

ES130(B)

For series compact vector inverters

User Manual



The new upgraded frequency converter launched in 2022 is suitable for three-phase asynchronous AC motors (ES130) and synchronous AC motors (ES130B). Applications: air compressors, fans, water pumps, printing, packaging, assembly lines, spraying, food machinery, bag making machines, film blowing machines, textile machinery, etc ...

Inverter model	Voltage level	Adapted motor (Kw)	Rated output current (A)
DRS ES130(B)-2S-0R4G-SD	Single phase 220V	0.4	2.8
DRS ES130(B)-2S-0R7G-SD		0.75	4.8
DRS ES130(B)-2S-1R5G-SD		1.5	8.0
DRS ES130(B)-2S-2R2G-SD		2.2	10.0
DRS ES130(B)-2S-0R4G		0.4	2.8
DRS ES130(B)-2S-0R7G		0.75	4.8
DRS ES130(B)-2S-1R5G		1.5	8.0
DRS ES130(B)-2S-2R2G		2.2	10.0
DRS ES130(B)-2S-4R0G		4.0	17
DRS ES130(B)-2T-0R4G-SD		Three-phase 220V	0.4
DRS ES130(B)-2T-0R7G-SD	0.75		4.8
DRS ES130(B)-2T-1R5G-SD	1.5		8.0
DRS ES130(B)-2T-2R2G-SD	2.2		10.0
DRS ES130(B)-2T-0R4G	0.4		2.8
DRS ES130(B)-2T-0R7G	0.75		4.8
DRS ES130(B)-2T-1R5G	1.5		8.0
DRS ES130(B)-2T-2R2G	2.2		10.0
DRS ES130(B)-2T-4R0G	4.0		17
DRS ES130(B)-2T-5R5G	5.5		25

DRS ES130(B)-2T-7R5G		7.5	32
DRS ES130(B)-2T-011G		11	45
DRS ES130(B)-2T-015G		15	60
DRS ES130(B)-2T-018G		18	75
DRS ES130(B)-2T-022G		12	90
DRS ES130(B)-2T-030G		30	110
DRS ES130(B)-2T-037G		37	150
DRS ES130(B)-2T-045G		45	176
DRS ES130(B)-2T-055G		55	220
DRS ES130(B)-2T-075G		75	260
DRS ES130(B)-3T-0R7G/1R5P-SD		Three-phase 380V	0.75/1.5
DRS ES130(B)-3T-1R5G/2R2P-SD	1.5/2.2		4.8/6.2
DRS ES130(B)-3T-2R2G/4R0P-SD	2.2/4.0		6.2/9.2
DRS ES130(B)-3T-4R0G/5R5P-SD	4.0/5.5		9.2/13
DRS ES130(B)-3T-0R7G/1R5P	0.75/1.5		2.8/4.8
DRS ES130(B)-3T-1R5G/2R2P	1.5/2.2		4.8/6.2
DRS ES130(B)-3T-2R2G/4R0P	2.2/4.0		6.2/9.2
DRS ES130(B)-3T-4R0G/5R5P	4.0/5.5		9.2/13
DRS ES130(B)-3T-5R5G/7R5P	5.5/7.5		13/17
DRS ES130(B)-3T-7R5G/011P	7.5/011		17/25
DRS ES130(B)-3T-011G/015P	11/015		25/32
DRS ES130(B)-3T-015G/018P	15/018		32/38

DRS ES130(B)-3T-018G/022P		18/22	38/45
DRS ES130(B)-3T-022G/030P		22/30	45/60
DRS ES130(B)-3T-030G/037P		30/37	60/75
DRS ES130(B)-3T-037G/045P		37/45	75/90
DRS ES130(B)-3T-045G/055P		45/55	90/110
DRS ES130(B)-3T-055G/075P		55/75	110/150
DRS ES130(B)-3T-075G/090P		75/90	150/176
DRS ES130(B)-3T-090G/110P		90/110	176/220
DRS ES130(B)-3T-110G/132P		110/132	220/260
DRS ES130(B)-3T-132G/160P		132/160	260/310
DRS ES130(B)-3T-160G/185P		160/185	310/340

Specifications

TECHNICAL SPECIFICATIONS

Power input	Rated input voltage	Single phase 220V±20% Three-phase 220V±20% Three-phase 380V±20%
	Rated input frequency	50~60Hz (±5%)
Power output	Rated output voltage	Not greater than the input voltage
	Rated output current	Inverter rated output current
	Overload capacity	G type machine: 150% rated current for 1 minute, 180% rated current for 10 seconds P type machine: 120% rated current for 1 minute, 150% rated current for 10 seconds
control function	control method	V/F control, vector control
	highest frequency	500Hz
	frequency resolution	Digital given: 0.1Hz Analog given: maximum frequency x 0.1%
	Speed range	1:200 (SVC)
	Steady speed accuracy	SVC: ±5% above 5HZ
	Torque boost	Fixed torque boost, arbitrary torque boost
	Acceleration and deceleration curve	Straight line, S-curve
	Acceleration and deceleration time	0.01S~600.00S

	Automatic voltage adjustment	When the grid voltage changes, it can automatically keep the output voltage constant
	Overcurrent, voltage stall	Automatically limit current and voltage during operation to prevent frequent overcurrent and overvoltage tripping.
	DC braking	DC braking frequency: 0.10Hz~60.00Hz Braking time: 0.00S~30.00S Braking action current value: 0.00%~150.00%
Peripheral interface	External power supply	10V/10mA 24V/150mA
	digital input	6 digital programmable input terminals
	Digital output	1 programmable Y1 terminal output, 1 programmable electrical appliance output R1
	Analog input	AL1:0~10V voltage input AL2:0~10V/0~20mA input
	Analog output	0~10V/0~20mA output
	485 Communication	Support standard Modbus communication protocol
operating keyboard	LED display	5-digit digital tube display
	button	8 operating buttons
Protect	failsafe function	Input phase loss, output phase loss, overcurrent protection, overvoltage protection, undervoltage protection, Overheating protection, overload protection, etc.

environment	Installation place	Indoors, away from direct sunlight, dust, corrosive gases, flammable gases, Oil mist, water vapor, dripping water or salt, etc.
	Altitude	Below 1000 meters
	ambient temperature	-10°C ~ +40°C

Features

PRODUCT FEATURES



- **01**

Using a dedicated motor control chip and an advanced optimized magnetic flux vector control algorithm, the operating characteristics are better;

- **02**

Standard LED keyboard, multi-channel monitoring parameters can be flexibly set; standard built-in braking unit, energy-consuming braking starting voltage and braking action ratio can be flexibly adjusted as needed

- **03**

6 programmable multi-function input terminals, 2 programmable multi-function open collector outputs, 1 programmable relay output;

- **04**

2 analog signal (0 ~ +10V, 0 ~ 20mA) input channels, 1 voltage analog signal output channel;

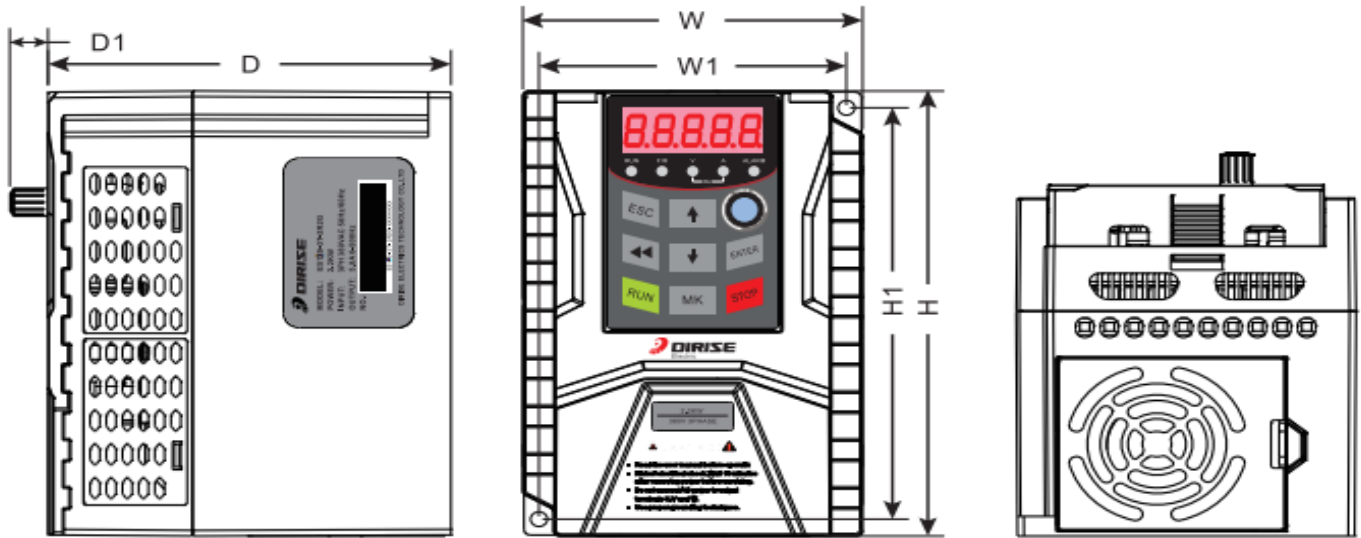
The external terminals are optional for 7-speed and programmable multi-speed operation; the standard enhanced PID regulator facilitates users to perform closed-loop control of temperature, pressure, flow, etc.;

- **06**

The standard RS485 interface is optional, which can easily connect PLC, industrial computer and other industrial control equipment to the inverter, and can also realize the interlocking operation of multiple inverters;

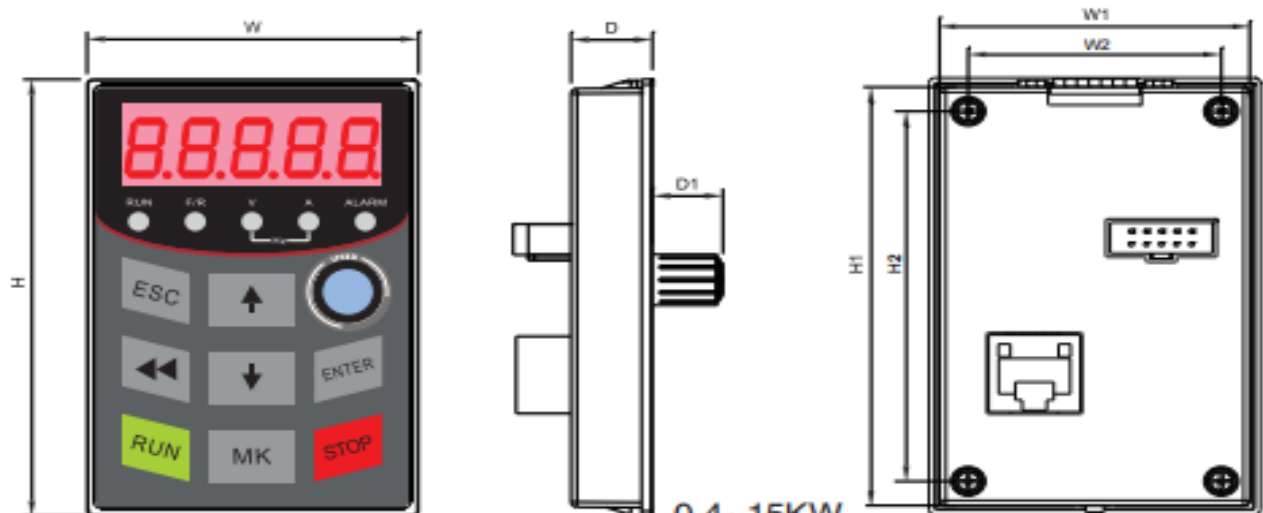
Wiring diagram/ dimensions

WIRING DIAGRAM / SPECIFICATION AND SIZE

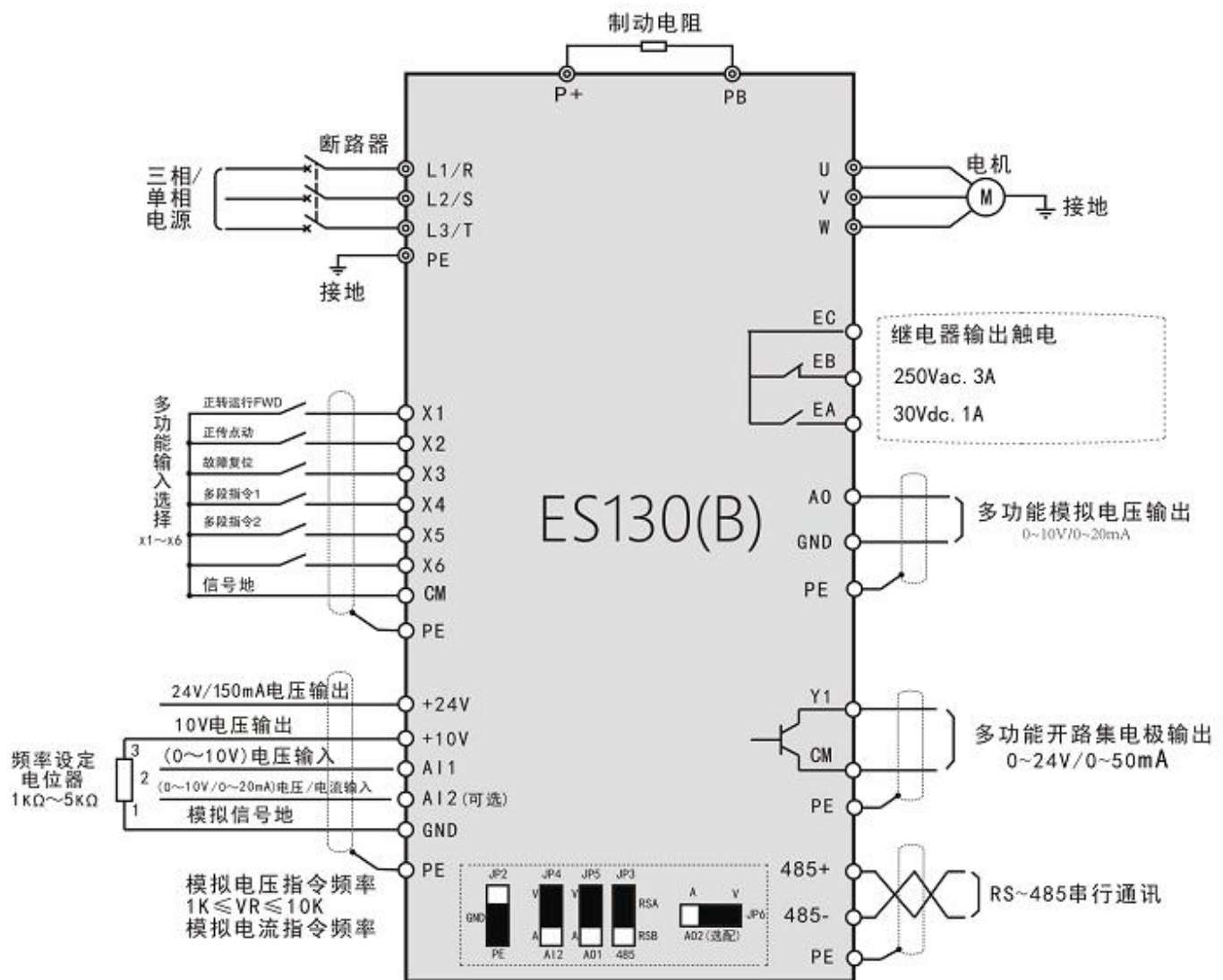


0.4KW-15KW

	W	W1	W2	H	H1	H2	D	D1
(mm)	55.0	51.6	42.0	85.0	81.6	72.0	13.5	11.0



0.4~15KW



- 注： 1 [] 表示采用屏蔽线配线
 2 ⊙表示主回路端子,○表示控制端子
 3 GND与CM共地

Specifications

SPECIFICATION PARAMETERS

Inverter model	Voltage level	W	W1	H	H1	H2	D	Installation hole diameter (mm)
DRS ES130(B)-2S-0R4G-SD DRS ES130(B)-2S-0R7G-SD DRS ES130(B)-2S-1R5G-SD DRS ES130(B)-2S-2R2G-SD DRS ES130(B)-2S-0R4G DRS ES130(B)-2S-0R7G DRS ES130(B)-2S-1R5G DRS ES130(B)-2S-2R2G	Single phase 220V	105	95	158	146		125	5.0
DRS ES130(B)-2S-4R0G		140	124	225	209		154	5.0
DRS ES130(B)-2T-0R4G-SD DRS ES130(B)-2T-0R7G-SD DRS ES130(B)-2T-1R5G-SD DRS ES130(B)-2T-2R2G-SD DRS ES130(B)-2T-0R4G DRS ES130(B)-2T-0R7G DRS ES130(B)-2T-1R5G DRS ES130(B)-2T-2R2G	Three-phase 220V	105	95	158	146		125	5.0
DRS ES130(B)-2T-4R0G		140	124	225	209		154	5.0
DRS ES130(B)-2T-5R5G DRS ES130(B)-2T-7R5G		160	143	265	248		170	5.5
DRS ES130(B)-2T-011G		205	140	344	328	320	205	6.5
DRS ES130(B)-2T-015G DRS ES130(B)-2T-018G		230	200	445	434	425	215	6.5
DRS ES130(B)-2T-022G DRS ES130(B)-2T-030G		300	190	505	483	465	270	9.0
DRS ES130(B)-2T-037G DRS ES130(B)-2T-045G		340	220	600	585	570	305	9.0
DRS ES130(B)-2T-055G		380	220	680	665	645	305	9.0
DRS ES130(B)-2T-075G		480	390	870	845	810	385	13
DRS ES130(B)-3T-0R7G/1R5P-SD DRS ES130(B)-3T-1R5G/2R2P-SD DRS ES130(B)-3T-2R2G/4R0P-SD DRS ES130(B)-3T-4R0G/5R5P-SD		Three-phase 380V	105	95	158	146		125

DRS ES130(B)-3T-0R7G/1R5P DRS ES130(B)-3T-1R5G/2R2P DRS ES130(B)-3T-2R2G/4R0P							
DRS ES130(B)-3T-4R0G/5R5P DRS ES130(B)-3T-5R5G/7R5P DRS ES130(B)-3T-7R5G/011P	140	124	225	209		154	5.0
DRS ES130(B)-3T-011G/015P DRS ES130(B)-3T-015G/018P	160	143	265	248		170	5.5
DRS ES130(B)-3T-018G/022P DRS ES130(B)-3T-022G/030P	205	140	344	328	320	205	6.5
DRS ES130(B)-3T-030G/037P DRS ES130(B)-3T-037G/045P	230	200	445	434	425	215	6.5
DRS ES130(B)-3T-045G/055P DRS ES130(B)-3T-055G/075P	300	190	505	483	465	270	9.0
DRS ES130(B)-3T-075G/090P DRS ES130(B)-3T-090G/110P	340	220	600	585	570	305	9.0
DRS ES130(B)-3T-110G/132P	380	220	680	665	645	305	9.0
DRS ES130(B)-3T-132G/160P DRS ES130(B)-3T-160G/185P	480	390	870	845	810	385	13

Product application scope

PRODUCT APPLICATION SCOPE



Application occasions

Fans, water pumps, printing, packaging, assembly lines, spraying, food



Company strength

COMPANY STRENGTH



Strong manufacturer, guaranteed spot supply

It has an independent industrial park of 20,000 square meters, equipped with a complete set of semi-automatic and fully automatic production equipment and manual assembly lines such as automatic spraying machines, single board test benches, complete machine test benches, and conformal paint coating machines. The annual output can reach more than 300,000 units.

The five major finished product warehouses including Dongguan Main Warehouse, Shijiazhuang Warehouse, Jinan Warehouse, Wuxi Warehouse and Linyi Warehouse are stocked all year round, and also have raw material warehouses and spare warehouses to ensure fast and timely supply and on-time delivery.

Strictly control quality to ensure qualified products leave the factory

The main raw materials such as modules, chips, and optocouplers are from first-tier imported brands. They are fully inspected upon entering the factory and stored in our own raw material warehouse to ensure the compatibility of materials before mass use and to control product quality from the source.

The anti-static dust-free workshop strictly implements ISO9001, EU CE, and China 3C quality and safety management standards; it has a full set of testing equipment such as automatic complete machine testing, single board test benches, pulse group testing, and oscilloscopes. Each product has passed PCBA, high temperature Multiple tests such as aging, motor load, and load are carried out to ensure that the finished product leaves the factory with full marks.



Strong R&D team to reduce costs and increase efficiency for customers

A team of more than 20 people with more than 18 years of industry R&D experience can plan products in a market-oriented manner and conduct product research and development from aspects such as product function, performance, manufacturability, and maintainability to provide customers with cost-effective products and reduce customers' usage costs.

It has reached strategic cooperation with universities, research institutes, and domestic semiconductor and chip manufacturers, and established a joint R&D laboratory. It has successively obtained more than 100 product appearance and technology patent certificates such as the inverter appearance design and the inverter world technology product innovation award.

Strictly abide by commitments and reassure agents

Over the past 8 years, Derris has kept its promise and provided different policy support for agents and dealers at different levels. It will also provide greater protection for the rights and interests of partners with different agency models to ensure that there is no conflict between the rights and interests of agents. While the Derris brand has good reputation, it also protects the rights and interests of agents in different regions to a greater extent.



Mature service system allows you to have no worries

Cooperating channel partners, offices and specialized technical teams across the country regularly track customers and provide customers with products or technical solutions, online video debugging, on-site support and other services to meet customers' localized service needs.

The after-sales team responds quickly and provides 400-hour after-sales hotline service 24/7 to quickly solve customer problems.