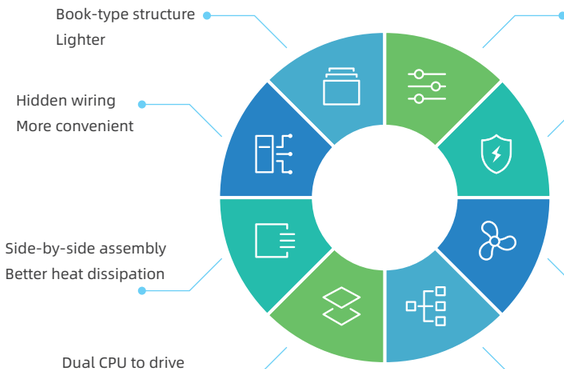
NiSTRO

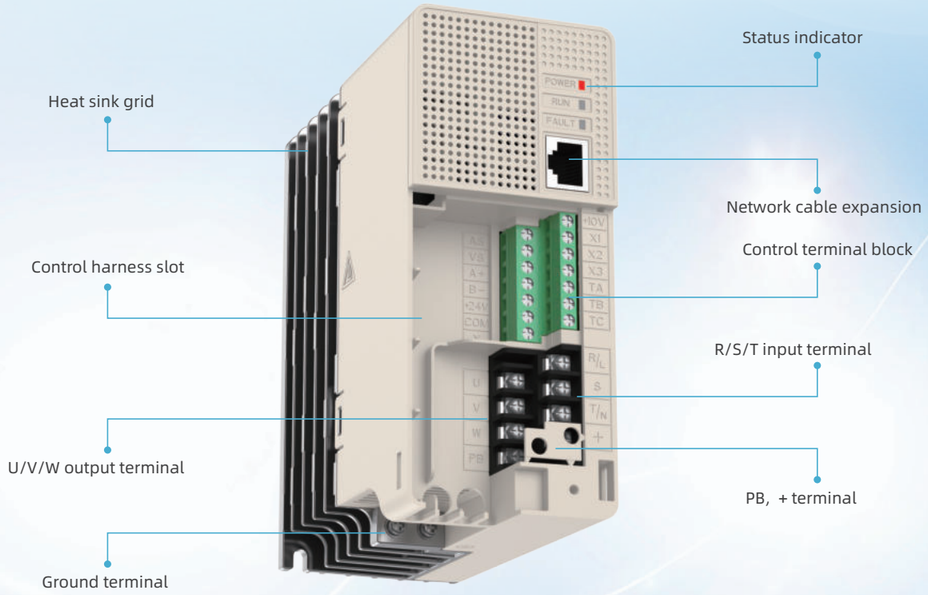
GA27 Series
Network AC Drive

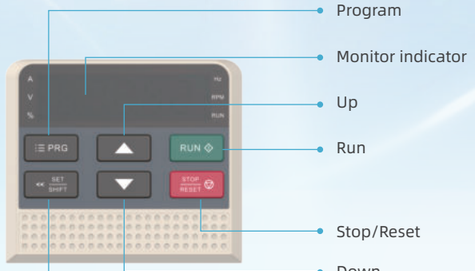
GA27 Series Network AC Drive

Based on Nistro's low-voltage AC series drive system, GA27 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 GA27 series of network AC drives, on NISTRO'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.



Layout





Dedicated KBD27-15

Note: KBD27-15 are plugged in (hardware-connected) to GA27 drive. While KBD20-15 and KBD310-25 are connected to the GA27 drive via network cable.

Single-row external keypad KBD20-15
(Opening size: 61*36(mm))

Dual-row external keypad KBD310-25
(Opening size 119*70(mm))

Indicator Interface

GA27 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 GA27 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）
GA27-S2-R40G-B	M3	0.7	1.5mm² (14)
GA27-S2-R75G-B	M3	0.7	2.5mm²(12)
GA27-S2-1R5G-B	M4	1.3	2.5mm² (12)
GA27-S2-2R2G-B	M4	1.3	4mm² (10)
GA27-S2-004G-B	M4	1.3	4mm² (10)
GA27-T3-R75G-B	M3	0.7	1.5mm² (14)
GA27-T3-1R5G-B	M3	0.7	2.5mm² (12)
GA27-T3-2R2G-B	M4	1.3	2.5mm² (12)
GA27-T3-004G-B	M4	1.3	4mm² (10)
GA27-T3-5R5G-B	M4	1.3	6mm² (9)
GA27-T3-7R5G-B	M4	1.3	6mm² (9)

Performance Feature

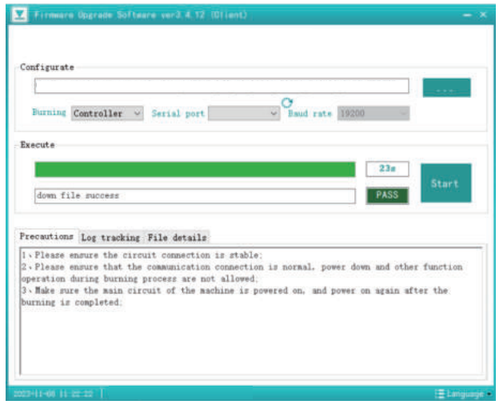
Control Performance

GA27 software integrates the features of GA310 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, ≤2% of rated sync speed
Start torque	SVC: 150% of the rated torque at 0.5Hz
Torque response	SVC: <20ms
Frequency accuracy	Digit setting: max. frequency × ±0.01%; analog setting: max.frequency × ±0.2 %
Frequency resolution	Digit setting: 0.01Hz; analog setting: max. frequency × ±0.05 %

Firmware Upgrade

The NISTRO software provides great convenience for instant firmware upgrades of the GA27.



Comprehensive Fault Protection

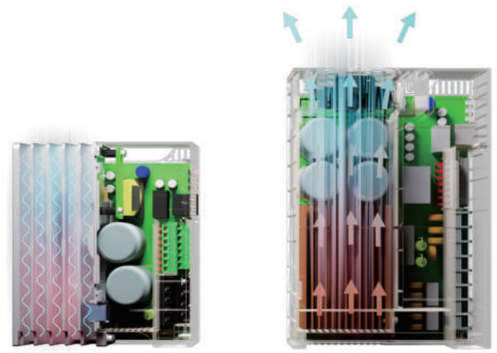
GA27 products are designed for higher convenience and flexibility in the application and protection of low-power motors. With optimization in terms of alarm threshold range, and detection sensitivity, etc, warnings are not that easy to be triggered on the basis of that different parameter errors are 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 GA27 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.

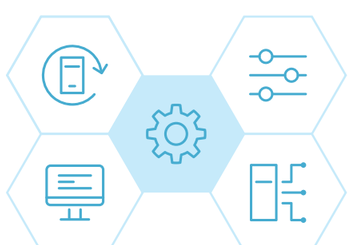


Flexible Configuration

The GA27 series products offer the flexibility to be equipped with built-in C3 filters tailored to specific working conditions. This feature effectively mitigates high-frequency noise and electromagnetic interference, ensuring compliance with the necessary electromagnetic compatibility standards.

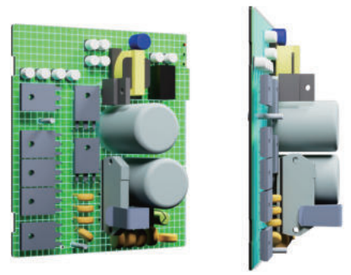
Higher Standards

The GA27 product line adheres to rigorous international standards like CE, EAC, TUV, and UL, ensuring the products' stability and reliability. This commitment to global benchmarks enhances their performance and safety, making them a dependable choice for users.



Protection Improvement

Protection of GA27 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 GA27 products are assembled, tested, aged and packaged from automated production lines instead of manual labor, which is more standardized and more reliable.

Naming Rules

GA27-S 2-R75 G-B-W-E

Product series
GA27 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

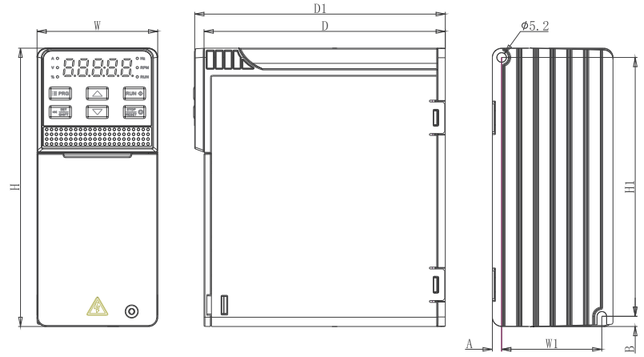
Rated Output Current

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

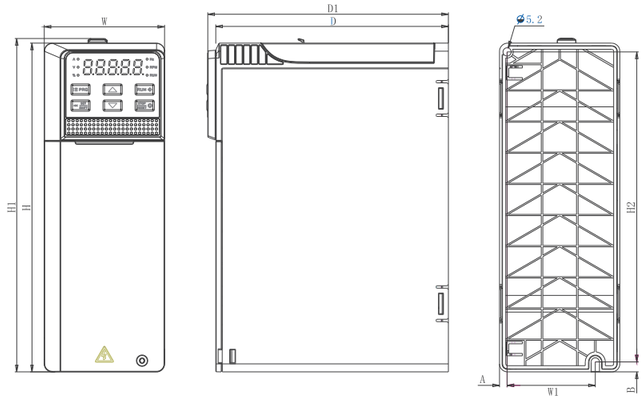
Control Terminal

	Type	Mark	Max.input/output
Control 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: 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



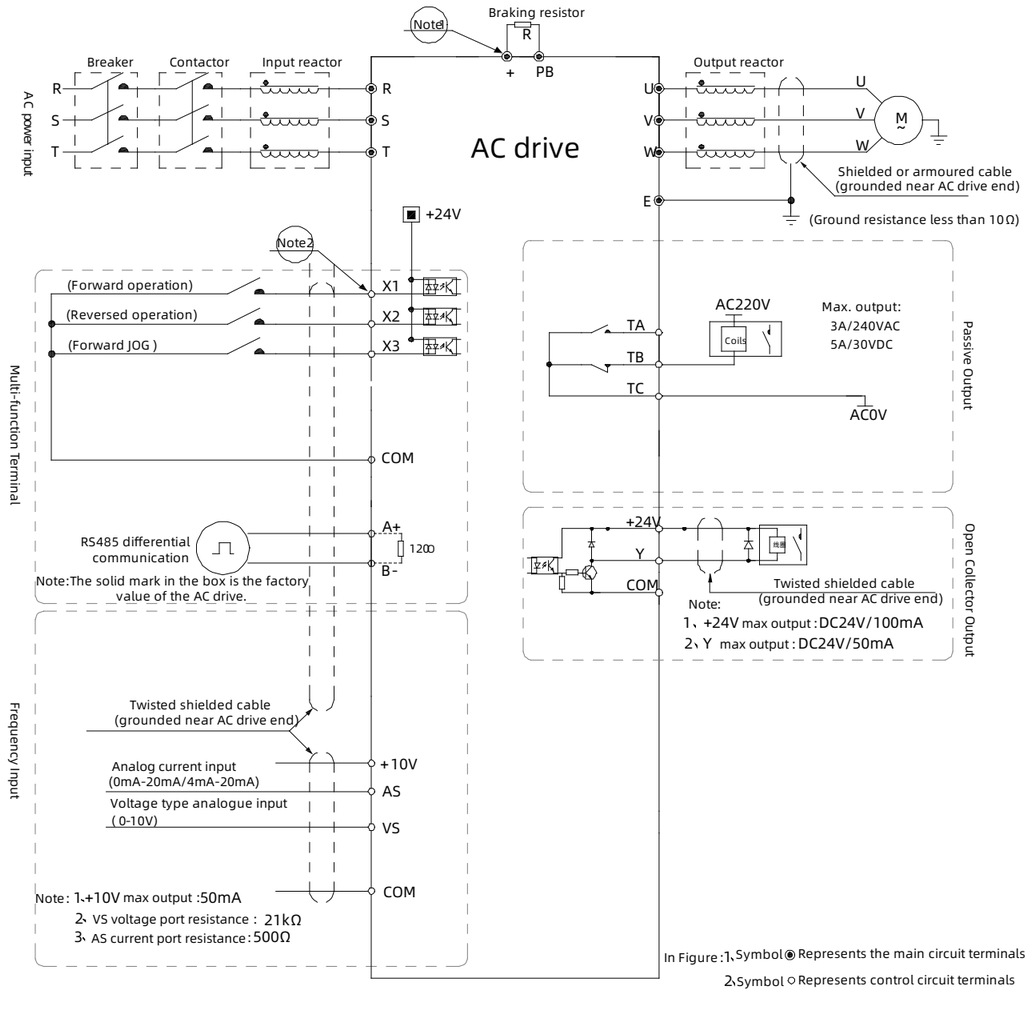
Drive model	Outer dimension (mm)				Front mounting dimension(mm)				Installation aperture(mm)
	W	H	D	D1	A	B	W1	H1	
GA27-S2-R40G-B	65	150	130	-	5	5.5	54	139.5	Φ5.2
GA27-S2-R75G-B									
GA27-T3-R75G-B									
GA27-T3-1R5G-B									
GA27-T3-R75G-B-W				135					
GA27-S2-R40G-B-W									
GA27-S2-R75G-B-W									
GA27-T3-1R5G-B-W									



Drive model	Outer dimension (mm)				Front mounting dimension(mm)				Installation aperture(mm)
	W	H	D		A	W1	H1	H2	
GA27-S2-1R5G-B	75	205	145	-	4.7	55	207.9	193.25	Φ5.2
GA27-S2-2R2G-B									
GA27-T3-2R2G-B									
GA27-T3-004G-B									
GA27-S2-1R5G-B-W				150					
GA27-S2-2R2G-B-W									
GA27-T3-2R2G-B-W									
GA27-T3-004G-B-W									
GA27-S2-004G-B	100	230	165	-	6.0	82	232.9	218	Φ6.2
GA27-T3-5R5G-B									
GA27-T3-7R5G-B									

GA27-W products are standard with KBD27-15 dedicated keypad, and D1 includes the size of it.

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