KEISOKU GIKEN Co., Ltd.

AC Power Source
QA series

Evolution while inheriting the basic concept

High-Capacity Programmable AC Power Source QA series

NEW PRODUCT

QUAD
Ene-phant®

QUAD Ene-phant®

Inherited the basic concept
Large capacity programmable
AC Power Source

Three-phase switched-mode

Top-class space-saving AC Power Source

QA-T4 series

- High efficiency with a power factor of 0.95. Size of input system breakers can be reduced
- Space-saving with built-in power factor correction circuit (PFC)
- Lineup of 4 models: 15kVA, 30kVA, 60kVA and 90kVA

It covers a large capacity of up to 90 kVA from 15 kVA, and its integrated design makes it compact and lightweight. PLC, DI/DO and RS-232C/USB/LAN interfaces are standardized, and by installing an optional GPIB/RS-232C converter and external analog input control (0 to 10Vdc), automatic control by PC base or PLC is possible. The standard output voltage is 310V (line to line voltage 537V), and it is possible to reproduce power source environments around the world. Also, by using the output voltage 350V (line-to-line 606V) extension option, voltage variations test (±20%) is possible.

400Hz Output Dedicated Aircraft Ground Power Source

QA-T4-4 series

- Input wiring method and voltage can be changed according to the grid voltage of airports and bases (factory option)
- Specialization in simple functions, realizing space-saving and low cost
- Lineup of 4 models: 15kVA, 30kVA, 60kVA and 90kVA

Timed current limitation of motor starting current as standard. In addition, it is optionally available with 3 times instantaneous overload output, enabling testing for all types of rotating(motor) equipment.

single phase switched-mode

Highly Efficient AC Power Source with PFC

QA-S2 series

- High efficiency with a power factor of 0.95. It is possible to reduce the size of the breaker of the input system
- Space-saving with built-in power factor correction circuit (PFC)
- Lineup of 3 models: 10kVA, 20kVA and 30kVA

It covers large capacities of up to 30 kVA, and its integrated design makes it compact and lightweight. PLC, DI/DO and RS-232C/USB/LAN interfaces are standardized, and by installing an optional GPIB/RS-232C converter and external analog input control (0 to 10Vdc), automatic control by PC base or PLC is possible. A 350V output voltage extension option and a 600V output voltage extension option are also available, enabling various tests. Timed current limitation of motor starting current as standard. In addition, it is optionally available with 3 times instantaneous overload output, enabling testing for all types of rotating(motor) equipment.

Upgrade

Inheriting the basic concept,
equipped with various new functions

Comparison with conventional products

The "QA Series" has been upgraded while covering the specifications and performance of the "6300/6500 Series".

■ 6300･6500 series		■ QA series
		
4 large LCDs	**Front display**	4 large LCDs
Function key UP/Down key output key	**Manual operation**	Function key, Emergency stop button, Digit shift key UP/Down key, Illuminated output switch, Pilot lamp
Phase voltage setting only Phase and line voltage measurement can be specified	**Setting voltage Measurement voltage**	Phase voltage and line voltage setting possible Phase and line voltage measurement can be specified
15kVA:600x839x980 30kVA:600x949x988	**Dimensions**	15kVA:600x949x986 30kVA:600x949x986
547kg(30kVA)	**Net weight**	550kg(30kVA)
Low range ：150V High range:300V	**Output voltage (phase voltage)**	Low range: 155V High range:310V
Low range：84A High range:42A	**Output current (30KVA model)**	Low range：100A High range:50A
≦3	**CF(crest factor)**	≦4
45Hz～70Hz	**Output frequency**	40Hz～70Hz
Less than 2msec	**Response time**	Less than 2msec
1% or less	**Total harmonic distortion**	1% or less
Option	**Remote sense function**	Standard equipment
Option	**Level adjuster**	Standard equipment
Not supported	**Support for USB memory**	Data can be saved to USB memory
Not supported	✕ **Failure diagnosis function** ✓	Failure details are indicated by code number
Not supported	✕ **Integration time measurement** ✓	Display total operating hours (minutes)
Overcurrent foldback function	✕ **Overcurrent support** ✓	Timed current limit function Instantaneous overload support (optional)
Input: ON/OFF Memory P1, P2, P3 selection	**PLC control**	Input: ON/OFF Memory P1, P2, P3 selection
Output：Processing	**DI/DO control**	Input: Emergency stop, Interlock Output: Fail (Failure alarm), Processing, STANDBY, Emergency stop alarm +12V,Trig output (pulse)
Standard: USB/RS-232C Option: GP-IB	**Communication Interface**	Standard: USB/RS-232C/LAN Option: GP-IB

Evolution — Housing/User Interface

Inheriting the basic concept,
equipped with various new functions

1 Screw holes for fixing signal tower as standard

The rear panel DI/DO and SL08 series (manufactured by PATLITE®) can be easily connected.

2 Pilot lamp convenient for checking energization

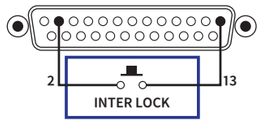
A pilot lamp that indicates when power is received from the grid at a glance is standard equipment.

3 Emergency stop button and interlock function as standard equipment for enhanced safety

The emergency stop button immediately shuts off the output in the event of a DUT failure. By using the interlock function with the contact signal of door open/close of jig equipment, etc., it can be used as an emergency stop function linked with door open/close. (Open: enabled Short: disabled)

Front panel

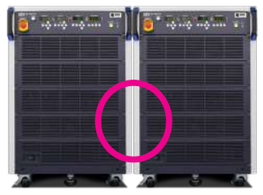
Real panel
DI/DO



D-sub 25pin Male connector

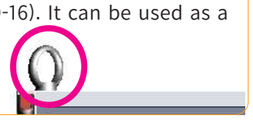
4 Front intake and rear exhaust eliminates the need for space on the left and right sides

The intake from the side, which was used in the previous model, has been eliminated, and even with large capacity, the structure has been unified to have front intake and rear exhaust. Products can now be installed without gaps on either side.



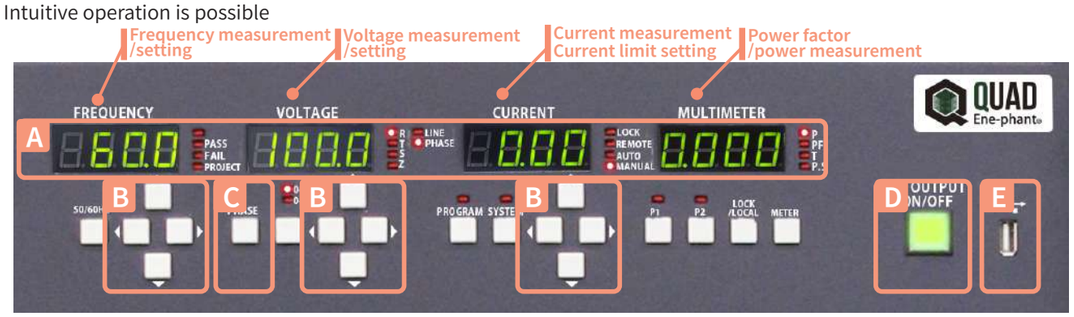
5 Earthquake-resistant housing fixing bolts can be attached (optional)

A fixing bolt that can be attached to the top of the housing (eye bolt type: cannot be lifted) is available as an option (model name: AO-16). It can be used as a simple Earthquake-resistant.



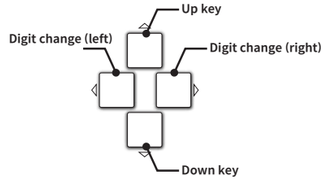
6 Easy operation with direct key

Only recall of fixed functions (system key programmable keys are excluded).
Intuitive operation is possible



A 4 values (frequency, voltage, current, and power factor or power) can be measured simultaneously, just like a power meter. The large, highly visible green LED is used for ease of viewing.

B A digit change key has been added in addition to the Up/Down keys for setting values. The new model is easier to set.



C In addition to the conventional voltage measurement function for each PHASE and LINE, a new LINE/PHASE switching function has been added so that the voltage can be set for each phase voltage and line voltage. Any voltage can be set directly.

D Adopts an illuminated output switch so you can see the output status at a glance.

E By connecting a USB memory to the dedicated USB port, program settings can be saved and recalled on the USB memory. Firmware updates can also be performed using this port.

Failure diagnosis function as standard equipment

Failure details can be displayed as code numbers and managed in the history. The history results enable the user to identify the cause of the malfunction, which in turn allows for quicker repair and after-sales service.

Cumulative operating hours function is standard

The total operating time during operation can be displayed (in minutes). By knowing the actual operating hours, thorough and prompt after-sales service is possible.

7 Supports installation of earthquake-resistant anchor bolt fixtures (optional)

It is possible to take earthquake-resistant measures by using the special screw holes prepared in advance at the four corners (front and rear) of the housing and using the optional (model name: AO-17) anchor bolt fixing bracket.

8 Level adjuster as standard equipment

A level adjuster, which was an option in conventional products, is standard equipment. Brackets for fixing level adjusters are also available as an option for simple earthquake resistance measures.

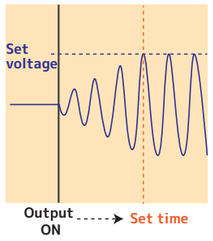
Evolution

— Mode/Function/Interface

Inheriting the basic concept,
equipped with various new functions

Voltage soft-start function as standard equipment

Equipped with a soft start time setting when the output is turned on, it is possible to increase the voltage without starting current during motor starting operation.



Capable of reproducing supply voltages from around the world

By expanding the PHASE voltage to 350V, this option can output up to 606V in LINE voltage. This allows simulation of power source voltages of 480V ± 20% (384V~576V) without the use of a separate transformer, making it possible to reproduce power source voltages from all over the world, including voltage variations tests.

Extensive interfaces

LAN/USB/RS-232C are standard. GPIB/RS-232C converter is also available as an option.

USB for power source for GPIB/RS-232C converter

GPIB/RS-232C Converter
(Model name: QO-C-01)

Equipped with PLC input and DI/DO suitable for PLC control. External analog input control available as an option

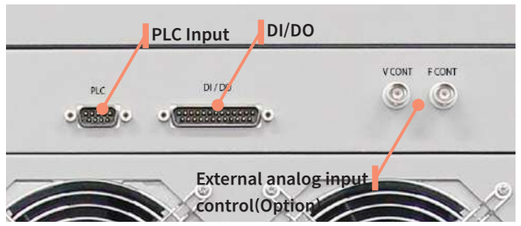
In addition to PC-based communication control, 0 to 10Vdc external analog control is supported as an option. Voltage and frequency can be controlled from a PLC (programmable logic controller) using standard PLC inputs and DI/DO.

PLC input and DI/DO

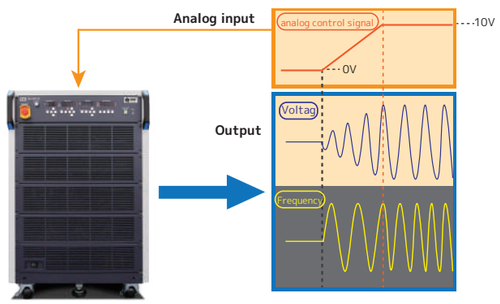
External I/O	Name	Purpose
PLC	ON/OFF	Output ON/OFF
	P1,P2.P3	P1.P2.P3 Memory selection
DI/DO	Emergency stop	Emergency stop execution
	InterLock	Interlock function
	Fail	Alarm output in case of abnormality
	Processing	Status output during test
	STANBY	Status output during test standby
	EMERGENCY	Emergency stop alarm output
	+12V	+12 V (Maximum 250mA)
	Trig output	Trigger output

External analog input control

External AI	Name	Purpose
V CONT	Output voltage control	External CV control 0~10Vdc
F CONT	Output frequency control	External CF control 0~10Vdc

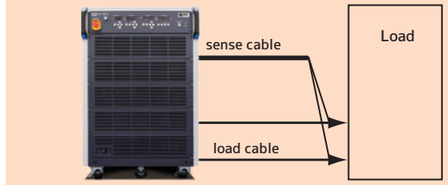


Analog Control Movement



Voltage remote sense as standard

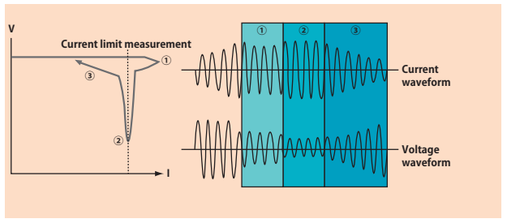
Voltage drop when a large current is applied is compensated for, enabling more accurate voltage setting at the sense point. It is effective when the distance between the AC power source unit and the load is far apart.



Timed current limit function is standard

Motors, compressors, etc. temporarily draw a large starting current. If this starting current activates the protection circuit of the AC power source, testing will not be possible.

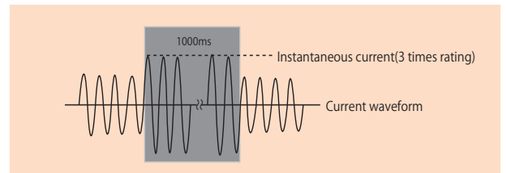
The timed current limit function was developed to avoid this problem, so it can be used with confidence when testing motors, compressors, etc.



By repeating steps 1 to 3, you can drive the motor.

Instantaneous overload support (optional)

It can supply an instantaneous overload of 3 times the rated capacity within 1 second (the voltage drop will drop to 110% if the time limit exceeds 1 second) . Even when testing motors and compressors with large inrush currents and starting currents, it is possible to start (rotate) without voltage drop.



Waveform at instantaneous current

Changeable to input voltage / input wiring Method (factory option)

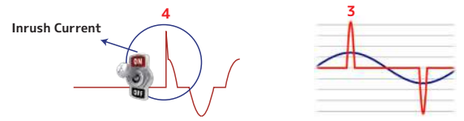
As a factory option (for a fee), the input voltage and wiring method can be changed to the following. It is possible to correspond to the grid input voltage of any country. ※ Standard is 3-phase 3-wire 200V unless specified.

3-phase 3-wire line voltage	3-phase, 4-wire Phase voltage / Line voltage
200V、208V、220V、230V 240V、380V、400V、415V	220V/380V、230V/400V、240V/415V
200V、208V、220V、230V、240V、380V、400V、415V、440V、480V	220V/380V、230V/400V、240V/415V、254V/440V、266V/460V、277V/480V

Resistant to inrush current

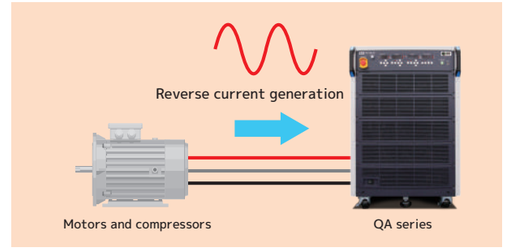
Inrush current can be supplied from 3 times that of conventional models to 4 times that of specifications. It also has a maximum of 4 times the resistance to repeated crest factors.

< Rush current: **4** times maximum current > < Crest factor: up to **4** times >



Optimal reverse current protection for protection during electric motor testing (optional)

A reverse current protection function is available as an option. When input current (reverse current) is detected from the output end of the AC power source, an alarm is displayed, and the output is immediately turned off to protect the AC power source itself. The main unit is protected from reverse currents such as reverse currents generated when motors, compressors, and other electric motors stop, and from instantaneous reverse currents generated by the PCS when combined in parallel with a resistive load as a power source simulating the grid, ensuring safe use of the unit.



Specifications

QA-T4 series (Three-phase output)

S-2572-1.1

Model			QA-15K-T4 (3-phase 15 kVA)	QA-30K-T4 (3-phase 30 kVA)	QA-60K-T4 (3-phase 60 kVA)	QA-90K-T4 (3-phase 90 kVA)
AC output (AC effective value)						
Number of phases/Lines			3 phase 4 wire			
Rated value	Rated voltage		155 V / 310 V			
	Rated current		50 A / 25 A	100 A / 50 A	200 A / 100 A	300 A / 150 A
	Rated power		15 kVA	30 kVA	60 kVA	90 kVA
AC voltage (r.m.s)	Output PHASE voltage setting range		0 ～ 155 V / 0 ～ 310 V / Auto range			
	Output LINE voltage setting range		0 ～ 269 V / 0 ～ 537 V / Auto range			
	Setting resolution		0.1 V			
	Setting accuracy *1*2		10 V or more: ± (1 % of setting + 2 counts)、less than 10 V：± (1 % of setting + 4 counts)			
	Line regulation		± 0.1 V			
	Load regulation		Phase voltage (L - N)：± (0.5% of Setting + 0.5 V)、Line voltage (L -L)：± (1 % of Setting + 1 V)（Resistive load）			
	DC offset voltage		± 20 mV（typ）			
	Response time		2 msec（10 ～ 90 %, typ）			
AC maximum current (r.m.s) single phase	0 ～ 155 V		50 A @ 100 V	100 A @ 100 V	200 A @ 100 V	300 A @ 100 V
	0 ～ 310 V		25 A @ 200 V	50 A @ 200 V	100 A @ 200 V	150 A @ 200 V
Frequency	Range of values		40 Hz ～ 70 Hz			
	Setting resolution		0.1 Hz			
	Setting accuracy		± (0.02 % of Setting)			
THD (Total Harmonic Distortion)			1 % or less（40 Hz ～ 70 Hz、Resistive load）			
Crest factor			≦ 4			
Load power factor			0 ～ 1（Enter phase or retarded phase、40 Hz ～ 70 Hz、External power injection and regenerative operation are not possible）			
Remote sense	Range L		Guaranteed up to 10 V			
	Range H		Guaranteed up to 20 V			
Measuring function (RMS value or AC)						
AC voltage (r.m.s)	Phase voltage measurement range		0 ～ 155.0 V / 0 ～ 310.0 V			
	Line voltage measurement range		0 ～ 269.0 V / 0 ～ 537.0 V			
	Measurement resolution		0.1 V			
	Measurement Accuracy *3		± (1 % of Reading + 2 counts)			
AC current (r.m.s)	Measuring range	L	0.00 ～ 35.00 A			
		H	30.0 ～ 350.0 A			
	Measurement resolution	L	0.01 A			
		H	0.1 A			
	Measurement Accuracy *4	L	± (1 % of Reading + 5 count)			
		H	± (1 % of Reading + 1 count)			
Frequency	Measuring range		40 Hz ～ 70 Hz			
	Resolution		0.1 Hz			
	Degree of accuracy		± 0.1 Hz			
AC Effective Power	Measuring range	L	0.000 ～ 3.500 kW			
		H	3.00 ～ 40.00 kW			
	Measurement resolution	L	0.001 kW			
		H	0.01 kW			
	Measurement Accuracy *5	L	± (1.5 % of Reading + 5 count)			
		H	± (1.5 % of Reading + 1 count)			
Power factor	Measuring range		0 ～ 1.000（Calculation Formula：W/V × A）			
	Measurement resolution		0.001			
General Specifications						
Input power source	Input phase / wire		Three-phase 3-wire			
	Input Voltage / Frequency		AC 200 V ± 10 % / 47 ～ 63 Hz			
	Power factor (at max. load)		0.90 or more			
	Efficiency (at maximum load)		80 % or more (At full load)			
Input power	With PFC at max load		20.8 kVA	41.7 kVA	83.3 kVA	125 kVA
Input current	Three-phase 3-wire AC 180 V at maximum load		66.8 A	133.6 A	267 A	401 A
Input form			Terminal block			
Net weight	Main body only		380 kg	550 kg	950 kg	1500 kg
Dimensions (WxHxD)	Including casters		600 × 949 × 986 [mm]		1000 × 1662 × 986 [mm]	1200 × 1805 × 986 [mm]
Fixing method			Fixed with Level adjuster			
Movement method			Self-propelled on casters			
Environmental condition	Operating environment		Indoor use			
	Operating temperature		0 ℃～ + 40 ℃			
	Operating humidity		20 % Rh ～ 85 % Rh（No dew condensation）			
	Storage temperature		-20 ℃～ + 60 ℃			
	Storage Humidity		20 % Rh ～ 85 % Rh（No dew condensation）			
	Altitude		2000 m or less above sea level			
Cooling method			Forced air cooling by fan			
Withstand voltage	Between input and output		AC 1500 V、1 minute			
	Between input and FG					
Insulation resistance	Between input and FG		DC 500 V、30 M Ω or more			

*1: Accuracy is not guaranteed when the output voltage is 5 V or less. *2: When the output voltage is more than 5 V and less than 30 V, "Volt Adj"=ON satisfies this specification. *3: Accuracy is not guaranteed when the output voltage is 5 V or less (10 V or less for the 600 V option). *4: When 0 to 310V is used, the accuracy specification is met when the output voltage exceeds 5V (10V for 0 to 600V option). *5: When output voltage is 5V or less, specification accuracy is met.

QA-T4-4series(Three-phase output 400 Hz only)

S-2572-1.1

Model			QA-15K-T4-4(3-phase 15 kVA)	QA-30K-T4-4 (3-phase 30 kVA)	QA-60K-T4-4(3-phase 60 kVA)	QA-90K-T4-4(3-phase 90 kVA)
AC output (AC effective value)						
Number of phases/Lines			3 phase 4 wire			
Rated value	Rated voltage		155 V / 310 V			
	Rated current		50 A / 25 A	100 A / 50 A	200 A / 100 A	300 A / 150 A
	Rated power		15 kVA	30 kVA	60 kVA	90 kVA
AC voltage (r.m.s)	Output PHASE voltage setting range		0 ～ 155 V / 0 ～ 310 V / Auto range			
	Output LINE voltage setting range		0 ～ 269 V / 0 ～ 537 V / Auto range			
	Setting resolution		0.1 V			
	Setting accuracy *1*2		10 V or more：± (1 % of setting + 2 counts)、less than 10 V：± (1 % of setting + 4 counts)			
	Line regulation		± 0.1 V			
	Load regulation		Phase voltage (L - N)：± (0.5% of Setting + 0.5 V)、Line voltage (L -L)：± (1 % of Setting + 1 V)（Resistive load）			
	DC offset voltage		± 20 mV（typ）			
	Response time		2 msec（10 ～ 90 %, typ）			
AC maximum current (r.m.s) single phase	0 ～ 155 V		50 A @ 100 V	100 A @ 100 V	200 A @ 100 V	300 A @ 100 V
	0 ～ 310 V		25 A @ 200 V	50 A @ 200 V	100 A @ 200 V	150 A @ 200 V
Frequency	Range of values		360 Hz ～ 440 Hz			
	Setting resolution		1 Hz			
	Setting accuracy		± (0.02 % of Setting)			
THD (Total Harmonic Distortion)			1 % or less（360 Hz ～ 440 Hz、Resistive load）			
Crest factor			≦ 4			
Load power factor			0 ～ 1（Enter phase or retarded phase、360Hz ～ 440 Hz、External power injection and regenerative operation are not possible）			
Remote sense	Range L		Guaranteed up to 10 V			
	Range H		Guaranteed up to 20 V			
Measuring function (RMS value or AC)						
AC voltage (r.m.s)	Phase voltage measurement range		0 ～ 155.0 V / 0 ～ 310.0 V			
	Line voltage measurement range		0 ～ 269.0 V / 0 ～ 537.0 V			
	Measurement resolution		0.1 V			
	Measurement Accuracy *3		± (1 % of Reading + 2 counts)			
AC current (r.m.s)	Measuring range	L	0.00 ～ 35.00 A			
		H	30.0 ～ 350.0 A			
	Measurement resolution	L	0.01 A			
		H	0.1 A			
	Measurement Accuracy *4	L	± (1 % of Reading + 5 count)			
		H	± (1 % of Reading + 1 count)			
Frequency	Measuring range		360 Hz ～ 440 Hz			
	Resolution		0.1 Hz			
	Degree of accuracy		± 0.1 Hz			
AC Effective Power	Measuring range	L	0.000 ～ 3.500 kW			
		H	3.00 ～ 40.00 kW			
	Measurement resolution	L	0.001 kW			
		H	0.01 kW			
	Measurement Accuracy *5	L	± (1.5 % of Reading + 5 count)			
		H	± (1.5 % of Reading + 1 count)			
Power factor	Measuring range		0 ～ 1.000（Calculation Formula W/V × A）			
	Measurement resolution		0.001			
General Specifications						
Input power source	Input phase / wire		Three-phase 3-wire			
	Input Voltage / Frequency		AC 200 V ± 10 % / 47 ～ 63 Hz			
	Power factor (at maximum load)		0.90 or more			
	Efficiency (at maximum load)		80 % or more (At full load)			
Input power	With PFC at max load		20.8 kVA	41.7 kVA	83.3 kVA	125 kVA
Input current	Three-phase 3-wire AC 180V at maximum load		66.8 A	133.6 A	267 A	401 A
Input form			Terminal block			
Net weight	Main body only		380 kg	550 kg	950 kg	1500 kg
Dimensions (WxHxD)	Including casters		600 × 949 × 986 [mm]		1000 × 1662 × 986 [mm]	1200 × 1805 × 986 [mm]
Fixing method			Fixed with Level adjuster			
Movement method			Self-propelled on casters			
Environmental condition	Operating environment		Indoor use			
	Operating temperature		0 ℃～ + 40 ℃			
	Operating humidity		20 % Rh ～ 85 % Rh（No dew condensation）			
	Storage temperature		-20 ℃～ + 60 ℃			
	Storage Humidity		20 % Rh ～ 85 % Rh（No dew condensation）			
	Altitude		2000 m or less m above sea level			
Cooling method			Forced air cooling by fan			
Withstand voltage	Between input and output		AC 1500 V、1 minute			
	Between input and FG					
Insulation resistance	Between input and FG		DC 500 V、30 M Ω or more			

*1: Accuracy is not guaranteed when the output voltage is 5 V or less. *2: When the output voltage is more than 5 V and less than 30 V, "Volt Adj"=ON satisfies this specification.*3: Accuracy is not guaranteed when the output voltage is 5 V or less (10 V or less for the 600 V option). *4: When 0 to 310V is used, the accuracy specification is met when the output voltage exceeds 5V (10V for 0 to 600V option). *5: When output voltage is 5V or less, specification accuracy is met.

Specifications

QA-S2 series(single-phase output)

S-2572-1.1

Model			QA-10K-S2 (single phase 10 kVA)	QA-20K-S2 (single phase 20 kVA)	QA-30K-S2 (single phase 30 kVA)
AC output (AC effective value)					
Number of phases/Lines			Single-phase 2-wire		
Rated value	Rated voltage		155 V / 310 V		
	Rated current		100 A / 50 A	200 A / 100 A	300 A / 150 A
	Rated power		10 kVA	20 kVA	30 kVA
AC voltage (r.m.s)	Output PHASE voltage setting range		0 ～ 155 V / 0 ～ 310 V / Auto range		
	Setting resolution		0.1 V		
	Setting accuracy *1*2		± (1 % of setting + 2 counts)		
	Line regulation		± 0.1 V		
	Load regulation		± (0.5 % of Setting + 0.5 V) (Resistive load)		
	DC offset voltage		± 20 mV (typ)		
	Response time		2 msec (10 ～ 90 %, typ)		
AC maximum current (r.m.s) single phase	0 ～ 155 V		100 A @ 100 V	200 A @ 100 V	300 A @ 100 V
	0 ～ 310 V		50 A @ 200 V	100 A @ 200 V	150 A @ 200 V
Frequency	Range of values		40 Hz ～ 70 Hz		
	Setting resolution		0.1 Hz		
	Setting accuracy		± (0.02 % of Setting)		
THD (Total Harmonic Distortion)			1 % or less (40 Hz ～ 70 Hz、Resistive load)		
Crest factor			≦ 4		
Load power factor			0 ～ 1 (Enter phase or retarded phase、40 Hz ～ 70 Hz、External power injection and regenerative operation are not possible)		
Remote sense	Range L		Guaranteed up to 10 V		
	Range H		Guaranteed up to 20 V		
Measuring function (RMS value or AC)					
AC voltage (r.m.s)	Phase voltage measurement range		0 ～ 155.0 V / 0 ～ 310.0 V		
	Line voltage measurement range		0 ～ 269.0 V / 0 ～ 537.0 V		
	Measurement resolution		0.1 V		
	Measurement Accuracy *3		± (1 % of Reading + 2 counts)		
AC current (r.m.s)	Measuring range	L	0.00 ～ 35.00 A		
		H	30.0 ～ 350.0 A		
	Measurement resolution	L	0.01 A		
		H	0.1 A		
	Measurement Accuracy *4	L	± (1 % of Reading + 5 count)		
		H	± (1 % of Reading + 1 count)		
Frequency	Range of values		40 Hz ～ 70 Hz		
	Resolution		0.1 Hz		
	Degree of accuracy		± 0.1 Hz		
AC Effective Power	Measuring range	L	0.000 ～ 3.500 kW		
		H	3.00 ～ 40.00 kW		
	Measurement resolution	L	0.001 kW		
		H	0.01 kW		
	Measurement Accuracy *5	L	± (1 % of Reading + 5 count)		
		H	± (1 % of Reading + 1 count)		
Power factor	Measuring range		0 ～ 1.000 (Calculation Formula : W/V × A)		
	Measurement resolution		0.001		
General Specifications					
Input power source	Input phase / wire		Three-phase 3-wire		
	Input Voltage / Frequency		AC 200 V ± 10 % / 47 ～ 63 Hz		
	Power factor (at max. load)		0.90 or more		
	Efficiency (at maximum load)		80 % or more (At full load)		
Input power	With PFC at max load		13.9 kVA	27.8 kVA	41.7 kVA
Input current	Three-phase 3-wire AC 180 V at maximum load		44.5 A	89.1 A	133.6 A
Input form			Terminal block		
Net weight	Main body only		346 kg		536 kg
Dimensions (WxHxD)	Including casters		430 × 839 × 736[mm]		600 × 1085 × 986[mm]
Fixing method			Fixed with level adjuster		
Movement method			Self-propelled on casters		
Environmental condition	Operating environment		Indoor use		
	Operating temperature		0 °C～ + 40 °C		
	Operating humidity		20 % Rh ～ 85 % Rh (No dew condensation)		
	Storage temperature		-20 °C～ + 60 °C		
	Storage Humidity		20 % Rh ～ 85 % Rh (No dew condensation)		
	Altitude		2000 m or less m above sea level		
Cooling method			Forced air cooling by fan		
Withstand voltage	Between input and output		AC 1500 V、1 minute		
	Between input and FG				
Insulation resistance	Between input and FG		DC 500 V、30 M Ω or more		

*1: Accuracy is not guaranteed when the output voltage is 5 V or less. *2: When the output voltage is more than 5 V and less than 30 V, "Volt Adj"=ON satisfies this specification. *3: Accuracy is not guaranteed when the output voltage is 5 V or less (10 V or less for the 600 V option). *4: When 0 to 310V is used, the accuracy specification is met when the output voltage exceeds 5V (10V for 0 to 600V option). *5: When output voltage is 5V or less, specification accuracy is met.

Common to all models

S-2572-1.1

Protective function			
Overvoltage protection (OVP)			The output voltage value has exceeded the set voltage of +5V
Overcurrent protection (OCP)			Output current has exceeded +10% of rated maximum current
Over Power Protection (OPP)			Output power has exceeded 10% of rated power
Over-Temperature Protection (OTP)			The heat sink for heat dissipation of the main unit or the transformer has exceeded the set temperature.
Short-circuit protection			Output short circuit has detected
Low voltage protection			When the remote sensing function is ON, the measured voltage value is lower than the set value.
AC input overvoltage protection (Vin OVP)			Input voltage has exceeded +20% of rating
AC input undervoltage protection (Vin UVP)			Input voltage has exceeded -20% of rating
AC input voltage imbalance protection			Unbalanced phase voltage (± 20 V) of the three input phases has been detected.
Limit function		Current	The output current has exceeded the set limit value.
		Power	Output power has exceeded set limit
Other features			
Timed current limit function			A function that reduces the output voltage to maintain a constant current when the output current is about to exceed the limit value.
Timer time setting		Range	1 ～ 9999 (0= continuous)
		Unit	Selectable from seconds, minutes, and hours
Soft start function		Setting range	0.1 ～ 999.9 s
		Setting resolution	0.1 s
Memory			10 file、20 steps per file (Voltage, Frequency, Test Time, Judgment Delay Time, Current, Power, Upper Limit / Lower limit setting can be memorized)
Auto loop cycle			0= continuous、OFF=one time、2 ～ 9999 (Select magnification x 1, x 10, or x 100.)
Calibration Function			Calibration possible from the front panel
Failure diagnosis function			Displays various failure details by code number
Cumulative operating hours			Total operating hours (unit: minutes)
Pilot lamp			White lamp on front panel lights up when system input (breaker ON)
Emergency stop button			Execute an emergency stop with the emergency stop button on the front panel
Output ON/OFF button (light-emitting type)			Equipped on front panel (Lights up when output is ON)
Control button			Equipped on front panel
Display panel			7SEG LEDs on front panel
Operation display			
OUTPUT ON/OFF		When output is on	OUTPUT LED lights up
Alarm Action		When protective function is activated	PROTECT LED lights up
		In case of operation abnormality	FAIL LED lights up(Startup error、OVP、OCP、SHORT、OPP、Temperature anomaly、Fuse blown, IGBT failure, input power overload voltage / low voltage / instantaneous breakdown detection, etc.)
Key lock operation		Key-locked state	LOCK LED lights up
Remote operation		During remote control	REMOTE LED lights up
Output voltage range		At Low range	0 ～ 155 V LED lights up
		At High range	0 ～ 310 V LED lights up
Voltage value display		when line voltage is displayed	LINE LED
		When phase voltage is displayed	PHASE LED
Output power capacity display			P LED
Power factor display			PF LED
Test time display			T LED
Program memory status display			P-S LED
External Control			
PLC remote control (D-Sub 9 pin connector)	Input signal	Output ON/OFF	Controls AC voltage output ON/OFF
		Memory read	Reads one of the program memories P1, P2, or P3
DI/DO control (25-pin D-Sub connector)	Input signal	Emergency stop	Execute emergency stop
		INTERLOCK	Disables the main unit panel control
	Output signal	FAIL	Operation error alarm
		PROCESSING	Alarm during program test
		STANDBY	Program test standby alarm
		EMERGENCY	Emergency stop alarm
	Power supply	+ 12 V	+12 V (max. 250 mA) supply (service power supply for the signal tower)
	Trigger output	Signal Level	Low level (0 V ～ 1.0 V)、High level (3 V ～ 5 V)
		Function	High level when output ON / Low level when output OFF / Pulse output
Interface			
USB (HOST)	Hardware		USB2.0 compliant (Fullspeed)
			Type-A connecto
	Function		Perform FW update from USB memory stick
USB (DEVICE)	Hardware		USB2.0 compliant (Fullspeed)
			Type-B connector
	Function		Execute various programs via USB communication
LAN	Hardware		IEEE 802,3 100Base-Tx/10Base-T Ethernet
			RJ-45 connector
			TCP/IP IPv4, Keep Alive support
RS-232C	Hardware		D-SUB 9-pin
			Baud rate : 115200 bps
			Data length: 8 bits, Stop bit: 1 bit, Parity bit: None, Flow control: None
Others			
Recommended Signal tower	Signal tower		SL08 series manufactured by PATLITE ® (Equipped with standard screw holes for fixing of the signal tower)

Price list

High-Capacity Programmable AC Power Source QA Series

QA-T4 series(Three-phase output)

	Circuit method	Output voltage	Voltage range	Frequency	Electric current	Electric power	price
QA-15K-T4	Switching	Three-phase 4-wire (3-wire also possible)	155V/310V (Phase voltage) 268V/ 537V (Line voltage)	40 ～ 70Hz	50A/25A	15kVA	Please contact us
QA-30K-T4					100A/50A	30kVA	
QA-60K-T4					200A/100A	60kVA	
QA-90K-T4					300A/150A	90kVA	
Interface	Standard：RS-232C/USB/LAN/PLC/DI/DO						

QA-T4-4 series（Three-phase output 400 Hz only)

Model	Circuit method	Output voltage	Voltage range	Frequency	Electric current	Electric power	price
QA-15K-T4-4	Switching	Three-phase 4-wire (3-wire also possible)	155V/310V (Phase voltage) 268V/537V (Line voltage)	360 ～ 440Hz	50A/25A	15kVA	Please contact us
QA-30K-T4-4					100A/50A	30kVA	
QA-60K-T4-4					200A/100A	60kVA	
QA-90K-T4-4					300A/150A	90kVA	
Interface	Standard：RS-232C/USB/LAN/PLC/DI/DO						

QA-S2 Series (Single-Phase Output)

Model	Circuit method	Output voltage	Voltage range	Frequency	Electric current	Electric power	price
QA-10K-S2	Switching	Single-phase 2-wire	155V/310V	40 ～ 70Hz	100A/50A	10kVA	Please contact us
QA-20K-S2					200A/100A	20kVA	
QA-30K-S2					300A/150A	30kVA	
Interface	Standard：RS-232C/USB/LAN/PLC/DI/DO						

Common Options

Model	Circuit method	Output voltage	price
QO-C-01	GPIB/RS-232C converter	Use dedicated GP-IB ⇔ RS-232C conversion box	Please contact us
AO-01	External analog input control	Output voltage/frequency controlled according to input voltage (0-10Vdc)*	
AO-02 ～ AO-07	Output voltage 350V extended	Correlation voltage changed to 350V max.*	
AO-08 ～ AO-13	Output voltage 600V extended	Correlation voltage changed to 600V max.*	
AO-18	Instantaneous overload support	3 times the rated capacity, 1 sec. or less (Timed, voltage drops to 110% of droop for more than 1 second) 3 times the rated current, 1 sec. or less	
AO-14、AO-15	Reverse current protection	Function to protect internal circuits when power is regenerated*	
AO-16	Housing fixing bolt for earthquake(Eye bolt)	Mounted on top of the enclosure (eyebolt type: cannot be lifted)	
AO-17	Anchor bolt fixture	Can be mounted on all four corners of the enclosure	
AO-19	Added signal tower	Mounted on top of the enclosure(lights up when output)	
AO-20 ～ AO-25	Input voltage / Input wiring method change	Changeable to input voltage / input wiring method*	

*factory option

●The information in this catalog is current as of July 2023. ●For purchase, please confirm the latest specifications, price and delivery date. ●All company and product names mentioned herein are trademarks or registered trademarks of their respective companies. ●Specifications and shapes are subject to change without notice. ●While every effort has been made to ensure that the information provided is accurate, please contact us if you notice any errors.

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