

S.M.P.S

LED Converter

Water Proof Converter

## F50CH2D-EX Series

50W single output with C.C circuit  
and PFC function



- **Constant current design(C.C. mode)**
- Built-in PFC function
- Protections: Over current / Short circuit
- IP68 design for outdoor installations
- 100% full load burn-in test
- 3 in 1 dimming function
- Suitable for LED lighting and street lighting applications
- Safety standards : K61347-2-1, K61347-2-13
- EMC standards : K00015, K61547, K61000-3-2,3
- Metal case

IP68     SELV   

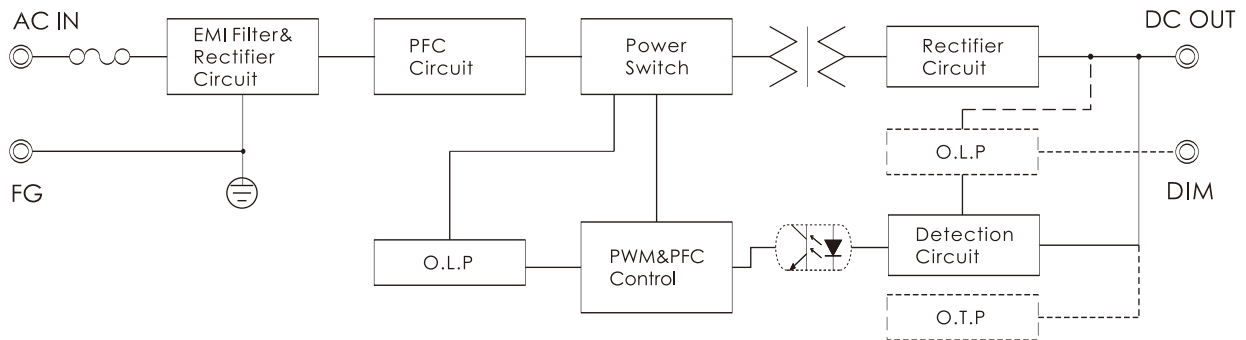
| ITEM         |                                                                                                                                                                                                                                                                                                                                     | UPF50S30CH2D-EX                                                       |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| INPUT        | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                       | AC180~264V                                                            |
|              | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                     | 47~63Hz                                                               |
|              | POWER FACTOR                                                                                                                                                                                                                                                                                                                        | PF>0.95 at full load                                                  |
|              | EFFICIENCY(typ.)                                                                                                                                                                                                                                                                                                                    | 90%                                                                   |
|              | AC CURRENT(typ.)                                                                                                                                                                                                                                                                                                                    | 0.22A/230VAC                                                          |
|              | INRUSH CURRENT(typ.)                                                                                                                                                                                                                                                                                                                | 40A/230VAC                                                            |
|              | LEAKAGE CURRENT                                                                                                                                                                                                                                                                                                                     | <2.5mA / 230VAC                                                       |
| OUTPUT       | RATED CURRENT                                                                                                                                                                                                                                                                                                                       | 1.4A                                                                  |
|              | CONSTANT CURRENT REGION                                                                                                                                                                                                                                                                                                             | 26-30V                                                                |
|              | RATED POWER                                                                                                                                                                                                                                                                                                                         | 42W                                                                   |
|              | CURRENT ADJ. RANGE                                                                                                                                                                                                                                                                                                                  | 1.2~1.4A                                                              |
|              | CURRENT ACCURACY                                                                                                                                                                                                                                                                                                                    | ±5%                                                                   |
|              | RIPPLE&NOISE(max.) Note2                                                                                                                                                                                                                                                                                                            | 150mVp-p                                                              |
|              | SETUP,RISE TIME(max.)                                                                                                                                                                                                                                                                                                               | 3000ms,100ms/230VAC at full load                                      |
|              | HOLD UP TIME(typ.)                                                                                                                                                                                                                                                                                                                  | 50ms/230VAC at full load                                              |
| PROTEC-TION  | OVER CURRENT Note3                                                                                                                                                                                                                                                                                                                  | 95~108%                                                               |
|              | SHORT CIRCUIT                                                                                                                                                                                                                                                                                                                       | Hiccup mode ; recovers automatically after fault condition is removed |
| ISOLA-TION   | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                   | I/P-O/P:AC3KV, I/P-F.G:AC1.5KV, O/P-F.G:AC0.5KV                       |
|              | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                | I/P-O/P, I/P-F.G, O/P-F.G:DC500V 100Mohms(At room temp. & humid.)     |
| ENVIRON-MENT | WORKING TEMP.&HUMID.                                                                                                                                                                                                                                                                                                                | -40~+70℃ (Refer to "DERATING CURVE"),20~95%RH                         |
|              | STORAGE TEMP.&HUMID.                                                                                                                                                                                                                                                                                                                | -40~+80℃,10~95%RH                                                     |
|              | VIBRATION                                                                                                                                                                                                                                                                                                                           | 10~500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes |
| OTHERS       | DIMENSION/WEIGHT                                                                                                                                                                                                                                                                                                                    | 192*55.5*37.3mm(L*W*H)/0.64Kg                                         |
| NOTE         | <p>1. All parameters not specially mentioned are measured at 230Vac input, rated load and 25℃ of ambient temperature.</p> <p>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with 0.1 uF &amp; 47uF parallel capacitor.</p> <p>3. Refer to "DRIVING METHODS of LED MODULE"</p> |                                                                       |

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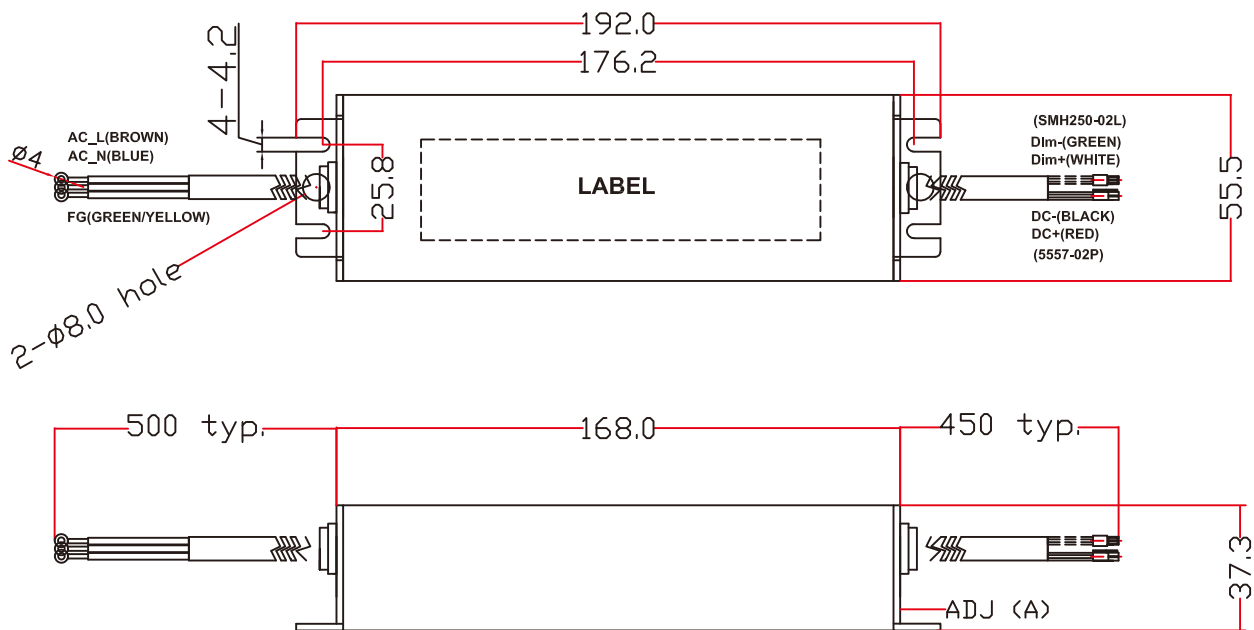
# LED Converter

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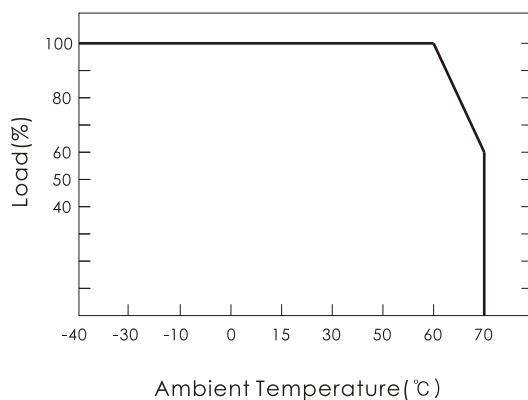
## BLOCK DIAGRAM



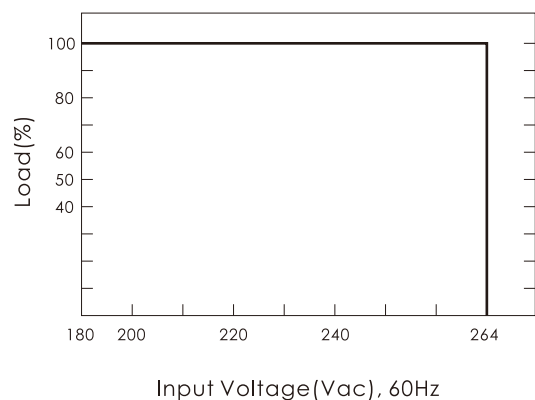
## DIMENSIONS(unit:mm)



## DERATING CURVE



## STATIC CHARACTERISTICS



## ■ DIMMING OPERATION

### ● Built-in 3 in 1 dimming function.

Output constant current level can be adjusted through output cable by connecting 10V PWM signal or 1-10Vdc or resistance between DIM+ and DIM-.

### ● Please do not connect 'DIM-' to 'V-'

### ● 10V PWM signal for output current adjustment (typ.):

frequency range: 100Hz~3KHz

|                          |       |        |        |        |        |        |        |        |        |         |         |
|--------------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| Duty Value               | 10%   | 20%    | 30%    | 40%    | 50%    | 60%    | 70%    | 80%    | 90%    | 100%    | Open    |
| Percent of Rated Current | 5~20% | 15~25% | 25~35% | 35~45% | 45~55% | 55~65% | 65~75% | 75~85% | 85~95% | 95~105% | 95~108% |

### ● 1-10V dimming function for output current adjustment (typ.)

|                          |       |        |        |        |        |        |        |        |        |         |         |
|--------------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| Dimming Value            | 1V    | 2V     | 3V     | 4V     | 5V     | 6V     | 7V     | 8V     | 9V     | 10V     | Open    |
| Percent of Rated Current | 5~20% | 15~25% | 25~35% | 35~45% | 45~55% | 55~65% | 65~75% | 75~85% | 85~95% | 95~105% | 95~108% |

### ● Reference resistance value for output current adjustment (typ.)

|                          |                                                                           |                    |                    |                    |                    |                    |                    |                    |                    |                    |                     |         |
|--------------------------|---------------------------------------------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------|
| Resistance Value         | Single driver                                                             | 10K $\Omega$       | 20K $\Omega$       | 30K $\Omega$       | 40K $\Omega$       | 50K $\Omega$       | 60K $\Omega$       | 70K $\Omega$       | 80K $\Omega$       | 90K $\Omega$       | 100K $\Omega$       | Open    |
|                          | Multiple driver<br>(N=driver quantity for synchronized dimming operation) | 10K $\Omega$<br>/N | 20K $\Omega$<br>/N | 30K $\Omega$<br>/N | 40K $\Omega$<br>/N | 50K $\Omega$<br>/N | 60K $\Omega$<br>/N | 70K $\Omega$<br>/N | 80K $\Omega$<br>/N | 90K $\Omega$<br>/N | 100K $\Omega$<br>/N | ---     |
| Percent of Rated Current |                                                                           | 5~20%              | 15~25%             | 25~35%             | 35~45%             | 45~55%             | 55~65%             | 65~75%             | 75~85%             | 85~95%             | 95~105%             | 95~108% |