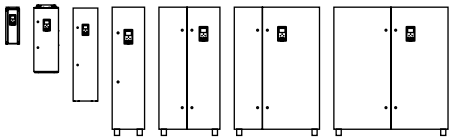
# SD750

**Full frontal access.**
**Higher power density.**
**Dedicated software, tools and macros.**
**Innovative cooling system.**

# SD750



| | | |
|---|---|---|
| INPUT | Power range [1] | 1.5 kW – 2200 kW |
| | Voltage range | 380 – 480 Vac (±10%), 525 – 690 Vac (-5/+10%) |
| | Input frequency | 50 Hz / 60 Hz (± 6%) |
| | Input rectifier technology | Diode-Diode F1-F2/Thyristor-Diode F3-F11 (multipulse available [1]) |
| | Displacement power factor (DPF = cos Φ ) | ≥0.98 |
| | Power factor (PF= $I_1$ /Irms· cos Φ) | ≥0.91 |
| | Momentary power loss | >2 seconds (depending on the load inertia) |
| | EMC input filter | Second environment (Industrial): C3 Standard.<br>First environment (Domestic): C2 (Optional), C1 consult with Power Electronics.<br>IT filter optional |
| | Harmonics filter | Choke coils 3% impedance |
| | Current THD (%) | <40% |
| | Regenerative | No |
| OUTPUT | Output frequency [2] | 0... 599 Hz |
| | Overload capacity | Constant torque / heavy duty: 150% during 60 seconds at 50 °C<br>Variable torque / normal duty: 120% during 60 seconds at 40 °C |
| | Efficiency (at full load) | ≥98% |
| | Control method | V / Hz |
| | | VECTOR CONTROL<br>Open Loop: PMC speed / torque control, AVC: speed / torque control<br>Close Loop (Encoder): PMC speed / torque control, AVC: speed / torque control<br>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 [3] | USC 300 m - SC 150 m |
| | Dynamic brake | External B150 Dynamic Brake - (Frames 1 and 2 integrated) |
| ENVIRONMENTAL CONDITIONS | Operation ambient temperature | Minimum: -20 °C Maximum: +50 °C (Heavy duty)<br>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% $P_N$(kW) per 100 m; 4000 m maximum (for higher altitude consult with PE) |
| | Ambient humidity | <95%, non-condensing |
| | Degree of protection | IP20 [4], IP54 [5], IP42 [6], Marine series adapted (IP44/IP54, under request) |
| | Vibration | Amplitude: ± 1mm ( 2 Hz-13.2 Hz), ± 0.075 mm (13.2 Hz-57 Hz)<br>Acceleration: 6.86 m/s² (13.2 Hz-57 Hz), 9.8 m/s² (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 encoder input. Voltages inputs from 5 to 24Vdc |
| | User power supply | +24 Vdc user power supply (Max. 180 mA) regulated and short-circuit protected<br>+10 Vdc user power supply (Max. 2 potentiometers R=1 kΩ) regulated and short-circuit protected |

NOTES

[1] Consult availability with Power Electronics.
[2] For operation frequencies higher than 100 Hz, consult Power Electronics.
[3] SC: Shielded cable, USC: Unshielded Cable. Follow Power Electronics installation recommendations.
For greater cable lengths, consult Power Electronics.
[4] Available for 380–480 Vac up to frame 4.
[5] Applicable to the electronics.
[6] For stand-alone models.



POWER ELECTRONICS

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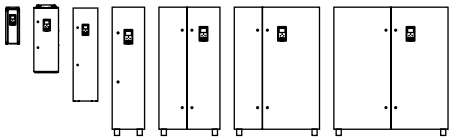

| | | |
|---|---|---|
| HARDWARE | I/O Extension board (optional) | Digital I/O board:<br>5 Digital inputs: Programmable inputs and active high (24 Vdc). Optically isolated<br>5 Digital outputs: programmable multi-function relays<br>Analogue I/O board:<br>2 Analogue input: Programmable and differential input<br>2 Analogue output: Programmable outputs in voltage/current |
| | External power supply (optional) | 24 V External power supply integrated |
| | SD card | Port for an external SD Card. Data Logging, events registration |
| COMMUNICATION | Standard hardware | USB port<br>RS485 port<br>Ethernet |
| | Optional hardware | Optical fibre<br>Communication boards |
| | Standard protocol | Modbus-RTU<br>Ethernet (Modbus TCP) |
| | Optional protocol | Profibus-DP<br>Ethernet IP<br>ProfiNet |
| CONTROL PANEL | Type | Removable |
| | Length | 3 meters (optional) |
| | Connection | USB |
| | Visualization leds | LED RUN: Motor receiving power supply<br>LED FAULT: Flashing displays that a fault has occurred |
| | LCD display | LCD screen<br>Keypad with 8 keys to control and configure the drive, start and stop/reset<br>Independent memory |
| | Display information | Average current and 3-phase motor current<br>Average voltage and 3-phase motor voltage<br>Average input voltage and 3-phase input voltage<br>3-phase input and output frequency<br>DC Bus Voltage |
| | Others | Drive status<br>Speed, Torque, Power, Power factor of motor<br>Register of total and partial drive running time with reset function. (hours)<br>Register of total and partial drive energy consumption with reset function (kWh)<br>Relay status<br>Digital inputs / PTC status<br>Output comparator status<br>Analogue inputs and sensor values<br>Analogue output value<br>Motor overload and equipment status<br>Drive and rectifier temperature<br>Fault history (last 6 faults)<br>Real time clock<br>Perpetual calendar |
| REGULATIONS | Certifications | CE, cTick, UL, cUL, Marine certifications (under request) |
| | Electromagnetic compatibility | EMC Directive (2004/108/CE)<br>IEC/EN 61800-3 |
| | Design and construction | LVD Directive (2006/95/CE)<br>IEC/EN 61800-2 General requirements<br>IEC/EN 61800-5-1 Safety<br>IEC/EN 60146-1-1 Semiconductor converters<br>IEC60068-2-6 - Vibration |
| | Functional safety | IEC/EN 61800-5-2 Safety Stop (STO) |

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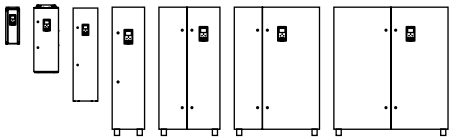

DIMENSIONS

**Frame: 2**


**Frame: 4**


| Frame | Width W (mm) | Depth D (mm) | Height H (mm) | Weight (kg) |
|---|---|---|---|---|
| 1 | 191 | 273 | 507 | 17 |
| 2 | 296 | 323 | 510 | 29 |
| 3 | 301 | 359 | 854 | 61 |
| 4 | 320 | 465 | 1251 | 85 |
| 5 | 431 | 529 | 1715 | 168 |
| 6 | 782 | 528 | 1715 | 287 |
| 7 | 1132 | 529 | 1715 | 441 |
| 8 | 1482 | 529 | 1715 | 576 |



POWER ELECTRONICS