# YSDH960 SERIES 960W


UL61010 Panding

The YSDH series were designed with metal housing and higher reliability features.

All models in the series will operate with wide ambient temperature, having peak power for 5 s and DC OK relay contact. The current sharing design for YSDH960 enables it to be used for higher loads.

The series can be used in industrial control systems, factory automation, machine building and automotive industry etc.

## Features

- AC input with 180-264V AC
- Parallel function, current sharing up to 3840W(3+1)
- Protections:Short circuit/Overload/Over voltage/Over temperature
- High efficiency and low power dissipation
- Free air convection design
- High peak power up to 130% for 5s
- Built-in active PFC funtion
- Built-in constant current limiting circuit
- Built-in DC OK relay contact
- Three years warranty



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## Model Information

| Part number | DC Voltage | Rated Current(max.) | Rated Power | Peak Power | Voltage ADJ. range |
|---|---|---|---|---|---|
| YSDH960-24 | 24V | 40A | 960W | 1248W(5sec.) | 24-28V |
| YSDH960-48 | 48V | 20A | 960W | 1248W(5sec.) | 48-55V |

## Input

| | |
|---|---|
| **Nominal Input Voltage** | 200-240 VAC |
| **Input Voltage Range** | 180~264VAC,254~370VDC |
| **Frequency Range** | 47~63Hz |
| **Power Factor(Typ.)** | 0.95/230VAC at full load |
| **Efficiency(Typ.)** | 93% |
| **No Load Power Consumption** | 6W max. |
| **AC Current(Typ.)** | 6A/230VAC |
| **Inrush Current(Typ.)** | 50A/230VAC, Cold start |
| **Leakage Current** | 5mA max. |
| **Start-up With Capacition Loads** | 120000μF min. |

## Output

| | | |
|---|---|---|
| **Ripple & Noise(Max.)** | YSDH960-24<br>180mVp-p | YSDH960-48<br>250mVp-p |
| **Voltage Tolerance** | ±1.0% | |
| **Line Regulation** | ±0.5% | |
| **Load Regulation** | ±1.0% | |
| **Set-up, Rise & Hold Up Time** | 1000ms max. / 100ms max. / 14ms Typ. | |



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## Protection

| | |
|---|---|
| **Over Load** | Normally works within 105 ~ 130% rated output power for more than 5 seconds and then shutdown o/p voltage with auto-recovery after 30 seconds if the peak load condition is removed.<br>Constant current limiting within 130 ~ 150% rated output power for more than 5 seconds and then shutdown o/p voltage, re-power on to recover. |
| **Over Voltage** | YSDH960-24 YSDH960-48<br>29 ~ 33V 56 ~ 65V<br>Protection Type: Shut down o/p voltage, auto-recovery or re-power to recover |
| **Reverse Over Voltage** | YSDH960-24 YSDH960-48<br>24.5 ~ 25.5V 48.5 ~ 49.5V<br>Protection Type: Shut down o/p voltage, auto-recovery or re-power to recover |
| **Over Temperature** | Protection Type: Shutdown o/p voltage, auto-recovery after temperature goes down |
| **Internal Fuse At L Pin** | F10 A /250V |
| **Short Circuit** | Constant current Limiting within 130 ~ 150% rated output power for more than 5 seconds and then shutdown o/p voltage, re-power on to recover. |

## Function

| | |
|---|---|
| **DC OK relay contact ratings(max.)** | 60VDC/0.3A, 30VDC/1A, 30vac/0.5A resistive load |
| **Current Sharing** | Please refer to Function Manual |

## Environment

| | |
|---|---|
| **Working temp.** | -30 ~ +70 ℃ (Refer to "Derating curve") |
| **Start-up tested temp.** | -40℃（50% load max.） |
| **Working humidity** | 20 ~ 95% RH non-condensing |
| **Storage temp., humidity** | -40 ~ +85 ℃, 10 ~ 95% RH |
| **MTBF** | Conducted by Parts Stress Analysis Prediction<br>82K hrs min. MIL-HDBK-217F (25℃) |
| **Temp. coefficient** | ±0.03%/ ℃ (0 ~ 50 ℃) |
| **Vibration** | Component:10 ~ 500Hz, 2G 10min./1cycle, 60min.<br>Each alongX,Y, Z axes; Mounting: compliance to IEC60068-2-6 |
| **Over voltage category** | II |
| **Pollution Degree** | 2 |



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## Safety And Electromagnetic Compatibility

| | |
|---|---|
| **Safety standards** | UL61010-1, UL61010-2-201, EN61010-1, BS EN61010-1 |
| **Withstand voltage** | I/P-O/P:3KVAC I/P-FG:2KVAC<br>O/P-FG:0.5KVAC O/P-DC OK:0.5KVAC |
| **Isolation resistance** | I/P-O/P,I/P-FG,O/P-FG:>100M Ohms/500VDC℃/70%RH |
| **EMC emission** | Compliance to BS EN/EN55032 , BS EN/EN61000-3-2,--3 |
| **EMC immunty** | Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11 |

## Note

**1.**All parameters NOT specially mentioned at 230VAC input, rated load and 25℃ of ambient temperature.

**2.**Ripple & noise are measured from peak to peak with bandwidth limit of 20MHz（0.1uF and 47uF/50V parallel capacitor under DC output full load, AC nominal input 25℃ ).

**3.**Installation clearances : top with 40mm, bottom with 20mm,left and right with 5mm.Increase the space to10-15mm when the adjacent device is heat source.

**4.**It could hold up 5 seconds max when reached peak power 1248W,and the average output power should not exceed the rate power.

**5.**Derating may be needed under low input voltage .Please check the derating curve for more details.

**6.**The ambient temperature derating of 3.5℃/1000m for operating altitude higher than 2000m(6500ft).

## Mechanical

| | |
|---|---|
| **Housing material：** | Aluminium / steel |
| **Dimensions(HXWXD)：** | 124.7x110x150.2mm(4.91x4.33x5.91inch) |
| **Weight：** | 2.47kg |
| **Connection Method:** | Input & Output, Screw connection ; DC&Current sharing, plug in |
| **Terminal** | Input 3 pins / Output 6 pins / DC-OK & Current sharing 4 Pins |
| **Wire** | Input 26-10AWG / 0.128-4mm2<br>Output 30-10AWG / 0.05-4mm2<br>DC-OK & Current sharing 26-20AWG /0.128-0.517mm2 |
| **Stripping length** | Input 7-8mm, output 7.5-8.5mm |
| **Tightening torque** | Input 0.5Nm, output 0.56Nm |
| **Mounting Rail** | Standard TS35 DIN Rail in accordance with EN60715 |



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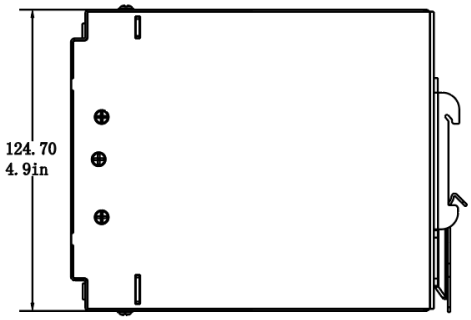
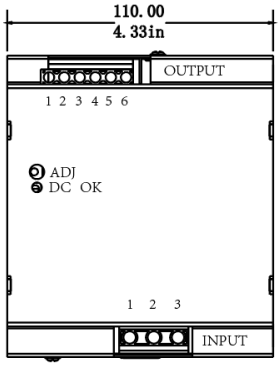
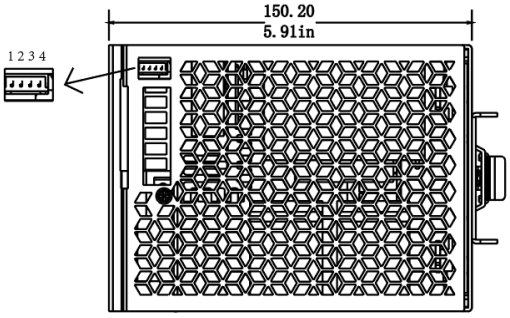
## Packing

| | |
|---|---|
| **Inner box:** | 1pcs / box, 41.5 * 33.2 * 20.2cm |
| **Outer carton:** | 4pcs/carton |

## Drawing & Label



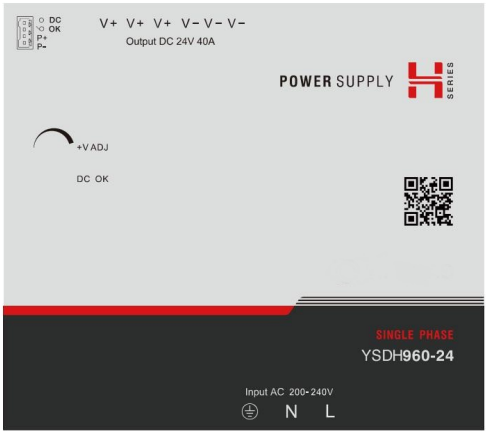



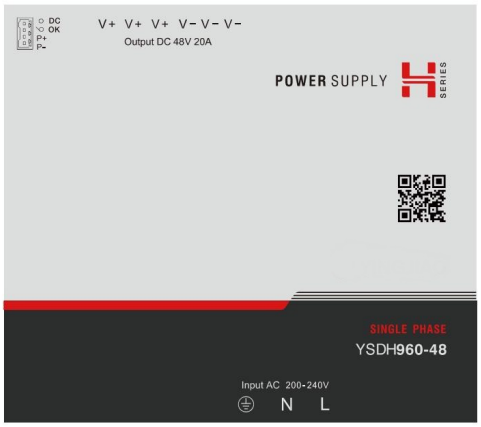




| Output | |
|---|---|
| No. | Description |
| 1,2,3 | DC OUTPUT +V |
| 4,5,6 | DC OUTPUT -V |

| Input | |
|---|---|
| No. | Description |
| 1 | PE |
| 2 | AC/N |
| 3 | AC/L |

| Control Pin:WJ15EDGK-2.54-4P or equivalent | | | |
|---|---|---|---|
| Pin No. | Assignment | Mating Housing | Wire Diameter |
| 1 | P-(Current Share) | WJ15EDGRC-2.54-04P or equivalent(Including in the single package) | 0.128~0.517mm² (26~20AWG) |
| 2 | P+(Current Share) | | |
| 3,4 | DC OK Relay Contact | | |



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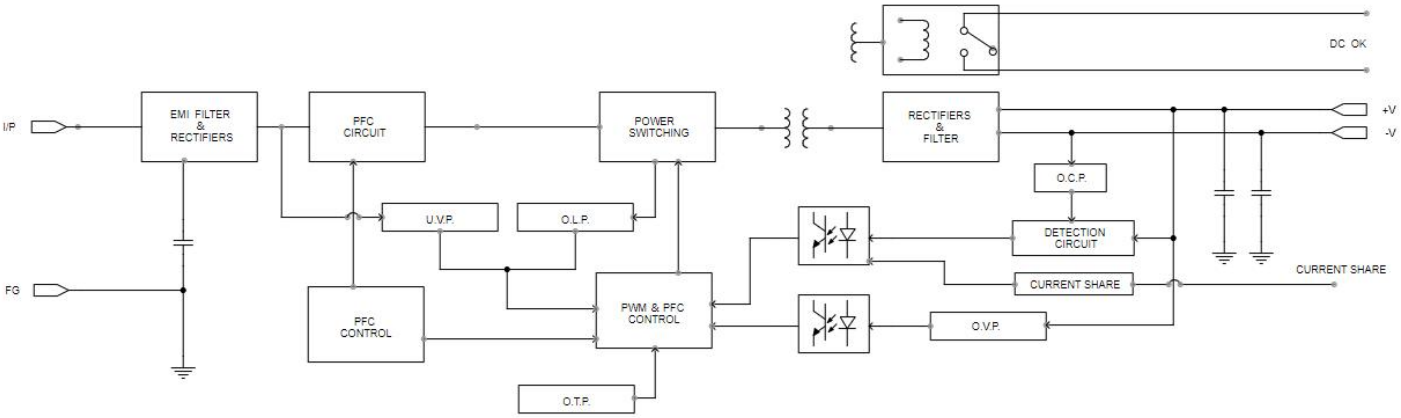
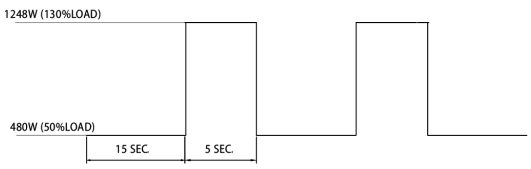
## Block Diagram

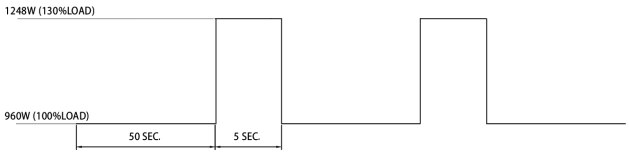



## Engineering Data

Peak loading

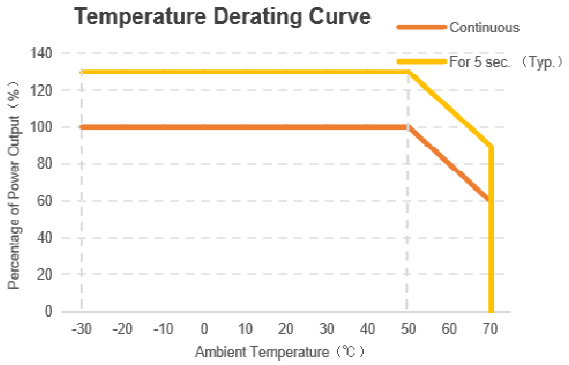



HALF LOAD

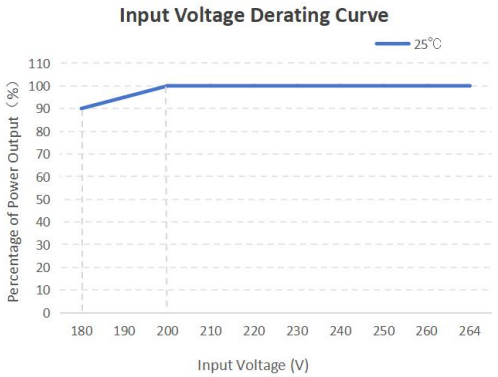



FULL LOAD

## Derating Curve




## Output Derating VS Input Voltage



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## DC OK Relay Contact

| | |
|---|---|
| **Contact Close** | PSU turns on/DC OK |
| **Contact Open** | PSU turns off/DC Fail |
| **Contact Rating(max.)** | 30V/1A resistive load |

## Current Sharing

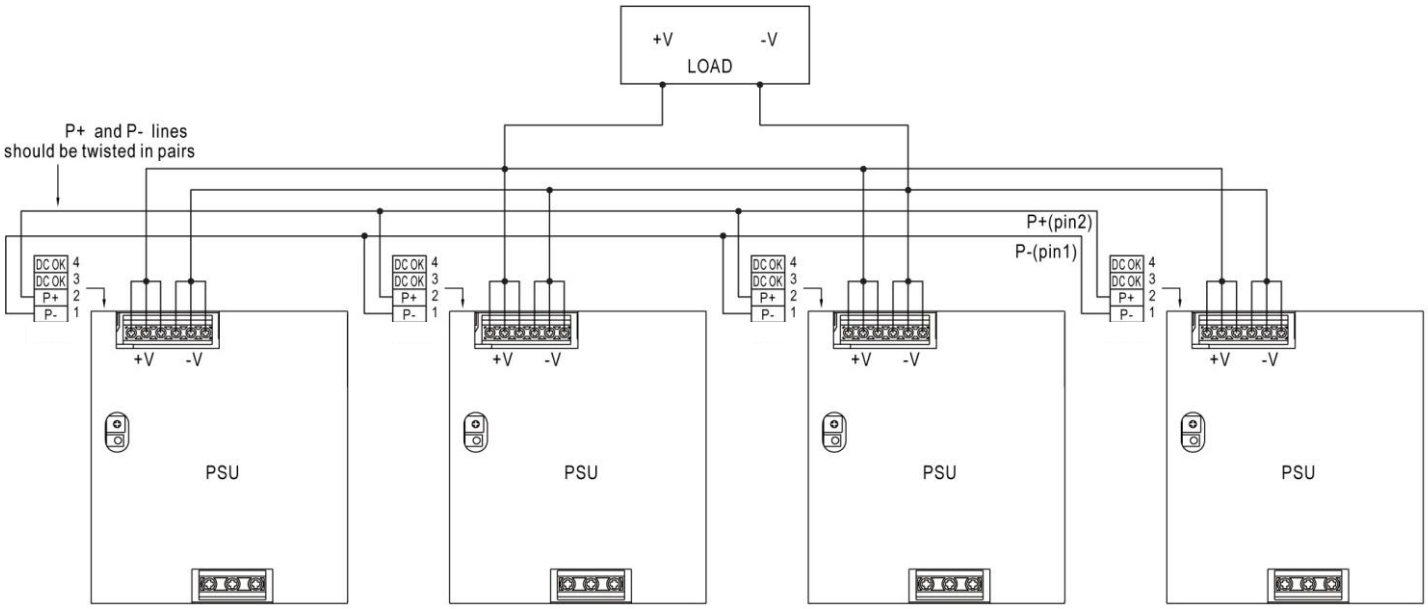
1.Connection method for parallel operation is shown as below drawing(P+,P- should be connected in parallel), the maximum quantity is 4 unit

2.The difference of output voltage should be less than 0.2V for all PSU units in parallel

3.The total output current must not exceed the value calculated of the following equation (output current at parallel operation)=(the rated current per unit)*(number of unit)×0.9

4.In parallel connection ,the minimum output load should be more than 5% of than output load (Min. load >5% rated current per unit X number of unit)

5. In parallel operation, pls using short and large diameter wires to connect the PSUs to the load



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