

INDUSTRIAL POWER SUPPLY



STABLE & POWERFUL



ENERGY EFFICIENT



HIGH PERFORMANCE



ARAKAWA Industrial power supply refers to the specialized systems designed to provide reliable and efficient electrical energy to various manufacturing, processing, and industrial operations. These power supplies are tailored to meet the specific demands of industrial equipment, ensuring stable voltage, current, and frequency levels.

TABLE OF CONTENT

APS SERIES SMALL TYPE HIGH PRECISION DC POWER SUPPLY

PAGE 01

APS SERIES HIGH POWER DC POWER SUPPLY

PAGE 06

APSH SMALL TYPE HIGH PRECISION DC POWER SUPPLY WITH REVERSE

PAGE 08

APSH HIGH POWER DC POWER SUPPLY WITH REVERSE

PAGE 10

SMALL TYPE HIGH PRECISION POSITIVE PULSE POWER SUPPLY

PAGE 12

APSM SERIES HIGH POWE POSITIVE PLUG POWER SUPPLY

PAGE 14

APSMZ SMALL TYPE HIGH PRECISION POSITIVE AND NEGATIVE PULSE POWER SUPPLY

PAGE 17

APSMZ SERIES DUAL PULSE POWER SUPPLY

PAGE 20

APSMZ SERIES PULSE SWITCHING POWER SUPPLY

PAGE 23

WATER QUALITY REQUIREMENTS (WATER COOLED)

PAGE 26

STABLE & POWERFUL

ENERGY EFFICIENT

HIGH PERFORMANCE

APS SERIES



APS SERIES

SMALL TYPE HIGH PRECISION DC POWER SUPPLY

APPLICATION

Gold, silver, tin, chromium and other precious metals plating, gold finger, semiconductor plating, connector, continuous plating, PCB copper plating, and various hardware plating, etc.

PRODUCT FEATURES

- 1 Single structure, easy to maintain.
- 2 Full range precision is very high, completely replacing the function of "sub-machine".
- 3 Constant current and voltage operation mode, free switching.
- 4 Very low ripple coefficient, high control accuracy and better electroplated coating uniformity.
- 5 Equipped with RS232 & RS485 interface.
- 6 4-20mA, 0-5V, 0-10V analog (Optional).
- 7 PROFIBUS, DeviceNet, modbus (Optional).
- 8 Built in ampere hour meter function.
- 9 With over temperature, over voltage, under voltage, overload, short circuit protection function.
- 10 Sealing structure design, with the use of acid and alkali proof waterproof function- three anti paint, make the product more durable.

TECHNICAL PARAMETERS

| | |
|------------------------------|--|
| Input Voltage | 3 x AC220V \pm 10%, 50/60Hz 3 x AC380V \pm 10%, 50/60Hz |
| | Other Voltages can be Customized as Required |
| Output Voltage | 0-500VDC, Customized |
| Output Current | 0-50ADC, Customized |
| Accuracy | \leq 1% |
| Power Factor | \geq 0.95 |
| Rated Efficiency | 90% Type |
| Output Waveform | Customizable |
| Insulation Resistance | Input-Output / Input-Shell / Output-Shell: \geq 5m Ω |
| Cooling Mode | Air Cooled or Water Cooled |
| Load Capacity | No Fault During 72 Hours of Full Load Operation |
| RoHS Compliance | Conformity With EU Directive 2011/65/EU |
| Safety Standards | Conformity With EU 2006/95/EC, 2004/108/EC |
| Degree Of Protection | Air Cooling IP33, Water Cooling IP43 Or 66 |

TYPICAL PRODUCT

| Output Voltage | Output Current | Mechanical Dimension | | |
|----------------|----------------|----------------------|--------|--------|
| | | L (mm) | W (mm) | H (mm) |
| 0-8V | 0-10A | 273 | 223 | 88 |
| 0-12V | 0-20A | 273 | 223 | 88 |
| 0-8V | 0-50A | 420 | 310 | 145 |
| 0-12V | 0-100A | 420 | 310 | 145 |
| 0-8V | 0-200A | 520 | 895 | 165 |
| 0-12V | 0-300A | 520 | 395 | 165 |
| 0-8V | 0-500A | 605 | 414 | 240 |
| 0-12V | 0-500A | 605 | 415 | 240 |

※ DIFFERENT VOLTAGE AND CURRENT CAN BE CUSTOMIZED ※

TEST DATA

| Operating Mode: Constant Current Mode | | | | | Operating Mode: Constant Pressure Mode | | | |
|---------------------------------------|--|--|-----------------------|--------------------------------------|--|-----------------------------|-----------------------|--------------------------------------|
| Current Setting (A) | Measured Voltage at Both Ends of Diverter (Mv) (60mv/100a) | Actual Output Current After Conversion (A) | Current Deviation (A) | Current Deviation % (Relative Rated) | Voltage Setting (v) | Measured Output Voltage (v) | Voltage Deviation (v) | Voltage Deviation % (Relative Rated) |
| 0.5 | 0.350 | 0.583 | 0.083 | 0.08% | 0.80 | 0.805 | 0.005 | 0.03% |
| 1.0 | 0.646 | 1.077 | 0.077 | 0.08% | 1.60 | 1.601 | 0.001 | 0.01% |
| 2.0 | 1.242 | 2.070 | 0.070 | 0.07% | 2.40 | 2.403 | 0.003 | 0.02% |
| 3.0 | 1.854 | 3.090 | 0.090 | 0.09% | 3.20 | 3.200 | 0.000 | 0.00% |
| 4.0 | 2.465 | 4.108 | 0.108 | 0.11% | 4.00 | 4.001 | 0.001 | 0.01% |
| 5.0 | 3.063 | 5.105 | 0.105 | 0.11% | 4.80 | 4.802 | 0.002 | 0.01% |
| 7.0 | 4.270 | 7.117 | 0.107 | 0.11% | 5.60 | 5.600 | 0.000 | 0.00% |
| 8.0 | 4.885 | 8.142 | 0.142 | 0.14% | 6.40 | 6.403 | 0.003 | 0.02% |
| 9.0 | 5.481 | 9.135 | 0.135 | 0.14% | 7.20 | 7.203 | 0.003 | 0.02% |
| 10.0 | 6.075 | 10.125 | 0.125 | 0.13% | 8.00 | 8.003 | 0.003 | 0.02% |
| 20.0 | 12.068 | 20.113 | 0.113 | 0.11% | 8.80 | 8.802 | 0.002 | 0.01% |
| 30.0 | 18.057 | 30.095 | 0.095 | 0.09% | 9.60 | 9.607 | 0.007 | 0.04% |
| 40.0 | 24.049 | 40.082 | 0.082 | 0.08% | 10.40 | 10.408 | 0.008 | 0.05% |
| 50.0 | 30.032 | 50.053 | 0.053 | 0.05% | 11.20 | 11.205 | 0.005 | 0.03% |
| 60.0 | 36.028 | 60.047 | 0.047 | 0.05% | 12.00 | 12.002 | 0.002 | 0.01% |
| 70.0 | 42.014 | 70.023 | 0.023 | 0.02% | 12.80 | 12.807 | 0.007 | 0.04% |
| 80.0 | 48.007 | 80.012 | 0.012 | 0.01% | 13.60 | 13.602 | 0.002 | 0.01% |
| 90.0 | 53.997 | 89.995 | -0.005 | 0.00% | 14.40 | 14.402 | 0.002 | 0.01% |
| 100.0 | 59.957 | 99.928 | -0.072 | -0.07% | 16.00 | 16.010 | 0.010 | 0.06% |

| Output DC Current (ADC) | Clamp Meter Test Output AC Current (AAC) | Current Ripple Coefficient |
|-------------------------|--|----------------------------|
| 10.0 | 0.06 | 0.60% |
| 20.0 | 0.17 | 0.85% |
| 50.0 | 0.47 | 0.94% |
| 90.0 | 0.56 | 0.62% |
| 100.0 | 0.58 | 0.58% |

| Output DC Voltage (VDC) | Multimeter Test AC Voltage (VAC) | Voltage Ripple Coefficient |
|-------------------------|----------------------------------|----------------------------|
| 1.6 | 0.012 | 0.75% |
| 3.2 | 0.030 | 0.94% |
| 8.0 | 0.078 | 0.98% |
| 14.4 | 0.103 | 0.72% |
| 16.0 | 0.098 | 0.61% |

STABLE & POWERFUL

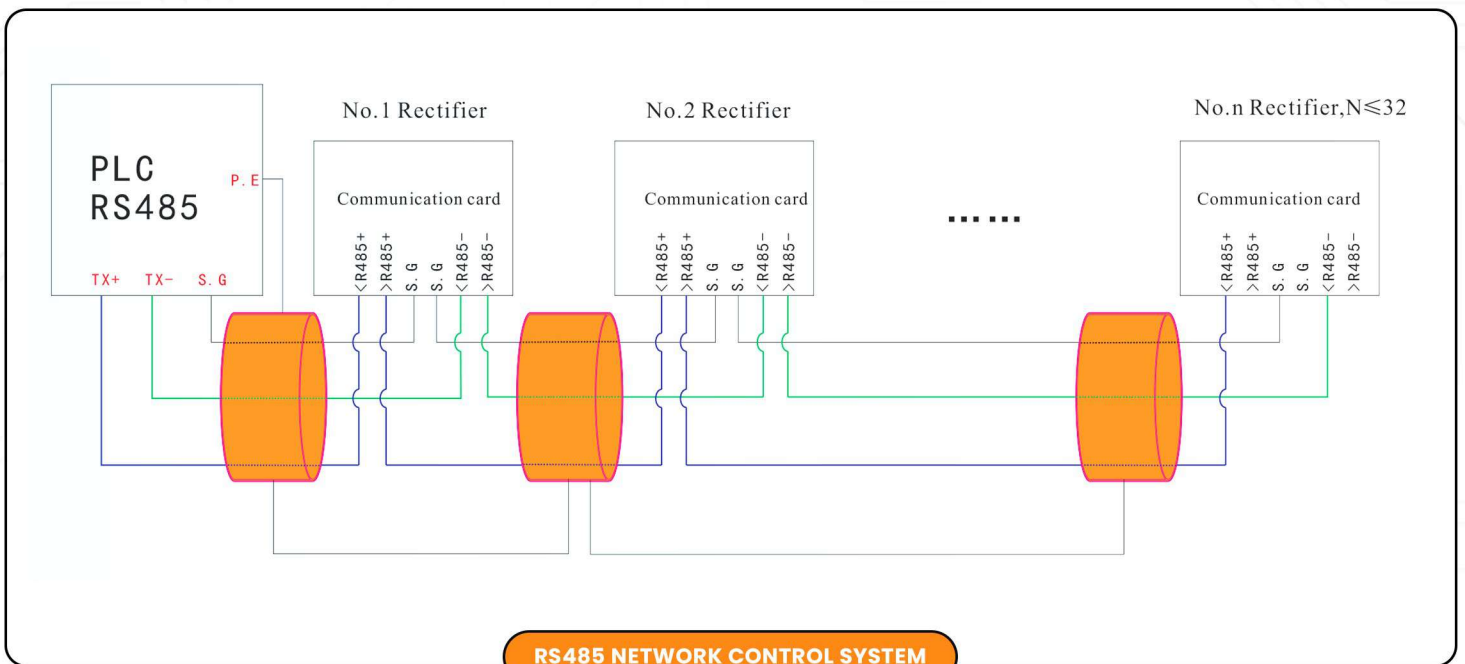
ENERGY EFFICIENT

HIGH PERFORMANCE

APS SERIES



- 1 N≤32
- 2 Adopt standard RS485 network control system, simple wiring, strong anti-interference ability.
- 3 RS485 communication line, 3-core with shielding layer, signal ground S.G. must be reliably connected.
- 4 All shields are connected together, only one end (PLC side) is connected to the earth.
- 5 It can be controlled by PROFIBUS DP, device net, Modbus / TCP, PROFINET, Ethernet IP and other methods according to customer requirements



RS485 NETWORK CONTROL SYSTEM



| Model | L(mm) | W(mm) | H(mm) | Weight Kg (Air Cooled) | Weight Kg (Water Cooled) |
|----------------|-------|-------|-------|---------------------------|-----------------------------|
| APS12-10CVC | 237 | 223 | 88 | 8.5 | |
| APS12-20CVC | 237 | 223 | 88 | 8.5 | |
| APS12-50CVC | 420 | 310 | 145 | 10 | |
| APS12-100CVC | 420 | 310 | 145 | 11 | |
| APS12-200CVC | 520 | 395 | 165 | 18 | |
| APS24-200CVC | 605 | 470 | 200 | 35 | |
| APS24-1000CVC | 715 | 485 | 860 | 90 | 60 |
| APS24-2000CVC | 780 | 610 | 580 | 145 | 80 |
| APS24-5000CVC | 1010 | 900 | 1750 | 340 | 200 |
| APS12-10000CVC | 1500 | 1310 | 1120 | 500 | 400 |
| APS12-20000CVC | 1415 | 1060 | 2180 | 800 | 700 |

✓ **STABLE & POWERFUL**

⚡ **ENERGY EFFICIENT**

⚙️ **HIGH PERFORMANCE**



APS SERIES

HIGH POWER DC POWER SUPPLY

APPLICATION

Metal plating, plastic plating, electrolytic copper foil, chrome plating, aluminum profile oxidation, Rare earth smelting, tinplate galvanizing, water treatment and other industries.

PRODUCT FEATURES

- 1 Small size, light weight, electricity-saving, high accuracy.
- 2 Very low ripple coefficient, high control accuracy and better electroplated coating uniformity.
- 3 Constant current and voltage operation mode, free switching.
- 4 Electronic switcher for positive and negative switching, with fast response time, less than 100ms.
- 5 Equipped with RS232 & RS485 interface (Optional).
- 6 4-20mA, 0-5V, 0-10V analog (optional).
- 7 PROFIBUS, DeviceNet, modbus (optional).
- 8 Built in ampere hour meter function.
- 9 With over temperature, over voltage, under voltage, overload, short circuit protection function.
- 10 Sealing structure design, with the use of acid and alkali proof waterproof function-three anti paint, make the product more durable, anti paint, make the product more durable.

TECHNICAL PARAMETERS

| | |
|------------------------------|--|
| Input Voltage | 3 x AC220V ±10%, 50/60Hz 3 x AC380V ±10%, 50/60Hz |
| | Other Voltages can be Customized as Required |
| Output Voltage | 0-800VDC, Customized |
| Output Current | 0 - no upper limit (manual 20000A maximum) |
| Accuracy | ≤ 1% |
| Power Factor | ≥ 0.95 |
| Rated Efficiency | 90% Type |
| | |
| Output Waveform | Customizable |
| Insulation Resistance | Input-Output / Input-Shell / Output-Shell: ≥ 5m Ω |
| Cooling Mode | Air Cooled or Water Cooled |
| Load Capacity | No Fault During 72 Hours of Full Load Operation |
| RoHS Compliance | Conformity With EU Directive 2011/65/EU |
| Safety Standards | Conformity With EU 2006/95/EC, 2004/108/EC |
| Degree Of Protection | Air Cooling IP33, Water Cooling IP43 Or 66 |

TYPICAL PRODUCT

| Output Voltage | Output Current | Mechanical Dimension | | |
|----------------|----------------|----------------------|--------|--------|
| | | L (mm) | W (mm) | H (mm) |
| 0-12V | 0-1000A | 665 | 490 | 240 |
| 0-12V | 0-2000A | 780 | 610 | 580 |
| 0-12V | 0-5000A | 860 | 780 | 1128 |
| 0-24V | 0-2000A | 860 | 780 | 1128 |
| 0-24V | 0-3000A | 525 | 510 | 1557 |
| 0-24V | 0-5000A | 1010 | 900 | 1750 |
| 0-12V | 0-10000A | 860 | 780 | 1128 |
| 0-12V | 0-20000A | 1415 | 1060 | 2180 |

※ DIFFERENT VOLTAGE AND CURRENT CAN BE CUSTOMIZED ※

STABLE & POWERFUL

ENERGY EFFICIENT

HIGH PERFORMANCE

APSH SERIES



APSH SERIES

SMALL TYPE HIGH PRECISION DC POWER SUPPLY WITH REVERSE

APPLICATION

The products are mainly used in precious metal plating, small hard chromium plating, laboratory and other surface treatment processes with high requirements.

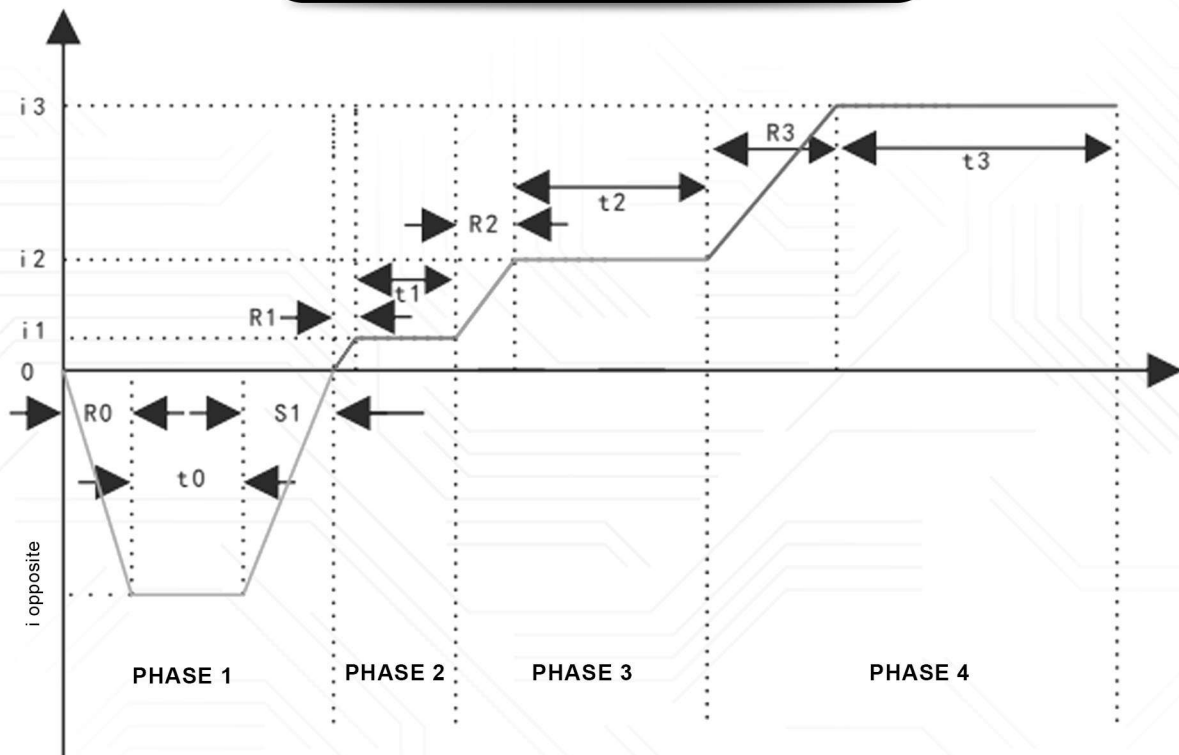
PRODUCT FEATURES

- 1 Single cabinet, adopt DC contactor achieve the polarity reverse function.
- 2 Automatic reverse or manual reverse model.
- 3 Constant current and voltage operation mode, free switching.
- 4 Electronic switcher for positive and negative switching, with fast response time, less than 100ms.
- 5 Equipped with RS232 & RS485 interface.
- 6 4-20mA, 0-5V, 0-10V analog (optional)
- 7 PROFIBUS, DeviceNet, modbus (optional)
- 8 Built in ampere hour meter function.
- 9 With over temperature, over voltage, under voltage, overload, short circuit protection function.
- 10 Sealing structure design, with the use of acid and alkali proof waterproof function-three anti paint, make the product more durable.

TECHNICAL PARAMETERS

| | |
|------------------------------|--|
| Input Voltage | 3 x AC220V ±10%, 50/60Hz 3 x AC380V ±10%, 50/60Hz |
| | Other Voltages can be Customized as Required |
| Output Voltage | 0-500VDC, Customized |
| Output Current | 0 – 300A |
| Switch Mode | MOS Tube |
| Power Factor | ≥ 0.95 |
| Rated Efficiency | 90% Type |
| | |
| Output Waveform | Customizable |
| Insulation Resistance | Input-Output / Input-Shell / Output-Shell: ≥ 5m Ω |
| Cooling Mode | Air Cooled or Water Cooled |
| Load Capacity | No Fault During 72 Hours of Full Load Operation |
| RoHS Compliance | Conformity With EU Directive 2011/65/EU |
| Safety Standards | Conformity With EU 2006/95/EC, 2004/108/EC |
| Degree Of Protection | Air Cooling IP33, Water Cooling IP43 Or 66 |

TYPICAL WAVES



✧ WITH THE TOUCH SCREEN, THE OPERATION IS MORE SIMPLE AND CLEAR ✧

✓ **STABLE & POWERFUL**

⚡ **ENERGY EFFICIENT**

⚙️ **HIGH PERFORMANCE**

APSH SERIES



APSH SERIES

HIGH POWER DC POWER SUPPLY WITH REVERSE

APPLICATION

Aircraft landing gear, large-scale hard chromium process, steel cleaning, environmental wastewater treatment, tinplate galvanizing, industrial waste electrolysis recovery and other industries;

PRODUCT FEATURES

- 1 Single cabinet, adopt DC contactor achieve the polarity reverse function.
- 2 Automatic reverse or manual reverse model.
- 3 Constant current and voltage operation mode, free switching.
- 4 Electronic switcher for positive and negative switching, with fast response time, less than 100ms.
- 5 Equipped with RS232 & RS485 interface.
- 6 4-20mA, 0-5V, 0-10V analog (optional)
- 7 PROFIBUS, DeviceNet, modbus (optional)
- 8 Built in ampere hour meter function.
- 9 With over temperature, over voltage, under voltage, overload, short circuit protection function.
- 10 Sealing structure design, with the use of acid and alkali proof waterproof function-three anti paint, make the product more durable.

TECHNICAL PARAMETERS

| | |
|------------------------------|--|
| Input Voltage | 3 x AC220V ±10%, 50/60Hz 3 x AC380V ±10%, 50/60Hz |
| | Other Voltages can be Customized as Required |
| Output Voltage | 0-500VDC, Customized |
| Output Current | 0 - no upper limit (manual 64000A maximum) |
| Switch Mode | MOS Tube |
| Power Factor | ≥ 0.95 |
| Rated Efficiency | 90% Type |
| Reverse Way | DC Contractor |
| Output Waveform | Customizable |
| Insulation Resistance | Input-Output / Input-Shell / Output-Shell: ≥ 5m Ω |
| Cooling Mode | Air Cooled or Water Cooled |
| Load Capacity | No Fault During 72 Hours of Full Load Operation |
| RoHS Compliance | Conformity With EU Directive 2011/65/EU |
| Safety Standards | Conformity With EU 2006/95/EC, 2004/108/EC |
| Degree Of Protection | Air Cooling IP33, Water Cooling IP43 Or 66 |

TYPICAL PRODUCT

| Output Voltage | Output Current | Mechanical Dimension | | |
|----------------|----------------|----------------------|--------|--------|
| | | L (mm) | W (mm) | H (mm) |
| 0-10V | 0-500A | 710 | 600 | 450 |
| 0-12V | 0-500A | 710 | 600 | 450 |
| 0-10V | 0-1000A | 1100 | 560 | 760 |
| 0-10V | 0-2000A | 900 | 620 | 430 |
| 0-24V | 0-1000A | 900 | 620 | 430 |
| 0-48V | 0-1000A | 900 | 620 | 430 |
| 0-48V | 0-2000A | 1130 | 560 | 900 |

※ DIFFERENT VOLTAGE AND CURRENT CAN BE CUSTOMIZED ※

✓ **STABLE & POWERFUL**

⚡ **ENERGY EFFICIENT**

⚙️ **HIGH PERFORMANCE**

APSM SERIES



APSM SERIES

SMALL TYPE HIGH PRECISION POSITIVE PULSE POWER SUPPLY

APPLICATION

Used in gold, silver, chromium, nickel and other precious metal plating, PCB plating, precious jewelry plating and laboratory development process and other occasions with high requirements.

PRODUCT FEATURES

- 1 The distortion of pulse waveform is weak, which is similar to the theoretical waveform.
- 2 The output waveform can be customized instead of selective output, and the automatic control can work in unlimited different phases.
- 3 DC mode and pulse mode, free choice.
- 4 Constant current and voltage operation mode, free switching.
- 5 Equipped with RS232 & RS485 interface.
- 6 4-20mA, 0-5V, 0-10V analog (optional).
- 7 PROFIBUS, DeviceNet, modbus (optional).
- 8 Built in ampere hour meter function.
- 9 With over temperature, over voltage, under voltage, overload, short circuit protection function.
- 10 Sealing structure design, with the use of acid and alkali proof waterproof function- three anti paint, make the product more durable.

TECHNICAL PARAMETERS

| | |
|------------------------------|--|
| Input Voltage | 3 x AC220V ±10%, 50/60Hz 3 x AC380V ±10%, 50/60Hz |
| | Other Voltages can be Customized as Required |
| Output Voltage | 0-250VDC, Customized |
| Output Current | 0-500ADC, Customized |
| Accuracy | ≤ 1% |
| Power Factor | ≥ 0.95 |
| Rated Efficiency | 90% Type |
| Ripple Coefficient | ≤ 2% or 1% (in DC Mode) |
| Output Waveform | Customizable |
| Insulation Resistance | Input-Output / Input-Shell / Output-Shell: ≥ 5m Ω |
| Pulse Width | 1-3000ms |
| Pulse Step | 1ms or 0.1ms |
| Cooling Mode | Air Cooled or Water Cooled |
| Load Capacity | No Fault during 72 Hours of full load operation |
| RoHS Compliance | Conformity With EU Directive 2011/65/EU |
| Safety Standards | Conformity With EU 2006/95/EC, 2004/108/EC |
| Degree Of Protection | Air Cooling IP33, Water Cooling IP43 Or 66 |

TYPICAL PRODUCT

| Output Voltage | Output Current | Mechanical Dimension | | |
|----------------|----------------|----------------------|--------|--------|
| | | L (mm) | W (mm) | H (mm) |
| 0-5V | 0-5A | 429 | 430 | 166 |
| 0-6V | 0-10A | 429 | 430 | 166 |
| 0-6V | 0-100A | 429 | 430 | 166 |
| 0-8V | 0-10A | 429 | 430 | 166 |
| 0-8V | 0-50A | 429 | 430 | 166 |
| 0-12V | 0-50A | 429 | 430 | 166 |
| 0-12V | 0-100A | 429 | 430 | 166 |
| 0-16V | 0-500A | 429 | 430 | 166 |

※ DIFFERENT VOLTAGE AND CURRENT CAN BE CUSTOMIZED ※

STABLE & POWERFUL

ENERGY EFFICIENT

HIGH PERFORMANCE



APSM SERIES

HIGH POWER POSITIVE PULSE POWER SUPPLY

TECHNICAL PARAMETERS

| | |
|------------------------------|--|
| Input Voltage | 3 x AC220V \pm 10%, 50/60Hz 3 x AC380V \pm 10%, 50/60Hz |
| | Other Voltages can be Customized as Required |
| Output Voltage | 0-250VDC, Customized |
| Output Current | 0 – No upper limit (Manual 64000A Maximum) |
| Accuracy | \leq 1% |
| Power Factor | \geq 0.95 |
| Rated Efficiency | 90% Type |
| Ripple Coefficient | \leq 2% or 1% (in DC Mode) |
| Output Waveform | Customizable |
| Insulation Resistance | Input-Output / Input-Shell / Output-Shell: \geq 5m Ω |
| Pulse Width | 1-3000ms |
| Pulse Step | 1ms or 0.1ms |
| Cooling Mode | Air Cooled or Water Cooled |
| Load Capacity | No Fault during 72 Hours of full load operation |
| RoHS Compliance | Conformity With EU Directive 2011/65/EU |
| Safety Standards | Conformity With EU 2006/95/EC, 2004/108/EC |
| Degree Of Protection | Air Cooling IP33, Water Cooling IP43 Or 66 |

TYPICAL PRODUCT

| Output Voltage | Output Current | Mechanical Dimension | | |
|----------------|----------------|--------------------------------------|--------|--------|
| | | L (mm) | W (mm) | H (mm) |
| 0-15V | 0-3000A | 525 | 510 | 1161 |
| 0-15V | 0-5000A | 525 | 510 | 1557 |
| 0-18V | 0-3000A | 525 | 510 | 1293 |
| 0-18V | 0-6000A | Composed of two 18v3000a in parallel | | |
| 0-24V | 0-3000A | 525 | 510 | 1557 |
| 0-24V | 0-6000A | Composed of two 24v3000a in parallel | | |
| 0-48V | 0-1500A | 525 | 510 | 166 |
| 0-48V | 0-4500A | Composed of two 48v1500a in parallel | | |

※ DIFFERENT VOLTAGE AND CURRENT CAN BE CUSTOMIZED ※

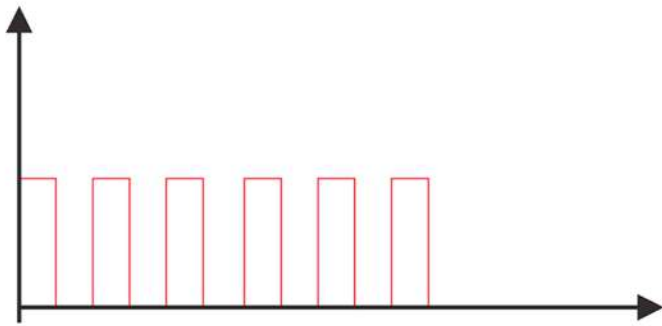
APPLICATION

It is used in industrial titanium coloring, plastic electroplating, decorative chromium, hard chromium, anodizing and other technological occasions with high requirements.

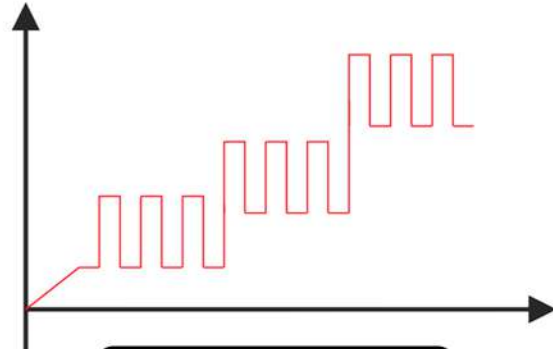
PRODUCT FEATURES

- 1 The distortion of pulse waveform is weak, which is similar to the theoretical waveform.
- 2 DC mode and pulse mode, free choice.
- 3 Constant current and voltage operation mode, free switching.
- 4 Equipped with RS232 & RS485 interface.
- 5 4-20mA, 0-5V, 0-10V analog (optional).
- 6 PROFIBUS, DeviceNet, modbus (optional).
- 7 Built in ampere hour meter function.
- 8 With over temperature, over voltage, under voltage, overload, short circuit protection function.
- 9 Sealing structure design, with the use of acid and alkali proof waterproof function-three anti paint, make the product more durable.
- 10 The output waveform can be customized instead of selective output, and the automatic control can work in unlimited different phases.

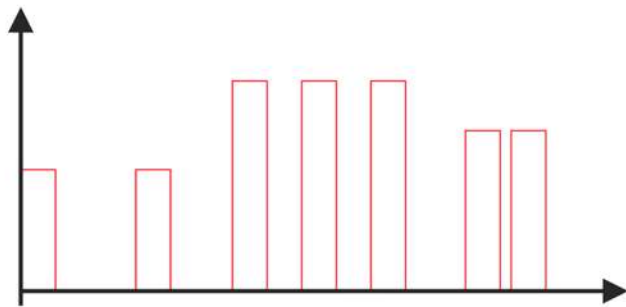
OUTPUT WAVE



STANDARD OUTPUT WAVEFORM



CUSTOM WAVEFORM EXAMPLE



CUSTOM WAVEFORM EXAMPLE 2

Crack free hard chromium applications:

Compared with the traditional power supply, APSM power supply, combined with appropriate technology, can realize the true sense of crack free hard chromium, the specific parameters are as follows:

1

Hardness
Above HV950

2

Salt spray resistance
time 20um,
thickness ≥ 500h

3

30um
thickness
≥ 600H

Advantages of APSM power supply in hard chromium:

Low Ripple: when it works, the top of the pulse is very flat, almost a straight line, and the ripple at this phase can be as small as 0.5%. When it is turned off, the plated parts can be immediately deplated and leveled. Therefore, it overcomes the ripple of silicon rectifier or silicon controlled power supply and the high and low areas of the surface of the plated parts, and it will not form the phenomenon of thick coating in high current area and thin coating in low current area.

Hard chromium coating is widely used in automotive industry, aerospace industry, mechanical parts and plastic mold surface coating because of its unique wear-resistant characteristics, good corrosion resistance and low price. However, a large amount of chromium hydride will be produced in the plating process, which will lead to cracks and corrosion resistance of the coating. By controlling the power parameters such as waveform and on-off ratio, Cosoul CSPP pulse power supply can influence the electrodeposition process to some extent, improve the coating characteristics, affect the structure of chromium plating layer, make the coating crystal fine, reduce the size and number of cracks, and even generate low stress and crack free coating when the process parameters are appropriate, which greatly improves the corrosion resistance of the coating.

STABLE & POWERFUL

ENERGY EFFICIENT

HIGH PERFORMANCE

APSMZ SERIES



APSMZ SERIES

SMALL TYPE HIGH PRECISION POSITIVE AND NEGATIVE PULSE POWER SUPPLY

APPLICATION

For PCB electroplating with high aspect ratio (16:1, 20:1, 40:1), especially for PCB with 3mm or more, the effect is significant in through hole, deep hole, blind hole and other processes.

It is used for electroplating of irregular gold and silver jewelry and other products with irregular shape, etc. in occasions with high requirements.

PRODUCT FEATURES

- 1 The distortion of pulse waveform is weak, which is similar to the theoretical waveform.
- 2 DC mode and pulse mode, free choice.
- 3 Constant current and voltage operation mode, free switching.
- 4 The output waveform can be customized instead of selective output, and the automatic control can work in unlimited different phases.
- 5 Equipped with RS232 & RS485 interface.
- 6 4-20mA, 0-5V, 0-10V analog (optional).
- 7 PROFIBUS, DeviceNet, modbus (optional).
- 8 Built in ampere hour meter function.
- 9 With over temperature, over voltage, under voltage, overload, short circuit protection function.
- 10 Sealing structure design, with the use of acid and alkali proof waterproof function-three anti paint, make the product more durable.

TECHNICAL PARAMETERS

| | |
|------------------------------|--|
| Input Voltage | 3 x AC220V ±10%, 50/60Hz 3 x AC380V ±10%, 50/60Hz |
| | Other Voltages can be Customized as Required |
| Output Voltage | 0- ±250VDC, Customized |
| Output Current | 0- ±300ADC, Customized |
| Accuracy | ≤ 1% |
| Power Factor | ≥ 0.95 |
| Rated Efficiency | 85% Type |
| Ripple Coefficient | ≤ 2% or 1% (in DC Mode) |
| Output Waveform | Customizable |
| Insulation Resistance | Input-Output / Input-Shell / Output-Shell: ≥ 5m Ω |
| Pulse Width | 1-3000ms |
| Pulse Step | 1ms or 0.1ms |
| Cooling Mode | Air Cooled or Water Cooled |
| Load Capacity | No Fault during 72 Hours of full load operation |
| RoHS Compliance | Conformity With EU Directive 2011/65/EU |
| Safety Standards | Conformity With EU 2006/95/EC, 2004/108/EC |
| Degree Of Protection | Air Cooling IP33, Water Cooling IP43 Or 66 |

TYPICAL PRODUCT

| Output Voltage | Output Current | Mechanical Dimension | | |
|----------------|----------------|----------------------|--------|--------|
| | | L (mm) | W (mm) | H (mm) |
| 0-6V | 0-5A | 450 | 445 | 166 |
| 0-6V | 0-100A | 450 | 445 | 166 |
| 0-9V | 0-100A | 450 | 445 | 166 |
| 0-9V | 0-300A | 450 | 445 | 166 |
| 0-12V | 0-100A | 450 | 445 | 166 |
| 0-12V | 0-300A | 450 | 445 | 166 |
| 0-15V | 0-100A | 450 | 445 | 166 |
| 0-15V | 0-300A | 450 | 445 | 166 |

※ DIFFERENT VOLTAGE AND CURRENT CAN BE CUSTOMIZED ※

STABLE & POWERFUL

ENERGY EFFICIENT

HIGH PERFORMANCE

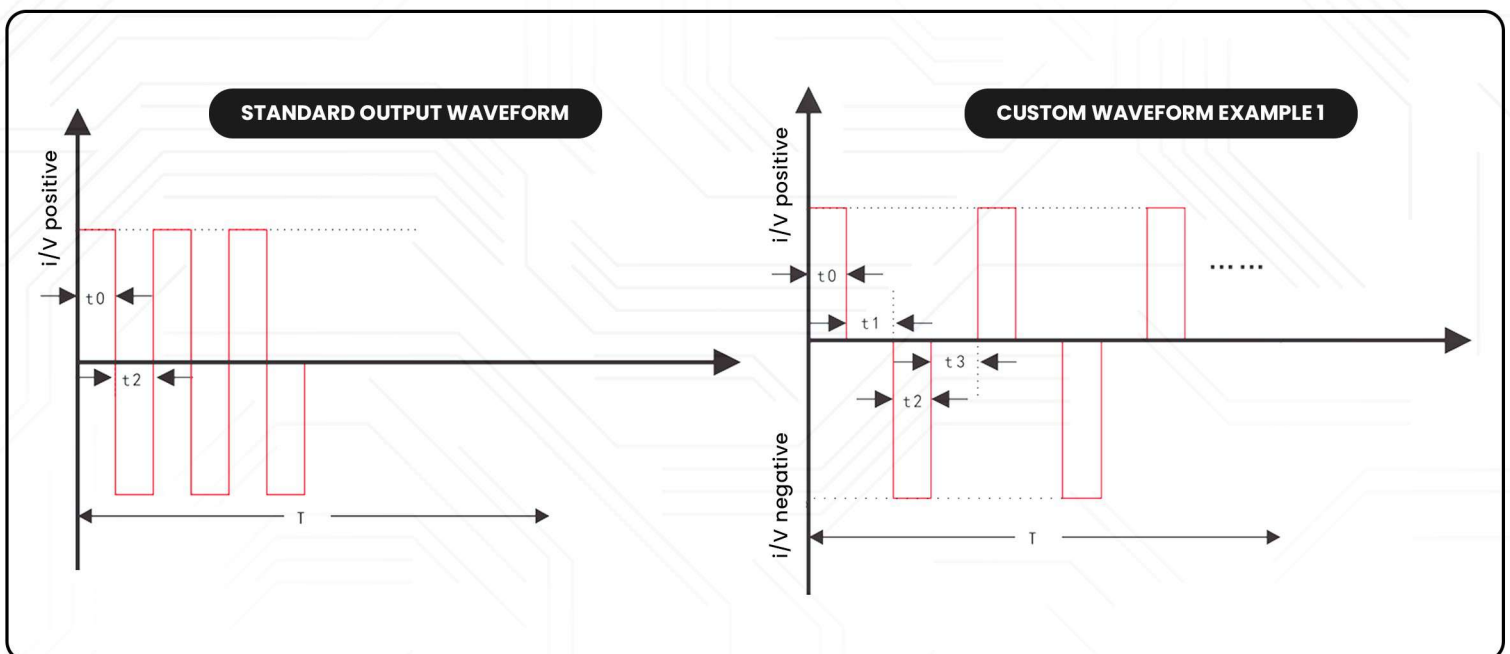
OUTPUT WAVE



MEASURED OUTPUT WAVEFORM

SMALL TYPE HIGH PRECISION POSITIVE AND NEGATIVE PULSE POWER SUPPLY

- t0: Positive pulse time:1-3000ms
- t1: Time interval between positive and negative pulses:1-3000ms or 0
- t2: Negative pulse time:1-3000ms
- t3: Time interval between negative and positive pulses:1-3000ms or 0
- The step of t0, t1, t2, t3:1ms(or 0.1ms)
- T: Total cycle working time:1s to 99hours



STABLE & POWERFUL

ENERGY EFFICIENT

HIGH PERFORMANCE

APSMZ SERIES



APSMZ SERIES

DUAL PULSE POWER SUPPLY

APPLICATION

- For coloring aluminum
- Used in copper plating, blind hole, hole filling and other copper processes of PCB
- It is used in irregular gold and silver jewelry plating and other irregular shape plating parts, etc

PRODUCT FEATURES

- 1 The distortion of pulse waveform is weak, which is similar to the theoretical waveform.
- 2 DC mode and pulse mode, free choice.
- 3 Constant current and voltage operation mode, free switching.
- 4 The output waveform can be customized instead of selective output, and the automatic control can work in unlimited different phases.
- 5 Equipped with RS232 & RS485 interface.
- 6 4-20mA, 0-5V, 0-10V analog (optional)
- 7 PROFIBUS, DeviceNet, modbus (optional)
- 8 Built in ampere hour meter function.
- 9 With over temperature, over voltage, under voltage, overload, short circuit protection function.
- 10 Sealing structure design, with the use of acid and alkali proof waterproof function-three anti paint, make the product more durable.

TECHNICAL PARAMETERS

| | |
|-------------------------------|--|
| Input Voltage | 3 x AC220V ±10%, 50/60Hz 3 x AC380V ±10%, 50/60Hz |
| | Other Voltages can be Customized as Required |
| Output Voltage | 0- ±250VDC, Customized |
| Positive Pulse Current | 0 – No upper limit (Manual 64000A Maximum) |
| Negative Pulse | 0 – No upper limit (Manual 64000A Maximum) |
| Pulse Width | 1-3000ms |
| Pulse Step | 1ms or 0.1ms |
| Accuracy | ≤ 1% |
| Output Waveform | Custom (Non Selective Output) |
| Insulation Resistance | Input-Output / Input-Shell / Output-Shell: ≥ 5m Ω |
| Rated Efficiency | 80% Type |
| Power Factor | ≥ 0.95 |
| Cooling Mode | Air Cooled or Water Cooled |
| Load Capacity | No Fault during 72 Hours of full load operation |
| RoHS Compliance | Conformity With EU Directive 2011/65/EU |
| Safety Standards | Conformity With EU 2006/95/EC, 2004/108/EC |
| Degree Of Protection | Air Cooling IP33, Water Cooling IP43 Or 66 |

TYPICAL PRODUCT

| Output Voltage | Output Current | Mechanical Dimension | | |
|----------------|----------------|----------------------|--------|--------|
| | | L (mm) | W (mm) | H (mm) |
| 0-12V | 0-1000A | 525 | 510 | 765 |
| 0-12V | 0-3000A | 525 | 510 | 1425 |
| 0-18V | 0-1000A | 525 | 510 | 897 |
| 0-18V | 0-3000A | 525 | 510 | 1557 |
| 0-25V | 0-1000A | 525 | 510 | 897 |
| 0-25V | 0-2000A | 525 | 510 | 1425 |
| 0-48V | 0-600A | 525 | 510 | 897 |
| 0-48V | 0-1400A | 525 | 510 | 1689 |

※ DIFFERENT VOLTAGE AND CURRENT CAN BE CUSTOMIZED ※

STABLE & POWERFUL

ENERGY EFFICIENT

HIGH PERFORMANCE

single pulse DC superimposed pulse Dual pulse

return

return **TR working menu** switch to TF

voltage(V) 12.3 current(A) 123

| unit | V(0-36) | (0.1-99.9ms) | (0-32000s) | |
|---------|-----------------|--------------|------------|--------------|
| project | voltage setting | on-time | off-time | working time |
| step 1 | ### | ### | ### | ##### |
| step 2 | ### | ### | ### | ##### |
| step 3 | ### | ### | ### | ##### |
| step 4 | ### | ### | ### | ##### |

current step 1 running as TR single pulse

| unit | A(0-500) | V(0-36) | (0-32000s) | |
|---------|--------------------|--------------------|--------------|----------------------|
| project | DC current setting | DC voltage setting | working time | cc cv auto start |
| step 1 | ### | ### | ##### | |
| step 2 | ### | ### | ##### | |
| step 3 | ### | ### | ##### | |
| step 4 | ### | ### | ##### | |

current step 1 running as TR DC

return **TF work menu** switch to TR

voltage(V) 12.3 current(A) 123

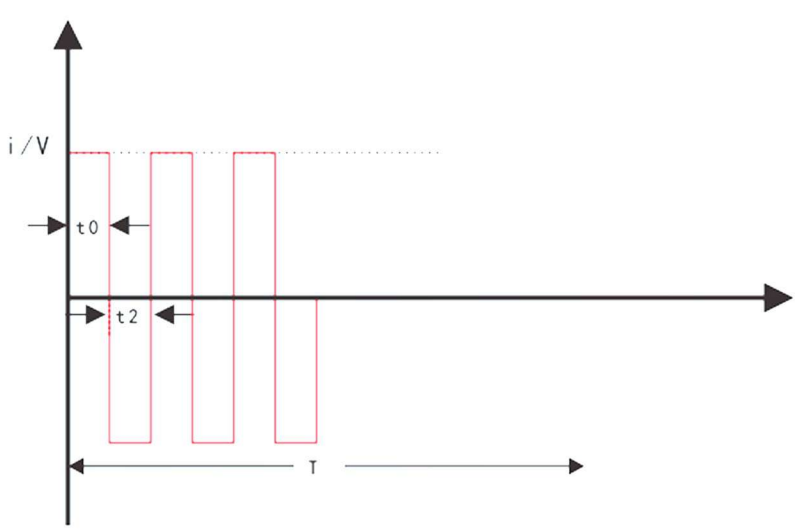
| unit | V(0-36) | (0.1-99.9ms) | (0-32000s) | |
|---------|-----------------|--------------|------------|--------------|
| project | voltage setting | on-time | off-time | working time |
| step 1 | ### | ### | ### | ##### |
| step 2 | ### | ### | ### | ##### |
| step 3 | ### | ### | ### | ##### |
| step 4 | ### | ### | ### | ##### |

current step 1 running as TF single pulse

| unit | A(0-500) | V(0-36) | (0-32000s) | |
|---------|--------------------|--------------------|--------------|----------------------|
| project | DC current setting | DC voltage setting | working time | cc cv auto start |
| step 1 | ### | ### | ##### | |
| step 2 | ### | ### | ##### | |
| step 3 | ### | ### | ##### | |
| step 4 | ### | ### | ##### | |

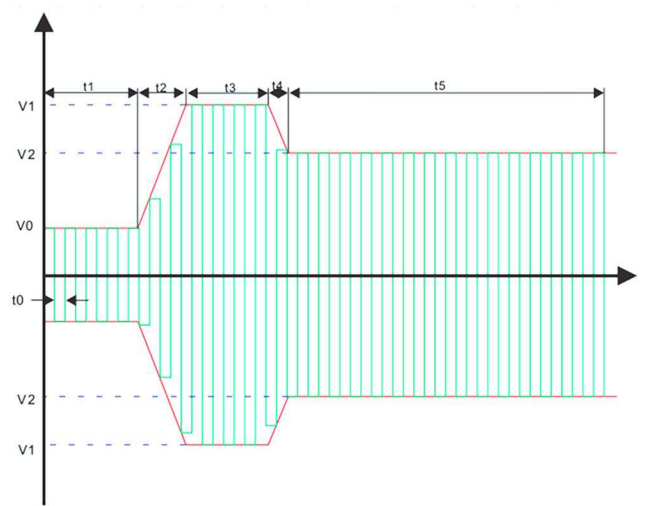
current step 1 running as TF DC

OUTPUT WAVE



STANDARD OUTPUT WAVEFORM

t0 : Positive pulse time:1-3000ms
t2 : Negative pulse time:1-3000ms
T : Total cycle working time:1s to 99hours



STANDARD OUTPUT WAVEFORM

STABLE & POWERFUL

ENERGY EFFICIENT

HIGH PERFORMANCE

APSM D SERIES



APSM D SERIES

PULSE SWITCHING POWER SUPPLY

APPLICATION

The products are used in nano materials manufacturing, sewage treatment, surface treatment of military special materials, graphene refining or related derivative industries

PRODUCT FEATURES

- 1 The distortion of pulse waveform is weak, which is similar to the theoretical waveform.
- 2 DC mode and pulse mode, free choice.
- 3 Constant current and voltage operation mode, free switching.
- 4 Output frequency adjustable 1-100kHz.
- 5 Adjustable duty cycle: 5-99%.
- 6 Equipped with RS232 & RS485 interface.
- 7 4-20mA, 0-5V, 0-10V analog (optional).
- 8 PROFIBUS, DeviceNet, modbus (optional).
- 9 Built in ampere hour meter function.
- 10 With over temperature, over voltage, under voltage, overload, short circuit protection function.
- 11 Sealing structure design, with the use of acid and alkali proof waterproof function-three anti paint, make the product more durable.

TECHNICAL PARAMETERS

| | |
|------------------------------|--|
| Line Voltage | 3 x AC220V \pm 10%, 50/60Hz 3 x AC380V \pm 10%, 50/60Hz |
| | Other Voltages can be Customized as Required |
| Output Voltage | 0-18VDC, Customized |
| Output Current | 0-200VDC, Customized |
| Accuracy | \leq 1% |
| Power Factor | \geq 0.95 |
| Rated Efficiency | 90% Type |
| Ripple Coefficient | \leq 2% or 1% (in DC Mode) |
| Duty Cycle | 5-99% |
| Pulse Frequency | 1-100K Hz |
| Insulation Resistance | Input-Output / Input-Shell / Output-Shell: \geq 5m Ω |
| Cooling Mode | Air Cooled or Water Cooled |
| Load Capacity | No Fault during 72 Hours of full load operation |
| RoHS Compliance | Conformity With EU Directive 2011/65/EU |
| Safety Standards | Conformity With EU 2006/95/EC, 2004/108/EC |
| Degree Of Protection | Air Cooling IP33, Water Cooling IP43 Or 66 |

TYPICAL PRODUCT

| Output Voltage | Output Current | Mechanical Dimension | | |
|----------------|----------------|----------------------|--------|--------|
| | | L (mm) | W (mm) | H (mm) |
| 0-12V | 0-20A | 429 | 430 | 166 |
| 0-12V | 0-50A | 429 | 430 | 166 |
| 0-12V | 0-100A | 429 | 430 | 166 |
| 0-16V | 0-50A | 429 | 430 | 166 |
| 0-16V | 0-100A | 429 | 430 | 166 |
| 0-16V | 0-200A | 429 | 430 | 166 |
| 0-18V | 0-50A | 429 | 430 | 166 |
| 0-18V | 0-100A | 429 | 430 | 166 |

※ DIFFERENT VOLTAGE AND CURRENT CAN BE CUSTOMIZED ※

STABLE & POWERFUL

ENERGY EFFICIENT

HIGH PERFORMANCE



REMOTE CONTROL



PRODUCT FUNCTION

- 1 Voltage Display.
- 2 Current display.
- 3 Status indicator: constant current, constant voltage, manual, automatic, normal operation, power indicator, alarm and overheat indicator.
- 4 Start and stop key.
- 5 Constant current & constant voltage key.
- 6 Keys of regulating current or voltage.
- 7 No need to connect external power supply additionally, it can be directly used after inserting into the host.
- 8 L:235mm, W:156mm, H:53mm, Weight:1.0kg.

STABLE & POWERFUL

ENERGY EFFICIENT

HIGH PERFORMANCE



WATER COOLED

WATER QUALITY REQUIREMENTS (WATER COOLED)

Are crucial for ensuring the efficient and reliable operation of various industrial and mechanical equipment that rely on water for cooling. These requirements encompass the chemical, physical, and biological characteristics of water to maintain optimal performance and prevent damage.

WATER QUALITY

| | |
|--|---|
| Cooling Water Temperature | 19-25 °C |
| Maximum Water Temperature | 30 °C (Limited Power Use) |
| Temperature difference between inlet and outlet water | About Δ7°C |
| Limited Power Use | When the inlet water temperature is higher than 25 °C, the power will be reduced by 3% for every over 1 °C |
| Range of inlet water pressure | 2-6 Bar |
| Conductivity | 180-220 S/cm |
| PH Value | 7-8 |
| Water Source Requirement | Deionized water or pure water shall be used, closed circuit is required, and non closed circuit water sources such as water tower shall not be used |

INSTALLATION REQUIREMENTS

| | |
|------------------------------|---|
| Place Requirement | Indoor Use Only |
| Air Circulation | Air circulation, no heat accumulation |
| Work Temperature | -10 to 35 °C |
| Storage Temperature | -20 to 45 °C |
| Relative Humidity | 15% - 85%, No Condensate |
| Filter Cotton | It cannot be blocked. It is recommended to wash once a week |
| Grounding Requirement | Forced Grounding of Equipment |
| Maintenance Space | At least 50cm should be left at the front and back of the air inlet and outlet of the rectifier, at least 15cm left and right, and at least 50cm at the top |
| Air Flow Direction | For air-cooled models, when multiple rectifiers are installed, the hot air of the front rectifiers cannot be directly blown into the air inlet of the rear Rectifiers |

INDOTARA[®]

PT. INDOTARA PERSADA

Our Marketing Office and After Sales Service Center

Head Office

50/F, Menara BCA Grand Indonesia
Jl. M.H. Thamrin No.1
Jakarta Pusat 10310

021 - 5011 2227

dee@indotara.id



Semarang Office

Wisma HSBC Lt. 6 Suite 609
Jl. Gajah Mada No.135
Semarang, Jawa Tengah 50134

024 - 40 300 892

smg.dee@indotara.id



Marketing Office

APL Tower 6th Floor No. 6 Central Park,
Jl. Letjen S. Parman Kav 28,
Jakarta Barat - 11440

021 - 5011 2227

dee@indotara.id



Medan Office

Sutomo Tower Lantai 5H
Jl. Sutomo Ujung No.28,
Kota Medan, Sumatera Utara 20235

061 - 50 300 594

mdn.dee@indotara.id



Graha Indotara

Millenium Industrial Estate
Jl. Millenium 22 Blok R3 No. 1
Cikupa, Tangerang - Banten 15720

021 - 5011 2227

dee@indotara.id



Makassar Office

Fajar Graha Pena Lt. 5
Jl. Urip Sumoharjo No. 20,
Makassar - South Sulawesi 90234

021 - 5011 2227

mks.dee@indotara.id



Bandung Office

Wisma HSBC Lt. 6 Suite B
Jl. Asia Afrika No. 116
Bandung, Jawa Barat 40112

021 - 5011 2227

bdg.dee@indotara.id



Balikpapan Office

Panin Tower Lt. 8 - Grand Sudirman
Jl. Jendral Sudirman No.7 Klandasan Ilir,
Balikpapan Kota, Kalimantan Timur 76114

021 - 5011 2227

bpp.dee@indotara.id



Surabaya Office

Japfa Indoland Center, Tower I Lt. 10/1008
Jl. Jendral Basuki Rahmat 129-137
Surabaya 60271

031 - 3360 1490

sby.dee@indotara.id



Bali Office

Benoa Square Lt. 2
Jl. Bypass Ngurah Rai No. 21 A Kedonganan,
Kuta Badung - Bali Indonesia 80361

021 - 5011 2227

bali.dee@indotara.id



Yogyakarta Office

Hartono Mall Yogyakarta Lt. 3
Kaliwaru, Condongcatur,
Sleman, Yogyakarta 55281

021 - 5011 2227

yog.dee@indotara.id



Singapore Office

Marina Bay Financial Centre Tower 3
17F, 12 Marina Boulevard
Singapore - 018982

021 - 5011 2227

sing.dee@indotara.id

