Features:

- Wide DC input voltage from DC20V ~ 48V.
- Reverse polarity and current limit protection.
- Fully isolated plastic case
- Built-in DALI interface
- Optional ZigBee 2007 PRO Wireless interface.
- Design for indoor LED lighting to meet IEC-62386-101 102 209 (DALI) international standard
- Up to 90%±1% efficiency at fully load.
- 1% to 100% linear dimming output without flickering.
- Optional PIR sensor module, to achieve auto-dimming function (3pin interface)
- 1 year warranty

Specification

Model		MDL-6CH-48-PDZFR	MDL-6CH-48-RDZFR	MDL-6CH-48-PDFR
Output	DC Voltage	20 ~ 48VDC		
	Constant current region [1]	Input value 85%~90%, the recommended value is 90%, 17VDC~18VDC/Vin=20VDC；40.8VDC~43.2VDC/Vin=48VDC		
	Rated current / Each Channel	800mA		
	Rated power / Each Channel	38.4W (When input voltage is 48VDC)		
	Ripple & Noise (max)[2]	10Vp-p		
	Current range [3]	800mA (Rated current per channel)		
	Minimum dimming level[4]	1%		
	Voltage tolerance [5]	±10%		
	Setup time [6]	100ms, 10ms (at full load)		
Input	Voltage range	20 ~ 48VDC		
	Efficiency (Typ.)	90%	90%	90%
	DC current (Typ.)	4.8A		
Protection	Reverse polarity	Internal protection diodes : The maximum input current of 2A		
Function	Dimming	Please see “Dimming Operation”		
	Sensor interface	PIR (3pin)	PIR+IR (7pin)	PIR (3pin)
Environment	Working temperature	-30 ~ +50℃		
	Working humidity	20~95% RH, non-condensing		
	Storage temp., humidity	-40 ~ +80℃，10 ~ 95% RH		
	Temp. coefficient	±0.03%/℃ (0 ~ 50℃)		
	Vibration	10 ~ 500 HZ, 2G 12min./1 cycle, period for 72 min. each along X, Y, Z axes		
Safety & EMC	DALI standards	IEC 62386-101, IEC 62386-102, IEC 62386-209		
	EMC emission	Compliance to EN55015, EN61000-3-2 Class C(≧40% rated power); EN61000-3-3; FCC part-15B		
	EMC immunity	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55024, EN61547 light industry level (surge 2KV); FCC part-15B		
Others	Dimension	213×66.75×36.45mm (L×W×H)		
Notes	1. Constant current operation region is designed between 80% ~ 100% rated output voltage. This is the suitable for LED related applications. Please contact to APAC for other applications. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12” twisted pair-wire terminated with 0.1uf & 47uf parallel capacitor. 3. The output current of each channel on DS model can be set by the DIP switch. 4. The output current is adjustable by DALI or ZigBee dimming command. 5. Tolerance：Includes set up tolerance, line regulation and load regulation. 6. Startup time is measured at cold start. Frequent ON/OFF may cause growth of setup time.			

Machine models Description

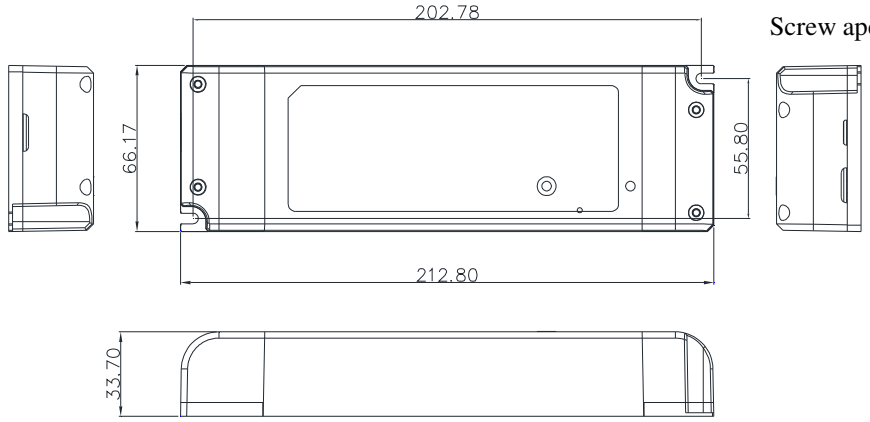
MDL - 2CH – 48 – P DZ FR

- Output Current Setting Mode : FR=Fixed Resistors DS=Dip Switch
- Dimming Interface : D=DALI DZ=DALI+ZigBee
- Sensor Interface : P=PIR R=PIR+IR
- Rated Voltage : 36=36V 48=48V
- Amount Of Output Channel : 2CH=2Channel 3CH=3Channel 4CH=4Channel 5CH=5Channel 6CH=6Channel
- Modes : MDL=Multi-Channel DC-DC Dimmable LED Driver

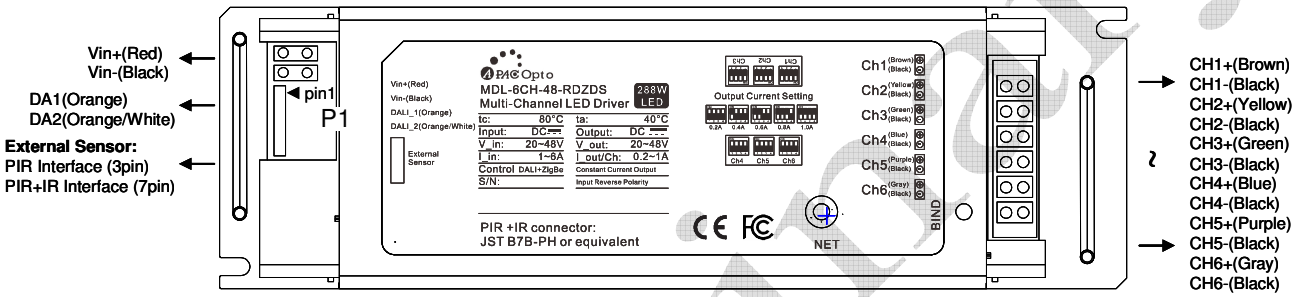
■ Mechanical Specification

Case No.MDL-6CH Unit : mm

Screw aperture : 4mm



■ Wiring Diagram



1. MDL-6CH series is outlet type models, all wiring and wiring color name as shown above.
2. The External Sensor can operated at 3pin (PIR Sensor) and 7pin (PIR+IR Sensor) mode. The pins functions are listed below:

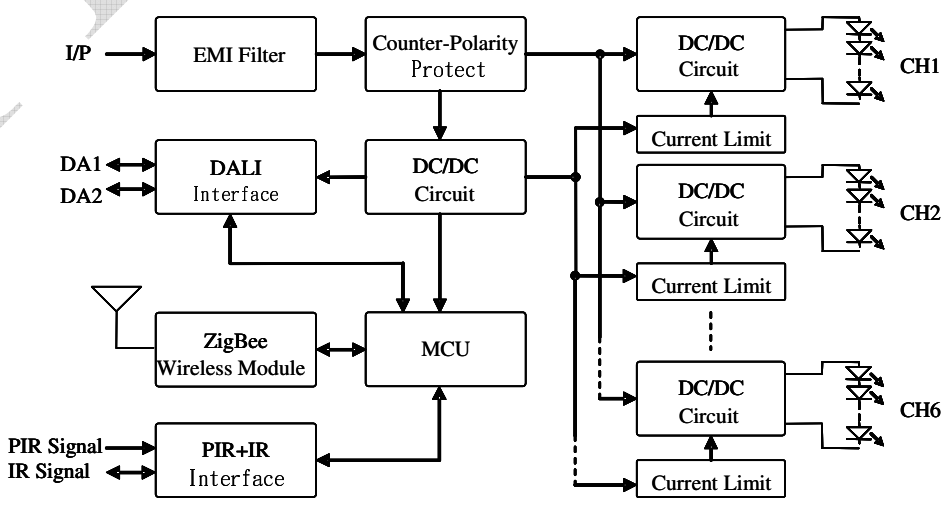
Pin Assignment (P1)-3pin mode

Pin No.	Assignment
1	PIR-
2	PIR Signal
3	PIR+

Pin Assignment (P1)-7pin mode

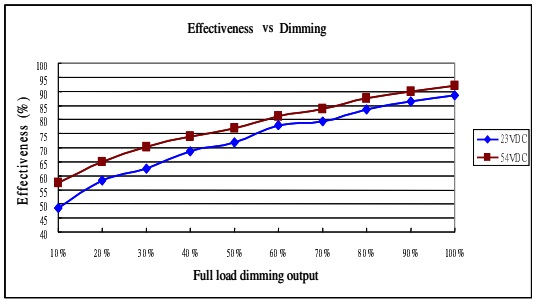
Pin No.	Assignment
1	CTL
2	TX
3	RX
4	NET
5	PIR-
6	PIR Signal
7	PIR+

■ Block Diagram



■ Dimming Characteristic Curve

Efficiency is calculated as follows : η =(CH1output power+・・・+CH6 output power)/ input power.



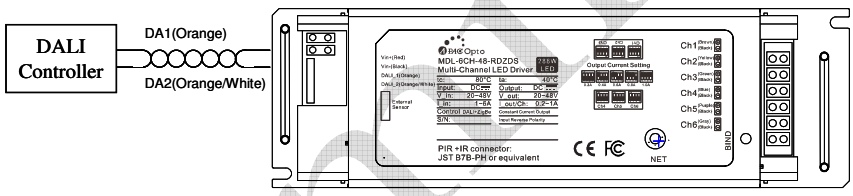
■ Dimming Operation

Dimming with output current table :

Dimming	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Output Current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

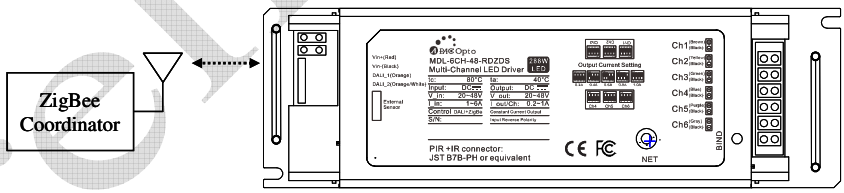
a. DALI Dimming Interface

- Maximum number of the DALI devices up to 64pcs for each loop. The schematic of MDL-2 communicated with DALI is shown below.
- Maximum DALI cable length is 300m (based on a 1.5mm^2 or 14AWG cable).



b. ZigBee Wireless Dimming Interface (DZ modes)

- ZigBee wireless dimming interface is met the ZigBee 2007 PRO standard.
- Push the “BIND” button to reconnect (or re-connect) to a new ZigBee coordinator.



c. PIR Sensor Dimming Interface

- The PIR sensor is an optional device and connects to the External Sensor connector.
- When the PIR sensor is connected to MDL-2, the MDL-2 driver will enable PIR auto-dimming and achieve automatic energy saving.

External Sensor:
. PIR Sensor (3pin)
. PIR+IR Sensor (7pin)