WIN-V63 Vector Control

Frequency Inverter

WIN-V63 Sensorless Vector Control Inverter:

Perfect combination of globally advanced inverter technology and years-accumulated application knowhow:

WIN-V63 Series inverter satisfies high performance requirements by using a unique control method to achieve high torque, high accuracy and super-silent operation control. It can challenge Emerson's EV3000, Siemens' Mircomaster 430, and Schneider's Altivar 31 with software and hardware improvements.

Extensive Functionalities:

- 10 master frequency reference sources and 10 auxiliary frequency reference sources for you option, which allows multiplexed control and fine adjustment to frequency source, additionally providing increasing control accuracy when one inverter is used to drive more than one motor.
- Using a pulse frequency reference source allows accurate synchronous control when one inverter is used to drive more than one motor.
- The digital signal input terminals can receive both dry-contact signals and digital level signals.
- Selection of positive/negative logic, input signal option.
- 42 functions for input terminals and 22 functions for output terminals;
- Sound fault protection function and automatic current-limiting function;
- 2 terminals for high frequency signal input (max.50KHz), 1 terminal for high frequency signal output (max. 50KHz);
- Inbuilt RS-485 communication port (MODBUS protocol);
- 28 fault protection measures solidly protect the inverter and peripheral equipment from being damaged;
- Frequency reference sources and Run command sources can be switched online, facilitating debugging and operation.
- Powerful overload capacity: 150% -- 2 minutes

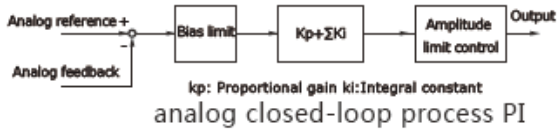
Excellent Control Performance:

- Stationary / rotating motor parameter autotuning;
- Achieve perfect current wave form and strong overload capacity through advanced vector control design;
- High torque at low frequency: In the open-loop control mode, the starting torque can realize 180% of rated torque at 0.5Hz.

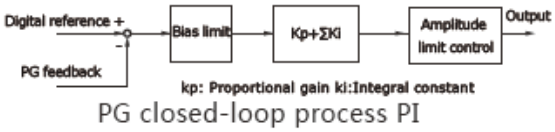
- High control accuracy: In the open-loop control mode, the speed control accuracy can hit 0.5%.
- Powerful load capacity: WIN-V63 inverter can achieve step startup, and fast torque response whenever the load suddenly accelerates or decelerates.

Inbuilt Closed-loop Process PI Control:

WIN-V63 inverter can realize analog closed-loop process PI and PG closed-loop process PI.

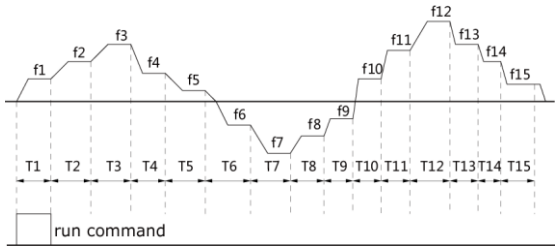


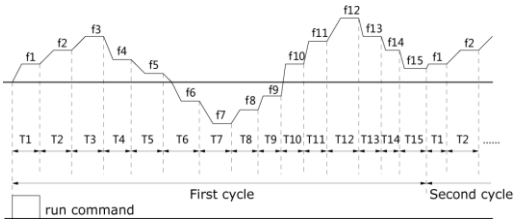
analog closed-loop process PI



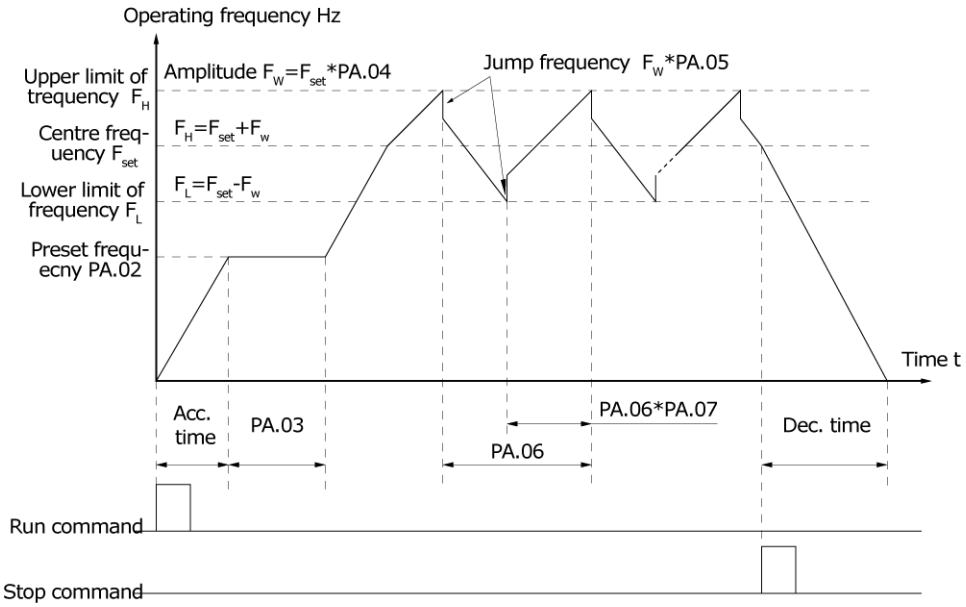
PG closed-loop process PI

Inbuilt PLC Operation: (up to 15-step PLC operation)

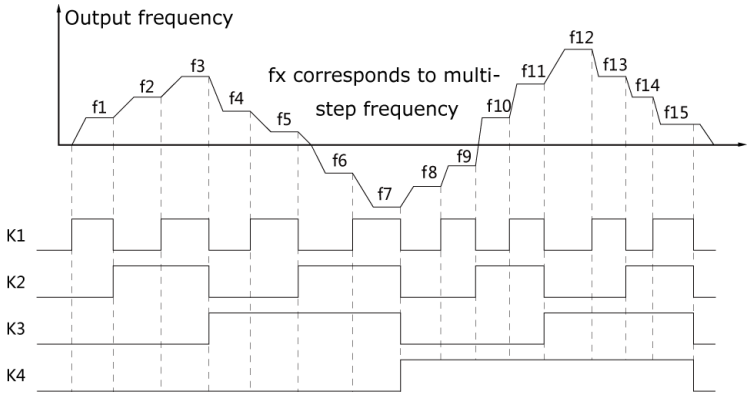




Inbuilt Wobble Operation



Inbuilt Multi-step Speed Operation (up to 16-step speed)



Keypad (Inbuilt as standard, extension is for option)

Inbuilt RS485 Communication Interface

WIN-V63 Series inverter is equipped with an 485 communication interface as standard, which uses standard MODBUS protocol.
We will provide you free of charge host PC software, facilitating convenient debugging.

45KW and below models are equipped with inbuilt braking units as standard.
93KW and above models are equipped with external DC chokes as standard.

Flexible Input /Output Terminals:

Signal classification	Terminal mark	Terminal name	Function descriptions
Digital input signal	FWD	Forward operation command	Bipolar input signal for option
	REV	Reverse operation command	Bipolar input signal for option
	X1	Multi-function input terminal 1	Bipolar input signal for option, programmable input
	X2	Multi-function input terminal 2	Bipolar input signal for option, programmable input
	X3	Multi-function input terminal 3	Bipolar input signal for option, programmable input
	X4	Multi-function input terminal 4	Bipolar input signal for option, programmable input. X4 and X5 are standard terminals for 5.5KW and above models; while for 3.7KW and below models, these two terminals can receive high frequency signals (up to 50KHz).
	X5	Multi-function input terminal 5	
	X6	Multi-function input terminal 6	Bipolar input signal for option, programmable input (Only for 5.5KW and above models)
	X7	Multi-function input terminal 7	Bipolar input signal for option, programmable input (Only available for 5.5KW and above models). X4 and X5 can receive high frequency signals (up to 50KHz).
	X8	Multi-function input terminal 8	
	P24	Internal 24V power source	To supply power to digital input, with max. output current of 200mA
	COM	Signal ground of digital input	Signal ground of digital input
Digital output signal	Y1	Multi-function output terminal 1	Programmable output
	Y2	Multi-function output terminal 2	Programmable output (Only available for 5.5KW and above models)

	DO	Multi-function high speed pulse output	Programmable output, with max. frequency up to 50KHz
Relay output	RA/RB/RC	Programmable relay output	Contact capacity: 250VAC /3A, or 30VDC/1A; programmable output
Analog input	AI1	Analog input signal 1	0~10V
	AI2	Analog input signal 2	0~10V /0~20mA for option
Analog output	AO1	Analog output signal 1	0~10V /0~20mA for option; programmable output
	AO2	Analog output signal 2	0~10V /0~20mA for option; programmable output
Analog signal power source	10V	Analog signal 10V power source	Analog signal 10V power source, with max. current of 5mA
	GND	Analog signal ground	Analog signal ground
Communication interface	485+ /485-	485 communication interface	485 differential signal positive/ negative port
Earthing terminal	PE	Earthing terminal	Shielded earthing terminal

WIN-V63 Technical Specification:

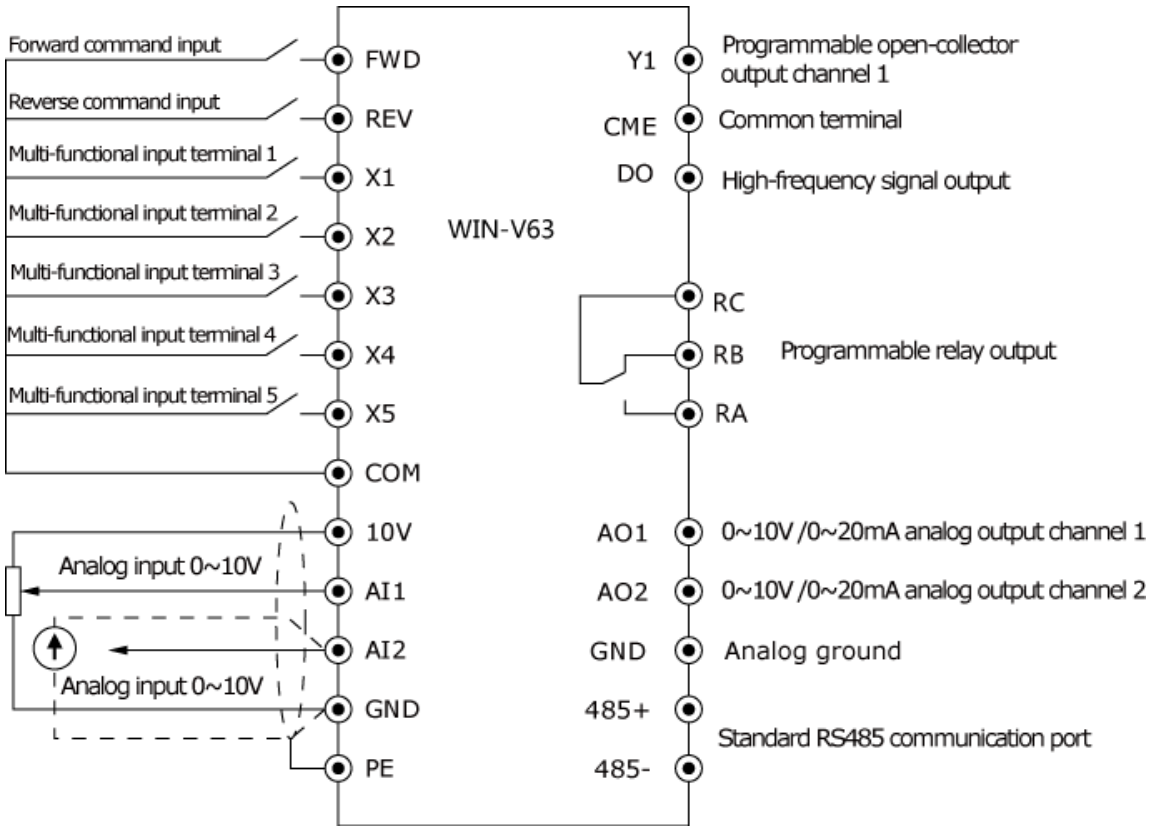
Item	Specifications
Rated voltage/frequency	Single-/Three-phase: 220~240V, 50Hz/60Hz; Three-phase: 380~440V, 50Hz/60Hz
Allowed fluctuation	Voltage fluctuation: ±10% Voltage unbalance rate: <3% Frequency fluctuation: ±5%
Output voltage	Three-phase: 0~220V Three-phase: 0~380V
Output frequency	0~400.00Hz
Overload capacity	150%: 2 Min; 180%: 10s
Control mode	Open-loop vector control; V/F control
Run command sources	Keypad; External terminals, Host PC via serial port

Speed reference sources	Digital reference via Keypad; Analog reference; Host PC reference via serial port
Speed reference accuracy	Digital reference: ±0.01% (-10℃ ~ +40℃) Analog reference: ±0.05% (25℃±10℃)
Speed reference resolution	Digital reference: 0.01Hz Analog reference: 1/2000 of the max. frequency
Speed control accuracy	Open-loop vector control: 1: 100
Torque control response	Open-loop vector control: < 200ms
Starting torque	Open-loop vector control: 180% rated torque / 0.5Hz
Torque control accuracy	±5%
Reference voltage source output	1 port: +10V /5mA
Control voltage source output	24V /200mA
Analog input	2 ports: AI1 voltage: 0~10V AI2 voltage/current for option: 0~10V / 0~20mA DC
Analog meter output	2 ports: 0~10V / 0~20mA DC Voltage/current for option
Run command input	2 ports, FWD: forward operation REV: reverse operation
Programmable digital input	Totally 8 programmable digital signal input terminals (X1~X8). X7 and X8 can receive high speed pulse signal. Note: For 3.7KW and below models, there are totally 5 programmable digital signal input terminals (X1~X5), X4 and X5 can receive high speed pulse signal.
DO frequency signal output	1 port, High frequency signal output (programmable)
Open-collector output	2 ports - Y1 and Y2 (For 3.7KW and below models, only I port –Y1.)
Programmable relay output	I port – RA/RB/RC Contact capacity: 250VAC /3A or 30VDC/1A
Serial port communication	RS-485 interfaces: 485+, 485-
4-digit LED	It can display frequency reference, output frequency, output voltage, output current, motor speed, output torque, fault code, etc.
LED indicator	Parameter unit, RUN/STOP status, special status indication, Charge indicator
Ambient temperature	-10℃ ~ + 40℃, with fluctuation < 0.5℃/Min;

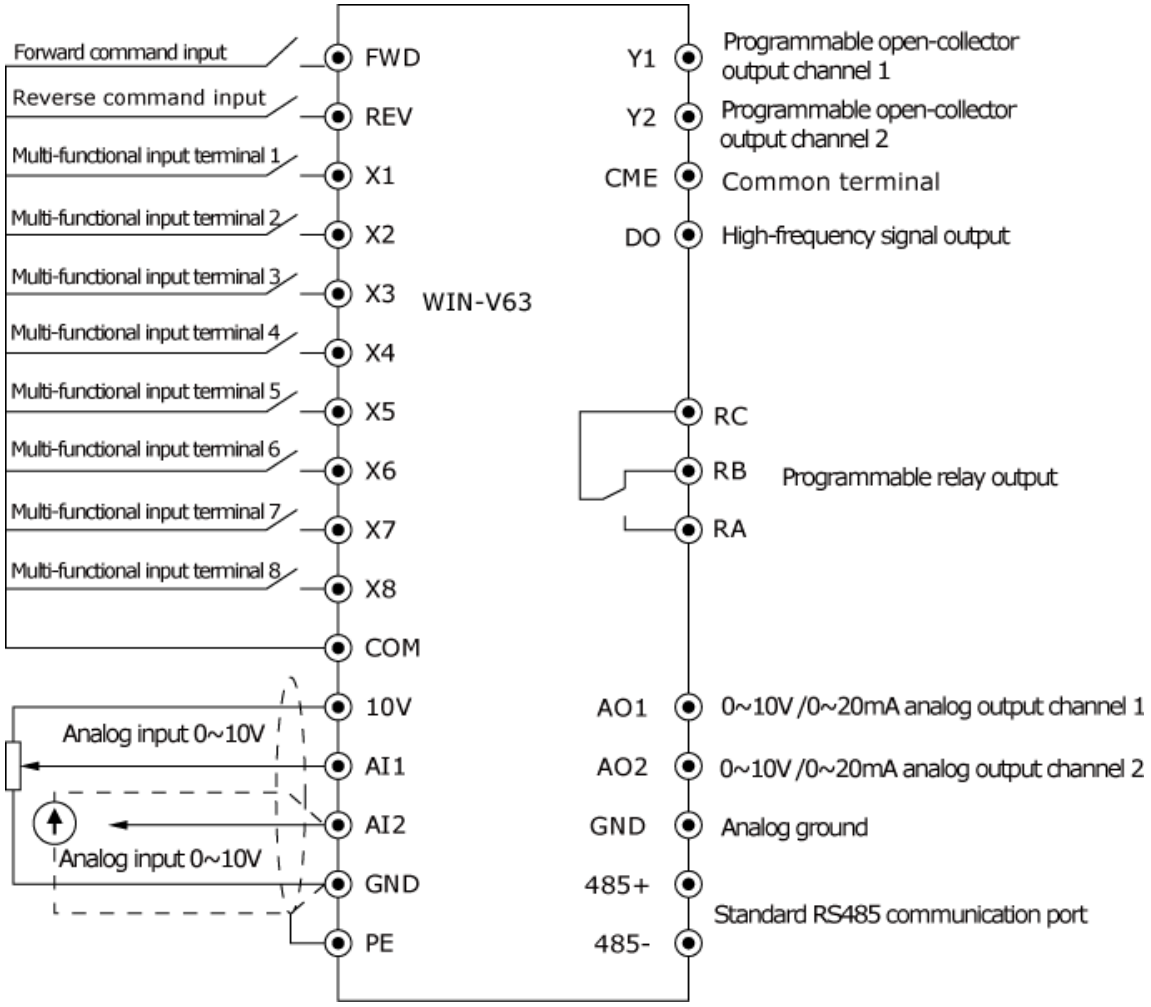
	Deration above 40℃. The output current should be derated by 2% with the increase of per 1 ℃. The allowed highest temperature is 50℃.
Humidity	< 95% RH, non-condensing
Oscillation	Less than 5.9m/ S2 (0.6g)
Storage temperature	-40℃ ~ +70℃
Enclosure rating	IP20
Cooling mode	Forced air cooling (natural cooling for 0.4KW or below models)

WIN-V63 Wiring Instruction:

Control signal wiring diagram for 3.7KW and below models



● *Control signal wiring diagram for 5.5KW and above models*



Scope of Application:

WIN-V63 Series inverter is a general purpose model. It is suitable for inertia load applications, potential load applications and other applications with high requirement on response time; It is also much applicable for pump and fan applications in power plants, iron & steel plants, mines, chemical plants, HVAC, etc, as well as mechanical drive control applications in the fields of textile, manufacturing, paper-making, wire-drawing, printing, etc.

WIN-V63 Code Description:

Model No.	Adaptable Motor	Voltage rating	Model No.	Adaptable Motor	Voltage rating
WIN-V63-0R2S2	0.25KW	single phase 220V AC	WIN-V63-030T4	30 KW	three phase 380V AC
WIN-V63-0R4S2	0.4KW		WIN-V63-037T4	37 KW	
WIN-V63-0R7S2	0.75KW		WIN-V63-045T4	45 KW	
WIN-V63-1R5S2	1.5KW		WIN-V63-055T4	55 KW	
WIN-V63-2R2S2	2.2KW		WIN-V63-075T4	75 KW	
WIN-V63-0R4T4	0.4 KW	three phase 380V AC	WIN-V63-090T4	90 KW	
WIN-V63-0R7T4	0.75 KW		WIN-V63-110T4	110 KW	
WIN-V63-1R5T4	1.5 KW		WIN-V63-132T4	132 KW	
WIN-V63-2R2T4	2.2 KW		WIN-V63-160T4	160 KW	
WIN-V63-3R7T4	3.7 KW		WIN-V63-200T4	200 KW	
WIN-V63-5R5T4	5.5 KW		WIN-V63-220T4	220 KW	
WIN-V63-7R5T4	7.5 KW		WIN-V63-250T4	250 KW	
WIN-V63-011T4	11 KW		WIN-V63-280T4	280 KW	
WIN-V63-015T4	15 KW		WIN-V63-315T4	315 KW	
WIN-V63-018T4	18.5 KW		WIN-V63-355T4	355 KW	
WIN-V63-022T4	22 KW		WIN-V63-400T4	400 KW	

External Dimension & Mounting Dimension:

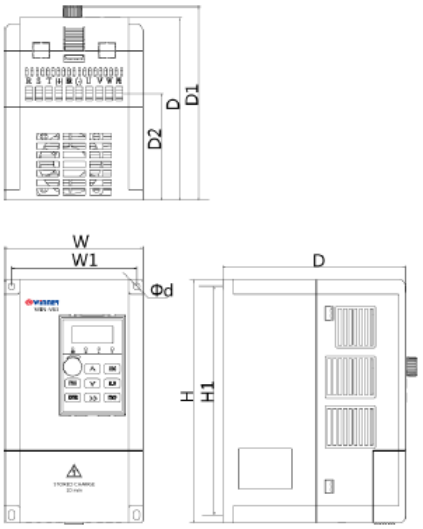


Fig.1

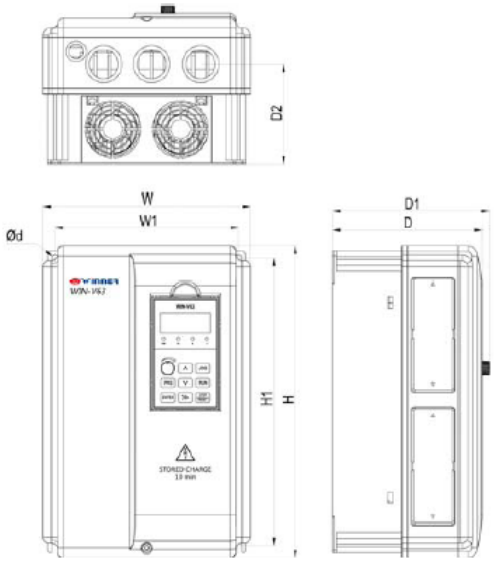


Fig.2

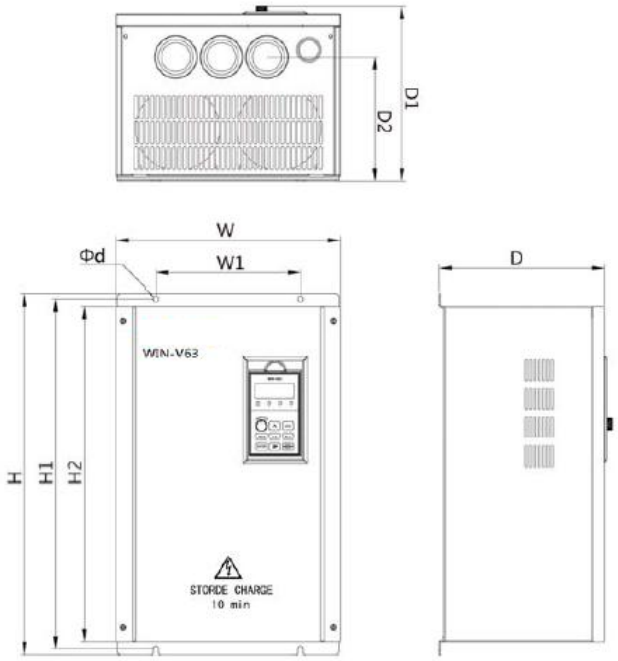


Fig. 3

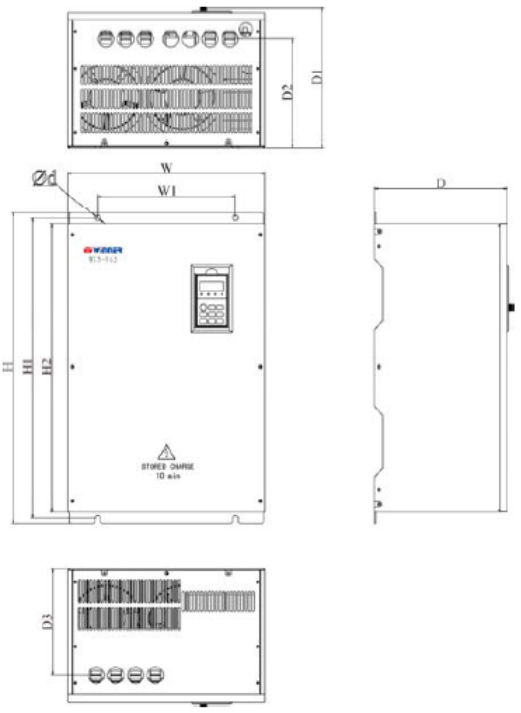


Fig. 4

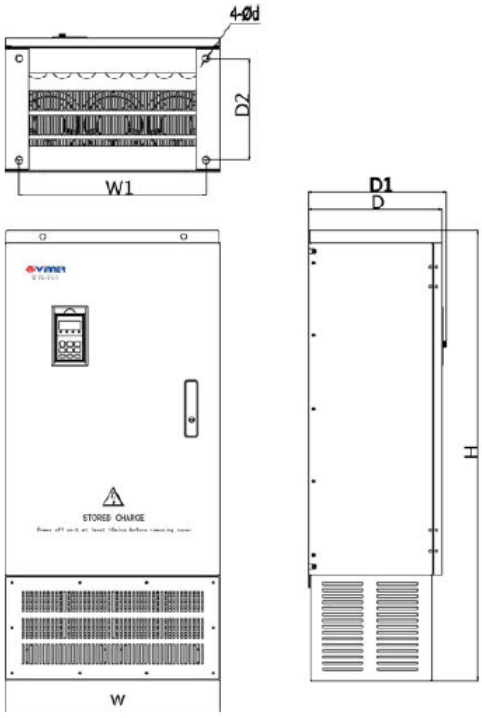


Fig. 5

The unit of size in the table is mm,and that of weight is kg.

Wall-mounted type:

Model: WIN-V63-	W	W1	W2	H	H1	H2	D	D1	D2	D3	d	Fig	Gross weight
0R2S2	96	86	/	160	149	/	114.5	123.1	56	/	5	1	1
0R4S2	96	86	/	160	149	/	114.5	123.1	56	/	5	1	1
0R7S2	105	95	/	185	174	/	139	147.6	81.4	/	5	1	2
1R5S2	105	95	/	185	174	/	139	147.6	81.4	/	5	1	2
2R2S2	115	105	/	220	209	/	154	162.5	81.4	/	5	1	2.2
0R4T4	105	95	/	185	174	/	139	147.6	81.4	/	5	1	2
0R7T4	105	95	/	185	174	/	139	147.6	81.4	/	5	1	2
1R5T4	105	95	/	185	174	/	139	147.6	81.4	/	5	1	2
2R2T4	115	105	/	220	209	/	154	162.5	81.4	/	5	1	2.2
3R7T4	115	105	/	220	209	/	154	162.5	81.4	/	5	1	2.2
5R5T4	215	190	/	320	295	/	155	163	103	/	7	2	5
7R5T4	215	190	/	320	295	/	155	163	103	/	7	2	5
011T4	250	225	/	320	295	/	175	183	123	/	7	2	6.5
015T4	250	225	/	320	295	/	175	183	123	/	7	2	6.5
018T4	310	200	/	500	485	465	230	240	170	/	7.5	3	20
022T4	310	200	/	500	485	465	230	240	170	/	7.5	3	20
030T4	355	240	/	600	580	553	250	260.5	184	/	10	3	29
037T4	355	240	/	600	580	553	250	260.5	184	/	10	3	29
045T4	355	240	/	600	580	553	250	260.5	184	/	10	3	29
055T4	430	300	/	680	655	629	290	300.5	233.5	232	12	4	48
075T4	430	300	/	680	655	629	290	300.5	233.5	232	12	4	48
090T4	475	350	/	754	729	703	290	300.5	233.5	232	12	4	66
110T4	475	350	/	754	729	703	290	300.5	233.5	232	12	4	66
132T4	530	350	/	880	850	819	330	340.5	256	276	14	4	91
160T4	530	350	/	880	850	819	330	340.5	256	276	14	4	91
200T4	680	500	/	1000	975	940	350	360.5	258.5	270	14	4	121
220T4	680	500	/	1000	975	940	350	360.5	258.5	270	14	4	121
250T4	680	500	/	1000	975	940	350	360.5	258.5	270	14	4	121

Cabinet Type:

Model: WIN-V63-	W	W1	W2	H	H1	H2	D	D1	D2	D3	d	Fig	Gross weight
132T4	530	420	/	1110	/	/	330	340.5	250	/	18	5	98
160T4	530	420	/	1110	/	/	330	340.5	250	/	18	5	98
200T4	680	600	/	1230	/	/	350	360.5	270	/	18	5	130
220T4	680	600	/	1230	/	/	350	360.5	270	/	18	5	130
250T4	680	600	/	1230	/	/	350	360.5	270	/	18	5	130