

Features

- Built-in 10KV lightning surge protection (EN61000-4-5)
- 90 ~ 305Vac full range input; Active PFC
- Output voltage range up to 430Vdc for outdoor lighting
- Aluminum case IP65/ IP67 waterproof
- Dual mode over temperature thermal design
- Output voltage automatic tracing & fixing function
- Built-in 3 in 1 output current dimming function (Type B)
- Optional timer dimming function (contact Darfon)
- All Series approved to UL/CB/CCC/CE/PSE
- Outdoor LED luminaries rugged driver solutions
- 5 years Warranty



MDC-120-XXXX □ Type A: IP65 grade · Adjust current by variable resistor internal

Type B: IP67grade · Output current dimming by 0~10V/10V PWM signal/Resistor

Model	Rated Output Current	Output Current Adj. Range(1)	Output Voltage Range	Output Voltage @ No Load (2)	OVP level	Rated Output Power	Efficiency(3)
MDC-120-0350	350mA	210~350mA	215~430V	437V	443~463V	150W	92.5%
MDC-120-0500	500mA	300~500mA	150~300V	307V	317~337V	150W	92.5%
MDC-120-0700	700mA	420~700mA	107~215V	221V	227~247V	150W	92.5%
MDC-120-1050	1050mA	630~1050mA	74~148V	156V	159~179V	155W	92.5%
MDC-120-1400	1400mA	840~1400mA	54~108V	112V	122~142V	151W	92.5%
MDC-120-2100	2100mA	1260~2100mA	29~58V	61V	62~77V	122W	91%
MDC-120-2450	2450mA	1470~2450mA	36~49V	52V	56~71V	120W	91%
MDC-120-2800	2800mA	1680~2800mA	31~42V	46V	48~63V	120W	91%
MDC-120-3500	3500mA	2100~3500mA	26~35V	40V	43~58V	122W	91%
MDC-120-4550	4550mA	2730~4550mA	21~27V	31V	34~49V	123W	91%

1. For Type A only

2. Please refer to " LED Driving Output Mode " chart

3. Efficiency test condition please refer to "Efficiency v.s. Load "chart.

◆ Input Specification

Input Voltage Range (1)	90 ~ 305VAC ; 127VDC ~ 431VDC
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Input Frequency	47 ~ 63Hz
Power Factor (2) (Typ.)	PF>0.98 / 115VAC, PF>0.95 / 230VAC, PF>0.93 / 264VAC, @ full load
Total Harmonic Distortion	THD<10% @ 230VAC / 50Hz, @ full load
Input Current (Typ.)	MDC1200350/MDC1200500/MDC1200700/MDC1201050/MDC1201400 1.6A / 115Vac, 0.8A / 230Vac, 0.7A / 277Vac MDC1202100/MDC1202450/MDC1202800/MDC1203500/MDC1204550 1.3A / 115Vac, 0.65A / 230Vac, 0.55A / 277Vac
Inrush Current (Typ.)	75A peak @230VAC , Cold Start
Leakage Current	< 0.75mA / 277VAC

1. Please refer to "Input Voltage v.s. De-Rating Curve" chart
2. Please refer to "PFC v.s. Load Curve" chart

◆ Output Specification

Output Current Tolerance	± 5%
Ripple & Noise (1)	MDC1200350 2V p-p ; MDC1200500 1.5V p-p ; MDC1200700/MDC1201050/MDC1201400 1V p-p MDC1202100 / MDC1202450 / MDC1202800 / MDC1203500 / MDC1204550 0.2V p-p
Output Ripple Current	± 5%
Line Regulation	± 1%
Turn-on Time	< 1.5S @ 115VAC , 0.5S @ 230VAC, @ full load
Hold up Time	> 12ms / 115VAC, @ full load

1. Ripple current is measured at 20MHz of bandwidth. The measured terminal is paralleled with a 22uF E-cap and a 0.1uF Ceramic cap.

◆ General Specification

MTBF	220Khrs min. MIL-HDBK-217F(25°C)
Life Time	> 50,000hrs , 230VAC , 100% Load, @ T-Case 70°C
Dimension	209 * 63 * 40mm (L*W*H)
Weight	950g

◆ Protections

Short Circuit	Auto recovery
Over Voltage	Auto recovery
Over Temperature De-rated (1)	Over 70°C , automatic de-rate to 75% of rated load current
Over Temperature (1)	85°C±10°C , Auto recovery

1. Please refer to "Temperature v.s. De-Rating Curve" chart

◆ Environment, Safety and EMC

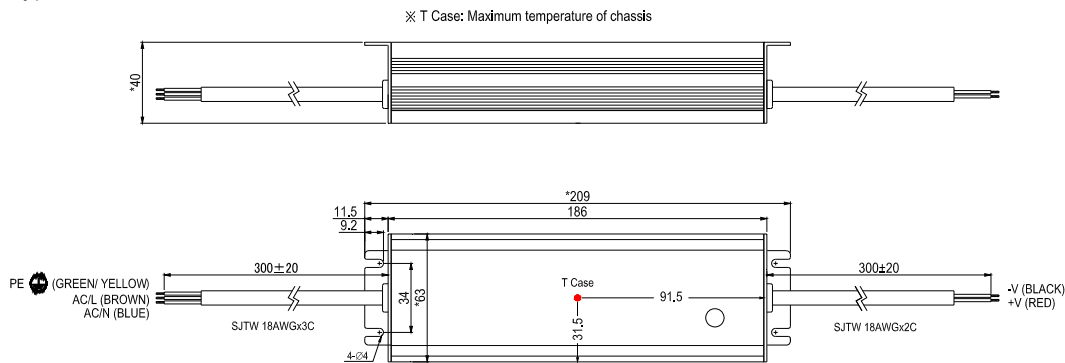
Operating Temperature & Humidity (1)	-40°C~70°C ; 10%~95% RH , Non-condensing
Storage Temperature & Humidity	-40°C~85°C ; 10%~95% RH
Vibration	IEC 68-2-2-1995/CNS-3629-C6016/GB/T 2423.10-2008 ; 5-500Hz , 1.0G , 1 Oct/min , 2cycle

	X, Y, Z, 75 minutes
Safety standards	UL 8750, EN 61347-1, EN 61347-2-13, GB 19510.1, GB 19510.14
EMI	EN 55015, EN 61000-3-2, EN 61000-3-3, FCC Part18; CNS 14115, GB 17743
EMS	EN 61547, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11, GB 17625.1
Lightning Surge	10KV(L/N-PE) & 5KV(L-N) /1.2*50μ sec
Hi-Pot	I/P-O/P: 3.75KVAC, I/P-PE: 2KVAC, O/P-PE: 0.5KVAC
Insulation Resistance	I/P-O/P, I/P-PE, O/P-PE: >100MΩ /500VDC/25°C/70%RH

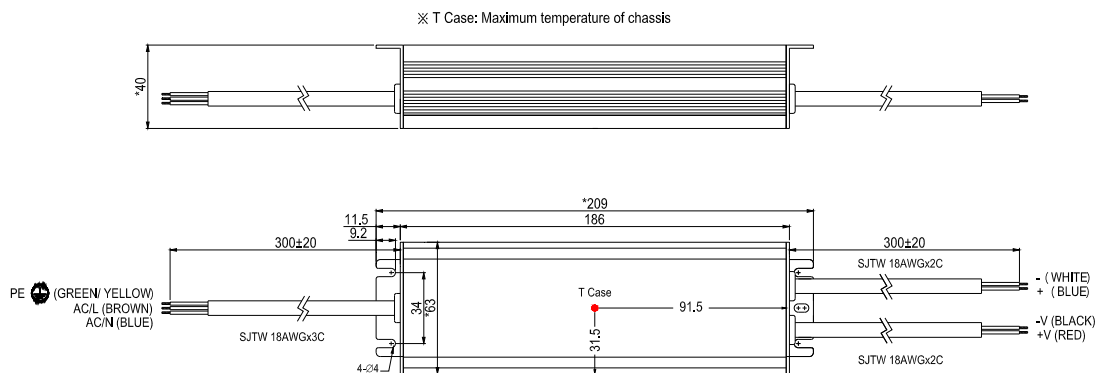
1. Please refer to "Temperature v.s. De-Rating Curve" chart

◆ Mechanical Drawing

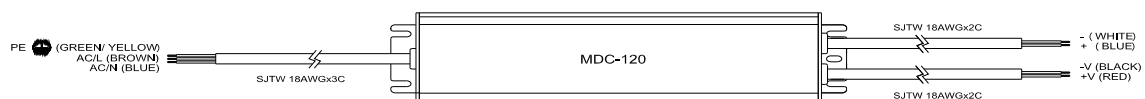
Type A



Type B



◆ Dimming Mode (Type B only)



* Do not put "-V (BLACK)" & "- (WHITE)" in connection

* Short ~100KΩ adjust output current (MDC1203500)

Resistor value	Short	10KΩ	20KΩ	30KΩ	40KΩ	50KΩ	60KΩ	70KΩ	80KΩ	90KΩ	100KΩ	OPEN
Rated Current rate	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95~105%

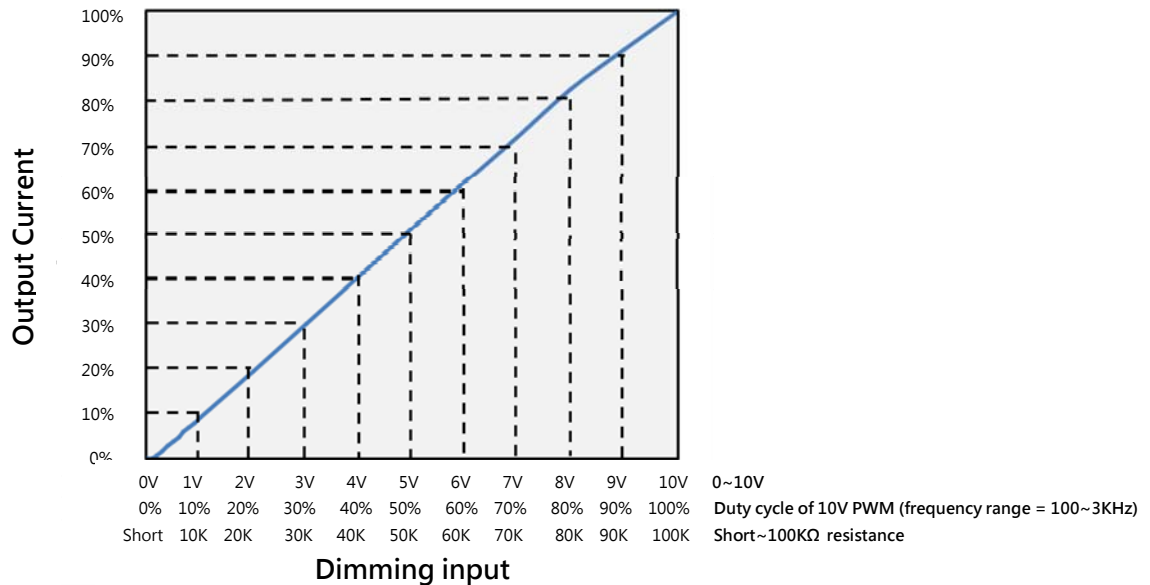
* 0~10Vdc adjust output current (MDC1203500)

Vdc	0V	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Rated Current rate	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95~105%

* 10V PWM adjust output current ; Frequency range 100Hz~3KHz (MDC1203500)

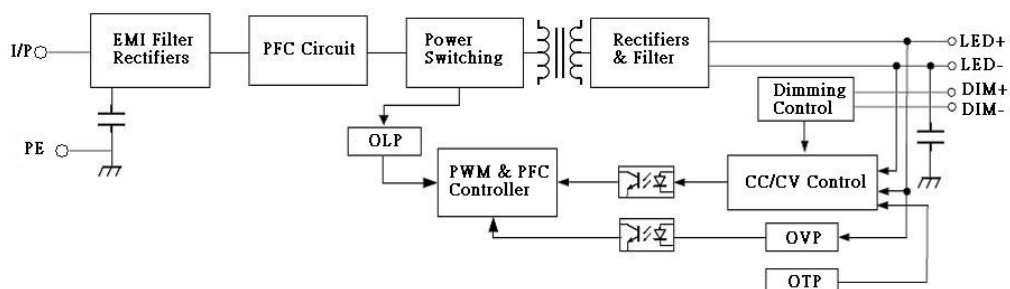
Duty	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Rated Current rate	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95~105%

◆ Dimming Curve (MDC1203500)



※Note : 1. The output current drops down to 0% when the dimming input is 1KΩ or 0.1Vdc, or 10V PWM signal with 0.1% duty cycle.
2. 0V ~ 1V dimming application please consult Darfon.

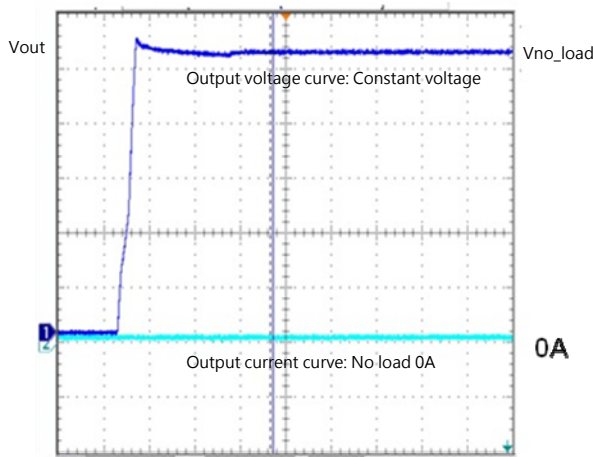
◆ Function Block



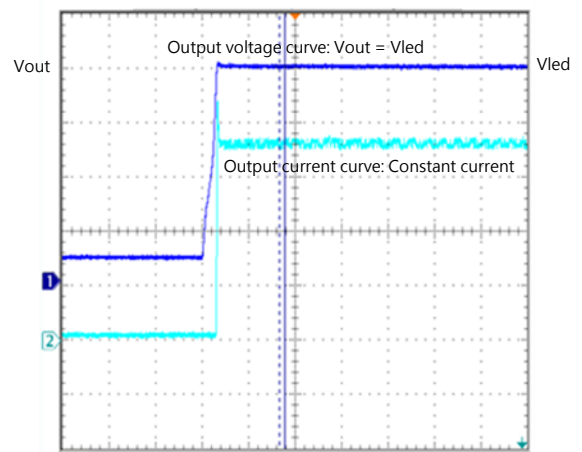
◆ LED Driving Output Mode

Darfon LED driver output characteristics with constant voltage mode (CV) & constant current mode (CC) to direct drive all kinds of LED lighting correctly

No load start up waveform:
Vout = Vno_Load (CV)



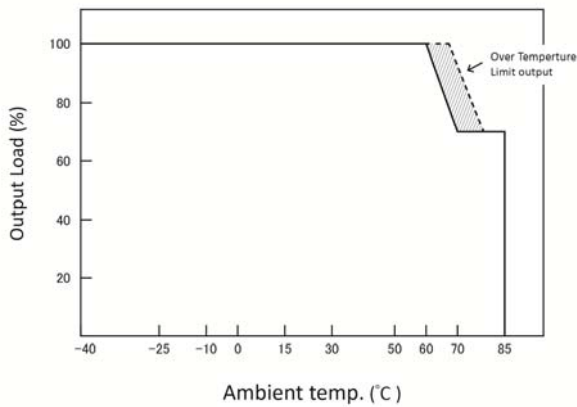
Connecting LED load start up waveform:
Vout = Vled ; Iout = Iset (CC)
(Iset = Default output current)



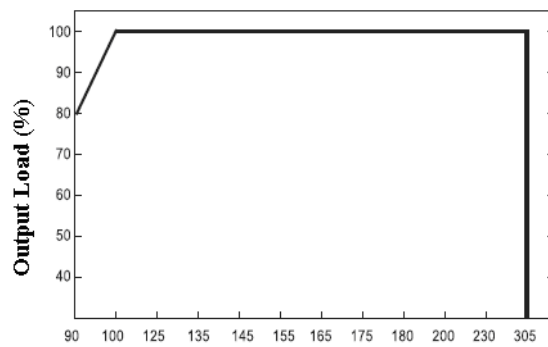
Welcome to consult Darfon to optimize your LED driving configuration!!

◆ Output Load De-Rating Curve

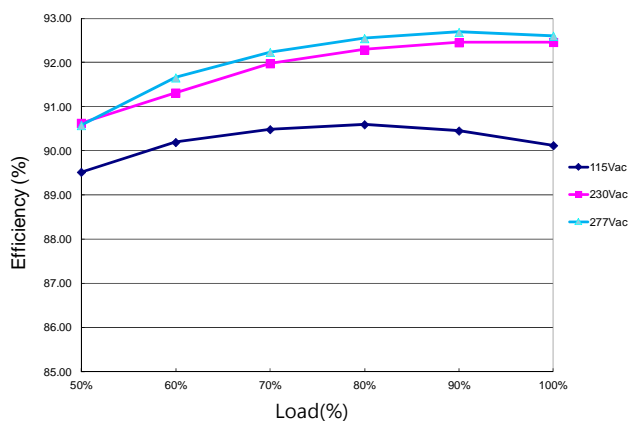
Temperature v.s. De-Rating Curve



Input Voltage v.s. De-Rating Curve



Efficiency v.s. Load(MDC-120-3500)



Input Voltage(V) 50~60Hz

Power Factor v.s. Load(MDC-120-3500)

