# TDK·Lambda

DPP120-XX-3 Din Rail Mountable Switching Power Supply



Technical Data **Installation and Operation** 

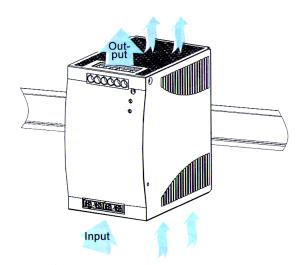


Fig. 2

Fig. 1

## **DEFINITION OF MODELS**

**Output Voltage** 

DPP120-12-3: 12V output

DPP120-24-3: 24V output

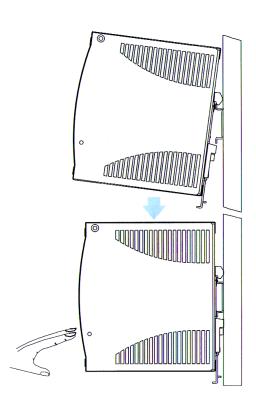
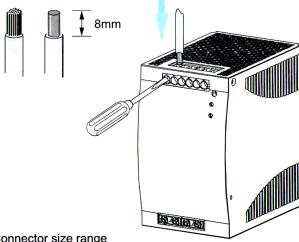


Fig. 3

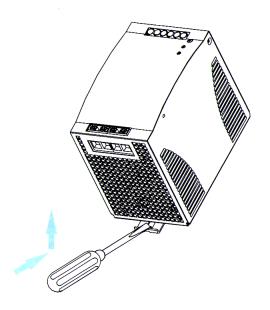


Connector size range \* AWG24 - 10

- Input connector can withstand torque at maximum 1.01Nm (9 pound-inches)
  Output connector can withstand torque at maximum 0.62Nm (5.5 pound-inches)

Use copper conductors only, 60/75 °C
Max. Surrounding Air Temperature of 55 °C

Fig. 4





### Safety notes

#### Read Instructions!

Before working with this unit, read these instructions carefully and completely. Make sure that you have understood all the information!

#### Disconnect system from supply network

Before any installation, maintenance or modification work: Disconnect your system from the supply network. Ensure that it cannot be re-connected inadvertently!

#### Before start of operation Ensure appropriate installation

Warning! Improper installation / operation impair safety and result in operational difficulties or complete failure of the unit. The unit must be installed and put into service appropriately by qualified personnel. Compliance with the relevant regulations must be ensured. Before operation is begun the following conditions must be ensured, in particular:

- Connection to main power supply in compliance with VDE01000 and EN50178.
- With stranded wires: all strands must be secured in the terminal blocks (Potential danger of short circuit).
- Unit and power supply cables must be properly fused; if necessary a manually controlled disconnecting element must be used to disengage from supply mains.
- The non-fused earth conductor must be connected to the " (a) " terminal (protection class 1).
- All output lines must be rated for the power supply output current and must be connected with the correct polarity.
- · Sufficient air-cooling must be ensured.
- pollution degree 2 environment.

#### In operation: No modifications!

As long as the unit is in operation: do not modify the installation! The same applies also to the secondary side. Risk of electric arcs and electric shock (fatal)!

## Only (dis) connect plug connectors when the power is off!

## Convection cooling (See Fig. 1) **Do not cover** any ventilation holes!

**Leave sufficient space** around the unit for cooling!

#### Warning: High voltage! Store energy!

The unit contains unprotected conductors carrying a lethal high voltage, and components storing substantial amounts of energy. Improper handling may result in an electric shock or serious burn!

- The unit must not be opened except appropriately trained personnel!
- Do not introduce any object into the unit!
- Keep away from fire and water!

#### Installation

#### **Application**

This unit is a primary switched-mode power supply designed for use in panel-board installations or building-in applications where access to the supply is restricted (shock-hazard protection). It must only be installed and put into service appropriately by qualified personnel.

#### Mounting

#### Mounting (See Fig. 1)

Permissible mounting position: keep free ventilation hole, leave space for cooling! Recommended to have 25mm free space at all sides for ventilation / cooling:

#### Snap on support rail (See Fig. 2)

- Tilt the unit slightly rearwards.
- · Fit the unit over top hat rail.
- · Slide it downward until it hits the stop.
- Press against the bottom front side for locking.
- Shake the unit slightly to check the locking action.

#### Front elements

#### Operation indicator

Indicates whether the unit is working properly. Green LED is lit on if the voltage at the output terminal is more than 75%.

#### DC output low indicator

Red LED is lit when the voltage at the output terminal is 70% to 90% of the rated output voltage.

#### Potentiometer

Used to set the output voltage.

#### Connection / Internal fuse

#### Connection (See Fig. 3)

- Data for permitted loads, cable cross-sections and stripping:
- Use only commercial cables designed for the indicated voltage and current values!
- With flexible cables: make sure that all stranded cable are secured in the terminal.
- Ensure proper polarity at output terminals!

#### Grounding

- Do not operate without PE connection! To comply with EMC and safety standards (CE mark, approvals), the unit must only be operated if the PE terminal (a) is connected to the non-fused earth conductor.
- Secondary side is not earthed; if necessary the  $\ \oplus$  or  $\ \ominus$  terminal can be earthed optionally.

#### Internal fuse

The internal input fuse serves to protect the unit and must not be replaced by the user. In case of an internal defect, the unit must be returned to the manufacturer for safety reasons.

#### External circuit breaker

 For input line protection observe national regulations; recommended recommended circuit breaker: Mitsubishi, Type NF30-CS, rated 20A max or equipollent of TUV/VDE/UL approved sources.

#### Removal

#### Removal from DIN Rai (See Fig. 4)

Insert a flat screwdriver into the slot in the clamp. Pull the clamp down until it clicks off the Din rail, then, from the bottom, lift the power supply up and away.

#### Technical Data

All specifications are typical at norminal line, full load,  $25^{\circ}\text{C}$ ; Unless otherwise noticed.

Output	VO [V]	Io [A]	Eff.	Inrush Current
Wattage	VO[V]	10 [7]	[typ.]	400/500Vac
120	12	10	87%	< 100
	24	5	89%	< 10A

#### **General Specification**

Isolation	3000 Vac / 4242 Vdc
Isolation Resistance	100 M ohm
Operation amb. Temperature	25 ~ +71 °C
Storage Temperature	25 ~ +85 °C
Derating	+61 ~ +71 °C (see Fig. 5)
Relative Humidity	20 ~ 95% RH
Cooling	Free air convection
Temperature Coefficient	0.03% / °C
Dimension	L124 x W74.3 x D118.8 [mm]
Weiaht	800a

#### Input Specification

Rated Input Voltage	3ø 400-500 Vac
Input Voltage Range	3ø 340 ~ 575 Vac
Rated Input Current	0.5A
Line Frequency	47 - 63 Hz
Power Factor	0.55

#### **Output Specification**

Output Accuracy	-0%, +1%
Line Regulation	+/- 1%
Load Regulation	
Ripple & Noise	
	11.4 ~ 14.5 Vdc for 12V model
	22.5 ~ 28.5 Vdc for 24V model
DC ON Indicator	Green LED
DC LOW Indicator	Red LED
Turn on time	<1000ms
Fall time	<150ms
Rise time	
Hold Up Time	
Case material	

#### Control And Protection

Input Internal Fuse	2A / 600 Vac internal / phase
Output Short Circuit	Current limited
Output Over Load	115 % ~ 135 %

#### Approvals And Standard

