

## AC-DC POWER SUPPLIES

### UNIVERSAL INPUT, UP TO 700 WATT

#### INDUSTRIAL APPLICATIONS

#### UIA700 SERIES



#### FEATURES

- Enclosed ITE Switching Power Supply
- Remote ON/OFF Function
- Standby 5V@1A
- High Efficiency up to 92%
- With P.F.C. Function >0.9
- Ultra Compact Size: 6.7" x 3.66" x 1.61"
- Chassis Mount With Terminal Strip
- UL /IEC/EN 62368

#### SELECTION GUIDE

All specifications are typical at 230Vac input, full load and 25°C, unless otherwise noted.

| Output Wattage<br>W | Output Voltage<br>Vdc | Output Current<br>A | Ripple & Noise<br>mV (max)* | Max. Capacitive Load<br>µF | Efficiency<br>% | Model Number* |
|---------------------|-----------------------|---------------------|-----------------------------|----------------------------|-----------------|---------------|
| 625                 | 12                    | 52.08               | 160                         | 5,000                      | 89              | UIA700-12S    |
| 625                 | 15                    | 41.66               | 160                         | 3,750                      | 90              | UIA700-15S    |
| 700                 | 24                    | 29.16               | 240                         | 2,500                      | 91              | UIA700-24S    |
| 700                 | 28                    | 25.00               | 280                         | 2,000                      | 92              | UIA700-28S    |
| 700                 | 48                    | 14.58               | 480                         | 1,250                      | 92              | UIA700-48S    |

#### Input Specifications

|                         |            |                            |
|-------------------------|------------|----------------------------|
| Voltage range, Vac      | 90-264     |                            |
| Input frequency, Hz     | 50/60      |                            |
| Input current, A        | < 8 Max.   | 115 Vac, Full load         |
|                         | < 3.5 Max. | 230 Vac, Full load         |
| Input inrush current, A | < 55 Max.  | < 2ms, 115 Vac, Cold start |
|                         | < 90 Max.  | < 2ms, 230 Vac, Cold start |
| Leakage current, mA     | < 0.1 Max. | Input to output            |
| Power factor            | > 0.9      | at 230Vac, Full Load       |

#### Output Specifications

|                         |   |             |
|-------------------------|---|-------------|
| Output voltage, Vdc     | 12-48   |             |
| Voltage accuracy, %     | ±2  |             |
| Voltage adjustment, Vdc | ±5  |             |
| Line regulation, %      | ±0.5  | 115-264 VAC |
| Load regulation, %      | ±1 Typ.   | 10-100%     |
| Ripple and noise, mV    | See Selection Guide for additional information. |             |
| Hold-up time, ms        | 5 Min.  | at 115 Vac  |

## UIA700 SERIES

### General Specifications

|                              |                           |  |
|------------------------------|---------------------------|--|
| Isolation voltage, Vac       | Input-Output (V.AC)       | 4000VAC or 5656VDC                         |
|                              | Input-PE (V.AC)           | 2000V                                      |
|                              | Output-PE (V.AC)          | 1500V                                      |
| Over Power Protection        | Auto recovery             |  |
| Over Voltage Protection      | Auto recovery             |  |
| Overt Temperature Protection | Auto recovery             |  |
| Short Circuit Protection     | Auto recovery or Latch    |  |
| Function                     | 5V Stand by               | 5VSB: 5V@1A ; Tolerance $\pm 10\%$         |
|                              | DC OK Signal (Power Good) | Turn ON: 3.7~5.7V ; Turn OFF: 0~1V         |
|                              | Remote Control            | +RC / -RC: Power ON=open ; Power OFF=short |

### Environmental Specifications

|                              |   |          |         |
|------------------------------|---|----------|---------|
| Operating Temperature, °C    | With derating   | -30 Min. | 70 Max. |
| Storage Temperature, °C      |   | -35 Min. | 85 Max. |
| Temperature Coefficient, °C  | $\pm 0.03\%/^{\circ}\text{C}$   | 0 Min.   | 50 Max. |
|                              | $\pm 0.06\%/^{\circ}\text{C}$   | -30 Min. | 0 Max.  |
| Altitude During Operation, m |   | 5,000    |         |
| Humidity                     | 95% RH  |          |         |
| Atmospheric Pressure         | 56 kPa to 106 kPa   |          |         |
| MTBF                         | >100,000 h @ 25°C (MIL-HDBK-217F)   |          |         |
| Vibration                    | IEC60068-2-6 (10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes) |          |         |
| Shock                        | IEC60068-2-27   |          |         |

### Physical Specifications

|                             |  |
|-----------------------------|--|
| Design meet safety standard | UL / IEC / EN 62368  |
| Weight, g                   | 890g (oz)  |
| Dimensions, inches          | 6.7 x 3.66 x 1.61<br>(170.2 x 93.0 x 41.0 mm )<br>Tolerance $\pm 0.5$ mm |
| MTBF                        | 4.093 $\times 10^5$ hrs , MIL-HDBK-217F,<br>Ta=25°C, Full load           |

### EMC Specifications

| Specifications     | Conditions            | Level                |
|--------------------|-----------------------|----------------------|
| EMI <sup>(1)</sup> | EN55032 / EN55011     | Conducted<br>Class B |
|                    |                       | Radiated<br>Class A  |
| EMS                | EN55024 / EN60601-1-2 | 4th edition          |

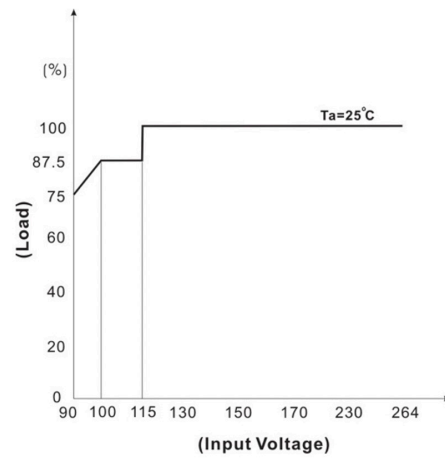
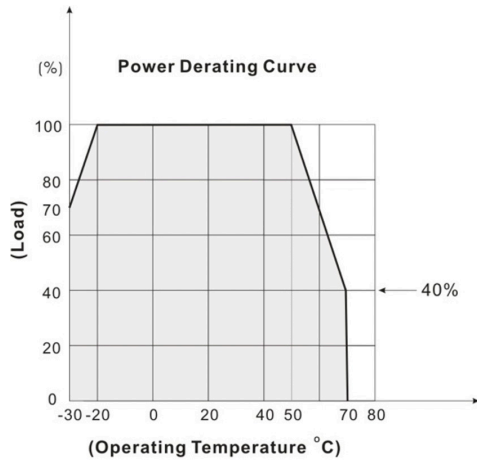
#### Note:

- Ripple & Noise are measured at 20MHz of bandwidth by using a 6" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.
- Hold-up Time measured at 90% Vout.
- Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with AC Voltage, please disconnect all Y-Capacitors.
- Please check the derating curve for more details.
- Double pole, neutral fusing. Disconnect mains before servicing.
- For further information, please contact Polytron Devices.

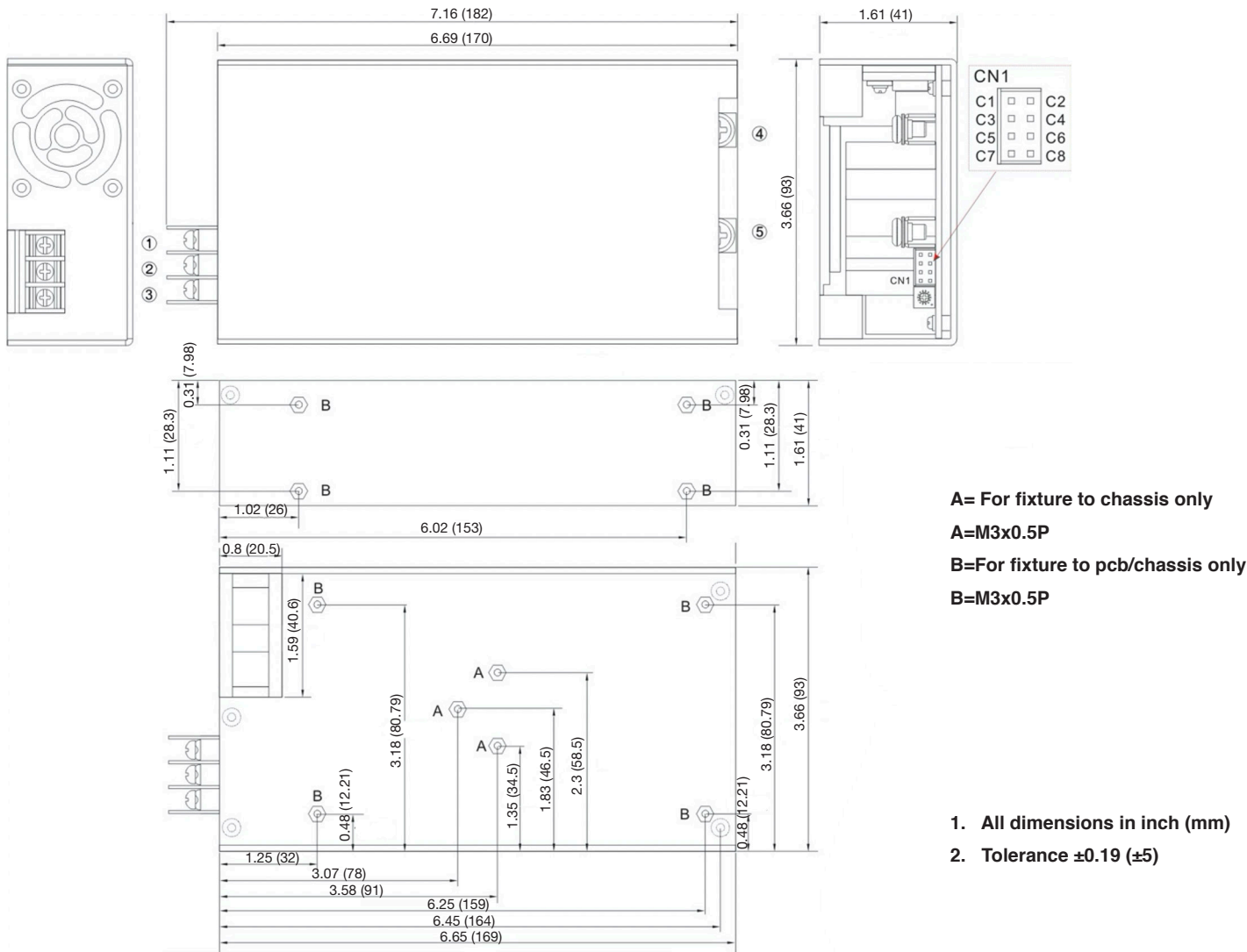
**CAUTION:** This power module is not internally fused. An input line fuse must always be used.

**UIA700 SERIES**

**Characteristic Curve**



**Mechanical Drawing**



## UIA700 SERIES

### Mechanical Drawing (Continued)

#### BRANDS

| PIN # | Single    | Terminal  |
|-------|-----------|---|
| A,B   | PE        | — — — —   |
| 1     | FG        | ANYTEK YK-301-3P  |
| 2     | AC IN (N) |   |
| 3     | AC IN (L) |   |
| 4     | +DC OUT   | Terminal :<br>M5 Pan HD screw in 2 positions<br>Torque to 8 lbs-in(90 cNm) max. |
| 5     | -DC OUT   |   |

#### CONNECTOR PIN

| Brands |           | Cherng Weei    |          | JST            |                |
|--------|-----------|----------------|----------|----------------|----------------|
| PIN #  | Single    | Mating Housing | Terminal | Mating Housing | Terminal       |
| C1     | +S        |                |          |                |                |
| C2     | -S        |                |          |                |                |
| C3     | NC        |                |          |                |                |
| C4     | -5V SB    | PHD-H20-2X4P   | PHD-T20  | PHDR-08VS      | SPHD-001T-P0.5 |
| C5     | GND / -RC |                |          |                |                |
| C6     | +RC       |                |          |                |                |
| C7     | PG        |                |          |                |                |
| C8     | +5V SB    |                |          |                |                |

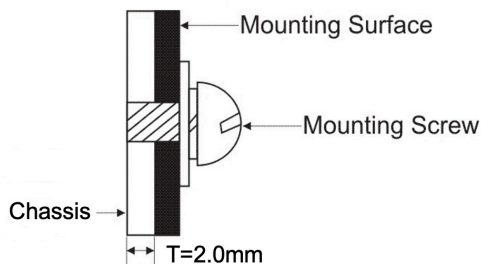
#### FUNCTION DESCRIPTION OF CN1

| PIN # | Function  | Description  |
|-------|-----------|--|
| C1    | +S        | Remote sensing (+)   |
| C2    | -S        | Remote sensing (-)   |
| C3    | NC        |  |
| C4    | -5V SB    | This pin connects to the negative terminal(-V)   |
| C5    | GND / -RC | This pin connects to the negative terminal(-V). Return for DC-OK signal output.  |
| C6    | +RC       | Turns the output on and off by electrical or dry contact between pin C5 (GND / -RC), Short: Power OFF, Open: Power ON. |
| C7    | +PG       | DC-OK Signal is a DC output. (DC-OK )  |
| C8    | +5V SB    | Stand by voltage output ground 4.5~5.5V, referenced to pin C4 or C5(GND). The maximum load current is 1A.              |

### Assembly Instructions

U Case T=2.0mm

Customer is advised to screw into the threads no more than 2.0mm



**UIA700 SERIES**

**Block Diagram**

