multiload

LEDrose
LDR100

0/1-10V controlled dimming driver
for constant current LEDs

Contents

Overview and technical specification
LDR100 2
LDR100-H 3
Installation – general 4
Installation – set-up 5
Multiload product options 6
Wiring diagrams
Rotary Push-switch Wall Dimmer RPS 6
Rotary Push-switch Wall Dimmer RPC 7
Rotary Push-switch Wall Dimmer RPC and Lighting Contactor LC100 7
Take Control 8
Take Control and Lighting Contactor LC100 8
MoodMaker Scene-setting System 9

Product order codes

LDR100
Ten different maximum current settings selectable by user between 100mA and 750mA.

LDR100-H
Ten different maximum current settings selectable by user between 500mA and 1400mA.

Factory-set
LEDrose LDR100 can be supplied with the current factory-set to customer requirement between 100mA and 1400mA.

Overview – LDR100 (100mA–750mA)

LEDrose LDR100 uses Constant Current Reduction (CCR) technology to provide smooth consistent flicker-free dimming to zero of constant current LED lamps or strips.

Can be positioned at great distances from the LED light source(s), allowing placement in electrical distribution cupboards or other convenient locations.

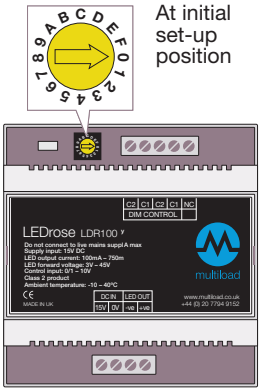
Maximum output current between 100mA and 750mA.

LDR100 supplied with 10 maximum current settings on a multi-position switch, selectable between 100mA and 750mA. (See multi-position switch table).

Features

- Output maximum current range 100mA to 750mA.
- Smooth flicker-free light level adjustment down to 0.0001% with 0/1-10V control.
- DALI and DMX interfaces available.
- Hot pluggable (allowing LEDs to be replaced without switching off the power).
- Short circuit protected.
- Can be placed hundreds of metres from LEDs.
- CCR (Constant Current Reduction) dimming keeps RFI along the cabling to a minimum (because current is not constantly switched on/off as in PWM dimming).
- Monitoring of current settings over time, allowing warranties to be honoured.
- Class 2 product requires power supply to applicable national standard.
- Any number of LEDrose LDR100s can be connected, up to 50% of the rating of the power supply, provided it can maintain the 15V supply under all conditions.
- Compatible with control products from other manufacturers

LDR100 output current settings



At initial set-up position

Multi-position switch table

Position	Function	max current
0	Initial set-up	
1	Operation	100mA
2	Operation	200mA
3	Operation	250mA
4	Operation	300mA
5	Operation	350mA
6	Operation	400mA
7	Operation	500mA
8	Operation	600mA
9	Operation	700mA
A	Operation	750mA

Technical information

Mechanical
DIN-rail mounted unit supplied with 3 standalone brackets.

Supply input voltage (15V)
15V ± 10% DC. Any number of LEDrose LDR100s can be connected, up to 50% of the wattage of the power supply.

Output forward voltage
3V – 45V

Maximum output current
LDR100: Adjustable using positions 1-A on the multi-position switch between 100mA and 750mA.

Control input
0/1-10V signal.
DALI and DMX interfaces available

Monitoring
Time operated at different maximum currents is recorded

Efficiency
LEDrose LDR100 is greater than 90% efficient under maximum load.

Environment / humidity
Maximum 90% rh non-condensing

Ambient temperature range
-10°C – 40°C

Terminals
High quality rising clamp, allows easy connection, accepts stranded cable up to 4mm²

Physical data
Weight: 270g
Finish: Plastic
Dimensions: W:88mm D:90mm H:58mm

Overview – LDR100-H (500mA–1400mA)

LEDrose LDR100-H uses Constant Current Reduction (CCR) technology to provide smooth consistent flicker-free dimming to zero of constant current LED lamps or strips.

Can be positioned at great distances from the LED light source(s), allowing placement in electrical distribution cupboards or other convenient locations.

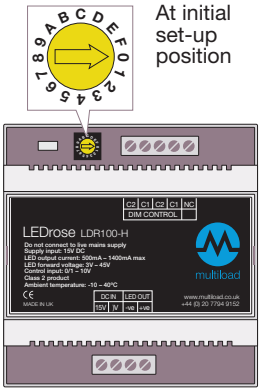
Maximum output current between 500mA and 1400mA.

LDR100-H supplied with 10 maximum current settings on a multi-position switch, selectable between 500mA and 1400mA. (See multi-position switch table).

Features

- Output maximum current range 500mA to 1400mA.
- Smooth flicker-free light level adjustment down to 0.0001% with 0/1-10V control.
- DALI and DMX interfaces available.
- Hot pluggable (allowing LEDs to be replaced without switching off the power).
- Short circuit protected.
- Can be placed hundreds of metres from LEDs.
- CCR (Constant Current Reduction) dimming keeps RFI along the cabling to a minimum (because current is not constantly switched on/off as in PWM dimming).
- Monitoring of current settings over time, allowing warranties to be honoured.
- Class 2 product requires power supply to applicable national standard.
- Any number of LEDrose LDR100-Hs can be connected, up to 50% of the rating of the power supply, provided it can maintain the 15V supply under all conditions.

LDR10-H output current settings



Multi-position switch table

Position	Function	max current
1	Operation	500mA
2	Operation	600mA
3	Operation	700mA
4	Operation	750mA
5	Operation	800mA
6	Operation	900mA
7	Operation	1000mA
8	Operation	1050mA
9	Operation	1200mA
A	Operation	1400mA

Technical information

Mechanical
DIN-rail mounted unit supplied with 3 standalone brackets.

Supply input voltage (15V)
15V ± 10% DC. Any number of LEDrose LDR100-Hs can be connected, up to 50% of the wattage of the power supply.

Output forward voltage
3V – 45V

Maximum output current
LDR100-H: Adjustable using positions 1-A on the multi-position switch between 500mA and 1400mA.

Control input
0/1-10V signal.
DALI and DMX interfaces available

Monitoring
Time operated at different maximum currents is recorded

Efficiency
LEDrose LDR100-H is greater than 90% efficient under maximum load.

Environment / humidity
Maximum 90% rh non-condensing

Ambient temperature range
-10°C – 40°C

Terminals
High quality rising clamp, allows easy connection, accepts stranded cable up to 4mm²

Physical data
Weight: 270g
Finish: Plastic
Dimensions: W:88mm D:90mm H:58mm

Installation – general

LEDrose LDR100 and LDR100-H

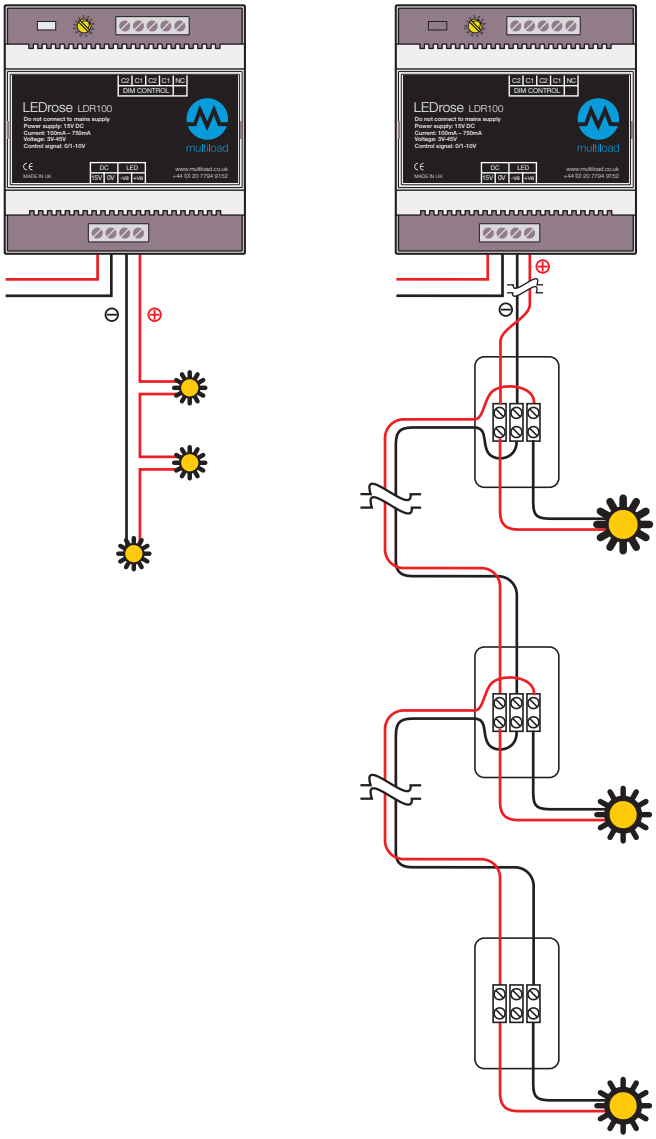
- Installation should be carried out by suitably qualified personnel in accordance with good wiring practice and the appropriate national wiring regulations.
- Only a single 2-core cable or a single feed and return cable are required for wiring LDR100 to the LED(s)
- Remote positioning eliminates the need to locate drivers in the ceiling or run mains and dimming signal wiring
- Minimised maintenance: LEDrose LDR100s can be placed in any suitable location to make access easy
- The LEDrose is SELV compatible. If SELV status is required for the installation the power supply and the dimming signal must also be SELV compatible (please check with controls manufacturer to ensure the dimming signal is also SELV).

Series connection and maximum voltage

Each LED requires a certain voltage when running at its nominal current; (this nominal voltage is calculated by dividing nominal power by nominal current, eg. a 14W lamp at 700mA requires 14W ÷ 0.7A = 20V.

When connected in series the total nominal voltage (plus any cable volt drop) connected to LEDrose LDR100 must not exceed 45V, the voltage capability of the output.

Series connection



Power supply and series wiring diagrams

LEDrose LDR100 with one individual LED lamp.

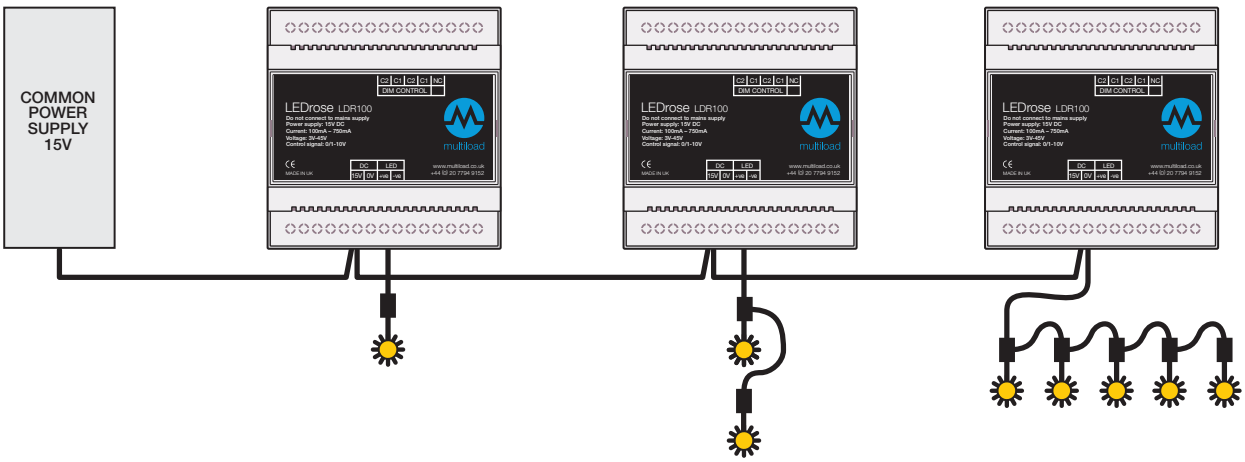
1 x 10W 300mA.
Nominal voltage:
10 ÷ 0.3 ≈ 33V

LEDrose LDR100 with two lamps wired in series.

2 x 14W 700mA.
Nominal voltage:
(2 x 14) ÷ 0.7 ≈ 40V

LEDrose LDR100 with five lamps wired in series.

5 x 6W 700mA.
Nominal voltage:
(5 x 6) ÷ 0.7 ≈ 43V



Installation – set-up

LEDrose LDR100 and LDR100-H

User -set using one of ten maximum current settings on multi -position switch (see tables on pages 2 and 3).

Preparation

Before switching on supply:

- Connect LED(s) to output terminals. If cabling a string of LED lamps these must be series wired (see page 4), with a combined nominal voltage ≤45V.
- Connect 15V power supply.
- Adjust multi-position switch to position 0.
- Ensure lamp or series of lamps are connected.
- Do not connect the dimming control signal.

Set-up

- Switch on supply and wait between 30 seconds to one minute. The unit will calculate the correct forward voltage between 3V and 45V for the LED or string of LEDs. The lamp(s) will reach a steady state brightness level, it will then switch itself off and within a couple of seconds re-establish a brightness level commensurate with 100mA.
- Switch off supply and adjust the multi-position switch to whatever current is required (see tables on pages 2 and 3).
- Switch on supply and leave for at least 1 minute.
- Connect the dimming control signal.
- This completes the set-up procedure and the unit will now be fully operational and the brightness level will be commensurate with the 0/1-10V signal input.

To change to new lamp type

If a different output current or lamp voltage is to be used the preparation and set-up process described above is required to reset LDR100.

If a short circuit is detected

When the LDR100 detects a short circuit on the output it will shut down and a power reset is required to restart the LDR100 (switch power off, wait a few seconds and switch power on again)

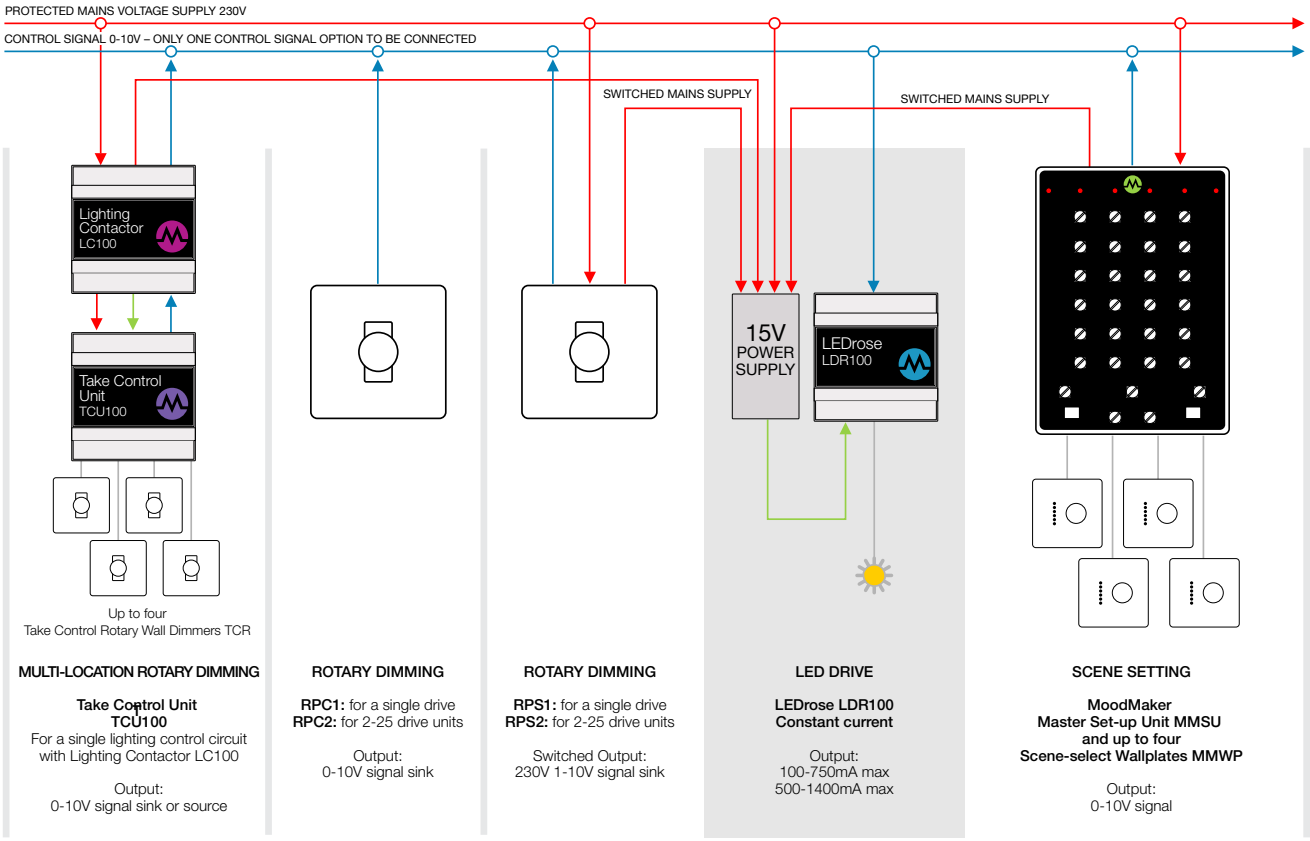
To review driver monitor

To review stored usage history of driver please contact supplier.

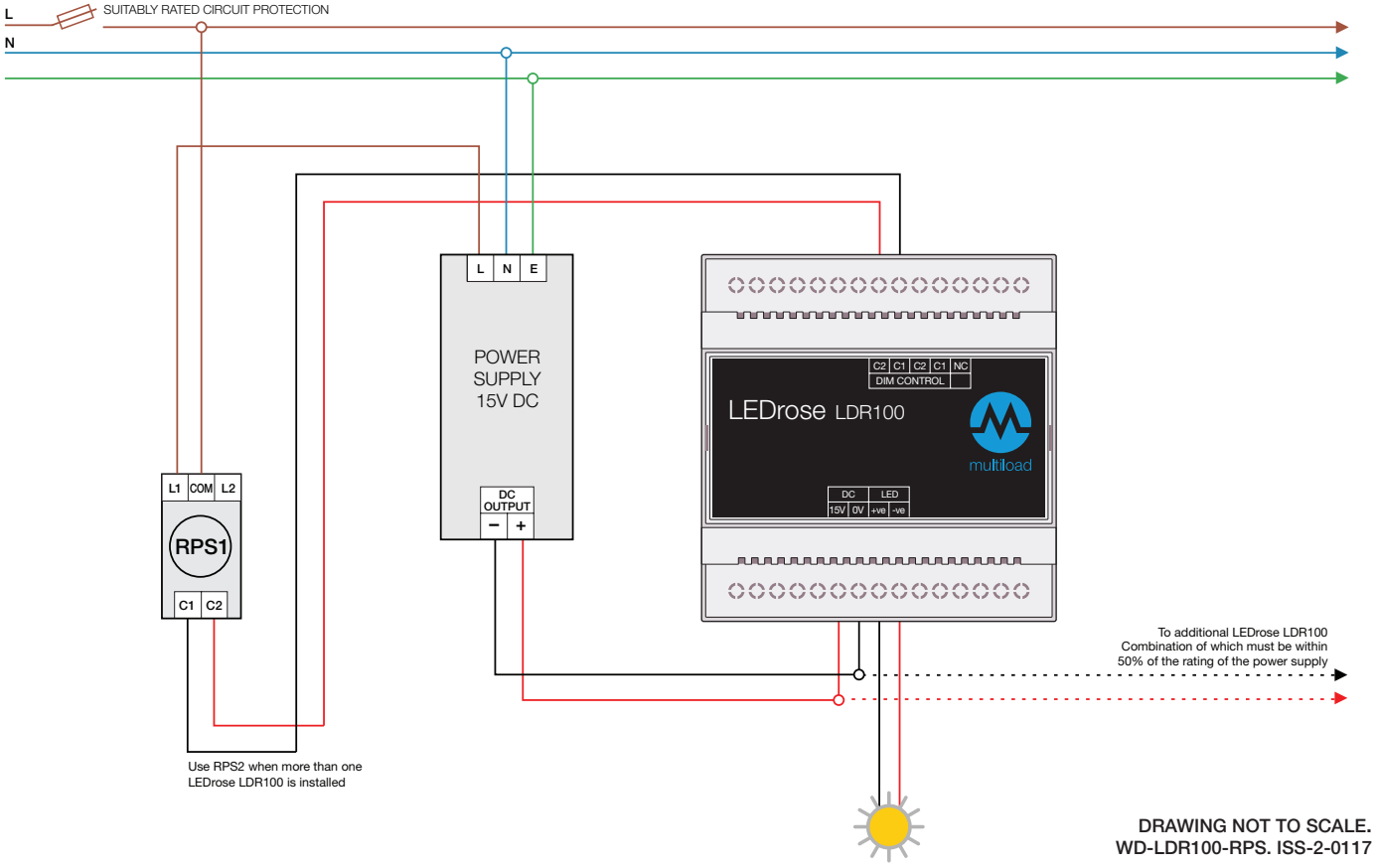
Factory set option

Can be supplied with maximum current factory-set on a particular switch position to customer requirement between 100mA and 1400mA.

LEDrose LDR100 with Multiload product options

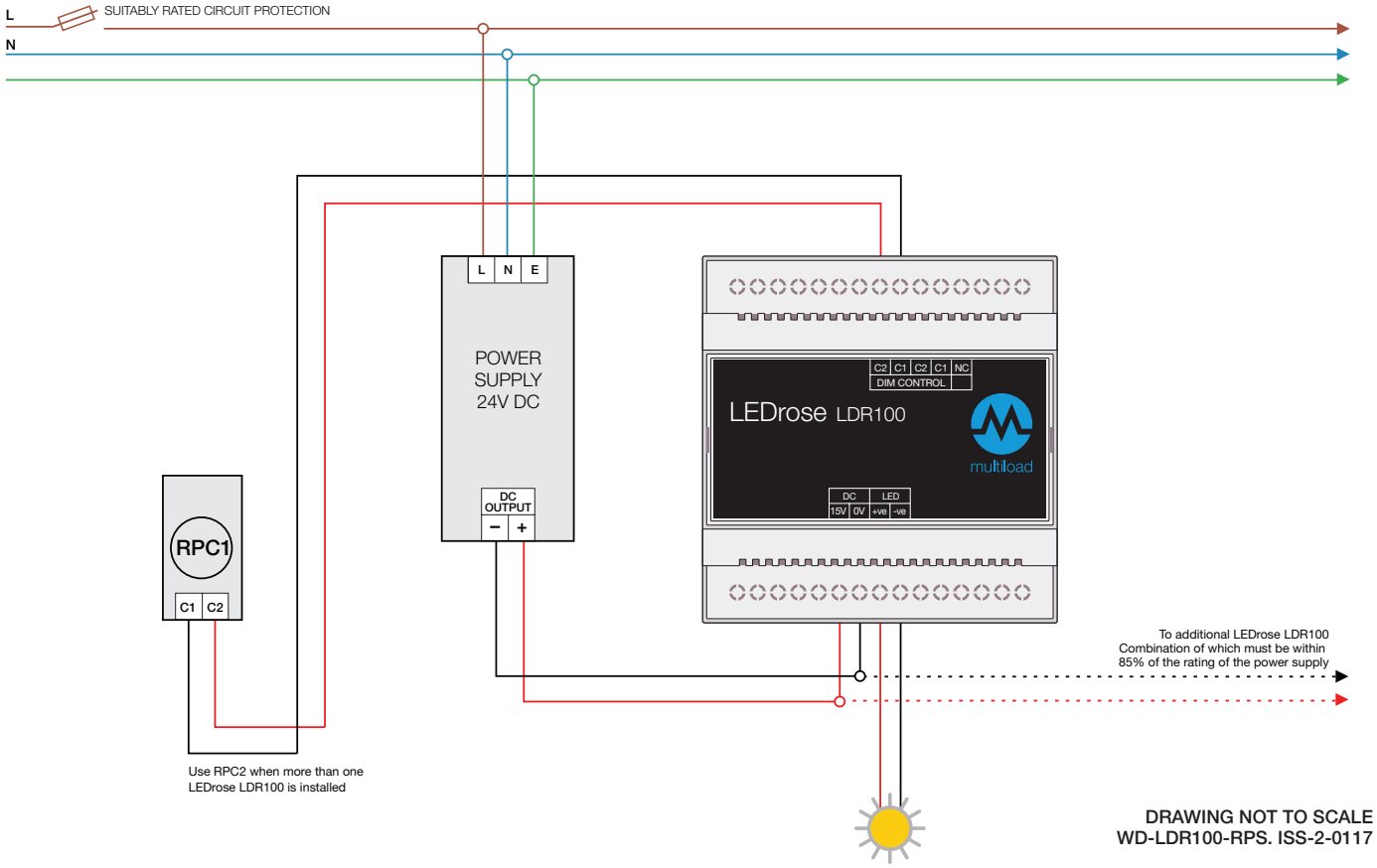


LEDrose LDR100 wired to Rotary Push-switch Wall Dimmer RPS



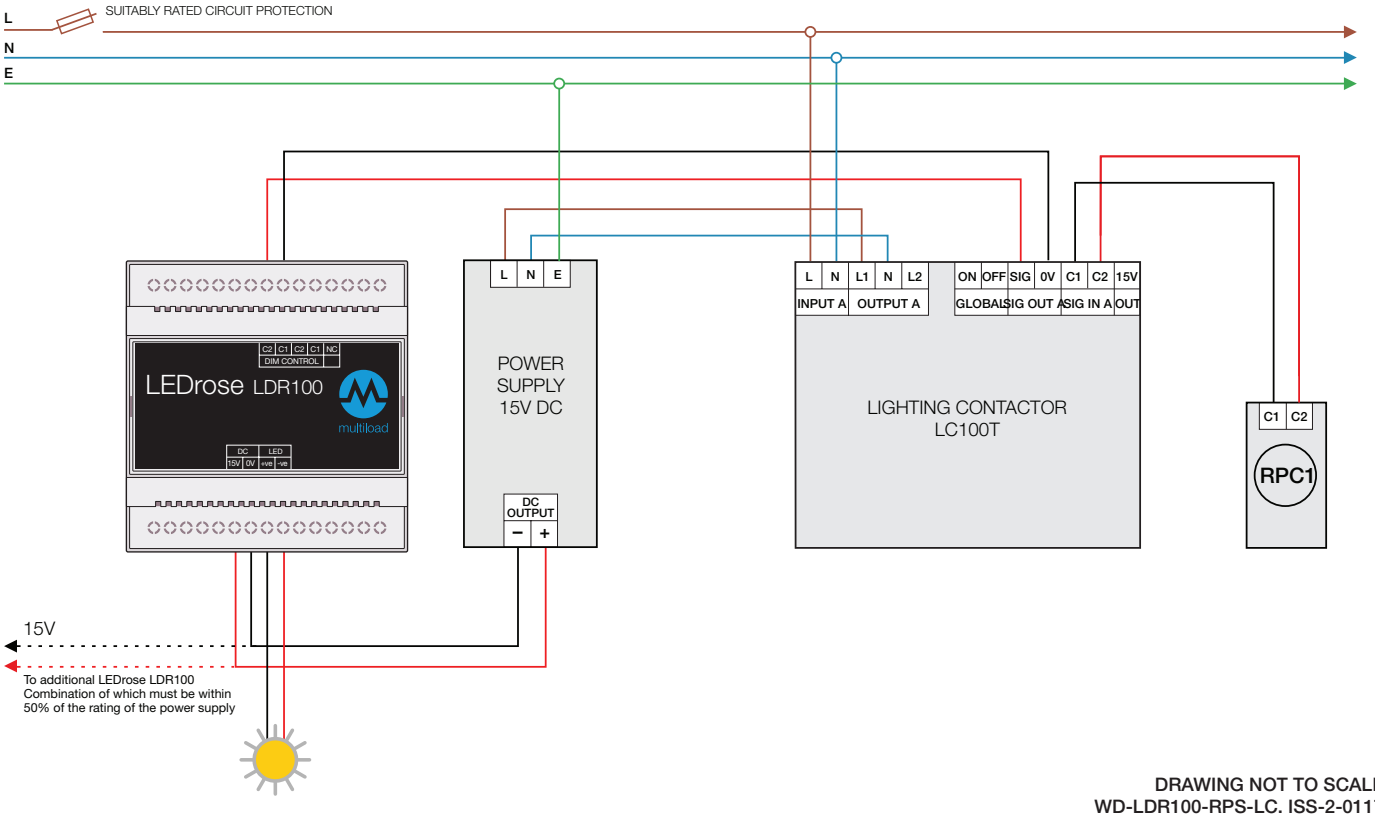
DRAWING NOT TO SCALE.
WD-LDR100-RPS. ISS-2-0117

LEDrose LDR100 wired to Rotary Push-control Wall Dimmer RPC



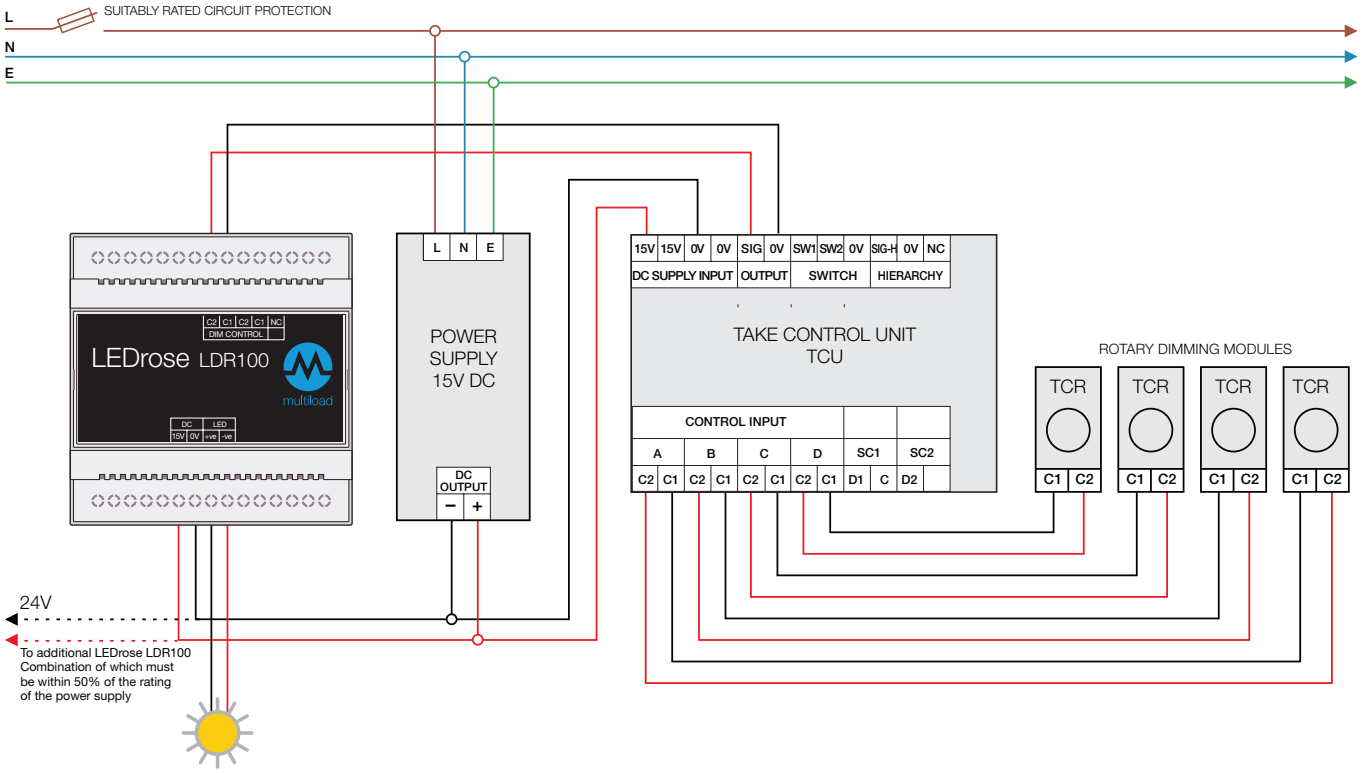
DRAWING NOT TO SCALE
WD-LDR100-RPS. ISS-2-0117

LEDrose LDR100 wired to Rotary Push-control Wall Dimmer RPC and Lighting Contactor LC100T



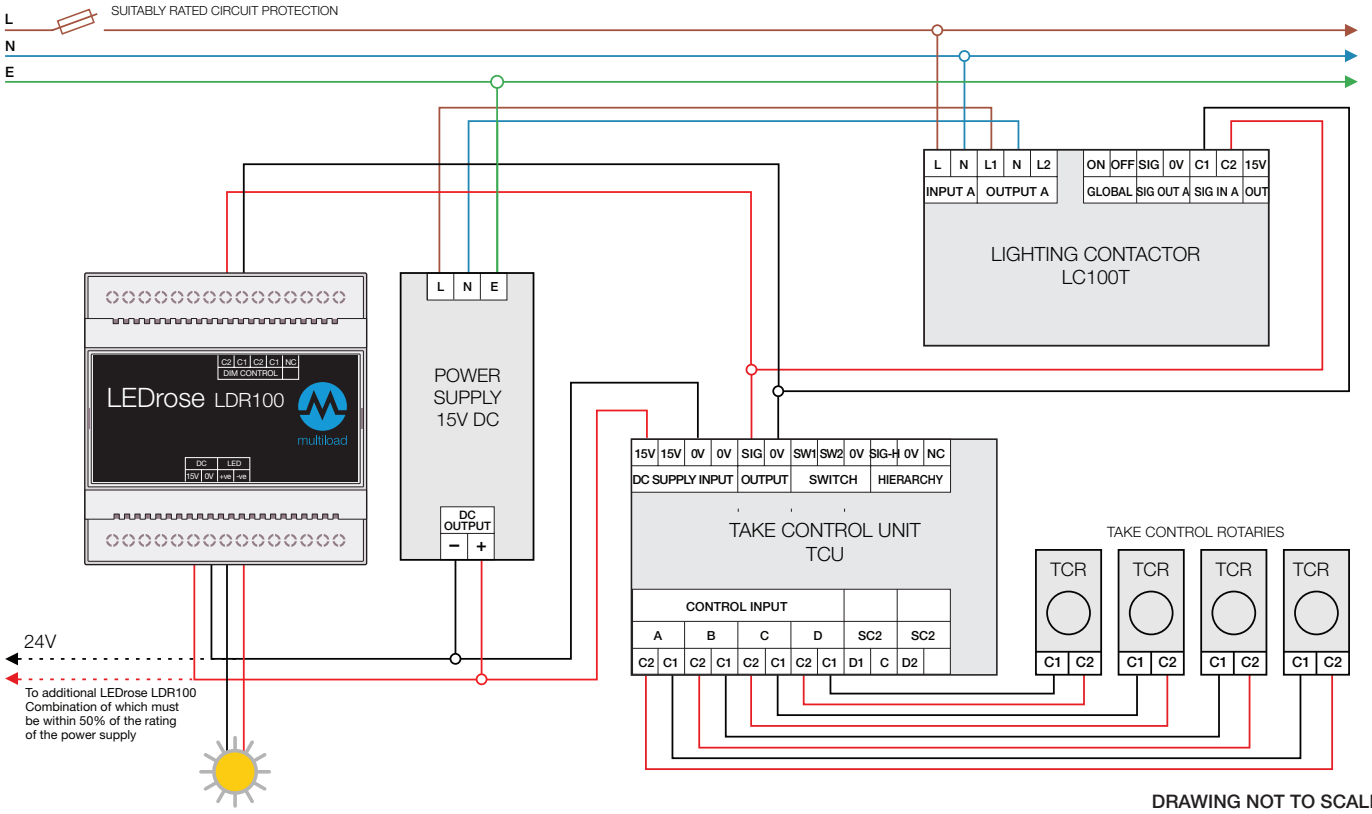
DRAWING NOT TO SCALE
WD-LDR100-RPS-LC. ISS-2-0117

LEDrose LDR100 wired to Take Control Unit TCU



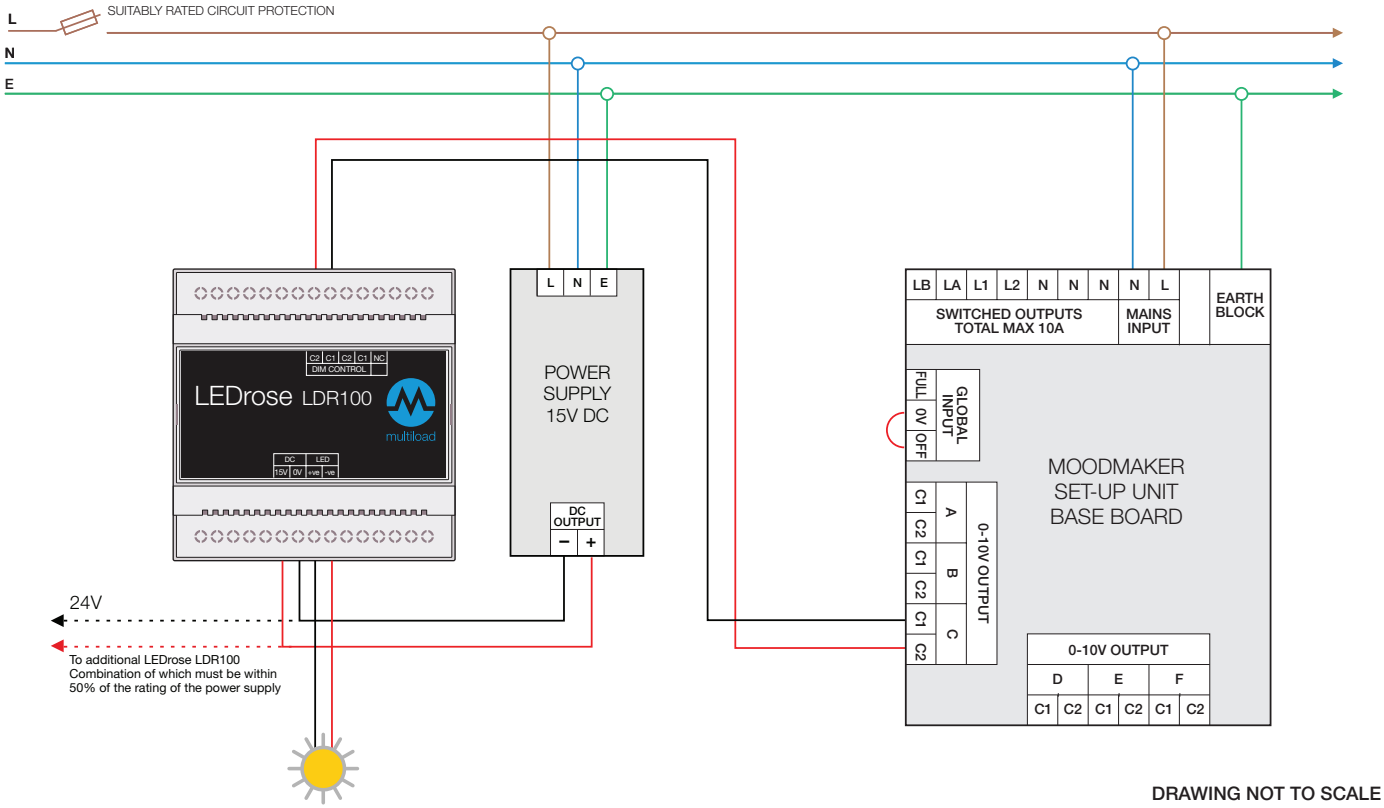
DRAWING NOT TO SCALE
WD-LDR100-TCU. ISS-2-0117

LEDrose LDR100 wired to Take Control Unit and Lighting Contactor LC100



DRAWING NOT TO SCALE
WD-LDR100-TCU-LC. ISS-2-0117

LEDrose LDR100 wired to MoodMaker Set-up Unit MMSU



DRAWING NOT TO SCALE
WD-LDR100-MMSU. ISS-2-0117