

1 and 2 Phase Power Supplies

Primary switched power supply

Thank you for having chosen one of our products for your work. We are certain that it will give the utmost satisfaction and be a notable help on the job.

Application

The power supplies Q.PS-AD2 and Q.PS-AD3 can be used in areas from extreme industrial environment, and complies with the latest technical standard. Before working with the unit, read these instructions carefully and completely. All these power supplies are single output, IP20, have Mounting DIN Rail IEC 60715/TH35. Class 1 isolation devices suitable for SELV and PELV solutions.

Installation



WARNING – Explosion Hazard. Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.



WARNING – Explosion Hazard. Substitution of components may impair suitability for class I, Division 2.

WARNING – Switch off the system before connecting the module. Never work on the machine when it is live. The device must be installed in according with EN 60950. The device must have a suitable isolating facility outside the power supply unit, via which can be switched to idle. Danger of fatal Injury!

Connection:

Cable Connection: The following cable cross-sections may be used:

	Solid (mm ²)	Stranded (mm ²)	AWG	Torque (Nm)	Stripping Length
Input:	0.2÷2.5	0.2÷2.5	24 – 14	0.5 – 0.6 Nm	7 mm
Output:	0.2÷2.5	0.2÷2.5	24 – 14	0.5 – 0.6 Nm	7 mm
Signal:	0.2÷2.5	0.2÷2.5	24 – 14	0.5 – 0.6 Nm	7 mm

The connection is made by the screw type 2.5 mm² terminal blocks. Use only copper cables that are designed for operating temperatures of > 75 °C. Wiring terminal shall be marked to indicate the proper connection for the power supply.

Input: The input connection is made by connections:

- 1 Phase Switching Power Supplies (Q.PS-AD2 or Q.PS-AD3 series) L, N, ⊕.
- 2 Phase Switching Power Supplies (PSM24xxB series) L1, L2, ⊕.

Output: 24 VDC is made via the + (+), - (-).

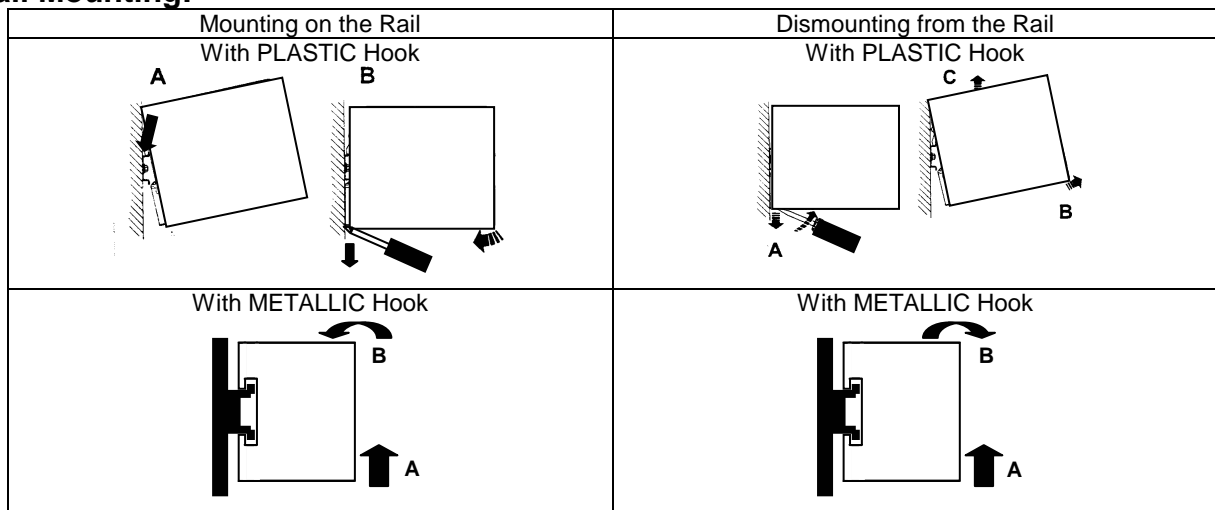
Signalling

The green LED (AC) lights up permanently when the input voltage is applied at the power supply.

The red LED (DC):

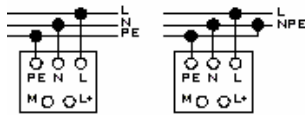
- Lights up permanently when the output voltage is OK
- Blink when there is in overload range or in short circuit protection.

Rail Mounting:

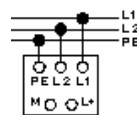


Other modules must have a minimum vertical distance of 10 cm to this power supply in order to guarantee sufficient auto convection. Depending on the ambient temperature and load of the device, the temperature of the housing can become very high!

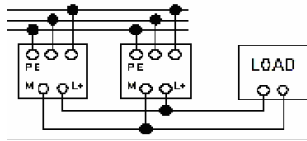
Connection 1 Phase:



Connection 2 Phase:



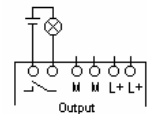
Parallel Connection for Redundancy or Increased capacity:



To result a good current share between all devices in parallel, adjust the output voltage in a tolerance of ± 20 mV. Therefore applying 1 - 2 A load to adjust the output-voltage. Then connect them in parallel. Use only power supplies of the same model.

Power Good Output Function - Option in some models (*)

Relays contact is used for preventive function monitoring of the power supply. An electrically isolated signal contact indicates that the output voltage has fallen more than 10% below the set value. Maximum current can be switched: 1 A @ 30 VDC.



Protection:

On the primary side: the device is equipped with an internally fuse follow the table into the next page. If the internal fuse is activated, it is most probable that there is a fault in the device. If happen, the device must be checked in the factory. **Caution:** In two phases Input models, Double Pole / Neutral Fusing.

On the secondary side: the device is electrically protected against: Over-load, over-voltage, output and short circuit automatically. Only in some models (*) can be selected in Auto or Manual reset:

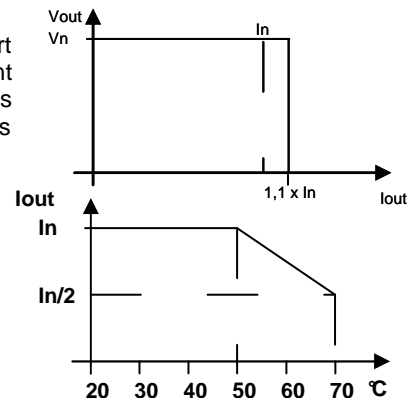
Hiccup Mode, Auto-reset: The output turns on when Overload or Short Circuit disappear (default select.).

Shut Down Mode, Manual Reset: In some models (*) you can select Shut Down mode , factory selection is Hiccup mode . You can change DIP switch selection as you wish. DIP switch setting is on the up side behind cover. You must turn off the device before change setting. If Overload or Short Circuit happens, the output turns off. To restart the power supply it is necessary to turn off mains input for a few second.

Characteristic Curves

Short circuit and overload

The output of the device is electrically protected against overload and short circuit. At nominal voltage the device can supply 1.1 the nominal Current without switching off. In the case of higher overload, the operating point traces the curve illustrated in figure. As the overload increases, the output voltage is reduced until zero.



Thermal behaviour

The rated maximal air temperature @ nominal current is 50°C. For ambient temperature above 50°C, the output current must be reduced by 2.5% per Kelvin increase in temperature. At the temperature of 70°C the output current will be $I_n/2$. The equipment does not switch off in case of ambient temperature above 70°C or thermal overload.

Standards and Certification

EMC Standards:

EN 61000-3-2; EN 61000-6-2 (level 4); EN 61000-6-4

Surge, Transient immunity:

EN 61000-4-2; EN 61000-4-4; EN 61000-4-5 Criterion B

Radio interference suppression in according with EN 55011 class B

In according to EMC 89/336/EEC and Low voltage directive 73/23/EEC



All specifications are subject to change without notice

* Q.PS-AD3-2405

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