



SD300 **LOW VOLTAGE VARIABLE SPEED DRIVE**

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ABOUT US

Since our inauguration in 1987 Power Electronics' strategy of continuous innovation in product development has realized an extensive range of AC variable speed drives and soft starters in low and medium voltage and utility scale solar inverters.

The expertise and know-how gained over more than 25 years in the business is demonstrated in the unique features and patented designs of our products, coupled with the shortest lead-times and unbeatable 24/7 Power On Support has consolidated Power Electronics' position as a global market leader in the AC drive and soft starter business.



+45
countries

The most complete range of AC drives and soft starters

0.4kW - 6000kW

0.23kV - 11kV

Financial stability and strength

SUSTAINABLE GROWTH

+25 years

of product excellence and diversification



+1200
Employees
worldwide



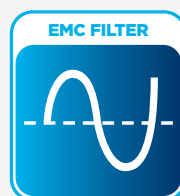
Product and Factory independent
Reports and Certifications

— Engineered for reliability

— **3** year warranty:
Industrial products

SD300

VARIABLE SPEED DRIVE



SD300

The SD300 is a high performance general purpose AC drive that excels in demanding heavy-duty applications that require high starting torque and precise control. The dual duty rating of the IP20 models ensures compatibility with all normal duty loads with less demanding overload requirements. The IP66/NEMA4X models guarantee operation even in the most severe environments.

The versatile SD300 is ideal for applications in water treatment and irrigation, food and beverage, ventilation systems, materials handling, packaging systems, textiles, plastic, wood processing, in fact any general purpose application where apparatus and machinery needs to be automated.

EXCEPTIONAL PERFORMANCE
IN ANY APPLICATION

- SENSORLESS VECTOR CONTROL WITH 200% STARTING TORQUE
- SIDE-BY-SIDE MOUNTING
- COMPACT FOOTPRINT
- MULTIPLE FIELDBUS OPTIONS
- BUILT-IN EMC FILTER AND COMPLIANT WITH INTERNATIONAL STANDARDS
- BUILT-IN SAFE TORQUE OFF (STO) AND REDUNDANT INPUT CIRCUIT
- IP66 MODELS

SD300 MAIN FEATURES

- The SD300 AC drive is an easy-to-use, compact and robust product offering users savings in time and space.
- The overall motor control features and the motor/drive protection functions limit unexpected machine downtime.
- An integrated keypad offers programming and operation capabilities.
- Integrated communication port and Modbus protocol allows the SD300 to exchange data for machine/process monitoring, control and preventive maintenance.

- 0.4kW to 2.2kW 230V SPh
- 0.4kW to 22kW 230V 3Ph.
- 0.4kW to 30kW 400V 3Ph.

I/O expansion card option:

- 2 Relay Outputs
- 3 Digital inputs
- 2 Analog Inputs
- 1 Analog Output

Powerful sensorless control.
High torque at very low speed
(200% at 0,5 Hz)

50°C operating temperature.
Suitable for IT Power Networks.

IP20 and IP66 degree of
environmental protection.

Built in display with keypad.
Remote LCD display option.

Output frequency up to 400Hz,
Sensorless and V/Hz motor
control, 150% current overload
capability.

Safe Torque Off (STO) as standard.
Meets EN ISO 13849-1 PLd and EN
61508 SIL2 (EN60204-1, stop category
0).

Intuitive control and
comprehensive menu setup
including PID, PLC functionality.

Integrated EMC filter compliant with
EN61800-3 and EN 61800-5-1.

CE marked, UL/cUL listed & RCM
(Australia & New Zealand) certified.

Multiple fieldbus options: Profibus,
Profinet, Ethercat, Ethernet I/P,
Modbus TCP.

RS485 communication port with
integrated Modbus protocol as
standard

BIG ON PERFORMANCE SMALL ON SPACE

- SPACE SAVING DESIGN WITH SIDE BY SIDE MOUNTING
- BUILT-IN RFI FILTER ON SINGLE PHASE AND THREE PHASES
- JUMPER TO DISCONNECT RFI FILTER (IT POWER NETWORKS)
- INTEGRATED BRAKE CHOPPER
- POWER, DC BUS AND GROUND TERMINALS
- SAFE TORQUE OFF (STO) AS STANDARD
- MULTIPLE FIELDBUS OPTIONS
- FAST A/D CONVERSION, TORQUE COMPENSATION AND SMOOTH CONTROL AT LOW SPEED
- IP66 WITH DISCONNECT SWITCH



CONTROL I/O TERMINAL BLOCK

- 7 Digital inputs (5 on IP66 option).
- Analog input configurable V/mA.
- Analog input 0-10V.
- Output Relay.
- Digital Output Open Collector.
- I/O Expansion Card Option.

BUILT IN KEYPAD WITH DISPLAY

- 4 Digits display for Parameter, Frequency, Voltage, Current, Temperature, Fault messages.
- Multi function LEDs.
- Parameter navigation keys: Up, Down, Left and Right.
- Run, Stop/Reset keys.



THE DRIVE FOR HARSH ENVIRONMENTS

Protected against fine dust and high pressure water jets.

- Meets IEC 60529 standard IP66
- Meets NEMA 4X for indoor use
- 200/400V 0.4-22kW
- Integrated Disconnect Switch

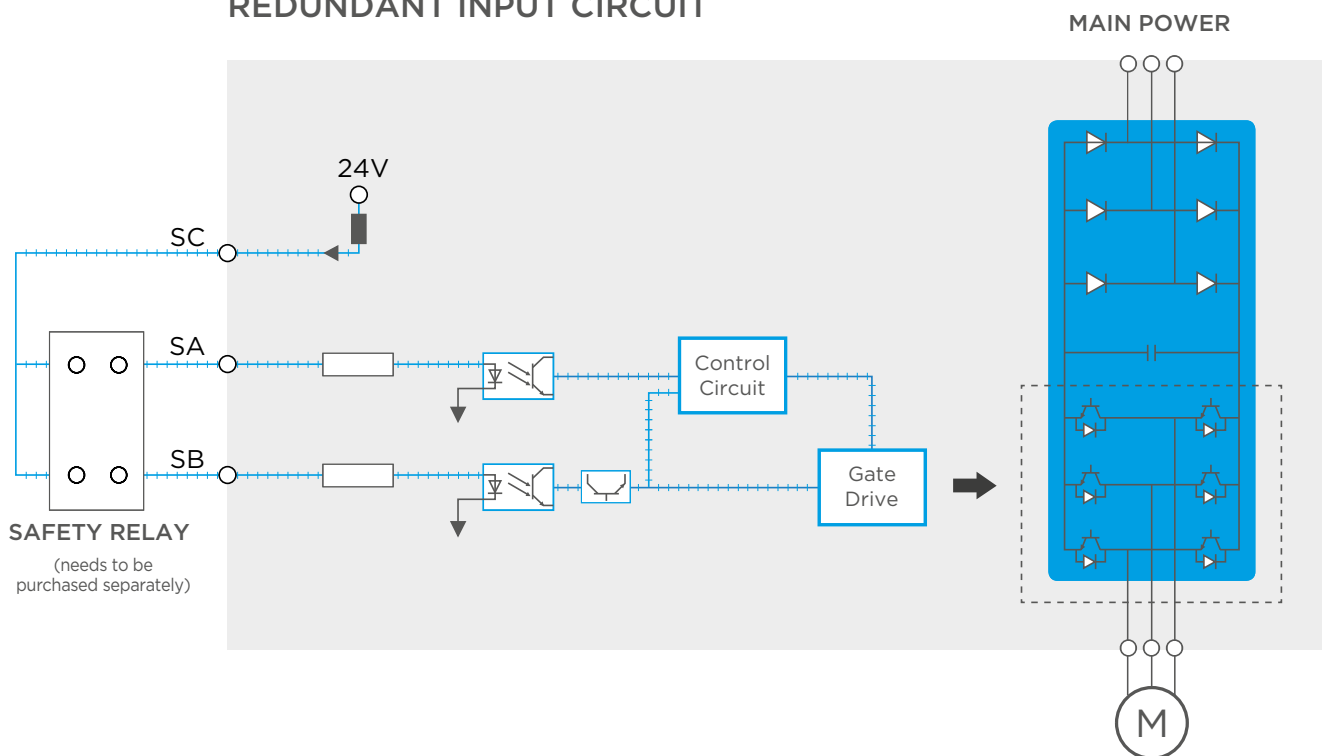
SAFETY FUNCTIONS

SAFE TORQUE OFF

The Safe Torque Off function meets EN ISO 13849-1 PLd and EN 61508 SIL2 (EN60204-1, stop category 0).

This feature is standard and enables compliance with current safety standards.

REDUNDANT INPUT CIRCUIT



GLOBAL STANDARDS

The SD300 AC drive complies with all the major international standards.

- CE, UL, cUL, RoHS.
- 3C2 Conformal coating on PCBs.



FIELDBUS COMMUNICATIONS

The SD300 integrates the most powerful and widely used fieldbus communication protocols used in automation and industry today. The multiple fieldbus options add another dimension to the versatility of the drive and allow the full potential of the SD300 to be realised as a key component in the automation and control network.



Integrated as standard via the RS485 communication terminals.



The “de-facto” standard of supervisory control and automation systems integrated onto the Ethernet platform.



This option is the future standard for factory automation and encompasses the latest technology available for fieldbus communications.



Efficient, high performing lower cost I/O level protocol.



This option enables compatibility with the popular flexible and low cost CanOPEN networks.



An industry standard and one of the most widely used fieldbus protocol today.



All the features of ProfiBus transposed over to the power of Ethernet.



REMOTE DISPLAY

The remote LCD display-keypad option facilitates installation of the drive inside a cabinet while enabling control of the drive by mounting the LCD display-keypad remotely on the cabinet door.

The LCD display-keypad comprises four lines of parameter visualization and programming, parameter upload/download, and local-remote control functionality.

The LCD display-keypad is also compatible with other Power Electronics drives.



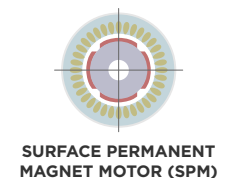
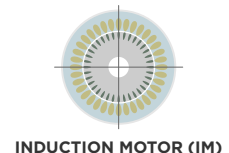
SOFTWARE

The SD300 is packed with new functions to cover all user requirements. Ranging from improved motor control including the integration of PMSM motors to PLC and process and pump control and configurations.

MOTOR CONTROL SENSORLESS AND PMSM

Exceptional performance for asynchronous and synchronous motors.

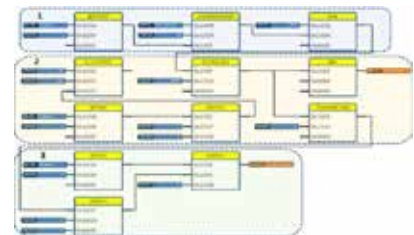
- Control of asynchronous and synchronous (PMSM) motors.
- Smooth and dynamic control of the motor.
- 200% torque at 0,5Hz.
- Static auto-tuning.
- Fast response to transient load torque changes.
- Improved motor regeneration control.
- Dynamic motor flux control.



INTERNAL PLC

PLC functions to simplify your external control requirements.

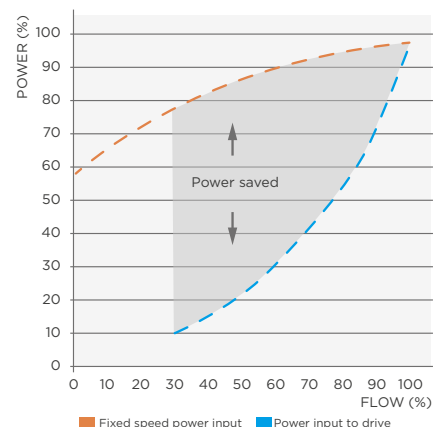
- Simple and powerful functionality.
- Logic operations.
- Arithmetic operations.
- Comparitors.
- Scan rate selection.
- Sequential execution.



ENERGY SAVING FUNCTIONS

Reduces motor power consumption under light load conditions.

- Ideal for variable torque applications.
- Power consumption reduction depending on motor load.
- Reduction of motor losses.
- Automatic and Manual adjustment.



PUMP CONTROL

Smooth and easy control for pumps in simple applications.

- Process PID controller.
- Pre-PID functionality.
- Sleep mode.
- Second PID adjustment.
- Engineering units.

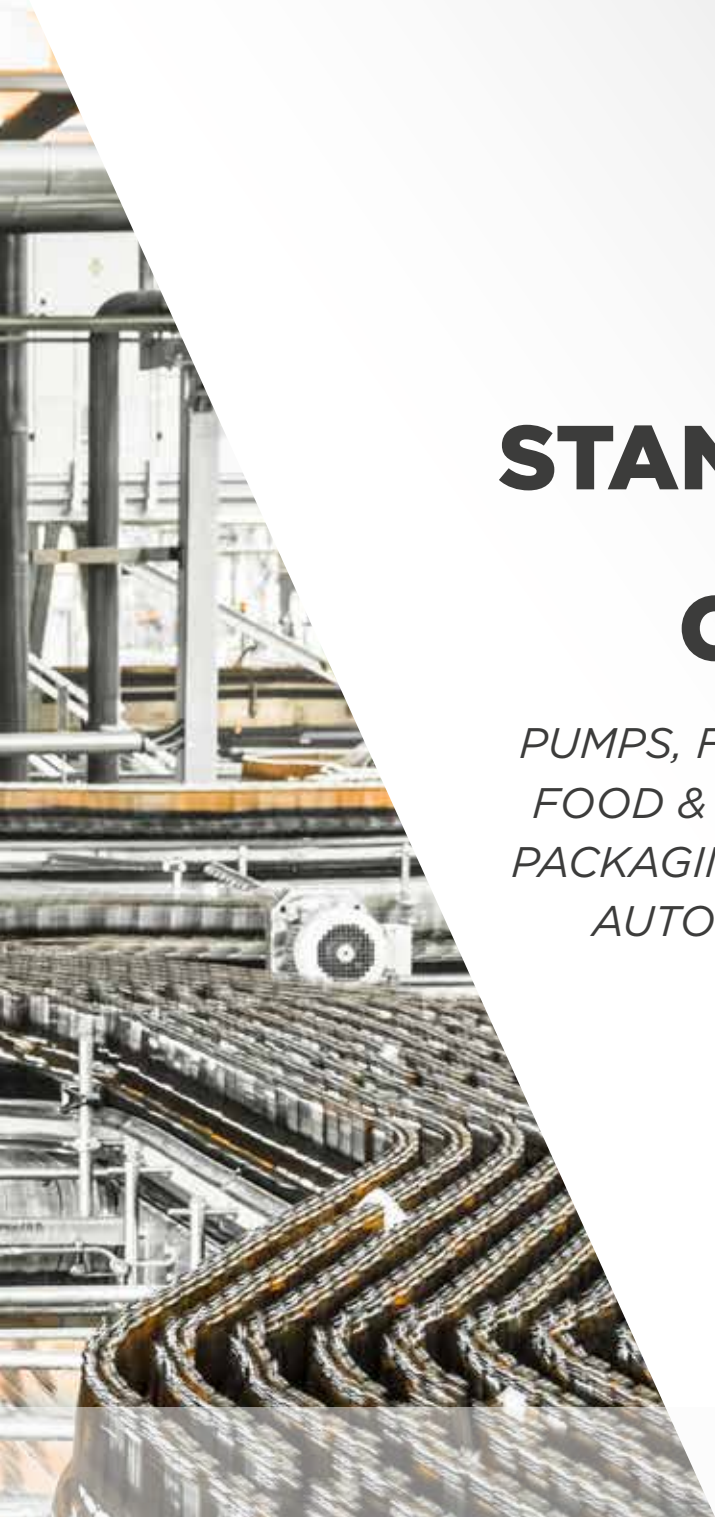




SD300

FOR ALL STANDARD MACHINE AND PROCESS CONTROL NEEDS

*PUMPS, FANS, CONVEYORS, COMPRESSORS,
FOOD & BEVERAGE, MATERIALS HANDLING,
PACKAGING, WOOD PROCESSING, PLASTICS,
AUTOMATIC DOORS...AND ANY GENERAL
PURPOSE MACHINERY*



SD300

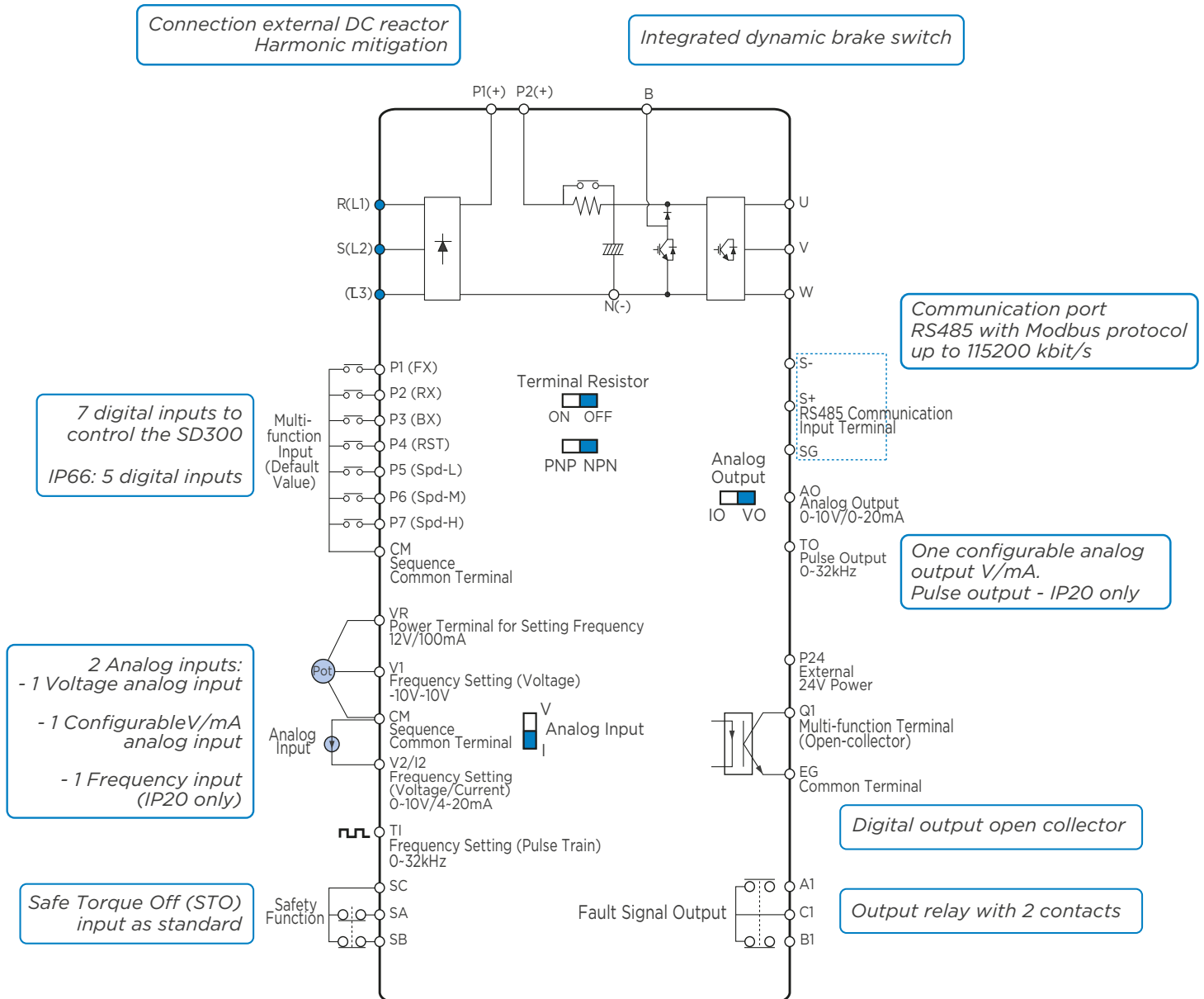
TECHNICAL CHARACTERISTICS

INPUT	Power ranges		0.4kW - 2.2kW 230V - Single Phase 0.4kW - 22kW 230V - 3-Phase 0.4kW - 30kW 400V - 3-Phase		
	Voltage range		230V: 200-240V Single Phase/3-Phase (-15%/+10%) 400V: 380-480V 3-Phase (-15%/+10%)		
	EMC Filter		C2 (First Environment) C3 (Second Environment)		
OUTPUT	Control Method		V/f, Slip compensation, Sensorless vector, PMSM VC ^[1]		
	Frequency Setting Resolution		Digital command: 0.01Hz / Analog command: 0.06Hz (maximum frequency: 60Hz)		
	Frequency Accuracy		1% of the maximum output frequency		
	V/F Pattern		Linear, Quadratic, User V/F		
	Overload Capacity		HD: 150% 1 minute, ND: 120% 1 minute ^[2]		
Torque Boost		Manual/Automatic torque boost			
OPERATION	Operation Mode		Keypad / Terminal / Communication option selectable		
	Frequency Setting		Analog : -10-10V, 0-10V, 4-20mA / Digital : Keypad, Pulse train input		
	Operation Function		PID control, 3-wire operation, Frequency limit, Second function, Anti-forward and reverse direction rotation, Speed search, Power braking, Leakage reduction, Up-down operation, DC braking, Frequency jump, Slip compensation, Automatic restart, Automatic tuning, Energy buffering, Flux braking, Fire Mode		
	Input	Multi-function Terminal Standard I/O (5 points) Multiple I/O (7 points)	NPN (Sink) / PNP (Source) Selectable		
			Function: Forward run, Reverse run, Reset, External trip, Emergency stop, Jog operation, Multi-step frequency-high, middle, low, Multi-step acceleration/ deceleration-high, middle, low, DC braking at stop, 2nd motor select, Frequency up/down, 3-wire operation, Change into normal operation during PID operation, Change into main body operation during option operation, Analog command frequency fixing, Acceleration/deceleration stop etc. Selectable		
			Analog Input		
	Pulse Train		V1: -10-10V, selectable V2: 0-10V/12 4-20mA		
	Output	Open Collector Terminal		Fault output and drive operation status output	
		Multi-function Relay		less than DC 24V 50mA (N.O., N.C.) less than AC 250V 1A, less than DC 30V 1A	
		Analog Output		Selectable 0-12Vdc/0-24mA Frequency, Output current, Output voltage, DC bus voltage etc. selectable	
Pulse Train		Maximum 32kHz, 10-12V			
PROTECTIVE FUNCTION	Trip		Over current trip, External signal trip, ARM short circuit current trip, Over heat trip, Ground trip, Motor over heat trip, I/O board link trip, No motor trip, Parameter writing trip, Emergency stop trip, Command loss trip, External memory error, CPU watchdog trip, Motor normal load trip, Over voltage trip, Temperature sensor trip, Drive over heat, Option trip, Output imaging trip, Drive overload trip, Fan trip, Pre-PID operation failure, External break trip, Low voltage trip during operation, Low voltage trip, Safety A(B) trip, Analog input error, Motor overload trip,		
	Alarm		Command loss trip alarm, overload alarm, normal load alarm, drive overload alarm, fan operation alarm, resistance braking rate alarm, number of corrections on rotor tuning error		
	Momentary Power Loss		HD below 15ms (ND below 8ms): Continuous operation (To be within rated input voltage, rated output) HD above 15ms (ND above 8ms): Automatic restart operation enable		
ENVIRONMENT	Cooling Type		Forced fan cooling structure		
	Protection Degree		IP20/UL Open (Default), UL Enclosed Type 1 (Option), IP66/NEMA 4X (Option)		
	Ambient Temperature		IP20: HD: -10-50°C(14-122°F) ND: -10-40°C(14-104°F) [However, recommended to use load below 80% when using at 50°C under light load]		
			IP66: HD: -10-40°C(14-104°F)		
	Storage Temperature		-20-65°C (-4-149°F)		
	Humidity		Relative humidity below 90% RH (non condensing)		
	Altitude, Vibration		Below 1,000m, below 9.8m/sec2 (1G)		
	Location		No corrosive gas, flammable gas, oil mist and dust etc. indoors (Pollution Degree 3 Env.)		
REGULATIONS	Pressure		70-106 kPa		
	Global certification		CE, UL, cUL, RoHS		
	PCB		3C2 Conformal coating		

NOTES [1] Please consult Power Electronics before the installation with these kind of motors.

[2] Only available with IP20 protection degree.

INPUT/OUTPUT TERMINATIONS

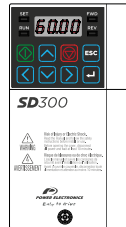


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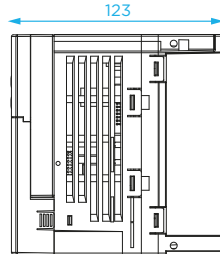
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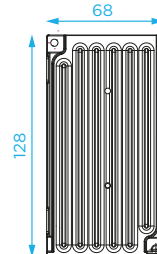
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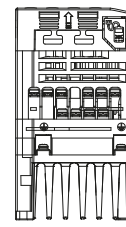
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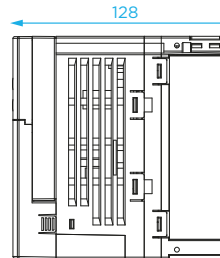


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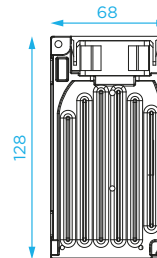
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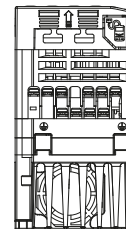
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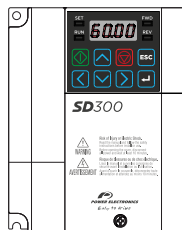


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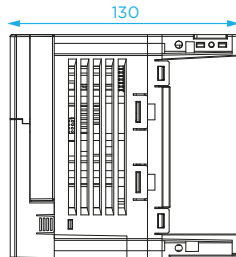


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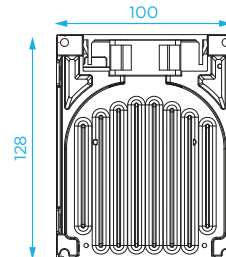
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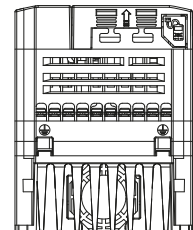
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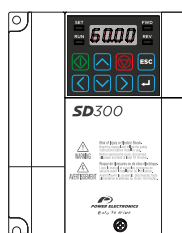


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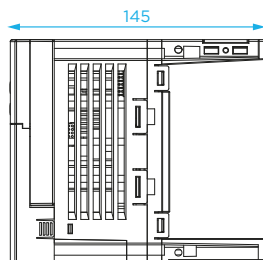


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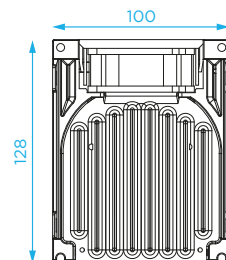
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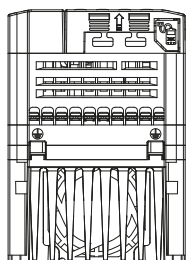
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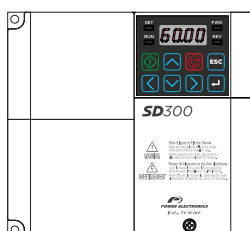


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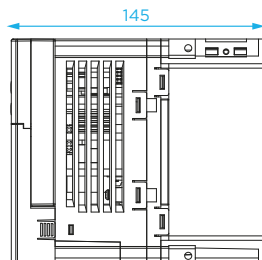


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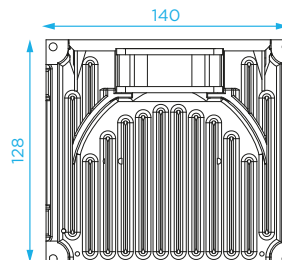
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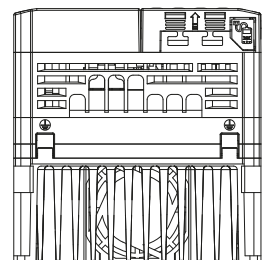
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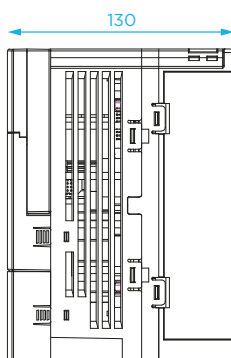
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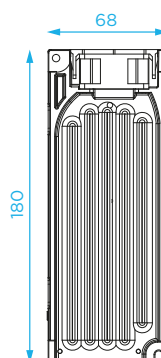
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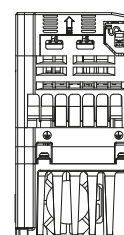
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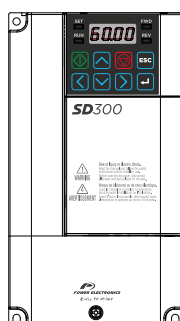


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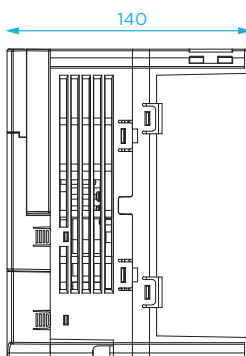


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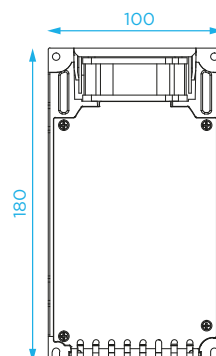
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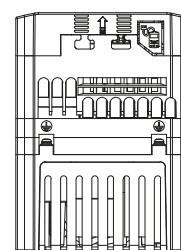
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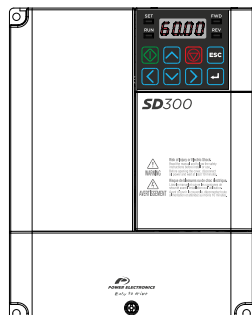


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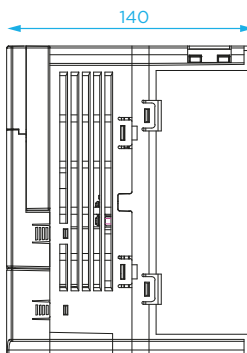


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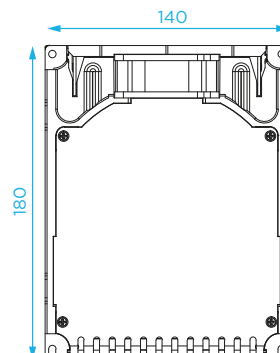
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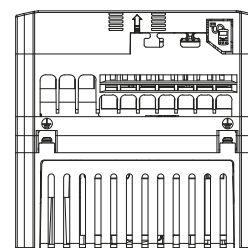
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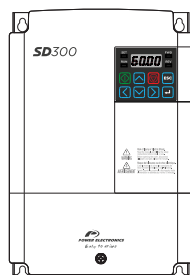
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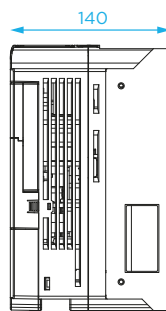
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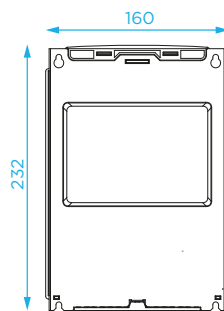
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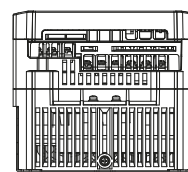
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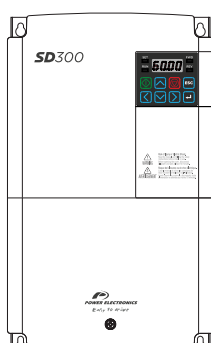


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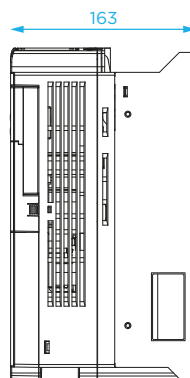


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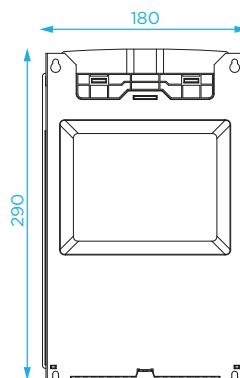
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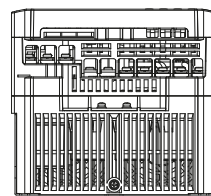
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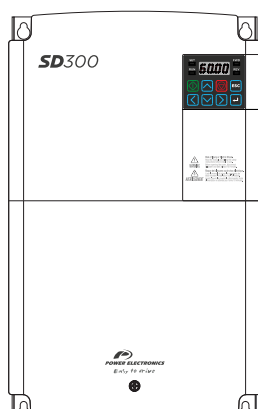


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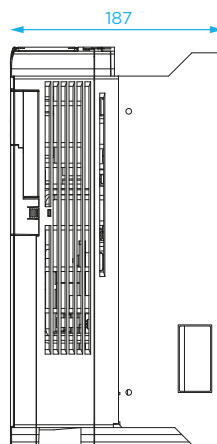


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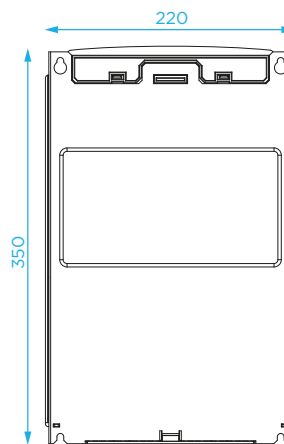
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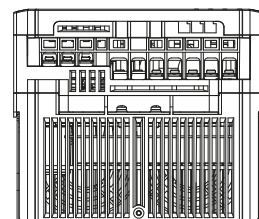
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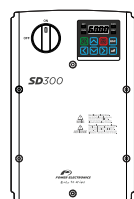
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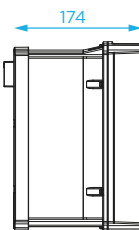
BOTTOM

IP66 - NEMA 4X

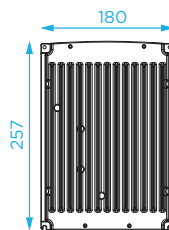
FRAME 1I



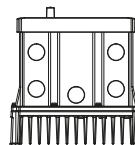
FRONT



SIDE

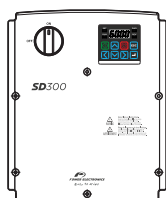


BACK

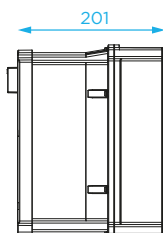


BOTTOM

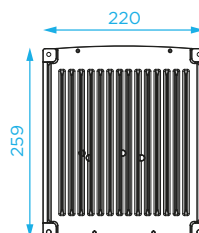
FRAME 2I



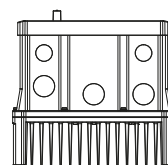
FRONT



SIDE

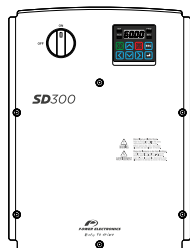


BACK

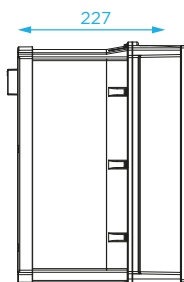


BOTTOM

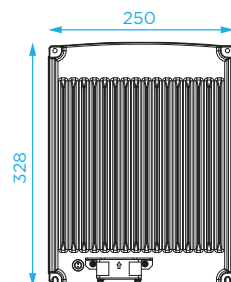
FRAME 3I



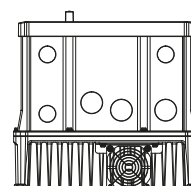
FRONT



SIDE

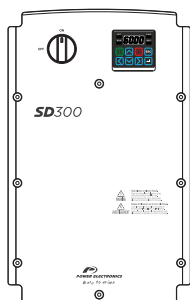


BACK

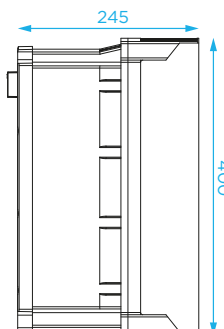


BOTTOM

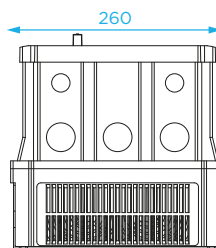
FRAME 4I



FRONT

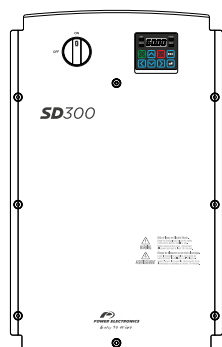


SIDE

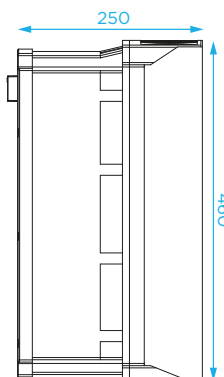


BACK

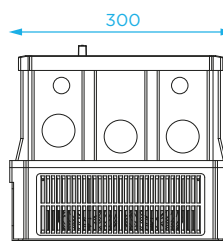
FRAME 5I



FRONT



SIDE



BACK

SD300

CONFIGURATION TABLE & STANDARD RATINGS

SD3	058		04		20			
SD300 SERIES	Current normal duty*		Voltage		Degree of protection		EMC Filter	
SD3	002	2A	1	230Vac Single Phase	2	IP20	F	Extended
	...		2	230Vac Three Phase	6	IP66	-	Standard
	069	69A	4	400Vac Three Phase				

*Heavy duty for IP66 models.

230VAC SINGLE PHASE

230VAC SINGLE PHASE - IP20													
Power ND (kW)	Power HD (kW)	Current ND (A)	Current HD (A)	EMC STANDARD					EMC EXTENDED				
				MODEL	DIMENSIONS (mm)			FRAME	MODEL	DIMENSIONS (mm)			FRAME
					W	H	D			W	H	D	
0,75	0,4	3.1	2.5	SD300312	68	128	128	2N	SD300312F [1]	68	180	130	1F
1,5	0,75	6.0	5.0	SD300612	100	128	130	3N	SD300612F [1]	100	180	140	2F
2,2	1,5	9.6	8.0	SD300912	100	128	145	4N	SD300912F [1]	100	180	140	2F
3,7	2,2	12.0	11.0	SD301212	140	128	145	5N	SD301212F [1]	140	180	140	3F

[1] Class 2

230VAC THREE PHASE

230VAC THREE PHASE - IP20								
Power ND (kW)	Power HD (kW)	Current ND (A)	Current HD (A)	MODEL	DIMENSIONS (mm)			FRAME
					W	H	D	
0,75	0,4	3.1	2.5	SD300322	68	128	123	1N
1,5	0,75	6.0	5.0	SD300622	68	128	128	2N
2,2	1,5	9.6	8.0	SD300922	100	128	130	3N
4	2,2	12	11	SD301222	100	128	145	4N
5,5	4	18	17	SD301822	140	128	145	5N
7,5	5,5	30	24	SD303022	160	232	140	4
11	7,5	40	32	SD304022				
15	11	56	46	SD305622	180	290	163	5
22	15	69	60	SD306922	220	350	187	6

230VAC THREE PHASE - IP66 (only Heavy Duty)						
Power HD (kW)	Current HD (A)	MODEL	DIMENSIONS (mm)			FRAME
			W	H	D	
0,4	2.5	SD300326	180	257	174	1I
0,75	5.0	SD300526				
1,5	8.0	SD300826	220	259	201	2I
2,2	11	SD301126				
4	17	SD301726				
5,5	24	SD302426	250	328	227	3I
7,5	32	SD303226				
11	46	SD304626				
15	60	SD306026	300	460	250	5I

400VAC THREE PHASE

400VAC THREE PHASE - IP20								
Power ND (kW)	Power HD (kW)	Current ND (A)	Current HD (A)	MODEL	DIMENSIONS (mm)			FRAME
					W	H	D	
0,75	0,4	2.0	1.3	SD300242	68	128	123	1N
1,5	0,75	3.1	2.4	SD300342	68	128	128	2N
2,2	1,5	5.1	4.0	SD300542	100	128	130	3N
4	2,2	6.9	5.5	SD300742	100	128	145	4N
5,5	4	10	9.0	SD301042	140	128	145	5N

400VAC THREE PHASE - IP20 - EMC EXTENDED								
Power ND (kW)	Power HD (kW)	Current ND (A)	Current HD (A)	MODEL	DIMENSIONS (mm)			FRAME
					W	H	D	
0,75	0,4	2.0	1.3	SD300242F ^[2]	68	180	130	1F
1,5	0,75	3.1	2.4	SD300342F ^[2]				
2,2	1,5	5.1	4.0	SD300542F ^[2]	100	180	140	2F
4	2,2	6.9	5.5	SD300742F ^[2]				
5,5	4	10	9.0	SD301042F ^[2]	140	180	140	3F
7,5	5,5	16	12	SD301642F ^[2]	160	232	140	4
11	7,5	23	16	SD302342F ^[2]				
15	11	30	24	SD303042F ^[2]	180	290	163	5
18,5	15	38	30	SD303842F ^[2]				
22	18,5	44	39	SD304442F ^[2]	220	350	187	6
30	22	58	45	SD305842F ^[2]				

[2] Class 3

400VAC THREE PHASE - IP66 (only Heavy Duty)							
Power HD (kW)	Current HD (A)	EMC STANDARD	EMC EXTENDED	DIMENSIONS (mm)			FRAME
		MODEL	MODEL	W	H	D	
0,4	1.3	SD300146	SD300146F ^[2]	180	257	174	1I
0,75	2.4	SD300246	SD300246F ^[2]				
1,5	4.0	SD300446	SD300446F ^[2]	220	259	201	2I
2,2	5.5	SD300646	SD300646F ^[2]				
4	9.0	SD300946	SD300946F ^[2]	250	328	227	3I
5,5	12	SD301246	SD301246F ^[2]				
7,5	16	SD301646	SD301646F ^[2]	260	400	245	4I
11	24	SD302446	SD302446F ^[2]				
15	30	SD303046	SD303046F ^[2]	300	460	250	5I
18,5	39	SD303946	SD303946F ^[2]				
22	45	SD304546	SD304546F ^[2]				

[2] Class 3

SD300

ACCESSORIES



• MULTIPLE FIELDBUS OPTIONS EASY TO INSTALL AND USE

- PROFINET
- Modbus TCP
- CANopen
- Profibus-DP
- EtherCAT
- Ethernet IP



• CONDUIT KIT

UL open type and enclosed type 1 certification:

- UL open type is offered as default.
- UL enclosed type1 needs conduit kit (option) installation.

• FLANGE TYPE

The heat sink can be mounted outside the panel in case of space limitations.



• I/O EXPANSION CARD OPTION

- 2 Relay outputs
- 3 Digital inputs
- 2 Analog Inputs
- 1 Analog Output

REFERENCE	DESCRIPTION
SD3CO	CANOpen communication module
SD3PB	Profibus communication module
SD3ETH	Ethernet I/P - Modbus TCP communication module
SD3ETC	EtherCAT communications module
SD3PN	Profinet communications module
SD3IO	Expansion module I/O
SD3EBF1	Conduit module frame 1N and 2N for NEMA1 compliant
SD3EBF2	Conduit module frame 3N and 4N for NEMA1 compliant
SD3EBF3	Conduit module frame 5N for NEMA1 compliant
SD3EBF4	Conduit module frame 1F for NEMA1 compliant
SD3EBF5	Conduit module frame 2F for NEMA1 compliant
SD3EBF6	Conduit module frame 3F for NEMA1 compliant
SD3EBF7	Conduit module frame 4F for NEMA1 compliant
SD3EBF8	Conduit module frame 5F for NEMA1 compliant
SD3EBF9	Conduit module frame 6F for NEMA1 compliant
SD3FLGF1	Flange module frame 1N and 2N
SD3FLGF2	Flange module frame 3N and 4N
SD3FLGF3	Flange module frame 5N
SD3FLGF4	Flange module frame 1F
SD3FLGF5	Flange module frame 2F
SD3FLGF6	Flange module frame 3F
SD3FLGF7	Flange module frame 4F
SD3FLGF8	Flange module frame 5F
SD3FLGF9	Flange module frame 6F
SD3CF1	Remote display-keypad option

Contact

24H/7D TECHNICAL ASSISTANCE	HEADQUARTERS - VALENCIA - SPAIN	
	C/ Leonardo da Vinci, 24 - 26 - Parque Tecnológico - 46980 - PATERNA - VALENCIA - SPAIN Tel. 902 40 20 70 - Tel. (+34) 96 136 65 57 - Fax (+34) 96 131 82 01	
	INTERNATIONAL SUBSIDIARIES	
AUSTRALIA	sales@power-electronics.com.au	Tel. (+61) 7 3386 1993
BRAZIL	comercialbrasil@power-electronics.com	Tel. (+55) 11 5891 9612
CHILE	ventaschile@power-electronics.com	Tel. (+56) 9 8587 4347
COLOMBIA	ventascolombia@power-electronics.com	Tel. (+57) 322 3464855
CHINA	sales@power-electronics.com.cn	Tel. (+86 10) 6437 9197
GERMANY	info@ped-deutschland.de	Tel. (+49) 911 99 43 99 0
INDIA	salesindia@power-electronics.com	Tel. (+91) 80 6569 0489
ITALY	infoitalia@power-electronics.com	Tel. (+39) 342 50 73 691
JAPAN	salesjapan@power-electronics.com	Tel. (+81) 80 9386 6107
KOREA	sales@power-electronics.kr	Tel. (+82) 2 3462 4656
MEXICO	ventasmexico@power-electronics.com	Tel. (+52) 1 55 2653 3738
NEW ZEALAND	sales@power-electronics.co.nz	Tel. (+64 3) 379 98 26
UNITED KINGDOM	uksales@power-electronics.com	Tel. (+44) 149 437 00 29
UNITED STATES	sales@power-electronics.us	Tel. (+1) 602-354-4890

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