LTECH

0-10V
Push DIM

LED Intelligent Driver

- Dimming interface: 0-10V (1-10V/10VPWM/RX), Push DIM.
- T-PWM™ digital dimming
- With soft-on and fade in function, visual more comfortable.
- Automatic recognition of 0-10V, 1-10V input signal.
- Dimming range: 0~100%, LED start at 0.01% possible.
- 0-100% flicker-free,High frequency exemption level.
- Innovative thermal management technology, intelligent power life protection.
- Multiple current & wide voltage, suitable for different power LED.
- Non-load output voltage 0V to prevent damages to LED caused by poor contact.
- Short circuit / Over-heat / Over load / Non-load protection, recover automatically.
- Suitable for internal lights application for Ⅰ/Ⅱ/Ⅲ
- Up to 50000-hour life time.
- 5 years warranty (Rubycon capacitor).

T-PWM™
Super depth dimming technology

Flicker-free
IEEE 1789

Dimmable:
0.01-100%

TUV Certificate No. B 17 06 01119 001
RCM Equipment registration No: E2017013627 Ref: ESV170365
ENEC Certificate No. U6 17 07 01119 004
CE EMC Certificate No. BST17024985200O1Y-1EC-1
LVD Certificate No. BST17099924700O1Y-1SC-2

5 in 1 dimming
0-10V
1-10V
PWM
RX
Push DIM

5 years warranty

RoHS SELV CE Class 2

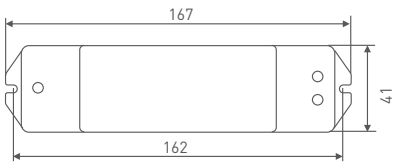
0-10V PUSH DIM | T-PWM Super depth dimming technology | Flicker-free IEEE 1789 | Over-heat Protection | Short Circuit Protection | Over Load Protection | Multiple Current

Specification

Model		AD-15-100-700-E1A1	AD-25-150-900-E1A1	AD-36-200-1200-E1A1
OUTPUT	Output Voltage	10-54Vdc		
	Max Output Voltage	58Vdc		
	Non-load Output Voltage	0Vdc		
	Output Current	100-700mA	150-900mA	200-1200mA
	Output Power	1W~15W	1.5~25W	2W~36W
	Strobe Level	Almost flicker-free / High frequency exemption level.		
	Dimming Range	0~100%, LED start at 0.01% possible.		
	PWM Frequency	≤3600Hz		
	Current Accuracy	±5%		
	Ripple & Noise	≤2V		
INPUT	Dimming Interface	0-10V (1-10V/PWM/RX), Push DIM		
	Input Voltage Range	220-240Vac ±10%		
	Frequency	50/60Hz		
	Input Current	<0.15A	<0.2A	<0.3A
	Power Factor	PF>0.90/230Vac, at full load	PF>0.93/230Vac, at full load	PF>0.95/230Vac, at full load
	THD	⩽20% at 230Vac, at full load		
	Efficiency(typ.)	83%	84%	87%
	Inrush Current(typ.)	Cold start 2.48A at 230Vac (twidth=25.1μs measured at 50% Ipeak)	Cold start 2.28A at 230Vac (twidth=36μs measured at 50% Ipeak)	Cold start 6.32A at 230Vac (twidth=60.1μs measured at 50% Ipeak)
	Anti Surge	L-N: 1kV		
	Leakage Current	<0.5mA/230Vac		
ENVIRONMENT	Working Temperature	ta: 50°C tc: 90°C		
	Working Humidity	20 ~ 95%RH, non-condensing		
	Storage Temp., Humidity	-40°C ~ 80°C, 10~95%RH		
	Temp. Coefficient	±0.03%/°C (0-50°C)		
	Vibration	10~500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes.		
PROTECTION	Over-heat Protection	Intelligently adjusting or turning off the output current if the PCB temperature ⩾110°C, , auto recovers.		
	Over Load Protection	Shut down the output when rated power⩾102%, auto recovers.		
	Short Circuit Protection	Shut down automatically if short circuit occurs, auto recovers.		
	Non-load Protection	Shut down the output if no load, auto recovers when load back to normal.		
SAFETY & EMC	Withstand Voltage	I/P-O/P: 3750Vac		
	Isolation Resistance	I/P-O/P: 100MΩ/500VDC/25°C/70%RH		
	Safety Standards	IEC/EN61347-1, IEC/EN61347-2-13		
	EMC Emission	EN55015, EN61000-3-2 Class C, IEC61000-3-3		
	EMC Immunity	EN61000-4-2,3,4,5,6,8,11 EN61547		
	Strobe Test Standard	IEEE 1789		
OTHERS	Dimension	167×41×32mm(L×W×H)		
	Packing	168×43×35mm(L×W×H)		
	Weight(G.W.)	165g±10g		

Dimensions

Unit: mm



LED Current Selection

Quick options: DIP switch for 8 optional currents' quick selection (see the table below).

	DIP Switch								
AD-15-100-700-E1A1	Output Current	100mA	180mA	300mA	350mA	450mA	500mA	600mA	700mA
	Output Voltage	10-54V	10-54V	10-50V	10-43V	10-34V	10-30V	10-25V	10-22V
	Output Power	1W-5.4W	1.8W-9.72W	3W-15W	3.5W-15.05W	4.5W-15.3W	5W-15W	6W-15W	7W-15.4W

	DIP Switch								
AD-25-150-900-E1A1	Output Current	150mA	250mA	300mA	350mA	500mA	600mA	700mA	900mA
	Output Voltage	10-54V	10-54V	10-54V	10-54V	10-50V	10-42V	10-36V	10-28V
	Output Power	1.5W-8.1W	2.5W-13.5W	3W-16.2W	3.5W-18.9W	5W-25W	6W-25.2W	7W-25.2W	9W-25.2W

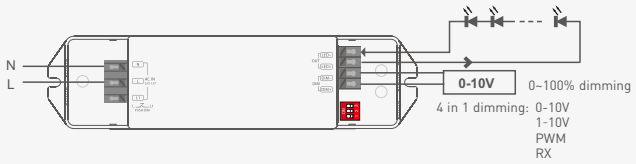
	DIP Switch								
AD-36-200-1200-E1A1	Output Current	200mA	350mA	500mA	600mA	700mA	900mA	1050mA	1200mA
	Output Voltage	10-54V	10-54V	10-54V	10-54V	10-52V	10-40V	10-35V	10-30V
	Output Power	2W-10.8W	3.5W-18.9W	5W-27W	6W-32.4W	7W-36.4W	9W-36W	10.5W-36.75W	12W-36W

ON OFF

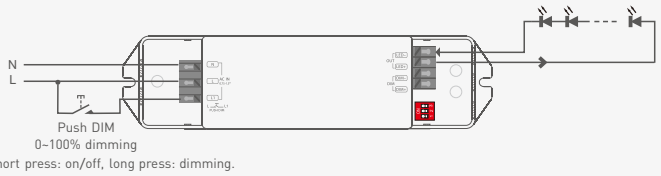
* After current setting by DIP switch, power off and then power on to make the new current effective.
* E.g. LED 3.2V/pcs: 10-54V can power 3-16pcs LEDs in series, 10-22V can power 3-6pcs LEDs, the max quantity of LEDs in series will be subject to the actual voltage of LED.

Wiring Diagram

0-10V Connection



Push DIM Connection



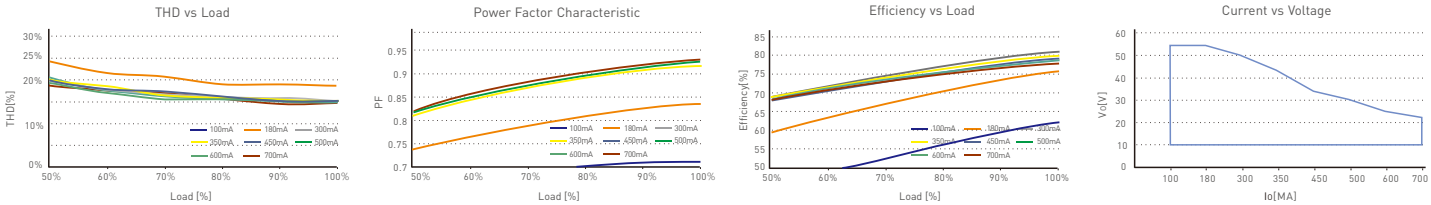
The dimming interface priority: First 0-10V, next Push DIM.

Push Dimming

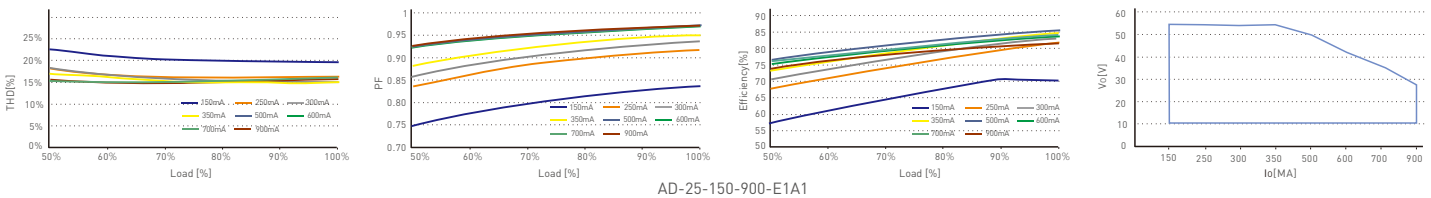
Reset Switch

- On/off control: Short press.
- Stepless dimming: Long press.
- With every other long press, the light level goes to the opposite direction.
- Dimming memory: Brightness will be the same as previously adjusted when turning off and on again.

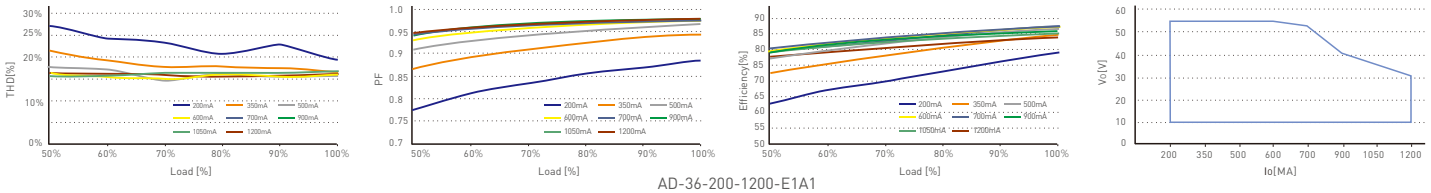
Relationship Diagrams



AD-15-100-700-E1A1



AD-25-150-900-E1A1



AD-36-200-1200-E1A1

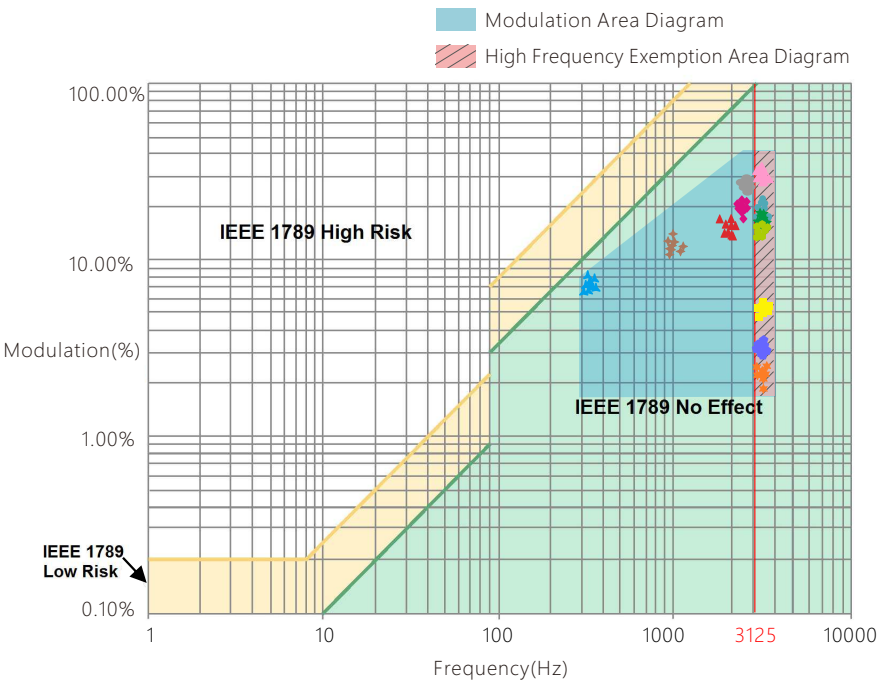
Flicker Test Form

IEEE 1789

Limit of Modulation in low risk area	
Waveform frequency of Optical output	limit (%)
$f \leqslant$ 8Hz	0.2
8Hz < $f \leqslant$ 90Hz	0.025 × f
90Hz < $f \leqslant$ 1250Hz	0.08 × f
f > 1250Hz	Exemption assessment
Limit of Modulation in no effect area	
Waveform frequency of Optical output	limit (%)
$f \leqslant$ 10Hz	0.1
10Hz < $f \leqslant$ 90Hz	0.01 × f
90Hz < $f \leqslant$ 3125Hz	(0.08/2.5) × f
f > 3125Hz	Exemption assessment (High frequency exemption)

Brightness

- 0.1%
- 1%
- 5%
- 10%
- 20%
- 30%
- 40%
- 50%
- 60%
- 70%
- 80%
- 90%
- 100%



Marks in the right chart were tested results of different current ranges.

The output frequeny is 0Hz in 100% brightness and its corresponding modulation is 0%, which could not be shown in the right chart.