

Introduction

Meso 50W LED Driver is an intelligent and flexible device, designed for fast and easy configuration.

This Application Note “AN1 Meso50 Wiring Diagram” provides technical information for the wiring connections of the Meso 50W LED Driver and mechanical fixing (all models).

Meso 50W LED Driver has a wide voltage range input connector, a push/step dimmer connector and a multifunction output connector for LED connections, LED thermal protection (NTC) and dimming.

It has also an additional connector for DALI communication (DALI versions) or for the current setting via resistor (Analog versions).

This document describes how to connect the Meso 50W LED Driver (AC Input, Constant Current output Channel, Communication and Controls).

Connectors Overview

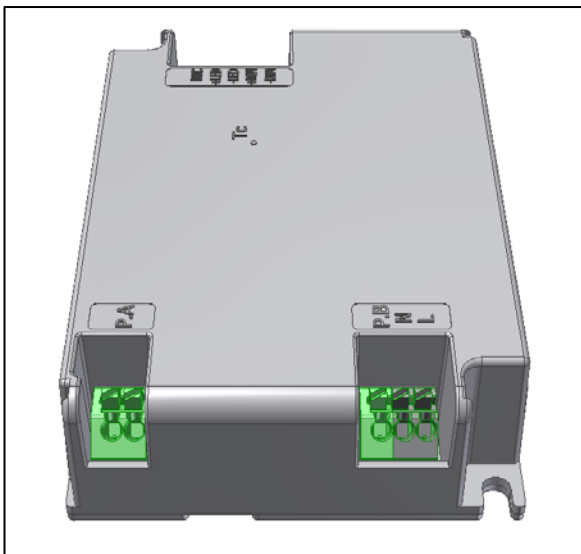


Figure 1: Input, Push/Step and DALI/P-res

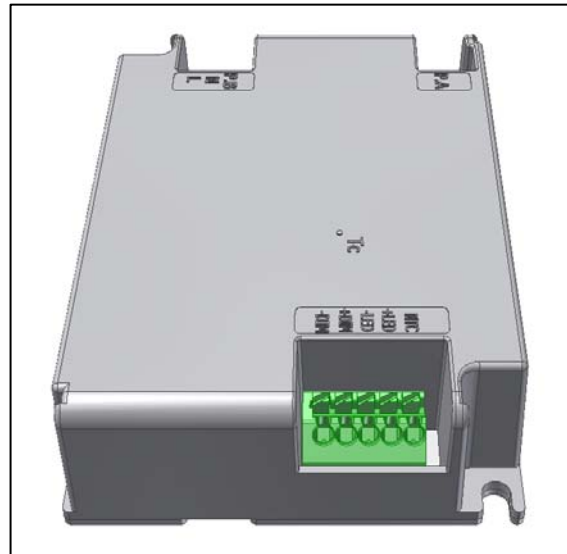


Figure 2: LEDs, NTC, 0-10V / 1-10V Dimming

AC Input Connection

Meso 50W LED Driver can be powered by a wide voltage range AC Input from 120 to 277Vac (**Figure 3**).

Consult the product DataSheet “DS1_Meso50W” for Input Voltages and Current ratings.

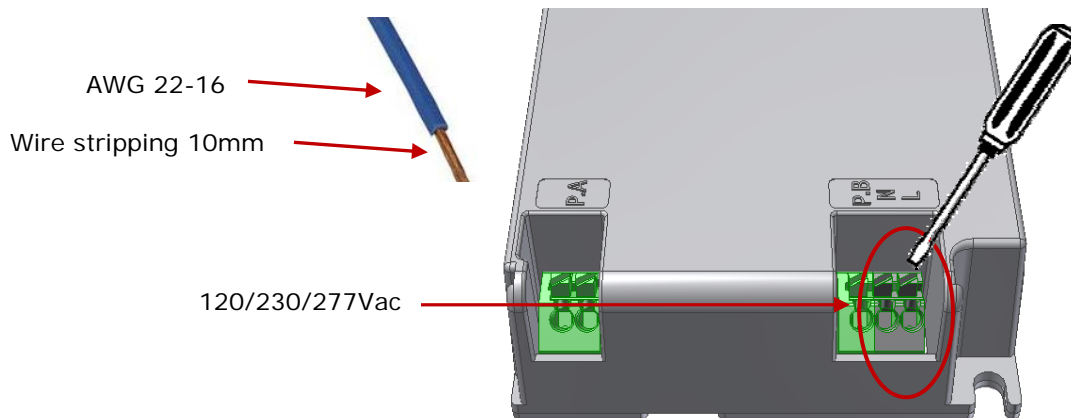


Figure 3: AC input connectors

| Connector | Pin name | Description |
|------------------|----------|------------------------------------|
| 2 pins connector | L | Line input (+Vin for DC models) |
| | N | Neutral input (-Vin for DC models) |

Table 1: Meso 50W input connections Table



CAUTION: Electrical shock risks.

Wrong device installation can cause serious injuries to the user, and irreparable damages to the device and to the connected LED lamp.

The driver may be installed only by qualified operators.

Eu and RoW

ROAL Electronics S.p.A
Via Jesina 56/A
60022 – Castelfidardo (AN) - Italy
Tel:+39 071 721461
Fax:+ 39 071 72146 480

www.roallivingenergy.com

North America

ROAL Electronics USA, Inc.
701, Main St. Suite 405
Stroudsburg, PA18360
Phone: + 1 570 421 5750
Fax: +1 570 421 5687

Output and Driving Connection

Meso 50W LED Driver versatility permits the user to approach different driving solutions as shown below (see **Figure 4**). Consult the DataSheet “DS1_Meso50W” for Output Voltages and Current ratings.

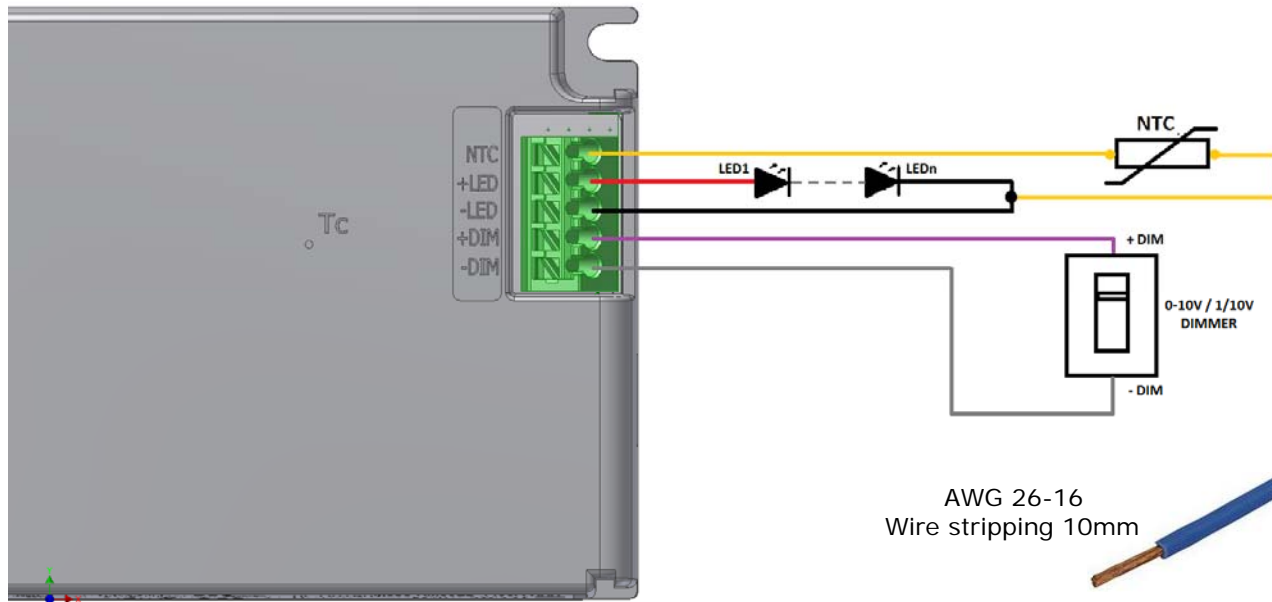


Figure 4: Meso 50W Output and Control Connections

| Connector | Pin name | Description |
|------------------|----------|-------------------------|
| 5 pins connector | NTC | Thermal sense input |
| | +LED | LEDs positive output |
| | -LED | LEDs negative output |
| | +DIM | 1/10V dimming input (+) |
| | -DIM | 1/10V dimming input (-) |

Table 2: Meso 50W output connections Table

Eu and RoW

ROAL Electronics S.p.A
Via Jesina 56/A
60022 – Castelfidardo (AN) - Italy
Tel:+39 071 721461
Fax:+ 39 071 72146 480

www.roallivingenergy.com

North America

ROAL Electronics USA, Inc.
701, Main St. Suite 405
Stroudsburg, PA18360
Phone: + 1 570 421 5750
Fax: +1 570 421 5687

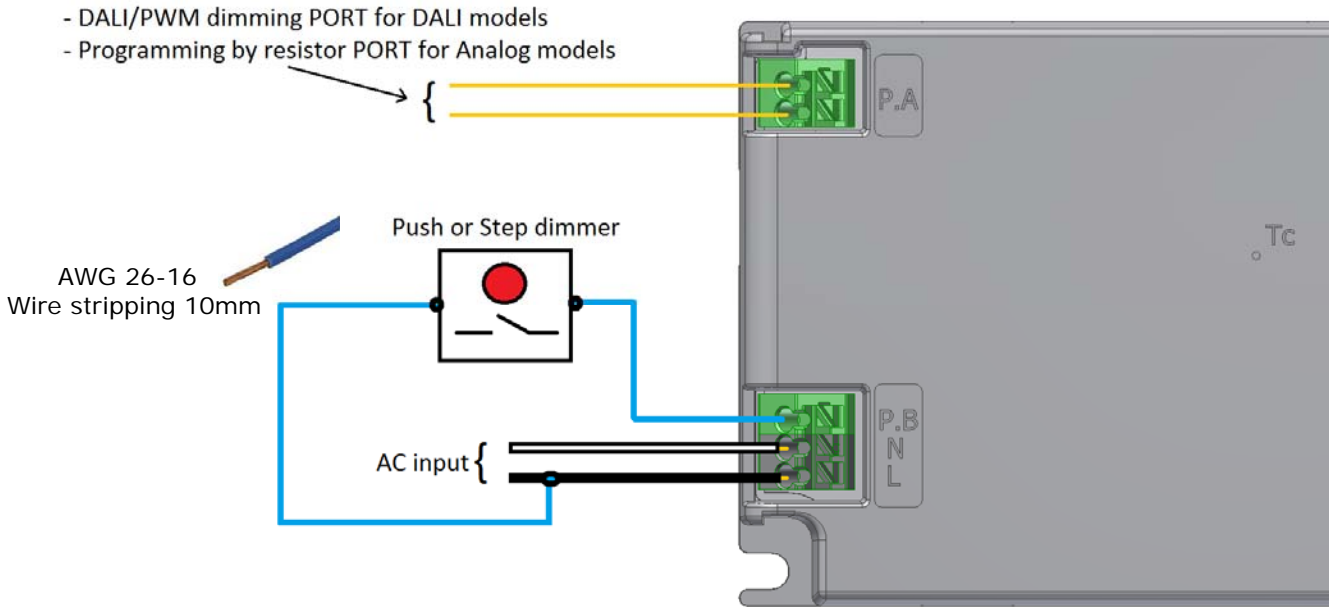


Figure 5: Meso 50W Input and Control Connections

| Connector | Pin name | Description |
|--|---------------|------------------------------------|
| 1 pin connector | Port B (P.B.) | Push/Step dimmer (NA in DC models) |
| 2 pins connector DALI versions | Port A (P.A.) | DALI input or PWM dimming input |
| 2 pins connector Analog versions | Port A (P.A.) | Programming resistor input |

Table 3: Meso 50W input connections Table

Eu and RoW

ROAL Electronics S.p.A
Via Jesina 56/A
60022 – Castelfidardo (AN) - Italy
Tel:+39 071 721461
Fax:+ 39 071 72146 480

www.roallivingenergy.com

North America

ROAL Electronics USA, Inc.
701, Main St. Suite 405
Stroudsburg, PA18360
Phone: + 1 570 421 5750
Fax: +1 570 421 5687

In the following table is specified the meanings and utilization of each connector of the Meso 50W LED driver:

| Output/Control | Short Description |
|--|--|
| +LED, -LED | Use these connector pins to connect the LED string. Pay attention to respect the LED Driver output ratings. For additional info see the Product DataSheet " DS1_Meso50W ". |
| +DIM, -DIM | An external 0-10V standard dimmer can be connected to dim the LED driver output current, from 3% to 100% of the maximum current. For additional info see " AN2_Meso50 Temp Sense & dimming ". |
| NTC (Thermal sense) | A negative coefficient thermistor (NTC) can be placed between this pin and the -LED pin in order to avoid potential extra temperature of the LED fixture. For additional info see " AN2_Meso50W Temp Sense & dimming ". |
| P-RES (Port A in analog versions) | A resistor can be placed between the two connectors of the Port A (P.A. in Figure 5) to set a desired output current value. The list of programmable current values and the relative resistors is listed in the table below (table 5) |
| DALI (Port A in DALI versions) | Meso 50W LED driver can be connected to a DALI network using the Port A (P.A. in Figure 5), both for input and output transmissions without polarity. The same connector may be used for PWM dimming: a signal on the DALI connectors according to the EN60929 annex E3. For additional information see " AN4_Meso50 DALI&PWM Dimming ". |
| Push/Step dimming | A third connector placed close to the Neutral AC input connector is used for Push or Step dimming. For details see " AN2_Meso50 Temp Sense & dimming ". |

Table 4: Meso 50W Output and Controls

| Resistor value (k Ω) | RM50LD-700A | RM50LD-1050A | RM50LD-1400A |
|------------------------------|-------------|--------------|--------------|
| | Iset (mA) | Iset (mA) | Iset (mA) |
| No resistor | I_mem | I_mem | I_mem |
| 90 | 350 | 500 | 700 |
| 40 | 400 | 550 | 800 |
| 24 | 450 | 600 | 900 |
| 15 | 500 | 700 | 1000 |
| 10 | 550* | 800 | 1050 |
| 6.5 | 600* | 900 | 1250 |
| 2.5 | 650* | 1000* | 1300* |
| 0 | 700* | 1050* | 1400* |

*The driver can be programmed at these current values but the power limitation will reduce the maximum allowable voltage.

Table 5: Output current values Vs Inserted resistor in Port A

The listed table is to be intended as step values: the insertion of a resistor in between the listed values will set the current to the nearest setting point of the table. If the inserted value is right in the middle of two sequential step values, the output current will be set at the lower one.

Mechanical Fixing

Meso 50W LED Driver has to be mounted on a flat surface as shown in Figure 6.

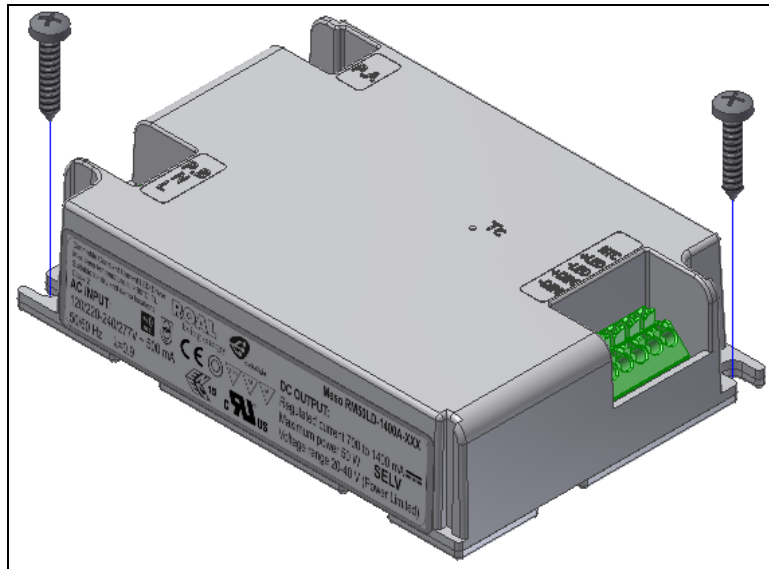


Figure 6: LED Driver mounting

Suggested Screw type: M4 or 8-32 of appropriate type and length for the end application

Screw torque: 6-8Kgf x cm (5.2 – 7.0 in-lbs)

Eu and RoW

ROAL Electronics S.p.A
Via Jesina 56/A
60022 – Castelfidardo (AN) - Italy
Tel: +39 071 721461
Fax: +39 071 72146 480

www.roallivingenergy.com

North America

ROAL Electronics USA, Inc.
701, Main St. Suite 405
Stroudsburg, PA18360
Phone: + 1 570 421 5750
Fax: +1 570 421 5687

Meso 50W Remote gear kit

Meso 50W LED driver can be installed as an Independent Unit by using the Independent unit Kit, available as optional with the code **RM50LD-RGKIT** (Roal production code: RHPS400EUKIT-1).

The kit is easily assembled by pushing the two shells toward the input and output connectors, locking them in the case housings and securing the unit by tightening the two screws in place, as shown in the following pictures:

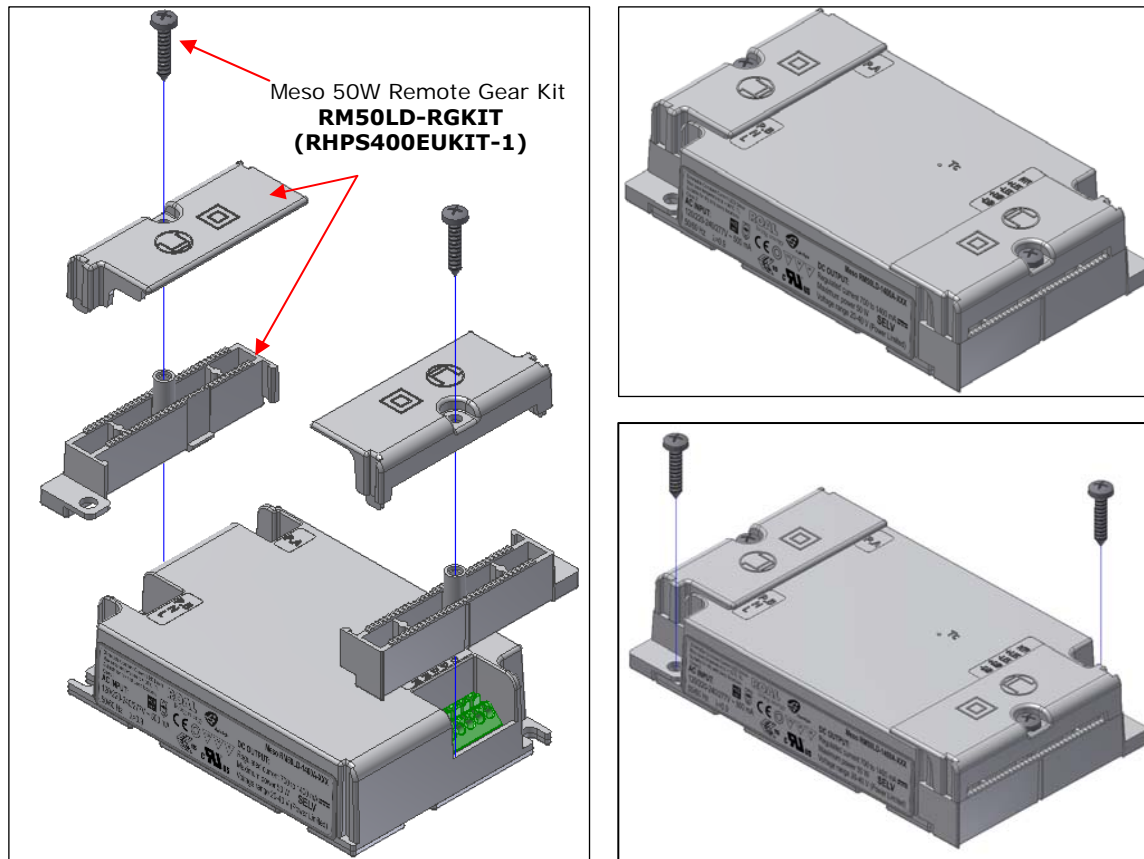


Figure 7: Installation of the Independent unit kit RM50LD-RGKIT

Suggested AWG wires and screws for a good mechanical installation are the following:

| | |
|-------------------------------------|--|
| <i>Input and Output connectors:</i> | wires AWG 18/20 |
| <i>Dali connector:</i> | wires AWG 22/24 |
| <i>Screw type:</i> | Thread forming screw for thermoplastic, Pan head screw, Phillips H cross recessed, d: 3.5mm L: 12mm (included in RM50LDORGKIT) |
| <i>Screw torque:</i> | 10-12Kgf x cm, Phillips H2 screwdriver tip |
| <i>Mounting Screw type:</i> | M4 or 8-32 of appropriate type and length for the end application |
| <i>Mounting Screw torque:</i> | 6-8Kgf x cm (5.2 – 7.0 in-lbs) |

Eu and RoW

ROAL Electronics S.p.A
Via Jesina 56/A
60022 – Castelfidardo (AN) - Italy
Tel:+39 071 721461
Fax:+ 39 071 72146 480

www.roallivingenergy.com

North America

ROAL Electronics USA, Inc.
701, Main St. Suite 405
Stroudsburg, PA18360
Phone: + 1 570 421 5750
Fax: +1 570 421 5687

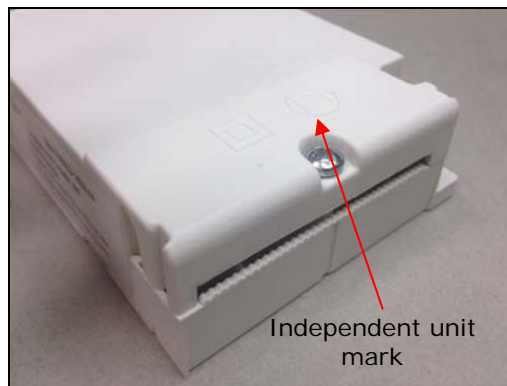
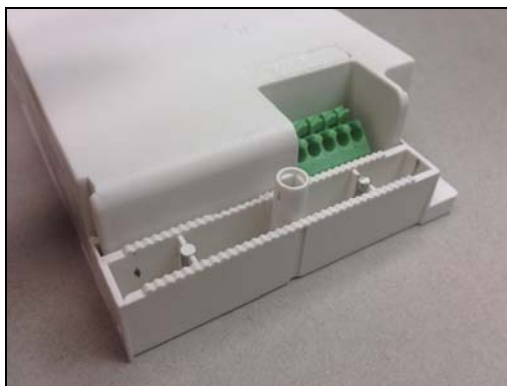



Figure 8: Meso 50W Remote Gear Kit installation

The Independent Unit mark  is indicated on the kit, as illustrated in the above picture.

Eu and RoW

ROAL Electronics S.p.A
Via Jesina 56/A
60022 – Castelfidardo (AN) - Italy
Tel:+39 071 721461
Fax:+ 39 071 72146 480

www.roallivingenergy.com

North America

ROAL Electronics USA, Inc.
701, Main St. Suite 405
Stroudsburg, PA18360
Phone: + 1 570 421 5750
Fax: +1 570 421 5687

Meso 50W Ballast Mounting kit

Meso 50W LED driver can also be mounted to standard junction boxes using the ballast mounting kit, available as optional with the code **RM50LD-BMKIT** (Roal production code: RHPS400USKIT-1).

The kit is easily assembled by putting the metal flange (part 1 in the Figure 9) into the plastic part (part 2 in the Figure 9) and then lock the whole kit to the case housing, as shown in the following pictures. Use care when locking and removing the driver from the kit. The locking tabs are not intended for multiple applications and may be damaged as a result of multiple operations.

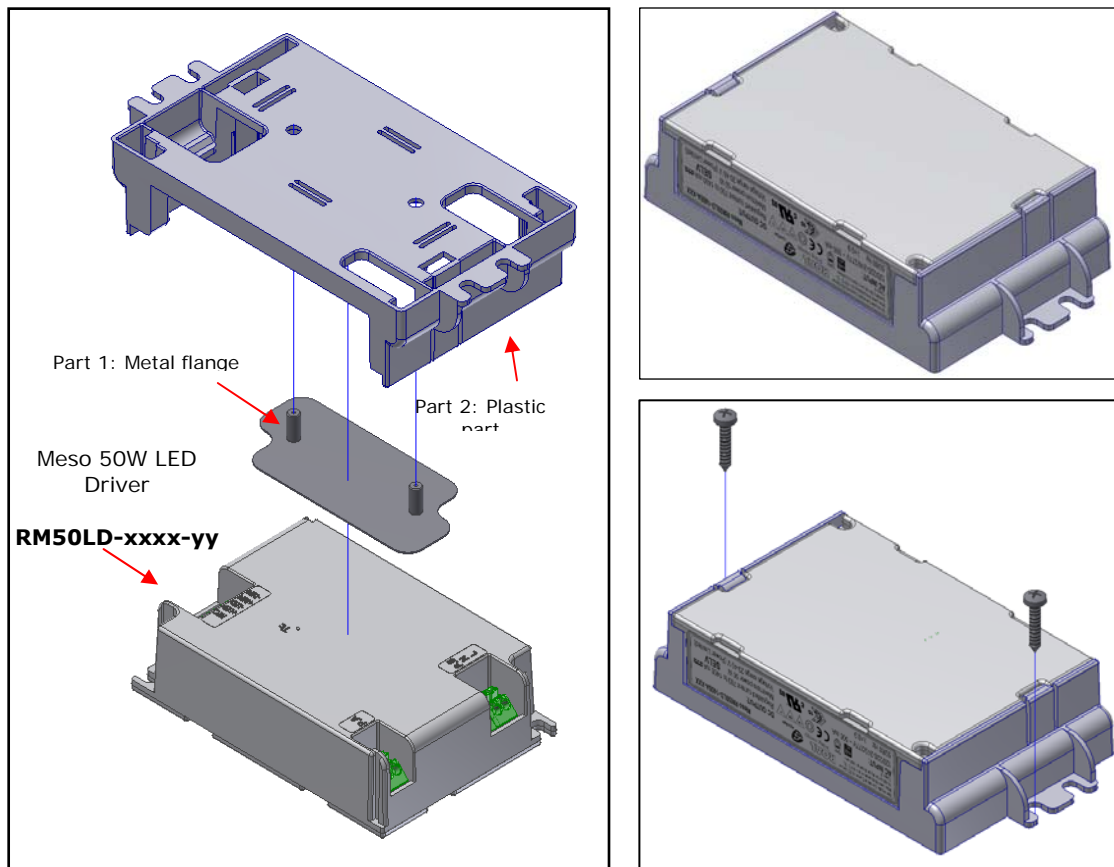


Figure 9: Installation of the ballast mounting kit RM50LD-BMKIT

Suggested AWG wires and screws for a good mechanical installation are the following:

| | |
|-------------------------------------|---|
| <i>Input and Output connectors:</i> | wires AWG 18/20 |
| <i>Dali connector:</i> | wires AWG 22/24 |
| <i>Mounting Screw type:</i> | M4 or 8-32 of appropriate type and length for the end application |
| <i>Mounting Screw torque:</i> | 6-8Kgf x cm (5.2 – 7.0 in-lbs) |

Eu and RoW

ROAL Electronics S.p.A
Via Jesina 56/A
60022 – Castelfidardo (AN) - Italy
Tel:+39 071 721461
Fax:+ 39 071 72146 480

www.roallivingenergy.com

North America

ROAL Electronics USA, Inc.
701, Main St. Suite 405
Stroudsburg, PA18360
Phone: + 1 570 421 5750
Fax: +1 570 421 5687

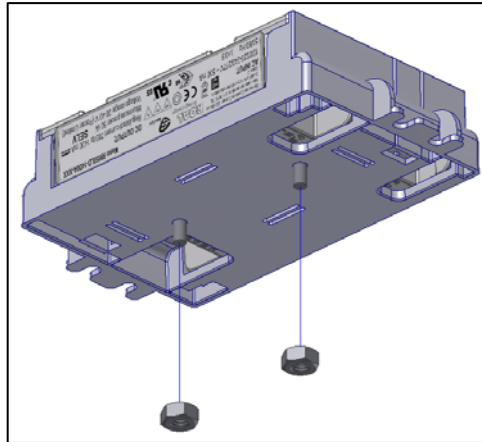


Figure 9: Meso 50W ballast mounting Kit using studs

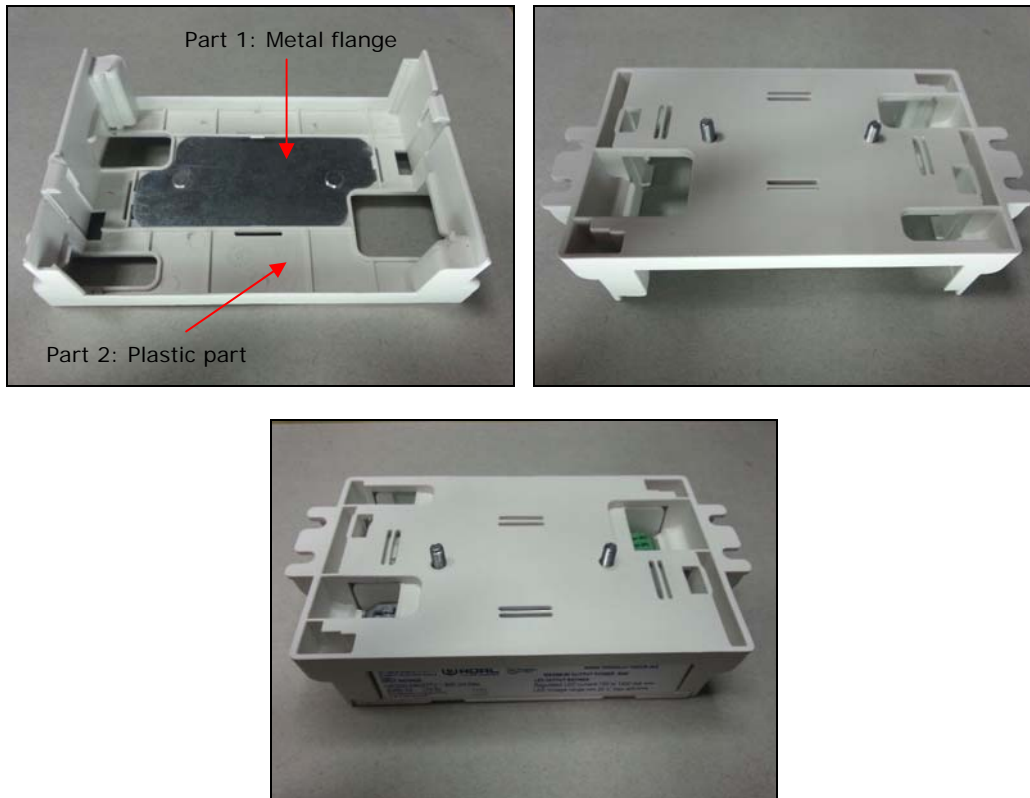


Figure 10: Meso 50W ballast mounting Kit installation

Roal Electronics, S.p.A. may change product specifications and accordingly the information presented in this document. Customers are responsible for their products and applications using Roal Electronics, S.p.A. products. Roal Electronics, S.p.A. assumes no liability from the use of its products outside of specifications. No license is granted to any intellectual property rights by this document. ROAL ELECTRONICS, S.P.A. DISCLAIMS ALL REPRESENTATIONS AND WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF NONINFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

Eu and RoW

ROAL Electronics S.p.A
Via Jesina 56/A
60022 – Castelfidardo (AN) - Italy
Tel:+39 071 721461
Fax:+ 39 071 72146 480

www.roallivingenergy.com

North America

ROAL Electronics USA, Inc.
701, Main St. Suite 405
Stroudsburg, PA18360
Phone: + 1 570 421 5750
Fax: +1 570 421 5687