

1, 2 and 3 Phase FLEX 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 FLEX Series 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
Input:	4.0	6.0	30 – 10	0.8 – 1.0 Nm	7 mm
Output:	0.2 – 2.5	0.2 – 2.5	24 – 14	0.5 – 0.6 Nm	7 mm
Output:	4.0	6.0	30 – 10	0.8 – 1.0 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 (FLEX60-90-170-280 series) or 4.0 mm² (FLEX500 series) 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 (FLEXxxxxxA series) L, N, PE ⊕
- 1 Phase Switching Power Supplies (FLEXxxxxxB series) L, N, PE ⊕
- 2 Phase Switching Power Supplies (FLEXxxxxxB series) L1, L2, PE ⊕
- 3 Phase Switching Power Supplies (FLEX500xxB series) L1, L2, L3, PE ⊕

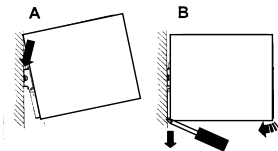
Output: 24 Vdc is made via the L+ (+), M (-).

Signalling – Output short circuit and overload settings:

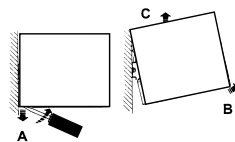
Jumper Setting:	Standard Conditions “Led DC ok”	Overload conditions “Led DC ok”
MANUAL RESET:	Lights up permanently when the output voltage is OK.	Switch off when is in overload range
HICCUP MODE:		Blink when is in overload range
FOLD – BACK:		Switch off when is in overload range

Rail Mounting:

Mounting on the Rail

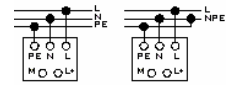


Dismounting from the Rail

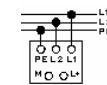


Other modules must have a minimum vertical and horizontal distance of 10 cm to this power supply in order to guarantee sufficient auto convection. Depending on the ambient temperature and load of the device, the temperature of the housing can become very high!

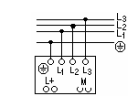
Connection: 1 Phase:



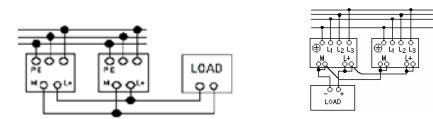
2 Phase:



3 Phase:



Parallel Connection for Redundancy or Increased capacity:



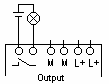
In FLEX280xxX and FLEX500xxX put a jumper for parallel connection easy.



In the FLEX60xxA, FLEX90xxX and FLEX170xxX series, the good current share between all devices in parallel, adj. Uout ± 20mV applying 1-2 A load to all devices output before connecting them in parallel. Use only power supplies of the same model.

Power Good Output Function - Only on FLEX280xxX AND FLEX500xxX

Output are used for preventive function monitoring of the power supply. An electrically isolated signal contact is available. When closed, the 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.

On the secondary side: the device is electrically protected against: Over Load, Over Voltage Output and Short circuit automatically. Only on FLEX60xxA you can not set the overload mode.

Settings mode for short circuit and Over Load (Not for FLEX60xxA):

- Jumper position in **Manual Reset** (Shut Down Mode): 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.
- Jumper position in **Hiccup Mode** (Auto–reset): The output turns on when Overload or Short Circuit disappear (default select.).
- Jumper position in **Fold–Back** (Auto–reset): If you need a constant power on your load, select this mode. In fold – back, the output continuity power don't switch off.

Characteristic Curves

Short circuit and overload

The output of the device is electrically protected against overload and short circuit. For the nominal voltage and nominal current at temperature condition, please see technical data name Continuous Current. The device can supply 1.1 at the nominal max Current without switching off.

Thermal behaviour

Surrounding air temperature 50 °C for FLEX60xxA for the other 60°C. At the temperature of 70°C the output current will be In/2. The equipment does not switch off in case of ambient temperature above 70°C or thermal overload.

Standards and Certification

Electrical Safety:

Assembling device: UL508, IEC/EN 60950 (VDE 0805) and EN 50178 (VDE 0160).

Installation according: IEC/EN 60950.

Input / Output separation: SELV EN 60950-1 and PELV EN 60204-1. Double or reinforced insulation.

EMC Standards (Surge, Transient immunity):

Immunity: EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11, EN50082-2 (IEC 61000-6-2)

Emission: EN50081-1 (IEC 61000-6-3)

Standards Conformity:

Safety of Electrical Equipment Machines: EN 60204-1.

In according to EMC 89/336/EEC and EMC 93/68/EEC
Low voltage directive 2006/95/EC



