

KC100 series inverter

General purpose precision high performance vector inverter

Kc100 series inverter is a cost-effective product developed based on a new technology platform. KC100 adopts narrow book-shape design, European crimping terminal and independent air duct design, which has many advantages such as convenient installation, convenient wiring, excellent heat dissipation, excellent performance and comprehensive protection. KC100 is systematic, process-oriented and strict in the development process of software, hardware and structure, paying attention to details and user experience. In the production and manufacturing process, KC100 relies on a complete quality process system to realize automatic tooling testing of all veneers and complete machines to ensure product quality.



Voltage level

Single-phase 220V model
0.4-2.2kW

Three-phase 380V model
0.75-5.5kW

Telecommunication

Supports the 485 standard MODBUS

Terminal configuration

4 digital inputs	1 analog input
1 relay output	1 analog output
1 DO output	1 channel 485 communication

Industry applications

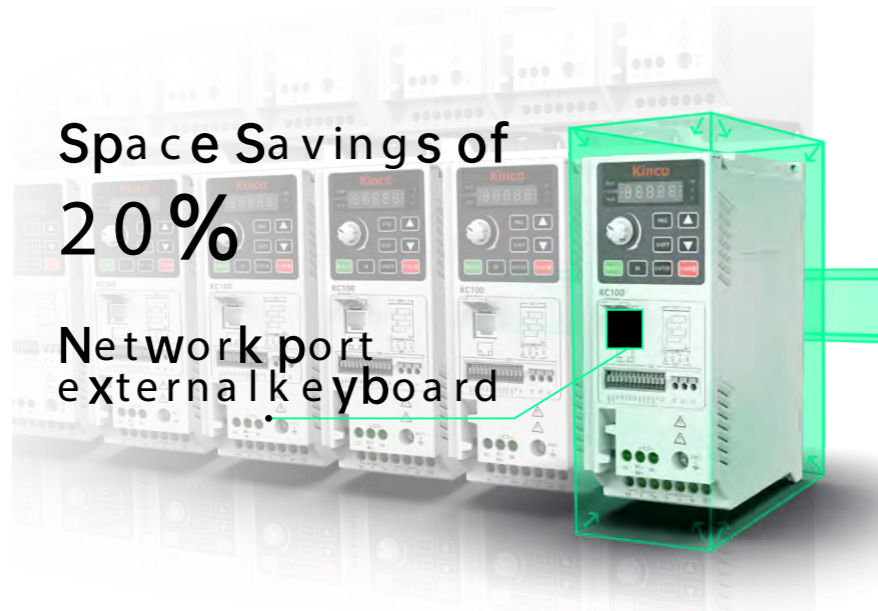
It can be widely used in sewage treatment, manufacturing production lines, fan ventilation systems, logistics and transportation, air conditioner cooling systems, woodworking machinery, and various automated production equipment and other industries.

Five bright spots Straight A+ student

- Compact structure, save space A+
- Bukey software, core strength A+
- Point to point, inhibit protection function A+
- Security guard, fault protection function A+
- No waiting, fast action

Compact structure, save space A+

- Narrow book-shape design, as small as 65mm, can be rail, vertical, side mounted; 20% less space than previous generations;
- European crimping terminal, 10 terminals without tightening screws, can improve assembly efficiency by 30%;
- Support network port connected to external keyboard and use standard MODBUS communication protocol and scheme.

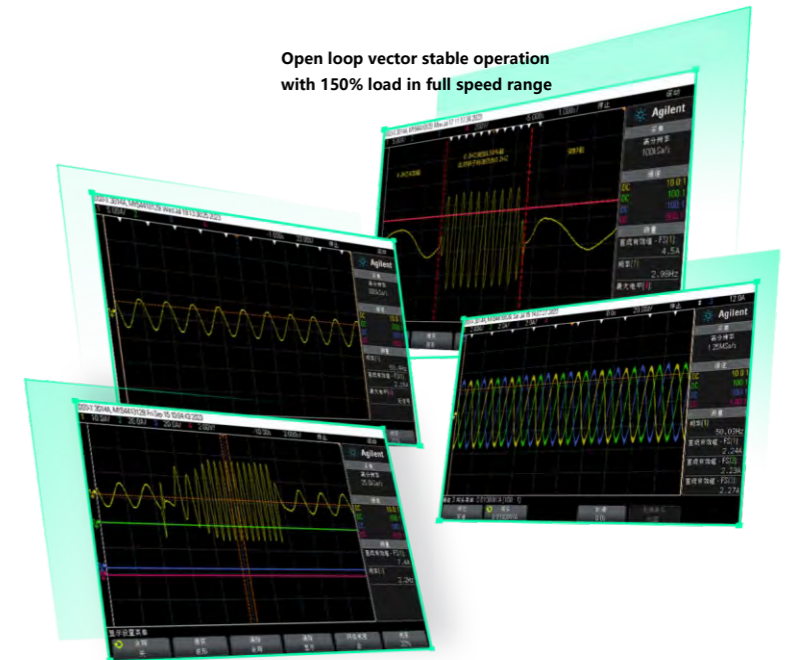


Space Savings of
20%

Network port
external keyboard

Bukey software, core strength A+

- Various frequency given channel selections such as panel, analog, communication, pulse, PID, multi-speed, etc.
- Built-in AVR, over-modulation, instantaneous non-stop and other functional design, can adapt to complex grid environment;
- High-performance VF control algorithm that can achieve full speed range of rated frequency (except zero speed) with 150% load stable operation;
- High-performance SVC control for stable operation with 150% load over the full speed range of the rated frequency.

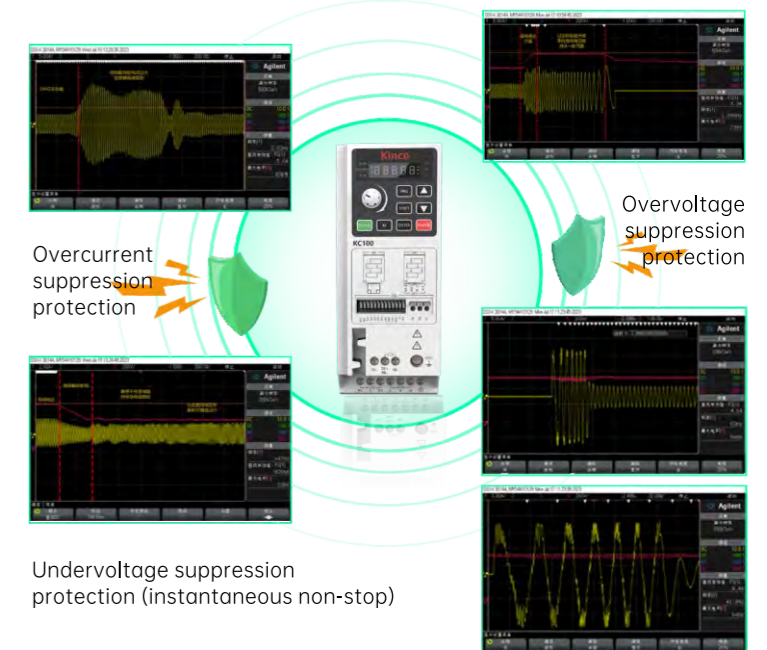


Open loop vector stable operation with 150% load in full speed range

Point to point, inhibit protection function A+

- Overcurrent suppression protection : real-time current monitoring, automatically limit the current to no more than the overcurrent suppression point;
- Overvoltage suppression protection : When no brake resistor is connected, the operating frequency is automatically adjusted or the bus voltage rise is suppressed by flux braking;
- Undervoltage suppression protection (instantaneous non-stop) : It can realize the function of instantaneous power loss without stopping;
- Wave-by-wave current limiting : When the sudden load or abnormal conditions such as momentary spikes in the current occurs, it will trigger the wave-by-wave current limit protection, which can limit the rise of the current to a certain extent, so that the current does not exceed the protection value of the inverter, and avoid reporting overcurrent fault and shutdown.
- Heat dissipation treatment : Independent air duct design, close to the IGBT power device efficient cooling, while the software built-in automatic reduction of carrier frequency according to temperature rise.

New high-performance vt control algorithm, stable operation at 0.1Hz with 150% load



Overcurrent suppression protection

Overvoltage suppression protection

Undervoltage suppression protection (instantaneous non-stop)

Wave-by-wave current limiting

Product Characteristics

Security guard, fault protection function A +

- Overvoltage, overcurrent fault protection;
- Input phase loss: Detect input phase loss based on bus voltage fluctuations. When phase loss occurs, a certain load is required to detect it;
- Output phase loss: Output phase loss fault can be quickly detected before and during operation; Phase to phase short circuit and short circuit to ground fault: quickly detected within 20ms before operation;
- Inverter module overtemperature, parameter self-learning failure, current detection failure, SVC stall failure, etc.



No waiting, fast action

- Fast delivery: Digital smart factory, using a more advanced overall lean production layout and end-to-end quality management system, high production efficiency, to ensure fast delivery;
- 24h instantaneous response: Attach importance to customer experience and respond quickly to customer needs through multiple channels of quality service.



Naming Rules & Parameters

KC100 series inverter naming rules

KC100 - 2 S - 01R5 G

1 2 3 4 5

①-Series

KC100:KC100 Series

②-Input voltage

2: AC220V
4: AC380V

③-Voltage level

S: Single-phase 180V ~ 260V
T: Three-phase 320V ~ 460V

④-Adaptive motor power

01R5: 1.5KW
02R2: 2.2KW
....
05R5: 5.5KW

⑤-Adaptive load

G: constant torque load

Note: R stands for decimal point

KC100 series inverter specifications and technical parameters

Inverter type	power capacity kVA	Input Current A	Output Current A	Adaptive motor kW
Single-phase 220v,50/60Hz				
KC100-2S-0R40G	1.0	5.3	2.5	0.4
KC100-2S-0R75G	1.5	8.2	4.0	0.75
KC100-2S-01R5G	3.0	14.0	7.5	1.5
KC100-2S-02R2G	4.0	23.0	10.0	2.2
Three-phase 380v,50/60Hz				
KC100-4T-0R75G	1.5	3.4	2.3	0.75
KC100-4T-01R5G	3.0	5.0	3.7	1.5
KC100-4T-02R2G	4.0	5.8	5.5	2.2
KC100-4T-03R7G	5.9	10.5	8.8	3.7
KC100-4T-05R5G	8.5	14.5	13.0	5.5

Technical Specification

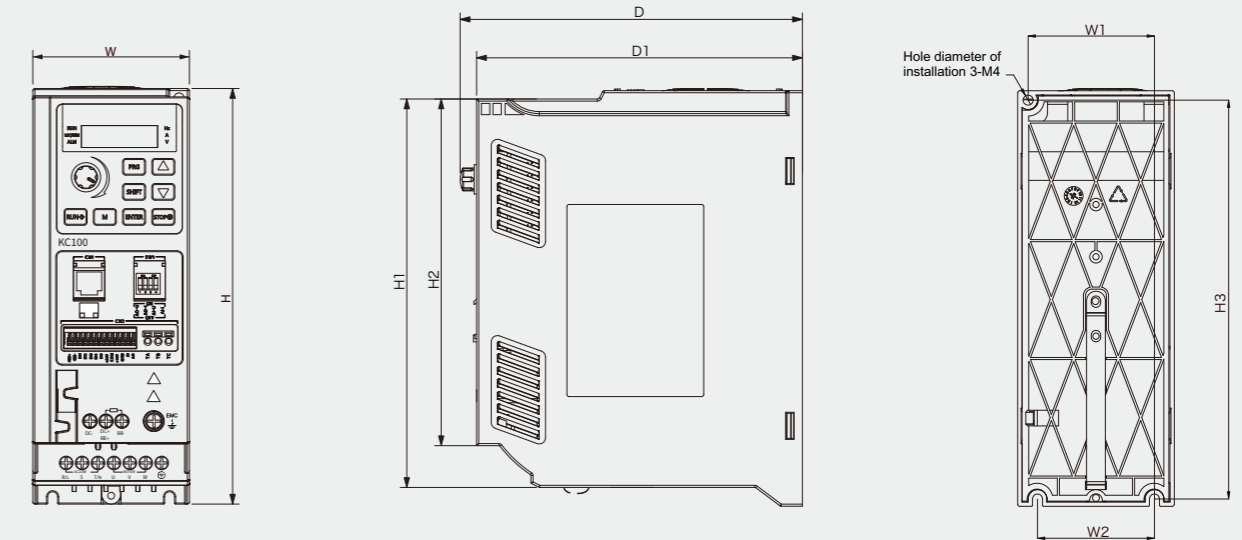
KC100 series inverter technical specification

Item	Specification	
Power input	Rated voltage, Rated frequency	2S: single-phase 180V ~ 260V 50Hz/60Hz; 4T: Three-phase 320V to 460V 50Hz/60Hz
	Allowable fluctuation range of voltage	-15 ~ 10%
	Allowable fluctuation range of frequency	± 5%
Output	Output voltage	0 ~ Input voltage
	Maximum output frequency	600Hz
	Overload capacity	60s at 150% the rated current, 3s at 180% rated current
Main control performance	Motor control mode	V/F control, Sensorless vector control (SVC), voltage frequency separation control
	Modulation mode	Space Vector Pulse Width Modulation
	Carrier frequency	0.5kHz to 12.0kHz
	Speed range	No PG vector control: rated load 1:200
	Startup torque	No PG vector control: 150% rated torque at 0.5Hz
	Torque response	No PG vector control: < 20ms
	Frequency accuracy	Digit setting: maximum frequency x (± 0.01%); Analog setting: Max frequency x (± 0.2%)
	Frequency resolution	Digital setting: 0.01Hz; Analog setting: maximum frequency x 0.1%
	Torque boost	Automatic boost: 0.0%; manual boost: 0.1 % to 30.0 %
	Basic function of product	Dc braking ability
V/F curve		Four Methods: multi-point V/f curve; Reduced torque characteristic curve;
Acceleration/ deceleration curve		Straight-line or S-curve acceleration/deceleration; Four groups of acceleration/deceleration time
Multi-speed running		The product supports up to 8 speeds with the control terminal
Built-in PID		The function facilitates closed-loop control of process control.
Auto voltage regulation (AVR)		When the mains voltage changes, the output voltage keeps constant automatically.
Overvoltage/overcurrent stall control		The function limits the current and voltage automatically during operation to prevent frequent trips caused by overvoltage or overcurrent.
Fast current limit		The function helps minimize overcurrent faults.
Power dip ride through		Load regenerative energy compensates for voltage reduction during instantaneous power failure, allowing the AC drive to continue operating for a short time.
Running command		Running commands can be given through the operating panel, control terminal, or serial port communication, which can be switched over in various ways.
Frequency reference		Digital settings, analog voltage, analog current, pulse, or serial port communication.
Auxiliary frequency reference		It can implement fine tuning of the auxiliary frequency and frequency synthesis.
Input terminals		4 digital input terminals, 1 of which supports high-speed pulse input up to 50kHz
	1 analog input terminal, support 0 ~ 10V/0 ~ 20mA input	
Output terminals	1 relay output terminal, including normally closed and normally open sub;	
	1 analog output terminal, support 0 ~ 10V voltage output	
Network Port	1 digital output terminal, 0.1kHz-50kHz pulse square wave signal output, capable of outputting physical quantities such as set frequency and output frequency	
	1 way 485 communication terminal	
Keyboard display	LED display	Single row 5-digit digital tube, with the same built-in keyboard and external keyboard
	Parameter copy	Quick parameter copy through the external keyboard
	Condition monitoring	Can display set frequency, output frequency, output voltage, output current and other more than 40 state parameters
	Fault Alarm	Overvoltage, undervoltage, overcurrent, short circuit, phase loss, overload, overheating, etc
Environment	Installation site	In the altitude area of more than 1000 meters, due to the thin air caused by the poor heat dissipation effect of the inverter, it needs to be derated, and 1% derated for every 100m rise
	Temperature	-10°C ~ +50°C Request a reduction in use
	Humidity	5%RH ~ 95%RH (non-condensation)
	Vibration	Less than 5.9 m/s ² (0.6g)
	Storage temperature	- 20 °C ~ + 60 °C
	Over voltage level	OVC III
	Class of contamination	Pd2
	Protection grade	Ip20
	Installation methods	Wall mounted

Dimension Drawing

KC100 series inverter mechanical dimensions (mm)

Note: when installing, keep enough space, the upper and lower space is recommended to keep >100mm, the left and right space is recommended to keep > 25mm

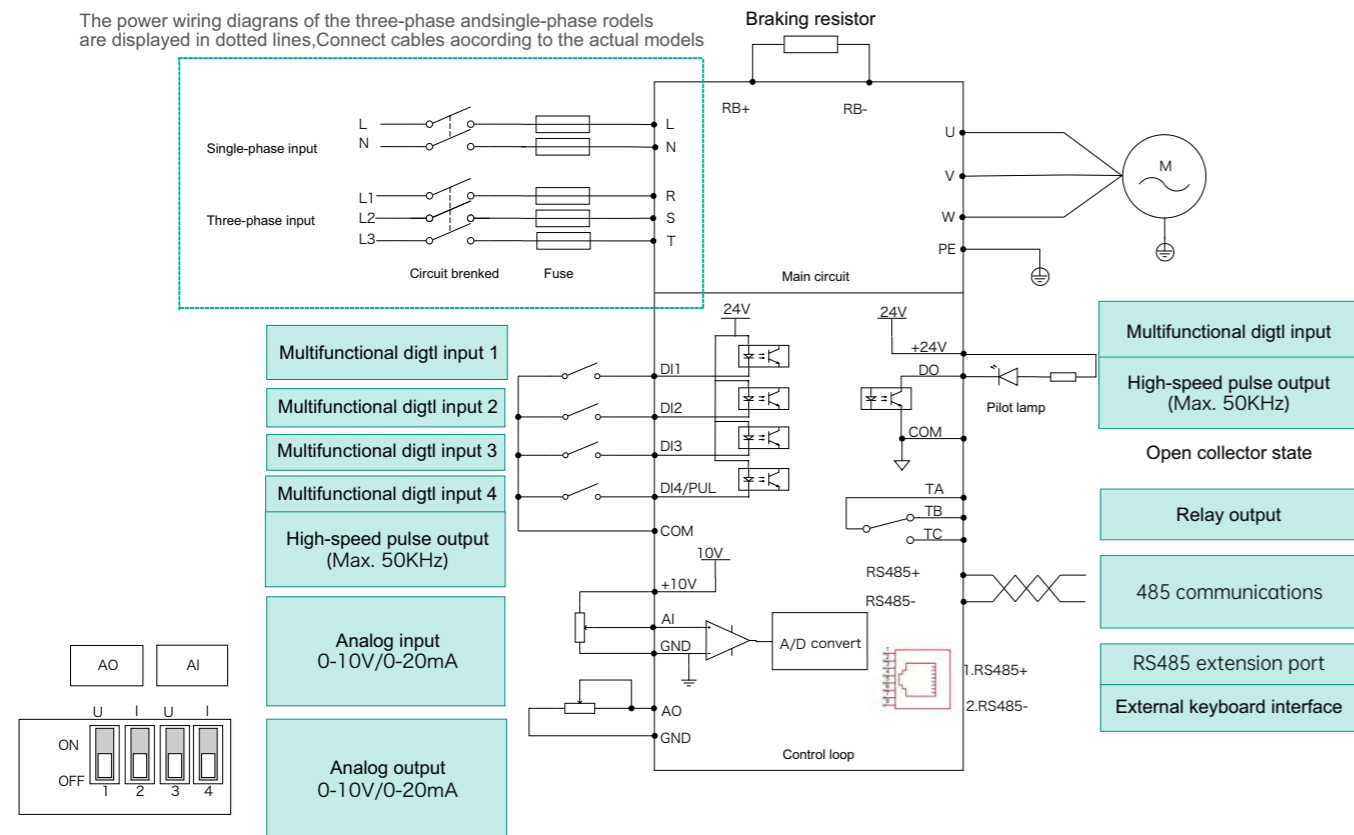


Voltage level	specifications and models	power (kW)	Dimension (mm)						mounting hole location (mm)			Hole diameter of installation (mm)	Weight (kg)
			W	H	H1	H2	D	D1	W1	W2	W3		
One-phase 220VAC	KC100-2S-0R40G	0.4	65	177	168.5	145	148	139	50	45	168	3-M4	0.85
	KC100-2S-0R75G	0.75											
Three-phase 380VAC	KC100-4T-0R75G	0.75	75	199	190	166	163	156	60.5	56	191	3-M4	1.28
	KC100-4T-01R5G	1.5											

Voltage level	specifications and models	power (kW)	Dimension (mm)						mounting hole location			Hole diameter of installation (mm)	Weight (kg)
			W	H	H1	H2	D	D1	W1	W2	W3		
One-phase 220VAC	KC100-2S-01R5G	1.5	75	199	190	166	163	156	60.5	56	191	3-M4	1.28
	KC100-2S-02R2G	2.2											
Three-phase 380VAC	KC100-4T-02R2G	2.2	75	199	190	166	163	156	60.5	56	191	3-M4	1.28
	KC100-4T-03R7G	3.7											
	KC100-4T-05R5G	5.5											

Terminal wiring diagram & Function description

KC100 series terminal wiring diagram



KC100 series terminals Function description

Terminal type	Terminal identification	Terminal name	Terminal function description
Main circuit	R/L, S, T/N	Three-phase/single-phase input terminals	Connect to the grid
	U, V, W	Three-phase output terminal	Three-phase AC output, connecting motor
	DC-	Negative end of DC	Common DC bus use
	DC+(RB+)	DC+ RB+	Dc bus plus end Brake resistor wiring end
	RB-	RB-	Brake resistor wiring end
Control circuit	⊕	Ground terminal	Shield the ground terminal
	DI1-DI4	Multifunctional digital input	Active low Effective level:0~15VDC; DI1-DI3 is low speed input; DI4 is used as a high speed; input with a maximum input frequency of 50kHz.
	DO	High-speed pulse output	High speed pulse output; Max output frequency 50kHz, Also as an open collect output
	+24V	+24V	External 24VDC power supply; Output voltage range:24V±10%; Maximum current: 200mA
	COM	24V power supply ground	Interior isolated from GND
	+10V	+10V analog voltage output	External 10V analog power supply; Output voltage range:10V±10%; Maximum current: 10mA
	GND	Simulated ground	Interior isolated from COM
	AI	Analog input	Input voltage/current range:0 ~ 10V/0 ~ 20mA; Select input signal type by dial switch
	AO	Analog output	Support 0 ~ 10V/0 ~ 20mA; Output Select the output signal type through the dial switch
	TA-TB-TC	Relay output	Normally closed: TA-TB; Normally open: TA-TC Contact load: 3A/250V AC, 1A/30V DC
	485+	485 communication positive signal	RS485 communication, support standard MODBUS RTU protocol
	485-	485 Communication negative signal	

Keyboard Operation

Keyboard operation

Support built-in keyboard and external keyboard, the body keyboard adopts 8 large-size independent keys, no re-use keys, can avoid the possibility of press by mistake, easy and quick to achieve control functions, and self-potentiometer; external keyboard, the keyboard line can reach 10 meters.

Ontology keyboard:

- LED monitor
- Command source indicator light (LOC/REM)
- RUN indicator light (RUM)
- Fault indicator light
- Menu key
- Potentiometers
- Shift key
- Run key
- Enter key
- Multifunction key

External reference operation panel:

- Forward and reverse run indicator light
- Command source indicator light
- RUN indicator light
- Current limiting indicator light
- Fault indicator light
- Unit indicator light
- Potentiometers
- Enter key
- Multifunction key
- Stop /Reset key
- Forward/reverse key

Note: Can Buy Buke KC100 network port keyboard: KC100