Motors for every demand
The SIMOTICS HV family
Get more out of your SIMOTICS HV motors with digitalization

SIMOTICS HV high-voltage motors are an integral component of SIDRIVE IQ, the digital platform to optimize drive systems. SIMOTICS HV motors are equipped with a connectivity box so that they can be integrated into this digital, cloud-based solution. Status data such as bearing temperatures, winding temperatures and enclosure vibration levels are evaluated, processed and sent to the cloud for analysis.

After uploading, they can be analyzed with our brand-new MindApp SIDRIVE IQ. With this App you can track and analyze all conditions of your motors. There you can see trends, error messages and reports. The goal of SIDRIVE IQ is to:

• Increase reliability
• Boost productivity and
• Improve your services

SIDRIVE IQ – the digital assistant for your drive system
siemens.com/sidrive-iq
Maximum plant availability, low operating cost, short time to market

There are good reasons why the SIMOTICS HV family is one of the leading portfolio in the global transnorm motor market. The comprehensive portfolio has the optimum motor for every high-rating drive application and sets new standards when it comes to flexibility, efficiency, time to market and plant availability.

The backbone of your process reliability
We know about the importance of our motors for the reliability of your plant and application. That’s why we put every effort into quality and testing. The result: an optimized performance, and reliability and availability second to none, also in extreme environments. In addition the use of highly standardized components increases plant availability through simplified spare parts management. And: SIMOTICS HV motors are now integral part of SIDRIVE IQ, the digital platform for optimizing your drive systems. Thus SIMOTICS HV motors take advantage of digitalization to enter into a new dimension of availability, serviceability, productivity, and efficiency.

Low operating costs
Energy usage has an especially significant impact on the operating costs. To keep these low, SIMOTICS HV motors have an especially low-loss design: in some instances, they have efficiencies close to 99%. Beyond this, the low-maintenance concept reduces maintenance costs to a minimum.

Shorter project execution times
SIMOTICS HV helps you cut on lead times with standardized production and test processes. The integration into standard tools such as Sizer Web Engineering shortens project planning times, and the tools also supports in configuring system components. However, SIMOTICS HV motors themselves play a role in significantly speeding up project execution: Their delivery times are extremely short and their small dimensions and low weight for the particular power rating, coupled with the installation-friendly design means that they can be very quickly integrated in the plant or system.

Maximum flexibility
Our motors are available in virtually any imaginable configuration and offer power ranges up to 100 MW and higher, speeds from 7 to 15,900 rpm and torques up to 2460 kNm. When you select your transnorm motor from our HV motor lineup, you gain considerable flexibility. This includes several cooling systems and degrees of protection as well as suitability for use in aggressive atmospheres and in potentially hazardous areas.
Almost no limits concerning speed and torque

- Low operating cost, short time to market
- Performance second to none, also in extreme conditions
- Flexibility and adaptability for high-productivity applications
- High-quality coating systems – longevity ensured
- Rugged design, low-wear materials – long service life ensured
- Extremely compact design – Short delivery times and standardized engineering tools

Core Applications and Product Highlights

**SIMOTICS HV Core Applications**
- Motors for every demand
- High-power motors
- SIMOTICS HV HP
- SIMOTICS HV M
- SIMOTICS HV A-compact
- SIMOTICS HV Specialized
- SIEMENS HV motors

**Product Highlights**
- Very flexible construction concept – focused on features essential for specific applications
- High-quality coating systems – high availability even under rough environmental conditions
- Rugged design, low-wear materials – long service life ensured
- Extremely compact design – low lifecycle cost by proven quality
- Low operating cost
- New electrical properties such as high voltage and very low noise levels
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The backbone of your process reliability

We know about the importance of our motors for the reliability of your plant and application. That’s why we put every effort into quality and testing. The result: an optimal performance, and reliability and availability second to none, also in extreme environments. In addition the use of highly standardized components increases plant availability through simplified spare part management. And: SIMOTICS HV motors are now integral parts of transnorm motor market. The comprehensive portfolio has the optimum motor for every high-rising drive application and sets new standards when it comes to flexibility, efficiency, time to market and plant availability.

Low operating costs

Energy usage has an especially significant impact on the operating costs. To keep these low, SIMOTICS HV motors have an especially low loss design. In some instances, they have efficiencies close to 99%. Beyond this, the low-maintenance concept reduces maintenance costs to a minimum.

Shorter project execution time

SIMOTICS HV helps you cut out dead times with standardized production and components. The integration into standard motors such as Siemens’ engineering toolbox project planning times, and the tools also supports in configuring system components. However, SIMOTICS HV motors themselves play a role in significantly speeding up project execution: Their delivery times are extremely short and their small dimensions and low weight for the particular power rating, coupled with the installation-friendly design means that they can be very quickly integrated in the plant or system.

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For various gearless drives for ore mills, gearless drives for excavators, blast furnace blowers, high-power mixers and extruders, core applications – High-speed compressor drives, reciprocating compressor drives, injection pumps, rolling mills, open hearths, wind, direct driven conveyer systems, geodesic ring drives for ore mills, gearless driven for compressors, blowers and specific main propulsion solutions for ships such as POS drives etc.

Compact construction concept – Low space requirements and easy plant integration.

Tailor-made solutions also for a wide range of complex and specific applications.

Extremely compact design – High space requirements, easy plant integration.

Flexible regarding number of poles, voltage and cooling concept – Accuracy fitting solutions for the individual high-quality cooling systems – High availability even under tough environmental conditions

Core Applications and Product Highlights

Core Applications

Pumps, fans, blowers, compressors, extruders, agitators, conveyors, main propulsion, thrusters, winders, winders, rolling mills etc.

Product highlights

High-speed compressor drives, reciprocating compressor drives, injection pumps, rolling mills, open hearths, wind, direct driven conveyer systems, geodesic ring drives for ore mills, gearless driven for compressors, blowers and specific main propulsion solutions for ships such as POS drives etc.

Product highlights

Specifically optimized to meet specific requirements of very complex applications – Tailor-made solutions also for extreme environmental conditions.

Motor Solutions with extreme low speed (7 rpm), high torque (2460 kNm) are available - Almost no limits concerning speed and torque

Motor power ratings of 100 MW and more are possible – Perfect solutions for applications such as all electric ships etc.

Wide range of direct drive solutions – For various gearless applications especially in oil, gas, mining and shipbuilding an optimum solution can be provided.

High-precision processing and high-quality coating systems – High availability even under tough environmental conditions

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SIMOTICS HV Motors – from 150 kW to 100 MW

A smart concept with a wide range of options makes the SIMOTICS HV motors the preferred choice for virtually any imaginable configuration with a power range from 150 kW up to 100 MW and more, speeds from 7 to 15,900 rpm, and torques up to 2,460 kNm and conformity with IEC and NEMA standards. Options include several cooling systems and all common explosion protection types. In addition, degrees of protection up to IP66 and special paint systems are available for use in aggressive atmospheres and under extreme conditions. We even supply SIMOTICS HV motors for use in temperatures as low as –60° Celsius and for applications with vigourous vibration quality requirements in line with the API standard. Motors with slip-ring or permanent-magnet rotors are not part of the overview below. With its compact, modular, high-power, specialized and ANEMA series, SIMOTIC HV is the perfect fit for every large drive application in the low- and medium-voltage range.

### Technical Specifications

<table>
<thead>
<tr>
<th>Compact motors</th>
<th>Modular motors</th>
<th>High-power motors</th>
<th>SIMOTICS HV Specialized</th>
<th>SIMOTICS HV ANEMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIMOTICS HV C</td>
<td>SIMOTICS HV M</td>
<td>SIMOTICS HV HP</td>
<td>SIMOTICS HV ANEMA</td>
<td></td>
</tr>
<tr>
<td>Type of motor</td>
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<td>Asynchronous</td>
<td>Asynchronous</td>
<td>Asynchronous</td>
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<tr>
<td>Power range</td>
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<tr>
<td>(tube cooled up to 7.1 MW)</td>
<td>0.5 – 19 MW</td>
<td>0.25 – 7.35 MW</td>
<td>1 – 100 MW and more</td>
<td></td>
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<tr>
<td>Voltage range</td>
<td>0.38 – 11 kV</td>
<td>0.38 – 13.8 kV</td>
<td>3.3 – 13.8 kV</td>
<td>0.38 – 13.8 kV</td>
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<tr>
<td>Frequency</td>
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<td>50 Hz / 60 Hz</td>
<td>50 Hz / 60 Hz</td>
<td>50 Hz / 60 Hz</td>
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<tr>
<td>Shaft height</td>
<td>315 – 560 mm</td>
<td>450 – 800 mm</td>
<td>900 – 1600 mm</td>
<td>630 – 710 mm</td>
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<tr>
<td>Number of poles</td>
<td>2 – 8</td>
<td>2 – 12</td>
<td>2 – 16</td>
<td>on request</td>
</tr>
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<td>Number of poles</td>
<td>2 – 12</td>
<td>2 – 12</td>
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<tr>
<td>Speed</td>
<td>up to 24 kNm</td>
<td>up to 16 kNm</td>
<td>up to 700 kNm</td>
<td>up to 3600 rpm</td>
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<tr>
<td>Torque</td>
<td>up to 24 kNm</td>
<td>up to 120 kNm</td>
<td>up to 2460 kNm</td>
<td>up to 80 kNm</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Cast iron</td>
<td>Cast iron</td>
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<tr>
<td>Bearings</td>
<td>Antifriction bearings, Sleeve bearings</td>
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</tr>
<tr>
<td>Cooling type</td>
<td>IC411, IC416, IC71W</td>
<td>IEC11, IEC16, IEC66, IEC18</td>
<td>IEC11, IEC16, IEC66, IEC18, IEC1</td>
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<tr>
<td>Type of construction</td>
<td>IMB3, IMB35, IMV1</td>
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<td>Explosion protection</td>
<td>Ex db, Ex db ab, Ex ec, Ex tc</td>
<td>Ex ec, Ex tc</td>
<td>Ex pex, Ex pzc, Ex ec</td>
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<td>Basic standards</td>
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<td>IEC, EN</td>
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<tr>
<td>Efficiency</td>
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<td>up to 98%</td>
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### Features

#### SIMOTICS HV C

- **Feature**: Revolutionary cooling concept
- **Feature**: High degree of standardization

#### SIMOTICS HV Specialized

- **Feature**: Extremely flexible concept
- **Feature**: Customer-specific design

#### SIMOTICS HV ANEMA

- **Feature**: Specific for NEMA standard

### Differentiating Features

- **Feature**: Best-in-class power density
- **Feature**: High performance with low operating costs
- **Feature**: High degree of flexibility
- **Feature**: Sleeve bearings over the whole range available
- **Feature**: Optimized for converter operation
- **Feature**: High speed up to 15,900 rpm in the Megawatt range
- **Feature**: Tailor-made according to customer requirements
- **Feature**: High performance design

### Additional Features

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SIMOTICS HV Motors – from 150 kW to 100 MW

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<td>SIMOTICS HV Series A-compact PLUS</td>
<td>SIMOTICS HV HP</td>
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- **Type of motor**: Asynchronous, Synchronous
- **Power range**: 0.15 – 2.2 MW (tube cooled up to 7.1 MW), 0.5 – 19 MW, 0.25 – 7.35 MW, 5 – 70 MW, 1 – 100 MW and more
- **Voltage range**: 0.38 – 11 kV, 0.38 – 13.6 kV, 0.675 – 11 kV, 3.3 – 13.6 kV, 0.675 – 11 kV, 0.38 – 13.8 kV
- **Frequency**: 50 Hz / 60 Hz, 50 Hz / 60 Hz, 50 Hz / 60 Hz, 50 Hz / 60 Hz, 50 Hz / 60 Hz
- **Shaft height**: 315 – 560 mm, 450 – 800 mm, 315 – 630 mm, 900 – 1600 mm
- **Number of poles**: 2 – 8, 2 – 12, 2 – 12, 2 – 12, 2 – 8
- **Speed**: up to 3600 rpm, up to 4800 rpm (higher on request), up to 3600 rpm, up to 3600 rpm (higher on request), 7 – 15,900 rpm
- **Torque**: up to 24 kNm, up to 120 kNm, up to 60 kNm, up to 750 kNm, up to 2400 kNm
- **Enclosure**: Cast iron, Cast iron, Welded steel, Welded steel, Cast iron, Welded steel
- **Bearings**: Antifriction bearings, Sleeve bearings, Antifriction bearings, Sleeve bearings, Antifriction bearings, Sleeve bearings
- **Casing type**: IC11, IC16, IC18, IC61, IC66, IC11, IC16, IC18, IC61, IC11, IC16, IC18, IC61, IC11, IC16, IC18, IC61, IC11, IC16, IC18, IC61, IC11, IC16, IC18, IC61, IC11, IC16, IC18, IC61, IC11, IC16, IC18
- **Type of construction**: IMB3, IMB35, IMV1, IMB3, IMB35, IMV1, IMB3, IMB35, IMV1, IMB3, IMB35, IMV1, IMB3, IMB35, IMV1
- **Degree of protection**: IP54, IP55, IP65, IP54, IP55, IP65, IP54, IP56, IP54, IP55, IP65, IP54, IP55, IP65
- **Exitation protection**: Ex db, Ex db I, Ex db II, Ex ec, Ex ec, Ex db, Ex db I, Ex db II, Ex db III, Ex ec, Ex ec, Ex ec, Ex ec, Ex ec
- **Efficiency**: up to 97.8%, up to 97.3%, up to 96%, up to 97.5%, up to 98.8%, up to 96% and more, up to 96%

**Features**

- **SIMOTICS HV C**
  - Revolutionary cooling concept
  - High degree of standardization
  - High performance with low operating costs
  - Extremely flexible concept
  - Customer-specific design
  - Specialized for NEMA standard

- **SIMOTICS HV M**
  - High degree of flexibility
  - High power density
  - Antifriction bearings, Sleeve bearings
  - Focused on the essential
  - Extremely flexible concept
  - Customer-specific design
  - Specialized for NEMA standard

- **SIMOTICS HV HP**
  - High installed power
  - High power density for a wide range of applications
  - Proven quality
  - Minimum quality and availability
  - Tailor-made according to customer requirements
  - High-performance design

- **SIMOTICS HV Specialized**
  - High speed and torque
  - High speed up to 15,000 rpm in the megawatt range
  - Optimal for converter operation
  - Effective and robust design
  - Efficiency close to 95%
  - High-speed design
  - AF standard design

**Medium-Voltage Drive Compatibility**

No drive or motor is perfect for every application or challenge. In addition to our SIMOTICS HV high-voltage motor portfolio, Siemens also offers you the most extensive portfolio of medium-voltage drives from the SINAMICS family that have been crafted to work seamlessly with our high-voltage motors.

A different drive may be required for each motor depending on the operational requirements, motor type selected and any preference of drive technology. This table should provide you with a basic view of which drives and motors are compatible.

**Application Compatibility**

Below you will find many of our most commonly supported applications, but we are experienced and able to support numerous other low- and medium-voltage applications that are not listed here. Motor capabilities can differ based on their configuration and the options selected so there may be exceptions to the suitability of the motor assignments listed here.
# SIMOTICS HV Motors – from 150 kW to 100 MW

A smart concept with a wide range of options makes the SIMOTICS HV motors the preferred choice for virtually any imaginable configuration with a power range from 150 kW up to 100 MW and more, speeds from 7 to 15,900 rpm, and torques up to 2,460 kNm and conformity with IEC and NEMA standards. Options include several cooling systems and all common explosion protection types. In addition, degrees of protection up to IP66 and special paint systems are available for use in aggressive atmospheres and under extreme conditions. We even supply SIMOTICS HV motors for use in temperatures as low as –60° Celsius and for applications with rigorous vibration quality requirements in line with the API standard. Motors with slip-ring or permanent-magnetic rotors are not part of the overview below. With its compact, modular, high-power, specialized and ANEMA series, SIMOTICS is the perfect fit for every large drive application in the low- and medium-voltage range.

## Technical Specifications

<table>
<thead>
<tr>
<th>Compact motors</th>
<th>Modular motors</th>
<th>High-power motors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SIMOTICS HV C</strong>&lt;br&gt;Series H-compact</td>
<td><strong>SIMOTICS HV M</strong>&lt;br&gt;Series A-compact PLUS</td>
<td><strong>SIMOTICS HV HP</strong>&lt;br&gt;Specialized</td>
</tr>
</tbody>
</table>

### Features

- **SIMOTICS HV C**
  - Revolutionary cooling concept
  - High degree of standardization
  - Best-in-class power density
  - Highest degree of flexibility

- **SIMOTICS HV M**
  - High degree of standardization
  - High performance with low operating costs
  - Flexible and robust design

- **SIMOTICS HV HP**
  - Extremely flexible concept
  - Customer-specific design
  - High-speed design

### Application Compatibility

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<td><strong>SIMOTICS M</strong>&lt;br&gt;Medium-Voltage Drives</td>
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## Features

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