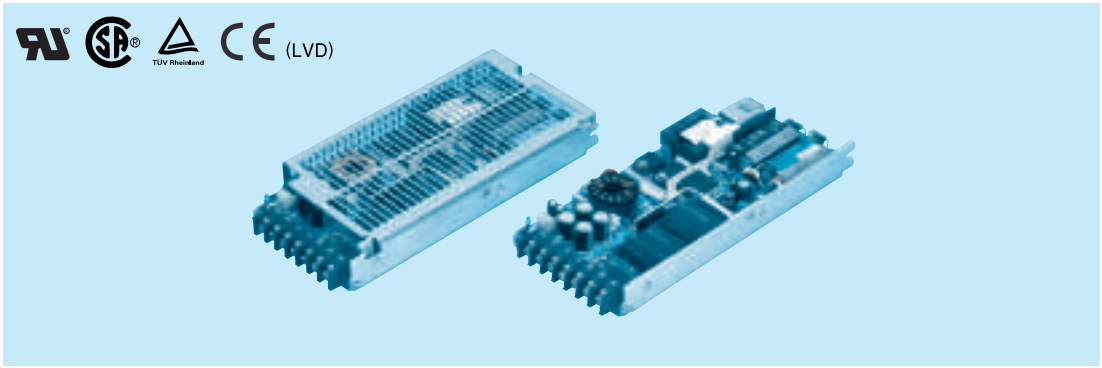
COSEL Unit type

UAW12

Ordering information

UA	W	125	S	-5	-□
①	②	③	④	⑤	⑥



①Series name
②Autoranging input
③Output wattage
④Single output
⑤Output voltage
⑥Optional
C :with Coating
G :Low leakage current
N :with Cover

Please refer to derating curve, because the rated load current depends on cooling method that is convention cooling or forced air.

MODEL	UAW125S-3	UAW125S-5	UAW125S-12	UAW125S-24	UAW125S-48
MAX OUTPUT WATTAGE[W]	75	125	126	124.8	124.8
DC OUTPUT	3V 25A	5V 25A	12V 10.5A	24V 5.2A	48V 2.6A

SPECIFICATIONS

	MODEL		UAW125S-3	UAW125S-5	UAW125S-12	UAW125S-24	UAW125S-48
INPUT	VOLTAGE[V]		AC85 - 132 / 170 - 264 1φ (Auto-selectable)				
	CURRENT[A]	ACIN 100V	2.8typ (Io=100%)				
		ACIN 200V	1.5typ (Io=100%)				
	FREQUENCY[Hz]		50/60 (47 - 63)				
	EFFICIENCY[%]		72typ	78typ	82typ	85typ	85typ
	INRUSH CURRENT[A]	ACIN 100V	30typ (Io=100%) (At cold start)				
		ACIN 200V	60typ (Io=100%) (At cold start)				
	LEAKAGE CURRENT[mA]		0.75max (60Hz, According to UL, CSA and VDE)				
OUTPUT	VOLTAGE[V]		3	5	12	24	48
	CURRENT[A]		25	25	10.5	5.2	2.6
	LINE REGULATION[mV]		20max	20max	48max	96max	192max
	LOAD REGULATION[mV]		40max	40max	100max	150max	300max
	RIPPLE[mVp-p]	0 to +50℃ *1	80max	80max	120max	120max	150max
		-10 - 0℃ *1	100max	100max	150max	150max	200max
	RIPPLE NOISE[mVp-p]	0 to +50℃ *1	120max	120max	150max	150max	200max
		-10 - 0℃ *1	180max	180max	200max	200max	250max
	TEMPERATURE REGULATION[mV]		40max	50max	120max	240max	480max
	DRIFT[mV]	*2	12max	20max	48max	96max	192max
	START-UP TIME[ms]		500max (ACIN 85/170V, Io=100%)				
	HOLD-UP TIME[ms]		10typ (ACIN 85/170V, Io=100%) 20typ (ACIN 100/200V, Io=100%)				
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		2.85 - 3.6	+10%, -5%			
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically				
	OVERVOLTAGE PROTECTION		4.00 - 5.25V	Works at 115 - 140% of rating			
	OPERATING INDICATION		LED (Green)				
	REMOTE SENSING		Provided				
ISOLATION	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)				
	INPUT-FG		AC2,000V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)				
	OUTPUT-FG		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)				
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE		-10 to +55℃, 10 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max				
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +75℃, 10 - 90%RH (Non condensing), 9,000m (30,000feet) max				
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis				
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis				
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS		UL1950, CSA C22.2 No.234, EN60950, VDE0160 Complies with IEC950				
	CONDUCTED NOISE		Complies with FCC-B, CISPR22-B, EN55022-B, VCCI-B				
OTHERS	CASE SIZE/WEIGHT		95×25×200mm (without terminal block) (W×H×D) / 550g max (without cover)				
	COOLING METHOD		Convection/Forced air				

*1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN:RM101).
*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃, with the input voltage held constant at the rated input/output.

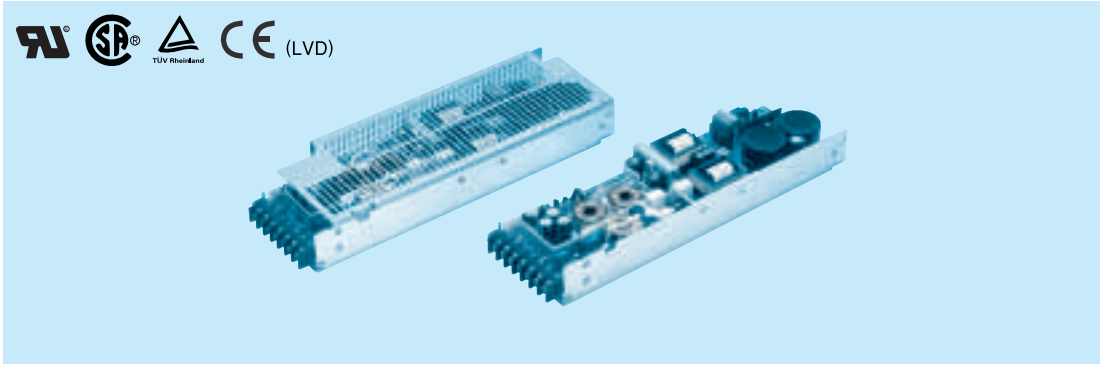
COSEL **Unit type**

UAW2 0

Ordering information

UA	W	250	S	-5	-□
①	②	③	④	⑤	⑥

UAW



①Series name
②Autoranging input
③Output wattage
④Single output
⑤Output voltage
⑥Optional
C :with Coating
G :Low leakage current
N :with Cover
R :with Remote ON/OFF

Please refer to derating curve, because the rated load current depends on cooling method that is convention cooling or forced air.

MODEL	UAW250S-3	UAW250S-5	UAW250S-12	UAW250S-24	UAW250S-48
MAX OUTPUT WATTAGE[W]	150	250	258	264	249.6
DC OUTPUT	3V 50A	5V 50A	12V 21.5A	24V 11A	48V 5.2A

SPECIFICATIONS

	MODEL		UAW250S-3	UAW250S-5	UAW250S-12	UAW250S-24	UAW250S-48
INPUT	VOLTAGE[V]		AC85 - 132 / 170 - 264 1φ (Auto-selectable)				
	CURRENT[A]	ACIN 100V	6typ (Io=100%)				
		ACIN 200V	3typ (Io=100%)				
	FREQUENCY[Hz]		50/60 (47 - 63)				
	EFFICIENCY[%]		70typ	77typ	80typ	83typ	83typ
	INRUSH CURRENT[A]	ACIN 100V	15/40typ (Io=100%) (Primary Surge Current/Secondary Surge Current)				
		ACIN 200V	30/40typ (Io=100%) (Primary Surge Current/Secondary Surge Current)				
	LEAKAGE CURRENT[mA]		0.75max (60Hz, According to UL, CSA and VDE)				
OUTPUT	VOLTAGE[V]		3	5	12	24	48
	CURRENT[A]		50	50	21.5	11	5.2
	LINE REGULATION[mV]		40max	40max	80max	100max	192max
	LOAD REGULATION[mV]		80max	80max	120max	160max	300max
	RIPPLE[mVp-p]	0 to +50℃ *1	80max	80max	120max	120max	150max
		-10 - 0℃ *1	120max	120max	150max	150max	200max
	RIPPLE NOISE[mVp-p]	0 to +50℃ *1	120max	120max	150max	150max	350max
		-10 - 0℃ *1	180max	180max	200max	200max	400max
	TEMPERATURE REGULATION[mV]		40max	50max	120max	240max	480max
	DRIFT[mV]	*2	12max	20max	48max	96max	192max
	START-UP TIME[ms]		800max (ACIN 85/170V, Io=100%)				
	HOLD-UP TIME[ms]		10typ (ACIN 85/170V, Io=100%) 20typ (ACIN 100/200V, Io=100%)				
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		2.85 - 3.6	+10%, -5%			
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically				
	OVERVOLTAGE PROTECTION		4.00 - 5.25V	Works at 115 - 140% of rating			
	OPERATING INDICATION		LED (Green)				
	REMOTE SENSING		Provided				
ISOLATION	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)				
	INPUT-FG		AC2,000V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)				
	OUTPUT-FG		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)				
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE		-10 to +55℃, 10 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max				
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +75℃, 10 - 90%RH (Non condensing), 9,000m (30,000feet) max				
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis				
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis				
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS		UL1950, CSA C22.2 No.234, EN60950, VDE0160 Complies with IEC950				
	CONDUCTED NOISE		Complies with FCC-B, CISPR22-B, EN55022-B, VCCI-B				
OTHERS	CASE SIZE/WEIGHT		95×35×278mm (without terminal block) (W×H×D) /1.1kg max (without cover)				
	COOLING METHOD		Convection/Forced air				

*1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN:RM101).
*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃, with the input voltage held constant at the rated input/output.

COSEL **Unit type**

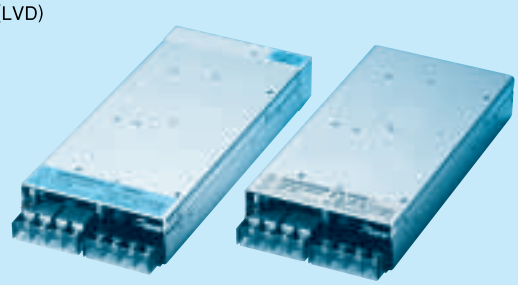
UAW 00

Ordering information

UA	W	500	S	-5	-□
①	②	③	④	⑤	⑥

UAW

(LVD)



①Series name
②Autoranging input
③Output wattage
④Single output
⑤Output voltage
⑥Optional
C :with Coating
F :with Fan unit
G :Low leakage current

The forced air with the fan is necessary.

MODEL	UAW500S-3	UAW500S-5	UAW500S-12	UAW500S-24
MAX OUTPUT WATTAGE[W]	300	500	516	528
DC OUTPUT	3V 100A	5V 100A	12V 43A	24V 22A

SPECIFICATIONS

	MODEL		UAW500S-3	UAW500S-5	UAW500S-12	UAW500S-24
INPUT	VOLTAGE[V]		AC85 - 132 / 170 - 264 1φ (Auto-selectable)			
	CURRENT[A]	ACIN 100V	12typ (Io=100%)			
		ACIN 200V	6.5typ (Io=100%)			
	FREQUENCY[Hz]		50/60 (47 - 63)			
	EFFICIENCY[%]		70typ	77typ	80typ	83typ
	INRUSH CURRENT[A]	ACIN 100V	15/40typ (Io=100%) (Primary Surge Current/Secondary Surge Current)			
		ACIN 200V	30/40typ (Io=100%) (Primary Surge Current/Secondary Surge Current)			
	LEAKAGE CURRENT[mA]		0.75max (60Hz, According to UL, CSA and VDE)			
OUTPUT	VOLTAGE[V]		3	5	12	24
	CURRENT[A]		100	100	43	22
	LINE REGULATION[mV]		40max	40max	80max	100max
	LOAD REGULATION[mV]		80max	80max	120max	160max
	RIPPLE[mVp-p]	0 to +50℃ *1	100max	100max	120max	120max
		-10 - 0℃ *1	120max	120max	150max	150max
	RIPPLE NOISE[mVp-p]	0 to +50℃ *1	120max	120max	150max	150max
		-10 - 0℃ *1	180max	180max	200max	200max
	TEMPERATURE REGULATION[mV]		40max	50max	160max	200max
	DRIFT[mV]	*2	12max	20max	48max	96max
	START-UP TIME[ms]		800max (ACIN 85/170V, Io=100%)			
	HOLD-UP TIME[ms]		10typ (ACIN 85/170V, Io=100%) 20typ (ACIN 100/200V, Io=100%)			
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		2.85 - 3.6	+10%, -5%		
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically			
	OVERVOLTAGE PROTECTION		4.00 - 5.25V	Works at 115 - 140% of rating		
	OPERATING INDICATION		LED (Green)			
	REMOTE SENSING		Provided			
ISOLATION	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)			
	INPUT-FG		AC2,000V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)			
	OUTPUT-FG		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)			
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE		-10 to +60℃, 10 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max			
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +75℃, 10 - 90%RH (Non condensing), 9,000m (30,000feet) max			
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis			
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis			
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS		UL1950, CSA C22.2 No.234, EN60950, VDE0160 Complies with IEC950			
	CONDUCTED NOISE		Complies with FCC-B, CISPR22-B, EN55022-B, VCCI-B			
OTHERS	CASE SIZE/WEIGHT		140×45×278 (308) mm (without terminal block) (W×H×D) /2.4kg max, 2.6kg max (with fan unit)			
	COOLING METHOD		Forced air			

*1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN:RM101).
*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃, with the input voltage held constant at the rated input/output.

Basic Characteristics Data

Model	Circuit method	Switching frequency [kHz]	Input current [A]	Rated input fuse	Inrush current protection	PCB/Pattern			Series/Parallel operation availability	
						Material	Single sided	Double sided	Series operation	Parallel operation
UAW125S	Forward converter	210	2.8	250V 5A	Thermistor	FR-4		Yes	Yes	✻1
UAW250S	Forward converter	210	6.0	250V 10A	Triac	FR-4		Yes	Yes	Yes
UAW500S	Forward converter	170	12.0	250V 20A	Triac	FR-4		Yes	Yes	Yes

✻1 Refer to Instruction Manual.
✻ The value of input current is at ACIN 100V and rated load.

UAW

1 Terminal Block A-98

2 Function A-98

2.1 Input voltage range A-98
2.2 Inrush current limiting A-98
2.3 Overcurrent protection A-98
2.4 Overvoltage protection A-99
2.5 Output voltage adjustment range A-99
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3 Series Operation and Parallel Operation A-100

3.1 Series operation A-100
3.2 Parallel operation/Master-slave operation A-100

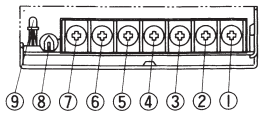
4 Assembling and Installation Method A-101

4.1 Installation method A-101
4.2 Derating A-101
4.3 Mounting screw A-102
4.4 Others A-102

UAW

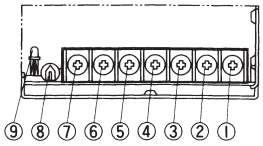
1 Terminal Block

●UAW125S



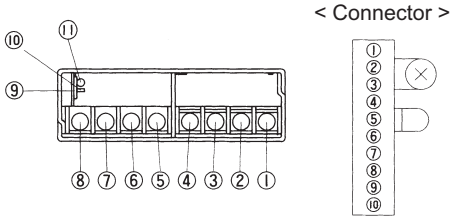
①AC(N)
②AC(L)
③Frame ground
④ } -Output
⑤ }
⑥ } +Output
⑦ }
⑧Output voltage adjustable potentiometer
⑨LED

●UAW250S



①AC(N)
②AC(L)
③Frame ground
④ } -Output
⑤ }
⑥ } +Output
⑦ }
⑧Output voltage adjustable potentiometer
⑨LED

●UAW500S



①AC(L)
②AC(N)
③NC
④Frame ground
⑤ } +Output
⑥ }
⑦ } -Output
⑧ }
⑨Connector
⑩LED
⑪Output voltage adjustable potentiometer

< Connector >

Pin No.	Function
①	Connection is not possible.
②	Connection is not possible.
③	Connection is not possible.
④	-Output voltage monitoring(-M)
⑤	-Remote sensing(-S)
⑥	+Output voltage monitoring(+M)
⑦	Connection is not possible.
⑧	+Remote sensing(+S)
⑨	Voltage balance(VB)
⑩	Current balance(CB)

2 Function

2.1 Input voltage range

■The range is from AC85V to AC132V/AC170V to AC264V which is automatically selected internally. But after the input voltage is applied, avoid changing AC100V/AC200V.

■AC input voltage must have a range from AC85V to AC132V/AC170V to AC264V for normal operation. If the wrong input is applied, the unit will not operate properly and/or may be damaged.

2.2 Inrush current limiting

■Inrush current limiting is built-in.

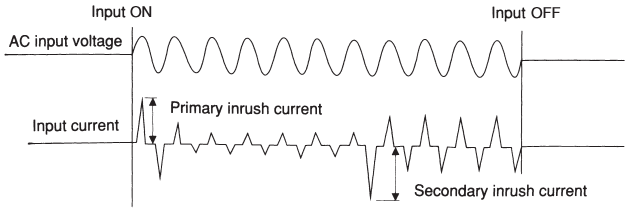
■If a switch on the input side is installed, it has to be the one handling the input inrush current.

●UAW125S

■The thermistor is used for protection from inrush current. When power is turned ON/OFF repeatedly within a short period of time, it is necessary to have enough time for power supply to cool down.

●UAW250S · UAW500S

■The thyristor technique is used for protection from inrush current. When power is turned ON/OFF repeatedly within a short period of time, it is necessary to have enough time between power ON and OFF to operate resistance circuit for inrush current.



2.3 Overcurrent protection

■Overcurrent protection is built-in and comes into effect at over 105% of the rated current. Overcurrent protection prevents the unit from short circuit and overcurrent condition. The unit automatically recovers when the fault condition is cleared.

■If the output voltage drops more than 50% of the rated voltage in an overcurrent protection mode, the average current will also be reduced by the intermittent operation.

2.4 Overvoltage protection

■The overvoltage protection circuit is built-in and comes into effect at 115 - 140% of the rated voltage (except 3V output voltage type: it operates at 4.00 - 5.25V). The AC input should be shut down if overvoltage protection is in operation. The minimum interval of AC recycling for recovery is 5 minutes.

✱ The recovery time varies depending on input voltage.

Remarks:

Please avoid applying the over-rated voltage to the output terminal. Power supply may operate incorrectly or fail.In case of operating a motor etc. , please install an external diode on the output terminal to protect the unit.

2.5 Output voltage adjustment range

■Adjustment of output voltage is possible by using potentiometer.

■Output voltage is increased by turning potentiometer clockwise and is decreased by turning potentiometer counterclockwise.

2.6 Remote ON/OFF

●UAW250S (optional "-R")

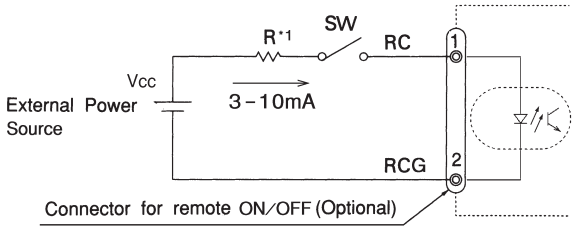
■Option "-R" is available for remote ON/OFF.

Between RC and RCG	Output
SW ON (High)	ON
SW OFF (0 - 0.5V)	OFF

✱1 To calculate the current limit resistance use following equation:

$$R\ [\Omega] = \frac{Vcc-1.1}{0.005}$$

where: Vcc = External power source



✱1 Current limit resistance: R(Recommendation)

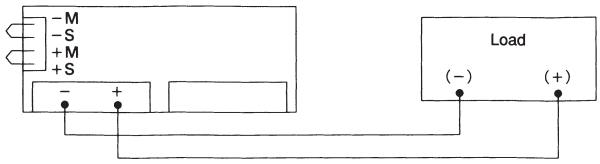
External Power Source	R
5V	750Ω
12V	2.2kΩ
24V	4.7kΩ

■A wrong connection may damage the internal components of the unit.

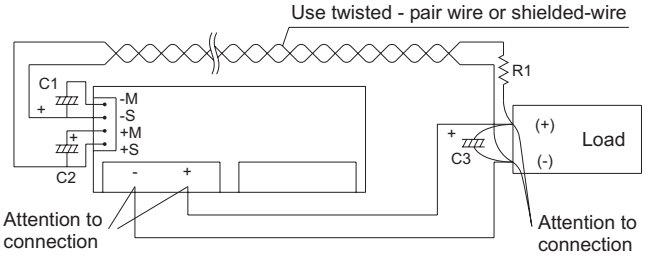
■Remote ON/OFF circuit (RC, RCG) is isolated from input, output and FG.

2.7 Remote sensing

(1)When not using remote sensing function



(2)When using remote sensing function



■When not using this function, confirm that terminals are shorted between +S and +M, and between -S and -M with short pieces.

■When using this function, wiring should be done without short pieces.

■Devices inside the power supply might be damaged when poor connection on load lines occurs, e.g. because of loose connector screws.

■Thick wire should be used for wiring between power supply and load, and line voltage drop should be less than 0.3V.

■When long sensing wire is required, use C1, C2 and C3.

■Twisted-pair wire or shield wire should be used for sensing wire.

■Please do not draw output current from +M, -M terminal.

■When remote sensing function is used, output voltage might become unstable because of a impedance of wiring and load condition. And the power supply should be evaluated enough. Following are examples to improve it.

✱ -S sensing wire is removed and terminals between -M and -S are shorted.

✱ C3 and R1 are connected as above figure.

2.8 Isolation

■For a receiving inspection, such as Hi-Pot test, gradually increase (decrease) the voltage for the start (shut down). Avoid using Hi-Pot tester with the timer because it may generate voltage a few times higher than the applied voltage, at ON/OFF of a timer.

■If the unit is tested on the isolation between input & output and output & FG, remote ON/OFF must be shorted to output.

2.9 Thermal protection

●UAW250S · UAW500S

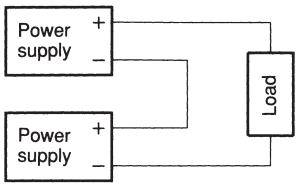
■Thermal protection is built-in. If this function comes into effect, shut down the output, eliminate all possible causes of overheating, and drop the temperature to normal level. Output voltage recovers after applying input voltage. To prevent the unit from overheating, avoid using the unit in a dusty, poorly ventilated environment.

3 Series Operation and Parallel Operation

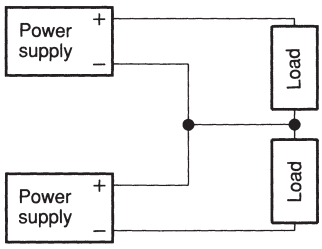
3.1 Series operation

■Series operation is available by connecting the outputs of two or more power supplies, as shown below. Output current in series connection should be lower than the lowest rated current in each unit.

(a)



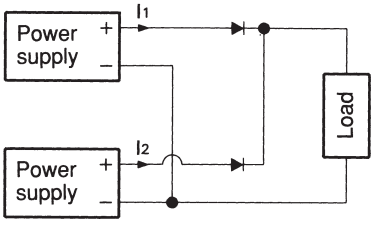
(b)



3.2 Parallel operation/master-slave operation

●UAW125S

■Parallel redundancy operation is available by connecting the units as shown below.



■Values of I_1 and I_2 become unbalanced by a slight difference of the output voltage. Make sure that the output voltage of units is of equal value and the output current from each power supply does not exceed the rated current.

$I_1, I_2 \leqq$ the rated current value

●UAW250S · UAW500S

■Parallel operation is available by connecting the units as shown below.

■As variance of output current drew from each power supply is maximum 10%, the total output current must not exceed the value determined by the following equation.

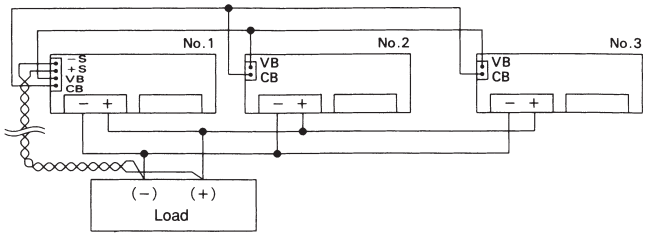
(Output current at parallel operation)
= (the rated current per unit) × (number of unit) × 0.9

When the number of units in parallel operation increases, input current increases at the same time. Adequate wiring design for input circuitry is required, such as circuit pattern, wiring and current capacity for equipment.

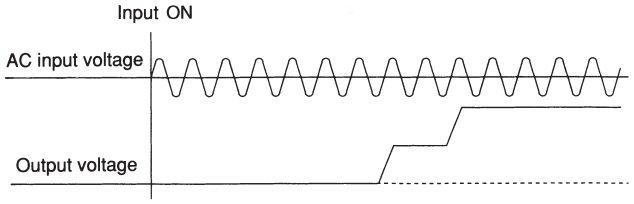
In parallel operation, the maximum operation number of units is 5.

■Output voltage in parallel operation is adjustable by using the potentiometer of the "master" unit. Select one power supply to be the master, and turn the potentiometer of the other, "slave" power supplies, clockwise to the end. Then use the potentiometer of the master to adjust output voltage.

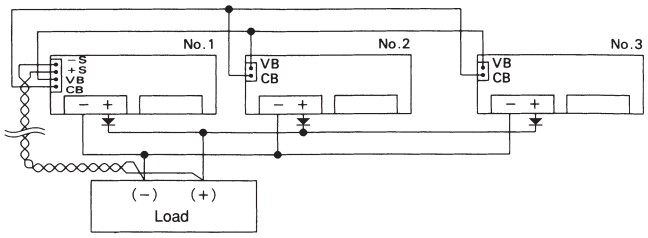
■When remote sensing is used in parallel operation, the sensing wire must be connected ONLY to the master. Terminals between +S & +M and -S & -M of "slave" power supplies must be shorted.



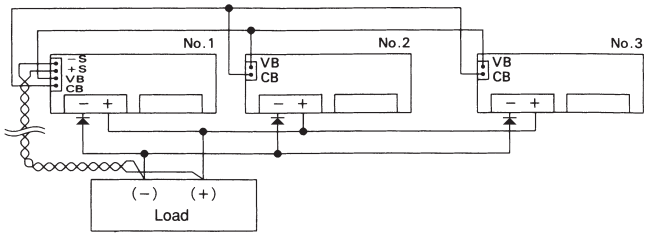
■In parallel operation, output voltage increases like stairs due to a delay of the rise time of output voltage at turn on.



■In parallel operation, please connect diode to the + side of the output circuit. If diode is connected to the-side, it will damage the unit or/and the balancing function will not work.



YES



NO

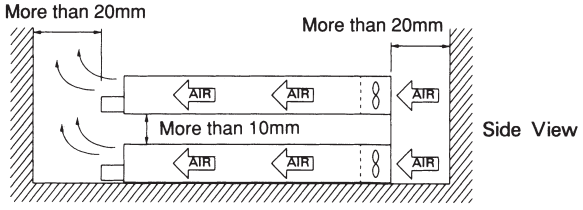
4 Assembling and Installation Method

4.1 Installation method

■When two or more power supplies are used side by side, position them with proper intervals to allow enough air ventilation. Ambient temperature around each power supply should not exceed the temperature range shown in derating curve.

■Fan for forced cooling is optional. Do not block the ventilation at suction side (terminal block side), its opposite side and upper side.

■When unit operates at dusty place, attach air-filter to avoid dust into the unit. In this case, avoid poorly ventilated environments.



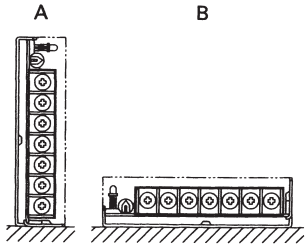
4.2 Derating

■The operative ambient temperature is different by with/without case cover or mounting position. Please refer drawings as below.

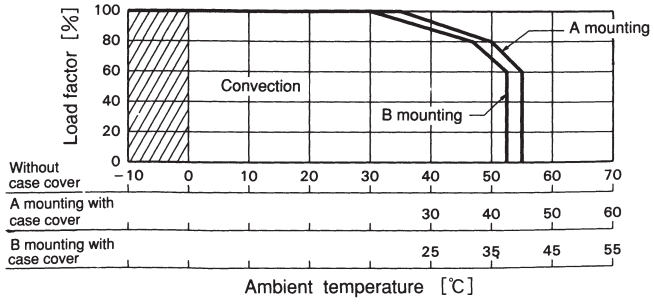
■When unit mounted except below drawings, it is required to consider ventilated environment by forced air cooling for temperature/load derating. For details, please consult our sales or engineering departments.

●UAW125S

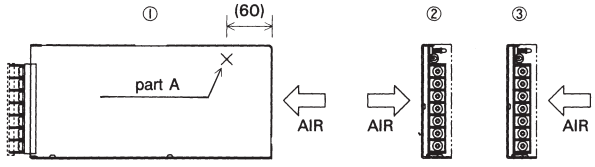
<Convection>



Mounting the internal PCB to base

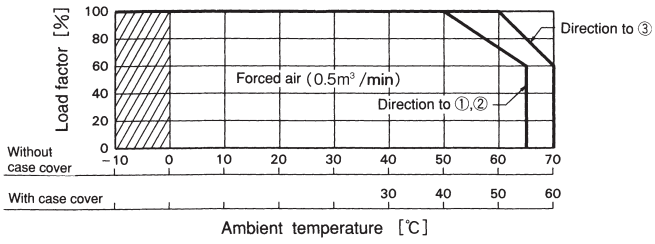


<Forced air>



Operation by forced air cooling is possible except A, B mounting.

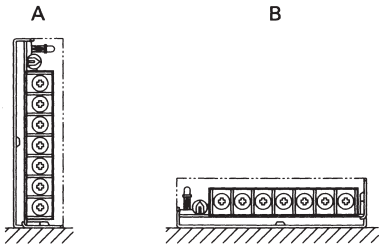
✱ Please operate below 80℃ of the unit at part A.



Note:

In the hatched area, the specification of Ripple, Ripple Noise is different from other area and the input voltage should be used more than AC90V.

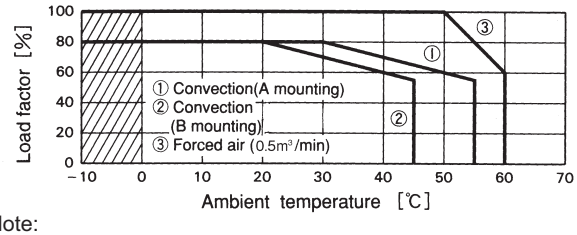
●UAW250S



Keep the temperature of part A and B as below.

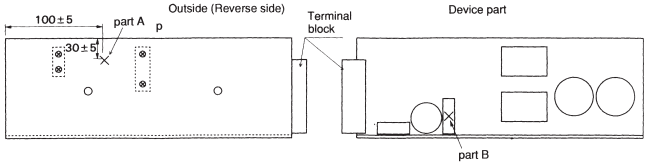
part A (chassis of power supply) : below 90℃

part B (C13) : below 85℃

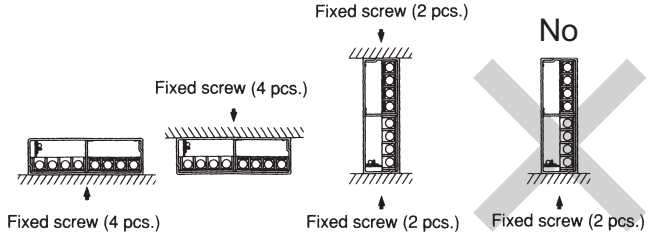


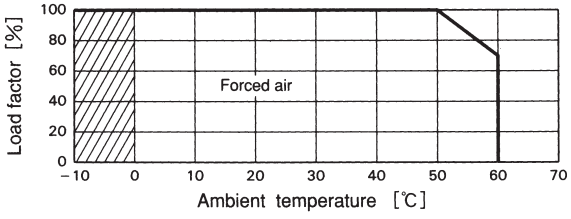
Note:

In the hatched area, the specification of Ripple, Ripple Noise is different from other area.



●UAW500S

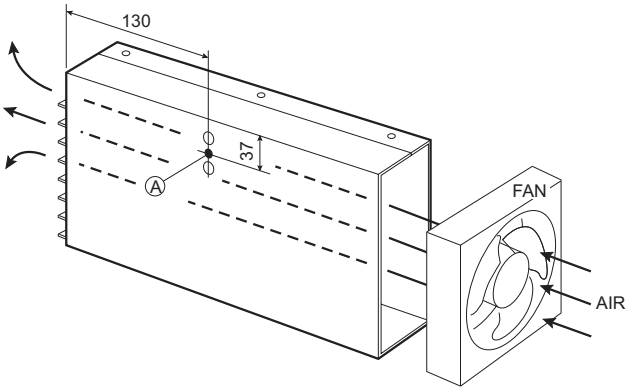




Note:

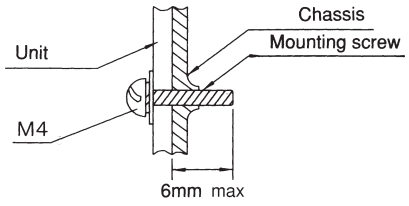
In the hatched area, the specification of Ripple, Ripple Noise is different from other area .

■When fan is set separately, the temperature of part A of the unit should be below 75 degree by flowing cooling-air inside of the unit.



4.3 Mounting screw

■Keep isolation distance between screw and internal components as below.



4.4 Others

■Fan unit (Optional)

The power supply is designed to operate with the fan (forced air cooling). The optional external fan unit is listed in the following table.

Model	Model with fan unit	Fan unit
UAW500S- 3		
UAW500S- 5	UAW500S- 5-F	F500- 5
UAW500S-12	UAW500S-12-F	F500-12
UAW500S-24	UAW500S-24-F	F500-24

✱ In case of unit with fan, the efficiency is lower 1% typ by power dissipation of fan.

The lifetime of fan varies depending on operating condition, so please replace the fan regularly.