



■ Features :

- Wide input range 180~528VAC
- Built-in active PFC function
- High efficiency up to 90%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- OCP point adjustable through output cable or internal potentiometer
- IP67 / IP65 design for indoor or outdoor installations
- Class 2 power unit
- Three in one dimming function (0~10Vdc or 10V PWM signal or resistance)
- Suitable for LED lighting and street lighting applications
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet locations
- 5 years warranty (Note.9)



HVG-65-12 **A** A : IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
 B : IP67 rated. Constant current level adjustable through output cable with 0~10Vdc or 10V PWM signal or resistance.
 D (option) : IP67 rated. Timer dimming function, contact MEAN WELL for details.

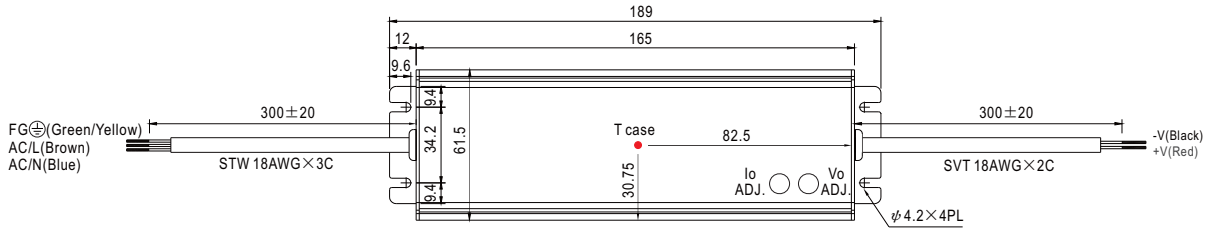
SPECIFICATION

| MODEL | HVG-65-12 | HVG-65-15 | HVG-65-20 | HVG-65-24 | HVG-65-30 | HVG-65-36 | HVG-65-42 | HVG-65-48 | HVG-65-54 | | |
|---------------------|---|--|-------------|--------------|--------------|-------------|--------------|--------------|--------------|--------------|--|
| OUTPUT | DC VOLTAGE | 12V | 15V | 20V | 24V | 30V | 36V | 42V | 48V | 54V | |
| | CONSTANT CURRENT REGION <small>Note.4</small> | 7.2 ~ 12V | 9 ~ 15V | 12 ~ 20V | 14.4 ~ 24V | 18 ~ 30V | 21.6 ~ 36V | 25.2 ~ 42V | 28.8 ~ 48V | 32.4 ~ 54V | |
| | RATED CURRENT | 5A | 4.3A | 3.25A | 2.71A | 2.17A | 1.81A | 1.55A | 1.36A | 1.21A | |
| | RATED POWER | 60W | 64.5W | 65W | 65W | 65.1W | 65.2W | 65.1W | 65.3W | 65.3W | |
| | RIPPLE & NOISE (max.) <small>Note.2</small> | 120mVp-p | 150mVp-p | 150mVp-p | 150mVp-p | 200mVp-p | 200mVp-p | 300mVp-p | 300mVp-p | 300mVp-p | |
| | VOLTAGE ADJ. RANGE <small>Note.6</small> | 10.8 ~ 13.5V | 13.5 ~ 17V | 17 ~ 22V | 22 ~ 27V | 27 ~ 33V | 33 ~ 40V | 38 ~ 46V | 43 ~ 53V | 49 ~ 58V | |
| | CURRENT ADJ. RANGE | Can be adjusted by internal potentiometer A type only | | | | | | | | | |
| | | 3 ~ 5A | 2.58 ~ 4.3A | 1.95 ~ 3.25A | 1.62 ~ 2.71A | 1.3 ~ 2.17A | 1.08 ~ 1.81A | 0.93 ~ 1.55A | 0.81 ~ 1.36A | 0.72 ~ 1.21A | |
| | VOLTAGE TOLERANCE <small>Note.3</small> | ±2.0% | ±2.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | |
| | LINE REGULATION | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | |
| LOAD REGULATION | ±1.5% | ±1.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | | |
| SETUP, RISE TIME | 500ms, 80ms / 230VAC 400ms, 80ms / 347VAC / 480VAC at full load B type 500ms, 80ms / 230VAC 500ms, 80ms / 347VAC / 480VAC at 95% load | | | | | | | | | | |
| HOLD UP TIME (Typ.) | 16ms / 347VAC 30ms / 480VAC at full load | | | | | | | | | | |
| INPUT | VOLTAGE RANGE <small>Note.5</small> | 180 ~ 528VAC 254VDC ~ 747VDC | | | | | | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | | | | | | |
| | POWER FACTOR (Typ.) | PF ≥ 0.98/230VAC, PF ≥ 0.97/277VAC, PF ≥ 0.97/347VAC, PF ≥ 0.93/480VAC at full load (Please refer to "Power Factor Characteristic" curve) | | | | | | | | | |
| | TOTAL HARMONIC DISTORTION | Total harmonic distortion will be lower than 20% when output loading is 60% or higher at 230VAC / 277VAC / 347VAC Total harmonic distortion will be lower than 20% when output loading is 75% or higher at 480VAC | | | | | | | | | |
| | EFFICIENCY (Typ.) | 86.5% | 87.5% | 88.5% | 89% | 89% | 89.5% | 89.5% | 90% | 90% | |
| | AC CURRENT (Typ.) | 0.22A / 347VAC 0.18A / 480VAC | | | | | | | | | |
| | INRUSH CURRENT (Typ.) | COLD START 25A (width=420µs measured at 50% I _{peak}) at 480VAC | | | | | | | | | |
| LEAKAGE CURRENT | <0.75mA / 480VAC | | | | | | | | | | |
| PROTECTION | OVER CURRENT | 95 ~ 108% Protection type : Constant current limiting, recovers automatically after fault condition is removed | | | | | | | | | |
| | SHORT CIRCUIT | Constant current limiting, recovers automatically after fault condition is removed | | | | | | | | | |
| | OVER VOLTAGE | 14.4 ~ 16.8V | 18 ~ 21V | 23 ~ 27V | 28 ~ 34V | 34 ~ 38V | 41 ~ 46V | 47 ~ 53V | 54 ~ 60V | 59 ~ 65V | |
| | OVER TEMPERATURE | Protection type : Shut down o/p voltage with auto-recovery or re-power on to recovery Shut down o/p voltage, recovers automatically after temperature goes down | | | | | | | | | |
| ENVIRONMENT | WORKING TEMP. | -40 ~ +70°C (Refer to "Derating Curve") | | | | | | | | | |
| | WORKING HUMIDITY | 20 ~ 95% RH non-condensing | | | | | | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +80°C, 10 ~ 95% RH | | | | | | | | | |
| | TEMP. COEFFICIENT | ±0.03%/°C (0 ~ 60°C) | | | | | | | | | |
| | VIBRATION | 10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes | | | | | | | | | |
| SAFETY & EMC | SAFETY STANDARDS <small>Note.7</small> | UL8750, CSA C22.2 No. 250.0-13, IP65 or IP67 approved | | | | | | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:1.5KVAC | | | | | | | | | |
| | ISOLATION RESISTANCE | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH | | | | | | | | | |
| | EMC EMISSION | Compliance to EN55015, EN61000-3-2 Class C (≥60% load) ; EN61000-3-3, FCC part 15 class B | | | | | | | | | |
| | EMC IMMUNITY | Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, light industry level (surge 4KV), criteria A | | | | | | | | | |
| OTHERS | MTBF | 208K hrs min. MIL-HDBK-217F (25°C) | | | | | | | | | |
| | DIMENSION | 189*61.5*36.8mm (L*W*H) | | | | | | | | | |
| | PACKING | 0.77Kg; 18pcs/14.9Kg/0.89CUFT | | | | | | | | | |
| NOTE | <ol style="list-style-type: none"> All parameters NOT specially mentioned are measured at 347VAC input, rated load and 25°C of ambient temperature. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. Tolerance : includes set up tolerance, line regulation and load regulation. Please refer to "DRIVING METHODS OF LED MODULE". Derating may be needed under low input voltages. Please check the static characteristics for more details. A Type only. Safety and EMC design refer to EN60598-1, CNS15233, GB7000.1. 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." (as available on http://www.meanwell.com) Refer to warranty statement. To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED power supply can only be used behind a switch without permanently connected to the mains. | | | | | | | | | | |

Mechanical Specification

Case No.957 Unit:mm

A Type:(HVG-65_A)

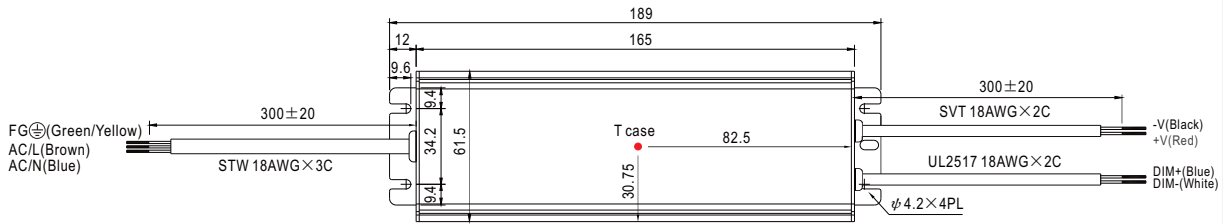


※ T case: Max. Case Temperature.

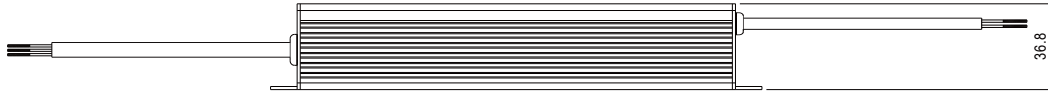


※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

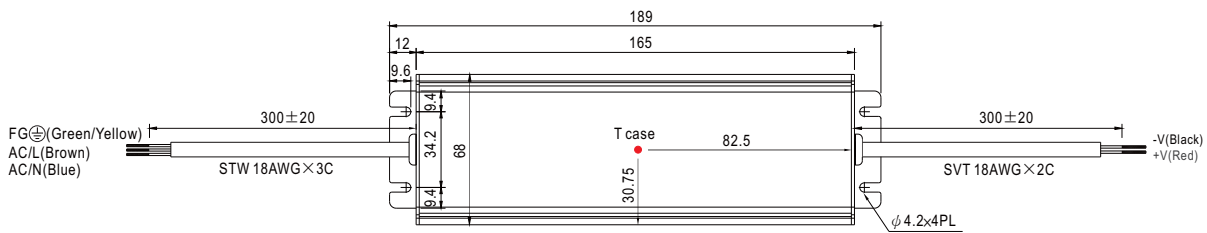
B Type:(HVG-65_B)



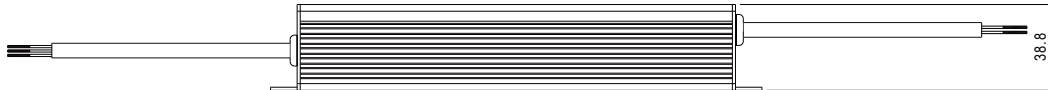
※ T case: Max. Case Temperature.



D Type(option):(HVG-65_D)

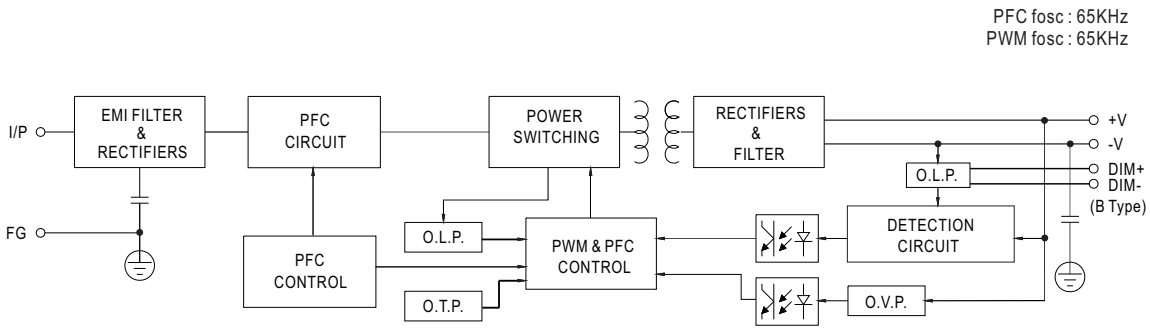


※ T case: Max. Case Temperature.

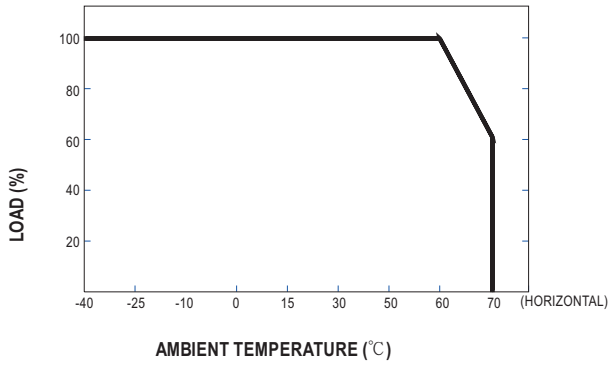


※ IP67 rated. Timer dimming function, contact MEAN WELL for details.

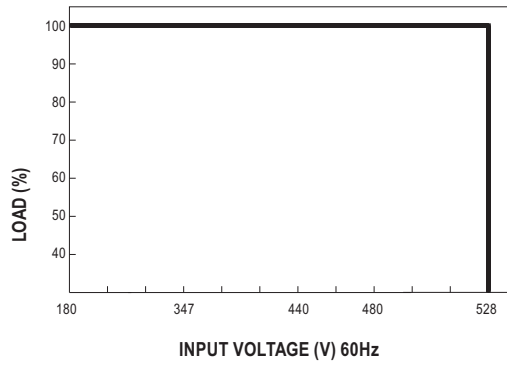
■ Block Diagram



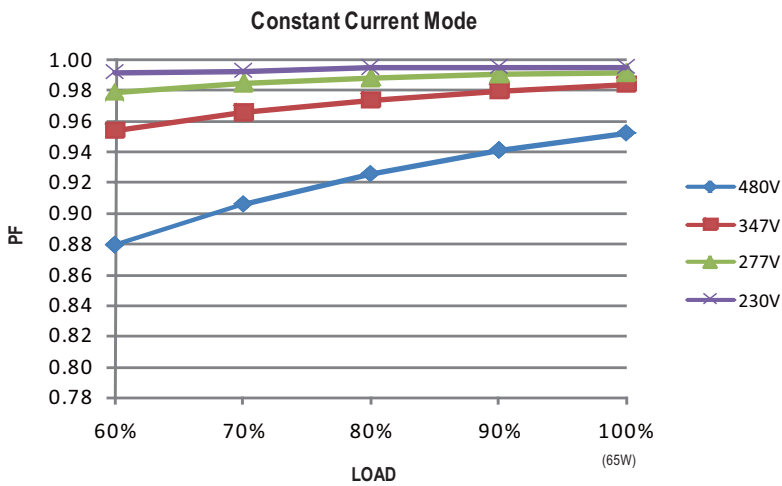
■ Derating Curve



■ Static Characteristics

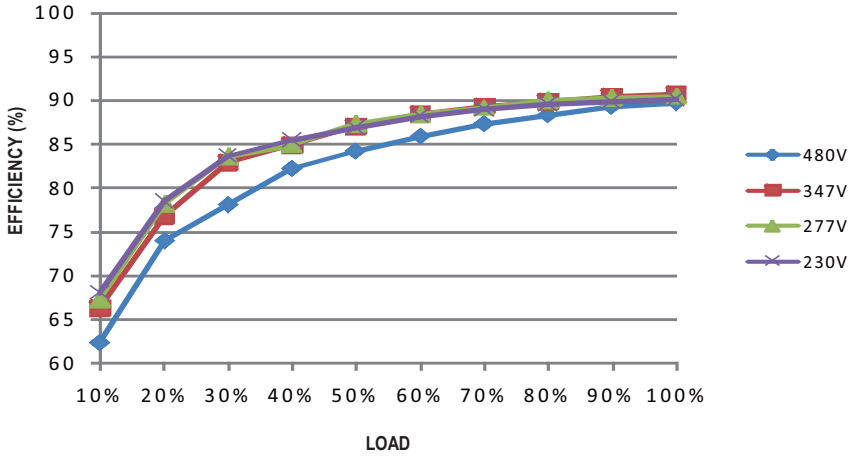


■ Power Factor Characteristic



EFFICIENCY vs LOAD (48V Model)

HVG-65 series possess superior working efficiency that up to 90% can be reached in field applications.

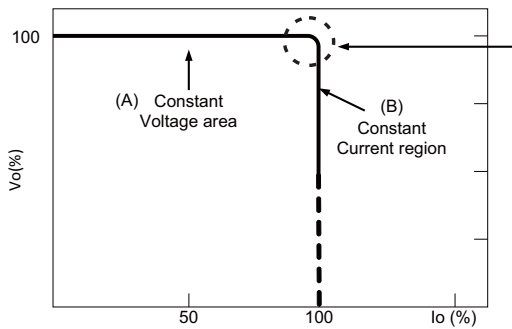


DRIVING METHODS OF LED MODULE

There are two major kinds of LED drive method "direct drive" and "with LED driver".

A typical LED power supply may either work in "constant voltage mode (CV) or constant current mode (CC)" to drive the LEDs.

Mean Well's LED power supply with CV+ CC characteristic can be operated at both CV mode (with LED driver, at area (A) and CC mode (direct drive, at area (B)).

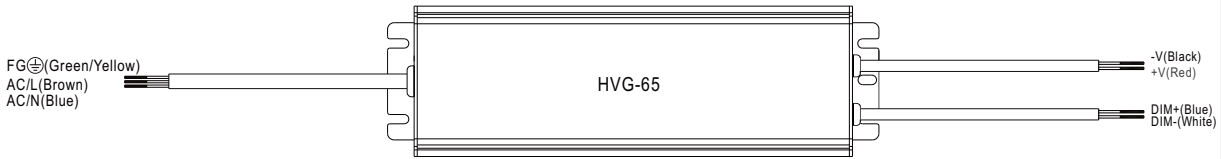


Typical LED power supply I-V curve

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

Should there be any compatibility issues, please contact MEAN WELL.

■ DIMMING OPERATION (for B-type only)



※ Built-in 3 in 1 dimming function, IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistance or 0 ~ 10Vdc or 10V PWM signal between DIM+ and DIM-.

※ Please DO NOT connect "DIM-" to "-V".

※ Reference resistance value for output current adjustment (Typical)

| Resistance value | Single driver | Short | 10KΩ | 20KΩ | 30KΩ | 40KΩ | 50KΩ | 60KΩ | 70KΩ | 80KΩ | 90KΩ | 100KΩ | OPEN |
|-----------------------------|---|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|----------|
| | Multiple drivers <small>(N-driver quantity for synchronized dimming operation)</small> | Short | 10KΩ/N | 20KΩ/N | 30KΩ/N | 40KΩ/N | 50KΩ/N | 60KΩ/N | 70KΩ/N | 80KΩ/N | 90KΩ/N | 100KΩ/N | ----- |
| Percentage of rated current | | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 95%~108% |

※ 0 ~ 10V dimming function for output current adjustment (Typical)

| Dimming value | 0V | 1V | 2V | 3V | 4V | 5V | 6V | 7V | 8V | 9V | 10V | OPEN |
|-----------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----------|
| Percentage of rated current | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 95%~108% |

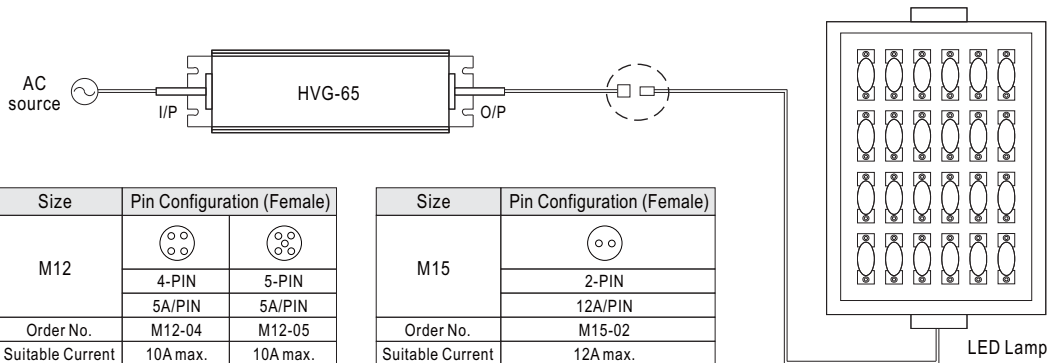
※ 10V PWM signal for output current adjustment (Typical): Frequency range : 100Hz ~ 3KHz

| Duty value | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | OPEN |
|-----------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----------|
| Percentage of rated current | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 95%~108% |

■ WATERPROOF CONNECTION

○ Waterproof connector

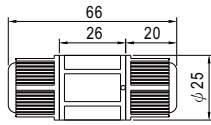
Waterproof connector can be assembled on the output cable of HVG-65 to operate in dry/wet/damp or outdoor environment.



| Size | Pin Configuration (Female) | |
|------------------|----------------------------|----------|
| M12 | | |
| | 4-PIN | 5-PIN |
| | 5A/PIN | 5A/PIN |
| Order No. | M12-04 | M12-05 |
| Suitable Current | 10A max. | 10A max. |

| Size | Pin Configuration (Female) |
|------------------|----------------------------|
| M15 | |
| | 2-PIN |
| | 12A/PIN |
| Order No. | M15-02 |
| Suitable Current | 12A max. |

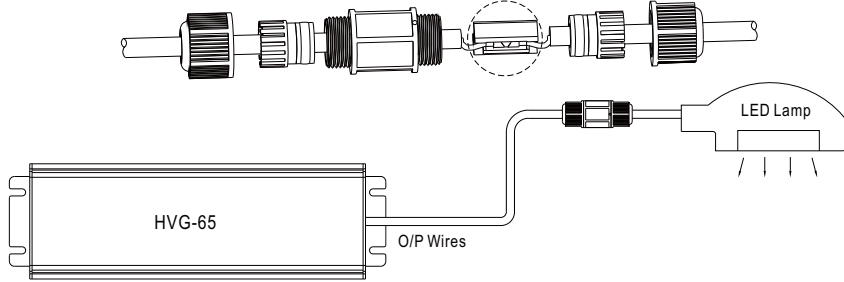
◎ Cable Joiner



CJ04-1 suitable for 14AWG~16AWG
CJ04-2 suitable for 18AWG~22AWG



Up to four wires can be connected through this cable joiner by soldering or clamping by tools.



※CJ04 cable joiner can be purchased independently for user's own assembly.
MEAN WELL order No. : CJ04-1, CJ04-2.