

## FLP0412FPx Open Frame Power Supply

90 - 265Vac input; 2-4 outputs; 450W Output Power



### Applications

- Industrial equipment
- Telecommunications equipment

### Description

In a small 3 x 7 inch footprint, the 450W 2-4 output FLP0412x open frame power supply delivers greater than 90 percent typical power efficiency and full load output at 42°C and 1m/s airflow. Protection features include output overcurrent (OCP), overvoltage (OVP), and overtemperature (OTP). There is power trading between the outputs. Whatever power is going to be taken from V2, V3, and V4, should be deducted from the gross power available from V1. This unit also offers PMBus control and monitoring of V3 and V4. Use of this feature is optional.

### Features

- Compact size 76.2 mm x 178 mm x 36.8 mm (3 in x 7 in x 1.45 in) with density of 15 W/in<sup>3</sup>
- Universal AC Input Range (90 – 265VAC)
- Output voltages of +12V (adjustable ±5%), +24V (adjustable 16-34V), +5V (adjustable 1-5.5V), +3.3V (adjustable 1-5.5V)
- Standby output of 5V @ 1A
- Maximum output current of 37.5A12V, 2A24V, 12A5V, 12A3.3V (450W total, see description below)
- High efficiency (>91% at Full Load, 230VAC in)
- Full load capability at 42°C and 1m/s airflow with derating at higher temperatures or lower airflows
- Capable of 320W out in sealed enclosure applications with enclosure ambient at 55°C
- Output overcurrent protection (non-latching)
- Overtemperature protection
- Output overvoltage protection
- Minimum of 11ms of holdup time at 450W out
- Parallelable with output current sharing on main 12V output – option, please request details
- Active power factor corrected input
- Conducted EMI - meets CISPR22 (EN55022/EN55032) and FCC Class B requirements
- Meets IEC61000-4-5, Level 4 (2kV/4kV)
- Compliant to RoHS EU Directive 2002/95/EC
- UL and cUL approved to UL/CSA60950-1, TUV (EN60950-1), CE Mark (for LVD) and CB Report available
- ISO\*\* 9001 and ISO 14001 certified manufacturing facilities

\* UL is a registered trademark of Underwriters Laboratories, Inc.

† CSA is a registered trademark of Canadian Standards Association.

‡ VDE is a trademark of Verband Deutscher Elektrotechniker e.V.

\*\* ISO is a registered trademark of the International Organization of Standards

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#### Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only, functional operation of the device is not implied at these or any other conditions in excess of those given in the operations sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect the device reliability.

| Parameter   | Device | Min | Max  | Unit |
|---|--------|-----|------|------|
| Input Voltage - Continuous  | All    | 90  | 265  | Vac  |
| For up to 10 seconds  | All    | 90  | 275  | Vac  |
| Operating Ambient Temperature<br>(see Thermal Considerations section) | All    | -40 | 85   | °C   |
| Storage Temperature   | All    | -40 | 85   | °C   |
| Humidity (non-condensing)   | All    | 5   | 95   | %    |
| Altitude  | All    |     | 5000 | m    |
| Isolation Voltage – Input to output                                   | All    |     | 3000 | Vac  |
| Input to safety ground  | All    |     | 1500 | Vac  |
| Outputs to safety ground  | All    |     | 50   | Vac  |

#### Electrical Specifications

| Parameter  | Device     | Min  | Typ     | Max       | Unit               |
|--|------------|------|---------|-----------|--------------------|
| Operating Input Voltage  | All        | 90   | 115/230 | 265       | Vac                |
| Input Source Frequency   | All        | 47   | 50/60   | 63        | Hz                 |
| Input Current ( $V_{IN} = 90\text{Vac}$ )  | All        |      |         | 6         | A <sub>RMS</sub>   |
| Input Power Factor (230Vac, Full Load)   | All        | 0.95 |         |           |                    |
| Inrush Transient Current ( $V_{IN} = 265\text{Vac}$ , $T_{amb} = 25^{\circ}\text{C}$ )   | All        |      |         | 60        | A Peak             |
| Leakage Current to earth ground ( $V_{IN} = 265\text{Vac}$ )   | All        |      |         | 3.5       | mA                 |
| V1 Output Voltage Setpoint   | All        |      | 12      |           | Vdc                |
| V1 Output Voltage Tolerance (due to set point, temperature variations, load and line regulation)   | All        | -2   |         | 2         | %                  |
| V1 Output Voltage Adjustment Range   | All        | 11.4 |         | 12.6      | Vdc                |
| V1 Output Remote Sense Range   | All        |      |         | 250       | mVdc               |
| V1 Output Load Regulation  | All        |      |         | 1         | %Vout              |
| V1 Output Line Regulation  | All        |      |         | 0.5       | %Vout              |
| V1 Output Ripple and Noise – measured with 0.1 $\mu\text{F}$ ceramic capacitor in parallel with 470 $\mu\text{F}$ electrolytic capacitor<br>Peak-to-peak (20MHz Bandwidth) | All        |      |         | 240       | mV p-p             |
| V1 Dynamic Load Response – 50% to 100% transient, 1A/ $\mu\text{s}$ slew rate<br>Output voltage deviation<br>Settling Time   | All<br>All |      |         | 5%<br>500 | %<br>$\mu\text{s}$ |
| V1 Output Current gross – see page 1   | All        | 0    |         | 37.5      | Adc                |
| V1 Output Current Limit Inception  | All        | 105  |         | 145       | % $I_{O,max}$      |
| V1 Maximum Output Capacitance  | All        |      |         | 10000     | $\mu\text{F}$      |
| Standby Output Voltage   | All        |      | 5       |           | Vdc                |
| Standby Output Current   | All        |      |         | 1         | Adc                |
| Efficiency: $V_{IN} = 230\text{Vac}$ , 20% load  | All        |      | 84.5    |           | %                  |
| 50% load   | All        |      | 91.3    |           | %                  |
| 100% load  | All        |      | 91.9    |           | %                  |
| $V_{IN} = 115\text{Vac}$ , 20% load  | All        |      | 83.5    |           | %                  |
| 50% load   | All        |      | 89.9    |           | %                  |
| 100% load  | All        |      | 90      |           | %                  |
| Holdup Time <sup>1</sup> – $V_{IN} = 115\text{Vac}$ , 450W load  | All        | 11   |         |           | ms                 |
| $V_{IN} = 230\text{Vac}$ , 450W load   | All        | 11   |         |           | ms                 |

<sup>1</sup> Holdup time may be lower at cold temperatures

## FLP0412FPx Open Frame Power Supply

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### General Specifications

| Parameter  | Device | Symbol | Typ.      | Unit     |
|--|--------|--------|-----------|----------|
| Calculated Reliability based on Telcordia SR-332 Issue 3: Method 1 Case 3 ( $V_{IN}=230V_{AC}$ , $I_o = 30A$ , $T_A = 40^{\circ}C$ , airflow 200LFM, 90% confidence) | All    | MTBF   | >650,000  | Hours    |
| Weight   | All    |        | 420<br>15 | g<br>oz. |

### Feature Specifications

| Parameter   | Device | Min  | Typ  | Max | Unit    |
|---|--------|------|------|-----|---------|
| On/Off Signal Interface – signal referenced to GND                |        |      |      |     |         |
| Logic Low (Power Supply ON)                                       |        |      |      |     |         |
| Input Low Current   | All    |      |      | 7   | mA      |
| Input Low Voltage   | All    |      |      | 1   | V       |
| Logic High (Power Supply OFF)                                     |        |      |      |     |         |
| Input High Current  | All    |      |      | 600 | $\mu A$ |
| Input Voltage   | All    |      |      | 5.5 | V       |
| Delay from ON/OFF being enabled to start of output voltage rise   | All    |      |      | 50  | ms      |
| Output Voltage Rise Time (from 10 to 90% of final value)          | All    |      | 20   |     | ms      |
| Delay from Input being applied to all outputs being in regulation | All    |      |      | 1   | s       |
| V1 Output Overvoltage Protection                                  | All    | 13.8 |      | 16  | Vdc     |
| Input Undervoltage lockout <sup>2</sup>                           |        |      |      |     |         |
| Turn-on Threshold (100% load)                                     | All    | 85   | 87.6 | 90  | Vac     |
| Turn-off Threshold (100% load)                                    | All    | 82   | 83.9 | 88  | Vac     |
| V1 DC OK – open collector, High when output available             |        |      |      |     |         |
| Sink Current  | All    |      |      | 4   | mA      |
| Maximum Collector Voltage   | All    |      |      | 12  | V       |

<sup>2</sup> Undervoltage lockout threshold may vary with output load current level – decreasing as load goes lower

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### Environmental Specifications

| Parameter                             | Device | Specification/Test   |
|---------------------------------------|--------|--|
| Radiated Emissions <sup>3</sup>       | All    | CISPR22/32 Class B with 3dB margin   |
| Conducted Emissions                   | All    | CISPR22/32 Class B with 6dB margin   |
| ESD                                   | All    | IEC61000-4-2, Level 4, performance criterion A   |
| Radiated Susceptibility <sup>4</sup>  | All    | IEC61000-4-3, Level 3  |
| Electrical Fast Transient Common Mode | All    | IEC61000-4-4, Level 3  |
| Surge Immunity                        | All    | IEC61000-4-5, Level 4  |
| Conducted RF Immunity                 | All    | IEC61000-4-6, Level 3  |
| Input Voltage Dips                    | All    | Output stays within regulation for either ½ cycle interruption or 25% dip from nominal line for 1 second |
| Input Harmonics                       | All    | IEC61000-3-2   |
| Shock and Vibration                   | All    | Per IPC-9592B, Class II  |

### Safety Specifications

| Parameter  | Device | Specification  |
|--|--------|--|
| Dielectric Withstand Voltage (between input and outputs) | All    | Minimum of 4,250Vdc for 1 minute   |
| Insulation Resistance (between input and outputs)        | All    | Minimum of 5 MΩ  |
| Safety Standards   | All    | Class 1, IEC60950, EN60950, with the following deviations: Nemko, UL 60950 (Recognized Component), cUL (Canadian Approval by UL) |

<sup>3</sup> Shall meet when tested in a suitable enclosure

<sup>4</sup> Shall meet when tested in a suitable enclosure

## FLP0412FPx Open Frame Power Supply

90 - 265Vac input; 2-4 outputs; 450W Output Power

### V2 +24V, 0-2A, provided by built-in ABXS002A3X41-SRZ

The output voltage can be adjusted by potentiometer RV2 over the range 16V to 34V.

V2 is provided by an ABXS002A3X41-SRZ which has around it the components required to ensure it meets the rest of this specification. V2+, V2powergood, and V2return are brought to the auxiliary output connector (HDR4).

V2 Turn-on happens when V1 reaches 91% of its nominal value. Turn-off happens when V1 goes below 86% or above 112% of its nominal value. V2 features the OTP, OCP, and OVP as provided by the converter.

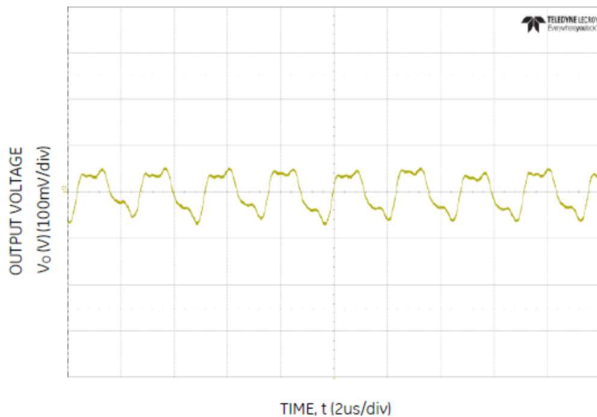


Figure 9. Typical output ripple and noise ( $C_o=66\mu\text{F}$  ceramic,  $V_{IN} = 12\text{V}$ ,  $I_o = I_{o,max}$ ).

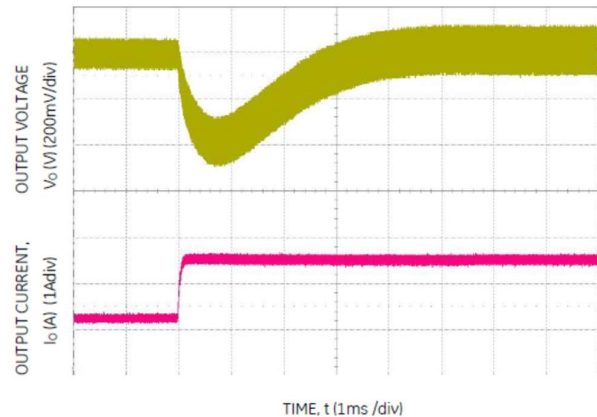


Figure 10. Transient Response to Dynamic Load Change from 50% to 100% at  $12\text{V}_{in}$ ,  $C_{out}=3\times 10\mu\text{F}+220\mu\text{F}$ ,  $C_{Tune}=3300\text{pF}$ ,  $R_{Tune}=30.1\text{k}\Omega$

### Overcurrent Protection

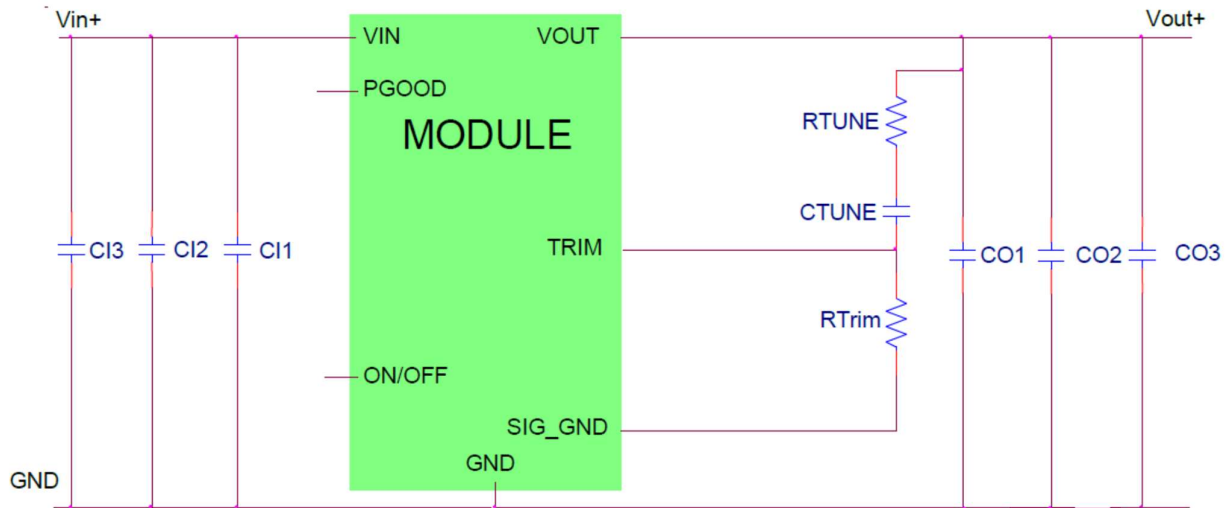
To provide protection in a fault (output overload) condition, the unit is equipped with internal current-limiting circuitry and can endure current limiting continuously. At the point of current-limit inception, the unit enters hiccup mode. The unit operates normally once the output current is brought back into its specified range.

### Power Good

The module provides a Power Good (PGOOD) signal that is implemented with an open-drain output to indicate that the output voltage is within the regulation limits of the power module. The PGOOD signal will be de-asserted to a low state if any condition such as overtemperature, overcurrent or loss of regulation occurs that would result in the output voltage going outside the specified thresholds. The PGOOD terminal can be connected through a pullup resistor (suggested value  $10\text{k}\Omega$ ) to a source of 5VDC or lower.

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Schematic for V2



|       |  |
|-------|--|
| C11   | 1 x 0.047µF/50V, 0603 ceramic capacitor                  |
| C12   | 4 x 10µF/50V, 1210 ceramic capacitor                     |
| C13   | 1 x 220µF/25V, bulk electrolytic                         |
| CO1   | 1 x 0.01µF/100V, 0805 ceramic capacitor                  |
| CO2   | 9 x 4.7µF/100V, 1210 ceramic capacitor                   |
| CO3   | 1 x 220µF/100V, bulk electrolytic                        |
| CTune | 220pF ceramic capacitor (can be 1206, 0805 or 0603 size) |
| RTune | 40.2 kΩSMT resistor (can be 1206, 0805 or 0603 size)     |

The output voltage is able to be adjusted by potentiometer RV2 over the range 16V to 34V, and this replaces the Rtrim shown above.

## FLP0412FPx Open Frame Power Supply

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### V3 and V4 +5V (default) and +3.3V (default), 0-12A, provided by two built-in PDT012

The output voltages are adjusted by potentiometers RV3 and RV4 over the range 1V to 5.5V.

V3 and V4 are provided by a PDT012 which have around them the components required to ensure they meet the rest of this specification. V3/4+, V3/4sense+, V3/4powergood, and V3/4return are brought to the auxiliary output connector (HDR4). Clock, Data, SMB Alert#, and 0V are brought to the PMBus connector (HDR5).

All of the digital features are the same as the PDT012 data sheet. For detailed digital interface specifications and feature descriptions, refer to PDT012 datasheet.

V3 and V4 Turn-on happens when V1 reaches 91% of its nominal value. Turn-off happens when V1 goes below 86% or above 112% of its nominal value. V3 and V4 feature the OTP, OCP, and OVP as provided by the converters, and as modified by the customer using PMBus.

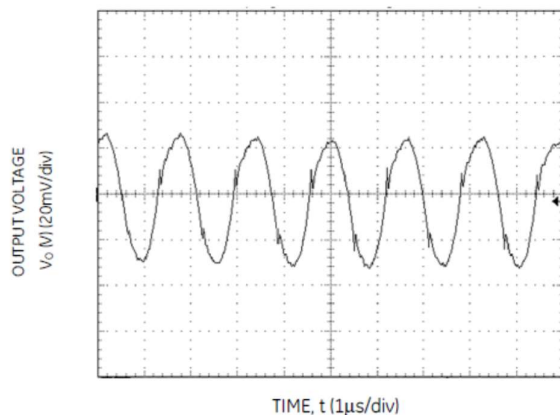


Figure 33. Typical output ripple and noise ( $C_o=22\mu\text{F}$  ceramic,  $V_{IN} = 12\text{V}$ ,  $I_o = I_{o,max}$ ).

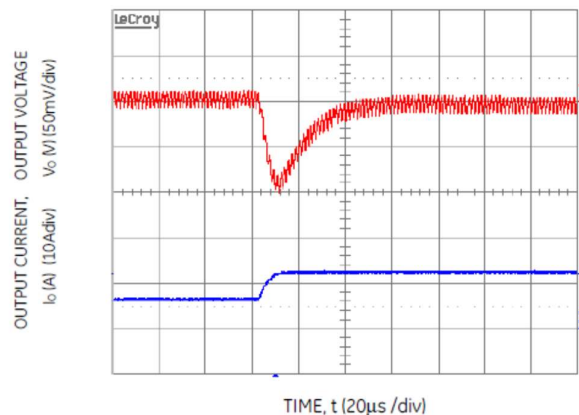


Figure 34. Transient Response to Dynamic Load Change from 50% to 100% at 12Vin,  $C_{out}=5x47\mu\text{F}$ ,  $C_{Tune}=1500\text{pF}$  &  $R_{Tune}=330\text{ohms}$

### Overcurrent Protection

To provide protection in a fault (output overload) condition, the unit is equipped with internal current-limiting circuitry and can endure current limiting continuously. At the point of current-limit inception, the unit enters hiccup mode. The unit operates normally once the output current is brought back into its specified range.

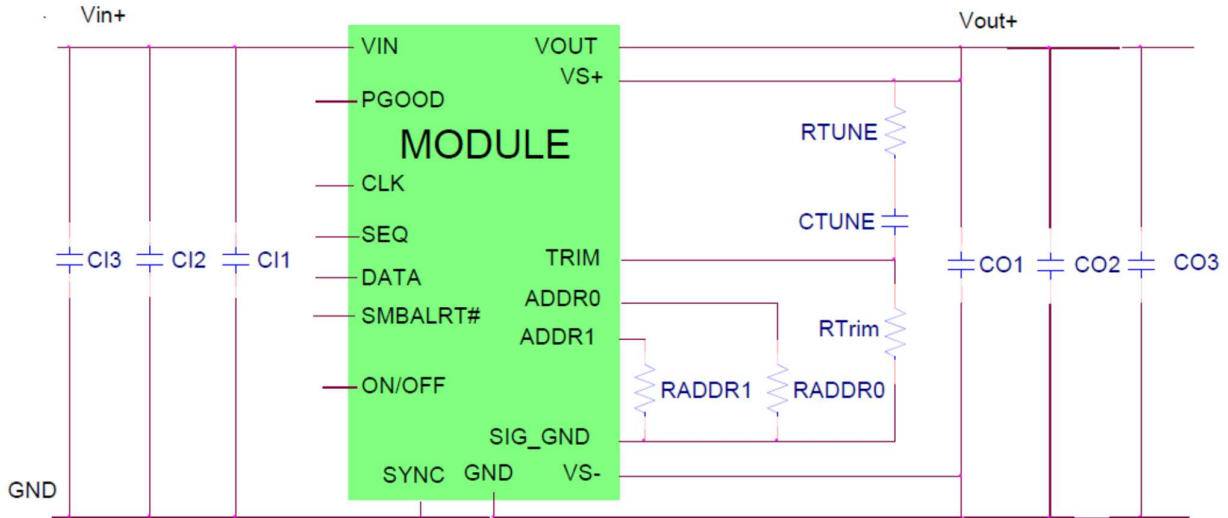
### Power Good

The module provides a Power Good (PGOOD) signal that is implemented with an open-drain output to indicate that the output voltage is within the regulation limits of the power module. The PGOOD signal will be de-asserted to a low state if any condition such as overtemperature, overcurrent or loss of regulation occurs that would result in the output voltage going  $\pm 10\%$  outside the setpoint value. The PGOOD terminal can be connected through a pullup resistor (suggested value  $100\text{K}\Omega$ ) to a source of 5VDC or lower.

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## Schematic for V3 and V4 +5V (default) and +3.3V (default), 0-12A



- CI1            Decoupling cap - 1x0.047 $\mu$ F/16V ceramic capacitor (e.g. Murata LLL185R71C473MA01)
- CI2            2x22 $\mu$ F/16V ceramic capacitor (e.g. Murata GRM32ER61C226KE20)
- CI3            470 $\mu$ F/16V bulk electrolytic
- CO1            Decoupling cap - 1x0.047 $\mu$ F/16V ceramic capacitor (e.g. Murata LLL185R71C473MA01)
- CO2            2 x 47 $\mu$ F/6.3V ceramic capacitor (e.g. Murata GRM31CR60J476ME19)
- CO3            1 x 330 $\mu$ F/6.3V Polymer (e.g. Sanyo Poscap)
- CTune         3300pF ceramic capacitor (can be 1206, 0805 or 0603 size)
- RTune         270 ohms SMT resistor (can be 1206, 0805 or 0603 size)

The output voltages are adjusted by potentiometers RV3 and RV4 over the range 1V to 5.5V. These potentiometers replace the fixed Rtrim shown above.



**FLP0412FPx Open Frame Power Supply**  
**90 - 265Vac input; 2-4 outputs; 450W Output Power**

|   |     |  |  |     |    |               |
|---|-----|--|--|-----|----|---------------|
| PGOOD (Power Good)                                  |     |  |  |     |    |               |
| Signal Interface Open Drain, $V_{supply} \leq 5VDC$ |     |  |  |     |    |               |
| Overvoltage threshold for PGOOD ON                  | All |  |  | 108 |    | $\%V_{o,set}$ |
| Overvoltage threshold for PGOOD OFF                 | All |  |  | 110 |    | $\%V_{o,set}$ |
| Undervoltage threshold for PGOOD ON                 | All |  |  | 92  |    | $\%V_{o,set}$ |
| Undervoltage threshold for PGOOD OFF                | All |  |  | 90  |    | $\%V_{o,set}$ |
| Pulldown resistance of PGOOD pin                    | All |  |  |     | 50 | $\Omega$      |
| Sink current capability into PGOOD pin              | All |  |  |     | 5  | mA            |

## FLP0412x Open Frame Power Supply

### 90 - 265Vac input; 2-4 outputs; 450W Output Power

#### Safety Considerations

The FLP0412FPx power supply is intended for inclusion in other equipment and the installer must ensure that it is in compliance with all the requirements of the end application. This product is only for inclusion by professional installers within other equipment and must not be operated as a stand-alone product. The power supply should meet Class 1, IEC60950, EN60950, with the following deviations: Nemko. UL 60950 (Recognized Component) C-UL (Canadian Approval by UL).

#### Feature Descriptions

##### Standby Power Supply

A standby output of 5V in the FLP0412FPx power supply, comes on when AC input in the operating range is applied.

##### Remote On/Off

The FLP0412FPx power supply features a TTL-compatible On/Off control input. The power supply turns ON when the On/Off input goes low, and turns OFF when the input goes high. Note that if the On/Off pin is left unconnected, the power supply main output shall remain off.

##### V1 Output Voltage Adjustment

The V1 output voltage is adjusted between 11.4V and 12.6V using a potentiometer (RV1) on the power supply.

##### V1 Remote Sense

The power supply has both positive and negative remote sense connections that can be connected to the positive and negative rails of the main output near the load. The power supply operates without the remote sense connections being made.

##### V1 Overcurrent Protection

To provide protection in a fault condition (output overload), the power supply is equipped with internal current-limiting circuitry and can endure current limiting continuously. At the point of current-limit inception, the unit enters hiccup mode. The power supply operates normally once the output current is brought back into its specified range.

##### V1 Overvoltage Protection

Overvoltage protection is a feature of the FLP0412FPx power supply that protects both the load and the power supply from an output overvoltage condition. When an overvoltage occurs, the power supply shuts down and latches off until the overvoltage condition is removed. It is necessary to recycle the input to restart the power supply when this protection is activated.

##### Overtemperature Protection

The FLP0412FPx also features overtemperature protection in order to provide additional protection in a fault condition. The power supply is equipped with a thermal shutdown circuit which detects excessive internal temperatures and shuts the unit down. Once the power supply goes into overtemperature shutdown, it will cool before attempting to restart. The

overtemperature protection circuit will typically trigger when the unit is operated at 450W output with an ambient temperature of 53°C and 1m/s (200LFM) airflow.

##### Input Undervoltage Lockout

At input voltages below the input undervoltage lockout limit, power supply operation is disabled. The power supply begins to operate at an input voltage above the undervoltage lockout turn-on threshold

##### V1 DC OK

The FLP0412FPx provides a DC OK signal that indicates when the output has come up and is in regulation. This is an open-collector type signal that goes high when the output is available and within regulation.

##### V1 Power Good LED

A green LED on board the power supply illuminates when the main output voltage is above 10V.

##### Paralleling V1 with Active Output Current Sharing

This power supply has optional parallel operation with active V1 output current sharing. Paralleling is accomplished by connecting the Current Share signals of the power supplies together. At load current levels above 20%, the output currents of multiple power supplies will be within  $\pm 5\%$  of the full load value. This feature is an option.

# FLP0412FPx Open Frame Power Supply

90 - 265Vac input; 2-4 outputs; 450W Output Power

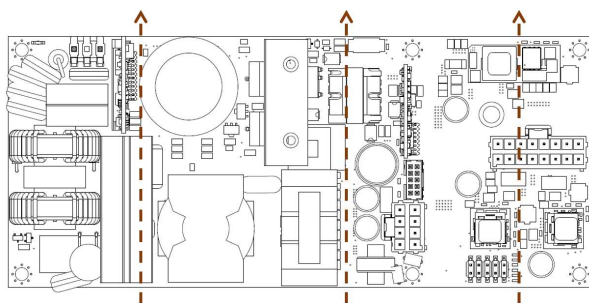
## Thermal Considerations

The power supply can be operated in a variety of thermal environments, however sufficient cooling should be provided to ensure reliable operation.

Considerations include ambient temperature, airflow, power supply dissipation and the need for increased reliability. A reduction in the operating temperature of the power supply will result in increased reliability. The thermal data presented here is based on measurements taken during testing in a wind tunnel.

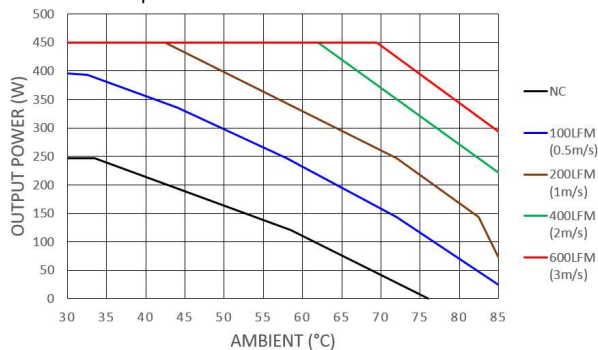
## Heat Transfer via Convection

Increased airflow through the power supply enhances the heat transfer via convection. Below figure shows the preferred airflow direction. Contact your GE technical representative for derating information in other airflow directions.



## Thermal Derating Characteristic Curve

Following curve data shown for model FLP0412FPMXXZ01A with 115Vac input. At 230Vac input derating is the same or better. For derating at other input voltages and other models, consult the GE Technical representative.

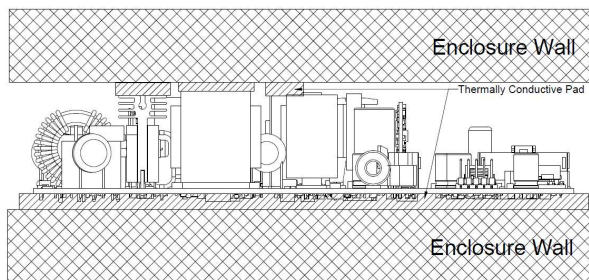
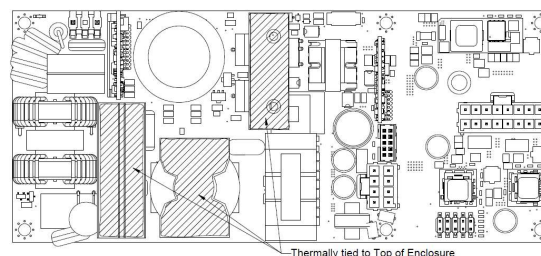


## Operation in a Sealed Enclosure

The FLP0412 power supply can also be operated in a sealed enclosure or in an environment where cooling is primarily via conduction. Bottom figure shows an arrangement where thermally conductive pads are used to transfer heat from the top and bottom of the power supply into the enclosure. Under such conditions, the power supply is capable of reduced power operation as shown in Table 1.

**Table 1. Output Power Capability when the FLP0412 is cooled primarily via conduction.**

| Cold Wall Temperature (°C) | Max. Output Power (W) |
|----------------------------|-----------------------|
| 25                         | 420                   |
| 55                         | 320                   |

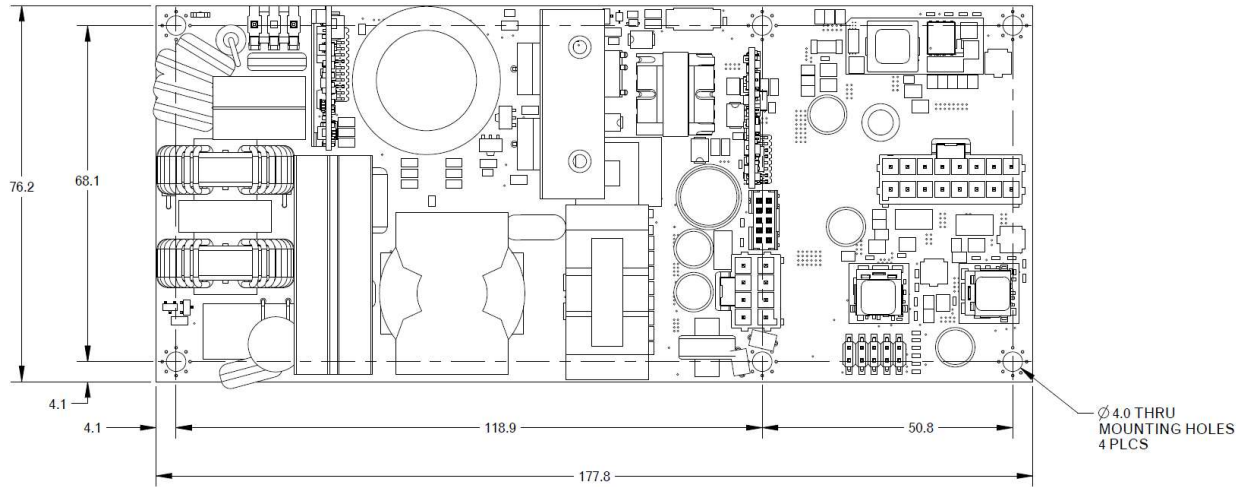


**Example arrangement of the FLP0412 for sealed enclosure applications.**

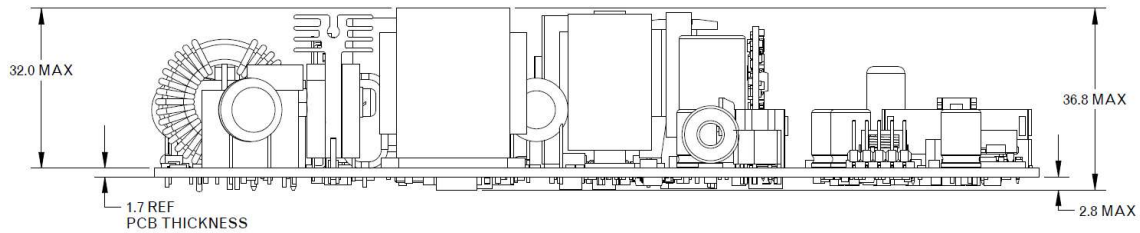
**FLP0412FPx Open Frame Power Supply**  
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**Mechanical Outline**

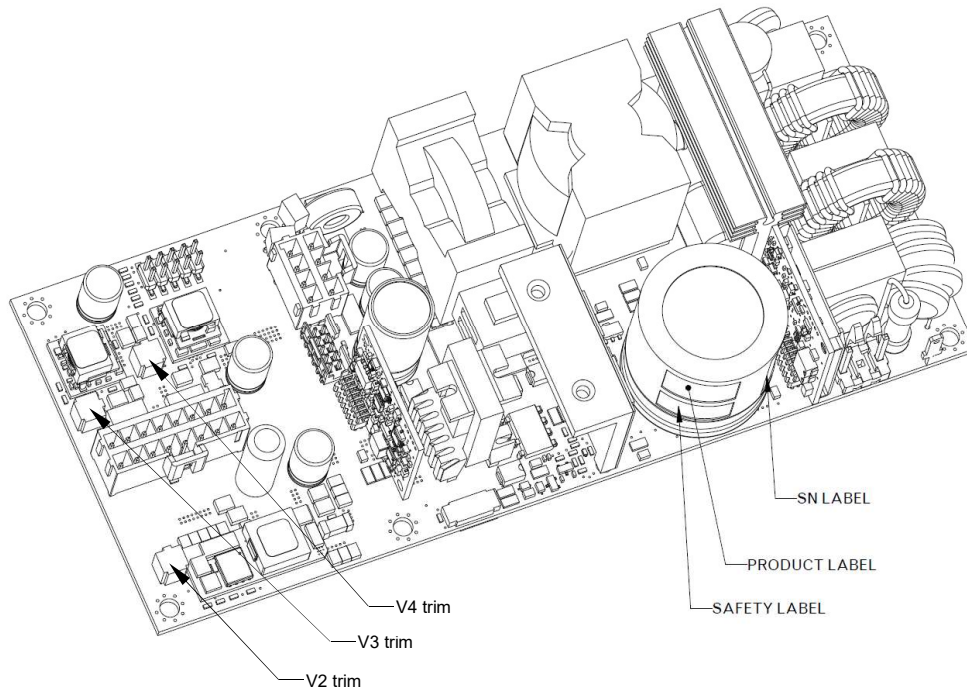
TOP VIEW



SIDE VIEW



3D VIEW

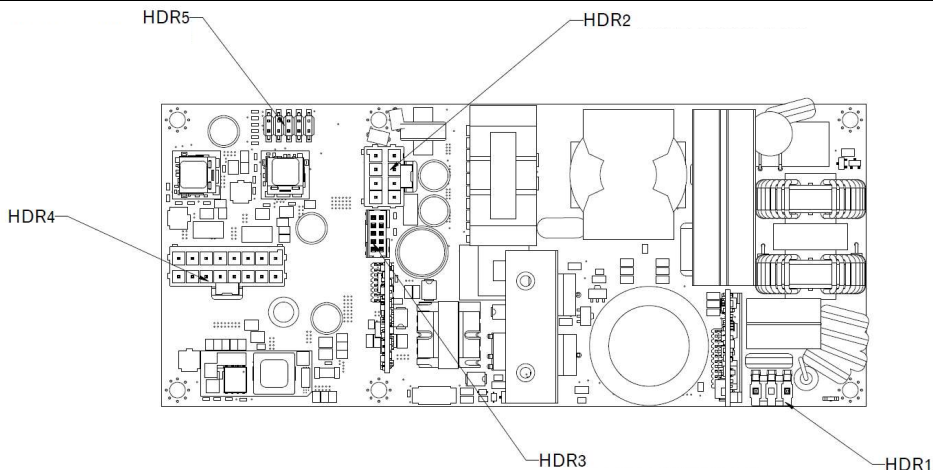


# FLP0412FPx Open Frame Power Supply

90 - 265Vac input; 2-4 outputs; 450W Output Power

## Connector Information

| Connector                         | Connector on Power Supply         | Mating Connector                            |
|-----------------------------------|-----------------------------------|---|
| AC Input Connector (HDR1)         | Molex 41671-3437 or equivalent    | Molex 09-50-3031 or equivalent              |
| V1 DC Output Connector (HDR2)     | Molex 172298-1208 or equivalent   | Molex 172258-1008 or equivalent             |
| Auxiliary signal Connector (HDR3) | FCI 98414-G04-10ULF or equivalent | FCI 90311-010LF or equivalent               |
| Auxiliary power connector (HDR4)  | Molex 172298-1216 or equivalent   | Molex 172258-1016 or equivalent             |
| PMBus connector (HDR5)            | Molex 015-91-6102 or equivalent   | GE CC408650477, Molex 10-way, or equivalent |



## Pinout Information

| AC Input Connector (HDR1) |         | DC Output Connector (HDR2) |                | Auxiliary Connector (HDR3) |                       |
|---------------------------|---------|----------------------------|----------------|----------------------------|-----------------------|
| Pin 1                     | Line    | Pins 1, 2, 3, 4            | V1+            | A1, A2 = 5V standby        | B1 = V1 Ishare        |
| Pin 2                     | removed | Pins 5, 6, 7, 8            | V1 return = 0V | A3 – not connected         | B2, B3 = 5V return 0V |
| Pin 3                     | Neutral |                            |                | A4 = V1 sense+             | B4 = V1 OK            |
|                           |         |                            |                | A5 = V1 sense-             | B5 = on/off           |

| DC Output Connector (HDR4) |        | PMBus Connector (HDR5) |                  | Connector |  |
|----------------------------|--------|------------------------|------------------|-----------|--|
| V2+                        | 1      | Not connected          | 1, 2, 3, 4, 5, 7 |           |  |
| V2 return = 0V             | 2      | Ground                 | 6                |           |  |
| V2 power good              | 3      | SMB Alert#             | 8                |           |  |
| V3+                        | 4, 5   | Clock                  | 9                |           |  |
| V3 return = 0V             | 6, 7   | Data                   | 10               |           |  |
| V3 sense                   | 8      |                        |                  |           |  |
| V3 power good              | 9      |                        |                  |           |  |
| V4+                        | 10, 11 |                        |                  |           |  |
| V4 return = 0V             | 12, 13 |                        |                  |           |  |
| V4 sense                   | 14     |                        |                  |           |  |
| V4 power good              | 15     |                        |                  |           |  |

## FLP0412FPx Open Frame Power Supply

90 - 265Vac input; 2-4 outputs; 450W Output Power

### Ordering Information

Please contact your GE Sales Representative for pricing, availability and optional features.

**Table 1. Device Codes**

| Device Code      | Input Voltage Range | Output Voltages  | Output Currents   | V2-V4 Setting   | Standby Supply | Temperature Range | Comcode          |
|------------------|---------------------|------------------|-------------------|-----------------|----------------|-------------------|------------------|
| FLP0412FPMXXZ01A | 90 – 265Vac         | 12/24/5/<br>3.3V | 37.5/2/12<br>/12A | Trim Pots       | 5V @ 1A        | -40 to 85°C       | FLP0412FPMXXZ01A |
| FLP0412FP4XXZ01A | 90 – 265Vac         | 12/24/5/<br>3.3V | 37.5/2/12<br>/12A | Fixed Resistors | 5V @ 1A        | -40 to 85°C       | FLP0412FP4XXZ01A |
| FLP0412FP3XXZ01A | 90 – 265Vac         | 12/24/5V         | 37.5/2/12<br>A    | Fixed Resistors | 5V @ 1A        | -40 to 85°C       | FLP0412FP3XXZ01A |
| FLP0412FP2XXZ01A | 90 – 265Vac         | 12/24V           | 37.5/2A           | Fixed Resistors | 5V @ 1A        | -40 to 85°C       | FLP0412FP2XXZ01A |

## Contact Us

For more information, call us at

USA/Canada:

**+1 888 546 3243**, or +1 972 244 9288

Asia-Pacific:

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Europe, Middle-East and Africa:

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