

MINI VECTOR SERIES





Mini Vector Series Purpose

Mini vector series is our new design with the most compact size but good vector Control Mode, Can be easily tuned to simple speed control for 80% Motors, really cheapest price, and good function.. with 24 months warranty offered, it can almost match all customers' requests.



Power Rate	1 phase & 3 phase Input 3 phase output	220V (+-20%) 0.4KW~4.0KW	380V (+-20%) 0.4KW~15KW
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Best Solutions For Small Vector Series

Vector ControlPIDMulti-step Freq.ModBus

Over-voltage & Over-current stall controlTorque Boost

Wobble Frequency ControlSimple PLCFDT.....

Start Torque @0.5Hz100%

Overload Capability200%

Speed accuracy ±0.5%

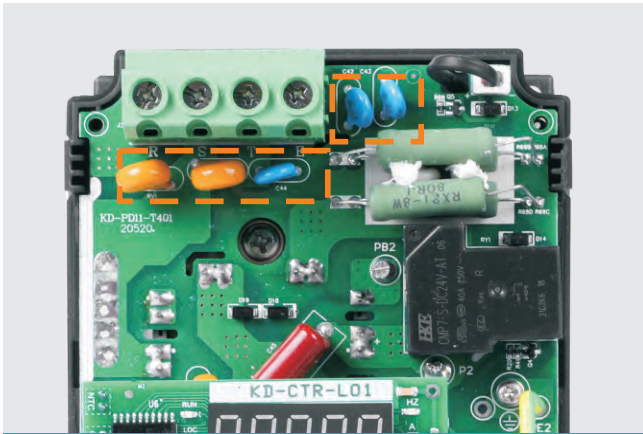
Ambient Temp °C40

Speed Regulation1:100

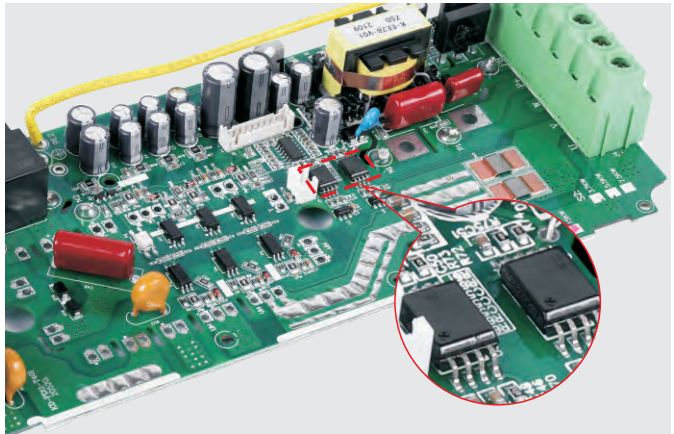
Multi-step speed max.16



REASONABLE STRUCTURAL DESIGN



EMC grounding design



Hall Chips Will Be Built In For All Series

- ✧ Independent grounding system selection switch (through the screw access or not to choose), easy to solve the problem of EMC interference and leakage current.
- ✧ Hall Chips Will Be Built In For All Series, Which Is Mainly Used For Heavy Loading And Over-Current Protection (95% Factory In China No install this in mini series).

With Hall Chip	Without Hall Chip
Over-Current Protection for 3 Phase for output Motor	Need Software to check Over-Current
—	Protection and only check out 2 phase for output Motor
Protetion Time For Over-Current < 0.001S	Protetion Time For Over-Current < 5~10S
Isolation of primary and secondary sides	X
Strong anti-interference	X
Can use for Vector Control	X



ADVANCED DESIGN

C3

◆ EMC Filter

C3 Level Filter Build-In Standardly
Better EMC Performance

IGBT

◆ IGBT Selection

Selection Of Large Margin
Current>2 Times of VFD Current

200%

◆ Overload Capacity

120% long time running without trip.
150% for 60 seconds
180% for 10 seconds

±15%

◆ Voltage Range

Compatible with ±15% input voltage
fluctuation, output voltage s table.

S Curve

◆ S Curve

S Curve Acceleration/Deceleration
Better Start /Stop Performance

Flying Start

◆ Flying Start Function

Restart The Running Motor Smoothly
No Current Surge
High Accuracy

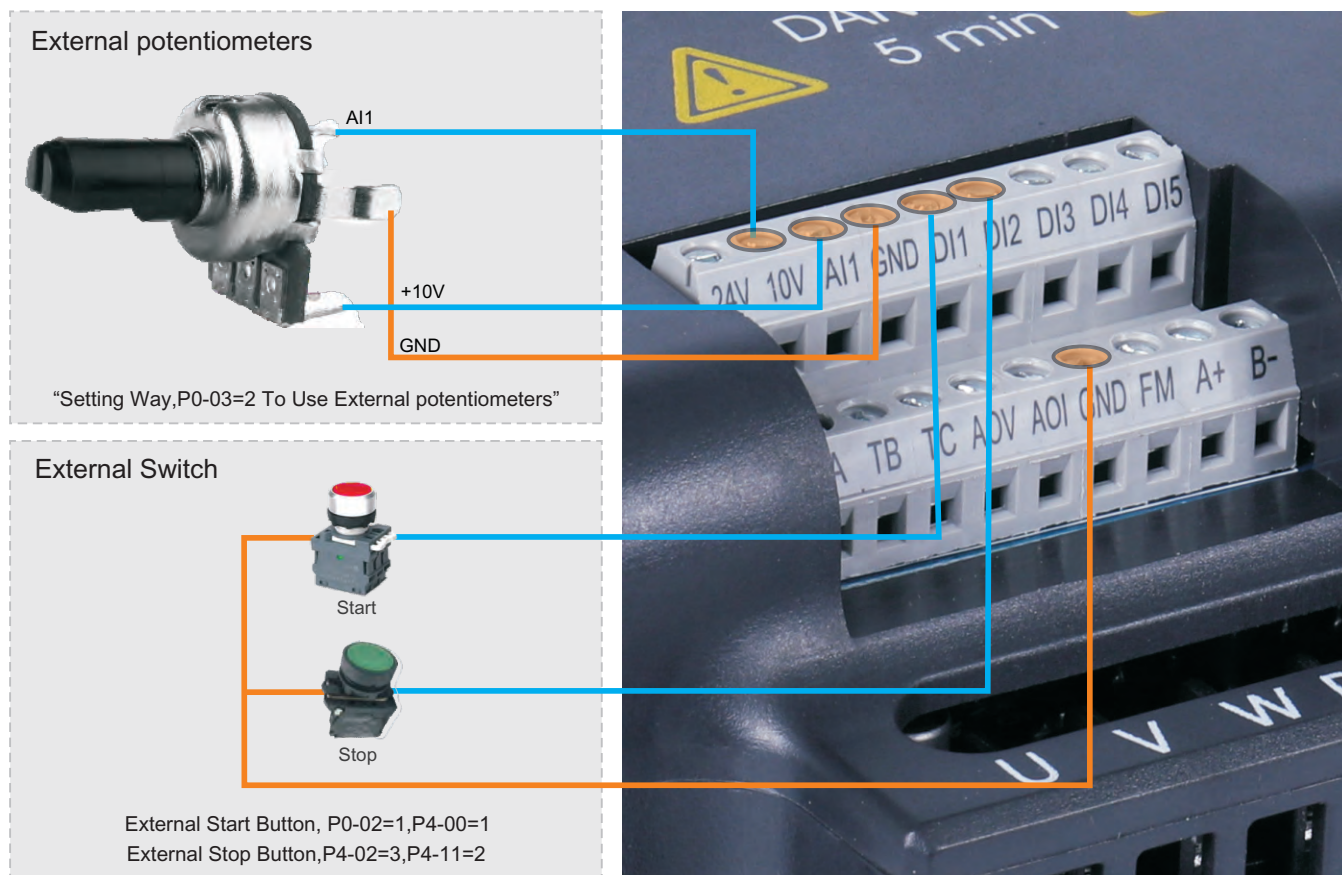
Prote tion

◆ Protection

Overcurrent, Overvoltage, PID feedback failure, Overheat, Undervoltage, The main contactor is abnormal, Motor overload, Fast protection, Unbalanced output, Frequency conversion overload, System abnormal, Motor detection abnormalOutput phase loss, Input phase loss, Short circuit protection of control board power supply.



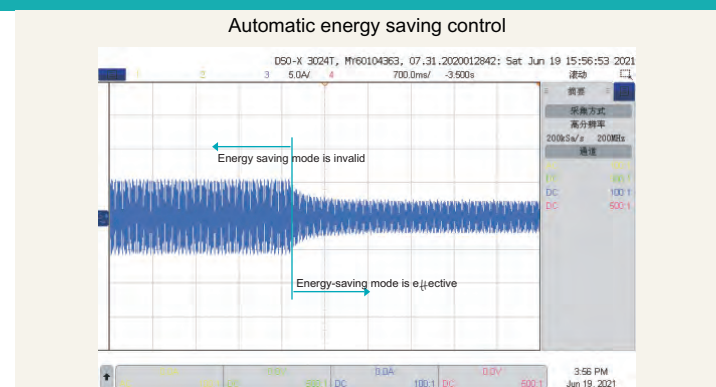
EASILY CONNECT WAY



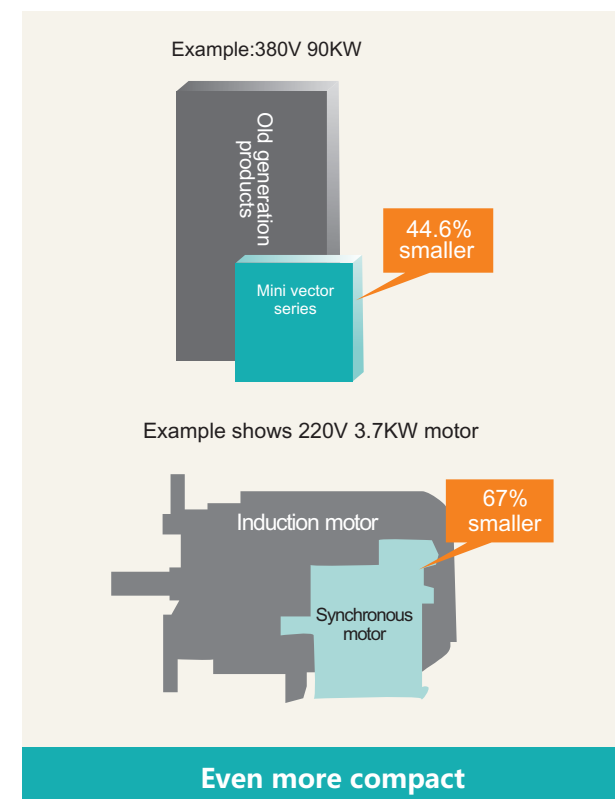
DRIVE DESIGN & FEATURES

Energy-saving operation of fans and pumps

- With excellent automatic energy-saving function, you only need to set the maximum energy-saving target, as long as the operation meets the energy-saving conditions, you can enter the automatic energy-saving state. By setting the VF function, one-to-multiple and long-distance control applications can be realized to meet the application of transformation occasions.



DRIVE DESIGN & FEATURES



- Continues to make applications even smaller by combining the compact designed drive with the light, efficient design of a synchronous motor.
- Use Side-by-Side installation for an even more compact setup.
- Finless models available.



- Independent air duct design, effectively preventing dust entering inverter, causing short-circuit and other faults and improving reliability;
- Use bigger air volume and long life cooling fan effectively reduces the internal temperature rise of the inverter and ensures reliable and stable operation of inverter.

Perfect protection system

- Designed for 10 years of maintenance-free operation.
- Cooling fan, capacitors, relays, and IGBTs have been carefully selected and designed for a life expectancy up to ten years.

※ Assumes the drive is running continuously for 24 hours a day at 80% load with an ambient temperature of 40°C.

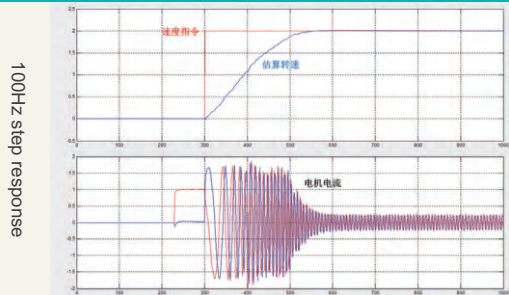




DRIVE DESIGN & FEATURES

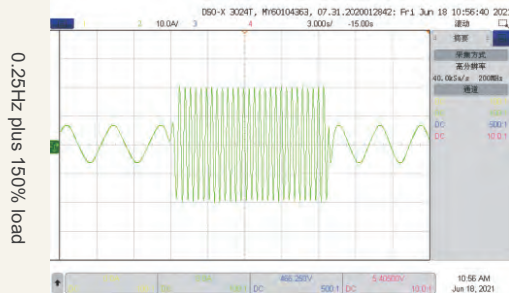
High speed accuracy and wide speed range

- ✧ **High speed accuracy and wide speed range:**
Steady speed accuracy: $\pm 0.5\%$ (SVC), $\pm 0.02\%$ (VC);
Speed range: 1:200 (SVC), 1:1000 (VC),
- ✧ **Heavy load overload capability:**
110% rated current for long-term stable operation;
150% rated current for 1 minute;
180% rated current 10s.



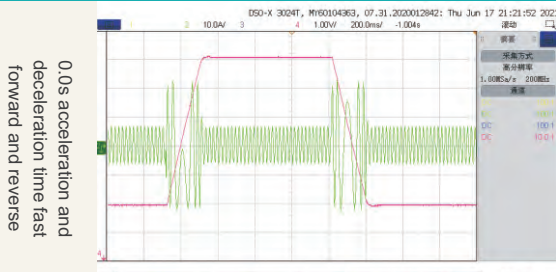
High torque in low speed, fast response

- ✧ **High torque in low speed, fast response Load capacity in low speed:**
VF: 180%@0.50Hz ;
SVC: 180%@0.25Hz ;
VC: 200%@0.00Hz.



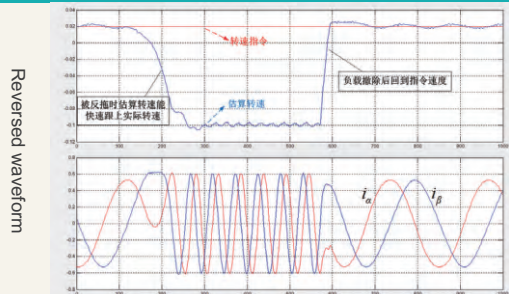
Rapid response to impact loads

- ✧ When it meets with sudden load change, inverter can quickly restore the speed, reduce the speed fluctuation, and ensure the production stability and high quality finished products.



Optimized SVC algorithm, stable operation in power generation

- ✧ At present, most of the inverters can not work stably under the SVC control mode (especially in the case of being reversed).
- ✧ Mini vector series can run very well, and it achieves great convenience in some special applications (such as tension control in rewinding and winding).



SPECIFICATION

Input & Output

Input voltage	1AC 220~240V($\pm 15\%$) 3AC 220~240V($\pm 15\%$) 3AC 380~460V($\pm 15\%$)
Input frequency	50Hz/60Hz $\pm 5\%$
Output voltage	0~ input voltage, deviation $< \pm 3\%$
Output frequency	0~ 600Hz

Control Characteristics

Control mode	V/f control Sensor-less vector control Torque control
Speed accuracy	$\pm 0.5\%$ (V/f) $\pm 0.2\%$ (SVC)
Speed fluctuation	$\pm 0.3\%$ (SVC)
Torque response	$< 10\text{ms}$ (SVC)
Starting torque	0.5Hz : 150% (V/f) 0.25Hz : 180% (SVC)
Overload capability	150% Rated Current 60s 180% Rated Current 10s 200% Rated Current 1s
Simple PLC Multi-step speed	16 steps speed External digital signal control Internal clock
PID function	Standard build-in
Communication	Modbus

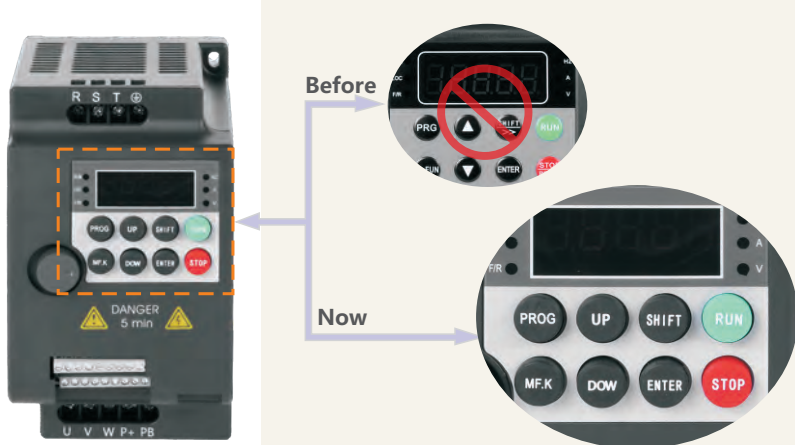
Featured Functions

Featured functions	Input & Output delay Flexible parameters display AVR (Automatic Voltage Regulation) Timing control, fixed length control, etc. Simple PLC, 16-steps speed control Torque control build-in S curve acceleration/deceleration Multi-functional programmable keypad V/f separated control
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Environment Limitation

Installation location	Without direct sunlight, free from dust, corrosive gases, oil mist, flammable gases, water vapor, water drop and salt, etc.
Altitude	0~ 2000m Derated 1% for every 100m when the altitude is above 1000meters
Ambient temperature	-10°C ~ 50°C (Output derated while the temperature is higher than 40°C)
Storage temperature	-20°C ~ +70°C
Relative humidity	5~ 95%, no condensation

Updated Keypad (More Convenient And Stable)



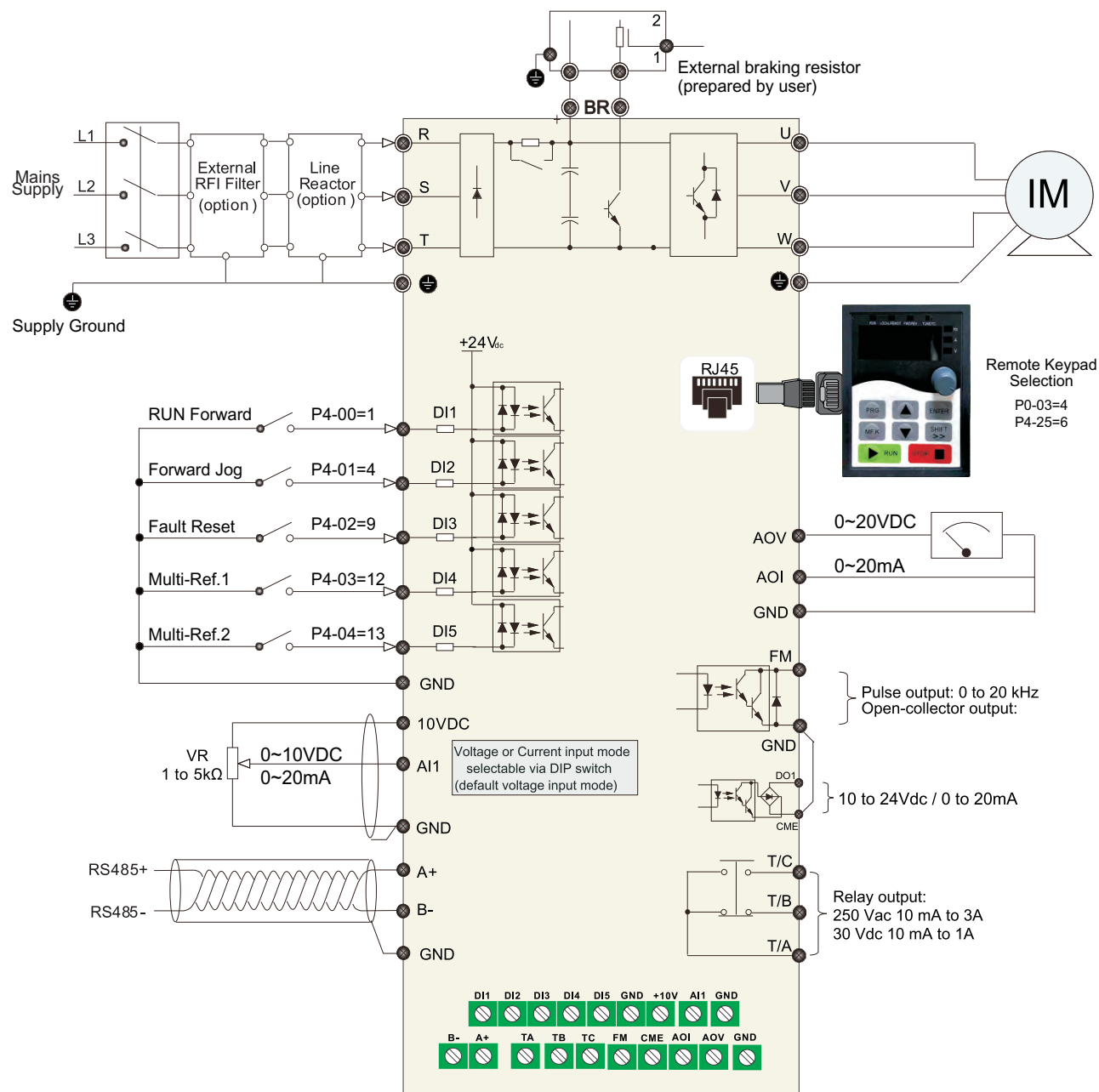
Cooperation brand



World-class components inside, stronger "bones", healthier "body".



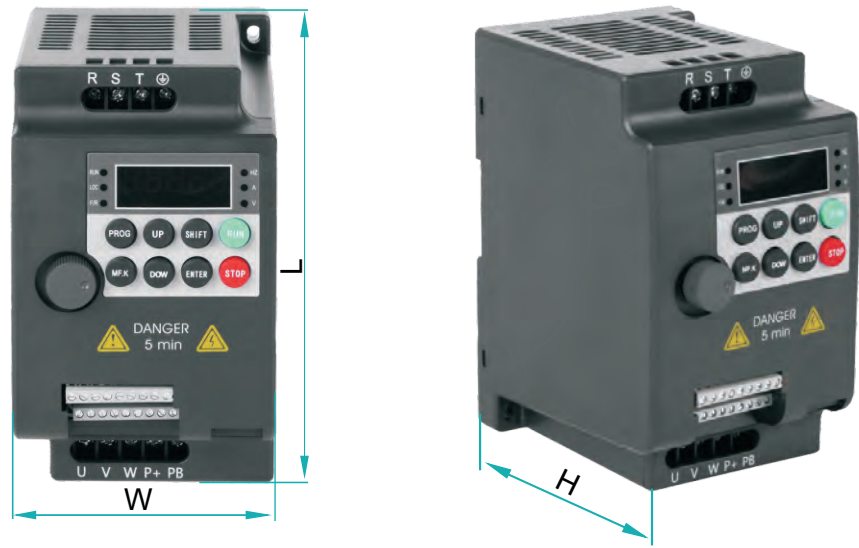
BASIC WIRING DIAGRAM



Terminal	Terminal Name	Terminal	Terminal Name
D1~D5	Digital Input X5	AI1	Analog Input X1
A,B	RS485 X1	TA1,TB1,TC1	Relay Output X1
X5	HDI (High Speed Pulse Input /Output) X1		



TECHNICAL SPECIFICATION



AC Drive Model	Power Capacity (KVA)	Rated Input Current(A)	Rated Output Current(A)	Dimensions(mm)		
				L	W	H
Input voltage: single-phase 220V Range: -15%~20%						
2S-0.4G	1.0	5.8	2.5	140	85	105
2S-0.7G	1.5	8.2	4	140	85	105
2S-1.5G	3.0	14.0	7	140	85	105
2S-2.2G	4	23.0	9.6	140	85	105
2S-4.0G	6.6	39.0	16.5	240	105	150
2S-5.5G	8	48.0	20	240	105	150
Input voltage: three-phase 380V Range: -15%~20%						
4T-0.7G	1.5	3.4	2.1	140	85	105
4T-1.5G	3.0	5.0	3.8	140	85	105
4T-2.2G	4.0	5.8	5.1	140	85	105
4T-4.0G	5.9	10.5	9.0	180	100	115
4T-5.5G	8.9	14.6	13.0	180	100	115
4T-7.5G	12	20	17	180	100	115
4T-11G	17.7	26	25	240	105	150
4T-15G	24.2	35	32	240	105	150