

Motors - ASM

General	143
ErP Directive 2009/125/EC	143
Regulation (EU) 2019/1781	144
Torques	146
Line voltages	146
Line frequencies	147
Rating plate	147
Terminal box	147
Motor connections	148
Terminal connections for single speed motors without motor protection	149
Terminal connections for single speed motors with motor protection	150
Terminal connections for pole changing motors in Dahlander connection (Δ/YY or Y/YY).....	151
Terminal connections for pole changing motors with two separate windings (YY or Δ/Δ)	152
Plug-and-socket connection	153
Motor protection	154
Thermistors (PTC)	154
Thermostatic protection	155
KTY sensors	156
PT100 sensors	157
Insulation	158
IP – Protection classes	158
Degrees of protection provided by enclosures for electrical equipment.....	158
Speed of output shaft	159
Duty types as defined by EN 60034	160
General	160
Continuous running duty (S1)	160
Short-time duty (S2)	160
Intermittent periodic duty (S3)	161
Intermittent periodic duty with starting (S4)	162
Intermittent periodic duty with electric braking (S5)	163
Continuous-operation periodic duty (S6)	164
Continuous-operation periodic duty with electric braking (S7)	164
Continuous-operation periodic duty with relative load/speed changes (S8)	165
Duty with non-periodic load and speed variations (S9)	165
Duty with discreet constant loads and speeds (S10)	166
Operation with frequency converter.....	167
Notes on design	167
Increased torque with reduced duty factor	167
Increased torque with external fan	167
Energy-saving function	168
Regeneration	168
Notes on operation with other-make frequency inverters	168
Technical data.....	169
Technical data of the 50 Hz motors.....	169
4-pole IE1 motors for continuous operation S1, line frequency 50 Hz	169
4-pole IE2 motors for continuous operation S1, line frequency 50 Hz	170
4-pole IE2 motors for continuous operation S1, mains frequency 50 Hz	171
4-pole IE3 motors for continuous operation S1, line frequency 50 Hz	172 ▶

Energy Efficient Geared Motors

Electric overhead conveyors series BM

4-pole IE3 motors for continuous operation S1, mains frequency 50 Hz.....	173
4 pole motors for periodic duty S3/S6-75 %, Mains Frequency 50 Hz.....	174
4 pole motors for periodic duty S3/S6, Mains Frequency 50 Hz	175
4/2-pole Δ/YY motors for continuous running duty (S1) and 50 Hz mains frequency	176
8/4-pole Δ/YY motors for continuous running duty (S1) and 50 Hz mains frequency	177
8/2-pole YY motors for intermittent periodic duty S3 25/75 % and 50 Hz mains frequency.....	178
12/2-pole YY motors for intermittent periodic duty S3 25/75 % and 50 Hz mains frequency.....	179
Technical data of the 60 Hz motors.....	180
4-pole IE1 motors for continuous operation S1, mains frequency 60 Hz.....	180
4-pole IE2 motors for continuous operation S1, mains frequency 60 Hz.....	181
4-pole IE2 motors for continuous operation S1, mains frequency 60 Hz.....	182
4-pole IE3 motors for continuous operation S1, line frequency 60 Hz.....	183
4-pole IE3 motors for continuous operation S1, mains frequency 60 Hz.....	184
4-pole motors for intermittent periodic duty (S3/S6 75 %) and 60 Hz mains frequency.....	185
4-pole motors for intermittent periodic duty (S3/S6) and 60 Hz mains frequency.....	186
4/2-pole motors Δ/YY for continuous operation S1, line frequency 60 Hz.....	187
8/4-pole motors Δ/YY for continuous operation S1, line frequency 60 Hz.....	188
8/2-pole YY motors for intermittent periodic duty S3 25/75 % and 60 Hz mains frequency.....	189
12/2-pole motors YY for intermittent periodic duty S3-25/75 %, line frequency 60 Hz.....	190
Operation with frequency converter, 50 Hz	191
IE1 Motor torques for frequency-converter range 5 Hz - 70 Hz, line frequency 50 Hz	191
IE1 Motor torques for frequency-converter range 5 Hz - 100 Hz, line frequency 50 Hz	192
IE2 Motor torques for frequency-converter range 5 Hz - 70 Hz, line frequency 50 Hz	193
IE2 Motor torques for frequency-converter range 5 Hz - 100 Hz, line frequency 50 Hz	194
IE3 Motor torques for frequency-converter range 5 Hz - 70 Hz. line frequency 50 Hz	195
IE3 Motor torques for frequency-converter range 5 Hz - 100 Hz, line frequency 50 Hz	196
Operation with frequency converter, 60 Hz	197
IE1 Motor torques for frequency-converter range 6 Hz - 84 Hz. line frequency 60 Hz	197
IE1 Motor torques for frequency-converter range 6 Hz - 120 Hz. line frequency 60 Hz	198
IE2 Motor torques for frequency-converter range 5 Hz - 80 Hz, line frequency 60 Hz	199
IE2 Motor torques for frequency-converter range 5 Hz - 120 Hz. line frequency 60 Hz	200
IE3 Motor torques for frequency-converter range 5 Hz - 80 Hz, line frequency 60 Hz	201
IE3 Motor torques for frequency-converter range 5 Hz - 120 Hz, line frequency 60 Hz	202

ErP Directive 2009/125/EC

Directive 2009/125/EC of the European Parliament and the Council, issued in 2009, specifies requirements for the environmentally responsible design of energy-related products (ErPs). In November 2009 it superseded Directive 2005/32/EC, which formed the framework for requirements for the environmentally responsible design of energy-using products (EuPs). This change has no effect on already proclaimed implementation measures.

Objectives

The ErP Directive has several objectives:

1. Mitigating the environmental impact of energy-using products

This objective is intended to be achieved by the documentation and labelling of products, by regulations for inspection, and by the formulation of individual requirements in implementation measures. As the entire product life cycle is taken into consideration, action must be taken as early as the design phase.

2. Climate protection

Achievement of the EU climate protection objectives is to be supported. This can be implemented by reducing energy consumption and the emission of global warming gasses in the production, operation and disposal of energy-using products.

3. Harmonised legislation

The directive creates a framework for the European regulation of environmental design requirements. This avoids trade impediments resulting from differences in national regulations. This can be achieved by means of the proclamation of legally binding implementation measures for the entire Community and protection of free trade in goods against further-reaching regulations of the Member States.

Motors - ASM

General

Regulation (EU) 2019/1781

To establish eco-design requirements for electric motors and variable speed drives pursuant to Directive 2009/125/EC

Valid from: 01.07.2021

- Frequency converter 0.12 - 1,000 kW: IE2
- 3-phase motors $0.12 < 0.75 \text{ kW}/2.4$, 6 or 8 poles: IE2 (Excluded: Ex eb (DxE))
- 3-phase motors $0.75 - 1,000 \text{ kW}/2.4$, 6 or 8 poles: IE3 (Excluded: Ex eb (DxE))

ATTENTION:

Brake motors are no longer exempt!!
IE2 for inverter operation is no longer permitted!!!

Valid from: 01.07.2023

- 1-phase motors $\geq 0.12 \text{ kW}$: IE2
- Ex eb (DxE) Motors $\geq 0.12 \text{ kW}$: IE2
- 3-phase motors $75 \text{ kW} - 200 \text{ kW}$ 2. 4 or 6 pole: IE4
(Exempt: brake motor and all explosion-proof motors)

Scope

Induction electric motors without brushes, commutators, slip rings or electrical connections to the rotor, rated for operation on a 50 Hz, 60 Hz or 50/60 Hz sinusoidal voltage and having the following characteristics:

- 2-, 4-, 6- and 8-pole motors
- Rated power PN between 0.12 kW and 1000 kW
- Rated voltage UN over 50 V up to and including 1,000 V
- are designed for continuous operation ($S_1, S_3 \geq 80\% \text{ ED}$, $S_6 \geq 80\% \text{ ED}$) and are intended for direct mains operation

Which engines are excluded from the scheme?

- Motors designed to be operated completely immersed in a liquid
- Motors fully integrated into a product (e.g. a gearbox, a pump, a fan or a compressor) whose energy efficiency cannot be measured independently of that product
- Motors with integrated frequency converter (compact drives) whose energy efficiency cannot be tested independently of the frequency converter
- Motors specifically designed and specified to operate exclusively
 - at altitudes exceeding 4000 m above sea-level
 - at ambient temperatures above 60 °C
 - at ambient temperatures below -30 °C
- Motors with integrated brake, which is an integral part of the inner motor construction and cannot be removed or supplied from a separate power source when testing the motor efficiency.
- Motors specifically qualified for the safety of nuclear installations, as defined in Article 3 of Council Directive 2009/71/EURATOM
- Motors with mechanical commutators
- Totally enclosed Non-Ventilated motors (TENV)
- Engines from the respective scope of application of the two deadlines 01.07.2021 or 01.07.2023, which were placed on the market before these deadlines, may continue to be placed on the market until 30.06.2029 as 1:1 replacements and may be specifically marketed as such
- Multi-speed motors, i.e. pole-changing motors
- Motors designed specifically for the traction of electric vehicles
- Motors in portable equipment whose weight is supported by hand during operation
- Motors in hand-held mobile equipment which are moved during operation
- Motors in cordless or battery-operated equipment
- Motors for underground mining (mines)

Method for determining the motor efficiency according to IEC 60034-2-1

Individual loss procedure

Additional losses according to residual loss method

Low measurement uncertainty

Bauer geared motors for connection to three-phase supply are supplied with specially designed induction motors. This design ensures maximum operating safety with high breakaway torque and minimum starting current.

The torque/speed characteristic is largely free of torque dips. Torque is optimised to suit requirements and application parameters. See "www.bauergears.com" for more information.

Torques

The torques as stated in the selection tables are fully available at the output shaft. These figures apply for continuous operation (S1-100 %) at a maximum ambient temperature of 40 °C and at site elevations up to 1000 m above sea level. Drives for higher ambient temperatures and site elevations are available on request. Gear efficiencies, which are lower than the usual values for spur gears, are taken into account in the torques listed in the selection tables.

Line voltages

BAUER motors are available as standard for the following three-phase line voltages:

Motor size	Standard voltages:
D..04LA4 - D..09X.4	220 V Δ / 380 V Y 50 Hz
0.06 - 2.2 kW	230 V Δ / 400 V Y 50 Hz*
	240 V Δ / 415 V Y 50 Hz**
from D..11SA4	440 V Y / 60 Hz 460 V Y/60 Hz
from 3.0 kW	220 V Δ / 380 V Y 50 Hz
	230 V Δ / 400 V Y 50 Hz
	240 V Δ / 415 V Y 50 Hz**
	440 V Y / 60 Hz 460 V Y/60 Hz
	380 V Δ / 660 V Y 50 Hz
	400 V Δ / 690 V Y 50 Hz*
	415 V Δ / 50 Hz**
	440 V Δ / 60 Hz
	460 V Δ / 60 Hz

*Voltage recommended world-wide by IEC 38 and in Europe by CENELEC.

**= Insulation Class F is necessary.

Designs for other voltages available on request and at extra cost.

Unless otherwise specified, motors for operation in conjunction with frequency converters with a 50 or 60 Hz frequency have a Y-circuit to optimise operating noise and winding load.

Unless otherwise stated, the tolerance for the rated voltage is +/- 5 %, in accordance with IEC 60034-1.

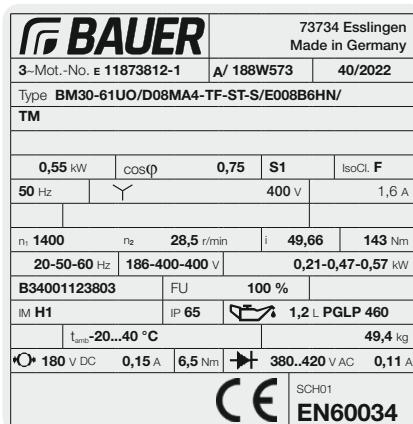
The D..04.. to D..18.. motors in 4 pole design can be operated within a tolerance of +/- 10 % of the rated voltage (400 V 50 Hz).

Line frequencies

All motors are available with the same power ratings for either 50 or 60 Hz. Increased power models are available on request.

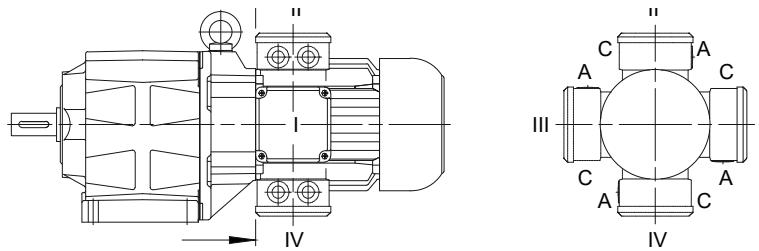
Rating plate

Bauer geared motors are supplied with a corrosion-proof rating plate as standard. The standard rating plate is made of special plastic tried and tested in many years of practical use and approved for hazardous areas by the Physikalisch-Technische-Bundesanstalt (PTB).



Terminal box

The cables of motors with and without brakes can be introduced into the motor terminal box from side A or side C.

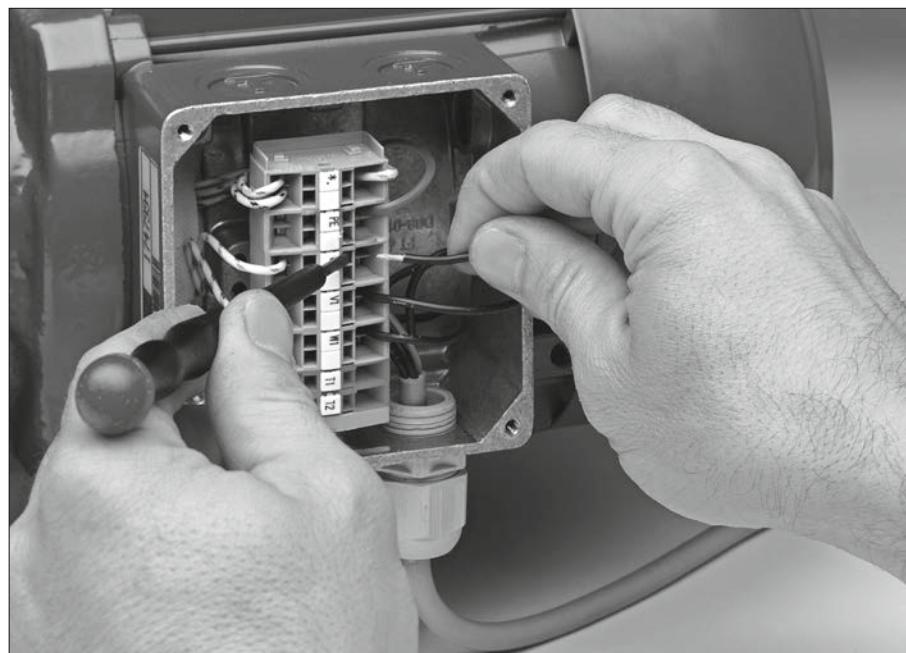


The standard position for the motor terminal box is shown in the dimensional drawings for the geared motors (see chapter 10, 11, 12 and 13). The terminal box can be installed at any of 3 other positions on request, if on-site space is restricted. The 4 possible positions are 90° offsets around the axis of the motor (dimensional drawing and designation for standard terminal box, see chapter 16 "Dimensional drawing standard terminal box").

Cast-on terminal boxes (KAG) are supplied with knock out entries with metric nut for cable gland. Screw-on terminal boxes (TBI...4 are supplied with a metric screw thread as standard.

Motor connections

The electrical connection of gear motors is time consuming and creates costs, which cannot be neglected both during initial installation and in service cases. These costs are reduced considerably by the use of BAUER Gear Motors, have CAGE CLAMP® connection technology instead of the conventional terminal block – and that without extra charge.



What are the advantages for you ?

Cost reduction during connection

Public timing test have confirmed, that the electrical connection of a cable by means of CAGE CLAMP® technology saves up to 75 % working time compared with the classic screw connection.

Simple Handling

Cable connection from the top, very easily accessible: The CAGE CLAMP® spring is pressed, and the cable inserted from the front, i.e. in the field of vision of the installation engineer.

Which cable core diameters ?

Suitable for all copper wires from 0,5 mm² to 25 mm².

Cost saving in material and tooling

- multicore cable ends, cable eyes or cable ring eyes are no longer needed
- Tools such as crimping pliers are no longer needed
- Inadvertently over tightening or breaking of the terminal bolts and the procurement of a new terminal block belong in the past.
- Searching and procurement of nuts and washers for the terminal blocks, which have fallen down, also belongs in the past.

Vibration and shock resistant

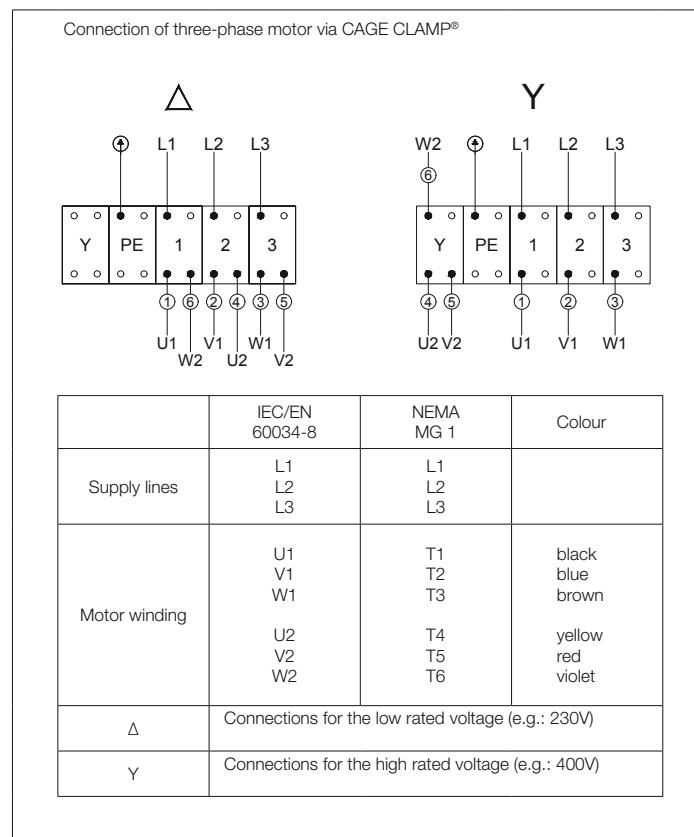
Vibration and shock result neither in conductor damage nor in a measurable contact interruption. The connection is service free.

Type of conductors

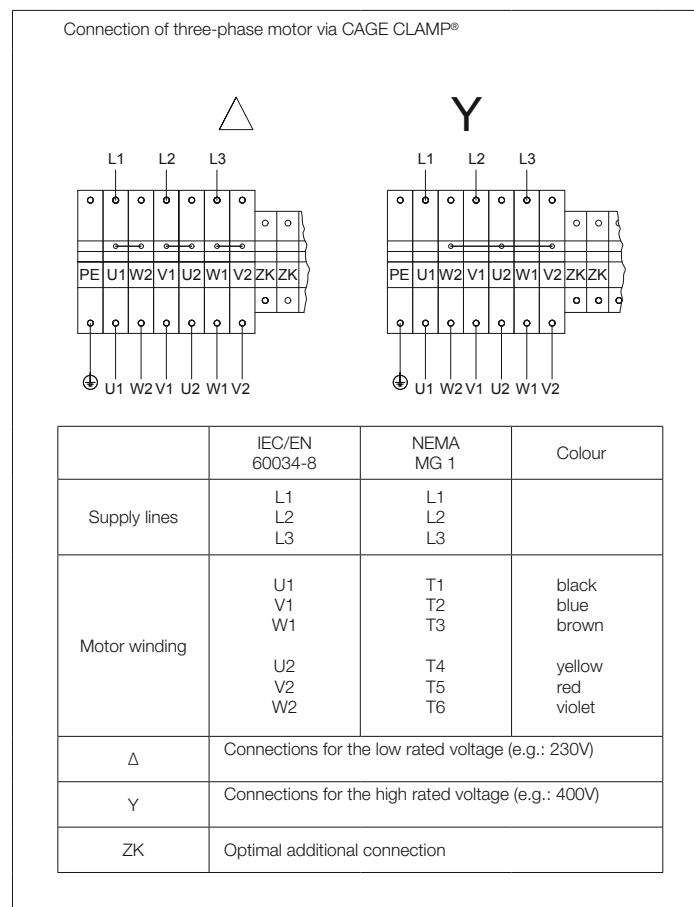
The CAGE CLAMP®-connector can clamp fine stranded, stranded and solid cores wires.

Terminal connections for single speed motors without motor protection

Standard connection of three phase motors without motor protection via CAGE CLAMP®.
D..04.. - D..09..



D..11.. - D..18..



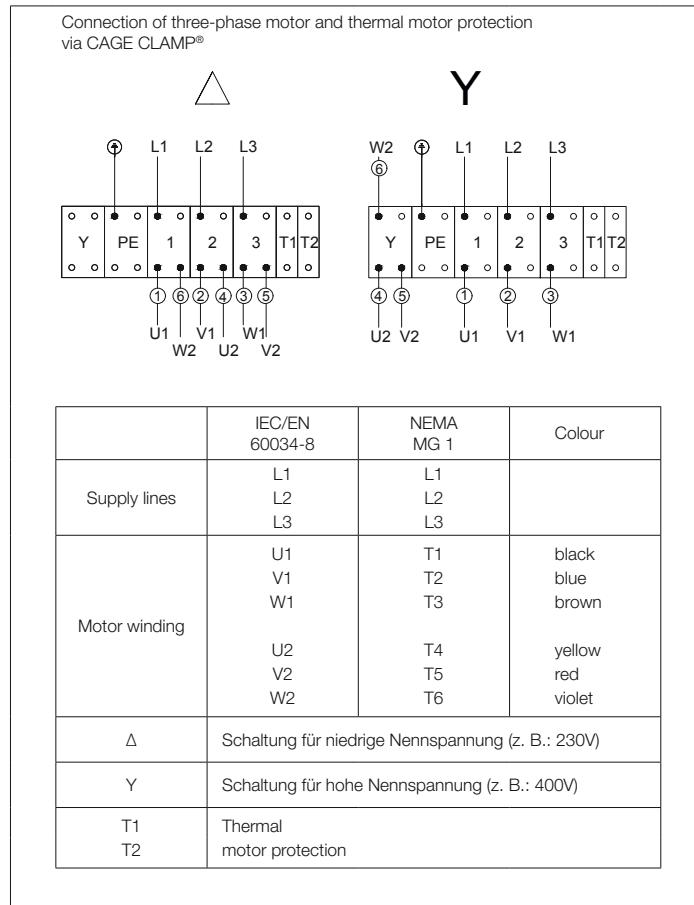
Motors - ASM

General

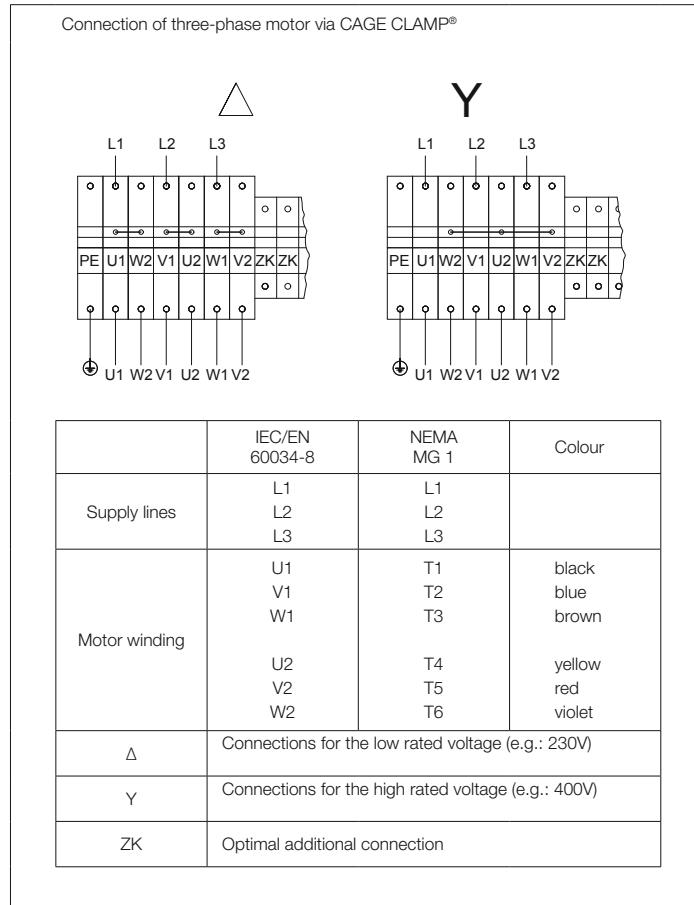
Terminal connections for single speed motors with motor protection

Standard connection of three phase motors with motor protection via CAGE CLAMP®.

D..04.. - D..09..

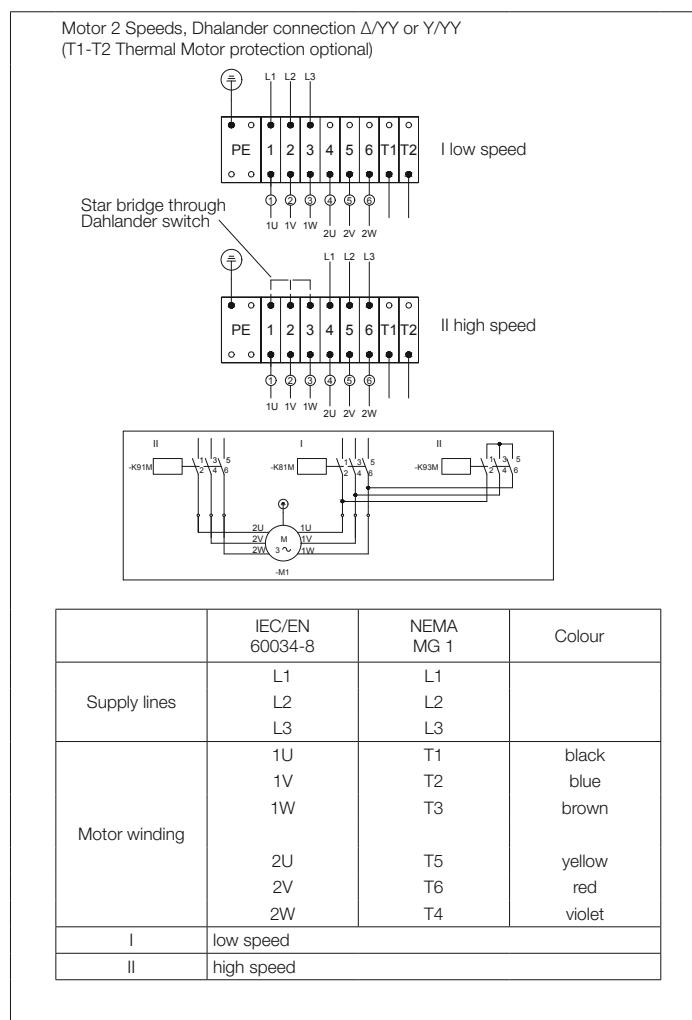


D..11 - D..18



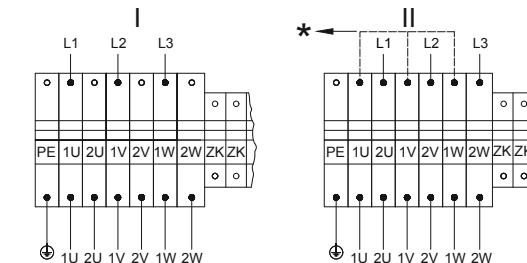
Terminal connections for pole changing motors in Dahlander connection (Δ/YY or Y/YY)

Standard connection of three phase motors without motor protection via CAGE CLAMP®.
D..04..-D..09.. - S..04..-S..09..



D..11.. - S..11..

Connection of three phase motor via CAGE CLAMP®
Pole changing for 2 speeds; Dahlander connection Δ/YY



	IEC/EN 60034-8	NEMA MG 1	Colour
Supply lines	L1	L1	
	L2	L2	
	L3	L3	
Motor winding	1U	T1	black
	1V	T2	blue
	1W	T3	brown
	2U	T4	yellow
	2V	T5	red
	2W	T6	violet
I	low speed		
II	high speed		
ZK	Optimal additional connection		
*	Star point over Dahlander Relay		

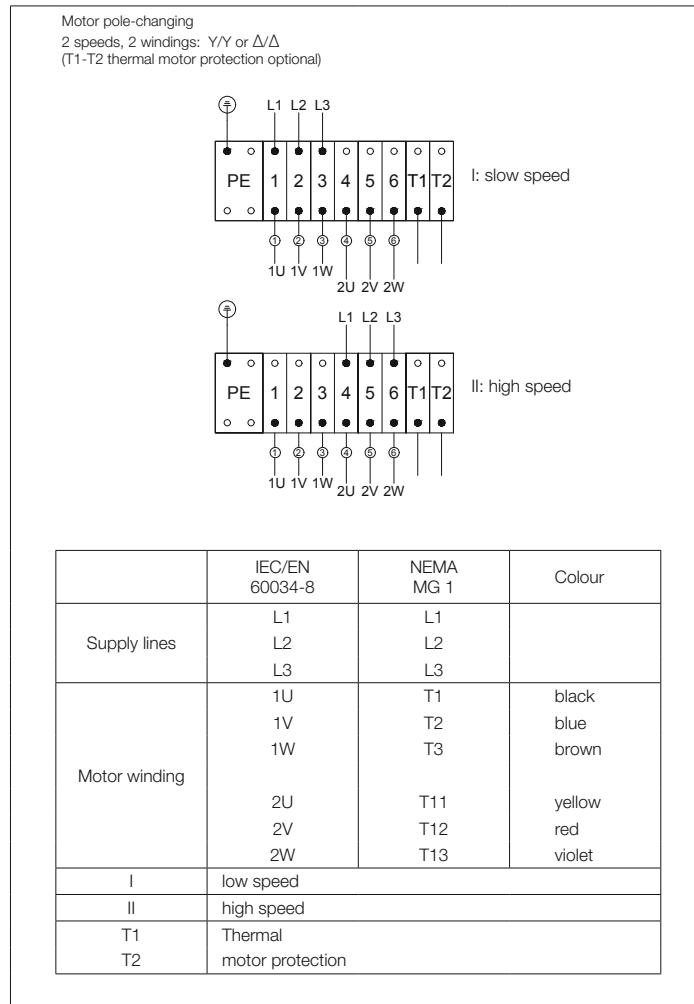
Motors - ASM

General

Terminal connections for pole changing motors with two separate windings (Y/Y or Δ/Δ)

Standard connection of three phase motors with motor protection via CAGE CLAMP®.

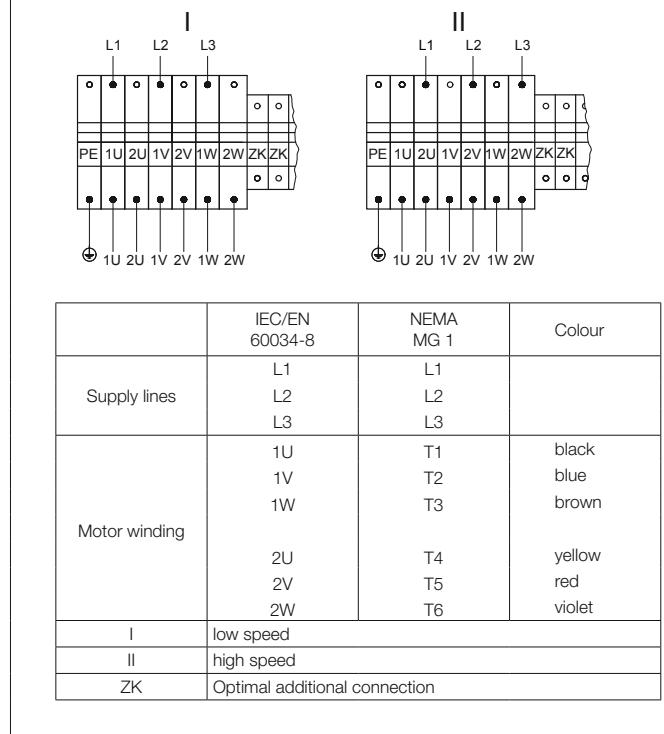
D..04..- D..09.., S..04..-S09..



11

D..11.. - S11..

Connection of three phase motor via CAGE CLAMP®
Motor pole-changing 2 speeds, 2 windings; Y/Y or Δ/Δ



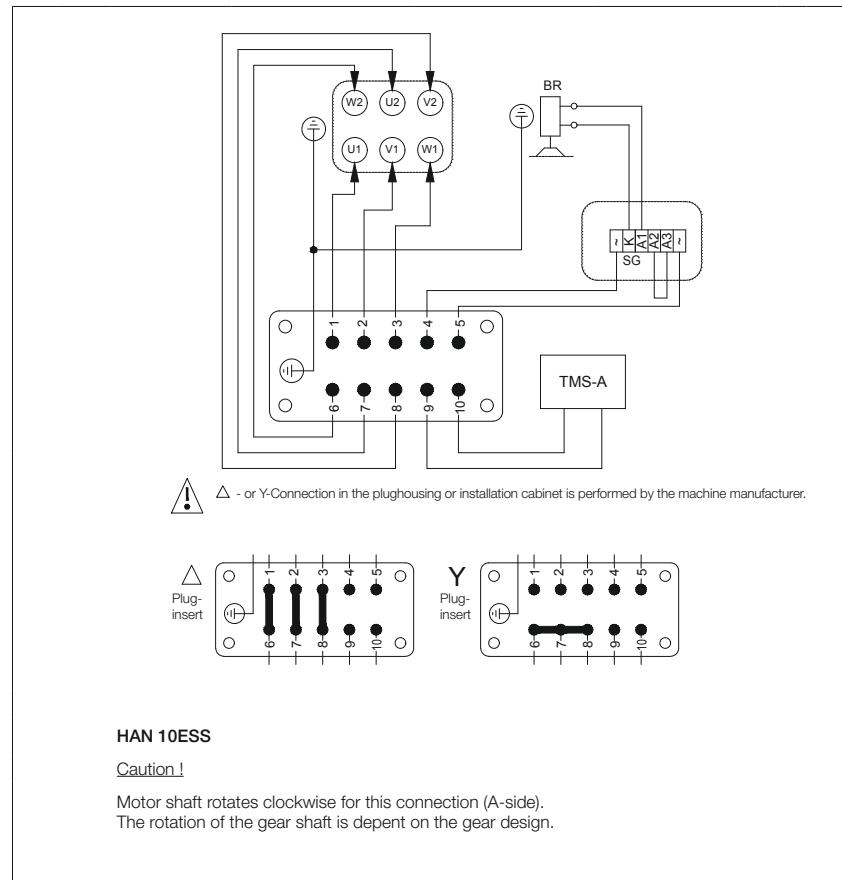
Plug-and-socket connection

D..06.. to D..16.. Bauer motors are available with plug-in motor connection. The socket housing is mounted on the fan-cowl side of the terminal box as standard. This layout minimises the protrusion caused by the plug.

The standard plug-and-socket type connection incorporates the attachment housing, pin insert and cover. Grommet-type housings and jack inserts are available on request at extra cost. Pin assignments on request (dimensional drawing, see chapter 17 "Dimensional drawing, plug-connector terminal box").



A design with single clamp lever according to the DESINA regulation of the „Verbandes Deutscher Werkzeugmaschinenhersteller“ (VDW) is also available.



11

The motors are also available with a low-cost round plug connector as an alternative. This is fitted at the factory in the standard terminal box and is also suitable for brake connection, thermistors and thermostats. Additional information on request.

Bauer motors from D..08.. with motor-mounted brake are also available with plug-in brake connection. This means that if it requires attention, the brake can be replaced on site with no loss of time.

Motors - ASM

General

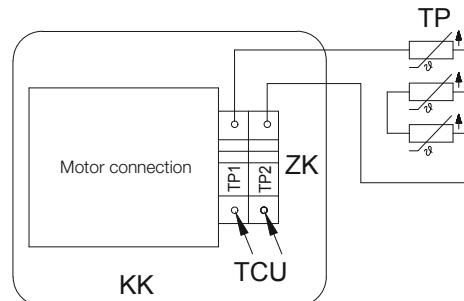
Motor protection

Each geared motor requires a current-dependent motor protection switch or an overcurrent relay with thermal delay in the switchgear to protect the motor windings. The rated motor currents required for settings are stated in the order acknowledgment. Thermal protection for the winding is recommended as an additional safety measure for special operating conditions (short-time or intermittent periodic duty, high switching frequency, severe voltage fluctuations or restricted cooling) and for operation in conjunction with a frequency converter.

Thermistors (PTC)

Thermistors are temperature-dependent resistors which are fitted in each phase winding. In conjunction with a motor protection switch, they ensure optimum protection for the winding in the event of rapid temperature rise. Characteristic to DIN 44081 and "Mark A" to IEC 34-11-2. Thermistors are available for all motors at extra cost. The requisite monitoring device is not included in the scope of supply.

Thermal motor protection with PTC-thermistors



KK	Terminal box
ZK	Additional terminals
TP	PTC-thermistors
TCU	Connection of Thermistor control unit EN 60947 Max. permissible testing voltage 2,5 VDC/thermistor in case of

with auth. certificate:

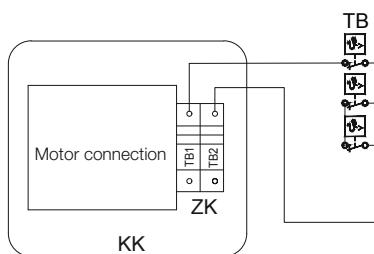
The location of the additional terminals in the drawing is not necessarily identical with the actual arrangement.

Thermostatic protection

Bimetal switches are used for slow-acting, independent temperature monitoring and are embedded in each winding section of the motor.

The bimetal disc is sized such that when the temperature rises above a specific, previously set value, the disc suddenly snaps from a convex state to a concave state and the contact moves vertically away from the contact plate. In this state the switch is either open (normally closed switch) or closed (normally open switch). A significant temperature change is necessary to allow the bimetal disc to independently snap back to its initial position. When it does, the switch is again closed (normally closed switch) or open (normally open switch). Thermal protection switches are available for all motors at additional cost. For technical reasons, this option is not recommended for large motors (D..11.. to D..18..).

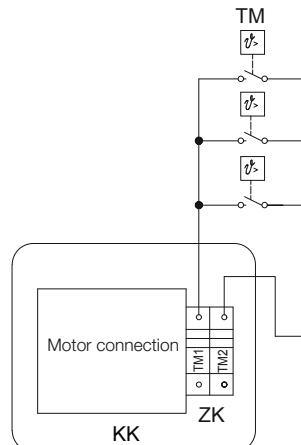
Thermal motor protection with thermostats
(with normally closed contacts)



KK	Terminal box
ZK	Additional terminals
TB	Thermostats with normally closed contacts max. 250VAC 1,6A

The location of the additional terminals in the drawing is not necessarily identical with the actual arrangement.

Thermal motor protection with thermostats
(with normally opened contacts)



KK	Terminal box
ZK	Additional terminals
TB	Thermostats with normally closed contacts max. 250VAC 1,6A

The location of the additional terminals in the drawing is not necessarily identical with the actual arrangement.

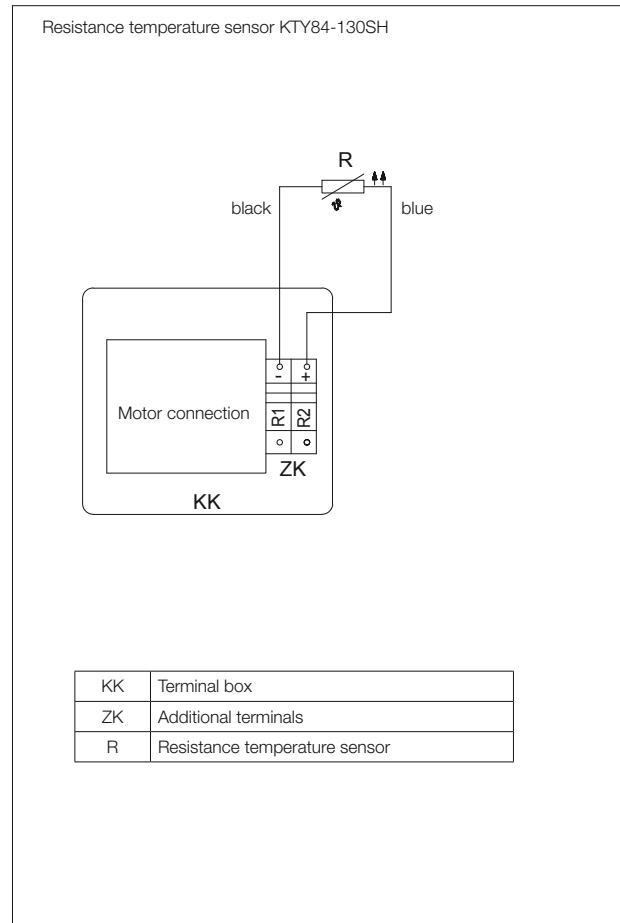
Motors - ASM

General

KTY sensors

KTY sensors with heat-shrink insulation can be used to measure and monitor critical surface temperatures and internal temperatures of motors and machines. These sensors are suitable for use in harsh industrial environments in all places where accurate measurements with a single sensor are required. KTY sensors are available for all types of motors at additional cost.

Working principle: KTY sensors are temperature-dependent components. The resistance of the KTY sensor increases when its temperature rises. The characteristic curve is nearly linear in the sensor's measuring range; the reference resistance (at 100 °C) is 970 to 1030 ohms.



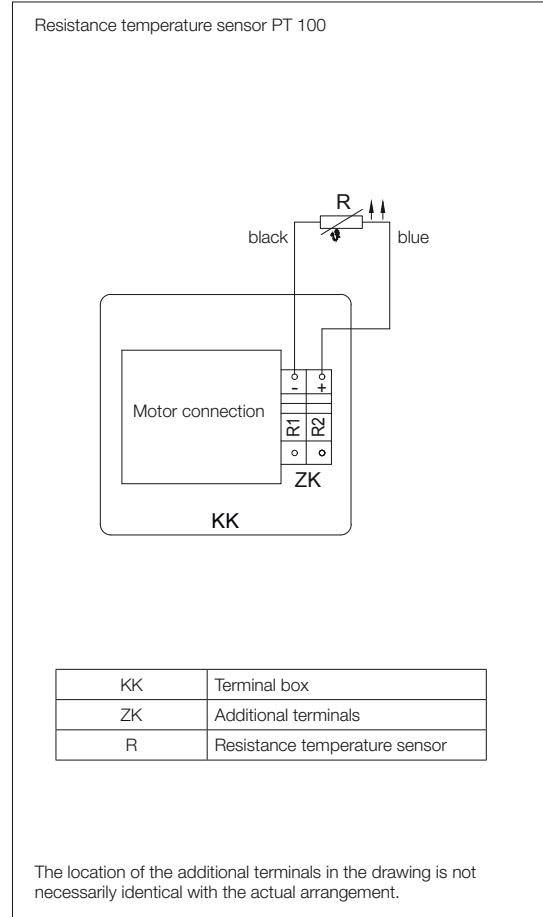
PT100 sensors

Precise monitoring of motor temperatures is necessary in many fields of industry. Pt100 sensors feature high accuracy, short response time and long-term stability, and they are suitable for use over a wide range of temperatures. Pt100 sensors are available for all motor types at additional cost.

Specifications

Nominal resistance: 100 Ω at 0 °C

The resistance characteristics are specified in EN 60751.



Motors - ASM

General

Insulation

The gearmotors described in the selection tables of this catalogue with the motor sizes D..04.., D..05.., D..06.., D..08.., D..09S and D..09L are executed in insulation class B. Temperature class F is available on request at extra cost.

4-pole motors D..07.. and D..09XA4 (2.2 kW) to D..18XA4 (30 kW) and all multi-speed motors are rated in Temperature Class F as standard.

Insulation Class F bestows the winding a multiple protection against high humidity, acidic gases and heavy tropical influences while making the same shock resistant and more resistant to heat. Protection against insects (termites) is guaranteed through the complete enclosure (IP65) as long as the mains cables are encased in metal.

IP – Protection classes

Bauer motors from motor size D..06.. are manufactured to IP65 degree of protection as standard. Motor sizes D04 and D05 have a smooth motor housing of IP54. Higher IP protection classes on request.

Degrees of protection provided by enclosures for electrical equipment

First IP - code number after DIN EN 60529				Second IP - code number after DIN EN 60529		
Protection against penetration of solid foreign bodies		Protection of persons against access to hazardous parts with		Protection against penetration of moisture or water		
4	diameter $\geq 1.0 \text{ mm}$			4	Splash water	
5	Dustproof		Wire	5	Jet water	
6	Dust tight			6	Strong Jet water	
				7	Temporary Submerge	

First IP - code number after DIN EN 60529		Second IP - code number after DIN EN 60529	
Protection against penetration of solid foreign bodies	Protection of persons against access to hazardous parts with	Protection against penetration of moisture or water	
		8	<p>Permanent Submerge</p> <p>$t = \infty$ IPX8 > IPX7</p> <p>> 150 mm</p> <p>1 m</p> <p>$x = 5$ m (Standard) or by agreement</p>
		9 ($\text{IK} = \text{DIN 40050-9}$)	<p>High pressure and high jet water temperature</p> <p>Housing ≥ 250 mm $t = 1$ min /m^2 > 3 min Water temperature (80 ± 5) °C 15 l/min, 100 bar Distance (175 ± 25) mm</p>

Speed of output shaft

The rated speeds in the selection tables are guidelines for load at rated power. Speed can vary depending on degree of load and temperature (particularly in the case of relatively small motors). Combination gear units for lower speeds are available on request.

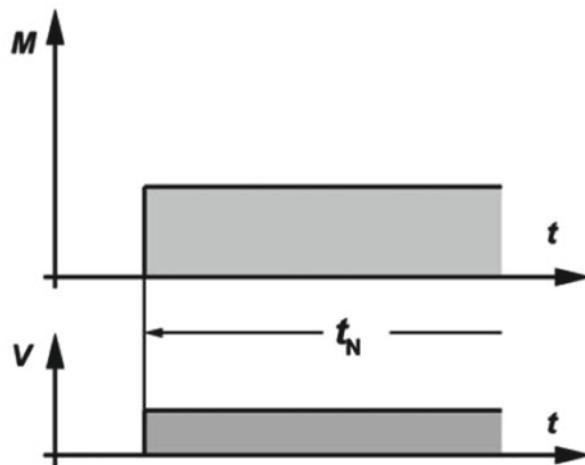
Motors - ASM

Duty types as defined by EN 60034

General

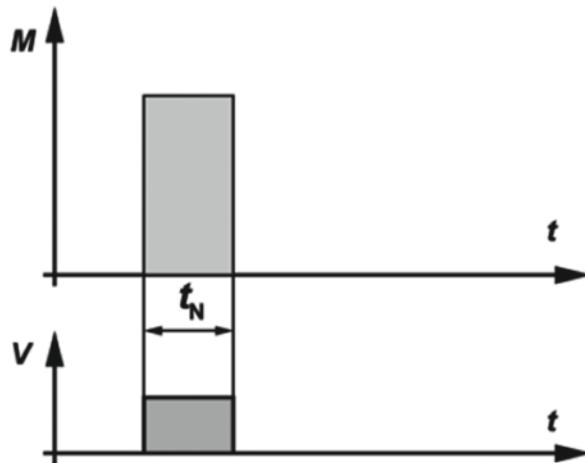
Aside from special drives (such as lifting equipment), standard motors are always designed for continuous running duty. If the drive is operated with frequent on/off cycles, it may be necessary to select a larger motor with a special design. On the other hand, with pronounced short-time duty it is often possible to select a smaller model. **For this reason, it is technically necessary or economically advantageous to inform the motor manufacturer of any duty type that differs from continuous running.**

Continuous running duty (S1)



Operation under rated load for sufficient time to allow temperature equilibrium to be attained, such that the temperature does not increase any more with continued operation. The equipment can operate continuously under the rated load without exceeding the allowable temperature.

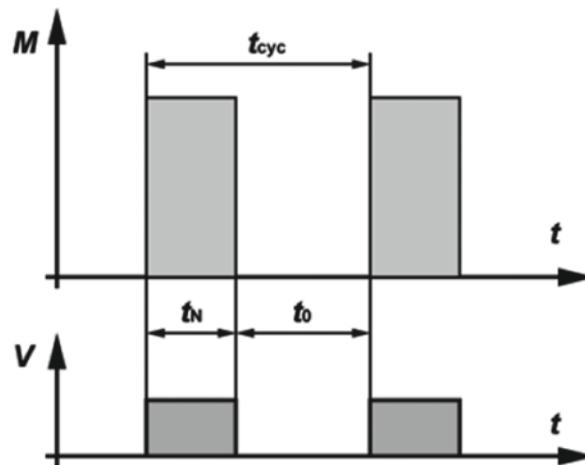
Short-time duty (S2)



The operating time under rated load is short compared with the subsequent rest period. The standard operating times are 10, 30, 60 and 90 minutes. The equipment can operate for this period under the rated load without exceeding the allowable temperature.

Example: S2 – 60 min

Intermittent periodic duty (S3)



S3 duty consists of a sequence of identical cycles, each composed of an operating time with constant load and a rest time with the windings de-energised. The cycle is such that the starting current does not significantly affect the temperature rise. The operating time under rated load and the subsequent pause are both short. The equipment can operate under load only during the period indicated by the duty cycle as a percentage of the total cycle time (cycle duration).

The standardised duty cycles are 15, 25, 40 and 60 %. The cycle duration is 10 minutes unless otherwise specified.

Intermittent periodic duty means that a state of thermal equilibrium is not reached during the load interval.

The duty cycle can be determined as follows:

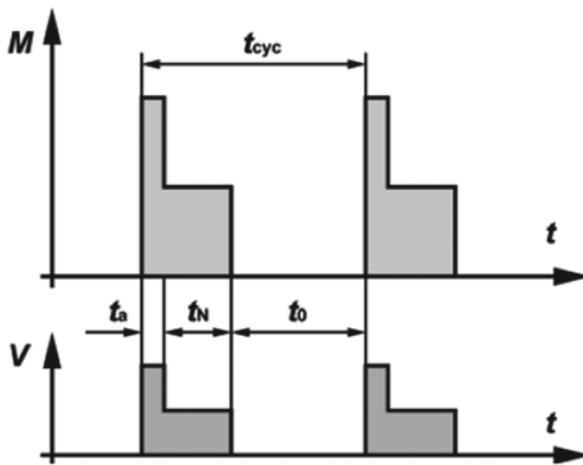
$$ED = \frac{t_N}{t_{cyc}} \times 100\% = \frac{t_N}{t_N+t_0} \times 100\%$$

Example: S3 – 25%

Motors - ASM

Duty types as defined by EN 60034

Intermittent periodic duty with starting
(S4)



S4 duty consists of a sequence of identical cycles, each of which is composed of a distinct starting time, a time of operation under constant load, and a rest period with the windings de-energised.

The operating time under rated load and the subsequent pause are both short. The equipment can operate under load only during the period indicated by the duty cycle as a percentage of the total cycle time (cycle duration).

The standardised duty cycles are 15, 20, 40 and 60 %. The cycle duration is 10 minutes unless otherwise specified.

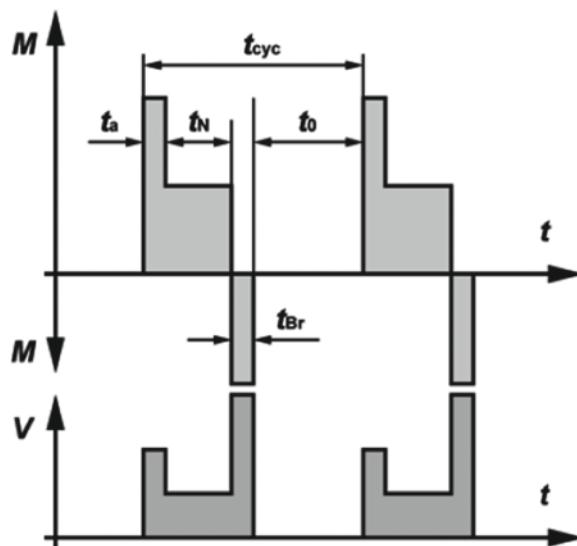
The load cycle corresponds to mode S3, but with additional heating during the starting time that must be taken into account.

The duty cycle can be determined as follows:

$$ED = \frac{(t_a + t_N)}{t_{cyc}} \times 100\% = \frac{t_a + t_N}{t_a + t_N + t_0} \times 100\%$$

Example: S4 – 25 %, $J_M = 0.15 \text{ kgm}^2$

Intermittent periodic duty with electric braking (S5)



S5 duty consists of a sequence of identical cycles, each of which is composed of a starting time, a time of operation under constant load, a time of fast electric braking, and a rest period with the windings de-energised.

The operating time under rated load and the subsequent pause are both short. The equipment can operate under load only during the period indicated by the duty cycle as a percentage of the total cycle time (cycle duration).

The standardised duty cycles are 15, 20, 40 and 60 %. The cycle duration is 10 minutes unless otherwise specified.

The load cycle corresponds to S3 duty, but with additional warming during the starting time t_a and the braking time t_{Br} taken into account.

The duty cycle can be determined as follows:

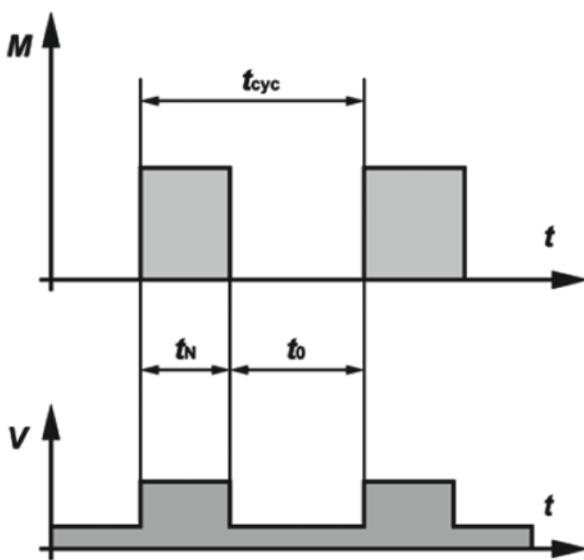
$$ED = \frac{(t_a + t_N + t_{Br})}{t_{cyc}} \times 100\% = \frac{t_a + t_N + t_{Br}}{t_a + t_N + t_{Br} + t_o} \times 100\%$$

Example: S5 – 25%; $J_M = 0.15 \text{ kgm}^2$, $J_{ext} = 0.7 \text{ kgm}^2$
(J_M Moment of inertia of the motor / J_{ext} Moment of inertia of the load)

Motors - ASM

Duty types as defined by EN 60034

Continuous-operation periodic duty
(S6)



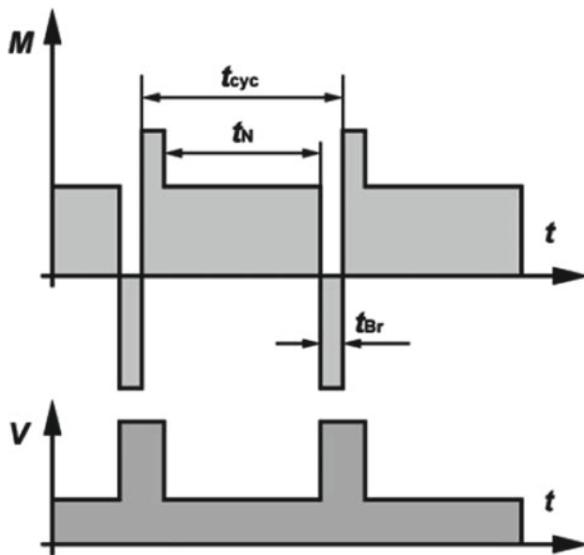
This type of duty corresponds to S3, with the exception that the equipment remains energised during the rest periods. In other words, it operates with no load during these periods. The duty cycle and cycle duration are specified the same way as for S3 duty.

The duty cycle can be determined as follows:

$$ED = \frac{t_N}{t_{cyc}} \times 100\% = \frac{t_N}{t_N + t_0} \times 100\%$$

Example: S6 – 40 %

Continuous-operation periodic duty
with electric braking (S7)

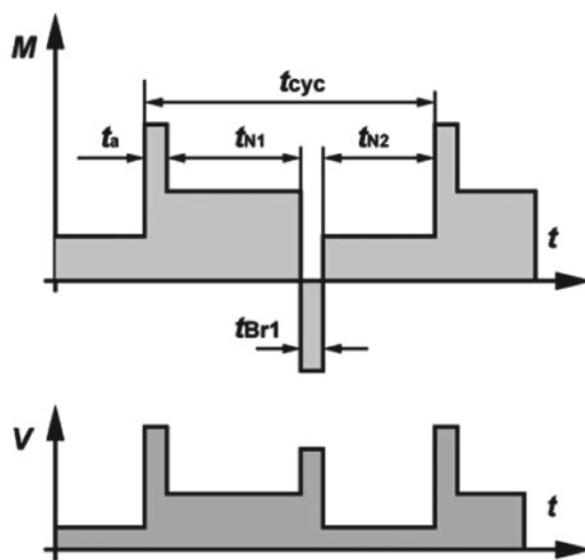


The machine starts up, operates under load, and then is braked electrically, for example by feeding it from a DC power source. Following this, it starts up again immediately. The machine can operate continuously in this manner if the specified moments of inertia of the motor *J_M* and of the load *J_{ext}* as well as the specified duty cycle are not exceeded. If the cycle duration is not specified, it is assumed to be 10 minutes.

The duty cycle can be determined as follows: $DC = 1$

Example: S7 – $J_M = 0.4 \text{ kgm}^2$, $J_{ext} = 7.5 \text{ kgm}^2$
(J_M Moment of inertia of the motor / J_{ext} Moment of inertia of the load)

Continuous-operation periodic duty with relative load/speed changes (S8)



The machine runs continuously under variable load with frequent speed variations. The machine can operate continuously in this manner if at each speed the specified values are not exceeded (moments of inertia J_M and J_{ext} cycle duration (if other than 10 minutes), rated output and duty cycle. With a moment of inertia of 1 kg m², the acceleration characteristics are the same as with a mass of 1 kg at a distance of 1 m from the axis of rotation).

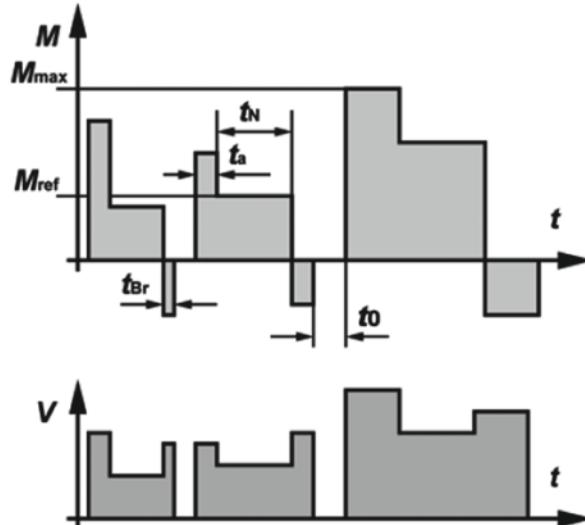
The duty cycle can be determined as follows:

$$ED = \frac{t_a + t_{N1}}{t_{cyc}} \times 100\% = \frac{t_{Br} + t_{N2}}{t_{cyc}} \times 100\%$$

Example: S8 – $J_M = 0.5 \text{ kgm}^2$, $J_{ext} = 6 \text{ kgm}^2$
(J_M Moment of inertia of the motor / J_{ext} Moment of inertia of the load)

11

Duty with non-periodic load and speed variations (S9)

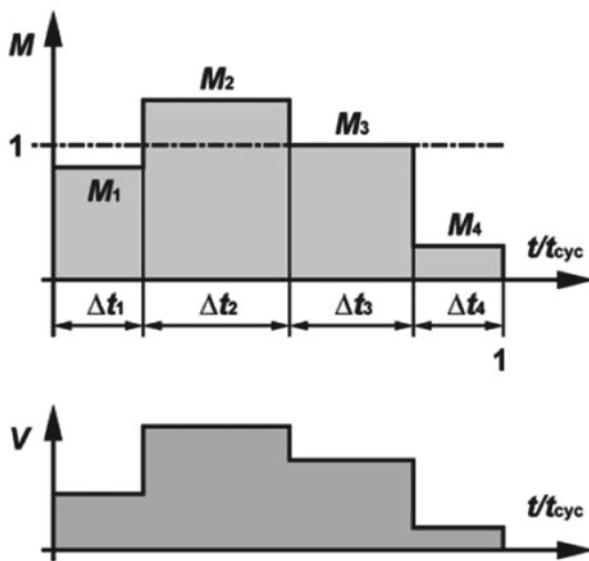


In S9 duty the load and the speed vary non-periodically within the permissible operating range. This includes frequently applied overloads, which must never exceed the reference load. For this duty type, a constant load appropriately selected and based on duty type S1 shall be taken as the reference value M_{ref} for the overload.

Motors - ASM

Duty types as defined by EN 60034

Duty with discreet constant loads and speeds (S10)



S10 duty comprises operation with at most four different load levels, each of which is maintained long enough to allow the machine to reach thermal equilibrium.

The minimum load within a duty cycle may have a value of zero (no-load operation or at rest with the windings de-energised).

The appropriate abbreviation is S10 followed by the per unit quantities $p/\Delta t$ for the respective load and its duration and the per unit quantity TL for the relative thermal life expectancy of the insulation system. The reference value for the thermal life expectancy is the thermal life expectancy at rating for continuous running duty and permissible limits of temperature rise based on duty type S1. For a time de-energized and at rest, the load shall be indicated by the letter r .

Example: S10 $p/\Delta t = 1.1/0.4, 1/0.3, 0.9/0.2, r/0.1; TL = 0.6$

The figures given in the table below are for Bauer motors operating in conjunction with the frequency inverter. The torques referred to in tables can be entered for the respective frequencies in continuous operation ($S_1 = \text{duty factor } 100\%$).

Notes on design

Use the torque required at the lowest operating speed to select motors for applications which require constant torque over the entire speed range, as is the case, for example, with lifting gear and conveyors. Bear in mind, too, the possibility of torque being lower in the field-weakening range.

Use only the torque required at the highest operating speed to select motors for applications which require square-law torque over the speed range, as is the case, for example, with pumps and fans. Field weakening is not permissible.

The motor's power is frequency-dependent. It can be approximated in kW from torque M in Nm, the 50 Hz or 60 Hz speed n and the frequency f in Hz by means of the equation

$$P = M \times n / 9550 \times f/50$$

or

$$P = M \times n / 9550 \times f/60$$

If a frequency inverter is used in conjunction with a pulse generator, the full 50 Hz or 60 Hz rated torque is available as holding torque at motor standstill (independent fan required for prolonged periods at standstill). In many instances, however, a mechanical brake is necessary for holding a position exactly or for safety reasons.

The use of thermistors for the thermal protection of the motor winding for frequency inverter duty are strictly recommended (available at extra cost for all motor sizes).

Increased torque with reduced duty factor

A reduction in duty factor increases the torque available at the low end of the frequency range (up to the transition frequency for field weakening) in accordance with the factors in the table below:

Duty factor	Motor torque with reduced duty factor	Increase in current requirement approximate
100 %	-	-
60 %	1.15 x S_1 torque	1.15 x S_1 current
40 %	1.30 x S_1 torque	1.30 x S_1 current
25 %	1.45 x S_1 torque	1.45 x S_1 current
15 %	1.60 x S_1 torque	1.60 x S_1 current

This, in turn, means that short-term overload by a factor of 1.6 is permissible for starting from a low speed, for example. An increase in torque in the field-weakening range due to a reduction in duty factor is possible only under certain conditions; the 1.6x S_1 torque generally cannot be achieved

Increased torque with external fan

If an independent fan is used, the S_1 - torque in the lower frequency range (below 30 Hz) need not be reduced, i.e., when it has an independent fan the motor can provide the 50 Hz or 60 Hz rated torque throughout the entire frequency range to the cut-off frequency of the field weakening.

With a high quality frequency inverter of 160 %, when independent ventilation is combined with a reduced duty factor the 50 Hz or 60 Hz torque is available from rest through to the transition frequency of the field weakening range.

External ventilation is available for motor types D..08.. and larger (see chapter 16 "Motor-independent fan (FV). In many instances, a more economical alternative is to select a larger motor without external ventilation.

Operation with frequency converter

Energy-saving function High quality frequency inverters reduce voltage in part-load operation to lower the motor current and thus improve efficiency. This converter function emulates the method of operation of commercially available "energy-saving devices".

Regeneration Regenerative torques (braking torques) are required for motors used in lifting gear, for example. In conjunction with high quality frequency inverters, the motor torques listed in the table can also be applied as regenerative torques. As with motor torque, an increase in regenerative torque with reduced duty factor is permissible.

Notes on operation with other-make frequency inverters The precondition is that the motor current generated by the frequency converter is largely free of harmonics. The harmonics generated in the motor by some old-style frequency inverters result in additional losses and cut available torque by some 10 % across the entire frequency range. There is also a risk of oscillation causing damage to the gear unit.

At frequencies below approximately 5 Hz, operation without pulse generators is possible only using a frequency inverter with state-of-the-art control. If frequency inverters are used that do not feature load-dependent frequency and current adjustment, the increase in the motor's current consumption means that, particularly in the case of small motors (D..04..-D..09..), torque has to be reduced at frequencies below approximately 10 Hz even if an external fan is used or the duty factor is reduced. Regenerative operation is possible only under certain circumstances.

Technical data of the 50 Hz motors

50 Hz

4-pole IE1 motors for continuous operation S1, line frequency 50 Hz

P _N kW	Type	n _N 1/min	M _N Nm	I _N (400V) A	Connection	cosφ	η (100% load) %	η (75% load) %	η (50% load) %	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	J _{rot}	Brake
0.03	D04LA4	1350	0.21	0.20	Y	0.60	-	-	-	2.2	2.6	2.6	3.0	0.000175	E003
0.04	D04LA4	1350	0.28	0.20	Y	0.60	-	-	-	2.2	2.0	2.0	2.3	0.000175	
0.06	D04LA4	1350	0.42	0.30	Y	0.60	-	-	-	2.3	2.1	2.1	2.4	0.000175	
0.09	D04LA4	1350	0.63	0.45	Y	0.69	-	-	-	2.5	2.2	2.2	2.6	0.000175	
0.11	D04LA4	1350	0.78	0.45	Y	0.68	-	-	-	2.2	1.9	1.9	2	0.000175	
0.06	D05LA4	1350	0.42	0.35	Y	0.72	-	-	-	3.7	3.7	3.5	3.7	0.000295	E003
0.09	D05LA4	1350	0.63	0.38	Y	0.70	-	-	-	3.9	3.0	2.8	3.0	0.000295	
0.06	D06LA4	1350	0.42	0.35	Y	0.72	-	-	-	3.7	3.7	3.5	3.7	0.000295	
0.09	D06LA4	1350	0.63	0.38	Y	0.70	-	-	-	3.9	3.0	2.8	3.0	0.000295	
0.12	DSE04LA4	1350	0.87	0.45	Y	0.72	53.4	51.4	43.2	2.3	1.7	1.4	1.8	0.000175	E003
0.18	DSE05LA4	1350	1.28	0.63	Y	0.66	63	61.7	54.9	3.4	2.2	2.2	2.4	0.000295	
0.2	DSE05LA4	1350	1.42	0.66	Y	0.71	61.6	61.7	54.9	3.3	2	2	2.2	0.000295	
0.25	DSE05LA4	1350	1.75	0.87	Y	0.68	61.5	58.8	54	2.6	2	2	2.1	0.000295	
0.18	DSE06LA4	1350	1.28	0.63	Y	0.65	63.5	61.7	53.1	3.1	2.4	2.3	2.5	0.000295	
0.2	DSE06LA4	1350	1.42	0.65	Y	0.7	62.5	61.7	53.1	3.3	2	2	2.2	0.000295	E003
0.25	DSE06LA4	1350	1.75	0.87	Y	0.68	61.5	58.8	51.4	2.6	2	2	2.1	0.000295	
0.37	DSE07LA4	1350	2.6	1.15	Y	0.71	66	65.2	59.7	3	2.2	2.1	2.2	0.000385	
0.55	DSE08MA4	1400	3.75	1.45	Y	0.72	75.4	75.2	72.0	4.2	2.1	2.0	2.4	0.00115	ES(X)010 EH(X)010 EH(X)027
0.75	DSE08LA4	1400	5.1	1.95	Y	0.76	75.6	76.2	72.7	4.6	2.0	2.0	2.4	0.00150	
1.1	DSE08XA4	1400	7.5	2.8	Y	0.75	75.5	76.8	73.5	3.7	2.0	1.8	2.2	0.00170	
1.1	DSE09SA4	1420	7.5	2.6	Y	0.76	80.0	80	77.5	4.9	2.5	2.2	2.8	0.00245	ES(X)010 ES(X)027 EH(X)027 EH(X)040
1.5	DSE09LA4	1420	10.1	3.5	Y	0.76	80.7	80.9	79.5	5.0	2.5	2.3	2.9	0.00320	
2.2	DSE09XA4	1420	15	4.9	Y	0.81	80.5	81.1	80.4	4.5	2.3	2.2	2.6	0.00380	
3	DSE11SA4	1420	20	6.4	D	0.80	84.4	85.0	83.8	5.9	2.7	2.5	3.2	0.00810	ES(X)027 ES(X)040 ES(X)070
4	DSE11MA4	1420	27	8.4	D	0.83	84.0	84.9	84.2	5.5	2.8	2.4	3.0	0.01050	
5.5	DSE11LA4	1420	37	11.3	D	0.83	85.8	86.2	85.4	6.3	2.8	2.6	3.2	0.014	

P_N Rated power
 n_N Guideline value for rated speed at the rotor shaft
 M_N Rated torque at the rotor shaft
 I_N Rated current (the current can be converted in inverse ratio to the voltages for the desired special voltage)
 cosφ Power factor
 η Efficiency at different loads
 I_A/I_N Relative starting current
 M_A/M_N Relative starting torque
 M_S/M_N Relative pull-up torque
 M_K/M_N Relative breakdown torque
 J_{rot} Mass moment of inertia of the rotor
 Brake Brake dimensioning see chapter "Motor Mounted Components-Dimensions"
 Winding configuration for standard motors for 400 V / 50 Hz.
 See "www.bauergears.com" for more information.

Continuous operation S1, 50 Hz

50 Hz

4-pole IE2 motors for continuous operation S1, line frequency 50 Hz

4-pole IE2 motors for continuous operation S1, line frequency 50 Hz										Operating conditions						Power losses in % at operating points (Speed/Torque)				
%	%	%	%	IE Class	Type	Number of poles	P	kW	Hz	V	1/min	$\frac{P}{Z}$	Voltage	Operating conditions	25/25	25/100	50/25	50/50	90/50	90/100
66.1	64.6	58.3	IE2	1)	DHE05LA4	4	0.12	50	400	1390	2)	3)	24.7	46.0	28.8	30.9	46.1	36.0	50.7	
65.9	64.1	57.7	IE2	1)	DHE06LA4	4	0.12	50	400	1385	2)	3)	25.0	47.0	29.3	31.3	47.1	36.5	51.8	
68.3	67.3	61.9	IE2	1)	DHE05LA4	4	0.18	50	400	1375	2)	3)	16.9	46.8	22.6	25.3	43.0	30.4	45.9	
68	67	61.4	IE2	1)	DHE06LA4	4	0.18	50	400	1370	2)	3)	17.2	46.2	23.0	25.8	43.3	32.3	49.6	
69.4	68.7	63.6	IE2	1)	DHE07LA4	4	0.25	50	400	1375	2)	3)	15.1	43.4	20.0	22.8	39.9	27.6	42.6	
70.8	70.5	66	IE2	1)	DHE07LA4	4	0.3	50	400	1360	2)	3)	19.1	37.5	20.6	22.7	38.0	25.6	41.0	
75.9	74.6	69.6	IE2	1)	DHE08MA4	4	0.37	50	400	1430	2)	3)	11.3	26.2	15.0	16.7	26.8	21.5	31.1	
78.1	78.9	76.2	IE2	1)	DHE08LA4	4	0.55	50	400	1415	2)	3)	7.6	29.8	10.0	12.6	26.0	15.9	27.8	

Installation altitude above sea level (m): 1000
Ambient temperature: -20 °C to +40 °C

Type of motor: three-phase motor

1) Manufacturer:
Commercial register
number:
Address:
Bauer Gear Motor GmbH
HRB 736269
Eberhard-Bauer-Str. 37 73734 Esslingen/Germany

Technical data of the 50 Hz motors

50 Hz

4-pole IE2 motors for continuous operation S1, mains frequency 50 Hz

P _N kW	Type	n _N 1/min	M _N Nm	I _N (400V) A	Connection	cosφ	η (100% Last) %	η (75% Last) %	η (50% Last) %	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	J _{rot} kgm ²	Brake
0.12	DHE05LA4	1390	0.82	0.39	Y	0.67	66.1	64.6	58.3	3.3	2.3	2.3	2.5	0.000295	E003
0.12	DHE06LA4	1385	0.83	0.39	Y	0.67	65.9	64.1	57.7	3.3	2.3	2.3	2.5	0.000295	
0.18	DHE05LA4	1375	1.25	0.57	Y	0.67	68.3	67.3	61.9	3.4	2.6	2.5	2.6	0.000295	
0.18	DHE06LA4	1370	1.25	0.58	Y	0.67	68	67	61.4	3.3	2.5	2.5	2.6	0.000295	
0.25	DHE07LA4	1375	1.74	0.76	Y	0.68	69.4	68.7	63.6	3.5	2.7	2.6	2.7	0.000385	E003 E004
0.3	DHE07LA4	1360	2.1	0.9	Y	0.67	70.8	70.5	66	3.5	2.8	2.7	2.7	0.000385	
0.37	DHE08MA4	1430	2.4	1.1	Y	0.65	75.9	74.6	69.6	4.5	2.5	2.4	3	0.00115	ES(X)010 EH(X)010 EH(X)027
0.55	DHE08LA4	1415	3.7	1.38	Y	0.74	78.1	78.9	76.2	4.5	2.3	2.1	2.6	0.0015	
0.75	DHE08XA4	1420	5.0	1.88	Y	0.72	79.7	80.0	77.4	4.7	2.3	2.2	2.7	0.00170	
0.75	DHE09SA4	1440	5.0	1.8	Y	0.73	81.6	81.0	77.4	5.9	3.1	2.7	3.5	0.00245	ES(X)010 ES(X)027 EH(X)027 EH(X)040
1.1	DHE09LA4	1440	7.3	2.5	Y	0.75	82.7	82.3	79.8	5.9	2.9	2.7	3.4	0.0032	
1.5	DHE09XA4	1440	10.0	3.3	Y	0.78	83.2	82.8	79.5	5.6	3.0	2.9	3.3	0.0038	
2.2	DHE09XB4	1420	14.8	4.7	Y	0.79	84.5	85.2	83.9	6.0	3.1	2.5	3.3	0.0049	
2.2	DHE11SA4	1440	14.5	4.6	Y	0.80	86.2	86.0	84.7	7.0	3.1	2.8	3.6	0.0081	ES(X)027 ES(X)040 ES(X)070 EH(X)070 EH(X)125
3	DHE11MA4	1440	20	6.3	D	0.8	86.5	86.5	84.7	6.7	3.4	2.8	3.7	0.0105	
4	DHE11LA4	1440	26.5	8.4	D	0.79	87.5	87	85.3	7.6	3.6	3.3	4.2	0.014	
5.5	DHE11LB4	1450	36	11	D	0.82	88.1	88.5	87.4	7.9	3.3	2.9	3.8	0.017	

P _N	Rated power
n _N	Guideline value for rated speed at the rotor shaft
M _N	Rated torque at the rotor shaft
I _N	Rated current (the current can be converted in inverse ratio to the voltages for the desired special voltage)
cosφ	Power factor
η	Efficiency at different loads
I _A /I _N	Relative starting current
M _A /M _N	Relative starting torque
M _S /M _N	Relative pull-up torque
M _K /M _N	Relative breakdown torque
J _{rot}	Mass moment of inertia of the rotor
Brake	Brake dimensioning see chapter "Motor Mounted Components-Dimensions"

Winding configuration for standard motors for 400 V / 50 Hz.

All motors are suitable for the voltage range 380...420 V or 400 V +/- 10 % if executed in insulation class F.

Important: Current, power factor and torque change as voltage deviates from 400 V.See "www.bauergears.com" for more information.

Motors - ASM

Technical data

Continuous operation S1, 50 Hz

50 Hz

4-pole IE3 motors for continuous operation S1, line frequency 50 Hz

n	n (100 %-Load)	n (75 %-Load)	n (50 %-Load)	Type	Number of poles	P kW	V	1/min	Power losses in % at operating points (Speed/Torque)							
									n _z	Operating conditions	25/25	25/100	50/25	50/100		
69.3	67.1	60.5	IE3	DPE05LA4	4	0.12	50	400	1405	2) (3)	18.2	38.2	23.9	38.9	31.9	43.8
68.8	66.4	59.9	IE3	DPE06LA4	4	0.12	50	400	1400	2) (3)	18.7	39.0	24.8	40.3	33.4	45.9
70.8	69.3	63.9	IE3	DPE07LA4	4	0.18	50	400	1400	2) (3)	15.6	36.4	20.2	22.6	36.1	27.5
77.7	76.4	71.8	IE3	DPE08MA4	4	0.25	50	400	1440	2) (3)	10.4	23.8	13.8	16.4	26.2	20.8
79.9	78.8	74.3	IE3	DPE08LA4	4	0.37	50	400	1445	2) (3)	8.9	19.4	11.6	13.2	20.8	16.8
81.2	81	77.9	IE3	DPE08XA4	4	0.55	50	400	1430	2) (3)	7.0	20.5	9.1	11.1	20.4	14.2
82.5	83.1	81.3	IE3	DPE08XB4	4	0.75	50	400	1425	2) (3)	6.1	19.6	7.7	9.7	19.2	12.1
82.7	82.5	79.1	IE3	DPE09LA4	4	0.75	50	400	1440	2) (3)	4.6	16.3	6.9	8.7	16.6	13.0
84.4	84.3	81.9	IE3	DPE09XA4	4	1.1	50	400	1440	2) (3)	4.4	15.9	6.2	8.0	16.2	11.2
85.5	86.1	84.5	IE3	DPE09XB4	4	1.5	50	400	1435	2) (3)	4.0	16.5	5.4	7.3	15.9	9.6
86.8	87.4	85.9	IE3	DPE09XB4C	4	2.2	50	400	1450	2) (3)	3.7	15.1	5.0	6.5	14.0	8.5
87.1	87.2	85.2	IE3	DPE11MA4	4	2.2	50	400	1450	2) (3)	3.1	12.3	4.7	6.1	12.6	8.6
87.7	87.6	85.5	IE3	DPE11LA4	4	3	50	400	1455	2) (3)	3.1	10.7	4.6	5.9	11.5	8.5
89.4	90.3	89.5	IE3	DPE11LB4	4	4	50	400	1450	2) (3)	2.3	10.9	3.2	4.5	10.9	6.0
90	90.6	89.7	IE3	DPE11LB4C	4	5.5	50	400	1465	2) (3)	2.4	10.3	3.4	4.6	10.1	6.1

- 1) Manufacturer:
Commercial register
number:
Address:
- 2) Type of motor: three-phase motor
Bauer Gear Motor GmbH
HRB 736269
Eberhard-Bauer-Str. 37, 73734 Esslingen/Germany
- 3) Installation altitude above sea level (m): 1000
Ambient temperature: -20 °C to +40 °C

Technical data of the 50 Hz motors

50 Hz

4-pole IE3 motors for continuous operation S1, mains frequency 50 Hz

P _N kW	Type	n _N 1/min	M _N	I _N (400V)	Connection	cosφ	η (100%-Load)	η (75%-Load)	η (50%Load)	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	J _{rot}	Brake
				Nm	A		%	%	%						kNm ²
0.12	DPE05LA4	1405	0.82	0.4	Y	0.62	69.3	67.1	60.5	3.8	3	3	3.1	0.000295	E003
0.12	DPE06LA4	1400	0.82	0.41	Y	0.63	68.8	66.4	59.9	3.7	3	3	3.1	0.000295	E003
0.18	DPE07LA4	1400	1.23	0.56	Y	0.65	70.8	69.3	63.9	3.9	3.1	3	3.1	0.000385	E003. E004
0.25	DPE08MA4	1440	1.66	0.71	Y	0.66	77.7	76.4	71.8	4.9	2.6	2.5	3.1	0.00115	ES(X)010 EH(X)010/027
0.37	DPE08LA4	1445	2.45	1.03	Y	0.64	79.9	78.8	74.3	5.5	3.2	3	3.6	0.0015	
0.55	DPE08XA4	1430	3.65	1.4	Y	0.7	81.2	81	77.9	5.3	2.9	2.7	3.2	0.0017	
0.75	DPE08XB4	1425	5	1.86	Y	0.71	82.5	83.1	81.3	5.3	3.1	2.8	3.3	0.002	
0.75	DPE09LA4	1440	5	1.67	Y	0.79	82.7	82.5	79.1	6.6	3.4	3	3.6	0.0032	
1.1	DPE09XA4	1440	7.3	2.4	Y	0.78	84.4	84.3	81.9	6.7	3.4	3.1	3.7	0.0038	ES(X)010/027 EH(X)027/040
1.5	DPE09XB4	1435	10	3.25	Y	0.79	85.5	86.1	84.5	6.5	3.2	3	3.6	0.0049	
2.2	DPE09XB4C	1450	14.5	4.7	Y	0.77	86.8	87.4	85.9	6.7	2.6	2.4	3.6	0.0069	
2.2	DPE11MA4	1450	14.5	4.6	Y	0.8	87.1	87.2	85.2	7.3	3.2	2.7	3.9	0.0105	
3	DPE11LA4	1455	19.7	6.2	D	0.8	87.7	87.6	85.5	8.3	3.7	3	4.4	0.014	ES(X)027/040/070 EH(X)070/125
4	DPE11LB4	1450	26.5	7.8	D	0.83	89.4	90.3	89.5	7.8	3.3	2.6	4	0.017	
5.5	DPE11LB4C	1465	36	11	D	0.8	90	89.4	88	8.2	2.7	2.4	4	0.022	

P _N	Rated power
n _N	Guideline value for rated speed at the rotor shaft
M _N	Rated torque at the rotor shaft
I _N	Rated current (the current can be converted in inverse ratio to the voltages for the desired special voltage)
cosφ	Power factor
η	Efficiency at different loads
I _A /I _N	Relative starting current
M _A /M _N	Relative starting torque
M _S /M _N	Relative pull-up torque
M _K /M _N	Relative breakdown torque
J _{rot}	Mass moment of inertia of the rotor
Brake	Brake dimensioning see chapter "Motor Mounted Components-Dimensions"

Winding configuration for standard motors for 400 V / 50 Hz.

All motors are suitable for the voltage range 380...420 V or 400 V +/- 10 % if executed in insulation class F.

Important: Current, power factor and torque change as voltage deviates from 400 V.

See "www.bauergears.com" for more information.

Motors - ASM

Technical data

Technical data of the 50 Hz motors

50 Hz

4 pole motors for periodic duty S3/S6-75 %, Mains Frequency 50 Hz

P _N kW	Type	n _N 1/min	M _N Nm	I _N (400V) A	Connection	cosφ	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	J _{rot} kgm ²	Brake
0.75	DSE08MA4	1320	5.4	2	Y	0.81	2.9	1.5	1.4	1.7	0.00115	ES(X)010
0.9	DSE08LA4	1350	6.3	2.3	Y	0.79	3.4	1.6	1.6	2	0.0015	
1.25	DSE08XA4	1350	8.8	3.1	Y	0.8	3.3	1.6	1.6	1.9	0.0017	
1.65	DSE09SA4	1370	11.5	3.7	Y	0.86	3.5	1.6	1.5	1.8	0.00245	
2.2	DSE09LA4	1370	15.5	5	Y	0.86	3.6	1.7	1.6	2	0.0032	ES(X)010 ES(X)027
2.5	DSE09XA4	1370	17.3	5.5	Y	0.84	4	2	1.9	2.3	0.0038	
3.7	DSE11SA4	1400	25	7.8	D	0.85	4.1	2.2	2	2.6	0.0081	ES(X)027
5	DSE11MA4	1380	34	10.3	D	0.86	4.4	2.2	1.9	2.4	0.0105	ES(X)040
6.6	DSE11LA4	1400	44	13.5	D	0.86	4.8	2.4	2.1	2.7	0.014	ES(X)070

P _N	Rated power
n _N	Guideline value for rated speed at the rotor shaft
M _N	Rated torque at the rotor shaft
I _N	Rated current (the current can be converted in inverse ratio to the voltages for the desired special voltage)
cosφ	Power factor
η	Efficiency at different loads
I _A /I _N	Relative starting current
M _A /M _N	Relative starting torque
M _S /M _N	Relative pull-up torque
M _K /M _N	Relative breakdown torque
J _{rot}	Mass moment of inertia of the rotor
Brake	Brake dimensioning see chapter "Motor Mounted Components-Dimensions"

The standard motor winding configuration is for 400 V / 50 Hz.

See "www.bauergears.com" for more information.

Technical data of the 50 Hz motors

50 Hz

4 pole motors for periodic duty S3/S6, Mains Frequency 50 Hz

P _N kW	ED 15%	Type	n _N 1/min	M _N Nm	I _N (400V) A	Connec- tion	cosφ	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	J _{rot} kgm ²
0.15	15%	D04LA4	1350	1.05	0.6	Y	0.77	2	1.6	1.5	1.6	0.000175
0.3	15%	D05LA4	1350	2.1	0.98	Y	0.75	2.6	1.9	1.8	1.9	0.000295
0.3	60%	D06LA4	1350	2.1	0.98	Y	0.75	2.6	1.9	1.8	1.9	0.000295
0.55	60%	D07LA4	1350	3.9	1.95	Y	0.86	3.4	1.6	1.5	1.6	0.000385
0.75	60%	D08MA4	1400	5.1	2	Y	0.81	3.4	1.6	1.4	1.7	0.00115
1.1	60%	D08LA4	1400	7.5	2.8	Y	0.82	3.3	1.5	1.4	1.7	0.0015
1.5	60%	D09SA4	1400	10.2	3.6	Y	0.84	3.9	1.7	1.5	2	0.00245
2.2	60%	D09LA4	1400	15	5	Y	0.86	3.9	1.6	1.5	1.9	0.0032
3	60%	D09XA4	1400	20	6.8	Y	0.86	3.4	1.7	1.6	1.9	0.0038
4	60%	D11SA4	1420	26.5	8.9	Δ	0.85	4	1.6	1.4	2	0.0081
5.5	60%	D11MA4	1420	37	11.7	Δ	0.87	4.3	1.5	1.5	2	0.0105
7.5	60%	D11LA4	1420	50	16	Δ	0.87	4.3	1.8	1.7	2.1	0.014

P _N	Rated power
ED	Duty cycle
n _N	Guideline value for rated speed at the rotor shaft
M _N	Rated torque at the rotor shaft
I _N	Rated current (the current can be converted in inverse ratio to the voltages for the desired special voltage)
cosφ	Power factor
I _A /I _N	Relative starting current
M _A /M _N	Relative starting torque
M _S /M _N	Relative pull-up torque
M _K /M _N	Relative breakdown torque
J _{rot}	Mass moment of inertia of the rotor

The standard motor winding configuration is for 400 V / 50 Hz.

See "www.bauergears.com" for more information.

Motors - ASM

Technical data

Technical data of the 50 Hz motors

50 Hz

4/2-pole Δ/YY motors for continuous running duty (S1) and 50 Hz mains frequency

P _N kW	Type	n _N 1/min	M _N Nm	I _N (400V) A	cosφ	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	J _{rot} kgm ²
0.03/0.06	D04LA42	1350/2700	0.210/0.210	0.230/0.250	0.56/0.67	2.2/3.1	3.4/3.1	3.4/3.1	3.6/3.3	0.000175
0.04/0.08	D04LA42	1350/2700	0.280/0.280	0.250/0.280	0.60/0.75	2.0/2.8	3.0/2.1	3.0/2.1	3.3/2.2	0.000175
0.06/0.12	D05LA42	1350/2700	0.420/0.420	0.450/0.450	0.50/0.75	2.8/3.3	3.1/2.0	3.0/1.9	3.8/2.6	0.000295
0.08/0.16	D05LA42	1350/2700	0.56/0.56	0.50/0.50	0.55/0.75	2.8/3.3	3.1/1.8	2.7/1.7	3.4/2.3	0.000295
0.06/0.12	D06LA42	1350/2700	0.420/0.420	0.450/0.450	0.50/0.75	2.8/3.3	3.1/2.0	3.0/1.9	3.8/2.6	0.000295
0.08/0.16	D06LA42	1350/2700	0.56/0.56	0.50/0.50	0.55/0.75	2.8/3.3	2.8/1.8	2.7/1.7	3.4/2.3	0.000295
0.11/0.22	D06LA42	1350/2700	0.77/0.77	0.68/0.68	0.55/0.75	2.8/3.3	2.8/1.8	2.7/1.7	3.4/2.3	0.000295
0.16/0.32	D06LA42	1350/2700	1.13/1.13	0.90/0.90	0.57/0.80	2.8/3.3	2.6/1.7	2.5/1.6	3.1/2.1	0.000295
0.2/0.4	D07LA42	1400/2800	1.35/1.37	1.10/1.15	0.58/0.81	2.9/3.6	2.8/1.6	2.7/1.4	3.0/2.0	0.000385
0.28/0.56	D08MA42	1400/2800	1.90/1.90	1.20/1.75	0.61/0.81	3.4/2.9	2.3/1.5	2.3/1.4	3.0/1.9	0.00115
0.4/0.8	D08LA42	1400/2800	2.7/2.7	1.53/1.91	0.62/0.90	4.7/5.1	2.7/1.8	2.4/1.7	3.1/2.1	0.0015
0.5/1.0	D09SA42	1400/2800	3.4/3.4	1.65/2.4	0.71/0.91	5.1/4.5	2.9/1.9	2.9/1.9	3.6/2.4	0.00245
0.7/1.4	D09SA42	1400/2800	4.8/4.8	2.1/3.3	0.71/0.93	4.7/4.1	2.5/1.6	2.5/1.6	3.1/2.0	0.00245
1.0/2.0	D09LA42	1400/2800	6.8/6.8	2.9/4.7	0.72/0.94	4.7/4.1	2.5/1.6	2.5/1.6	3.1/2.0	0.0032
1.2/2.4	D09XA42	1400/2800	8.2/8.1	3.8/5.7	0.65/0.87	6.2/3.0	2.5/1.8	2.5/1.8	3.1/2.3	0.0038
1.4/2.8	D11SA42	1420/2840	9.4/9.4	3.6/6.2	0.74/0.90	6.4/4.5	3.0/1.7	2.6/1.5	4.1/2.8	0.0081
2.0/4.0	D11MA42	1420/2840	13.5/13.4	5.5/9.1	0.70/0.90	6.7/5.4	3.1/2.1	2.7/1.6	3.7/2.5	0.0105
2.5/5.0	D11LA42	1420/2840	16.8/16.8	5.5/10	0.79/0.92	5.6/4.6	2.8/1.8	2.7/1.7	3.7/2.6	0.014

P _N	Rated power
n _N	Guideline value for rated speed at the rotor shaft
M _N	Rated torque at the rotor shaft
I _N	Rated current (the current can be converted in inverse ratio to the voltages for the desired special voltage)
cosφ	Power factor
I _A /I _N	Relative starting current
M _A /M _N	Relative starting torque
M _S /M _N	Relative pull-up torque
M _K /M _N	Relative breakdown torque
J _{rot}	Mass moment of inertia of the rotor

The standard motor winding configuration is for 400 V / 50 Hz.

See "www.bauergears.com" for more information.

Technical data of the 50 Hz motors

50 Hz

8/4-pole Δ/YY motors for continuous running duty (S1) and 50 Hz mains frequency

P _N kW	Type	n _N 1/min	M _N Nm	I _N (400V) A	cosφ	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	J _{rot} kgm ²
0.03/0.06	D05LA84	680/1350	0.410/0.420	0.300/0.280	0.52/0.71	1.6/2.6	2.7/1.9	1.6/1.7	1.6/1.7	0.000295
0.03/0.06	D06LA84	680/1350	0.410/0.420	0.300/0.280	0.52/0.71	1.6/2.6	2.7/1.9	1.6/1.7	1.6/1.7	0.000295
0.04/0.08	D06LA84	680/1350	0.54/0.56	0.480/0.400	0.52/0.66	1.4/2.2	2.6/2.1	1.6/1.7	1.6/1.7	0.000295
0.06/0.12	D07LA84	680/1350	0.84/0.85	0.70/0.60	0.52/0.66	1.7/2.8	3.2/1.7	3.2/1.5	3.3/2.1	0.000385
0.06/0.12	D08LA84	700/1400	0.81/0.81	0.50/0.50	0.61/0.83	2.8/3.7	3.1/2.3	3.1/2.3	3.7/3.1	0.0025
0.08/0.16	D08LA84	700/1400	1.08/1.09	0.62/0.62	0.61/0.83	2.8/3.7	3.0/2.2	3.0/2.2	3.5/3.0	0.0025
0.11/0.22	D08LA84	700/1400	1.49/1.5	0.80/0.80	0.61/0.83	2.8/3.7	2.8/2.1	2.8/2.1	3.3/2.8	0.0025
0.14/0.28	D08LA84	700/1400	1.90/1.91	1.00/1.00	0.61/0.83	2.8/3.7	2.8/2.1	2.8/2.1	3.3/2.8	0.0025
0.2/0.4	D08LA84	700/1400	2.7/2.7	1.10/1.30	0.55/0.77	2.8/3.7	2.3/1.7	2.3/1.7	2.7/2.3	0.0025
0.25/0.5	D09XC84	700/1400	3.3/3.3	1.40/1.40	0.48/0.77	2.9/5.0	2.7/2.0	2.7/2.1	3.1/2.7	0.006
0.28/0.56	D09XC84	700/1400	3.8/3.8	1.40/1.50	0.57/0.80	2.9/4.9	2.4/1.8	2.4/1.9	2.8/2.4	0.006
0.4/0.8	D09XC84	700/1400	5.4/5.4	1.95/2.4	0.55/0.79	2.8/4.2	2.3/1.7	2.3/1.8	2.7/2.3	0.006
0.5/1.0	D09XC84	700/1400	6.8/6.8	2.4/2.6	0.55/0.81	2.6/4.0	2.2/1.6	2.2/1.6	2.5/2.2	0.006
0.8/1.6	D11LC84	710/1420	10.7/10.7	3.0/4.2	0.63/0.88	3.5/4.3	2.2/1.9	2.2/1.7	2.8/2.7	0.0215
1.1/2.2	D11LC84	710/1420	14.7/14.7	4.0/5.0	0.58/0.85	3.9/5.7	2.3/2.1	2.3/1.7	2.7/2.5	0.0215
1.6/3.2	D11LC84	710/1420	21.5/21.5	6.0/7.6	0.59/0.84	3.7/5.1	2.2/1.8	2.1/1.5	2.6/2.3	0.0215

P_N Rated power
 n_N Guideline value for rated speed at the rotor shaft
 M_N Rated torque at the rotor shaft
 I_N Rated current (the current can be converted in inverse ratio to the voltages for the desired special voltage)
 cosφ Power factor
 I_A/I_N Relative starting current
 M_A/M_N Relative starting torque
 M_S/M_N Relative pull-up torque
 M_K/M_N Relative breakdown torque
 J_{rot} Mass moment of inertia of the rotor

The standard motor winding configuration is for 400 V / 50 Hz.

See "www.bauergears.com" for more information.

Motors - ASM

Technical data

Technical data of the 50 Hz motors

50 Hz

8/2-pole Y/Y motors for intermittent periodic duty S3 25/75 % and 50 Hz mains frequency

P _N kW	ED	Type	n _N 1/min	M _N Nm	I _N (400V) A	cosφ	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	J _{rot} kgm ²
0.04/0.16	25/75 %	D05LA82	680/2700	0.56/0.56	0.400/0.80	0.63/0.75	1.6/3.2	1.9/2.2	1.9/2.1	2.0/2.3	0.000295
0.05/0.20	25/75 %	D06LA82	680/2700	0.70/0.70	0.51/1.02	0.63/0.75	1.4/2.8	1.7/2.0	1.7/1.9	1.8/2.1	0.000295
0.063/0.25	25/75 %	D07LA82	650/2840	0.87/0.87	0.60/1.20	0.69/0.62	1.4/2.6	1.6/1.4	1.6/1.4	1.8/2.7	0.000385
0.071/0.28	25/75 %	D07LA82	650/2840	0.99/0.98	0.65/1.40	0.69/0.68	1.4/2.6	1.5/1.3	1.5/1.3	1.7/2.6	0.000385
0.063/0.25	25/75 %	D08LA82	700/2800	0.85/0.85	0.55/0.70	0.55/0.87	2.8/4.0	2.4/2.6	2.4/2.5	2.8/3.0	0.0015
0.09/0.36	25/75 %	D08LA82	700/2800	1.22/1.22	0.70/1.05	0.60/0.92	2.9/4.5	2.0/2.6	2.0/2.5	2.4/2.9	0.0015
0.12/0.5	25/75 %	D08LA82	700/2800	1.70/1.70	0.95/1.43	0.60/0.92	2.9/4.5	2.0/2.6	2.0/2.5	2.4/2.9	0.0015
0.16/0.63	25/75 %	D08LA82	700/2800	2.1/2.1	1.20/1.45	0.63/0.90	2.0/4.6	1.8/2.1	1.8/2.0	2.2/2.4	0.0015
0.25/1.0	25/75 %	D09XA82	700/2800	3.4/3.4	1.30/2.3	0.62/0.90	2.2/5.2	1.9/2.3	1.9/2.3	2.0/2.6	0.0038
0.36/1.4	25/75 %	D09XA82	700/2800	4.9/4.8	2.1/3.3	0.57/0.87	2.0/4.5	1.9/2.1	1.9/2.1	2.0/2.4	0.0038
0.45/1.8	25/75 %	D09XA82	700/2800	6.1/6.1	2.4/4.3	0.65/0.89	2.0/4.3	1.7/2.0	1.7/2.0	2.0/2.5	0.0038
0.56/2.2	25/75 %	D11LA82	710/2840	7.5/7.3	2.3/4.7	0.60/0.94	3.2/4.9	1.9/2.9	1.9/2.4	2.2/2.9	0.014
0.71/2.8	25/75 %	D11LA82	710/2840	9.5/9.4	2.8/5.6	0.58/0.94	2.5/4.7	1.9/2.3	1.9/2.0	2.1/2.4	0.014
0.90/3.6	25/75 %	D11LA82	710/2840	12.1/12.1	3.5/7.9	0.58/0.94	2.5/4.5	1.8/2.0	1.8/1.8	2.0/2.1	0.014

P _N	Rated power
ED	Duty cycle
n _N	Guideline value for rated speed at the rotor shaft
M _N	Rated torque at the rotor shaft
I _N	Rated current (the current can be converted in inverse ratio to the voltages for the desired special voltage)
cosφ	Power factor
I _A /I _N	Relative starting current
M _A /M _N	Relative starting torque
M _S /M _N	Relative pull-up torque
M _K /M _N	Relative breakdown torque
J _{rot}	Mass moment of inertia of the rotor

The standard motor winding configuration is for 400 V / 50 Hz.

See "www.bauergears.com" for more information.

Technical data of the 50 Hz motors

50 Hz

12/2-pole Y/Y motors for intermittent periodic duty S3 25/75 % and 50 Hz mains frequency

P _N kW	DC	Type	n _N 1/min	M _N Nm	I _N (400V) A	cosφ	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	J _{rot} kgm ²
0.045/0.28	25/75 %	D08LA122	470/2800	0.92/0.95	0.55/0.86	0.70/0.90	1.4/4.5	1.9/2.4	1.9/2.4	1.9/2.7	0.0015
0.063/0.4	25/75 %	D08LA122	470/2800	1.29/1.36	0.66/1.10	0.70/0.90	1.4/4.5	1.7/2.2	1.7/2.2	1.7/2.4	0.0015
0.09/0.56	25/75 %	D08LA122	470/2800	1.85/1.91	1.00/1.45	0.63/0.89	1.4/4.1	1.7/2.1	1.7/2.3	1.8/2.4	0.0015
0.11/0.71	25/75 %	D09XA122	470/2800	2.3/2.4	1.05/1.60	0.59/0.88	1.5/5.5	1.7/2.7	1.7/2.6	1.8/3.3	0.0038
0.16/1.0	25/75 %	D09XA122	470/2800	3.2/3.4	1.70/2.4	0.62/0.89	1.5/5.5	1.8/2.6	1.8/2.5	1.8/3.3	0.0038
0.20/1.25	25/75 %	D09XA122	470/2800	4.1/4.2	2.0/3.0	0.62/0.89	1.5/5.0	1.7/2.4	1.7/2.3	1.7/3.1	0.0038
0.25/1.6	25/75 %	D11LA122	470/2840	5.1/5.3	2.3/3.4	0.53/0.95	1.6/4.9	1.7/2.6	1.7/2.4	2.0/2.8	0.014
0.32/2.0	25/75 %	D11LA122	470/2840	6.5/6.7	2.9/4.0	0.53/0.94	1.6/4.7	1.7/2.5	1.7/2.2	2.0/2.7	0.014
0.45/2.8	25/75 %	D11LA122	470/2840	9.2/9.4	4.5/5.6	0.52/0.94	1.6/4.7	1.5/2.3	1.5/2.0	1.8/2.4	0.014

P _N	Rated power
ED	Duty cycle
n _N	Guideline value for rated speed at the rotor shaft
M _N	Rated torque at the rotor shaft
I _N	Rated current (the current can be converted in inverse ratio to the voltages for the desired special voltage)
cosφ	Power factor
I _A /I _N	Relative starting current
M _A /M _N	Relative starting torque
M _S /M _N	Relative pull-up torque
M _K /M _N	Relative breakdown torque
J _{rot}	Mass moment of inertia of the rotor

The standard motor winding configuration is for 400 V / 50 Hz.

See "www.bauergears.com" for more information.

Motors - ASM

Technical data

Technical data of the 60 Hz motors

60 Hz

4-pole IE1 motors for continuous operation S1, mains frequency 60 Hz

P _N kW	Type	n _N 1/min	M _N Nm	I _N (460V) A	Connec- tion	cosφ	η (100%-Load) %	η (75%-Load) %	η (50%-Load) %	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	J _{rot} kgm ²	Brake
0.03	D04LA4	1620	0.17	0.18	Y	0.60	-	-	-	2.4	2.9	2.9	3.3	0.000175	E003
0.04	D04LA4	1620	0.23	0.18	Y	0.60	-	-	-	2.4	2.2	2.2	2.5	0.000175	
0.06	D04LA4	1620	0.35	0.28	Y	0.60	-	-	-	2.5	2.3	2.3	2.7	0.000175	
0.09	D04LA4	1620	0.52	0.40	Y	0.69	-	-	-	2.7	2.4	2.4	2.9	0.000175	
0.11	D04LA4	1620	0.64	0.42	Y	0.58	-	-	-	2.7	2.4	2.4	2.7	0.000175	
0.12	D04LA4	1620	0.7	0.42	Y	0.73	-	-	-	2.5	1.9	1.9	2.1	0.000175	
0.06	D05LA4	1620	0.35	0.32	Y	0.72	-	-	-	4.1	4.1	3.8	4.1	0.000295	E003
0.09	D05LA4	1620	0.52	0.35	Y	0.70	-	-	-	4.3	3.3	3.1	3.3	0.000295	
0.12	D05LA4	1620	0.7	0.38	Y	0.73	-	-	-	3.7	2.4	2.3	2.4	0.000295	
0.18	D05LA4	1620	1.06	0.58	Y	0.70	-	-	-	3.7	2.5	2.4	2.6	0.000295	
0.25	D05LA4	1620	1.45	0.80	Y	0.69	-	-	-	3.6	2.5	2.4	2.5	0.000295	
0.06	D06LA4	1620	0.35	0.32	Y	0.72	-	-	-	4.1	4.1	3.8	4.1	0.000295	E003
0.09	D06LA4	1620	0.52	0.35	Y	0.70	-	-	-	4.3	3.3	3.1	3.3	0.000295	
0.12	D06LA4	1620	0.7	0.38	Y	0.73	-	-	-	3.7	2.4	2.3	2.4	0.000295	
0.18	D06LA4	1620	1.06	0.58	Y	0.70	-	-	-	3.7	2.5	2.4	2.6	0.000295	
0.25	D06LA4	1620	1.45	0.80	Y	0.69	-	-	-	3.6	2.5	2.4	2.5	0.000295	
0.3	D07LA4	1620	1.76	1.20	Y	0.60	-	-	-	3.0	3.0	3.0	3.1	0.000385	E003 E004
0.37	D07LA4	1620	2.1	1.26	Y	0.66	-	-	-	2.8	2.4	2.4	2.4	0.000385	
0.55	DSE08MA4	1720	3.1	1.28	Y	0.72	75.4	75.2	73.0	4.6	2.3	2.2	2.7	0.00115	ES(X)010 EH(X)010 EH(X)027
0.75	DSE08LA4	1720	4.15	1.75	Y	0.69	78.2	77.0	72.7	4.8	2.5	2.4	2.9	0.00150	
1.1	DSE08XA4	1720	6.2	2.4	Y	0.71	79.0	77.0	73.0	4.1	2.2	2.0	2.4	0.00170	
1.1	DSE09SA4	1740	6.05	2.3	Y	0.72	83.6	82.6	79.2	6.5	3.6	3.3	4.0	0.00245	ES(X)010 ES(X)027 EH(X)027 EH(X)040
1.5	DSE09LA4	1740	8.25	3.1	Y	0.72	84.2	83.5	80.4	6.5	3.4	3.1	4.0	0.00320	
2.2	DSE09XA4	1720	12.2	4.3	Y	0.76	84.9	85.0	83.0	6.2	3.3	3.0	3.6	0.00380	
3	DSE11SA4	1740	16.4	5.5	D	0.78	86.7	86.6	84.4	6.9	3.0	2.7	3.8	0.00810	ES(X)027 ES(X)040
4	DSE11MA4	1740	21.9	7.2	D	0.81	86.2	86.4	84.9	6.9	3.3	2.7	3.7	0.01050	
5.5	DSE11LA4	1740	30.2	9.7	D	0.81	87.7	87.8	86	7.6	3.3	2.9	4	0.014	ES(X)027 ES(X)040 ES(X)070 EH(X)070 EH(X)125

P _N	Rated power
n _N	Guideline value for rated speed at the rotor shaft
M _N	Rated torque at the rotor shaft
I _N	Rated current (the current can be converted in inverse ratio to the voltages for the desired special voltage)
cosφ	Power factor
η	Efficiency at different loads
I _A /I _N	Relative starting current
M _A /M _N	Relative starting torque
M _S /M _N	Relative pull-up torque
M _K /M _N	Relative breakdown torque
J _{rot}	Mass moment of inertia of the rotor
Brake	Brake dimensioning see chapter "Motor Mounted Components-Dimensions"

The standard motor winding configuration is for 460 V / 60 Hz.

See "www.bauergears.com" for more information.

Continuous operation S1, 60 Hz

60 Hz

4-pole IE2 motors for continuous operation S1, mains frequency 60 Hz

4-pole IE2 motors for continuous operation S1, mains frequency 60 Hz										Power losses in % at operating points (Speed/Torque)														
n (100 %-Load)	n (75 %-Load)		n (50 %-Load)		Type	Number of poles	P kW	Hz	V	1/min	n _z													
												25/25	25/100	50/25	50/50	50/100	90/50	90/100						
68.8	65.8	58.9	IE2	1)	DHE05LA4	4	0.12	60	460	1710	2)	23.6	35.4	26.0	28.4	38.1	34.1	44.0						
68.4	65.4	58.1	IE2	1)	DHE06LA4	4	0.12	60	460	1710	2)	24.3	35.9	26.8	29.1	38.5	34.9	44.5						
71.6	69.3	63.1	IE2	1)	DHE05LA4	4	0.18	60	460	1700	2)	20.4	32.0	22.3	24.6	34.0	29.0	38.7						
71.2	68.8	62.4	IE2	1)	DHE06LA4	4	0.18	60	460	1700	2)	20.4	32.0	22.4	24.7	34.1	29.3	39.0						
72.6	70.3	64.6	IE2	1)	DHE07LA4	4	0.25	60	460	1700	2)	17.8	29.3	19.8	22.1	31.5	26.9	36.6						
74.6	73	67.6	IE2	1)	DHE07LA4	4	0.3	60	460	1690	2)	16.1	27.6	17.7	20.1	29.4	23.9	33.4						
77.8	75.7	70.1	IE2	1)	DHE08MA4	4	0.37	60	460	1745	2)	12.1	19.9	14.0	15.6	22.1	20.2	27.1						
80.5	79.9	76.3	IE2	1)	DHE08LA4	4	0.55	60	460	1730	2)	8.7	18.3	10.2	12.2	20.0	15.7	24.0						

1) Manufacturer: Commercial register number: Address:	Bauer Gear Motor GmbH HRB 736269 Eberhard-Bauer-Str. 37, 73734 Esslingen/Germany	2) Type of motor: three-phase motor	3) Installation altitude above sea level (m): 1000 Ambient temperature: -20 °C to +40 °C
--	--	-------------------------------------	---

Motors - ASM

Technical data

Technical data of the 60 Hz motors

60 Hz

4-pole IE2 motors for continuous operation S1, mains frequency 60 Hz

P _N kW	Type	n _N 1/min	M _N Nm	I _N (460 V) A	Connec- tion	cosφ	η (100%-Last) %	η (75%-Last) %	η (50%-Last) %	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	J _{rot} kgm ²	Brake
0.12	DHE05LA4	1710	0.67	0.36	Y	0.61	68.8	65.8	58.9	4	2.8	2.8	3.2	0.000295	E003
0.12	DHE06LA4	1710	0.67	0.36	Y	0.6	68.4	65.4	58.1	3.9	2.8	2.8	3.3	0.000295	
0.18	DHE05LA4	1700	1.01	0.52	Y	0.61	71.6	69.3	63.1	4	3.2	3.1	3.3	0.000295	
0.18	DHE06LA4	1700	1.01	0.53	Y	0.6	71.2	68.8	62.4	3.9	3.2	3.1	3.3	0.000295	
0.25	DHE07LA4	1700	1.4	0.7	Y	0.62	72.6	70.3	64.6	4.2	3.4	3.2	3.5	0.000385	
0.3	DHE07LA4	1690	1.7	0.82	Y	0.62	74.6	73	67.6	4.2	3.5	3.3	3.5	0.000385	E004
0.37	DHE08MA4	1745	2	0.99	Y	0.6	77.8	75.7	70.1	5.9	2.9	2.7	3.6	0.00115	ES(X)010 EH(X)010 EH(X)027
0.55	DHE08LA4	1730	3	1.23	Y	0.69	80.5	79.9	76.3	5.4	2.7	2.4	3.2	0.0015	
0.75	DHE08XA4	1720	4.1	1.60	Y	0.72	82.5	81.0	78.0	5.1	2.5	2.4	3.0	0.0017	
0.75	DHE09SA4	1740	4.1	1.60	Y	0.70	83.7	82.4	78.3	7.3	3.4	3.0	4.0	0.00245	
1.1	DHE09LA4	1740	6.0	2.25	Y	0.73	84.8	83.8	80.4	7.3	3.6	3.3	4.3	0.0032	ES(X)010 ES(X)027 EH(X)027 EH(X)040
1.5	DHE09XA4	1740	8.2	2.95	Y	0.74	85.8	85.2	82.5	7.2	3.7	3.5	4.3	0.0038	
2.2	DHE09XB4	1740	12.1	4.1	Y	0.77	87.5	87.1	85.2	7.5	3.4	3.1	4.0	0.0049	
2.2	DHE11SA4	1760	12	4.0	Y	0.78	87.7	87.2	84.1	8.3	3.5	3.1	4.3	0.0081	
3	DHE11MA4	1760	16.5	5.5	D	0.78	87.6	87.2	83.9	7.9	3.9	3.1	4.4	0.0105	ES(X)027 ES(X)040 ES(X)070
4	DHE11LA4	1760	21.5	7.3	D	0.77	88.3	87.5	84.6	9.3	4.1	3.6	4.9	0.014	
5.5	DHE11LB4	1750	30	9.6	D	0.8	89.5	89.2	87.4	9.1	3.6	3.2	4.5	0.017	

P _N	Rated power
n _N	Guideline value for rated speed at the rotor shaft
M _N	Rated torque at the rotor shaft
I _N	Rated current (the current can be converted in inverse ratio to the voltages for the desired special voltage)
cosφ	Power factor
η	Efficiency at different loads
I _A /I _N	Relative starting current
M _A /M _N	Relative starting torque
M _S /M _N	Relative pull-up torque
M _K /M _N	Relative breakdown torque
J _{rot}	Mass moment of inertia of the rotor
Brake	Brake dimensioning see chapter "Motor Mounted Components-Dimensions"

Winding configuration for standard motors for 460 V / 60 Hz.

All motors are suitable for the voltage range 440...480 V or 460 V +/- 10 % if executed in insulation class F.

Important: Current, power factor and torque change as voltage deviates from 460 V.

See "www.bauergears.com" for more information.

Continuous operation S1, 60 Hz

60 Hz

4-pole IE3 motors for continuous operation S1, line frequency 60 Hz

n (100 %-Load)	n (75 %-Load)	n (50 %-Load)	%	%	%	Type	Number of poles	P kW	Hz	V	1/min	n_z	Power losses in % at operating points (Speed/Torque)						
													Operating conditions	25/25	25/100	50/25	50/100	50/50	
71.4	68.2	61	IE3	1)	DPE05LA4	4	0.12	60	460	1715	2)	3)	20.4	30.2	22.9	24.9	32.8	30.7	38.9
70.8	67.4	60.3	IE3	1)	DPE06LA4	4	0.12	60	460	1715	2)	3)	20.6	30.5	23.1	25.2	33.3	31.1	39.6
73.1	70.5	64.2	IE3	1)	DPE07LA4	4	0.18	60	460	1715	2)	3)	16.9	27.1	19.1	21.2	29.5	26.4	35.1
78.2	76.2	70.9	IE3	1)	DPE08MA4	4	0.25	60	460	1745	2)	3)	11.6	19.7	13.8	15.5	22.3	21.0	28.4
81.5	79.4	74.3	IE3	1)	DPE08LA4	4	0.37	60	460	1750	2)	3)	8.7	15.0	10.5	11.8	17.0	16.1	21.6
82.9	81.7	77.9	IE3	1)	DPE08XA4	4	0.55	60	460	1740	2)	3)	7.6	15.0	9.1	10.6	16.7	14.1	20.5
85	84.6	81.7	IE3	1)	DPE08XB4	4	0.75	60	460	1735	2)	3)	6.5	14.1	7.5	9.1	15.3	11.4	18.0
83.9	82.6	78.9	IE3	1)	DPE09LA4	4	0.75	60	460	1750	2)	3)	5.0	11.5	6.9	8.3	13.7	12.8	18.8
87.4	86.4	83.5	IE3	1)	DPE09XB4	4	1.1	60	460	1755	2)	3)	5.3	10.6	6.6	7.7	12.0	10.8	15.3
87.1	86.8	84.4	IE3	1)	DPE09XB4	4	1.5	60	460	1745	2)	3)	5.0	11.6	6.1	7.4	12.9	9.9	15.7
90.3	90	88.3	IE3	1)	DPE11LB4	4	2.2	60	460	1760	2)	3)	3.3	7.9	4.3	5.2	9.0	7.5	11.6
90.7	90.5	88.9	IE3	1)	DPE11LB4	4	3	60	460	1760	2)	3)	2.5	7.5	3.8	4.8	8.8	7.0	11.0
90.5	90.5	89.5	IE3	1)	DPE11LB4	4	4	60	460	1760	2)	3)	3.0	7.8	3.8	4.8	8.7	6.8	11.0

- 1) Manufacturer:
Commercial register
number:
Address:
- 2) Type of motor: three-phase motor
- 3) Installation altitude above sea level (m): 1000
Ambient temperature: -20 °C to +40 °C

Motors - ASM

Technical data

Technical data of the 60 Hz motors

60 Hz

4-pole IE3 motors for continuous operation S1, mains frequency 60 Hz

PN kW	Type	n_N 1/min	M_N (460 V)	I_N A	Connec- tion	$\cos\varphi$	η (100%-Load) %	η (75%-Load) %	η (50%-Load) %	I_A/I_N	M_A/M_N	M_S/M_N	M_K/M_N	J_{rot}	Brake
0.12	DPE05LA4	1715	0.67	0.37	Y	0.57	71.4	68.2	61	4.4	3.7	3.6	3.9	0.000295	E003
0.12	DPE06LA4	1715	0.67	0.37	Y	0.57	70.8	67.4	60.3	4.4	3.7	3.6	3.9	0.000295	E003
0.18	DPE07LA4	1715	1	0.52	Y	0.6	73.1	70.5	64.2	4.7	3.8	3.6	3.9	0.000385	E003. E004
0.25	DPE08MA4	1745	1.37	0.65	Y	0.63	78.2	76.2	70.9	5.5	3	2.7	3.7	0.00115	ES(X)010 EH(X)010/027
0.37	DPE08LA4	1750	2	0.94	Y	0.6	81.5	79.4	74.3	6.3	3.6	3.3	4.3	0.0015	
0.55	DPE08XA4	1740	3	1.25	Y	0.67	82.9	81.7	77.9	6.2	3.4	3	3.9	0.0017	
0.75	DPE08XB4	1735	4.15	1.67	Y	0.67	85	84.6	81.7	6.4	3.6	3.1	4	0.002	
0.75	DPE09LA4	1750	4.1	1.45	Y	0.76	83.9	82.6	78.9	7.7	3.7	3.4	4.2	0.0032	
1.1	DPE09XB4	1755	6	2.2	Y	0.73	87.4	86.4	83.5	8.7	4.2	3.8	5	0.0049	ES(X)010/027 EH(X)027/040
1.5	DPE09XB4	1745	8.2	2.9	Y	0.76	87.1	86.8	84.4	7.6	3.6	3.4	4.3	0.0049	
2.2	DPE11LB4	1760	11.9	3.7	Y	0.83	90.3	90	88.3	9.5	3.7	3.2	4.5	0.017	ES(X)027/040/070 EH(X)070/125
3	DPE11LB4	1760	16.3	5.2	D	0.81	90.7	90.5	88.9	9	3.8	3.3	4.6	0.017	
4	DPE11LB4	1760	21.7	6.9	D	0.81	90.5	90.5	89.5	9.3	3.7	3	4.7	0.017	

P_N	Rated power
n_N	Guideline value for rated speed at the rotor shaft
M_N	Rated torque at the rotor shaft
I_N	Rated current (the current can be converted in inverse ratio to the voltages for the desired special voltage)
$\cos\varphi$	Power factor
η	Efficiency at different loads
I_A/I_N	Relative starting current
M_A/M_N	Relative starting torque
M_S/M_N	Relative pull-up torque
M_K/M_N	Relative breakdown torque
J_{rot}	Mass moment of inertia of the rotor
Brake	Brake dimensioning see chapter "Motor Mounted Components-Dimensions"

The standard motor winding configuration is for 460 V / 60 Hz.

All motors are suitable for the voltage range 440...480 V or 460 V +/- 10 % if executed in insulation class F.

Important: Current, power factor and torque change as voltage deviates from 460 V.

See "www.bauergears.com" for more information.

Technical data of the 60 Hz motors

60 Hz

4-pole motors for intermittent periodic duty (S3/S6 75 %) and 60 Hz mains frequency

P _N kW	Type	n _N 1/min	M _N Nm	I _N (460 V) A	Connection	cosφ	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	J _{rot} kgm ²	Brake
0.9	DSE08MA4	1620	5.4	2.1	Y	0.81	3.2	1.6	1.5	1.9	0.00115	ES(X)010 ES(X)027 ES(X)040 ES(X)070
1.1	DSE08LA4	1660	6.3	2.4	Y	0.79	3.6	1.6	1.6	1.9	0.0015	
1.5	DSE08XA4	1660	8.4	3.1	Y	0.81	3.6	1.6	1.5	1.8	0.0017	
2	DSE09SA4	1660	11.5	3.8	Y	0.86	4.2	1.8	1.6	2	0.00245	
2.6	DSE09LA4	1660	15.3	5	Y	0.86	4.3	1.9	1.8	2.2	0.0032	
3	DSE09XA4	1680	17	5.5	Y	0.83	4.8	2.4	2.2	2.6	0.0038	
4.5	DSE11SA4	1700	25	7.8	D	0.85	4.9	2	1.8	2.5	0.0081	
6	DSE11MA4	1700	34	10.5	D	0.86	4.7	2.2	1.8	2.4	0.0105	
7.5	DSE11LA4	1720	41.5	12.7	D	0.86	5.8	2.4	2.1	2.9	0.014	

P _N	Rated power
n _N	Guideline value for rated speed at the rotor shaft
M _N	Rated torque at the rotor shaft
I _N	Rated current (the current can be converted in inverse ratio to the voltages for the desired special voltage)
cosφ	Power factor
I _A /I _N	Relative starting current
M _A /M _N	Relative starting torque
M _S /M _N	Relative pull-up torque
M _K /M _N	Relative breakdown torque
J _{rot}	Mass moment of inertia of the rotor
Brake	Brake dimensioning see chapter "Motor Mounted Components-Dimensions"

The standard motor winding configuration is for 460 V / 60 Hz.

See "www.bauergears.com" for more information.

Motors - ASM

Technical data

Technical data of the 60 Hz motors

60 Hz

4-pole motors for intermittent periodic duty (S3/S6) and 60 Hz mains frequency

P _N kW	ED 15%	Type D04LA4	n _N 1/min 1620	M _N Nm 0.87	I _N (460 V) 0.56	Connection Y	cosφ 0.77	I _A /I _N 2.2	M _A /M _N 1.8	M _S /M _N 1.7	M _K /M _N 1.8	J _{rot} kgm ² 0.000175
0.15	15%	D05LA4	1620	1.75	0.9	Y	0.75	2.8	2.1	2	2.1	0.000295
0.3	60%	D06LA4	1620	1.75	0.9	Y	0.75	2.8	2.1	2	2.1	0.000295
0.55	60%	D07LA4	1620	3.2	1.78	Y	0.86	3.7	1.8	1.6	1.8	0.000385
0.75	60%	D08MA4	1680	4.2	1.84	Y	0.81	3.7	1.8	1.5	1.9	0.00115
1.1	60%	D08LA4	1680	6.2	2.5	Y	0.82	3.6	1.6	1.5	1.9	0.0015
1.5	60%	D09SA4	1680	8.5	3.3	Y	0.84	4.3	1.9	1.6	2.2	0.00245
2.2	60%	D09LA4	1680	12.5	4.5	Y	0.86	4.3	1.8	1.6	2.1	0.0032
3	60%	D09XA4	1680	16.6	6.2	Y	0.86	3.7	1.9	1.8	2.1	0.0038
4	60%	D11SA4	1710	22	8.1	Δ	0.85	4.4	1.8	1.5	2.2	0.0081
5.5	60%	D11MA4	1710	30.5	10.7	Δ	0.87	4.7	1.6	1.6	2.2	0.0105
7.5	60%	D11LA4	1710	41.5	14.6	Δ	0.87	5	2	1.9	2.3	0.014

P _N	Rated power
ED	Duty cycle
n _N	Guideline value for rated speed at the rotor shaft
M _N	Rated torque at the rotor shaft
I _N	Rated current (the current can be converted in inverse ratio to the voltages for the desired special voltage)
cosφ	Power factor
I _A /I _N	Relative starting current
M _A /M _N	Relative starting torque
M _S /M _N	Relative pull-up torque
M _K /M _N	Relative breakdown torque
J _{rot}	Mass moment of inertia of the rotor

The standard motor winding configuration is for 460 V / 60 Hz.

See "www.bauergears.com" for additional information.

Technical data of the 60 Hz motors

60 Hz

4/2-pole motors Δ/YY for continuous operation S1, line frequency 60 Hz

P _N kW	Type	n _N 1/min	M _N Nm	I _N (460 V) A	cosφ	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	J _{rot} kgm ²
0.03/0.06	D04LA42	1620/3240	0.160/0.170	0.200/0.230	0.56/0.67	2.4/3.4	3.8/3.4	3.8/3.4	4.0/3.7	0.000175
0.04/0.08	D04LA42	1620/3240	0.230/0.230	0.230/0.260	0.60/0.75	2.2/3.1	3.3/2.3	3.3/2.3	3.7/2.4	0.000175
0.06/0.12	D05LA42	1620/3240	0.350/0.350	0.420/0.420	0.50/0.75	3.1/3.6	3.4/2.2	3.3/2.1	4.2/2.9	0.000295
0.08/0.16	D05LA42	1620/3240	0.470/0.470	0.460/0.460	0.55/0.75	3.1/3.6	3.1/2.0	3.0/1.9	3.8/2.5	0.000295
0.06/0.12	D06LA42	1620/3240	0.350/0.350	0.420/0.420	0.50/0.75	3.1/3.6	3.4/2.2	3.3/2.1	4.2/2.9	0.000295
0.08/0.16	D06LA42	1620/3240	0.470/0.470	0.46/0.460	0.55/0.75	3.1/3.6	3.1/2.0	3.0/1.9	3.8/2.5	0.000295
0.11/0.22	D06LA42	1620/3240	0.64/0.64	0.63/0.63	0.55/0.75	3.1/3.6	3.1/2.0	3.0/1.9	3.8/2.5	0.000295
0.16/0.32	D06LA42	1620/3240	0.94/0.94	0.82/0.82	0.57/0.80	3.1/3.6	2.8/1.9	2.7/1.8	3.4/2.3	0.000295
0.2/0.4	D07LA42	1680/3360	1.12/1.14	1.04/1.08	0.58/0.81	3.2/3.9	3.1/1.8	3.0/1.5	3.3/2.2	0.000385
0.28/0.56	D08MA42	1680/3360	1.58/1.58	1.10/1.60	0.61/0.81	3.7/3.2	2.5/1.7	2.5/1.5	3.3/2.1	0.00115
0.4/0.8	D08LA42	1680/3360	2.2/2.2	1.40/1.74	0.6/0.90	5.1/5.6	3.0/2.0	2.6/1.9	3.4/2.3	0.0015
0.5/1.0	D09SA42	1680/3360	2.8/2.8	1.60/2.6	0.71/0.91	5.5/4.6	3.4/2.2	3.4/2.2	4.2/2.6	0.00245
0.7/1.4	D09SA42	1680/3360	3.9/3.9	1.93/3.1	0.71/0.93	5.1/4.5	2.8/1.8	2.8/1.8	3.4/2.2	0.00245
1.0/2.0	D09LA42	1680/3360	5.6/5.6	2.8/4.3	0.72/0.94	5.1/4.5	2.8/1.8	2.8/1.8	3.4/2.2	0.0032
1.2/2.4	D09XA42	1680/3360	6.8/6.7	3.4/5.2	0.65/0.87	6.8/3.3	2.7/2.0	2.7/2.0	3.4/2.5	0.0038
1.4/2.8	D11SA42	1710/3420	7.8/7.8	3.3/5.7	0.74/0.90	7.0/4.9	3.3/1.9	2.8/1.6	4.5/3.1	0.0081
2.0/4.0	D11MA42	1710/3420	11.2/11.1	51./8.4	0.70/0.90	7.3/5.9	3.4/2.3	3.0/1.8	4.1/2.8	0.0105
2.5/5.0	D11LA42	1710/3420	14/14	5.0/9.1	0.79/0.92	6./5.0	3.1/2.0	3.0/1.9	4.1/2.8	0.014

P _N	Rated power
n _N	Guideline value for rated speed at the rotor shaft
M _N	Rated torque at the rotor shaft
I _N	Rated current (the current can be converted in inverse ratio to the voltages for the desired special voltage)
cosφ	Power factor
I _A /I _N	Relative starting current
M _A /M _N	Relative starting torque
M _S /M _N	Relative pull-up torque
M _K /M _N	Relative breakdown torque
J _{rot}	Mass moment of inertia of the rotor

The standard motor winding configuration is for 460 V / 60 Hz.

See "www.bauergears.com" for additional information.

Motors - ASM

Technical data

Technical data of the 60 Hz motors

60 Hz

8/4-pole motors Δ/YY for continuous operation S1, line frequency 60 Hz

P _N kW	Type	n _N 1/min	M _N Nm	I _N (460 V) A	cosφ	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	J _{rot} kgm ²
0.03/0.06	D05LA84	810/1620	0.340/0.350	0.280/0.260	0.52/0.71	1.8/2.8	3.0/2.1	1.8/1.9	1.8/1.9	0.000295
0.03/0.06	D06LA84	810/1620	0.340/0.350	0.280/0.260	0.52/0.71	1.8/2.8	3.0/2.1	1.8/1.9	1.8/1.9	0.000295
0.04/0.08	D06LA84	810/1620	0.450/0.460	0.440/0.370	0.52/0.66	1.5/2.4	2.9/2.3	1.8/1.9	1.8/1.9	0.000295
0.06/0.12	D07LA84	810/1620	0.70/0.70	0.65/0.55	0.52/0.66	1.9/3.1	3.5/1.9	3.5/1.7	3.6/2.3	0.000385
0.06/0.12	D08LA84	840/1680	0.67/0.67	0.460/0.460	0.61/0.83	3.1/4.1	3.4/2.5	3.4/2.5	3.9/3.2	0.0025
0.08/0.16	D08LA84	840/1680	0.90/0.90	0.57/0.57	0.61/0.83	3.1/4.1	3.3/2.4	3.3/2.4	3.9/3.3	0.0025
0.11/0.22	D08LA84	840/1680	1.24/1.25	0.74/0.74	0.61/0.83	3.1/4.1	3.1/2.3	3.1/2.3	3.7/3.1	0.0025
0.14/0.28	D08LA84	840/1680	1.58/1.59	0.92/0.92	0.61/0.83	3.1/4.1	3.1/2.3	3.1/2.3	3.7/3.1	0.0025
0.2/0.4	D08LA84	840/1680	2.2/2.2	1.05/1.20	0.55/0.77	3.1/4.1	2.5/1.9	2.5/1.9	3.0/2.5	0.0025
0.25/0.5	D09XC84	840/1680	2.8/2.8	1.28/1.28	0.48/0.77	3.2/5.5	3.0/2.2	3.0/2.3	3.4/3.0	0.006
0.28/0.56	D09XC84	840/1680	3.1/3.1	1.29/1.38	0.57/0.80	3.2/5.4	2.7/2.0	2.7/2.1	3.1/2.7	0.006
0.4/0.8	D09XC84	840/1680	4.5/4.5	1.80/2.2	0.55/0.79	3.1/4.6	2.5/1.9	2.5/2.0	3.0/2.5	0.006
0.5/1.0	D09XC84	840/1680	5.6/5.6	2.2/2.4	0.55/0.81	2.9/4.4	2.4/1.8	2.4/1.8	2.8/2.4	0.006
0.8/1.6	D11LC84	850/1710	8.9/8.9	2.8/3.8	0.63/0.88	3.8/4.7	2.4/2.1	2.4/1.9	3.1/3.0	0.0215
1.1/2.2	D11LC84	850/1710	12.2/12.2	3.7/4.5	0.58/0.85	4.3/6.2	2.5/2.3	2.5/1.9	3.0/2.7	0.0215
1.6/3.2	D11LC84	850/1710	17.9/17.9	5.5/7.0	0.59/0.84	4.1/5.6	2.4/2.0	2.3/1.6	2.8/2.5	0.0215

P_N Rated power
n_N Guideline value for rated speed at the rotor shaft
M_N Rated torque at the rotor shaft
I_N Rated current (the current can be converted in inverse ratio to the voltages for the desired special voltage)
cosφ Power factor
I_A/I_N Relative starting current
M_A/M_N Relative starting torque
M_S/M_N Relative pull-up torque
M_K/M_N Relative breakdown torque
J_{rot} Mass moment of inertia of the rotor

The standard motor winding configuration is for 460 V / 60 Hz.

See "www.bauergears.com" for additional information.

Technical data of the 60 Hz motors

60 Hz

8/2-pole Y/Y motors for intermittent periodic duty S3 25/75 % and 60 Hz mains frequency

P _N kW	ED	Type	n _N 1/min	M _N Nm	I _N (460 V) A	cosφ	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	J _{rot} kgm ²
0.04/0.16	25/75 %	D05LA82	680/2700	0.56/0.56	0.400/0.80	0.63/0.75	1.6/3.2	1.9/2.2	1.9/2.1	2.0/2.3	0.000295
0.05/0.20	25/75 %	D06LA82	680/2700	0.70/0.70	0.51/1.02	0.63/0.75	1.4/2.8	1.7/2.0	1.7/1.9	1.8/2.1	0.000295
0.063/0.25	25/75 %	D07LA82	650/2840	0.87/0.87	0.60/1.20	0.69/0.62	1.4/2.6	1.6/1.4	1.6/1.4	1.8/2.7	0.000385
0.071/0.28	25/75 %	D07LA82	650/2840	0.99/0.98	0.65/1.40	0.69/0.68	1.4/2.6	1.5/1.3	1.5/1.3	1.7/2.6	0.000385
0.063/0.25	25/75 %	D08LA82	700/2800	0.85/0.85	0.55/0.70	0.55/0.87	2.8/4.0	2.4/2.6	2.4/2.5	2.8/3.0	0.0015
0.09/0.36	25/75 %	D08LA82	700/2800	1.22/1.22	0.70/1.05	0.60/0.92	2.9/4.5	2.0/2.6	2.0/2.5	2.4/2.9	0.0015
0.12/0.5	25/75 %	D08LA82	700/2800	1.70/1.70	0.95/1.43	0.60/0.92	2.9/4.5	2.0/2.6	2.0/2.5	2.4/2.9	0.0015
0.16/0.63	25/75 %	D08LA82	700/2800	2.1/2.1	1.20/1.45	0.63/0.90	2.0/4.6	1.8/2.1	1.8/2.0	2.2/2.4	0.0015
0.25/1.0	25/75 %	D09XA82	700/2800	3.4/3.4	1.30/2.3	0.62/0.90	2.2/5.2	1.9/2.3	1.9/2.3	2.0/2.6	0.0038
0.3/1.4	25/75 %	D09XA82	700/2800	4.9/4.8	2.1/3.3	0.57/0.87	2.0/4.5	1.9/2.1	1.9/2.1	2.0/2.4	0.0038
0.45/1.8	25/75 %	D09XA82	700/2800	6.1/6.1	2.4/4.3	0.65/0.89	2.0/4.3	1.7/2.0	1.7/2.0	2.0/2.5	0.0038
0.56/2.2	25/75 %	D11LA82	710/2840	7.5/7.3	2.3/4.7	0.60/0.94	3.2/4.9	1.9/2.9	1.9/2.4	2.2/2.9	0.014
0.71/2.8	25/75 %	D11LA82	710/2840	9.5/9.4	2.8/5.6	0.58/0.94	2.5/4.7	1.9/2.3	1.9/2.0	2.1/2.4	0.014
0.90/3.6	25/75 %	D11LA82	710/2840	12.1/12.1	3.5/7.9	0.58/0.94	2.5/4.5	1.8/2.0	1.8/1.8	2.0/2.1	0.014

P _N	Rated power
ED	Duty cycle
n _N	Guideline value for rated speed at the rotor shaft
M _N	Rated torque at the rotor shaft
I _N	Rated current (the current can be converted in inverse ratio to the voltages for the desired special voltage)
cosφ	Power factor
I _A /I _N	Relative starting current
M _A /M _N	Relative starting torque
M _S /M _N	Relative pull-up torque
M _K /M _N	Relative breakdown torque
J _{rot}	Mass moment of inertia of the rotor

The standard motor winding configuration is for 460 V / 60 Hz.

See "www.bauergears.com" for additional information.

Motors - ASM

Technical data

Technical data of the 60 Hz motors

60 Hz

12/2-pole motors Y/Y for intermittent periodic duty S3-25/75 %, line frequency 60 Hz

P _N kW	ED	Type	n _N 1/min	M _N Nm	I _N (460 V) A	cosφ	I _A /I _N	M _A /M _N	M _S /M _N	M _K /M _N	J _{rot} kgm ²
0.045/0.28	25/75 %	D08LA122	560/3360	0.76/0.79	0.51/0.79	0.70/0.90	1.5/4.9	2.1/2.7	2.1/2.7	2.1/3.0	0.0015
0.063/0.40	25/75 %	D08LA122	560/3360	1.07/1.13	0.61/1.02	0.70/0.90	1.5/4.9	1.9/2.4	1.9/2.4	1.9/2.7	0.0015
0.09/0.56	25/75 %	D08LA122	560/3360	1.54/1.59	0.95/1.35	0.63/0.89	1.5/4.5	1.9/2.3	1.9/2.5	2.0/2.6	0.0015
0.11/0.71	25/75 %	D09XA122	560/3360	1.88/2.0	1.00/1.50	0.59/0.88	1.6/6.0	1.9/3.0	1.9/2.9	2.0/3.6	0.0038
0.16/1.0	25/75 %	D09XA122	560/3360	2.7/2.8	1.56/2.2	0.62/0.89	1.6/6.0	2.0/2.9	2.0/2.7	2.0/3.6	0.0038
0.2/1.25	25/75 %	D09XA122	560/3360	3.4/3.5	1.85/2.8	0.62/0.89	1.6/5.5	1.9/2.6	1.9/2.5	1.9/3.4	0.0038
0.25/1.6	25/75 %	D11LA122	560/3420	4.2/4.4	2.1/3.1	0.53/0.95	1.8/5.4	1.9/2.8	1.9/2.6	2.2/3.1	0.014
0.32/2.0	25/75 %	D11LA122	560/3420	5.4/5.5	2.7/3.6	0.53/0.94	1.8/5.1	1.9/2.7	1.9/2.4	2.2/3.0	0.014
0.45/2.8	25/75 %	D11LA122	560/3420	7.6/7.8	3.8/5.1	0.52/0.94	1.8/5.1	1.6/2.5	1.6/2.2	2.0/2.6	0.014

P _N	Rated power
ED	Duty cycle
n _N	Guideline value for rated speed at the rotor shaft
M _N	Rated torque at the rotor shaft
I _N	Rated current (the current can be converted in inverse ratio to the voltages for the desired special voltage)
cosφ	Power factor
I _A /I _N	Relative starting current
M _A /M _N	Relative starting torque
M _S /M _N	Relative pull-up torque
M _K /M _N	Relative breakdown torque
J _{rot}	Mass moment of inertia of the rotor

The standard motor winding configuration is for 460 V / 60 Hz.

See "www.bauergears.com" for additional information.

Operation with frequency converter, 50 Hz

50 Hz

IE1 Motor torques for frequency-converter range 5 Hz - 70 Hz, line frequency 50 Hz

P _N kW	Type	Connec- tion	5 Hz M Nm	10 Hz M Nm	20 Hz M Nm	30 Hz M Nm	50 Hz M Nm	60 Hz M Nm	70 Hz M Nm	5 Hz I A	10 Hz I A	20 Hz I A	30 Hz I A	50 Hz I A	60 Hz I A	70 Hz I A
0.03	D04LA4	Y	0.125	0.155	0.185	0.205	0.21	0.21	0.18	0.19	0.193	0.198	0.2	0.2	0.23	0.23
0.04	D04LA4	Y	0.165	0.21	0.25	0.275	0.28	0.275	0.205	0.19	0.193	0.198	0.2	0.2	0.23	0.2
0.06	D04LA4	Y	0.25	0.315	0.375	0.41	0.42	0.42	0.32	0.29	0.295	0.3	0.3	0.3	0.34	0.305
0.09	D04LA4	Y	0.375	0.47	0.56	0.62	0.63	0.63	0.52	0.435	0.44	0.45	0.45	0.45	0.51	0.495
0.11	D04LA4	Y	0.465	0.58	0.7	0.77	0.78	0.67	0.495	0.41	0.425	0.44	0.45	0.45	0.45	0.435
0.06	D05LA4	Y	0.25	0.315	0.375	0.41	0.42	0.42	0.36	0.3	0.315	0.34	0.35	0.35	0.395	0.4
0.09	D05LA4	Y	0.375	0.47	0.56	0.62	0.63	0.63	0.54	0.355	0.365	0.375	0.38	0.38	0.43	0.43
0.06	D06LA4	Y	0.25	0.315	0.375	0.41	0.42	0.42	0.36	0.3	0.315	0.34	0.35	0.35	0.395	0.4
0.09	D06LA4	Y	0.375	0.47	0.56	0.62	0.63	0.63	0.54	0.355	0.365	0.375	0.38	0.38	0.43	0.43
0.12	DSE04LA4	Y	0.52	0.65	0.78	0.85	0.87	0.67	0.495	0.45	0.45	0.45	0.45	0.45	0.45	0.45
0.18	DSE05LA4	Y	0.76	0.96	1.15	1.26	1.28	1.28	0.97	0.6	0.61	0.63	0.63	0.63	0.72	0.64
0.2	DSE05LA4	Y	0.85	1.06	1.27	1.4	1.42	1.35	0.99	0.62	0.63	0.65	0.66	0.66	0.72	0.66
0.25	DSE05LA4	Y	1.05	1.31	1.57	1.72	1.75	1.59	1.17	0.86	0.87	0.87	0.87	0.87	0.9	0.87
0.18	DSE06LA4	Y	0.76	0.96	1.15	1.26	1.28	1.28	1.02	0.6	0.61	0.63	0.63	0.63	0.72	0.67
0.2	DSE06LA4	Y	0.85	1.06	1.27	1.4	1.42	1.35	0.99	0.61	0.63	0.64	0.65	0.65	0.71	0.65
0.25	DSE06LA4	Y	1.05	1.31	1.57	1.72	1.75	1.59	1.17	0.86	0.87	0.87	0.87	0.87	0.9	0.87
0.37	DSE07LA4	Y	1.59	1.98	2.3	2.6	2.6	2.5	1.85	1.13	1.14	1.15	1.15	1.15	1.24	1.15
0.55	DSE08MA4	Y	2.2	2.8	3.3	3.7	3.8	3.8	2.8	1.29	1.35	1.41	1.45	1.45	1.64	1.47
0.75	DSE08LA4	Y	3	3.8	4.5	5	5.1	5.1	3.9	1.7	1.79	1.89	1.95	1.95	2.2	1.97
1.1	DSE08XA4	Y	4.5	5.6	6.7	7.4	7.5	7.1	5.2	2.5	2.6	2.8	2.8	2.8	3.1	2.8
1.1	DSE09SA4	Y	4.5	5.6	6.7	7.4	7.5	7.5	6.4	2.2	2.4	2.5	2.6	2.6	3	3
1.5	DSE09LA4	Y	6	7.5	9	9.9	10.1	10.1	8.6	3	3.2	3.4	3.5	3.5	4	4
2.2	DSE09XA4	Y	9	11.2	13.5	14.8	15	15	12.4	3.9	4.2	4.7	4.9	4.9	5.6	5.4
3	DSE11SA4	Y	12	15	18	19.7	20	20	17.1	5.1	5.5	6.1	6.4	6.4	7.3	7.3
4	DSE11MA4	Y	16.2	20	24	26.5	27	27	23	6.4	7.1	7.9	8.4	8.4	9.5	9.5
5.5	DSE11LA4	Y	22	27.5	33	36.5	37	37	31.5	8.2	9.3	10.5	11.2	11.3	12.8	12.8

P_N Rated power

M Permissible load torque (S1-100 %) at the rotor shaft by operation with a frequency inverter

I Load current for operation with frequency inverter

Field weakening for frequencies above 50 Hz, winding for standard voltage **400 V Y / 50 Hz**, Temperature Class F.ation with frequency inverter

Motors with standard windings can be switched from Y- to Δ- circuit for operation with a converter having a single-phase mains connection. This has no effect on the torques and frequencies as listed in the table above. As regards the choice of converter, however, note that currents are higher than those of the Y-circuit by a factor of 1.73.

The load currents in the table are guideline values for selecting the size of frequency inverter. Load current is lower if the load torque is below the values permitted for 30-70 Hz and the frequency inverter used is of the high-grade type. This means that a smaller inverter can sometimes be used, particularly in conjunction with large motors.

Motors - ASM

Technical data

Operation with frequency converter, 50 Hz

50 Hz

IE1 Motor torques for frequency-converter range 5 Hz - 100 Hz, line frequency 50 Hz

P _N kW	Type	Connection	5 Hz	8.7 Hz	10 Hz	20 Hz	87 Hz	100 Hz	5 Hz	8.7 Hz	10 Hz	20 Hz	87 Hz	100 Hz
			M Nm	M Nm	M Nm	M Nm	M Nm	M Nm	I A	I A	I A	I A	I A	I A
0.03	D04LA4	D	0.125	0.15	0.155	0.185	0.21	0.21	0.33	0.335	0.335	0.345	0.35	0.38
0.04	D04LA4	D	0.165	0.2	0.21	0.25	0.28	0.28	0.33	0.335	0.335	0.345	0.35	0.38
0.06	D04LA4	D	0.25	0.3	0.315	0.375	0.42	0.42	0.51	0.51	0.51	0.52	0.52	0.57
0.09	D04LA4	D	0.375	0.45	0.47	0.56	0.63	0.63	0.76	0.76	0.77	0.78	0.78	0.86
0.11	D04LA4	D	0.465	0.56	0.58	0.7	0.78	0.73	0.71	0.73	0.73	0.76	0.78	0.81
0.06	D05LA4	D	0.25	0.3	0.315	0.375	0.42	0.42	0.52	0.54	0.55	0.59	0.61	0.67
0.09	D05LA4	D	0.375	0.45	0.47	0.56	0.63	0.63	0.62	0.63	0.63	0.65	0.66	0.73
0.09	D05LA4	D	0.375	0.45	0.47	0.56	0.63	0.63	0.62	0.63	0.63	0.65	0.66	0.73
0.06	D06LA4	D	0.25	0.3	0.315	0.375	0.42	0.42	0.52	0.54	0.55	0.59	0.61	0.67
0.09	D06LA4	D	0.375	0.45	0.47	0.56	0.63	0.63	0.62	0.63	0.63	0.65	0.66	0.73
0.12	DSE04LA4	D	0.52	0.62	0.65	0.78	0.87	0.74	0.78	0.78	0.78	0.78	0.78	0.78
0.18	DSE05LA4	D	0.76	0.92	0.96	1.15	1.28	1.28	1.04	1.06	1.06	1.08	1.1	1.2
0.2	DSE05LA4	D	0.85	1.02	1.06	1.27	1.42	1.42	1.06	1.09	1.09	1.13	1.15	1.26
0.25	DSE05LA4	D	1.05	1.25	1.31	1.57	1.75	1.73	1.49	1.5	1.5	1.51	1.51	1.65
0.18	DSE06LA4	D	0.76	0.92	0.96	1.15	1.28	1.28	1.04	1.06	1.06	1.08	1.1	1.2
0.2	DSE06LA4	D	0.85	1.02	1.06	1.27	1.42	1.42	1.06	1.08	1.08	1.11	1.13	1.24
0.25	DSE06LA4	D	1.05	1.25	1.31	1.57	1.75	1.73	1.49	1.5	1.5	1.51	1.51	1.65
0.37	DSE07LA4	D	1.59	1.9	1.98	2.3	2.6	2.6	1.95	1.96	1.97	1.98	2	2.2
0.55	DSE08MA4	D	2.2	2.7	2.8	3.3	3.8	3.8	2.2	2.4	2.4	2.5	2.6	2.8
0.75	DSE08LA4	D	3	3.6	3.8	4.5	5.1	5.1	3	3.1	3.1	3.3	3.4	3.8
1.1	DSE08XA4	D	4.5	5.4	5.6	6.7	7.5	7.5	4.3	4.5	4.5	4.7	4.9	5.4
1.1	DSE09SA4	D	4.5	5.4	5.6	6.7	7.5	7.5	3.8	4	4.1	4.4	4.5	5
1.5	DSE09LA4	D	6	7.2	7.5	9	10.1	10.1	5.1	5.4	5.4	5.8	6.1	6.7
2.2	DSE09XA4	D	9	10.7	11.2	13.5	15	15	6.8	7.3	7.4	8.1	8.5	9.4
3	DSE11SA4	D	12	14.3	15	18	20	20	8.7	9.4	9.6	10.5	11.1	12.2
4	DSE11MA4	D	16.2	19.4	20	24	27	27	11	12	12.2	13.6	14.6	16
5.5	DSE11LA4	D	22	26.5	27.5	33	37	37	14.2	15.7	16.1	18.2	19.6	21.5

P_N Rated power

M Permissible load torque (S1-100 %) at the rotor shaft by operation with a frequency inverter

I Load current for operation with frequency inverter

Field weakening for frequencies above 87 Hz, winding for
230 V Δ/ 50 Hz (U_{max} = 400 V Δ/87 Hz), Temperature Class F.

The load currents in the table are guideline values for selecting the size of frequency inverter. Load current is lower if the load torque is below the values permitted for 30-100 Hz and the frequency inverter used is of the high-grade type. This means that a smaller inverter can sometimes be used, particularly in conjunction with large motors.

Operation with frequency converter, 50 Hz

50 Hz

IE2 Motor torques for frequency-converter range 5 Hz - 70 Hz, line frequency 50 Hz

P _N kW	Type	Connec- tion	5 Hz M Nm	10 Hz M Nm	20 Hz M Nm	30 Hz M Nm	50 Hz M Nm	60 Hz M Nm	70 Hz M Nm	5 Hz I A	10 Hz I A	20 Hz I A	30 Hz I A	50 Hz I A	60 Hz I A	70 Hz I A
0.12	DHE05LA4	Y	0.49	0.61	0.73	0.81	0.82	0.82	0.65	0.36	0.37	0.385	0.39	0.39	0.44	0.415
0.18	DHE05LA4	Y	0.75	0.93	1.12	1.23	1.25	1.25	1.03	0.53	0.54	0.56	0.57	0.57	0.65	0.63
0.12	DHE06LA4	Y	0.495	0.62	0.74	0.81	0.83	0.83	0.66	0.36	0.37	0.385	0.39	0.39	0.44	0.415
0.18	DHE06LA4	Y	0.75	0.93	1.12	1.23	1.25	1.25	1.03	0.54	0.55	0.57	0.58	0.58	0.66	0.64
0.25	DHE07LA4	Y	1.04	1.3	1.56	1.71	1.74	1.74	1.49	0.7	0.72	0.75	0.76	0.76	0.86	0.86
0.3	DHE07LA4	Y	1.26	1.57	1.89	2	2.1	2.1	1.8	0.82	0.85	0.88	0.9	0.9	1.02	1.02
0.37	DHE08MA4	Y	1.47	1.83	2.2	2.4	2.4	2.4	2.1	0.99	1.03	1.07	1.1	1.1	1.25	1.25
0.55	DHE08LA4	Y	2.2	2.8	3.3	3.6	3.7	3.7	3	1.15	1.23	1.32	1.38	1.38	1.56	1.51
0.75	DHE08XA4	Y	3	3.8	4.5	4.9	5	5	4.2	1.6	1.7	1.81	1.88	1.88	2.2	2.2
0.75	DHE09SA4	Y	3	3.8	4.5	4.9	5	5	4.2	1.54	1.63	1.73	1.8	1.8	2.1	2.1
1.1	DHE09LA4	Y	4.3	5.4	6.5	7.2	7.3	7.3	6.2	2.1	2.2	2.5	2.6	2.6	2.9	2.9
1.5	DHE09XA4	Y	5.9	7.4	8.9	9.8	9.9	9.9	8.5	2.7	2.9	3.2	3.4	3.4	3.8	3.8
2.2	DHE09XA4C	Y	8.7	10.8	13	14.3	14.5	14.5	12.4	3.8	4.2	4.5	4.8	4.8	5.4	5.4
2.2	DHE09XB4	Y	8.8	11.1	13.3	14.6	14.8	14.8	12.6	3.7	4	4.5	4.7	4.7	5.4	5.4
2.2	DHE11SA4	Y	8.7	10.8	13	14.3	14.5	14.5	12.4	3.6	3.9	4.4	4.6	4.6	5.2	5.3
3	DHE11MA4	Y	12	15	18	19.7	20	20	17.1	4.9	5.4	5.9	6.3	6.3	7.2	7.2
4	DHE11LA4	Y	15.9	19.8	23.5	26	26.5	26.5	22.5	6.9	7.4	8	8.4	8.4	9.5	9.5
5.5	DHE11LA4C	Y	21.5	27	32	35.5	36	36	30.5	8.2	9.2	10.3	11	11	12.5	12.5
5.5	DHE11LB4	Y	21.5	27	32	35.5	36	36	30.5	8.3	9.2	10.3	11	11	12.5	12.5

P_N Rated power

M Permissible load torque (S1-100 %) at the rotor shaft by operation with a frequency inverter

I Load current for operation with frequency inverter

Field weakening for frequencies above 50 Hz, winding for standard voltage **400 V Y / 50 Hz**, Temperature Class F.

Motors with standard windings can be switched from Y- to Δ- circuit for operation with a converter having a single-phase mains connection. This has no effect on the torques and frequencies as listed in the table above. As regards the choice of converter, however, note that currents are higher than those of the Y-circuit by a factor of 1.73.

The load currents in the table are guideline values for selecting the size of frequency converter. Load current is lower if the load torque is below the values permitted for 30-70 Hz and the frequency inverter used is of the high-grade type. This means that a smaller inverter can sometimes be used, particularly in conjunction with large motors.

Motors - ASM

Technical data

Operation with frequency converter, 50 Hz

50 Hz

IE2 Motor torques for frequency-converter range 5 Hz - 100 Hz, line frequency 50 Hz

P _N kW	Type	Connec- tion	5 Hz M Nm	8.7 Hz M Nm	10 Hz M Nm	20 Hz M Nm	87 Hz M Nm	100 Hz M Nm	5 Hz I A	8.7 Hz I A	10 Hz I A	20 Hz I A	87 Hz I A	100 Hz I A
0.12	DHE05LA4	D	0.49	0.59	0.61	0.73	0.82	0.82	0.62	0.64	0.64	0.67	0.68	0.75
0.18	DHE05LA4	D	0.75	0.89	0.93	1.12	1.25	1.25	0.91	0.93	0.94	0.97	0.99	1.09
0.12	DHE06LA4	D	0.495	0.59	0.62	0.74	0.83	0.83	0.62	0.64	0.64	0.67	0.68	0.75
0.18	DHE06LA4	D	0.75	0.89	0.93	1.12	1.25	1.25	0.93	0.95	0.95	0.99	1.01	1.11
0.25	DHE07LA4	D	1.04	1.25	1.3	1.56	1.74	1.74	1.2	1.23	1.24	1.29	1.32	1.45
0.3	DHE07LA4	D	1.26	1.51	1.57	1.89	2.1	2.1	1.42	1.46	1.47	1.52	1.56	1.71
0.37	DHE08MA4	D	1.47	1.76	1.83	2.2	2.4	2.4	1.72	1.77	1.78	1.86	1.91	2.1
0.55	DHE08LA4	D	2.2	2.6	2.8	3.3	3.7	3.7	1.99	2.1	2.2	2.3	2.4	2.7
0.75	DHE08XA4	D	3	3.6	3.8	4.5	5	5	2.8	2.9	3	3.2	3.3	3.6
0.75	DHE09SA4	D	3	3.6	3.8	4.5	5	5	2.7	2.8	2.8	3	3.2	3.5
1.1	DHE09LA4	D	4.3	5.2	5.4	6.5	7.3	7.3	3.6	3.8	3.9	4.2	4.5	4.9
1.5	DHE09XA4	D	5.9	7.1	7.4	8.9	9.9	9.9	4.6	5	5.1	5.5	5.9	6.4
2.2	DHE09XA4C	D	8.7	10.4	10.8	13	14.5	14.5	6.7	7.1	7.2	7.8	8.3	9.1
2.2	DHE09XB4	D	8.8	10.6	11.1	13.3	14.8	14.8	6.4	6.9	7	7.7	8.2	9
2.2	DHE11SA4	D	8.7	10.4	10.8	13	14.5	14.5	6.2	6.7	6.8	7.5	8	8.8
3	DHE11MA4	D	12	14.3	15	18	20	20	8.4	9.1	9.3	10.3	11	12
4	DHE11LA4	D	15.9	19	19.8	23.5	26.5	26.5	11.9	12.6	12.8	13.9	14.6	16
5.5	DHE11LA4C	D	21.5	25.5	27	32	36	36	14.2	15.6	15.9	17.8	19.1	21
5.5	DHE11LB4	D	21.5	25.5	27	32	36	36	14.3	15.6	15.9	17.8	19.1	21

P_N Rated power

M Permissible load torque (S1-100 %) at the rotor shaft by operation with a frequency inverter

I Load current for operation with frequency inverter

Field weakening for frequencies above 87 Hz, winding for
230 V Δ / 50 Hz ($U_{max} = 400 \text{ V } \Delta/87 \text{ Hz}$), Temperature Class F.

The load currents in the table are guideline values for selecting the size of frequency inverter. Load current is lower if the load torque is below the values permitted for 30-100 Hz and the frequency inverter used is of the high-grade type. This means that a smaller inverter can sometimes be used, particularly in conjunction with large motors.

Operation with frequency converter, 50 Hz

50 Hz

IE3 Motor torques for frequency-converter range 5 Hz - 70 Hz. line frequency 50 Hz

P kW	Type	Connec- tion	5 Hz M Nm	10 Hz M Nm	20 Hz M Nm	30 Hz M Nm	50 Hz M Nm	60 Hz M Nm	70 Hz M Nm	5 Hz I A	10 Hz I A	20 Hz I A	30 Hz I A	50 Hz I A	60 Hz I A	70 Hz I A
0.12	DPE05LA4	Y	0.49	0.61	0.73	0.81	0.82	0.82	0.7	0.37	0.38	0.395	0.4	0.4	0.455	0.455
0.12	DPE06LA4	Y	0.49	0.61	0.73	0.81	0.82	0.82	0.7	0.38	0.39	0.405	0.41	0.41	0.465	0.465
0.18	DPE07LA4	Y	0.73	0.92	1.1	1.21	1.23	1.23	1.05	0.52	0.53	0.55	0.56	0.56	0.64	0.64
0.25	DPE08MA4	Y	0.99	1.24	1.49	1.63	1.66	1.66	1.42	0.62	0.65	0.69	0.71	0.71	0.81	0.81
0.37	DPE08LA4	Y	1.47	1.83	2.2	2.4	2.4	2.4	2.1	0.92	0.96	1	1.03	1.03	1.17	1.17
0.55	DPE08XA4	Y	2.1	2.7	3.2	3.6	3.6	3.6	3.1	1.19	1.26	1.35	1.4	1.4	1.58	1.59
0.75	DPE08XB4	Y	3	3.8	4.5	4.9	5	5	4.2	1.57	1.67	1.78	1.85	1.86	2.1	2.2
0.75	DPE09LA4	Y	3	3.8	4.5	4.9	5	5	4.2	1.3	1.43	1.57	1.66	1.67	1.89	1.89
1.1	DPE09XA4	Y	4.3	5.4	6.5	7.2	7.3	7.3	6.2	1.9	2.1	2.3	2.4	2.4	2.8	2.8
1.5	DPE09XB4	Y	6	7.5	9	9.8	10	10	8.5	2.6	2.8	3.1	3.2	3.2	3.7	3.7
2.2	DPE09XB4C	Y	8.7	10.8	13	14.3	14.5	14.5	12.4	3.8	4.1	4.5	4.7	4.7	5.4	5.4
2.2	DPE11MA4	Y	8.7	10.8	13	14.3	14.5	14.5	12.4	3.5	3.9	4.3	4.6	4.6	5.2	5.3
3	DPE11LA4	Y	11.8	14.7	17.7	19.4	19.7	19.7	16.8	4.8	5.3	5.9	6.2	6.2	7	7.1
4	DPE11LB4	Y	15.9	19.8	23.5	26	26.5	26.5	22.5	5.7	6.4	7.3	7.8	7.8	8.8	8.9
5.5	DPE11LB4C	Y	21.5	27	32	35.5	36	36	30.5	8.3	9.2	10.3	11	11	12.5	12.5

 P_N Rated power

M Permissible load torque (S1-100 %) at the rotor shaft by operation with a frequency inverter

I Load current for operation with frequency inverter

Field weakening for frequencies above 50 Hz, winding for standard voltage **400 V Y / 50 Hz**, Temperature Class F.

Motors with standard windings can be switched from Y- to Δ- circuit for operation with a converter having a single-phase mains connection. This has no effect on the torques and frequencies as listed in the table above. As regards the choice of converter, however, note that currents are higher than those of the Y-circuit by a factor of 1.73.

The load currents in the table are guideline values for selecting the size of frequency converter. Load current is lower if the load torque is below the values permitted for 30-70 Hz and the frequency inverter used is of the high-grade type. This means that a smaller inverter can sometimes be used, particularly in conjunction with large motors.

Motors - ASM

Technical data

Operation with frequency converter, 50 Hz

50 Hz

IE3 Motor torques for frequency-converter range 5 Hz - 100 Hz, line frequency 50 Hz

P kW	Type	Connection	5 Hz M Nm	8.7 Hz M Nm	10 Hz M Nm	20 Hz M Nm	87 Hz M Nm	100 Hz M Nm	5 Hz A	8.7 Hz A	10 Hz A	20 Hz I A	87 Hz I A	100 Hz I A
0.12	DPE05LA4	D	0.49	0.59	0.61	0.73	0.82	0.82	0.64	0.66	0.66	0.68	0.7	0.76
0.12	DPE06LA4	D	0.49	0.59	0.61	0.73	0.82	0.82	0.66	0.67	0.68	0.7	0.72	0.78
0.18	DPE07LA4	D	0.73	0.88	0.92	1.1	1.23	1.23	0.89	0.91	0.92	0.95	0.97	1.07
0.25	DPE08MA4	D	0.99	1.19	1.24	1.49	1.66	1.66	1.07	1.11	1.13	1.19	1.23	1.35
0.37	DPE08LA4	D	1.47	1.76	1.83	2.2	2.4	2.4	1.59	1.64	1.66	1.73	1.79	1.96
0.55	DPE08XA4	D	2.1	2.6	2.7	3.2	3.6	3.6	2.1	2.2	2.2	2.4	2.5	2.7
0.75	DPE08XB4	D	3	3.6	3.8	4.5	5	5	2.8	2.8	2.9	3.1	3.2	3.6
0.75	DPE09LA4	D	3	3.6	3.8	4.5	5	5	2.2	2.5	2.5	2.8	2.9	3.2
1.1	DPE09XA4	D	4.3	5.2	5.4	6.5	7.3	7.3	3.3	3.6	3.6	4	4.2	4.6
1.5	DPE09XB4	D	6	7.1	7.5	9	10	10	4.4	4.8	4.9	5.3	5.7	6.2
2.2	DPE09XB4C	D	8.7	10.4	10.8	13	14.5	14.5	6.5	7	7.1	7.7	8.2	9
2.2	DPE11MA4	D	8.7	10.4	10.8	13	14.5	14.5	6.1	6.6	6.7	7.5	8	8.8
3	DPE11LA4	D	11.8	14.1	14.7	17.7	19.7	19.7	8.3	9	9.1	10.1	10.8	11.8
4	DPE11LB4	D	15.9	19	19.8	23.5	26.5	26.5	9.9	10.9	11.1	12.5	13.6	14.9
5.5	DPE11LB4C	D	21.5	25.5	27	32	36	36	14.3	15.6	15.9	17.8	19.1	21

P_N Rated power

M Permissible load torque (S1-100 %) at the rotor shaft by operation with a frequency inverter

I Load current for operation with frequency inverter

Field weakening for frequencies above 87 Hz, winding for
230 V Δ / 50 Hz (Umax = 400 V Δ / 87 Hz), Temperature Class F.

The load currents in the table are guideline values for selecting the size of frequency inverter. Load current is lower if the load torque is below the values permitted for 30-100 Hz and the frequency inverter used is of the high-grade type. This means that a smaller inverter can sometimes be used, particularly in conjunction with large motors.

Operation with frequency converter, 60 Hz

60 Hz

IE1 Motor torques for frequency-converter range 6 Hz - 84 Hz, line frequency 60 Hz

P _N kW	Type	Connec- tion	6 Hz M Nm	12 Hz M Nm	24 Hz M Nm	36 Hz M Nm	60 Hz M Nm	72 Hz M Nm	84 Hz M Nm	6 Hz I A	12 Hz I A	24 Hz I A	36 Hz I A	60 Hz I A	72 Hz I A	84 Hz I A
0.03	D04LA4	Y	0.115	0.14	0.165	0.18	0.18	0.18	0.15	0.176	0.178	0.18	0.185	0.18	0.205	0.205
0.04	D04LA4	Y	0.145	0.18	0.215	0.235	0.23	0.23	0.18	0.176	0.178	0.18	0.185	0.18	0.205	0.19
0.06	D04LA4	Y	0.22	0.275	0.325	0.355	0.35	0.35	0.3	0.275	0.275	0.28	0.29	0.28	0.32	0.32
0.09	D04LA4	Y	0.33	0.41	0.485	0.53	0.52	0.52	0.445	0.4	0.4	0.4	0.415	0.4	0.455	0.455
0.11	D04LA4	Y	0.38	0.48	0.57	0.63	0.64	0.64	0.57	0.42	0.42	0.42	0.42	0.42	0.465	0.475
0.12	D04LA4	Y	0.445	0.55	0.65	0.71	0.7	0.63	0.465	0.41	0.415	0.42	0.435	0.42	0.435	0.415
0.06	D05LA4	Y	0.22	0.275	0.325	0.355	0.35	0.35	0.3	0.28	0.295	0.315	0.33	0.32	0.365	0.365
0.09	D05LA4	Y	0.33	0.41	0.485	0.53	0.52	0.52	0.445	0.335	0.34	0.35	0.36	0.35	0.395	0.4
0.12	D05LA4	Y	0.445	0.55	0.65	0.71	0.7	0.7	0.53	0.345	0.36	0.375	0.395	0.38	0.43	0.385
0.18	D05LA4	Y	0.67	0.83	0.99	1.08	1.06	1.06	0.87	0.54	0.56	0.58	0.6	0.58	0.66	0.64
0.25	D05LA4	Y	0.92	1.14	1.36	1.48	1.45	1.45	1.15	0.78	0.79	0.8	0.83	0.8	0.91	0.85
0.06	D06LA4	Y	0.22	0.275	0.325	0.355	0.35	0.35	0.3	0.28	0.295	0.315	0.33	0.32	0.365	0.365
0.09	D06LA4	Y	0.33	0.41	0.485	0.53	0.52	0.52	0.445	0.335	0.34	0.35	0.36	0.35	0.395	0.4
0.12	D06LA4	Y	0.445	0.55	0.65	0.71	0.7	0.7	0.53	0.345	0.36	0.375	0.395	0.38	0.43	0.385
0.18	D06LA4	Y	0.67	0.83	0.99	1.08	1.06	1.06	0.87	0.54	0.56	0.58	0.6	0.58	0.66	0.64
0.25	D06LA4	Y	0.92	1.14	1.36	1.48	1.45	1.45	1.15	0.78	0.79	0.8	0.83	0.8	0.91	0.85
0.3	D07LA4	Y	1.12	1.38	1.65	1.8	1.76	1.76	1.5	1.18	1.19	1.2	1.24	1.2	1.36	1.36
0.37	D07LA4	Y	1.37	1.69	2	2.2	2.1	2.1	1.64	1.24	1.25	1.26	1.3	1.26	1.43	1.28
0.37	D08MA4	Y	1.31	1.61	1.92	2.1	2	2	1.75	0.93	0.97	1.01	1.05	1.02	1.16	1.16
0.55	DSE08MA4	Y	1.86	2.3	2.8	3	3.1	3.1	2.8	1.14	1.19	1.25	1.28	1.28	1.42	1.45
0.75	DSE08LA4	Y	2.5	3.1	3.8	4.1	4.2	4.2	3.8	1.51	1.59	1.69	1.75	1.75	1.94	1.98
1.1	DSE08XA4	Y	3.7	4.6	5.5	6.1	6.2	6.2	5.2	2.2	2.3	2.4	2.5	2.5	2.8	2.6
1.1	DSE09SA4	Y	3.6	4.5	5.4	5.9	6	6	5.4	1.96	2.1	2.2	2.3	2.3	2.6	2.6
1.5	DSE09LA4	Y	5	6.1	7.4	8.1	8.2	8.2	7.4	2.6	2.8	3	3.1	3.1	3.5	3.6
2.2	DSE09XA4	Y	7.3	9.1	10.9	12	12.2	12.2	10.9	3.5	3.8	4.1	4.3	4.3	4.8	4.9
3	DSE11SA4	Y	9.8	12.3	14.7	16.2	16.4	16.4	14.7	4.3	4.7	5.2	5.5	5.5	6.1	6.3
4	DSE11MA4	Y	13.1	16.4	19.7	21.5	21.5	21.5	19.7	5.4	6.1	6.8	7.2	7.2	8	8.2
5.5	DSE11LA4	Y	18.1	22.5	27	29.5	30	30	27	7.3	8.1	9.1	9.7	9.7	10.8	11

P_N Rated power

M Permissible load torque (S1-100 %) at the rotor shaft by operation with a frequency inverter

I Load current for operation with frequency inverter

Field weakening for frequencies above 60 Hz, winding for standard voltage **460 V Y / 60 Hz**, Temperature Class F.

Motors with standard windings can be switched from Y- to Δ- circuit for operation with a converter having a single-phase mains connection. This has no effect on the torques and frequencies as listed in the table above. As regards the choice of converter, however, note that currents are higher than those of the Y-circuit by a factor of 1.73.

The load currents in the table are guideline values for selecting the size of frequency converter. Load current is lower if the load torque is below the values permitted for 36-84 Hz and the frequency inverter used is of the high-grade type. This means that a smaller inverter can sometimes be used, particularly in conjunction with large motors.

Motors - ASM

Technical data

Operation with frequency converter, 60 Hz

60 Hz

IE1 Motor torques for frequency-converter range 6 Hz - 120 Hz. line frequency 60 Hz

P _N kW	Type	Connec- tion	6 Hz M Nm	12 Hz M Nm	24 Hz M Nm	36 Hz M Nm	104 Hz M Nm	120 Hz M Nm	6 Hz I A	12 Hz I A	24 Hz I A	36 Hz I A	104 Hz I A	120 Hz I A
0.03	D04LA4	D	0.115	0.14	0.165	0.18	0.18	0.18	0.305	0.31	0.315	0.325	0.315	0.345
0.04	D04LA4	D	0.145	0.18	0.215	0.235	0.23	0.23	0.305	0.31	0.315	0.325	0.315	0.345
0.06	D04LA4	D	0.22	0.275	0.325	0.355	0.35	0.35	0.47	0.475	0.485	0.5	0.485	0.54
0.09	D04LA4	D	0.33	0.41	0.485	0.53	0.52	0.52	0.69	0.69	0.7	0.72	0.7	0.77
0.11	D04LA4	D	0.38	0.48	0.57	0.63	0.64	0.64	0.73	0.73	0.73	0.73	0.73	0.8
0.12	D04LA4	D	0.445	0.55	0.65	0.71	0.7	0.69	0.71	0.72	0.73	0.75	0.73	0.79
0.06	D05LA4	D	0.22	0.275	0.325	0.355	0.35	0.35	0.48	0.51	0.55	0.57	0.56	0.61
0.09	D05LA4	D	0.33	0.41	0.485	0.53	0.52	0.52	0.58	0.59	0.61	0.63	0.61	0.67
0.12	D05LA4	D	0.445	0.55	0.65	0.71	0.7	0.7	0.6	0.62	0.65	0.68	0.66	0.73
0.18	D05LA4	D	0.67	0.83	0.99	1.08	1.06	1.06	0.93	0.96	1	1.04	1.01	1.11
0.25	D05LA4	D	0.92	1.14	1.36	1.48	1.45	1.45	1.34	1.36	1.38	1.43	1.39	1.53
0.06	D06LA4	D	0.22	0.275	0.325	0.355	0.35	0.35	0.48	0.51	0.55	0.57	0.56	0.61
0.09	D06LA4	D	0.33	0.41	0.485	0.53	0.52	0.52	0.58	0.59	0.61	0.63	0.61	0.67
0.12	D06LA4	D	0.445	0.55	0.65	0.71	0.7	0.7	0.6	0.62	0.65	0.68	0.66	0.73
0.18	D06LA4	D	0.67	0.83	0.99	1.08	1.06	1.06	0.93	0.96	1	1.04	1.01	1.11
0.25	D06LA4	D	0.92	1.14	1.36	1.48	1.45	1.45	1.34	1.36	1.38	1.43	1.39	1.53
0.3	D07LA4	D	1.12	1.38	1.65	1.8	1.76	1.76	2.1	2.1	2.1	2.2	2.1	2.3
0.37	D07LA4	D	1.37	1.69	2	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.4
0.37	D08MA4	D	1.31	1.61	1.92	2.1	2	2	1.6	1.67	1.74	1.82	1.77	1.95
0.55	DSE08MA4	D	1.86	2.3	2.8	3	3.1	3.1	1.97	2.1	2.2	2.2	2.2	2.5
0.75	DSE08LA4	D	2.5	3.1	3.8	4.1	4.2	4.2	2.7	2.8	3	3.1	3.1	3.4
1.1	DSE08XA4	D	3.7	4.6	5.5	6.1	6.2	6.2	3.8	4	4.2	4.2	4.2	4.7
1.1	DSE09SA4	D	3.6	4.5	5.4	5.9	6	6	3.4	3.6	3.8	4	4	4.4
1.5	DSE09LA4	D	5	6.1	7.4	8.1	8.2	8.2	4.5	4.8	5.2	5.4	5.4	6
2.2	DSE09XA4	D	7.3	9.1	10.9	12	12.2	12.2	6	6.5	7.1	7.4	7.5	8.2
3	DSE11SA4	D	9.8	12.3	14.7	16.2	16.4	16.4	7.4	8.2	9	9.5	9.6	10.5
4	DSE11MA4	D	13.1	16.4	19.7	21.5	21.5	21.5	9.4	10.5	11.7	12.4	12.5	13.8
5.5	DSE11LA4	D	18.1	22.5	27	29.5	30	30	12.6	14.1	15.7	16.7	16.9	18.5

P_N Rated power

M Permissible load torque (S1-100 %) at the rotor shaft by operation with a frequency inverter

I Load current for operation with frequency inverter

Field weakening for frequencies above 87 Hz, winding for standard voltage 265 V Δ / 60 Hz (U_{max} = 460 V Δ / 104 Hz), Temperature Class F.

The load currents in the table are guideline values for selecting the size of frequency converter. Load current is lower if the load torque is below the values permitted for 36-120 Hz and the frequency inverter used is of the high-grade type. This means that a smaller inverter can sometimes be used, particularly in conjunction with large motors.

Operation with frequency converter, 60 Hz

60 Hz

IE2 Motor torques for frequency-converter range 5 Hz - 80 Hz, line frequency 60 Hz

P kW	Type	Connec- tion	5 Hz M Nm	10 Hz M Nm	20 Hz M Nm	30 Hz M Nm	60 Hz M Nm	70 Hz M Nm	80 Hz M Nm	5 Hz I A	10 Hz I A	20 Hz I A	30 Hz I A	60 Hz I A	70 Hz I A	80 Hz I A
0.12	DHE05LA4	Y	0.4	0.5	0.6	0.66	0.67	0.67	0.6	0.335	0.345	0.355	0.36	0.36	0.4	0.41
0.18	DHE05LA4	Y	0.6	0.75	0.9	0.99	1.01	1.01	0.9	0.485	0.5	0.51	0.52	0.52	0.58	0.59
0.12	DHE06LA4	Y	0.4	0.5	0.6	0.66	0.67	0.67	0.6	0.34	0.35	0.355	0.36	0.36	0.4	0.41
0.18	DHE06LA4	Y	0.6	0.75	0.9	0.99	1.01	1.01	0.9	0.495	0.51	0.52	0.53	0.53	0.59	0.6
0.25	DHE07LA4	Y	0.84	1.05	1.26	1.38	1.4	1.4	1.26	0.65	0.67	0.69	0.7	0.7	0.78	0.8
0.3	DHE07LA4	Y	1.02	1.27	1.53	1.67	1.7	1.7	1.53	0.76	0.78	0.81	0.82	0.82	0.91	0.93
0.37	DHE08MA4	Y	1.2	1.5	1.8	1.97	2	2	1.8	0.9	0.94	0.97	0.99	0.99	1.1	1.12
0.55	DHE08LA4	Y	1.83	2.2	2.7	3	3	3	2.7	1.05	1.11	1.18	1.23	1.23	1.37	1.39
0.75	DHE08XA4	Y	2.4	3.1	3.7	4.1	4.1	4.1	3.7	1.45	1.5	1.56	1.6	1.6	1.78	1.81
0.75	DHE09SA4	Y	2.4	3.1	3.7	4.1	4.1	4.1	3.7	1.34	1.43	1.53	1.6	1.6	1.78	1.81
1.1	DHE09LA4	Y	3.6	4.5	5.4	5.9	6	6	5.4	1.85	1.99	2.2	2.2	2.2	2.5	2.6
1.5	DHE09XA4	Y	4.9	6.1	7.3	8.1	8.2	8.2	7.3	2.4	2.6	2.8	3	3	3.3	3.4
2.2	DHE09XA4C	Y	7.2	9	10.8	11.8	12	12	10.8	3.3	3.6	3.8	4	4	4.5	4.5
2.2	DHE09XB4	Y	7.2	9	10.8	11.9	12.1	12.1	10.8	3.2	3.6	3.9	4.1	4.1	4.5	4.7
2.2	DHE11SA4	Y	7.2	9	10.8	11.8	12	12	10.8	3.1	3.5	3.8	4	4	4.5	4.5
3	DHE11MA4	Y	9.9	12.3	14.8	16.2	16.5	16.5	14.8	4.2	4.7	5.2	5.5	5.5	6.1	6.3
4	DHE11LA4	Y	13	16.2	19.5	21	21.5	21.5	19.5	6.2	6.6	7	7.3	7.3	8.1	8.3
5.5	DHE11LA4C	Y	18	22.5	27	29.5	30	30	27	7.2	8	8.9	9.5	9.5	10.6	10.8
5.5	DHE11LB4	Y	18	22.5	27	29.5	30	30	27	7.5	8.2	9.1	9.6	9.6	10.7	10.9

 P_N Rated power

M Permissible load torque (S1-100 %) at the rotor shaft by operation with a frequency inverter

I Load current for operation with frequency inverter

Field weakening for frequencies above 60 Hz, winding for standard voltage **460 V Y / 60 Hz**, Temperature Class F.

Motors with standard windings can be switched from Y- to Δ - circuit for operation with a converter having a single-phase mains connection. This has no effect on the torques and frequencies as listed in the table above. As regards the choice of converter, however, note that currents are higher than those of the Y-circuit by a factor of 1.73.

The load currents in the table are guideline values for selecting the size of frequency converter. Load current is lower if the load torque is below the values permitted for 36-84 Hz and the frequency inverter used is of the high-grade type. This means that a smaller inverter can sometimes be used, particularly in conjunction with large motors.

Motors - ASM

Technical data

Operation with frequency converter, 60 Hz

60 Hz

IE2 Motor torques for frequency-converter range 5 Hz - 120 Hz. line frequency 60 Hz

P kW	Typ	Connection	5 Hz M Nm	10 Hz M Nm	20 Hz M Nm	30 Hz M Nm	104 Hz M Nm	120 Hz M Nm	5 Hz I A	10 Hz I A	20 Hz I A	30 Hz I A	104 Hz I A	120 Hz I A
0.12	DHE05LA4	D	0.4	0.5	0.6	0.66	0.67	0.67	0.58	0.6	0.62	0.63	0.63	0.69
0.18	DHE05LA4	D	0.6	0.75	0.9	0.99	1.01	1.01	0.84	0.86	0.89	0.9	0.91	0.99
0.12	DHE06LA4	D	0.4	0.5	0.6	0.66	0.67	0.67	0.59	0.6	0.62	0.63	0.63	0.69
0.18	DHE06LA4	D	0.6	0.75	0.9	0.99	1.01	1.01	0.86	0.88	0.91	0.92	0.92	1.01
0.25	DHE07LA4	D	0.84	1.05	1.26	1.38	1.4	1.4	1.12	1.15	1.19	1.21	1.22	1.34
0.3	DHE07LA4	D	1.02	1.27	1.53	1.67	1.7	1.7	1.3	1.35	1.39	1.42	1.43	1.57
0.37	DHE08MA4	D	1.2	1.5	1.8	1.97	2	2	1.56	1.62	1.68	1.71	1.72	1.89
0.55	DHE08LA4	D	1.83	2.2	2.7	3	3	3	1.81	1.92	2.1	2.2	2.2	2.4
0.75	DHE08XA4	D	2.4	3.1	3.7	4.1	4.1	4.1	2.6	2.6	2.7	2.8	2.8	3.1
0.75	DHE09SA4	D	2.4	3.1	3.7	4.1	4.1	4.1	2.4	2.5	2.7	2.8	2.8	3.1
1.1	DHE09LA4	D	3.6	4.5	5.4	5.9	6	6	3.2	3.5	3.8	3.9	3.9	4.3
1.5	DHE09XA4	D	4.9	6.1	7.3	8.1	8.2	8.2	4.2	4.5	4.9	5.1	5.2	5.7
2.2	DHE09XA4C	D	7.2	9	10.8	11.8	12	12	5.7	6.1	6.6	6.9	7	7.7
2.2	DHE09XB4	D	7.2	9	10.8	11.9	12.1	12.1	5.7	6.2	6.7	7.1	7.2	7.9
2.2	DHE11SA4	D	7.2	9	10.8	11.8	12	12	5.4	5.9	6.5	6.9	7	7.7
3	DHE11MA4	D	9.9	12.3	14.8	16.2	16.5	16.5	7.4	8.1	9	9.5	9.6	10.5
4	DHE11LA4	D	13	16.2	19.5	21	21.5	21.5	10.7	11.4	12.2	12.6	12.7	13.9
5.5	DHE11LA4C	D	18	22.5	27	29.5	30	30	12.4	13.8	15.4	16.4	16.5	18.1
5.5	DHE11LB4	D	18	22.5	27	29.5	30	30	12.9	14.2	15.6	16.5	16.7	18.3

P_N Rated power

M Permissible load torque (S1-100 %) at the rotor shaft by operation with a frequency inverter

I Load current for operation with frequency inverter

Field weakening for frequencies above 87 Hz, winding for standard voltage 265 V Δ / 60 Hz ($U_{max} = 460$ V Δ / 104 Hz), Temperature Class F.

The load currents in the table are guideline values for selecting the size of frequency converter. Load current is lower if the load torque is below the values permitted for 36-120 Hz and the frequency inverter used is of the high-grade type. This means that a smaller inverter can sometimes be used, particularly in conjunction with large motors.

Operation with frequency converter, 60 Hz

60 Hz

IE3 Motor torques for frequency-converter range 5 Hz - 80 Hz, line frequency 60 Hz

P kW	Type	Connec- tion	5 Hz M Nm	10 Hz M Nm	20 Hz M Nm	30 Hz M Nm	60 Hz M Nm	70 Hz M Nm	80 Hz M Nm	5 Hz I A	10 Hz I A	20 Hz I A	30 Hz I A	60 Hz I A	70 Hz I A	80 Hz I A
0.12	DPE05LA4	Y	0.4	0.5	0.6	0.66	0.67	0.67	0.6	0.345	0.355	0.365	0.37	0.37	0.41	0.42
0.12	DPE06LA4	Y	0.4	0.5	0.6	0.66	0.67	0.67	0.6	0.35	0.36	0.365	0.37	0.37	0.41	0.42
0.18	DPE07LA4	Y	0.6	0.75	0.9	0.98	1	1	0.9	0.48	0.495	0.51	0.52	0.52	0.58	0.59
0.25	DPE08MA4	Y	0.82	1.02	1.23	1.35	1.37	1.37	1.23	0.57	0.6	0.63	0.65	0.65	0.72	0.74
0.37	DPE08LA4	Y	1.2	1.5	1.8	1.97	2	2	1.8	0.85	0.88	0.92	0.94	0.94	1.05	1.07
0.55	DPE08XA4	Y	1.8	2.2	2.7	2.9	3	3	2.7	1.08	1.14	1.21	1.25	1.25	1.39	1.42
0.75	DPE08XB4	Y	2.4	3.1	3.7	4.1	4.1	4.1	3.7	1.43	1.51	1.61	1.67	1.67	1.85	1.89
0.75	DPE09LA4	Y	2.4	3	3.6	4	4.1	4.1	3.6	1.16	1.26	1.37	1.44	1.45	1.61	1.64
1.1	DPE09XB4	Y	3.6	4.5	5.4	5.9	6	6	5.4	1.8	1.94	2.1	2.2	2.2	2.5	2.5
1.5	DPE09XB4	Y	4.9	6.1	7.3	8.1	8.2	8.2	7.3	2.4	2.6	2.8	2.9	2.9	3.2	3.3
2.2	DPE11LB4	Y	7.1	8.9	10.7	11.7	11.9	11.9	10.7	2.8	3.1	3.5	3.7	3.7	4.1	4.2
3	DPE11LB4	Y	9.7	12.2	14.6	16.1	16.3	16.3	14.6	3.9	4.4	4.9	5.2	5.2	5.8	5.9
4	DPE11LB4	Y	13	16.2	19.5	21	21.5	21.5	19.5	5.2	5.8	6.5	6.9	6.9	7.7	7.8

 P_N Rated power

M Permissible load torque (S1-100 %) at the rotor shaft by operation with a frequency inverter

I Load current for operation with frequency inverter

Field weakening for frequencies above 60 Hz, winding for standard voltage **460 V Y / 60 Hz**, Temperature Class F.

Motors with standard windings can be switched from Y- to Δ - circuit for operation with a converter having a single-phase mains connection. This has no effect on the torques and frequencies as listed in the table above. As regards the choice of converter, however, note that currents are higher than those of the Y-circuit by a factor of 1.73.

The load currents in the table are guideline values for selecting the size of frequency converter. Load current is lower if the load torque is below the values permitted for 36-84 Hz and the frequency inverter used is of the high-grade type. This means that a smaller inverter can sometimes be used, particularly in conjunction with large motors.

Motors - ASM

Technical data

Operation with frequency converter, 60 Hz

60 Hz

IE3 Motor torques for frequency-converter range 5 Hz - 120 Hz, line frequency 60 Hz

P kW	Type	Connection	5 Hz M Nm	10 Hz M Nm	20 Hz M Nm	30 Hz M Nm	104 Hz M Nm	120 Hz M Nm	5 Hz I A	10 Hz I A	20 Hz I A	30 Hz I A	104 Hz I A	120 Hz I A
0.12	DPE05LA4	D	0.4	0.5	0.6	0.66	0.67	0.67	0.6	0.62	0.63	0.64	0.65	0.71
0.12	DPE06LA4	D	0.4	0.5	0.6	0.66	0.67	0.67	0.61	0.62	0.64	0.64	0.65	0.71
0.18	DPE07LA4	D	0.6	0.75	0.9	0.98	1	1	0.83	0.86	0.89	0.9	0.91	0.99
0.25	DPE08MA4	D	0.82	1.02	1.23	1.35	1.37	1.37	0.99	1.04	1.09	1.13	1.13	1.24
0.37	DPE08LA4	D	1.2	1.5	1.8	1.97	2	2	1.47	1.52	1.59	1.63	1.63	1.79
0.55	DPE08XA4	D	1.8	2.2	2.7	2.9	3	3	1.87	1.98	2.1	2.2	2.2	2.4
0.75	DPE08XB4	D	2.4	3.1	3.7	4.1	4.1	4.1	2.5	2.7	2.8	2.9	2.9	3.2
0.75	DPE09LA4	D	2.4	3	3.6	4	4.1	4.1	2.1	2.2	2.4	2.5	2.6	2.8
1.1	DPE09XB4	D	3.6	4.5	5.4	5.9	6	6	3.2	3.4	3.7	3.8	3.8	4.2
1.5	DPE09XB4	D	4.9	6.1	7.3	8.1	8.2	8.2	4	4.4	4.8	5	5.1	5.6
2.2	DPE11LB4	D	7.1	8.9	10.7	11.7	11.9	11.9	4.7	5.3	6	6.4	6.5	7.1
3	DPE11LB4	D	9.7	12.2	14.6	16.1	16.3	16.3	6.7	7.5	8.4	9	9.1	9.9
4	DPE11LB4	D	13	16.2	19.5	21	21.5	21.5	8.9	10	11.2	11.9	12	13.2

P_N Rated power

M Permissible load torque (S1-100 %) at the rotor shaft by operation with a frequency inverter

I Load current for operation with frequency inverter

Field weakening for frequencies above 87 Hz, winding for standard voltage 265 V Δ / 60 Hz (U_{max} = 460 V Δ / 104 Hz), Temperature Class F.

The load currents in the table are guideline values for selecting the size of frequency converter. Load current is lower if the load torque is below the values permitted for 36-120 Hz and the frequency inverter used is of the high-grade type. This means that a smaller inverter can sometimes be used, particularly in conjunction with large motors.