oc No.: MSSD-6181 A2

LED DRIVER SPECIFICATIONS

Part Description: Input: **20~60VDC**

Customer's Part Number:

MOONS' Part Number: **PR085N070DQ_DMX**

Customer:

Company:
Department:
Approved by:
Date:

EDITED: **DATE:**

CHECKED: **DATE:**

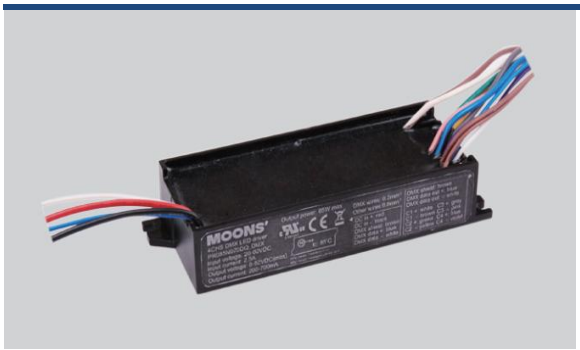
APPROVED: **DATE:**

SHANGHAI MOONS' AUTOMATION CONTROL Co., LTD.

REVISIONS:

Rev.	Date	Descriptions	ECO No.	Edited	Checked	Approved
A0	2016-03-30	PR085N070DQ_DMX	New release	Army		
A1	2016-04-15		ECO16-1017 DE	Army		
A2	2018-11-11	Default driver current set to 350mA	ECO18-1935 DE	Eason		

PR085N070DQ_DMX Intelligent DMX/RDM DC-DC LED Driver



■ Features

- ◆ Input voltage: 20-60Vdc
- ◆ DMX/RDM Constant Current Driver.
- ◆ High efficiency: up to 94% Typ.
- ◆ Waterproof (IP66)
- ◆ Power output 85W max （20V>Vin-Vout>5V)
- ◆Constant Current / DMX Dimming
- ◆Output current can be set from 200~700mA
- ◆Protection: SCP, OTP,OPP
- ◆Life time is 80000 hours（ Case temperature 75℃）
- ◆According with UL、CE、ENEC

■ Specification

Model (PR085N070DQ_DMX)						
Electrical Specification：	Maximum input voltage range			20-60	Vdc	
	Output voltage range			8-52	Vdc	
	Output Current			200-700	mA	
	Maxium output power			85	W	(5V<Vin-Vo<20V)
	Effiency typical value（60Vdc/50W,full loaded①）			94-96	%	
	Start-up time			<0.5	S	
	The maximum setup current precision			±5	%	
	Ripple current (full loaded)			200	mA	
	Dimming range			0.1-100	%	
	Ambient Temperature			-35…50	℃	

Type	Output Current（every channel）	Output Voltage（every channel）	Output Power（tatal）	Input Voltage（max）	Efficiency	Ambient Temperature
PR085N070DQ_DMX	200mA	52V	41.60W	60V	94.04%	25℃
	250mA	52V	52.00W	60V	94.06%	25℃
	300mA	52V	62.40W	60V	95.12%	25℃
	350mA	52V	72.80W	60V	95.48%	25℃
	400mA	52V	83.20W	60V	95.23%	25℃
	450mA	47V	84.60W	60V	94.98%	25℃
	500mA	42V	84.00W	60V	94.73%	25℃
	550mA	38V	83.60W	58V	94.48%	25℃
	600mA	35V	84.00W	55V	94.03%	25℃
	650mA	32V	83.20W	52V	93.68%	25℃
	700mA	30V	84.00W	50V	93.13%	25℃

Output	Output voltage range (V)	8-52
	Output Current Range(mA)	200-700
	Rated Power (W)	85(max)
	Ripple Current(（Pk-AV）/AV	10% max@ output 350~700mA CCM current conditions
	Current Tolerance②	±5%
	Line Regulation	±1%
	Load Regulation	±3%
	Setup, Rise Time	＜1.0s measured at 60Vdc input at 80%～100% load conditions
Dimming Control	DIMMING FUNCTION	DMX Dimming / 0.1%Io~100%Io ref. Dimming module diagram and dimming cruve
Protection	Short Circuit protection	Power supply active control stop output, power supply shall be self-recovery when the fault is removed.
	Over Temperature protection	When the temperature of the inside PCB exceeds 120℃ ±10%, output current will be decreased to 50%. And it can not recover until the temperture drops to 70℃±10%.
	Over power protection	1.Total power exceeds 95W, the output current of each channel will decrease to 50% about 20 seconds， and then increased to 85W gradually. 2.Total power exceeds 105W, the output current of each channel will decrease to 50% immediately，and then increased to 85W gradually.
Environment	Operating Temp.	-35~+50℃
	Operating Humidity	20~95%RH, non-condensing
	Storage Temp., Humidity	-40~+85℃, 10-95%RH
	Vibration	10~55Hz, 1~2G 12min/cycle, period for 72min each along X、Y、Z axes
EMC	EMC Emission	EN55015/FCC Part 15 Class B(with lamps and lanterns）
	EMC Immunity	EN61547（Surge DM 0.5KV）
Others	Life time	80000hours@Tc =75℃@ 60Vdc input, full load
	MTBF	250,000 hours, measured at full load, 25℃ ambient temperature MIL-HDBK-217F(25℃)
	Dimension	113x40x22 mm (LxWxH)
	Weight	180g

Note.1: 52V*410mA *4CHS tatal output power is 85W
Note.2: At Rated Current ,Includes set up tolerance, line regulation and load regulation.

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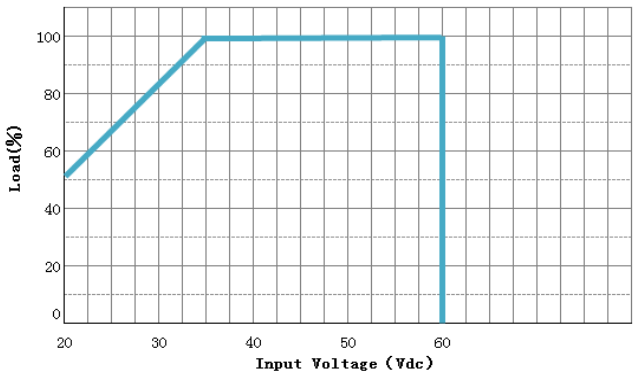
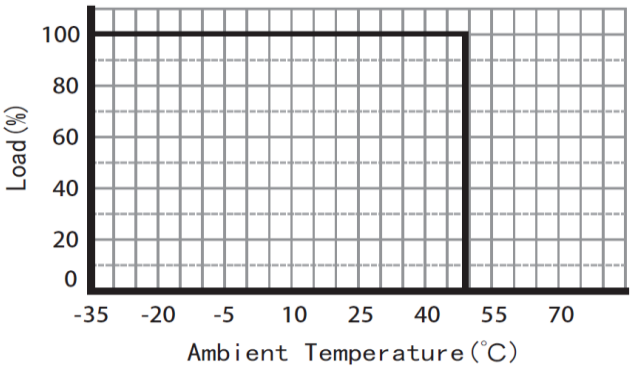
■ Curve

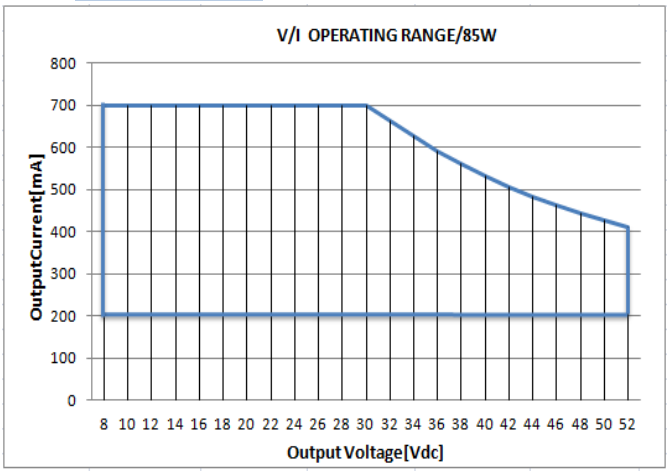
Derating Curve



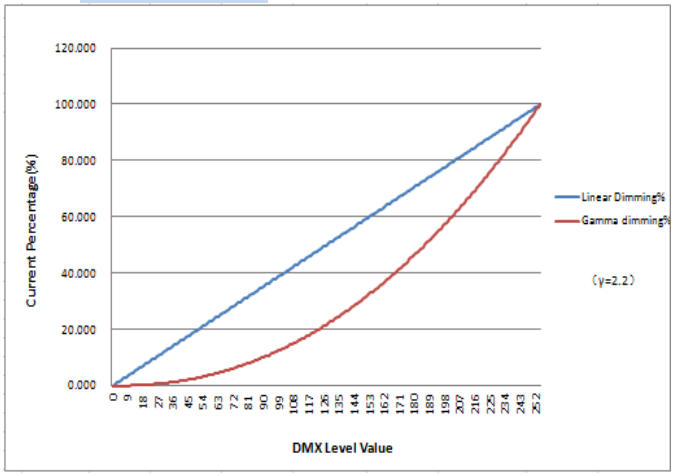
Derating Curve



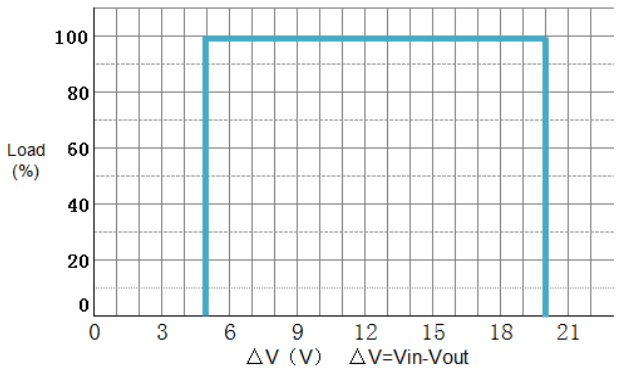
V/I Curve



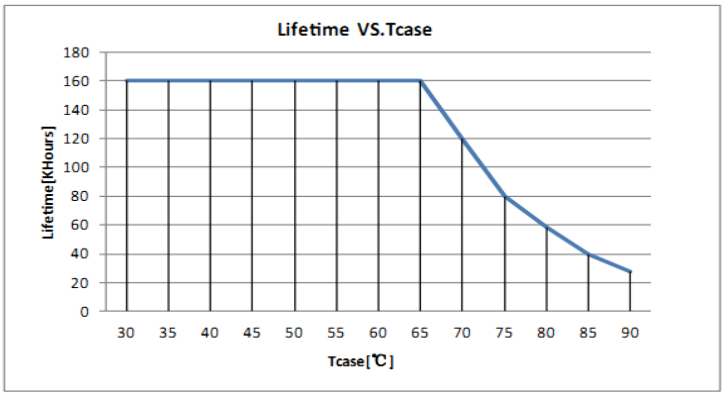
Io VS DMX dim



△V Curve



Lifetime VS Tambier



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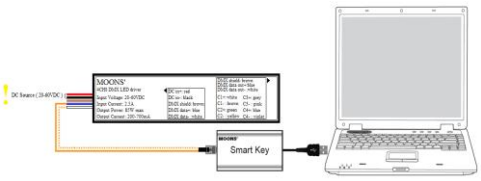
■ Application of introduction

1.Field Programmable Topology



- **Current step setting**

With the help of our Smartkey and Smart key software, you can set the current of the driver, each step is 1 mA. Please refer to specification of Smartkey.

- **Dimming curve**

Dimming curve contains Logarithm curve and linear curve,Can be selected according to the needs of the application.

- **Minmum dimming level**

when using DMX dimming funtion , can set the minimum dimming output current.

- **Address and channel**

This funtion of Smart key software is used in the DMX driver, this DMX driver does require this function.

- **NTC throttling temperature**

You can connect to the driver NTC1、NTC2、NTC3、NTC4 interface with a thermistor①. When the temperature exceeds the point which can be set by Smartkey, the output current can be decreased automatically, but not less than 25%.

- **Maximum**

when using DMX dimming funtion , can set the maximum dimming output current.

- **The button of read and change**

If you want to read the driver settings, press the read button. When setting the parameters of Smart key software, press the change button to save the parameters to the driver.

- **Online Update**

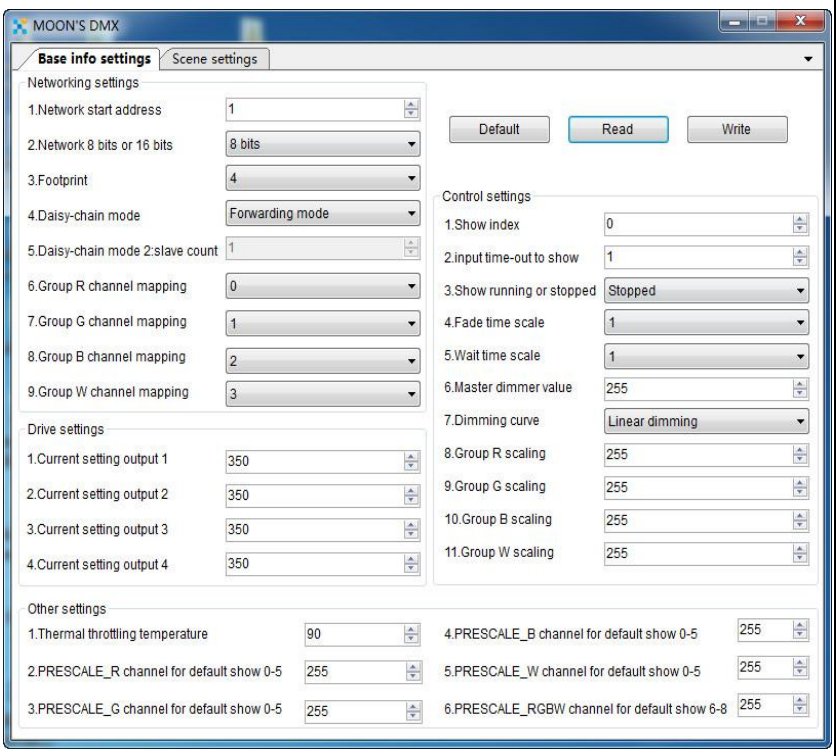
Use smartkey to connect PC and the driver to update the firmware.

①Recommended manufacture and type of the

Manufacture: MURATA Type:NCP21WB473J03RA

Manufacture: VISHAY Type:NTCS0805e4473JXT

2. Smart key software interface



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■ Application of introduction

• Supply Voltage

- DC constant voltage input so that the driver can be used with different numbers of LEDs and different sizes of product by scaling the power.voltage and dimensions of a separate DC power supply.
- 60VDC Input max.
- Protection from damage by reverse polarity of supply voltage.
- Protection from damage if supply voltage is switched.(i.e. not smooth ramp up of supply voltage as typical from power supply switch on)
- Protection from damage by overvoltage transients and spikes to 0.5KV.

• Driver Outputs

- 4 channels
- 4 channels current source
- Fully adjustable driver current between 200mA and 700mA(via programming interface)
- Output current tolerance ±5% at max output 700 mA;Others' are reference to DALI protocol standard.
- It is deirable to have the ability to adjust each channels current sepsrately(set via programming interface)
- Default driver current set to 350mA
- Default driver current set to linear dimming curve
- Difference between input and output voltage must be no more than 4V at 200mA~350mA and 5V at 200mA~700mA(LEDs total Vf+ cable losses + difference is the minimun PSU supply voltage to maintain stability)
- Short circuit protection of outputs
- Channels may be left open circuit when unused
- Total driver output power is 85 W
- Each channel must be able to power 700mA at full voltage until full power of the driver is reached

• DMX Interface

- DMX 512-A interface protocol (E1.11-2004).
- DMX in with RDM (E1.20-20XX).
- RDM protocol to be implemented for addressing as a minimun.
- Data output to slave driver,1-25 slaves,proprietary protocols are acceptable.
- Slave driver to be set via programming interface if manual setting is required.
- DMX data shield to be connected to 0V power supply input via a 100 ohm current limiting resistor only.
- On power up the output channels will remain in an off state by default(can be changed via programming interface).
- On power up with no DMX signal the output channels can be set to an adjustable level from 0-100%,DMX signal should override this (set via programming interface).
- On loss of DMX data the output channels will remain in the state of the last DMX command.
- It must be possible to set the footprint of the driver from 1-4 and map anychannels to these address positions(adjustable via programming inte
- RDM Identifier is 0x5348.
- Serial number range to be agreed with Schreder(last production started at 1 million).

• Programming Interface

- A software interface is required to allow programming of driver variables as below ,this should be via the DMX interface so it can be programmed after installation in the product.
- Start address.
- Default forwarding mode.
- Footprint and channel mapping.
- Master or Slave driver .
- Power up off/on and level adjustment.
- Logarithm or linear dimming curve.
- Show programming .
- fast/slow display adjustment .
- Driver current .

• Dimming performance

- The driver is predominately used in products that project light onto surfaces and not for direct viewing of the LED's.
- The quality of dimming change at very low levels is not of high importance.
- When fixed at any dimmed level flicher should not be seen.
- Dimming curve should default to Linear but be adjustable to Logarithmic via programming interface.

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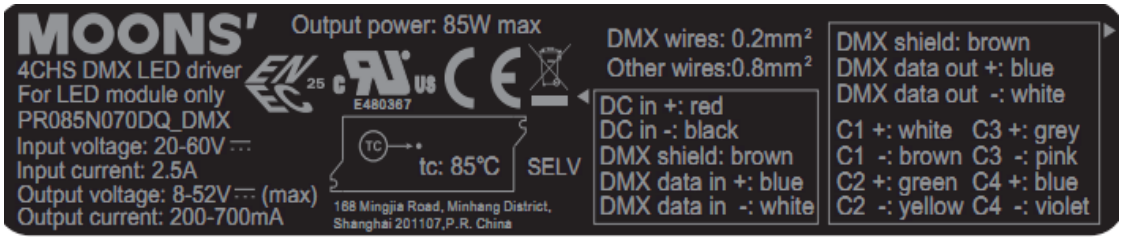
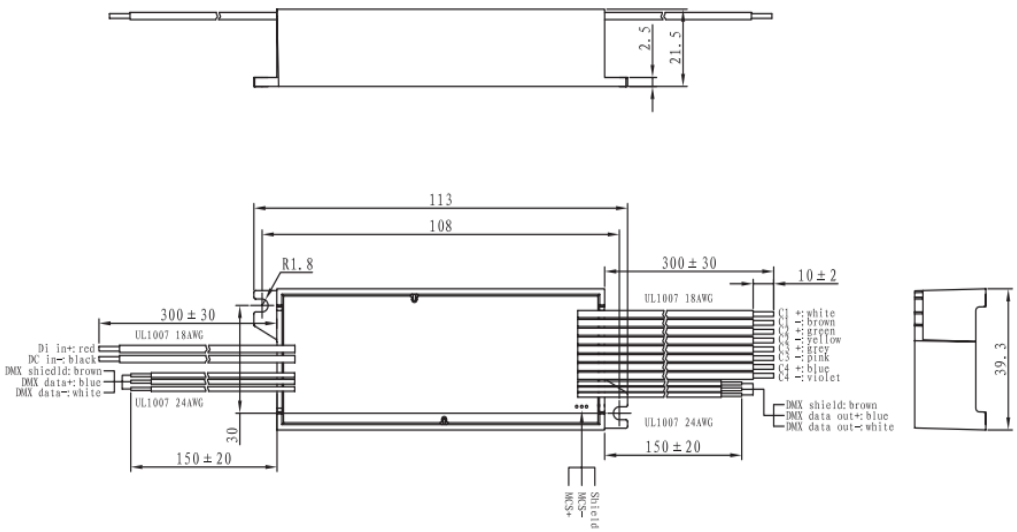
■ Label



■ Mechanical Specification

Dimensions(Unit:mm)



■ Physical figure

RoHS Compliance:
Our products comply with the European Directive 2002/95/EC, calling for the elimination of lead and other hazardous substances from electronic products.

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