

# AC01 Series Network AC Drive



**VEICHI**

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Stock code: 688698

# About us



VEICHI Electric (stock code: 688698) specializes in electric drive and industry control, establishing itself as a leading high-tech enterprise in the R&D, production, and sales of industrial automation products. With R&D and manufacturing facilities in Suzhou, Shenzhen, and Xi'an, along with a fully-owned subsidiary in India, VEICHI serves the global market by offering competitive, safe, and reliable products and services.

A wide range of VEICHI products and solutions tailored to various scenarios, including AC drives, servo systems, and control systems, have been acclaimed with plentiful proven applications across sectors from light to heavy industries, propelling intellectualization transformation in manufacturing. Keeping pace with development trends, VEICHI is branching into burgeoning sectors like robotics, new energy, and healthcare, introducing innovative products such as coreless motors, frameless motors, photovoltaic drives, and surgical power systems for further industrial advancement.

Abundant patented technologies with independent intellectual properties have testified VEICHI's years of dedication to independent R&D and innovation in core motor control technologies including vector control for PMSM, high-frequency pulse injection, speed tracking for start-up, high-speed field-weakening, scalar V/F and vector control, as well as silicon carbide applications, auto tuning of motor parameters, and protection functions. As of June,30, 2024, VEICHI holds 221 patents, including 51

inventions.

Throughout its history, VEICHI has made significant progress patiently but surely, earning numerous prestigious awards and certifications from national and provincial authoritative entities and organizations. These accolades include titles such as "The Third Batch of Specialized and Sophisticated 'Small Giant' Enterprises with Distinctive New Products," "High-tech Enterprises," "Jiangsu Provincial Engineering Technology Research Center," "Jiangsu Provincial Enterprise Technology Center," and "Jiangsu Provincial Industrial Internet Development Demonstration Enterprise (Benchmarking Factory Category)."

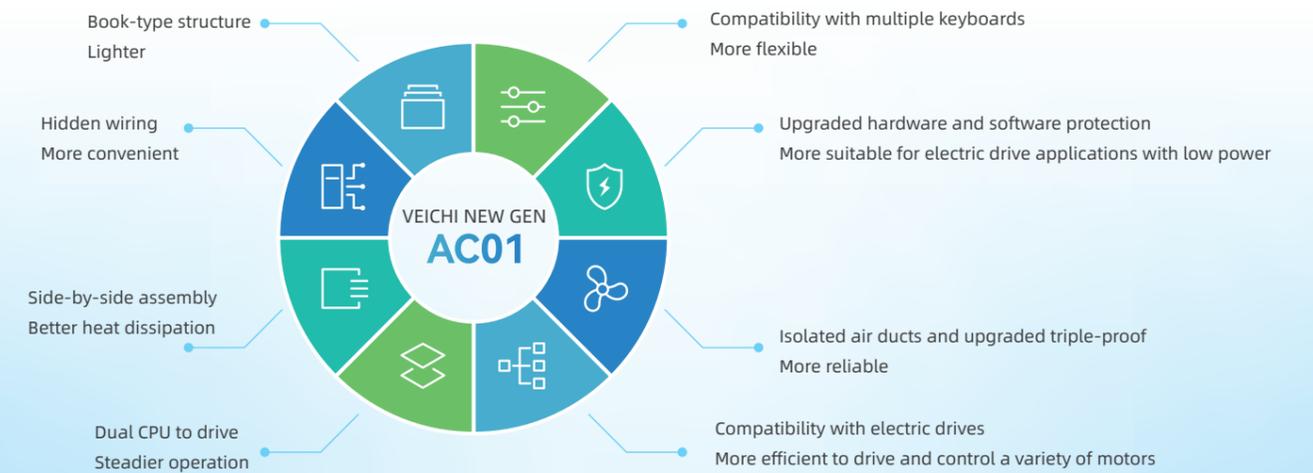
Looking forward, VEICHI will, by the business philosophy of "guided by market demand and driven by technological innovation", make breakthroughs in key core technologies for more refreshing products and explore more reassuring applications based on their competitive performance and quality, energizing the electrical drive and industrial control sector one more step further.

## AC01 Series Network AC Drive

Based on Veichi's low-voltage AC series drive system, AC01 series drives with compactness and intelligence, is developed to meet the market demand for lower volume and higher performance/price ratio.

This series of products feature narrow but highly reliable book-like structure which is inherited from the previous products and durability in its parts. Improvements in fully automated production processes and more circuit-integrated designs have been made for cost reductions and increased profitability for our customers.

The AC01 series of network AC drives, on VEICHI's advanced PLM R&D management system, stands out with its lightweight design and a suite of powerful features, being a catalyst for enhancing lean production standards for customers throughout the industrial chain, from upstream to downstream.



### 2005

- Beginning of entrepreneurship in Shenzhen
- First-generation of AC drive successfully launched

### 2014

- First stage of Suzhou Veichi project groundbreaking and put into construction

### 2016

- First stage of Suzhou Veichi project put into operation
- First generation of motion control system launched

### 2013

- Suzhou Veichi Electric Co., Ltd established
- First generation of servo system successfully developed

### 2019

- Indian subsidiary established
- Restructure to a company limited by shares

### 2020

- A-share of science and technology innovation board landing
- Awarded as provincial Specialized and Sophisticated "Small Giant" Firms That Produce New and Unique Products

### 2021

- A Veichi controlled subsidiary established
- Awarded as the third patch of Specialized and Sophisticated "Small Giant" Firms That Produce New and Unique Products

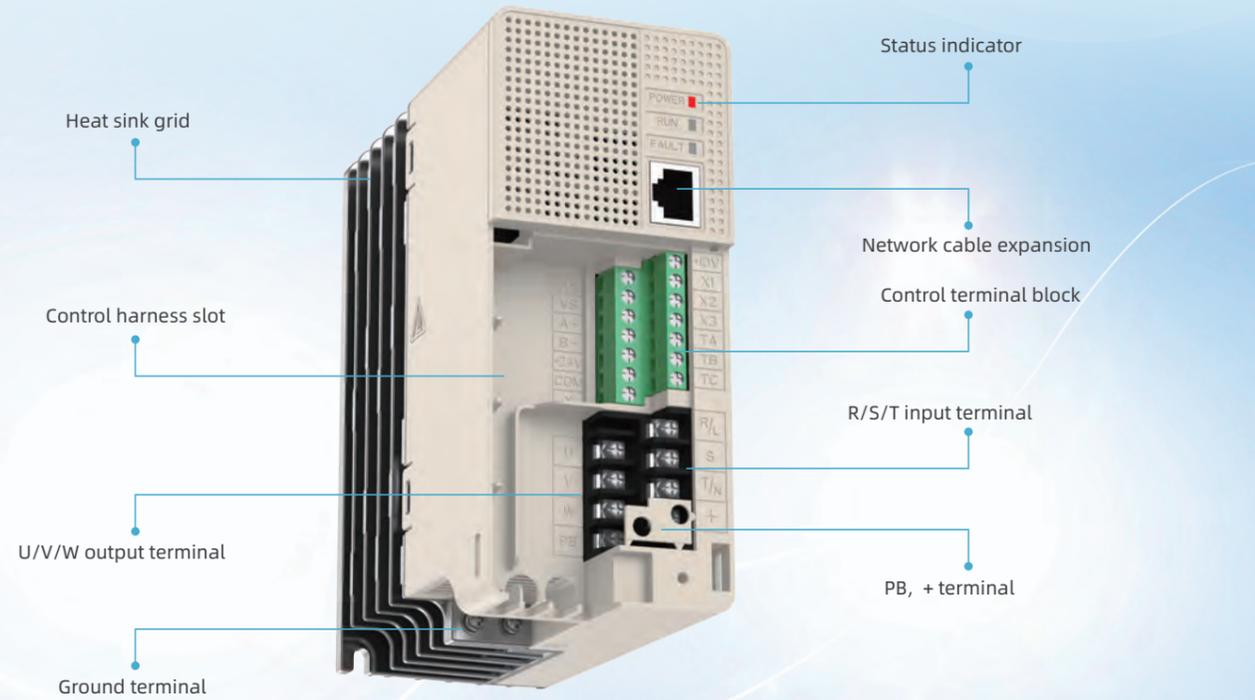
### 2022

- Xi'an R&D Center established
- Veichi Digital Energy subsidiary established

### 2023

- Suzhou Veichi Phase II project put into operation
- Suzhou Veichi Phase III Project put into construction
- Veichi Medical Equipment subsidiary established

## Layout



Single-row external keypad KBD10-15  
(Opening size: 61\*36(mm))



Dual-row external keypad KBD300-25  
(Opening size 119\*70(mm))

**Dedicated KBD01-15**  
Note: KBD01-15 are plugged in (hardware-connected) to AC01 drive.  
While KBD10-15 and KBD300-25 are connected to the AC01 drive via network cable.

## Indicator Interface

AC01 series network AC drive can work without external keyboards, and its status can be indicated by the three LEDs on the interface:

Mark	Indicator	Status	Description
POWER	Red light	On	Power is normal and drive is ready for operation
		Off	Power is abnormal
RUN	Green light	On	Drive is in forward operation
		Flash (on for 500ms and off for 500ms in cycles)	Drive is in reverse operation
		Off	Drive is not in operation
FAULT	Red light	On	Fault occurrences represented by main codes 1-11
		Flash (on for 100ms and off for 100ms in cycles)	Fault occurrences represented by main codes 12-117
		Slow flash (on for 100ms and off for 100ms + on for 100ms and off for 170ms in cycles)	Drive is reporting warning
		Off	AC Drive is fault free

Note: Please see fault/alarm codes together with the AC01 manual.

## Control Terminal Specifications (European-type)

Item	Power	Stripping Length (mm)	Wire Specification (AWG)	Screw
Specification	0.4kW~7.5kW	6~7	30-14	M3

## Main Circuit Terminal Specifications (Grid-type)

Model	Screw (mm)	Fixture Torque (N·m)	Copper (AWG)
AC01-S2-R40G-B	M3	0.7	1.5mm <sup>2</sup> (14)
AC01-S2-R75G-B	M3	0.7	2.5mm <sup>2</sup> (12)
AC01-S2-1R5G-B	M4	1.3	2.5mm <sup>2</sup> (12)
AC01-S2-2R2G-B	M4	1.3	4mm <sup>2</sup> (10)
AC01-S2-004G-B	M4	1.3	4mm <sup>2</sup> (10)
AC01-T3-R75G-B	M3	0.7	1.5mm <sup>2</sup> (14)
AC01-T3-1R5G-B	M3	0.7	2.5mm <sup>2</sup> (12)
AC01-T3-2R2G-B	M4	1.3	2.5mm <sup>2</sup> (12)
AC01-T3-004G-B	M4	1.3	4mm <sup>2</sup> (10)
AC01-T3-5R5G-B	M4	1.3	6mm <sup>2</sup> (9)
AC01-T3-7R5G-B	M4	1.3	6mm <sup>2</sup> (9)

## Performance Feature

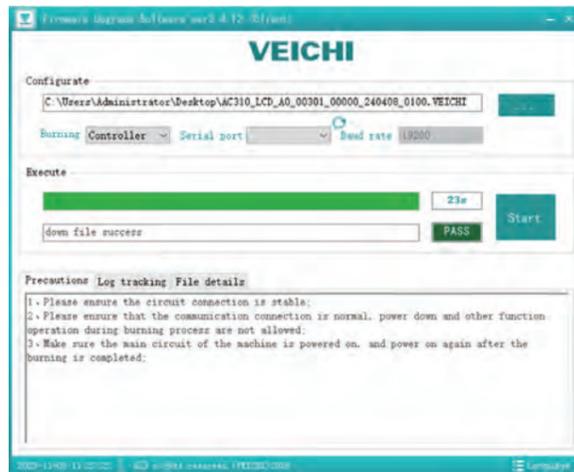
### Control Performance

AC01 software integrates the features of AC310 series products with high accuracy for different needs, providing a one-touch convenient operation for drives under special applications.

Motor type	Asynchronous/Synchronous motor
Motor control mode	SVC, FVC
Modulation	SVPWM
Speed control range	SVC, rated load 1:100
Speed stabilizing accuracy	SVC, $\leq 2\%$ of rated sync speed
Start torque	SVC: 150% of the rated torque at 0.5Hz
Torque response	SVC: $< 20\text{ms}$
Frequency accuracy	Digit setting: max. frequency $\times \pm 0.01\%$ ; analog setting: max.frequency $\times \pm 0.2\%$
Frequency resolution	Digit setting: 0.01Hz; analog setting: max. frequency $\times \pm 0.05\%$

### Firmware Upgrade

The VEICHI software provides great convenience for instant firmware upgrades of the AC01.



### Comprehensive Fault Protection

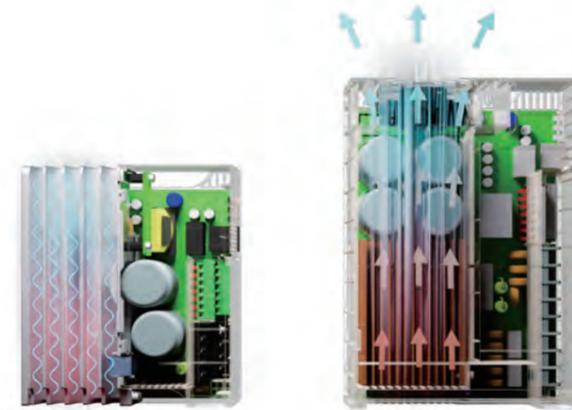
AC01 products are designed for higher convenience and flexibility in the application and protection of low-power motors. With optimization in terms of alarm threshold range, and detection sensitivity, etc, warnings are not that easy to be triggered on the basis of that different parameter errors are precisely monitored.

System failure	Drive overload	Non-0 current sum of three phase	Parameter copy failure	Brake unit failure	Parameter setting fault
Overcurrent	Continuous CBC activation	Excessive U/V/W phase zero drift	Three-phase output phase loss	Auto tuning error	CPU timeout
Overvoltage	Rectifier module overheat	Short circuit to ground	U/V/W output phase loss	Load protection	Parameter storage failure
Undervoltage	Inverter module overheat	Fan short circuit	Input phase loss	Excessive speed deviation	Communication fault
Motor overload	Terminal start protection	PID disconnection feedback	External fault	Overspeed	.....

## Reliability Design

### New Structure

The whole series of AC01 products are designed with two cooling methods, natural cooling and forced air-cooling, together with independent cooling ducts to ensure efficient heat dissipation and enhanced operation.



### Flexible Configuration

The AC01 series features customizable C3 filters to reduce high-frequency noise and EMI, meeting EM compatibility standards.

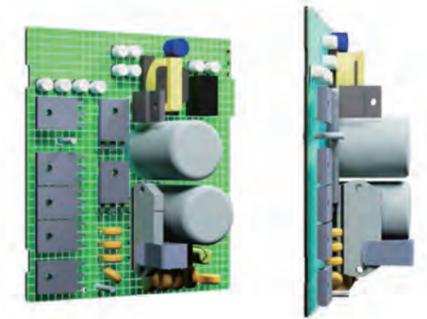
### Higher Standards

The AC01 series meets serious global standards such as CE, EAC, TUV, and UL and this adherence to international benchmarks makes them a reliable and quality option for users.



### Protection Improvement

Protection of AC01 series of products optimized especially the three-resistance coating process of PCB board is improved. The automated three three-resistance spray ensures more even thickness and more comprehensive coverage, and enables the products to cope with harsh environments.



### Fully Automated Production and Assembly

The whole series of AC01 products are assembled, tested, aged and packaged from automated production lines instead of manual labor, which is more standardized and more reliable.



### Naming Rules

**AC01-S 2-R75 G-B-W-E**

**Product Series**  
AC01 series

**Voltage Type**  
T: Three-phase  
S: Single-phase

**Voltage Level**  
2: 220V  
3: 380V

**Accessory**  
B: Brake  
W: Dedicated keypad  
E: Built-in C3 filter

**Load**  
G: Heavy

**Motor Power**  
R75: 0.75kW

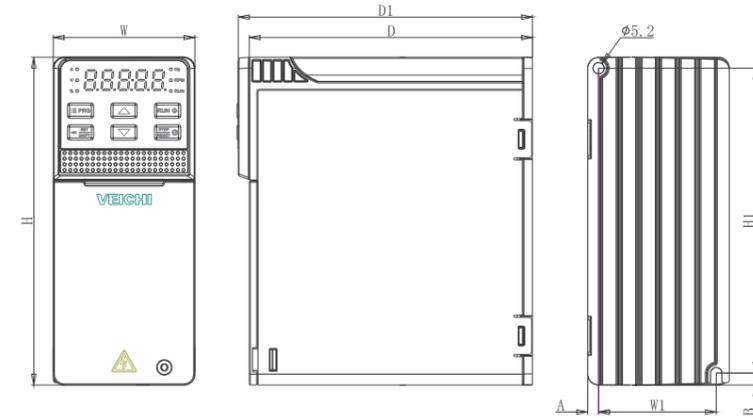
### Rated Output Current

Voltage	220V	380V
Power(kW)	Rated output current (A)	
0.4	3.0	—
0.75	4.0	2.5
1.5	7.0	3.7
2.2	10.0	5.0
4	16.0	9.5
5.5	—	13.0
7.5	—	17.0

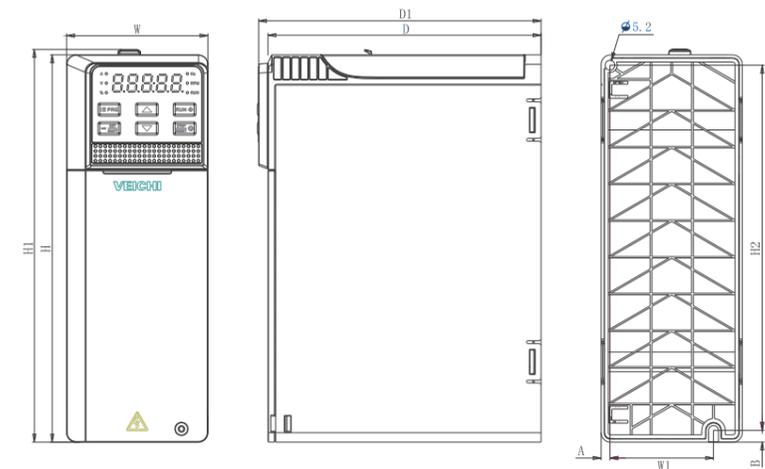
### Control Terminal

Type	Mark	Max.input/output
Power terminal	+10V-COM	Analog power supply, max. output 50mA
	24V auxiliary power, forming a circuit with COM	Digital power supply, max. output 100Ma
AI	AS-COM	AI current: 0mA~20mA
	VS-COM	AI voltage: 0V~10V
DI	X1-X3 (NPN type), forming a circuit with COM	DI with 15KΩ impedance
DO	TA TB TC relay output	Output capacity: 240V AC/3A; 30V DC/5A
	Y terminal output	Max. output 50mA
485 communication	A+ B-	Modbus, PTU protocol

### Installation Size



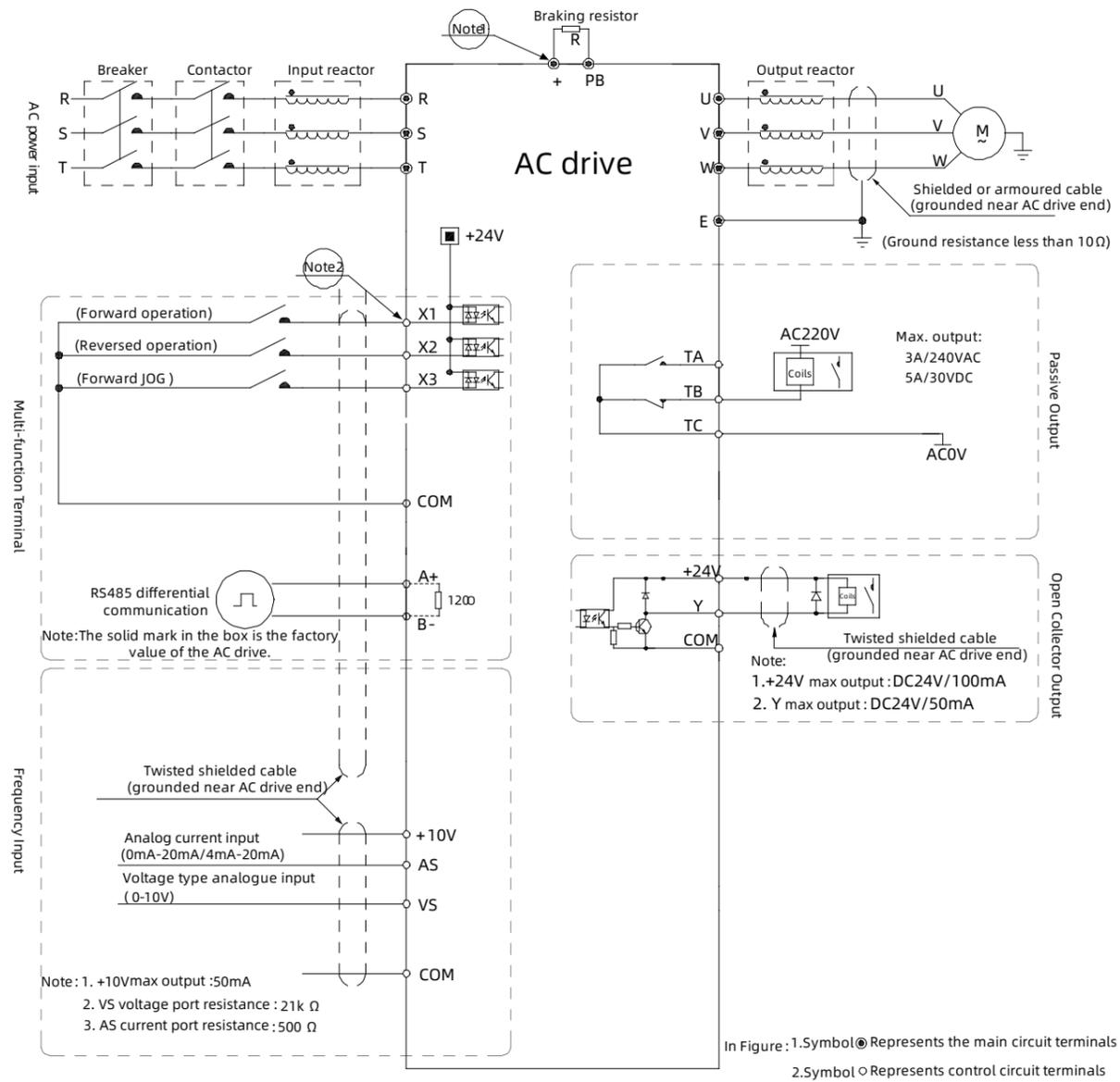
Drive model	Outer dimension (mm)				Front mounting dimension(mm)				Installation aperture(mm)
	W	H	D	D1	A	B	W1	H1	
AC01-S2-R40G-B	65	150	130	-	5	5.5	54	139.5	Φ5.2
AC01-S2-R75G-B									
AC01-T3-R75G-B									
AC01-T3-1R5G-B									
AC01-T3-R75G-B-W									
AC01-S2-R40G-B-W				135					
AC01-S2-R75G-B-W									
AC01-T3-1R5G-B-W									



Drive model	Outer dimension (mm)				Front mounting dimension(mm)				Installation aperture(mm)
	W	H	D	D1	A	W1	H1	H2	
AC01-S2-1R5G-B	75	205	145	-	4.7	55	207.9	193.25	Φ5.2
AC01-S2-2R2G-B									
AC01-T3-2R2G-B									
AC01-T3-004G-B									
AC01-S2-1R5G-B-W									
AC01-S2-2R2G-B-W				150					
AC01-T3-2R2G-B-W									
AC01-T3-004G-B-W									
AC01-S2-004G-B	100	230	165	-	6.0	82	232.9	218	Φ6.2
AC01-T3-5R5G-B									
AC01-T3-7R5G-B									
AC01-T3-7R5G-B									

AC01-W is equipped with KBD01-15 keypad by default, D1 indicates the size with the keypad.

Standard Wiring



- Note: 1. Select the appropriate braking resistor according to the site conditions and "Braking Resistor Specification Parameters".  
2. Multi-function input terminal (X1 ~ X3) can take the NPN transistor signal as input.  
3. In the control circuit, digital ground and analog ground terminals are combined into the COM terminal.

Application



**01 Pre-sales**  
technology promotion,  
site survey, proposal design,  
energy saving assessment

**02 During-sales**  
customization, design  
consultation,  
installation and  
commissioning,  
on-site training

**03 After-sales**  
regular return visits,  
regular maintenance,  
timely repairs,  
application instruction

