



MAC01 Series Network AC Drive



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About us

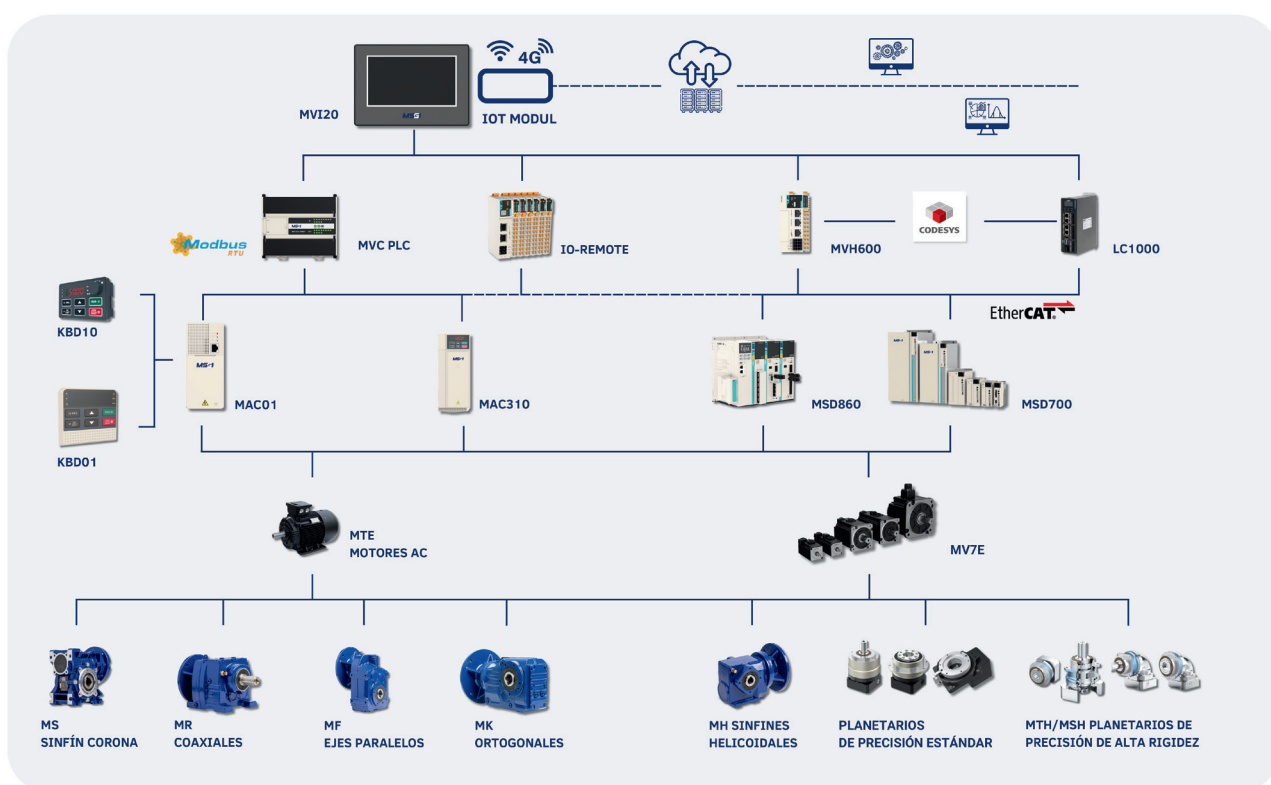
Welcome to Mechatronic System Group (MSG), a young team with solid experience in the industrial mechatronics sector.

We stand out by offering innovative products and a complete portfolio that covers the needs of machine manufacturers and engineering companies. At MSG, we not only provide advanced technical solutions, but we also accompany our customers throughout the machine definition process. With a national and international presence, we are committed to driving the cutting edge of mechatronics in industry.

At MSG, we pride ourselves on being at the forefront of technology by constantly innovating our products. In our electronics division, we excel with precision planetary gearboxes and helical gearboxes. Designed to be interchangeable with the vast majority of manufacturers, this gives us a unique competitive advantage over other brands. MSG are committed to offering advanced and flexible mechanical solutions to meet the demands of our customers.

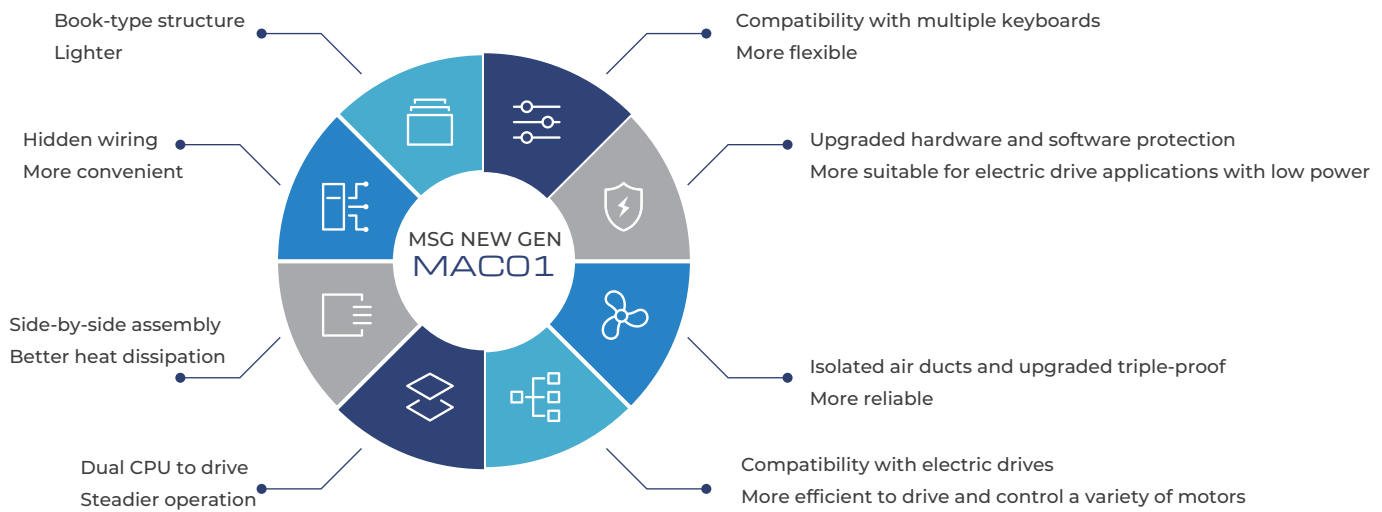
MSG provides various products including inverters from 0.4kW to 1.200kW, servo systems from 50W to 90kW, motion controllers, PLC and HMI, which are applied in all sorts of fields occasions like lifting, mining, rail traffic, machine tools, compressors, plastic equipment, photo-voltaic pumping, construction, robots/mechanical arms, printing and packaging, chemical fibers for textile use, metallurgy, municipal works, petrol work and chemical engineering.

MSG has 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.

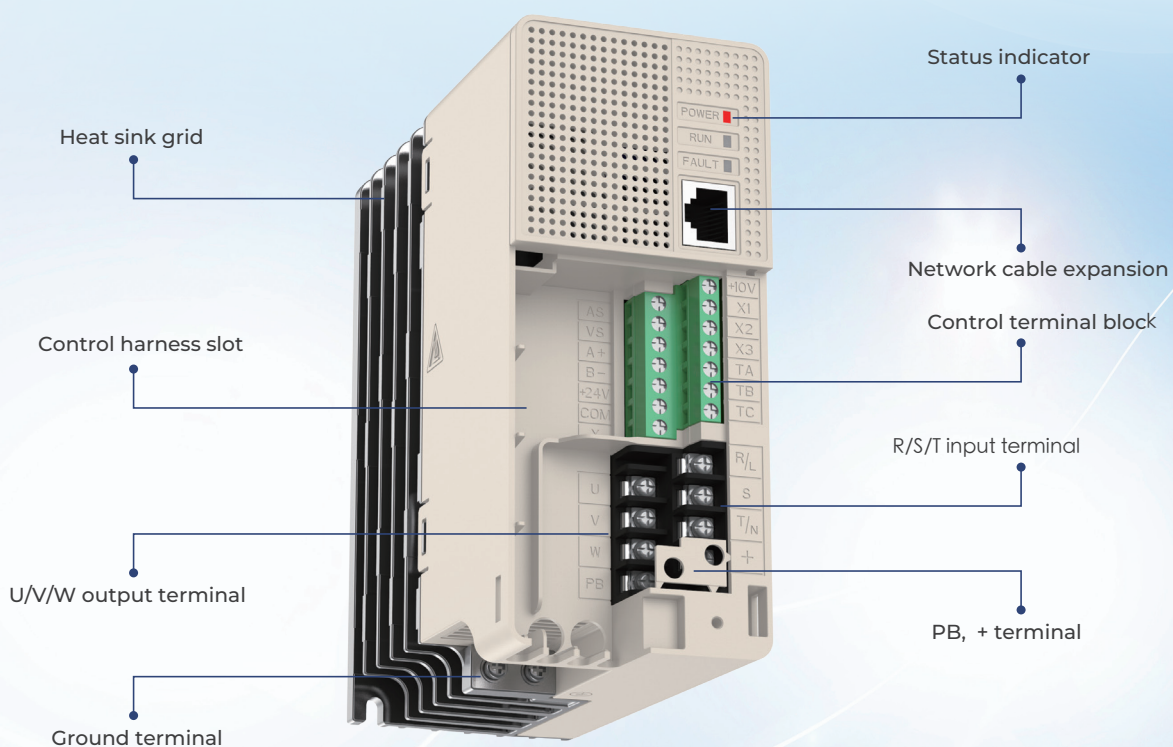


MAC01 Series Network AC Drive

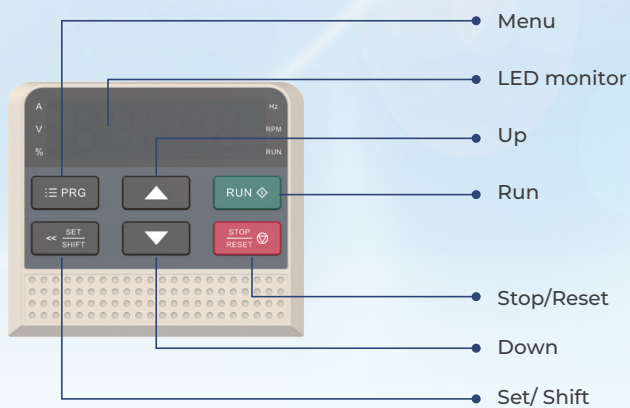
Based on MSG's low-voltage AC series drive system, MAC01 series drives with compactness and intelligence, is developed to meet the market demand for lower volume and higher performance/price ratio. This series of products feature narrow but highly reliable book-like structure which is inherited from the previous products and durability in its parts. Improvements in fully automated production processes and more circuit-integrated designs have resulted in cost reductions and increased profitability for our customers. The MAC01 series of network AC drives, on MSG's advanced PLM R&D management system, helps customers both upstream and downstream in the industrial chain to improve lean production with its compact design and powerful functions.



Structure Features



Supports self-chosen dedicated keyboards
Or MAC310/MAC10 external single/dual line display keyboards.
AC01 can be operated without external keyboards, too.



Indicator Interface

MAC01 series network AC drive can work without external keyboards, and its status can be indicated by the three LEDs on the

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 MAC01 manual.

Control Terminal Wiring Specifications (European Terminal Block)

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

Main Circuit Terminal Wiring Specifications (Grid Terminal Block)

Model	Main circuit terminal screw (mm)	Recommended fixing torque (N·m)	Recommended copper cables mm ² (AWG)
MAC01-S2-R40G-B	M3	0.7	1.5mm ² (14)
MAC01-S2-R75G-B	M3	0.7	2.5mm ² (12)
MAC01-S2-1R5G-B	M4	1.3	2.5mm ² (12)
MAC01-S2-2R2G-B	M4	1.3	4mm ² (10)
MAC01-S2-004G-B	M4	1.3	4mm ² (10)
MAC01-T3-R75G-B	M3	0.7	1.5mm ² (14)
MAC01-T3-1R5G-B	M3	0.7	2.5mm ² (12)
MAC01-T3-2R2G-B	M4	1.3	2.5mm ² (12)
MAC01-T3-004G-B	M4	1.3	4mm ² (10)
MAC01-T3-5R5G-B	M4	1.3	6mm ² (9)
MAC01-T3-7R5G-B	M4	1.3	6mm ² (9)

Performance Feature

Firm Control Performance

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

Motor type	Asynchronous/Synchronous motor
Motor control mode	PG-free V/F control, PG-free vector control
Modulation	Optimized Space Vector Modulation PWM
Speed control range	PG-free vector control, rated load 1:100
Steady-state speed accuracy	PG-free vector control, $\leq 2\%$ of rated sync speed
Start torque	PG-free vector control: 150% of the rated torque at 0.5Hz
Torque response	PG-free vector control: $< 20\text{ms}$
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 $\times \pm 0.05\%$

Comprehensive Fault Protection

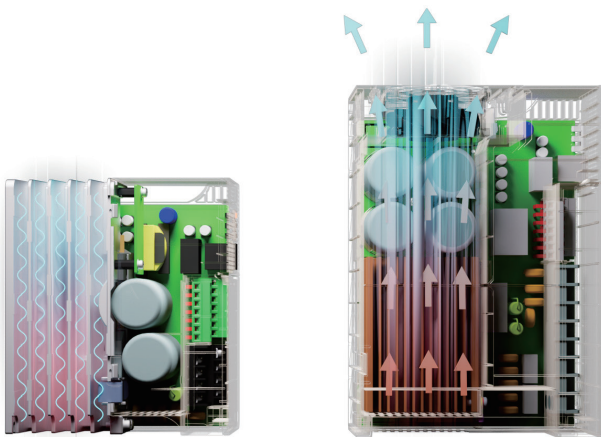
MAC01 products are designed for higher convenience and flexibility in the application and protection of low-power motors. With optimization in terms of alarm threshold range, and detection sensitivity, etc, warnings are not that easy to be triggered on the basis of that different parameter errors are 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

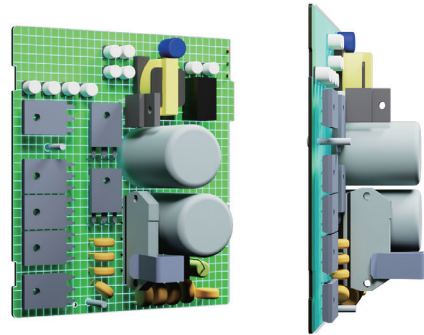
New Structure

The whole series of MAC01 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.



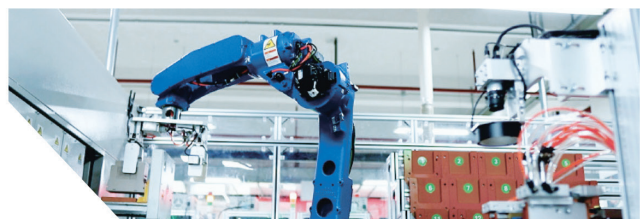
Protection Improvement

Protection of MAC01 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 MAC01 products are assembled, tested, aged and packaged from automated production lines instead of manual labor, which is more standardized and more reliable.



Model Description

MAC01 Model Naming Rules

MAC01-S 2-R75 G-B

Product series

MAC01 series

Voltage type

T: Three-phase

S: Single-phase

Voltage level

2: 220V

3: 380V

Accessory

B: Brake unit

Load

G: Heavy duty

Motor power

R75: 0.75kW

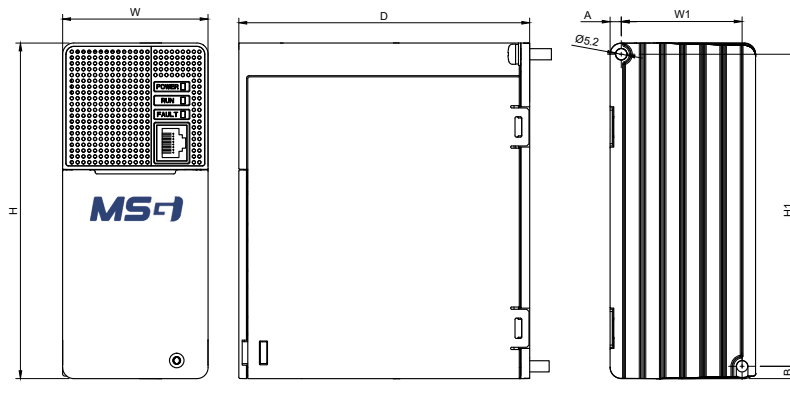
Rated Output Current

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

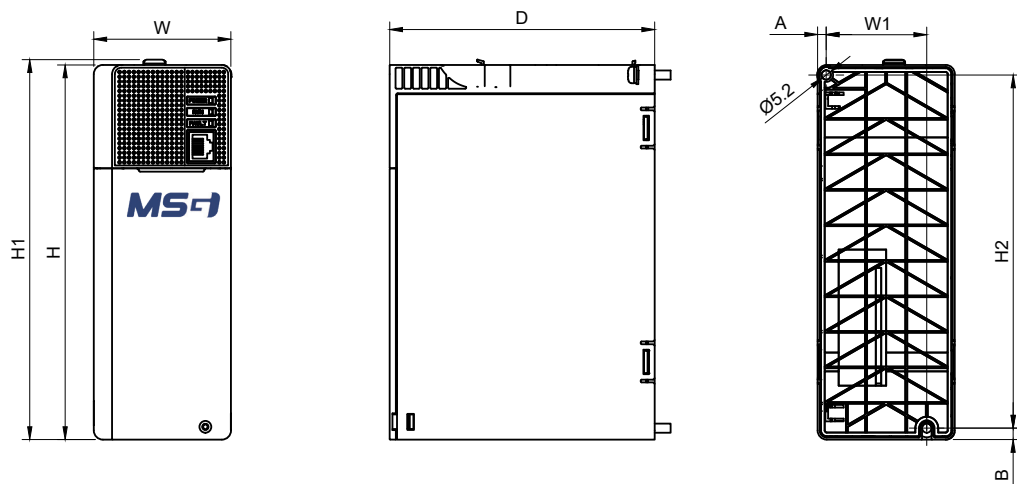
Control Terminal Parameter

	Type	Mark	Max.input/output
Power Circuit Terminal	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: 0~20mA
		VS-COM	AI voltage: 0~10V
	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

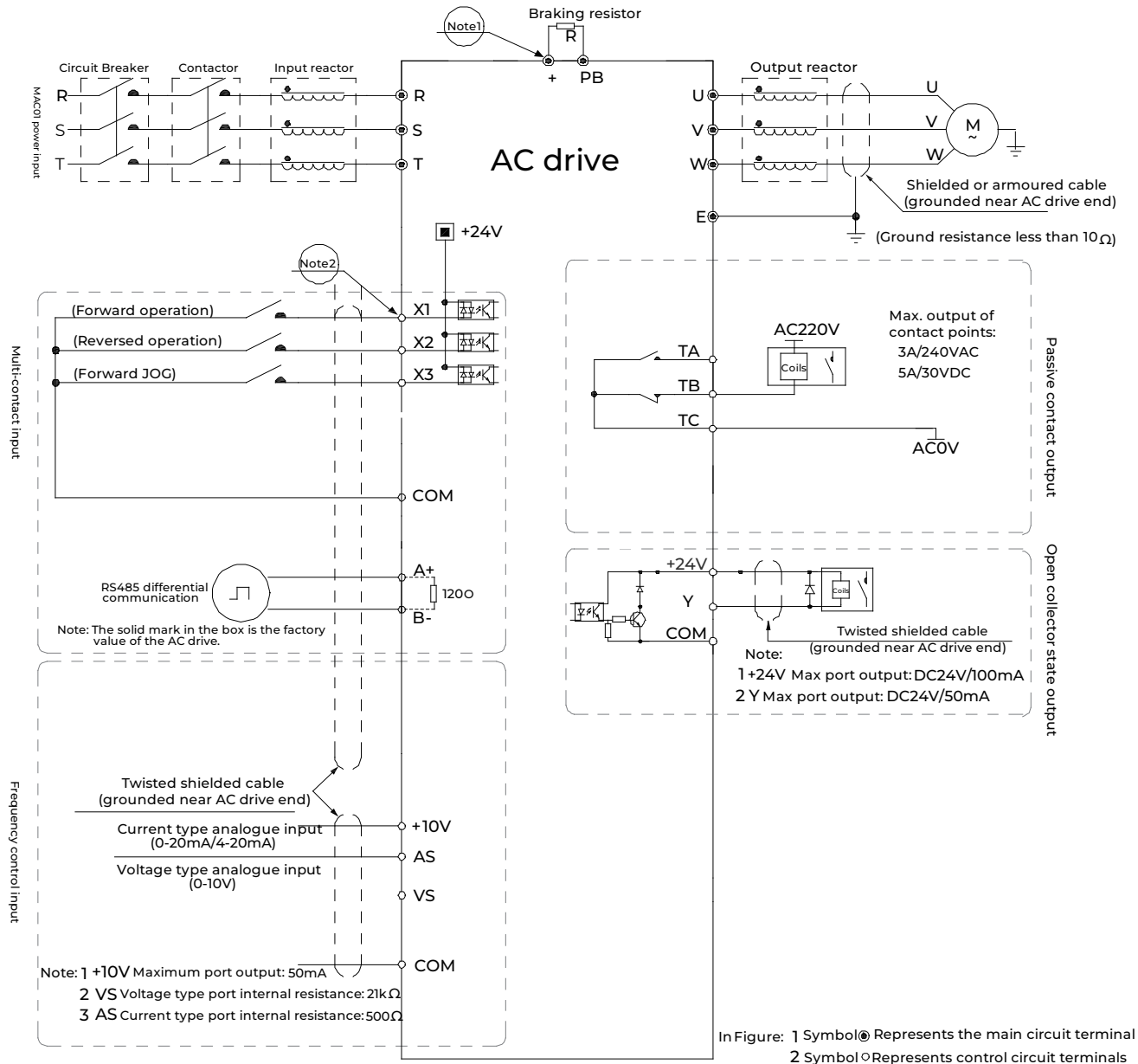


Drive model	Outer dimension (mm)			Front mounting dimension(mm)				Installation aperture (mm)
	W	H	D	A	B	W1	H1	
MAC01-S2-R40G-B	65	150	130	5	5.5	54	139.5	Φ5.2
MAC01-S2-R75G-B								
MAC01-T3-R75G-B								
MAC01-T3-1R5G-B								



Drive model	Outer dimension (mm)			Front mounting dimension(mm)				Installation aperture (mm)
	W	H	D	A	W1	H1	H2	
MAC01-S2-1R5G-B	75	205	145	4.7	55	207.9	193.25	Φ5.2
MAC01-S2-2R2G-B								
MAC01-T3-2R2G-B								
MAC01-T3-004G-B								
MAC01-S2-004G-B	100	230	165	6.0	82	232.9	218	Φ6.2
MAC01-T3-5R5G-B								
MAC01-T3-7R5G-B								

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



MSG Drives

C/ Itàlia, 11 - Igualada (08700) - Barcelona

info@msgdrives.com

Tel: +93-805-6021

Linkedin: MSG - Mechatronic System Group

<https://www.msgdrives.com/>



Official Website

*Version: March, 2024

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