

# *SD1*

AC Variable Speed Inverter Drives  
0.4 - 110kW

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Affordable drives **evolved**

# SD1

## Competitively priced inverters for AC motors 0.4 - 110kW

- Single-phase up to 2.2kW (3HP)
- Three-phase up to 110kW (150HP)
- Torque vector control
- STO (safe torque off) feature
- Integral MODBUS RTU / RS485
- Multiple filter options



## SD1 AC Inverter Drives

The SD1 range is the ultimate variable speed drive for you! Easy to set up, and comprehensively specified for use in virtually any application, the SD1 offers STO (SIL2 / SIL3) dependent upon model, along with a huge range of enhanced features, normally only found on much more expensive inverter drive solutions.

A range of EMC filter options makes the SD1 suitable for virtually every industrial, commercial or domestic application.

- IP20/IP00
- Torque Vector Control
- STO (Safe Torque OFF) - SIL2 / SIL3
- Up to 150% Starting Torque
- Front Mounted RJ45 Socket ( $\leq 2.2\text{kW}$ )
- Din Rail Mountable ( $\leq 2.2\text{kW}$ )
- Fixed Keypad with Potentiometer ( $\leq 2.2\text{kW}$ )
- Detachable Keypad ( $\geq 4\text{kW}$ )
- HDI Input (Pulse)
- 1/2 Analogue Inputs
- 1/2 Analogue Outputs
- 2 C/O Output Relays
- Transistor Output
- 4 Digital Inputs
- Selectable PNP/NPN I/O
- Integral MODBUS RTU / RS485
- PID Control as Standard
- DC Injection Braking
- Integral Brake Chopper ( $\leq 30\text{kW}$ )
- Motor Auto-tune (Static & Dynamic)
- Integral C3 Filter ( $\geq 4\text{kW}$ )
- Optional C3 Filter ( $\leq 2.2\text{kW}$ )
- Optional C1 & C2 Filter
- CE
- RoHS & Reach Compliant
- UL / cUL / TUV Pending
- 2 Year Warranty

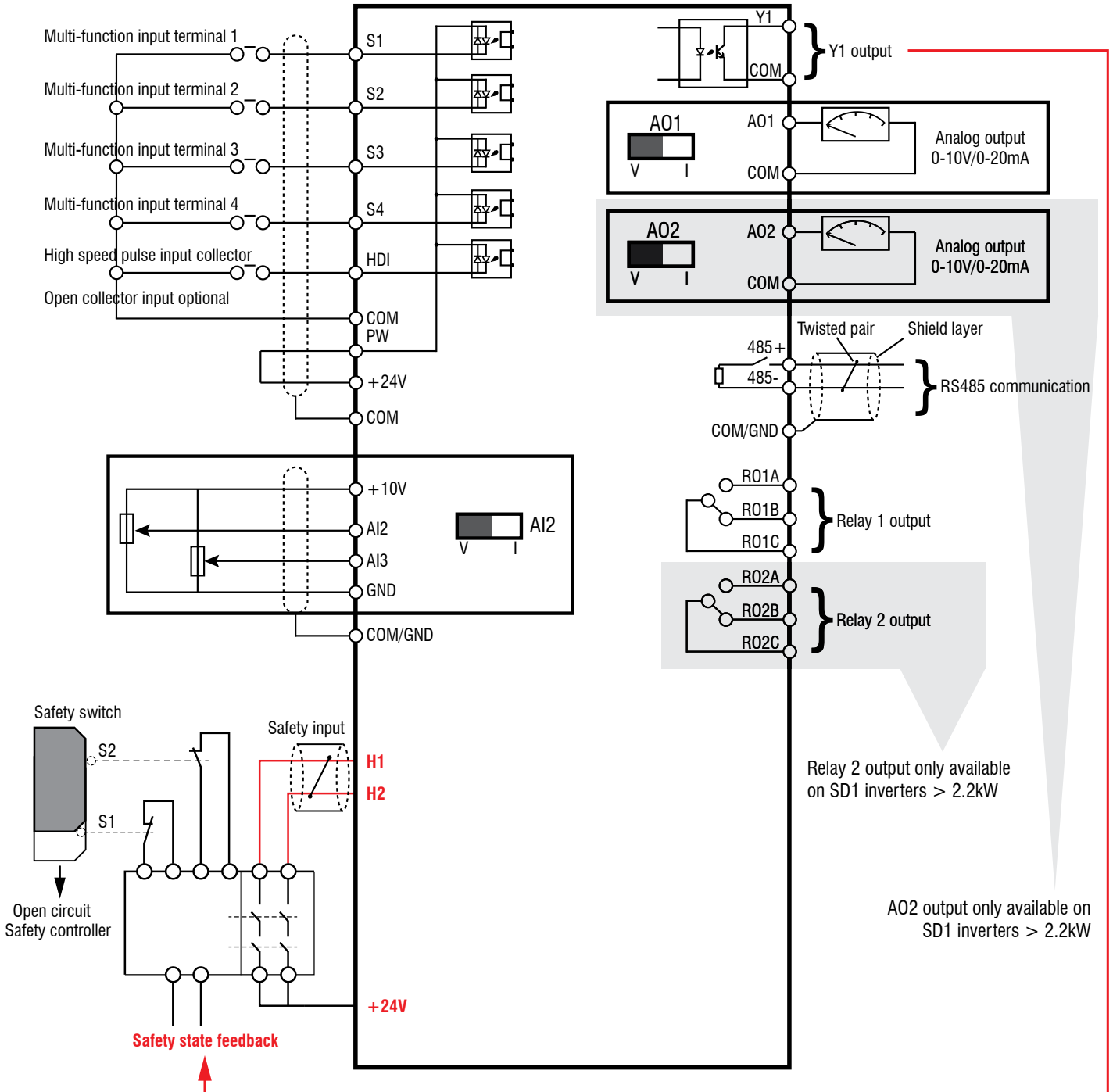


\* Approval pending.  
Please check with IMO for current status

## SD1 Specifications

	Model	Output Power		Input Current (A)	Output Current (A)	MCCB (A)	Cables (mm <sup>2</sup> )
Single-phase 220V	SD1-2.5A-21	0.4kW	0.5Hp	6.5	2.5	10	1.5
	SD1-4.2A-21	0.75kW	1.0Hp	9.3	4.2	16	1.5
	SD1-7.5A-21	1.5kW	2.0Hp	15.7	7.5	25	2.5
	SD1-10A-21	2.2kW	3.0Hp	24	10	40	2.5
Three-phase 220V	SD1-2.5A-23	0.4kW	0.5Hp	3.7	2.5	6	1.5
	SD1-4.2A-23	0.75kW	1.0Hp	5	4.2	10	1.5
	SD1-7.5A-23	1.5kW	2.0Hp	7.7	7.5	16	2.5
	SD1-10A-23	2.2kW	3.0Hp	11	10	25	2.5
	SD1-16A-23	4kW	4.5Hp	17	16	32	2.5
	SD1-20A-23	5.5kW	7.5Hp	21	20	32	4
	SD1-30A-23	7.5kW	10Hp	31	30	63	6
Three-phase 380V	SD1-2.5A-43	0.75kW	1.0Hp	3.4	2.5	6	1.5
	SD1-4.2A-43	1.5kW	2.0Hp	5	4.2	10	1.5
	SD1-5.5A-43	2.2kW	3.0Hp	5.8	5.5	10	1.5
	SD1-9.5A-43	4kW	5.5Hp	13.5	9.5	25	2.5
	SD1-14A-43	5.5kW	7.5Hp	19.5	14	32	2.5
	SD1-18.5A-43	7.5kW	10Hp	25	18.5	40	4
	SD1-25A-43	11kW	15Hp	32	25	63	6
	SD1-32A-43	15kW	20Hp	40	32	63	6
	SD1-38A-43	18.5kW	25Hp	47	38	100	10
	SD1-45A-43	22kW	30Hp	51	45	100	16
	SD1-60A-43	30kW	40Hp	70	60	125	25
	SD1-75A-43	37kW	50Hp	80	75	160	25
	SD1-92A-43	45kW	60Hp	98	92	200	35
	SD1-115A-43	55kW	75Hp	128	115	200	50
	SD1-150A-43	75kW	100Hp	139	150	250	70
SD1-180A-43	90kW	125Hp	168	180	315	95	
SD1-215A-43	110kW	150Hp	201	215	350	120	

# Control Circuit Wiring Diagram



## Options & Ordering Codes

SD1 - 2.5A - 21		
<b>Nominal Power</b>		
0.4kW / 0.5Hp	<b>2.5A</b>	Input 200-240V Single Phase
0.75kW / 1Hp	<b>4.2A</b>	
1.5kW / 2Hp	<b>7.5A</b>	
2.2kW / 3Hp	<b>10A</b>	

SD1 - 2.5A - 23		
<b>Nominal Power</b>		
0.4kW / 0.5Hp	<b>2.5A</b>	Input 200-240V Three Phase
0.75kW / 1Hp	<b>4.2A</b>	
1.5kW / 2Hp	<b>7.5A</b>	
2.2kW / 3Hp	<b>10A</b>	
4kW / 5.5Hp	<b>16A</b>	
5.5kW / 7.5Hp	<b>20A</b>	
7.5kW / 10Hp	<b>30A</b>	

SD1 - 2.5A - 43		
<b>Nominal Power</b>		
0.75kW / 1Hp	<b>2.5A</b>	Input 380-440V Three Phase
1.5kW / 2Hp	<b>4.2A</b>	
2.2kW / 3Hp	<b>5.5A</b>	
4kW / 5.5Hp	<b>9.5A</b>	
5.5kW / 7.5Hp	<b>14A</b>	
7.5kW / 10Hp	<b>18.5A</b>	
11kW / 15Hp	<b>25A</b>	
15kW / 20Hp	<b>32A</b>	
18.5kW / 25Hp	<b>38A</b>	
22kW / 30Hp	<b>45A</b>	
30kW / 40Hp	<b>60A</b>	
37kW / 50Hp	<b>75A</b>	
45kW / 60Hp	<b>92A</b>	
55kW / 75Hp	<b>115A</b>	
75kW / 100Hp	<b>150A</b>	
90kW / 125Hp	<b>180A</b>	
110kW / 150Hp	<b>215A</b>	

## Accessories

Model	Description
<b>SD1-KP</b>	Remote Keypad
<b>SD1-KP-CPY</b>	Remote Keypad with Copy
<b>SD1-KP-MB</b>	Keypad Mounting Bracket



SD1-KP



SD1-KP-MB



## Filters

	Model	C3 Filter	Current	C2 Filter	Current
Single Phase 220V	SD1-2.5A-21	SD1-RFC3-10	10A	SD1-RFC2-10	10A
	SD1-4.2A-21	SD1-RFC3-10	10A	SD1-RFC2-10	10A
	SD1-7.5A-21	SD1-RFC3-10	10A	SD1-RFC2-16	16A
	SD1-10A-21	SD1-RFC3-10	10A	SD1-RFC2-16	16A
Three Phase 220V	SD1-2.5A-23	SD1-RFC3-7	7A	SD1-RFC2-6	6A
	SD1-4.2A-23	SD1-RFC3-7	7A	SD1-RFC2-6	6A
	SD1-7.5A-23	Embedded	-	SD1-RFC2-16	16A
	SD1-10A-23	Embedded	-	SD1-RFC2-16	16A
	SD1-16A-23	Embedded	-	SD1-RFC2-32	32A
	SD1-20A-23	Embedded	-	SD1-RFC2-32	32A
	SD1-30A-23	Embedded	-	SD1-RFC2-45	45A
Three Phase 400V	SD1-2.5A-43	SD1-RFC3-7	7A	SD1-RFC2-6	6A
	SD1-4.2A-43	SD1-RFC3-7	7A	SD1-RFC2-6	6A
	SD1-5.5A-43	SD1-RFC3-7	7A	SD1-RFC2-6	6A
	SD1-9.5A-43	Embedded	-	SD1-RFC2-16	16A
	SD1-14A-43	Embedded	-	SD1-RFC2-16	16A
	SD1-18.5A-43	Embedded	-	SD1-RFC2-32	32A
	SD1-25A-43	Embedded	-	SD1-RFC2-32	32A
	SD1-32A-43	Embedded	-	SD1-RFC2-45	45A
	SD1-38A-43	Embedded	-	SD1-RFC2-45	45A
	SD1-45A-43	Embedded	-	SD1-RFC2-65	65A
	SD1-60A-43	Embedded	-	SD1-RFC2-65	65A
	SD1-75A-43	Embedded	-	SD1-RFC2-100	100A
	SD1-92A-43	Embedded	-	SD1-RF52-100	100A
	SD1-115A-43	Embedded	-	SD1-RFC2-150	150A
	SD1-150A-43	Embedded	-	SD1-RFC2-150	150A
	SD1-180A-43	Embedded	-	SD1-RFC2-240	240A
SD1-215A-43	Embedded	-	SD1-RFC2-240	240A	



*SD1-RFC3-10*

Earth leakage currents are often problematic when using small drives, but not with the new SD1 range. There are several filter options available to suit the environment in which the inverter will be installed, and all are low leakage designs.

Shown here is the low-cost C3 ultra low leakage filter designed to suit industrial environments.

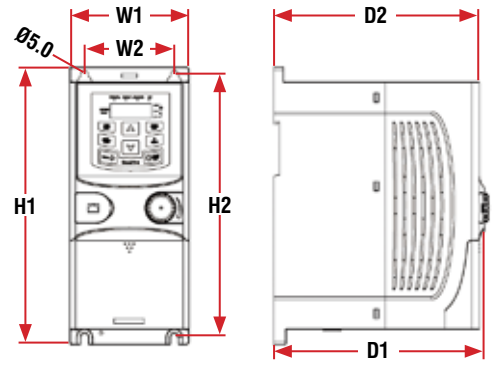
If you want more information regarding EMC filtering, please contact the IMO technical team.

## Dimensions (mm)

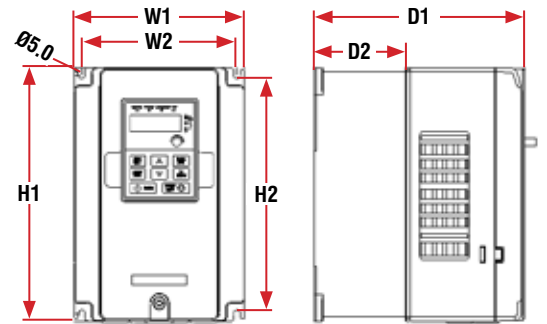
	Model	W1	W2	H1	H2	D1	D2
Single-phase 220V	SD1-2.5A-21	80	60	160	150	123.5	120.3
	SD1-4.2A-21	80	60	160	150	123.5	120.3
	SD1-7.5A-21	80	60	185	175	140.5	137.3
	SD1-10A-21	80	60	185	175	140.5	137.3

Three-phase 220V	SD1-2.5A-23	80	60	185	175	140.5	137.3
	SD1-4.2A-23	80	60	185	175	140.5	137.3
	SD1-7.5A-23	146	131	256	243.5	167	84.5
	SD1-10A-23	146	131	256	243.5	167	84.5
	SD1-16A-23	146	131	256	243.5	167	84.5
	SD1-20A-23	170	151	320	303.5	196.3	113
	SD1-30A-23	170	151	320	303.5	196.3	113

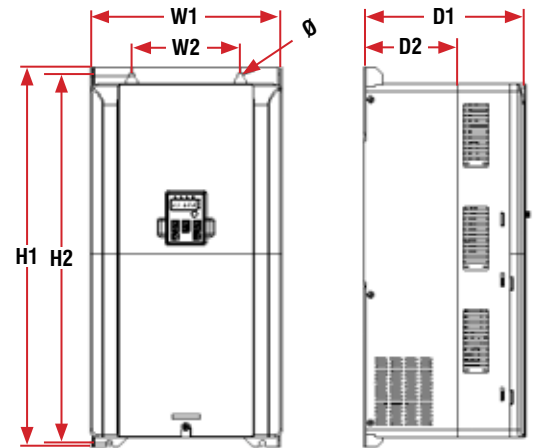
Three-phase 400V	SD1-2.5A-43	80	60	185	175	140.5	137.3
	SD1-4.2A-43	80	60	185	175	140.5	137.3
	SD1-5.5A-43	80	60	185	175	140.5	137.3
	SD1-9.5A-43	146	131	256	243.5	167	84.5
	SD1-14A-43	146	131	256	243.5	167	84.5
	SD1-18.5A-43	170	151	320	303.5	196.3	113
	SD1-25A-43	170	151	320	303.5	196.3	113
	SD1-32A-43	170	151	320	303.5	196.3	113
	SD1-38A-43	200	185	340.6	328.6	184.3	104.5
	SD1-45A-43	200	185	340.6	328.6	184.3	104.5
	SD1-60A-43	250	230	400	380	202	123.5
	SD1-75A-43	250	230	400	380	202	123.5
	SD1-92A-43	282	160	560	542	238	138
	SD1-115A-43	282	160	560	542	238	138
	SD1-150A-43	282	160	560	542	238	138
SD1-180A-43	338	200	554	535	329.2	—	
SD1-215A-43	338	200	554	535	329.2	—	



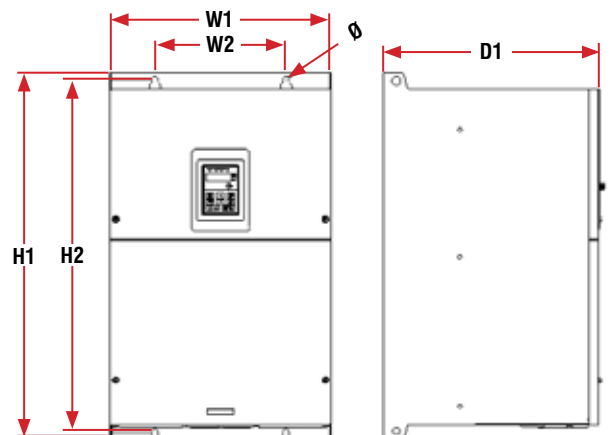
Wall mounting dimensions of 0.75 to 2.2kW SD1 Inverter (unit: mm)



Wall mounting dimensions of 3PH 380V 0.4 to 37kW & 3PH 220V 1.5 to 7.5kW SD1 Inverter (unit: mm)



Wall mounting dimensions of 3PH 45 to 75kW SD1 Inverter (unit: mm)



Wall mounting dimensions of 3PH 380V 90 to 110kW SD1 Inverter (unit: mm)

## 2.4 Type Designation Key

The model designation contains information on the inverter. The user can find the model designation on the model designation label attached to the inverter or the simple name plate.

**SD1 - 2.5A - 21**

①                      ②                      ③

*Figure 2-2: Product Type*

Key	No.	Detailed Description	Detailed Content
Product Abbreviation	①	Product Abbreviation	SD1 = Series Name
Rated Power	②	Rated Output Current	2.5A = 2.5Amps continuous rating
Voltage Degree	③	Supply Voltage	21: AC 1PH 200V (-15%)~240V (+10%) 23: AC 3PH 200V (-15%)~240V (+10%) 43: AC 3PH 380V (-15%)~440V (+10%)

## 2.5 Rated Specifications

Model	Voltage Degree	Rated Output Power (kW)	Rated Input Current (A)	Rated Output Current (A)	Weight (kg)	STO Function
SD1-2.5A-21	Single phase 200V	0.4	6.5	2.5	0.9	SIL2
SD1-4.2A-21		0.75	9.3	4.2	0.9	SIL2
SD1-7.5A-21		1.5	15.7	7.5	1.2	SIL2
SD1-10A-21		2.2	24	10	1.2	SIL2
SD1-2.5A-23	Three phase 200V	0.4	3.7	2.5	1.0	SIL2
SD1-4.2A-23		0.75	5	4.2	1.0	SIL2
SD1-7.5A-23		1.5	7.7	7.5	3.1	SIL3
SD1-10A-23		2.2	11	10	3.1	SIL3
SD1-16A-23		4	17	16	3.1	SIL3
SD1-20A-23		5.5	21	20	5.58	SIL3
SD1-30A-23		7.5	31	30	5.83	SIL3
SD1-2.5A-43	Three phase 380V	0.75	3.4	2.5	1.0	SIL2
SD1-4.2A-43		1.5	5.0	4.2	1.0	SIL2
SD1-5.5A-43		2.2	5.8	5.5	1.0	SIL2
SD1-9.5A-43		4	13.5	9.5	3.1	SIL3
SD1-14A-43		5.5	19.5	14	3.1	SIL3
SD1-18.5A-43		7.5	25	18.5	5.58	SIL3
SD1-25A-43		11	32	25	5.58	SIL3
SD1-32A-43		15	40	32	5.83	SIL3
SD1-38A-43		18.5	47	38	9.0	SIL3
SD1-45A-43		22	51	45	9.0	SIL3
SD1-60A-43		30	70	60	15.5	SIL3
SD1-75A-43		37	80	75	15.5	SIL3
SD1-92A-43		45	98	92	25	SIL3
SD1-115A-43		55	128	115	25	SIL3
SD1-150A-43		75	139	150	25	SIL3
SD1-180A-43		90	168	180	45	SIL3
SD1-215A-43	110	201	215	45	SIL3	



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### IMO Automazione

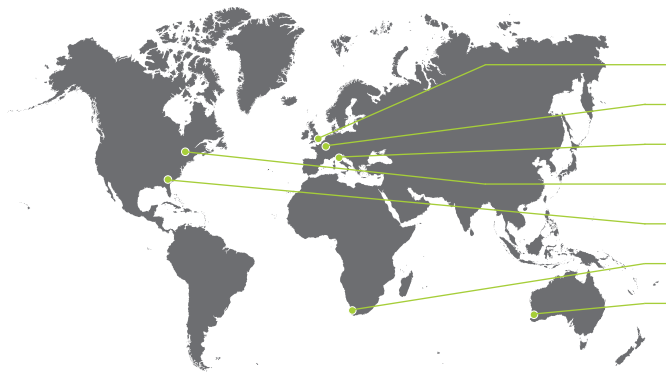
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