



# 150W Quad Output with PFC Function

# QP-150 series



## ■ Features :

- Universal AC input / Full range
- Built-in active PFC function, PF>0.95
- Protections: Short circuit / Over load / Over voltage
- Forced air cooling by built-in DC fan
- CH4:±Polarity is selectable
- Fixed switching frequency at 100KHz
- 3 years warranty



## SPECIFICATION

| MODEL                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | QP-150-3A                                                                                                               |                          |                                                                                   |                                 | QP-150-3B        |          |                   |          | QP-150-3C        |          |                   |          |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------|---------------------------------|------------------|----------|-------------------|----------|------------------|----------|-------------------|----------|
| OUTPUT                   | OUTPUT NUMBER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CH1                                                                                                                     | CH2                      | CH3                                                                               | CH4                             | CH1              | CH2      | CH3               | CH4      | CH1              | CH2      | CH3               | CH4      |
|                          | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5V                                                                                                                      | 3.3V                     | 12V                                                                               | -5V                             | 5V               | 3.3V     | 12V               | -12V     | 5V               | 3.3V     | 15V               | -15V     |
|                          | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10A                                                                                                                     | 10A                      | 5A                                                                                | 0.6A                            | 10A              | 10A      | 5A                | 0.6A     | 10A              | 10A      | 4A                | 0.6A     |
|                          | CURRENT RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 3 ~ 15A                                                                                                                 | 0 ~ 15A                  | 0.4 ~ 5A                                                                          | 0 ~ 1A                          | 3 ~ 15A          | 0 ~ 15A  | 0.4 ~ 5A          | 0 ~ 1A   | 3 ~ 15A          | 0 ~ 15A  | 0.4 ~ 5A          | 0 ~ 1A   |
|                          | RATED POWER (max.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 146W                                                                                                                    |                          |                                                                                   |                                 | 150.2W           |          |                   |          | 152W             |          |                   |          |
|                          | RIPPLE & NOISE (max.) Note.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 100mVp-p                                                                                                                | 100mVp-p                 | 150mVp-p                                                                          | 150mVp-p                        | 100mVp-p         | 100mVp-p | 150mVp-p          | 150mVp-p | 100mVp-p         | 100mVp-p | 150mVp-p          | 150mVp-p |
|                          | VOLTAGE ADJ. RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CH1: 4.75 ~ 5.5V                                                                                                        |                          | CH2: 3.14 ~ 3.63V                                                                 |                                 | CH1: 4.75 ~ 5.5V |          | CH2: 3.14 ~ 3.63V |          | CH1: 4.75 ~ 5.5V |          | CH2: 3.14 ~ 3.63V |          |
|                          | VOLTAGE TOLERANCE Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ±3.0%                                                                                                                   | ±3.0%                    | ±6.0%                                                                             | ±5.0%                           | ±3.0%            | ±3.0%    | ±6.0%             | ±5.0%    | ±3.0%            | ±3.0%    | +8,-6%            | ±5.0%    |
|                          | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ±1.0%                                                                                                                   | ±1.0%                    | ±2.0%                                                                             | ±1.0%                           | ±1.0%            | ±1.0%    | ±2.0%             | ±1.0%    | ±1.0%            | ±1.0%    | ±2.0%             | ±1.0%    |
|                          | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ±2.0%                                                                                                                   | ±2.0%                    | ±6.0%                                                                             | ±2.0%                           | ±2.0%            | ±2.0%    | ±6.0%             | ±2.0%    | ±2.0%            | ±2.0%    | ±6.0%             | ±2.0%    |
| SETUP, RISE TIME         | 800ms, 50ms/230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                         |                          |                                                                                   | 800ms, 50ms/115VAC at full load |                  |          |                   |          |                  |          |                   |          |
| HOLD UP TIME (Typ.)      | 24ms/230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                         | 24ms/115VAC at full load |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
| INPUT                    | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 90 ~ 264VAC                                                                                                             |                          | 127 ~ 370VDC                                                                      |                                 |                  |          |                   |          |                  |          |                   |          |
|                          | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 47 ~ 63Hz                                                                                                               |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
|                          | POWER FACTOR (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | PF>0.95/230VAC                                                                                                          |                          | PF>0.98/115VAC at full load                                                       |                                 |                  |          |                   |          |                  |          |                   |          |
|                          | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 73%                                                                                                                     |                          |                                                                                   |                                 |                  | 75%      |                   |          |                  |          | 74%               |          |
|                          | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2.5A/115VAC                                                                                                             |                          | 1.2A/230VAC                                                                       |                                 |                  |          |                   |          |                  |          |                   |          |
|                          | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | COLD START ≤40A/230V                                                                                                    |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
|                          | LEAKAGE CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <3.5mA / 240VAC                                                                                                         |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
| PROTECTION               | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 105 ~ 150% rated output power<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
|                          | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | CH1:5.75 ~ 6.75V                                                                                                        |                          | CH2:3.8 ~ 4.4V<br>Protection type : Shut down o/p voltage, re-power on to recover |                                 |                  |          |                   |          |                  |          |                   |          |
|                          | OVER TEMPERATURE(OPTION)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 95℃ ±5℃ (TSW1)<br>Protection type : Shut down o/p voltage, recovers automatically after temperature goes down           |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                         |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
| ENVIRONMENT              | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -10 ~ +60℃ (Refer to "Derating Curve")                                                                                  |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
|                          | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 20 ~ 90% RH non-condensing                                                                                              |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
|                          | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -20 ~ +85℃, 10 ~ 95% RH                                                                                                 |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
|                          | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ±0.03%/℃ (0~50℃)                                                                                                        |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
|                          | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes                                                            |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
| SAFETY & EMC<br>(Note 4) | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | UL60950-1, TUV EN60950-1 approved                                                                                       |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
|                          | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC                                                                             |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
|                          | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH                                                               |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
|                          | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3                                                                 |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
|                          | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A                                       |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
| OTHERS                   | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 141.5K hrs min. MIL-HDBK-217F (25℃)                                                                                     |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
|                          | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 199*99*50mm (L*W*H)                                                                                                     |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
|                          | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.93Kg; 20pcs/19.6Kg/1.28CUFT                                                                                           |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |
| NOTE                     | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies."<br>(as available on <a href="http://www.meanwell.com">http://www.meanwell.com</a> ) |                                                                                                                         |                          |                                                                                   |                                 |                  |          |                   |          |                  |          |                   |          |



## Features :

- Universal AC input / Full range
- Built-in active PFC function, PF>0.95
- Protections: Short circuit / Overload / Over voltage
- Forced air cooling by built-in DC fan
- CH4:±Polarity is selectable
- Fixed switching frequency at 100KHz
- 3 years warranty

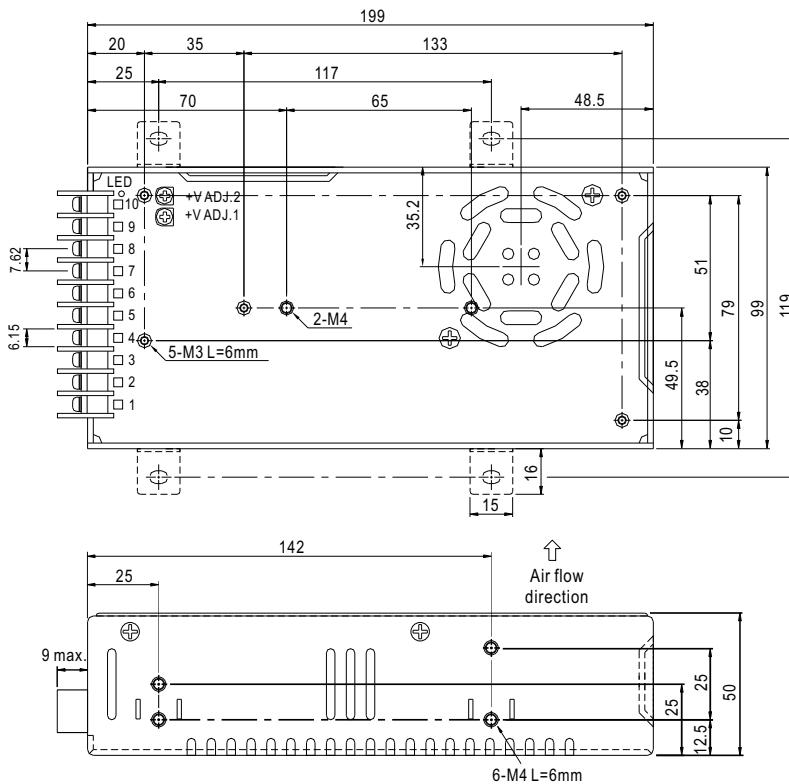


## SPECIFICATION

| MODEL                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | QP-150-3D                                                                                                               |                          |                             |                                 | QP-150D          |          |                   |          | QP-150F          |          |                    |          |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------|---------------------------------|------------------|----------|-------------------|----------|------------------|----------|--------------------|----------|
| OUTPUT                   | OUTPUT NUMBER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CH1                                                                                                                     | CH2                      | CH3                         | CH4                             | CH1              | CH2      | CH3               | CH4      | CH1              | CH2      | CH3                | CH4      |
|                          | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5V                                                                                                                      | 3.3V                     | 24V                         | -12V                            | 5V               | 12V      | 24V               | -12V     | 5V               | 15V      | 24V                | -15V     |
|                          | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10A                                                                                                                     | 10A                      | 2.5A                        | 0.6A                            | 10A              | 4A       | 2A                | 0.6A     | 10A              | 3A       | 2A                 | 0.6A     |
|                          | CURRENT RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 3 ~ 15A                                                                                                                 | 0 ~ 15A                  | 0.3 ~ 3A                    | 0 ~ 1A                          | 3 ~ 15A          | 0 ~ 5A   | 0.4 ~ 3A          | 0 ~ 1A   | 3 ~ 15A          | 0 ~ 5A   | 0.4 ~ 3A           | 0 ~ 1A   |
|                          | RATED POWER (max.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 150.2W                                                                                                                  |                          |                             |                                 | 153.2W           |          |                   |          | 152W             |          |                    |          |
|                          | RIPPLE & NOISE (max.) Note.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 100mVp-p                                                                                                                | 100mVp-p                 | 150mVp-p                    | 150mVp-p                        | 120mVp-p         | 150mVp-p | 200mVp-p          | 150mVp-p | 120mVp-p         | 150mVp-p | 200mVp-p           | 150mVp-p |
|                          | VOLTAGE ADJ. RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CH1: 4.75 ~ 5.5V                                                                                                        |                          | CH2: 3.14 ~ 3.63V           |                                 | CH1: 4.75 ~ 5.5V |          | CH2: 11.4 ~ 13.2V |          | CH1: 4.75 ~ 5.5V |          | CH2: 14.3 ~ 16.5V  |          |
|                          | VOLTAGE TOLERANCE Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ±3.0%                                                                                                                   | ±3.0%                    | ±6.0%                       | ±5.0%                           | ±3.0%            | ±3.0%    | ±6.0%             | ±5.0%    | ±3.0%            | ±3.0%    | ±6.0%              | ±5.0%    |
|                          | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ±1.0%                                                                                                                   | ±1.0%                    | ±2.0%                       | ±1.0%                           | ±1.0%            | ±1.0%    | ±2.0%             | ±1.0%    | ±1.0%            | ±1.0%    | ±2.0%              | ±1.0%    |
|                          | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ±2.0%                                                                                                                   | ±2.0%                    | ±6.0%                       | ±2.0%                           | ±2.0%            | ±2.0%    | ±6.0%             | ±2.0%    | ±2.0%            | ±2.0%    | ±6.0%              | ±2.0%    |
| SETUP, RISE TIME         | 800ms, 50ms/230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                         |                          |                             | 800ms, 50ms/115VAC at full load |                  |          |                   |          |                  |          |                    |          |
| HOLD UP TIME (Typ.)      | 24ms/230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                         | 24ms/115VAC at full load |                             |                                 |                  |          |                   |          |                  |          |                    |          |
| INPUT                    | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 90 ~ 264VAC                                                                                                             |                          | 127 ~ 370VDC                |                                 |                  |          |                   |          |                  |          |                    |          |
|                          | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 47 ~ 63Hz                                                                                                               |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
|                          | POWER FACTOR (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | PF>0.95/230VAC                                                                                                          |                          | PF>0.98/115VAC at full load |                                 |                  |          |                   |          |                  |          |                    |          |
|                          | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 76%                                                                                                                     |                          |                             |                                 |                  | 78%      |                   |          |                  |          | 78%                |          |
|                          | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2.5A/115VAC                                                                                                             |                          | 1.2A/230VAC                 |                                 |                  |          |                   |          |                  |          |                    |          |
|                          | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | COLD START ≤40A/230V                                                                                                    |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
|                          | LEAKAGE CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <3.5mA / 240VAC                                                                                                         |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
| PROTECTION               | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 105 ~ 150% rated output power<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
|                          | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | CH1:5.75 ~ 6.75V                                                                                                        |                          | CH2:3.8 ~ 4.4V              |                                 | CH1:5.75 ~ 6.75V |          | CH2:13.8 ~ 16.2V  |          | CH1:5.75 ~ 6.75V |          | CH2:17.25 ~ 20.25V |          |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Protection type : Shut down o/p voltage, re-power on to recover                                                         |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
|                          | OVER TEMPERATURE(OPTION)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 95℃±5℃ (TSW1)<br>Protection type : Shut down o/p voltage, recovers automatically after temperature goes down            |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
| ENVIRONMENT              | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -10 ~ +60℃ (Refer to "Derating Curve")                                                                                  |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
|                          | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 20 ~ 90% RH non-condensing                                                                                              |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
|                          | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -20 ~ +85℃, 10 ~ 95% RH                                                                                                 |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
|                          | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ±0.03%/℃ (0~50℃)                                                                                                        |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
|                          | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes                                                            |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
| SAFETY & EMC<br>(Note 4) | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | UL60950-1, TUV EN60950-1 approved                                                                                       |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
|                          | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC                                                                             |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
|                          | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH                                                               |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
|                          | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3                                                                 |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
|                          | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A                                       |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
| OTHERS                   | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 141.5K hrs min. MIL-HDBK-217F (25℃)                                                                                     |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
|                          | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 199*99*50mm (L*W*H)                                                                                                     |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
|                          | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.93Kg; 20pcs/19.6Kg/1.28CUFT                                                                                           |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |
| NOTE                     | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies."<br>(as available on <a href="http://www.meanwell.com">http://www.meanwell.com</a> ) |                                                                                                                         |                          |                             |                                 |                  |          |                   |          |                  |          |                    |          |

## Mechanical Specification

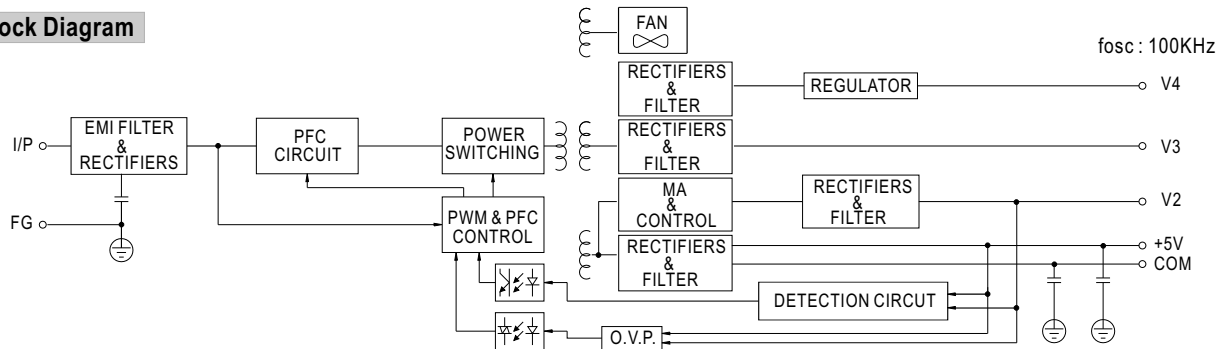
Case No. 916B Unit:mm



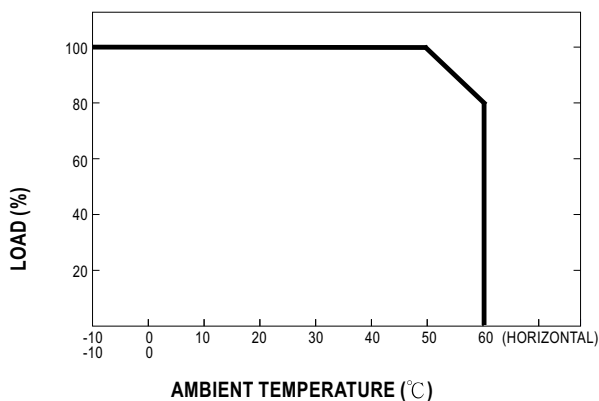
Terminal Pin No. Assignment :

| Pin No. | Assignment   | Pin No. | Assignment    |
|---------|--------------|---------|---------------|
| 1       | AC/L         | 5       | DC OUTPUT V3  |
| 2       | AC/N         | 6,7     | DC OUTPUT V1  |
| 3       | FG $\perp$   | 8,9     | DC OUTPUT COM |
| 4       | DC OUTPUT V4 | 10      | DC OUTPUT V2  |

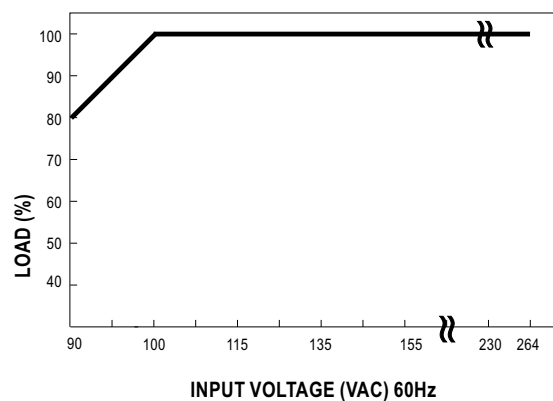
## Block Diagram



## Derating Curve



## Output Derating VS Input Voltage





150W Quad Output with PFC Function

**QP-150B,C series**



■ Features :

- Universal AC input / Full range
- Built-in active PFC function, PF>0.95
- Protections: Short circuit / Overload / Over voltage
- Forced air cooling by built-in DC fan
- Fixed switching frequency at 100KHz
- 3 years warranty

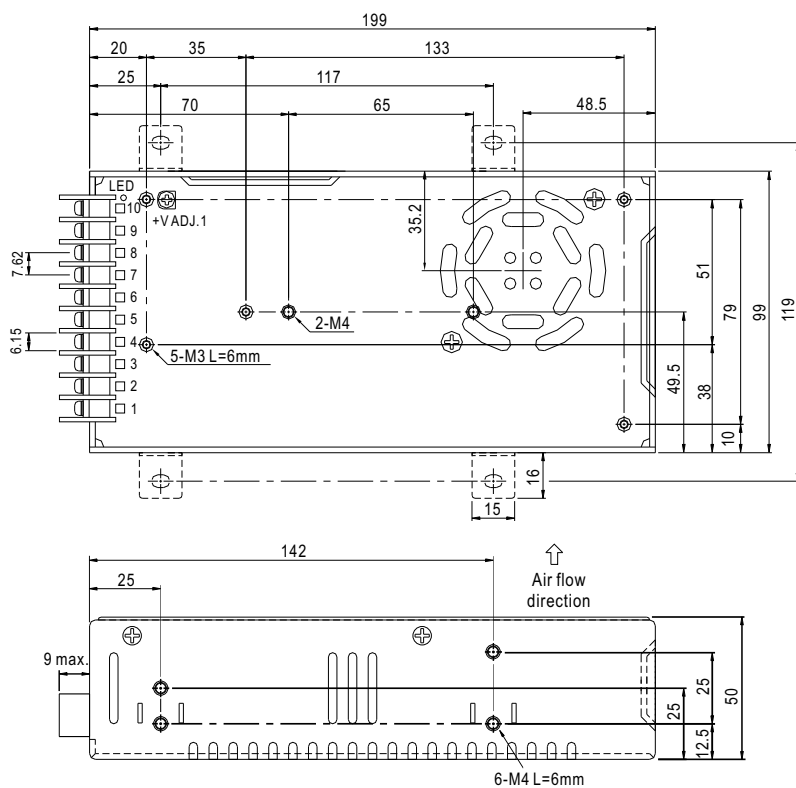


**SPECIFICATION**

| MODEL                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | QP-150B                                                                                                                 |          |                             |          | QP-150C         |          |          |          |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------|----------|-----------------|----------|----------|----------|
| OUTPUT                   | OUTPUT NUMBER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CH1                                                                                                                     | CH2      | CH3                         | CH4      | CH1             | CH2      | CH3      | CH4      |
|                          | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5V                                                                                                                      | 12V      | -12V                        | -5V      | 5V              | 15V      | -15V     | -5V      |
|                          | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 15A                                                                                                                     | 4A       | 2A                          | 0.6A     | 15A             | 3A       | 2A       | 0.6A     |
|                          | CURRENT RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 3 ~ 15A                                                                                                                 | 0.4 ~ 5A | 0.3 ~ 2A                    | 0 ~ 1A   | 3 ~ 15A         | 0.4 ~ 4A | 0.3 ~ 2A | 0 ~ 1A   |
|                          | RATED POWER (max.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 150W                                                                                                                    |          |                             |          | 153W            |          |          |          |
|                          | RIPPLE & NOISE (max.) Note.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 100mVp-p                                                                                                                | 150mVp-p | 150mVp-p                    | 100mVp-p | 100mVp-p        | 150mVp-p | 150mVp-p | 100mVp-p |
|                          | VOLTAGE ADJ. RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CH1:4.75 ~ 5.5V                                                                                                         |          |                             |          | CH1:4.75 ~ 5.5V |          |          |          |
|                          | VOLTAGE TOLERANCE Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ±3.0%                                                                                                                   | ±6.0%    | +10,-6%                     | ±5.0%    | ±3.0%           | +6,-10%  | ±8.0%    | ±5.0%    |
|                          | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ±1.0%                                                                                                                   | ±2.0%    | ±2.0%                       | ±1.0%    | ±1.0%           | ±2.0%    | ±2.0%    | ±1.0%    |
|                          | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ±2.0%                                                                                                                   | ±6.0%    | ±6.0%                       | ±2.0%    | ±2.0%           | ±6.0%    | ±6.0%    | ±2.0%    |
|                          | SETUP, RISE TIME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1000ms, 50ms at full load                                                                                               |          |                             |          |                 |          |          |          |
| HOLD UP TIME (Typ.)      | 24ms at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                         |          |                             |          |                 |          |          |          |
| INPUT                    | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 90 ~ 264VAC                                                                                                             |          | 127 ~ 370VDC                |          |                 |          |          |          |
|                          | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 47 ~ 63Hz                                                                                                               |          |                             |          |                 |          |          |          |
|                          | POWER FACTOR (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | PF>0.95/230VAC                                                                                                          |          | PF>0.98/115VAC at full load |          |                 |          |          |          |
|                          | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 76%                                                                                                                     |          |                             |          | 77%             |          |          |          |
|                          | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2.5A/115VAC                                                                                                             |          | 1.2A/230VAC                 |          |                 |          |          |          |
|                          | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | COLD START ≤40A                                                                                                         |          |                             |          |                 |          |          |          |
|                          | LEAKAGE CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <3.5mA / 240VAC                                                                                                         |          |                             |          |                 |          |          |          |
| PROTECTION               | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 105 ~ 135% rated output power<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed |          |                             |          |                 |          |          |          |
|                          | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | CH1:5.75 ~ 6.75V<br>Protection type : Shut down o/p voltage, re-power on to recover                                     |          |                             |          |                 |          |          |          |
|                          | OVER TEMPERATURE(OPTION)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 95℃ ±5℃ (TSW1)<br>Protection type : Shut down o/p voltage, recovers automatically after temperature goes down           |          |                             |          |                 |          |          |          |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                         |          |                             |          |                 |          |          |          |
| ENVIRONMENT              | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -10 ~ +60℃ (Refer to "Derating Curve")                                                                                  |          |                             |          |                 |          |          |          |
|                          | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 20 ~ 90% RH non-condensing                                                                                              |          |                             |          |                 |          |          |          |
|                          | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -20 ~ +85℃, 10 ~ 95% RH                                                                                                 |          |                             |          |                 |          |          |          |
|                          | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ±0.03%/℃ (0~50℃)                                                                                                        |          |                             |          |                 |          |          |          |
|                          | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes                                                            |          |                             |          |                 |          |          |          |
| SAFETY & EMC<br>(Note 4) | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | UL60950-1, TUV EN60950-1 approved                                                                                       |          |                             |          |                 |          |          |          |
|                          | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC                                                                             |          |                             |          |                 |          |          |          |
|                          | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH                                                               |          |                             |          |                 |          |          |          |
|                          | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3                                                                 |          |                             |          |                 |          |          |          |
|                          | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A                                       |          |                             |          |                 |          |          |          |
| OTHERS                   | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 141.5K hrs min. MIL-HDBK-217F (25℃)                                                                                     |          |                             |          |                 |          |          |          |
|                          | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 199*99*50mm (L*W*H)                                                                                                     |          |                             |          |                 |          |          |          |
|                          | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1.1Kg; 20pcs/22Kg/1.28CUFT                                                                                              |          |                             |          |                 |          |          |          |
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## ■ Mechanical Specification

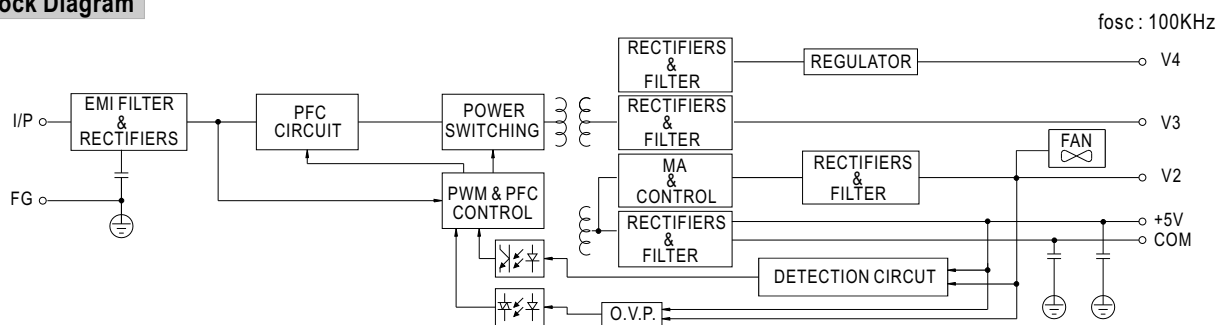
Case No. 916B    Unit:mm



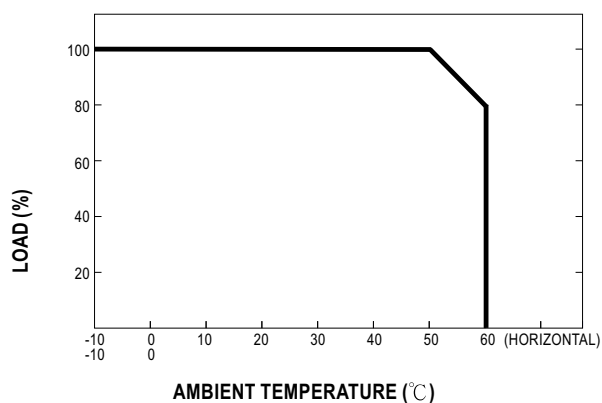
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### ■ Block Diagram



### Derating Curve



### ■ Output Derating VS Input Voltage

