VEICHI

AC10-Series
General-purpose AC Drive

About us

Veichi （stock code：688698） has always committed to electric drive and industrial control since it's foundation. As an all-round company engaged in R & D, manufacturing and sales on high-tech industrial automation products, Veichi has been identified with several honorary titles such as Jiangsu Provincial-level Enterprise Technology Center, Jiangsu Private-own Technical Enterprise, Specialized and Sophisticated Enterprises That Produce New and Unique Products, Jiangsu Engineering Research Center, Jiangsu New and High-tech Enterprise and Suzhou City-level Gazelle Company (High Growth Enterprise) and has obtained the highest level of enterprise credit. Through years of independent research and development, Veichi now has been authorized with patents totaling 148 by the end of December, 2022, and among them 36 are for invention. Having established R & D center and manufacturing bases in Suzhou, Shenzhen and Xi'an, added with the wholly-owned subsidiary in India, Veichi now are dealing with customers from several nations and regions and has the full capability to provide safe, competitive and trustworthy products and services to customers from the larger world.

Veichi provides various products including drives from 0.4kW to 5,600kW, servo systems from 50W to 200kW, motion controllers, PLC and HMI, which are applied in all sorts of fields like lifting, mining, rail traffic, machine tools, compressors, plastic equipment, photo-voltaic pumping, construction, robots/mechanical arms, printing and packaging, chemical fibers for textile use, metallurgy, municipal works, petrol work and chemical engineering.

20 service stations and 182 contracted distributors cover 31 provinces on China mainland and Hong Kong, Macao and Taiwan regions, which guarantees a massive and efficient network for sales and services for our customers.

Veichi will continue to abide by the operation philosophy, that is, guided by market demand and driven by technological innovation, enlarge and enhance its core business like drives, servo systems, control systems and SIoTs. And Veichi will always be devoted to providing quality products and services for customers and further make contributions to the development of electric drive and industrial control.

2005
- Business started in Shenzhen
- First generation of drive on the market

2013
- Suzhou Veichi Electric Co., Ltd established
- First generation of servo system on the market

2014
- Suzhou Veichi first-stage project put into construction

2015
- Advanced integrated product development mode (IPD) initiated

2016
- Suzhou Veichi first-stage project put into operation
- First generation of motion control system on the market

2017
- Veichi honored with New High-tech Enterprise

2018
- Veichi honored with secondary enterprise of standardized production safety among Jiangsu province

2019
- Veichi restructured to a company limited by shares
- Indian subsidiary established
- Veichi honored with Jiangsu Province Enterprise Technology Center

2020
- A-share science and technology innovation board landing successfully
- Veichi honored with Jiangsu Province Specialized and Sophisticated Enterprise That Produces New and Unique Products
- Veichi honored with Jiangsu Province Engineering Technology Research Center of Medium& high Power Drives and Servo motion Controllers

2021
- Veichi subsidiary corporation established
- Veichi honored with national -level Specialized and Sophisticated Enterprise That Produces New and Unique Products

2022
- Xi'an R&D center established
- Veichi digital energy subsidiary corporation established
- Veichi honored with AAA certificate of integrating IT application with industrialization

2023
- Suzhou Veichi second-stage project put into operation
- Suzhou Veichi third-stage project put into construction
- Veichi medical facility subsidiary established

AC10 General-purpose AC Drive

AC10 series AC drive represent the newest technology from VEICHI's research, featuring their small size but high reliability and cost performance in the light of current market needs.

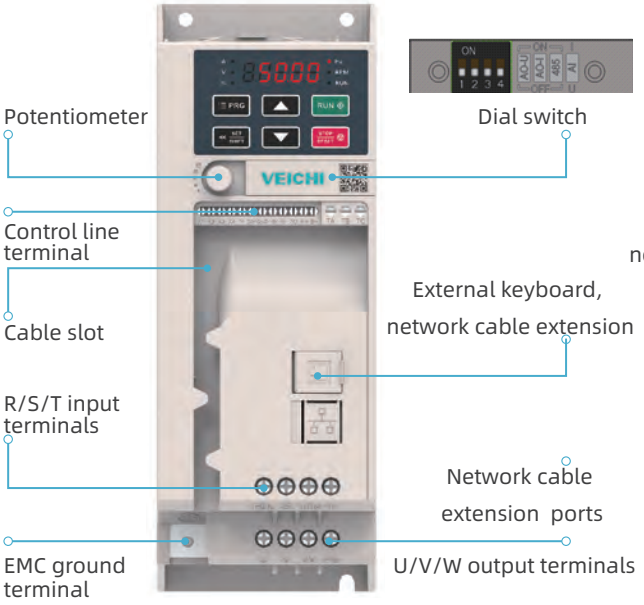
As a vector AC drive with book-like design, AC10 boasts easy installation, small volume, low temperature rise, high protection and favorable software performance among all of the other advantages.

With the advanced PLM R&D management system applied during the whole process, hardware, software, structure and testing process are all guaranteed since all the steps are three-dimensional,systematical and traceable. Every detail is meticulously developed thus our products are rigorous and refined.

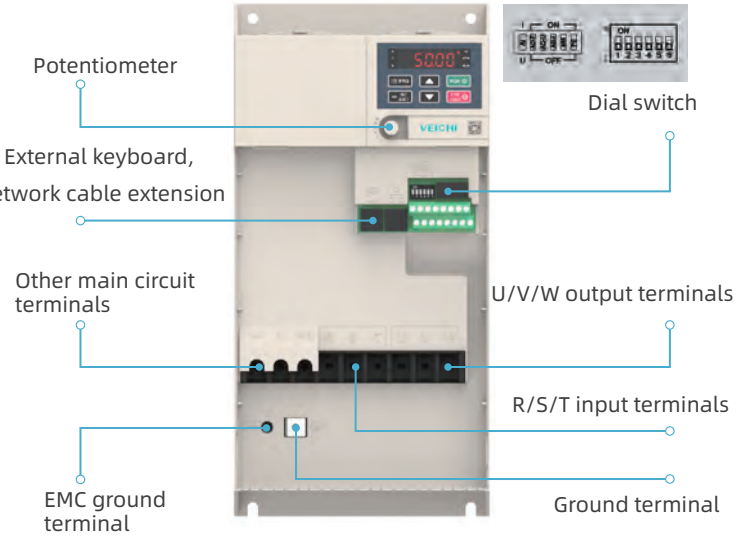
- Book-type design
- Various installation methods
- No derating while ambient temperature is up to 50℃
- Hidden wires for easy routes
- Isolated air ducts for both device heat dissipation and dust protection
- Over voltage & over current suppression protection and wave-by-wave current limit protection
- Convenient group network expansion
- Smaller size for more functions

Structural Features

0.4kW-5.5kW interface



7.5kW-22kW power band interface introduction



Installation methods

Support penetration installation (wall installation, embedded installation); Adapt to various installation environments

Side by side installation, no need to reserve clearance

Rail mounting , plug in then use it

Side mounting supported when vertical space is insufficient

Wiring terminals

The terminal layout of AC10 VFD is simple and beautiful, with a deep sense of craftsmanship.

A cable slot is designed beside the control line terminals so those wires can be routed within directly for clear and simple layout on both single and combined cabinets.

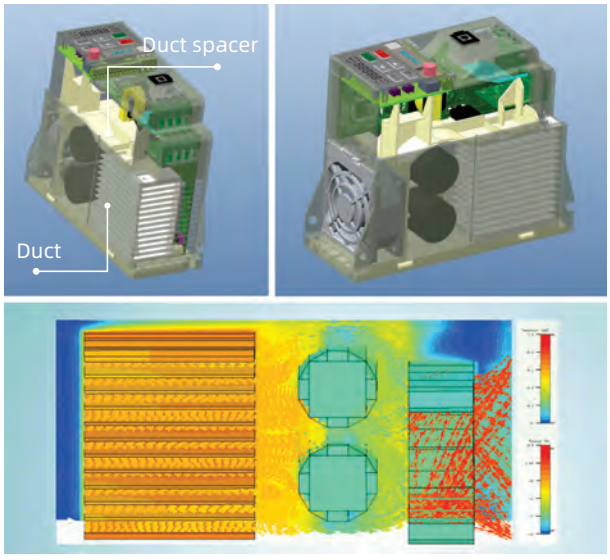
European-style terminals are used on the main circuit for higher safety and simpler wiring steps.

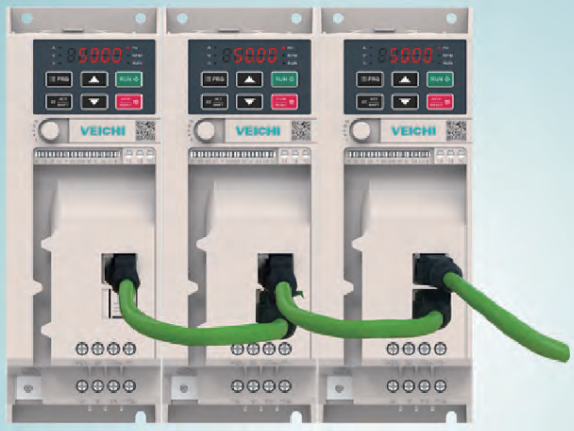
EMC and ground terminals, separated from terminals on the main circuit for safety, are used on products according to their power.

Protective designs

High protection:completely independent air ducts and scientific layout inside to meet the requirements of heat dissipation of high-power consumption components and dust proof of sensitive components;

High temperature resistance: scientific design of air dusts to quicken heat dissipation and slower temperature rise enabling usage under ambient temperature 50 ℃ without capacity reduction.





Communication extensions

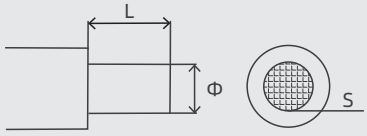
RS485 (standard) and CAN communication (OPT) are supported through the extension ports so customers can simply connect cables to them. All is convenient and clean.

Control terminal wiring specifications

Rational parameters	Power range	Strip length (mm)	Wire gauge (AWG)	Screw
Specification	0.4kW~5.5kW	4-5	20~14	M2
	7.5kW~22kW	6-7	26~14	M3

Main circuit terminal wiring specifications

Power range: 0.4kW ~ 5.5kW

	AC10 power level	Wire diameter (mm)	Wire cross-sectional area (mm)	Strip length (mm)
Main circuit terminal	0.4kW-2.2kW	0.25-2.5	0.05-5.2	7-8
	4kW-5.5kW	0.5-2.5	0.2-5.2	6-8
Wire stripping diagram				

Power range: 7.5kW~22kW

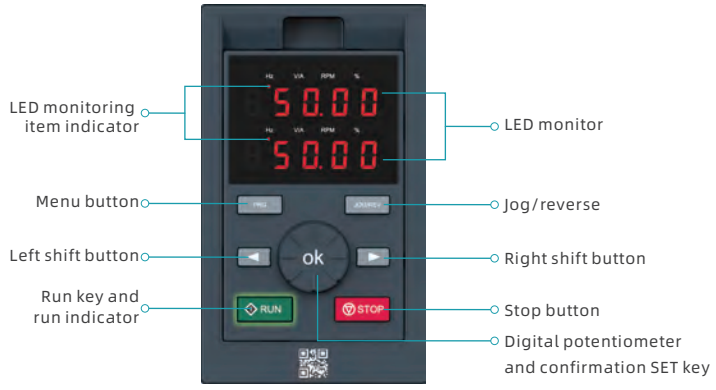
Model	Main circuit terminal screw specifications (mm)	Recommended fixed torque (N·m)	Recommended copper core cable specifications mm² (AWG)
AC10-T3-7R5G-B	M4	1.2 ~ 1.5	6mm²(9)
AC10-T3-011G-B	M4	1.2 ~ 1.5	10mm²(7)
AC10-T3-015G-B	M5	2 ~ 3	10mm²(7)
AC10-T3-018G-B	M5	2 ~ 3	16mm²(5)
AC10-T3-022G-B	M5	2 ~ 3	16mm²(5)

Keyboard operation

Keyboard operations of AC300/AC310 are still adopted here for quick start.
Extended keyboards are applicable too to AC310-series products.

All-in-one keyboard

One-line display external keyboard
(Single keypad opening size: 60*36mm)

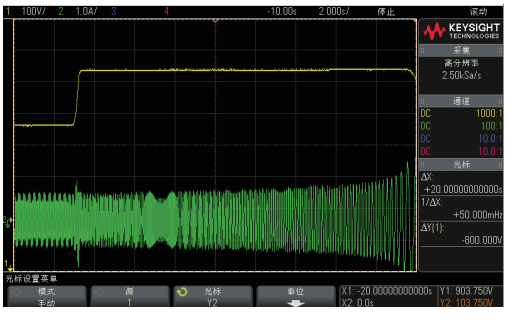


Dual-line display external keyboard
(Opening size: 119*70mm)

Performance Characteristics

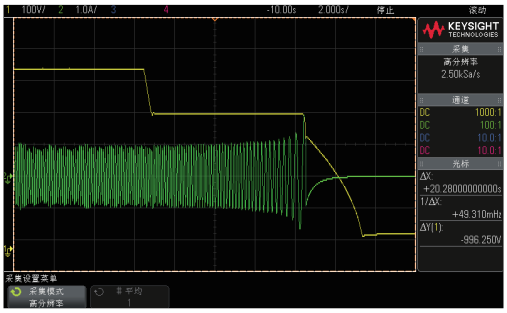
Over-voltage Suppression

When the bus voltage reaches or exceeds the bus overvoltage suppression point during the running ,it will automatically adjust the operating frequency to suppress the bus voltage rise, thus ensuring that the AC drive does not cause over-voltage protection.



Under-voltage suppression

When the AC drive suddenly loses power during running, it will automatically adjust the operating frequency after the bus voltage drops to the under-voltage suppression point, thus ensuring that the drive will not report under-voltage faults due to the low bus voltage in a short time.
When the power supply is restored within the valid period of under-voltage suppression, this drive can continue to operate normally .



Comprehensive fault protection

The AC10 fault protection is more comprehensive and detailed, and it can find the problem more quickly and accurately in the event of an error.

System fault	Drive overload	Non-zero sum of three phrases	Parameter copy fault	Brake unit fault	Parameter setting fault
Over current	CBC ontinuous occurs	Excessive U/V/W phase zero drift	Three phase output phase loss	Self-tuning fault	CPU timeout
Over voltage	Rectifier module overheat	Short circuit to ground	U/V/W phase output phase loss	Load protection	Parameter storage fault
Under voltage	Module overheat	Fan short circuit	Input phase loss	Excessive speed deviation	Communication fault
Motor overload	Terminlal start-up protection	PID feedback disconnection	External fault	Stall protection	.....

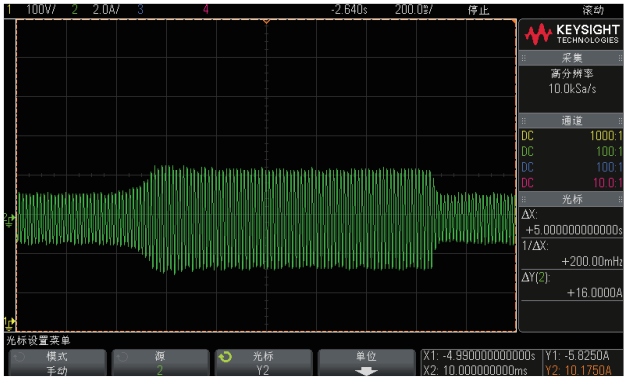
Excellent control performance

The AC 10 is a high-performance AC drive that supports PG-free vector control in addition to the universal V/F control mode.
It has excellent control performance and can adapt to more complex operating conditions.

Motor type	Asynchronous motors, synchronous motors
Motor control method	No PG V/F control, no PG vector control
Modulation method	Optimized space vector PWM modulation
Speed control range	No PG vector control, rated load 1:100
Steady-state speed accuracy	No PG vector control:≤2% Rated synchronous speed
Starting torque	No PG vector control : 150% rated torque at 0.5Hz
Torque response	No PG vector control : < 20ms
Frequency accuracy	Digital setting: Max. frequency×±0.1%; Analog setting: Max. frequency×±0.2%
Frequency resolution	Digital setting 0.01Hz; Analog setting:Max.frequency×0.05%

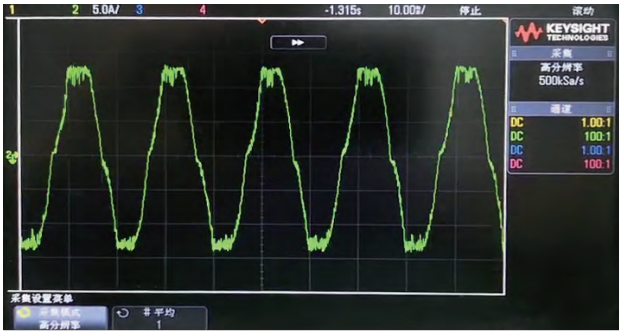
Over-current suppression

The overcurrent suppression function is to real-time monitor and automatically limit the load current during operation, it does not exceed the overcurrent suppression point, thus to prevent the fault trip caused by excessive current.
This function is especially used for some loads with large inertia or severe changes. The setting is only valid under V/F control, and the overcurrent suppression function under the vector control is always valid.



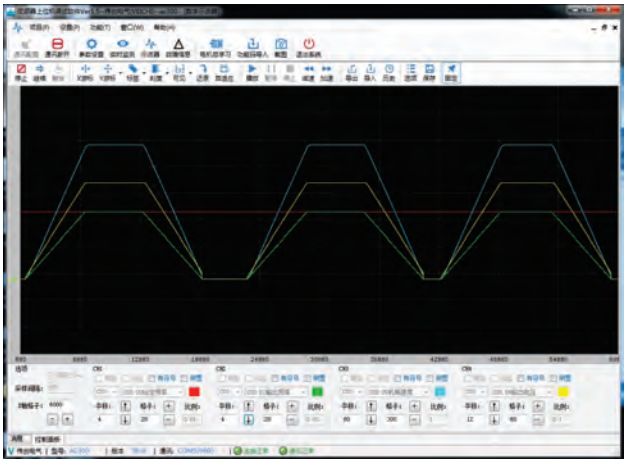
Wave-by-Wave current limit

The wave-by-wave current limit could limit the rise of current to a certain extent through the hardware protection, so that the current does not exceed the protection value of the AC drive to avoid any stopping due to over current fault.



Virtual oscilloscope

The AC10 has virtual oscilloscope software that can monitor four parameters at the same time. Users can monitor the operating parameters in real time on the computer through the virtual oscilloscope, which makes monitoring, debugging and troubleshooting more flexible.



Firmware field upgrade

VEICHI firmware upgrade software provides great convenience for the filter upgrade of AC10 firmware.

Model Description

AC10 model naming rules

AC10-T 3-1R5 G-B

Machine series
AC10 Series

Voltage type
T:Three-phase
S:Single-phase

Voltage rating
2: 220V
3: 380V

Accessory type
B: Brake unit

Load type
G: Heavy duty type

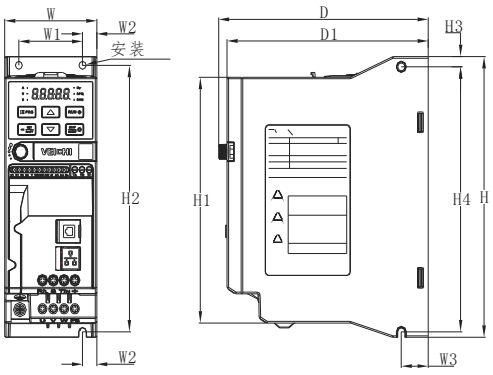
Adaptable motor power
R75: 0.75kW
1R5: 1.5kW
2R2: 2.2kW
004: 4kW

Rated Output Current

Voltage	220V	380V
Power (KW)	Rated output current(A)	
0.4	2.5	—
0.75	4	3
1.5	7	4
2.2	10	5
4	—	9.5
5.5	—	13
7.5	—	17
11	—	25
15	—	32
18.5	—	38
22	—	45

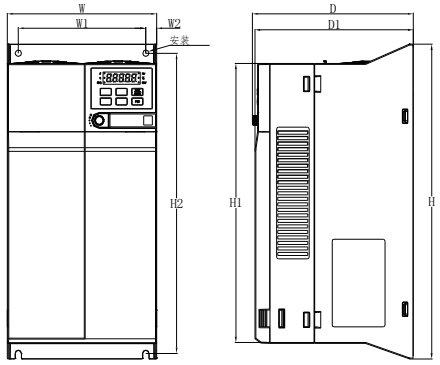
Installation Size

0.4kW-5.5kW Installation Size Chart



Drive model	Dimension(mm)					Mounting dimensions (mm)						Mounting aperture
	W	H	H1	D	D1	W1	W2	H2	W3	H3	H4	
AC10-T/S2-R40G-B	65	177	155	148	142	45	10	168	19	6.5	167	3-M4
AC10-T/S2-R75G-B												
AC10-T/S2-1R5G-B	75	202	180	163	157	55	10	193	19	6.5	192	3-M4
AC10-T/S2-2R2G-B												
AC10-T3-R75G-B	65	177	155	148	142	45	10	168	19	6.5	167	3-M4
AC10-T3-1R5G-B												
AC10-T3-2R2G-B												
AC10-T3-004G-B	75	202	180	163	157	55	10	193	19	6.5	192	3-M4
AC10-T3-5R5G-B												

7.5kW-22kW Installation Size Chart

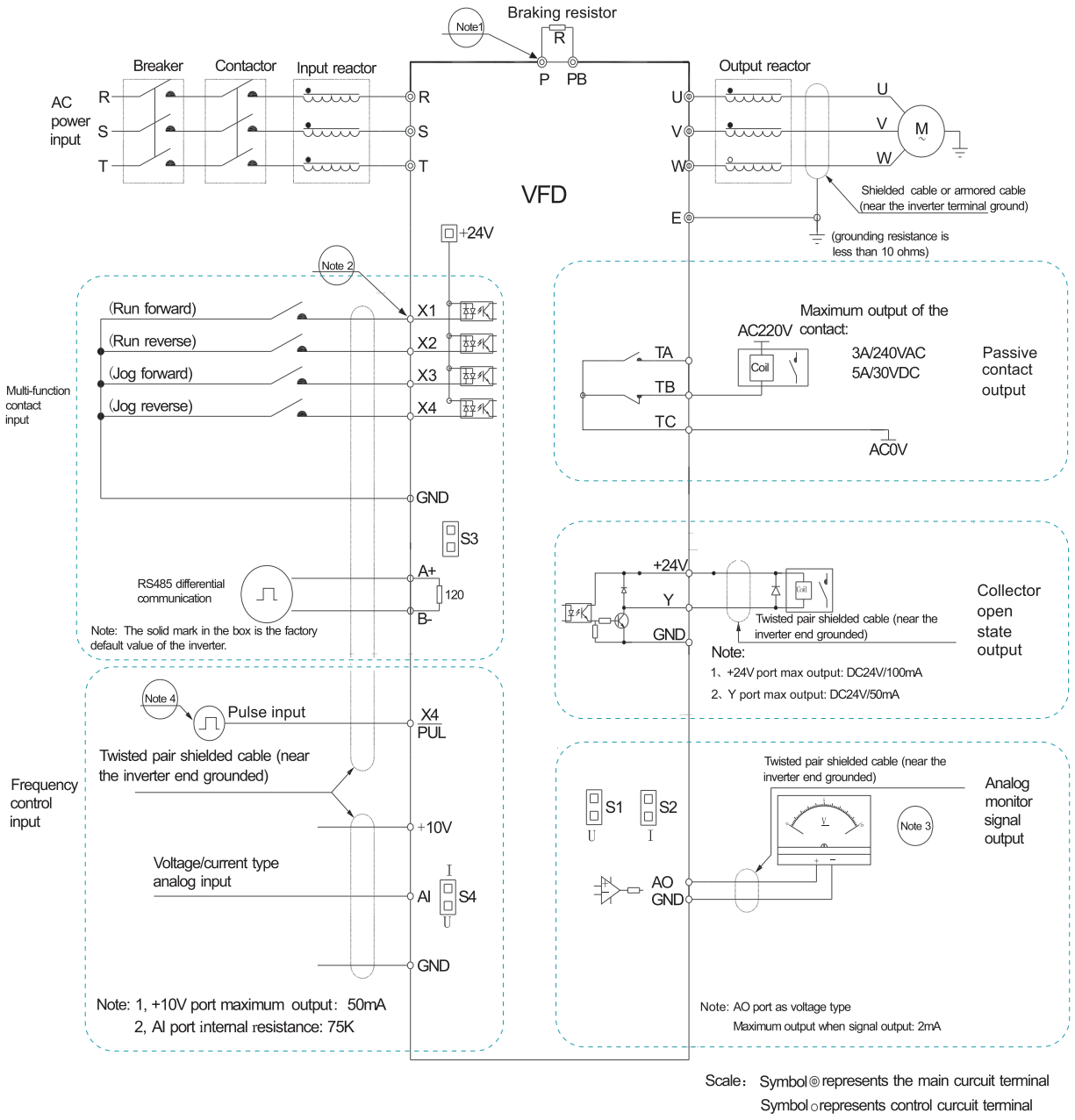


Drive model	Dimension(mm)					Mounting dimensions (mm)						Mounting aperture
	W	H	H1	D	D1	W1	W2	H2	W3	H3	H4	
AC10-T3-7R5G-B	130	320	286	161	158	105	12.5	302	-	-	-	M5
AC10-T3-011G-B												
AC10-T3-015G-B	170	342.5	303.5	183	180	145	12.5	326.5	-	-	-	M5
AC10-T3-018G-B												
AC10-T3-022G-B												

Control Terminal Parameters

	Type	Terminal symbol	Maximum input/output capacity
Control line terminals	Power terminals	+10V-GND	DC10V，50mA
		+24V -GND（0.4kW-5.5kW power range） +24V -COM（7.5kW- 22kW power range）	DC24V，100mA
	Analog input	AI-GND	1. DC0V~10V 2. 0mA~20mA
	Digital input	X1~X4-GND（0.4kW-5.5kW power range） X1~X4-COM（7.5kW- 22kW power range）	1.High level：10~30V 2.Low Level：0~5V 3.X4（PUL）：100KHz
	Analog output	AO-GND	1.DC 0V~10V 2.DC 0mA~20mA
	Digital output	Y - GND（0.75kW-5.5kW） Y - COM（7.5kW-22kW）	Open collector output 1.DC 0V~30V 2.DC 0mA~50mA
	Relay normally open terminals	TA-TC	Contact drive capability 1.240VAC , 3A 2.30VDC , 5A
	Relay normally closed terminal	TB-TC	
	RS485 communication terminal	A+	RS485 communication interface Select by dipswitch whether to connect terminal resistor
		B-	

Terminal Wiring



Scale: Symbol ◎ represents the main curcuit terminal
Symbol ○ represents control curcuit terminal

Applications

- Fans & Pumps
- Automated production line
- Woodworking machinery
- Smart logistics
- Food packaging line

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