high operating cost, short time to market

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 transmos 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 optimum performance, 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 components. How ever, SIMOTICS HV motors themselves play an especially low 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

SMART-HV helps you cut on lead times with standardized products and set processes. The integration in standard products such as SIDRIVE IQ, allowing you to project planning times, and the tools also supports in configuration system components. However, SIMOTICS HV motors themselves play a role in significantly speeding up project execution. Their delivery times are extremely short and their low 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.

Low operating costs

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

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 75,000 rpm and torques up to 2460 kNm. When you select your transmos 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.

Core Applications and Product Highlights

SIMOTICS HV compact motors

SIMOTICS HV modular motors

SIMOTICS HV high-power motors

SIMOTICS HV HP

SIMOTICS HV M

SIMOTICS HV Specialized

SIMOTICS HV Anema

Get more out of your SIMOTICS HV motors

For various gearless drives for ore mills, gearless drives for excavators, boosters and specific main propulsion solutions for ships such as PCC drives etc.

High-stiffness design – higher reliability and lower vibrations, even under extreme conditions

Very flexible construction concept – accurately fitting solutions for the individual application.

Short delivery times and standardized engineering tools – simplified selection and configuration, shorter time to market.

Noise damping design – less noise emission and in compliance with governmental laws

Low noise level – Soundproofing and noise protection

High mechanical rigidity – Optimum efficiency – Low operating cost

Low lifecycle cost by proven quality.

Features are binding only when they are expressly agreed upon in the concluded contract.

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Subject to changes and errors.

reflect those described, or which may undergo modification in the future. The information in this document is valid as of the publication date.
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 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 M</th>
<th>SIMOTICS HV HP</th>
<th>SIMOTICS HV Speciality</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 C</td>
<td>SIMOTICS HV M</td>
<td>SIMOTICS HV HP</td>
<td>SIMOTICS HV ANEMA</td>
</tr>
<tr>
<td>Type of motor</td>
<td>Asynchronous</td>
<td>Asynchronous</td>
<td>Asynchronous</td>
<td>Asynchronous</td>
<td>Asynchronous</td>
<td>Asynchronous</td>
</tr>
<tr>
<td>Power range</td>
<td>0.15 – 2.2 MW (tube cooled up to 7.1 MW)</td>
<td>0.15 – 2.2 MW</td>
<td>0.15 – 19 MW</td>
<td>0.25 – 7.35 MW</td>
<td>1 – 100 MW and more</td>
<td>200 – 18000 HP</td>
</tr>
<tr>
<td>Voltage range</td>
<td>0.38 – 11 kV</td>
<td>0.38 – 13.8 kV</td>
<td>0.675 – 11 kV</td>
<td>3.3 – 13.6 kV</td>
<td>0.675 – 11 kV</td>
<td>0.675 – 13.8 kV</td>
</tr>
<tr>
<td>Frequency</td>
<td>50 Hz / 60 Hz</td>
<td>50 Hz / 60 Hz</td>
<td>50 Hz / 60 Hz</td>
<td>50 Hz / 60 Hz</td>
<td>50 Hz / 60 Hz</td>
<td>50 Hz / 60 Hz</td>
</tr>
<tr>
<td>Shaft height</td>
<td>315 – 560 mm (tube cooled 710 – 1000 mm)</td>
<td>315 – 560 mm</td>
<td>315 – 630 mm</td>
<td>900 – 1600 mm</td>
<td>on request</td>
<td>630 – 710 mm</td>
</tr>
<tr>
<td>Number of poles</td>
<td>2 – 8</td>
<td>2 – 12</td>
<td>2 – 12</td>
<td>2 – 24</td>
<td>2 – 16</td>
<td>on request</td>
</tr>
<tr>
<td>Speed</td>
<td>up to 3600 rpm (higher on request)</td>
<td>up to 4800 rpm (higher on request)</td>
<td>up to 3600 rpm</td>
<td>up to 3600 rpm (higher on request)</td>
<td>7 – 15900 rpm</td>
<td>up to 3600 rpm</td>
</tr>
<tr>
<td>Torque</td>
<td>up to 24 kNm (tube cooled up to 45 kNm)</td>
<td>up to 120 kNm</td>
<td>up to 60 kNm</td>
<td>up to 750 kNm</td>
<td>up to 2600 kNm</td>
<td>up to 80 kNm</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Cast iron welded steel</td>
<td>Cast iron welded steel</td>
<td>Cast iron</td>
<td>Welded steel</td>
<td>Welded steel</td>
<td>Cast iron welded steel</td>
</tr>
<tr>
<td>Bearings</td>
<td>Antifriction bearings, Sleeve bearings</td>
<td>Antifriction bearings, Sleeve bearings</td>
<td>Antifriction bearings, Sleeve bearings</td>
<td>Sleeve bearings</td>
<td>Antifriction bearings, Sleeve bearings</td>
<td>Antifriction bearings, Sleeve bearings</td>
</tr>
<tr>
<td>Casing type</td>
<td>IC411, IC416, IC71W (tube cooled: IC511, IC516)</td>
<td>IC411, IC416</td>
<td>IC611, IC616, IC666, IC68, IC68B, IC69</td>
<td>IC611, IC616, IC666, IC68, IC68B, IC69</td>
<td>IC611, IC616, IC666, IC68, IC68B, IC69</td>
<td>IC611, IC616, IC666, IC68, IC68B, IC69</td>
</tr>
<tr>
<td>Type of construction</td>
<td>IMB3, IMB35, IMV1</td>
<td>IMB3, IMB35, IMV1</td>
<td>IMV1</td>
<td>IMV1, IMV1, IMV1, IMV1, IMV1, IMV1, IMV1, IMV1</td>
<td>IMV1, IMV1, IMV1, IMV1, IMV1, IMV1, IMV1, IMV1, IMV1, IMV1</td>
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</tr>
<tr>
<td>Degree of protection</td>
<td>IP23, IP33, IP43, IP54</td>
<td>IP23, IP33, IP43</td>
<td>IP23, IP33, IP43</td>
<td>IP23, IP33, IP43</td>
<td>IP23, IP33, IP43</td>
<td>IP23, IP33, IP43</td>
</tr>
<tr>
<td>Explosion protection</td>
<td>Ex dI, Ex eIIBb, Ex eX, Ex eX</td>
<td>Ex dI, Ex eIIBb, Ex dI, Ex dI</td>
<td>Ex dI, Ex eIIBb, Ex dI, Ex dI</td>
<td>Ex dI, Ex eIIBb, Ex dI, Ex dI</td>
<td>Ex dI, Ex eIIBb, Ex dI, Ex dI</td>
<td>Ex dI, Ex eIIBb, Ex dI, Ex dI</td>
</tr>
<tr>
<td>Basic standards</td>
<td>IEC, 6%</td>
<td>IEC, 6%</td>
<td>IEC, 6%</td>
<td>IEC, 6%</td>
<td>IEC, 6%</td>
<td>IEC, 6%</td>
</tr>
<tr>
<td>Efficiency</td>
<td>up to 97.8%</td>
<td>up to 97.3%</td>
<td>up to 96%</td>
<td>up to 97.5%</td>
<td>up to 98.8%</td>
<td>up to 96% and more</td>
</tr>
</tbody>
</table>

### Features

<table>
<thead>
<tr>
<th>SIMOTICS HV C</th>
<th>SIMOTICS HV M</th>
<th>SIMOTICS HV HP</th>
<th>SIMOTICS HV Specialised</th>
<th>SIMOTICS HV ANEMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revolutionary cooling concept</td>
<td>High degree of standardization</td>
<td>High performance with low operating costs</td>
<td>Focused on the essential</td>
<td>Customer-specific design</td>
</tr>
<tr>
<td>Best-in-class power density</td>
<td>High power density for a wide range of applications</td>
<td>Proven quality</td>
<td>Maximum quality and availability</td>
<td>Tailor-made according to customer requirements</td>
</tr>
<tr>
<td>Highest degree of flexibility</td>
<td>Sleeve bearings over the whole range available</td>
<td>Optimized for converter operation</td>
<td>Flexible and robust design</td>
<td>Efficiency close to 99%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>API standard design</td>
</tr>
</tbody>
</table>

### 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 configurations and the options selected such there may be exceptions to the suitability of the motor assignments listed here.

#### Medium-Voltage Drive Compatibility

No drive or motor is perfect for every application or challenge. In addition to our SIMOTICS HV high-voltage motors 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.

#### Technical Specifications

- SIMOTICS HV M
  - 0.38 – 11 kV
  - 50 Hz / 60 Hz
  - 315 – 560 mm
  - sleeve bearings
  - type of construction: IMB3, IMB35, IMV1

- SIMOTICS HV HP
  - 0.38 – 11 kV
  - 50 Hz / 60 Hz
  - 315 – 560 mm
  - sleeve bearings
  - type of construction: IMB3, IMB35, IMV1

### Key Features

- **Revolutionary cooling concept**
- **High degree of standardization**
- **High performance with low operating costs**
- **Focused on the essential**
- **Extremely flexible concept**
- **Customer-specific design**
- **Suitable for NEMA standard**
- **High-speed design**
- **API standard design**

### Application Compatibility

- **Pumps**
- **Fans**
- **Blowers**
- **Compressors**
- **Elevators**
- **Agitators / mixers**
- **Crushers**
- **Mills**
- **Gravel mills**
- **Excavators**
- **Conveyors**
- **Rollers**
- **Wooden**
- **Kilns**
- **Roiling mills**
- **Main propulsion**
- **Throttlers**
- **Winches**
- **Bolsters**
- **Bailer sub pumps**
- **Large ID fans**
- **Large SCC compressors**
- ** Blast furnace blowers**
- **Injection pumps**
- **Mine winds**
- **High-speed compressor drives**
- **Reciprocating compressors**
- **LNG starter / helper**

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**Note**: This table provides a basic view of which drives and motors are compatible. Motor capabilities can differ based on their configurations and the options selected such there may be exceptions to the suitability of the motor assignments listed here.