SD750FR

High performance.
Low harmonics.
Energy regeneration.
4 quadrant operation.

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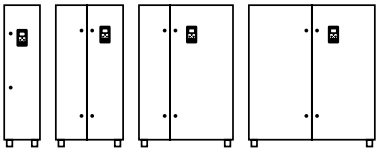

INPUT	Power range [1]	110 kW – 2200 kW
	Voltage range	380 - 480 Vac (±10%), 690 Vac (-5/+10%)
	Input frequency	50 Hz / 60 Hz (±6%)
	Input rectifier technology	IGBT
	Rectifier bridge switching frequency	2.8 kHz
	Displacement power factor (DPF = cos φ)	1 (factory settings) 0.90 leading ... 0.90 lagging (adjustable)
	Power factor (PF= i1/irms · cos φ)	≥0.98
	Momentary power loss	>2sec (depending on the load inertia)
	EMC input filter	Second environment (Industrial): C3 Standard. First environment (Domestic): C2 (Optional), C1 consult with Power Electronics. IT filter (Optional)
	Harmonics filter	LCL
	Current thd (%)	<3% / 5% [2]
	Regenerative	Yes – 4 quadrant operation
OUTPUT	Output frequency [3]	0... 599 Hz
	Overload capacity	Constant torque/heavy duty: 150% during 60 sec at 50 °C Variable torque/normal duty: 120% during 60 sec at 40 °C.
	Efficiency (at full load)	≥97%
	Control method	V/Hz
		VECTOR CONTROL Open Loop: PMC speed / torque control, AVC: speed / torque control Close Loop (Encoder): PMC speed / torque control, AVC: speed / torque control PMSM I/f, Sensorless and HEPOL (High Efficiency Performance Open Loop)
	Carrier frequency	4 to 8 kHz – PEWave
	Output dV/dt filter	500 - 800 V/µs
	Output cable length [4]	USC 300 m, SC 150 m
	Dynamic brake	-
ENVIRONMENTAL CONDITIONS	Operation ambient temperature	Minimum: -20 °C; Maximum: +60 °C (Heavy Duty) Minimum: -20 °C; Maximum: +40 °C (Normal Duty)
	Storage temperature	Minimum: -40 °C; Maximum: +70 °C
	Altitude	1000 m
	Power altitude derating [1]	>1000 m, 1% PN (kW) per 100 m; 4000 m maximum (for higher altitude consult with PE)
	Ambient humidity	<95%, non-condensing
	Degree of protection	IP54 [5], IP42 [6], Marine series adapted (IP44/IP54, under request)
	Vibration	Amplitude: ± 1 mm (2 Hz-13.2 Hz), ± 0.075 mm (13.2 Hz - 57 Hz) Acceleration: 6.86 m/s^2 (13.2 Hz - 57 Hz), 9.8 m/s^2 (57 Hz - 150 Hz)
	Heating resistors	Optional
	Conformal Coated Electronics	Class 3C3
PROTECTIONS	Motor protections	Rotor locked, Motor overload (thermal model), Output current limit, Phase current imbalance, Phase voltage imbalance, Motor over-temperature (PT100 signal), Speed limit, Torque limit.
	Drive protections	IGBT's overload, Input phase loss, Low input voltage, High input voltage, DC Bus voltage limit, Low DC Bus voltage, High supply frequency, Low supply frequency, IGBT temperature, Heat-sink over-temperature, Power supply fault, Drive thermal model, Ground fault, Software and Hardware fault, Analogue input signal loss (speed reference loss), Safe stop/Emergency Stop
HARDWARE	Digital inputs	6 programmable, Active high (24 Vdc), Isolated power supply
	Digital outputs	3 programmable changeover relays (250 Vac, 8 A or 30 Vdc, 8 A)
	Analogue input	3 programmable differential inputs. 0 – 20 mA, 4 – 20 mA, 0 – 10 Vdc and ±10 Vdc, PT100. (Optically isolated)
	Analogue outputs	2 isolated programmable outputs: 0 – 20 mA, 4 – 20 mA, 0 – 10 Vdc and ±10 Vdc
	Encoder inputs (optional)	1 differential encoders input. Voltages inputs from 5 to 24 Vdc
	User power supply	+24 Vdc user power supply (Max 180 mA) regulated and short-circuit protected +10 Vdc user power supply (Max 2 potentiometers R= 1 kΩ) regulated and short-circuit protected

NOTES

[1] Consult with Power Electronics for other configurations.
[2] THDi < 3% (THDv = 0%). Harmonics are below the limits defined in IEEE519 for all I_{SC} / I_L.
[3] For operation frequencies higher than 100 Hz consult Power Electronics.
[4] SC: Shielded cable, USC: Unshielded Cable. Follow Power Electronics installation recommendations.
For greater cable lengths, consult Power Electronics.
[5] Applicable to the electronics.
[6] For stand-alone models.

POWER ELECTRONICS

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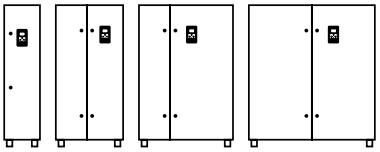

HARDWARE	I/O Extension board (optional)	Digital I/O board: 5 Digital Inputs: Programmable inputs and active high (24 Vdc). Optically isolated. 5 Digital Outputs: programmable multi-function relays. Analogue I/O board: 2 Analogue Input: Programmable and differential input. 2 Analogue Output: Programmable outputs in voltage / current.
	Disconnector (optional)	For all IEC, UL models
	Heating Resistor (optional)	Motor and/or cabinet, internal or external supply
	Switching Panel (optional)	Start, stop, reset, local/remote selector, Run LED, Fault LED and emergency stop button
	Terminal blocks (optional)	Includes terminal blocks for all available connections
COMMUNICATIONS	Standard hardware	USB port RS485 port Ethernet
	Optional hardware	Optical fiber Communication boards
	Standard protocol	Modbus-RTU Ethernet (Modbus TCP)
	Optional protocol	Profibus-DP Ethernet IP ProfiNet
CONTROL PANEL	Type	Removable
	Length	3 meters (optional)
	Connection	USB
	Visualization leds	LED RUN: Motor receiving power supply LED FAULT: Flashing displays that a fault has occurred
	LCD display	LCD Screen Keypad with 8 keys to control and configure the drive, start and stop/reset Independent memory
	Display information	Average current and 3-phase motor current Average voltage and 3-phase motor voltage Average input voltage and 3-phase input voltage 3-phase input and output frequency DC Bus Voltage Drive Status
	Others	Real time clock Perpetual calendar Speed, Torque, Power, Power factor of the motor Register of total and partial drive running time with reset function. (hours) Register of total and partial drive energy consumption with reset function (kWh) Relay status Digital inputs / PTC status Output comparator status Analogue inputs and sensor values Analogue output value Motor overload and equipment status Drive and rectifier temperature Fault history (last 6 faults)
REGULATIONS	Certifications	CE, RCM, UL, cUL, Marine certifications (under request)
	Electromagnetic compatibility	EMC Directive (2004/108/CE) IEC/EN 61800-3
	Design and construction	LVD Directive (2006/95/CE) IEC/EN 61800-2 General requirements IEC/EN 61800-5-1 Safety IEC/EN 60146-1-1 Semiconductor converters IEC60068-2-6 – Vibration
	Functional safety	IEC/EN 61800-5-2 Safety Stop (STO)

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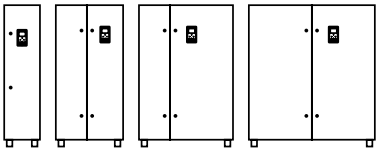
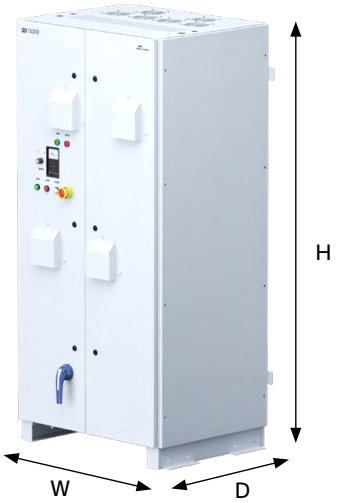


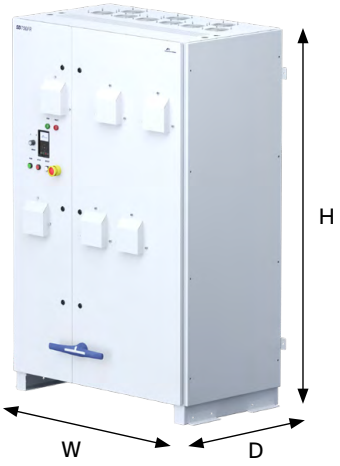
DIMENSIONS

Frame: 5

Frame: 6



Frame: 7



Frame: 8

Frame	Width W (mm)	Depth D (mm)	Height H (mm)	Weight (kg)
5	655	771	2046	350
6	1003	771	2000	700
7	1354	790	2000	1000
8	1705	790	2000	1200

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