DIRISE
Electric

ES100 Series VFD

General Purpose Vector Control Drive

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SHENZHEN DIRISE ELECTRIC TECHNOLOGY CO., LTD

ES100 General Purpose Vector Control Drive

Es100 series compact vector VFD positioned as a general purpose inverter, apply V/F vector control, with excellent motor drive performance and various protections to control asynchronous motors. Widely used in pumps & fans, air compressor, plastic machinery, ceramic machinery and other industrial load applications.

Control mode: V/F, open–loop vector control
Motor type: Asynchronous motor
Input voltage: AC 220V ±20% AC 380V ±20%
Power range: 0.4kw –160kw

Advantages

1, Compact structure design, less installation place
- Smaller installation space with less cost, especially for the cabinet machine
- Independent air duct design can effectively prevent dust from entering the inside of the frequency converter,protect the safe and stable operation of electronic components

2, Stable performance, safe and reliable
- Follow IEC GB standards, meet the requirements of CE certification

3.Wide voltage range
- Wide voltage design in line with international standards, allowable voltage fluctuation range is ±20%.

4.Advanced open loop vector control

Technical Features

1.Optimized V/F and Sensorless vector control
2.Up to 0.5Hz/150% starting torque
3.RS–485 MODBUS communication supported
4.Built–in PID with 13–step speed control
5.Built–in braking unit (≤22kW), Optional external braking unit (≥30kW)
6.Standard potentiometer and external LED keypad
7.Support G/P dual rating
8.Over 20 protections including input and output phase loss, over–voltage, over–load,short circuit protection,etc

Applications

Food machinery, Ceramic machinery, Woodworking machinery, Air compressor, Fans & water pumps, Textile, etc

Model Selection

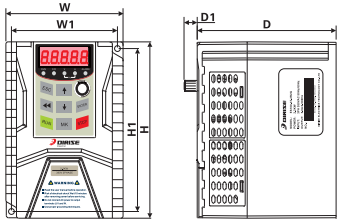
DRS ES100 – 3 T – 2R2 G/4R0P – M
① ② ③ ④ ⑤ ⑥ ⑤ ⑥ ⑦

① Brand	③ Voltage class 2: 220V 3: 380V	④ Voltage phase T: triple phase S: single phase	⑥ Load type G: heavy load P:light load
② Product series code ES100: compact vectorial series ES103: high–frequency special inverter ES105: special Inverter For wire drawing machine	⑤ Power code 0R4: 0.4KW 0R7: 0.75KW		⑦ Module machine M: module machine

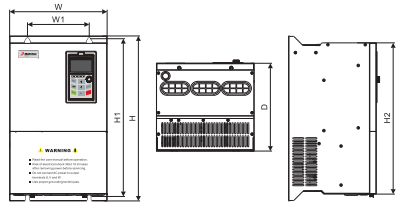
Inverter model	Voltage class	Adaptive motor (KW)	Rated output current (A)
DRS ES100–2S–0R4G	Single–phase 220V	0.4	2.8
DRS ES100–2S–0R7G		0.75	4.8
DRS ES100–2S–1R5G		1.5	8.0
DRS ES100–2S–2R2G		2.2	10.0
DRS ES100–2S–0R4G–M		0.4	2.8
DRS ES100–2S–0R7G–M		0.75	4.8
DRS ES100–2S–1R5G–M		1.5	8.0
DRS ES100–2S–2R2G–M		2.2	10.0
DRS ES100–2S–4R0G		4.0	17
DRS ES100–2T–0R4G	Triple–phase 220V	0.4	2.8
DRS ES100–2T–0R7G		0.75	4.8
DRS ES100–2T–1R5G		1.5	8.0
DRS ES100–2T–2R2G		2.2	10.0
DRS ES100–2T–0R4G–M		0.4	2.8
DRS ES100–2T–0R7G–M		0.75	4.8
DRS ES100–2T–1R5G–M		1.5	8.0
DRS ES100–2T–2R2G–M		2.2	10.0
DRS ES100–2T–4R0G		4.0	17
DRS ES100–2T–5R5G		5.5	25
DRS ES100–2T–7R5G		7.5	32
DRS ES100–2T–011G		11	45
DRS ES100–2T–015G		15	60
DRS ES100–2T–018G		18	75
DRS ES100–2T–022G		22	90
DRS ES100–2T–030G		30	110
DRS ES100–2T–037G		37	150
DRS ES100–2T–045G		45	176
DRS ES100–2T–055G		55	220
DRS ES100–2T–075G		75	260
DRS ES100–2T–090G		90	310

Inverter model	Voltage class	Adaptive motor (KW)	Rated output current (A)
DRS ES100–3T–0R7G/1R5P	Triple–phase 380V	0.75	2.8
DRS ES100–3T–1R5G/2R2P		1.5	4.8
DRS ES100–3T–2R2G/4R0P		2.2	6.2
DRS ES100–3T–4R0G/5R5P		4.0	9.2
DRS ES100–3T–0R7G/1R5P–M		0.75	2.8
DRS ES100–3T–1R5G/2R2P–M		1.5	4.8
DRS ES100–3T–2R2G/4R0P–M		2.2	6.2
DRS ES100–3T–4R0G/5R5P–M		4.0	9.2
DRS ES100–3T–5R5G/7R5P		5.5	13
DRS ES100–3T–7R5G/011P		7.5	17
DRS ES100–3T–011G/015P		11	25
DRS ES100–3T–015G/018P		15	32
DRS ES100–3T–018G/022P		18.5	38
DRS ES100–3T–022G/030P		22	45
DRS ES100–3T–030G/037P		30	60
DRS ES100–3T–037G/045P		37	75
DRS ES100–3T–045G/055P		45	90
DRS ES100–3T–055G/075P		55	110
DRS ES100–3T–075G/090P		75	150
DRS ES100–3T–090G/110P		90	176
DRS ES100–3T–110G/132P		110	220
DRS ES100–3T–132G/160P		132	260
DRS ES100–3T–160G/185P		160	310

Dimension



(0.4KW–15KW)



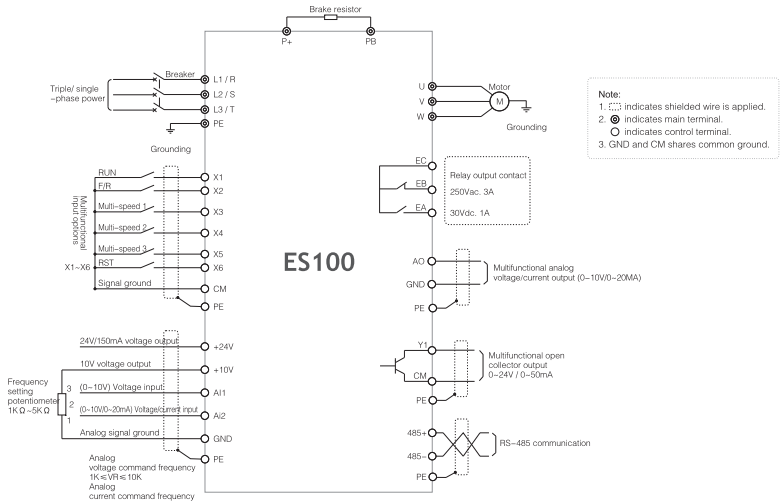
(18.5KW–160KW)

ES100 Compact Vectorial Inverter

Installation Dimension

Inverter model	Voltage class	W (mm)	W1 (mm)	H (mm)	H1 (mm)	H2 (mm)	D (mm)	Installation hole diameter (mm)
DRS ES100-2S-0R4G	Single-phase 220V	105	95	158	146		125	5.0
DRS ES100-2S-0R7G								
DRS ES100-2S-1R5G								
DRS ES100-2S-2R2G								
DRS ES100-2S-4R0G		140	124	225	209		154	
DRS ES100-2T-0R4G	Triple-phase 220V	105	95	158	146		125	5.0
DRS ES100-2T-0R7G								
DRS ES100-2T-1R5G								
DRS ES100-2T-2R2G								
DRS ES100-2T-4R0G		140	124	225	209		154	
DRS ES100-2T-5R5G		160	143	265	248		170	5.5
DRS ES100-2T-7R5G								
DRS ES100-2T-011G		205	140	344	328	320	205	6.5
DRS ES100-2T-015G		230	200	445	434	425	215	6.5
DRS ES100-2T-018G								
DRS ES100-2T-022G		300	190	505	483	465	270	9.0
DRS ES100-2T-030G								
DRS ES100-2T-037G		340	220	600	585	570	305	9.0
DRS ES100-2T-045G								
DRS ES100-2T-055G		380	220	680	665	645	305	9.0
DRS ES100-2T-075G		480	390	870	845	810	385	13
DRS ES100-2T-090G								
DRS ES100-3T-0R7G/1R5P	Triple-phase 380V	105	95	158	146		125	5.0
DRS ES100-3T-1R5G/2R2P								
DRS ES100-3T-2R2G/4R0P								
DRS ES100-3T-4R0G/5R5P								
DRS ES100-3T-5R5G/7R5P		140	124	225	209		154	
DRS ES100-3T-7R5G/011P								
DRS ES100-3T-011G/015P		160	143	265	248		170	5.5
DRS ES100-3T-015G/018P								
DRS ES100-3T-018G/022P		205	140	344	328	320	205	6.5
DRS ES100-3T-022G/030P								
DRS ES100-3T-030G/037P		230	200	445	434	425	215	6.5
DRS ES100-3T-037G/045P								
DRS ES100-3T-045G/055P		300	190	505	483	465	270	9.0
DRS ES100-3T-055G/075P								
DRS ES100-3T-075G/090P		340	220	600	585	570	305	9.0
DRS ES100-3T-090G/110P								
DRS ES100-3T-110G/132P		380	220	680	665	645	305	9.0
DRS ES100-3T-132G/160P		480	390	870	845	810	385	13
DRS ES100-3T-160G/185P								

Wiring Diagram



Technical Specification

Function description		Specification index
Input Capacity	Rated input voltage	Single-phase: 220V ± 20%, triple-phase: 220V ± 20%, triple-phase: 380V ± 20%
	Rated input frequency	50 ~ 60Hz (± 5%)
Output Capacity	Voltage	No higher than input voltage
	Frequency	0.00 ~ 300.00Hz
	Full-load output current	100% rated current continuous output
	Maximum overload current	150% of rated current for 1min, 180% of rated current for 10s
Control Functions	Control mode	No PG vector control, V/F
	Operation mode	Keypad, terminal (2-thread, 3-thread), communication
	Frequency resolution	Digital given: 0.01Hz, analog given: 0.1Hz
	Speed-regulating range	1: 50 (V/F) 1: 100 (vector control)
	Speed control precision	± 0.3%
	Torque boost	Automatic torque boost, fixed torque boost, customized V/F curve
	Acceleration/deceleration time	0.01S ~ 600.00S
	Start-up torque	150% / 0.5Hz
	Automatic output voltage regulation	When AVR function is enabled, input voltage varies and output voltage basically remains the same; precision: rated input voltage ± 10V.
	Automatic current amplitude limiting	Automatic output current limiting to prevent a trip due to overcurrent.
	DC braking	Braking frequency: 0.10~60.00Hz, Braking time: 0~30S, Braking current: 0~150% rated current
	Signal input source	Digital, analog voltage, analog current, multi-speed, simple PLC, MODBUS communication, PID. Main frequency given, auxiliary frequency combination given and terminal switching.
Input/output Function	Auxiliary power	10V/10mA、24V/50mA
	Digital input terminals	Input impedance: 27KΩ
		Input voltage range: 0 ~30V, low level valid
		Input frequency: ⩽ 1KHz
		6-CH can programme input terminal which functions can set by function code.
	Analog input terminals	1-CH voltage source input 0~10V .1-CH can choose input 0~10V of voltage source or 0~20mA of current source.
		Input impedance: voltage source 510KΩ, current source 250KΩ
		Resolution: 0.1%
	Human-machine interface	5-digit LED Nixie tube, 8 keys and 5 indicator lights.
Protection	Protection Functions	Overcurrent, overvoltage, output short-circuit, input/output phase loss, overheat protection and so on.
Ambient	Installation site	Indoor, altitude less than 1KM, away from dust, corrosive and inflammable gases.
	Temperature/humid environment	-20℃ ~ +65℃, 20% ~ 90%RH (no condensation)
	Vibration	Less than 0.5g
Others	Protection grade	IP20
	Cooling way	Forced air-cooling
	Installation way	Wall-mounted