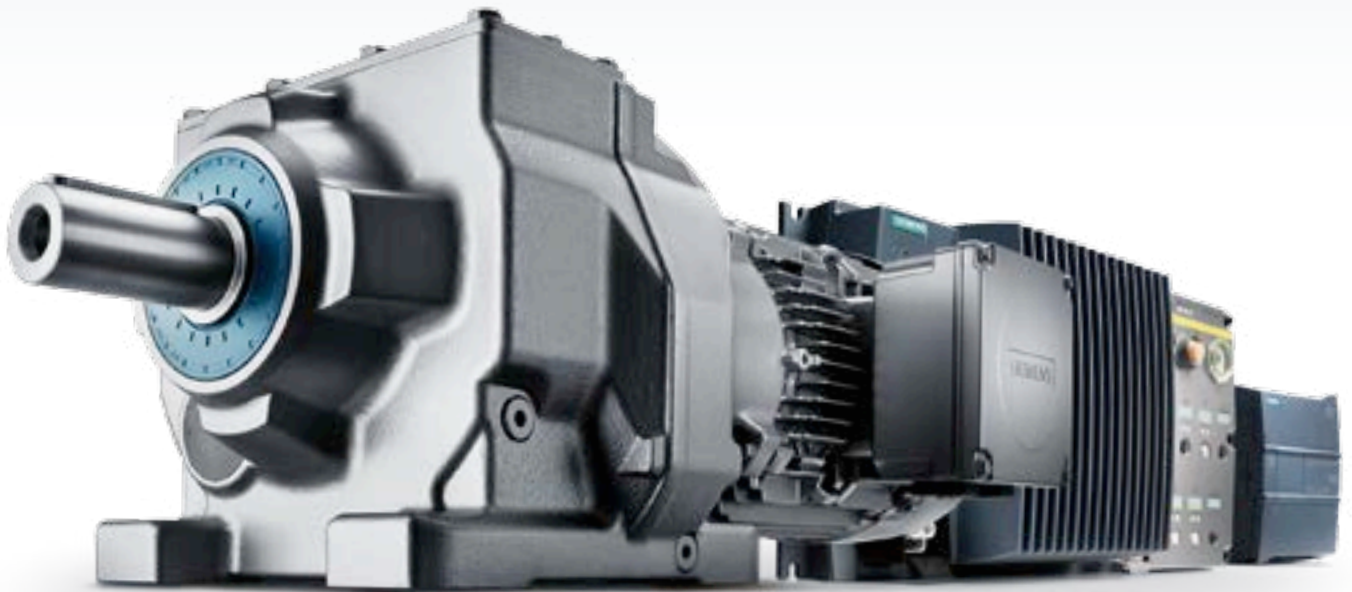


**SIEMENS**  
*Ingenuity for life*



## Get on board the drive train

Change now to SIMOGEAR  
geared motors for easy installation  
and more flexibility

[siemens.com/simogear](https://www.siemens.com/simogear)



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# SIMOGEAR makes the change simple for you

The demands placed on industrial drive technology are always increasing: Compact and versatile geared motor solutions that can be optimally integrated into the drive train are demanded. More flexibility, more power, a more standard approach – these are the expectations of the sector, especially in conveyor technology.

## Siemens is further developing the standard

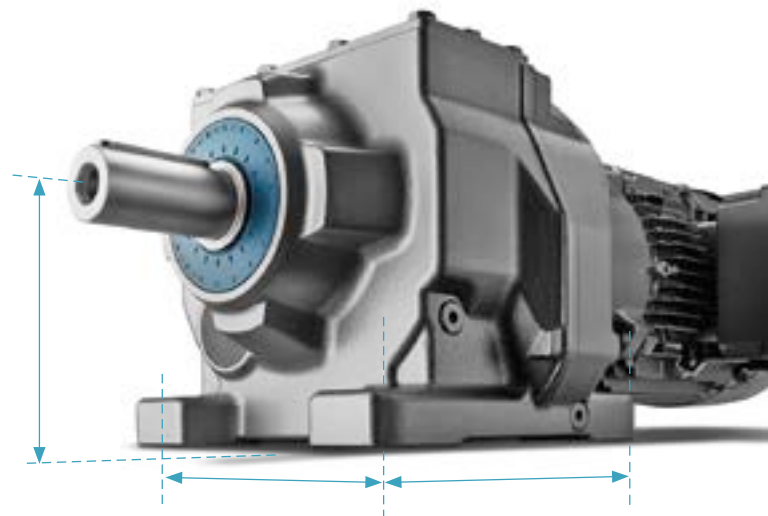
What is the impact of a new and better standard for geared motors? Is it the compatibility of the mounting dimensions? Is it a balanced portfolio with finely graduated frame sizes? Or is it the outstanding quality, which ensures a high plant or system availability, that counts? The new series of SIMOGEAR® geared motors provides the answers. It is 1:1 compatible to the general standard in the market, and can therefore be simply integrated into existing or new machines and systems.

## Well designed

As a result of the standard mounting dimensions selected for shaft heights, output shafts, foot and flange mounting, etc., SIMOGEAR supports known design routines that have established themselves over the years. This means the following: You can freely select suppliers and completely modernize or reconfigure your complete drive solutions at any time – with low associated costs. You can see: A change to SIMOGEAR is quite simple.

### Advantages at a glance:

- Based on an optimum design principle on the gear unit side, and by using new, energy-efficient motors, SIMOGEAR plays a role in reducing the energy costs of your plant or system
- As a result of the finely scaled portfolio, you only pay for the power rating that you actually require
- As a result of the compact dimensions, SIMOGEAR can even be integrated into the smallest spaces



As a result of the mounting dimensions generally used in the market, SIMOGEAR is compatible to products from most geared motor manufacturers

# The portfolio. A perfect fit for every application.

With SIMOGEAR, we can offer you the complete range of geared motors, in all of the usual gear unit types and with a wealth of product advantages – which all together clearly underscore the superiority of this new series. As part of the most comprehensive, integrated drive and automation concept worldwide, with SIMOGEAR, you obtain the optimum solution for each and every application.



From left to right:  
Worm geared motor  
Bevel geared motor  
Parallel shaft geared motor  
Helical geared motor

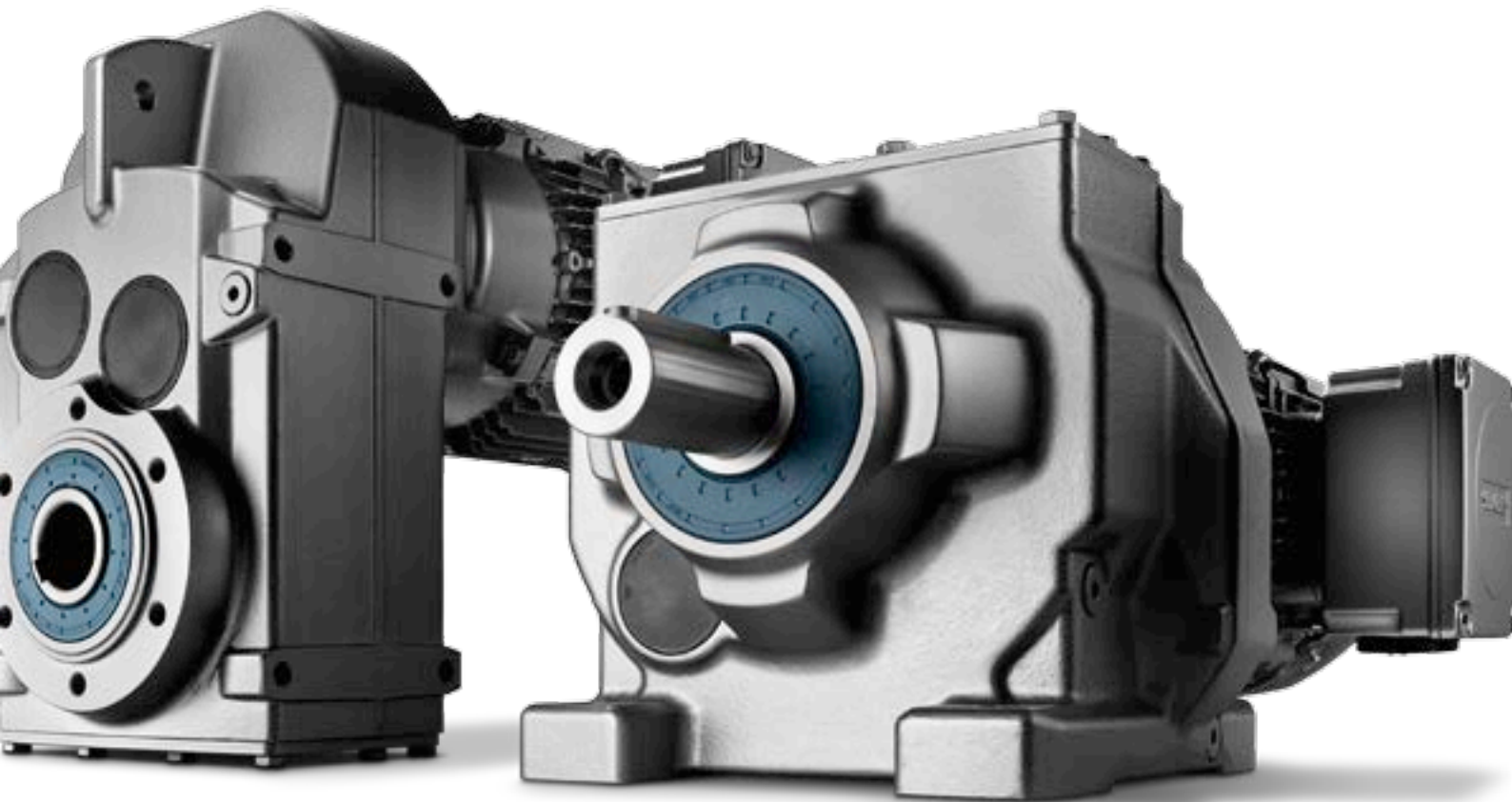
## Harmoniously coordinated

Helical, parallel shaft and bevel gear unit types in the power range extending from 0.09 up to 55 kW are available, effectively immediately. Worm gear units are available up to 7.5 kW. For SIMOGEAR, the rated gear unit torque, permissible radial force, output shaft diameter, bearing lifetime, housing stiffness, gearing reliability and shaft stiffness have been precisely harmonized and coordinated with one another. You benefit from higher ratios and the same or even higher rated gear unit torques as geared motors of the same size from our competitors. When compared to the previous series, as a result of additional gear unit frame sizes, you have finer torque graduations and the optimum drive for every application – regarding the gear unit type, rated torque and ratio.

## Internationality is the standard

With Siemens, you can implement comprehensive drive solutions worldwide for all conceivable applications in each and every sector. Our geared motors fulfill all of the applicable international regulations.

- The standard motors are in compliance with IEC/EN standards.
- We can offer you motors with the following specifications for export to the NAFTA market (US, Canada, Mexico): Electrical NEMA, UL, CSA.
- CCC-certified motors are available for export to China as well as EAC-certified gear units for export to Russia.
- To ensure that your plants and systems run efficiently, we provide High Efficiency (IE2) and Premium Efficiency (IE3) energy-saving motors corresponding to EU regulation No. 640/2009 based on minimum efficiencies corresponding to IEC 60034-30.
- Explosion-proof versions for zones 1/2 (gas) and 21/22 (dust) due to EU directive 94/9/EG (ATEX)



Helical gear units 2-/3-stage	D/Z19 100 Nm	D/Z29 140 Nm	D/Z39 200 Nm	D/Z49 320 Nm	D/Z59 450 Nm	D/Z69 600 Nm	D/Z79 840 Nm	D/Z89 1,680 Nm	D/Z109 3,100 Nm	D/Z129 5,000 Nm	D/Z149 8,000 Nm	D/Z169 14,000 Nm	D/Z189 19,000 Nm
Parallel shaft gear units 2-/3-stage		F29 150 Nm	F39 290 Nm	F49 480 Nm		F69 600 Nm	F79 1,000 Nm	F89 1,850 Nm	F109 3,100 Nm	F129 4,850 Nm	F149 8,000 Nm	F169 13,600 Nm	F189 19,000 Nm
Bevel gear units 2-stage	B19 50 Nm	B29 110 Nm	B39 250 Nm	B49 450 Nm									
Bevel gear units 3-stage			K39 220 Nm	K49 420 Nm	K69 600 Nm	K79 820 Nm	K89 1,600 Nm	K109 2,900 Nm	K129 4,400 Nm	K149 8,000 Nm	K169 13,000 Nm	K189 19,500 Nm	
Worm gear units 2-stage			C29 110 Nm	C39 235 Nm	C49 400 Nm	C69 675 Nm	C89 1,450 Nm						
Worm gear units 1-stage	S09 33 Nm	S19 72 Nm	S29 116 Nm										

# Highest performance. Down to the finest detail.

Our new series of SIMOGEAR geared motors sets itself apart as a result of its outstanding technical performance with the highest power density. This is reflected in many details, including higher input speeds as well as finer ratio steps. Further, the housing design was optimized using FEM analysis.



By employing the plug-in pinion design, higher ratios are achieved when compared to motor pinions utilizing the plug-on design. In many applications, this results in a more cost-effective solution as one gear stage can be eliminated. You can also enjoy cost advantages if you can use standard 4-pole motors instead of the more expensive 6- or 8-pole motors due to the higher ratio.

**Improved design measures**

For the output shaft, SIMOGEAR offers sealing concepts harmonized and coordinated to address the various application areas. Further, the pressure relief valve is included as standard, and the small gear unit frame sizes are permanently lubricated. These are just a few details of the design improvements that have been made. As a whole, this means: You can depend on high operational reliability, high quality of the final product as well as a long service life.



New sealing concept



Plug-in pinion design

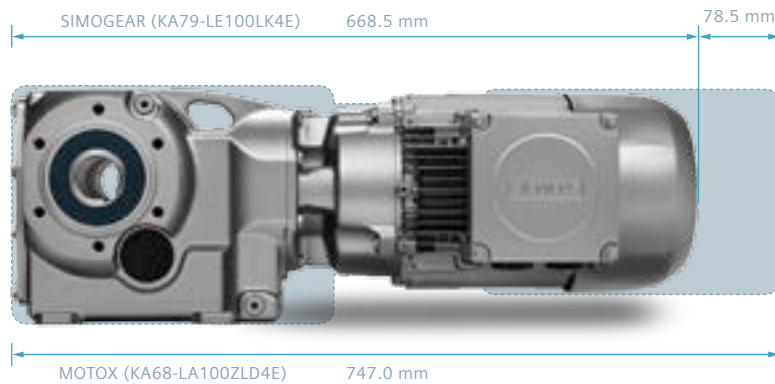


# Maximum power. Minimum space requirement.

Less is more. With SIMOGEAR, you achieve the maximum degree of compactness in the smallest space. The length of SIMOGEAR geared motors has been reduced when compared to the previous series, and their low weight means less space is required as well as straightforward and easy installation.

## The shorter length plays a role

An integrated motor DE bearing shield forms the interface to the gear unit. This helps to achieve a compact design and reduces the number of interface and sealing locations. Further, for bevel gear units, the bevel pinion shaft bearing has been optimized. As a consequence, the length and therefore the weight have been able to be reduced. Another advantage: The frame size stays the same when changing from efficiency class IE2 to IE3.





# Outstanding efficiency. Extremely economical.

Our SIMOGEAR geared motors set themselves apart as a result of their high energy efficiency across the board. An example of this: our 2-stage bevel gear unit specifically designed for conveyor applications. It has an efficiency of more than 96%, and has ratios extending up to  $i=60$ .

Two-stage helical and parallel shaft gear units are just as impressive, and also have efficiencies of more than 96%. For SIMOGEAR, the motor pinion is in the form of a plug-in pinion – as a consequence, higher ratios can be implemented in the first gear unit stage than for gear units where traditionally the motor pinion is a plug-on pinion. Therefore, in many cases, for the same ratio, 2-stage SIMOGEAR gear units can be used with a high efficiency; while gear units from our competitors are already implemented as 3-stage units, with the corresponding lower efficiency.

## Lower operating costs

The reduced oil immersion losses as a result of the plug-in pinion design play their role in achieving the high energy efficiency of SIMOGEAR geared motors. Operating SIMOGEAR

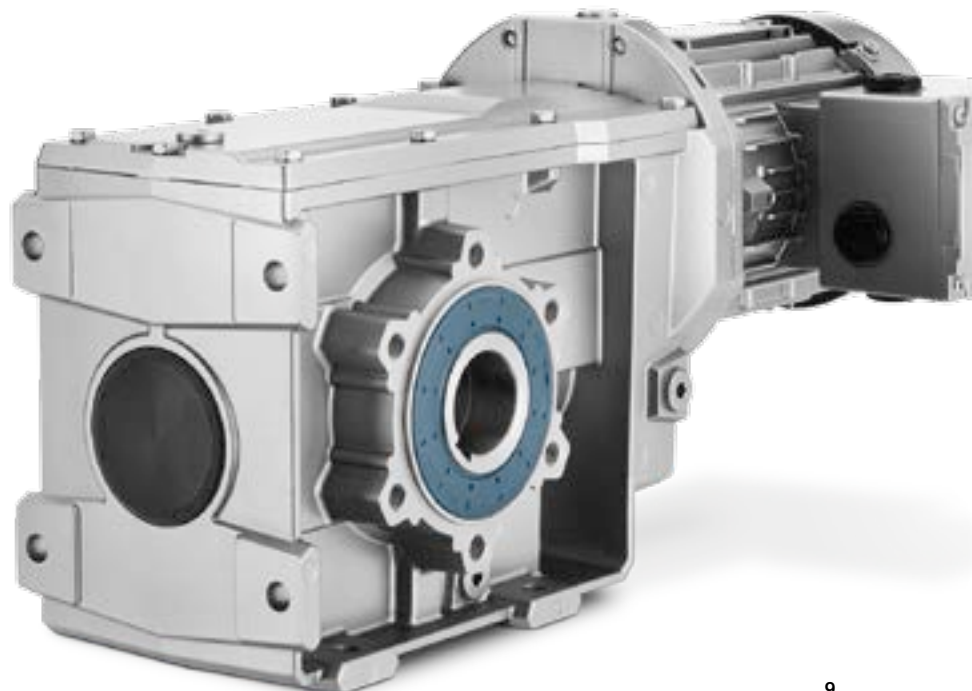
geared motors with our SINAMICS G120D converters capable of energy recovery represents the ideal combination. This allows valuable energy to be saved. And reducing energy costs means reducing your operating costs. Longer maintenance intervals as well as longer operating times also play a role in reducing your operating costs.

## Lower noise levels

SIMOGEAR automatically means quiet geared motors. The noise level is significantly reduced as a result of the lower circumferential velocity of the first gear unit stage due to the plug-in pinion design. A noise-dampening fan cover used as standard also helps ensure a low noise level. For motors equipped with a brake, the brake can be optionally encapsulated to reduce the noise even further.

## Environmentally friendly disposal

Further, over the complete life cycle, we ensure a high degree of environmental compatibility, from the original production up to disposal. As a consequence, up to 90% of the components can be completely recycled.



# Everything for the drive train. Everything from a single source.

Standard automation and drive solutions are becoming increasingly significant. Siemens has the most comprehensive portfolio worldwide for the complete drive train. This extends from geared motors through motor starters and converters up to identification systems, switchgear and automation technology. All of the components are tested, checked out in the field and coordinated with one another – and equipped with standard interfaces for communication bus systems.

## Part of Totally Integrated Automation

SIMOGEAR geared motors are an integral component of Totally Integrated Automation (TIA), the extensive range of Siemens products and systems for company-wide automation in all sectors. As a result of the unique level of integration, Totally Integrated Automation plays a decisive role in reducing the total cost of ownership, shortening the time to market and increasing investment security – therefore sustainably improving your competitiveness.

Drive train

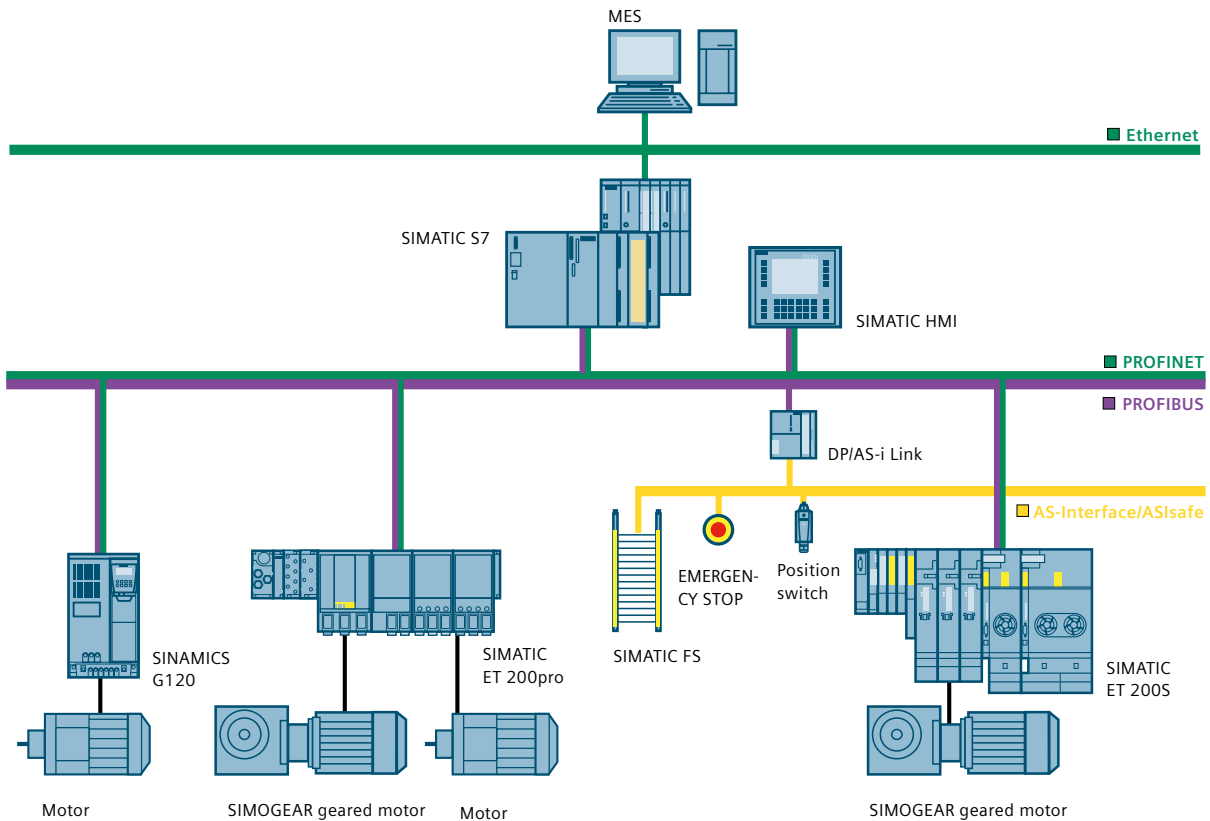
You can access the film from here. Simply scan in the QR code using your smartphone.



### Profit across the board

Your drive solutions also profit from this level of integration – no matter what your specific requirements are: Based on Totally Integrated Automation, you can realize your projects with perfectly matched and coordinated components from a single source. The result: You obtain seamless and integrated system solutions, with which you can increase your productivity. These solutions set themselves apart as a result of the lower installation and commissioning costs as well as increased flexibility and system availability.

Further, high energy saving potential can be implemented thanks to energy-efficient motors, motor starters, soft starters and frequency converters as well as the power management system based on SIMATIC PCS 7 and multi-function measuring devices.

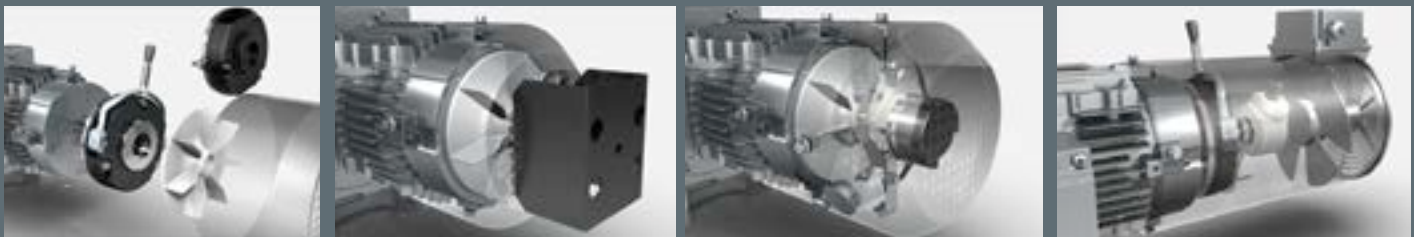


# A modular system. Many possibilities.

No matter what your requirements are: Our complete range can be combined as required for geared motors thanks to our modular system. You can configure all of the versions and mounting versions of geared motors generally used in the market. The gear units can be combined with a high degree of versatility and therefore adapted to the widest range of drive situations.

## Remain flexible with MODULOG

On the motor side, SIMOGEAR uses the well-proven MODULOG modular principle – and is optimized from a logistical perspective. By means of mounting shafts, function units such as brake, separately driven fan and encoder can be mounted to the basic motor that always remains the same. This means that even after the motor has been installed, function units can still be added.



MODULOG system

# Always the optimum tool. From the very start.

Our intelligent software tools support you from the very start. Whether precisely dimensioning and configuring, fast and reliable commissioning or selecting the most efficient components.

## Selection made easy

With our user-friendly SIMOGEAR electronic catalog Configurator, even selecting and configuring your application is quite simple. You can quickly and reliably find the optimum geared motor, can call up 2-D and 3-D CAD data in all of the usual file formats and directly process this data in your design. Not only this, the technical feasibility is automatically checked. In just a few configuring steps, you can simply determine the matching geared motor for frequently encountered applications – such as travel and hoisting drives – using the integrated ARCHIMEDES engineering tool.

## SIZER – a huge help when it comes to configuring your solutions

Further, the SIZER tool supports you when configuring all of the components necessary for a drive application. You are navigated through the various engineering steps, from the line supply through converter and geared motors up to the control systems. You have extensive engineering options at your disposal as a result of the wide variety of motor configurations as well as the selection of application-oriented drive and control solutions. This tool is extremely user-friendly as a result of the intuitive navigation using the workflow and the fact that simple drives up to complex multi-axis applications are handled in the same identical fashion.

## Well calculated with SinaSave

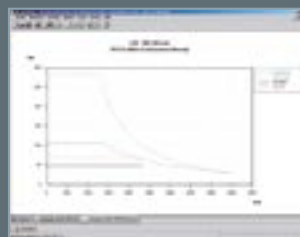
You want to know the payback time of your investment in energy-efficient drives – or how much you save when compared to conventional standard drives? Then you should use our SinaSave calculation software. Using various comparison scenarios, based on transparent calculations and graphics, you can select the most efficient components for a specific application.



SIMOGEAR Configurator



ARCHIMEDES



SIZER



SinaSave

# High service quality. That is standard.

SIMOGEAR geared motors are developed and produced according to the highest quality standards. However, a high product quality alone is not sufficient to guarantee high plant and system availability over the long term. High-quality services are also imperative.

## **Our comprehensive service for you**

We support you with comprehensive service from the very beginning. This extends from commissioning and maintenance through troubleshooting up to service contracts. Regional contact persons around the globe are there to ensure the availability of your plants and machines.

Locally, they provide individual service and spare parts. You benefit from the Siemens service infrastructure in over 130 countries and a 24/7 service hotline as well as partner assembly centers.

## **Spare parts are quickly available**

With the increasing degree of standardization of SIMOGEAR geared motors, we have been able to further improve our spare parts logistics, also by efficiently maintaining stock inventories. As a consequence, you can quickly obtain spare parts or replacement drives anywhere in the world. Repair times have also been significantly shortened.



# SIMOGEAR geared motors.

## An overview.



Gear unit type	Helical geared motors	Parallel shaft geared motors	Bevel helical geared motors 2-stage	Bevel helical geared motors 3-stage	Worm geared motors 2-stage	Worm geared motors 1-stage
<b>Gear unit designation</b>	E39 ... E149 (1-stage) Z19 ... Z189 (2-stage) D19 ... D189 (3-stage)	FZ29 ... FZ189 (2-stage) FD29 ... FD189 (3-stage)	B19 ... B49 (2-stage)	K39 ... K189 (3-stage)	C29 ... C89 (2-stage)	S09 ... S29 (1-stage)
<b>Number of gear unit frame sizes</b>	7 (1-stage) 13 (2-/3-stage)	11	4	10	5	3
<b>Rated gear unit torque [Nm]</b>	50 ... 19,000	150 ... 19,000	50 ... 450	220 ... 19,500	110 ... 1,450	33 ... 116
<b>Gear unit ratio</b>	1.29 ... 9.79 (1-stage) 3.40 ... 57 (2-stage) 28 ... 328 (3-stage) 248 ... 31.284 (multi-stage)	4 ... 70 (2-stage) 58 ... 413 (3-stage) 315 ... 38.522 (multi-stage)	3.6 ... 59 (2-stage)	5,7 ... 244 (3-stage) 170 ... 34.345 (multi-stage)	6.5 ... 363 (2-stage) 271 ... 23.706 (multi-stage)	5 ... 100 (1-stage)
<b>Max. motor power [kW]</b>	55	55	9.2	55	7.5	0.55

**There's more to it:**

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Integrated Drive Systems boost  
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improve your time to profit.**

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to take suitable preventive action  
(e.g. cell protection concept) and  
integrate each component into a  
holistic, state-of-the-art industrial  
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that may be in use should also be  
considered.

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