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.

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.

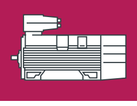
Low operating costs

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.

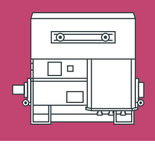
Shorter project execution times

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.

SIMOTICS HV compact motors



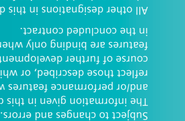
SIMOTICS HV modular motors



SIMOTICS HV high-power motors

Core Applications and Product Highlights

SIMOTICS HV C



Core Applications
Pumps, fans, blowers, compressors, extruders, agitators, mixers, mills, crushers, kilns, conveyor belt systems, thrusters, winches, refiners, winders etc.

Product Highlights
Revolutionary cooling concept – Unique power density for minimum space requirements and easy plant integration.

Extremely rugged design – Maximum reliability even under extreme conditions

Optimized temperature distribution – Extended service intervals and extreme long lifetime

Variable terminal box position – Increased flexibility in plants and systems and simplified installation

Minimized noise level – Reduced noise damping measures and costs on-site

SIMOTICS HV Series H-compact

Core Applications
Pumps, fans, blowers, compressors, extruders, agitators, mixers, mills, crushers, kilns, conveyor belt systems, thrusters, winches, refiners, winders etc.

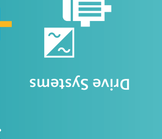
Product Highlights
Compact construction concept – Low space requirements and low weight for easy plant integration.

Optimum efficiency – Low operating cost

Designed for a high degree of reliability – High plant availability and low service & maintenance cost

Low noise level – Exceeds most customer and legislated safety requirements

SIMOTICS HV M



Core Applications
Compressors, pumps, fans, blowers, extruders, agitators, mixers, mills, crushers, kilns, thrusters, main propulsion, refiners, rolling mills etc.

Product Highlights
Highest power density – Small dimensions and low weight for simplified handling and easier plant integration.

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

Very flexible construction concept – Accurately fitting solutions for the individual applications

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

SIMOTICS HV Series A-compact PLUS

Core Applications
Pumps, fans, blowers, compressors, conveyors, main propulsion, thrusters

Product Highlights
Focused on features essential for high power, pumps and compressors – Low lifecycle cost by proven quality.

Rugged design, low wear materials – Reliable and long service lifetime

Extremely compact design – Low space requirements, easy plant integration

Flexible regarding number of poles, voltage and cooling concept – Accurately fitting solutions for the individual application

High-quality coating systems – High availability even under rough environment conditions

SIMOTICS HV HP

Core Applications
High-power compressors for pipelines. LNG or air separation, IGCC compressors, large pipeline pumps, boiler fed pumps, blast furnace blowers, high-power mixers and extruders, main propulsion, rolling mills, high-power refiners etc.

Product Highlights
Unique grade of modularity and adaptability – Tailor-made solutions also for a wide range of complex high-power applications.

Optimized baseframe – High mechanical rigidity, low vibrations, low noise and noise protection

Standardized interfaces – Fast implementation

Largely standardized components – Increased plant availability due to fast and easy access to spare parts and optimized serviceability

Efficiency rates of close to 99% – Low operation cost

SIMOTICS HV Specialized

Core Applications
High-speed compressor drives, reciprocating compressor drives, injection pumps, rolling mills, mine hoists, mine winders, direct-driven conveyor systems, gearless ring drives for ore mills, gearless drives for excavators, boosters and specific main propulsion solutions for ships such as POD drives etc.

Product Highlights
Specifically optimized to meet specific requirements of very complex applications – Tailor-made solutions also for extraordinary demands.

Motor Solutions with extreme low speed (7 rpm), high speed (15,900 rpm) and 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 LNG plants

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

SIMOTICS HV ANEMA

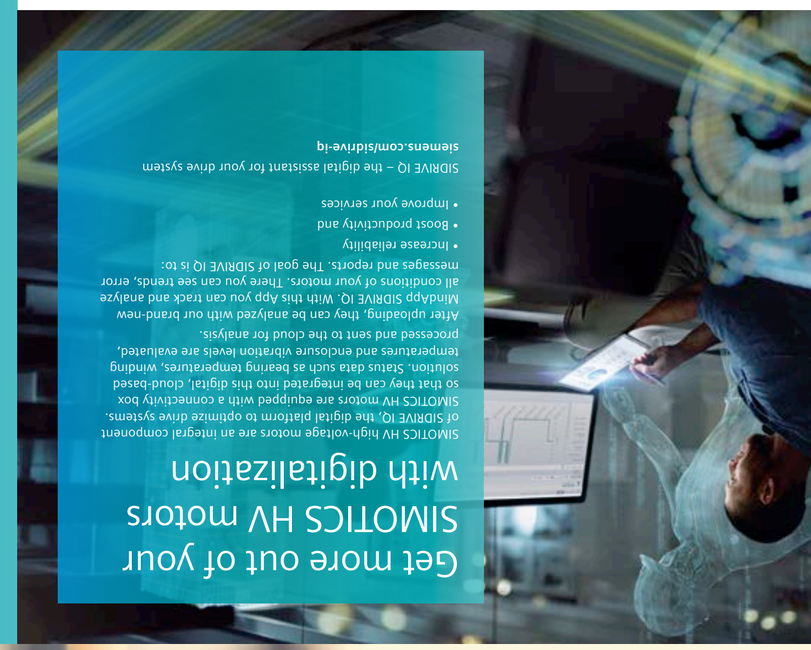
Core Applications
Compressors, pumps, fans, blowers, extruders, agitators, mills, crushers, kilns, conveyor belt systems, thrusters, winders, main propulsion, refiners, winders, rolling mills etc.

Product Highlights
Tailored to the customers specifications – Reduced engineering time and increased reliability.

Maximum availability and efficiency – Low total cost of ownership

Rugged and low maintenance – Maximum productivity due to minimum downtimes.

Perfect fulfilment of all NEMA specifications – Tailor-made motor solution for the American market



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

Published by
Siemens AG 2018
Process Industries and Drives
P.O. Box 47 43
90025 Nuernberg, Germany

Article No.: PDLD-Y10129-00-7600
Printed in Germany
Dispo 41505
WÜ/79861 PO 09180.5

SIEMENS
Ingenuity for life

Motors for every demand
the SIMOTICS HV family

siemens.com/simotics-hv

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, SIMOTIC HV is the perfect fit for every large drive application in the low- and medium-voltage range.

Technical Specifications

	Compact motors		Modular motors		High-power motors		
	SIMOTICS HV C	SIMOTICS HV Series H-compact	SIMOTICS HV M	SIMOTICS HV Series A-compact PLUS	SIMOTICS HV HP	SIMOTICS HV Specialized	SIMOTICS HV ANEMA
							
Type of motor	Asynchronous	Asynchronous	Asynchronous	Asynchronous	Asynchronous/ Synchronous	Asynchronous/ Synchronous	Asynchronous
Power range	0.15 – 3.2 MW (tube cooled up to 7.1 MW)	0.15 – 2.2 MW	0.5 – 19 MW	0.25 – 7.35 MW	5 – 70 MW	1 – 100 MW and more	200 – 18000 HP
Voltage range	0.38 – 11 kV	0.38 – 11 kV	0.38 – 13.8 kV	0.675 – 11 kV	3.3 – 13.8 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	50 Hz / 60 Hz	50 Hz / 60 Hz
Shaft height	315 – 560 mm (tube cooled 710 – 1000 mm)	315 – 560 mm	450 – 800 mm	315 – 630 mm	900 – 1600 mm	on request	630 – 710 mm and frame size 449 – 800 inch
Number of poles	2 – 8	2 – 12	2 – 12	2 – 16	2 – 24	on request	2 – 16
Speed	up to 3600 rpm (higher on request)	up to 3600 rpm	up to 4800 rpm (higher on request)	up to 3600 rpm	up to 3600 rpm (higher on request)	7 – 15900 rpm	up to 3600 rpm
Torque	up to 24 kNm (tube cooled up to 45 kNm)	up to 16 kNm	up to 120 kNm	up to 60 kNm	up to 700 kNm	up to 2460 kNm	up to 80 kNm
Enclosure	Cast iron/ welded steel	Cast iron	Cast iron/ welded steel	Cast iron	Welded steel	Welded steel	Cast iron/ welded steel
Bearings	Antifriction bearings, Sleeve bearings	Antifriction bearings, Sleeve bearings	Antifriction bearings, Sleeve bearings	Antifriction bearings, Sleeve bearings	Sleeve bearings	Antifriction bearings, Sleeve bearings, Magnetic bearings	Antifriction bearings, Sleeve bearings
Cooling type	IC411, IC416, IC71W (tube cooled: IC511, IC516)	IC411, IC416	IC611, IC616, IC666, IC81W, IC86W, IC01	IC611, IC616, IC81W, IC86W, IC01	IC81W, IC86W, IC616, IC37, IC75W	IC86W, IC81W, IC616, IC37, IC75W	IC01, IC411, IC416, IC71W, IC81W, IC86W, IC611, IC616, IC666
Type of construction	IMB3, IMB35, IMV1	IMB3, IMB35, IMV1	IMB3, IMV1	IMB3, IMB35, IMV1	IM1001, IM1101, IM1205, IM1305	on request	IMB3, IMB35, IMV1
Degree of protection	IP55, IP56, IP65, IP66	IP55, IP56, IP65	IP23, IP55, IP56 nonheavy sea	IP23, IP24W, IP55	IP54, IP55, IP56	IP23 – IP56	IP23, IP24, IP24W, IP54, IP55
Explosion protection	Ex db, Ex db eb, Ex ec, Ex tc	Ex ec, Ex tc	Ex pxb, Ex pzc, Ex ec	Ex ec	Ex pxb, Ex pzc, Ex ec	Ex pxb, Ex pzc, Ex ec	Ex pxb, Ex pzc, Ex ec
Basic standards	IEC, EN	IEC, EN	IEC, EN	IEC, EN	IEC, EN, NEMA	IEC, EN, NEMA	NEMA
Efficiency	up to 97.8%	up to 97.3%	up to 98%	up to 97.5%	up to 98.8%	up to 98% and more	up to 98%

Features

	SIMOTICS HV C	SIMOTICS HV Series H-compact	SIMOTICS HV M	SIMOTICS HV Series A-compact PLUS	SIMOTICS HV HP	SIMOTICS HV Specialized	SIMOTICS HV ANEMA
Differentiating Features	Revolutionary cooling concept	High degree of standardization	High performance with low operating costs	Focused on the essentials	Extremely flexible concept	Customer-specific design	Specific for NEMA standard
	Best-in-class power density	Huge installed base	High power density for a wide range of applications	Proven quality	Maximum quality and availability	Tailor-made according to customer requirements	High performance design
	Highest degree of flexibility	Sleeve bearings over the whole range available	Optimized for converter operation	Flexible and robust design	Efficiency close to 99%	High speed up to 15,900 rpm in the Megawatt range	API standard designs

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.

SINAMICS Medium-Voltage Drives	SIMOTICS HV C	SIMOTICS HV Series H-compact	SIMOTICS HV M	SIMOTICS HV Series A-compact PLUS	SIMOTICS HV HP	SIMOTICS HV Specialized	SIMOTICS HV ANEMA
SINAMICS PERFECT HARMONY GH180	●	●	●	●	●	●	●
SINAMICS PERFECT HARMONY GH150			●		●	●	●
SINAMICS GM150	●	●	●		●	●	●
SINAMICS GL150					●	●	
SINAMICS SM120 CM	●	●	●		●	●	●
SINAMICS SM150	●	●	●		●	●	●
SINAMICS SL150					●	●	



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 so there may be exceptions to the suitability of the motor assignments listed here.

	SIMOTICS HV C	SIMOTICS HV Series H-compact	SIMOTICS HV M	SIMOTICS HV Series A-compact PLUS	SIMOTICS HV HP	SIMOTICS HV Specialized	SIMOTICS HV ANEMA
Pumps	●	●	●	●	●	●	●
Fans	●	●	●	●	●		●
Blowers	●	●	●	●	●		●
Compressors	●	●	●	●	●	●	●
Extruders	●	●	●		●		●
Agitators / mixers	●	●	●				●
Crushers	●	●	●				●
Mills	●	●	●	●	●	●	●
Gearless mills						●	
Excavators	●	●	●			●	
Conveyors	●	●	●	●		●	●
Refiners	●	●	●		●		●
Winders	●	●					●
Kilns	●	●	●				●
Rolling mills	●	●	●		●	●	
Main propulsion			●	●	●	●	●
Thrusters	●	●	●	●			●
Winches	●	●					●
Boosters						●	
Boiler fed pumps			●		●	●	●
Large ID fans			●		●		●
Large IGCC compressors			●		●	●	●
Blast furnace blowers					●		
Injection pumps						●	
Mine winders						●	
High-speed compressor drives						●	
Reciprocating compressors						●	
LNG starter / helper						●	