65W Constant Current Mode LED Driver HVGC-65 series

User's Manual

TAIWAN EXCELLENCE 2014

IP65 IP67

Features

- Wide input range 180 ~ 528VAC
- Constant Current mode output
- Metal housing with Class I design
- Built-in active PFC function
- IP67 / IP65 design for indoor or outdoor installations
- Function options: output adjustable via potentiometer; 3 in 1 dimming (dim-to-off) ; Timer dimming
- Typical lifetime>50000 hours
- 5 years warranty

Applications

- LED street lighting
- LED high-bay lighting
- Parking space lighting
- LED fishing lamp

GTIN CODE

MW Search: https://www.meanwell.com/serviceGTIN.aspx

Description

HVGC-65 series is a 65W LED AC/DC LED power supply featuring the constant current mode and high voltage output. HVGC-65 operates from 180~528VAC and offers models with different rated current ranging between 350mA and 1050mA. Thanks to the high efficiency up to 90.5%, with the fanless design, the entire series is able to operate for -40℃ ~ +80℃ case temperature under free air convection. The design of metal housing and IP67/IP65 ingress protection level allows this series to fit both indoor and outdoor applications. HVGC-65 is equipped with various function options, such as dimming methodologies, so as to provide the optimal design flexibility for LED lighting system.

Model Encoding

HVGC - 65 - 1050 A

- A — Function options
- 1050 — Rated output current(350/500/700/1050mA)
- 65 — Rated wattage
- HVGC — Series name

Type	IP Level	Function	Note
A	IP65	Io adjustable through built-in potentiometer.	In Stock
B	IP67	3 in 1 dimming function (0~10Vdc, 10V PWM signal and resistance)	In Stock
AB	IP65	Io adjustable through built-in potentiometer & 3 in 1 dimming function (0~10Vdc, 10V PWM signal and resistance)	In Stock
D	IP67	Timer dimming function, contact MEAN WELL for details(safety pending).	By request

SPECIFICATION

MODEL		HVGC-65-350□	HVGC-65-500□	HVGC-65-700□	HVGC-65-1050□
OUTPUT	RATED CURRENT	350mA	500mA	700mA	1050mA
	RATED POWER	65.1W	65W	65.1W	65.1W
	CONSTANT CURRENT REGION Note.2	18 ~ 186V	13 ~ 130V	9 ~ 93V	6 ~ 62V
	CURRENT ADJ. RANGE	Adjustable for A/AB-Type only (via the built-in potentiometer)			
		210 ~ 350mA	300 ~ 500mA	420 ~ 700mA	630 ~ 1050mA
	CURRENT TOLERANCE	±5.0%			
	CURRENT RIPPLE Note.5	5.0% max. @rated current			
	SET UP TIME Note.4	500ms / 230Vac 400ms / 347VAC,480VAC			
INPUT	VOLTAGE RANGE Note.3	180 ~ 528VAC 254VDC ~ 747VDC (Please refer to "STATIC CHARACTERISTIC" section)			
	FREQUENCY RANGE	47 ~ 63Hz			
	POWER FACTOR (Typ.)	PF≧0.98/230VAC, PF≧0.97/277VAC, PF≧0.95/347VAC, PF≧0.93/480VAC @full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)			
	TOTAL HARMONIC DISTORTION	THD< 20%(@ load≧60%/230VAC, 277VAC, 347VAC; @ load≧75%/480VAC) (Please refer to "TOTAL HARMONIC DISTORTION (THD)" section)			
	EFFICIENCY (Typ.)	90%	90.5%	90.5%	90%
	AC CURRENT (Typ.)	0.22A / 347VAC 0.18A / 480VAC			
	INRUSH CURRENT (Typ.)	COLD START 25A(t_{width}=420μs measured at 50% I_{peak}) at 480VAC; Per NEMA 410			
	MAX. No. of PSUs on 16A CIRCUIT BREAKER	12 units (circuit breaker of type B) / 20 units (circuit breaker of type C) at 480VAC			
	LEAKAGE CURRENT	<0.75mA / 480VAC			
PROTECTION	SHORT CIRCUIT	Constant current limiting, recovers automatically after fault condition is removed			
	OVER VOLTAGE	195 ~ 210V	137 ~ 150V	98 ~ 107V	65 ~ 72V
		Shut down o/p voltage with auto-recovery or re-power on to recovery			
	OVER TEMPERATURE	Shut down o/p voltage, recovers automatically after temperature goes down			
ENVIRONMENT	WORKING TEMP.	Tcase=-40 ~ +80℃ (Please refer to "OUTPUT LOAD vs TEMPERATURE" section)			
	MAX. CASE TEMP.	Tcase=+80℃			
	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, CSA C22.2 No. 250.13-12, ENEC BS EN/EN61347-1, BS EN/EN61347-2-13, BS EN/EN62384, independent, EAC TP TC 004, 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℃/ 70% RH			
	EMC EMISSION Note.6	Compliance to BS EN/EN55015, BS EN/EN61000-3-2 Class C (@ load≧60%) ; BS EN/EN61000-3-3, FCC Part 15 Subpart B, EAC TP TC 020			
	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 4KV, Line-Line 2KV), EAC TP TC 020			
OTHERS	MTBF	2164.4K hrs min. Telcordia SR-332 (Bellcore) ; 202.8K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	189*61.5*36.8mm (L*W*H)			
	PACKING	0.77Kg; 18pcs/14.9Kg/0.89CUFT			

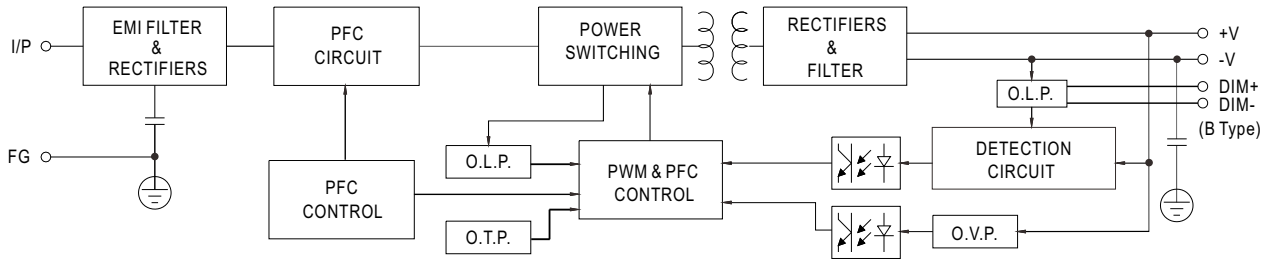
NOTE

1. All parameters NOT specially mentioned are measured at 347VAC input, rated current and 25℃ of ambient temperature.
2. Please refer to "DRIVING METHODS OF LED MODULE".
3. Please refer to "STATIC CHARACTERISTIC" sections for details.
4. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time.
5. It is measured 50%~100% of maximum voltage under rated power delivery.
6. 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. (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
7. To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED driver can only be used behind a switch without permanently connected to the mains.
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 75℃ or less.
9. Please refer to the warranty statement on MEAN WELL's website at http://www.meanwell.com.
10. 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).
11. For any application note and IP water proof function installation caution, please refer our user manual before using. https://www.meanwell.com/Upload/PDF/LED_EN.pdf
12. This product is intended for North America and EU lighting equipment application. Please contact your MEAN WELL sales if you have other using.

※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

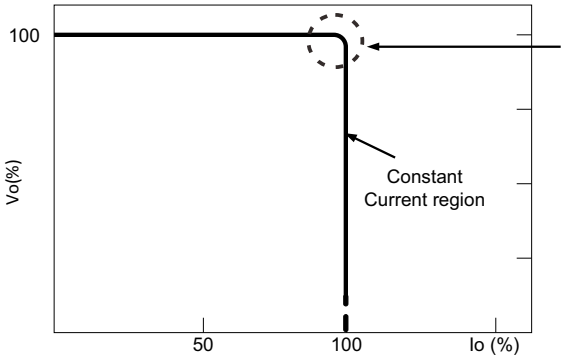
■ Block Diagram

PFC fosc : 65KHz
PWM fosc : 75KHz



■ DRIVING METHODS OF LED MODULE

※ This series works in constant current mode to directly drive the LEDs.

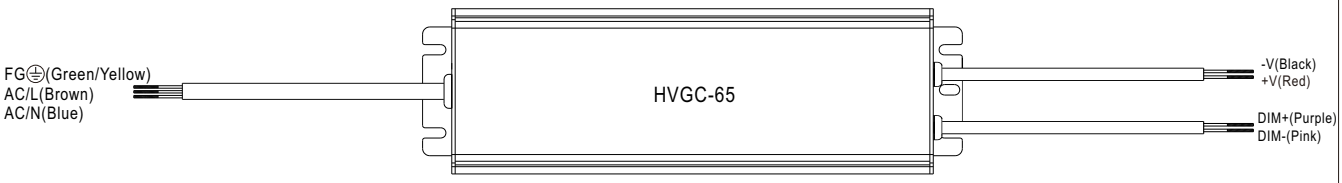


Typical output current normalized by rated current (%)

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.

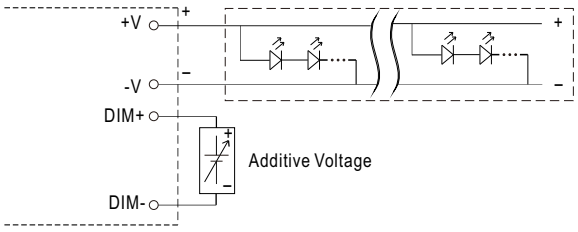
■ DIMMING OPERATION



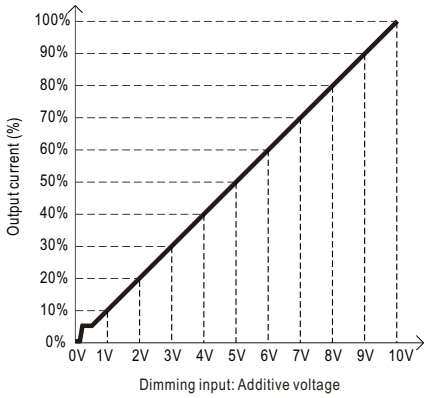
※ 3 in 1 dimming function (for B/AB-Type)

- Output constant current level can be adjusted by applying one of the three methodologies between DIM+ and DIM-: 0 ~ 10VDC, or 10V PWM signal or resistance.
- Direct connecting to LEDs is suggested. It is not suitable to be used with additional drivers.
- Dimming source current from power supply: 100μA (typ.)

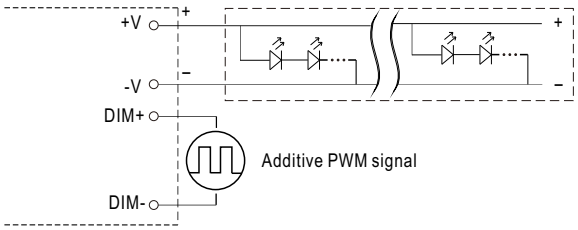
◎ Applying additive 0 ~ 10VDC



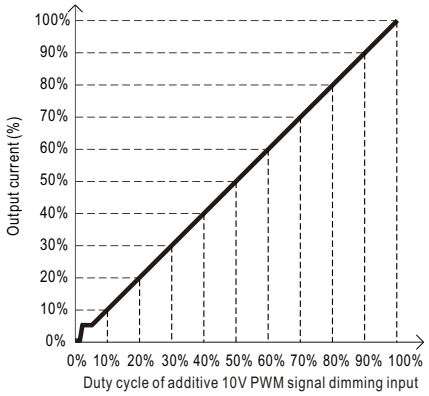
"DO NOT connect "DIM- to -V"



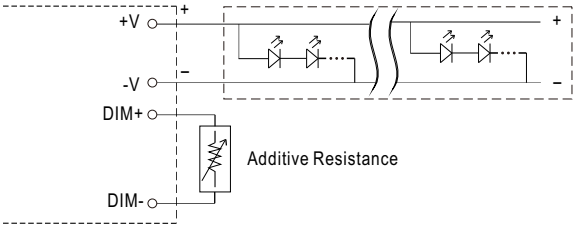
◎ Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):



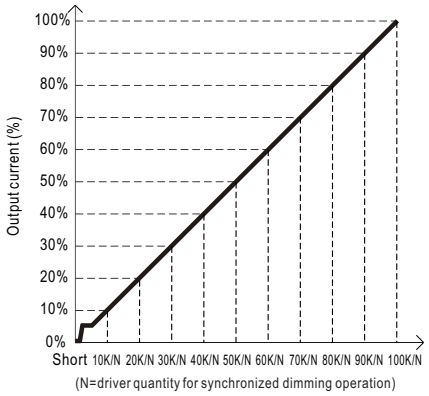
"DO NOT connect "DIM- to -V"



◎ Applying additive resistance:

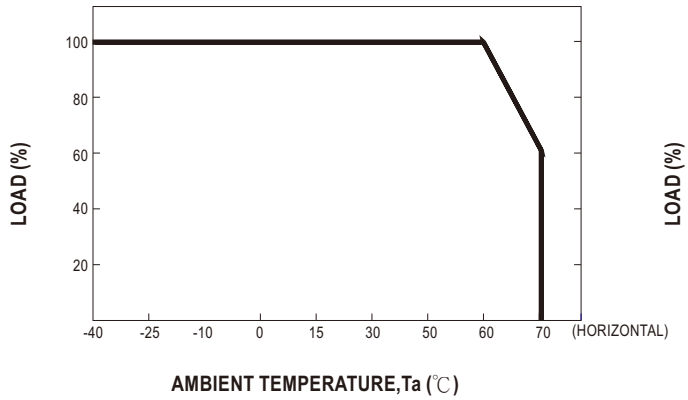


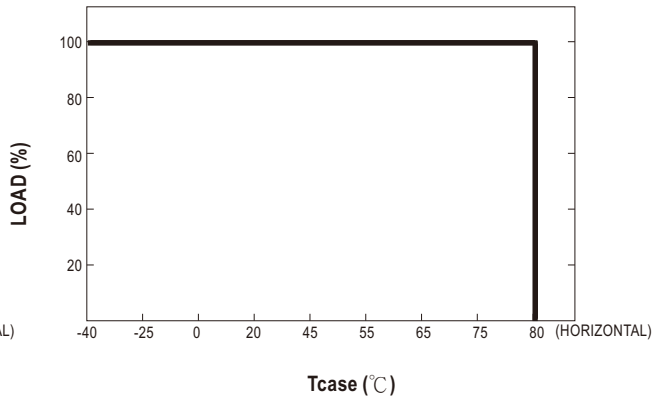
"DO NOT connect "DIM- to -V"



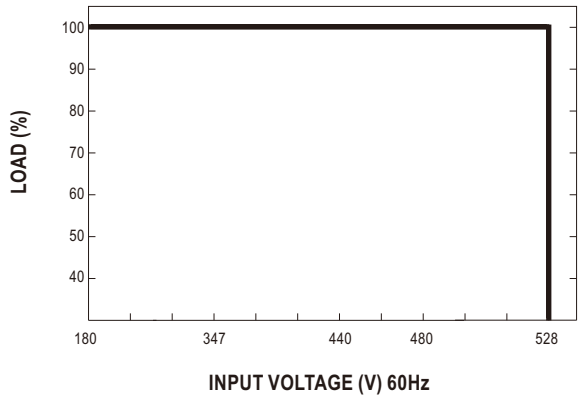
Note : 1. Min. dimming level is about 6% and the output current is not defined when 0%< Iout<6%.
2. The output current could drop down to 0% when dimming input is about 0kΩ or 0Vdc, or 10V PWM signal with 0% duty cycle.

■ OUTPUT LOAD vs TEMPERATURE(Note.9)





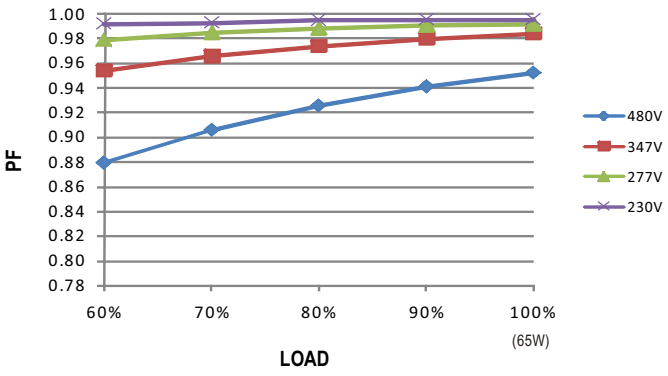
■ STATIC CHARACTERISTIC



※ De-rating is needed under low input voltage.

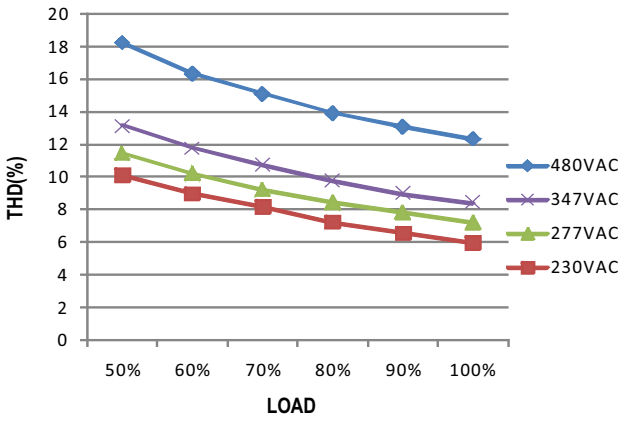
■ POWER FACTOR (PF) CHARACTERISTIC

※ Tcase at 70℃



■ TOTAL HARMONIC DISTORTION (THD)

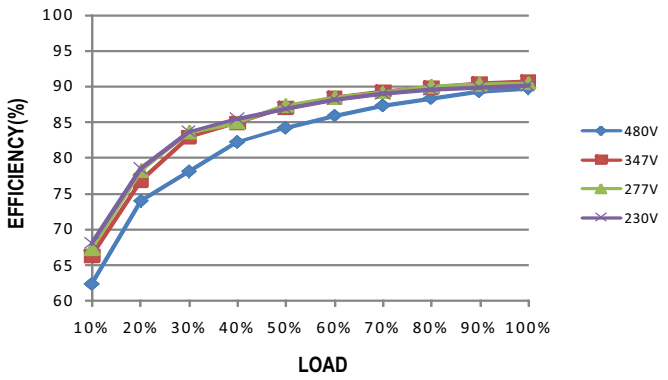
※ 700mA Model, Tcase at 70℃



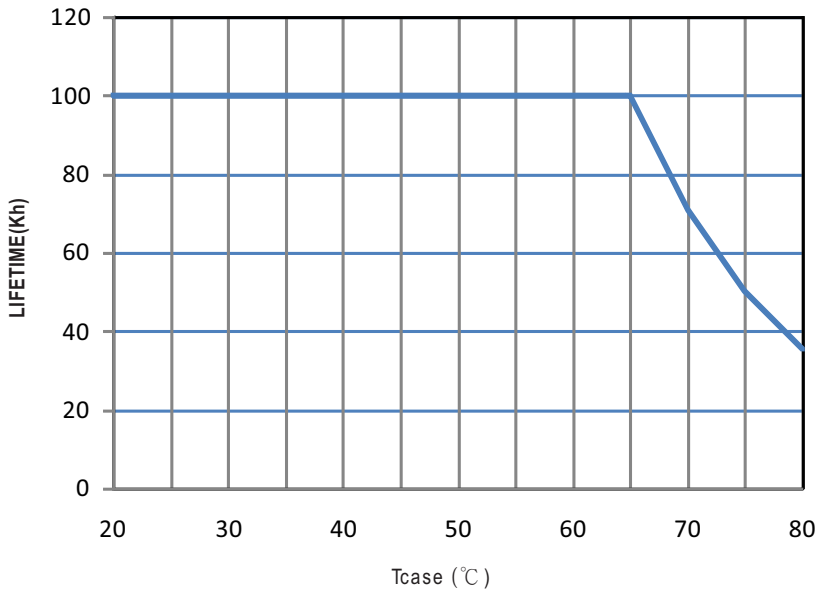
■ EFFICIENCY vs LOAD

HVGC-65 series possess superior working efficiency that up to 90.5% can be reached in field applications.

※ 700mA Model, Tcase at 70℃



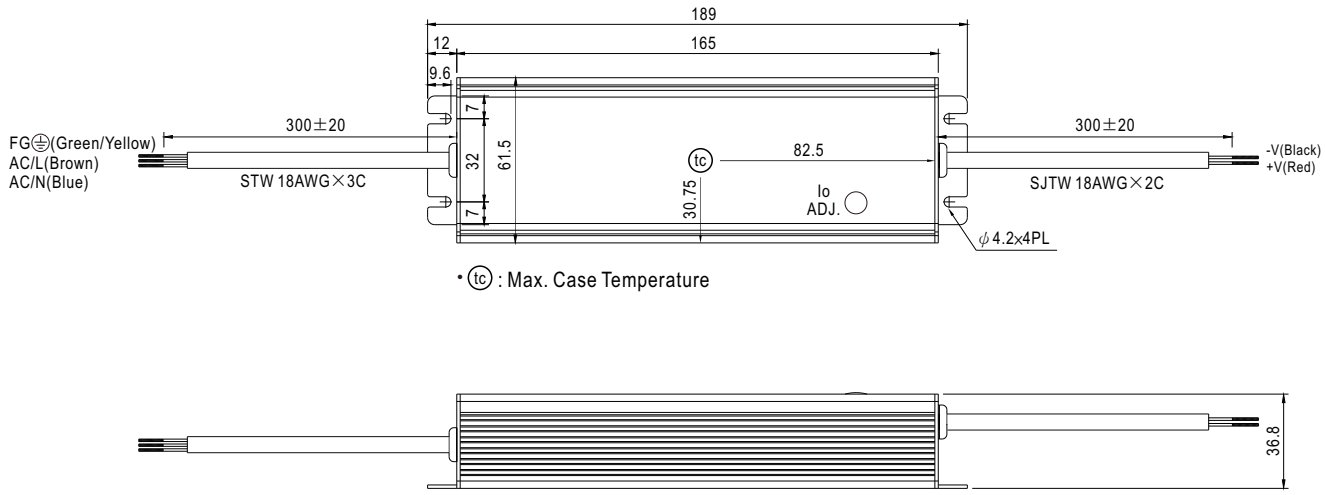
■ LIFE TIME



■ MECHANICAL SPECIFICATION

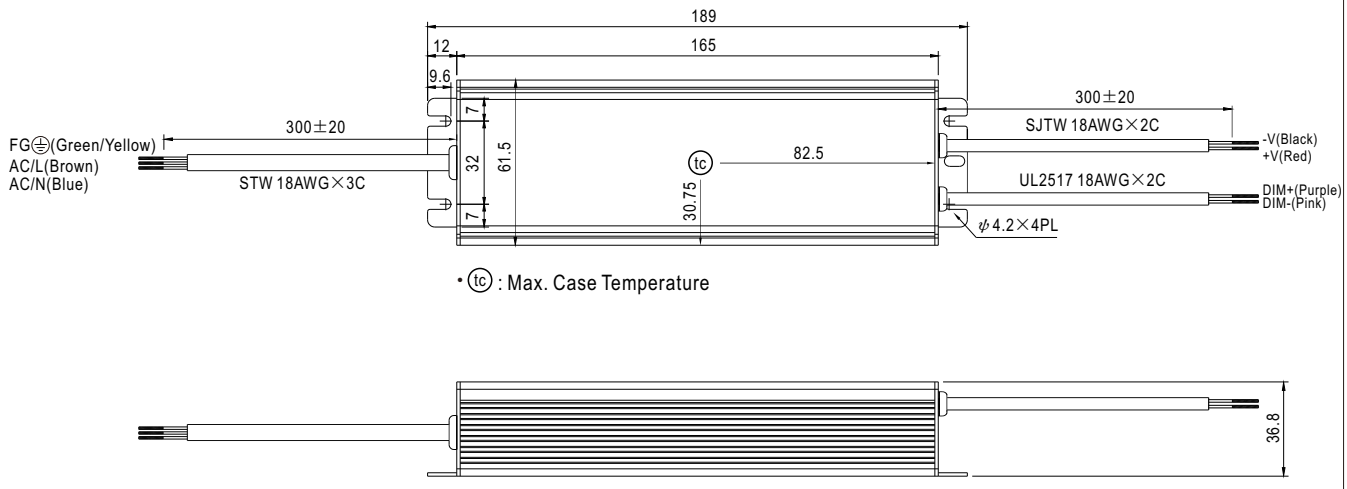
Case No. 957 Unit:mm Tolerance:±1

※ **A-Type**



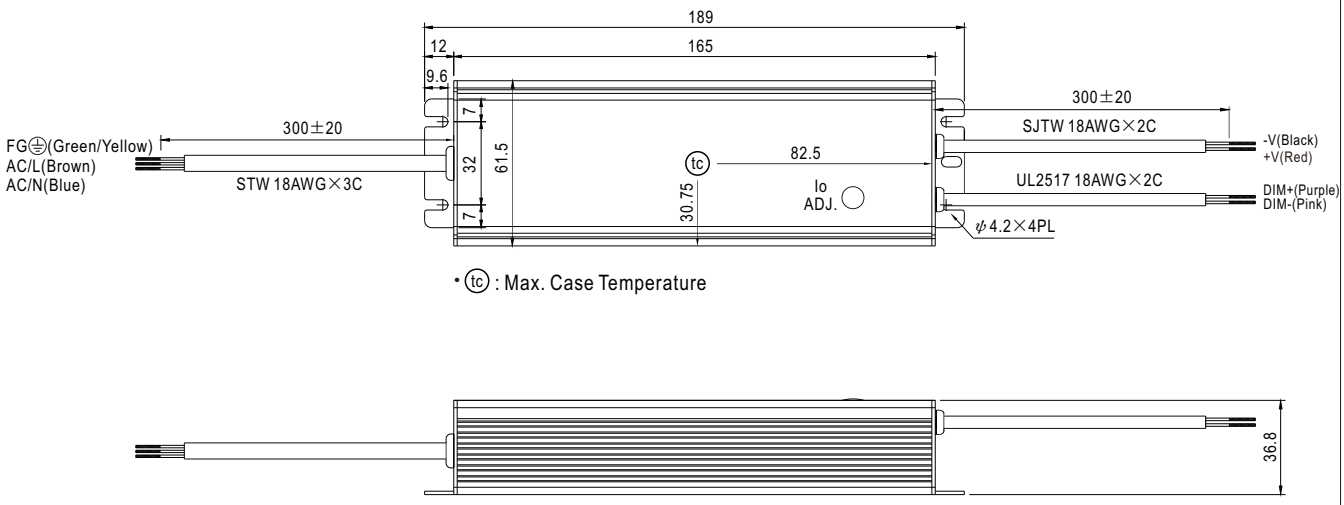
• tc : Max. Case Temperature

※ **B-Type**



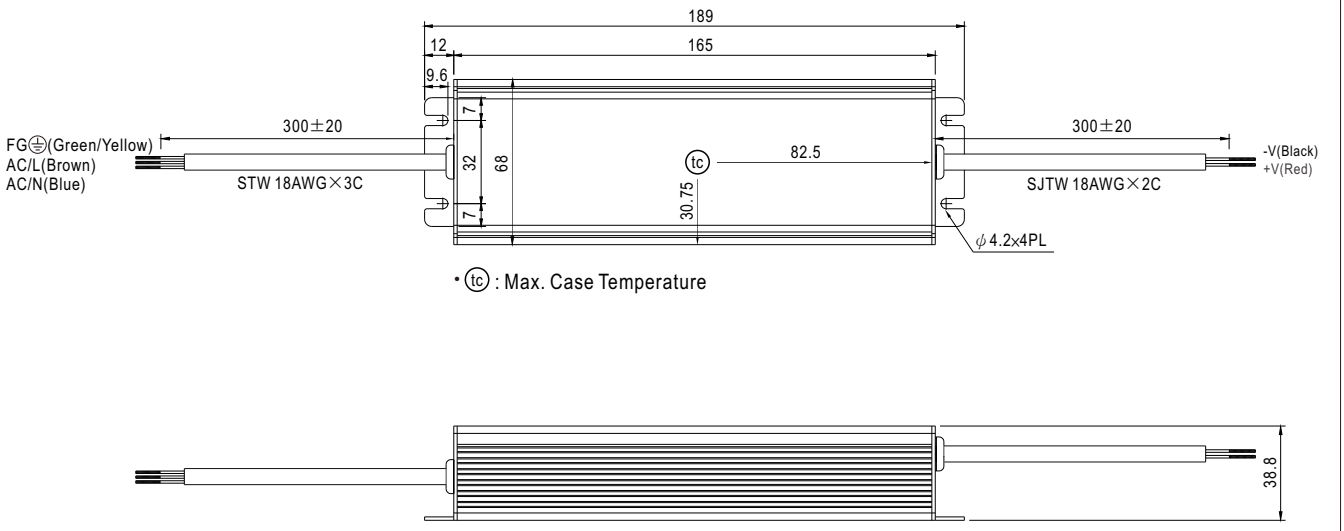
• tc : Max. Case Temperature

※ **AB-Type**



• tc : Max. Case Temperature

※ **D-Type**

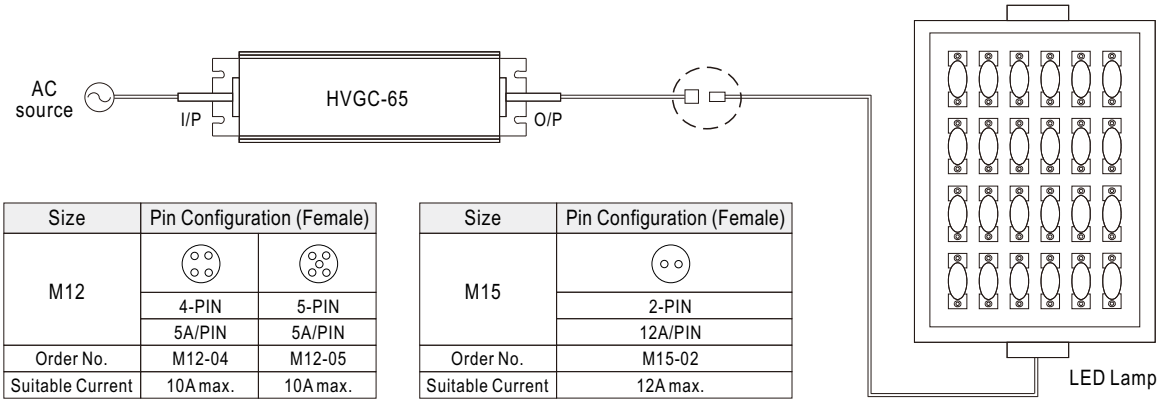


• tc : Max. Case Temperature

■ WATERPROOF CONNECTION

※ **Waterproof connector**

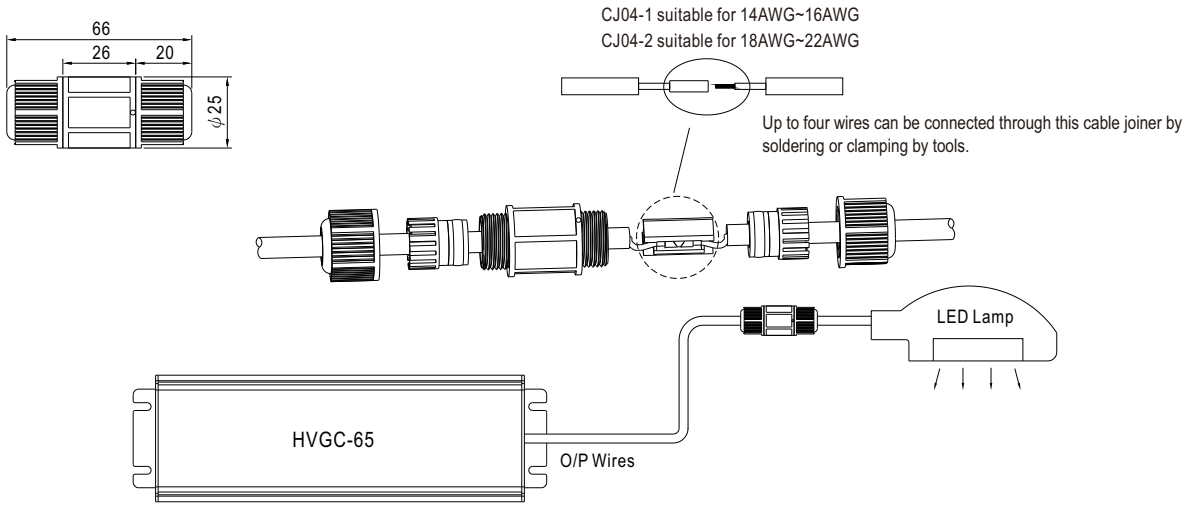
Waterproof connector can be assembled on the output cable of HVGC-65 to operate in dry/wet/damp or outdoor environment.



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

■ INSTALLATION MANUAL

Please refer to : http://www.meanwell.com/manual.html