motor diameter	AC	mm	80	80	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	83.4	83.4	102	102	102	114	114	135	137	158	158
Gearbox diameter	AE	mm	140	140	140	140	140	140	140	140	190	190	190



Planetary gearbox g720-P

The modular system

g720-P planetary gearbox with m850 synchronous servo motor

Gearbox		g720-P20	g720-P44	g720-P130	g720-P260
Min. motor assignment		m850-S40S	m850-S40S	m850-120M	m850-120S
Max. motor assignment		m850-S80L	m850-S80L	m850-140L	m850-190L
Technical data					
Max. output torque	Nm	20	44	130	260
Mounting position		Any			
Color		Unpainted 40/60/80 Primed 120/140/190 RAL9005 120/140/190			
Surface and corrosion protection		Without 40/60/80 OKS-G 120/140/190			
Output shaft					
Solid shaft with featherkey	mm	16 x 28	16 x 28	20 x 36	25 x 50
Smooth solid shaft	mm	16 x 28	16 x 28	20 x 36	25 x 50
Shaft material		Steel			
Shaft sealing ring material		NBR			
Gearbox design		Without foot with centering			
Gearbox stages		1/2/3	1/2/3	1/2/3	1/2/3
Output flange	mm	60	60	80	120
Lubricant		Standard Food compatible			
Cooling		Self-ventilated			
Motor connection		Connector			
Holding brake		Without With			
Feedback					
Without functional safety		Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)			
With functional safety		Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)			
Temperature monitoring		PT1000 thermal sensor 40/60/80 PT1000 thermal sensor and 2x PTC thermistor 120/140/190			



Gearbox data

g720-P20, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	11.0	15	1
7	8.0	15	2
8	6.0	15	2
10	5.0	15	1

g720-P20, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
9	16.0	19	2
20	20.0	19	3
25	18.0	19	3
32	20.0	19	3
40	18.0	19	3
64	8.0	19	2

g720-P20, 3-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
60	20.0	22	3
80	20.0	22	3
100	20.0	22	3
120	18.0	22	3
160	20.0	22	3

g720-P44, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	28.0	10	4
4	38.0	10	4
5	40.0	10	4
7	25.0	10	3
8	18.0	10	3
10	15.0	10	3



g720-P44, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
9	44.0	12	4
12	44.0	12	4
15	44.0	12	4
16	44.0	12	4
20	44.0	12	4
32	44.0	12	4
25	40.0	12	4
40	40.0	12	4
64	18.0	12	3

g720-P44, 3-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
60	44.0	15	4
80	44.0	15	4
100	44.0	15	4
120	44.0	15	4
160	44.0	15	4
200	40.0	15	4
256	44.0	15	4
320	40.0	15	4

g720-P130, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
3	85.0	7	9
4	115	7	12
5	110	7	13
7	65.0	7	10
8	50.0	7	10
10	38.0	7	9

g720-P130, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
9	130	9	10
12	120	9	13
15	110	9	13
16	120	9	13
20	120	9	13
25	110	9	13
32	120	9	13
40	110	9	13
64	50.0	9	10



g720-P130, 3-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
60	110	11	13
80	120	11	13
100	120	11	13
120	110	11	13
160	120	11	13
200	110	11	13
256	120	11	13

g720-P260, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
3	115	7	16
4	155	7	18
5	195	7	19
7	135	7	16
10	95.0	7	15
8	120	7	16

g720-P260, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
9	210	9	18
12	260	9	19
15	230	9	19
16	260	9	19
25	230	9	19
20	260	9	19
32	260	9	19
40	230	9	19
64	120	9	17

g720-P260, 3-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
60	260	11	19
80	260	11	19
100	260	11	19
120	230	11	19
160	260	11	19
200	230	11	19
256	260	11	19
320	230	11	19

Technical data

Planetary gearbox g720-P
Radial forces and axial forces



Radial forces and axial forces

Gearbox			g720-P20	g720-P44	g720-P130	g720-P260
Bearing service life 20000 h						
Speed		rpm	100	100	100	100
Radial force	F_{rad}	rated	900	900	2050	2950
axial force	F_{ax}	rated	1000	1000	2500	2500
Bearing service life 30000 h						
Speed		rpm	100	100	100	100
Radial force	F_{rad}	rated	700	700	1700	2400
axial force	F_{ax}	rated	800	800	2000	2100
Max. radial force	$F_{rad, max}$	rated	520	1500	2500	4000
Max. axial force	$F_{ax, max}$	rated	620	1950	3800	3800



Technical data

Planetary gearbox g720-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors

Selection tables

Inverter mains connection 400 V, self-ventilated motors

0.11 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g720-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
1.0	900	4.6	5.0	450	0.045	10	P20	S40/S9000	1	1.2
2.6	281	5.7	20.0	141	0.045	32	P20	S40/S9000	2	1.3
3.8	225	4.2	18.0	113	0.045	40	P20	S40/S9000	2	1.3
5.7	150	3.1	20.0	75.0	0.055	60	P20	S40/S9000	3	1.4
5.7	113	5.0	44.0	125	0.105	80	P44	S40/S9000	3	2.5
6.4	141	1.3	8.0	70.0	0.045	64	P20	S40/S9000	2	1.3
6.7	141	2.7	18.0	156	0.096	64	P44	S40/S9000	2	2.6
8.3	113	2.4	20.0	56.0	0.048	80	P20	S40/S9000	3	1.4
8.3	90.0	4.1	44.0	100	0.104	100	P44	S40/S9000	3	2.5
10.0	90.0	1.9	20.0	45.0	0.048	100	P20	S40/S9000	3	1.4
11.0	75.0	3.5	44.0	83	0.096	120	P44	S40/S9000	3	2.5
12.0	75.0	1.5	18.0	38.0	0.055	120	P20	S40/S9000	3	1.4
16.0	56.3	1.3	20.0	28.0	0.045	160	P20	S40/S9000	3	1.4
16.0	56.3	2.7	44.0	63	0.096	160	P44	S40/S9000	3	2.5
20.0	45.0	2.0	40.0	50	0.096	200	P44	S40/S9000	3	2.5
25.0	35.2	1.8	44.0	39	0.096	256	P44	S40/S9000	3	2.5
30.0	28.1	1.4	40.0	31	0.096	320	P44	S40/S9000	3	2.5

0.2 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g720-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
0.5	3000	5.5	11.0	1500	0.083	3	P20	S40/L9000	1	1.4
1.2	1286	5.7	8.0	643	0.070	7	P20	S40/L9000	1	1.4
1.4	1000	5.1	16.0	500	0.080	9	P20	S40/L9000	2	1.5
1.5	1125	3.8	6.0	563	0.069	8	P20	S40/L9000	1	1.4
1.9	900	2.6	5.0	450	0.069	10	P20	S40/L9000	1	1.4
3.0	450	5.1	20.0	225	0.072	20	P20	S40/L9000	2	1.5
4.3	360	3.7	18.0	180	0.072	25	P20	S40/L9000	2	1.5
4.6	281	5.6	44.0	313	0.120	32	P44	S40/L9000	2	2.8
5.7	281	3.2	20.0	141	0.069	32	P20	S40/L9000	2	1.5
6.3	225	4.7	40.0	250	0.120	40	P44	S40/L9000	2	2.8
7.6	225	2.4	18.0	113	0.069	40	P20	S40/L9000	2	1.5
9.2	150	3.7	44.0	167	0.130	60	P44	S40/L9000	3	2.7
11.0	150	1.8	20.0	75.0	0.079	60	P20	S40/L9000	3	1.6
12.0	141	1.5	18.0	156	0.120	64	P44	S40/L9000	2	2.8
14.0	113	2.9	44.0	125	0.129	80	P44	S40/L9000	3	2.7
15.0	113	1.4	20.0	56.0	0.072	80	P20	S40/L9000	3	1.6
18.0	90.0	1.1	20.0	45.0	0.072	100	P20	S40/L9000	3	1.6
18.0	90.0	2.4	44.0	100	0.128	100	P44	S40/L9000	3	2.7
22.0	75.0	2.0	44.0	83	0.120	120	P44	S40/L9000	3	2.7
29.0	56.3	1.5	44.0	63	0.120	160	P44	S40/L9000	3	2.7
35.0	45.0	1.2	40.0	50	0.120	200	P44	S40/L9000	3	2.7
44.0	35.2	1.0	44.0	39	0.120	256	P44	S40/L9000	3	2.7

Technical data

Planetary gearbox g720-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



0.325 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g720-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
2.9	857	5.3	25.0	429	0.312	7	P44	S60/S6000	1	3.4
3.4	750	4.6	18.0	375	0.310	8	P44	S60/S6000	1	3.4
4.3	500	5.2	44.0	250	0.359	12	P44	S60/S6000	2	3.6
4.6	600	3.1	15.0	300	0.306	10	P44	S60/S6000	1	3.4
5.7	400	4.6	44.0	200	0.317	15	P44	S60/S6000	2	3.6
6.3	375	4.3	44.0	188	0.326	16	P44	S60/S6000	2	3.6
8.3	300	3.6	44.0	150	0.316	20	P44	S60/S6000	2	3.6
11.0	240	3.1	40.0	120	0.315	25	P44	S60/S6000	2	3.6
13.0	150	5.9	110	75.0	0.586	40	P130	S60/S6000	2	6.1
14.0	188	2.6	44.0	94.0	0.307	32	P44	S60/S6000	2	3.6
19.0	150	2.1	40.0	75.0	0.307	40	P44	S60/S6000	2	3.6
21.0	100	4.0	110	50.0	0.804	60	P130	S60/S6000	3	6.6
25.0	93.8	4.2	120	102	1.634	64	P260	S60/S6000	2	12
26.0	60.0	5.8	260	65	1.783	100	P260	S60/S6000	3	13
27.0	100	1.6	44.0	50.0	0.316	60	P44	S60/S6000	3	3.5
28.0	93.8	1.8	50.0	47.0	0.586	64	P130	S60/S6000	2	6.1
31.0	75.0	3.3	120	38.0	0.625	80	P130	S60/S6000	3	6.6
36.0	75.0	1.2	44.0	38.0	0.316	80	P44	S60/S6000	3	3.5
40.0	50.0	4.4	230	54	2.399	120	P260	S60/S6000	3	13
42.0	60.0	2.7	120	30.0	0.624	100	P130	S60/S6000	3	6.6
53.0	50.0	2.1	110	25.0	0.810	120	P130	S60/S6000	3	6.6
58.0	37.5	3.7	260	41	1.636	160	P260	S60/S6000	3	13
70.0	37.5	1.7	120	19.0	0.585	160	P130	S60/S6000	3	6.6
83.0	30.0	2.7	230	33	1.636	200	P260	S60/S6000	3	13
85.0	30.0	1.3	110	15.0	0.585	200	P130	S60/S6000	3	6.6
106	23.4	2.5	260	25	1.633	256	P260	S60/S6000	3	13
108	23.4	1.1	120	12.0	0.586	256	P130	S60/S6000	3	6.6
126	18.8	1.8	230	20	1.633	320	P260	S60/S6000	3	13



Technical data

Planetary gearbox g720-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

0.55 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g720-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
3.8	1200	5.1	40.0	600	0.518	5	P44	S60/L6000	1	3.9
5.8	857	2.9	25.0	429	0.505	7	P44	S60/L6000	1	3.9
6.7	750	2.6	18.0	375	0.503	8	P44	S60/L6000	1	3.9
6.7	667	3.6	44.0	333	0.556	9	P44	S60/L6000	2	4.1
7.8	600	4.4	38.0	300	0.784	10	P130	S60/L6000	1	6.1
8.6	600	1.7	15.0	300	0.499	10	P44	S60/L6000	1	3.9
9.5	500	2.9	44.0	250	0.552	12	P44	S60/L6000	2	4.1
12.0	400	2.5	44.0	200	0.510	15	P44	S60/L6000	2	4.1
13.0	375	2.4	44.0	188	0.519	16	P44	S60/L6000	2	4.1
16.0	240	5.2	110	120	0.819	25	P130	S60/L6000	2	6.6
17.0	300	2.0	44.0	150	0.509	20	P44	S60/L6000	2	4.1
21.0	240	1.7	40.0	120	0.508	25	P44	S60/L6000	2	4.1
22.0	188	4.4	120	94.0	0.780	32	P130	S60/L6000	2	6.6
27.0	188	1.5	44.0	94.0	0.500	32	P44	S60/L6000	2	4.1
31.0	150	3.3	110	75.0	0.779	40	P130	S60/L6000	2	6.6
31.0	100	5.2	260	108	2.609	60	P260	S60/L6000	3	14
34.0	150	1.2	40.0	75.0	0.500	40	P44	S60/L6000	2	4.1
47.0	100	2.2	110	50.0	0.997	60	P130	S60/L6000	3	7.1
51.0	93.8	2.3	120	102	1.827	64	P260	S60/L6000	2	12
51.0	75.0	4.0	260	81	1.983	80	P260	S60/L6000	3	14
65.0	75.0	1.8	120	38.0	0.818	80	P130	S60/L6000	3	7.1
70.0	60.0	3.2	260	65	1.976	100	P260	S60/L6000	3	14
81.0	60.0	1.5	120	30.0	0.817	100	P130	S60/L6000	3	7.1
93.0	50.0	2.4	230	54	2.592	120	P260	S60/L6000	3	14
96.0	50.0	1.1	110	25.0	1.003	120	P130	S60/L6000	3	7.1
125	37.5	2.1	260	41	1.829	160	P260	S60/L6000	3	14
151	30.0	1.5	230	33	1.829	200	P260	S60/L6000	3	14
191	23.4	1.4	260	25	1.826	256	P260	S60/L6000	3	14
228	18.8	1.0	230	20	1.826	320	P260	S60/L6000	3	14

Technical data

Planetary gearbox g720-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



1 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, max}	J	i	g720-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
4.5	1833	4.2	28.0	3333	1.809	3	P44	S80/S5500	1	5.1
6.2	1375	3.3	38.0	2500	1.767	4	P44	S80/S5500	1	5.1
7.9	1100	2.8	40.0	2000	1.752	5	P44	S80/S5500	1	5.1
9.8	786	5.4	65.0	393	1.802	7	P130	S80/S5500	1	7.3
11.0	786	1.6	25.0	1429	1.752	7	P44	S80/S5500	1	5.1
11.0	611	5.5	130	306	2.025	9	P130	S80/S5500	2	7.8
12.0	688	3.8	50.0	344	1.788	8	P130	S80/S5500	1	7.3
13.0	688	1.4	18.0	1250	1.749	8	P44	S80/S5500	1	5.1
14.0	611	2.0	44.0	1111	1.790	9	P44	S80/S5500	2	5.3
14.0	550	5.8	95.0	650	2.781	10	P260	S80/S5500	1	12
14.0	458	5.3	120	229	1.999	12	P130	S80/S5500	2	7.8
16.0	550	2.3	38.0	275	1.771	10	P130	S80/S5500	1	7.3
19.0	458	1.6	44.0	833	1.786	12	P44	S80/S5500	2	5.3
20.0	367	4.4	110	183	1.991	15	P130	S80/S5500	2	7.8
21.0	344	4.4	120	172	1.854	16	P130	S80/S5500	2	7.8
24.0	367	1.4	44.0	667	1.745	15	P44	S80/S5500	2	5.3
26.0	344	1.3	44.0	625	1.753	16	P44	S80/S5500	2	5.3
28.0	275	3.7	120	138	1.809	20	P130	S80/S5500	2	7.8
29.0	220	5.7	230	260	2.966	25	P260	S80/S5500	2	14
32.0	275	1.1	44.0	500	1.743	20	P44	S80/S5500	2	5.3
38.0	220	2.7	110	110	1.806	25	P130	S80/S5500	2	7.8
40.0	172	5.0	260	203	2.820	32	P260	S80/S5500	2	14
50.0	172	2.3	120	86.0	1.767	32	P130	S80/S5500	2	7.8
56.0	138	3.6	230	163	2.817	40	P260	S80/S5500	2	14
64.0	138	1.7	110	69.0	1.766	40	P130	S80/S5500	2	7.8
84.0	91.7	2.8	260	108	3.596	60	P260	S80/S5500	3	15
92.0	91.7	1.2	110	46.0	1.984	60	P130	S80/S5500	3	8.3
97.0	85.9	1.2	120	102	2.814	64	P260	S80/S5500	2	14
121	68.8	2.1	260	81	2.970	80	P260	S80/S5500	3	15
153	55.0	1.7	260	65	2.963	100	P260	S80/S5500	3	15
180	45.8	1.3	230	54	3.579	120	P260	S80/S5500	3	15
237	34.4	1.1	260	41	2.816	160	P260	S80/S5500	3	15



Technical data

Planetary gearbox g720-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

1.2 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g720-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
5.1	1833	5.7	85.0	917	2.713	3	P130	S80/L5500	1	8.0
5.7	1833	3.4	28.0	3333	2.339	3	P44	S80/L5500	1	5.8
7.8	1375	2.7	38.0	2500	2.297	4	P44	S80/L5500	1	5.8
10.0	1100	2.3	40.0	2000	2.282	5	P44	S80/L5500	1	5.8
13.0	786	4.4	65.0	393	2.332	7	P130	S80/L5500	1	8.0
14.0	786	1.3	25.0	1429	2.282	7	P44	S80/L5500	1	5.8
15.0	688	3.1	50.0	344	2.318	8	P130	S80/L5500	1	8.0
15.0	611	4.4	130	306	2.555	9	P130	S80/L5500	2	8.5
16.0	688	1.1	18.0	1250	2.279	8	P44	S80/L5500	1	5.8
18.0	611	1.6	44.0	1111	2.320	9	P44	S80/L5500	2	6.0
18.0	550	4.7	95.0	650	3.311	10	P260	S80/L5500	1	12
20.0	550	1.9	38.0	275	2.301	10	P130	S80/L5500	1	8.0
20.0	458	4.3	120	229	2.529	12	P130	S80/L5500	2	8.5
24.0	458	1.3	44.0	833	2.316	12	P44	S80/L5500	2	6.0
26.0	367	3.6	110	183	2.521	15	P130	S80/L5500	2	8.5
28.0	344	3.5	120	172	2.384	16	P130	S80/L5500	2	8.5
30.0	367	1.1	44.0	667	2.275	15	P44	S80/L5500	2	6.0
32.0	344	1.1	44.0	625	2.283	16	P44	S80/L5500	2	6.0
37.0	275	3.0	120	138	2.339	20	P130	S80/L5500	2	8.5
40.0	220	4.6	230	260	3.496	25	P260	S80/L5500	2	14
49.0	220	2.2	110	110	2.336	25	P130	S80/L5500	2	8.5
53.0	172	4.1	260	203	3.350	32	P260	S80/L5500	2	14
63.0	172	1.9	120	86.0	2.297	32	P130	S80/L5500	2	8.5
74.0	138	2.9	230	163	3.347	40	P260	S80/L5500	2	14
79.0	138	1.4	110	69.0	2.296	40	P130	S80/L5500	2	8.5
110	91.7	2.2	260	108	4.126	60	P260	S80/L5500	3	16
120	85.9	1.0	120	102	3.344	64	P260	S80/L5500	2	14
151	68.8	1.7	260	81	3.500	80	P260	S80/L5500	3	16
189	55.0	1.4	260	65	3.493	100	P260	S80/L5500	3	16
222	45.8	1.0	230	54	4.109	120	P260	S80/L5500	3	16

Technical data

Planetary gearbox g720-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



2 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g720-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
13.0	1320	2.7	85.0	660	7.283	3	P130	S120/S3960	1	11
14.0	1320	1.6	28.0	660	6.909	3	P44	S120/S3960	1	8.4
17.0	990	4.4	115	495	7.048	4	P130	S120/S3960	1	11
18.0	990	1.3	38.0	495	6.867	4	P44	S120/S3960	1	8.4
21.0	792	3.7	110	396	6.969	5	P130	S120/S3960	1	11
23.0	792	1.1	40.0	396	6.852	5	P44	S120/S3960	1	8.4
29.0	566	4.1	135	283	7.969	7	P260	S120/S3960	1	15
32.0	566	2.0	65.0	283	6.902	7	P130	S120/S3960	1	11
35.0	495	3.2	120	248	7.936	8	P260	S120/S3960	1	15
36.0	440	3.6	210	220	8.792	9	P260	S120/S3960	2	17
37.0	495	1.3	50.0	248	6.888	8	P130	S120/S3960	1	11
40.0	440	2.1	130	220	7.125	9	P130	S120/S3960	2	11
43.0	330	4.7	260	165	8.726	12	P260	S120/S3960	2	17
46.0	396	2.0	95.0	198	7.881	10	P260	S120/S3960	1	15
54.0	330	2.1	120	165	7.099	12	P130	S120/S3960	2	11
61.0	264	3.3	230	132	8.704	15	P260	S120/S3960	2	17
64.0	248	3.5	260	124	8.248	16	P260	S120/S3960	2	17
68.0	264	1.6	110	132	7.091	15	P130	S120/S3960	2	11
72.0	248	1.6	120	124	6.954	16	P130	S120/S3960	2	11
85.0	198	2.8	260	99.0	8.074	20	P260	S120/S3960	2	17
90.0	198	1.3	120	99.0	6.909	20	P130	S120/S3960	2	11
113	158	2.0	230	79.0	8.066	25	P260	S120/S3960	2	17
144	124	1.8	260	62.0	7.920	32	P260	S120/S3960	2	17
180	99.0	1.3	230	50.0	7.917	40	P260	S120/S3960	2	17

2.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g720-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
22.0	1080	4.6	115	540	18.093	3	P260	S140/S3240	1	36
24.0	1080	1.6	85.0	540	17.350	3	P130	S140/S3240	1	32
29.0	810	4.7	155	405	17.553	4	P260	S140/S3240	1	36
32.0	810	2.6	115	405	17.114	4	P130	S140/S3240	1	32
36.0	648	4.7	195	324	17.344	5	P260	S140/S3240	1	36
40.0	648	2.2	110	324	17.026	5	P130	S140/S3240	1	32
56.0	463	2.3	135	231	17.169	7	P260	S140/S3240	1	36
57.0	463	1.1	65.0	231	16.989	7	P130	S140/S3240	1	32
65.0	405	1.8	120	203	17.136	8	P260	S140/S3240	1	36
71.0	360	2.2	210	180	17.992	9	P260	S140/S3240	2	38
72.0	360	1.3	130	180	17.192	9	P130	S140/S3240	2	32
82.0	324	1.2	95.0	162	17.081	10	P260	S140/S3240	1	36
91.0	270	2.7	260	135	17.926	12	P260	S140/S3240	2	38
96.0	270	1.2	120	135	17.166	12	P130	S140/S3240	2	32
120	216	1.9	230	108	17.904	15	P260	S140/S3240	2	38
128	203	2.0	260	101	17.448	16	P260	S140/S3240	2	38
160	162	1.6	260	81.0	17.274	20	P260	S140/S3240	2	38
200	130	1.1	230	65.0	17.266	25	P260	S140/S3240	2	38
256	101	1.0	260	51.0	17.120	32	P260	S140/S3240	2	38



Technical data

Planetary gearbox g720-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

3.1 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g720-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
19.0	1320	5.0	115	660	14.793	3	P260	S120/M3960	1	18
21.0	1320	1.1	28.0	660	12.809	3	P44	S120/M3960	1	11
21.0	1320	1.8	85.0	660	13.183	3	P130	S120/M3960	1	13
24.0	990	5.3	155	495	14.253	4	P260	S120/M3960	1	18
27.0	990	2.9	115	495	12.948	4	P130	S120/M3960	1	13
31.0	792	5.4	195	396	14.044	5	P260	S120/M3960	1	18
35.0	792	2.4	110	396	12.869	5	P130	S120/M3960	1	13
48.0	566	2.7	135	283	13.869	7	P260	S120/M3960	1	18
50.0	566	1.3	65.0	283	12.802	7	P130	S120/M3960	1	13
57.0	495	2.1	120	248	13.836	8	P260	S120/M3960	1	18
61.0	440	2.4	210	220	14.692	9	P260	S120/M3960	2	20
63.0	440	1.4	130	220	13.025	9	P130	S120/M3960	2	14
71.0	396	1.3	95.0	198	13.781	10	P260	S120/M3960	1	18
77.0	330	3.1	260	165	14.626	12	P260	S120/M3960	2	20
83.0	330	1.4	120	165	12.999	12	P130	S120/M3960	2	14
103	264	2.2	230	132	14.604	15	P260	S120/M3960	2	20
104	264	1.0	110	132	12.991	15	P130	S120/M3960	2	14
109	248	2.3	260	124	14.148	16	P260	S120/M3960	2	20
111	248	1.1	120	124	12.854	16	P130	S120/M3960	2	14
139	198	1.8	260	99.0	13.974	20	P260	S120/M3960	2	20
174	158	1.3	230	79.0	13.966	25	P260	S120/M3960	2	20
223	124	1.2	260	62.0	13.820	32	P260	S120/M3960	2	20

3.7 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g720-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
24.0	1320	4.1	115	660	20.593	3	P260	S120/L3960	1	21
31.0	990	4.4	155	495	20.053	4	P260	S120/L3960	1	21
39.0	792	4.4	195	396	19.844	5	P260	S120/L3960	1	21
60.0	566	2.2	135	283	19.669	7	P260	S120/L3960	1	21
69.0	495	1.7	120	248	19.636	8	P260	S120/L3960	1	21
76.0	440	1.9	210	220	20.492	9	P260	S120/L3960	2	22
86.0	396	1.1	95.0	198	19.581	10	P260	S120/L3960	1	21
98.0	330	2.5	260	165	20.426	12	P260	S120/L3960	2	22
127	264	1.8	230	132	20.404	15	P260	S120/L3960	2	22
135	248	1.9	260	124	19.948	16	P260	S120/L3960	2	22
169	198	1.5	260	99.0	19.774	20	P260	S120/L3960	2	22
212	158	1.1	230	79.0	19.766	25	P260	S120/L3960	2	22

Technical data

Planetary gearbox g720-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



4.8 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g720-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
39.0	1080	2.8	115	540	32.493	3	P260	S140/M3240	1	41
52.0	810	2.8	155	405	31.953	4	P260	S140/M3240	1	41
54.0	810	1.6	115	405	31.514	4	P130	S140/M3240	1	37
65.0	648	2.8	195	324	31.744	5	P260	S140/M3240	1	41
67.0	648	1.3	110	324	31.426	5	P130	S140/M3240	1	37
94.0	463	1.4	135	231	31.569	7	P260	S140/M3240	1	41
108	405	1.1	120	203	31.536	8	P260	S140/M3240	1	41
118	360	1.3	210	180	32.392	9	P260	S140/M3240	2	43
158	270	1.6	260	135	32.326	12	P260	S140/M3240	2	43
197	216	1.1	230	108	32.304	15	P260	S140/M3240	2	43
211	203	1.2	260	101	31.848	16	P260	S140/M3240	2	43

5 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g720-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
45.0	1000	2.4	115	500	65.555	3	P260	S190/S3000	1	53
60.0	750	2.5	155	375	65.015	4	P260	S190/S3000	1	53
75.0	600	2.5	195	300	64.806	5	P260	S190/S3000	1	53
108	429	1.2	135	214	64.635	7	P260	S190/S3000	1	53
135	333	1.2	210	167	65.454	9	P260	S190/S3000	2	55
180	250	1.4	260	125	65.388	12	P260	S190/S3000	2	55
241	188	1.1	260	94.0	64.910	16	P260	S190/S3000	2	55

5.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g720-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
50.0	1080	2.3	115	540	46.993	3	P260	S140/L3240	1	46
66.0	810	2.3	155	405	46.453	4	P260	S140/L3240	1	46
83.0	648	2.3	195	324	46.244	5	P260	S140/L3240	1	46
117	463	1.1	135	231	46.069	7	P260	S140/L3240	1	46
147	360	1.1	210	180	46.892	9	P260	S140/L3240	2	48
196	270	1.3	260	135	46.826	12	P260	S140/L3240	2	48

7.5 kW

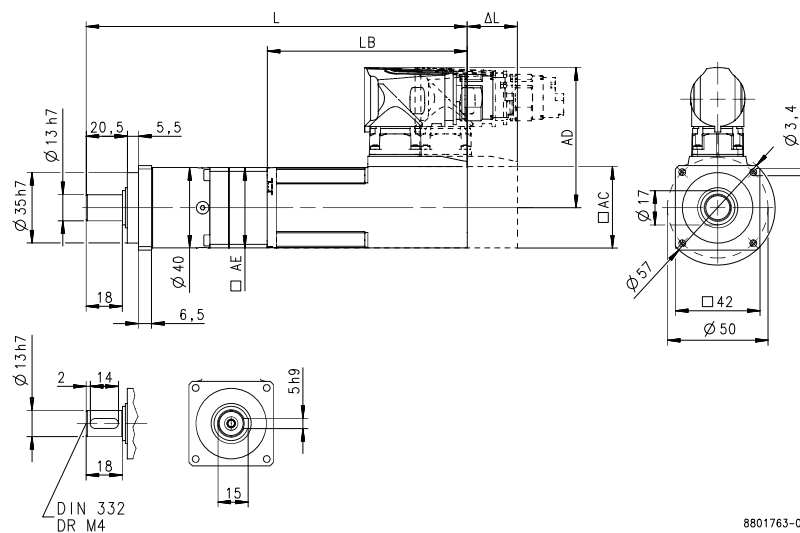
Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g720-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
69.0	1000	1.6	115	500	121.855	3	P260	S190/M3000	1	62
92.0	750	1.7	155	375	121.315	4	P260	S190/M3000	1	62
115	600	1.7	195	300	121.106	5	P260	S190/M3000	1	62



Basic dimensions

g720-P20 with m850

Gearbox design: Solid shaft, without foot with centering



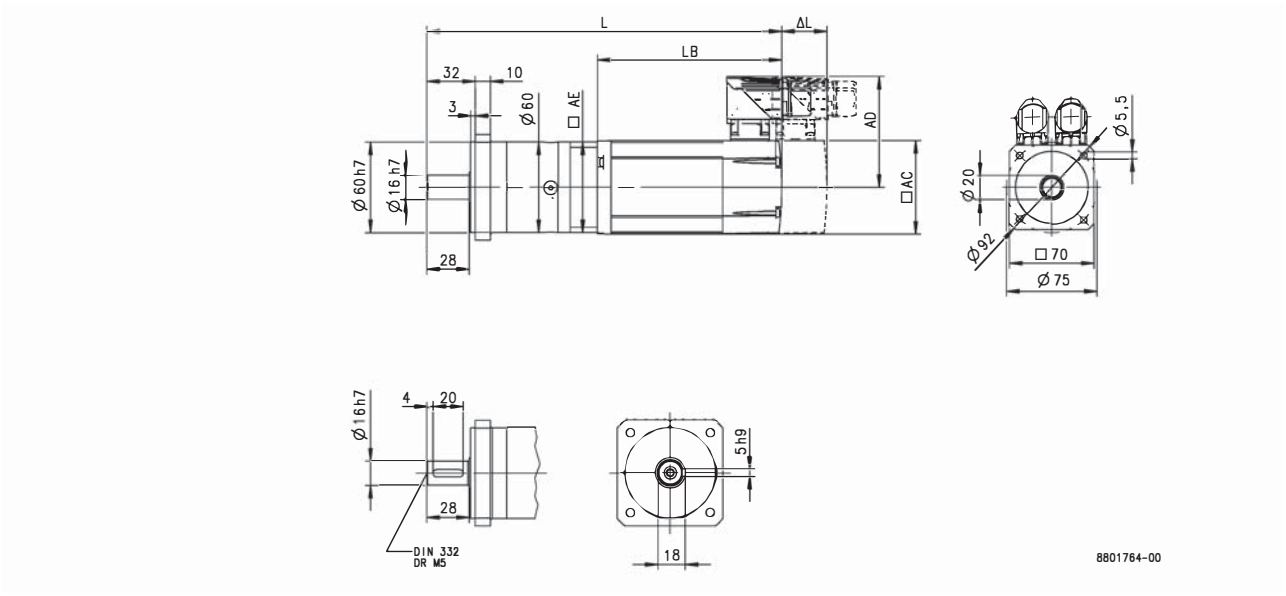
8801763-00

Motor			m850-	
			S40/S9000	S40/L9000
Total length	L	mm	189	214
Motor length	LB	mm	99	124
Motor diameter	AC	mm	40	40
Motor/connection distance	AD	mm	70	70
Gearbox diameter	AE	mm	40	40



g720-P44 with m850

Gearbox design: Solid shaft, without foot with centering



Motor			m850-					
			S60/S6000	S60/L6000	S80/S5500	S80/L5500	S120/S3960	S120/M3960
Total length	L	mm	240	270	281.5	301.5	317.5	355.5
Motor length	LB	mm	122	152	158	178	189	227
Motor diameter	AC	mm	60	60	80	80	121	121
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102	102
Gearbox diameter	AE	mm	60	60	80	80		

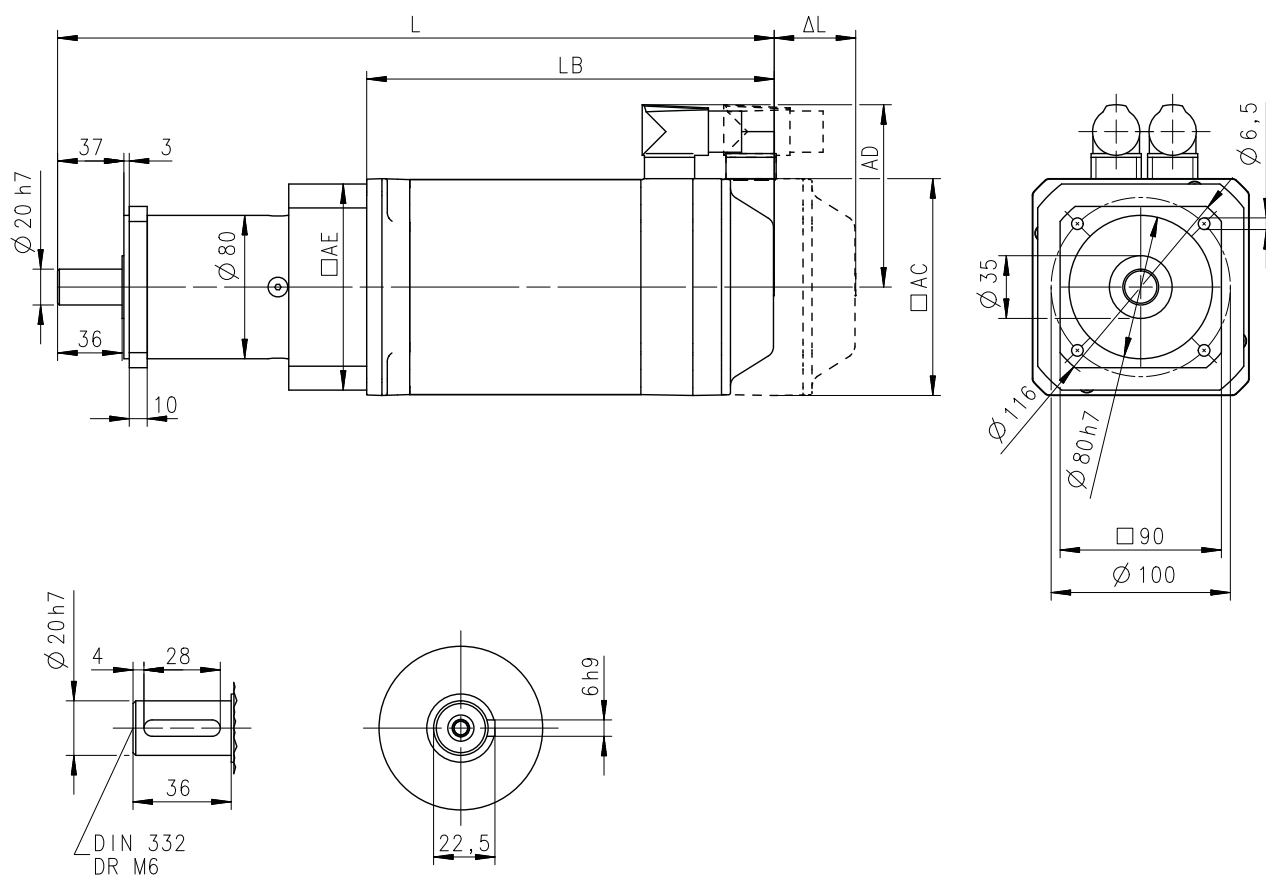


Technical data

Planetary gearbox g720-P
Basic dimensions

g720-P130 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



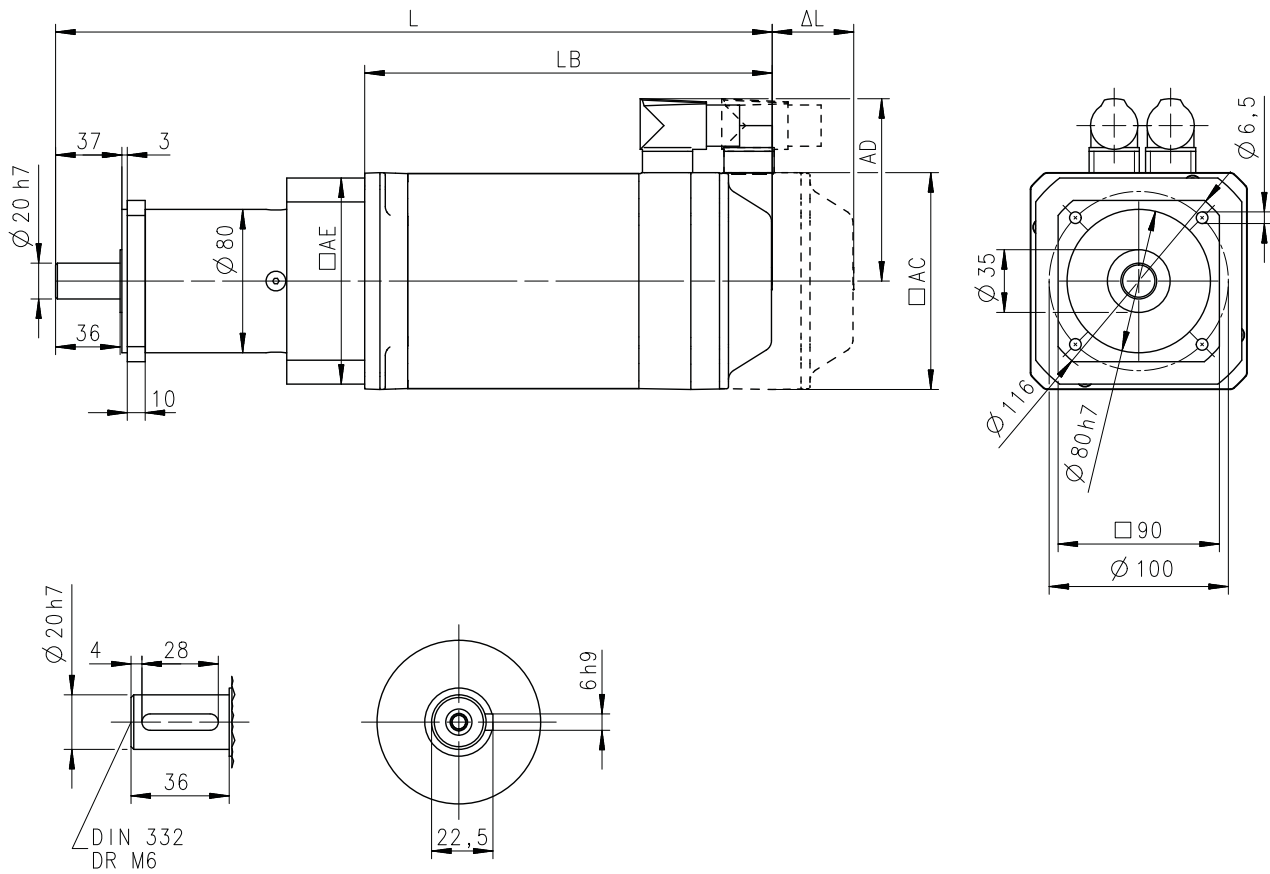
8801017-00

Motor			m850-						
			S60/L6000	S80/S5500	S80/L5500	S120/S3960	S120/M3960	S140/S3240	S140/M3240
Total length	L	mm	296.5	307.5	327.5	343.5	381.5	346.5	386.5
Motor length	LB	mm	152	158	178	189	227	182	222
Motor diameter	AC	mm	60	80	80	121	121	142	142
Motor/connection distance	AD	mm	73.4	83.4	83.4	102	102	114	114
Gearbox diameter	AE	mm	80	80	80	115	115	140	140



g720-P130 with m850

Gearbox design: Solid shaft, without foot with centering, 2-stage



8801017-00

Motor			m850-						
			S60/S6000	S60/L6000	S80/S5500	S80/L5500	S120/S3960	S120/M3960	S140/S3240
Total length	L	mm	284.5	314.5	325.5	345.5	361.5	399.5	364.5
Motor length	LB	mm	122	152	158	178	189	227	182
Motor diameter	AC	mm	60	60	80	80	121	121	142
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102	102	114
Gearbox diameter	AE	mm	80	80	80	80	115	115	140

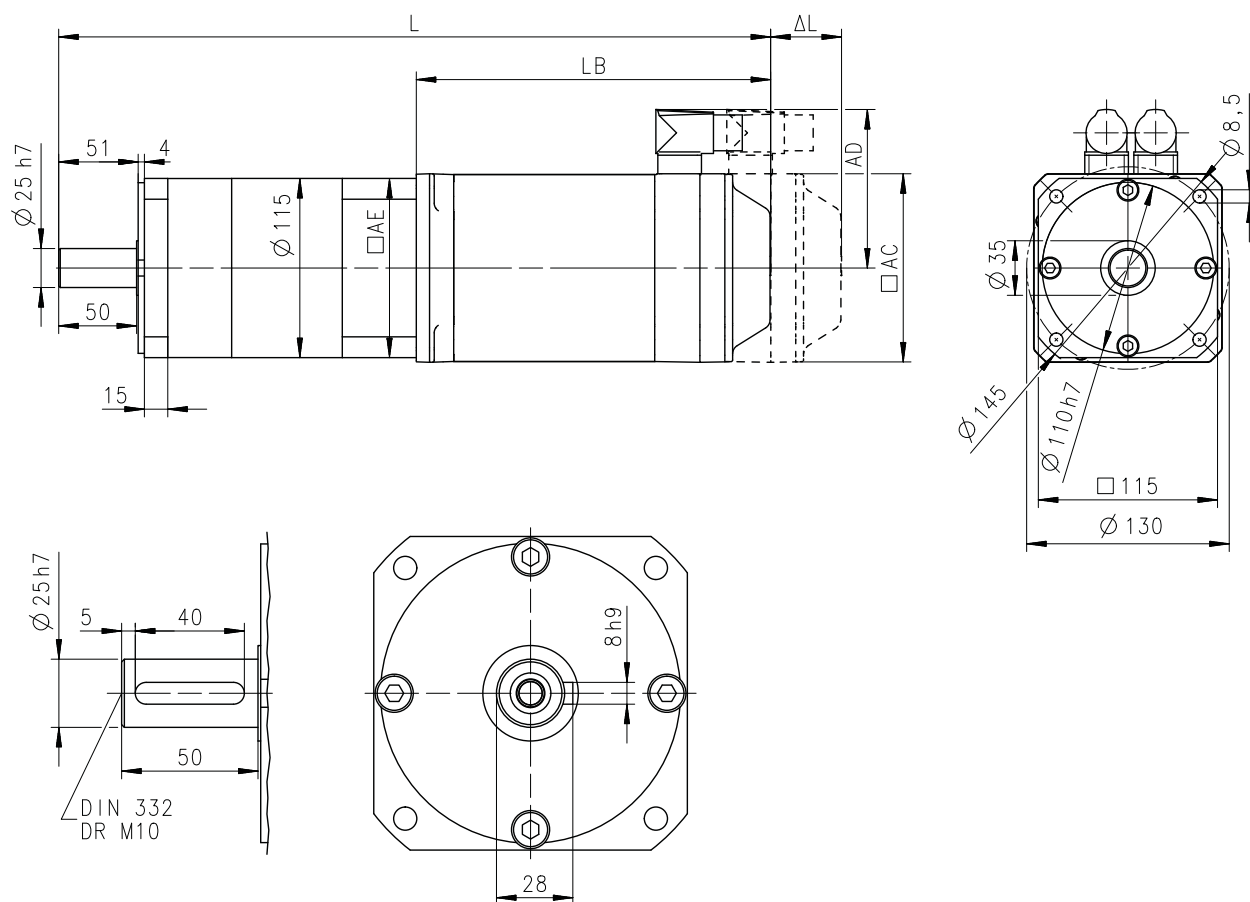


Technical data

Planetary gearbox g720-P
Basic dimensions

g720-P260 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



8801018-00

Motor			m850-									
			S80/ S5500	S80/ L5500	S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000
Total length	L	mm	359.5	379.5	390.5	428.5	466.5	393.5	433.5	473.5	433	481
Motor length	LB	mm	158	178	189	227	265	182	222	262	204	252
Motor diameter	AC	mm	80	80	121	121	121	142	142	142	190	190
Motor/connection distance	AD	mm	83.4	83.4	102	102	102	114	114	135	137	158
Gearbox diameter	AE	mm	115	115	115	115	115	140	140	140	190	190

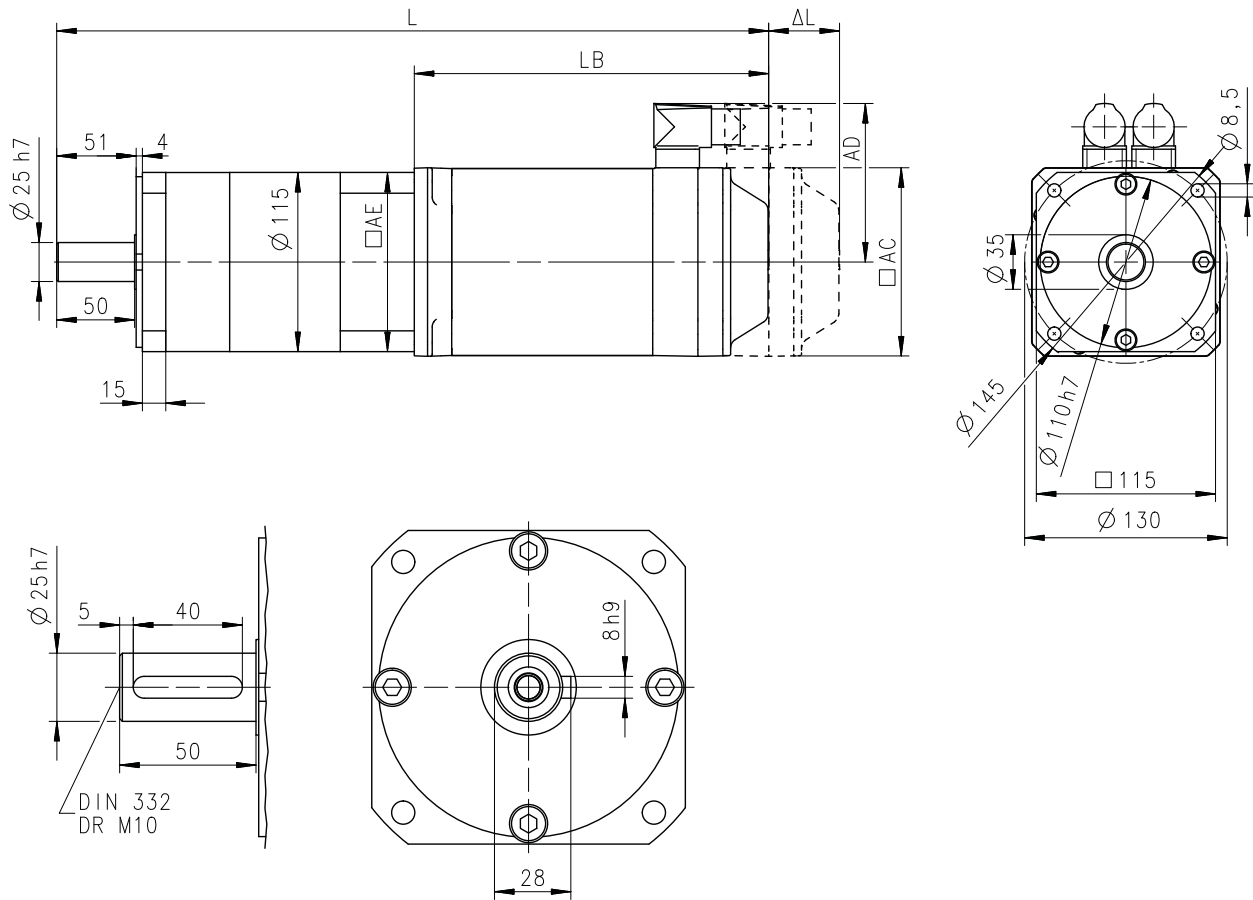
Technical data

Planetary gearbox g720-P
Basic dimensions



g720-P260 with m850

Gearbox design: Solid shaft, without foot with centering, 2-stage



8801018-00

Motor			m850-										
			S60/ S6000	S60/ L6000	S80/ S5500	S80/ L5500	S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000
Total length	L	mm	351.5	381.5	387.5	407.5	418.5	456.5	494.5	421.5	461.5	501.5	461
Motor length	LB	mm	122	152	158	178	189	227	265	182	222	262	204
Motor diameter	AC	mm	60	60	80	80	121	121	121	142	142	142	190
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102	102	102	114	114	135	137
Gearbox diameter	AE	mm	115	115	115	115	115	115	115	140	140	140	190



Planetary gearbox g730-P

The modular system

g730-P planetary gearbox with m850 synchronous servo motor

Gearbox		g730-P15	g730-P33	g730-P97	g730-P195	g730-P460
Min. motor assignment		m850-S40S	m850-S40S	m850-S60L	m850-S60S	m850-S120S
Max. motor assignment		m850S40L	m850-S80L	m850-S120M	m850-S140L	m850-S190L
Technical data						
Max. output torque	Nm	15	33	97	195	460
Mounting position		Any				
Color		Unpainted 40/60/80 Primed 120/140/190 RAL9005 120/140/190				
Surface and corrosion protection		Without 40/60/80 OKS-G 120/140/190				
Output shaft						
Solid shaft with featherkey	mm	12 x 18	16 x 28	22 x 36	32 x 58	40 x 82
Smooth solid shaft	mm	12 x 18	16 x 28	22 x 36	32 x 58	40 x 82
Shaft material		Steel				
Shaft sealing ring material		NBR				
Gearbox design		Without foot with centering				
Gearbox stages		1/2	1/2	1/2	1/2	1/2
Output flange	mm	50	70	90	120	155
Lubricant		Standard Food compatible				
Cooling		Self-ventilated				
Motor connection		Connector				
Holding brake		Without With				
Feedback						
Without functional safety		Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)				
With functional safety			Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)			
Temperature monitoring		PT1000 thermal sensor 40/60/80 PT1000 thermal sensor and 2x PTC thermistor 120/140/190				



Gearbox data

g730-P15, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	11.0	15	1
7	8.0	15	1
8	6.0	15	1
10	5.0	15	1

g730-P15, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
9	12.0	19	1
12	15.0	19	1
15	13.0	19	1
16	15.0	19	1
20	15.0	19	1
25	13.0	19	1
32	15.0	19	1
40	13.0	19	1
64	8.0	19	1

g730-P33, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	28.0	10	4
4	33.0	10	5
5	30.0	10	6
7	25.0	10	5
8	18.0	10	4
10	15.0	10	4

g730-P33, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
9	33.0	12	5
12	33.0	12	6
20	33.0	12	6
15	33.0	12	5
16	33.0	12	6
25	30.0	12	6
32	33.0	12	6
40	30.0	12	6
64	18.0	12	5
100	15.0	12	4



g730-P97, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	85.0	7	10
5	82.0	7	15
4	90.0	7	15
7	65.0	7	12
8	50.0	7	12
10	38.0	7	11

g730-P97, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
9	97.0	9	12
12	90.0	9	16
15	82.0	9	15
16	90.0	9	16
20	90.0	9	16
25	82.0	9	16
32	90.0	9	16
40	82.0	9	16
64	50.0	9	12

g730-P195, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	115	7	32
4	155	7	39
5	172	7	40
7	135	7	31
10	95.0	7	26
8	120	7	31

g730-P195, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
9	157	9	37
15	172	9	41
12	195	9	43
20	195	9	44
16	195	9	44
25	172	9	41
32	195	9	43
40	172	9	41
64	120	9	32
100	95.0	9	22

Technical data

Planetary gearbox g730-P
Radial forces and axial forces



g730-P460, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
4	460	6	68
5	445	6	71
10	210	6	57

g730-P460, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
16	460	9	73
20	460	9	73
25	445	9	73
40	460	9	72
50	445	9	73

Radial forces and axial forces

Gearbox			g730-P15	g730-P33	g730-P97	g730-P195	g730-P460
Bearing service life 20000 h							
Speed		rpm	100	100	100	100	100
Radial force	F_{rad}	rated	800	1050	1900	2500	5200
axial force	F_{ax}	rated	1000	1350	2000	4000	7000
Bearing service life 30000 h							
Speed		rpm	100	100	100	100	100
Radial force	F_{rad}	rated	700	900	1700	2150	4600
axial force	F_{ax}	rated	800	1000	1500	3000	6000
Max. radial force	$F_{\text{rad, max}}$	rated	1300	1650	3100	4000	8400
Max. axial force	$F_{\text{ax, max}}$	rated	1000	2100	3800	5900	11000



Selection tables

Inverter mains connection 400 V, self-ventilated motors

0.11 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g730-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
0.8	1000	4.5	12.0	500	0.056	9	P15	S40/S9000	2	1.6
1.0	900	4.4	5.0	450	0.045	10	P15	S40/S9000	1	1.4
2.3	360	4.6	13.0	180	0.048	25	P15	S40/S9000	2	1.6
3.0	281	4.2	15.0	141	0.045	32	P15	S40/S9000	2	1.6
4.2	225	2.9	13.0	113	0.045	40	P15	S40/S9000	2	1.6
6.6	141	1.2	8.0	70.0	0.045	64	P15	S40/S9000	2	1.6
6.6	141	2.7	18.0	156	0.096	64	P33	S40/S9000	2	3.0
9.6	90.0	1.6	15.0	100	0.094	100	P33	S40/S9000	2	3.0

0.2 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g730-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
0.5	3000	5.4	11.0	1500	0.084	3	P15	S40/L9000	1	1.6
1.2	1286	5.6	8.0	643	0.070	7	P15	S40/L9000	1	1.6
1.5	1125	3.7	6.0	563	0.069	8	P15	S40/L9000	1	1.6
1.7	1000	2.6	12.0	500	0.080	9	P15	S40/L9000	2	1.8
1.8	750	5.5	15.0	375	0.080	12	P15	S40/L9000	2	1.8
2.0	900	2.5	5.0	450	0.069	10	P15	S40/L9000	1	1.6
2.4	600	4.3	13.0	300	0.079	15	P15	S40/L9000	2	1.8
2.6	563	4.5	15.0	281	0.074	16	P15	S40/L9000	2	1.8
2.8	450	5.8	33.0	500	0.130	20	P33	S40/L9000	2	3.2
3.4	450	3.8	15.0	225	0.072	20	P15	S40/L9000	2	1.8
3.9	360	4.9	30.0	400	0.129	25	P33	S40/L9000	2	3.2
4.7	360	2.6	13.0	180	0.072	25	P15	S40/L9000	2	1.8
5.3	281	4.2	33.0	313	0.121	32	P33	S40/L9000	2	3.2
6.1	281	2.4	15.0	141	0.069	32	P15	S40/L9000	2	1.8
7.0	225	3.6	30.0	250	0.120	40	P33	S40/L9000	2	3.2
7.7	225	1.7	13.0	113	0.069	40	P15	S40/L9000	2	1.8
12.0	141	1.6	18.0	156	0.120	64	P33	S40/L9000	2	3.2

Technical data

Planetary gearbox g730-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



0.325 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g730-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
2.9	857	5.3	25.0	429	0.319	7	P33	S60/S6000	1	3.7
3.3	667	4.9	33.0	333	0.367	9	P33	S60/S6000	2	4.0
3.4	750	4.7	18.0	375	0.315	8	P33	S60/S6000	1	3.7
4.6	600	3.2	15.0	300	0.310	10	P33	S60/S6000	1	3.7
4.8	500	3.9	33.0	250	0.361	12	P33	S60/S6000	2	4.0
6.3	400	3.5	33.0	200	0.319	15	P33	S60/S6000	2	4.0
6.8	375	3.2	33.0	188	0.327	16	P33	S60/S6000	2	4.0
8.9	300	2.8	33.0	150	0.317	20	P33	S60/S6000	2	4.0
11.0	240	2.3	30.0	120	0.316	25	P33	S60/S6000	2	4.0
11.0	188	6.0	90.0	94.0	0.588	32	P97	S60/S6000	2	6.7
15.0	188	2.0	33.0	94.0	0.307	32	P33	S60/S6000	2	4.0
15.0	150	4.4	82.0	75.0	0.586	40	P97	S60/S6000	2	6.7
19.0	150	1.6	30.0	75.0	0.307	40	P33	S60/S6000	2	4.0
25.0	93.8	4.2	120	102	1.635	64	P195	S60/S6000	2	13
28.0	93.8	1.8	50.0	47.0	0.587	64	P97	S60/S6000	2	6.7
42.0	60.0	2.3	95.0	65	1.596	100	P195	S60/S6000	2	13

0.55 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g730-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
2.2	2000	5.8	28.0	1000	0.608	3	P33	S60/L6000	1	4.2
3.1	1500	4.6	33.0	750	0.551	4	P33	S60/L6000	1	4.2
4.0	1200	3.9	30.0	600	0.529	5	P33	S60/L6000	1	4.2
5.8	857	2.9	25.0	429	0.512	7	P33	S60/L6000	1	4.2
6.7	750	2.6	18.0	375	0.508	8	P33	S60/L6000	1	4.2
7.2	667	2.7	33.0	333	0.560	9	P33	S60/L6000	2	4.5
7.8	600	4.4	38.0	300	0.787	10	P97	S60/L6000	1	6.5
8.5	600	1.8	15.0	300	0.503	10	P33	S60/L6000	1	4.2
10.0	500	2.2	33.0	250	0.554	12	P33	S60/L6000	2	4.5
13.0	400	1.9	33.0	200	0.512	15	P33	S60/L6000	2	4.5
13.0	300	5.2	90.0	150	0.823	20	P97	S60/L6000	2	7.2
14.0	375	1.8	33.0	188	0.520	16	P33	S60/L6000	2	4.5
17.0	300	1.5	33.0	150	0.510	20	P33	S60/L6000	2	4.5
18.0	240	3.8	82.0	120	0.819	25	P97	S60/L6000	2	7.2
21.0	240	1.3	30.0	120	0.509	25	P33	S60/L6000	2	4.5
24.0	188	3.3	90.0	94.0	0.781	32	P97	S60/L6000	2	7.2
26.0	150	5.1	172	163	1.832	40	P195	S60/L6000	2	14
27.0	188	1.1	33.0	94.0	0.500	32	P33	S60/L6000	2	4.5
33.0	150	2.4	82.0	75.0	0.779	40	P97	S60/L6000	2	7.2
51.0	93.8	2.3	120	102	1.828	64	P195	S60/L6000	2	14
75.0	60.0	1.3	95.0	65	1.789	100	P195	S60/L6000	2	14



Technical data

Planetary gearbox g730-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

1 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g730-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
4.7	1833	3.2	28.0	3333	1.842	3	P33	S80/S5500	1	5.4
6.4	1375	2.5	33.0	2500	1.785	4	P33	S80/S5500	1	5.4
8.1	1100	2.1	30.0	2000	1.763	5	P33	S80/S5500	1	5.4
9.8	786	5.4	65.0	393	1.809	7	P97	S80/S5500	1	7.7
11.0	786	1.6	25.0	1429	1.758	7	P33	S80/S5500	1	5.4
12.0	688	3.8	50.0	344	1.794	8	P97	S80/S5500	1	7.7
13.0	688	1.4	18.0	1250	1.754	8	P33	S80/S5500	1	5.4
13.0	611	3.3	97.0	306	2.025	9	P97	S80/S5500	2	8.4
14.0	611	1.5	33.0	1111	1.794	9	P33	S80/S5500	2	5.7
14.0	550	5.8	95.0	650	2.819	10	P195	S80/S5500	1	13
16.0	550	2.3	38.0	275	1.774	10	P97	S80/S5500	1	7.7
16.0	458	4.0	90.0	229	2.001	12	P97	S80/S5500	2	8.4
19.0	458	1.2	33.0	833	1.788	12	P33	S80/S5500	2	5.7
22.0	367	3.3	82.0	183	1.992	15	P97	S80/S5500	2	8.4
23.0	344	3.3	90.0	172	1.853	16	P97	S80/S5500	2	8.4
24.0	367	1.1	33.0	667	1.746	15	P33	S80/S5500	2	5.7
30.0	275	2.8	90.0	138	1.810	20	P97	S80/S5500	2	8.4
33.0	220	4.3	172	260	2.971	25	P195	S80/S5500	2	15
40.0	220	2.0	82.0	110	1.806	25	P97	S80/S5500	2	8.4
44.0	172	3.8	195	203	2.823	32	P195	S80/S5500	2	15
51.0	172	1.8	90.0	86.0	1.768	32	P97	S80/S5500	2	8.4
60.0	138	2.7	172	163	2.819	40	P195	S80/S5500	2	15
64.0	138	1.3	82.0	69.0	1.766	40	P97	S80/S5500	2	8.4
97.0	85.9	1.2	120	102	2.815	64	P195	S80/S5500	2	15

Technical data

Planetary gearbox g730-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



1.2 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g730-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
5.1	1833	5.7	85.0	917	2.719	3	P97	S80/L5500	1	8.4
5.9	1833	2.6	28.0	3333	2.372	3	P33	S80/L5500	1	6.1
8.1	1375	2.0	33.0	2500	2.315	4	P33	S80/L5500	1	6.1
8.5	1100	5.7	82.0	550	2.406	5	P97	S80/L5500	1	8.4
10.0	1100	1.7	30.0	2000	2.293	5	P33	S80/L5500	1	6.1
13.0	786	4.4	65.0	393	2.339	7	P97	S80/L5500	1	8.4
13.0	611	5.7	157	722	4.264	9	P195	S80/L5500	2	16
14.0	786	1.3	25.0	1429	2.288	7	P33	S80/L5500	1	6.1
15.0	688	3.1	50.0	344	2.324	8	P97	S80/L5500	1	8.4
16.0	688	1.1	18.0	1250	2.284	8	P33	S80/L5500	1	6.1
17.0	611	2.6	97.0	306	2.555	9	P97	S80/L5500	2	9.1
18.0	611	1.2	33.0	1111	2.324	9	P33	S80/L5500	2	6.4
18.0	550	4.7	95.0	650	3.349	10	P195	S80/L5500	1	13
20.0	550	1.9	38.0	275	2.304	10	P97	S80/L5500	1	8.4
21.0	367	5.7	172	433	4.148	15	P195	S80/L5500	2	16
22.0	458	3.2	90.0	229	2.531	12	P97	S80/L5500	2	9.1
28.0	367	2.7	82.0	183	2.522	15	P97	S80/L5500	2	9.1
30.0	344	2.6	90.0	172	2.383	16	P97	S80/L5500	2	9.1
31.0	275	4.9	195	325	3.512	20	P195	S80/L5500	2	16
39.0	275	2.3	90.0	138	2.340	20	P97	S80/L5500	2	9.1
44.0	220	3.5	172	260	3.501	25	P195	S80/L5500	2	16
49.0	220	1.6	82.0	110	2.336	25	P97	S80/L5500	2	9.1
58.0	172	3.1	195	203	3.353	32	P195	S80/L5500	2	16
63.0	172	1.4	90.0	86.0	2.298	32	P97	S80/L5500	2	9.1
78.0	138	2.2	172	163	3.349	40	P195	S80/L5500	2	16
79.0	138	1.0	82.0	69.0	2.296	40	P97	S80/L5500	2	9.1
120	85.9	1.0	120	102	3.345	64	P195	S80/L5500	2	16



Technical data

Planetary gearbox g730-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

2 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g730-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
12.0	1320	5.8	115	660	9.264	3	P195	S120/S3960	1	16
13.0	1320	2.7	85.0	660	7.289	3	P97	S120/S3960	1	11
14.0	1320	1.2	28.0	660	6.942	3	P33	S120/S3960	1	8.7
17.0	990	3.3	90.0	495	7.057	4	P97	S120/S3960	1	11
22.0	792	2.8	82.0	396	6.976	5	P97	S120/S3960	1	11
29.0	566	4.1	135	283	8.046	7	P195	S120/S3960	1	16
32.0	566	2.0	65.0	283	6.909	7	P97	S120/S3960	1	11
35.0	495	3.2	120	248	7.995	8	P195	S120/S3960	1	16
37.0	495	1.3	50.0	248	6.894	8	P97	S120/S3960	1	11
38.0	440	2.8	157	220	8.834	9	P195	S120/S3960	2	18
41.0	440	1.3	97.0	220	7.125	9	P97	S120/S3960	2	12
41.0	396	4.5	210	198	11.432	10	P460	S120/S3960	1	29
46.0	396	2.1	95.0	198	7.919	10	P195	S120/S3960	1	16
48.0	330	3.5	195	165	8.748	12	P195	S120/S3960	2	18
54.0	330	1.6	90.0	165	7.101	12	P97	S120/S3960	2	12
65.0	264	2.5	172	132	8.718	15	P195	S120/S3960	2	18
68.0	264	1.2	82.0	132	7.092	15	P97	S120/S3960	2	12
69.0	248	2.6	195	124	8.260	16	P195	S120/S3960	2	18
70.0	198	5.0	460	99.0	12.672	20	P460	S120/S3960	2	34
72.0	248	1.2	90.0	124	6.953	16	P97	S120/S3960	2	12
89.0	198	2.1	195	99.0	8.082	20	P195	S120/S3960	2	18
97.0	158	3.9	445	79.0	12.617	25	P460	S120/S3960	2	34
113	158	1.5	172	79.0	8.071	25	P195	S120/S3960	2	18
144	124	1.4	195	62.0	7.923	32	P195	S120/S3960	2	18
173	99.0	2.5	460	50.0	11.607	40	P460	S120/S3960	2	34
226	79.2	2.0	445	40.0	11.274	50	P460	S120/S3960	2	34

Technical data

Planetary gearbox g730-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



2.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g730-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
23.0	1080	3.5	115	540	18.464	3	P195	S140/S3240	1	37
24.0	1080	1.6	85.0	540	17.356	3	P97	S140/S3240	1	32
29.0	810	4.6	155	405	17.751	4	P195	S140/S3240	1	37
33.0	810	2.0	90.0	405	17.127	4	P97	S140/S3240	1	32
38.0	648	3.8	172	324	17.468	5	P195	S140/S3240	1	37
41.0	648	1.7	82.0	324	17.043	5	P97	S140/S3240	1	32
56.0	463	2.3	135	231	17.246	7	P195	S140/S3240	1	37
57.0	463	1.1	65.0	231	16.996	7	P97	S140/S3240	1	32
65.0	405	1.8	120	203	17.195	8	P195	S140/S3240	1	37
72.0	360	1.7	157	180	18.034	9	P195	S140/S3240	2	39
80.0	324	2.6	210	162	20.632	10	P460	S140/S3240	1	50
82.0	324	1.2	95.0	162	17.119	10	P195	S140/S3240	1	37
96.0	270	2.0	195	135	17.948	12	P195	S140/S3240	2	39
113	203	3.5	460	101	22.808	16	P460	S140/S3240	2	55
120	216	1.4	172	108	17.918	15	P195	S140/S3240	2	39
128	203	1.5	195	101	17.460	16	P195	S140/S3240	2	39
150	162	2.8	460	81.0	21.872	20	P460	S140/S3240	2	55
160	162	1.2	195	81.0	17.282	20	P195	S140/S3240	2	39
197	130	2.2	445	65.0	21.817	25	P460	S140/S3240	2	55
320	81.0	1.4	460	41.0	20.807	40	P460	S140/S3240	2	55
400	64.8	1.1	445	32.0	20.474	50	P460	S140/S3240	2	55

3.1 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g730-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
20.0	1320	3.8	115	660	15.164	3	P195	S120/M3960	1	19
21.0	1320	1.8	85.0	660	13.189	3	P97	S120/M3960	1	14
25.0	990	4.9	155	495	14.451	4	P195	S120/M3960	1	19
28.0	990	2.1	90.0	495	12.957	4	P97	S120/M3960	1	14
32.0	792	4.1	172	396	14.168	5	P195	S120/M3960	1	19
36.0	792	1.8	82.0	396	12.876	5	P97	S120/M3960	1	14
48.0	566	2.7	135	283	13.946	7	P195	S120/M3960	1	19
50.0	566	1.3	65.0	283	12.809	7	P97	S120/M3960	1	14
57.0	495	2.1	120	248	13.895	8	P195	S120/M3960	1	19
63.0	440	1.8	157	220	14.734	9	P195	S120/M3960	2	21
68.0	396	2.9	210	198	17.332	10	P460	S120/M3960	1	31
71.0	396	1.3	95.0	198	13.819	10	P195	S120/M3960	1	19
82.0	330	2.3	195	165	14.648	12	P195	S120/M3960	2	21
83.0	330	1.0	90.0	165	13.001	12	P97	S120/M3960	2	14
94.0	248	4.1	460	124	19.508	16	P460	S120/M3960	2	37
104	264	1.6	172	132	14.618	15	P195	S120/M3960	2	21
111	248	1.7	195	124	14.160	16	P195	S120/M3960	2	21
126	198	3.2	460	99.0	18.572	20	P460	S120/M3960	2	37
139	198	1.4	195	99.0	13.982	20	P195	S120/M3960	2	21
167	158	2.5	445	79.0	18.517	25	P460	S120/M3960	2	37
278	99.0	1.6	460	50.0	17.507	40	P460	S120/M3960	2	37
348	79.2	1.3	445	40.0	17.174	50	P460	S120/M3960	2	37



Technical data

Planetary gearbox g730-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

3.7 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g730-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
25.0	1320	3.1	115	660	20.964	3	P195	S120/L3960	1	22
32.0	990	4.1	155	495	20.251	4	P195	S120/L3960	1	22
41.0	792	3.3	172	396	19.968	5	P195	S120/L3960	1	22
60.0	566	2.2	135	283	19.746	7	P195	S120/L3960	1	22
69.0	495	1.7	120	248	19.695	8	P195	S120/L3960	1	22
76.0	440	1.5	157	220	20.534	9	P195	S120/L3960	2	24
85.0	396	2.4	210	198	23.132	10	P460	S120/L3960	1	34
86.0	396	1.1	95.0	198	19.619	10	P195	S120/L3960	1	22
102	330	1.9	195	165	20.448	12	P195	S120/L3960	2	24
122	248	3.3	460	124	25.308	16	P460	S120/L3960	2	40
127	264	1.3	172	132	20.418	15	P195	S120/L3960	2	24
135	248	1.4	195	124	19.960	16	P195	S120/L3960	2	24
161	198	2.7	460	99.0	24.372	20	P460	S120/L3960	2	40
169	198	1.1	195	99.0	19.782	20	P195	S120/L3960	2	24
211	158	2.1	445	79.0	24.317	25	P460	S120/L3960	2	40
338	99.0	1.4	460	50.0	23.307	40	P460	S120/L3960	2	40
423	79.2	1.0	445	40.0	22.974	50	P460	S120/L3960	2	40

4.8 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g730-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
40.0	1080	2.1	115	540	32.864	3	P195	S140/M3240	1	42
52.0	810	2.8	155	405	32.151	4	P195	S140/M3240	1	42
54.0	810	1.2	90.0	405	31.527	4	P97	S140/M3240	1	37
57.0	648	5.8	445	324	36.582	5	P460	S140/M3240	1	55
66.0	648	2.3	172	324	31.868	5	P195	S140/M3240	1	42
67.0	648	1.0	82.0	324	31.443	5	P97	S140/M3240	1	37
94.0	463	1.4	135	231	31.646	7	P195	S140/M3240	1	42
108	405	1.1	120	203	31.595	8	P195	S140/M3240	1	42
118	360	1.0	157	180	32.434	9	P195	S140/M3240	2	44
134	324	1.6	210	162	35.032	10	P460	S140/M3240	1	55
158	270	1.2	195	135	32.348	12	P195	S140/M3240	2	44
208	203	2.1	460	101	37.208	16	P460	S140/M3240	2	60
263	162	1.7	460	81.0	36.272	20	P460	S140/M3240	2	60
329	130	1.3	445	65.0	36.217	25	P460	S140/M3240	2	60

Technical data

Planetary gearbox g730-P

Basic dimensions

Inverter mains connection 400 V, self-ventilated motors



5 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g730-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
46.0	1000	1.9	115	500	65.926	3	P195	S190/S3000	1	54
60.0	750	2.5	155	375	65.213	4	P195	S190/S3000	1	54
67.0	600	5.2	445	300	67.282	5	P460	S190/S3000	1	67
77.0	600	2.0	172	300	64.929	5	P195	S190/S3000	1	54
108	429	1.2	135	214	64.712	7	P195	S190/S3000	1	54
154	300	1.4	210	150	65.732	10	P460	S190/S3000	1	67
180	250	1.1	195	125	65.410	12	P195	S190/S3000	2	57
241	188	1.9	460	94.0	67.908	16	P460	S190/S3000	2	72
301	150	1.5	460	75.0	66.972	20	P460	S190/S3000	2	72
376	120	1.2	445	60.0	66.917	25	P460	S190/S3000	2	72

5.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g730-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
50.0	1080	1.7	115	540	47.364	3	P195	S140/L3240	1	47
57.0	810	5.6	460	405	52.211	4	P460	S140/L3240	1	60
66.0	810	2.2	155	405	46.651	4	P195	S140/L3240	1	47
74.0	648	4.6	445	324	51.082	5	P460	S140/L3240	1	60
84.0	648	1.8	172	324	46.368	5	P195	S140/L3240	1	47
117	463	1.1	135	231	46.146	7	P195	S140/L3240	1	47
167	324	1.2	210	162	49.532	10	P460	S140/L3240	1	60
262	203	1.7	460	101	51.708	16	P460	S140/L3240	2	65
327	162	1.4	460	81.0	50.772	20	P460	S140/L3240	2	65
409	130	1.1	445	65.0	50.717	25	P460	S140/L3240	2	65

7.5 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g730-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
69.0	1000	1.3	115	500	122.226	3	P195	S190/M3000	1	63
84.0	750	4.1	460	375	124.711	4	P460	S190/M3000	1	76
92.0	750	1.7	155	375	121.513	4	P195	S190/M3000	1	63
108	600	3.4	445	300	123.582	5	P460	S190/M3000	1	76
115	600	1.4	172	300	121.229	5	P195	S190/M3000	1	63
361	188	1.3	460	94.0	124.208	16	P460	S190/M3000	2	81

9.2 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g730-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
129	630	3.0	460	315	200.111	4	P460	S190/L2520	1	88
165	504	2.5	445	252	198.982	5	P460	S190/L2520	1	88

Basic dimensions



Gearbox design: Solid shaft, without foot with centering

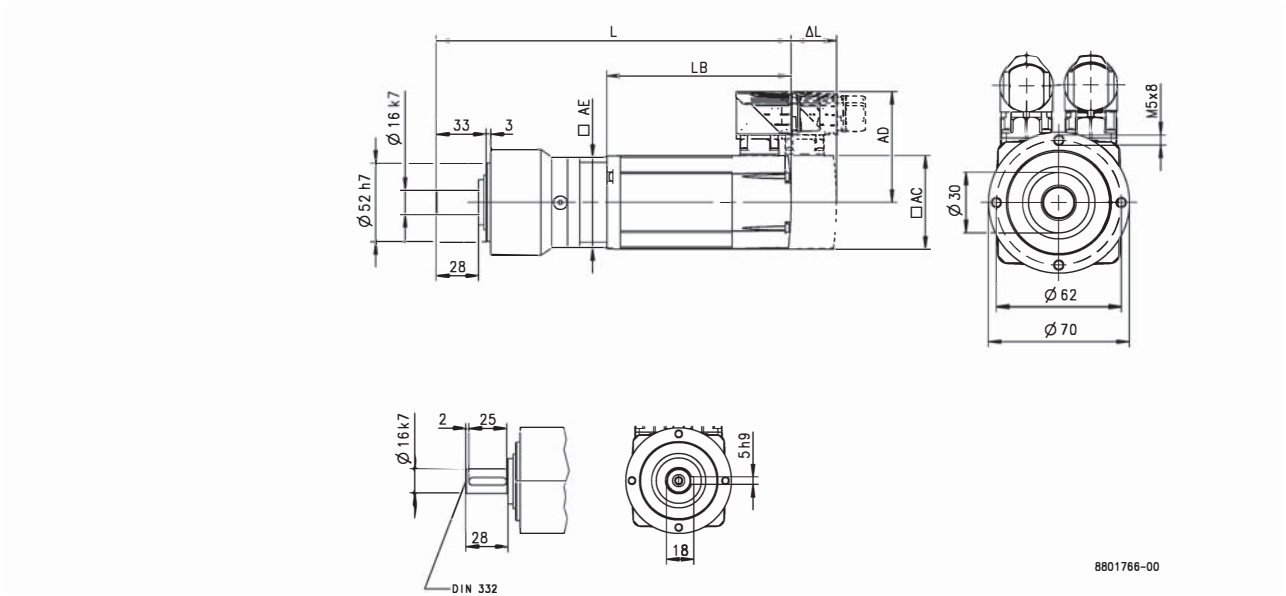


Motor			m850-	
			S40/S9000	S40/L9000
Total length	L	mm	198	223
Motor length	LB	mm	99	124
Motor diameter	AC	mm	40	40
Motor/connection distance	AD	mm	70	70
Gearbox diameter	AE	mm	40	40



g730-P33 with m850

Gearbox design: Solid shaft, without foot with centering



Motor			m850-				
			S60/S6000	S60/L6000	S80/S5500	S80/L5500	S120/S3960
Total length	L	mm	240	270	281.5	301.5	317.5
Motor length	LB	mm	122	152	158	178	189
Motor diameter	AC	mm	60	60	80	80	121
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102
Gearbox diameter	AE	mm	60	60	80	80	115



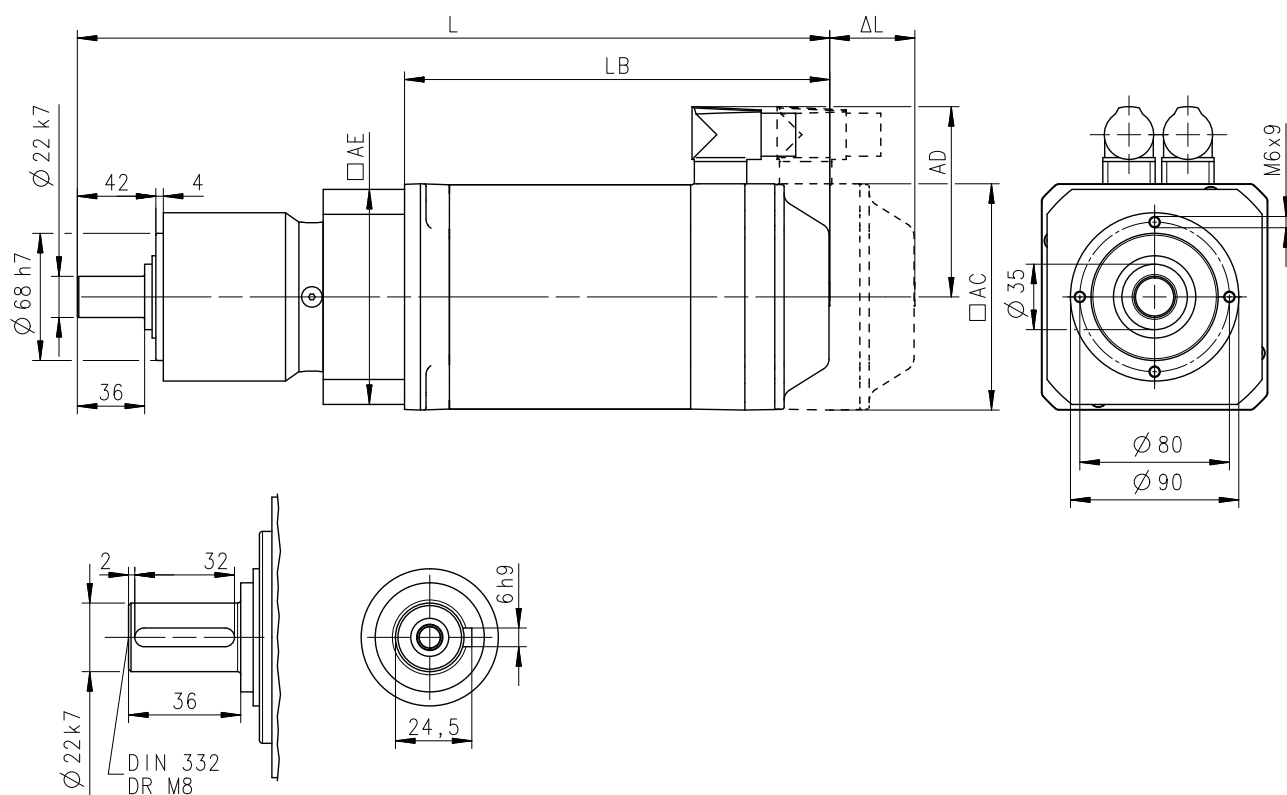
Technical data

Planetary gearbox g730-P

Basic dimensions

g730-P97 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



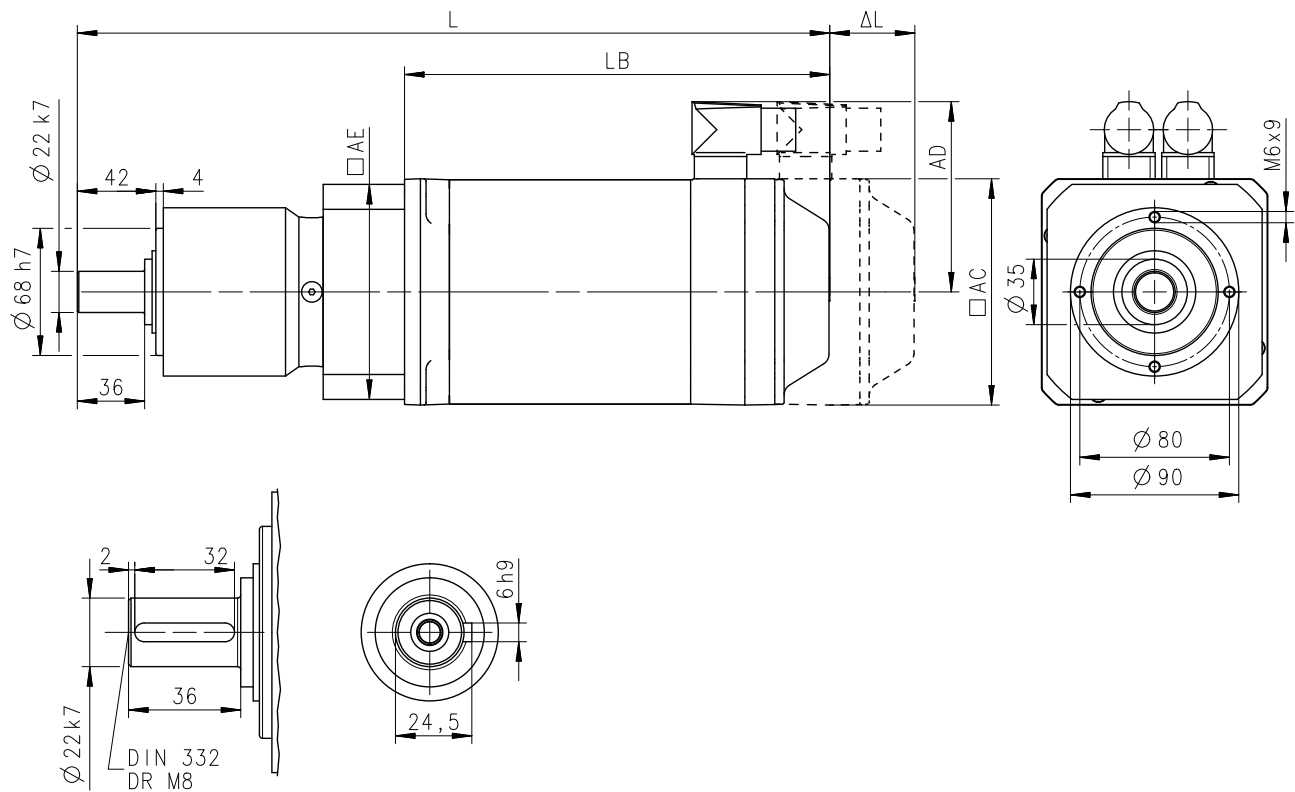
8801019-00

Motor			m850-						
			S60/L6000	S80/S5500	S80/L5500	S120/S3960	S120/M3960	S140/S3240	S140/M3240
Total length	L	mm	299	310	330	346	384	349	389
Motor length	LB	mm	152	158	178	189	227	182	222
Motor diameter	AC	mm	60	80	80	121	121	142	142
Motor/connection distance	AD	mm	73.4	83.4	83.4	102	102	114	114
Gearbox diameter	AE	mm	80	80	80	115	115	140	140



g730-P97 with m850

Gearbox design: Solid shaft, without foot with centering, 2-stage

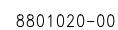


8801019-00

Motor			m850-					
			S60/S6000	S60/L6000	S80/S5500	S80/L5500	S120/S3960	S120/M3960
Total length	L	mm	286.5	316.5	327.5	347.5	363.5	401.5
Motor length	LB	mm	122	152	158	178	189	227
Motor diameter	AC	mm	60	60	80	80	121	121
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102	102
Gearbox diameter	AE	mm	80	80	80	80	115	115



Gearbox design: Solid shaft, without foot with centering, 1-stage

91

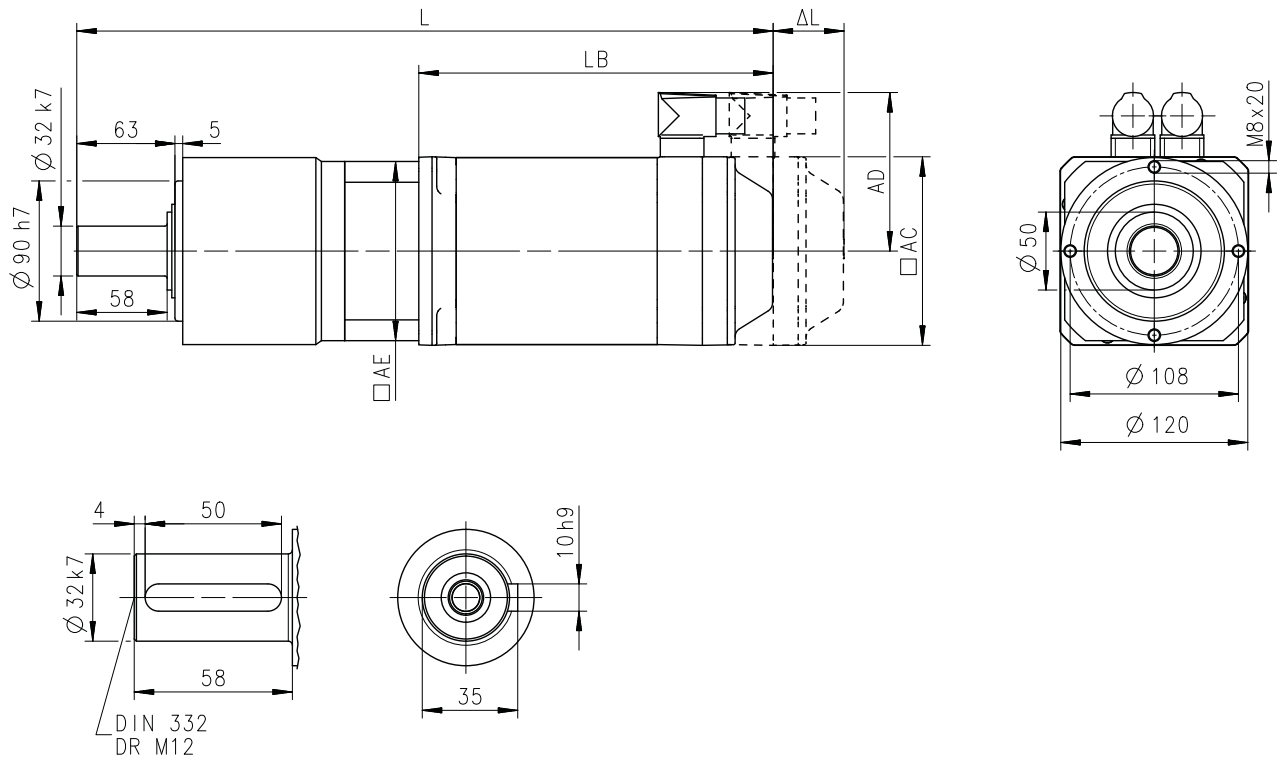
Technical data

Planetary gearbox g730-P
Basic dimensions



g730-P195 with m850

Gearbox design: Solid shaft, without foot with centering, 2-stage



8801020-00

Motor			m850-									
			S60/ S6000	S60/ L6000	S80/ S5500	S80/ L5500	S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S190/ S3000
Total length	L	mm	341.5	371.5	377.5	397.5	408.5	446.5	484.5	411.5	451.5	451
Motor length	LB	mm	122	152	158	178	189	227	265	182	222	204
Motor diameter	AC	mm	60	60	80	80	121	121	121	142	142	190
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102	102	102	114	114	137
Gearbox diameter	AE	mm	115	115	115	115	115	115	115	140	140	190

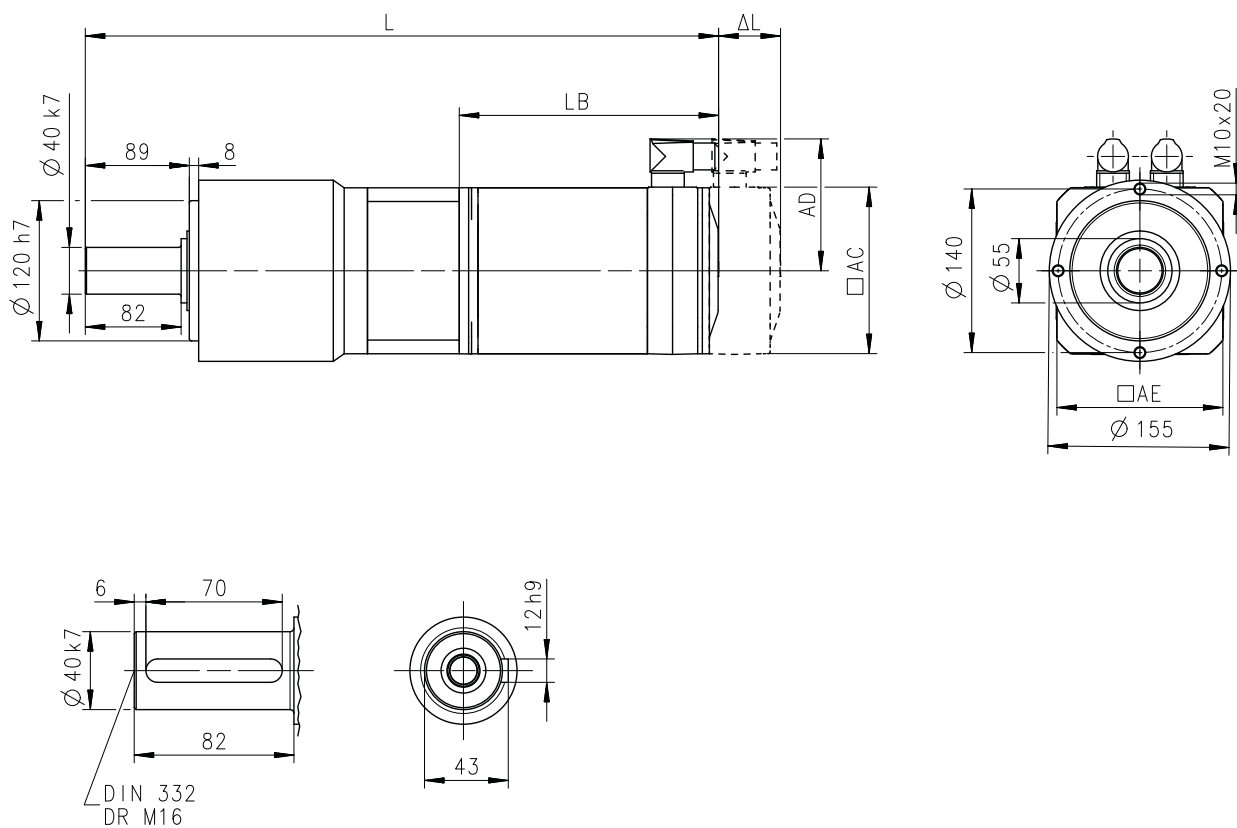


Technical data

Planetary gearbox g730-P
Basic dimensions

g730-P460 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



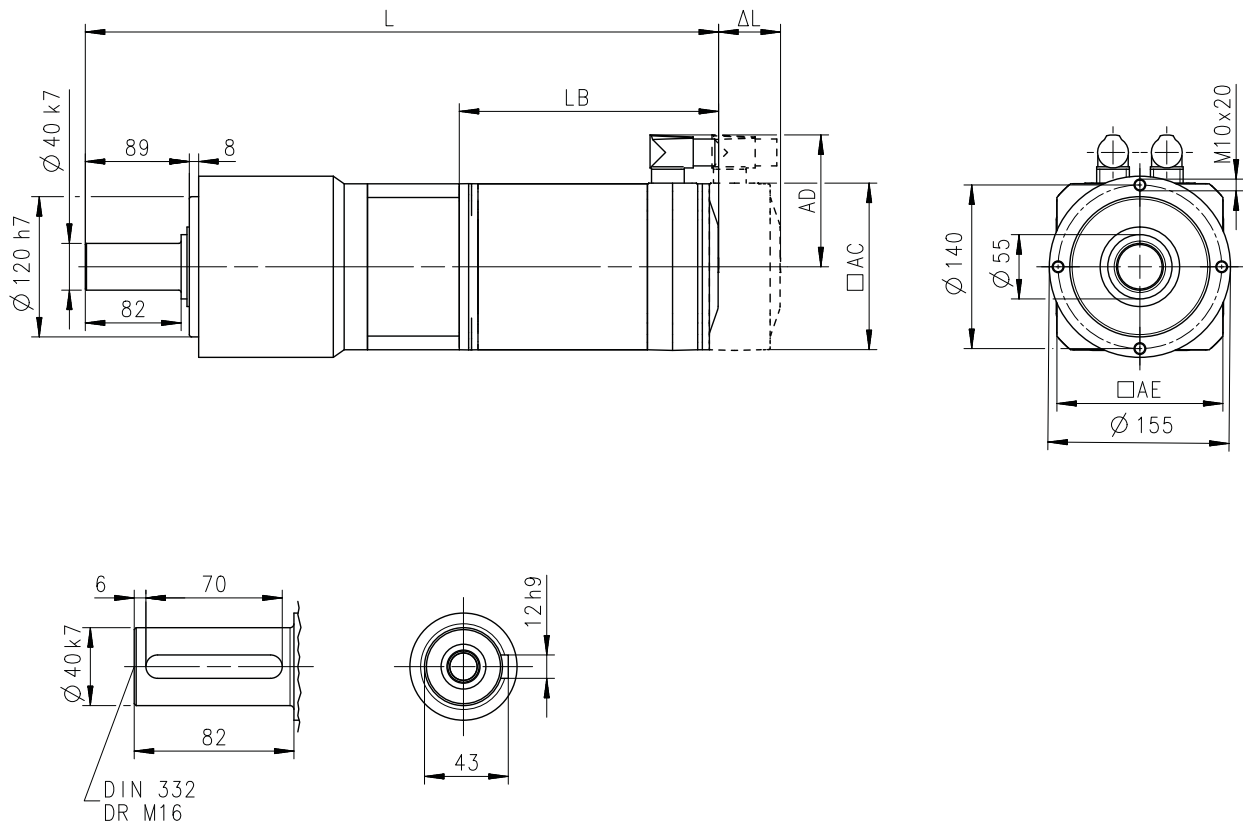
8801021-00

Motor			m850-								
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	464.5	502.5	540.5	457.5	497.5	537.5	489.5	537.5	601.5
Motor length	LB	mm	189	227	265	182	222	262	204	252	316
Motor diameter	AC	mm	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158	158
Gearbox diameter	AE	mm	142	142	142	142	142	142	190	190	190



g730-P460 with m850

Gearbox design: Solid shaft, without foot with centering, 2-stage



8801021-00

Motor			m850-							
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000
Total length	L	mm	509	547	585	502	542	582	534	582
Motor length	LB	mm	189	227	265	182	222	262	204	252
Motor diameter	AC	mm	121	121	121	142	142	142	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158
Gearbox diameter	AE	mm	142	142	142	142	142	142	190	190



Planetary gearbox g750-P

The modular system

g750-P planetary gearbox with m850 synchronous servo motor

Gearbox		g750-P44	g750-P130	g750-P260
Min. motor assignment		m850-S40S	m850-S60L	m850-S60S
Max. motor assignment		m850-S80L	m850-140S	m850-S190S
Technical data				
Max. output torque	Nm	44	130	260
Mounting position		Any		
Color		Unpainted 40/60/80 Primed 120/140/190 RAL9005 120/140/190		
Surface and corrosion protection		Without 40/60/80 OKS-G 120/140/190		
Output shaft				
Solid shaft with featherkey	mm	16 x 28	22 x 36	32 x 58
Smooth solid shaft	mm	16 x 28	22 x 36	32 x 58
Shaft material		Steel		
Shaft sealing ring material		NBR		
Gearbox design		Without foot with centering		
Gearbox stages		1/2	1/2	1/2
Output flange	mm	70	80	120
Lubricant		Standard Food compatible		
Cooling		Self-ventilated		
Motor connection		Connector		
Holding brake		Without With		
Feedback				
Without functional safety		Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)		
With functional safety		Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)		
Temperature monitoring		PT1000 thermal sensor 40/60/80 PT1000 thermal sensor and 2x PTC thermistor 120/140/190		



Gearbox data

g750-P44, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	28.0	10	4
4	38.0	10	5
5	40.0	10	4
7	25.0	10	4
8	18.0	10	4
10	15.0	10	3

g750-P44, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
9	44.0	12	4
12	44.0	12	4
15	44.0	12	4
16	44.0	12	5
20	44.0	12	5
32	44.0	12	5
25	40.0	12	5
40	40.0	12	5
64	18.0	12	4
100	15.0	12	3

g750-P130, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	85.0	7	9
4	115	7	11
5	110	7	12
7	65.0	7	10
8	50.0	7	10
10	38.0	7	9

g750-P130, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
9	130	9	10
12	120	9	12
15	110	9	12
16	120	9	12
20	120	9	12
25	110	9	12
32	120	9	12
40	110	9	12
64	50.0	9	10



g750-P260, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	115	7	22
4	155	7	26
5	195	7	26
7	135	7	22
10	95.0	7	20
8	120	7	22

g750-P260, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
9	210	9	25
12	260	9	28
15	230	9	27
16	260	9	28
25	230	9	27
20	260	9	28
32	260	9	28
40	230	9	27
64	120	9	23
100	95.0	9	17

Radial forces and axial forces

Gearbox			g750-P44	g750-P130	g750-P260
Bearing service life 20000 h					
Speed		rpm	100	100	100
Radial force	F_{rad}	rated	3200	5500	6000
axial force	F_{ax}	rated	4400	6400	8000
Bearing service life 30000 h					
Speed		rpm	100	100	100
Radial force	F_{rad}	rated	3200	4800	5400
axial force	F_{ax}	rated	3900	5700	7000
Max. radial force	$F_{\text{rad, max}}$	rated	3200	5500	6000
Max. axial force	$F_{\text{ax, max}}$	rated	4400	6400	8000

Technical data

Planetary gearbox g750-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



Selection tables

Inverter mains connection 400 V, self-ventilated motors

0.11 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g750-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
6.5	141	2.8	18.0	156	0.097	64	P44	S40/S9000	2	3.1
9.4	90.0	1.6	15.0	100	0.094	100	P44	S40/S9000	2	3.1

0.2 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g750-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
4.6	281	5.6	44.0	313	0.122	32	P44	S40/L9000	2	3.3
6.3	225	4.8	40.0	250	0.121	40	P44	S40/L9000	2	3.3
11.0	141	1.6	18.0	156	0.121	64	P44	S40/L9000	2	3.3

0.325 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g750-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
2.9	857	5.4	25.0	429	0.319	7	P44	S60/S6000	1	3.9
3.4	750	4.8	18.0	375	0.315	8	P44	S60/S6000	1	3.9
4.3	500	5.3	44.0	250	0.370	12	P44	S60/S6000	2	4.1
4.6	600	3.2	15.0	300	0.310	10	P44	S60/S6000	1	3.9
5.7	400	4.6	44.0	200	0.322	15	P44	S60/S6000	2	4.1
6.2	375	4.3	44.0	188	0.332	16	P44	S60/S6000	2	4.1
8.2	300	3.7	44.0	150	0.320	20	P44	S60/S6000	2	4.1
11.0	240	3.1	40.0	120	0.319	25	P44	S60/S6000	2	4.1
13.0	150	5.9	110	75.0	0.588	40	P130	S60/S6000	2	6.2
14.0	188	2.7	44.0	94.0	0.308	32	P44	S60/S6000	2	4.1
19.0	150	2.2	40.0	75.0	0.308	40	P44	S60/S6000	2	4.1
25.0	93.8	4.2	120	102	1.637	64	P260	S60/S6000	2	12
28.0	93.8	1.8	50.0	47.0	0.589	64	P130	S60/S6000	2	6.2
42.0	60.0	2.3	95.0	65	1.598	100	P260	S60/S6000	2	12



Technical data

Planetary gearbox g750-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

0.55 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g750-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
3.8	1200	5.1	40.0	600	0.531	5	P44	S60/L6000	1	4.4
5.8	857	3.0	25.0	429	0.512	7	P44	S60/L6000	1	4.4
6.7	750	2.7	18.0	375	0.508	8	P44	S60/L6000	1	4.4
6.7	667	3.6	44.0	333	0.568	9	P44	S60/L6000	2	4.6
7.7	600	4.5	38.0	300	0.783	10	P130	S60/L6000	1	6.2
8.4	600	1.8	15.0	300	0.503	10	P44	S60/L6000	1	4.4
9.5	500	2.9	44.0	250	0.563	12	P44	S60/L6000	2	4.6
12.0	400	2.6	44.0	200	0.515	15	P44	S60/L6000	2	4.6
13.0	375	2.4	44.0	188	0.525	16	P44	S60/L6000	2	4.6
16.0	240	5.2	110	120	0.825	25	P130	S60/L6000	2	6.7
17.0	300	2.0	44.0	150	0.513	20	P44	S60/L6000	2	4.6
21.0	240	1.7	40.0	120	0.512	25	P44	S60/L6000	2	4.6
22.0	188	4.4	120	94.0	0.783	32	P130	S60/L6000	2	6.7
27.0	188	1.5	44.0	94.0	0.501	32	P44	S60/L6000	2	4.6
31.0	150	3.3	110	75.0	0.781	40	P130	S60/L6000	2	6.7
33.0	150	1.2	40.0	75.0	0.501	40	P44	S60/L6000	2	4.6
51.0	93.8	2.3	120	102	1.830	64	P260	S60/L6000	2	13
75.0	60.0	1.3	95.0	65	1.791	100	P260	S60/L6000	2	13

1 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, max}	J	i	g750-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
4.4	1833	4.3	28.0	3333	1.845	3	P44	S80/S5500	1	5.6
6.2	1375	3.4	38.0	2500	1.787	4	P44	S80/S5500	1	5.6
7.9	1100	2.8	40.0	2000	1.765	5	P44	S80/S5500	1	5.6
9.8	786	5.5	65.0	393	1.801	7	P130	S80/S5500	1	7.4
11.0	786	1.7	25.0	1429	1.758	7	P44	S80/S5500	1	5.6
11.0	611	5.5	130	306	2.041	9	P130	S80/S5500	2	7.9
12.0	688	3.8	50.0	344	1.787	8	P130	S80/S5500	1	7.4
13.0	688	1.4	18.0	1250	1.754	8	P44	S80/S5500	1	5.6
14.0	611	2.0	44.0	1111	1.802	9	P44	S80/S5500	2	5.8
14.0	550	5.8	95.0	650	2.790	10	P260	S80/S5500	1	12
14.0	458	5.3	120	229	2.015	12	P130	S80/S5500	2	7.9
16.0	550	2.4	38.0	275	1.770	10	P130	S80/S5500	1	7.4
19.0	458	1.6	44.0	833	1.797	12	P44	S80/S5500	2	5.8
20.0	367	4.5	110	183	2.007	15	P130	S80/S5500	2	7.9
21.0	344	4.4	120	172	1.860	16	P130	S80/S5500	2	7.9
24.0	367	1.4	44.0	667	1.749	15	P44	S80/S5500	2	5.8
26.0	344	1.3	44.0	625	1.759	16	P44	S80/S5500	2	5.8
28.0	275	3.7	120	138	1.815	20	P130	S80/S5500	2	7.9
29.0	220	5.7	230	260	2.977	25	P260	S80/S5500	2	14
32.0	275	1.1	44.0	500	1.747	20	P44	S80/S5500	2	5.8
38.0	220	2.7	110	110	1.812	25	P130	S80/S5500	2	7.9
40.0	172	5.0	260	203	2.824	32	P260	S80/S5500	2	14
50.0	172	2.3	120	86.0	1.770	32	P130	S80/S5500	2	7.9
56.0	138	3.6	230	163	2.821	40	P260	S80/S5500	2	14
64.0	138	1.7	110	69.0	1.768	40	P130	S80/S5500	2	7.9
97.0	85.9	1.2	120	102	2.817	64	P260	S80/S5500	2	14

Technical data

Planetary gearbox g750-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



1.2 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g750-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
5.1	1833	5.7	85.0	917	2.705	3	P130	S80/L5500	1	8.1
5.7	1833	3.4	28.0	3333	2.375	3	P44	S80/L5500	1	6.3
7.8	1375	2.7	38.0	2500	2.317	4	P44	S80/L5500	1	6.3
10.0	1100	2.3	40.0	2000	2.295	5	P44	S80/L5500	1	6.3
13.0	786	4.4	65.0	393	2.331	7	P130	S80/L5500	1	8.1
14.0	786	1.3	25.0	1429	2.288	7	P44	S80/L5500	1	6.3
15.0	688	3.1	50.0	344	2.317	8	P130	S80/L5500	1	8.1
15.0	611	4.5	130	306	2.571	9	P130	S80/L5500	2	8.6
16.0	688	1.2	18.0	1250	2.284	8	P44	S80/L5500	1	6.3
18.0	611	1.6	44.0	1111	2.332	9	P44	S80/L5500	2	6.5
18.0	550	4.7	95.0	650	3.320	10	P260	S80/L5500	1	13
20.0	550	1.9	38.0	275	2.300	10	P130	S80/L5500	1	8.1
20.0	458	4.3	120	229	2.545	12	P130	S80/L5500	2	8.6
24.0	458	1.3	44.0	833	2.327	12	P44	S80/L5500	2	6.5
26.0	367	3.6	110	183	2.537	15	P130	S80/L5500	2	8.6
28.0	344	3.5	120	172	2.390	16	P130	S80/L5500	2	8.6
30.0	367	1.1	44.0	667	2.279	15	P44	S80/L5500	2	6.5
32.0	344	1.1	44.0	625	2.289	16	P44	S80/L5500	2	6.5
37.0	275	3.0	120	138	2.345	20	P130	S80/L5500	2	8.6
40.0	220	4.6	230	260	3.507	25	P260	S80/L5500	2	15
49.0	220	2.2	110	110	2.342	25	P130	S80/L5500	2	8.6
53.0	172	4.1	260	203	3.354	32	P260	S80/L5500	2	15
63.0	172	1.9	120	86.0	2.300	32	P130	S80/L5500	2	8.6
74.0	138	2.9	230	163	3.351	40	P260	S80/L5500	2	15
79.0	138	1.4	110	69.0	2.298	40	P130	S80/L5500	2	8.6
120	85.9	1.0	120	102	3.347	64	P260	S80/L5500	2	15



Technical data

Planetary gearbox g750-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

2 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g750-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
13.0	1320	2.8	85.0	660	7.275	3	P130	S120/S3960	1	11
14.0	1320	1.7	28.0	660	6.945	3	P44	S120/S3960	1	8.9
17.0	990	4.4	115	495	7.040	4	P130	S120/S3960	1	11
18.0	990	1.3	38.0	495	6.887	4	P44	S120/S3960	1	8.9
21.0	792	3.7	110	396	6.966	5	P130	S120/S3960	1	11
23.0	792	1.1	40.0	396	6.865	5	P44	S120/S3960	1	8.9
29.0	566	4.1	135	283	7.986	7	P260	S120/S3960	1	16
32.0	566	2.0	65.0	283	6.901	7	P130	S120/S3960	1	11
35.0	495	3.3	120	248	7.934	8	P260	S120/S3960	1	16
36.0	440	3.7	210	220	8.826	9	P260	S120/S3960	2	17
37.0	495	1.4	50.0	248	6.887	8	P130	S120/S3960	1	11
40.0	440	2.2	130	220	7.141	9	P130	S120/S3960	2	11
43.0	330	4.7	260	165	8.756	12	P260	S120/S3960	2	17
46.0	396	2.1	95.0	198	7.890	10	P260	S120/S3960	1	16
54.0	330	2.1	120	165	7.115	12	P130	S120/S3960	2	11
61.0	264	3.3	230	132	8.733	15	P260	S120/S3960	2	17
64.0	248	3.5	260	124	8.265	16	P260	S120/S3960	2	17
68.0	264	1.6	110	132	7.107	15	P130	S120/S3960	2	11
72.0	248	1.6	120	124	6.960	16	P130	S120/S3960	2	11
85.0	198	2.9	260	99.0	8.085	20	P260	S120/S3960	2	17
90.0	198	1.3	120	99.0	6.915	20	P130	S120/S3960	2	11
113	158	2.0	230	79.0	8.077	25	P260	S120/S3960	2	17
144	124	1.8	260	62.0	7.924	32	P260	S120/S3960	2	17
180	99.0	1.3	230	50.0	7.921	40	P260	S120/S3960	2	17

2.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g750-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
22.0	1080	4.7	115	540	18.186	3	P260	S140/S3240	1	37
24.0	1080	1.7	85.0	540	17.342	3	P130	S140/S3240	1	32
29.0	810	4.7	155	405	17.605	4	P260	S140/S3240	1	37
32.0	810	2.7	115	405	17.110	4	P130	S140/S3240	1	32
36.0	648	4.7	195	324	17.377	5	P260	S140/S3240	1	37
40.0	648	2.2	110	324	17.033	5	P130	S140/S3240	1	32
56.0	463	2.3	135	231	17.186	7	P260	S140/S3240	1	37
57.0	463	1.2	65.0	231	16.987	7	P130	S140/S3240	1	32
65.0	405	1.8	120	203	17.134	8	P260	S140/S3240	1	37
71.0	360	2.2	210	180	18.026	9	P260	S140/S3240	2	38
72.0	360	1.3	130	180	17.208	9	P130	S140/S3240	2	32
82.0	324	1.2	95.0	162	17.090	10	P260	S140/S3240	1	37
91.0	270	2.7	260	135	17.956	12	P260	S140/S3240	2	38
96.0	270	1.2	120	135	17.182	12	P130	S140/S3240	2	32
120	216	1.9	230	108	17.933	15	P260	S140/S3240	2	38
128	203	2.0	260	101	17.465	16	P260	S140/S3240	2	38
160	162	1.6	260	81.0	17.285	20	P260	S140/S3240	2	38
200	130	1.1	230	65.0	17.277	25	P260	S140/S3240	2	38
256	101	1.0	260	51.0	17.124	32	P260	S140/S3240	2	38

Technical data

Planetary gearbox g750-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



3.1 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g750-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
19.0	1320	5.1	115	660	14.886	3	P260	S120/M3960	1	18
21.0	1320	1.1	28.0	660	12.845	3	P44	S120/M3960	1	12
21.0	1320	1.8	85.0	660	13.175	3	P130	S120/M3960	1	13
24.0	990	5.4	155	495	14.305	4	P260	S120/M3960	1	18
27.0	990	2.9	115	495	12.940	4	P130	S120/M3960	1	13
30.0	792	5.4	195	396	14.077	5	P260	S120/M3960	1	18
35.0	792	2.4	110	396	12.866	5	P130	S120/M3960	1	13
48.0	566	2.7	135	283	13.886	7	P260	S120/M3960	1	18
50.0	566	1.3	65.0	283	12.801	7	P130	S120/M3960	1	13
57.0	495	2.1	120	248	13.834	8	P260	S120/M3960	1	18
61.0	440	2.4	210	220	14.726	9	P260	S120/M3960	2	20
63.0	440	1.4	130	220	13.041	9	P130	S120/M3960	2	14
71.0	396	1.3	95.0	198	13.790	10	P260	S120/M3960	1	18
77.0	330	3.1	260	165	14.656	12	P260	S120/M3960	2	20
83.0	330	1.4	120	165	13.015	12	P130	S120/M3960	2	14
103	264	2.2	230	132	14.633	15	P260	S120/M3960	2	20
104	264	1.0	110	132	13.007	15	P130	S120/M3960	2	14
109	248	2.3	260	124	14.165	16	P260	S120/M3960	2	20
111	248	1.1	120	124	12.860	16	P130	S120/M3960	2	14
139	198	1.9	260	99.0	13.985	20	P260	S120/M3960	2	20
174	158	1.3	230	79.0	13.977	25	P260	S120/M3960	2	20
223	124	1.2	260	62.0	13.824	32	P260	S120/M3960	2	20

3.7 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g750-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
24.0	1320	4.2	115	660	20.686	3	P260	S120/L3960	1	21
31.0	990	4.4	155	495	20.105	4	P260	S120/L3960	1	21
39.0	792	4.5	195	396	19.877	5	P260	S120/L3960	1	21
60.0	566	2.2	135	283	19.686	7	P260	S120/L3960	1	21
69.0	495	1.7	120	248	19.634	8	P260	S120/L3960	1	21
76.0	440	2.0	210	220	20.526	9	P260	S120/L3960	2	23
86.0	396	1.1	95.0	198	19.590	10	P260	S120/L3960	1	21
98.0	330	2.5	260	165	20.456	12	P260	S120/L3960	2	23
127	264	1.8	230	132	20.433	15	P260	S120/L3960	2	23
135	248	1.9	260	124	19.965	16	P260	S120/L3960	2	23
169	198	1.5	260	99.0	19.785	20	P260	S120/L3960	2	23
212	158	1.1	230	79.0	19.777	25	P260	S120/L3960	2	23



Technical data

Planetary gearbox g750-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

4.8 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g750-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
39.0	1080	2.8	115	540	32.586	3	P260	S140/M3240	1	42
40.0	1080	1.0	85.0	540	31.742	3	P130	S140/M3240	1	37
52.0	810	2.9	155	405	32.005	4	P260	S140/M3240	1	42
54.0	810	1.6	115	405	31.510	4	P130	S140/M3240	1	37
65.0	648	2.9	195	324	31.777	5	P260	S140/M3240	1	42
67.0	648	1.4	110	324	31.433	5	P130	S140/M3240	1	37
94.0	463	1.4	135	231	31.586	7	P260	S140/M3240	1	42
108	405	1.1	120	203	31.534	8	P260	S140/M3240	1	42
118	360	1.3	210	180	32.426	9	P260	S140/M3240	2	43
158	270	1.6	260	135	32.356	12	P260	S140/M3240	2	43
197	216	1.1	230	108	32.333	15	P260	S140/M3240	2	43
211	203	1.2	260	101	31.865	16	P260	S140/M3240	2	43

5 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g750-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
45.0	1000	2.5	115	500	65.648	3	P260	S190/S3000	1	54
60.0	750	2.5	155	375	65.067	4	P260	S190/S3000	1	54
75.0	600	2.5	195	300	64.839	5	P260	S190/S3000	1	54
108	429	1.3	135	214	64.652	7	P260	S190/S3000	1	54
135	333	1.2	210	167	65.487	9	P260	S190/S3000	2	56
180	250	1.4	260	125	65.418	12	P260	S190/S3000	2	56
226	200	1.0	230	100	65.395	15	P260	S190/S3000	2	56
241	188	1.1	260	94.0	64.927	16	P260	S190/S3000	2	56

5.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g750-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
50.0	1080	2.3	115	540	47.086	3	P260	S140/L3240	1	47
66.0	810	2.3	155	405	46.505	4	P260	S140/L3240	1	47
82.0	648	2.3	195	324	46.277	5	P260	S140/L3240	1	47
117	463	1.1	135	231	46.086	7	P260	S140/L3240	1	47
147	360	1.1	210	180	46.926	9	P260	S140/L3240	2	48
196	270	1.3	260	135	46.856	12	P260	S140/L3240	2	48

7.5 kW

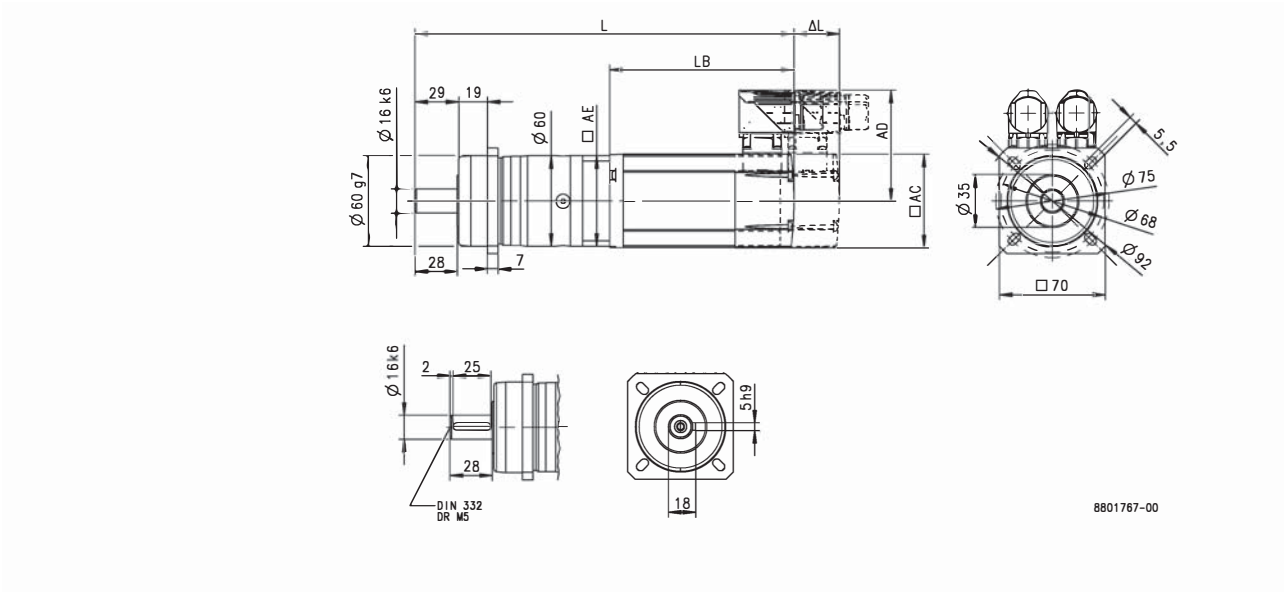
Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g750-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
69.0	1000	1.7	115	500	121.948	3	P260	S190/M3000	1	63
92.0	750	1.7	155	375	121.367	4	P260	S190/M3000	1	63
115	600	1.7	195	300	121.139	5	P260	S190/M3000	1	63



Basic dimensions

g750-P44 with m850

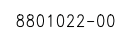
Gearbox design: Solid shaft, without foot with centering



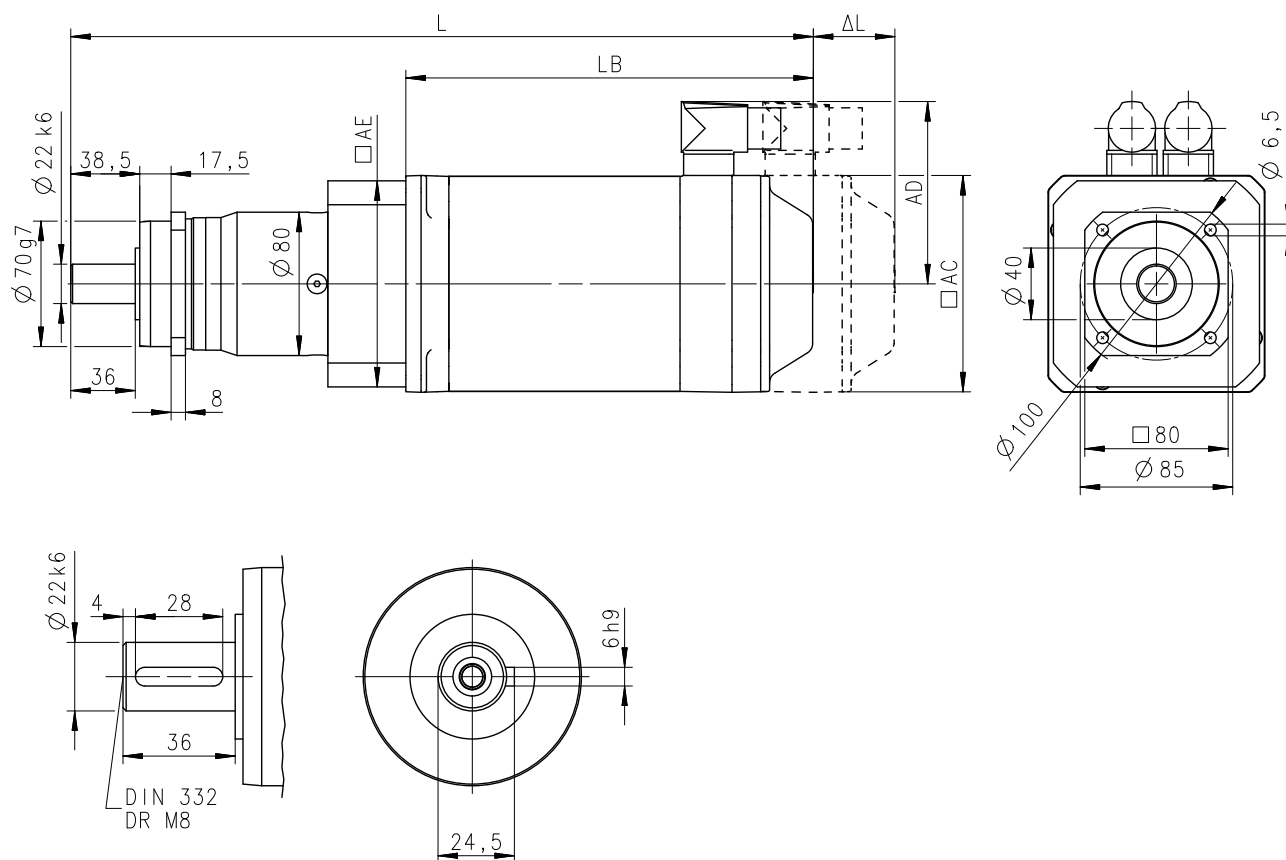
Motor			m850-					
			S60/S6000	S60/L6000	S80/S5500	S80/L5500	S120/S3960	S120/M3960
Total length	L	mm	240	270	281.5	301.5	317.5	355.5
Motor length	LB	mm	122	152	158	178	189	227
Motor diameter	AC	mm	60	60	80	80	121	121
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102	102
Gearbox diameter	AE	mm	60	60	80	80		



Gearbox design: Solid shaft, without foot with centering, 1-stage

105

Gearbox design: Solid shaft, without foot with centering, 2-stage

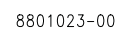


8801022-00

Motor			m850-						
			S60/S6000	S60/L6000	S80/S5500	S80/L5500	S120/S3960	S120/M3960	S140/S3240
Total length	L	mm	298.5	328.5	339.5	359.5	375.5	413.5	378.5
Motor length	LB	mm	122	152	158	178	189	227	182
Motor diameter	AC	mm	60	60	80	80	121	121	142
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102	102	114
Gearbox diameter	AE	mm	80	80	80	80	115	115	140



Gearbox design: Solid shaft, without foot with centering, 1-stage

107

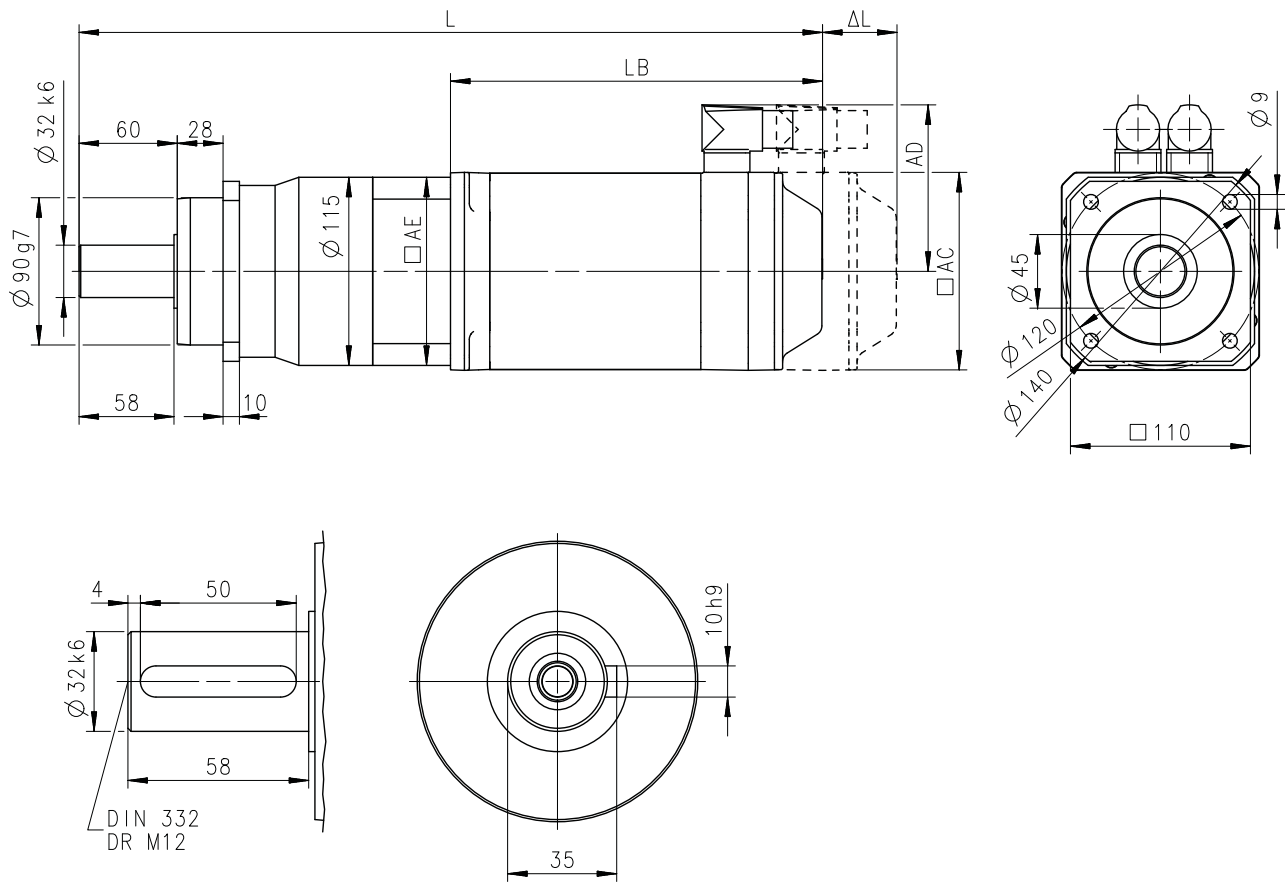
Technical data

Planetary gearbox g750-P
Basic dimensions



g750-P260 with m850

Gearbox design: Solid shaft, without foot with centering, 2-stage



8801023-00

Motor			m850-										
			S60/ S6000	S60/ L6000	S80/ S5500	S80/ L5500	S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000
Total length	L	mm	349	379	385	405	416	454	492	419	459	499	458.5
Motor length	LB	mm	122	152	158	178	189	227	265	182	222	262	204
Motor diameter	AC	mm	60	60	80	80	121	121	121	142	142	142	190
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102	102	102	114	114	135	137
Gearbox diameter	AE	mm	115	115	115	115	115	115	115	140	140	140	190



Planetary gearbox g780-P

The modular system

g780-P planetary gearbox with m850 synchronous servo motor

Gearbox		g780-P20	g780-P44	g780-P130	g780-P260
Min. motor assignment		m850-S40S	m850-S40S	m850-S60S	m850-S60S
Max. motor assignment		m850-S80L	m850-S80L	m850-S140S	m850-S190S
Technical data					
Max. output torque	Nm	20	44	130	260
Mounting position		Any			
Color		Unpainted 40/60/80 Primed 120/140/190 RAL9005 120/140/190			
Surface and corrosion protection		Without 40/60/80 OKS-G 120/140/190			
Output shaft					
Flange output shaft with dowel hole	mm	20 x 4	20 x 4	31.5 x 6	40 x 6
Gearbox design		Without foot with centering			
Gearbox stages		1/2	1/2	1/2	1/2
Output flange	mm	80	80	110	135
Lubricant		Standard Food compatible			
Cooling		Self-ventilated			
Motor connection		Connector			
Holding brake		Without With			
Feedback					
Without functional safety		Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)			
With functional safety		Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)			
Temperature monitoring		PT1000 thermal sensor 40/60/80 PT1000 thermal sensor and 2x PTC thermistor 120/140/190			



Gearbox data

g780-P20, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	11.0	15	2
7	8.0	15	3
8	6.0	15	3
10	5.0	15	2

g780-P20, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
9	16.0	19	2
20	20.0	19	6
25	18.0	19	5
32	20.0	19	5
40	18.0	19	5
64	8.0	19	3

g780-P44, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	28.0	10	9
4	38.0	10	12
5	40.0	10	11
7	25.0	10	7
8	18.0	10	7
10	15.0	10	6

g780-P44, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
9	44.0	12	10
12	44.0	12	11
15	44.0	12	10
16	44.0	12	12
20	44.0	12	12
32	44.0	12	11
25	40.0	12	12
40	40.0	12	12
64	18.0	12	8
100	15.0	12	5



g780-P130, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	85.0	7	16
4	115	7	32
5	110	7	34
7	65.0	7	22
8	50.0	7	20
10	38.0	7	17

g780-P130, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
9	130	9	21
12	120	9	37
15	110	9	36
16	120	9	40
20	120	9	40
25	110	9	38
32	120	9	39
40	110	9	37
64	50.0	9	20

g780-P260, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	115	7	50
4	155	7	69
5	195	7	72
7	135	7	49
10	95.0	7	36
8	120	7	47

g780-P260, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
9	210	9	64
12	260	9	85
15	230	9	76
16	260	9	88
25	230	9	77
20	260	9	87
32	260	9	85
40	230	9	76
64	120	9	50
100	95.0	9	30

Technical data

Planetary gearbox g780-P
Radial forces and axial forces



Radial forces and axial forces

Gearbox			g780-P20	g780-P44	g780-P130	g780-P260
Bearing service life 20000 h						
Speed		rpm	100	100	100	100
Radial force	F_{rad}	rated	550	550	1400	2400
axial force	F_{ax}	rated	840	1200	3000	3300
Bearing service life 30000 h						
Speed		rpm	100	100	100	100
Radial force	F_{rad}	rated	480	500	1200	2100
axial force	F_{ax}	rated	710	1200	3000	3300
Max. radial force	$F_{rad, max}$	rated	1150	900	2200	3800
Max. axial force	$F_{ax, max}$	rated	1000	1200	3300	5200



Technical data

Planetary gearbox g780-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors

Selection tables

Inverter mains connection 400 V, self-ventilated motors

0.11 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g780-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
1.0	900	4.7	5.0	450	0.048	10	P20	S40/S9000	1	1.5
2.6	281	5.7	20.0	141	0.045	32	P20	S40/S9000	2	1.6
3.8	225	4.2	18.0	113	0.045	40	P20	S40/S9000	2	1.6
6.2	141	1.3	8.0	70.0	0.045	64	P20	S40/S9000	2	1.6
6.6	141	2.7	18.0	156	0.096	64	P44	S40/S9000	2	2.6
9.5	90.0	1.6	15.0	100	0.094	100	P44	S40/S9000	2	2.6

0.2 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g780-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
0.5	3000	5.5	11.0	1500	0.118	3	P20	S40/L9000	1	1.7
1.2	1286	5.8	8.0	643	0.076	7	P20	S40/L9000	1	1.7
1.4	1000	5.1	16.0	500	0.084	9	P20	S40/L9000	2	1.8
1.5	1125	3.9	6.0	563	0.074	8	P20	S40/L9000	1	1.7
1.9	900	2.7	5.0	450	0.072	10	P20	S40/L9000	1	1.7
3.0	450	5.1	20.0	225	0.073	20	P20	S40/L9000	2	1.8
4.3	360	3.7	18.0	180	0.072	25	P20	S40/L9000	2	1.8
4.6	281	5.6	44.0	313	0.121	32	P44	S40/L9000	2	2.8
5.7	281	3.3	20.0	141	0.069	32	P20	S40/L9000	2	1.8
6.3	225	4.8	40.0	250	0.120	40	P44	S40/L9000	2	2.8
7.6	225	2.4	18.0	113	0.069	40	P20	S40/L9000	2	1.8
12.0	141	1.6	18.0	156	0.120	64	P44	S40/L9000	2	2.8

0.325 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g780-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
2.9	857	5.4	25.0	429	0.325	7	P44	S60/S6000	1	3.4
3.4	750	4.7	18.0	375	0.319	8	P44	S60/S6000	1	3.4
4.3	500	5.2	44.0	250	0.363	12	P44	S60/S6000	2	3.6
4.6	600	3.2	15.0	300	0.313	10	P44	S60/S6000	1	3.4
5.7	400	4.6	44.0	200	0.320	15	P44	S60/S6000	2	3.6
6.2	375	4.3	44.0	188	0.328	16	P44	S60/S6000	2	3.6
8.2	300	3.7	44.0	150	0.318	20	P44	S60/S6000	2	3.6
11.0	240	3.1	40.0	120	0.316	25	P44	S60/S6000	2	3.6
13.0	150	5.9	110	75.0	0.588	40	P130	S60/S6000	2	6.3
14.0	188	2.7	44.0	94.0	0.307	32	P44	S60/S6000	2	3.6
19.0	150	2.2	40.0	75.0	0.307	40	P44	S60/S6000	2	3.6
25.0	93.8	4.2	120	102	1.636	64	P260	S60/S6000	2	12
28.0	93.8	1.8	50.0	47.0	0.587	64	P130	S60/S6000	2	6.3
42.0	60.0	2.3	95.0	65	1.597	100	P260	S60/S6000	2	12

Technical data

Planetary gearbox g780-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



0.55 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g780-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
3.8	1200	5.1	40.0	600	0.543	5	P44	S60/L6000	1	3.9
5.8	857	3.0	25.0	429	0.518	7	P44	S60/L6000	1	3.9
6.7	750	2.6	18.0	375	0.512	8	P44	S60/L6000	1	3.9
6.7	667	3.6	44.0	333	0.564	9	P44	S60/L6000	2	4.1
7.8	600	4.4	38.0	300	0.819	10	P130	S60/L6000	1	6.2
8.5	600	1.8	15.0	300	0.506	10	P44	S60/L6000	1	3.9
9.5	500	2.9	44.0	250	0.556	12	P44	S60/L6000	2	4.1
12.0	400	2.5	44.0	200	0.513	15	P44	S60/L6000	2	4.1
13.0	375	2.4	44.0	188	0.521	16	P44	S60/L6000	2	4.1
16.0	240	5.2	110	120	0.825	25	P130	S60/L6000	2	6.8
17.0	300	2.0	44.0	150	0.511	20	P44	S60/L6000	2	4.1
21.0	240	1.7	40.0	120	0.509	25	P44	S60/L6000	2	4.1
22.0	188	4.4	120	94.0	0.784	32	P130	S60/L6000	2	6.8
27.0	188	1.5	44.0	94.0	0.500	32	P44	S60/L6000	2	4.1
31.0	150	3.3	110	75.0	0.781	40	P130	S60/L6000	2	6.8
33.0	150	1.2	40.0	75.0	0.500	40	P44	S60/L6000	2	4.1
51.0	93.8	2.3	120	102	1.829	64	P260	S60/L6000	2	13
75.0	60.0	1.3	95.0	65	1.790	100	P260	S60/L6000	2	13

1 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g780-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
4.4	1833	4.2	28.0	3333	1.878	3	P44	S80/S5500	1	5.1
6.2	1375	3.4	38.0	2500	1.806	4	P44	S80/S5500	1	5.1
7.9	1100	2.8	40.0	2000	1.777	5	P44	S80/S5500	1	5.1
9.8	786	5.4	65.0	393	1.874	7	P130	S80/S5500	1	7.4
11.0	786	1.6	25.0	1429	1.764	7	P44	S80/S5500	1	5.1
11.0	611	5.5	130	306	2.066	9	P130	S80/S5500	2	8.0
12.0	688	3.8	50.0	344	1.843	8	P130	S80/S5500	1	7.4
13.0	688	1.4	18.0	1250	1.759	8	P44	S80/S5500	1	5.1
14.0	611	2.0	44.0	1111	1.798	9	P44	S80/S5500	2	5.3
14.0	550	5.8	95.0	650	2.884	10	P260	S80/S5500	1	12
14.0	458	5.3	120	229	2.024	12	P130	S80/S5500	2	8.0
16.0	550	2.4	38.0	275	1.806	10	P130	S80/S5500	1	7.4
19.0	458	1.6	44.0	833	1.791	12	P44	S80/S5500	2	5.3
20.0	367	4.4	110	183	2.006	15	P130	S80/S5500	2	8.0
21.0	344	4.4	120	172	1.865	16	P130	S80/S5500	2	8.0
24.0	367	1.4	44.0	667	1.747	15	P44	S80/S5500	2	5.3
26.0	344	1.3	44.0	625	1.756	16	P44	S80/S5500	2	5.3
28.0	275	3.7	120	138	1.818	20	P130	S80/S5500	2	8.0
29.0	220	5.7	230	260	2.981	25	P260	S80/S5500	2	14
32.0	275	1.1	44.0	500	1.745	20	P44	S80/S5500	2	5.3
38.0	220	2.7	110	110	1.812	25	P130	S80/S5500	2	8.0
40.0	172	5.0	260	203	2.829	32	P260	S80/S5500	2	14
50.0	172	2.3	120	86.0	1.771	32	P130	S80/S5500	2	8.0
56.0	138	3.6	230	163	2.823	40	P260	S80/S5500	2	14
64.0	138	1.7	110	69.0	1.768	40	P130	S80/S5500	2	8.0
97.0	85.9	1.2	120	102	2.816	64	P260	S80/S5500	2	14



Technical data

Planetary gearbox g780-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

1.2 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g780-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
5.1	1833	5.7	85.0	917	3.094	3	P130	S80/L5500	1	8.1
5.7	1833	3.4	28.0	3333	2.408	3	P44	S80/L5500	1	5.8
7.8	1375	2.7	38.0	2500	2.336	4	P44	S80/L5500	1	5.8
10.0	1100	2.3	40.0	2000	2.307	5	P44	S80/L5500	1	5.8
13.0	786	4.4	65.0	393	2.404	7	P130	S80/L5500	1	8.1
14.0	786	1.3	25.0	1429	2.294	7	P44	S80/L5500	1	5.8
15.0	688	3.1	50.0	344	2.373	8	P130	S80/L5500	1	8.1
15.0	611	4.4	130	306	2.596	9	P130	S80/L5500	2	8.7
16.0	688	1.1	18.0	1250	2.289	8	P44	S80/L5500	1	5.8
18.0	611	1.6	44.0	1111	2.328	9	P44	S80/L5500	2	6.0
18.0	550	4.7	95.0	650	3.414	10	P260	S80/L5500	1	12
20.0	550	1.9	38.0	275	2.336	10	P130	S80/L5500	1	8.1
20.0	458	4.3	120	229	2.554	12	P130	S80/L5500	2	8.7
24.0	458	1.3	44.0	833	2.321	12	P44	S80/L5500	2	6.0
26.0	367	3.6	110	183	2.536	15	P130	S80/L5500	2	8.7
28.0	344	3.5	120	172	2.395	16	P130	S80/L5500	2	8.7
30.0	367	1.1	44.0	667	2.277	15	P44	S80/L5500	2	6.0
32.0	344	1.1	44.0	625	2.286	16	P44	S80/L5500	2	6.0
37.0	275	3.0	120	138	2.348	20	P130	S80/L5500	2	8.7
40.0	220	4.6	230	260	3.511	25	P260	S80/L5500	2	14
49.0	220	2.2	110	110	2.342	25	P130	S80/L5500	2	8.7
53.0	172	4.1	260	203	3.359	32	P260	S80/L5500	2	14
63.0	172	1.9	120	86.0	2.301	32	P130	S80/L5500	2	8.7
74.0	138	2.9	230	163	3.353	40	P260	S80/L5500	2	14
79.0	138	1.4	110	69.0	2.298	40	P130	S80/L5500	2	8.7
120	85.9	1.0	120	102	3.346	64	P260	S80/L5500	2	14

Technical data

Planetary gearbox g780-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



2 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g780-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
13.0	1320	2.7	85.0	660	7.664	3	P130	S120/S3960	1	11
14.0	1320	1.7	28.0	660	6.978	3	P44	S120/S3960	1	8.4
17.0	990	4.4	115	495	7.264	4	P130	S120/S3960	1	11
18.0	990	1.3	38.0	495	6.906	4	P44	S120/S3960	1	8.4
21.0	792	3.7	110	396	7.110	5	P130	S120/S3960	1	11
23.0	792	1.1	40.0	396	6.877	5	P44	S120/S3960	1	8.4
29.0	566	4.1	135	283	8.159	7	P260	S120/S3960	1	15
32.0	566	2.0	65.0	283	6.974	7	P130	S120/S3960	1	11
35.0	495	3.2	120	248	8.082	8	P260	S120/S3960	1	15
36.0	440	3.6	210	220	8.907	9	P260	S120/S3960	2	17
37.0	495	1.4	50.0	248	6.943	8	P130	S120/S3960	1	11
40.0	440	2.1	130	220	7.166	9	P130	S120/S3960	2	11
43.0	330	4.7	260	165	8.790	12	P260	S120/S3960	2	17
46.0	396	2.1	95.0	198	7.984	10	P260	S120/S3960	1	15
54.0	330	2.1	120	165	7.124	12	P130	S120/S3960	2	11
61.0	264	3.3	230	132	8.745	15	P260	S120/S3960	2	17
64.0	248	3.5	260	124	8.284	16	P260	S120/S3960	2	17
68.0	264	1.6	110	132	7.106	15	P130	S120/S3960	2	11
72.0	248	1.6	120	124	6.965	16	P130	S120/S3960	2	11
85.0	198	2.8	260	99.0	8.097	20	P260	S120/S3960	2	17
90.0	198	1.3	120	99.0	6.918	20	P130	S120/S3960	2	11
113	158	2.0	230	79.0	8.081	25	P260	S120/S3960	2	17
144	124	1.8	260	62.0	7.929	32	P260	S120/S3960	2	17
180	99.0	1.3	230	50.0	7.923	40	P260	S120/S3960	2	17

2.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g780-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
22.0	1080	4.6	115	540	19.130	3	P260	S140/S3240	1	36
24.0	1080	1.6	85.0	540	17.730	3	P130	S140/S3240	1	32
29.0	810	4.7	155	405	18.128	4	P260	S140/S3240	1	36
32.0	810	2.6	115	405	17.334	4	P130	S140/S3240	1	32
36.0	648	4.7	195	324	17.716	5	P260	S140/S3240	1	36
40.0	648	2.2	110	324	17.177	5	P130	S140/S3240	1	32
56.0	463	2.3	135	231	17.359	7	P260	S140/S3240	1	36
57.0	463	1.1	65.0	231	17.060	7	P130	S140/S3240	1	32
65.0	405	1.8	120	203	17.282	8	P260	S140/S3240	1	36
71.0	360	2.2	210	180	18.107	9	P260	S140/S3240	2	38
72.0	360	1.3	130	180	17.233	9	P130	S140/S3240	2	32
82.0	324	1.2	95.0	162	17.184	10	P260	S140/S3240	1	36
91.0	270	2.7	260	135	17.990	12	P260	S140/S3240	2	38
96.0	270	1.2	120	135	17.191	12	P130	S140/S3240	2	32
120	216	1.9	230	108	17.945	15	P260	S140/S3240	2	38
128	203	2.0	260	101	17.484	16	P260	S140/S3240	2	38
160	162	1.6	260	81.0	17.297	20	P260	S140/S3240	2	38
200	130	1.1	230	65.0	17.281	25	P260	S140/S3240	2	38
256	101	1.0	260	51.0	17.129	32	P260	S140/S3240	2	38



Technical data

Planetary gearbox g780-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

3.1 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g780-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
19.0	1320	5.0	115	660	15.830	3	P260	S120/M3960	1	18
21.0	1320	1.1	28.0	660	12.878	3	P44	S120/M3960	1	11
21.0	1320	1.8	85.0	660	13.564	3	P130	S120/M3960	1	13
24.0	990	5.3	155	495	14.828	4	P260	S120/M3960	1	18
27.0	990	2.9	115	495	13.164	4	P130	S120/M3960	1	13
31.0	792	5.4	195	396	14.416	5	P260	S120/M3960	1	18
35.0	792	2.4	110	396	13.010	5	P130	S120/M3960	1	13
48.0	566	2.7	135	283	14.059	7	P260	S120/M3960	1	18
50.0	566	1.3	65.0	283	12.874	7	P130	S120/M3960	1	13
57.0	495	2.1	120	248	13.982	8	P260	S120/M3960	1	18
61.0	440	2.4	210	220	14.807	9	P260	S120/M3960	2	20
63.0	440	1.4	130	220	13.066	9	P130	S120/M3960	2	14
71.0	396	1.3	95.0	198	13.884	10	P260	S120/M3960	1	18
77.0	330	3.1	260	165	14.690	12	P260	S120/M3960	2	20
83.0	330	1.4	120	165	13.024	12	P130	S120/M3960	2	14
103	264	2.2	230	132	14.645	15	P260	S120/M3960	2	20
104	264	1.0	110	132	13.006	15	P130	S120/M3960	2	14
109	248	2.3	260	124	14.184	16	P260	S120/M3960	2	20
111	248	1.1	120	124	12.865	16	P130	S120/M3960	2	14
139	198	1.8	260	99.0	13.997	20	P260	S120/M3960	2	20
174	158	1.3	230	79.0	13.981	25	P260	S120/M3960	2	20
223	124	1.2	260	62.0	13.829	32	P260	S120/M3960	2	20

3.7 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g780-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
24.0	1320	4.1	115	660	21.630	3	P260	S120/L3960	1	21
31.0	990	4.4	155	495	20.628	4	P260	S120/L3960	1	21
39.0	792	4.4	195	396	20.216	5	P260	S120/L3960	1	21
60.0	566	2.2	135	283	19.859	7	P260	S120/L3960	1	21
69.0	495	1.7	120	248	19.782	8	P260	S120/L3960	1	21
76.0	440	1.9	210	220	20.607	9	P260	S120/L3960	2	23
86.0	396	1.1	95.0	198	19.684	10	P260	S120/L3960	1	21
98.0	330	2.5	260	165	20.490	12	P260	S120/L3960	2	23
127	264	1.8	230	132	20.445	15	P260	S120/L3960	2	23
135	248	1.9	260	124	19.984	16	P260	S120/L3960	2	23
169	198	1.5	260	99.0	19.797	20	P260	S120/L3960	2	23
212	158	1.1	230	79.0	19.781	25	P260	S120/L3960	2	23

Technical data

Planetary gearbox g780-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



4.8 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g780-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
39.0	1080	2.8	115	540	33.530	3	P260	S140/M3240	1	41
52.0	810	2.8	155	405	32.528	4	P260	S140/M3240	1	41
54.0	810	1.6	115	405	31.734	4	P130	S140/M3240	1	37
65.0	648	2.8	195	324	32.116	5	P260	S140/M3240	1	41
67.0	648	1.4	110	324	31.577	5	P130	S140/M3240	1	37
94.0	463	1.4	135	231	31.759	7	P260	S140/M3240	1	41
108	405	1.1	120	203	31.682	8	P260	S140/M3240	1	41
118	360	1.3	210	180	32.507	9	P260	S140/M3240	2	43
158	270	1.6	260	135	32.390	12	P260	S140/M3240	2	43
197	216	1.1	230	108	32.345	15	P260	S140/M3240	2	43
211	203	1.2	260	101	31.884	16	P260	S140/M3240	2	43

5 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g780-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
45.0	1000	2.5	115	500	66.591	3	P260	S190/S3000	1	53
60.0	750	2.5	155	375	65.590	4	P260	S190/S3000	1	53
75.0	600	2.5	195	300	65.178	5	P260	S190/S3000	1	53
108	429	1.2	135	214	64.825	7	P260	S190/S3000	1	53
135	333	1.2	210	167	65.569	9	P260	S190/S3000	2	55
180	250	1.4	260	125	65.452	12	P260	S190/S3000	2	55
226	200	1.0	230	100	65.407	15	P260	S190/S3000	2	55
241	188	1.1	260	94.0	64.945	16	P260	S190/S3000	2	55

5.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g780-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
50.0	1080	2.3	115	540	48.030	3	P260	S140/L3240	1	46
66.0	810	2.3	155	405	47.028	4	P260	S140/L3240	1	46
83.0	648	2.3	195	324	46.616	5	P260	S140/L3240	1	46
117	463	1.1	135	231	46.259	7	P260	S140/L3240	1	46
147	360	1.1	210	180	47.007	9	P260	S140/L3240	2	48
196	270	1.3	260	135	46.890	12	P260	S140/L3240	2	48

7.5 kW

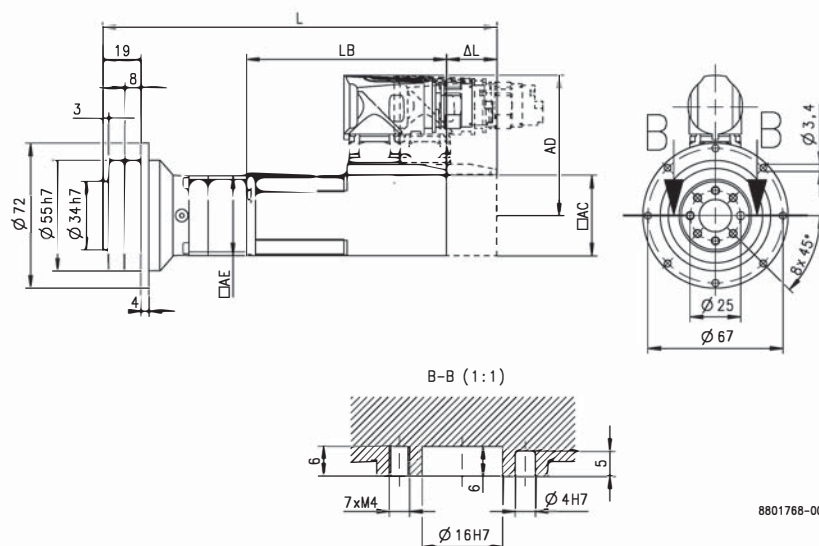
Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g780-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
69.0	1000	1.7	115	500	122.891	3	P260	S190/M3000	1	62
92.0	750	1.7	155	375	121.890	4	P260	S190/M3000	1	62
115	600	1.7	195	300	121.478	5	P260	S190/M3000	1	62



Basic dimensions

g780-P20 with m850

Gearbox design: Solid shaft, without foot with centering



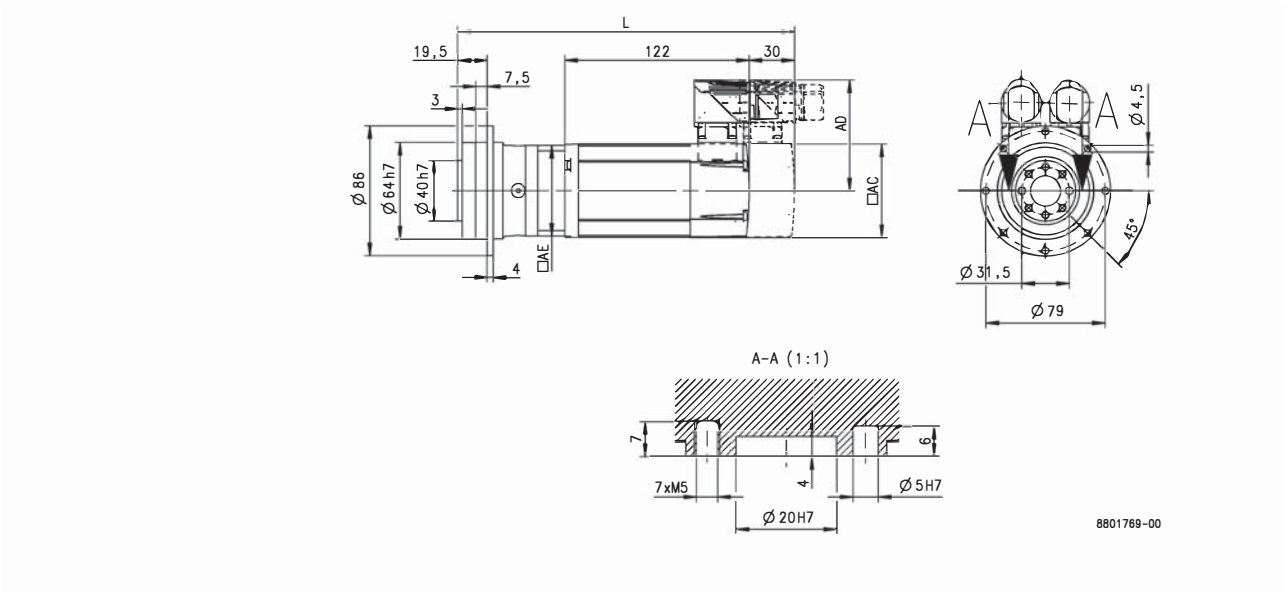
8801768-00

Motor			m850-	
			S40/S9000	S40/L9000
Total length	L	mm	151.5	176.5
Motor length	LB	mm	99	124
Motor diameter	AC	mm	40	40
Motor/connection distance	AD	mm	70	70
Gearbox diameter	AE	mm	40	40



g780-P44 with m850

Gearbox design: Solid shaft, without foot with centering

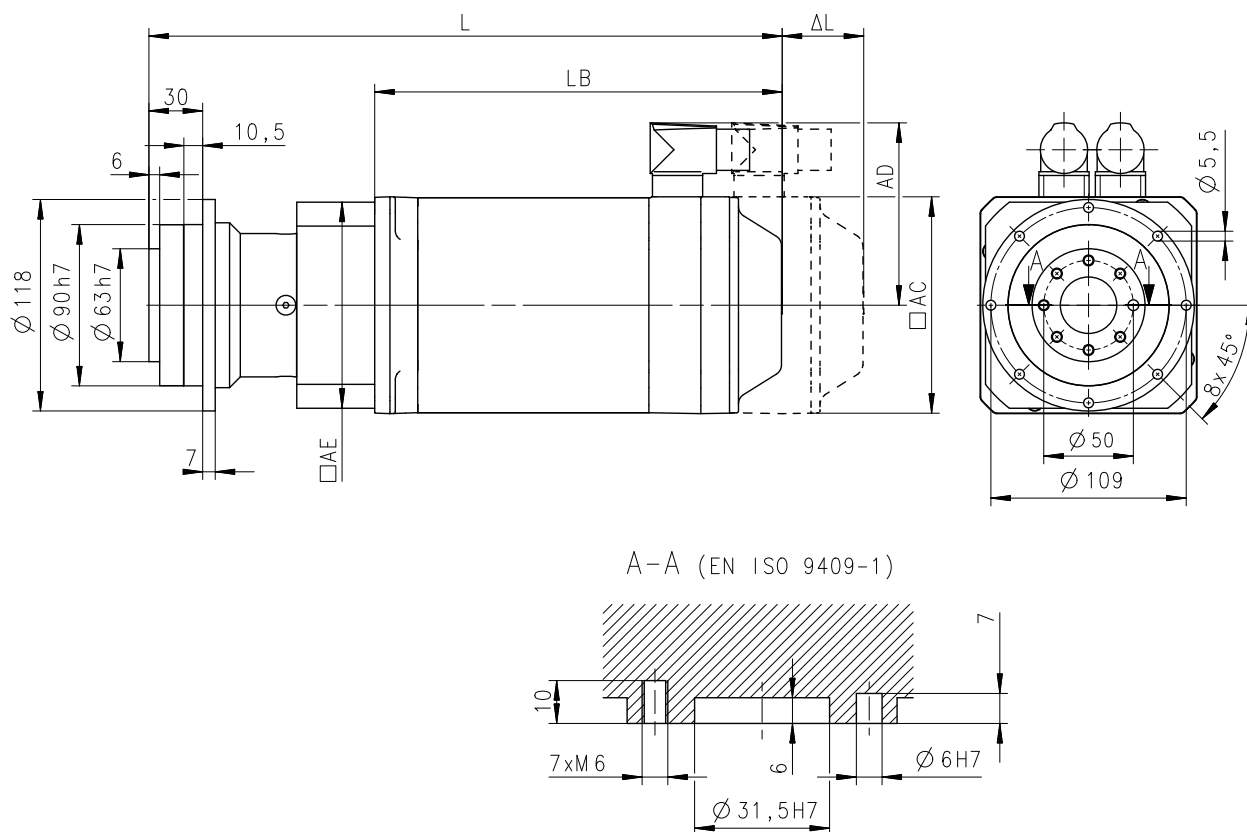


Motor			m850-					
			S60/S6000	S60/L6000	S80/S5500	S80/L5500	S120/S3960	S120/M3960
Total length	L	mm	178.5	208.5	220	240	189	227
Motor length	LB	mm	122	152	158	178	189	227
Motor diameter	AC	mm	60	60	80	80	121	121
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102	102
Gearbox diameter	AE	mm	60	60	80	80		



g780-P130 with m850

Gearbox design: Flange output shaft, without foot with centering, 1-stage



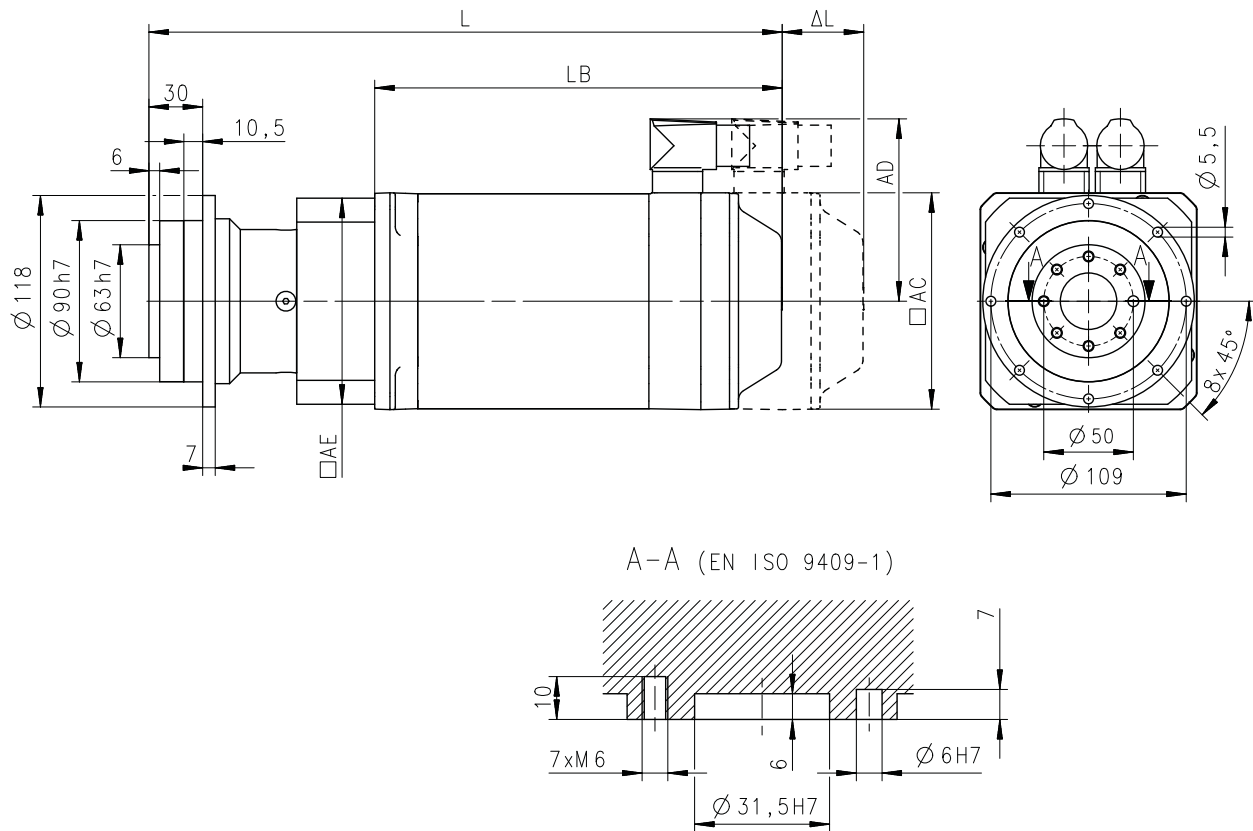
8801024-00

Motor			m850-						
			S60/L6000	S80/S5500	S80/L5500	S120/S3960	S120/M3960	S140/S3240	S140/M3240
Total length	L	mm	220.5	231.5	251.5	297.5	335.5	300.5	340.5
Motor length	LB	mm	152	158	178	189	227	182	222
Motor diameter	AC	mm	60	80	80	121	121	142	142
Motor/connection distance	AD	mm	73.4	83.4	83.4	102	102	114	114
Gearbox diameter	AE	mm	80	80	80	115	115	140	140



g780-P130 with m850

Gearbox design: Flange output shaft, without foot with centering, 2-stage



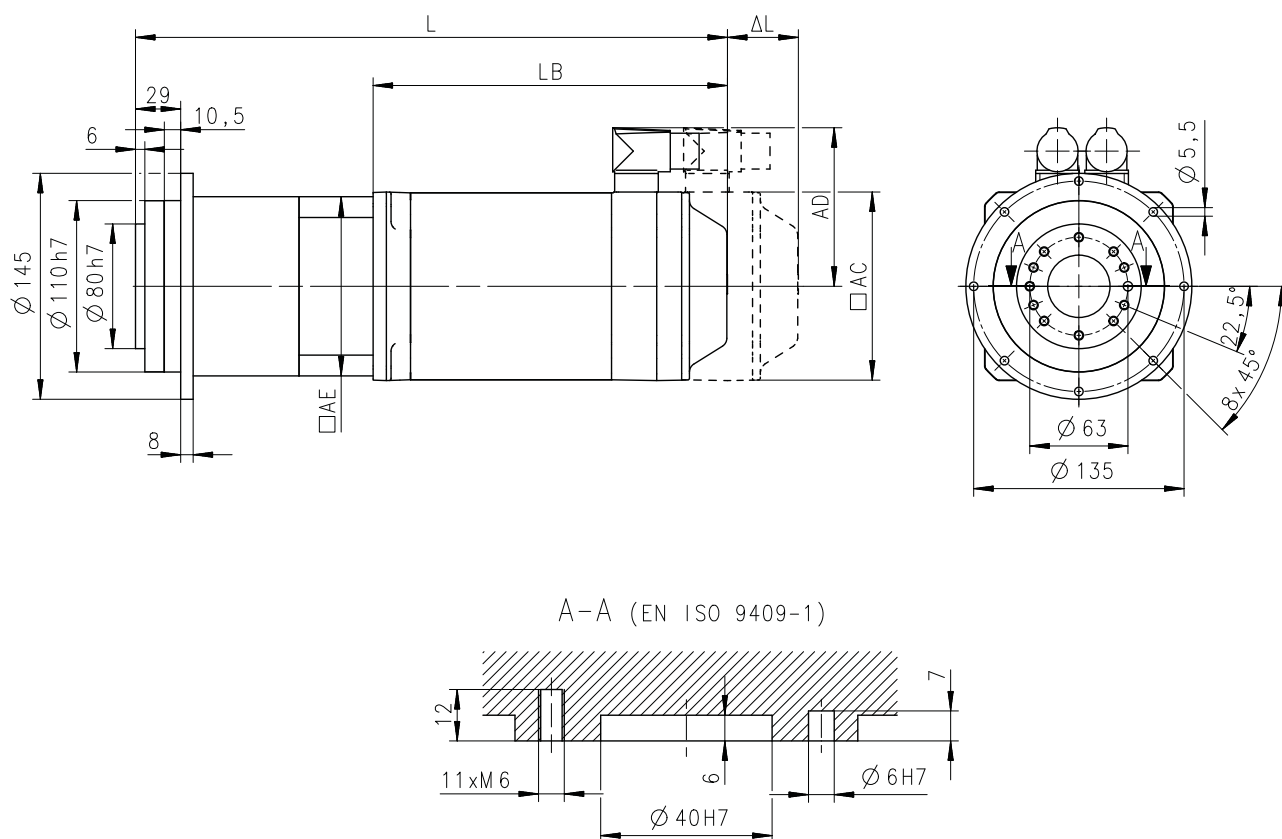
8801024-00

Motor			m850-						
			S60/S6000	S60/L6000	S80/S5500	S80/L5500	S120/S3960	S120/M3960	S140/S3240
Total length	L	mm	208	238	249	269	315	353	318
Motor length	LB	mm	122	152	158	178	189	227	182
Motor diameter	AC	mm	60	60	80	80	121	121	142
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102	102	114
Gearbox diameter	AE	mm	80	80	80	80	115	115	140



g780-P260 with m850

Gearbox design: Flange output shaft, without foot with centering, 1-stage



8801025-00

Motor			m850-									
			S80/ S5500	S80/ L5500	S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000
Total length	L	mm	254.5	274.5	314.5	352.5	390.5	317.5	357.5	397.5	357	405
Motor length	LB	mm	158	178	189	227	265	182	222	262	204	252
Motor diameter	AC	mm	80	80	121	121	121	142	142	142	190	190
Motor/connection distance	AD	mm	83.4	83.4	102	102	102	114	114	135	137	158
Gearbox diameter	AE	mm	115	115	115	115	115	140	140	140	190	190

Planetary gearbox g780-P

Basic dimensions





Planetary gearbox g820-P

The modular system

g820-P planetary gearbox with m850 synchronous servo motor

Gearbox		g820-P40	g820-P80	g820-P180	g820-P470
Min. motor assignment		m850-S40L	m850-S60S	m850-S80S	m850-S80S
Max. motor assignment		m850-S120M	m850-S140L	m850-S140L	m850-S190L
Technical data					
Max. output torque	Nm	40	80	180	470
Mounting position		Any			
Color		Unpainted 40/60/80 Primed 120/140/190 RAL9005 120/140/190			
Surface and corrosion protection		Without 40/60/80 OKS-G 120/140/190			
Output shaft					
Solid shaft with featherkey	mm	16 x 28	22 x 36	32 x 58	40 x 82
Smooth solid shaft	mm	16 x 28	22 x 36	32 x 58	40 x 82
Shaft material		Steel			
Shaft sealing ring material		NBR			
Gearbox design		Without foot with centering			
Gearbox stages		1/2	1/2	1/2	1/2
Output flange	mm	70	90	115	142
Lubricant		Standard Food compatible			
Cooling		Self-ventilated			
Motor connection		Connector			
Holding brake		Without With			
Feedback					
Without functional safety		Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)			
With functional safety		Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)			
Temperature monitoring		PT1000 thermal sensor 40/60/80 PT1000 thermal sensor and 2x PTC thermistor 120/140/190			



Gearbox data

g820-P40, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	29.0	3	5
4	39.0	3	6
7	37.0	3	5
5	40.0	3	6
8	39.0	3	5
10	28.0	3	5

g820-P40, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
12	29.0	5	5
15	29.0	5	5
16	39.0	5	6
20	39.0	5	6
35	40.0	5	6
25	40.0	5	6
40	39.0	5	6
50	40.0	5	6
70	37.0	5	5
100	28.0	5	5

g820-P80, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	54.0	3	11
4	80.0	3	14
5	80.0	3	14
7	78.0	3	13
8	75.0	3	13
10	59.0	3	11



g820-P80, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
12	54.0	5	11
15	54.0	5	11
16	80.0	5	13
20	80.0	5	13
25	80.0	5	14
35	80.0	5	13
40	80.0	5	13
50	80.0	5	13
70	78.0	5	12
100	59.0	5	11

g820-P180, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
3	135	3	23
4	180	3	31
5	175	3	33
7	175	3	32
8	155	3	33
10	140	3	32

g820-P180, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
12	135	5	27
15	135	5	28
16	180	5	34
20	180	5	35
25	175	5	35
35	175	5	35
40	180	5	32
50	175	5	34
70	175	5	33

g820-P470, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
3	380	3	71
4	470	3	76
5	405	3	76
7	355	3	69
8	350	3	67
10	305	3	61

Technical data

Planetary gearbox g820-P
Radial forces and axial forces



g820-P470, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
12	380	5	60
15	380	5	60
16	450	5	68
20	450	5	68
25	405	5	71
35	405	5	70
40	470	5	67
50	405	5	69
70	355	5	66
100	305	5	60

Radial forces and axial forces

Gearbox			g820-P40	g820-P80	g820-P180	g820-P470
Bearing service life 20000 h						
Speed		rpm	100	100	100	100
Radial force	F_{rad}	rated	1000	1900	2300	4200
axial force	F_{ax}	rated	1500	3000	4400	9400
Bearing service life 30000 h						
Speed		rpm	100	100	100	100
Radial force	F_{rad}	rated	850	1700	2000	3700
axial force	F_{ax}	rated	1300	2500	3700	7700
Max. radial force	$F_{\text{rad, max}}$	rated	1600	3100	4500	9500
Max. axial force	$F_{\text{ax, max}}$	rated	1500	2800	4500	9600



Selection tables

Inverter mains connection 400 V, self-ventilated motors

0.2 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g820-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
4.9	257	5.9	40.0	286	0.186	35	P40	S40/L9000	2	3.3
6.1	225	5.1	39.0	250	0.178	40	P40	S40/L9000	2	3.3
8.2	180	4.2	40.0	200	0.178	50	P40	S40/L9000	2	3.3
13.0	129	2.9	37.0	143	0.177	70	P40	S40/L9000	2	3.3
17.0	90.0	1.7	28.0	100	0.177	100	P40	S40/L9000	2	3.3

0.325 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g820-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
4.0	600	5.9	28.0	1000	0.369	10	P40	S60/S6000	1	3.5
4.3	500	5.1	29.0	833	0.417	12	P40	S60/S6000	2	4.1
5.7	375	5.2	39.0	625	0.416	16	P40	S60/S6000	2	4.1
5.9	400	4.2	29.0	667	0.395	15	P40	S60/S6000	2	4.1
7.9	300	4.2	39.0	500	0.392	20	P40	S60/S6000	2	4.1
8.9	240	5.3	80.0	400	0.396	25	P80	S60/S6000	2	5.3
10.0	240	3.4	40.0	400	0.391	25	P40	S60/S6000	2	4.1
14.0	171	4.2	80.0	286	0.377	35	P80	S60/S6000	2	5.3
16.0	171	2.5	40.0	286	0.374	35	P40	S60/S6000	2	4.1
16.0	150	4.3	80.0	250	0.368	40	P80	S60/S6000	2	5.3
18.0	150	2.1	39.0	250	0.366	40	P40	S60/S6000	2	4.1
21.0	120	3.4	80.0	200	0.367	50	P80	S60/S6000	2	5.3
23.0	120	1.8	40.0	200	0.366	50	P40	S60/S6000	2	4.1
30.0	85.7	1.2	37.0	143	0.366	70	P40	S60/S6000	2	4.1
32.0	85.7	2.4	78.0	143	0.366	70	P80	S60/S6000	2	5.3
44.0	60.0	1.4	59.0	100	0.366	100	P80	S60/S6000	2	5.3

Technical data

Planetary gearbox g820-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



0.55 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g820-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
5.1	857	5.9	37.0	1429	0.573	7	P40	S60/L6000	1	4.0
6.0	750	5.3	39.0	1250	0.568	8	P40	S60/L6000	1	4.0
7.7	500	5.3	54.0	833	0.635	12	P80	S60/L6000	2	5.8
8.2	600	3.3	28.0	1000	0.562	10	P40	S60/L6000	1	4.0
9.5	500	2.9	29.0	833	0.610	12	P40	S60/L6000	2	4.6
11.0	400	4.2	54.0	667	0.603	15	P80	S60/L6000	2	5.8
11.0	375	4.6	80.0	625	0.618	16	P80	S60/L6000	2	5.8
12.0	400	2.3	29.0	667	0.588	15	P40	S60/L6000	2	4.6
13.0	375	2.9	39.0	625	0.609	16	P40	S60/L6000	2	4.6
14.0	300	4.0	80.0	500	0.593	20	P80	S60/L6000	2	5.8
17.0	300	2.3	39.0	500	0.585	20	P40	S60/L6000	2	4.6
20.0	240	2.9	80.0	400	0.589	25	P80	S60/L6000	2	5.8
21.0	240	1.9	40.0	400	0.584	25	P40	S60/L6000	2	4.6
29.0	171	1.4	40.0	286	0.567	35	P40	S60/L6000	2	4.6
29.0	171	2.3	80.0	286	0.570	35	P80	S60/L6000	2	5.8
33.0	150	1.2	39.0	250	0.559	40	P40	S60/L6000	2	4.6
33.0	150	2.4	80.0	250	0.561	40	P80	S60/L6000	2	5.8
42.0	120	1.9	80.0	200	0.560	50	P80	S60/L6000	2	5.8
58.0	85.7	1.3	78.0	143	0.559	70	P80	S60/L6000	2	5.8

1 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g820-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
9.6	786	5.9	78.0	1429	1.874	7	P80	S80/S5500	1	7.1
11.0	688	5.5	75.0	1250	1.856	8	P80	S80/S5500	1	7.1
15.0	550	3.6	59.0	1000	1.836	10	P80	S80/S5500	1	7.1
18.0	458	2.8	54.0	833	1.856	12	P80	S80/S5500	2	7.0
18.0	367	5.5	135	667	1.990	15	P180	S80/S5500	2	11
24.0	367	2.2	54.0	667	1.825	15	P80	S80/S5500	2	7.0
24.0	275	5.4	180	500	1.953	20	P180	S80/S5500	2	11
25.0	344	2.5	80.0	625	1.840	16	P80	S80/S5500	2	7.0
32.0	275	2.2	80.0	500	1.814	20	P80	S80/S5500	2	7.0
34.0	220	3.9	175	400	1.939	25	P180	S80/S5500	2	11
40.0	220	1.6	80.0	400	1.811	25	P80	S80/S5500	2	7.0
51.0	157	3.1	175	286	1.870	35	P180	S80/S5500	2	11
56.0	157	1.3	80.0	286	1.791	35	P80	S80/S5500	2	7.0
60.0	138	2.8	180	250	1.838	40	P180	S80/S5500	2	11
62.0	110	5.1	405	55.0	2.270	50	P470	S80/S5500	2	21
64.0	138	1.3	80.0	250	1.783	40	P80	S80/S5500	2	7.0
79.0	110	1.0	80.0	200	1.782	50	P80	S80/S5500	2	7.0
79.0	110	2.2	175	200	1.834	50	P180	S80/S5500	2	11
102	78.6	3.2	355	39.0	2.259	70	P470	S80/S5500	2	21
111	78.6	1.6	175	143	1.832	70	P180	S80/S5500	2	11
153	55.0	2.0	305	28.0	2.241	100	P470	S80/S5500	2	21



Technical data

Planetary gearbox g820-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

1.2 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g820-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
12.0	786	4.8	78.0	1429	2.404	7	P80	S80/L5500	1	7.8
14.0	688	4.5	75.0	1250	2.386	8	P80	S80/L5500	1	7.8
17.0	458	5.6	135	833	2.639	12	P180	S80/L5500	2	11
19.0	550	2.9	59.0	1000	2.366	10	P80	S80/L5500	1	7.8
23.0	458	2.3	54.0	833	2.386	12	P80	S80/L5500	2	7.7
24.0	367	4.5	135	667	2.520	15	P180	S80/L5500	2	11
24.0	344	5.1	180	625	2.582	16	P180	S80/L5500	2	11
30.0	367	1.8	54.0	667	2.355	15	P80	S80/L5500	2	7.7
31.0	344	2.0	80.0	625	2.370	16	P80	S80/L5500	2	7.7
33.0	275	4.4	180	500	2.483	20	P180	S80/L5500	2	11
39.0	275	1.8	80.0	500	2.344	20	P80	S80/L5500	2	7.7
45.0	220	3.1	175	400	2.469	25	P180	S80/L5500	2	11
49.0	220	1.3	80.0	400	2.341	25	P80	S80/L5500	2	7.7
50.0	157	5.8	405	79.0	2.940	35	P470	S80/L5500	2	21
56.0	138	5.9	470	69.0	2.814	40	P470	S80/L5500	2	21
66.0	157	2.5	175	286	2.400	35	P180	S80/L5500	2	11
69.0	157	1.0	80.0	286	2.321	35	P80	S80/L5500	2	7.7
77.0	138	2.3	180	250	2.368	40	P180	S80/L5500	2	11
79.0	138	1.0	80.0	250	2.313	40	P80	S80/L5500	2	7.7
83.0	110	4.1	405	55.0	2.800	50	P470	S80/L5500	2	21
99.0	110	1.8	175	200	2.364	50	P180	S80/L5500	2	11
132	78.6	2.6	355	39.0	2.789	70	P470	S80/L5500	2	21
137	78.6	1.3	175	143	2.362	70	P180	S80/L5500	2	11
189	55.0	1.6	305	28.0	2.771	100	P470	S80/L5500	2	21

Technical data

Planetary gearbox g820-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



2 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g820-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
13.0	1320	3.6	54.0	660	7.395	3	P80	S120/S3960	1	10
14.0	1320	2.0	29.0	660	7.017	3	P40	S120/S3960	1	8.5
17.0	990	4.0	80.0	495	7.143	4	P80	S120/S3960	1	10
18.0	990	2.1	39.0	495	6.944	4	P40	S120/S3960	1	8.5
22.0	792	3.1	80.0	396	7.048	5	P80	S120/S3960	1	10
23.0	792	1.7	40.0	396	6.917	5	P40	S120/S3960	1	8.5
29.0	566	4.6	175	283	7.518	7	P180	S120/S3960	1	15
32.0	566	1.2	37.0	283	6.894	7	P40	S120/S3960	1	8.5
32.0	566	2.3	78.0	283	6.974	7	P80	S120/S3960	1	10
34.0	495	4.1	155	248	7.434	8	P180	S120/S3960	1	15
36.0	495	1.1	39.0	248	6.890	8	P40	S120/S3960	1	8.5
37.0	495	2.0	75.0	248	6.956	8	P80	S120/S3960	1	10
44.0	396	3.0	140	198	7.374	10	P180	S120/S3960	1	15
46.0	396	1.3	59.0	198	6.936	10	P80	S120/S3960	1	10
50.0	264	5.5	380	132	7.981	15	P470	S120/S3960	2	24
52.0	330	2.4	135	165	7.209	12	P180	S120/S3960	2	14
53.0	248	5.5	450	124	8.225	16	P470	S120/S3960	2	24
68.0	264	2.0	135	132	7.090	15	P180	S120/S3960	2	14
70.0	248	2.4	180	124	7.152	16	P180	S120/S3960	2	14
72.0	198	4.7	450	99.0	7.804	20	P470	S120/S3960	2	24
90.0	198	2.0	180	99.0	7.053	20	P180	S120/S3960	2	14
100	158	3.6	405	79.0	7.748	25	P470	S120/S3960	2	24
113	158	1.5	175	79.0	7.039	25	P180	S120/S3960	2	14
152	113	2.5	405	57.0	7.510	35	P470	S120/S3960	2	24
158	113	1.1	175	57.0	6.970	35	P180	S120/S3960	2	14
173	99.0	2.6	470	50.0	7.384	40	P470	S120/S3960	2	24
226	79.2	1.8	405	40.0	7.370	50	P470	S120/S3960	2	24
309	56.6	1.2	355	28.0	7.359	70	P470	S120/S3960	2	24



Technical data

Planetary gearbox g820-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors

2.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g820-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
22.0	1080	4.9	135	540	18.641	3	P180	S140/S3240	1	36
24.0	1080	2.2	54.0	540	17.145	3	P80	S140/S3240	1	31
29.0	810	4.8	180	405	17.649	4	P180	S140/S3240	1	36
32.0	810	2.4	80.0	405	16.892	4	P80	S140/S3240	1	31
38.0	648	3.7	175	324	17.254	5	P180	S140/S3240	1	36
41.0	648	1.8	80.0	324	16.797	5	P80	S140/S3240	1	31
55.0	463	2.7	175	231	17.008	7	P180	S140/S3240	1	36
56.0	405	5.3	350	203	22.573	8	P470	S140/S3240	1	46
57.0	463	1.4	78.0	231	16.448	7	P80	S140/S3240	1	31
64.0	405	2.4	155	203	16.924	8	P180	S140/S3240	1	36
65.0	405	1.2	75.0	203	16.430	8	P80	S140/S3240	1	31
76.0	324	3.7	305	162	22.239	10	P470	S140/S3240	1	46
82.0	324	1.7	140	162	16.864	10	P180	S140/S3240	1	36
82.0	270	3.9	380	135	17.993	12	P470	S140/S3240	2	45
96.0	270	1.4	135	135	16.959	12	P180	S140/S3240	2	35
110	216	3.1	380	108	17.472	15	P470	S140/S3240	2	45
115	203	3.3	450	101	17.716	16	P470	S140/S3240	2	45
120	216	1.1	135	108	16.840	15	P180	S140/S3240	2	35
128	203	1.4	180	101	16.901	16	P180	S140/S3240	2	35
151	162	2.8	450	81.0	17.294	20	P470	S140/S3240	2	45
160	162	1.1	180	81.0	16.803	20	P180	S140/S3240	2	35
200	130	2.0	405	65.0	17.239	25	P470	S140/S3240	2	45
280	92.6	1.4	405	46.0	17.001	35	P470	S140/S3240	2	45
320	81.0	1.5	470	41.0	16.874	40	P470	S140/S3240	2	45
400	64.8	1.0	405	32.0	16.860	50	P470	S140/S3240	2	45

Technical data

Planetary gearbox g820-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



3.1 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g820-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
18.0	1320	5.3	135	660	15.050	3	P180	S120/M3960	1	17
21.0	1320	1.3	29.0	660	12.917	3	P40	S120/M3960	1	11
21.0	1320	2.3	54.0	660	13.295	3	P80	S120/M3960	1	13
25.0	990	5.2	180	495	14.058	4	P180	S120/M3960	1	17
28.0	990	1.3	39.0	495	12.844	4	P40	S120/M3960	1	11
28.0	990	2.6	80.0	495	13.043	4	P80	S120/M3960	1	13
33.0	792	4.0	175	396	13.664	5	P180	S120/M3960	1	17
36.0	792	1.1	40.0	396	12.817	5	P40	S120/M3960	1	11
36.0	792	2.0	80.0	396	12.948	5	P80	S120/M3960	1	13
48.0	566	3.0	175	283	13.418	7	P180	S120/M3960	1	17
50.0	566	1.5	78.0	283	12.874	7	P80	S120/M3960	1	13
55.0	495	2.7	155	248	13.334	8	P180	S120/M3960	1	17
57.0	495	1.3	75.0	248	12.856	8	P80	S120/M3960	1	13
64.0	396	4.3	305	198	18.939	10	P470	S120/M3960	1	27
68.0	330	4.5	380	165	14.403	12	P470	S120/M3960	2	27
71.0	396	2.0	140	198	13.274	10	P180	S120/M3960	1	17
83.0	330	1.6	135	165	13.109	12	P180	S120/M3960	2	17
92.0	264	3.6	380	132	13.881	15	P470	S120/M3960	2	27
98.0	248	3.6	450	124	14.125	16	P470	S120/M3960	2	27
104	264	1.3	135	132	12.990	15	P180	S120/M3960	2	17
111	248	1.6	180	124	13.052	16	P180	S120/M3960	2	17
128	198	3.1	450	99.0	13.704	20	P470	S120/M3960	2	27
139	198	1.3	180	99.0	12.953	20	P180	S120/M3960	2	17
170	158	2.3	405	79.0	13.648	25	P470	S120/M3960	2	27
243	113	1.7	405	57.0	13.410	35	P470	S120/M3960	2	27
278	99.0	1.7	470	50.0	13.284	40	P470	S120/M3960	2	27
348	79.2	1.2	405	40.0	13.270	50	P470	S120/M3960	2	27



Technical data

Planetary gearbox g820-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

3.7 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g820-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
23.0	1320	4.4	135	660	20.850	3	P180	S120/L3960	1	20
26.0	1320	1.9	54.0	660	19.095	3	P80	S120/L3960	1	16
31.0	990	4.3	180	495	19.858	4	P180	S120/L3960	1	20
34.0	990	2.1	80.0	495	18.843	4	P80	S120/L3960	1	16
41.0	792	3.3	175	396	19.464	5	P180	S120/L3960	1	20
43.0	792	1.6	80.0	396	18.748	5	P80	S120/L3960	1	16
51.0	566	5.8	355	283	25.347	7	P470	S120/L3960	1	30
59.0	566	2.4	175	283	19.218	7	P180	S120/L3960	1	20
60.0	566	1.2	78.0	283	18.674	7	P80	S120/L3960	1	16
60.0	495	5.0	350	248	25.073	8	P470	S120/L3960	1	30
69.0	495	1.1	75.0	248	18.656	8	P80	S120/L3960	1	16
69.0	495	2.2	155	248	19.134	8	P180	S120/L3960	1	20
81.0	396	3.5	305	198	24.739	10	P470	S120/L3960	1	30
86.0	396	1.6	140	198	19.074	10	P180	S120/L3960	1	20
89.0	330	3.7	380	165	20.203	12	P470	S120/L3960	2	29
102	330	1.3	135	165	18.909	12	P180	S120/L3960	2	20
118	264	2.9	380	132	19.681	15	P470	S120/L3960	2	29
126	248	2.9	450	124	19.925	16	P470	S120/L3960	2	29
127	264	1.0	135	132	18.790	15	P180	S120/L3960	2	20
135	248	1.3	180	124	18.852	16	P180	S120/L3960	2	20
163	198	2.5	450	99.0	19.504	20	P470	S120/L3960	2	29
169	198	1.0	180	99.0	18.753	20	P180	S120/L3960	2	20
212	158	1.9	405	79.0	19.448	25	P470	S120/L3960	2	29
296	113	1.4	405	57.0	19.210	35	P470	S120/L3960	2	29
338	99.0	1.4	470	50.0	19.084	40	P470	S120/L3960	2	29

4.8 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g820-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
39.0	1080	3.0	135	540	33.041	3	P180	S140/M3240	1	41
40.0	1080	1.3	54.0	540	31.545	3	P80	S140/M3240	1	36
52.0	810	2.9	180	405	32.049	4	P180	S140/M3240	1	41
54.0	810	1.4	80.0	405	31.292	4	P80	S140/M3240	1	36
56.0	648	5.9	405	324	38.435	5	P470	S140/M3240	1	51
67.0	648	1.1	80.0	324	31.197	5	P80	S140/M3240	1	36
67.0	648	2.2	175	324	31.654	5	P180	S140/M3240	1	41
87.0	463	3.7	355	231	37.247	7	P470	S140/M3240	1	51
94.0	463	1.7	175	231	31.408	7	P180	S140/M3240	1	41
102	405	3.2	350	203	36.973	8	P470	S140/M3240	1	51
108	405	1.4	155	203	31.324	8	P180	S140/M3240	1	41
133	324	2.3	305	162	36.639	10	P470	S140/M3240	1	51
134	324	1.0	140	162	31.264	10	P180	S140/M3240	1	41
154	270	2.4	380	135	32.393	12	P470	S140/M3240	2	50
197	216	1.9	380	108	31.872	15	P470	S140/M3240	2	50
210	203	2.0	450	101	32.116	16	P470	S140/M3240	2	50
263	162	1.7	450	81.0	31.694	20	P470	S140/M3240	2	50
329	130	1.2	405	65.0	31.639	25	P470	S140/M3240	2	50

Technical data

Planetary gearbox g820-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



5 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g820-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
45.0	1000	2.7	135	500	66.305	3	P180	S190/S3000	1	53
60.0	750	2.6	180	375	65.313	4	P180	S190/S3000	1	53
67.0	600	5.2	405	300	69.135	5	P470	S190/S3000	1	63
77.0	600	2.0	175	300	64.919	5	P180	S190/S3000	1	53
102	429	3.2	355	214	67.947	7	P470	S190/S3000	1	63
108	429	1.5	175	214	64.673	7	P180	S190/S3000	1	53
119	375	2.8	350	188	67.673	8	P470	S190/S3000	1	63
123	375	1.3	155	188	64.589	8	P180	S190/S3000	1	53
154	300	2.0	305	150	67.339	10	P470	S190/S3000	1	63
180	250	2.1	380	125	65.285	12	P470	S190/S3000	2	62
226	200	1.7	380	100	64.763	15	P470	S190/S3000	2	62
241	188	1.8	450	94.0	65.007	16	P470	S190/S3000	2	62
301	150	1.5	450	75.0	64.586	20	P470	S190/S3000	2	62
376	120	1.1	405	60.0	64.531	25	P470	S190/S3000	2	62

5.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g820-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
49.0	1080	2.4	135	540	47.541	3	P180	S140/L3240	1	46
50.0	1080	1.1	54.0	540	46.045	3	P80	S140/L3240	1	41
66.0	810	2.4	180	405	46.549	4	P180	S140/L3240	1	46
67.0	810	1.2	80.0	405	45.792	4	P80	S140/L3240	1	41
74.0	648	4.8	405	324	52.935	5	P470	S140/L3240	1	56
84.0	648	1.8	175	324	46.154	5	P180	S140/L3240	1	46
112	463	3.0	355	231	51.747	7	P470	S140/L3240	1	56
117	463	1.3	175	231	45.908	7	P180	S140/L3240	1	46
130	405	2.6	350	203	51.473	8	P470	S140/L3240	1	56
134	405	1.2	155	203	45.824	8	P180	S140/L3240	1	46
167	324	1.8	305	162	51.139	10	P470	S140/L3240	1	56
196	270	1.9	380	135	46.893	12	P470	S140/L3240	2	55
245	216	1.5	380	108	46.372	15	P470	S140/L3240	2	55
262	203	1.6	450	101	46.616	16	P470	S140/L3240	2	55
327	162	1.4	450	81.0	46.194	20	P470	S140/L3240	2	55



Technical data

Planetary gearbox g820-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors

7.5 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g820-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
61.0	1000	4.7	380	500	131.540	3	P470	S190/M3000	1	72
69.0	1000	1.8	135	500	122.605	3	P180	S190/M3000	1	62
82.0	750	4.7	470	375	126.892	4	P470	S190/M3000	1	72
92.0	750	1.8	180	375	121.613	4	P180	S190/M3000	1	62
108	600	3.4	405	300	125.435	5	P470	S190/M3000	1	72
115	600	1.3	175	300	121.219	5	P180	S190/M3000	1	62
160	429	2.2	355	214	124.247	7	P470	S190/M3000	1	72
184	375	1.9	350	188	123.973	8	P470	S190/M3000	1	72
230	300	1.3	305	150	123.639	10	P470	S190/M3000	1	72
271	250	1.4	380	125	121.585	12	P470	S190/M3000	2	71
338	200	1.1	380	100	121.063	15	P470	S190/M3000	2	71
361	188	1.2	450	94.0	121.307	16	P470	S190/M3000	2	71

9.2 kW

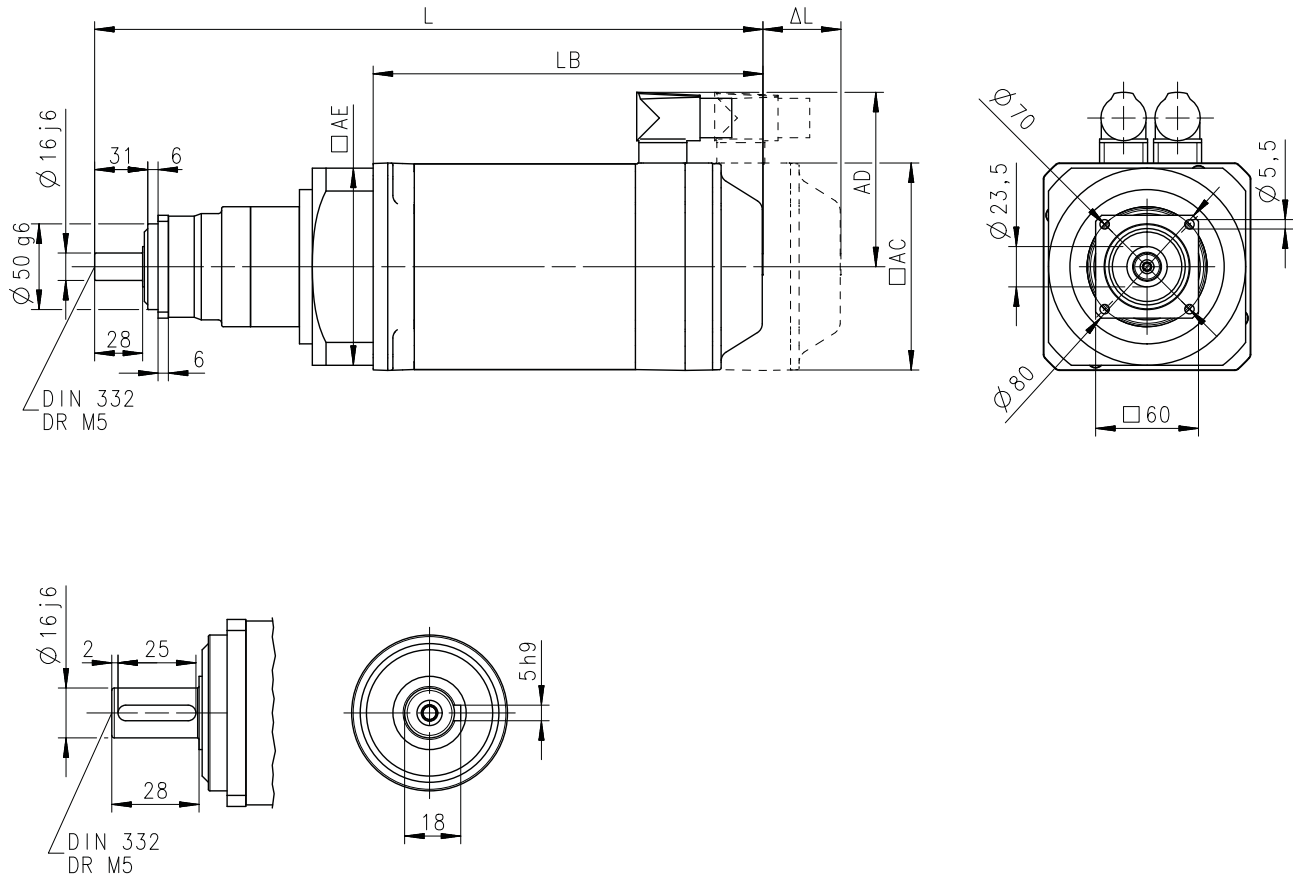
Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g820-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
95.0	840	3.4	380	420	206.940	3	P470	S190/L2520	1	84
126	630	3.4	470	315	202.292	4	P470	S190/L2520	1	84
165	504	2.4	405	252	200.835	5	P470	S190/L2520	1	84
235	360	1.5	355	180	199.647	7	P470	S190/L2520	1	84
269	315	1.3	350	158	199.373	8	P470	S190/L2520	1	84



Basic dimensions

g820-P40 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



8801034-00

Motor			m850-			
			S60/S6000	S60/L6000	S120/S3960	S120/M3960
Total length	L	mm	245.5	275.5	323	361
Motor length	LB	mm	122	152	189	227
Motor diameter	AC	mm	60	60	121	121
Motor/connection distance	AD	mm	73.4	73.4	102	102
Gearbox diameter	AE	mm	70	70	115	115



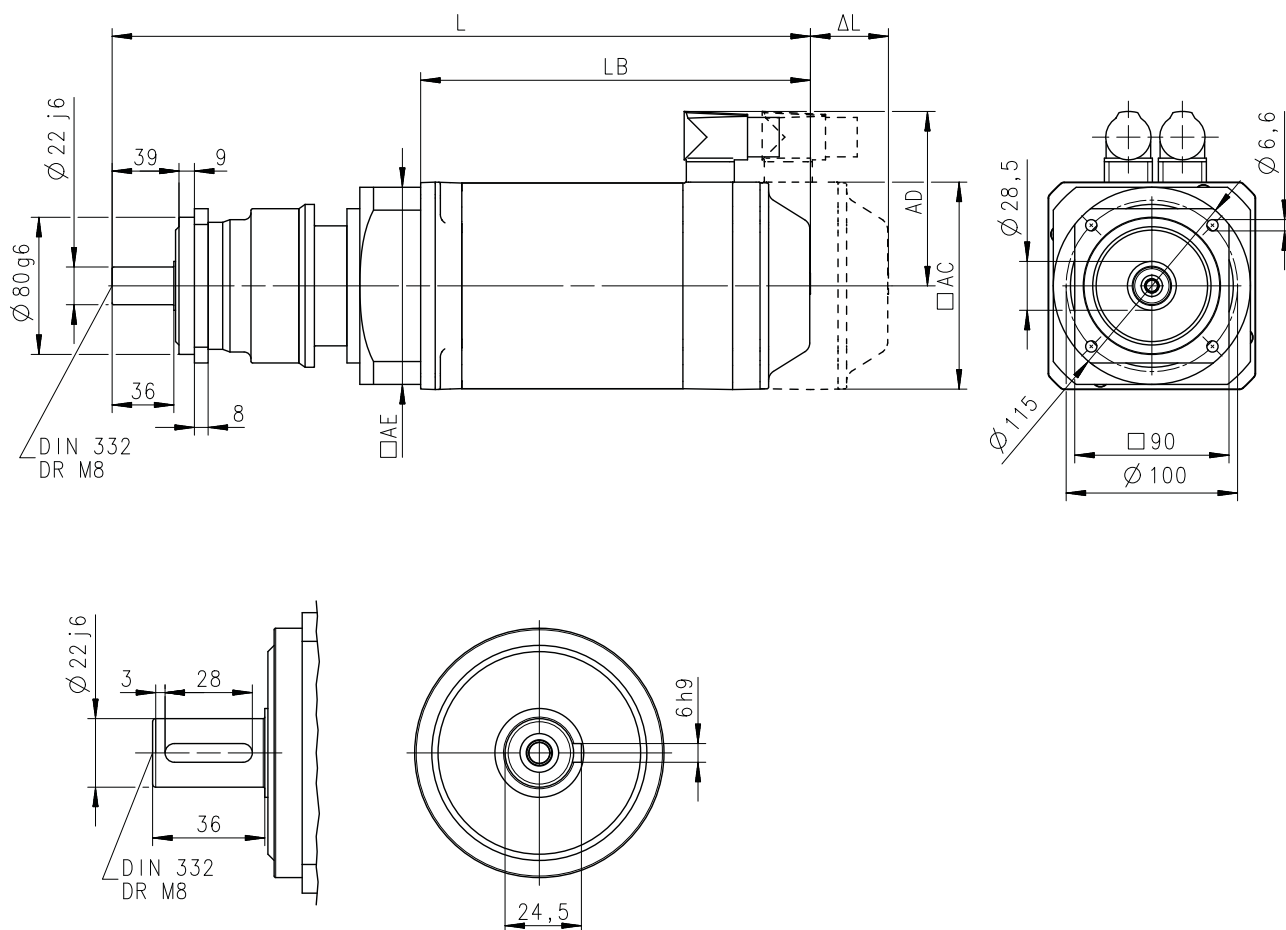
Technical data

Planetary gearbox g820-P

Basic dimensions

g820-P80 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



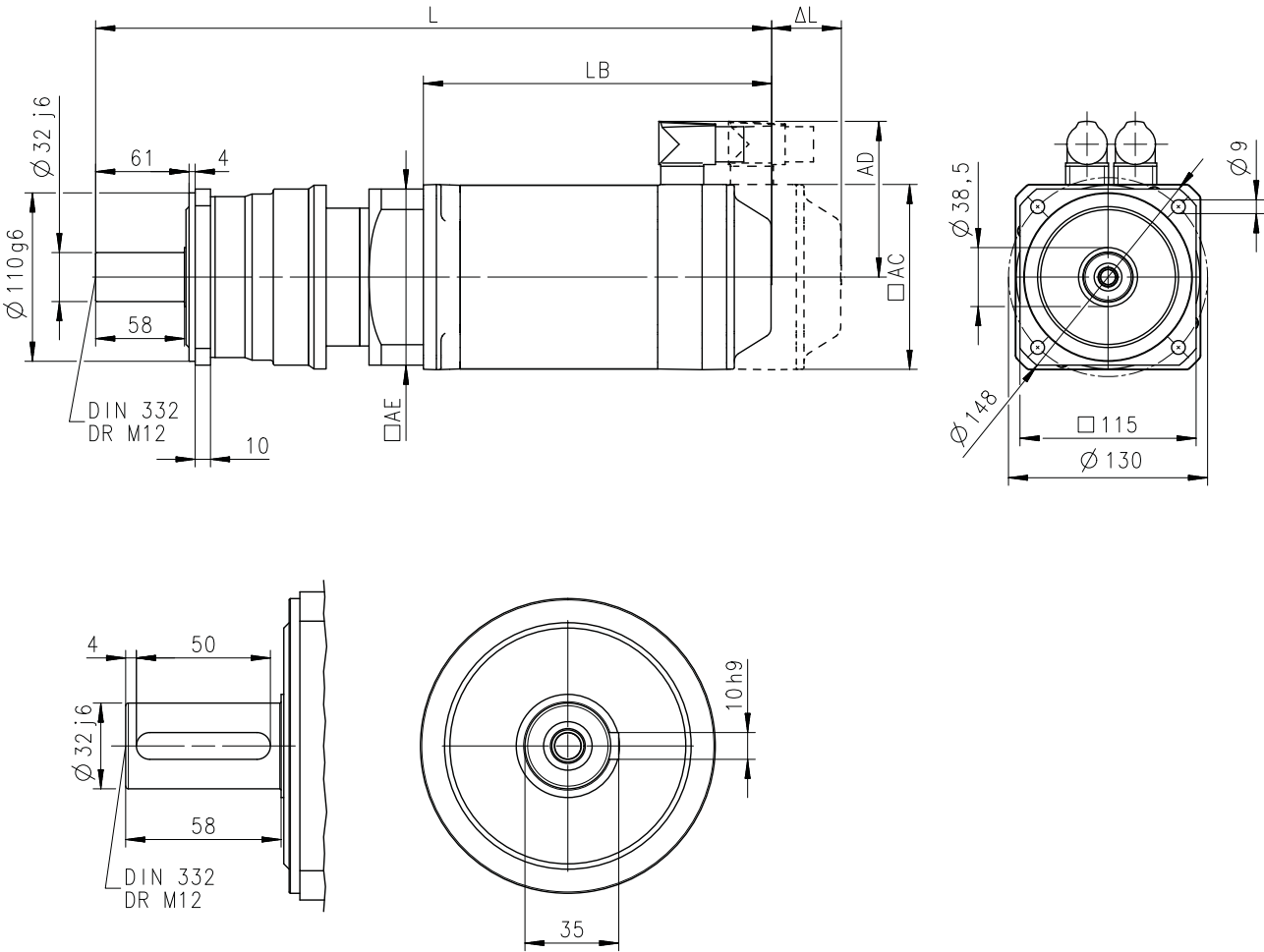
8801035-00

Motor			m850-							
			S80/S5500	S80/L5500	S120/S3960	S120/M3960	S120/L3960	S140/S3240	S140/M3240	S140/L3240
Total length	L	mm	308.5	328.5	339.5	377.5	415.5	342.5	382.5	422.5
Motor length	LB	mm	158	178	189	227	265	182	222	262
Motor diameter	AC	mm	80	80	121	121	121	142	142	142
Motor/connection distance	AD	mm	83.4	83.4	102	102	102	114	114	135
Gearbox diameter	AE	mm	90	90	115	115	115	142	142	142



g820-P180 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage

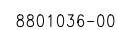


8801036-00

Motor			m850-							
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000
Total length	L	mm	371.5	409.5	447.5	374.5	414.5	454.5	407.5	455.5
Motor length	LB	mm	189	227	265	182	222	262	204	252
Motor diameter	AC	mm	121	121	121	142	142	142	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158
Gearbox diameter	AE	mm	120	120	120	142	142	142	190	190



Gearbox design: Solid shaft, without foot with centering, 2-stage

141

Planetary gearbox g820-P

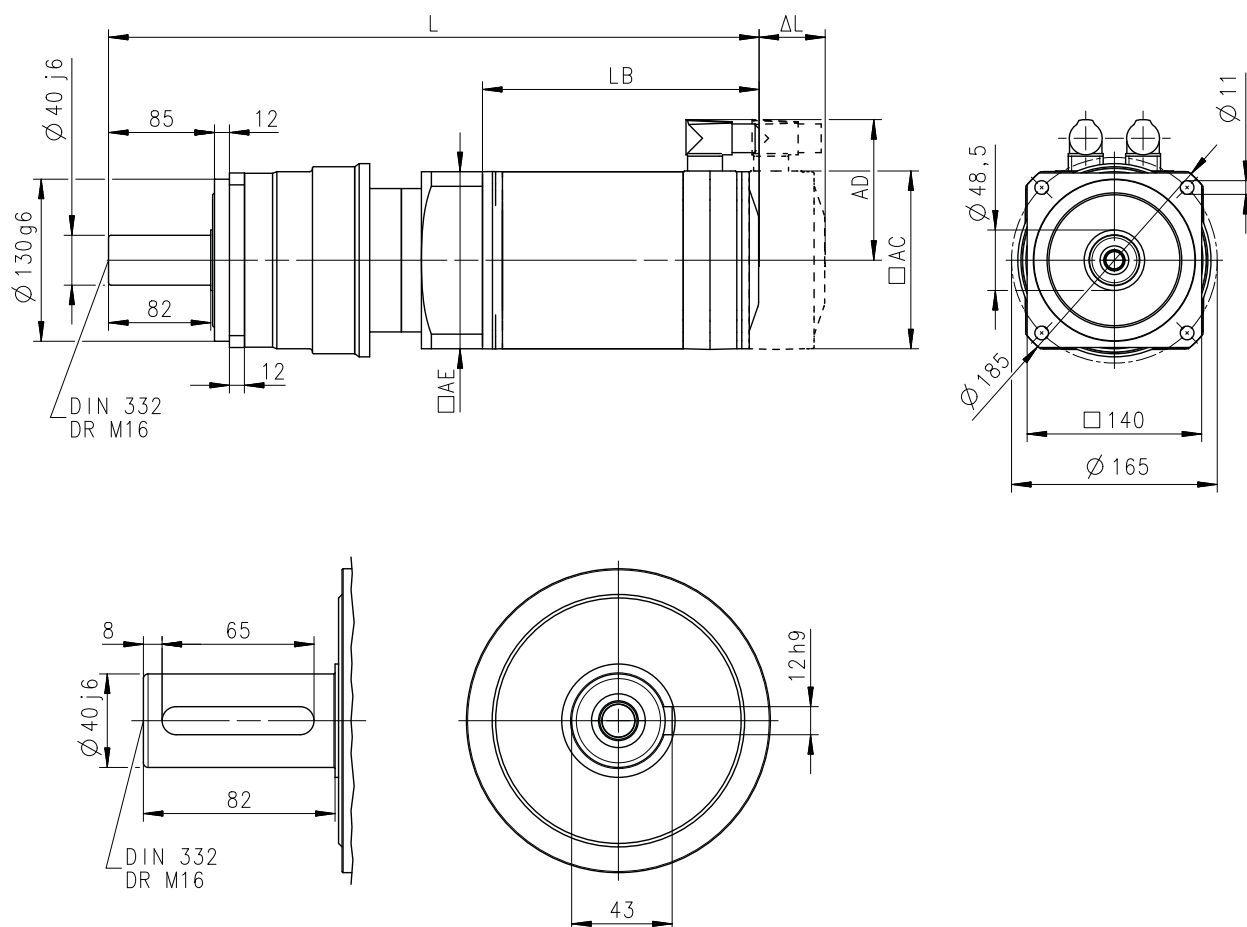
Basic dimensions





g820-P470 with m850

Gearbox design: Solid shaft, without foot with centering, 2-stage



8801037-00

Motor			m850-									
			S80/ S5500	S80/ L5500	S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000
Total length	L	mm	437	457	468	506	544	471	511	551	504	552
Motor length	LB	mm	158	178	189	227	265	182	222	262	204	252
Motor diameter	AC	mm	80	80	121	121	121	142	142	142	190	190
Motor/connection distance	AD	mm	83.4	83.4	102	102	102	114	114	135	137	158
Gearbox diameter	AE	mm	115	115	120	120	120	142	142	142	190	190



Planetary gearbox g840-P

The modular system

g840-P planetary gearbox with m850 synchronous servo motor

Gearbox		g840-P77	g840-P150	g840-P300	g840-P1000	g840-P1800
Min. motor assignment		m850-S40L	m850-S60S	m850-S80S	m850-S80S	m850-S140S
Max. motor assignment		m850-S120M	m850-S140L	m850-S190M	m850-S190L	m850-S190L
Technical data						
Max. output torque	Nm	77	150	300	1000	1800
Mounting position		Any				
Color		Unpainted 40/60/80 Primed 120/140/190 RAL9005 120/140/190				
Surface and corrosion protection		Without 40/60/80 OKS-G 120/140/190				
Output shaft						
Solid shaft with featherkey	mm	16 x 28	22 x 36	32 x 58	40 x 80	55 x 82
Smooth solid shaft	mm	16 x 28	22 x 36	32 x 58	40 x 80	55 x 82
Toothed output shaft (Values in brackets: length of toothing)		15.84 x 26 (15) z = 18	21.75 x 26 (15) z = 16	31.75 x 26 (15) z = 24	39.6 x 40 (20) z = 18	54.6 x 41.5 (22) z = 26
Shaft material		Steel				
Shaft sealing ring material		NBR				
Gearbox design		Without foot with centering				
Gearbox stages		1/2	1/2	1/2	1/2	1/2
Output flange	mm	70	90	115	142	190
Lubricant		Standard Food compatible				
Cooling		Self-ventilated				
Motor connection		Connector				
Holding brake		Without With				
Feedback						
Without functional safety		Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)				
With functional safety		Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)				
Temperature monitoring		PT1000 thermal sensor 40/60/80 PT1000 thermal sensor and 2x PTC thermistor 120/140/190				



Gearbox data

g840-P77, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	45.0	3	5
4	60.0	3	5
5	65.0	3	5
7	45.0	3	4
8	40.0	3	4
10	27.0	3	4

g840-P77, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
12	68.0	5	5
15	68.0	5	5
16	77.0	5	5
20	77.0	5	5
25	65.0	5	5
32	77.0	5	5
40	65.0	5	5
64	40.0	5	4
100	27.0	5	4

g840-P150, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	100	3	11
4	140	3	12
5	140	3	12
7	90.0	3	11
8	80.0	3	11
10	60.0	3	10

g840-P150, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
12	110	5	11
15	110	5	11
16	150	5	12
20	150	5	12
25	140	5	12
32	150	5	12
40	140	5	12
64	80.0	5	11
100	60.0	5	10



g840-P300, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
3	230	3	23
4	300	3	26
5	260	3	27
7	180	3	24
8	150	3	24
10	125	3	24

g840-P300, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
15	250	5	24
12	250	5	24
20	300	5	26
16	300	5	26
25	260	5	27
32	300	5	26
40	260	5	27
64	150	5	24

g840-P1000, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
3	450	3	65
4	600	3	70
5	750	3	74
7	530	3	68
8	450	3	66
10	305	3	63

g840-P1000, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
12	780	5	73
15	780	5	73
16	1000	5	73
20	1000	5	74
25	900	5	76
32	1000	5	73
40	900	5	76
64	450	5	68
100	305	5	63



g840-P1800, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
8	1000	3	176
7	1300	3	177
10	630	3	158

g840-P1800, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
12	1500	5	195
15	1500	5	196
16	1800	5	196
20	1800	5	197
25	1800	5	209
32	1800	5	195
40	1800	5	208
64	1000	5	181

Radial forces and axial forces

Gearbox			g840-P77	g840-P150	g840-P300	g840-P1000	g840-P1800
Bearing service life 20000 h							
Speed		rpm	100	100	100	100	100
Radial force	F_{rad}	rated	3200	5500	6000	12500	21000
axial force	F_{ax}	rated	4400	6400	8000	15000	21000
Bearing service life 30000 h							
Speed		rpm	100	100	100	100	100
Radial force	F_{rad}	rated	3200	4800	5400	11400	18000
axial force	F_{ax}	rated	3900	5700	7000	13200	18500
Max. radial force	$F_{\text{rad, max}}$	rated	3200	5500	6000	12500	21000
Max. axial force	$F_{\text{ax, max}}$	rated	4400	6400	8000	15000	21000

Technical data

Planetary gearbox g840-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



Selection tables

Inverter mains connection 400 V, self-ventilated motors

0.2 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g840-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
11.0	141	3.7	40.0	156	0.266	64	P77	S40/L9000	2	3.7
14.0	90.0	1.9	27.0	100	0.263	100	P77	S40/L9000	2	3.7

0.325 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g840-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
4.0	600	5.9	27.0	1000	0.436	10	P77	S60/S6000	1	4.1
5.2	400	5.4	68.0	667	0.451	15	P77	S60/S6000	2	4.5
7.0	300	5.4	77.0	500	0.448	20	P77	S60/S6000	2	4.5
9.5	240	4.6	65.0	400	0.446	25	P77	S60/S6000	2	4.5
13.0	188	4.0	77.0	313	0.433	32	P77	S60/S6000	2	4.5
17.0	150	3.4	65.0	250	0.433	40	P77	S60/S6000	2	4.5
26.0	93.8	1.5	40.0	156	0.432	64	P77	S60/S6000	2	4.5
28.0	93.8	2.9	80.0	156	0.777	64	P150	S60/S6000	2	6.6
40.0	60.0	1.5	60.0	100	0.764	100	P150	S60/S6000	2	6.6

0.55 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g840-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
5.1	857	5.8	45.0	1429	0.641	7	P77	S60/L6000	1	4.6
6.0	750	5.3	40.0	1250	0.636	8	P77	S60/L6000	1	4.6
8.2	600	3.3	27.0	1000	0.629	10	P77	S60/L6000	1	4.6
9.0	500	3.5	68.0	833	0.662	12	P77	S60/L6000	2	5.0
9.2	400	5.7	110	667	1.043	15	P150	S60/L6000	2	7.1
12.0	400	3.0	68.0	667	0.644	15	P77	S60/L6000	2	5.0
12.0	375	3.5	77.0	625	0.657	16	P77	S60/L6000	2	5.0
15.0	240	5.8	140	400	1.029	25	P150	S60/L6000	2	7.1
16.0	300	3.0	77.0	500	0.641	20	P77	S60/L6000	2	5.0
20.0	240	2.6	65.0	400	0.639	25	P77	S60/L6000	2	5.0
21.0	188	5.0	150	313	0.973	32	P150	S60/L6000	2	7.1
26.0	188	2.2	77.0	313	0.626	32	P77	S60/L6000	2	5.0
28.0	150	4.2	140	250	0.972	40	P150	S60/L6000	2	7.1
32.0	150	1.9	65.0	250	0.626	40	P77	S60/L6000	2	5.0
50.0	93.8	1.6	80.0	156	0.970	64	P150	S60/L6000	2	7.1



Technical data

Planetary gearbox g840-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

1 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g840-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
4.3	1833	5.0	45.0	3333	1.927	3	P77	S80/S5500	1	5.8
5.7	1375	4.9	60.0	2500	1.844	4	P77	S80/S5500	1	5.8
7.5	1100	4.1	65.0	2000	1.814	5	P77	S80/S5500	1	5.8
11.0	786	3.2	45.0	1429	1.790	7	P77	S80/S5500	1	5.8
13.0	688	2.9	40.0	1250	1.785	8	P77	S80/S5500	1	5.8
15.0	550	3.7	60.0	1000	1.960	10	P150	S80/S5500	1	7.8
16.0	550	1.7	27.0	1000	1.778	10	P77	S80/S5500	1	5.8
17.0	458	3.6	110	833	2.099	12	P150	S80/S5500	2	8.3
19.0	458	1.9	68.0	833	1.811	12	P77	S80/S5500	2	6.2
21.0	344	4.4	150	625	2.082	16	P150	S80/S5500	2	8.3
22.0	367	3.1	110	667	2.030	15	P150	S80/S5500	2	8.3
24.0	367	1.6	68.0	667	1.793	15	P77	S80/S5500	2	6.2
26.0	344	1.9	77.0	625	1.806	16	P77	S80/S5500	2	6.2
28.0	275	3.7	150	500	2.019	20	P150	S80/S5500	2	8.3
28.0	220	6.0	260	340	3.534	25	P300	S80/S5500	2	13
32.0	275	1.6	77.0	500	1.790	20	P77	S80/S5500	2	6.2
37.0	220	3.1	140	400	2.016	25	P150	S80/S5500	2	8.3
39.0	220	1.4	65.0	400	1.789	25	P77	S80/S5500	2	6.2
39.0	172	5.2	300	266	3.367	32	P300	S80/S5500	2	13
48.0	172	2.7	150	313	1.960	32	P150	S80/S5500	2	8.3
50.0	172	1.2	77.0	313	1.776	32	P77	S80/S5500	2	6.2
54.0	138	4.1	260	213	3.363	40	P300	S80/S5500	2	13
61.0	138	1.0	65.0	250	1.775	40	P77	S80/S5500	2	6.2
63.0	138	2.2	140	250	1.959	40	P150	S80/S5500	2	8.3
82.0	85.9	4.7	450	102	8.435	64	P1000	S80/S5500	2	30
96.0	85.9	1.6	150	133	3.359	64	P300	S80/S5500	2	13
139	55.0	2.2	305	65	8.211	100	P1000	S80/S5500	2	30

Technical data

Planetary gearbox g840-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



1.2 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, max}	J	i	g840-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
5.5	1833	4.0	45.0	3333	2.457	3	P77	S80/L5500	1	6.5
7.4	1375	4.0	60.0	2500	2.374	4	P77	S80/L5500	1	6.5
9.5	1100	3.3	65.0	2000	2.344	5	P77	S80/L5500	1	6.5
12.0	786	5.9	90.0	1429	2.529	7	P150	S80/L5500	1	8.5
14.0	786	2.6	45.0	1429	2.320	7	P77	S80/L5500	1	6.5
14.0	688	5.0	80.0	1250	2.512	8	P150	S80/L5500	1	8.5
16.0	688	2.3	40.0	1250	2.315	8	P77	S80/L5500	1	6.5
19.0	550	1.4	27.0	1000	2.308	10	P77	S80/L5500	1	6.5
19.0	550	3.0	60.0	1000	2.490	10	P150	S80/L5500	1	8.5
22.0	458	2.9	110	833	2.629	12	P150	S80/L5500	2	9.0
23.0	367	5.2	250	567	4.102	15	P300	S80/L5500	2	14
24.0	458	1.6	68.0	833	2.341	12	P77	S80/L5500	2	6.9
28.0	344	3.5	150	625	2.612	16	P150	S80/L5500	2	9.0
28.0	275	5.8	300	425	4.085	20	P300	S80/L5500	2	14
29.0	367	2.5	110	667	2.560	15	P150	S80/L5500	2	9.0
30.0	367	1.3	68.0	667	2.323	15	P77	S80/L5500	2	6.9
32.0	344	1.6	77.0	625	2.336	16	P77	S80/L5500	2	6.9
37.0	275	3.0	150	500	2.549	20	P150	S80/L5500	2	9.0
39.0	275	1.3	77.0	500	2.320	20	P77	S80/L5500	2	6.9
39.0	220	4.9	260	340	4.064	25	P300	S80/L5500	2	14
47.0	220	2.5	140	400	2.546	25	P150	S80/L5500	2	9.0
48.0	220	1.1	65.0	400	2.319	25	P77	S80/L5500	2	6.9
53.0	172	4.2	300	266	3.897	32	P300	S80/L5500	2	14
62.0	172	2.2	150	313	2.490	32	P150	S80/L5500	2	9.0
71.0	138	3.3	260	213	3.893	40	P300	S80/L5500	2	14
78.0	138	1.8	140	250	2.489	40	P150	S80/L5500	2	9.0
110	85.9	3.8	450	102	8.965	64	P1000	S80/L5500	2	31
118	85.9	1.3	150	133	3.889	64	P300	S80/L5500	2	14
172	55.0	1.8	305	65	8.741	100	P1000	S80/L5500	2	31



Technical data

Planetary gearbox g840-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

2 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g840-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
13.0	1320	3.6	100	660	7.528	3	P150	S120/S3960	1	11
14.0	1320	1.9	45.0	649	7.027	3	P77	S120/S3960	1	9.1
17.0	990	4.4	140	495	7.267	4	P150	S120/S3960	1	11
18.0	990	1.9	60.0	495	6.944	4	P77	S120/S3960	1	9.1
21.0	792	3.7	140	396	7.174	5	P150	S120/S3960	1	11
23.0	792	1.6	65.0	396	6.914	5	P77	S120/S3960	1	9.1
28.0	566	5.4	180	283	8.537	7	P300	S120/S3960	1	16
31.0	566	2.8	90.0	283	7.099	7	P150	S120/S3960	1	11
32.0	566	1.2	45.0	283	6.890	7	P77	S120/S3960	1	9.1
34.0	495	4.1	150	248	8.482	8	P300	S120/S3960	1	16
36.0	495	1.1	40.0	248	6.885	8	P77	S120/S3960	1	9.1
37.0	495	2.2	80.0	248	7.082	8	P150	S120/S3960	1	11
45.0	396	2.7	125	198	8.442	10	P300	S120/S3960	1	16
46.0	396	1.3	60.0	198	7.060	10	P150	S120/S3960	1	11
50.0	330	2.9	250	165	8.873	12	P300	S120/S3960	2	17
54.0	330	1.4	110	165	7.199	12	P150	S120/S3960	2	12
65.0	264	2.5	250	132	8.672	15	P300	S120/S3960	2	17
65.0	248	3.3	300	124	8.830	16	P300	S120/S3960	2	17
68.0	264	1.2	110	132	7.130	15	P150	S120/S3960	2	12
72.0	248	1.7	150	124	7.182	16	P150	S120/S3960	2	12
85.0	198	2.8	300	99.0	8.655	20	P300	S120/S3960	2	17
90.0	198	1.5	150	99.0	7.119	20	P150	S120/S3960	2	12
110	158	2.3	260	79.0	8.634	25	P300	S120/S3960	2	17
113	158	1.2	140	79.0	7.116	25	P150	S120/S3960	2	12
140	99.0	5.0	900	50.0	13.558	40	P1000	S120/S3960	2	34
144	124	1.0	150	62.0	7.060	32	P150	S120/S3960	2	12
144	124	2.0	300	62.0	8.467	32	P300	S120/S3960	2	17
179	99.0	1.5	260	50.0	8.463	40	P300	S120/S3960	2	17
273	61.9	1.7	450	31.0	13.535	64	P1000	S120/S3960	2	34

Technical data

Planetary gearbox g840-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



2.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g840-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
22.0	1080	4.5	230	540	18.956	3	P300	S140/S3240	1	37
24.0	1080	2.2	100	540	17.179	3	P150	S140/S3240	1	32
29.0	810	5.0	300	405	18.190	4	P300	S140/S3240	1	37
32.0	810	2.6	140	405	16.919	4	P150	S140/S3240	1	32
37.0	648	4.2	260	324	17.934	5	P300	S140/S3240	1	37
40.0	648	2.2	140	324	16.825	5	P150	S140/S3240	1	32
54.0	463	3.1	180	231	17.737	7	P300	S140/S3240	1	37
57.0	463	1.6	90.0	231	16.750	7	P150	S140/S3240	1	32
64.0	405	2.3	150	203	17.682	8	P300	S140/S3240	1	37
65.0	405	1.2	80.0	203	16.733	8	P150	S140/S3240	1	32
75.0	270	4.9	780	133	25.513	12	P1000	S140/S3240	2	55
76.0	324	3.7	305	162	22.708	10	P1000	S140/S3240	1	52
82.0	324	1.5	125	162	17.642	10	P300	S140/S3240	1	37
90.0	203	5.9	1000	101	25.230	16	P1000	S140/S3240	2	55
96.0	270	1.8	250	135	18.073	12	P300	S140/S3240	2	38
100	216	4.2	780	108	23.782	15	P1000	S140/S3240	2	55
120	216	1.5	250	108	17.872	15	P300	S140/S3240	2	38
123	162	5.1	1000	81.0	23.601	20	P1000	S140/S3240	2	55
128	203	1.0	150	101	16.834	16	P150	S140/S3240	2	33
128	203	2.0	300	101	18.030	16	P300	S140/S3240	2	38
160	162	1.7	300	81.0	17.855	20	P300	S140/S3240	2	38
166	130	4.2	900	65.0	23.528	25	P1000	S140/S3240	2	55
200	130	1.3	260	65.0	17.834	25	P300	S140/S3240	2	38
224	101	3.7	1000	51.0	22.787	32	P1000	S140/S3240	2	55
233	81.0	5.6	1800	41.0	40.145	40	P1800	S140/S3240	2	76
256	101	1.2	300	51.0	17.667	32	P300	S140/S3240	2	38
300	81.0	2.8	900	41.0	22.758	40	P1000	S140/S3240	2	55
490	50.6	2.0	1000	25.0	40.026	64	P1800	S140/S3240	2	76



Technical data

Planetary gearbox g840-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

3.1 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g840-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
19.0	1320	4.9	230	612	15.656	3	P300	S120/M3960	1	19
21.0	1320	1.3	45.0	595	12.927	3	P77	S120/M3960	1	12
21.0	1320	2.4	100	641	13.428	3	P150	S120/M3960	1	14
24.0	990	5.4	300	495	14.890	4	P300	S120/M3960	1	19
27.0	990	2.9	140	495	13.167	4	P150	S120/M3960	1	14
28.0	990	1.2	60.0	495	12.844	4	P77	S120/M3960	1	12
32.0	792	4.5	260	396	14.634	5	P300	S120/M3960	1	19
35.0	792	2.4	140	396	13.074	5	P150	S120/M3960	1	14
36.0	792	1.0	65.0	396	12.814	5	P77	S120/M3960	1	12
47.0	566	3.5	180	283	14.437	7	P300	S120/M3960	1	19
50.0	566	1.8	90.0	283	12.999	7	P150	S120/M3960	1	14
55.0	495	2.6	150	248	14.382	8	P300	S120/M3960	1	19
57.0	495	1.4	80.0	248	12.982	8	P150	S120/M3960	1	14
63.0	330	5.3	780	135	22.213	12	P1000	S120/M3960	2	36
64.0	396	4.3	305	198	19.408	10	P1000	S120/M3960	1	34
71.0	396	1.8	125	198	14.342	10	P300	S120/M3960	1	19
83.0	330	1.9	250	165	14.773	12	P300	S120/M3960	2	19
84.0	264	4.6	780	127	20.482	15	P1000	S120/M3960	2	36
103	198	5.5	1000	99.0	20.301	20	P1000	S120/M3960	2	36
104	264	1.6	250	132	14.572	15	P300	S120/M3960	2	19
110	248	2.1	300	124	14.730	16	P300	S120/M3960	2	19
111	248	1.1	150	124	13.082	16	P150	S120/M3960	2	14
139	198	1.8	300	99.0	14.555	20	P300	S120/M3960	2	19
140	158	4.6	900	79.0	20.228	25	P1000	S120/M3960	2	36
174	158	1.5	260	79.0	14.534	25	P300	S120/M3960	2	19
190	124	4.0	1000	62.0	19.487	32	P1000	S120/M3960	2	36
223	124	1.3	300	62.0	14.367	32	P300	S120/M3960	2	19
253	99.0	3.2	900	50.0	19.458	40	P1000	S120/M3960	2	36
422	61.9	1.1	450	31.0	19.435	64	P1000	S120/M3960	2	36

Technical data

Planetary gearbox g840-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



3.7 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g840-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
24.0	1320	4.0	230	584	21.456	3	P300	S120/L3960	1	21
26.0	1320	1.9	100	613	19.228	3	P150	S120/L3960	1	17
31.0	990	4.4	300	495	20.690	4	P300	S120/L3960	1	21
34.0	990	2.3	140	495	18.967	4	P150	S120/L3960	1	17
40.0	792	3.7	260	396	20.434	5	P300	S120/L3960	1	21
43.0	792	2.0	140	396	18.874	5	P150	S120/L3960	1	17
58.0	566	2.9	180	283	20.237	7	P300	S120/L3960	1	21
60.0	566	1.5	90.0	283	18.799	7	P150	S120/L3960	1	17
69.0	495	1.2	80.0	248	18.782	8	P150	S120/L3960	1	17
69.0	495	2.2	150	248	20.182	8	P300	S120/L3960	1	21
81.0	396	3.5	305	198	25.208	10	P1000	S120/L3960	1	37
84.0	330	4.4	780	129	28.013	12	P1000	S120/L3960	2	39
86.0	396	1.5	125	198	20.142	10	P300	S120/L3960	1	21
102	330	1.6	250	165	20.573	12	P300	S120/L3960	2	22
102	248	5.3	1000	104	27.730	16	P1000	S120/L3960	2	39
110	264	3.8	780	121	26.282	15	P1000	S120/L3960	2	39
127	264	1.3	250	132	20.372	15	P300	S120/L3960	2	22
135	248	1.7	300	124	20.530	16	P300	S120/L3960	2	22
138	198	4.5	1000	97.0	26.101	20	P1000	S120/L3960	2	39
169	198	1.5	300	99.0	20.355	20	P300	S120/L3960	2	22
184	158	3.8	900	79.0	26.028	25	P1000	S120/L3960	2	39
212	158	1.2	260	79.0	20.334	25	P300	S120/L3960	2	22
246	124	3.3	1000	62.0	25.287	32	P1000	S120/L3960	2	39
271	124	1.1	300	62.0	20.167	32	P300	S120/L3960	2	22
322	99.0	2.7	900	50.0	25.258	40	P1000	S120/L3960	2	39



Technical data

Planetary gearbox g840-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

4.8 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g840-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
39.0	1080	2.7	230	528	33.356	3	P300	S140/M3240	1	42
40.0	1080	1.3	100	540	31.579	3	P150	S140/M3240	1	37
51.0	810	3.0	300	405	32.590	4	P300	S140/M3240	1	42
54.0	810	1.6	140	405	31.319	4	P150	S140/M3240	1	37
66.0	648	2.6	260	324	32.334	5	P300	S140/M3240	1	42
67.0	648	1.3	140	324	31.225	5	P150	S140/M3240	1	37
80.0	463	5.6	530	231	37.723	7	P1000	S140/M3240	1	57
94.0	463	1.9	180	231	32.137	7	P300	S140/M3240	1	42
98.0	405	4.1	450	203	37.437	8	P1000	S140/M3240	1	57
108	405	1.4	150	203	32.082	8	P300	S140/M3240	1	42
112	270	5.9	1500	108	66.103	12	P1800	S140/M3240	2	81
119	324	4.7	630	162	52.976	10	P1800	S140/M3240	1	74
133	324	2.3	305	162	37.108	10	P1000	S140/M3240	1	57
146	270	3.0	780	116	39.913	12	P1000	S140/M3240	2	60
153	216	5.0	1500	104	59.171	15	P1800	S140/M3240	2	81
158	270	1.1	250	135	32.473	12	P300	S140/M3240	2	43
185	203	3.6	1000	95.0	39.630	16	P1000	S140/M3240	2	60
189	216	2.6	780	108	38.182	15	P1000	S140/M3240	2	60
211	203	1.2	300	101	32.430	16	P300	S140/M3240	2	43
242	162	3.1	1000	81.0	38.001	20	P1000	S140/M3240	2	60
254	130	5.1	1800	65.0	58.152	25	P1800	S140/M3240	2	81
263	162	1.0	300	81.0	32.255	20	P300	S140/M3240	2	43
315	130	2.6	900	65.0	37.928	25	P1000	S140/M3240	2	60
351	101	4.2	1800	51.0	54.636	32	P1800	S140/M3240	2	81
414	101	2.2	1000	51.0	37.187	32	P1000	S140/M3240	2	60
471	81.0	3.4	1800	41.0	54.545	40	P1800	S140/M3240	2	81
526	81.0	1.7	900	41.0	37.158	40	P1000	S140/M3240	2	60
806	50.6	1.2	1000	25.0	54.426	64	P1800	S140/M3240	2	81

Technical data

Planetary gearbox g840-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



5 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g840-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
45.0	1000	2.4	230	500	65.786	3	P300	S190/S3000	1	54
60.0	750	2.7	300	375	65.019	4	P300	S190/S3000	1	54
76.0	600	2.3	260	300	64.763	5	P300	S190/S3000	1	54
95.0	429	4.9	530	214	68.423	7	P1000	S190/S3000	1	69
108	429	1.7	180	214	66.891	7	P300	S190/S3000	1	54
115	375	3.6	450	188	68.137	8	P1000	S190/S3000	1	69
123	375	1.2	150	188	64.511	8	P300	S190/S3000	1	54
136	250	5.3	1500	106	96.803	12	P1800	S190/S3000	2	93
140	300	4.1	630	150	83.676	10	P1800	S190/S3000	1	86
154	300	2.0	305	150	67.808	10	P1000	S190/S3000	1	69
171	250	2.7	780	112	70.613	12	P1000	S190/S3000	2	72
183	200	4.5	1500	100	89.871	15	P1800	S190/S3000	2	93
219	188	3.2	1000	92.0	70.330	16	P1000	S190/S3000	2	72
221	200	2.3	780	100	68.882	15	P1000	S190/S3000	2	72
224	150	5.4	1800	75.0	89.086	20	P1800	S190/S3000	2	93
241	188	1.1	300	94.0	64.859	16	P300	S190/S3000	2	55
284	150	2.8	1000	75.0	68.701	20	P1000	S190/S3000	2	72
306	120	4.5	1800	60.0	88.852	25	P1800	S190/S3000	2	93
367	120	2.3	900	60.0	68.628	25	P1000	S190/S3000	2	72
420	93.8	3.7	1800	47.0	85.336	32	P1800	S190/S3000	2	93
481	93.8	2.0	1000	47.0	67.887	32	P1000	S190/S3000	2	72
557	75.0	3.0	1800	38.0	85.245	40	P1800	S190/S3000	2	93
602	75.0	1.5	900	38.0	67.858	40	P1000	S190/S3000	2	72
922	46.9	1.1	1000	23.0	85.126	64	P1800	S190/S3000	2	93



Technical data

Planetary gearbox g840-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

5.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g840-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
50.0	1080	1.1	100	526	46.079	3	P150	S140/L3240	1	42
50.0	1080	2.2	230	497	47.856	3	P300	S140/L3240	1	47
66.0	810	2.4	300	405	47.090	4	P300	S140/L3240	1	47
67.0	810	1.3	140	405	45.819	4	P150	S140/L3240	1	42
83.0	648	2.1	260	324	46.834	5	P300	S140/L3240	1	47
84.0	648	1.1	140	324	45.725	5	P150	S140/L3240	1	42
105	463	4.5	530	231	52.223	7	P1000	S140/L3240	1	62
117	463	1.5	180	231	46.637	7	P300	S140/L3240	1	47
126	405	3.3	450	203	51.937	8	P1000	S140/L3240	1	62
134	405	1.1	150	203	46.582	8	P300	S140/L3240	1	47
155	324	3.8	630	162	67.476	10	P1800	S140/L3240	1	79
156	270	4.7	1500	103	80.603	12	P1800	S140/L3240	2	86
167	324	1.8	305	162	51.608	10	P1000	S140/L3240	1	62
190	270	2.4	780	109	54.413	12	P1000	S140/L3240	2	65
190	203	5.7	1800	84.0	79.382	16	P1800	S140/L3240	2	86
208	216	4.1	1500	98.0	73.671	15	P1800	S140/L3240	2	86
244	216	2.1	780	102	52.682	15	P1000	S140/L3240	2	65
244	203	2.9	1000	89.0	54.130	16	P1000	S140/L3240	2	65
257	162	4.9	1800	79.0	72.886	20	P1800	S140/L3240	2	86
315	162	2.5	1000	81.0	52.501	20	P1000	S140/L3240	2	65
346	130	4.1	1800	63.0	72.652	25	P1800	S140/L3240	2	86
407	130	2.1	900	65.0	52.428	25	P1000	S140/L3240	2	65
469	101	3.4	1800	51.0	69.136	32	P1800	S140/L3240	2	86
523	101	1.8	1000	51.0	51.687	32	P1000	S140/L3240	2	65
618	81.0	2.8	1800	41.0	69.045	40	P1800	S140/L3240	2	86
654	81.0	1.4	900	41.0	51.658	40	P1000	S140/L3240	2	65

Technical data

Planetary gearbox g840-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



7.5 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g840-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
62.0	1000	4.6	450	328	132.370	3	P1000	S190/M3000	1	78
69.0	1000	1.6	230	454	122.086	3	P300	S190/M3000	1	63
78.0	750	5.6	600	308	127.602	4	P1000	S190/M3000	1	78
92.0	750	1.8	300	370	121.319	4	P300	S190/M3000	1	63
103	600	4.6	750	264	125.638	5	P1000	S190/M3000	1	78
115	600	1.5	260	300	121.063	5	P300	S190/M3000	1	63
153	429	3.3	530	214	124.723	7	P1000	S190/M3000	1	78
158	375	5.4	1000	188	142.100	8	P1800	S190/M3000	1	95
161	429	1.1	180	214	123.191	7	P300	S190/M3000	1	63
181	375	2.4	450	188	124.437	8	P1000	S190/M3000	1	78
223	300	2.7	630	150	139.976	10	P1800	S190/M3000	1	95
230	300	1.3	305	150	124.108	10	P1000	S190/M3000	1	78
240	250	3.5	1500	95.0	153.103	12	P1800	S190/M3000	2	102
271	250	1.8	780	99.0	126.913	12	P1000	S190/M3000	2	81
301	188	4.2	1800	78.0	151.882	16	P1800	S190/M3000	2	102
313	200	3.0	1500	91.0	146.171	15	P1800	S190/M3000	2	102
338	200	1.5	780	93.0	125.182	15	P1000	S190/M3000	2	81
357	188	2.2	1000	82.0	126.630	16	P1000	S190/M3000	2	81
397	150	3.6	1800	74.0	145.386	20	P1800	S190/M3000	2	102
451	150	1.8	1000	75.0	125.001	20	P1000	S190/M3000	2	81
522	120	3.0	1800	59.0	145.152	25	P1800	S190/M3000	2	102
564	120	1.5	900	60.0	124.928	25	P1000	S190/M3000	2	81
697	93.8	2.5	1800	47.0	141.636	32	P1800	S190/M3000	2	102
722	93.8	1.3	1000	47.0	124.187	32	P1000	S190/M3000	2	81
902	75.0	2.0	1800	38.0	141.545	40	P1800	S190/M3000	2	102

9.2 kW

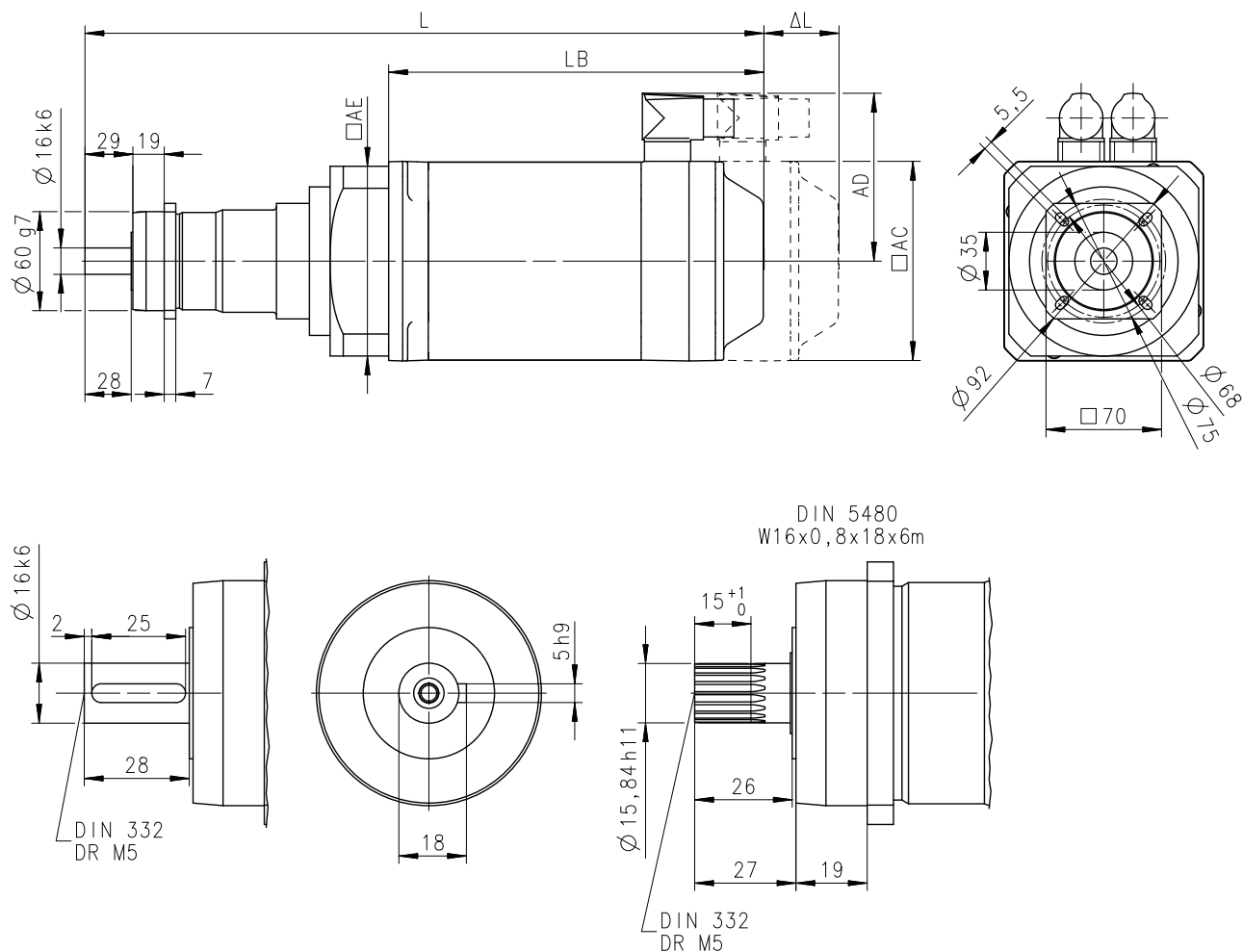
Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g840-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
95.0	840	3.3	450	308	207.770	3	P1000	S190/L2520	1	91
123	630	4.0	600	283	203.002	4	P1000	S190/L2520	1	91
159	504	3.3	750	239	201.038	5	P1000	S190/L2520	1	91
206	360	5.0	1300	180	218.555	7	P1800	S190/L2520	1	108
233	360	2.2	530	180	200.123	7	P1000	S190/L2520	1	91
250	315	3.7	1000	158	217.500	8	P1800	S190/L2520	1	108
269	315	1.7	450	158	199.837	8	P1000	S190/L2520	1	91
336	252	1.9	630	126	215.376	10	P1800	S190/L2520	1	108
379	210	2.5	1500	87.0	228.503	12	P1800	S190/L2520	2	115
395	210	1.3	780	88.0	202.313	12	P1000	S190/L2520	2	93
485	158	3.1	1800	72.0	227.282	16	P1800	S190/L2520	2	115
487	168	2.2	1500	83.0	221.571	15	P1800	S190/L2520	2	115
494	168	1.1	780	83.0	200.582	15	P1000	S190/L2520	2	93
526	158	1.6	1000	74.0	202.030	16	P1000	S190/L2520	2	93
628	126	2.6	1800	63.0	220.786	20	P1800	S190/L2520	2	115
658	126	1.3	1000	63.0	200.401	20	P1000	S190/L2520	2	93
812	101	2.2	1800	50.0	220.552	25	P1800	S190/L2520	2	115
823	101	1.1	900	50.0	200.328	25	P1000	S190/L2520	2	93
1053	78.8	1.7	1800	39.0	217.036	32	P1800	S190/L2520	2	115
1316	63.0	1.4	1800	32.0	216.945	40	P1800	S190/L2520	2	115



Basic dimensions

g840-P77 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



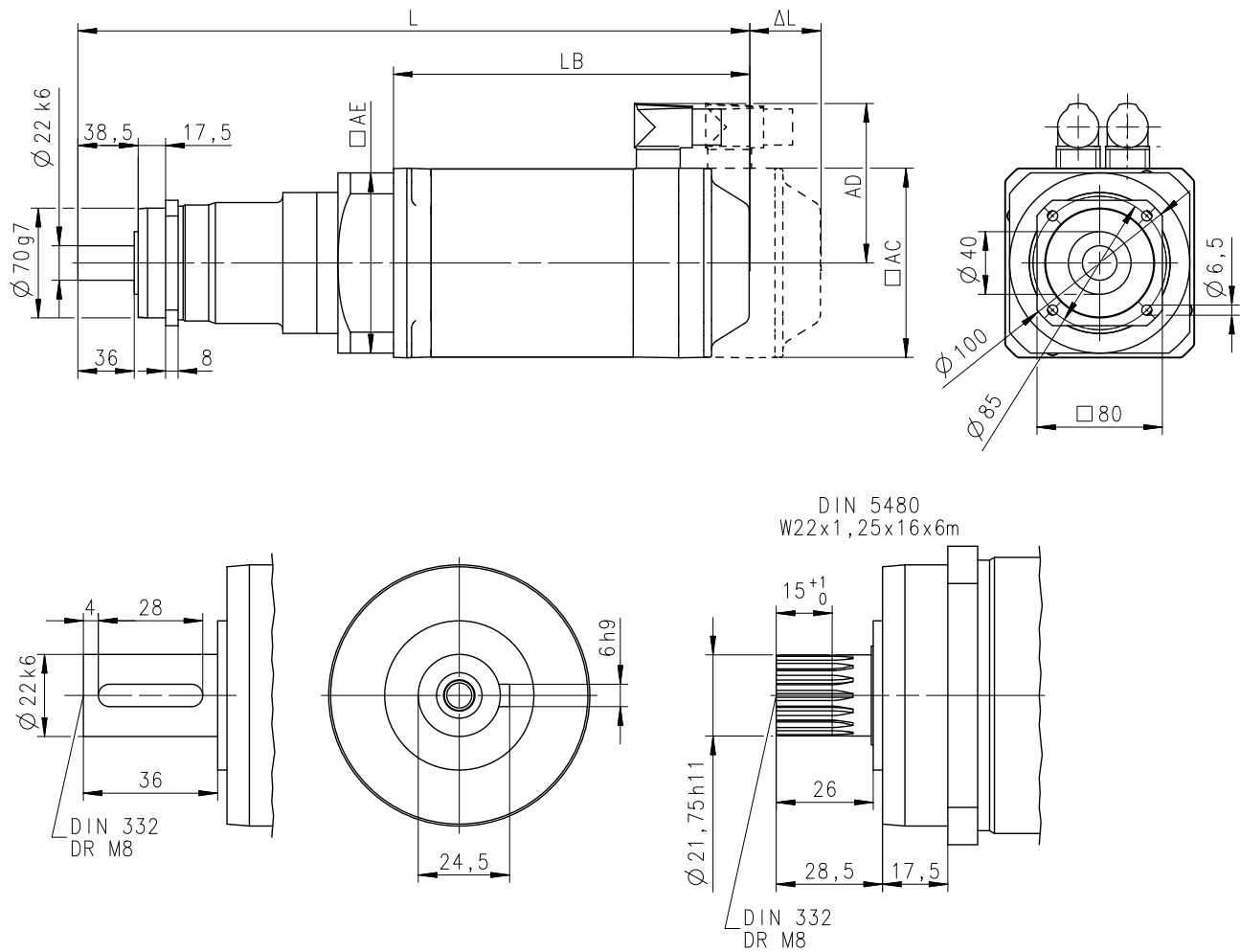
8801043-00

Motor			m850-					
			S60/S6000	S60/L6000	S80/S5500	S80/L5500	S120/S3960	S120/M3960
Total length	L	mm	265.5	295.5	312.5	332.5	343.5	381.5
Motor length	LB	mm	122	152	158	178	189	227
Motor diameter	AC	mm	60	60	80	80	121	121
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102	102
Gearbox diameter	AE	mm	70	70	90	90	115	115



g840-P150 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



8801044-00

Motor			m850-							
			S80/S5500	S80/L5500	S120/S3960	S120/M3960	S120/L3960	S140/S3240	S140/M3240	S140/L3240
Total length	L	mm	327.5	347.5	358.5	396.5	434.5	361.5	401.5	441.5
Motor length	LB	mm	158	178	189	227	265	182	222	262
Motor diameter	AC	mm	80	80	121	121	121	142	142	142
Motor/connection distance	AD	mm	83.4	83.4	102	102	102	114	114	135
Gearbox diameter	AE	mm	90	90	115	115	115	142	142	142

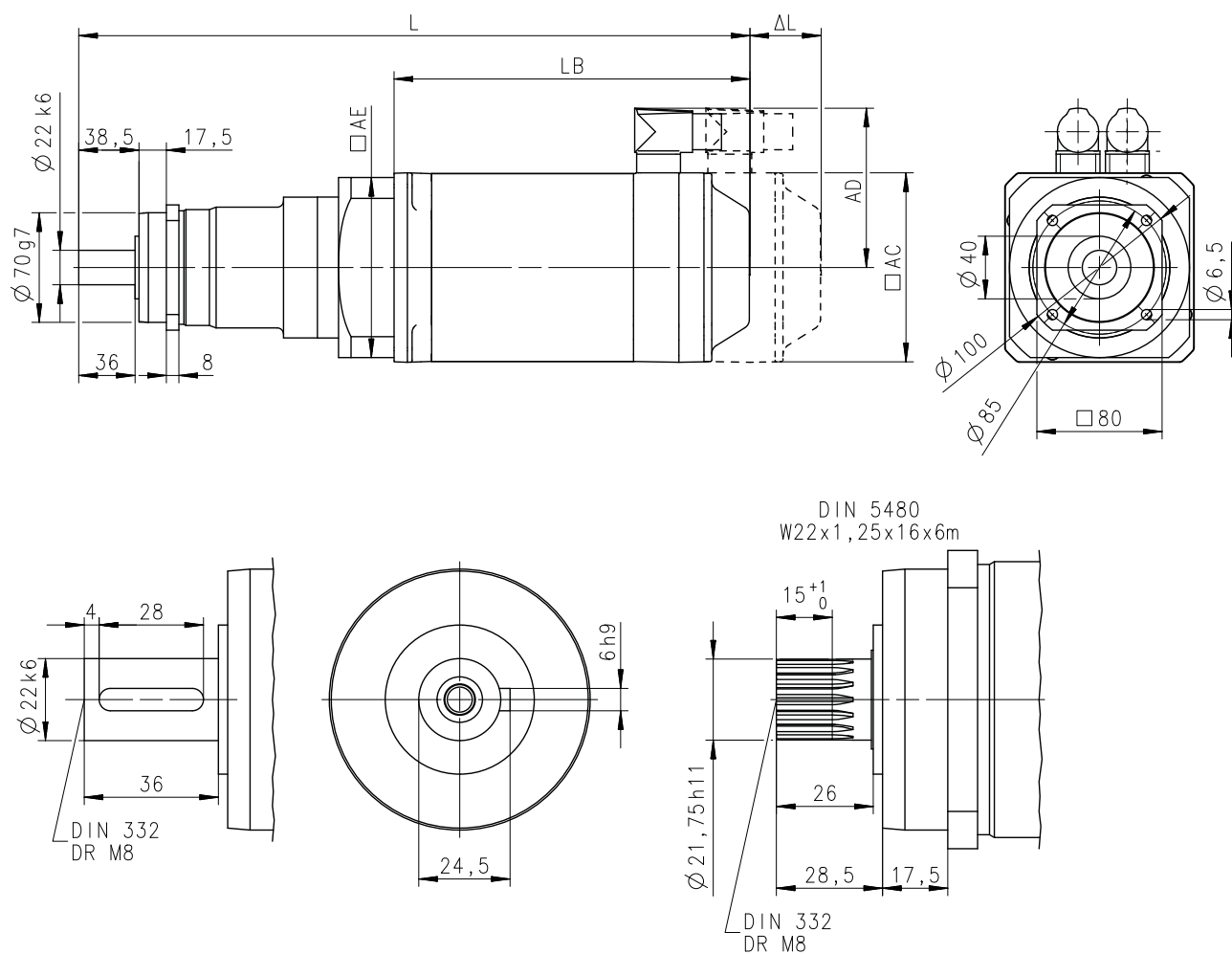


Technical data

Planetary gearbox g840-P
Basic dimensions

g840-P150 with m850

Gearbox design: Solid shaft, without foot with centering, 2-stage



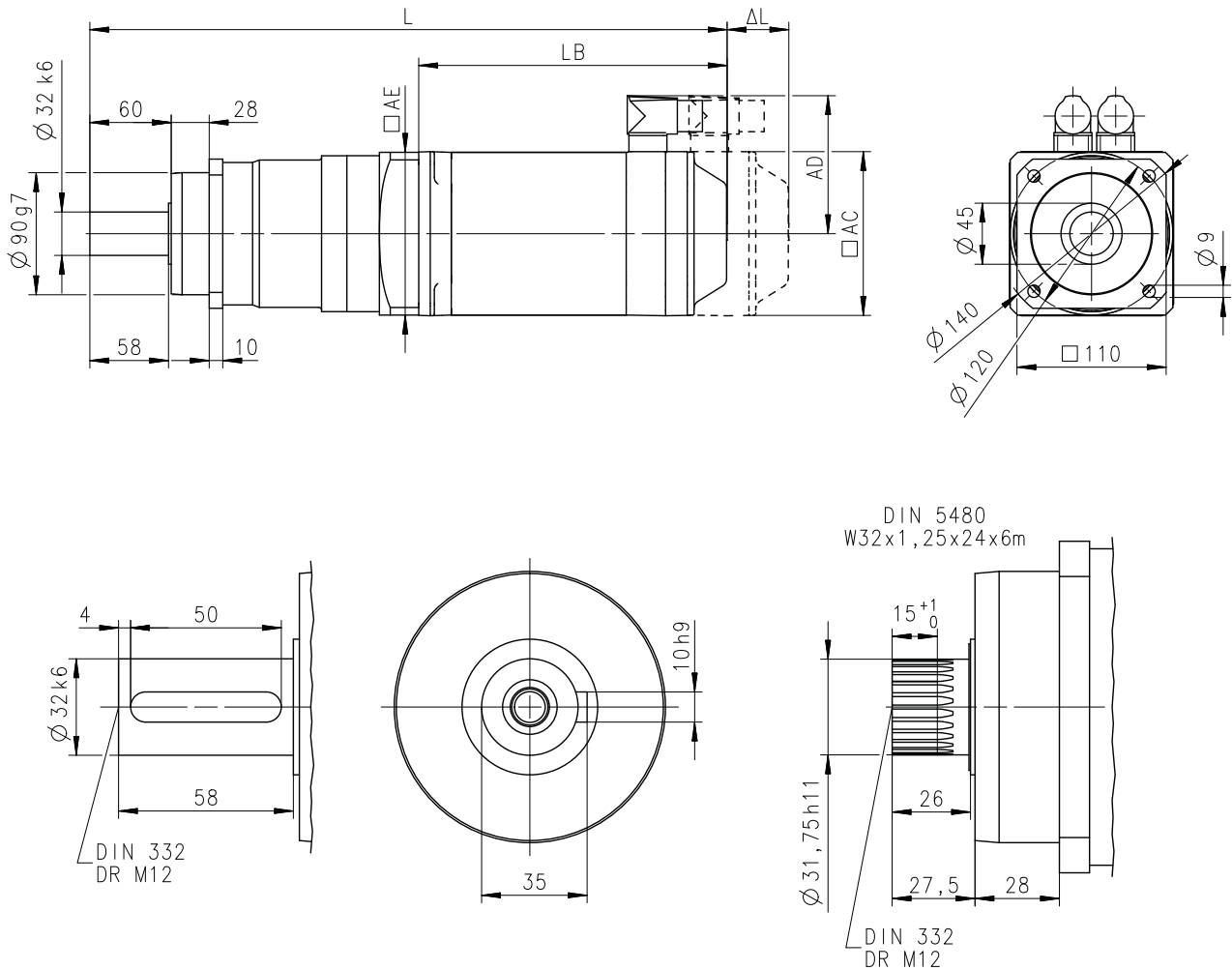
8801044-00

Motor			m850-						
			S60/S6000	S60/L6000	S80/S5500	S80/L5500	S120/S3960	S120/M3960	S140/S3240
Total length	L	mm	313.5	343.5	359.5	379.5	390.5	428.5	393.5
Motor length	LB	mm	122	152	158	178	189	227	182
Motor diameter	AC	mm	60	60	80	80	121	121	142
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102	102	114
Gearbox diameter	AE	mm	90	90	90	90	115	115	142



g840-P300 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



8801045-00

Motor			m850-							
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000
Total length	L	mm	389.5	427.5	465.5	392.5	432.5	472.5	424.5	472.5
Motor length	LB	mm	189	227	265	182	222	262	204	252
Motor diameter	AC	mm	121	121	121	142	142	142	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158
Gearbox diameter	AE	mm	120	120	120	142	142	142	190	190

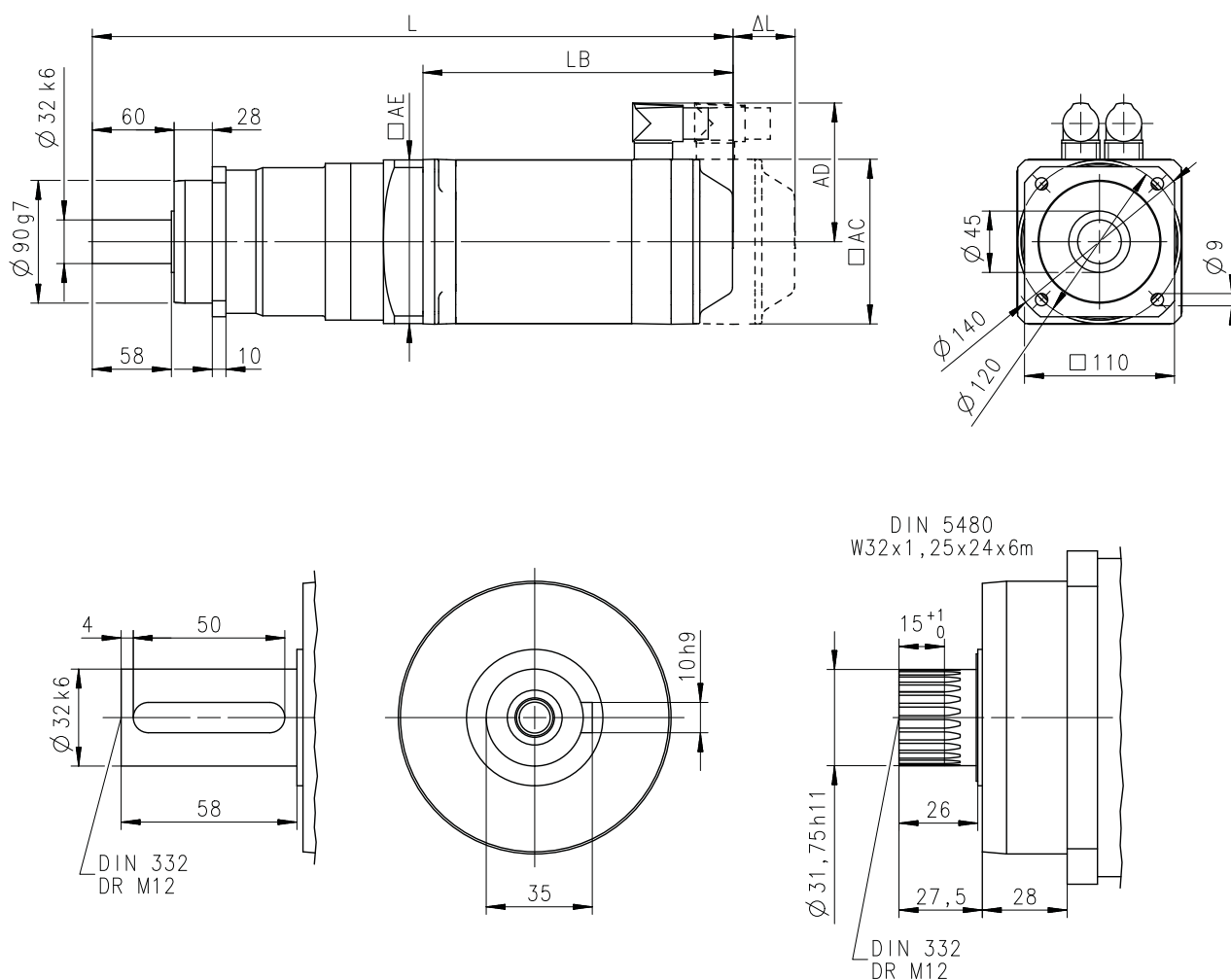


Technical data

Planetary gearbox g840-P
Basic dimensions

g840-P300 with m850

Gearbox design: Solid shaft, without foot with centering, 2-stage



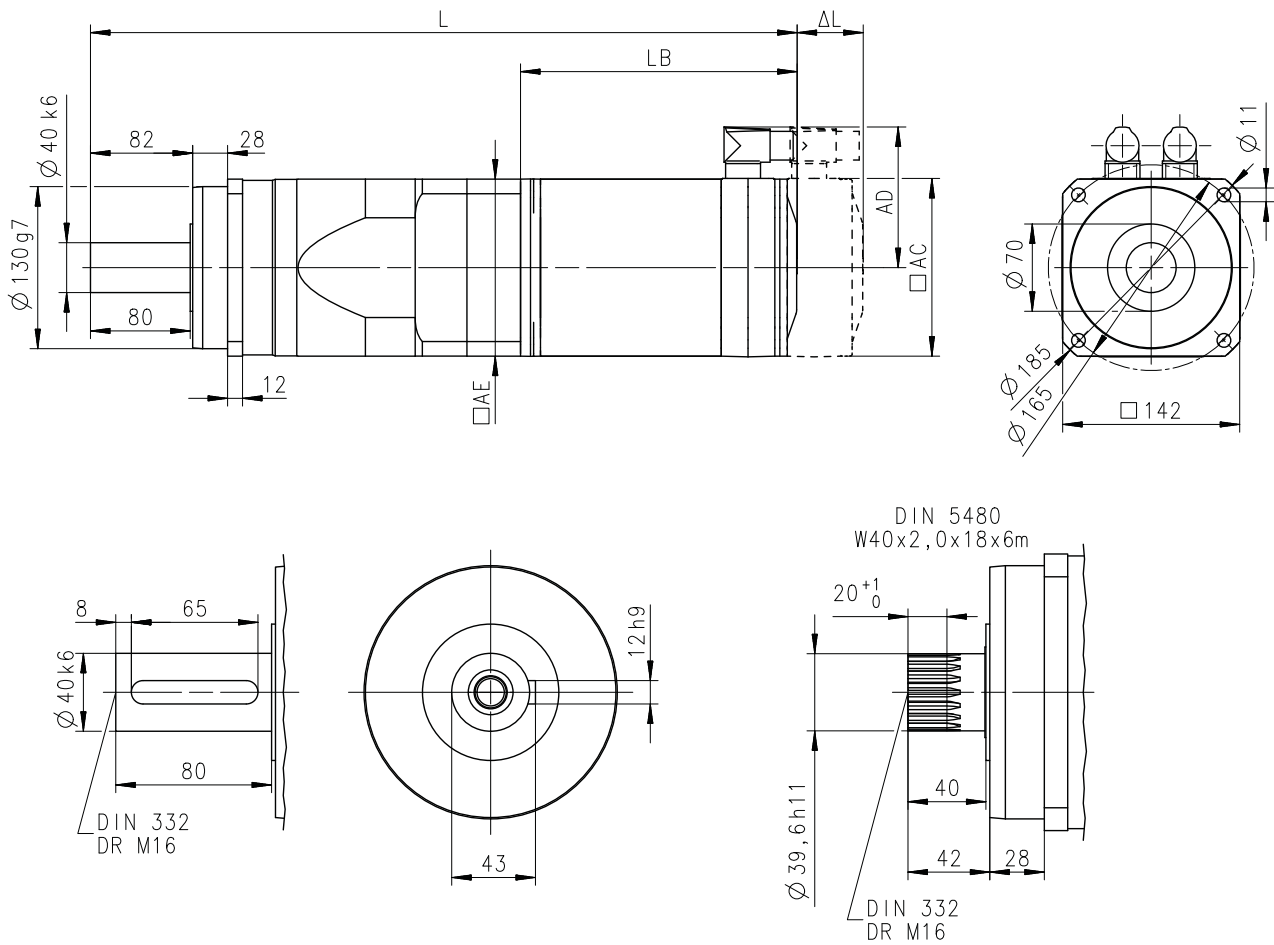
8801045-00

Motor			m850-							
			S80/S5500	S80/L5500	S120/S3960	S120/M3960	S120/L3960	S140/S3240	S140/M3240	S190/S3000
Total length	L	mm	399	419	430	468	506	433	473	465
Motor length	LB	mm	158	178	189	227	265	182	222	204
Motor diameter	AC	mm	80	80	121	121	121	142	142	190
Motor/connection distance	AD	mm	83.4	83.4	102	102	102	114	114	137
Gearbox diameter	AE	mm	115	115	120	120	120	142	142	190



g840-P1000 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



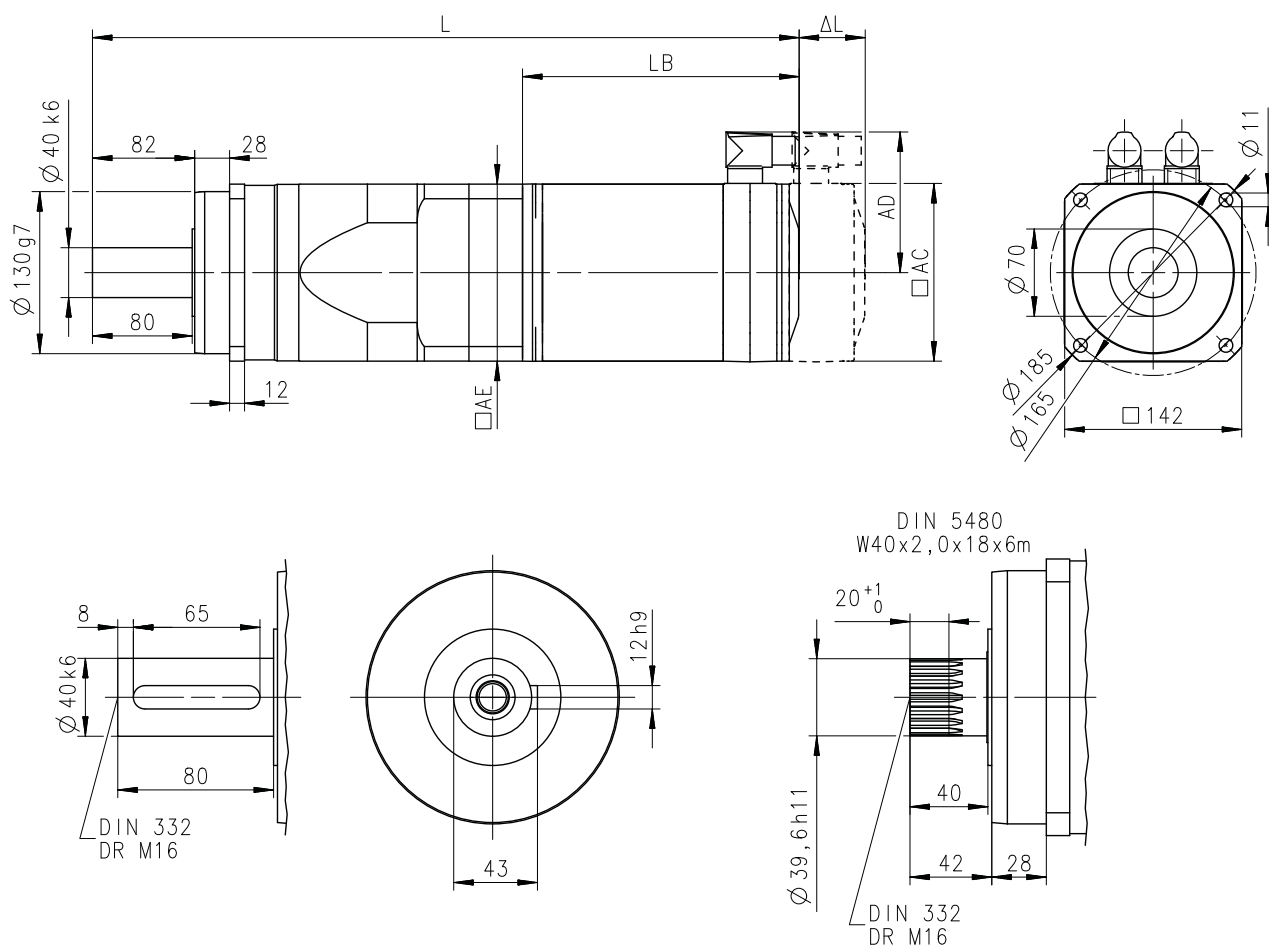
8801046-00

Motor			m850-							
			S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	503	541	458	498	538	490	538	602
Motor length	LB	mm	227	265	182	222	262	204	252	316
Motor diameter	AC	mm	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	102	102	114	114	135	137	158	158
Gearbox diameter	AE	mm	142	142	142	142	142	190	190	190



g840-P1000 with m850

Gearbox design: Solid shaft, without foot with centering, 2-stage



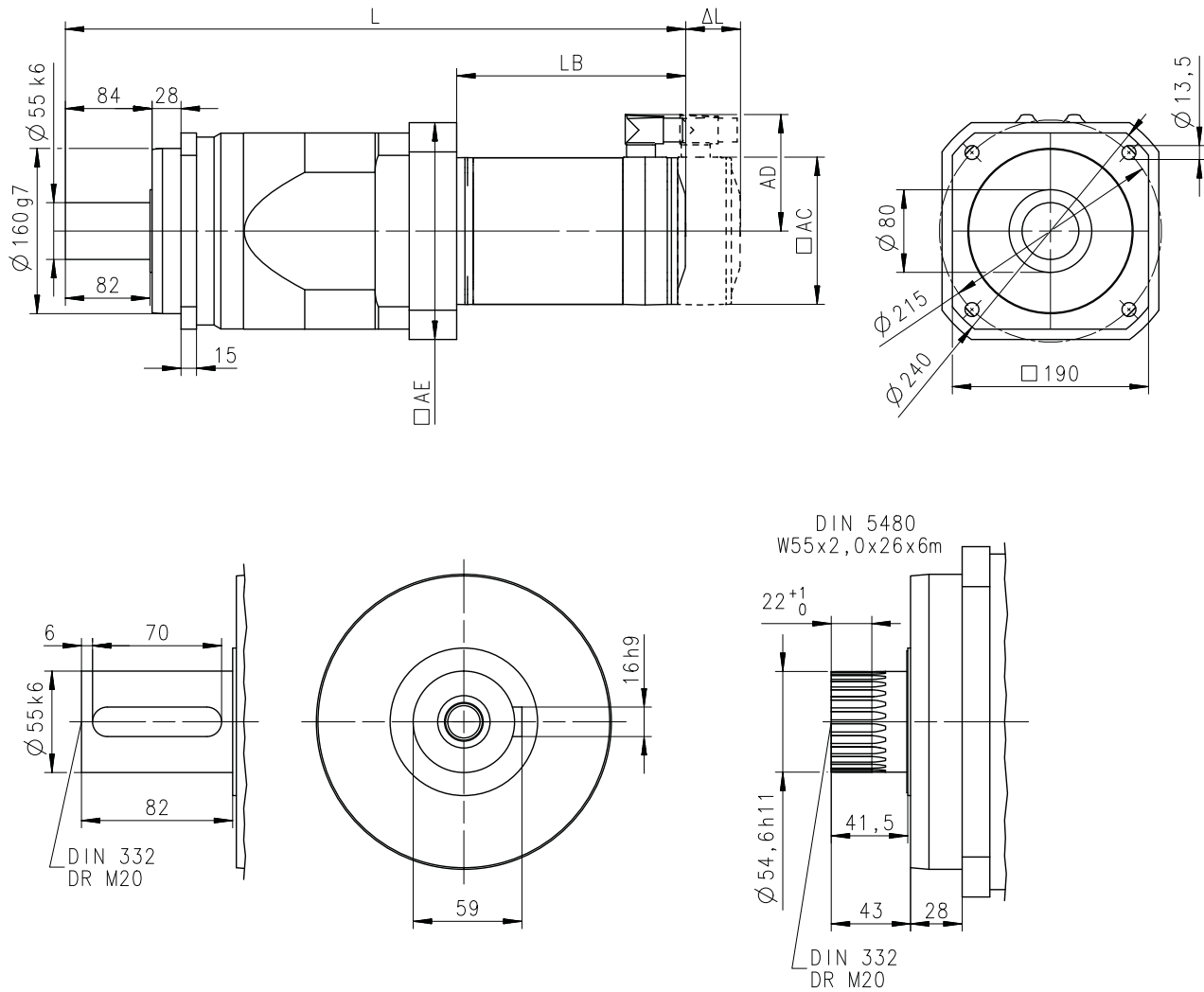
8801046-00

Motor			m850-										
			S80/ S5500	S80/ L5500	S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	501	521	524	562	600	517	557	597	549	597	661
Motor length	LB	mm	158	178	189	227	265	182	222	262	204	252	316
Motor diameter	AC	mm	80	80	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	83.4	83.4	102	102	102	114	114	135	137	158	158
Gearbox diameter	AE	mm	142	142	142	142	142	142	142	142	190	190	190



g840-P1800 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



8801047-00

Motor			m850-				
			S140/M3240	S140/L3240	S190/S3000	S190/M3000	S190/L2520
Total length	L	mm	532.5	572.5	534.5	582.5	646.5
Motor length	LB	mm	222	262	204	252	316
Motor diameter	AC	mm	142	142	190	190	190
Motor/connection distance	AD	mm	114	135	137	158	158
Gearbox diameter	AE	mm	190	190	190	190	190

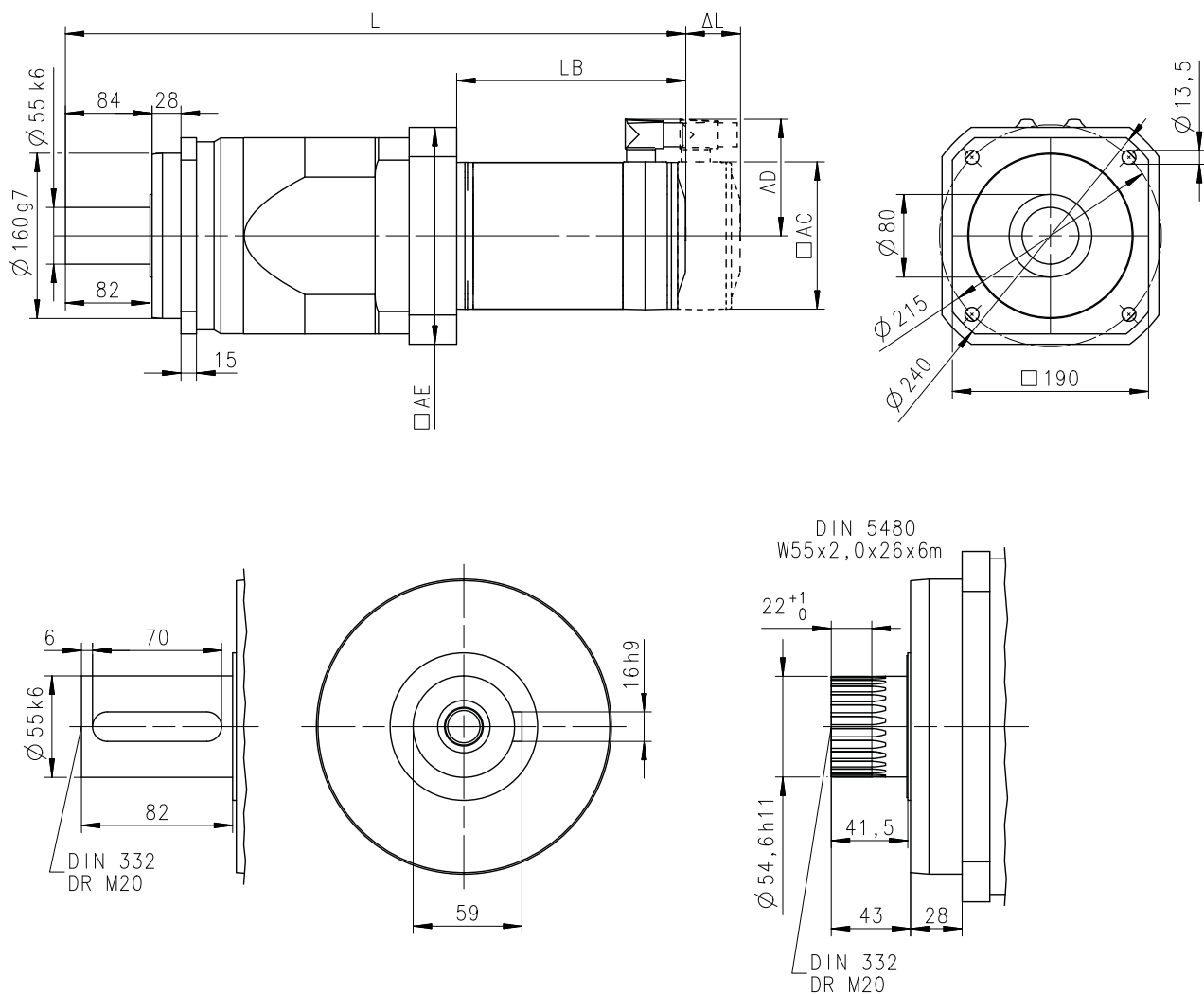


Technical data

Planetary gearbox g840-P
Basic dimensions

g840-P1800 with m850

Gearbox design: Solid shaft, without foot with centering, 2-stage



8801047-00

Motor			m850-					
			S140/S3240	S140/M3240	S140/L3240	S190/S3000	S190/M3000	S190/L2520
Total length	L	mm	564.5	604.5	644.5	606.5	654.5	718.5
Motor length	LB	mm	182	222	262	204	252	316
Motor diameter	AC	mm	142	142	142	190	190	190
Motor/connection distance	AD	mm	114	114	135	137	158	158
Gearbox diameter	AE	mm	190	190	190	190	190	190



Planetary gearbox g850-P

The modular system

g850-P planetary gearbox with m850 synchronous servo motor

Gearbox		g850-P40	g850-P80	g850-P180	g850-P470	g850-P950
Min. motor assignment		m850-S40S	m850-S60S	m850-S80S	m850-S80S	m850-S80S
Max. motor assignment		m850-S120M	m850-S140M	m850-S190M	m850-S190L	m850-S190L
Technical data						
Max. output torque	Nm	40	80	180	470	950
Mounting position		Any				
Color		Unpainted 40/60/80 Primed 120/140/190 RAL9005 120/140/190				
Surface and corrosion protection		Without 40/60/80 OKS-G 120/140/190				
Output shaft						
Solid shaft with featherkey	mm	16 x 28	22 x 36	32 x 58	40 x 80	55 x 82
Smooth solid shaft	mm	16 x 28	22 x 36	32 x 58	40 x 80	55 x 82
Toothed output shaft (Values in brackets: length of toothing)		15.84 x 26 (15) z = 18	21.75 x 26 (15) z = 16	31.75 x 26 (15) z = 24	39.6 x 40 (20) z = 18	54.6 x 41.5 (22) z = 26
Shaft material		Steel				
Shaft sealing ring material		NBR				
Gearbox design		Without foot with centering				
Gearbox stages		1/2	1/2	1/2	1/2	1/2
Output flange	mm	40	60	80	120	160
Lubricant		Standard Food compatible				
Cooling		Self-ventilated				
Motor connection		Connector				
Holding brake		Without With				
Feedback						
Without functional safety		Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)				
With functional safety		Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)				
Temperature monitoring		PT1000 thermal sensor 40/60/80 PT1000 thermal sensor and 2x PTC thermistor 120/140/190				



Gearbox data

g850-P40, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	29.0	3	5
4	39.0	3	5
5	40.0	3	5
7	37.0	3	5
8	39.0	3	5
10	28.0	3	4

g850-P40, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
12	29.0	5	5
15	29.0	5	5
16	39.0	5	5
20	39.0	5	5
35	40.0	5	5
25	40.0	5	5
40	39.0	5	5
50	40.0	5	5
70	37.0	5	4
100	28.0	5	4

g850-P80, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	54.0	3	11
4	80.0	3	14
5	80.0	3	14
7	78.0	3	13
8	75.0	3	13
10	59.0	3	12



g850-P80, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
12	54.0	5	11
15	54.0	5	11
16	80.0	5	14
20	80.0	5	14
25	80.0	5	14
35	80.0	5	14
40	80.0	5	13
50	80.0	5	14
70	78.0	5	12
100	59.0	5	11

g850-P180, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	135	3	23
4	180	3	30
5	175	3	32
7	175	3	31
10	140	3	31

g850-P180, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
12	135	5	30
15	135	5	30
16	180	5	36
20	180	5	36
25	175	5	36
35	175	5	36
40	180	5	35
50	175	5	36
70	175	5	33

g850-P470, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
3	380	3	74
4	470	3	79
5	405	3	80
7	355	3	72
10	305	3	64



g850-P470, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
12	380	5	68
15	380	5	69
16	450	5	75
20	450	5	76
25	405	5	78
35	405	5	78
40	470	5	76
50	405	5	78
70	355	5	71
100	305	5	64

g850-P950, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
5	950	3	228
7	900	3	210
10	750	3	186

g850-P950, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
12	845	5	203
15	845	5	204
16	950	5	235
20	950	5	236
25	950	5	224
35	950	5	222
40	950	5	226
50	950	5	219
70	900	5	205
100	750	5	184

Radial forces and axial forces

Gearbox			g850-P40	g850-P80	g850-P180	g850-P470	g850-P950
Bearing service life 20000 h							
Speed		rpm	100	100	100	100	100
Radial force	F_{rad}	rated	3200	5500	6000	13000	20000
axial force	F_{ax}	rated	4400	6400	8000	15000	19000
Bearing service life 30000 h							
Speed		rpm	100	100	100	100	100
Radial force	F_{rad}	rated	3200	4800	5400	11500	17500
axial force	F_{ax}	rated	3900	5700	7000	13500	18500
Max. radial force	$F_{\text{rad, max}}$	rated	3200	5500	6000	13000	20000
Max. axial force	$F_{\text{ax, max}}$	rated	4400	6400	8000	15000	19000

Technical data

Planetary gearbox g850-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



Selection tables

Inverter mains connection 400 V, self-ventilated motors

0.11 kW

Inverter operation						i	Geared motor		Number of stages z	Mass m
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J		g850-	m850-		
Nm	rpm		Nm	rpm	kgcm ²					kg
6.1	129	5.1	37.0	143	0.153	70	P40	S40/S9000	2	3.6
9.5	90.0	3.0	28.0	100	0.153	100	P40	S40/S9000	2	3.6

0.2 kW

Inverter operation						i	Geared motor		Number of stages z	Mass m
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J		g850-	m850-		
Nm	rpm		Nm	rpm	kgcm ²					kg
4.9	257	5.9	40.0	286	0.186	35	P40	S40/L9000	2	3.8
6.1	225	5.1	39.0	250	0.178	40	P40	S40/L9000	2	3.8
8.2	180	4.2	40.0	200	0.178	50	P40	S40/L9000	2	3.8
13.0	129	2.9	37.0	143	0.177	70	P40	S40/L9000	2	3.8
17.0	90.0	1.7	28.0	100	0.177	100	P40	S40/L9000	2	3.8

0.325 kW

Inverter operation						i	Geared motor		Number of stages z	Mass m
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J		g850-	m850-		
Nm	rpm		Nm	rpm	kgcm ²					kg
4.0	600	5.9	28.0	1000	0.370	10	P40	S60/S6000	1	4.0
4.3	500	5.1	29.0	833	0.419	12	P40	S60/S6000	2	4.6
5.7	375	5.2	39.0	625	0.417	16	P40	S60/S6000	2	4.6
5.9	400	4.2	29.0	667	0.396	15	P40	S60/S6000	2	4.6
7.9	300	4.2	39.0	500	0.393	20	P40	S60/S6000	2	4.6
8.9	240	5.3	80.0	400	0.397	25	P80	S60/S6000	2	6.0
10.0	240	3.4	40.0	400	0.392	25	P40	S60/S6000	2	4.6
14.0	171	4.2	80.0	286	0.377	35	P80	S60/S6000	2	6.0
16.0	171	2.5	40.0	286	0.374	35	P40	S60/S6000	2	4.6
16.0	150	4.3	80.0	250	0.368	40	P80	S60/S6000	2	6.0
18.0	150	2.1	39.0	250	0.366	40	P40	S60/S6000	2	4.6
21.0	120	3.4	80.0	200	0.367	50	P80	S60/S6000	2	6.0
23.0	120	1.8	40.0	200	0.366	50	P40	S60/S6000	2	4.6
30.0	85.7	1.2	37.0	143	0.366	70	P40	S60/S6000	2	4.6
32.0	85.7	2.4	78.0	143	0.367	70	P80	S60/S6000	2	6.0
44.0	60.0	1.4	59.0	100	0.366	100	P80	S60/S6000	2	6.0



Technical data

Planetary gearbox g850-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

0.55 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g850-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
5.1	857	5.8	37.0	1429	0.575	7	P40	S60/L6000	1	4.5
6.0	750	5.2	39.0	375	0.570	8	P40	S60/L6000	1	4.5
7.7	500	5.3	54.0	833	0.640	12	P80	S60/L6000	2	6.5
8.2	600	3.3	28.0	1000	0.563	10	P40	S60/L6000	1	4.5
9.5	500	2.9	29.0	833	0.612	12	P40	S60/L6000	2	5.1
11.0	400	4.2	54.0	667	0.606	15	P80	S60/L6000	2	6.5
11.0	375	4.6	80.0	625	0.621	16	P80	S60/L6000	2	6.5
12.0	400	2.3	29.0	667	0.589	15	P40	S60/L6000	2	5.1
13.0	375	2.9	39.0	625	0.610	16	P40	S60/L6000	2	5.1
14.0	300	4.0	80.0	500	0.595	20	P80	S60/L6000	2	6.5
17.0	300	2.3	39.0	500	0.586	20	P40	S60/L6000	2	5.1
20.0	240	2.9	80.0	400	0.590	25	P80	S60/L6000	2	6.5
21.0	240	1.9	40.0	400	0.585	25	P40	S60/L6000	2	5.1
29.0	171	1.4	40.0	286	0.567	35	P40	S60/L6000	2	5.1
29.0	171	2.3	80.0	286	0.570	35	P80	S60/L6000	2	6.5
33.0	150	1.2	39.0	250	0.559	40	P40	S60/L6000	2	5.1
33.0	150	2.4	80.0	250	0.561	40	P80	S60/L6000	2	6.5
42.0	120	1.9	80.0	200	0.560	50	P80	S60/L6000	2	6.5
58.0	85.7	1.3	78.0	143	0.560	70	P80	S60/L6000	2	6.5

Technical data

Planetary gearbox g850-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



1 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, max}	J	i	g850-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
4.2	1833	5.2	29.0	3333	1.928	3	P40	S80/S5500	1	5.7
5.6	1375	5.2	39.0	2500	1.850	4	P40	S80/S5500	1	5.7
7.4	1100	4.3	40.0	2000	1.821	5	P40	S80/S5500	1	5.7
9.6	786	5.9	78.0	1429	1.879	7	P80	S80/S5500	1	7.7
11.0	786	3.2	37.0	1429	1.796	7	P40	S80/S5500	1	5.7
11.0	688	5.5	75.0	344	1.862	8	P80	S80/S5500	1	7.7
13.0	688	2.8	39.0	344	1.792	8	P40	S80/S5500	1	5.7
15.0	550	3.6	59.0	1000	1.839	10	P80	S80/S5500	1	7.7
16.0	550	1.7	28.0	1000	1.784	10	P40	S80/S5500	1	5.7
18.0	458	2.8	54.0	833	1.861	12	P80	S80/S5500	2	7.7
18.0	367	5.5	135	667	1.991	15	P180	S80/S5500	2	12
19.0	458	1.5	29.0	833	1.834	12	P40	S80/S5500	2	6.3
24.0	367	1.2	29.0	667	1.810	15	P40	S80/S5500	2	6.3
24.0	367	2.2	54.0	667	1.828	15	P80	S80/S5500	2	7.7
24.0	275	5.4	180	500	1.953	20	P180	S80/S5500	2	12
25.0	344	2.5	80.0	625	1.843	16	P80	S80/S5500	2	7.7
26.0	344	1.5	39.0	625	1.832	16	P40	S80/S5500	2	6.3
32.0	275	1.2	39.0	500	1.807	20	P40	S80/S5500	2	6.3
32.0	275	2.2	80.0	500	1.816	20	P80	S80/S5500	2	7.7
34.0	220	3.9	175	400	1.939	25	P180	S80/S5500	2	12
39.0	220	1.0	40.0	400	1.806	25	P40	S80/S5500	2	6.3
40.0	220	1.6	80.0	400	1.812	25	P80	S80/S5500	2	7.7
51.0	157	3.1	175	286	1.870	35	P180	S80/S5500	2	12
56.0	157	1.3	80.0	286	1.792	35	P80	S80/S5500	2	7.7
60.0	138	2.8	180	250	1.838	40	P180	S80/S5500	2	12
62.0	110	5.0	405	55.0	2.270	50	P470	S80/S5500	2	22
64.0	138	1.3	80.0	250	1.783	40	P80	S80/S5500	2	7.7
79.0	110	1.0	80.0	200	1.782	50	P80	S80/S5500	2	7.7
79.0	110	2.2	175	200	1.834	50	P180	S80/S5500	2	12
102	78.6	3.2	355	39.0	2.259	70	P470	S80/S5500	2	22
111	78.6	1.6	175	143	1.832	70	P180	S80/S5500	2	12
126	55.0	4.9	750	65	7.760	100	P950	S80/S5500	2	47
155	55.0	2.0	305	28.0	2.240	100	P470	S80/S5500	2	22



Technical data

Planetary gearbox g850-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

1.2 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g850-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
5.5	1833	4.2	29.0	3333	2.458	3	P40	S80/L5500	1	6.4
7.3	1375	4.2	39.0	2500	2.380	4	P40	S80/L5500	1	6.4
9.5	1100	3.4	40.0	2000	2.351	5	P40	S80/L5500	1	6.4
12.0	786	4.8	78.0	1429	2.409	7	P80	S80/L5500	1	8.4
14.0	786	2.6	37.0	1429	2.326	7	P40	S80/L5500	1	6.4
14.0	688	4.4	75.0	344	2.392	8	P80	S80/L5500	1	8.4
16.0	688	2.3	39.0	344	2.322	8	P40	S80/L5500	1	6.4
17.0	458	5.6	135	833	2.640	12	P180	S80/L5500	2	13
19.0	550	2.9	59.0	1000	2.369	10	P80	S80/L5500	1	8.4
20.0	550	1.4	28.0	1000	2.314	10	P40	S80/L5500	1	6.4
23.0	458	1.2	29.0	833	2.364	12	P40	S80/L5500	2	7.0
23.0	458	2.3	54.0	833	2.391	12	P80	S80/L5500	2	8.4
24.0	367	4.5	135	667	2.521	15	P180	S80/L5500	2	13
24.0	344	5.1	180	625	2.581	16	P180	S80/L5500	2	13
30.0	367	1.8	54.0	667	2.358	15	P80	S80/L5500	2	8.4
31.0	344	2.0	80.0	625	2.373	16	P80	S80/L5500	2	8.4
32.0	344	1.2	39.0	625	2.362	16	P40	S80/L5500	2	7.0
33.0	275	4.4	180	500	2.483	20	P180	S80/L5500	2	13
39.0	275	1.8	80.0	500	2.346	20	P80	S80/L5500	2	8.4
45.0	220	3.1	175	400	2.469	25	P180	S80/L5500	2	13
49.0	220	1.3	80.0	400	2.342	25	P80	S80/L5500	2	8.4
50.0	157	5.7	405	79.0	2.940	35	P470	S80/L5500	2	23
56.0	138	5.8	470	69.0	2.815	40	P470	S80/L5500	2	23
66.0	157	2.5	175	286	2.400	35	P180	S80/L5500	2	13
69.0	157	1.0	80.0	286	2.322	35	P80	S80/L5500	2	8.4
77.0	138	2.3	180	250	2.368	40	P180	S80/L5500	2	13
79.0	138	1.0	80.0	250	2.313	40	P80	S80/L5500	2	8.4
84.0	110	4.1	405	55.0	2.800	50	P470	S80/L5500	2	23
99.0	110	1.8	175	200	2.364	50	P180	S80/L5500	2	13
132	78.6	2.6	355	39.0	2.789	70	P470	S80/L5500	2	23
137	78.6	1.3	175	143	2.362	70	P180	S80/L5500	2	13
169	55.0	3.9	750	65	8.290	100	P950	S80/L5500	2	47
191	55.0	1.6	305	28.0	2.770	100	P470	S80/L5500	2	23

Technical data

Planetary gearbox g850-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



2 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g850-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
13.0	1320	3.6	54.0	660	7.420	3	P80	S120/S3960	1	11
14.0	1320	2.0	29.0	660	7.028	3	P40	S120/S3960	1	9.0
17.0	990	4.0	80.0	495	7.157	4	P80	S120/S3960	1	11
18.0	990	2.1	39.0	495	6.950	4	P40	S120/S3960	1	9.0
22.0	792	3.1	80.0	396	7.057	5	P80	S120/S3960	1	11
23.0	792	1.7	40.0	396	6.921	5	P40	S120/S3960	1	9.0
29.0	566	4.6	175	283	7.483	7	P180	S120/S3960	1	16
32.0	566	1.2	37.0	283	6.896	7	P40	S120/S3960	1	9.0
32.0	566	2.3	78.0	283	6.979	7	P80	S120/S3960	1	11
44.0	396	3.0	140	198	7.357	10	P180	S120/S3960	1	16
46.0	396	1.3	59.0	198	6.939	10	P80	S120/S3960	1	11
50.0	264	5.5	380	132	7.955	15	P470	S120/S3960	2	26
52.0	330	2.4	135	165	7.210	12	P180	S120/S3960	2	15
53.0	248	5.5	450	124	8.234	16	P470	S120/S3960	2	26
68.0	264	2.0	135	132	7.091	15	P180	S120/S3960	2	15
70.0	248	2.4	180	124	7.151	16	P180	S120/S3960	2	15
72.0	198	4.7	450	99.0	7.809	20	P470	S120/S3960	2	26
90.0	198	2.0	180	99.0	7.053	20	P180	S120/S3960	2	15
100	158	3.5	405	79.0	7.748	25	P470	S120/S3960	2	26
112	113	5.9	950	57.0	13.441	35	P950	S120/S3960	2	50
113	158	1.5	175	79.0	7.039	25	P180	S120/S3960	2	15
138	99.0	5.2	950	50.0	13.002	40	P950	S120/S3960	2	50
152	113	2.5	405	57.0	7.510	35	P470	S120/S3960	2	26
158	113	1.1	175	57.0	6.970	35	P180	S120/S3960	2	15
173	99.0	2.6	470	50.0	7.385	40	P470	S120/S3960	2	26
189	79.2	4.2	950	40.0	12.938	50	P950	S120/S3960	2	50
226	79.2	1.8	405	40.0	7.370	50	P470	S120/S3960	2	26
296	56.6	2.9	900	28.0	12.884	70	P950	S120/S3960	2	50
312	56.6	1.1	355	28.0	7.359	70	P470	S120/S3960	2	26
437	39.6	1.7	750	20.0	12.860	100	P950	S120/S3960	2	50



Technical data

Planetary gearbox g850-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

2.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g850-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
22.0	1080	4.9	135	540	18.475	3	P180	S140/S3240	1	37
24.0	1080	2.2	54.0	540	17.169	3	P80	S140/S3240	1	32
29.0	810	4.8	180	405	17.547	4	P180	S140/S3240	1	37
32.0	810	2.4	80.0	405	16.906	4	P80	S140/S3240	1	32
38.0	648	3.7	175	324	17.185	5	P180	S140/S3240	1	37
41.0	648	1.8	80.0	324	16.806	5	P80	S140/S3240	1	32
55.0	463	2.7	175	231	16.973	7	P180	S140/S3240	1	37
57.0	463	1.4	78.0	231	16.453	7	P80	S140/S3240	1	32
76.0	324	3.7	305	162	22.175	10	P470	S140/S3240	1	48
82.0	324	1.7	140	162	16.847	10	P180	S140/S3240	1	37
82.0	270	3.9	380	135	17.952	12	P470	S140/S3240	2	47
96.0	270	1.4	135	135	16.959	12	P180	S140/S3240	2	36
110	216	3.1	380	108	17.445	15	P470	S140/S3240	2	47
114	162	5.8	950	81.0	23.886	20	P950	S140/S3240	2	71
115	203	3.3	450	101	17.725	16	P470	S140/S3240	2	47
120	216	1.1	135	108	16.840	15	P180	S140/S3240	2	36
128	203	1.4	180	101	16.901	16	P180	S140/S3240	2	36
151	162	2.8	450	81.0	17.300	20	P470	S140/S3240	2	47
160	162	1.1	180	81.0	16.803	20	P180	S140/S3240	2	36
160	130	4.7	950	65.0	23.630	25	P950	S140/S3240	2	71
200	130	2.0	405	65.0	17.238	25	P470	S140/S3240	2	47
252	92.6	3.3	950	46.0	22.641	35	P950	S140/S3240	2	71
280	92.6	1.4	405	46.0	17.000	35	P470	S140/S3240	2	47
298	81.0	2.9	950	41.0	22.202	40	P950	S140/S3240	2	71
320	81.0	1.4	470	41.0	16.876	40	P470	S140/S3240	2	47
389	64.8	2.4	950	32.0	22.138	50	P950	S140/S3240	2	71
400	64.8	1.0	405	32.0	16.860	50	P470	S140/S3240	2	47
559	46.3	1.6	900	23.0	22.084	70	P950	S140/S3240	2	71

Technical data

Planetary gearbox g850-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



3.1 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g850-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
18.0	1320	5.3	135	660	14.884	3	P180	S120/M3960	1	19
21.0	1320	1.3	29.0	660	12.928	3	P40	S120/M3960	1	12
21.0	1320	2.3	54.0	660	13.320	3	P80	S120/M3960	1	14
25.0	990	5.2	180	495	13.957	4	P180	S120/M3960	1	19
28.0	990	1.3	39.0	495	12.850	4	P40	S120/M3960	1	12
28.0	990	2.6	80.0	495	13.057	4	P80	S120/M3960	1	14
33.0	792	4.0	175	396	13.594	5	P180	S120/M3960	1	19
36.0	792	1.1	40.0	396	12.821	5	P40	S120/M3960	1	12
36.0	792	2.0	80.0	396	12.957	5	P80	S120/M3960	1	14
48.0	566	3.0	175	283	13.383	7	P180	S120/M3960	1	19
50.0	566	1.5	78.0	283	12.879	7	P80	S120/M3960	1	14
64.0	396	4.3	305	198	18.875	10	P470	S120/M3960	1	29
68.0	330	4.5	380	165	14.362	12	P470	S120/M3960	2	28
71.0	396	2.0	140	198	13.257	10	P180	S120/M3960	1	19
83.0	330	1.6	135	165	13.110	12	P180	S120/M3960	2	18
92.0	264	3.6	380	132	13.855	15	P470	S120/M3960	2	28
98.0	248	3.6	450	124	14.134	16	P470	S120/M3960	2	28
104	264	1.3	135	132	12.991	15	P180	S120/M3960	2	18
111	248	1.6	180	124	13.051	16	P180	S120/M3960	2	18
128	198	3.1	450	99.0	13.709	20	P470	S120/M3960	2	28
131	158	5.4	950	79.0	20.330	25	P950	S120/M3960	2	53
139	198	1.3	180	99.0	12.953	20	P180	S120/M3960	2	18
170	158	2.3	405	79.0	13.648	25	P470	S120/M3960	2	28
210	113	3.8	950	57.0	19.341	35	P950	S120/M3960	2	53
243	113	1.6	405	57.0	13.410	35	P470	S120/M3960	2	28
250	99.0	3.3	950	50.0	18.902	40	P950	S120/M3960	2	53
278	99.0	1.7	470	50.0	13.285	40	P470	S120/M3960	2	28
330	79.2	2.7	950	40.0	18.838	50	P950	S120/M3960	2	53
348	79.2	1.2	405	40.0	13.270	50	P470	S120/M3960	2	28
487	56.6	1.9	900	28.0	18.784	70	P950	S120/M3960	2	53
673	39.6	1.1	750	20.0	18.760	100	P950	S120/M3960	2	53



Technical data

Planetary gearbox g850-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

3.7 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g850-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
23.0	1320	4.4	135	660	20.684	3	P180	S120/L3960	1	22
26.0	1320	1.9	54.0	660	19.120	3	P80	S120/L3960	1	17
31.0	990	4.3	180	495	19.757	4	P180	S120/L3960	1	22
34.0	990	2.1	80.0	495	18.857	4	P80	S120/L3960	1	17
41.0	792	3.3	175	396	19.394	5	P180	S120/L3960	1	22
43.0	792	1.6	80.0	396	18.757	5	P80	S120/L3960	1	17
51.0	566	5.8	355	283	25.214	7	P470	S120/L3960	1	32
59.0	566	2.4	175	283	19.183	7	P180	S120/L3960	1	22
60.0	566	1.2	78.0	283	18.679	7	P80	S120/L3960	1	17
81.0	396	3.5	305	198	24.675	10	P470	S120/L3960	1	32
86.0	396	1.6	140	198	19.057	10	P180	S120/L3960	1	22
89.0	330	3.7	380	165	20.162	12	P470	S120/L3960	2	31
102	330	1.3	135	165	18.910	12	P180	S120/L3960	2	21
118	264	2.9	380	132	19.655	15	P470	S120/L3960	2	31
125	198	5.5	950	99.0	26.386	20	P950	S120/L3960	2	56
126	248	2.9	450	124	19.934	16	P470	S120/L3960	2	31
127	264	1.0	135	132	18.791	15	P180	S120/L3960	2	21
135	248	1.3	180	124	18.851	16	P180	S120/L3960	2	21
163	198	2.5	450	99.0	19.509	20	P470	S120/L3960	2	31
169	198	1.0	180	99.0	18.753	20	P180	S120/L3960	2	21
174	158	4.4	950	79.0	26.130	25	P950	S120/L3960	2	56
212	158	1.9	405	79.0	19.448	25	P470	S120/L3960	2	31
271	113	3.1	950	57.0	25.141	35	P950	S120/L3960	2	56
296	113	1.3	405	57.0	19.210	35	P470	S120/L3960	2	31
320	99.0	2.8	950	50.0	24.702	40	P950	S120/L3960	2	56
338	99.0	1.4	470	50.0	19.085	40	P470	S120/L3960	2	31
416	79.2	2.2	950	40.0	24.638	50	P950	S120/L3960	2	56
592	56.6	1.5	900	28.0	24.584	70	P950	S120/L3960	2	56

Technical data

Planetary gearbox g850-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



4.8 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g850-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
39.0	1080	3.0	135	540	32.875	3	P180	S140/M3240	1	42
40.0	1080	1.3	54.0	540	31.569	3	P80	S140/M3240	1	37
52.0	810	2.9	180	405	31.947	4	P180	S140/M3240	1	42
54.0	810	1.4	80.0	405	31.306	4	P80	S140/M3240	1	37
56.0	648	5.9	405	324	38.175	5	P470	S140/M3240	1	53
67.0	648	1.1	80.0	324	31.206	5	P80	S140/M3240	1	37
67.0	648	2.2	175	324	31.585	5	P180	S140/M3240	1	42
87.0	463	3.7	355	231	37.114	7	P470	S140/M3240	1	53
94.0	463	1.7	175	231	31.373	7	P180	S140/M3240	1	42
116	324	5.3	750	162	51.795	10	P950	S140/M3240	1	69
120	270	5.2	845	135	40.754	12	P950	S140/M3240	2	76
133	324	2.3	305	162	36.575	10	P470	S140/M3240	1	53
134	324	1.0	140	162	31.247	10	P180	S140/M3240	1	42
154	270	2.4	380	135	32.352	12	P470	S140/M3240	2	52
166	216	4.2	845	108	38.986	15	P950	S140/M3240	2	76
173	203	4.4	950	101	39.659	16	P950	S140/M3240	2	76
197	216	1.9	380	108	31.845	15	P470	S140/M3240	2	52
210	203	2.0	450	101	32.125	16	P470	S140/M3240	2	52
233	162	3.5	950	81.0	38.286	20	P950	S140/M3240	2	76
263	162	1.7	450	81.0	31.700	20	P470	S140/M3240	2	52
309	130	2.8	950	65.0	38.030	25	P950	S140/M3240	2	76
329	130	1.2	405	65.0	31.638	25	P470	S140/M3240	2	52
460	92.6	2.0	950	46.0	37.041	35	P950	S140/M3240	2	76
526	81.0	1.8	950	41.0	36.602	40	P950	S140/M3240	2	76
658	64.8	1.4	950	32.0	36.538	50	P950	S140/M3240	2	76



Technical data

Planetary gearbox g850-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

5 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g850-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
45.0	1000	2.7	135	500	66.139	3	P180	S190/S3000	1	54
60.0	750	2.6	180	375	65.211	4	P180	S190/S3000	1	54
67.0	600	5.2	405	300	68.875	5	P470	S190/S3000	1	65
77.0	600	2.0	175	300	64.849	5	P180	S190/S3000	1	54
102	429	3.3	355	214	67.814	7	P470	S190/S3000	1	65
108	429	1.5	175	214	64.637	7	P180	S190/S3000	1	54
136	300	4.8	750	150	82.495	10	P950	S190/S3000	1	81
146	250	4.5	845	125	71.454	12	P950	S190/S3000	2	88
154	300	2.0	305	150	67.275	10	P470	S190/S3000	1	65
180	250	2.1	380	125	65.617	12	P470	S190/S3000	2	64
198	200	3.6	845	100	69.686	15	P950	S190/S3000	2	88
207	188	3.9	950	94.0	70.359	16	P950	S190/S3000	2	88
226	200	1.7	380	100	65.110	15	P470	S190/S3000	2	64
241	188	1.8	450	94.0	65.389	16	P470	S190/S3000	2	64
276	150	3.1	950	75.0	68.986	20	P950	S190/S3000	2	88
301	150	1.5	450	75.0	64.964	20	P470	S190/S3000	2	64
363	120	2.5	950	60.0	68.730	25	P950	S190/S3000	2	88
376	120	1.1	405	60.0	64.903	25	P470	S190/S3000	2	64
526	85.7	1.8	950	43.0	67.741	35	P950	S190/S3000	2	88
602	75.0	1.6	950	38.0	67.302	40	P950	S190/S3000	2	88
752	60.0	1.3	950	30.0	67.238	50	P950	S190/S3000	2	88

5.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g850-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
49.0	1080	2.4	135	540	47.375	3	P180	S140/L3240	1	47
50.0	1080	1.1	54.0	540	46.069	3	P80	S140/L3240	1	42
66.0	810	2.4	180	405	46.447	4	P180	S140/L3240	1	47
67.0	810	1.2	80.0	405	45.806	4	P80	S140/L3240	1	42
74.0	648	4.8	405	324	52.675	5	P470	S140/L3240	1	58
84.0	648	1.8	175	324	46.085	5	P180	S140/L3240	1	47
112	463	3.0	355	231	51.614	7	P470	S140/L3240	1	58
117	463	1.3	175	231	45.873	7	P180	S140/L3240	1	47
151	324	4.3	750	162	66.295	10	P950	S140/L3240	1	74
165	270	4.2	845	135	55.254	12	P950	S140/L3240	2	81
167	324	1.8	305	162	51.075	10	P470	S140/L3240	1	58
196	270	1.9	380	135	46.852	12	P470	S140/L3240	2	57
221	216	3.3	845	108	53.486	15	P950	S140/L3240	2	81
231	203	3.6	950	101	54.159	16	P950	S140/L3240	2	81
245	216	1.5	380	108	46.345	15	P470	S140/L3240	2	57
262	203	1.6	450	101	46.625	16	P470	S140/L3240	2	57
307	162	2.8	950	81.0	52.786	20	P950	S140/L3240	2	81
327	162	1.4	450	81.0	46.200	20	P470	S140/L3240	2	57
401	130	2.3	950	65.0	52.530	25	P950	S140/L3240	2	81
572	92.6	1.6	950	46.0	51.541	35	P950	S140/L3240	2	81
654	81.0	1.4	950	41.0	51.102	40	P950	S140/L3240	2	81
818	64.8	1.2	950	32.0	51.038	50	P950	S140/L3240	2	81

Technical data

Planetary gearbox g850-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



7.5 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g850-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
61.0	1000	4.7	380	349	130.212	3	P470	S190/M3000	1	74
69.0	1000	1.8	135	500	122.439	3	P180	S190/M3000	1	63
82.0	750	4.7	470	335	126.656	4	P470	S190/M3000	1	74
92.0	750	1.8	180	375	121.511	4	P180	S190/M3000	1	63
108	600	3.4	405	300	125.175	5	P470	S190/M3000	1	74
115	600	1.3	175	300	121.149	5	P180	S190/M3000	1	63
143	429	4.7	900	214	141.639	7	P950	S190/M3000	1	90
160	429	2.2	355	214	124.114	7	P470	S190/M3000	1	74
219	300	3.2	750	150	138.795	10	P950	S190/M3000	1	90
230	300	1.3	305	150	123.575	10	P470	S190/M3000	1	74
250	250	3.0	845	125	127.754	12	P950	S190/M3000	2	97
271	250	1.4	380	125	121.917	12	P470	S190/M3000	2	73
328	200	2.4	845	100	125.986	15	P950	S190/M3000	2	97
338	200	1.1	380	100	121.410	15	P470	S190/M3000	2	73
345	188	2.6	950	94.0	126.659	16	P950	S190/M3000	2	97
361	188	1.2	450	94.0	121.689	16	P470	S190/M3000	2	73
449	150	2.1	950	75.0	125.286	20	P950	S190/M3000	2	97
564	120	1.7	950	60.0	125.030	25	P950	S190/M3000	2	97
790	85.7	1.2	950	43.0	124.041	35	P950	S190/M3000	2	97
902	75.0	1.0	950	38.0	123.602	40	P950	S190/M3000	2	97

9.2 kW

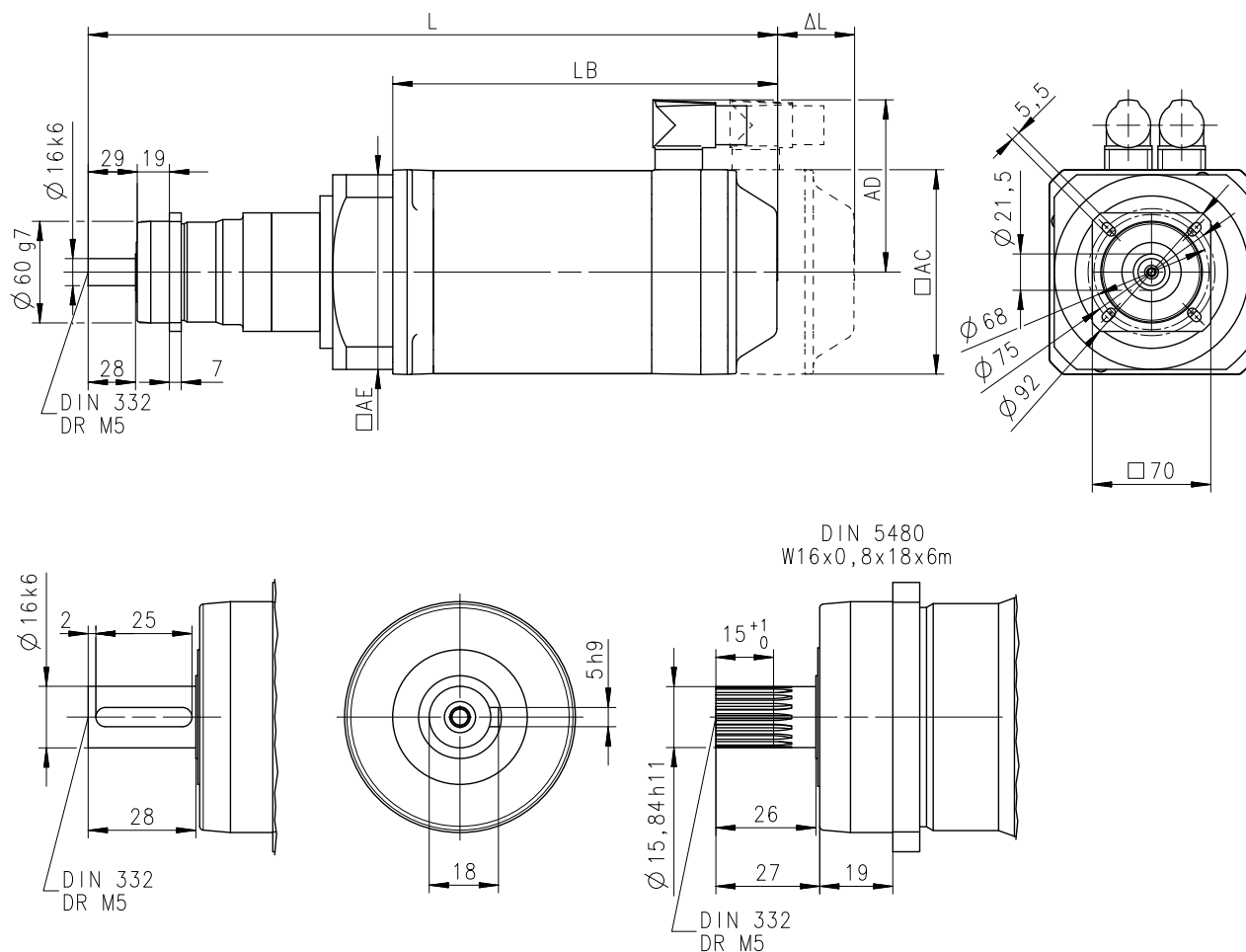
Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g850-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
95.0	840	3.4	380	342	205.612	3	P470	S190/L2520	1	86
126	630	3.4	470	315	202.056	4	P470	S190/L2520	1	86
149	504	4.8	950	238	221.883	5	P950	S190/L2520	1	102
165	504	2.4	405	252	200.575	5	P470	S190/L2520	1	86
222	360	3.4	900	180	217.039	7	P950	S190/L2520	1	102
235	360	1.5	355	180	199.514	7	P470	S190/L2520	1	86
333	252	2.2	750	126	214.195	10	P950	S190/L2520	1	102
393	210	2.1	845	105	203.154	12	P950	S190/L2520	2	110
494	168	1.7	845	84.0	201.386	15	P950	S190/L2520	2	110
526	158	1.8	950	79.0	202.059	16	P950	S190/L2520	2	110
658	126	1.4	950	63.0	200.686	20	P950	S190/L2520	2	110
823	101	1.1	950	50.0	200.430	25	P950	S190/L2520	2	110



Basic dimensions

g850-P40 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



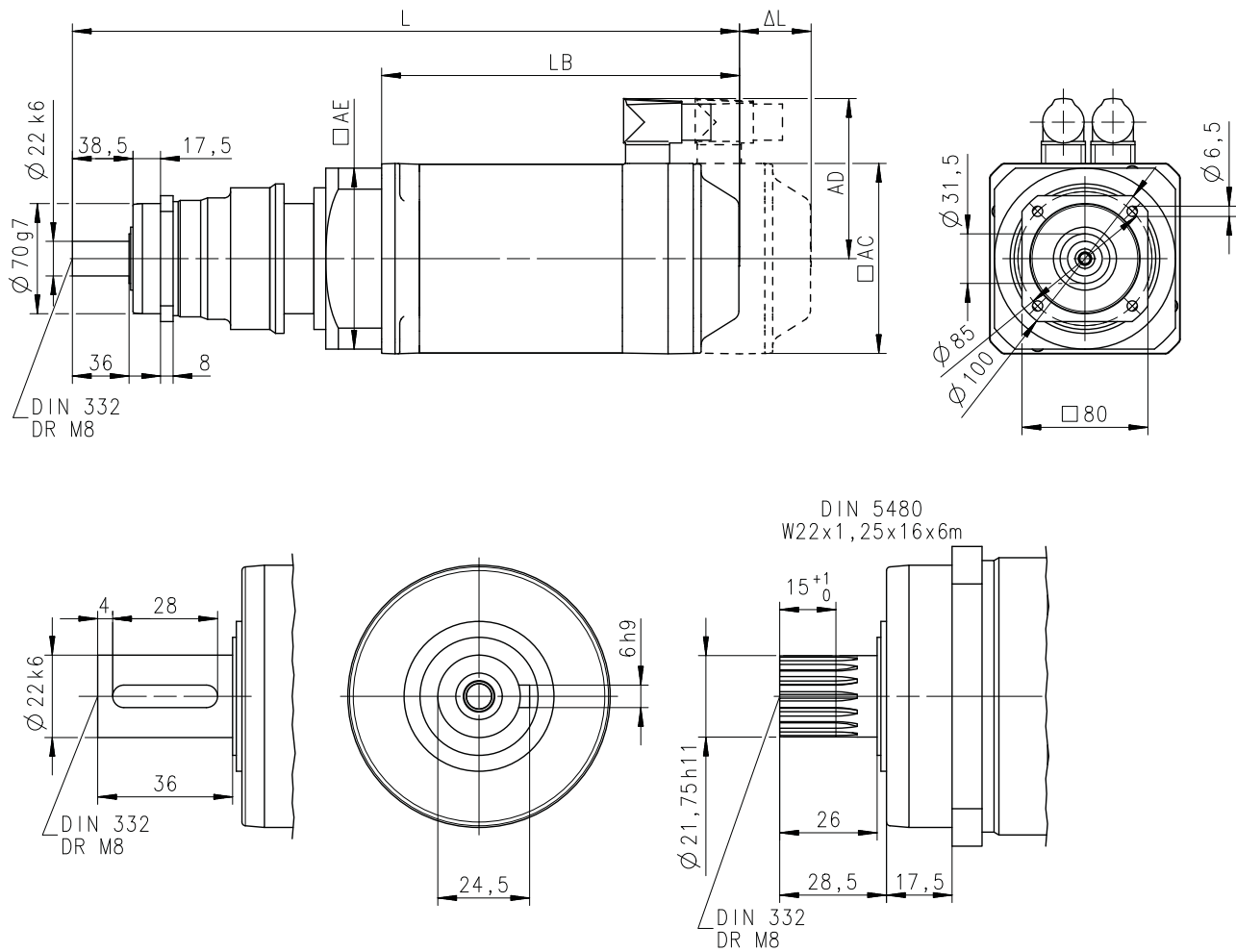
8801038-01

Motor			m850-					
			S60/S6000	S60/L6000	S80/S5500	S80/L5500	S120/S3960	S120/M3960
Total length	L	mm	263	293	309.5	329.5	340.5	378.5
Motor length	LB	mm	122	152	158	178	189	227
Motor diameter	AC	mm	60	60	80	80	121	121
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102	102
Gearbox diameter	AE	mm	70	70	90	90	115	115



g850-P80 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



8801039-00

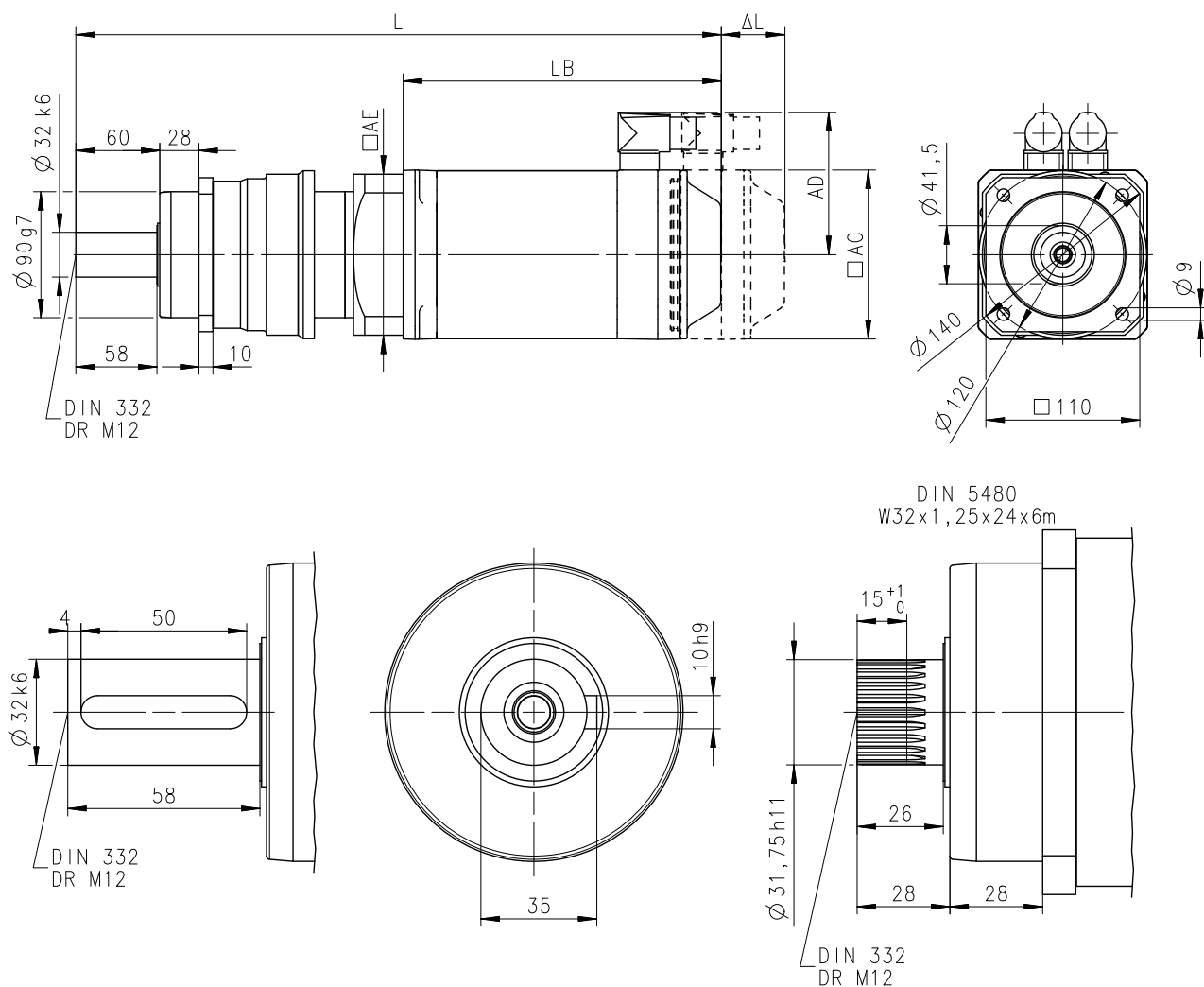
Motor			m850-							
			S80/S5500	S80/L5500	S120/S3960	S120/M3960	S120/L3960	S140/S3240	S140/M3240	S140/L3240
Total length	L	mm	325	345	356	394	432	359	399	439
Motor length	LB	mm	158	178	189	227	265	182	222	262
Motor diameter	AC	mm	80	80	121	121	121	142	142	142
Motor/connection distance	AD	mm	83.4	83.4	102	102	102	114	114	135
Gearbox diameter	AE	mm	90	90	115	115	115	142	142	142



Technical data Planetary gearbox g850-P Basic dimensions

g850-P180 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



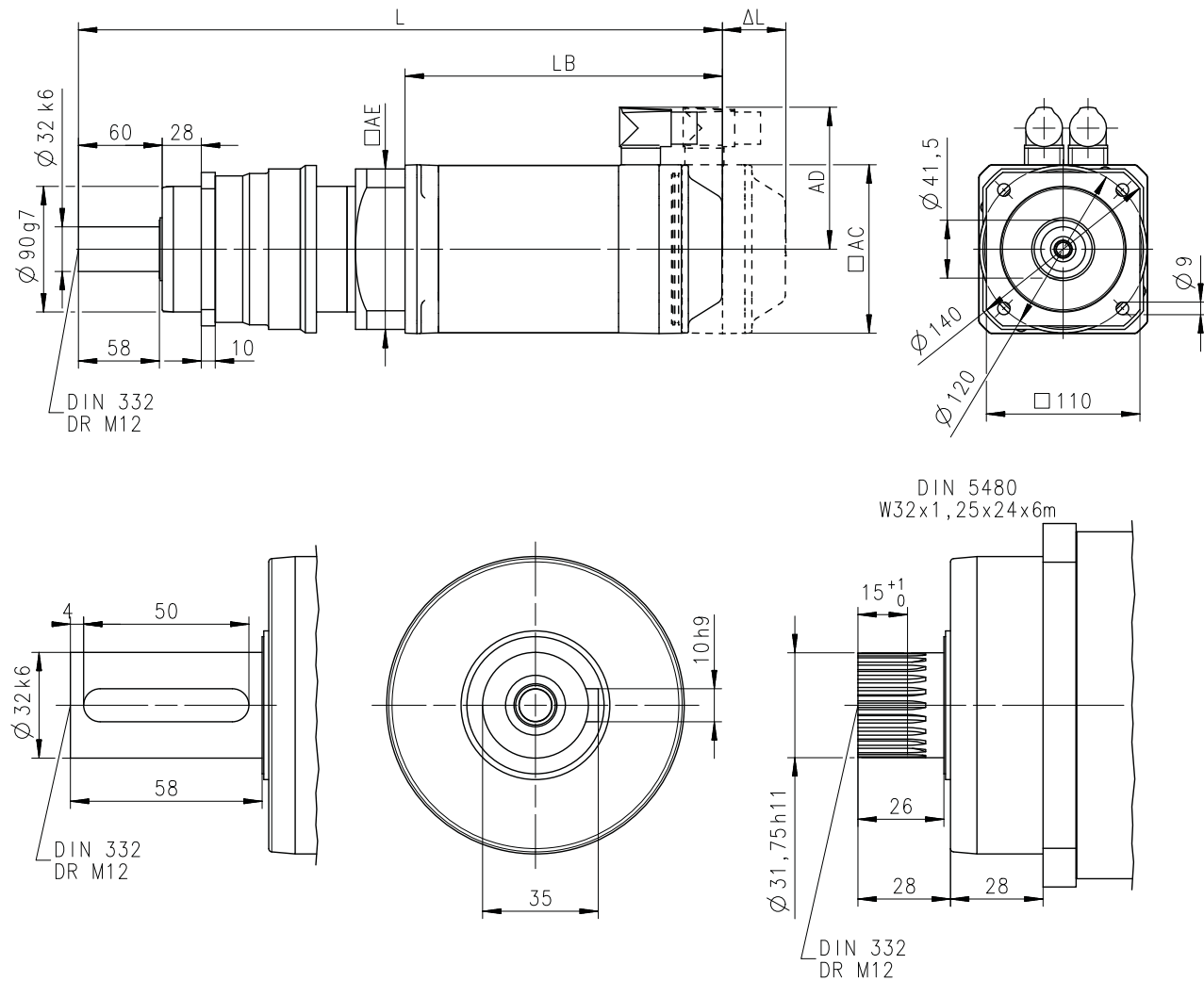
8801040-00

Motor			m850-							
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000
Total length	L	mm	391.5	429.5	467.5	394.5	434.5	474.5	427.5	475.5
Motor length	LB	mm	189	227	265	182	222	262	204	252
Motor diameter	AC	mm	121	121	121	142	142	142	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158
Gearbox diameter	AE	mm	120	120	120	142	142	142	190	190



g850-P180 with m850

Gearbox design: Solid shaft, without foot with centering, 2-stage



8801040-00

Motor			m850-					
			S80/S5500	S80/L5500	S120/S3960	S120/M3960	S120/L3960	S140/S3240
Total length	L	mm	392	412	423	461	499	426
Motor length	LB	mm	158	178	189	227	265	182
Motor diameter	AC	mm	80	80	121	121	121	142
Motor/connection distance	AD	mm	83.4	83.4	102	102	102	114
Gearbox diameter	AE	mm	90	90	115	115	115	142

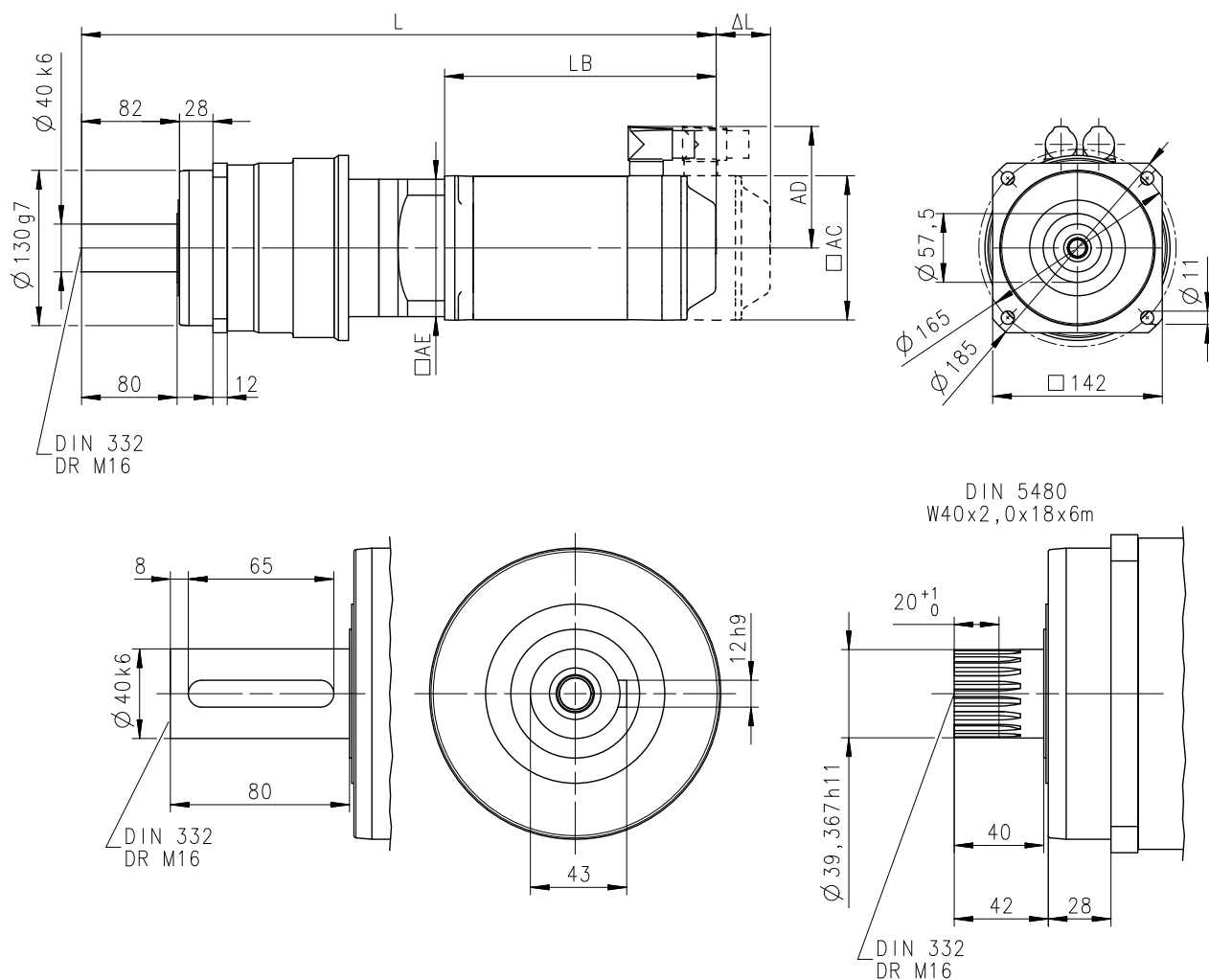


Technical data

Planetary gearbox g850-P
Basic dimensions

g850-P470 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



8801041-00

Motor			m850-							
			S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	488.5	526.5	443.5	483.5	523.5	475.5	523.5	587.5
Motor length	LB	mm	227	265	182	222	262	204	252	316
Motor diameter	AC	mm	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	102	102	114	114	135	137	158	158
Gearbox diameter	AE	mm	150	150	150	150	150	190	190	190

Gearbox design: Solid shaft, without foot with centering, 2-stage

188



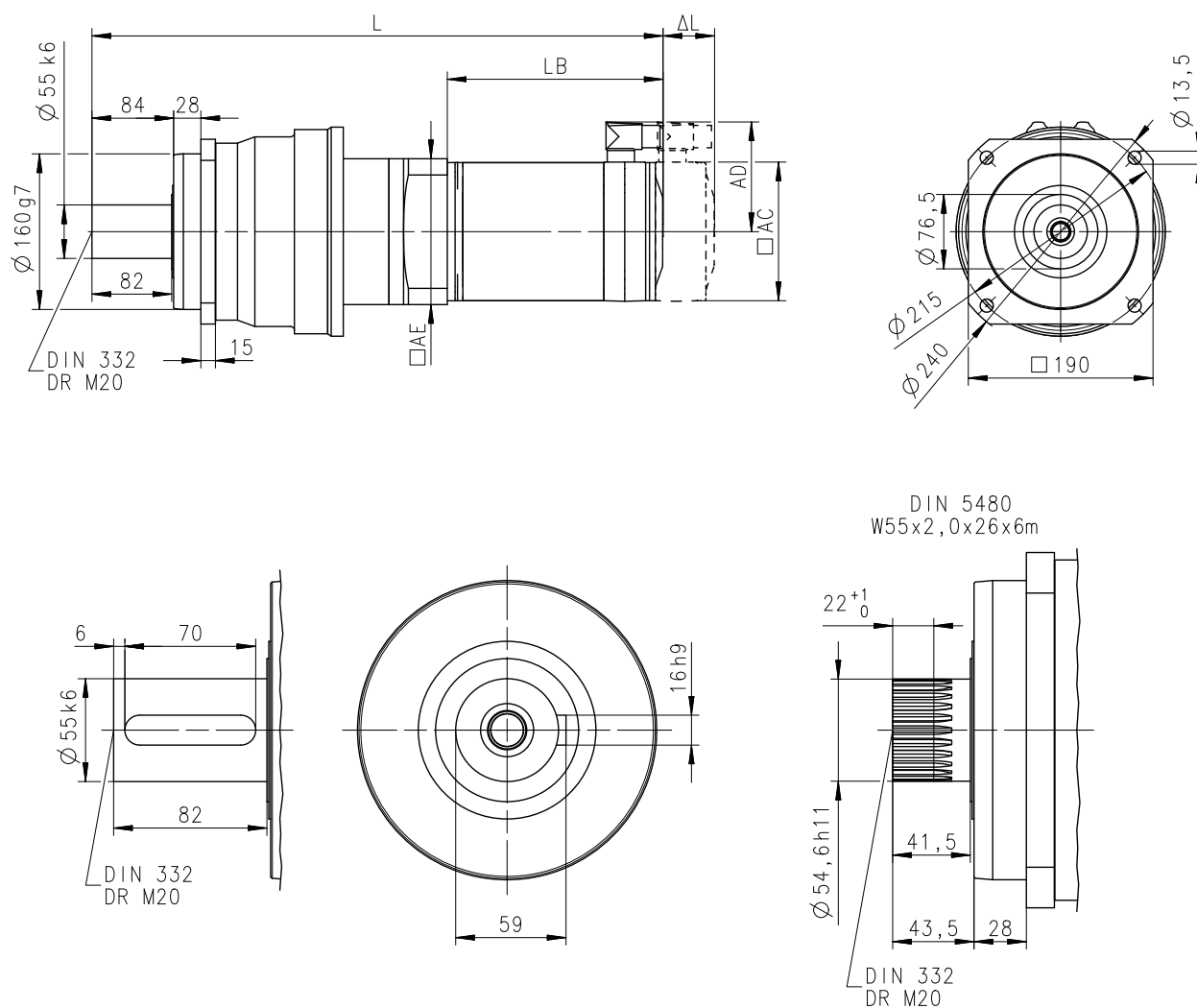
Technical data

Planetary gearbox g850-P

Basic dimensions

g850-P950 with m850

Gearbox design: Solid shaft, without foot with centering, 1-stage



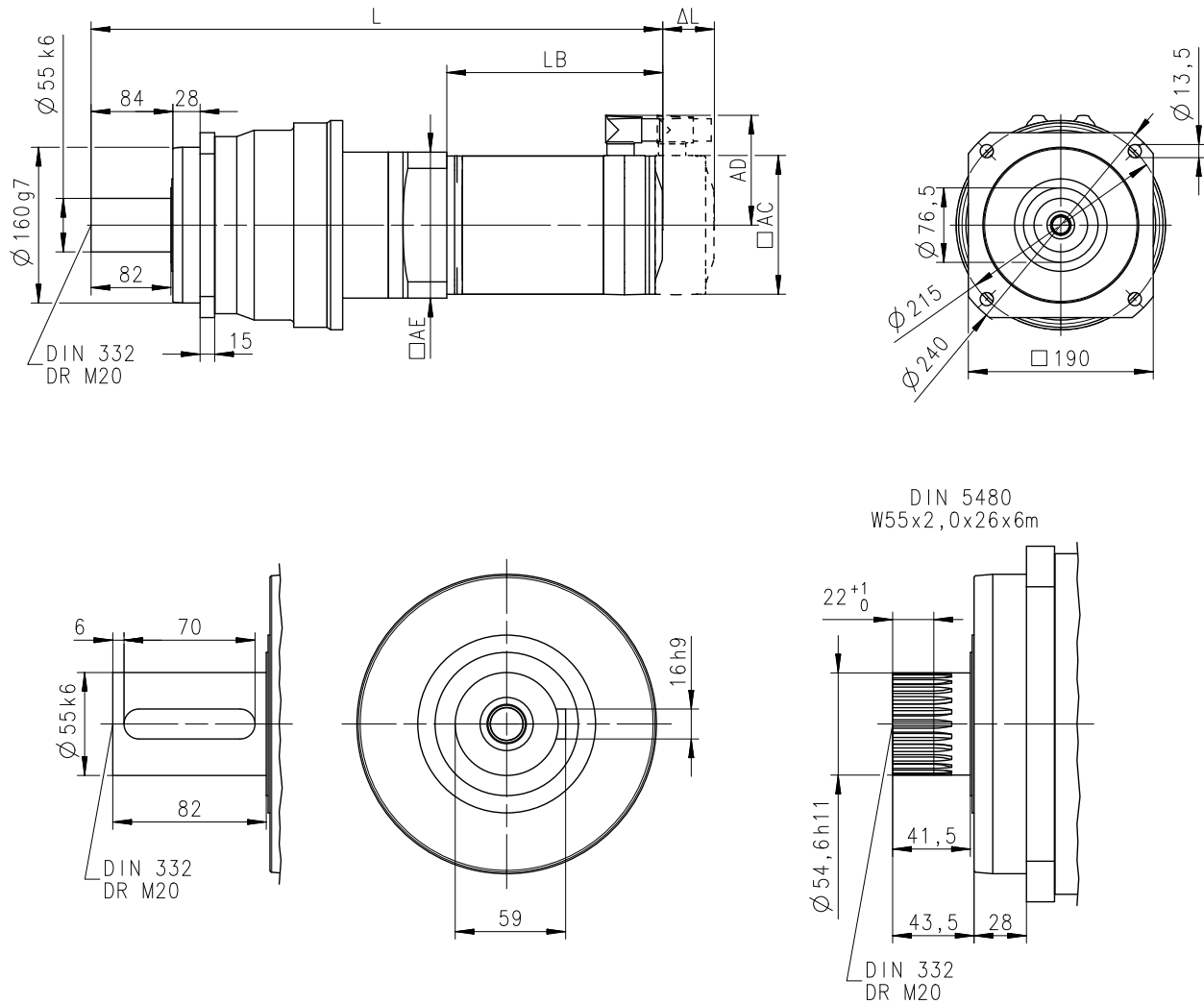
8801042-00

Motor			m850-				
			S140/M3240	S140/L3240	S190/S3000	S190/M3000	S190/L2520
Total length	L	mm	532.5	572.5	534.5	582.5	646.5
Motor length	LB	mm	222	262	204	252	316
Motor diameter	AC	mm	142	142	190	190	190
Motor/connection distance	AD	mm	114	135	137	158	158
Gearbox diameter	AE	mm	210	210	210	210	210



g850-P950 with m850

Gearbox design: Solid shaft, without foot with centering, 2-stage



8801042-00

Motor			m850-										
			S80/ S5500	S80/ L5500	S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	514	534	545	583	621	538	578	618	570	618	682
Motor length	LB	mm	158	178	189	227	265	182	222	262	204	252	316
Motor diameter	AC	mm	80	80	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	83.4	83.4	102	102	102	114	114	135	137	158	158
Gearbox diameter	AE	mm	150	150	150	150	150	150	150	150	190	190	190



Planetary gearbox g870-P

The modular system

g870-P planetary gearbox with m850 synchronous servo motor

Gearbox		g870-P77	g870-P150	g870-P300	g870-P1000	g870-P1800
Min. motor assignment		m850-S40L	m850-S60S	m850-S80S	m850-S80S	m850-S80S
Max. motor assignment		m850-S120M	m850-S140L	m850-S190M	m850-S190L	m850-S190L
Technical data						
Max. output torque	Nm	77	150	300	1000	1800
Mounting position		Any				
Color		Unpainted 40/60/80 Primed 120/140/190 RAL9005 120/140/190				
Surface and corrosion protection		Without 40/60/80 OKS-G 120/140/190				
Output shaft						
Flange output shaft with dowel hole	mm	20 x 4.5	31.5 x 6.5	40 x 6.5	50 x 6.5	80 x 10
Flange output shaft	mm	20 x 4.5	31.5 x 6.5	40 x 6.5	50 x 6.5	80 x 10
Shaft material		Steel				
Shaft sealing ring material		NBR				
Gearbox design		Without foot with centering				
Gearbox stages		1/2	1/2	1/2	1/2	1/2
Output flange	mm	64	90	110	140	200
Lubricant		Standard Food compatible				
Cooling		Self-ventilated				
Motor connection		Connector				
Holding brake		Without With				
Feedback						
Without functional safety		Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)				
With functional safety		Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)				
Temperature monitoring		PT1000 thermal sensor 40/60/80 PT1000 thermal sensor and 2x PTC thermistor 120/140/190				



Gearbox data

g870-P77, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
4	60.0	3	13
5	65.0	3	15
7	45.0	3	10
8	40.0	3	10
10	27.0	3	8

g870-P77, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
16	77.0	5	14
20	77.0	5	14
25	65.0	5	15
32	77.0	5	13
40	65.0	5	15
64	40.0	5	10
50	65.0	5	14
100	27.0	5	8

g870-P150, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
4	140	3	35
5	140	3	41
7	90.0	3	27
8	80.0	3	27
10	60.0	3	22

g870-P150, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
16	150	5	33
20	150	5	33
25	140	5	38
32	150	5	32
40	140	5	37
50	130	5	35
64	80.0	5	27
100	60.0	5	19



g870-P300, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
4	300	3	77
5	260	3	92
7	180	3	60
8	150	3	60
10	125	3	59

g870-P300, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
20	300	5	76
16	300	5	75
25	260	5	91
32	300	5	73
40	260	5	88
50	260	5	86
64	150	5	59

g870-P1000, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
4	600	3	211
5	750	3	255
7	530	3	190
8	450	3	173
10	305	3	156

g870-P1000, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/°
16	1000	5	223
20	1000	5	231
25	900	5	264
32	600	5	212
40	750	5	251
64	450	5	182
50	620	5	241
100	305	5	177

Technical data

Planetary gearbox g870-P
Radial forces and axial forces



g870-P1800, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
8	1000	3	420
7	1300	3	429
10	630	3	330

g870-P1800, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
16	1800	5	532
20	1800	5	543
25	1800	5	656
32	1800	5	517
40	1800	5	633
50	1525	5	614
64	1000	5	442
100	630	5	391

Radial forces and axial forces

Gearbox			g870-P77	g870-P150	g870-P300	g870-P1000	g870-P1800
Bearing service life 20000 h							
Speed		rpm	100	100	100	100	100
Radial force	F_{rad}	rated	2150	3950	4900	12000	33000
axial force	F_{ax}	rated	4300	8200	9500	8500	15000
Bearing service life 30000 h							
Speed		rpm	100	100	100	100	100
Radial force	F_{rad}	rated	1900	3500	4350	11000	29500
axial force	F_{ax}	rated	3800	7200	8400	7500	13500
Max. radial force	$F_{\text{rad, max}}$	rated	2150	3950	4900	12000	33000
Max. axial force	$F_{\text{ax, max}}$	rated	4300	8200	9500	8500	15000



Technical data

Planetary gearbox g870-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors

Selection tables

Inverter mains connection 400 V, self-ventilated motors

0.2 kW

Inverter operation						i	Geared motor		Number of stages z	Mass m
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J		g870-	m850-		
Nm	rpm		Nm	rpm	kgcm ²					kg
11.0	141	3.7	40.0	156	0.266	64	P77	S40/L9000	2	3.1
14.0	90.0	1.9	27.0	100	0.263	100	P77	S40/L9000	2	3.1

0.325 kW

Inverter operation						i	Geared motor		Number of stages z	Mass m
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J		g870-	m850-		
Nm	rpm		Nm	rpm	kgcm ²					kg
4.0	600	5.9	27.0	1000	0.437	10	P77	S60/S6000	1	3.3
7.0	300	5.4	77.0	500	0.448	20	P77	S60/S6000	2	3.9
9.5	240	4.6	65.0	400	0.446	25	P77	S60/S6000	2	3.9
13.0	188	4.0	77.0	313	0.433	32	P77	S60/S6000	2	3.9
17.0	150	3.4	65.0	250	0.430	40	P77	S60/S6000	2	3.9
17.0	120	5.7	130	60.0	0.432	50	P150	S60/S6000	2	5.4
22.0	120	3.0	65.0	200	0.430	50	P77	S60/S6000	2	3.9
26.0	93.8	1.5	40.0	156	0.432	64	P77	S60/S6000	2	3.9
28.0	93.8	2.8	80.0	47.0	0.435	64	P150	S60/S6000	2	5.4
40.0	60.0	1.5	60.0	30.0	0.431	100	P150	S60/S6000	2	5.4

0.55 kW

Inverter operation						i	Geared motor		Number of stages z	Mass m
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J		g870-	m850-		
Nm	rpm		Nm	rpm	kgcm ²					kg
5.1	857	5.8	45.0	1429	0.644	7	P77	S60/L6000	1	3.8
6.0	750	5.3	40.0	1250	0.638	8	P77	S60/L6000	1	3.8
8.2	600	3.3	27.0	1000	0.630	10	P77	S60/L6000	1	3.8
12.0	375	3.5	77.0	625	0.656	16	P77	S60/L6000	2	4.4
15.0	240	5.8	140	120	0.650	25	P150	S60/L6000	2	5.9
16.0	300	3.0	77.0	500	0.641	20	P77	S60/L6000	2	4.4
20.0	240	2.6	65.0	400	0.639	25	P77	S60/L6000	2	4.4
21.0	188	5.0	150	94.0	0.632	32	P150	S60/L6000	2	5.9
26.0	188	2.2	77.0	313	0.626	32	P77	S60/L6000	2	4.4
28.0	150	4.2	140	75.0	0.627	40	P150	S60/L6000	2	5.9
32.0	150	1.9	65.0	250	0.623	40	P77	S60/L6000	2	4.4
39.0	120	3.1	130	60.0	0.625	50	P150	S60/L6000	2	5.9
40.0	120	1.6	65.0	200	0.623	50	P77	S60/L6000	2	4.4
51.0	93.8	1.6	80.0	47.0	0.628	64	P150	S60/L6000	2	5.9

Technical data

Planetary gearbox g870-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



1 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g870-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
5.7	1375	4.9	60.0	2500	1.851	4	P77	S80/S5500	1	5.0
7.5	1100	4.1	65.0	2000	1.819	5	P77	S80/S5500	1	5.0
11.0	786	3.2	45.0	1429	1.793	7	P77	S80/S5500	1	5.0
13.0	688	2.9	40.0	1250	1.787	8	P77	S80/S5500	1	5.0
15.0	550	3.7	60.0	1000	1.980	10	P150	S80/S5500	1	6.9
16.0	550	1.7	27.0	1000	1.780	10	P77	S80/S5500	1	5.0
21.0	344	4.4	150	625	2.022	16	P150	S80/S5500	2	7.1
26.0	344	1.9	77.0	625	1.806	16	P77	S80/S5500	2	5.6
28.0	275	3.7	150	500	1.978	20	P150	S80/S5500	2	7.1
28.0	220	5.9	260	110	2.039	25	P300	S80/S5500	2	10
32.0	275	1.6	77.0	500	1.790	20	P77	S80/S5500	2	5.6
37.0	220	3.1	140	400	1.972	25	P150	S80/S5500	2	7.1
39.0	220	1.4	65.0	400	1.788	25	P77	S80/S5500	2	5.6
39.0	172	5.1	300	86.0	1.974	32	P300	S80/S5500	2	10
48.0	172	2.7	150	313	1.944	32	P150	S80/S5500	2	7.1
50.0	172	1.2	77.0	313	1.776	32	P77	S80/S5500	2	5.6
54.0	138	4.1	260	69.0	1.955	40	P300	S80/S5500	2	10
61.0	138	1.0	65.0	250	1.773	40	P77	S80/S5500	2	5.6
63.0	138	2.2	140	250	1.936	40	P150	S80/S5500	2	7.1
72.0	110	3.3	260	55.0	1.951	50	P300	S80/S5500	2	10
78.0	110	1.7	130	200	1.935	50	P150	S80/S5500	2	7.1
84.0	85.9	4.5	450	43.0	3.396	64	P1000	S80/S5500	2	20
99.0	85.9	1.5	150	43.0	1.962	64	P300	S80/S5500	2	10
133	55.0	4.2	630	65	8.311	100	P1800	S80/S5500	2	53
151	55.0	2.0	305	28.0	3.351	100	P1000	S80/S5500	2	20



Technical data

Planetary gearbox g870-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors

1.2 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g870-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
7.4	1375	4.0	60.0	2500	2.381	4	P77	S80/L5500	1	5.7
9.5	1100	3.3	65.0	2000	2.349	5	P77	S80/L5500	1	5.7
12.0	786	5.9	90.0	1429	2.569	7	P150	S80/L5500	1	7.6
14.0	786	2.6	45.0	1429	2.323	7	P77	S80/L5500	1	5.7
14.0	688	5.0	80.0	1250	2.543	8	P150	S80/L5500	1	7.6
16.0	688	2.3	40.0	1250	2.317	8	P77	S80/L5500	1	5.7
19.0	550	1.4	27.0	1000	2.310	10	P77	S80/L5500	1	5.7
19.0	550	3.0	60.0	1000	2.510	10	P150	S80/L5500	1	7.6
28.0	344	3.5	150	625	2.552	16	P150	S80/L5500	2	7.8
29.0	275	5.7	300	138	2.584	20	P300	S80/L5500	2	11
32.0	344	1.6	77.0	625	2.336	16	P77	S80/L5500	2	6.3
37.0	275	3.0	150	500	2.508	20	P150	S80/L5500	2	7.8
39.0	275	1.3	77.0	500	2.320	20	P77	S80/L5500	2	6.3
39.0	220	4.8	260	110	2.569	25	P300	S80/L5500	2	11
47.0	220	2.5	140	400	2.502	25	P150	S80/L5500	2	7.8
48.0	220	1.1	65.0	400	2.318	25	P77	S80/L5500	2	6.3
53.0	172	4.1	300	86.0	2.504	32	P300	S80/L5500	2	11
62.0	172	2.2	150	313	2.474	32	P150	S80/L5500	2	7.8
71.0	138	3.3	260	69.0	2.485	40	P300	S80/L5500	2	11
78.0	138	1.8	140	250	2.466	40	P150	S80/L5500	2	7.8
94.0	110	2.6	260	55.0	2.481	50	P300	S80/L5500	2	11
97.0	110	1.4	130	200	2.465	50	P150	S80/L5500	2	7.8
111	85.9	3.6	450	43.0	3.926	64	P1000	S80/L5500	2	20
122	85.9	1.2	150	43.0	2.492	64	P300	S80/L5500	2	11
177	55.0	3.4	630	65	8.841	100	P1800	S80/L5500	2	54
187	55.0	1.6	305	28.0	3.881	100	P1000	S80/L5500	2	20

Technical data

Planetary gearbox g870-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



2 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g870-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
17.0	990	4.4	140	495	7.420	4	P150	S120/S3960	1	10
18.0	990	1.9	60.0	495	6.951	4	P77	S120/S3960	1	8.3
21.0	792	3.7	140	396	7.253	5	P150	S120/S3960	1	10
23.0	792	1.6	65.0	396	6.919	5	P77	S120/S3960	1	8.3
28.0	566	5.4	180	283	8.699	7	P300	S120/S3960	1	13
31.0	566	2.8	90.0	283	7.139	7	P150	S120/S3960	1	10
32.0	566	1.2	45.0	283	6.893	7	P77	S120/S3960	1	8.3
34.0	495	4.1	150	248	8.620	8	P300	S120/S3960	1	13
36.0	495	1.1	40.0	248	6.887	8	P77	S120/S3960	1	8.3
37.0	495	2.2	80.0	248	7.113	8	P150	S120/S3960	1	10
45.0	396	2.7	125	198	8.536	10	P300	S120/S3960	1	13
46.0	396	1.3	60.0	198	7.080	10	P150	S120/S3960	1	10
66.0	248	3.2	300	124	7.237	16	P300	S120/S3960	2	13
72.0	248	1.7	150	124	7.122	16	P150	S120/S3960	2	10
85.0	198	2.8	300	99.0	7.154	20	P300	S120/S3960	2	13
90.0	198	1.5	150	99.0	7.078	20	P150	S120/S3960	2	10
110	158	2.3	260	79.0	7.139	25	P300	S120/S3960	2	13
113	158	1.2	140	79.0	7.072	25	P150	S120/S3960	2	10
122	124	4.1	600	62.0	8.566	32	P1000	S120/S3960	2	23
144	124	1.0	150	62.0	7.044	32	P150	S120/S3960	2	10
144	124	2.0	300	62.0	7.074	32	P300	S120/S3960	2	13
152	99.0	4.1	750	50.0	8.492	40	P1000	S120/S3960	2	23
180	99.0	1.4	260	50.0	7.055	40	P300	S120/S3960	2	13
213	79.2	2.8	620	40.0	8.477	50	P1000	S120/S3960	2	23
226	79.2	1.2	260	40.0	7.051	50	P300	S120/S3960	2	13
256	61.9	3.5	1000	31.0	13.741	64	P1800	S120/S3960	2	57
286	61.9	1.6	450	31.0	8.496	64	P1000	S120/S3960	2	23
422	39.6	1.5	630	20.0	13.411	100	P1800	S120/S3960	2	57



Technical data

Planetary gearbox g870-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

2.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g870-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
29.0	810	5.0	300	388	18.642	4	P300	S140/S3240	1	34
32.0	810	2.6	140	405	17.071	4	P150	S140/S3240	1	31
37.0	648	4.2	260	324	18.235	5	P300	S140/S3240	1	34
40.0	648	2.2	140	324	16.904	5	P150	S140/S3240	1	31
54.0	463	3.2	180	231	17.899	7	P300	S140/S3240	1	34
57.0	463	1.6	90.0	231	16.790	7	P150	S140/S3240	1	31
64.0	405	2.3	150	203	17.820	8	P300	S140/S3240	1	34
65.0	405	1.2	80.0	203	16.763	8	P150	S140/S3240	1	31
76.0	324	3.8	305	162	23.013	10	P1000	S140/S3240	1	45
81.0	324	1.6	125	162	17.736	10	P300	S140/S3240	1	34
91.0	203	5.9	1000	101	18.484	16	P1000	S140/S3240	2	44
124	162	5.0	1000	81.0	18.123	20	P1000	S140/S3240	2	44
128	203	1.9	300	101	17.869	16	P300	S140/S3240	2	34
160	162	1.7	300	81.0	17.738	20	P300	S140/S3240	2	34
167	130	4.2	900	65.0	18.005	25	P1000	S140/S3240	2	44
200	130	1.3	260	65.0	17.722	25	P300	S140/S3240	2	34
235	81.0	5.6	1800	41.0	22.940	40	P1800	S140/S3240	2	78
250	101	2.3	600	51.0	17.766	32	P1000	S140/S3240	2	44
256	101	1.2	300	51.0	17.625	32	P300	S140/S3240	2	34
312	81.0	2.3	750	41.0	17.692	40	P1000	S140/S3240	2	44
347	64.8	3.8	1525	32.0	22.802	50	P1800	S140/S3240	2	78
400	64.8	1.6	620	32.0	17.677	50	P1000	S140/S3240	2	44
500	50.6	2.0	1000	25.0	22.941	64	P1800	S140/S3240	2	78

Technical data

Planetary gearbox g870-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



3.1 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g870-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
24.0	990	5.4	300	395	15.342	4	P300	S120/M3960	1	16
27.0	990	2.9	140	451	13.320	4	P150	S120/M3960	1	13
28.0	990	1.2	60.0	459	12.851	4	P77	S120/M3960	1	11
32.0	792	4.5	260	382	14.935	5	P300	S120/M3960	1	16
35.0	792	2.4	140	396	13.153	5	P150	S120/M3960	1	13
36.0	792	1.0	65.0	396	12.819	5	P77	S120/M3960	1	11
47.0	566	3.5	180	283	14.599	7	P300	S120/M3960	1	16
50.0	566	1.8	90.0	283	13.039	7	P150	S120/M3960	1	13
55.0	495	2.6	150	248	14.520	8	P300	S120/M3960	1	16
57.0	495	1.4	80.0	248	13.013	8	P150	S120/M3960	1	13
64.0	396	4.3	305	198	19.713	10	P1000	S120/M3960	1	27
70.0	396	1.8	125	198	14.436	10	P300	S120/M3960	1	16
104	198	5.4	1000	99.0	14.823	20	P1000	S120/M3960	2	26
111	248	1.1	150	124	13.022	16	P150	S120/M3960	2	13
111	248	2.1	300	124	13.137	16	P300	S120/M3960	2	16
139	198	1.8	300	99.0	13.054	20	P300	S120/M3960	2	16
141	158	4.5	900	79.0	14.705	25	P1000	S120/M3960	2	26
174	158	1.5	260	79.0	13.039	25	P300	S120/M3960	2	16
212	124	2.7	600	62.0	14.466	32	P1000	S120/M3960	2	26
223	124	1.3	300	62.0	12.974	32	P300	S120/M3960	2	16
264	99.0	2.7	750	50.0	14.392	40	P1000	S120/M3960	2	26
287	79.2	4.3	1525	40.0	19.502	50	P1800	S120/M3960	2	59
348	79.2	1.8	620	40.0	14.377	50	P1000	S120/M3960	2	26
435	61.9	2.3	1000	31.0	19.641	64	P1800	S120/M3960	2	59
440	61.9	1.0	450	31.0	14.396	64	P1000	S120/M3960	2	26



Technical data

Planetary gearbox g870-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

3.7 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g870-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
31.0	990	4.5	300	378	21.142	4	P300	S120/L3960	1	18
34.0	990	2.3	140	430	19.120	4	P150	S120/L3960	1	16
40.0	792	3.7	260	366	20.735	5	P300	S120/L3960	1	18
43.0	792	2.0	140	396	18.953	5	P150	S120/L3960	1	16
58.0	566	2.9	180	283	20.399	7	P300	S120/L3960	1	18
60.0	566	1.5	90.0	283	18.839	7	P150	S120/L3960	1	16
69.0	495	1.2	80.0	248	18.813	8	P150	S120/L3960	1	16
69.0	495	2.2	150	248	20.320	8	P300	S120/L3960	1	18
81.0	396	3.6	305	198	25.513	10	P1000	S120/L3960	1	30
86.0	396	1.5	125	198	20.236	10	P300	S120/L3960	1	18
103	248	5.2	1000	124	20.984	16	P1000	S120/L3960	2	28
135	248	1.7	300	124	18.937	16	P300	S120/L3960	2	19
138	198	4.5	1000	99.0	20.623	20	P1000	S120/L3960	2	28
169	198	1.5	300	99.0	18.854	20	P300	S120/L3960	2	19
184	158	3.7	900	79.0	20.505	25	P1000	S120/L3960	2	28
212	158	1.2	260	79.0	18.839	25	P300	S120/L3960	2	19
256	99.0	5.3	1800	50.0	25.440	40	P1800	S120/L3960	2	62
267	124	2.2	600	62.0	20.266	32	P1000	S120/L3960	2	28
271	124	1.1	300	62.0	18.774	32	P300	S120/L3960	2	19
334	99.0	2.2	750	50.0	20.192	40	P1000	S120/L3960	2	28
374	79.2	3.6	1525	40.0	25.302	50	P1800	S120/L3960	2	62
423	79.2	1.5	620	40.0	20.177	50	P1000	S120/L3960	2	28
530	61.9	1.9	1000	31.0	25.441	64	P1800	S120/L3960	2	62

Technical data

Planetary gearbox g870-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



4.8 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g870-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
51.0	810	3.1	300	345	33.042	4	P300	S140/M3240	1	39
54.0	810	1.6	140	389	31.471	4	P150	S140/M3240	1	36
66.0	648	2.6	260	324	32.635	5	P300	S140/M3240	1	39
67.0	648	1.3	140	324	31.304	5	P150	S140/M3240	1	36
80.0	463	5.6	530	231	38.342	7	P1000	S140/M3240	1	50
94.0	463	1.9	180	231	32.299	7	P300	S140/M3240	1	39
98.0	405	4.2	450	203	37.910	8	P1000	S140/M3240	1	50
108	405	1.4	150	203	32.220	8	P300	S140/M3240	1	39
119	324	4.7	630	144	56.980	10	P1800	S140/M3240	1	71
133	324	2.3	305	162	37.413	10	P1000	S140/M3240	1	50
185	162	6.0	1800	81.0	39.612	20	P1800	S140/M3240	2	83
186	203	3.6	1000	101	32.884	16	P1000	S140/M3240	2	49
211	203	1.2	300	101	32.269	16	P300	S140/M3240	2	39
243	162	3.1	1000	81.0	32.523	20	P1000	S140/M3240	2	49
254	130	5.1	1800	65.0	39.032	25	P1800	S140/M3240	2	83
263	162	1.0	300	81.0	32.138	20	P300	S140/M3240	2	39
316	130	2.6	900	65.0	32.405	25	P1000	S140/M3240	2	49
351	101	4.2	1800	51.0	37.827	32	P1800	S140/M3240	2	83
421	101	1.4	600	51.0	32.166	32	P1000	S140/M3240	2	49
472	81.0	3.4	1800	41.0	37.340	40	P1800	S140/M3240	2	83
526	81.0	1.4	750	41.0	32.092	40	P1000	S140/M3240	2	49
644	64.8	2.3	1525	32.0	37.202	50	P1800	S140/M3240	2	83
824	50.6	1.2	1000	25.0	37.341	64	P1800	S140/M3240	2	83

5 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g870-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
60.0	750	2.7	300	336	65.471	4	P300	S190/S3000	1	51
76.0	600	2.3	260	300	65.065	5	P300	S190/S3000	1	51
95.0	429	4.9	530	214	69.042	7	P1000	S190/S3000	1	63
108	429	1.7	180	214	64.728	7	P300	S190/S3000	1	51
114	375	3.7	450	188	68.610	8	P1000	S190/S3000	1	63
123	375	1.2	150	188	64.649	8	P300	S190/S3000	1	51
140	300	4.1	630	141	87.680	10	P1800	S190/S3000	1	84
152	300	2.0	305	150	68.113	10	P1000	S190/S3000	1	63
219	188	3.2	1000	94.0	69.053	16	P1000	S190/S3000	2	61
226	150	5.4	1800	75.0	70.312	20	P1800	S190/S3000	2	95
284	150	2.7	1000	75.0	67.846	20	P1000	S190/S3000	2	61
306	120	4.5	1800	60.0	69.732	25	P1800	S190/S3000	2	95
368	120	2.3	900	60.0	67.678	25	P1000	S190/S3000	2	61
420	93.8	3.7	1800	47.0	68.527	32	P1800	S190/S3000	2	95
481	93.8	1.2	600	47.0	67.515	32	P1000	S190/S3000	2	61
559	75.0	3.0	1800	38.0	68.040	40	P1800	S190/S3000	2	95
602	75.0	1.2	750	38.0	67.407	40	P1000	S190/S3000	2	61
752	60.0	2.0	1525	30.0	67.902	50	P1800	S190/S3000	2	95
942	46.9	1.1	1000	23.0	68.041	64	P1800	S190/S3000	2	95



Technical data

Planetary gearbox g870-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

5.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g870-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
66.0	810	2.5	300	327	47.542	4	P300	S140/L3240	1	44
67.0	810	1.3	140	365	45.971	4	P150	S140/L3240	1	41
83.0	648	2.1	260	318	47.135	5	P300	S140/L3240	1	44
84.0	648	1.1	140	324	45.804	5	P150	S140/L3240	1	41
105	463	4.5	530	230	52.842	7	P1000	S140/L3240	1	55
117	463	1.5	180	231	46.799	7	P300	S140/L3240	1	44
126	405	3.4	450	203	52.410	8	P1000	S140/L3240	1	55
134	405	1.1	150	203	46.720	8	P300	S140/L3240	1	44
154	324	3.8	630	140	71.480	10	P1800	S140/L3240	1	76
165	324	1.9	305	162	51.913	10	P1000	S140/L3240	1	55
191	203	5.6	1800	94.0	56.413	16	P1800	S140/L3240	2	88
245	203	2.9	1000	101	47.384	16	P1000	S140/L3240	2	54
259	162	4.8	1800	81.0	54.112	20	P1800	S140/L3240	2	88
316	162	2.5	1000	81.0	47.023	20	P1000	S140/L3240	2	54
346	130	4.1	1800	65.0	53.532	25	P1800	S140/L3240	2	88
407	130	2.1	900	65.0	46.905	25	P1000	S140/L3240	2	54
469	101	3.4	1800	51.0	52.327	32	P1800	S140/L3240	2	88
523	101	1.1	600	51.0	46.666	32	P1000	S140/L3240	2	54
619	81.0	2.7	1800	41.0	51.840	40	P1800	S140/L3240	2	88
654	81.0	1.1	750	41.0	46.592	40	P1000	S140/L3240	2	54
818	64.8	1.9	1525	32.0	51.702	50	P1800	S140/L3240	2	88

7.5 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g870-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
78.0	750	5.6	600	256	129.465	4	P1000	S190/M3000	1	71
92.0	750	1.8	300	301	121.771	4	P300	S190/M3000	1	60
102	600	4.7	750	235	126.828	5	P1000	S190/M3000	1	71
115	600	1.5	260	294	121.365	5	P300	S190/M3000	1	60
153	429	3.3	530	214	125.342	7	P1000	S190/M3000	1	71
158	375	5.4	1000	146	148.331	8	P1800	S190/M3000	1	92
161	429	1.1	180	214	121.028	7	P300	S190/M3000	1	60
181	375	2.4	450	188	124.910	8	P1000	S190/M3000	1	71
223	300	2.8	630	134	143.980	10	P1800	S190/M3000	1	92
228	300	1.3	305	150	124.413	10	P1000	S190/M3000	1	71
303	188	4.2	1800	86.0	128.913	16	P1800	S190/M3000	2	104
358	188	2.1	1000	94.0	125.353	16	P1000	S190/M3000	2	70
399	150	3.6	1800	75.0	126.612	20	P1800	S190/M3000	2	104
451	150	1.8	1000	75.0	124.146	20	P1000	S190/M3000	2	70
522	120	3.0	1800	60.0	126.032	25	P1800	S190/M3000	2	104
564	120	1.5	900	60.0	123.978	25	P1000	S190/M3000	2	70
697	93.8	2.5	1800	47.0	124.827	32	P1800	S190/M3000	2	104
902	75.0	2.0	1800	38.0	124.340	40	P1800	S190/M3000	2	104
1128	60.0	1.3	1525	30.0	124.202	50	P1800	S190/M3000	2	104

Technical data

Planetary gearbox g870-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



9.2 kW

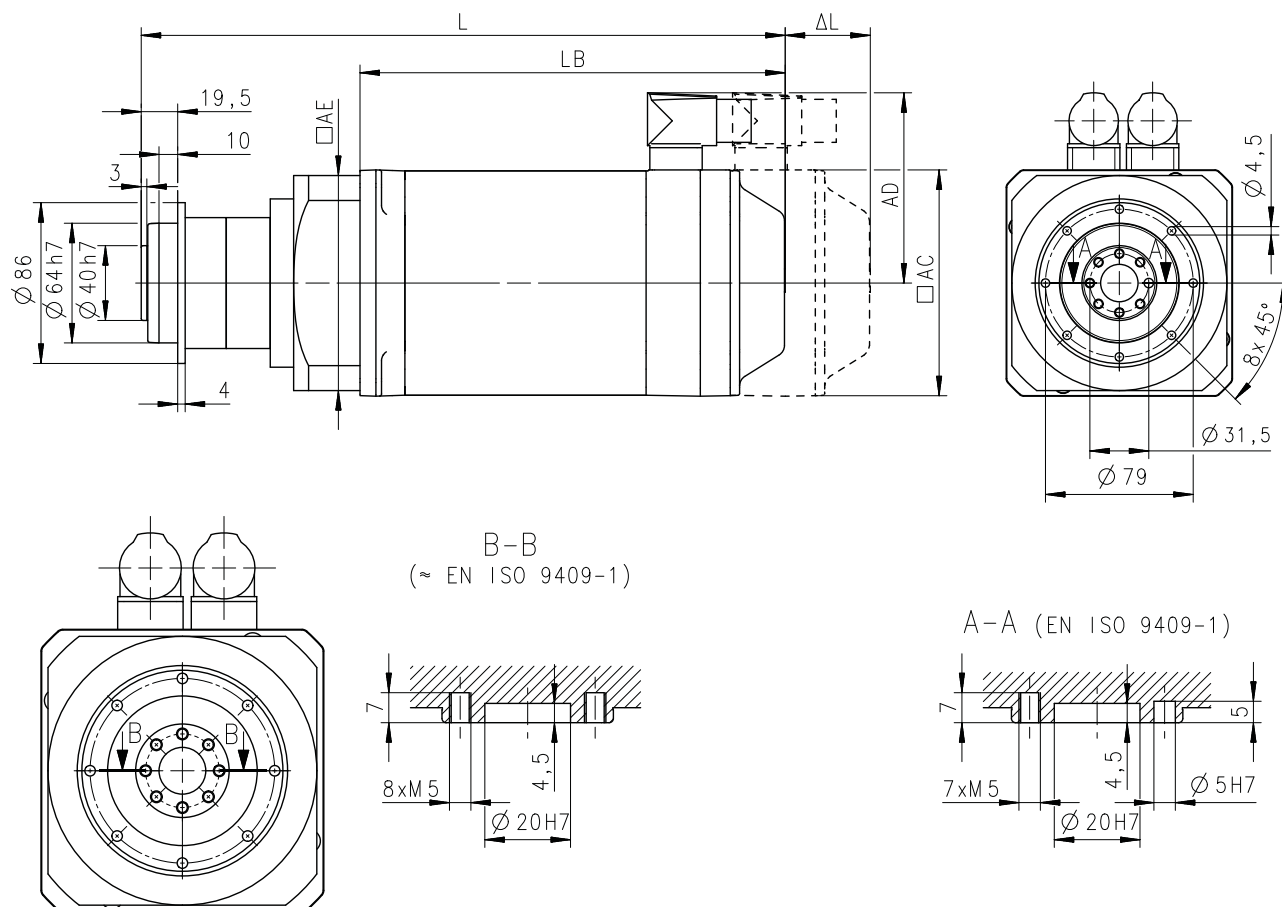
Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g870-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
123	630	4.0	600	238	204.865	4	P1000	S190/L2520	1	84
158	504	3.4	750	215	202.228	5	P1000	S190/L2520	1	84
206	360	5.0	1300	150	226.683	7	P1800	S190/L2520	1	105
233	360	2.2	530	180	200.742	7	P1000	S190/L2520	1	84
250	315	3.7	1000	136	223.731	8	P1800	S190/L2520	1	105
269	315	1.7	450	158	200.310	8	P1000	S190/L2520	1	84
333	252	1.9	630	126	219.380	10	P1800	S190/L2520	1	105
487	158	3.0	1800	78.0	204.313	16	P1800	S190/L2520	2	116
630	126	2.6	1800	63.0	202.012	20	P1800	S190/L2520	2	116
812	101	2.2	1800	50.0	201.432	25	P1800	S190/L2520	2	116
1053	78.8	1.7	1800	39.0	200.227	32	P1800	S190/L2520	2	116
1316	63.0	1.4	1800	32.0	199.740	40	P1800	S190/L2520	2	116



Basic dimensions

g870-P77 with m850

Gearbox design: Flange output shaft, without foot with centering, 1-stage



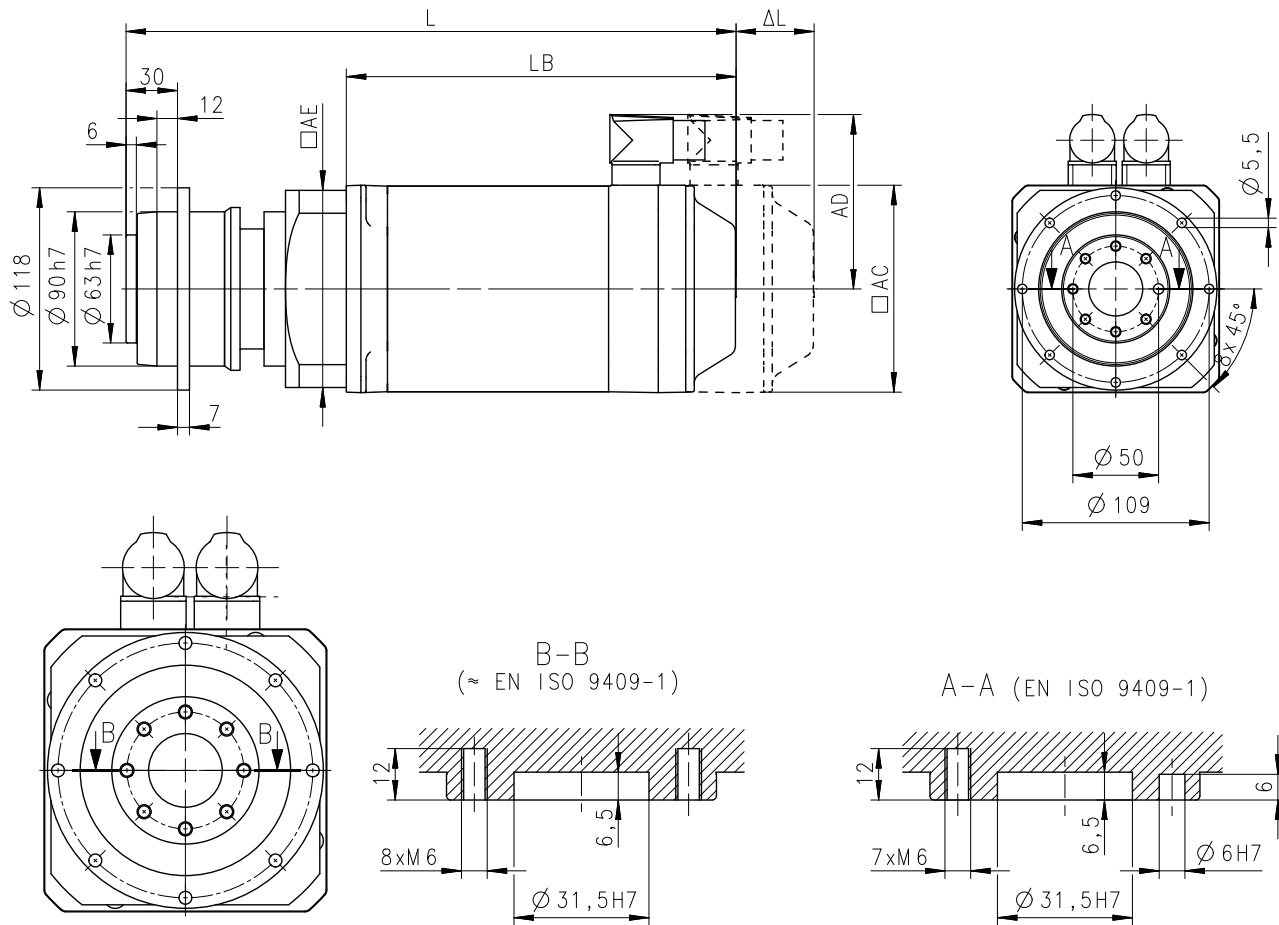
8801053-00

Motor			m850-					
			S60/S6000	S60/L6000	S80/S5500	S80/L5500	S120/S3960	S120/M3960
Total length	L	mm	180.5	210.5	227	247	277.5	315.5
Motor length	LB	mm	122	152	158	178	189	227
Motor diameter	AC	mm	60	60	80	80	121	121
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102	102
Gearbox diameter	AE	mm	70	70	90	90	115	115



g870-P150 with m850

Gearbox design: Flange output shaft, without foot with centering, 1-stage



8801054-00

Motor			m850-							
			S80/S5500	S80/L5500	S120/S3960	S120/M3960	S120/L3960	S140/S3240	S140/M3240	S140/L3240
Total length	L	mm	227	247	288	326	364	291	331	371
Motor length	LB	mm	158	178	189	227	265	182	222	262
Motor diameter	AC	mm	80	80	121	121	121	142	142	142
Motor/connection distance	AD	mm	83.4	83.4	102	102	102	114	114	135
Gearbox diameter	AE	mm	90	90	115	115	115	142	142	142

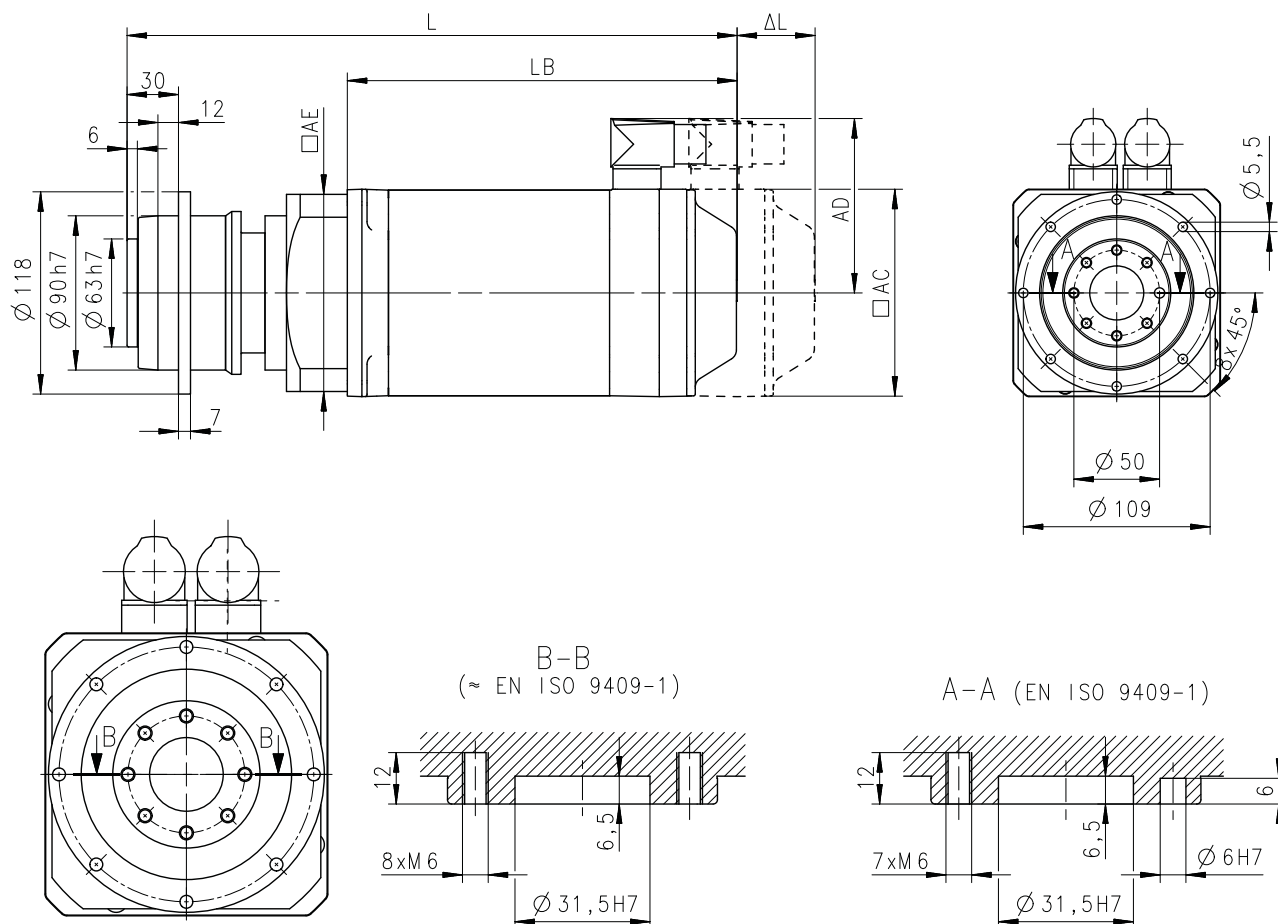


Technical data

Planetary gearbox g870-P
Basic dimensions

g870-P150 with m850

Gearbox design: Flange output shaft, without foot with centering, 2-stage



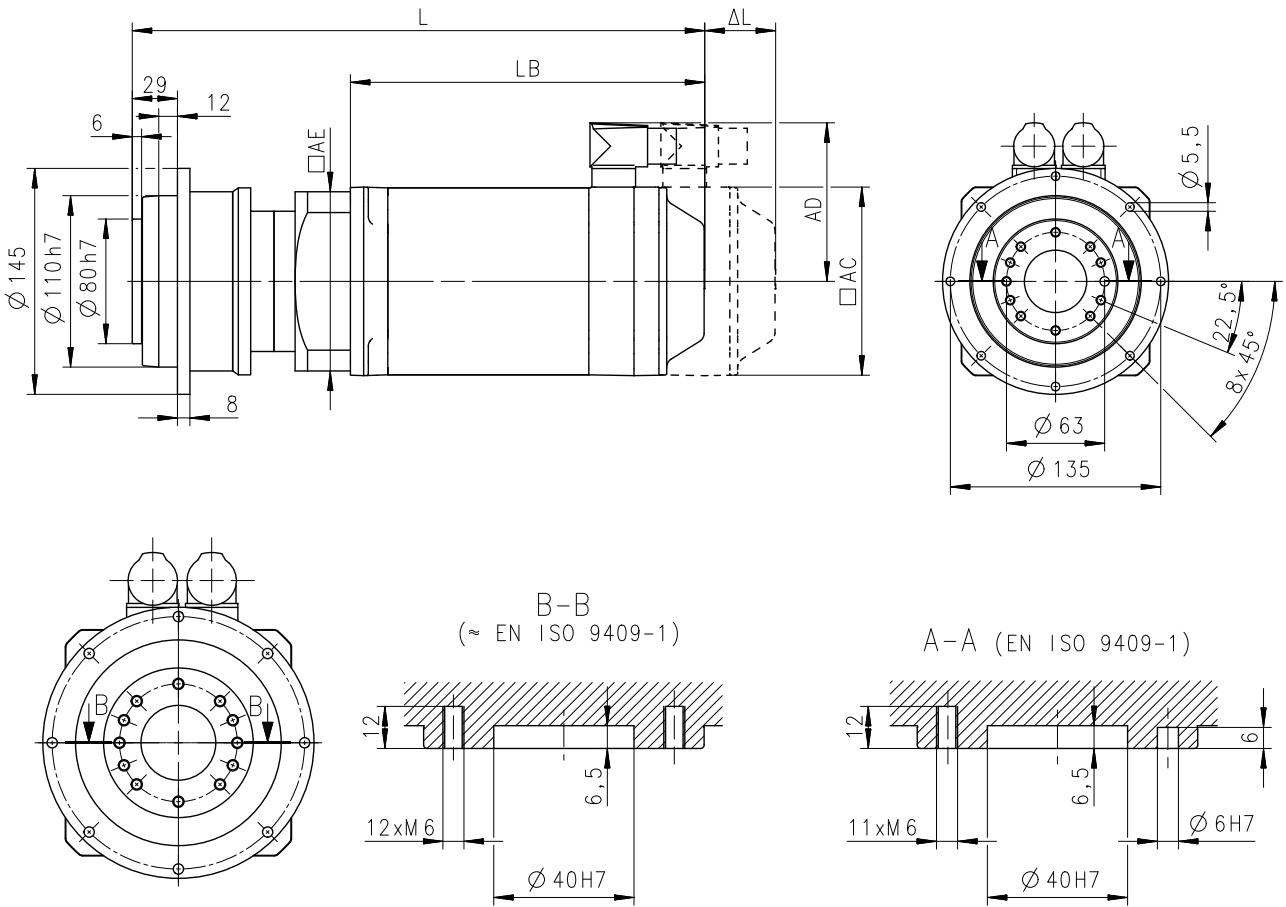
8801054-00

Motor			m850-					
			S60/S6000	S60/L6000	S80/S5500	S80/L5500	S120/S3960	S120/M3960
Total length	L	mm	0	0	256.5	276.5	317.5	355.5
Motor length	LB	mm	122	152	158	178	189	227
Motor diameter	AC	mm	60	60	80	80	121	121
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102	102
Gearbox diameter	AE	mm	70	70	90	90	115	115



g870-P300 with m850

Gearbox design: Flange output shaft, without foot with centering, 1-stage



8801055-00

Motor			m850-							
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000
Total length	L	mm	297	335	373	300	340	380	333	381
Motor length	LB	mm	189	227	265	182	222	262	204	252
Motor diameter	AC	mm	121	121	121	142	142	142	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158
Gearbox diameter	AE	mm	120	120	120	142	142	142	190	190



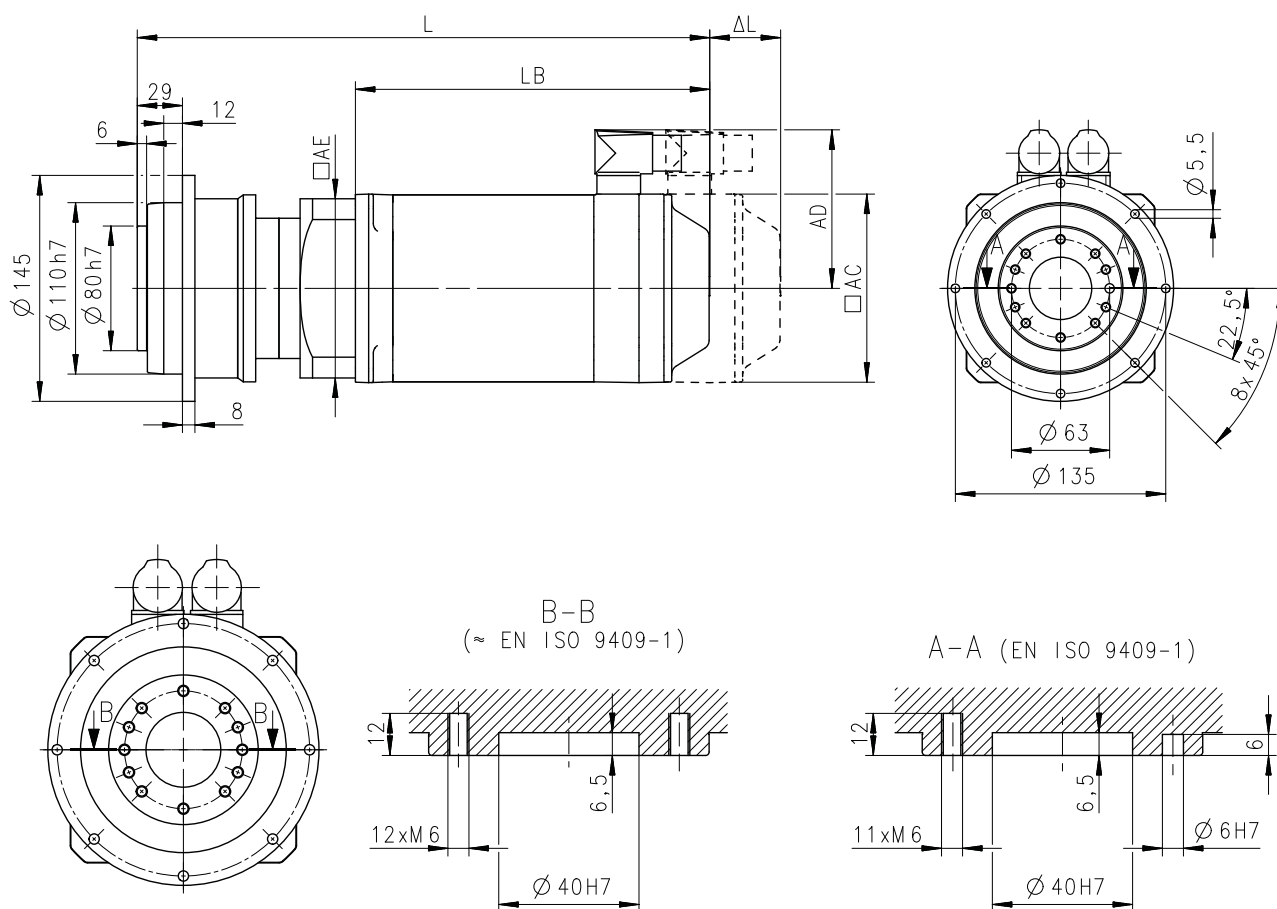
Technical data

Planetary gearbox g870-P

Basic dimensions

g870-P300 with m850

Gearbox design: Flange output shaft, without foot with centering, 2-stage



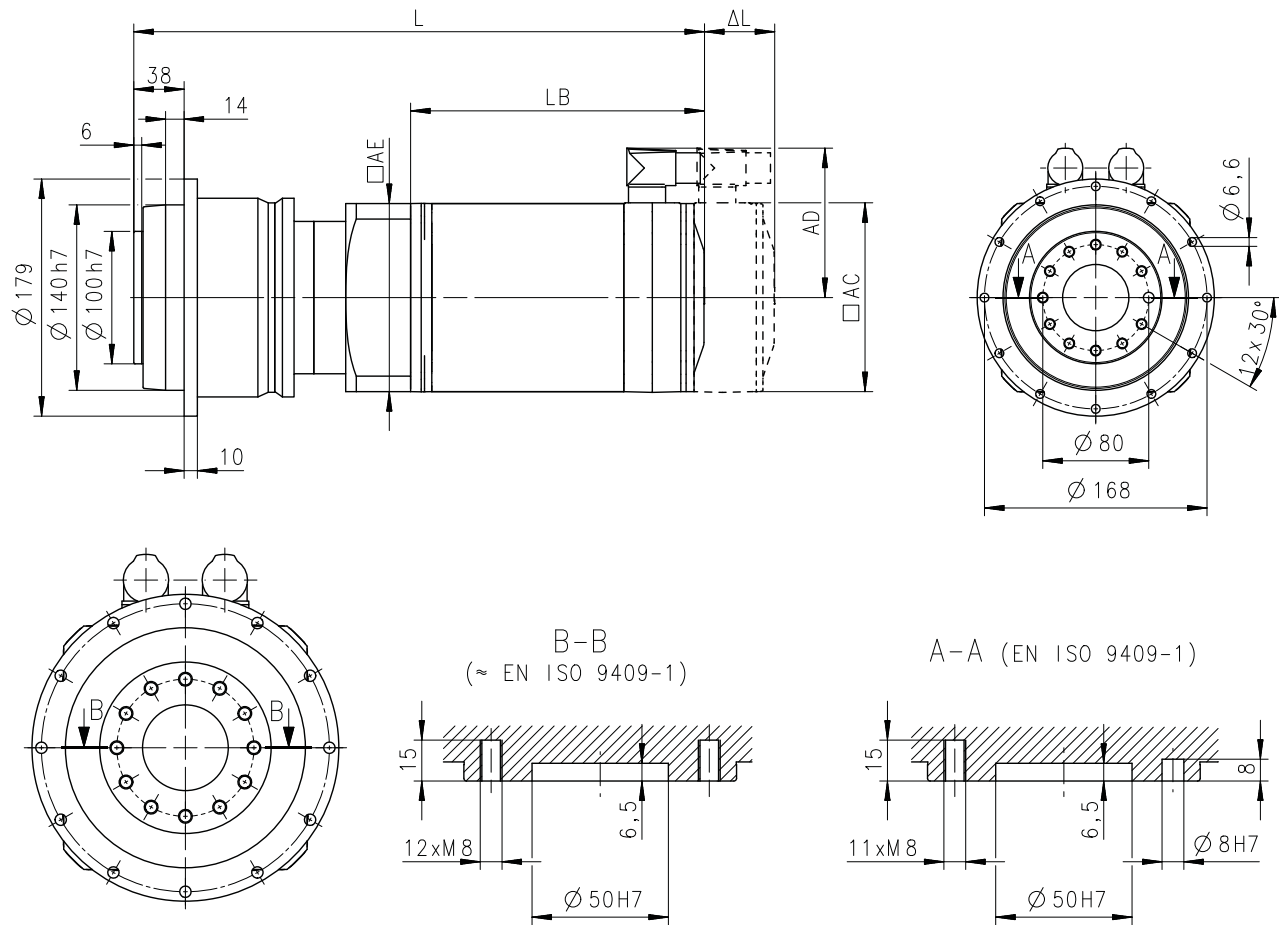
8801055-00

Motor			m850-						
			S80/S5500	S80/L5500	S120/S3960	S120/M3960	S120/L3960	S140/S3240	S140/M3240
Total length	L	mm	0	0	329	367	405	332	372
Motor length	LB	mm	158	178	189	227	265	182	222
Motor diameter	AC	mm	80	80	121	121	121	142	142
Motor/connection distance	AD	mm	83.4	83.4	102	102	102	114	114
Gearbox diameter	AE	mm	90	90	115	115	115	142	142



g870-P1000 with m850

Gearbox design: Flange output shaft, without foot with centering, 1-stage



8801056-00

Motor			m850-							
			S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	384	422	339	379	419	371	419	483
Motor length	LB	mm	227	265	182	222	262	204	252	316
Motor diameter	AC	mm	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	102	102	114	114	135	137	158	158
Gearbox diameter	AE	mm	142	142	142	142	142	190	190	190

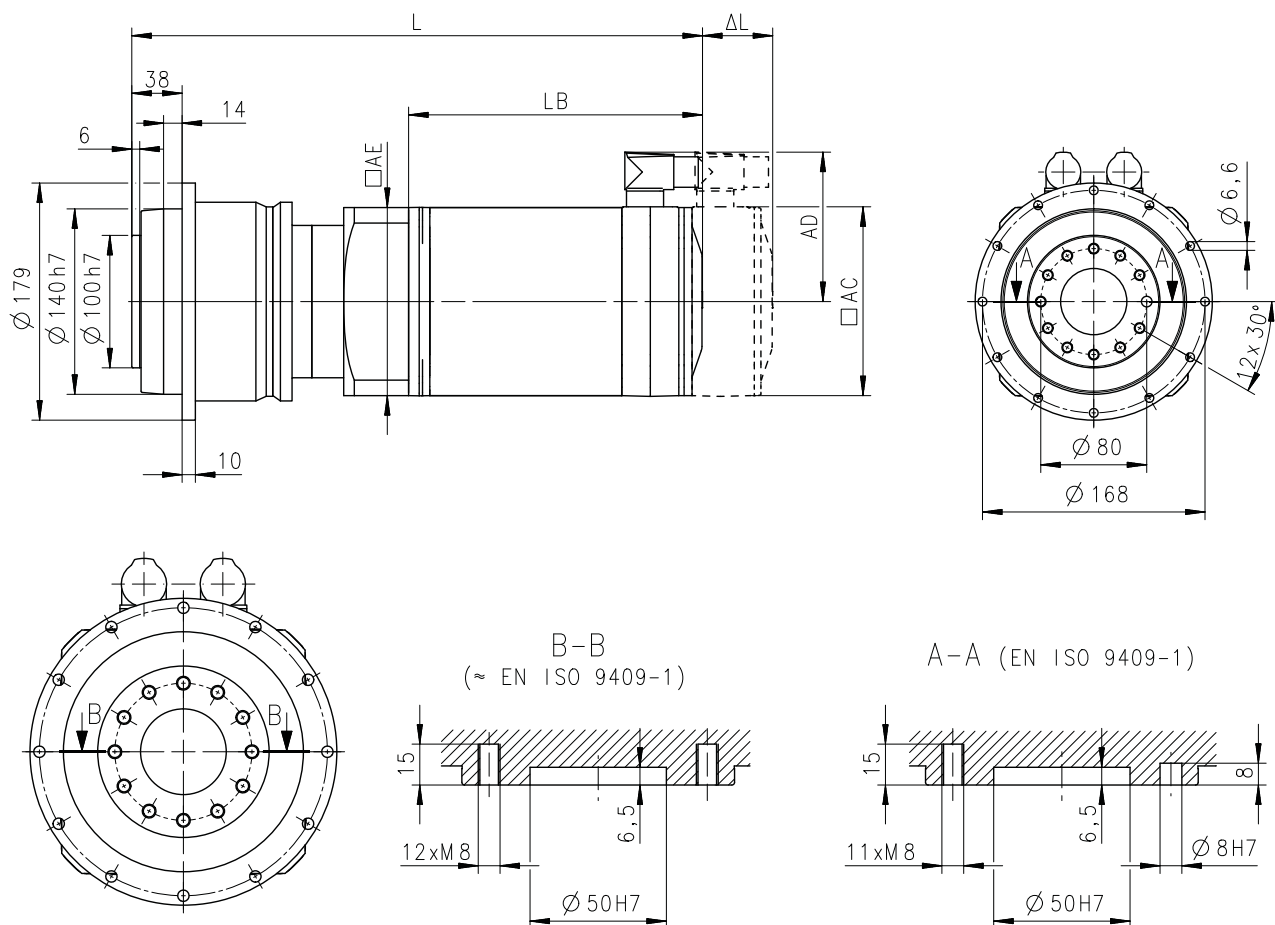


Technical data

Planetary gearbox g870-P
Basic dimensions

g870-P1000 with m850

Gearbox design: Flange output shaft, without foot with centering, 2-stage



8801056-00

Motor			m850-									
			S80/ S5500	S80/ L5500	S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000
Total length	L	mm	0	0	376.5	414.5	452.5	379.5	419.5	459.5	411.5	459.5
Motor length	LB	mm	158	178	189	227	265	182	222	262	204	252
Motor diameter	AC	mm	80	80	121	121	121	142	142	142	190	190
Motor/connection distance	AD	mm	83.4	83.4	102	102	102	114	114	135	137	158
Gearbox diameter	AE	mm			120	120	120	142	142	142	190	190

Planetary gearbox g870-P

Basic dimensions





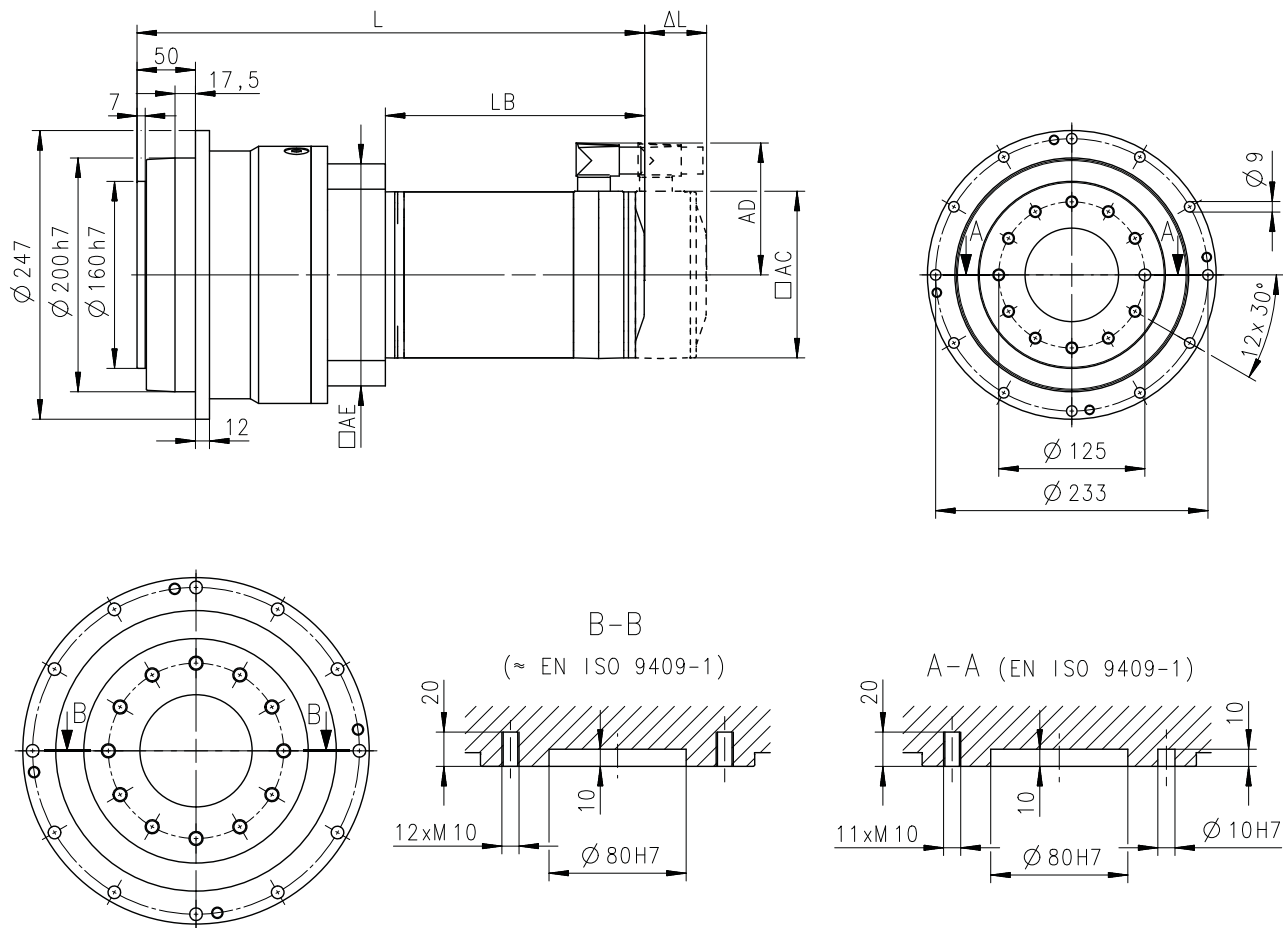
Technical data

Planetary gearbox g870-P

Basic dimensions

g870-P1800 with m850

Gearbox design: Flange output shaft, without foot with centering, 2-stage



8801057-00

Motor			m850-										
			S80/ S5500	S80/ L5500	S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	380	400	453	491	529	446	486	526	478	526	590
Motor length	LB	mm	158	178	189	227	265	182	222	262	204	252	316
Motor diameter	AC	mm	80	80	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	83.4	83.4	102	102	102	114	114	135	137	158	158
Gearbox diameter	AE	mm	142	142	142	142	142	142	142	142	190	190	190



Planetary gearbox g880-P

The modular system

g880-P planetary gearbox with m850 synchronous servo motor

Gearbox		g880-P40	g880-P80	g880-P180	g880-P470	g880-P950
Min. motor assignment		m850-S40S	m850-S60S	m850-S80S	m850-S80S	m850-S80S
Max. motor assignment		m850-S120M	m850-S140L	m850-S190M	m850-S190L	m850-S190L
Technical data						
Max. output torque	Nm	40	80	180	470	950
Mounting position		Any				
Color		Unpainted 40/60/80 Primed 120/140/190 RAL9005 120/140/190				
Surface and corrosion protection		Without 40/60/80 OKS-G 120/140/190				
Output shaft						
Flange output shaft with dowel hole	mm	20 x 4.5	31.5 x 6.5	40 x 6.5	50 x 6.5	80 x 10
Flange output shaft	mm	20 x 4.5	31.5 x 6.5	40 x 6.5	50 x 6.5	80 x 10
Shaft material		Steel				
Shaft sealing ring material		NBR				
Gearbox design		Without foot with centering				
Gearbox stages		1/2	1/2	1/2	1/2	1/2
Output flange	mm	80	90	110	140	200
Lubricant		Standard Food compatible				
Cooling		Self-ventilated				
Motor connection		Connector				
Holding brake		Without With				
Feedback						
Without functional safety		Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)				
With functional safety		Digital absolute value encoder for One Cable Technology (OCT) Resolver (except 40) Absolute value encoder (except 40)				
Temperature monitoring		PT1000 thermal sensor 40/60/80 PT1000 thermal sensor and 2x PTC thermistor 120/140/190				



Gearbox data

g880-P40, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
4	39.0	3	13
5	40.0	3	13
7	37.0	3	11
8	39.0	3	11
10	28.0	3	8

g880-P40, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
16	39.0	5	13
20	39.0	5	13
35	40.0	5	13
25	40.0	5	13
40	39.0	5	13
50	40.0	5	13
70	37.0	5	9
100	28.0	5	8

g880-P80, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
4	80.0	3	31
5	80.0	3	32
7	78.0	3	26
8	75.0	3	28
10	59.0	3	22

g880-P80, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
16	80.0	5	31
20	80.0	5	31
25	80.0	5	32
35	80.0	5	31
40	80.0	5	29
50	80.0	5	30
70	78.0	5	24
100	59.0	5	21



g880-P180, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
4	180	3	55
5	175	3	62
7	175	3	61
10	140	3	60

g880-P180, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
16	180	5	83
20	180	5	83
25	175	5	83
35	175	5	81
40	180	5	78
50	175	5	79
70	175	5	69

g880-P470, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
4	470	3	215
5	405	3	218
7	355	3	166
10	305	3	129

g880-P470, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
16	450	5	185
20	450	5	190
25	405	5	201
35	405	5	200
40	470	5	192
50	405	5	201
70	355	5	160
100	305	5	127

g880-P950, 1-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
5	950	3	602
7	900	3	486
10	750	3	374



Technical data

Planetary gearbox g880-P
Radial forces and axial forces

g880-P950, 2-stage gearboxes

Ratio	Max. output torque	Max. backlash	Torsional stiffness
		Standard	
i	$M_{2, \max}$		
	Nm	'	Nm/'
16	950	5	663
20	950	5	668
25	950	5	576
35	950	5	561
40	950	5	596
50	950	5	540
70	900	5	461
100	750	5	365

Radial forces and axial forces

Gearbox			g880-P40	g880-P80	g880-P180	g880-P470	g880-P950
Bearing service life 20000 h							
Speed		rpm	100	100	100	100	100
Radial force	F_{rad}	rated	2150	3950	4900	12000	23000
axial force	F_{ax}	rated	4300	8200	9500	8500	16000
Bearing service life 30000 h							
Speed		rpm	100	100	100	100	100
Radial force	F_{rad}	rated	1900	3500	4350	11000	21000
axial force	F_{ax}	rated	3800	7200	8400	7500	14000
Max. radial force	$F_{\text{rad, max}}$	rated	2150	3950	4900	12000	23000
Max. axial force	$F_{\text{ax, max}}$	rated	4300	8200	9500	8500	16000

Technical data

Planetary gearbox g880-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



Selection tables

Inverter mains connection 400 V, self-ventilated motors

0.11 kW

Inverter operation						i	Geared motor		Number of stages z	Mass m
M ₂	n ₂	c	M _{2, max}	n _{2, max}	J		g880-	m850-		
Nm	rpm		Nm	rpm	kgcm ²					kg
6.1	129	5.1	37.0	143	0.154	70	P40	S40/S9000	2	3.0
9.5	90.0	3.0	28.0	100	0.154	100	P40	S40/S9000	2	3.0

0.2 kW

Inverter operation						i	Geared motor		Number of stages z	Mass m
M ₂	n ₂	c	M _{2, max}	n _{2, max}	J		g880-	m850-		
Nm	rpm		Nm	rpm	kgcm ²					kg
4.9	257	5.9	40.0	286	0.188	35	P40	S40/L9000	2	3.2
6.1	225	5.1	39.0	250	0.179	40	P40	S40/L9000	2	3.2
8.2	180	4.2	40.0	200	0.179	50	P40	S40/L9000	2	3.2
13.0	129	2.9	37.0	143	0.178	70	P40	S40/L9000	2	3.2
17.0	90.0	1.7	28.0	100	0.178	100	P40	S40/L9000	2	3.2

0.325 kW

Inverter operation						i	Geared motor		Number of stages z	Mass m
M ₂	n ₂	c	M _{2, max}	n _{2, max}	J		g880-	m850-		
Nm	rpm		Nm	rpm	kgcm ²					kg
4.0	600	5.9	28.0	1000	0.369	10	P40	S60/S6000	1	3.3
5.7	375	5.2	39.0	625	0.423	16	P40	S60/S6000	2	4.0
7.9	300	4.2	39.0	500	0.396	20	P40	S60/S6000	2	4.0
8.9	240	5.3	80.0	120	0.403	25	P80	S60/S6000	2	5.5
10.0	240	3.4	40.0	400	0.395	25	P40	S60/S6000	2	4.0
14.0	171	4.2	80.0	86.0	0.380	35	P80	S60/S6000	2	5.5
16.0	171	2.5	40.0	286	0.376	35	P40	S60/S6000	2	4.0
16.0	150	4.3	80.0	75.0	0.370	40	P80	S60/S6000	2	5.5
18.0	150	2.1	39.0	250	0.367	40	P40	S60/S6000	2	4.0
21.0	120	3.4	80.0	60.0	0.369	50	P80	S60/S6000	2	5.5
23.0	120	1.8	40.0	200	0.367	50	P40	S60/S6000	2	4.0
30.0	85.7	1.2	37.0	143	0.367	70	P40	S60/S6000	2	4.0
32.0	85.7	2.4	78.0	43.0	0.368	70	P80	S60/S6000	2	5.5
44.0	60.0	1.4	59.0	30.0	0.367	100	P80	S60/S6000	2	5.5



Technical data

Planetary gearbox g880-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors

0.55 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, max}	J	i	g880-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
5.1	857	5.9	37.0	1429	0.574	7	P40	S60/L6000	1	3.8
6.0	750	5.2	39.0	375	0.570	8	P40	S60/L6000	1	3.8
8.2	600	3.3	28.0	1000	0.562	10	P40	S60/L6000	1	3.8
11.0	375	4.6	80.0	188	0.632	16	P80	S60/L6000	2	6.0
13.0	375	2.9	39.0	625	0.616	16	P40	S60/L6000	2	4.5
14.0	300	4.0	80.0	150	0.602	20	P80	S60/L6000	2	6.0
17.0	300	2.3	39.0	500	0.589	20	P40	S60/L6000	2	4.5
20.0	240	2.9	80.0	120	0.596	25	P80	S60/L6000	2	6.0
21.0	240	1.9	40.0	400	0.588	25	P40	S60/L6000	2	4.5
29.0	171	1.4	40.0	286	0.569	35	P40	S60/L6000	2	4.5
29.0	171	2.4	80.0	86.0	0.573	35	P80	S60/L6000	2	6.0
33.0	150	1.2	39.0	250	0.560	40	P40	S60/L6000	2	4.5
33.0	150	2.4	80.0	75.0	0.563	40	P80	S60/L6000	2	6.0
42.0	120	1.9	80.0	60.0	0.562	50	P80	S60/L6000	2	6.0
58.0	85.7	1.3	78.0	43.0	0.561	70	P80	S60/L6000	2	6.0

1 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, max}	J	i	g880-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
5.6	1375	5.2	39.0	2500	1.844	4	P40	S80/S5500	1	5.0
7.4	1100	4.3	40.0	2000	1.817	5	P40	S80/S5500	1	5.0
9.6	786	5.9	78.0	1429	1.900	7	P80	S80/S5500	1	7.0
11.0	786	3.2	37.0	1429	1.795	7	P40	S80/S5500	1	5.0
11.0	688	5.5	75.0	344	1.881	8	P80	S80/S5500	1	7.0
13.0	688	2.8	39.0	344	1.791	8	P40	S80/S5500	1	5.0
15.0	550	3.7	59.0	1000	1.850	10	P80	S80/S5500	1	7.0
16.0	550	1.7	28.0	1000	1.784	10	P40	S80/S5500	1	5.0
24.0	275	5.4	180	500	1.982	20	P180	S80/S5500	2	10
25.0	344	2.5	80.0	625	1.854	16	P80	S80/S5500	2	7.2
26.0	344	1.5	39.0	625	1.837	16	P40	S80/S5500	2	5.7
31.0	275	2.2	80.0	500	1.823	20	P80	S80/S5500	2	7.2
32.0	275	1.2	39.0	500	1.811	20	P40	S80/S5500	2	5.7
34.0	220	3.9	175	400	1.964	25	P180	S80/S5500	2	10
39.0	220	1.0	40.0	400	1.810	25	P40	S80/S5500	2	5.7
40.0	220	1.6	80.0	400	1.818	25	P80	S80/S5500	2	7.2
51.0	157	3.1	175	286	1.882	35	P180	S80/S5500	2	10
56.0	157	1.3	80.0	286	1.795	35	P80	S80/S5500	2	7.2
60.0	138	2.8	180	250	1.845	40	P180	S80/S5500	2	10
62.0	110	5.0	405	55.0	2.285	50	P470	S80/S5500	2	19
64.0	138	1.3	80.0	250	1.785	40	P80	S80/S5500	2	7.2
79.0	110	1.0	80.0	200	1.783	50	P80	S80/S5500	2	7.2
79.0	110	2.2	175	200	1.840	50	P180	S80/S5500	2	10
102	78.6	3.2	355	39.0	2.272	70	P470	S80/S5500	2	19
111	78.6	1.6	175	143	1.837	70	P180	S80/S5500	2	10
126	55.0	4.9	750	65	7.834	100	P950	S80/S5500	2	40
155	55.0	2.0	305	28.0	2.253	100	P470	S80/S5500	2	19

Technical data

Planetary gearbox g880-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



1.2 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \max}$	J	i	g880-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
7.3	1375	4.2	39.0	2500	2.374	4	P40	S80/L5500	1	5.7
9.5	1100	3.4	40.0	2000	2.347	5	P40	S80/L5500	1	5.7
12.0	786	4.8	78.0	1429	2.430	7	P80	S80/L5500	1	7.7
14.0	786	2.6	37.0	1429	2.325	7	P40	S80/L5500	1	5.7
14.0	688	4.5	75.0	344	2.411	8	P80	S80/L5500	1	7.7
16.0	688	2.3	39.0	344	2.321	8	P40	S80/L5500	1	5.7
19.0	550	3.0	59.0	1000	2.380	10	P80	S80/L5500	1	7.7
20.0	550	1.4	28.0	1000	2.314	10	P40	S80/L5500	1	5.7
24.0	344	5.1	180	625	2.627	16	P180	S80/L5500	2	11
31.0	344	2.0	80.0	625	2.384	16	P80	S80/L5500	2	7.9
32.0	344	1.2	39.0	625	2.367	16	P40	S80/L5500	2	6.4
33.0	275	4.4	180	500	2.512	20	P180	S80/L5500	2	11
39.0	275	1.8	80.0	500	2.353	20	P80	S80/L5500	2	7.9
45.0	220	3.1	175	400	2.494	25	P180	S80/L5500	2	11
49.0	220	1.3	80.0	400	2.348	25	P80	S80/L5500	2	7.9
50.0	157	5.8	405	79.0	2.972	35	P470	S80/L5500	2	19
56.0	138	5.8	470	69.0	2.831	40	P470	S80/L5500	2	19
66.0	157	2.5	175	286	2.412	35	P180	S80/L5500	2	11
69.0	157	1.0	80.0	286	2.325	35	P80	S80/L5500	2	7.9
77.0	138	2.3	180	250	2.375	40	P180	S80/L5500	2	11
79.0	138	1.0	80.0	250	2.315	40	P80	S80/L5500	2	7.9
84.0	110	4.1	405	55.0	2.815	50	P470	S80/L5500	2	19
99.0	110	1.8	175	200	2.370	50	P180	S80/L5500	2	11
132	78.6	2.6	355	39.0	2.802	70	P470	S80/L5500	2	19
137	78.6	1.3	175	143	2.367	70	P180	S80/L5500	2	11
169	55.0	3.9	750	65	8.364	100	P950	S80/L5500	2	40
191	55.0	1.6	305	28.0	2.783	100	P470	S80/L5500	2	19



Technical data

Planetary gearbox g880-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

2 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g880-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
17.0	990	4.0	80.0	495	7.219	4	P80	S120/S3960	1	10
18.0	990	2.1	39.0	495	6.944	4	P40	S120/S3960	1	8.3
22.0	792	3.1	80.0	396	7.097	5	P80	S120/S3960	1	10
23.0	792	1.7	40.0	396	6.917	5	P40	S120/S3960	1	8.3
29.0	566	4.6	175	283	7.548	7	P180	S120/S3960	1	14
32.0	566	1.2	37.0	283	6.895	7	P40	S120/S3960	1	8.3
32.0	566	2.3	78.0	283	7.000	7	P80	S120/S3960	1	10
44.0	396	3.0	140	198	7.392	10	P180	S120/S3960	1	14
46.0	396	1.3	59.0	198	6.950	10	P80	S120/S3960	1	10
53.0	248	5.5	450	124	8.336	16	P470	S120/S3960	2	22
70.0	248	2.4	180	124	7.197	16	P180	S120/S3960	2	14
72.0	248	1.0	80.0	124	6.954	16	P80	S120/S3960	2	11
72.0	198	4.7	450	99.0	7.875	20	P470	S120/S3960	2	22
90.0	198	2.0	180	99.0	7.082	20	P180	S120/S3960	2	14
100	158	3.5	405	79.0	7.811	25	P470	S120/S3960	2	22
111	113	6.0	950	57.0	13.665	35	P950	S120/S3960	2	43
113	158	1.5	175	79.0	7.064	25	P180	S120/S3960	2	14
137	99.0	5.2	950	50.0	13.138	40	P950	S120/S3960	2	43
152	113	2.5	405	57.0	7.542	35	P470	S120/S3960	2	22
158	113	1.1	175	57.0	6.982	35	P180	S120/S3960	2	14
173	99.0	2.6	470	50.0	7.401	40	P470	S120/S3960	2	22
189	79.2	4.2	950	40.0	13.048	50	P950	S120/S3960	2	43
226	79.2	1.8	405	40.0	7.385	50	P470	S120/S3960	2	22
295	56.6	2.9	900	28.0	12.971	70	P950	S120/S3960	2	43
312	56.6	1.1	355	28.0	7.372	70	P470	S120/S3960	2	22
437	39.6	1.7	750	20.0	12.934	100	P950	S120/S3960	2	43

Technical data

Planetary gearbox g880-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



2.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g880-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
29.0	810	4.9	180	405	17.729	4	P180	S140/S3240	1	35
32.0	810	2.4	80.0	405	16.968	4	P80	S140/S3240	1	31
38.0	648	3.7	175	324	17.305	5	P180	S140/S3240	1	35
41.0	648	1.8	80.0	324	16.846	5	P80	S140/S3240	1	31
55.0	463	2.8	175	231	17.036	7	P180	S140/S3240	1	35
57.0	463	1.4	78.0	231	16.474	7	P80	S140/S3240	1	31
76.0	324	3.7	305	162	22.226	10	P470	S140/S3240	1	43
82.0	324	1.7	140	162	16.880	10	P180	S140/S3240	1	35
114	162	5.8	950	81.0	24.430	20	P950	S140/S3240	2	64
115	203	3.3	450	101	17.827	16	P470	S140/S3240	2	43
128	203	1.4	180	101	16.946	16	P180	S140/S3240	2	35
151	162	2.8	450	81.0	17.365	20	P470	S140/S3240	2	43
160	162	1.1	180	81.0	16.832	20	P180	S140/S3240	2	35
160	130	4.7	950	65.0	24.070	25	P950	S140/S3240	2	64
200	130	2.0	405	65.0	17.301	25	P470	S140/S3240	2	43
251	92.6	3.4	950	46.0	22.865	35	P950	S140/S3240	2	64
280	92.6	1.4	405	46.0	17.032	35	P470	S140/S3240	2	43
297	81.0	2.9	950	41.0	22.338	40	P950	S140/S3240	2	64
320	81.0	1.4	470	41.0	16.892	40	P470	S140/S3240	2	43
389	64.8	2.4	950	32.0	22.248	50	P950	S140/S3240	2	64
400	64.8	1.0	405	32.0	16.876	50	P470	S140/S3240	2	43
553	46.3	1.6	900	23.0	22.171	70	P950	S140/S3240	2	64



Technical data

Planetary gearbox g880-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors

3.1 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g880-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
25.0	990	5.3	180	477	14.141	4	P180	S120/M3960	1	16
28.0	990	1.3	39.0	495	12.844	4	P40	S120/M3960	1	11
28.0	990	2.6	80.0	495	13.119	4	P80	S120/M3960	1	13
33.0	792	4.0	175	396	13.717	5	P180	S120/M3960	1	16
36.0	792	1.1	40.0	396	12.817	5	P40	S120/M3960	1	11
36.0	792	2.0	80.0	396	12.997	5	P80	S120/M3960	1	13
48.0	566	3.0	175	283	13.448	7	P180	S120/M3960	1	16
50.0	566	1.5	78.0	283	12.900	7	P80	S120/M3960	1	13
64.0	396	4.3	305	198	18.926	10	P470	S120/M3960	1	24
71.0	396	2.0	140	198	13.292	10	P180	S120/M3960	1	16
98.0	248	3.6	450	124	14.236	16	P470	S120/M3960	2	25
111	248	1.6	180	124	13.097	16	P180	S120/M3960	2	16
128	198	3.1	450	99.0	13.775	20	P470	S120/M3960	2	25
131	158	5.4	950	79.0	20.770	25	P950	S120/M3960	2	46
139	198	1.3	180	99.0	12.982	20	P180	S120/M3960	2	16
170	158	2.3	405	79.0	13.711	25	P470	S120/M3960	2	25
210	113	3.9	950	57.0	19.565	35	P950	S120/M3960	2	46
243	113	1.7	405	57.0	13.442	35	P470	S120/M3960	2	25
250	99.0	3.4	950	50.0	19.038	40	P950	S120/M3960	2	46
278	99.0	1.7	470	50.0	13.301	40	P470	S120/M3960	2	25
330	79.2	2.7	950	40.0	18.948	50	P950	S120/M3960	2	46
348	79.2	1.2	405	40.0	13.285	50	P470	S120/M3960	2	25
482	56.6	1.9	900	28.0	18.871	70	P950	S120/M3960	2	46
673	39.6	1.1	750	20.0	18.834	100	P950	S120/M3960	2	46

Technical data

Planetary gearbox g880-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



3.7 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g880-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
31.0	990	4.3	180	471	19.941	4	P180	S120/L3960	1	19
34.0	990	2.1	80.0	495	18.919	4	P80	S120/L3960	1	16
41.0	792	3.3	175	396	19.517	5	P180	S120/L3960	1	19
43.0	792	1.6	80.0	396	18.797	5	P80	S120/L3960	1	16
51.0	566	5.8	355	275	25.314	7	P470	S120/L3960	1	27
59.0	566	2.5	175	283	19.248	7	P180	S120/L3960	1	19
60.0	566	1.2	78.0	283	18.700	7	P80	S120/L3960	1	16
81.0	396	3.5	305	198	24.726	10	P470	S120/L3960	1	27
86.0	396	1.6	140	198	19.092	10	P180	S120/L3960	1	19
125	198	5.5	950	99.0	26.930	20	P950	S120/L3960	2	49
126	248	2.9	450	124	20.036	16	P470	S120/L3960	2	27
135	248	1.3	180	124	18.897	16	P180	S120/L3960	2	19
163	198	2.5	450	99.0	19.575	20	P470	S120/L3960	2	27
169	198	1.0	180	99.0	18.782	20	P180	S120/L3960	2	19
174	158	4.4	950	79.0	26.570	25	P950	S120/L3960	2	49
212	158	1.9	405	79.0	19.511	25	P470	S120/L3960	2	27
270	113	3.2	950	57.0	25.365	35	P950	S120/L3960	2	49
296	113	1.4	405	57.0	19.242	35	P470	S120/L3960	2	27
319	99.0	2.8	950	50.0	24.838	40	P950	S120/L3960	2	49
338	99.0	1.4	470	50.0	19.101	40	P470	S120/L3960	2	27
416	79.2	2.2	950	40.0	24.748	50	P950	S120/L3960	2	49
586	56.6	1.5	900	28.0	24.671	70	P950	S120/L3960	2	49

4.8 kW

Inverter operation							Geared motor		Number of stages	Mass
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g880-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
52.0	810	3.0	180	405	32.129	4	P180	S140/M3240	1	40
54.0	810	1.4	80.0	405	31.368	4	P80	S140/M3240	1	36
56.0	648	6.0	405	294	38.361	5	P470	S140/M3240	1	48
67.0	648	1.1	80.0	324	31.246	5	P80	S140/M3240	1	36
67.0	648	2.2	175	324	31.705	5	P180	S140/M3240	1	40
87.0	463	3.7	355	231	37.214	7	P470	S140/M3240	1	48
94.0	463	1.7	175	231	31.436	7	P180	S140/M3240	1	40
116	324	5.4	750	162	52.620	10	P950	S140/M3240	1	62
133	324	2.3	305	162	36.626	10	P470	S140/M3240	1	48
134	324	1.0	140	162	31.280	10	P180	S140/M3240	1	40
173	203	4.4	950	101	40.510	16	P950	S140/M3240	2	69
210	203	2.0	450	101	32.227	16	P470	S140/M3240	2	48
233	162	3.5	950	81.0	38.830	20	P950	S140/M3240	2	69
263	162	1.7	450	81.0	31.765	20	P470	S140/M3240	2	48
309	130	2.8	950	65.0	38.470	25	P950	S140/M3240	2	69
329	130	1.2	405	65.0	31.701	25	P470	S140/M3240	2	48
459	92.6	2.0	950	46.0	37.265	35	P950	S140/M3240	2	69
526	81.0	1.8	950	41.0	36.738	40	P950	S140/M3240	2	69
658	64.8	1.4	950	32.0	36.648	50	P950	S140/M3240	2	69



Technical data

Planetary gearbox g880-P
Selection tables

Inverter mains connection 400 V, self-ventilated motors

5 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g880-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
60.0	750	2.7	180	375	65.391	4	P180	S190/S3000	1	52
66.0	600	5.2	405	291	69.061	5	P470	S190/S3000	1	60
77.0	600	2.0	175	300	64.967	5	P180	S190/S3000	1	52
102	429	3.3	355	214	67.914	7	P470	S190/S3000	1	60
108	429	1.5	175	214	64.698	7	P180	S190/S3000	1	52
136	300	4.8	750	150	83.320	10	P950	S190/S3000	1	74
154	300	2.0	305	150	67.326	10	P470	S190/S3000	1	60
207	188	3.9	950	94.0	71.210	16	P950	S190/S3000	2	81
241	188	1.8	450	94.0	65.118	16	P470	S190/S3000	2	60
276	150	3.1	950	75.0	69.530	20	P950	S190/S3000	2	81
301	150	1.5	450	75.0	64.657	20	P470	S190/S3000	2	60
363	120	2.5	950	60.0	69.170	25	P950	S190/S3000	2	81
376	120	1.1	405	60.0	64.593	25	P470	S190/S3000	2	60
526	85.7	1.8	950	43.0	67.965	35	P950	S190/S3000	2	81
602	75.0	1.6	950	38.0	67.438	40	P950	S190/S3000	2	81
752	60.0	1.3	950	30.0	67.348	50	P950	S190/S3000	2	81

5.9 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g880-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
66.0	810	2.4	180	405	46.629	4	P180	S140/L3240	1	45
67.0	810	1.2	80.0	405	45.868	4	P80	S140/L3240	1	41
74.0	648	4.8	405	289	52.861	5	P470	S140/L3240	1	53
84.0	648	1.8	175	324	46.205	5	P180	S140/L3240	1	45
112	463	3.0	355	231	51.714	7	P470	S140/L3240	1	53
117	463	1.4	175	231	45.936	7	P180	S140/L3240	1	45
151	324	4.3	750	162	67.120	10	P950	S140/L3240	1	67
167	324	1.8	305	162	51.126	10	P470	S140/L3240	1	53
231	203	3.6	950	100	55.010	16	P950	S140/L3240	2	74
262	203	1.6	450	101	46.727	16	P470	S140/L3240	2	53
307	162	2.8	950	81.0	53.330	20	P950	S140/L3240	2	74
327	162	1.4	450	81.0	46.265	20	P470	S140/L3240	2	53
401	130	2.3	950	65.0	52.970	25	P950	S140/L3240	2	74
572	92.6	1.6	950	46.0	51.765	35	P950	S140/L3240	2	74
654	81.0	1.4	950	41.0	51.238	40	P950	S140/L3240	2	74
818	64.8	1.2	950	32.0	51.148	50	P950	S140/L3240	2	74

Technical data

Planetary gearbox g880-P

Selection tables

Inverter mains connection 400 V, self-ventilated motors



7.5 kW

Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g880-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
81.0	750	4.8	470	286	126.770	4	P470	S190/M3000	1	69
92.0	750	1.8	180	375	121.691	4	P180	S190/M3000	1	61
108	600	3.5	405	281	125.361	5	P470	S190/M3000	1	69
115	600	1.3	175	300	121.267	5	P180	S190/M3000	1	61
143	429	4.7	900	192	143.299	7	P950	S190/M3000	1	83
160	429	2.2	355	214	124.214	7	P470	S190/M3000	1	69
219	300	3.2	750	150	139.620	10	P950	S190/M3000	1	83
230	300	1.3	305	150	123.626	10	P470	S190/M3000	1	69
345	188	2.6	950	94.0	127.510	16	P950	S190/M3000	2	90
361	188	1.2	450	94.0	121.418	16	P470	S190/M3000	2	69
449	150	2.1	950	75.0	125.830	20	P950	S190/M3000	2	90
564	120	1.7	950	60.0	125.470	25	P950	S190/M3000	2	90
790	85.7	1.2	950	43.0	124.265	35	P950	S190/M3000	2	90
902	75.0	1.0	950	38.0	123.738	40	P950	S190/M3000	2	90

9.2 kW

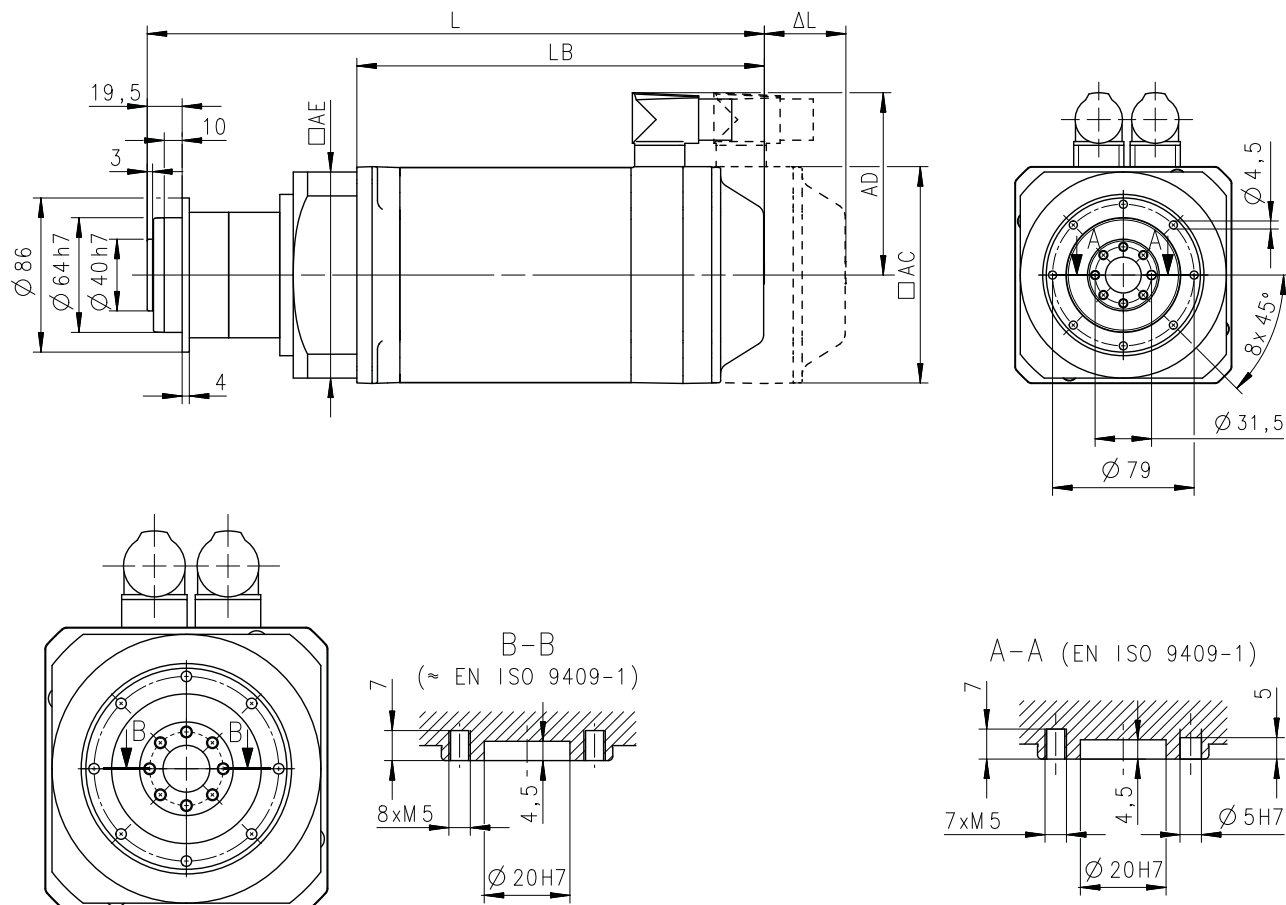
Inverter operation							Geared motor		Number of stages	Mass
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g880-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
126	630	3.5	470	279	202.170	4	P470	S190/L2520	1	81
148	504	4.8	950	199	225.073	5	P950	S190/L2520	1	95
165	504	2.4	405	252	200.761	5	P470	S190/L2520	1	81
221	360	3.4	900	180	218.699	7	P950	S190/L2520	1	95
235	360	1.5	355	180	199.614	7	P470	S190/L2520	1	81
333	252	2.2	750	126	215.020	10	P950	S190/L2520	1	95
526	158	1.8	950	79.0	202.910	16	P950	S190/L2520	2	103
658	126	1.4	950	63.0	201.230	20	P950	S190/L2520	2	103
823	101	1.1	950	50.0	200.870	25	P950	S190/L2520	2	103



Basic dimensions

g880-P40 with m850

Gearbox design: Flange output shaft, without foot with centering, 1-stage



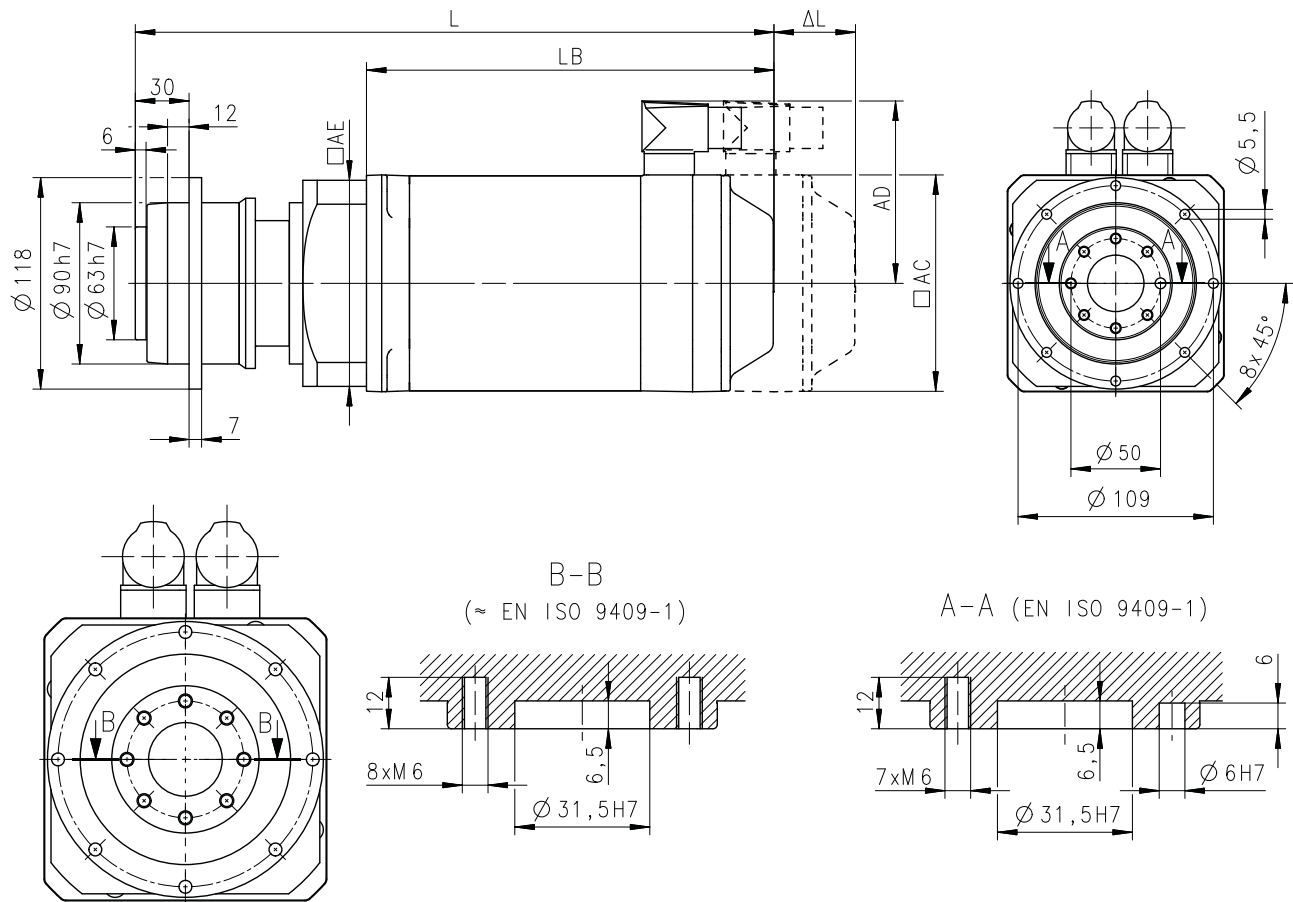
8801048-00

Motor			m850-								
			S60/ S6000	S60/L6000		S80/S5500		S80/L5500		S120/ S3960	S120/ M3960
Total length	L	mm	180.5	210.5	0	227	0	247	0	277.5	315.5
Motor length	LB	mm	122	152	152	158	158	178	178	189	227
Motor diameter	AC	mm	60	60	60	80	80	80	80	121	121
Motor/connection distance	AD	mm	73.4	73.4	73.4	83.4	83.4	83.4	83.4	102	102
Gearbox diameter	AE	mm	70	70	70	90	90	90	90	115	115



g880-P80 with m850

Gearbox design: Flange output shaft, without foot with centering, 1-stage



8801049-00

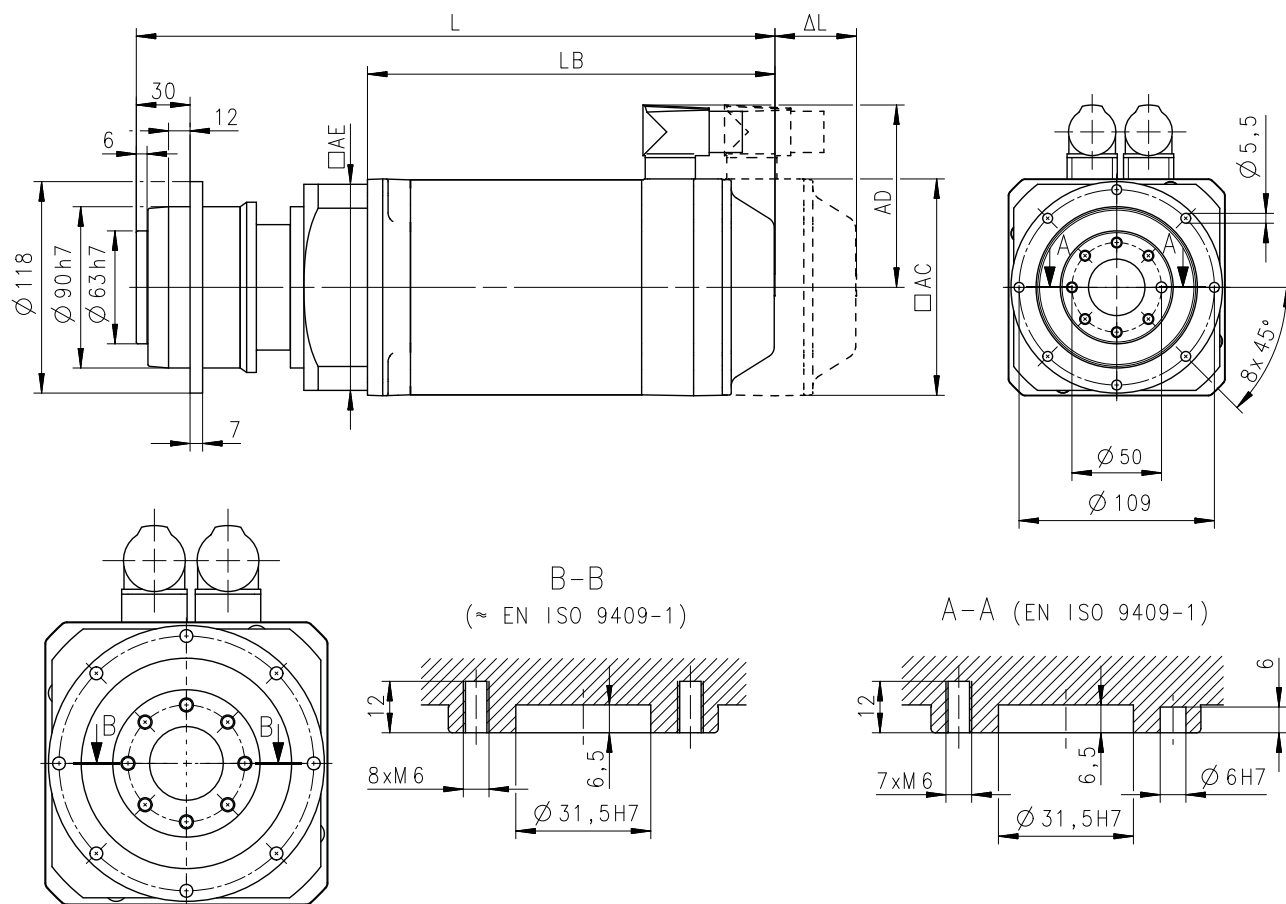
Motor			m850-									
			S80/S5500		S80/L5500		S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240
Total length	L	mm	227.5	0	247.5	0	288.5	326.5	364.5	291.5	331.5	371.5
Motor length	LB	mm	158	158	178	178	189	227	265	182	222	262
Motor diameter	AC	mm	80	80	80	80	121	121	121	142	142	142
Motor/connection distance	AD	mm	83.4	83.4	83.4	83.4	102	102	102	114	114	135
Gearbox diameter	AE	mm	90	90	90	90	115	115	115	142	142	142



Technical data Planetary gearbox g880-P Basic dimensions

g880-P80 with m850

Gearbox design: Flange output shaft, without foot with centering, 2-stage



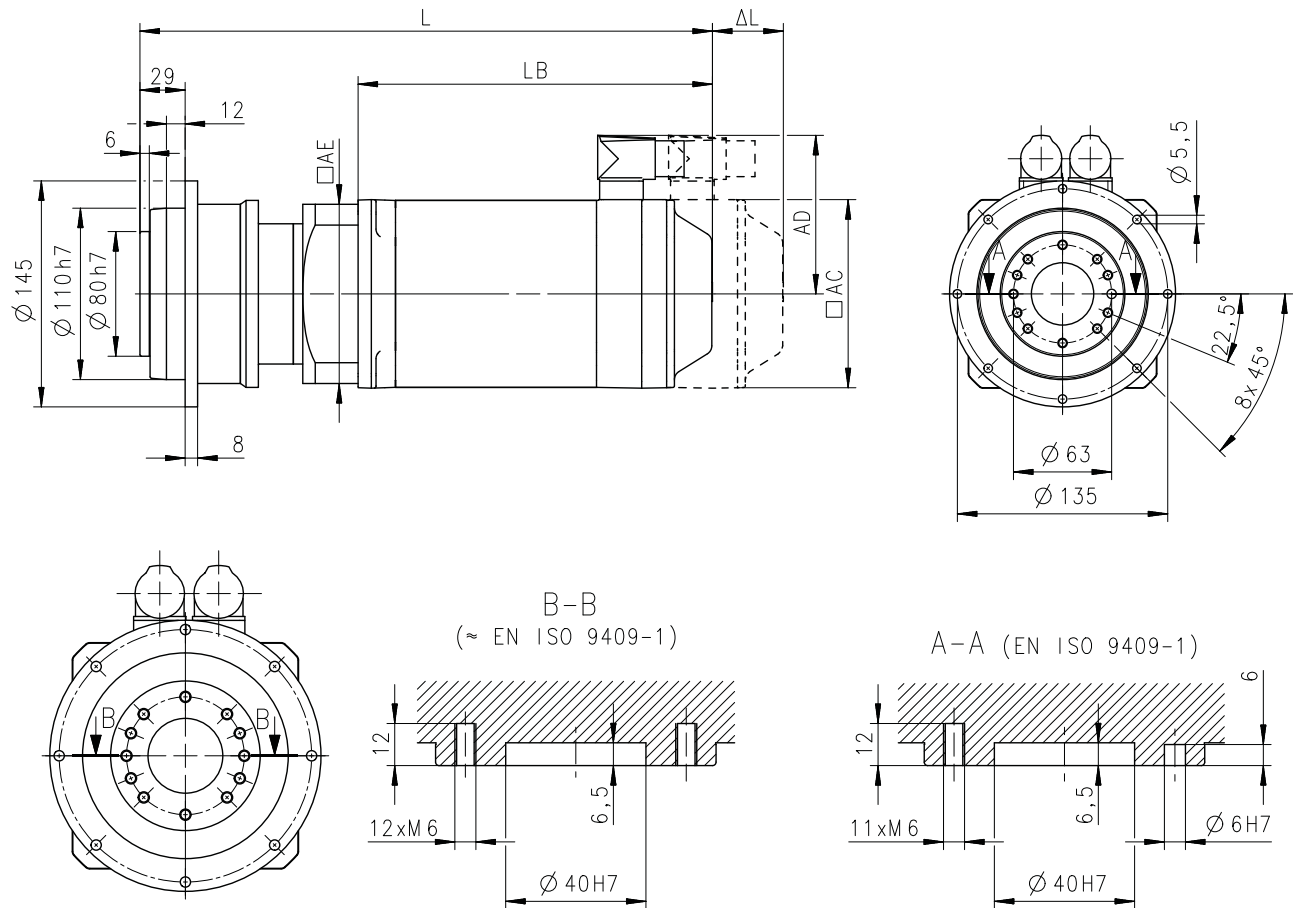
8801049-00

Motor			m850-				
			S60/S6000	S60/L6000	S80/S5500	S80/L5500	S120/S3960
Total length	L	mm	0	0	257.5	277.5	318
Motor length	LB	mm	122	152	158	178	189
Motor diameter	AC	mm	60	60	80	80	121
Motor/connection distance	AD	mm	73.4	73.4	83.4	83.4	102
Gearbox diameter	AE	mm	70	70	90	90	115



g880-P180 with m850

Gearbox design: Flange output shaft, without foot with centering, 1-stage



8801050-00

Motor			m850-							
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000
Total length	L	mm	297	335	373	300	340	380	333	381
Motor length	LB	mm	189	227	265	182	222	262	204	252
Motor diameter	AC	mm	121	121	121	142	142	142	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158
Gearbox diameter	AE	mm	120	120	120	142	142	142	190	190

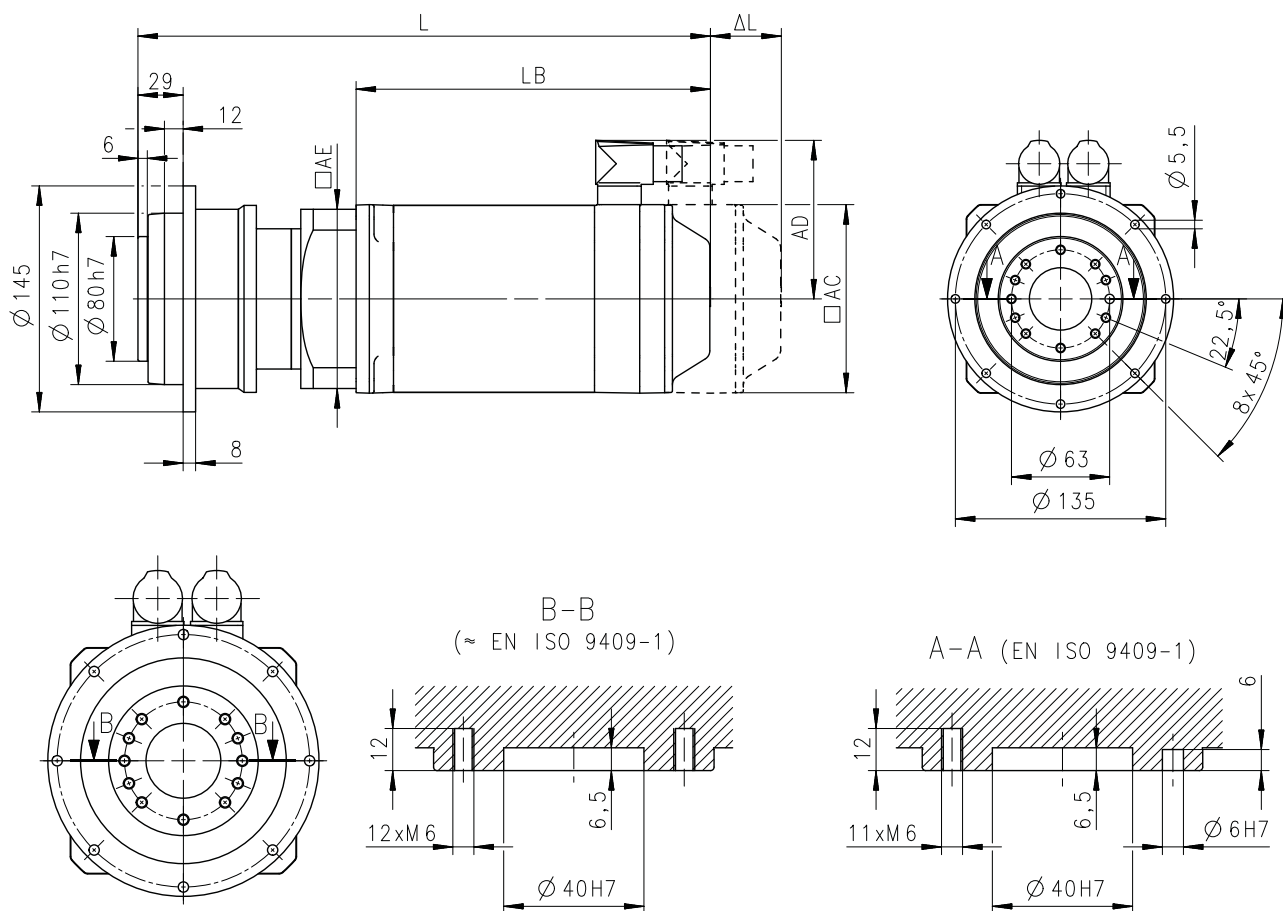


Technical data

Planetary gearbox g880-P
Basic dimensions

g880-P180 with m850

Gearbox design: Flange output shaft, without foot with centering, 2-stage



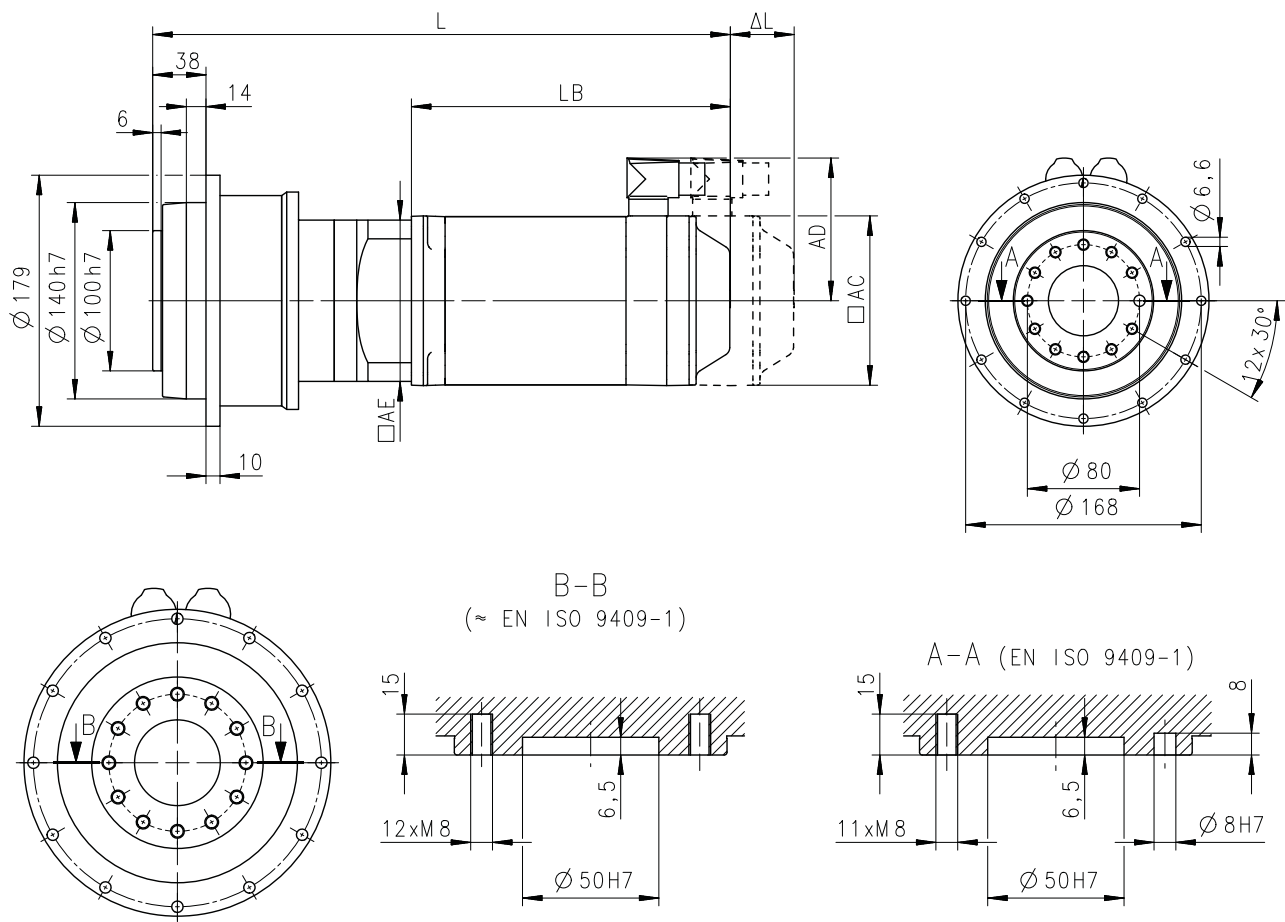
8801050-00

Motor			m850-					
			S80/L5500	S80/S5500	S120/L3960	S120/M3960	S120/S3960	S140/S3240
Total length	L	mm	289	269	405	367	329	332
Motor length	LB	mm	178	158	265	227	189	182
Motor diameter	AC	mm	80	80	121	121	121	142
Motor/connection distance	AD	mm	83.4	83.4	102	102	102	114
Gearbox diameter	AE	mm	90	90	115	115	115	142



g880-P470 with m850

Gearbox design: Flange output shaft, without foot with centering, 1-stage



8801051-00

Motor			m850-							
			S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	369	407	324	364	404	356	404	468
Motor length	LB	mm	227	265	182	222	262	204	252	316
Motor diameter	AC	mm	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	102	102	114	114	135	137	158	158
Gearbox diameter	AE	mm	150	150	150	150	150	190	190	190



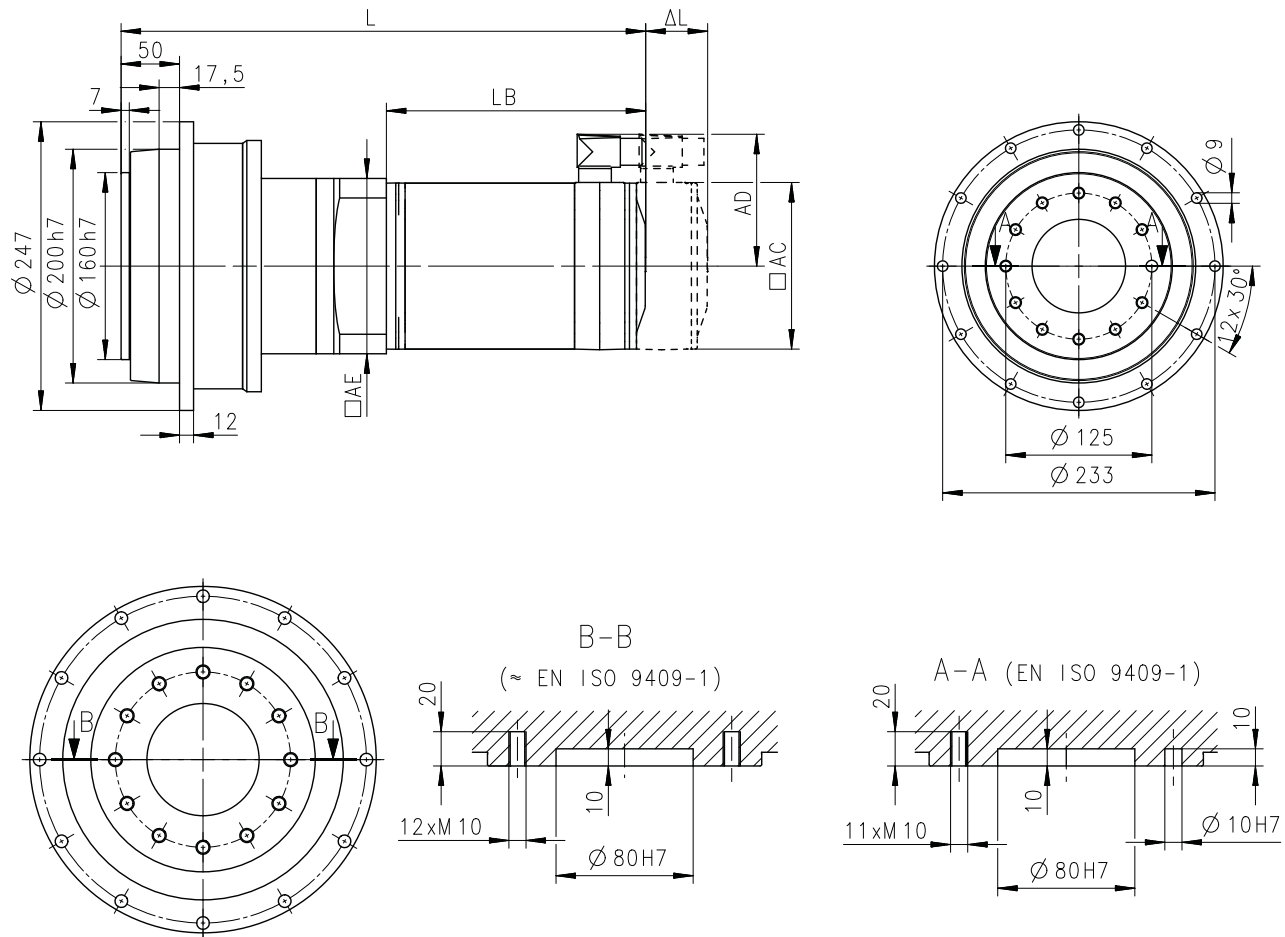
Gearbox design: Flange output shaft, without foot with centering, 2-stage

233



g880-P950 with m850

Gearbox design: Flange output shaft, without foot with centering, 1-stage



8801052-00

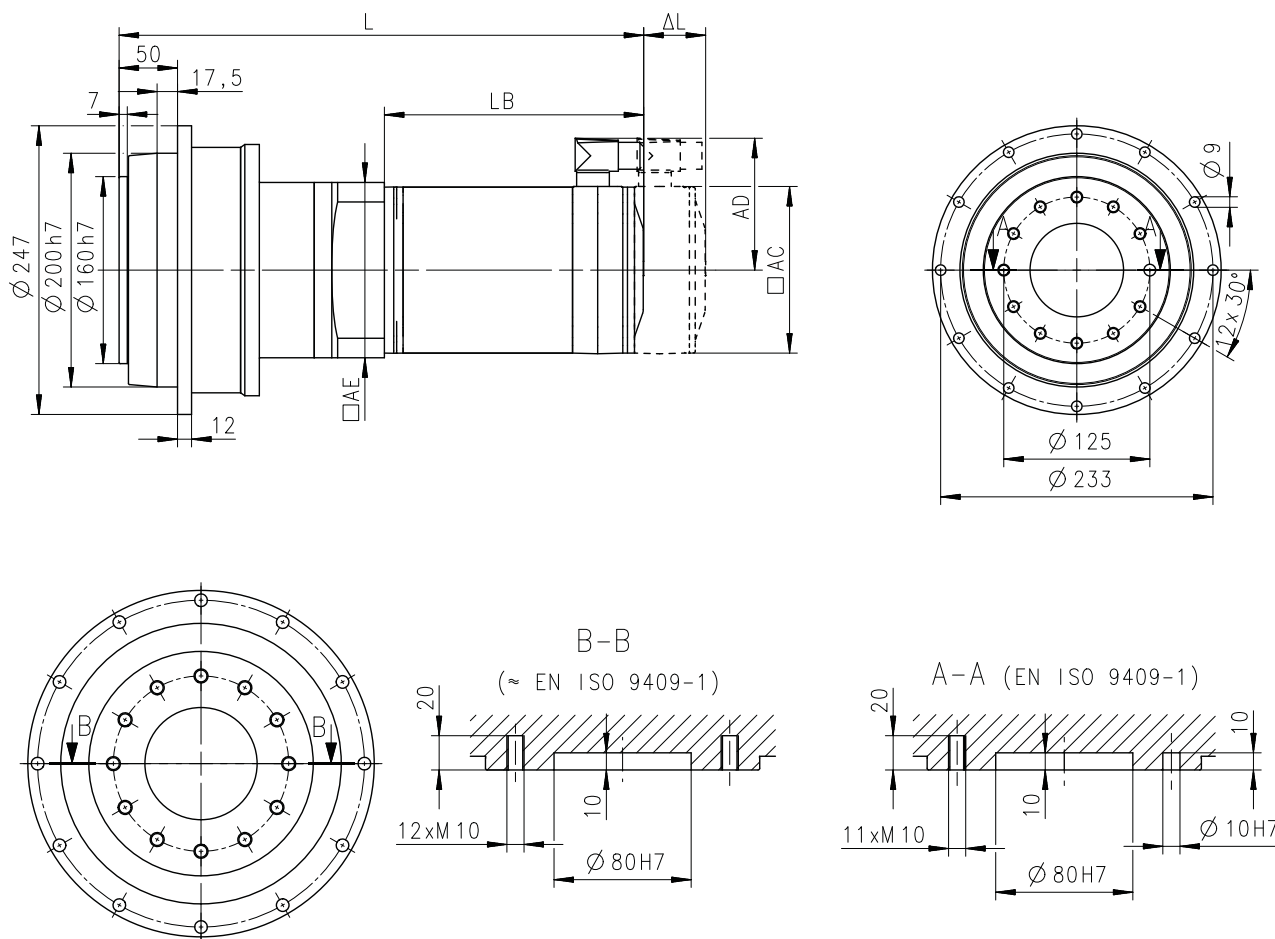
Motor			m850-				
			S140/M3240	S140/L3240	S190/S3000	S190/M3000	S190/L2520
Total length	L	mm	394	434	396	444	508
Motor length	LB	mm	222	262	204	252	316
Motor diameter	AC	mm	142	142	190	190	190
Motor/connection distance	AD	mm	114	135	137	158	158
Gearbox diameter	AE	mm	210	210	210	210	210



Technical data Planetary gearbox g880-P Basic dimensions

g880-P950 with m850

Gearbox design: Flange output shaft, without foot with centering, 2-stage



8801052-00

Motor			m850-										
			S80/ S5500	S80/ L5500	S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	325	345	406	444	482	399	439	479	431	479	543
Motor length	LB	mm	158	178	189	227	265	182	222	262	204	252	316
Motor diameter	AC	mm	80	80	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	83.4	83.4	102	102	102	114	114	135	137	158	158
Gearbox diameter	AE	mm	150	150	150	150	150	150	150	150	190	190	190



Additional lengths

Motors

Motor			m850-		
			S40/S9000 S40/L9000	S60/S6000 S60/L6000	S80/S5500 S80/L5500
Spring-applied holding brake	Δ L	mm	36	34	42

Motor			m850-		
			S120/S3960 S120/M3960 S120/L3960	S140/S3240 S140/M3240 S140/L3240	S190/S3000 S190/M3000 S190/L2520
Spring-applied holding brake	Δ L	mm	46	53	68



Additional weights

Holding brake

Motor			m850-S40/ S9000	m850-S40/ L9000	m850-S60/ S6000	m850-S60/ L6000	m850-S80/ L5500	m850-S80/ S5500
Weight	m	kg	0.085	0.085	0.2	0.2	0.4	0.4

Motor			m850-S120/ L3960	m850-S120/ S3960	m850-S120/ M3960	m850-S140/ M3240	m850-S140/ L3240	m850-S140/ S3240
Weight	m	kg	2.0	2.0	2.0	3.0	3.0	3.0

Motor			m850-S190/S3000	m850-S190/M3000	m850-S190/L2520
Weight	m	kg	6.70	6.70	6.70



Product extensions

Motor connection

Connection via connector

The electrical connection to the servo motors is made via M23 or M40 plug connectors as standard.

The connection is made via two connectors:

- For power and brake
- For feedback and temperature monitoring

Alternatively, Lenze offers a One Cable Technology (OCT).

The connectors can be rotated by 270 ° and are provided with a bayonet catch. Since the catch of the connector is also compatible with conventional box nuts, existing mating connectors with a screw plug can continue to be used without any problems.



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

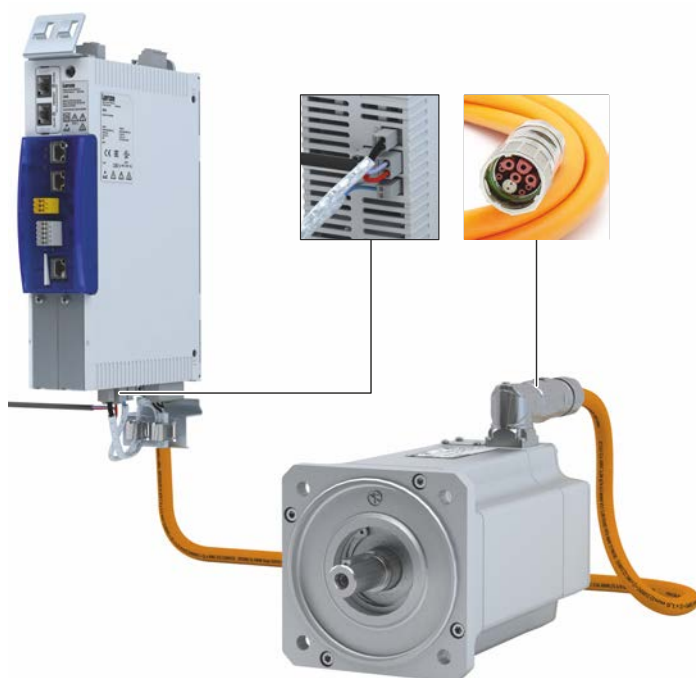
Details and data can be found in the "Accessories" brochure on the Internet.

One Cable Technology (OCT)

With the help of digital absolute value encoders and the HIPERFACE DSL® open motor feedback protocol, the motor supports the use of future-oriented One Cable Technology (OCT).

Advantages

- All the wiring required is carried out in just one connector.
- The use of system cables merges the servo and feedback cables.
- Connection cables, cable variance, and connection costs are thus reasonably minimized.
- The motor temperature is transmitted digitally together with the encoder signal. An additional connection for a motor temperature sensor is not required.
- Speed-dependent safety functions can be realized by using the safety-rated digital absolute value encoder.





Product extensions

Motor connection
Connection via connector



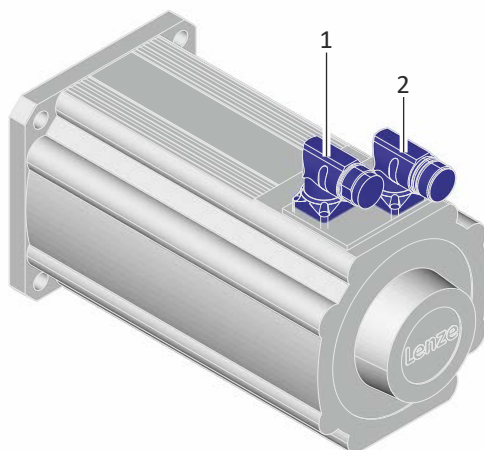
The M23 connector for One Cable Technology (OCT) has been changed; the change can be recognized by the color of the connector:

- Old connector: Blue
- New connector: Red

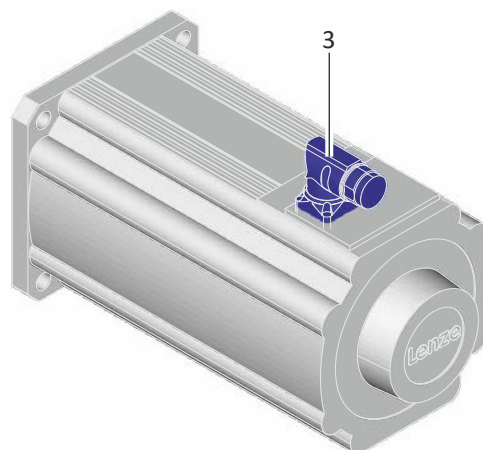
Only motor/system cable connectors of the same color can be plugged in.

Position of the connections

Standard connection



One Cable Technology (OCT)



Assignment motor - connector m850-S40 ... m850-S80

Position	Meaning	Position	Meaning
1	M23 connector, 6-pole • Feedback connection • Connection of temperature monitoring	3	For One Cable Technology (OCT) M23 connector • Power connection • Brake connection • PE connection • Digital absolute value encoder connection • Temperature monitoring connection
2	M23 connector • Power connection • Brake connection • PE connection		

Standard connection: Power and brake

One Cable Technology (OCT): Power, brake, feedback and temperature monitoring connection

Motor	Connector	Motor	Connector	Motor	Connector
m850-S40/S9000	M23	m850-S60/S6000	M23	m850-S80/S5500	M23
m850-S40/L9000	M23	m850-S60/L6000	M23	m850-S80/L5500	M23

Assignment motor - connector m850-S120 ... m850-S190

Position	Meaning	Position	Meaning
1	M23 connector, 6-pole M40 connector, 8-pole • Power connection • Brake connection • PE connection	3	For One Cable Technology (OCT) M23 connector M40 connector • Power connection • Brake connection • PE connection • Digital absolute value encoder connection • Temperature monitoring connection
2	M23 connector • Feedback connection • Temperature monitoring connection		

Standard connection: Power and brake

One Cable Technology (OCT): Power, brake, feedback and temperature monitoring connection

Motor	Connector	Motor	Connector	Motor	Connector
m850-S120/S3960	M23	m850-S140/S3240	M23	m850-S190/S3000	M23
m850-S120/M3960	M23	m850-S140/M3240	M23	m850-S190/M3000	M40
m850-S120/L3960	M23	m850-S140/L3240	M40	m850-S190/L2520	M40

Product extensions

Motor connection
Connection via connector

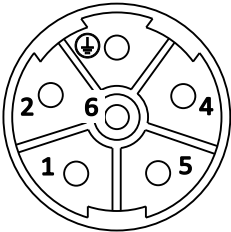


Standard connection

Connection of power and brake

ICN-M23 connector assignment

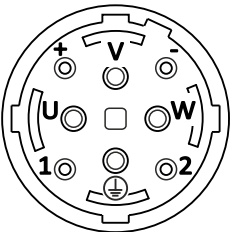
6-pole



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

M40 connector assignment for motor cables

8-pole



M40 8-pole		
Contact	Name	Meaning
+	BD1	Holding brake +
-	BD2	Holding brake -
PE	PE	PE conductor
U	U	Power phase U
V	V	Power phase V
W	W	Power phase W
1		Not assigned
2		Not assigned



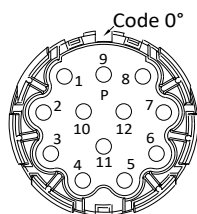
Product extensions

Motor connection
Connection via connector

Feedback and temperature monitoring connection

ICN-M23 connector assignment

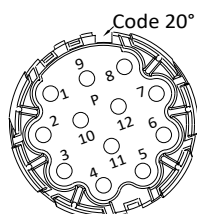
Resolver



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

ICN-M23 connector assignment

Incremental and SinCos absolute value encoder Hiperface®



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

Product extensions

Motor connection
Connection via connector



One Cable Technology (OCT)

Power, brake, feedback and temperature monitoring connection

M23 connector assignment for OCT motor cables



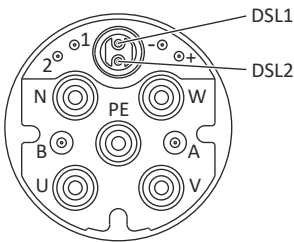
M23_OCT		
Contact	Name	Meaning
A	BD1	Holding brake +
B	BD2	Holding brake -
C		Not assigned
D		Not assigned
H	VCC/Daten +	VCC/data +
L	GND/Daten -	GND/data -
PE	PE	PE
U	U	Power phase U
V	V	Power phase V
W	W	Power phase W



Product extensions

Motor connection
Connection via connector

M40 connector assignment for OCT motor cables



M40_OCT		
Contact	Name	Meaning
-		Not assigned
+		Not assigned
1		Not assigned
2		Not assigned
A	BD1	Holding brake +
B	BD2	Holding brake -
DSL1	+	VCC/data +
DSL2	-	GND/data -
N		Not assigned
PE	PE	PE
U	U	Power phase U
V	V	Power phase V
W	W	Power phase W



Brakes

Optionally the motors can be ordered with a spring-applied brake as holding brake.

⚠ CAUTION!

They may not be used as safety elements (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 brakes must only be used as holding brakes for holding the axes at a standstill or in the deenergised state.
- ▶ The brake must not be used as a service brake.

⚠ CAUTION!

If no suitable voltage (incorrect value, incorrect polarity) is applied to the brake, the brake will be applied and can be overheated and destroyed by the motor continuing to rotate.

Motor supply cables

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

The following applies to Lenze system cables:

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

NOTICE

- ▶ The brakes become active when the supply voltage has been switched off (closed-circuit principle).
- ▶ When using the brakes purely as holding brakes, virtually no wear occurs on the friction surfaces.
- ▶ 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.

NOTICE

In case of travel axes, the compliance of the permissible ratio of mass inertia load/brake motor (J_L/J_{MB}) ensures that the permissible maximum switching energy of the brake will not be exceeded and at least the values given for the emergency stop functions from the given speed (see rated data) are applied.

For hoist axes, the load torque resulting from the weight acts additionally. In this case, the specifications for (J_L/J_{MB}) do not apply.



To simplify matters, the friction energy per switching cycle can be calculated using the formula below and must not exceed the limit value for emergency stops, which depends on the switching rate:

$Q = \frac{1}{2} \times J_{\text{ges}} \times \left(2\pi \times \frac{\Delta n}{60} \right)^2 \times \frac{M_N}{M_N - M_L}$	Q	J	Friction energy
	J_{total}	kgm ²	Total mass inertia (motor + load)
	Δn	rpm	Differential speed
	M_N	Nm	Rated torque of the brake
	M_L	nM	Load torque



The shortest operating times of the brakes are achieved by DC switching of the voltage and an external suppressor circuit (varistor or spark suppressor).

Without suppressor circuit, the operating times may increase. A varistor/ spark suppressor limits the breaking voltage peaks. It must be ensured that the power limit of the suppressor circuit is not exceeded. This limit depends on the brake current, brake voltage, disengagement time and the switching operations per time unit.

Furthermore the suppressor circuit is necessary for interference suppression and for increasing the service life of the relay contacts (external, is not integrated into the motor).



It is not possible to readjust the brake.

Product extensions

Brakes
Permanent magnet brakes



Permanent magnet brakes

Rated data

NOTICE

Engagement and disengagement times apply to rated voltage ($\pm 0\%$) and suppressor circuit of the brakes with a varistor with DC switching. Without a suppressor circuit, the times may be longer.

The currents are the maximum values when the brake is cold (value used for dimensioning the current supply). The values for a motor at operating temperature are considerably lower.

Requirements with regard to the DC 24 V brake: smoothed DC voltage, ripple $\leq 1\%$.

Maximum switching energy per emergency stop with $n = 3000$ rpm for at least 2000 emergency stops.

Motor			m850-S40/ S9000	m850-S40/ L9000	m850-S60/ S6000	m850-S60/ L6000	m850-S80/ S5500	m850-S80/ L5500
Supply voltage range	V _{in}	V	21.6 ... 26.4					
Supply voltage	V _{rated}	V	24					
Bemessungsdrehmoment								
At 20 °C	M _{rated}	Nm	0.4		2		4.5	
At 120 °C	M _{rated}	Nm	0.35		1.8		4	
Rated current	I _{rated}	A	0.33		0.46		0.5	
Engagement time t1	t ₁	ms	9		20		15	
Disengagement time t2	t ₂	ms	10		38		40	
Friction energy	Q _E	kJ	0.001					
Weight	m	kg	0.085		0.2		0.4	
Massenträgheitsmoment								
Brake	J	kgcm ²	0.0143		0.0691		0.185	
Brake motor	J _{MB}	kgcm ²	0.055	0.079	0.319	0.512	1.68	2.2
Load/brake motor ratio	J _L /J _{MB}		13263	9234	3620	2255	970	741



Spring-applied brakes

Rated data

NOTICE

Engagement and disengagement times apply to rated voltage ($\pm 0\%$) and suppressor circuit of the brakes with a varistor with DC switching. Without a suppressor circuit, the times may be longer.

The currents are the maximum values when the brake is cold (value used for dimensioning the current supply). The values for a motor at operating temperature are considerably lower.

Requirements with regard to the DC 24 V brake: smoothed DC voltage, ripple $\leq 1\%$.

Maximum switching energy for each emergency stop with $n = 3000$ rpm for a maximum of 3-6 emergency stops per hour.

Motor			m850-S120/ S3960	m850-S120/ M3960	m850-S120/ L3960	m850-S140/ S3240	m850-S140/ M3240	m850-S140/ L3240
Supply voltage range	V _{in}	V	21.6 ... 26.4					
Supply voltage	V _{rated}	V	24					
Bemessungsdrehmoment								
At 20 °C	M _{rated}	Nm	20			34		
At 120 °C	M _{rated}	Nm	18			32		
Rated current	I _{rated}	A	1.2			1.4		
Engagement time t1	t ₁	ms	30			50		
Disengagement time t2	t ₂	ms	110			150		
Friction energy	Q _E	kJ	3.1					
Weight	m	kg	2.0			3.0		
Massenträgheitsmoment								
Brake	J	kgcm ²	0.75			2.01		
Brake motor	J _{MB}	kgcm ²	7.5	13.3	19.2	18.1	32.5	46.9
Load/brake motor ratio	J _L /J _{MB}		74	47	32	34	19	13

Motor			m850-S190/S3000	m850-S190/M3000	m850-S190/L2520
Supply voltage range	V _{in}	V	21.6 ... 26.4		
Supply voltage	V _{rated}	V	24		
Bemessungsdrehmoment					
At 20 °C	M _{rated}	Nm	102		
At 120 °C	M _{rated}	Nm	100		
Rated current	I _{rated}	A	2.1		
Engagement time t1	t ₁	ms	40		
Disengagement time t2	t ₂	ms	230		
Friction energy	Q _E	kJ	5.7		
Weight	m	kg	6.70		
Massenträgheitsmoment					
Brake	J	kgcm²	10.42		
Brake motor	J _{MB}	kgcm²	72.6	128.9	204.3
Load/brake motor ratio	J _L /J _{MB}		15	8	5



Feedback

For speed control with a servo inverter, the servo motor can be equipped with the following feedback systems:

m850-S40 ... m850-S80

Inverter	Feedback without functional safety		
	Resolver (only m850-S60, m850-S80)	Absolute value encoder (only m850-S60, m850-S80)	Digital absolute value encoder for OCT
i950 servo inverter	RS2	AM128-8V-H	AM17-8V-D
i750 servo inverter	RS2	AM128-8V-H	AM17-8V-D
8400 TopLine Inverter Drives	RS2	AM128-8V-H	-
9400 HighLine Servo Drives	RS2	AM128-8V-H	-

Inverter	Feedback with functional safety		
	Resolver (only m850-S60, m850-S80)	Absolute value encoder (only m850-S60, m850-S80)	Digital absolute value encoder for OCT (only m850-S60, m850-S80)
i950 servo inverter	RV22	AM128-8V-K2	AM17-8V-D2
i750 servo inverter	RV22	AM128-8V-K2	AM17-8V-D2
9400 HighLine Servo Drives	RV22	AM128-8V-K2	-

m850-S120 ... m850-S190

Inverter	Feedback without functional safety		
	Resolver	Absolute value encoder	Digital absolute value encoder for OCT
i950 servo inverter	RS0	AM128-8V-H	AM20-8V-D
i750 servo inverter	RS0	AM128-8V-H	AM20-8V-D
8400 TopLine Inverter Drives	RS0	AM128-8V-H	-
9400 HighLine Servo Drives	RS0	AM128-8V-H	-

Inverter	Feedback with functional safety		
	Resolver	Absolute value encoder	Digital absolute value encoder for OCT
i950 servo inverter	RV03	AM128-8V-K2	AM20-8V-D2
i750 servo inverter	RV03	AM128-8V-K2	AM20-8V-D2
9400 HighLine Servo Drives	RV03	AM128-8V-K2	-

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			RS0	RS2	RV03	RV22
Speed-dependent safety functions			Nein	Nein	Ja	Ja
Design			Mounting			
Resolution - angle		'	0.8	0.8	0.8	0.8
Min. accuracy		'	-10	-10	-10	-10
Max. accuracy		'	10	10	10	10
Absolute positioning			1 revolution	1 revolution	1 revolution	1 revolution
Max. speed	$n_{\max}$	rpm	8000	20000	8000	20000
Max. DC input voltage	$V_{\text{in,max}}$	V	10	7	10	7
Max. input frequency	$f_{\text{in,max}}$	kHz	4	10	4	10
Ratio stator/rotor			0.3	0.5	0.3	0.5
Min ratio tolerance		%	-5	-10	-5	-10
Max ratio tolerance		%	5	10	5	10
Rotor impedance	Z_{ro}	Ω	51+j90	86+j120	51+j90	86+j120
Stator impedance	Z_{so}	Ω	102+j150	140+j273	102+j150	140+j273
Impedance	Z_{rs}	Ω	44+j76	70+j106	44+j76	70+j106
Min. insulation resistance at DC 500 V	R_{min}	M Ω	10	10	10	10
Number of pole pairs			1	1	1	1
Max. angle error Min		'	-10	-10	-10	-10
Max. angle error Max		'	10	10	10	10

Speed-dependent safety functions

Feedback			RV03	RV22
Max. permissible angular acceleration	α	rad/s ²	19000	200000
Functional safety				
EN IEC 61800-5-2/EN IEC 61508			SIL3	
EN IEC 61800-5-2/EN IEC 62061				SIL2
EN ISO 13849-1			Up to Performance Level e	Up to Performance Level d



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.



In conjunction with the AMxx-8V-D digital absolute value encoder, the motor supports the HIPERFACE DSL® open motor feedback protocol for One Cable Technology (OCT).

Feedback type			Digital absolute value encoder				SinCos absolute value encoder	
Feedback			AM17-8V-D	AM17-8V-D2	AM20-8V-D	AM20-8V-D2	AM128-8V-H	AM128-8V-K2
Speed-dependent safety functions			Nein	Ja	Nein	Ja	Nein	Ja
Design			Mounting	Mounting	Mounting	Mounting	Mounting	Mounting
Encoder type			Multi-turn	Multi-turn	Multi-turn	Multi-turn	Multi-turn	Multi-turn
Resolution		bit	-	-	20	20	-	-
Pulses			-	-	-	-	128	128
Output signals			Digital	Digital	Digital	Digital	SinCos 1 Vss	SinCos 1 Vss
Interfaces			Hiperface	Hiperface	Hiperface	Hiperface	Hiperface	Hiperface
Absolute revolution			4096	4096	4096	4096	4096	4096
Resolution - angle			-	-	0.02	0.02	0.4	0.4
Min. accuracy		'	-	-	-	-	-1.3	-1.3
Max. accuracy		'	-	-	-	-	1.3	1.3
Fehlergrenze Positionswert								
System accuracy			-	-	1.7	1.7	-	-
Integral nonlinearity			-	-	1	1	-	-
Min. DC input voltage	$V_{in,min}$	V	7	7	-	-	7	7
Max. DC input voltage	$V_{in,max}$	V	12	12	-	-	12	12
Max. current consumption	I_{max}	A	0.15	0.15	0.15	0.15	0.06	0.06
Limit frequency	f_{max}	kHz	-	-	-	-	200	200

Speed-dependent safety functions

Feedback			AM17-8V-D2	AM20-8V-D2	AM128-8V-K2
Max. permissible angular acceleration	α	rad/s ²	240000	240000	240000
Functional safety					
EN IEC 61800-5-2/EN IEC 61508				SIL2	SIL2
EN IEC 61800-5-2/EN IEC 62061			SIL2		
EN ISO 13849-1			Up to Performance Level d		



Temperature monitoring

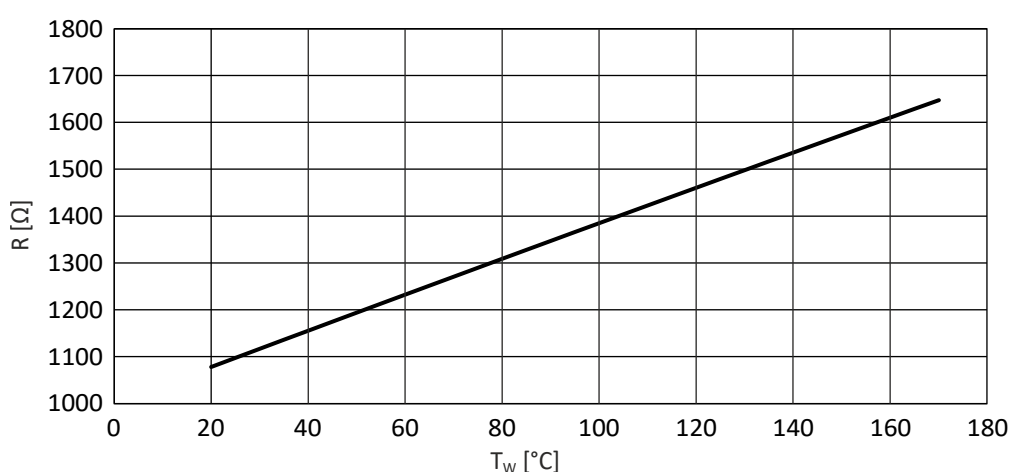
Thermal detectors PT1000

The thermal sensors used continuously monitor 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!**

The motors are monitored via three thermal sensors connected in series (1x PT1000 + 2x PTC 150 °C). This makes it possible to determine the motor temperature in the permissible operating range and at the same time execute the overtemperature response configured in the inverter in one of the winding strands.



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



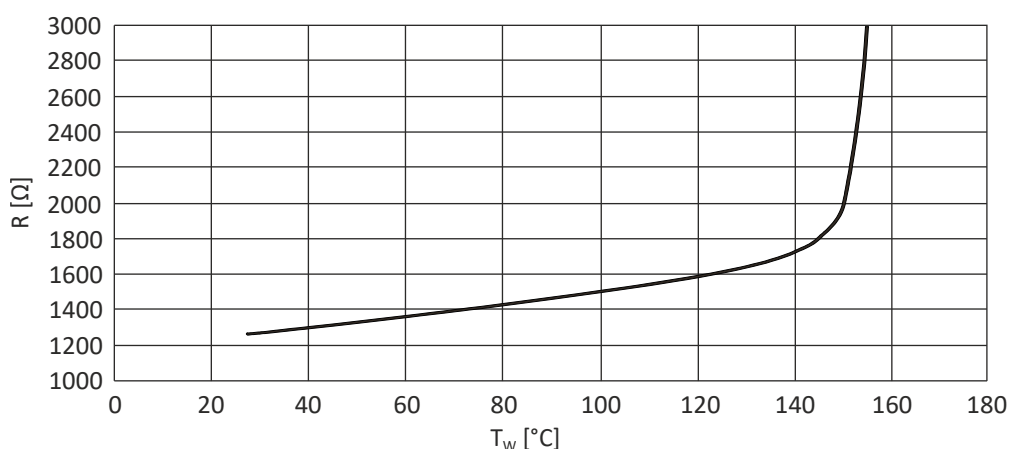
R Resistance
T_w Winding temperature



The three thermal sensors connected in series are identified on the nameplate by the short designation "PT1k+2PTC".



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



R Resistance
T_w Winding temperature



Product codes

Planetary and bevel planetary gearbox product code g7□0

Example		G	7	5	A	P	113	M	V	C	R	1	C00
Portfolio segment	Gearbox	G											
Product	7		7										
Product type	0			0									
	2			2									
	3			3									
	5			5									
	8			8									
Product generation	A				A								
Product type	bevel planetary gearbox					B							
	Planetary gearbox					P							
torque (Examples)	44 Nm						044						
	97 Nm						097						
	130 Nm						113						
	195 Nm						119						
Type of construction	Geared motor							M					
	Gearbox							N					
Output shaft	Output shaft with featherkey								V				
	Smooth output shaft								G				
	Flanged output shaft with dowel hole								E				
Housing type	Without foot with centering									C			
Flange mounting	Without flange										R		
	Flange with through holes										K		
Number of stages	1-stage											1	
	2-stage											2	
	3-stage											3	
Motor mounting	Motor integrated												C00
	IEC adapter with jaw coupling												Nxx Txx
	NEMA adapter with jaw coupling												Axx
	Servo motor-adapter with plug-in hollow shaft												Sxx



Planetary and bevel planetary gearbox product code g8□0

Example		G	8	4	A	P	040	M	V	C	R	1	C00
Portfolio segment	Gearbox	G											
Product	8		8										
Product type	2			2									
	4			4									
	5			5									
	6			6									
	7			7									
	8			8									
Product generation	A				A								
Product type	bevel planetary gearbox					B							
	Planetary gearbox					P							
torque (Examples)	40 Nm						040						
	80 Nm						080						
	130 Nm						113						
	300 Nm						130						
	1000 Nm						210						
	1800 Nm						218						
Type of construction	Geared motor							M					
	Gearbox							N					
Output shaft	Output shaft with featherkey								V				
	Smooth output shaft								G				
	Toothed output shaft								Z				
	Flanged output shaft								F				
	Flanged output shaft with dowel hole								E				
	Flanged hollow output shaft with dowel hole								K				
	Shrink disc								S				
	Hollow shaft								H				
Housing type	Without foot with centering									C			
Flange mounting	Without flange										R		
	Flange with through holes										N		
Number of stages	1-stage											1	
	2-stage											2	
Motor mounting	Motor integrated												C00
	IEC adapter with jaw coupling												Nxx Txx
	NEMA adapter with jaw coupling												Axx
	Servo motor-adapter with plug-in hollow shaft												Sxx



Product ID m850 synchronous servo motor

Example		M	8	5	A	S	120	S	25	5	S	0	R	C	C	0
Meaning	Variant	Product ID														
Portfolio segment		M														
Product family	8		8													
Product level	5			5												
Product generation	1				A											
Product type	Synchronous servo motor					S										
Flange height	40						40									
	60						60									
	80						80									
	120						120									
	140						140									
	190						190									
Motor length	Short							S								
	Medium							M								
	Long							L								
Speed	25 x 100 rpm								25							
	30 x 100 rpm								30							
	32 x 100 rpm								32							
	40 x 100 rpm								40							
	55 x 100 rpm								55							
	60 x 100 rpm								60							
	90 x 100 rpm								90							
Degree of protection	IP5x									5						
	IP6x									6						
Cooling	No cooling										S					
Brake mounting	No brake											0				
	Spring-applied brake											F				
	Permanent magnet brake											P				
encoder mounting	Resolver												R			
	Absolute value encoder												A			
	Digital absolute value encoder HIPERFACE DSL®												D			
Product approval	CE													C		
	CE; cULus													L		
	CE; cURus													U		
Internal key	40, 60, 80														V	
	120, 140, 190														C	
																0



Motor data

Rated data

Inverter mains connection 400 V, Self-ventilated motors

Motor data

Rated data

Inverter mains connection 400 V, Self-ventilated motors

Motor			m850-S40/ S9000	m850-S40/ L9000	m850-S60/ S6000	m850-S60/ L6000	m850-S80/ S5500	m850-S80/ L5500
Standstill torque	M_0	Nm	0.180	0.350	0.700	1.50	2.80	3.50
Rated torque	M_{rated}	Nm	0.120	0.210	0.500	0.900	1.70	2.10
Max. torque	M_{max}	Nm	0.72	1.4	2.6	5.8	10.5	13.4
Rated speed	n_{rated}	rpm	9000	9000	6000	6000	5500	5500
Max. speed	n_{max}	rpm	10000	10000	10000	10000	10000	10000
Rated power	P_{rated}	kW	0.11	0.2	0.325	0.55	1	1.2
Standstill current	I_0	A	0.800	1.60	0.900	1.90	3.50	4.20
Rated current	I_{rated}	A	0.700	1.20	0.700	1.20	2.30	2.80
Max. current	I_{max}	A	3.20	6.40	6.40	13.2	13.2	15.6
Rated voltage	V_{rated}	V	149	134	310	318	282	292
Rated frequency	f_{rated}	Hz	300	300	300	300	275	275
Moment of inertia	J	kgcm ²	0.03	0.054	0.22	0.413	1.40	1.93
Efficiency	η		0.64	0.73	0.84	0.85	0.87	0.88
Torque constant	$Kt_{0\ 150\ ^\circ C}$	Nm/A	0.23	0.22	0.78	0.79	0.8	0.83
Voltage constant	$KE_{LL\ 150\ ^\circ C}$	V/ (1000/ min)	12.32	11.98	45.25	43.62	45.59	47.82
Stator terminal resistance	$R_{UV\ 20\ ^\circ C}$	Ω	25.6	8.6	26.4	9.8	4.6	2.8
Stator terminal resistance	$R_{UV\ 150\ ^\circ C}$	Ω	38.579	12.96	39.785	14.769	6.932	4.22
Stator inductance	L	mH	4.87	2.3	16.14	8.48	4.74	3.74
Weight	m	kg	0.5	0.7	1.45	2	3.2	3.85

Motor data

Rated data

Inverter mains connection 400 V, Self-ventilated motors



Motor			m850-S120/ S3960	m850-S120/ M3960	m850-S120/ L3960	m850-S140/ S3240	m850-S140/ M3240	m850-S140/ L3240
Standstill torque	M_0	Nm	6.50	11.0	15.0	11.0	21.0	28.0
Rated torque	M_{rated}	Nm	4.80	7.40	9.00	8.50	14.0	17.4
Max. torque	M_{max}	Nm	14.5	29.0	44.0	26.0	53.5	80.0
Rated speed	n_{rated}	rpm	3960	3960	3960	3240	3240	3240
Max. speed	n_{max}	rpm	6000	6000	6000	6000	6000	6000
Rated power	P_{rated}	kW	2	3.1	3.7	2.9	4.8	5.9
Standstill current	I_0	A	5.50	8.80	12.1	7.40	14.0	18.0
Rated current	I_{rated}	A	4.30	6.40	7.80	6.30	10.0	12.2
Max. current	I_{max}	A	15.0	28.0	42.0	23.0	45.5	66.0
Rated voltage	V_{rated}	V	330	330	320	340	330	330
Rated frequency	f_{rated}	Hz	330	330	330	270	270	270
Moment of inertia	J	kgcm ²	6.50	12.4	18.2	15.7	30.1	44.6
Efficiency	η		0.902	0.914	0.914	0.879	0.915	0.926
Torque constant	$Kt_{0\ 150\ ^\circ C}$	Nm/A	1.18	1.25	1.24	1.49	1.50	1.56
Voltage constant	$KE_{LL\ 150\ ^\circ C}$	V/ (1000/ min)	68.99	73.1	72.93	86.81	88.36	90.67
Stator terminal resistance	$R_{UV\ 20\ ^\circ C}$	Ω	2.24	1.02	0.63	1.436	0.562	0.366
Stator terminal resistance	$R_{UV\ 150\ ^\circ C}$	Ω	3.376	1.537	0.949	2.164	0.847	0.552
Stator inductance	L	mH	11.5	6.73	4.58	9.90	5.22	3.76
Weight	m	kg	6.5	9.25	12.0	9.50	14.5	19.5

Motor			m850-S190/S3000	m850-S190/M3000	m850-S190/L2520
Standstill torque	M_0	Nm	27.0	46.0	67.0
Rated torque	M_{rated}	Nm	16.0	24.0	35.0
Max. torque	M_{max}	Nm	71.0	120	200
Rated speed	n_{rated}	rpm	3000	3000	2520
Max. speed	n_{max}	rpm	4500	4500	4500
Rated power	P_{rated}	kW	5	7.5	9.2
Standstill current	I_0	A	16.0	26.8	30.8
Rated current	I_{rated}	A	10.3	15.4	17.7
Max. current	I_{max}	A	64.0	87.0	112
Rated voltage	V_{rated}	V	340	330	345
Rated frequency	f_{rated}	Hz	250	250	210
Moment of inertia	J	kgcm ²	60.8	117	193
Efficiency	η		0.905	0.919	0.929
Torque constant	$Kt_{0\ 150\ ^\circ C}$	Nm/A	1.69	1.72	2.18
Voltage constant	$KE_{LL\ 150\ ^\circ C}$	V/ (1000/ min)	99.24	101.13	124.86
Stator terminal resistance	$R_{UV\ 20\ ^\circ C}$	Ω	0.452	0.196	0.16
Stator terminal resistance	$R_{UV\ 150\ ^\circ C}$	Ω	0.681	0.295	0.241
Stator inductance	L	mH	5.46	2.90	2.76
Weight	m	kg	19.8	28.5	41.0



Torque characteristics



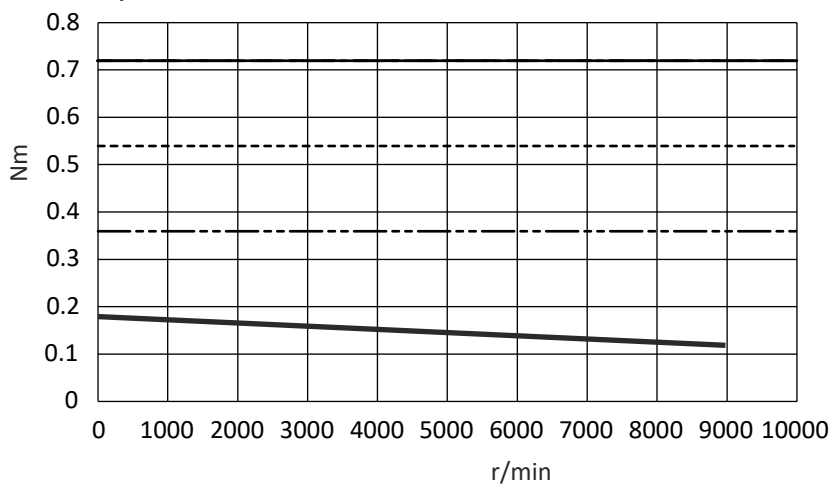
The torque/speed characteristic for your motor/inverter combination can be found on the Internet:

<http://www.lenze.com> → Product Finder → M-n characteristics



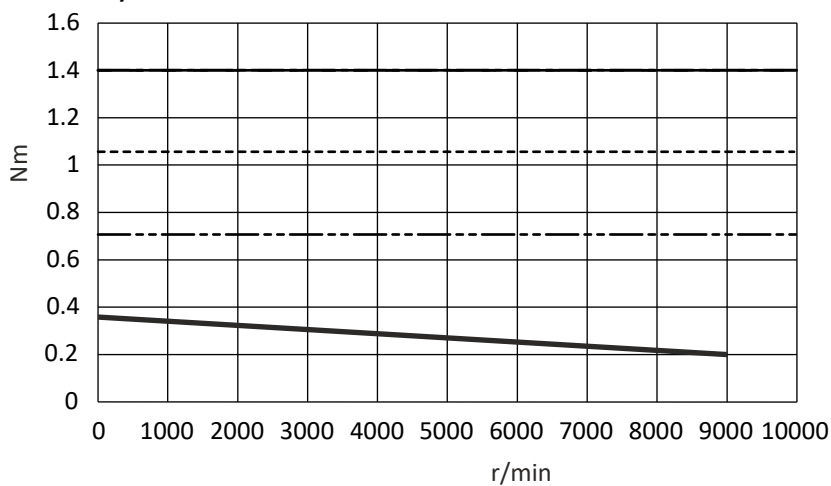
The following data apply to a mains voltage 3 x 400 V of the inverter.

m850-S40/S9000



- - - $M_{max} = 440 \text{ V}$
 — $M_{max} = 400 \text{ V}$
 — $M_{max} = 360 \text{ V}$
 - - - $M_{max} @ I_{max} = 3 \times I_0$
 - - - $M_{max} @ I_{max} = 2 \times I_0$
 — S1

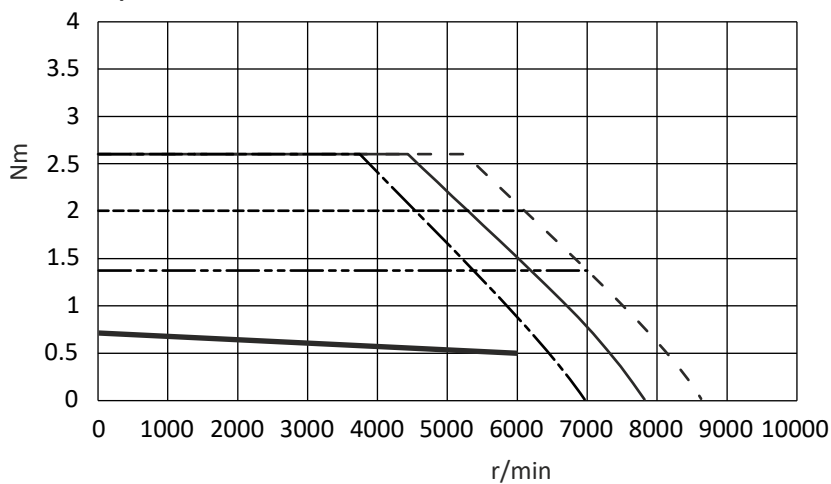
m850-S40/L9000



- - - $M_{max} = 440 \text{ V}$
 — $M_{max} = 400 \text{ V}$
 — $M_{max} = 360 \text{ V}$
 - - - $M_{max} @ I_{max} = 3 \times I_0$
 - - - $M_{max} @ I_{max} = 2 \times I_0$
 — S1

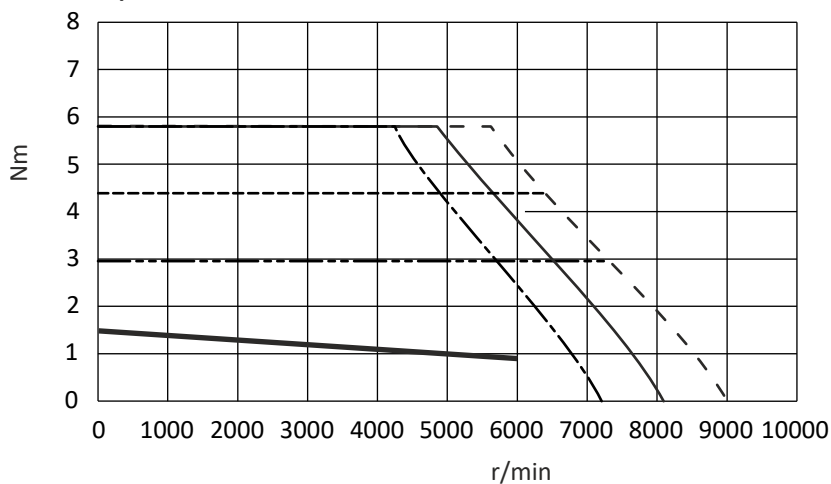


m850-S60/S6000



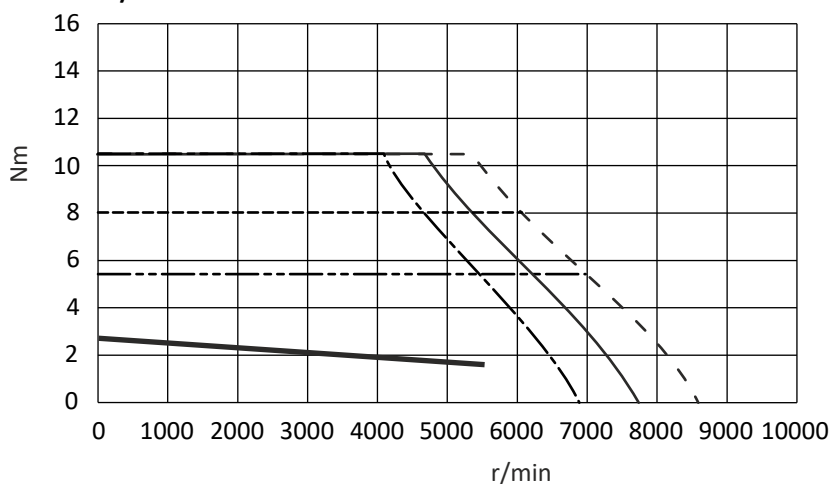
- $M_{\max} = 440 \text{ V}$
- $M_{\max} = 400 \text{ V}$
- · - $M_{\max} = 360 \text{ V}$
- $M_{\max} @ I_{\max} = 3 \times I_0$
- · - $M_{\max} @ I_{\max} = 2 \times I_0$
- S1

m850-S60/L6000



- $M_{\max} = 440 \text{ V}$
- $M_{\max} = 400 \text{ V}$
- · - $M_{\max} = 360 \text{ V}$
- $M_{\max} @ I_{\max} = 3 \times I_0$
- · - $M_{\max} @ I_{\max} = 2 \times I_0$
- S1

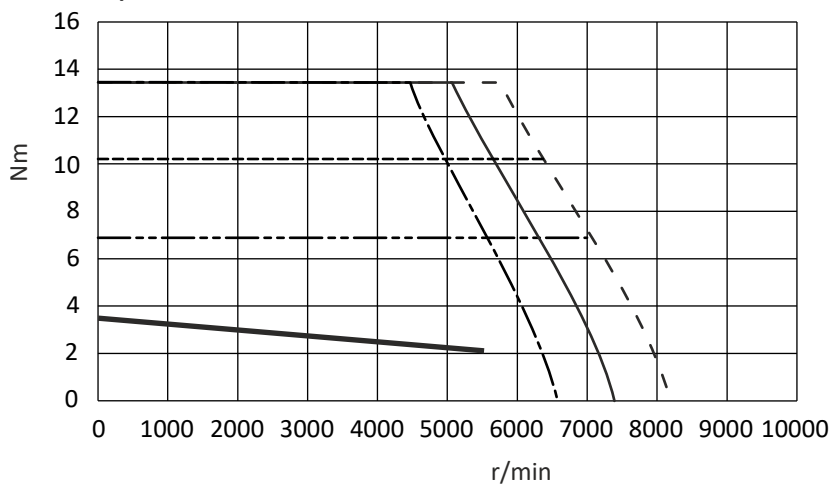
m850-S80/S5500



- $M_{\max} = 440 \text{ V}$
- $M_{\max} = 400 \text{ V}$
- · - $M_{\max} = 360 \text{ V}$
- $M_{\max} @ I_{\max} = 3 \times I_0$
- · - $M_{\max} @ I_{\max} = 2 \times I_0$
- S1

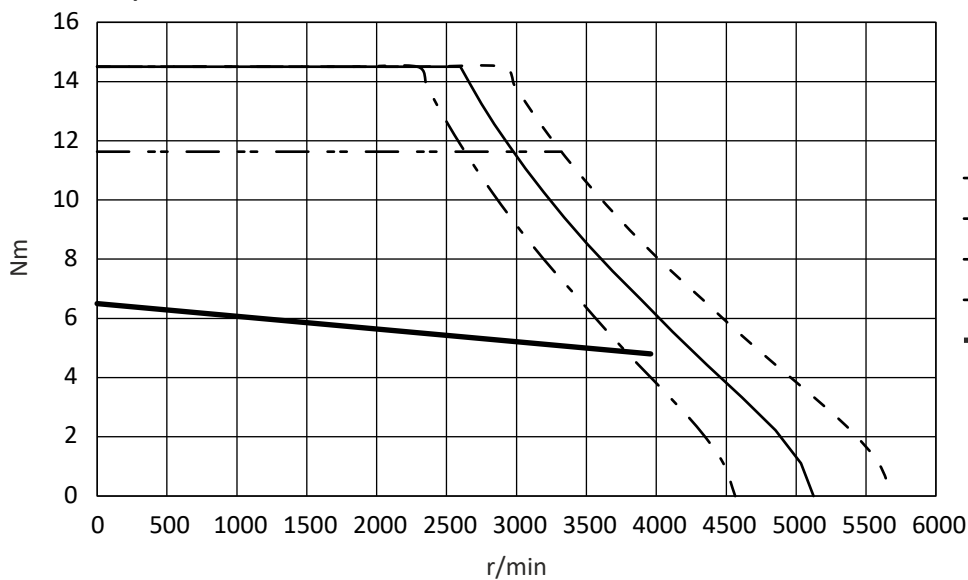


m850-S80/L5500



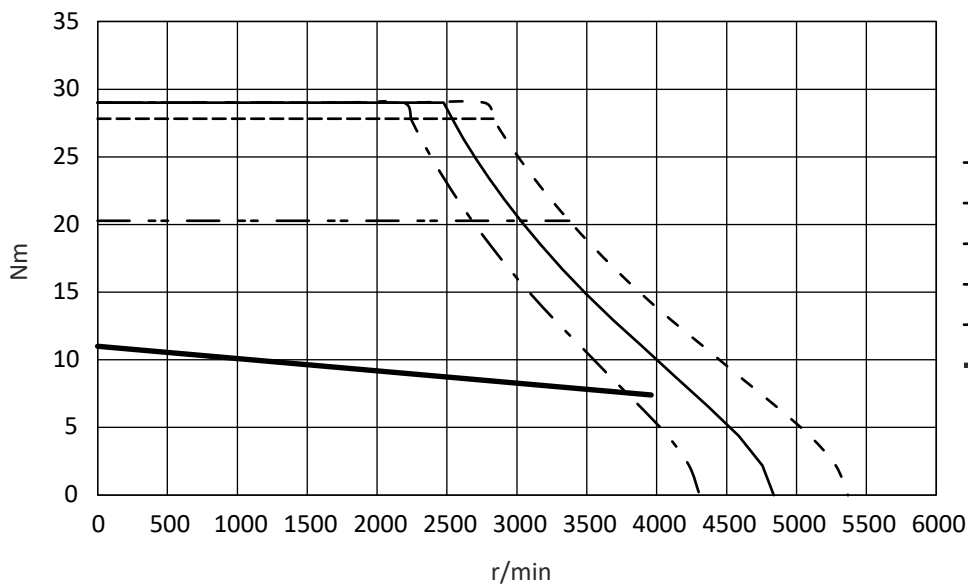
- - - $M_{\max} = 440 \text{ V}$
- $M_{\max} = 400 \text{ V}$
- - - $M_{\max} = 360 \text{ V}$
- - - $M_{\max} @ I_{\max} = 3x I_0$
- - - $M_{\max} @ I_{\max} = 2x I_0$
- S1

m850-S120/S3960



- - - $M_{\max} = 440 \text{ V}$
- $M_{\max} = 400 \text{ V}$
- - - $M_{\max} = 360 \text{ V}$
- - - $M_{\max} @ I_{\max} = 2x I_0$
- S1

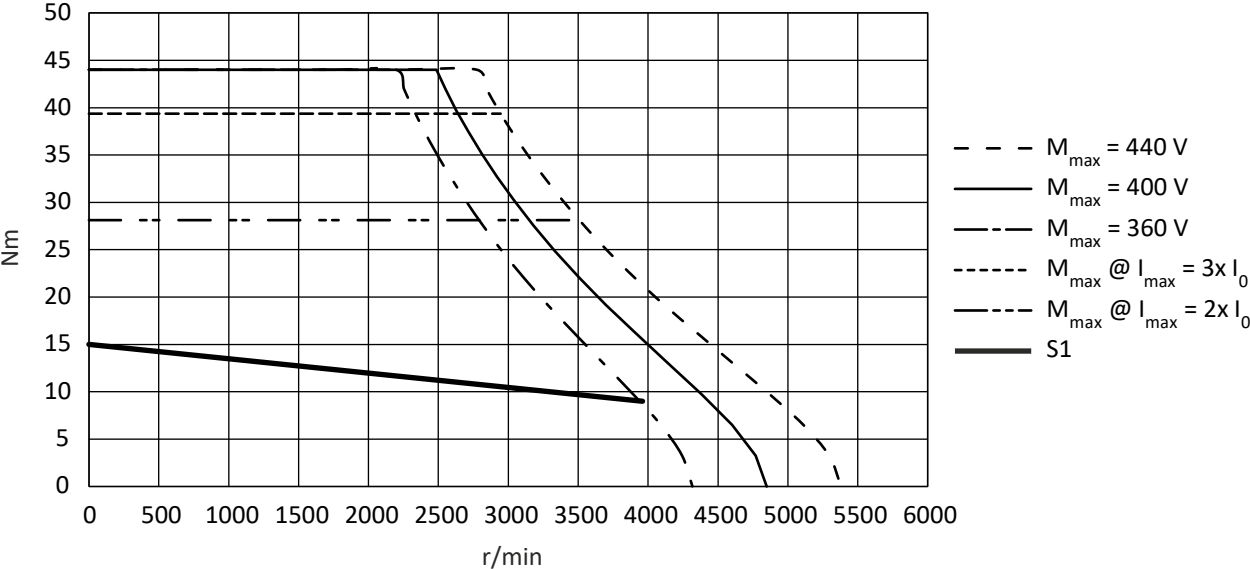
m850-S120/M3960



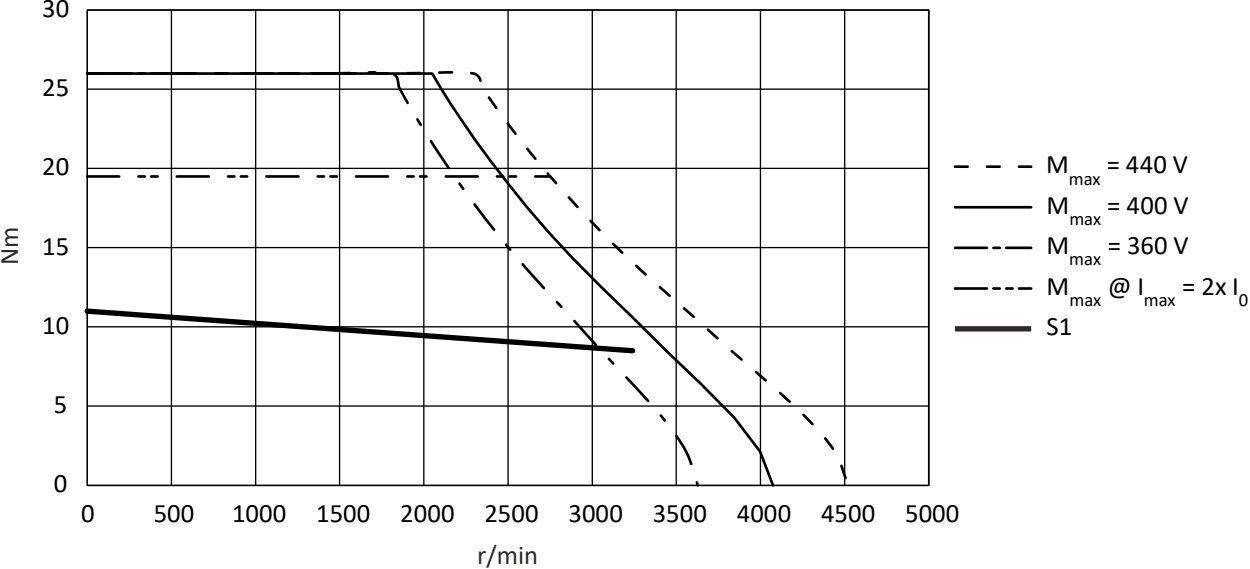
- - - $M_{\max} = 440 \text{ V}$
- $M_{\max} = 400 \text{ V}$
- - - $M_{\max} = 360 \text{ V}$
- - - $M_{\max} @ I_{\max} = 3x I_0$
- - - $M_{\max} @ I_{\max} = 2x I_0$
- S1



m850-S120/L3960

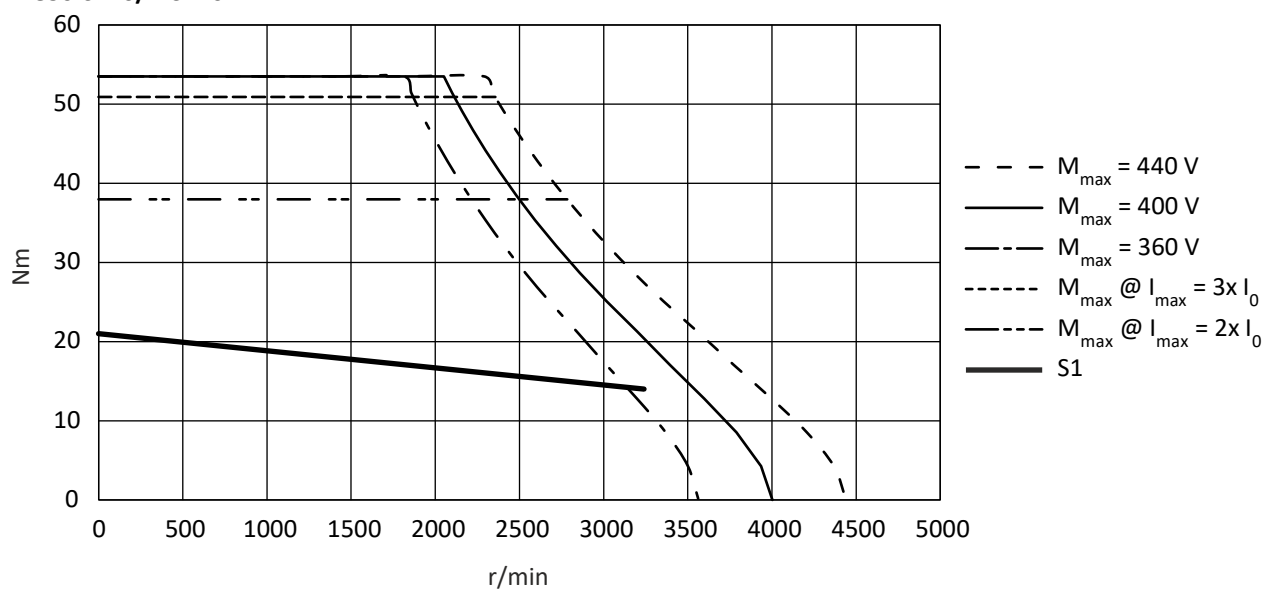


m850-S140/S3240

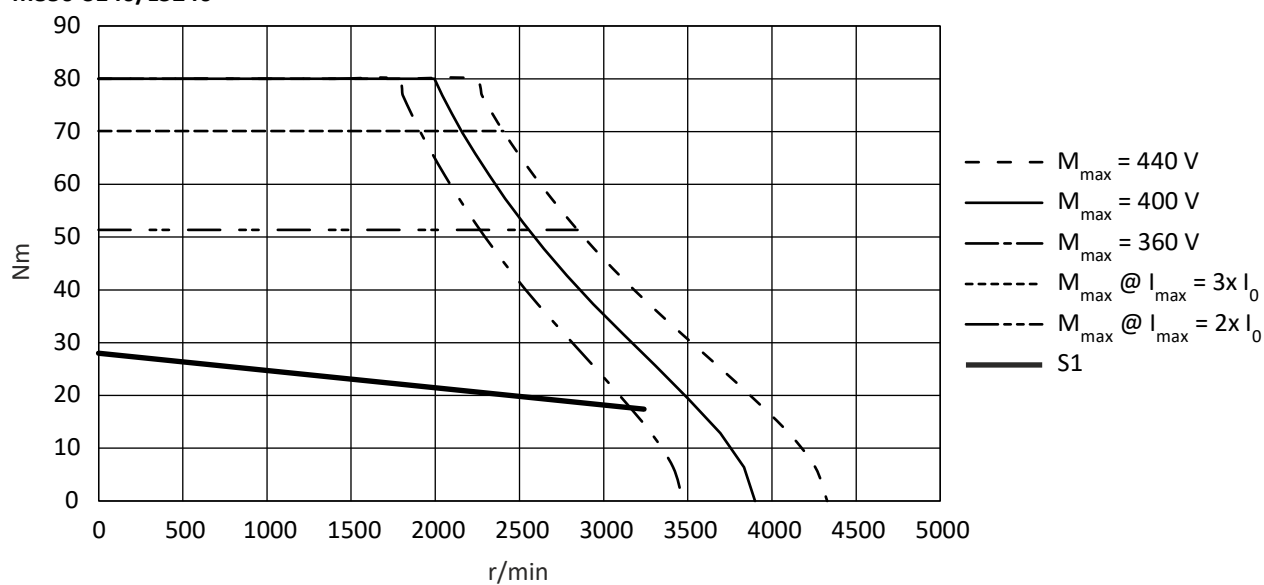




m850-S140/M3240

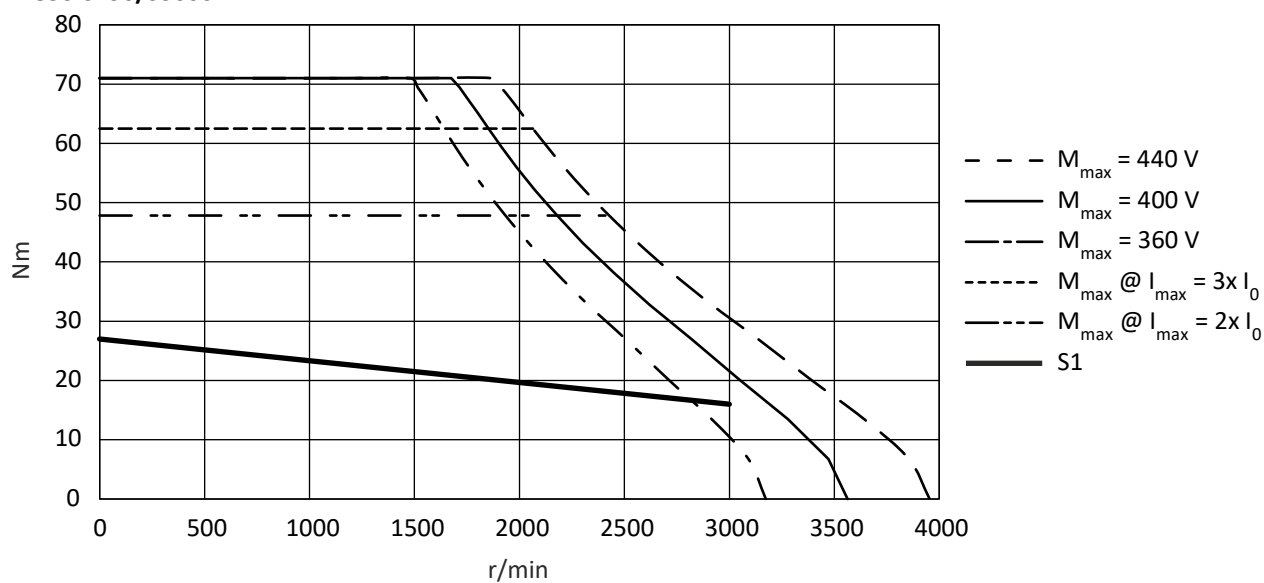


m850-S140/L3240

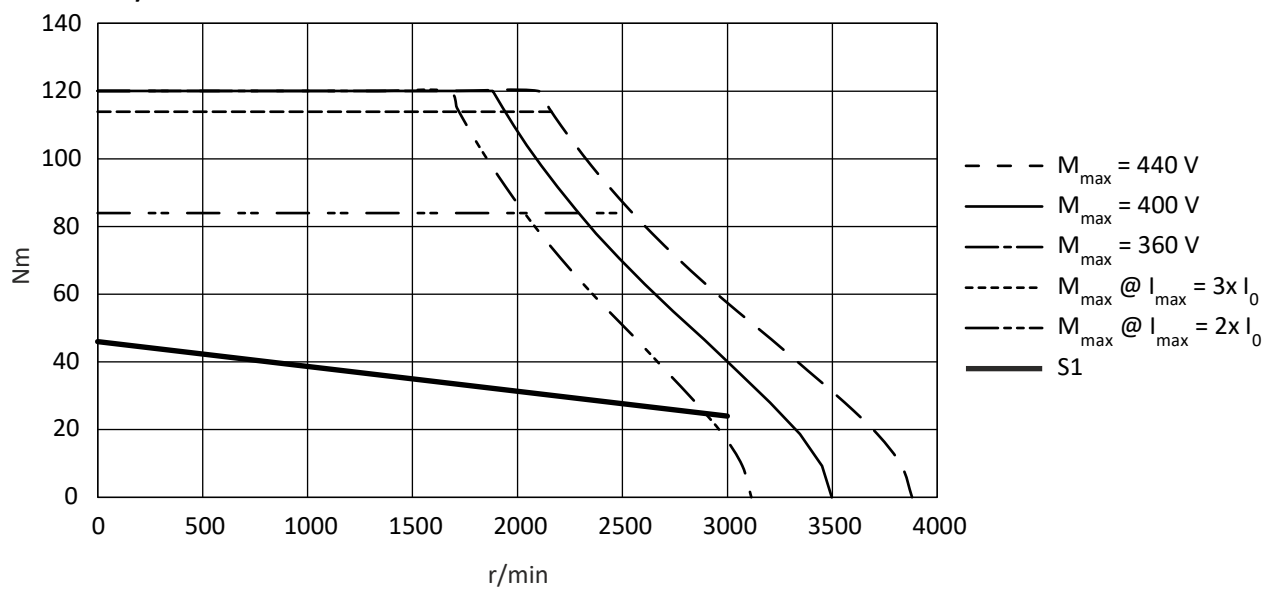




m850-S190/S3000

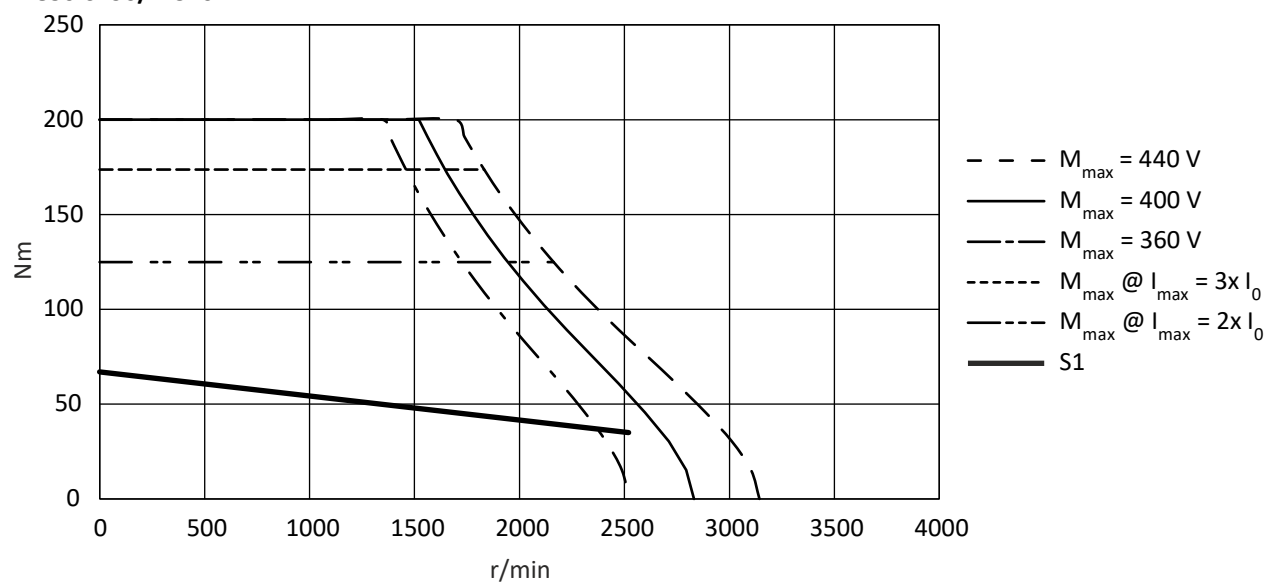


m850-S190/M3000





m850-S190/L2520





Environmental notes and recycling

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



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



The crossed-out wheeled bin symbol is located on the equipment. This information indicates that used electrical and electronic products must not be disposed of with normal household waste.

The EU Directive 2012/19/EU: Directive on waste electrical and electronic equipment (WEEE) [UKCA: S.I. 2013/3113 - The Waste Electrical and Electronic Equipment Regulations 2013], which has been transposed into national law by the respective EU member states, applies to the disposal of equipment. As a customer, you have the option of disposing of the electrical and electronic equipment that you have purchased from us and that is subject to WEEE via the Lenze branch in your country.

Lenze addresses in Europe: <https://www.lenze.com/en-de/company/global-presence>

Some Lenze products contain batteries/rechargeable batteries in accordance with REGULATION (EU) No. 2023/1542: Battery Directive [UKCA: S.I. 2009/890 - The Waste Batteries and Accumulators Regulations 2009]. Any batteries/rechargeable batteries included are designed to last the life of the product and do not need to be replaced or otherwise removed by the end user.



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

REACH

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

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

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

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



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

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



Appendix

Good to know

Operating modes of the motor

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.

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

The most important operating modes

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



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

Enclosures

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

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

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

