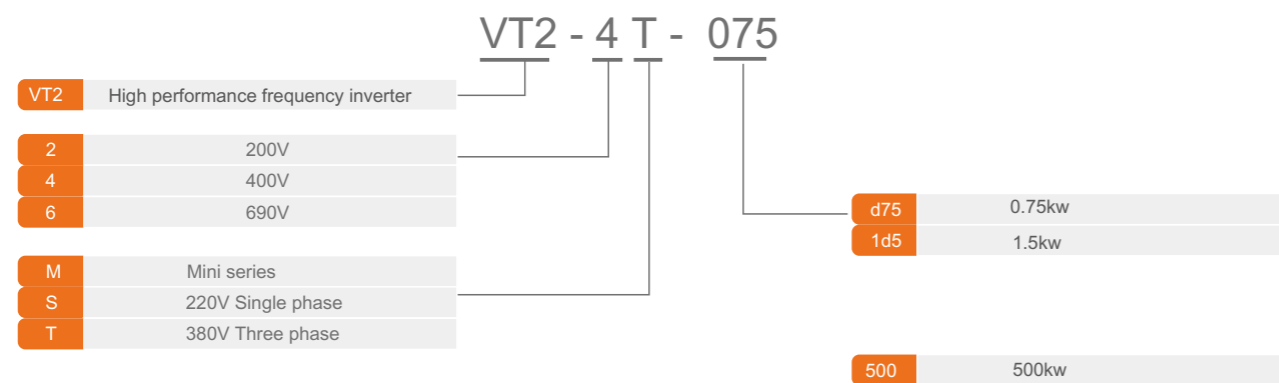


## VT2 Series Overview and Applications

### VT2 Latest series High performance frequency inverter 0.4KW-500KW



#### Product Model Description



#### Wide Applications

VT2 series arrange from 0.4KW to 500KW, can be widely used in light and heavy industry. it's suitable for most applications. Fan, water pumps, conveyor, compressors, HVAC, material handling, mining Industry, mixing, shop tools, extruding grinding, wire drawing, machine tools, food industry, chiller, packaging machines, processing machinery, printing machinery, cranes, rolling mills, paper, plastics and textile machines, machine tools, etc...



# VT2 Series Products description and specification

## Product Description and Features

### Product Description

Vt2 series frequency inverter is a high-quality and simple VF control inverter. It can run a wide range of speed and torque control in high precision by decoupling control of motor magnetic flux current and torque current torque: fast and accurately, High end hardware platforms, scientific production technology and complete testing equipment make the product more stable and reliable.

### Product Features

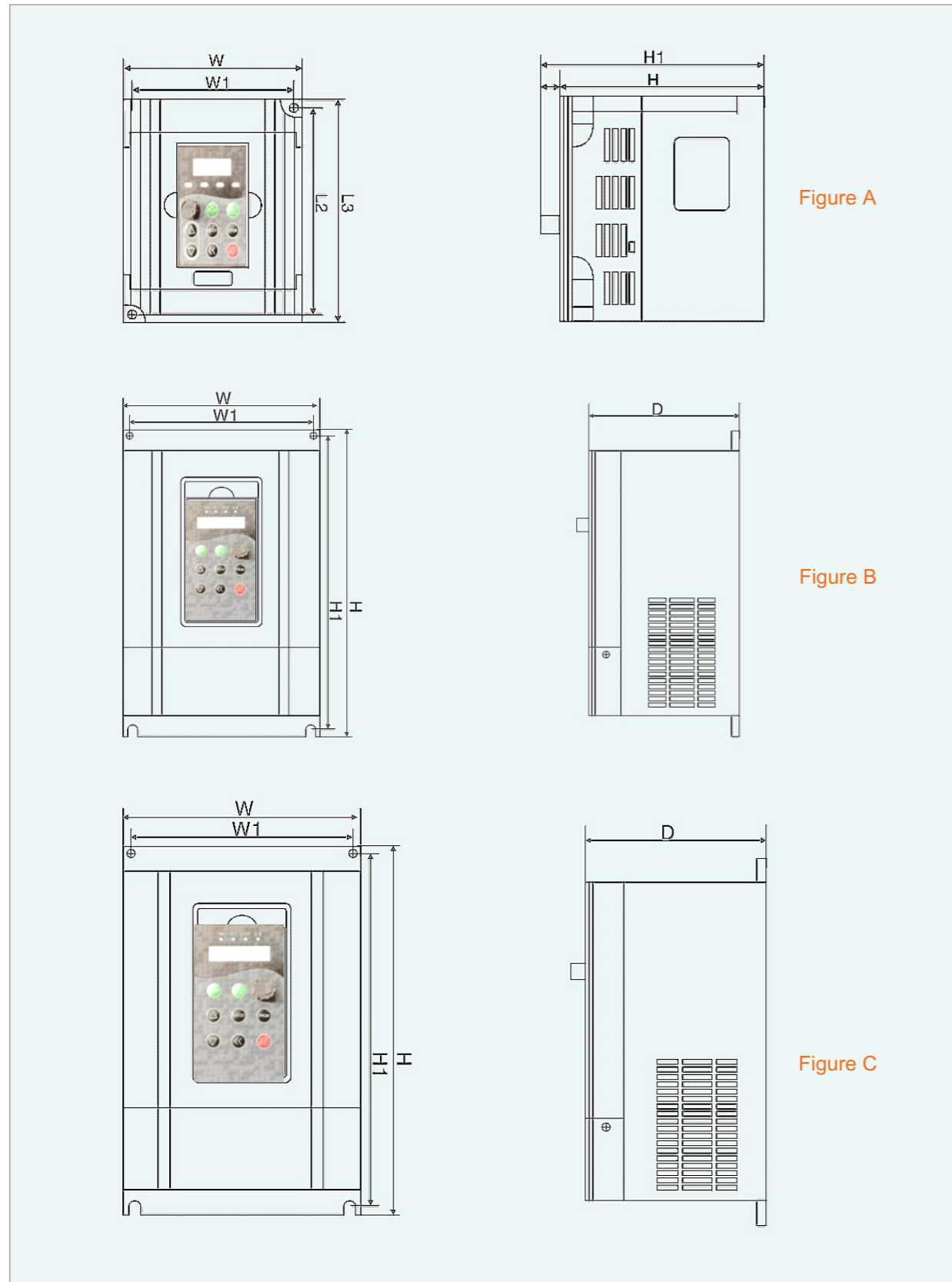
- Excellent control performance for motor at 0.25hz with 150% output torque; With Sensorless vector control for reliable start and precise control in different kinds of loads.
- Excellent torque control in open loop in winding and rewinding
- simple PLC and 16 phase multiple speed control
- Programmable delay relay function
- Variable selector and logic control for programming
- Multiple functional counter.
- Support 2 analog input 0-10V 4-20MA and two analog output as well as support IO expansion card
- Protections: Over-voltage stall, under-voltage, current limit, overload, overheat, over speed, over-voltage, etc.

## Technical Specification

Basic function	
Control system	High performance of current vector control technology to realize 3 phase asynchronous motor control
Drive performance	High efficiency driving for induction motor and synchronous motor
Maximum frequency	Vector control : 0~500Hz V/F control : 0~500Hz
Carrier frequency	0.5kHz~16kHz; the carrier frequency will be automatically adjusted according to the load characteristics
Input frequency resolution	Digital setting : 0.01Hz Analog setting : maximum frequency ×0.025%
Control mode	Open loop vector control(SVC) V/F control
Startup torque	G type : 0.5Hz/150%(SVC) ; 0Hz/180%(FVC) P type : 0.5Hz/100%
Speed range	1 : 100(SVC) 1 : 1000(FVC)
Speed stabilizing precision	±0.5%(SVC) ±0.02%(FVC)
Torque control precision	±5%(FVC)
Over load capability	G type : 150% rated current 60 seconds; 180% rated current 3 seconds; P type : 120% rated current 60 seconds; 150% rated current 3 seconds
Torque boost	Auto torque boost function ; Manual torque boost 0.1%~30.0%
V/F curve	Linear V/F, multi-point V/F and square V/F curve (power of 1.2, 1.4, 1.6, 1.8, 2)
V/F separation	In 2 ways : separation ,semi separation
Acc. / dec curve	Straight line or S curve acceleration and deceleration mode. Four kinds of acceleration and deceleration time. Acceleration and deceleration time range between 0.0s to 6500s.
DC brake	DC brake frequency : 0.00Hz to maximum frequency. Brake time : 0.0s to 36.0s, and brake current value : 0.0% to 100.0%.
Jog control	Jog frequency range : 0.00Hz~50.00Hz. Jog acceleration/deceleration time 0.0s~6500.0s.
Simple PLC and MS speed running	It can realize at maximum of 16 segments speed running via the built-in PLC or control terminal.
Built-in PID	It is easy to realize process-controlled closed loop control system
Auto voltage regulation (AVR)	It can keep constant output voltage automatically in the case of change of network voltage.

Over-voltage/current stall control	It can limit the running voltage/current automatically and prevent frequent over-voltage/current tripping during the running process
Quick current limit	Minimize the over-current fault, protect normal operation of the AC Drive
Torque limit & control	"Excavators" characteristics, automatically limit torque during operation, prevent frequent over-current tripping. Closed loop vector mode can realize the torque control.
Personalized	
Instantaneous stop non-stop	When instantaneous power off, voltage reduction is compensated through load feedback energy, which could make AC Drive keep running in a short period of time.
Rapid current limit	To avoid AC Drive frequent over-current fault.
Virtual IO	5 groups of virtual DI, DO to realize simple logic control
Timing control	Timing control function : set time range 0Min~6500.0Min
Multiple motor switch	4 groups of motor parameters, which can realize 4-motor switch control
Multi-threaded bus support	Support 4 kinds of field bus : RS485, CANlink, CANopen
Motor overheat protection	Select optional INDVS C1 analog input DI3x can accept the motor temperature sensor input(PT100, PT1000)
Multi-encoder support	Support difference, open collector, UVW, rotary transformer, sine cosine encoder etc.
Programmable PLC	Select optional user programmable card, which can realize secondary development. Programming mode is compatible with INDVS Company PLC.
Excellent backend software	Support AC Drive parameter operation and virtual oscilloscope function. AC Drive internal state graphic monitor can be realized through virtual oscilloscope.
Running	
Running command channel	Three types of channels : operation panel reference, control terminal reference and serial communication port reference. These channels can be switched in various modes.
Frequency source	There are totally eleven types of frequency sources, such as digital reference, analog voltage reference , analog current reference, pulse reference , MS speed, PLC, PID and serial port reference.
Auxiliary frequency source	11 kinds of auxiliary frequency source which can flexible achieve auxiliary frequency tuning, frequency synthesis
Input terminal	Standard : 6 digital input terminals, DI5 can be used as 100kHz high-speed input pulse. 3 analog input terminals which can be used as 0-10V voltage input or 0~20mA current input. Extended function : 4 digital input terminals;
Output terminal	Standard : 2 digital output terminals, FM is high-speed pulse output terminal (can be chosen as open circuit collector type), support 0~10kHz square wave signal; 1 relay output terminal; 2 analog output terminals, support 0~20mA output current or 0~10V output voltage; Extended function : 1 digital output terminal; 1 relay output terminal ; 1 analog output terminal, support 0~20mA output current or 0~10V output voltage.
Keyboard operation	
LED display	Realize parameter setting, status monitoring function
OLED display	Optional device, which can offer Chinese / English operating content
Keyboard potentiometer	Equipped with keyboard potentiometer or coding potentiometer
Parameter copy	Realize parameter rapid copy through OLED operation panel
Key lock & function selection	Realize button locking, define operation range for part of buttons to prevent operation fault.
Protection function	It can implement power-on motor short-circuit detection, input / output phase loss protection, over current protection, over voltage protection, under voltage protection, overheating protection and overload protection.
Optional parts	OLED operation panel, brake component, multi-function extended card 1.IO extended card 2.user programmable card, RS485 communication card, communication card, CANlink communication card, CANopen communication card, differential input PG card, UVW differential input PG card, rotating AC Drive PG card, OC input PG card.
Environment	
Using place	Indoor, and be free from direct sunlight, dust, corrosive gas, combustible gas, oil smoke, vapor, drip or salt.
Altitude	Below 1000m
Ambient temperature	-10 °C to +40 °C (Derating use when under ambient temperature of 40 °C to 50 °C)
Humidity	Less than 95%RH, without condensing
Vibration	Less than 5.9m/s <sup>2</sup> (0.6g)
Storage temperature	- 10°C~ + 50°C

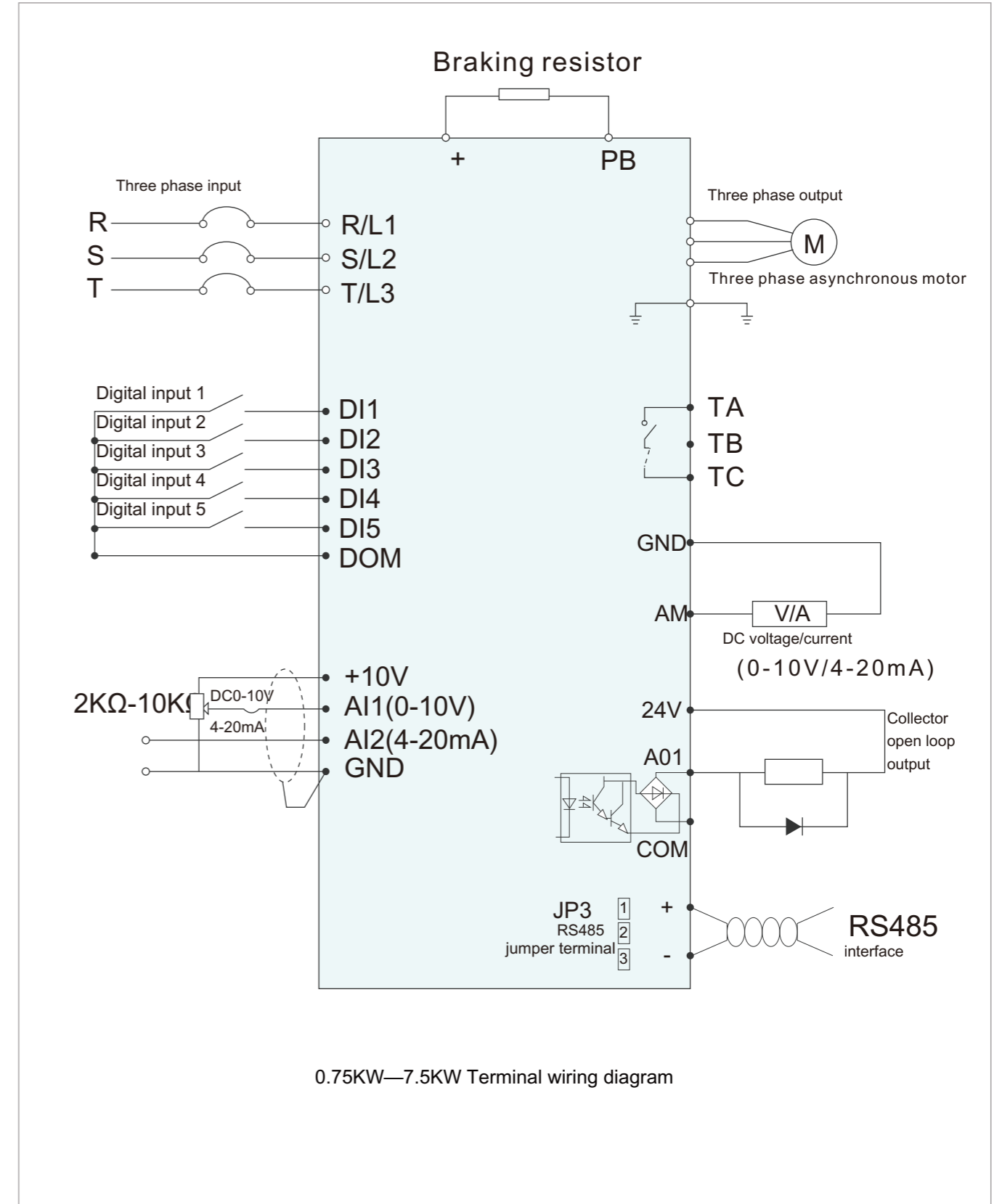
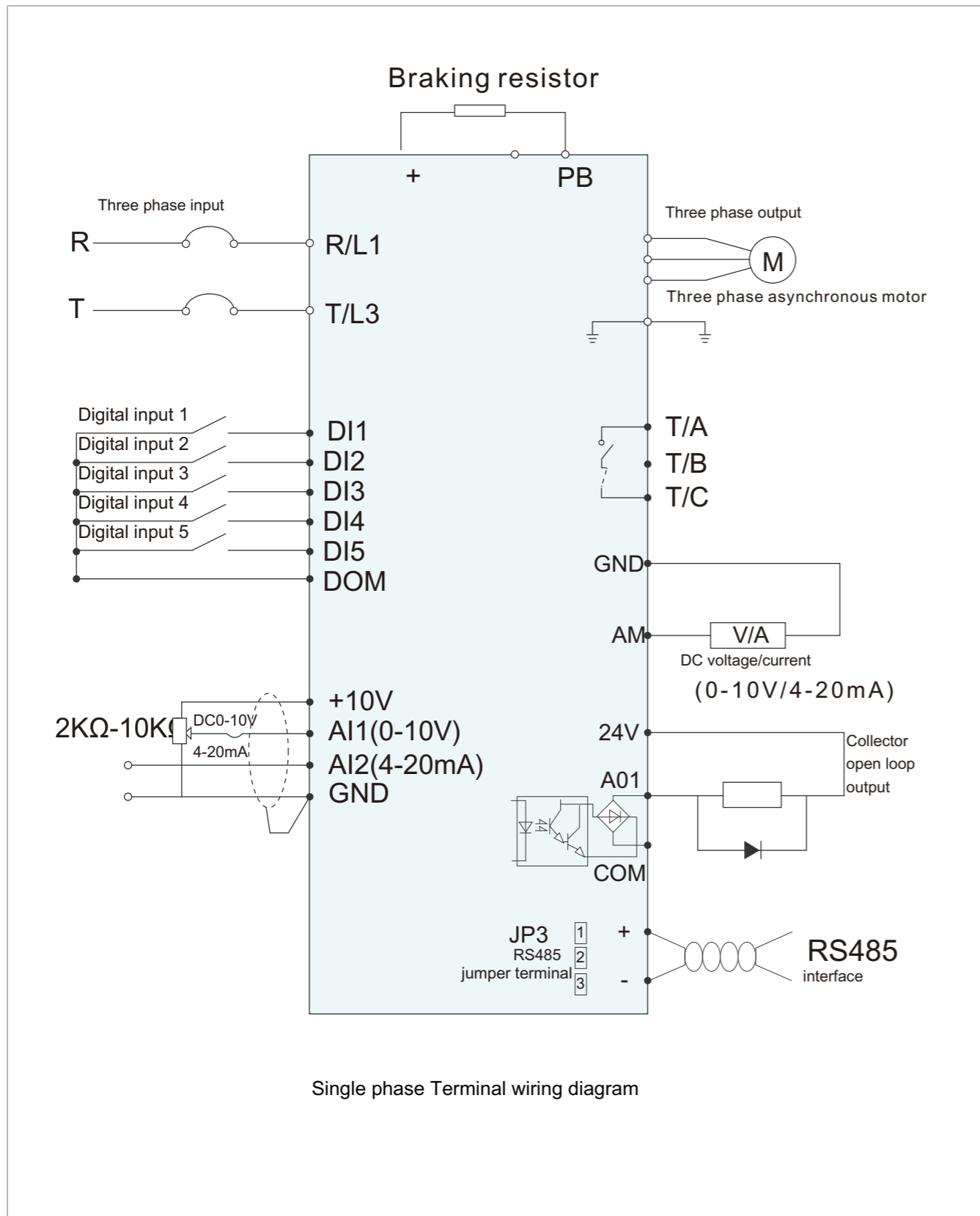
# VT2 Series Dimentions and Technical Data



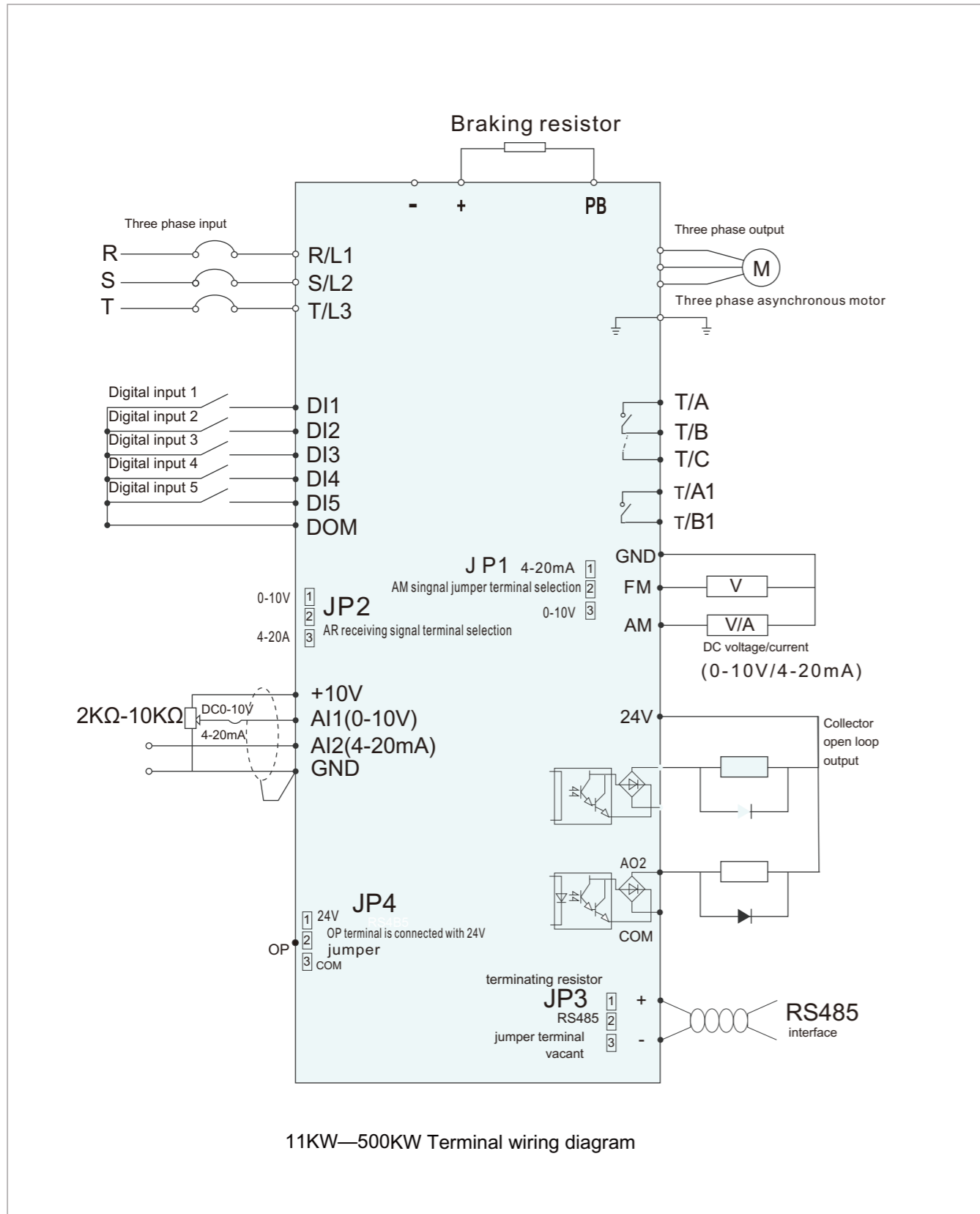
AC drive model	Motor adapter		Output Current (A)	Shape dimension(mm)			Installation dimension(mm)			Figure
	KW	HP		L1	L	W	W1	H1	Diameter	
VT2-2M-d04	0.4	0.5	2.5	132	142	85.5	74	113	ø2	Figure A
VT2-2M-d75	0.75	1	4	132	142	85.5	74	113	ø2	
VT2-2M-1d5	1.5	2	7	132	142	85.5	74	113	ø2	
VT2-2S-d75	0.75	1	4	143	152	101	92	117	ø2	
VT2-2S-1d5	1.5	2	7	143	152	101	92	117	ø2	
VT2-2S-2d2	2.2	3	10	143	152	101	92	117	ø2	
VT2-4T-d75	0.75	1	2.5	143	152	101	92	117	ø2	Figure B
VT2-4T-1d5	1.5	2	3.7	143	152	101	92	117	ø2	
VT2-4T-2d2	2.2	3	5.1	143	152	101	92	117	ø2	
VT2-4T-4d0	4	5	8.5	203	221.6	113	98.7	158	ø5	
VT2-4T-5d5	5.5	7.5	13	203	221.6	113	98.7	158	ø5	
VT2-4T-7d5	7.5	10	16	203	221.6	113	98.7	158	ø5	
VT2-4T-011	11	15	25	243	265	160	143	163	ø6.5	Figure C
VT2-4T-015	15	20	32	243	265	160	143	163	ø6.5	
VT2-4T-018	18.5	25	38	277	302.5	192	172	163	ø8.5	
VT2-4T-022	22	30	45	277	302.5	192	172	163	ø8.5	
VT2-4T-030	30	40	60	323	348.5	227	208.5	173	ø8.5	
VT2-4T-037	37	50	75	323	348.5	227	208.5	173	ø8.5	
VT2-4T-045	45	60	90	490	330.5	229.3	459	202.5	ø17	Figure C
VT2-4T-055	55	70	110	600	388.1	289.4	569	260	ø17	
VT2-4T-075	75	100	150	600	388.1	289.4	569	260	ø17	
VT2-4T-090	90	125	170	690	370	350	635.5	302	ø17	
VT2-4T-110	110	150	210	690	370	350	635.5	302	ø17	
VT2-4T-132	132	175	250	849	480	402	808.5	369	ø17	
VT2-4T-160	160	210	300	849	480	402	808.5	369	ø17	
VT2-4T-185	185	245	340	849	480	402	808.5	369	ø17	
VT2-4T-200	200	260	380	849	480	402	808.5	369	ø17	
VT2-4T-220	220	300	415	1060	650	392.5	1012	420	ø24	
VT2-4T-250	250	350	470	1060	650	392.5	1012	420	ø24	
VT2-4T-280	280	370	520	1060	650	392.5	1012	420	ø24	
VT2-4T-315	315	400	600	1361.5	818	404.5	1280	520	ø28	
VT2-4T-355	355	420	650	1361.5	818	404.5	1280	520	ø28	
VT2-4T-400	400	530	725	1361.5	818	404.5	1280	520	ø28	
VT2-4T-450	450	595	820	1361.5	818	404.5	1280	520	ø28	
VT2-4T-500	500	595	980	1361.5	818	404.5	1280	520	ø28	



# VT2 Series Terminal Wiring



# VT2 Series Terminal Wiring and Control Circuit Terminal



Description of Main Circuit Terminals of Single-phase AC Drive (0.4KW-1.5KW)

T/A	T/B	T/C	AO1	DI5	DI4	DI3	DI2	DI1	COM	GND	AI2	AI1	AM	10V
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Description of Main Circuit Terminals of Single-phase AC Drive (0.75KW-7.5KW)

T/A	T/B	T/C	DI1	DI2	DI3	DI4	DI5	AO1	COM	10V	AM	AI1	AI2	-	+	GND
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Description of Main Circuit Terminals of Single-phase AC Drive (11KW-500KW)

T/A1	T/B1	T/A	T/B	T/C	AO1	AO2	DI1	DI2	DI3	DI4	DI5	OP
COM	COM	24V	FM	AM	AI1	AI2	10V	GND	GND	-	+	

Type	Terminal sign	Terminal Name	Function Description
Power supply	+10V-GND	External terminal of 10V power supply	Provide +10V power supply for external units, with maximum output current of 10mA. It is generally used as the operating power supply for the external potentiometer. The potentiometer resistance range is 1kΩ to 5kΩ.
	+24V-COM	External terminal of 24V power supply	Provide +24V power supply for external units. It is generally used as the operating power supply for digital input/output terminal and the external sensor. Maximum output current : 200mA.
	SP	External power input terminals	When using external signal to drive DI1~DI6, SP should be connected to external power supply, connection with +24V as factory default.
Analog input	AI1-GND	Analog input terminal 1	1. Input voltage range : DC 0V to 10V /4mA to 20mA, chosen by jumper J3 on control board. 2. Input impedance : 22kΩ of voltage input, 500Ω of current input.
	AI2-GND	Analog input terminal 2	1. Input range : DC 0V~10V/4mA~20mA, chosen by jumper JP4 on control board. 2. Input impedance : 22kΩ of voltage input, 500Ω of current input.
	AI3-GND	Analog input terminal 3	1. Input range : DC 0V~10V/4mA~20mA, chosen by jumper JP5 on control board. 2. Input impedance : 22kΩ of voltage input, 500Ω of current input. 3. Factory default : J6 connected to 1-2 keypad keyboard potentiometer. If AI3 is needed to be connected, please jump 2-3. 4. When using extended function card AI3x, please take off J6.
Digital Input	DI1-SP	Digital Input 1	1. Optical coupling isolation, bipolar input. 2. Input impedance : 4.7kΩ. 3. Electrical level input range : 9V~30V.
	DI2-SP	Digital Input 2	
	DI3-SP	Digital Input 3	
	DI4-SP	Digital Input 4	1. Input impedance : 2.4 kΩ.
	DI5-SP	Digital Input 5	
	DI6-SP	Digital Input 6	
HDI	High-speed pulse input terminal	DI5 can be used as high-speed pulse input channel. Maximum input frequency : 100kHz.	
Analog output	AO1-GND	Analog output 1	The voltage or current output is determined by jumper J1 on the control panel. Output voltage range : 0V to 10V. Output current range : 0mA to 20mA.
	AO2-GND	Analog output 2	The voltage or current output is determined by jumper J2 on the control panel. Output voltage range : 0V to 10V. Output current range : 0mA to 20mA.
Digital Output	DO1-COM	Digital output 1	Optical coupling isolation, dual polarity open collector output. Output voltage range : 0V to 24V. Output current range : 0mA to 50mA.
	FM-COM	High-speed pulse output	When used as high-speed pulse output, maximum frequency can reach 100kHz. Function code P5.00 as constraints.