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Simogear & DT konfigurator

motor reduktori koji pokreću sv(ij)e(t)!

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Static power of a geared motor

$$P = T \cdot \omega = T \cdot 2\pi n$$

P in [W], T in [Nm], n in [1/sec]

Conversion:

$$\frac{60}{2\pi} \cdot 1000 \approx 9550$$

$$\boxed{P = T \cdot \omega = \frac{T \cdot n}{9550}}$$

P in [kW], T in [Nm], n in [rpm]

Taking into account the efficiency:

$$P_1 = T_1 \cdot 2\pi n_1 = \frac{P_2}{\eta_{Gearbox}} = \frac{T_2 \cdot 2\pi n_2}{\eta_{Gearbox}}$$

$$i = \frac{n_1}{n_2} \quad \Rightarrow \quad T_1 = \frac{T_2}{\eta_{Gearbox} \cdot i}$$

The motor power is available at the output, reduced by the losses in the geared motor (friction, splashing losses, temperature rise...).

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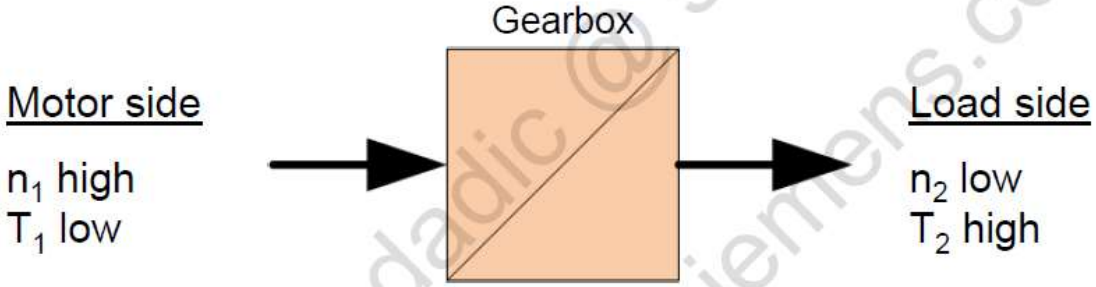
Speed and torque converted by the gearbox



Derivation of the gear ratio (assumption: loss-free gearbox)

$$P_1 = T_1 \cdot \omega_1 = T_1 \cdot 2\pi \cdot n_1$$
$$P_2 = T_2 \cdot \omega_2 = T_2 \cdot 2\pi \cdot n_2$$

Loss-free →

$$P_1 = P_2$$

$$T_1 \cdot 2\pi \cdot n_1 = T_2 \cdot 2\pi \cdot n_2$$
$$T_1 \cdot n_1 = T_2 \cdot n_2$$

Gear ratio $$i = \frac{n_1}{n_2} = \frac{T_2}{T_1}$$

GEARBOX LOSES

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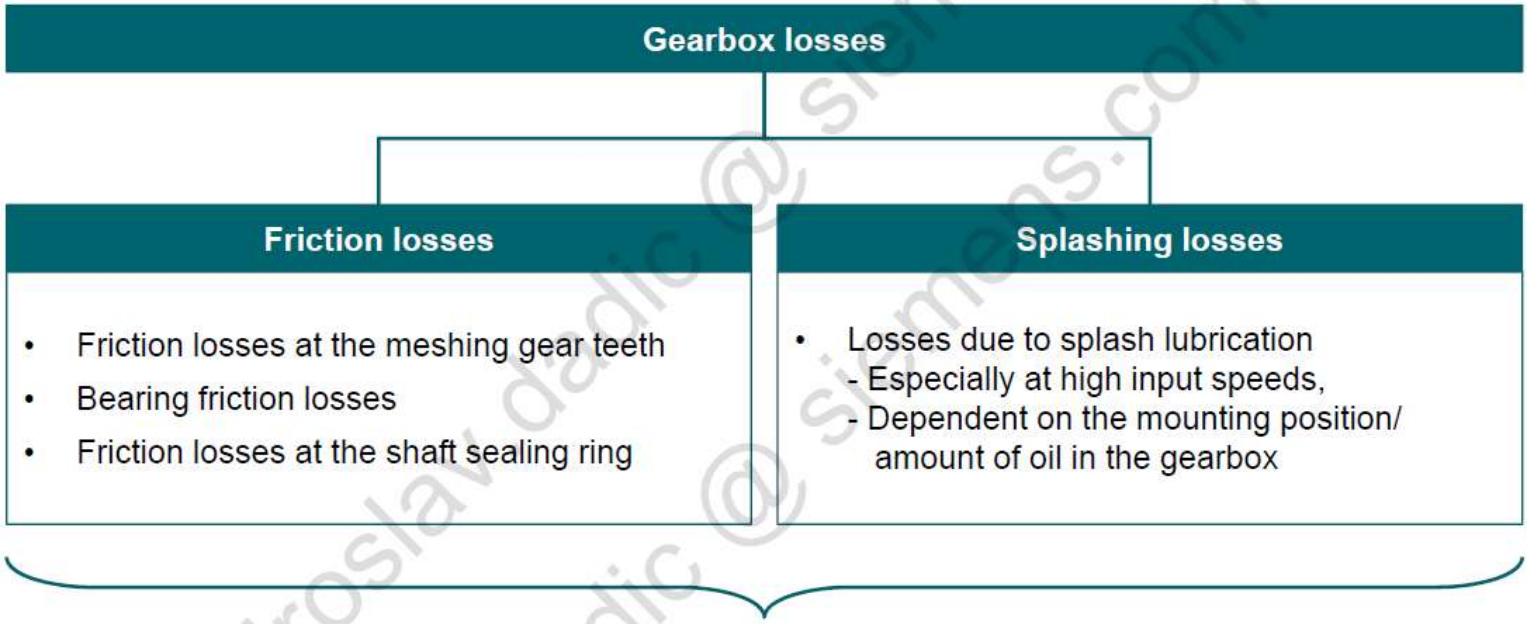

Friction losses

- Friction losses at the meshing gear teeth
- Bearing friction losses
- Friction losses at the shaft sealing ring

Splashing losses

- Losses due to splash lubrication
  - Especially at high input speeds,
  - Dependent on the mounting position/ amount of oil in the gearbox

- Normally, the efficiency is independent of the speed and load.
- For helical, parallel shaft and bevel helical gearboxes, for a first approximation, a 2% drop in efficiency can be assumed for each gear wheel stage.
- The efficiency of gearboxes with worm gear teeth is heavily dependent on the gear ratio and the input speed (the higher the gear ratio, the lower the efficiency)

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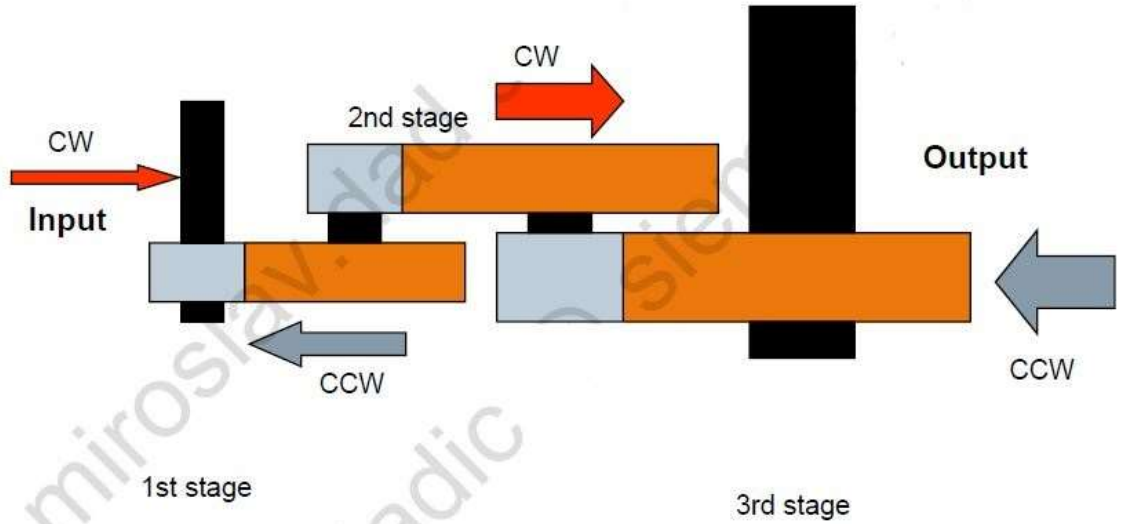
Schematic representation of a 3-stage gearbox



$$i_{ges} = i_1 \cdot i_2 \cdot i_3 \cdot \ldots \cdot i_n$$

SIMOGEAR Geared motors
Precise and powerful

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With the **SIMOGEAR Geared motors** you will benefit especially from its ability to deliver the highest level of **flexibility** due to our wide range of gear units and **compact design.**

The SIMOGEAR Geared motors delivers performance **from 0.09 kW up to 55 kW**[1)] with torque up to approx. **20.000 Nm**.
SIMOGEAR offers the full range of **helical**, **parallel** shaft, **bevel, helical worm** and **worm** gear units. These suitable for all requirements dependending on power requirements, space and technical specification.
Additionally, SIMOGEAR provides a wide portfolio of solutions for specific applications like ATEX, Carwash, EHB, crane, cooling towers, agitators and mixers.

SIMOGEAR geared motors represent a fully integrated SIEMENS portfolio fitting to a wide range of applications including **airport logistics and intralogistics**, **automotive engineering**, **food and beverage**, **wood processing**, **water and waste water, packaging** as well as **general machine building**.

[1)] with adapter and siemens LV motor up to 200kW

SIMOGEAR Geared motors
The top highlights of the system

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Feature / Function	Benefits
• High power density • Finely scaled wide range of ratios • High reliability and long service life	• High performance
• High efficient gearboxes with mechanical efficiency up to 98% • 2-stage bevel geared motors with efficiency up to 96%. • High efficient geared motors exceeding the IE4	• High efficiency
• Shorter housing length and lower weight due to a reduced number of joints and sealing points	• Compact design
• Compatible with the entire SIEMENS portfolio, suitable for any IEC, NEMA motors and servomotors. • Compatible mounting dimensions • Integrated in TIA selection tool	• Compatibility

SIMOGEAR Geared motors
Position in the geared motor portfolio

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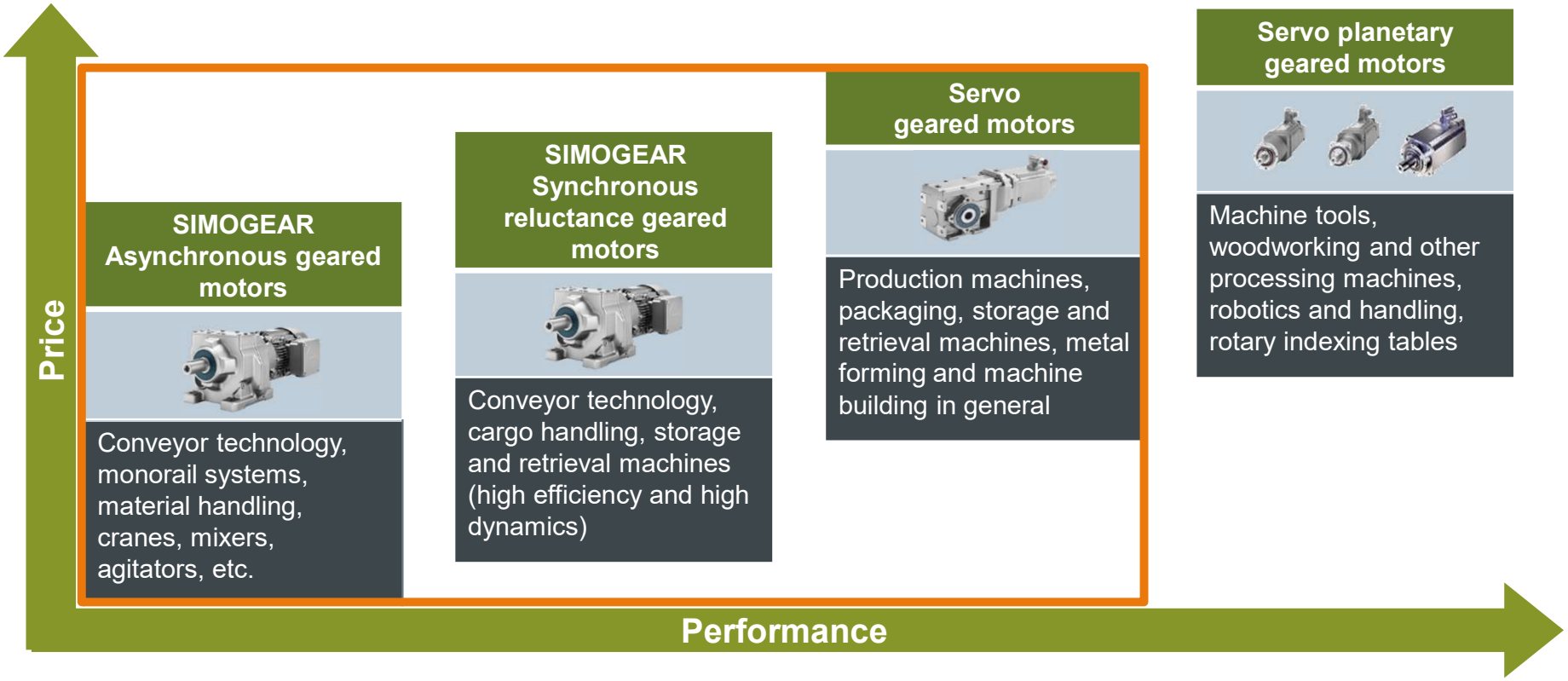

SIMOGEAR Geared motors
Portfolio suitable for every application

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Helical geared motor

E/Z/D

Basic data (at 50 Hz)

Motor power: up to 55 kW
Output torque: up to 20,000 Nm
gearbox ratio: 1,29 … 328

Features

- Single-, two- or three-stage versions
- Only solid shafts
- **High mechanical efficiency η = 0.94 for 3-stage and 0.98 for 1-stage, independent of the ratio**
- **Typical applications: conveyors, packing lines, vertical conveyors**

Parallel shaft geared motor

FZ/FD

Basic data (at 50 Hz)

Motor power: up to 55 kW
Output torque: up to 20,000 Nm
gearbox ratio: 3,5 … 330

Features

- Two- or three-stage version
- Parallel force transmission
- Solid and hollow shafts, SIMOLOC
- **High mechanical efficiency η = 0.94 for 3-stage, 0.96 for 2-stage, independent of the ratio**
- **Typical applications: agitators, horizontal and vertical conveyors,**

SIMOGEAR Geared motors
Portfolio suitable for every application

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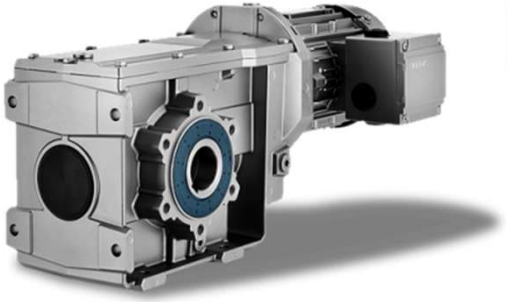
Bevel geared motor (2-stage)



B

Basic data (at 50 Hz)

Motor power: up to 7,5 kW
Output torque: up to 450 Nm
Gearbox ratio: 3,5 … 59

Features

- High power density, high ratio, high efficiency
- Force transmission angled through 90°
- Solid and hollow shafts, foot and flange-mounted design
- **High mechanical efficiency η = 0.96 independent of the ratio**
- **Typical applications: conveying systems, packing lines, warehouse logistics lines, mixers**

Bevel geared motor (3-stage)

K

Basic data (at 50 Hz)

Motor power: up to 55 kW
Output torque: up to 20.000 Nm
Gearbox ratio: 5,7 … 237

Features

- High power density, high ratio, high efficiency
- Force transmission angled through 90°
- Solid and hollow shafts, foot and flange-mounted design
- **High mechanical efficiency η = 0.94 independent of the ratio**
- **Typical applications: conveying systems, packing lines, warehouse logistics lines, mixers**

SIMOGEAR Geared motors
Portfolio suitable for every application

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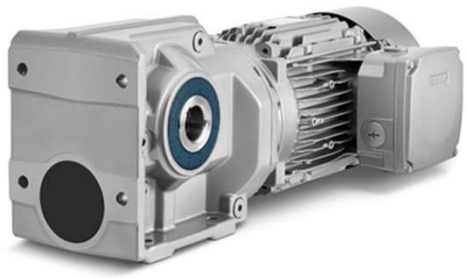
Helical worm geared motor

C



Basic data (at 50 Hz)

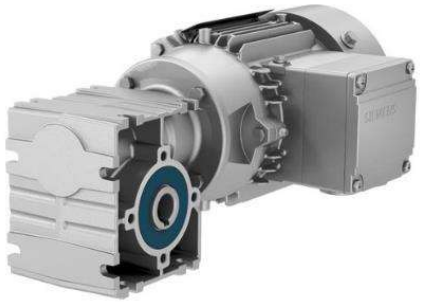
Motor power: up to 7,5 kW
Output torque: up to 1.450 Nm
gearbox ratio: 6,48 … 363

Features

- Two-stage version
- Force transmission angled through 90˚
- Foot, flange-mounted design, shaft mounted design with torque arm, design with integrated mounting flange
- **Mechanical efficiency η = 0.65…0.93 dependent on the ratio**
- **Typical applications: conveying applications, stage systems**

Worm geared motor

S



Basic data (at 50 Hz)

Motor power: up to 0,55 kW
Output torque: up to 80 Nm
gearbox ratio: 5 … 100

Features

- Single stage version
- Force transmission angled through 90˚
- Low cost geared motors with poor or moderate Efficiency
- **Mechanical efficiency: ŋ = 0,50…0,93 depending on the ratio**
- Self-locking at certain ratios
- **Typical applications: press applications, stage systems**

SIMOGEAR Geared motors
Motor portfolio suitable for every application

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Motor SIZE	Motor POWER 4 poles	IEC Asynchronous motors			NEMA MG1	VSD 10 for VSD only	Reluctance motor for VSD only
		IE1	IE2	IE3	NEMA energy / premium	VSD 10	VSD 4000
63	0.09 .. 0.18	LE63	LE63..E		LE63[1)]		
71	0.25 .. 0.55	LE71	LE71..E		LE71[1)]		
80	0.55 .. 0.75	LE80	LE80..E	LE80..P	LE80		LE80..SV
90	1.1 .. 1.5		LE90..E	LE90..P	LE90		LE90..SV
100	2.2 .. 3		LE100..E	LE100..P	LE100	LE100..V	
112	4		LE112..E	LE112..P	LE112	LE112..V	LE112..SV[2)]
132	5.5 .. 9.2		LE132..E	LE132..P	LE132	LE132..V	
160	11 .. 15		LE160..E	LE160..P	LE160	LE160..V	
180	18 .. 22		LES180..E	LES180..P	LES180	LES180..V	
200	30		LES200..E	LES200..P	LES200	LES200..V	
225	37 .. 45		LES225..E	LES225..P	LES225	LES225..V	
250	55		LES250..E	LES250..P	LES250	LES250..V	

[1)] FS 63 and 71 no request for efficiency

[2)] Motor power 2,2…3kW set in LE122..SV

SIMOGEAR Geared motors
Portfolio suitable for conveyor applications

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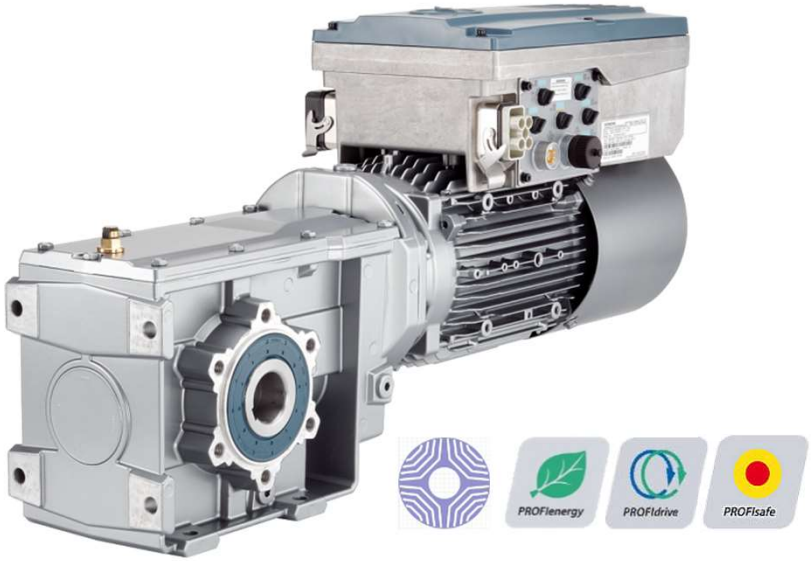
Geared motor with integrated inverter G110M (up to IP65)



Power Modules
- 0.55 – 4kW, 380 – 480V +/- 10%
- Integrated electronic brake control
- Integrated motor protection

Control Unit
- STO via F-DI or PROFIsafe
- USS / Modbus, PROFIBUS, PROFINET / Ethernet IP, AS-i
- 4 DI, 2 DO, 2 AI (can also be used as DI)
- Commissioning using DIP switch, memory card, IOP or parameterizing tool STARTER / Startdrive

SIMOTICS Motor
- GP Serie from Aluminium Synchronous Reluctance Motor
- GP Serie from Aluminium and SD Serie Cast Iron Asynchronous Motor

SIMOGEAR Geared Motor
- The SINAMICS G110M is completely assembled in the factory – and is preconfigured for the particular geared motor (motor data, brake and temperature sensor)

The “ready to use" drive system

SIMOGEAR Geared motors
Suitable for applications in gas and dust loaded atmospheres

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ATEX system solution with SIMOGEAR

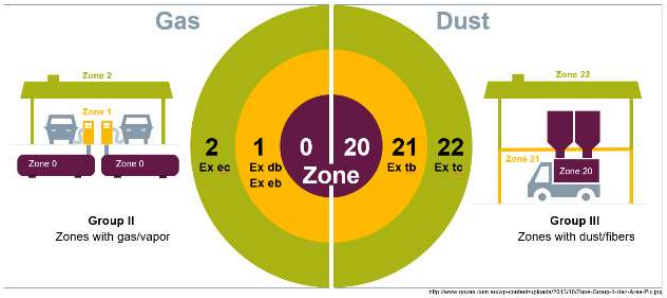
SIMOGEAR available with Adapter for EX motors

SIMOGEAR gearboxes with ATEX 2014/34/EU Compatible with SIMOTICS XP Motors suitable for Zone 1,2,21 and 22
Suitable for SIMOTICS XP 1MB1, 1MB5 series

Typical aplications

Gases (Ex ec, Ex eb)

- Chemical and petrochemical industry
- Gas plants
- Coking plants
- Painting systems
- Gas stations (petrol stations)
- Sewage treatment plants
- etc.



Dusts (Ex tb, Ex tc)

- Agriculture, e.g. concentrated feed, malt, grain
- Chemical industry ,
  e.g. coal/carbon dust, cleaning agents/detergents
- Processing plastics,
  e.g. rubber, natural rubber (caoutchouc)
- Wood industry, e.g. wood dust, wood resin
- etc.

SIMOGEAR Geared motors
Flexibility with adapter for gearboxes

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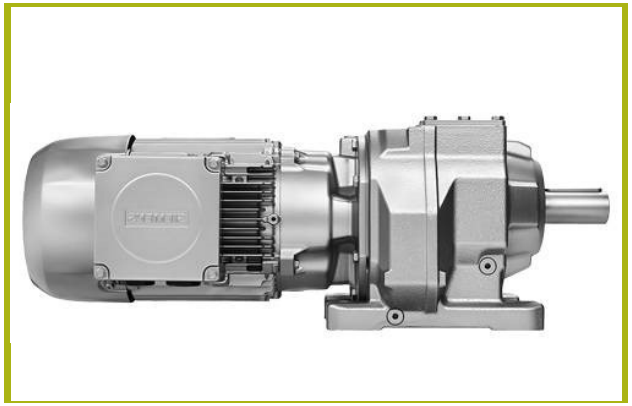
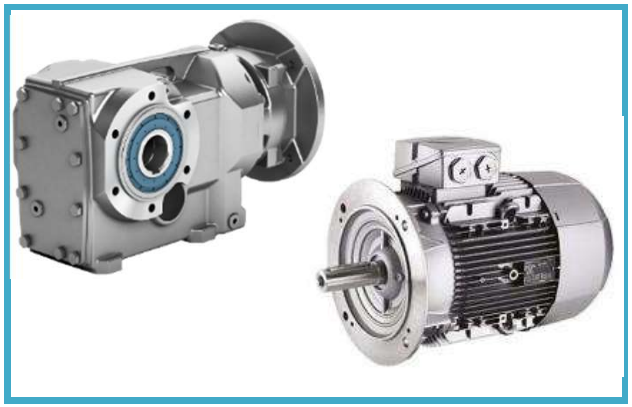


Geared motors

- Compact installation
- Optimised motor and gearbox design
- Material and cost savings
- No coupling required, pinion mounted on the motor shaft

Compact design



Gearboxes with adapter for motor mounting

- In case of service, only single component has to be exchanged
- Optimised warehousing
- Compatible with all standard IEC motors
- Compatible with all standard NEMA motors
- Compatible with all SIEMENS servomotors and main motors
- Adapter types K2, K3, K4, K5 and KS are available for mounting Siemens motors on ATEX-compliant gearboxes

Compatibility

SIMOGEAR Geared motors
KS adapter for all SIEMENS servo drive systems

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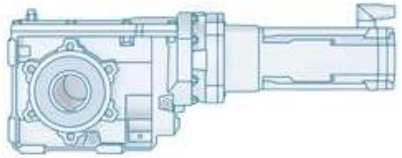
The KS adapter provides an excellent fit with servo drive systems V90/S-1FL6, S210/S-1FK2, S120/S-1FK7,S-1FT7 and M-1PH8



Flexible

Combinable

Optimized

Features

- Full SIEMENS portfolio of servo drive systems can be connected
- Coupling adapter with compact design
- Zero-backlash coupling without feather key
- KS Adapter available for mounting Siemens motors on ATEX-compliant gearboxes.
- Compatibile with:
  - SIMOTICS S-1FL6 servo motors and SINAMICS V90
  - SIMOTICS S-1FK2 servo motors and SINAMICS S210
  - SIMOTICS S-1FK7, S-1FT7 and SINAMICS S120
  - SIMOTICS M-1PH8 and SINAMICS S120

SIMOGEAR Geared motors
Brakes, Encoders and MODULOG

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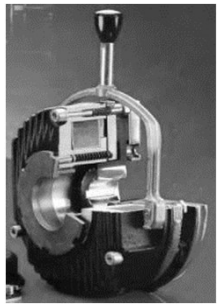

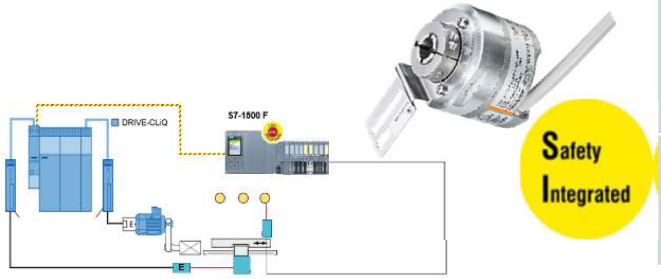

Feature / Function	Benefits
Wide selection of brakes	• Spring-operated brake • Can be used as holding or operating brake • High levels of wear reserve • Rectifier options (fast opening and closing times) • Options for protection against corrosion, dust and moisture
Adjustable brake torque via setting ring	• Customer-friendly adjustability of the braking torque in a wide range by a setting ring • The replacement of the springs to adjust the braking torque is thus rarely required. • Largest range of brake torques
MODULOG Modular motor system	• Individual mounting shaft system for brakes, encoders and external fans • High availability, short delivery times • Can be subsequently modified
Wide selection of encoders including functionally safe encoders FSD encoder with integrated safety	• Simplified acceptance procedure (SIL 2,PL d)

SIMOGEAR Geared motors
Mounting position & Venting of the gearbox

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Mounting positions are relevant for decision how much oil is filled and where mounted breather to release internal air pressure is positioned.

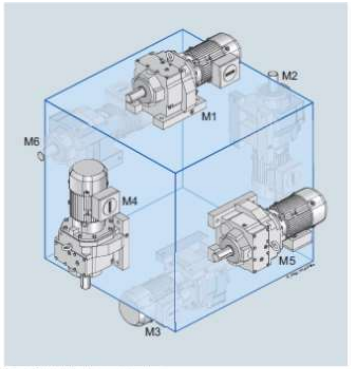


Fig. 10/1 Helical geared motors

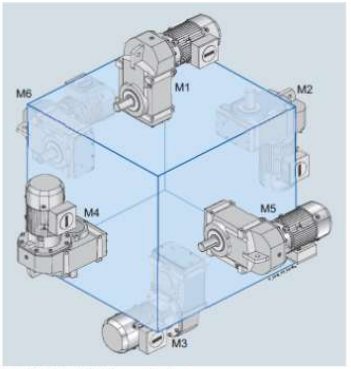
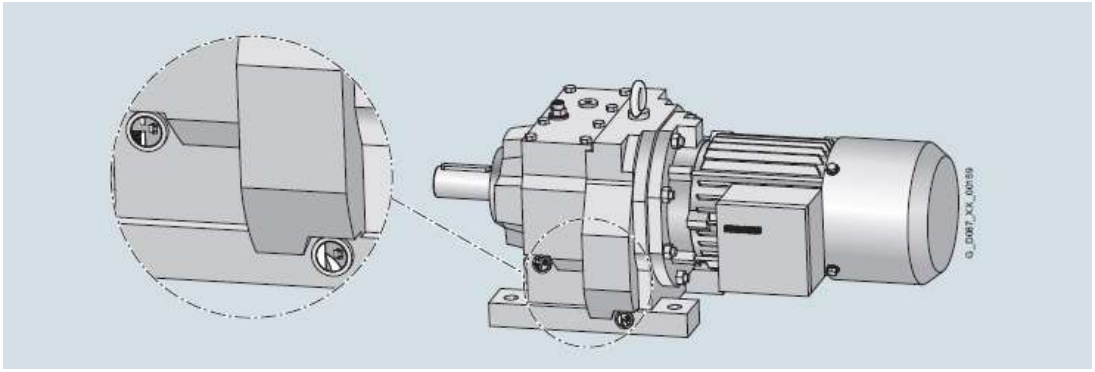


Fig. 10/2 Parallel shaft geared motors



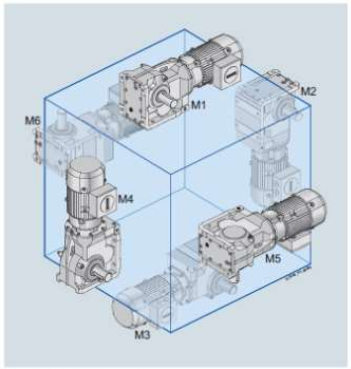


Fig. 10/3 Bevel geared motors

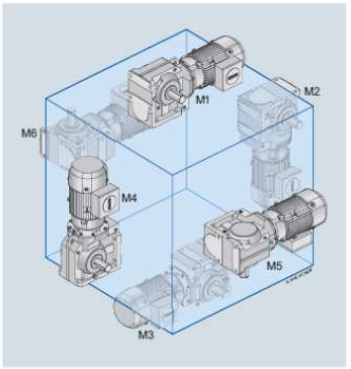


Fig. 10/4 Helical worm geared motors

Oil valves

- Venting
- Oil drain
- Oil level checking screw
- Oil dipstick, optional
- Venting main gearbox (applies only to tandem geared motors)
- Oil drain main gearbox (applies only to tandem geared motors)

More info: https://wiki.siemens.com/x/hAZvCQ

SIMOGEAR Geared motors
Lubrication - option K06-K16

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Area of application	Oil type	Permissible temperature of oil		Typical use	Order code
Standard	CLP ISO VG220	-15	+80	**Mineral oil,** standard for Helical, Parallel and Bevel (3 stage)	**K06**
	CLP ISO PG VG220	-25	+110	Standard oil for Bevel (2 stage), helical worm and worm **increased service life due to synthetic oil**	**K07**
	CLP ISO PG VG460	-25	+110	**Due to higher viscosity, start of the geared motor is harder, but better suitable for higher oil sum temperature**, increased service life	**K08**
	CLP ISO PAO VG68	-40	+60	More expensive than PG oil, **designated for very low temperatures**, **due to the low viscosity max oil sump temperature is limited to 60°C,** increased service life	**K13**
	CLP ISO PAO VG220	-30	+100	More expensive than PG oil, **better performance for lower temperatures** . increased service life	**K12**
	CLP ISO PAO VG 460	-25	110	More expensive than PG oil, better performance for lower temperatures . **Due to higher viscosity, start of the geared motor is harder, but better suitable for higher oil sum temperature**, increased service life	**K16**
Foodstuff area	CLP ISO H1 VG460	-25	+100	Foodstuff area increased service life	**K11**
	CLP ISO H1 VG100	-30	+90	Foodstuff area dedicated for low temperatures increased service life	**K14**
Biodegradable oil	CLP ISO E VG220	-20	+100	Biodegradable oil increased service life	**K10**

More info: https://wiki.siemens.com/x/wL6yBg

SIMOGEAR Geared motors
Encoders to determine position of the shaft - option Q42-Q92

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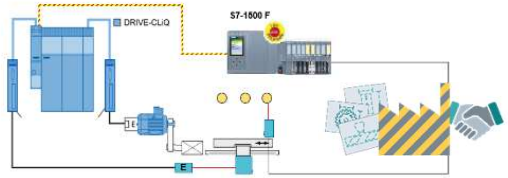

Safety Integrated

Incremental encoders ✓
For applications without absolute value positioning (HTL or TTL)

Absolute encoders (single turn / multi turn) ✓
For applications where the position must not be lost

(SSI and sin / cos or HTL) (EnDAT and sin / cos also available with PROFINET Gateway)

Rugged encoders ✓
For demanding operating environments. It is resistant to shock and vibration and has insulated bearings.

Functionally safe encoders (incremental and absolute) FSD ✓
To realize certain safety functions it is mandatory to use a functional safety encoder in conjunction with a suitable control unit (sensor) and inverter (actor).

Benefit:
The safety of a machine is increased further with Integrated Safety. PLd / SIL2, PLe / SIL3 are available.

SIMOGEAR Geared motors
Temperature sensor - option M10-M17

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Motor protection	Motor frame size												Option
	63	71	80	90	100	112	132	160	180	200	225	250	
PTC thermistor disconnection	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	M10
Winding thermostat, disconnection	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	M12
Pt1000 resistance thermometer			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	M17
protection for VSD10-Line Motor													
PTC thermistor disconnection						✓	✓	✓	✓	✓	✓	✓	M10
Winding thermostat, disconnection						✓	✓	✓	✓	✓	✓	✓	M12
Pt1000 resistance thermometer					✓	✓	✓	✓	✓	✓	✓	✓	M17
Motor protection for Reluctance motor													
Pt1000 resistance thermometr			✓	✓		✓							M17

PTC

M10

The temperature sensor is a positive temperature coefficient (PTC) thermistor which offers comprehensive protection against thermal motor overload. The temperature of the winding can be accurately monitored thanks to its low thermal capacity and the excellent heat contact with the winding. The PTC thermistor exhibits a sudden change in resistance when a rated response temperature is reached.

Pt1000 resistance thermometer

M17

The resistance thermometer has a chip for a temperature sensor, the resistance of which changes in relation to temperature according to a series of reproducible basic values. The changes in resistance are transferred as changes in current. At 0 ° C, the measurement resistances are adjusted to 1000 Ω for the Pt1000, and correspond to the accuracy class B (i.e. the relationship between resistance and temperature). The limit deviation is ±0.3 ° C, and the admissible deviations are defined in EN 60751.

winding thermostat

M12

The temperature switch is a winding thermostat (NC contact) and is suitable as a protection device for slowly increasing motor temperatures. When the rated response temperature is reached, it can open an auxiliary circuit. When the motor temperature decreases, the winding thermostat closes again as soon as the temperature falls significantly below the rated response temperature.

SIMOGEAR Geared motors
Cooling and ventilation - option M21-M23

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Motor frame size	Frequency	Rated voltage range			Rated current	Power consumption	Volume flow	Weight
	Hz	Phase	V	Connection	A	W	m³/h	kg
71	50	1 AC	230 ... 277	1(Δ)	0.10	27.0	78	1.45
		3 AC	220 ... 303/346 ... 525	Δ/Y	0.11/0.06	31.0		
	60	1 AC	230 ... 277	1(Δ)	0.12	33.0	96	
		3 AC	220 ... 332/380 ... 575	Δ/Y	0.10/0.06	29.0		
80	50	1 AC	230 ... 277	1(Δ)	0.11	29.0	127	1.50
		3 AC	200 ... 303/346 ... 525	Δ/Y	0.11/0.06	31.0		
	60	1 AC	230 ... 277	1(Δ)	0.14	37.0	148	
		3 AC	220 ... 332/380 ... 575	Δ/Y	0.10/0.06	34.0		
90	50	1 AC	230 ... 277	1(Δ)	0.25	65.0	200	1.90
		3 AC	200 ... 303/346 ... 525	Δ/Y	0.38/0.22	91.0		
	60	1 AC	230 ... 277	1(Δ)	0.29	65.0	240	
		3 AC	220 ... 332/380 ... 575	Δ/Y	0.33/0.19	77.0		
100	50	1 AC	230 ... 277	1(Δ)	0.28	66.0	260	2.05
		3 AC	200 ... 303/346 ... 525	Δ/Y	0.37/0.22	91.0		
	60	1 AC	230 ... 277	1(Δ)	0.30	75.0	310	
		3 AC	220 ... 332/380 ... 575	Δ/Y	0.31/0.18	87.0		
112	50	1 AC	230 ... 277	1(Δ)	0.28	71.0	337	2.15
		3 AC	200 ... 303/346 ... 525	Δ/Y	0.35/0.20	97.0		
	60	1 AC	230 ... 277	1(Δ)	0.37	94.0	411	
		3 AC	220 ... 332/380 ... 575	Δ/Y	0.31/0.18	103.0		
132	50	1 AC	230 ... 277	1(Δ)	0.52	125.0	560	3.00
		3 AC	200 ... 303/346 ... 525	Δ/Y	0.64/0.37	160.0		
	60	1 AC	230 ... 277	1(Δ)	0.61	163.0	650	
		3 AC	220 ... 332/380 ... 575	Δ/Y	0.35/0.20	180.0		
160	50	1 AC	230 ... 277	1(Δ)	1.05	246.0	980	
		3 AC	200 ... 303 / 346... 525	Δ/Y	1.28 / 0.74	314.0		
	60	1 AC	230 ... 277	1(Δ)	1.52	390.0	1170	
		3 AC	220 ... 332 / 380... 575	Δ/Y	1.08 / 0.62	391.0		
180	50	1 AC	230 ... 277	1(Δ)	1.05	246.0	1166	8.15
		3 AC	200 ... 303 / 346... 525	Δ/Y	1.28 / 0.74	314.0		
	60	1 AC	230 ... 277	1(Δ)	1.52	390.0	1306	
		3 AC	220 ... 332 / 380... 575	Δ/Y	1.08 / 0.62	391.0		
200	50	1 AC	230 ... 277	1(Δ)	1.05	246.0	1331	9.75
		3 AC	200 ... 303 / 346... 525	Δ/Y	1.28 / 0.74	314.0		
	60	1 AC	230 ... 277	1(Δ)	1.52	390.0	1586	
		3 AC	220 ... 332 / 380... 575	Δ/Y	1.08 / 0.62	391.0		
225 ... 250	50	3 AC	220 ... 240 / 380 ... 420	Δ/Y	2.0 / 1.15	450.0	On request	22.0
	60		440 ... 480	Y	1.05	520.0		

Standard fan

✓

As a standard, the motors are equipped with a plastic fan. This can be used for the entire standard ambient temperature range.

Metal fan

M21

Metal fans are used for specific environmental conditions, such as when there are solid or dirt particles, such as wood chips, textile fibers in the cooling air, or in special motor designs for increased ambient temperatures exceeding +60 ° C.

High inertia fan

M22

When required, 4-pole motors in frame sizes 71 to 132 can be equipped with a high inertia fan.

High inertia fans as an additional inertia are finely balanced according to ISO 1940. Typical applications are drives for travelling gear, conveying equipment, or in general for supporting soft starting and/or soft braking in line operations.

Forced ventilation

M23

Forced ventilation (separately driven fan) can be combined with almost all brakes and encoders as required.

SIMOGEAR Geared motors
Bearing Executions - option G20, G30,G31

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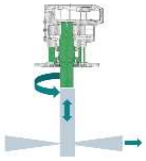
The gearboxes can be supplied with a standard design or with a reinforced output shaft bearing design.



Standard bearing ✓
EF, ZF, DF, FF, KF
Output shaft standard

Reinforced bearing G20
EF, ZF, DF, FF, KF
Output shaft standard

VL plus: G30
ZF, DF, FF, KF
Output shaft large

XL plus G31
ZF,DF,FF, KF
Output shaft large

Benefit:
The reinforced bearings allow higher radial and combined forces (radial and axial) to be absorbed.
This solution is mainly used for applications like Agitators, mixers or cooling towers.

SIMOGEAR Geared motors
SIMOLOC mounting system - option H3J-H3M

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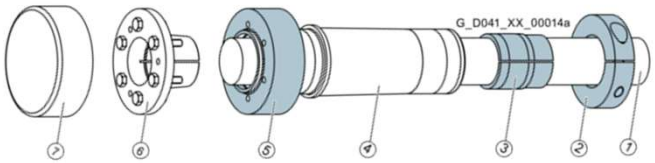
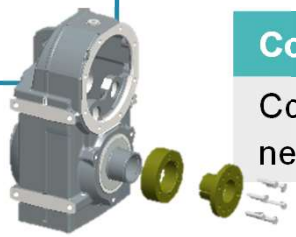


Components of the SIMOLOC

1. Machine shaft
2. Clamping ring
3. Bronze bushing
4. Hollow shaft of the gear
5. V-ring
6. Taper bushing
7. Rotating protection cover



New way for the gear mounting

SIMOLOC offers a cost-effective, easy-to-install alternative to conventional shaft connections such as a hollow shaft with feather key, shrink disk or with splined shaft

Variability

The same SIMOLOC gear shaft can be used together with several bushing sizes in order to fit the gear a range of different shaft sizes

Quick and easy installation

The clearance between the solid shaft and the hollow shaft ensures a very easy installation of the gearbox

Cost reduction

Cost reduction of the machine shaft manufacturing and the key-way are not necessary

SIMOGEAR Geared motors
For ambient temperature up to -40°C - option K92-K98

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Option	Ambient Temperature Range	Low Temperatures	High Temperatures
standard	Helical geared motors Z/D/E Parallel shaft geared motors FZ/FD Bevel geared motors K (3-stage)	-15	40
standard	Bevel geared motors B (2-stage) Helical worm geared motors C Worm geared motors S	-20	40
standard	Geared motors with SINAMICS G110M motor integrated frequency converter	-10	40

K96	Low Temperature option	-25	40
K97	Low Temperature option	-30	40
K98	Low Temperature option	-40	40
K92	High Temperature option	-20	45

Options for higher temperature avaialable on request

SIMOGEAR Geared motors
Low-backlash solution - option G99

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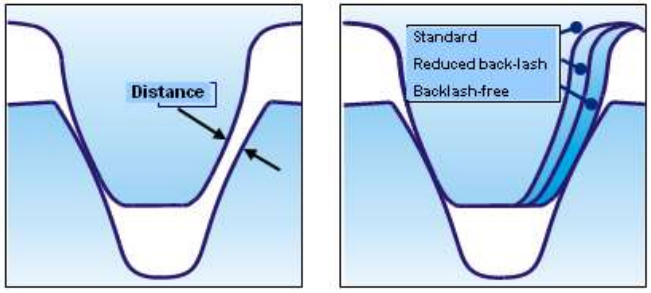
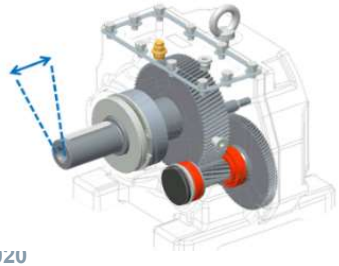
Demand:
High accuracy for signal input





High control quality

As the encoder cannot give the right movement information to the inverter with existing gear backlash, an information delay takes place. As a result, the mechanics does not follow the control impulses anymore. Oscillations occur.

Exact positioning

When using a mechanical gear with backlash, the relative position of the gear output shaft to the motor shaft cannot be defined anymore. The control doesn‘t know if the left or right gear flank is in contact. This can normally be solved with an encoder on machine‘s shaft. Additionally, an inverter parameter such as „backlash compensation“ can be used.

Lower peak loads

The higher the backlash (bigger air gap between toothed parts), the bigger the peak loads. With reduced backlash the gear can have a longer lifetime.

SIMOGEAR
Reduced delivery time - option W50

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For a faster delivery of our SIMOGEAR geared motors outside the standard delivery times we offer a fast track option. W50

Delivery time category A: ✓
Unpainted: 2 working days
Painted (C1...C2): 4 working days

Delivery time category B ✓
Unpainted: 3 working days
Painted (C1...C3): 5 working days

Number of geared motors: ✓
Max. 5 pieces/order

Additional cost: ✓
With the selection of the option “Fast lane” (W50) the list price of the gear motor is increased by 30%.

Benefit

Fast availability of complete spare geared motors

SIMOGEAR
Extension of liability for defects - option W80 and W82

SIEMENS
Ingenuity for life

✓ **Extension of the liability for defects for SIMOGEAR geared motors to the following periods:**

W80 **Extension of liability for defects: 24 months**

Liability for defect period extended by 12 months up to a total of 24 months from the initial shipment.

W82 **Extension of liability for defects: 36 months**

Liability for defect period extended by 24 months up to a total of 36 months from the initial shipment.

More information in SIOS Nr.109773208

Benefit

SIMOGEAR offers extension of liability for defects up to 36 months from the initial shipment.

SIMOGEAR Geared motors
MLFB structure

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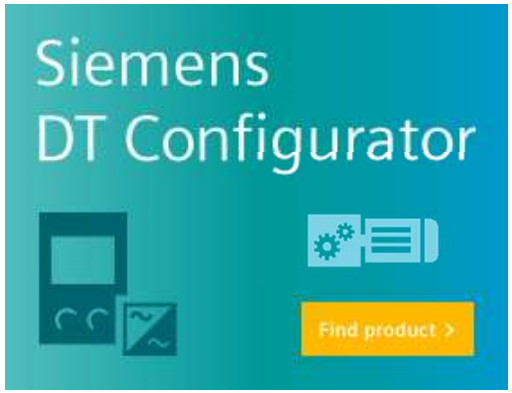
You can simply configure your geared motor in TST or DT Configurator

2	K	J	3	X	X	X	-	X	X	X	X	X	-	X	X	X	X	-	Z
1	2	3	4	5	6	7		8	9	10	11	12		13	14	15	16		17

Digit	Description		
1–4	SIMOGEAR designation 2KJ3		
5	Gearbox type	Helical gearbox E, 1-stage,	0
		Helical gearbox Z, 2-stage,	1
		Helical gearbox D, 3-stage,	2
		Parallel shaft gearbox FZ, 2-stage	3
		Parallel shaft gearbox FD, 3-stage	4
		Bevel gearbox B, 2-stage	5
		Bevel gearbox K, 3-stage	5
		Helical worm gearbox C, 2-stage	6
		Worm gearbox S, 1-stage	7
6–7	Gearbox size		
8	Output shaft		
9–10	Motor frame size		
11	Motor type		
12	Motor efficiency		
13	Frequency, voltage		
14	Gearbox mounting design		
15–16	Transmission ratio		
17	Suffix followed with order codes or plain text		



SIMOGEAR Geared motors Catalogs

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Catalogs and pricelist available

Catalog D50.1

Catalog MD50.11

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Live DEMO- DT konfigurator

Hvala na pozornosti!!

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