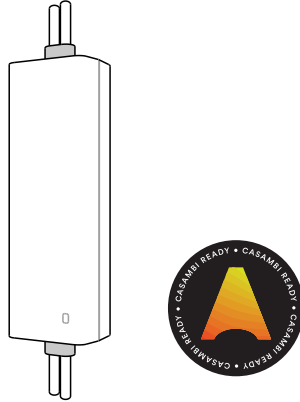# Rayrun

Smart PLC Master-Slave
Master LED Driver

MD400CB (-S)

■ Features

- DC 48V PLC communication
- Flexible master-slave configuration
- Slave driver feature programmable
- Slave driver groupable
- Single color / CCT function
- Waterproof option

■ Introduction

MD400CB is master driver to work with the compatible slave drivers for LED lighting application. The power input is DC 48V, it can receive Casambi command and output DC 48V power with digital power line communication (PLC) commands to drive and control slave drivers. The slave driver can drive LED lights with the 48V power and PLC commands from this model.

Besides dimming and color adjusting, the LED rated current, fading time, current trim level, dimming curve and group features are adjustable from the Casambi app. The master driver will transfer these commands to slave drivers via the power cable.

■ Wiring Diagram
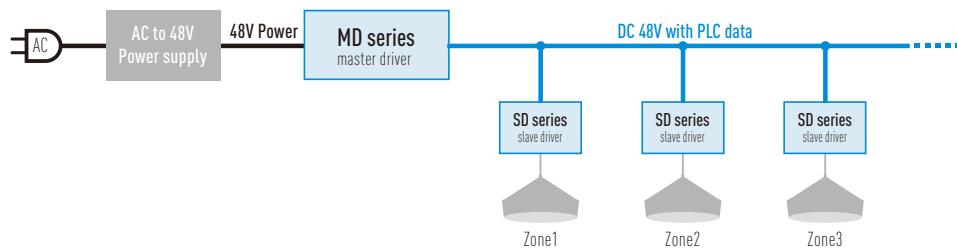
■ Installation

1. Select proper slave driver model and amount, make sure the total power of slave drivers are below the master's rated power.

2. Make sure the slave driver's output current match the LED lights and then connect the slave drivers' output to LED lights.

3. Connect the master driver's output cable to all slave drivers' power input.

4. Connect the power input of master driver to 48V DC power.

CAUTION:
Do not connect any cable to AC power!
Only use with compatible slave drivers!

■ Change model profile

This master driver can be configured as single color, CCT or single color/CCT with zone model. To change the model profile, please make sure current item is unpaired and powered on. On the Casambi app, click on the product icon and select 'Change profile' option on the pop up menu (Fig.1). The model can be changed in the list (Fig.2).
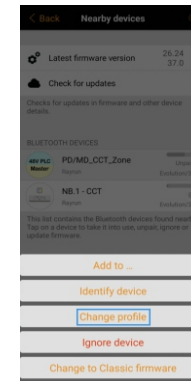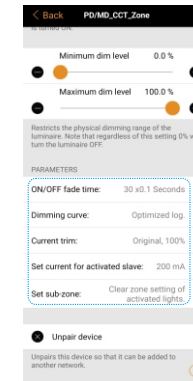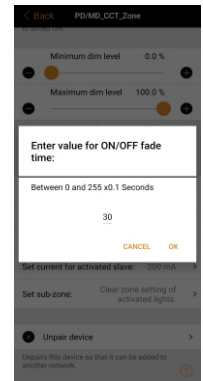

| Fig.1 | Fig.2 | Fig.3 | Fig.4 |

■ ON/OFF fade time adjust

The on/off fade time of slave driver can be adjusted on the setting page. Please open the setting page of MD400CB on the app, find the 'ON/OFF fade time' in PARAMETERS section, and tap this item (Fig.3). The fade time can be adjusted in range of 0-25.5 seconds. Please enter value in range of 0-255 with the step of 0.1 seconds (Fig.4).

For example, enter '25' to set the fade time to 2.5 seconds.

■ Change output current of slave driver

The output current of slave driver connected to this model can be changed in range of 100mA-1400mA from the app. User can setup the activated slave driver's current by type in value. The activated slave driver will accept the current value in it's rated range.

To change the slave driver's output current, please operate with following steps:

1. Open the setting page of MD400CB on the app, find the 'Set current for activated slave' in PARAMETERS section, and tap this item (Fig.3).

2. Type in the desired current value for the slave driver in the dialog box. (Fig.4)

3. Connect power of the target slave driver to this master driver, and tap OK within 10 seconds. If the slave driver was already powered on, please cut it's power and power on again to activate it.

After this operation, the current value will be set to the slave driver. Please be noted, only activated slave driver will accept the valid current value within it's rated current range.
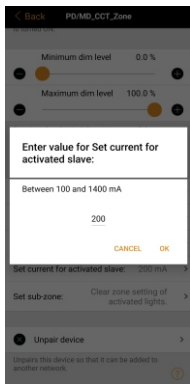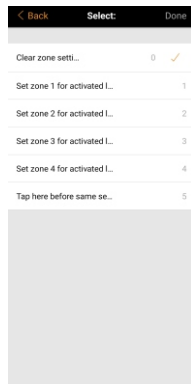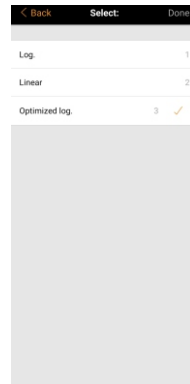
Fig.5

Fig.6

Fig.7

Fig.8

■ Program the slave driver zone

With zone supported profile of this model, the connected slave drivers can be programmed to 4 zones, and user can adjust the brightness of each zone individually. To program the slave driver's zone, please operate with following steps:

1. Open the setting page of MD400CB on the app, find the 'Set sub-zone' in PARAMETERS section, and tap this item (Fig.3).

2. Connect power of the slave driver to this master driver. If the slave driver was already powered on, please cut it's power and power on again to activate it.

3. Select the desired zone setting of the target slave driver and tap 'Done' from the menu(Fig.6). If slave drivers need to be programmed with same zone feature, please select item 5 'Tap here before same setting' before making the same setting.

■ Output current trimming

To fine tune the slave driver's LED driving current, please open the setting page of MD400CB on the app, find the 'Current trim' in PARAMETERS section, and tap this item (Fig.3). The output current can be trimmed from 100% to 50% of the rated current at 5% step (Fig.7).

The current trim setting is a global parameter, it will effect on all connected slave drivers once operated.

■ Change dimming curve

The dimming curve defines the trend of light output strength versus brightness level (0-100%) showing on the app. To change the slave driver's dimming curve, please open the setting page of MD400CB on the app, find the 'Dimming curve' in PARAMETERS section, and tap this item (Fig.3), the dimming curve can be changed from Logarithm, Linear and Optimized logarithm (Fig.8).

The Linear curve will result even light output power versus the brightness level set on app, but for human eye sensing, the light output change is relative too small at high brightness level.

The Logarithm curve will result strong brightness change at high brightness level and this will make the brightness adjustment is more visible and logical for human eye.

The Optimized logarithm curve is between linear and logarithm, results an balanced brightness adjustment effect.

■ Specification

Model	MD400CB	MD400CB-S
Function	Single Color / CCT with zone option	
Rated max power	400W	
Input power	DC 48V	
Output voltage	DC 48V with PLC data	
LED driving current setting	100-1400mA with 1mA step	
Fade time setting	0-25.5 seconds with 0.1 second step	
Output current trim setting	100% to 50% with 5% step	
Dimming curve setting	Linear, Logarithm, Optimized logarithm	
Standby power	<0.5W	
Working temperature	-20~50°C	
Water proof	IP63	IP68
Dimension	81x26x20mm(cable excluded)	

智能PLC主从驱动

可编程LED驱动主机

MD400CB(-S)

■ 特点

- 直流48V PLC通讯
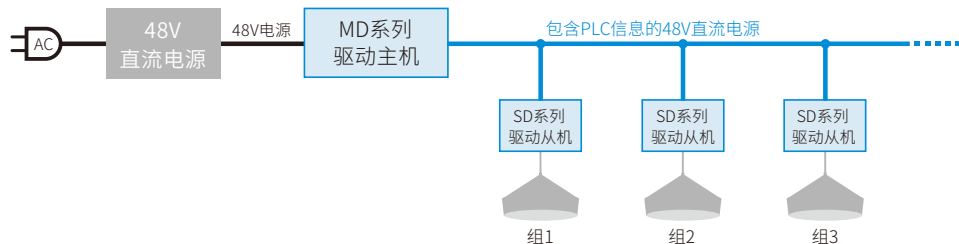- 灵活的主从配置
- 多参数可编程
- 从机可分组
- 单色/CCT二合一机型
- 可选防水功能

■ 简介

　　本机为用于LED智能照明的驱动主机,可以与对应的驱动从机通过电源线载波通信(PLC)的方式实现主从式的智能照明功能。本机输入电源为直流48V,可以接收Casambi的智能控制指令,并输出包含PLC信息的48V电源。本机在给驱动从机供电的同时还给从机发送PLC控制信息,驱动从机将从主机获取电源,并在解码电源中包含的PLC控制信息后驱动LED灯具。

　　通过Casambi app,用户可以进行调光调色操作,还可以调节从机及相应灯具的分组、驱动电流、渐变时间、电流微调和调光曲线,实现各类智能照明控制功能。

■ 接线图

AC — 48V 直流电源 — 48V电源 — MD系列 驱动主机 — 包含PLC信息的48V直流电源 — SD系列 驱动从机(组1) / SD系列 驱动从机(组2) / SD系列 驱动从机(组3)

■ 安装方法

　　1、选择合适的驱动从机型号和数量,确保从机总功率低于主机的额定功率。

　　2.确保从机的输出电流和LED灯具匹配,然后将从机的输出连接到LED灯具。

　　3.将驱动主机的输出电缆连接到所有驱动从机的电源输入。

　　4.将驱动主机的电源输入连接到48V直流电源。

　　警告:

　　请勿将本机连接到交流电源!

　　请勿将本机与不兼容的驱动连接!

■ 更改机型配置

　　本机可以在单色、CCT或者带分组功能的单色/CCT机型中进行切换。要更改机型配置,请保持本机未配置工程并处于通电状态,在Casambi app中,单击本机图标并在弹出的菜单中选择"更改配置文件"选项(图1)。可以在弹出的列表中切换本机的工作模式(图2)。
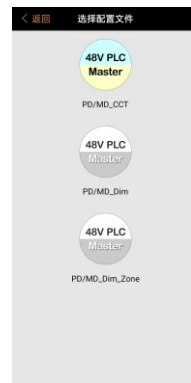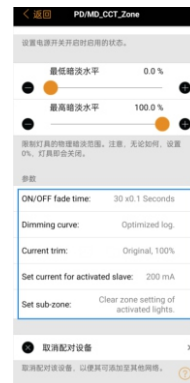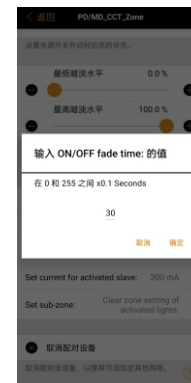
| 图1 | 图2 | 图3 | 图4 |

■ 开/关机渐变时间调整

　　要调节开/关机渐变时间,请先在app上添加本机,然后双击本机图标打开设置页面。在设置页面,请点击参数部分中的"ON/OFF fade time"项(图3)。渐变时间的可调范围是0到25.5秒,用户可以按0.1秒的步长,从0到255的范围内输入数值进行调整(图4)。

　　例如,输入25就表示将渐变时间调整为2.5秒。

■ 设置从机输出电流

连接到主机的从机输出电流调整范围为100-1400mA,可以在Casambi app中进行设置。用户可以通过输入数值来设置已激活的从机电流,已激活的从机驱动会接受其额定电流范围内的电流值。

要改变从机驱动的输出电流,请按以下步骤进行操作:

1.在app上打开本机的设置页面,在参数部分中找到并点击"Set current for activated slave"项(图3)。

2.在对话框中输入想要设置的从机输出电流(图5)。

3.将目标从机电源连接到本机输出,并在10秒内点击"确定"。如果从机已经通电,请先断开电源然后再通电来激活从机。

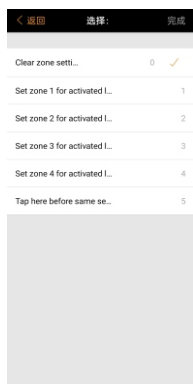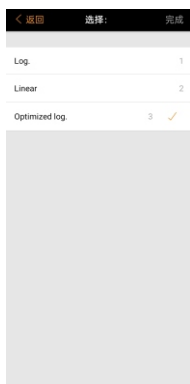在这些操作后,驱动从机的电流将被设置成当前输入的电流值。请注意,输入的电流值只有在已激活从机的额定电流范围内才能生效。

图5　　　　图6　　　　图7　　　　图8

■ 对从机分组

在支持分组功能的机型配置下,驱动从机可以被分成最多4个组,用户可以单独调整每组的亮度。要将从机进行分组,请按照以下步骤进行操作:

1.在app上打开本机的设置页面,在参数部分中找到并点击"Set sub-zone"项(图3)。

2.将目标从机电源连接到本机输出。如果从机已经通电,请先断开电源然后再通电来激活从机。

3.选择目标从机想要设置的分组,然后点击页面上的"完成"(图6)。如果想要重复进行同一组的分组操作,在进行上面的操作前,请先选择第5项"Tap here before same setting"再选择要设置的分组。

■ 电流微调

要微调从驱动的输出电流,请先在app上打开本机的设置页面,在参数部分中找到并点击"Current trim"项(图3)。输出电流可以按5%的步长,从额定电流的100%到50%进行微调(图7)。

电流微调是一个全局性参数,其操作会在所有连接的从机上生效。

■ 更改调光曲线

要更改调光曲线,请先在app上打开本机的设置页面,在参数部分中找到并点击"Dimming curve"项(图3)。用户可以选择Log.、Linear或者Optimized log.调光曲线进行更改(图8)。

Linear代表线性调光曲线,可以使灯光的输出功率与app设置的亮度水平相匹配,但在高亮度水平下,人眼能感知的亮度变化不明显。

Log.代表对数调光曲线,可以在整个亮度范围内产生较明显的亮度变化,使人眼能够明显感知亮度的调整。

Optimized log.为优化对数调光曲线,它介于线性与对数之间,实现相对均衡的亮度调节效果。

■ 规格表

型号	MD400CB	MD400CB-S
功能	带分组功能的单色/冷暖白驱动主机	
额定最大功率	400W	
输入电压	DC 48V	
输出电压	带有PLC命令的48V直流电	
LED从机驱动输出电流	100-1400mA可调,步长为1mA	
渐变时间	0-25.5秒可调,步长为0.1秒	
电流微调	100%到50%,步长为5%	
调光曲线	线性曲线、对数曲线、优化对数曲线	
待机功耗	<0.5W	
工作温度	-20~50℃	
防水等级	IP63	IP68
尺寸	81x26x20m(不包括电缆)	