

# MEAN WELL

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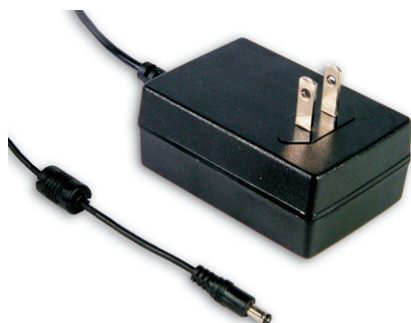
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## 9~18W AC-DC Single Output Wall-mounted type

## ES18U series



### ■ Features :

- Universal AC input / Full range
- 2 pole USA plug
- Class II power (without earth pin)
- Full output 3~48V safety approval
- Protections: Short circuit / Overload / Over voltage
- Fully enclosed plastic case
- RCC control circuit and regulated
- LED indicator for power on
- Approvals: UL/ CUL / BSMI / CB / FCC / CE
- 1 year warranty

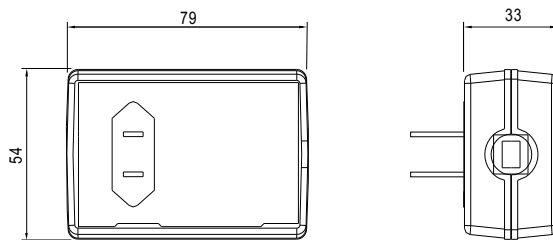
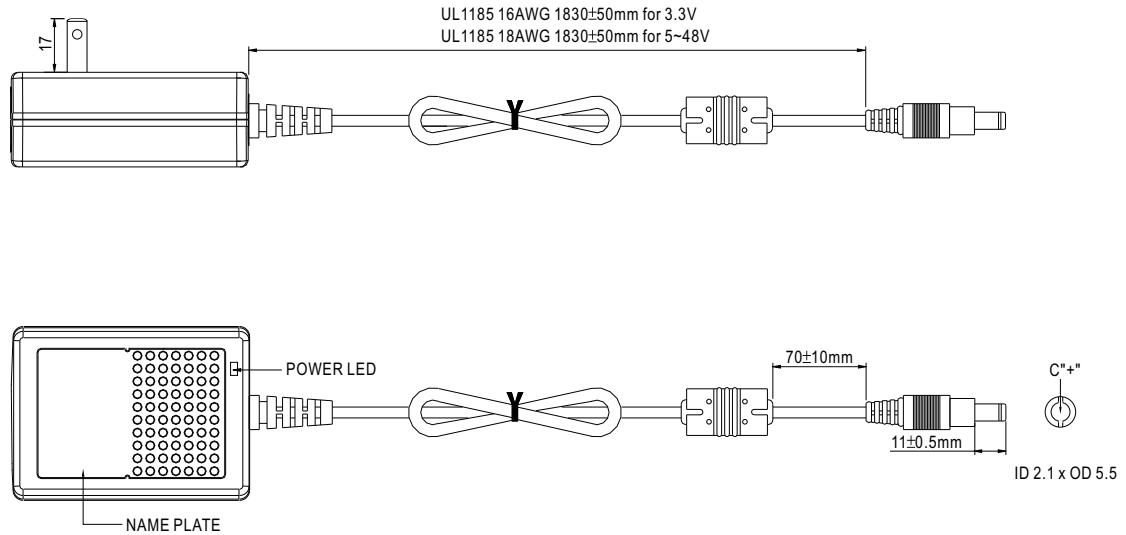


### SPECIFICATION

| SPECIFICATION             |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |             |             |              |                               |             |             |              |               |
|---------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|--------------|-------------------------------|-------------|-------------|--------------|---------------|
| ORDER NO.                 |                                        | ES18U03-P1J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ES18U05-P1J | ES18U07-P1J | ES18U09-P1J | ES18U12-P1J  | ES18U15-P1J                   | ES18U18-P1J | ES18U24-P1J | ES18U28-P1J  | ES18U48-P1J   |
| OUTPUT                    | SAFETY MODEL NO.                       | ES18U03                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ES18U05     | ES18U07     | ES18U09     | ES18U12      | ES18U15                       | ES18U18     | ES18U24     | ES18U28      | ES18U48       |
|                           | DC VOLTAGE                      Note.2 | 3.3V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5V          | 7.5V        | 9V          | 12V          | 15V                           | 18V         | 24V         | 28V          | 48V           |
|                           | RATED CURRENT                          | 2.72A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 3.0A        | 2.0A        | 2.0A        | 1.50A        | 1.20A                         | 1.0A        | 0.75A       | 0.64A        | 0.375A        |
|                           | CURRENT RANGE                          | 0.3 ~ 2.72A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.3 ~ 3.0A  | 0.3 ~ 2.0A  | 0.2 ~ 2.0A  | 0.15 ~ 1.50A | 0.1 ~ 1.20A                   | 0.1 ~ 1.0A  | 0.1 ~ 0.75A | 0.06 ~ 0.64A | 0.05 ~ 0.375A |
|                           | RATED POWER (max.)                     | 9W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 15W         | 15W         | 18W         | 18W          | 18W                           | 18W         | 18W         | 18W          | 18W           |
|                           | RIPPLE & NOISE (max.)    Note.3        | 50mVp-p                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 50mVp-p     | 80mVp-p     | 80mVp-p     | 80mVp-p      | 100mVp-p                      | 150mVp-p    | 180mVp-p    | 240mVp-p     | 240mVp-p      |
|                           | VOLTAGE ADJ. RANGE                     | Fixed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             |             |             |              |                               |             |             |              |               |
|                           | VOLTAGE TOLERANCE    Note.4            | ±5.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ±5.0%       | ±5.0%       | ±5.0%       | ±3.0%        | ±3.0%                         | ±3.0%       | ±2.0%       | ±2.0%        | ±2.0%         |
|                           | LINE REGULATION        Note.5          | ±1.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ±1.0%       | ±1.0%       | ±1.0%       | ±1.0%        | ±1.0%                         | ±1.0%       | ±1.0%       | ±1.0%        | ±1.0%         |
|                           | LOAD REGULATION        Note.6          | ±5.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ±5.0%       | ±5.0%       | ±5.0%       | ±3.0%        | ±3.0%                         | ±3.0%       | ±2.0%       | ±2.0%        | ±2.0%         |
| SETUP, RISE, HOLD TIME    |                                        | 300ms, 100ms, 16ms   at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |             |             |              |                               |             |             |              |               |
| INPUT                     | VOLTAGE RANGE                          | 90 ~ 264VAC    135 ~ 370VDC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |             |             |              |                               |             |             |              |               |
|                           | FREQUENCY RANGE                        | 47 ~ 63Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |             |             |              |                               |             |             |              |               |
|                           | EFFICIENCY (Typ.)                      | 55%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 70%         | 72%         | 72%         | 74%          | 77%                           | 78%         | 80%         | 81%          | 82%           |
|                           | AC CURRENT                             | 0.5A / 100VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             |             |             |              |                               |             |             |              |               |
|                           | INRUSH CURRENT (max.)                  | 20A / 115VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |             |             |              |                               |             |             |              |               |
|                           | LEAKAGE CURRENT(max.)                  | 0.25mA / 240VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |             |             |              |                               |             |             |              |               |
| PROTECTION                | OVERLOAD                               | 110 ~ 200% rated output power                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             |             |             |              | 130 ~ 350% rated output power |             |             |              |               |
|                           |                                        | Protection type : Hiccup mode, recovers automatically after fault condition is removed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             |             |             |              |                               |             |             |              |               |
|                           | OVER VOLTAGE                           | 105 ~ 135% rated output voltage<br>Protection type : Clamp by zener diode, output short                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |             |             |              |                               |             |             |              |               |
| ENVIRONMENT               | WORKING TEMP.                          | 0 ~ +50℃ (Refer to output load 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, period for 60min. each along X, Y, Z axes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |             |             |              |                               |             |             |              |               |
| SAFETY & EMC<br>(Note. 7) | SAFETY STANDARDS                       | UL60950-1, CSA C22.2, BSMI, CNS14336 Approved                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             |             |             |              |                               |             |             |              |               |
|                           | WITHSTAND VOLTAGE                      | I/P-O/P:3KVAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             |             |             |              |                               |             |             |              |               |
|                           | ISOLATION RESISTANCE                   | I/P-O/P:100M Ohms / 500VDC / 25℃ / 70% RH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |             |             |              |                               |             |             |              |               |
|                           | EMI CONDUCTION & RADIATION             | Compliance to EN55022 class B, CNS13438 class B, FCC PART 15 / CISPR22 class B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |             |             |              |                               |             |             |              |               |
|                           | HARMONIC CURRENT                       | Compliance to EN61000-3-2,3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |             |             |              |                               |             |             |              |               |
| OTHERS                    | EMS IMMUNITY                           | Compliance to EN61000-4-2,3,4,5,6,8,11, Light industry level, criteria A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |             |             |              |                               |             |             |              |               |
|                           | MTBF                                   | 500Khrs min. MIL-HDBK-217F(25℃)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |             |             |              |                               |             |             |              |               |
|                           | DIMENSION                              | 79*54*33mm (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |             |             |              |                               |             |             |              |               |
| CONNECTOR                 | PACKING                                | 220g ; 60pcs / 13.5kg / CARTON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |             |             |              |                               |             |             |              |               |
|                           | PLUG                                   | Standard type P1J: 2.1φ * 5.5φ * 11mm, tuning fork type, center positive for stock ; Other type available by customer requested                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |             |             |              |                               |             |             |              |               |
|                           | CABLE                                  | Standard type UL1185 6ft (with ferrite core) for stock ; Other type available by customer requested                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |             |             |             |              |                               |             |             |              |               |
| NOTE                      |                                        | 1.All parameters are specified at 115VAC input, rated load, 25℃ 70% RH ambient.<br>2.DC voltage: The output voltage set at point measure by plug terminal & 50% load.<br>3.Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1uf & 47uf capacitor.<br>4.Tolerance: includes set up tolerance, line regulation, load regulation.<br>5.Line regulation is measured from low line to high line at rated load.<br>6.Load regulation is measured from 20% to 100% rated load<br>7.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. |             |             |             |              |                               |             |             |              |               |

## Mechanical Specification

Unit:mm

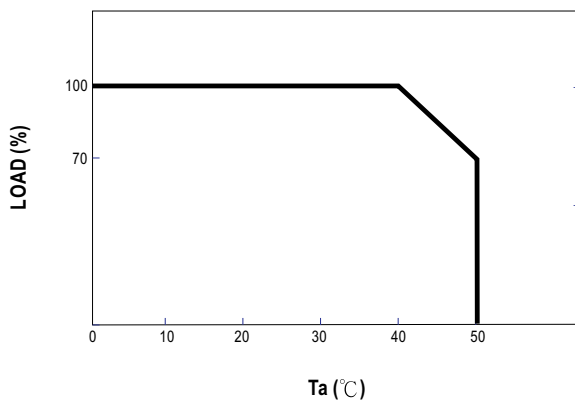


## Plug Assignment

Standard plug: P1J (option)

| P1J    |        |
|--------|--------|
| P/N    | OUTPUT |
| CENTER | +      |

## Derating Curve



## Static Characteristics

