IS 15885(Part 2/Sec13)
R-41027766
(Please refer safety description)

(for DA-Type only) SELV IP65 IP67 Type HL

## ■ Features

- Constant Voltage + Constant Current mode output
- Metal housing design with functional Ground
- Built-in active PFC function
- Class 2 power unit
- No load / Standby power consumption <0.5W
- IP67 / IP65 rating for indoor or outdoor installations
- Typical lifetime>50000 hours
- 5 years warranty

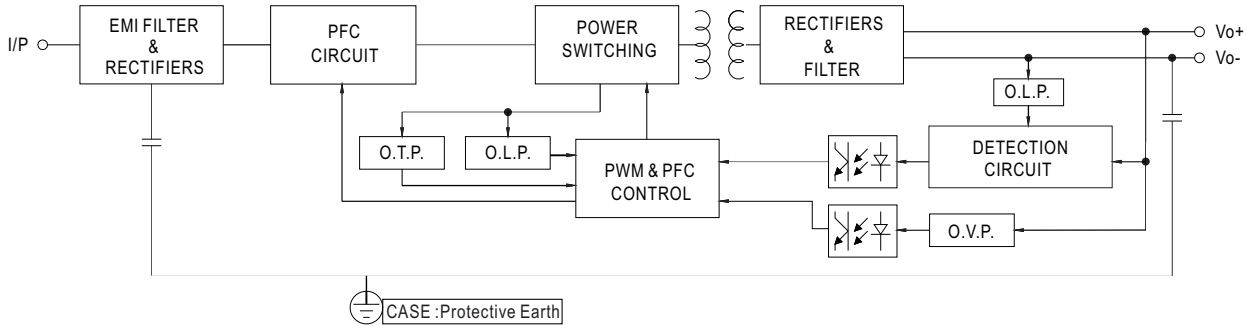
## ■ Applications

- LED street lighting
- LED architectural lighting
- LED bay lighting
- LED floodlighting
- Type “HL” for use in Class I, Division 2 hazardous (Classified) location.

| Type | IP Level | Function |
|---|---|---|
| DA | IP67 | DALI control technology. |

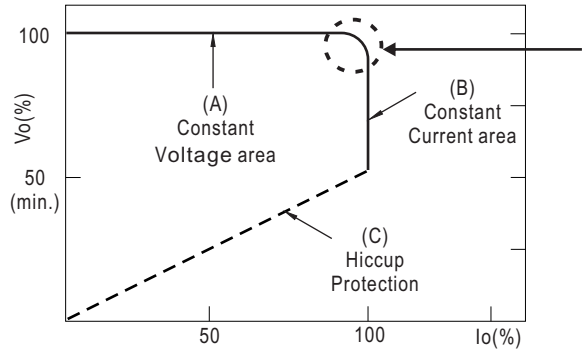
## ■ Block Diagram

PFC fosc : 50~120KHz
PWM fosc : 60~130KHz




## ■ DRIVING METHODS OF LED MODULE

※ This series is able to work in either Constant Current mode (a direct drive way) or Constant Voltage mode (usually through additional DC/DC driver) to drive the LEDs.




In the constant current region, the highest voltage at the output of the driver depends on the configuration of the end systems.

Typical output current normalized by rated current (%)

◎ For DA-Type, the Constant Current area is 60%~100% Vo.

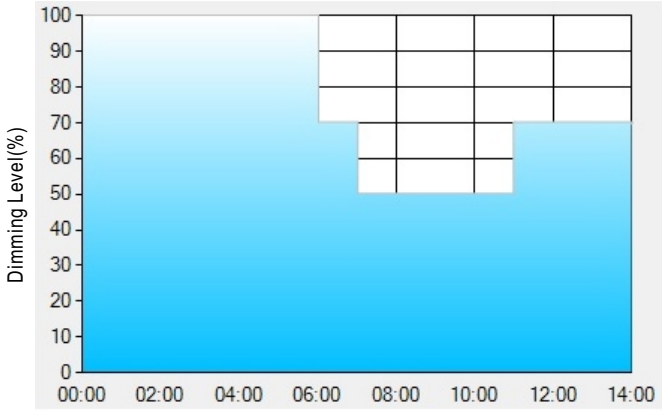
## SPECIFICATION

| | | | | | | |
|---|---|---|---|---|---|---|
| OUTPUT | DC VOLTAGE | 24V | | | | |
| | CONSTANT CURRENT REGION Note.2 | 12 ~ 24V | | | | |
| | RATED CURRENT | 4.0A | | | | |
| | RATED POWER | 200VAC ~ 305VAC | | | | |
| | | 96W | | | | |
| | | 100VAC ~ 180VAC | | | | |
| | | 70W | | | | |
| | RIPPLE & NOISE (max.) Note.3 | 200mVp-p | | | | |
| | VOLTAGE ADJ. RANGE | | | | | |
| | | 21.6 ~ 26.4V | | | | |
| | CURRENT ADJ. RANGE | | | | | |
| | | 2 ~ 4A | | | | |
| | VOLTAGE TOLERANCE Note.4 | ±3.0% | | | | |
| | LINE REGULATION | ±0.5% | | | | |
| | LOAD REGULATION | ±1.0% | | | | |
| | SETUP, RISE TIME Note.6 | 1000ms, 80ms/115VAC 500ms, 100ms/230VAC | | | | |
| | HOLD UP TIME (Typ.) | 15ms/115VAC 10ms/230VAC | | | | |
| INPUT | VOLTAGE RANGE Note.5 | 100 ~ 305VAC 142 ~ 431VDC continue,320VAC for 24Hrs; 360VAC for 1Hr<br>(Please refer to "STATIC CHARACTERISTIC" section) | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | |
| | POWER FACTOR | PF≧0.97/115VAC, PF≧0.95/230VAC, PF≧0.92/277VAC@full load | | | | |
| | TOTAL HARMONIC DISTORTION | THD< 20%(@load≧50%/115VC; @load≧60%/230VAC; @load≧75%/277VAC) | | | | |
| | EFFICIENCY (Typ.) | 88% | 89% | 90% | 90% | 91% |
| | AC CURRENT | 1.1A / 115VAC 0.6A / 230VAC 0.5A/277VAC | | | | |
| | INRUSH CURRENT(Typ.) | COLD START 60A(twidth=850μs measured at 50% Ipeak) at 230VAC; Per NEMA 410 | | | | |
| | | | | | | |
| | LEAKAGE CURRENT | <0.75mA / 277VAC | | | | |
| | NO LOAD / STANDBY POWER CONSUMPTION | Standby power consumption <0.5W for DA-Type | | | | |
| PROTECTION | OVER CURRENT | 95 ~ 108% | | | | |
| | | Constant current limiting, recovers automatically after fault condition is removed | | | | |
| | SHORT CIRCUIT | Hiccup mode, recovers automatically after fault condition is removed | | | | |
| | OVER VOLTAGE | 28 ~ 34V | 41 ~ 48V | 47 ~ 54V | 54 ~ 62V | 62 ~ 72V |
| | | Shut down output voltage, re-power on to recover | | | | |
| | OVER TEMPERATURE | Shut down output voltage, re-power on to recover | | | | |
| ENVIRONMENT | | | | | | |
| | MAX. CASE TEMP. | Tcase=+90℃ | | | | |
| | WORKING HUMIDITY | 20 ~ 95% RH non-condensing | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +80℃, 10 ~ 95% RH | | | | |
| | TEMP. COEFFICIENT | ±0.03%/℃ (0 ~ 60℃) | | | | |
| | VIBRATION | 10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes | | | | |
| SAFETY & EMC | SAFETY STANDARDS | UL8750(type"HL"), CSA C22.2 No. 250.13-12; IEC/BS EN/EN/AS/NZS 61347-1, IEC/BS EN/EN/AS/NZS 61347-2-13 independent, BS EN/EN62384; EAC TP TC 004;BIS IS15885(24DA); GB19510.1, GB19510.14; IP65 or IP67;KC61347-1 ,KC61347-2-13 approved | | | | |
| | DALI STANDARDS | Compliance to IEC62386-101,102,(207 by request) for DA Type | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:3.75KVAC I/P-FG:2.0KVAC O/P-FG:1.5KVAC | | | | |
| | ISOLATION RESISTANCE | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH | | | | |
| | EMC EMISSION | Compliance to BS EN/EN55015,BS EN/EN61000-3-2 Class C (@load≧60%); BS EN/EN61000-3-3;GB17743, GB17625.1; EAC TP TC 020; KC KN15,KN61547 | | | | |
| | EMC IMMUNITY | Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11; BS EN/EN61547, light industry level (surge immunity Line-Earth 6KV, Line-Line 4KV); EAC TP TC 020; KC KN15 , KN61547 | | | | |
| OTHERS | MTBF | 978.2K hrs min. Telcordia SR-332 (Bellcore) 282.9Khrs min. MIL-HDBK-217F (25℃) | | | | |
| | DIMENSION | 199*63*35.5mm (L*W*H) | | | | |
| NOTE | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25℃ of ambient temperature.<br>2. Please refer to "DRIVING METHODS OF LED MODULE". For DA-Type, Constant Current region is 60%~100% of maximum voltage under rated power delivery.<br>3. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>4. Tolerance : includes set up tolerance, line regulation and load regulation.<br>5. De-rating may be needed under low input voltages.<br>6. Length of set up time is measured at first cold start. Turning ON/OFF the driver may lead to increase of the set up time.<br>7. The driver is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.<br>8. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly (tc) point (or TMP, per DLC), is about 80℃ or less.<br>9. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft). | | | | | |

※ **DALI Interface (primary side; for DA-Type)**

- Apply DALI signal between DA+ and DA-.
- DALI protocol comprises 16 groups and 64 addresses.
- First step is fixed at 8% of output.

Ex : ◎ D01-Type: the profile recommended for residential lighting




Set up for D01-Type in Smart timer dimming software program:

| | T1 | T2 | T3 | T4 |
|---|---|---|---|---|
| TIME** | 06:00 | 07:00 | 11:00 | --- |
| LEVEL** | 100% | 70% | 50% | 70% |

**: TIME matches Operating Time in the diagram whereas LEVEL matches Dimming Level.

Example: If a residential lighting application adopts D01-Type, when turning on the power supply at 6:00pm, for instance:

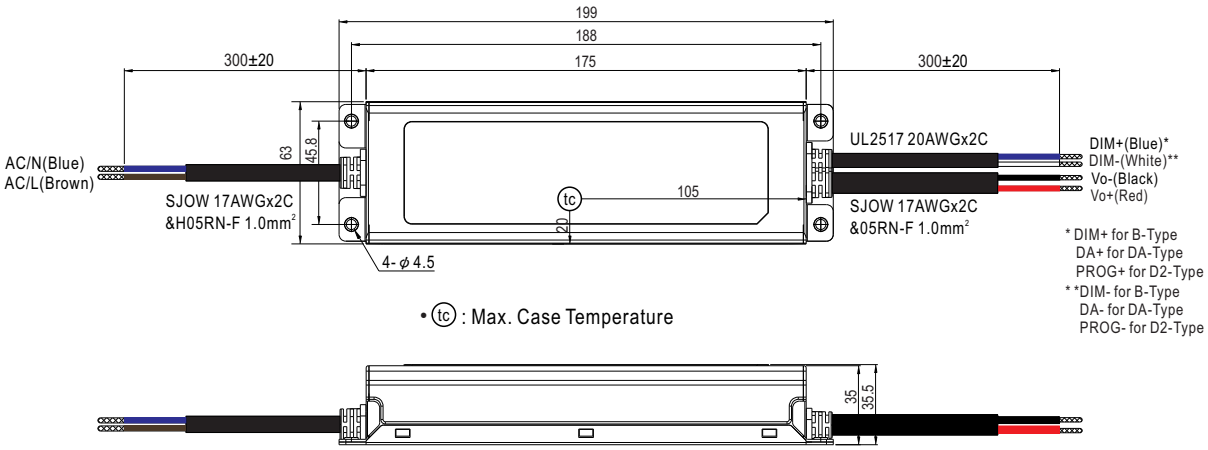
[1] The power supply will switch to the constant current level at 100% starting from 6:00pm.

[2] The power supply will switch to the constant current level at 70% in turn, starting from 0:00am, which is 06:00 after the power supply turns on.

[3] The power supply will switch to the constant current level at 50% in turn, starting from 1:00am, which is 07:00 after the power supply turns on.

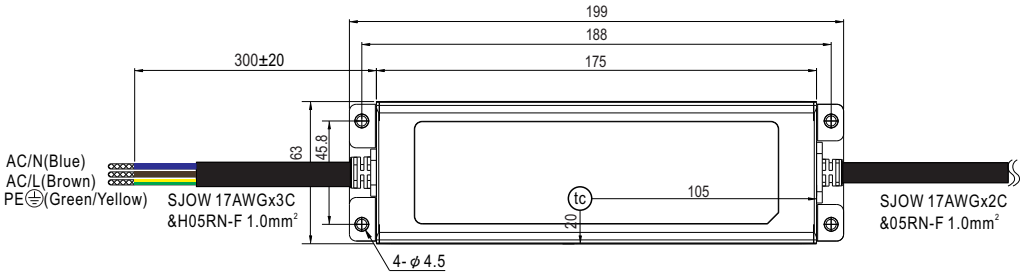
[4] The power supply will switch to the constant current level at 70% in turn, starting from 5:00am, which is 11:00 after the power supply turns on. The constant current level remains till 8:00am, which is 14:00 after the power supply turns on.

※ **DA Type**




• ⓣc : Max. Case Temperature

※ **3Y Model (3-wire input)**




• ⓣc : Max. Case Temperature