

C002 RGB High Power Controller The intelligent 55W LED Driver

USER MANUAL



“The C002 is one of a family of devices specifically designed for the control and dimming of LED Fixtures”

Product Overview The powerful new **C002** LED driver is designed to optimize the performance of high power lighting fixtures using high power LEDs including Luxeon™.

The patented **C002** technology enables excellent color matching and 100% smooth dimming with precise DC current control combined with advanced automatic heat management system to enhance the long life of both fixtures and LED boards.

The 55 Watt system provides a universal voltage input with both UL and CE approvals so you can install them in practically any location.

The **C002** has been designed to make installation simple and to save time by using standard power and DMX connectors with a unique user interface to control all **C002** functions. There are no complicated DIP switches!

The patented thermal control of attached LED boards, using our unique **C002** Technology, optimises your LED installation for any environment.

C002 can be controlled by DMX512, or use the hundreds of pre-programmed settings to provide independent scenes, colour combinations and effects.

C002 RGB High Power Controller The intelligent 55W LED Driver

Features

- Compact size and rugged construction with standard 5-pin XLR DMX in/out connectors.
- Universal voltage input with standard IEC connector.
- Patented **C002** thermal management system to optimise and prolong the life of fixtures and LEDs.
- The **C002** technology is licenced and patented in the UK and USA with Worldwide applications pending.
- Patented color mixing 3 channel system.
- Simple 3 rotary switch interface sets DMX address and controls all additional pre-set functions.
- Smooth dimming control 0 - 100%.
- High efficiency (>88%).
- Long life and high reliability (50,000 hours).
- LED lamp connection with 8 pin RJ45 connector.
- Short and open circuit protection.
- Standalone mode (no DMX controller required) incorporating many static and dynamic colour functions and programmes.
- Self test functions.
- No binning of LEDs results in cost savings.
- Internal Thermal Protection.
- CE Approved

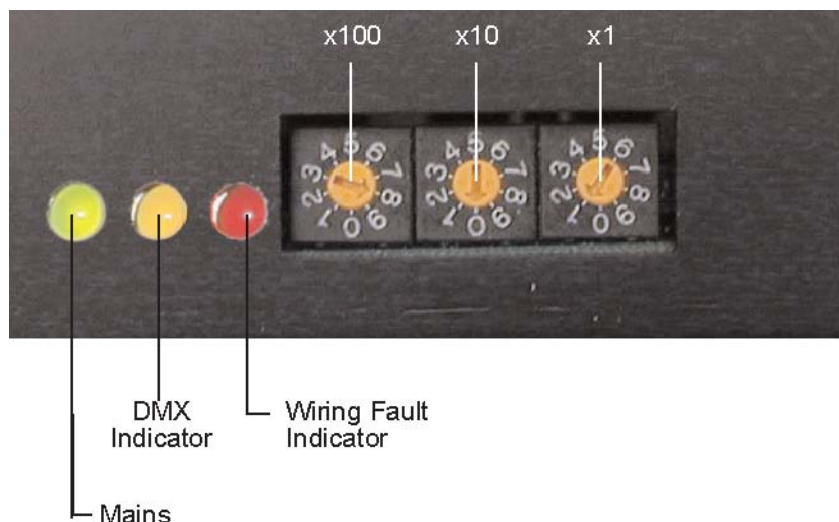
Welcome to the **C002**, with a host of built in features and protection for your LED fixtures. The **C002** is designed to control fixtures containing between 18 and 36 RGB LED's. Please ensure that the LED fixture is plugged into the **C002** RJ45 connector before the mains is switched on, this is important since the system will perform a diagnostic scan of the LED fixture when powered up. The diagnostic scan will test for two functions.

1. Open or short circuits in the LED fixture and wiring. If this is detected the faulty channel will be isolated. The 'REDLED wiring fault indicator' will illuminate to confirm this. The **C002** should be turned off at the mains and the fault rectified before powering up the system again.

2. The second scan will look for a thermistor on the LED fixture, as recommended in the 'wiring specification' (page 4). If a thermistor is found the 'thermal feedback protection' will be activated in the **C002**.

Both these scans take less than 1 second to perform and only take place on initial power up of the system.

C002 RGB High Power Controller The intelligent 55W LED Driver

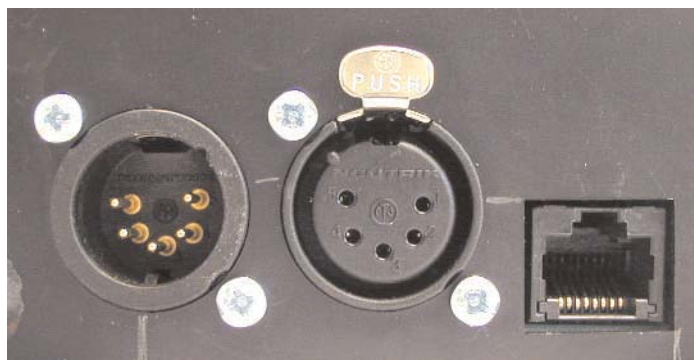


Main Indicator - Indicates power onto the **C002**.

DMX Indicator - When the rotary switches are set to a DMX address i.e. between 001 and 510, this indicator will flash until the **C002** receives a DMX input via the DMX 5-pin XLR input. Once a DMX signal is received, the amber indicator stops flashing and stays permanently on.

Wiring Fault Indicator - The **C002** has short/open circuit protection. In the event of the LED fixture being incorrectly wired, the indicator will be permanently on until the fault in the LED fixture has been corrected.

The **C002** uses DMX 512A - the latest ESTA DMX standard, using isolated 5-pin XLR connections for both input and output.



The **C002** can be used in DMX mode or stand alone mode.

For DMX Settings

The rotary switches should be set to between 001 and 510. Normally address 0.0.1 is sufficient for a 3 channel and master DMX controller.

For Stand Alone Settings

The **C002** contains many pre-set programs.

600 - 636 - This setting provides 36 different preset colors - 636 being a white setting, i.e. all LEDs full on.

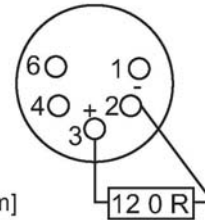
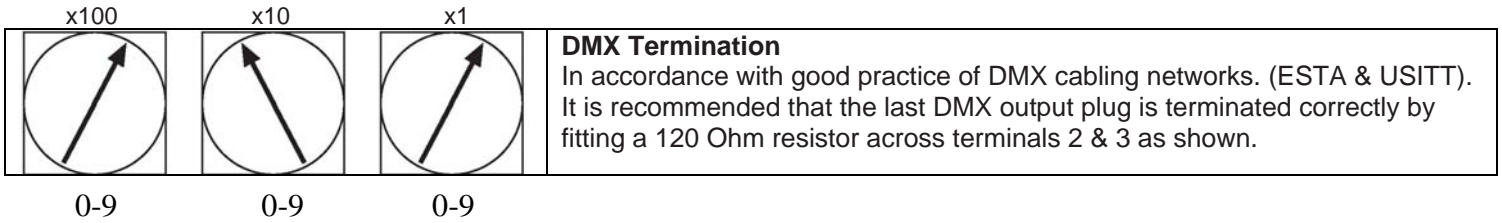
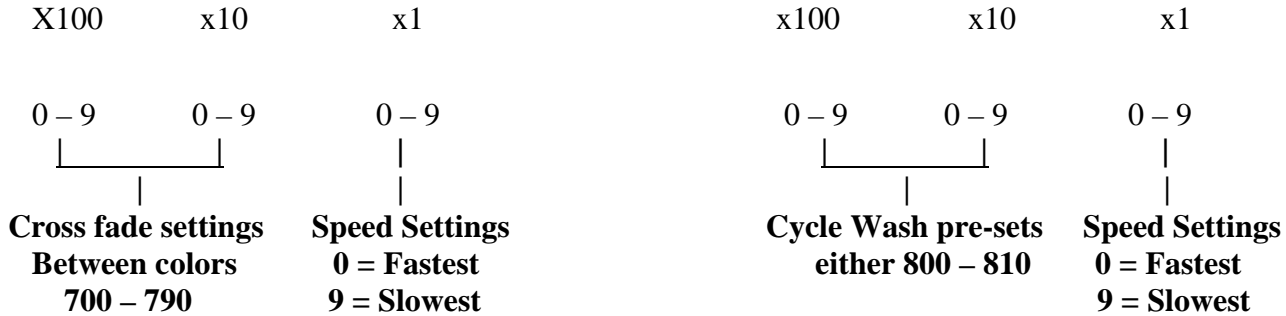
700 - 799 - These are the cross fade settings with different speed functions.

800 - 819 - Cycle Wash Pre-set.

There are two preset cyclic washes, either clockwise or anti-clockwise with speed control

C002 RGB High Power Controller The intelligent 55W LED Driver

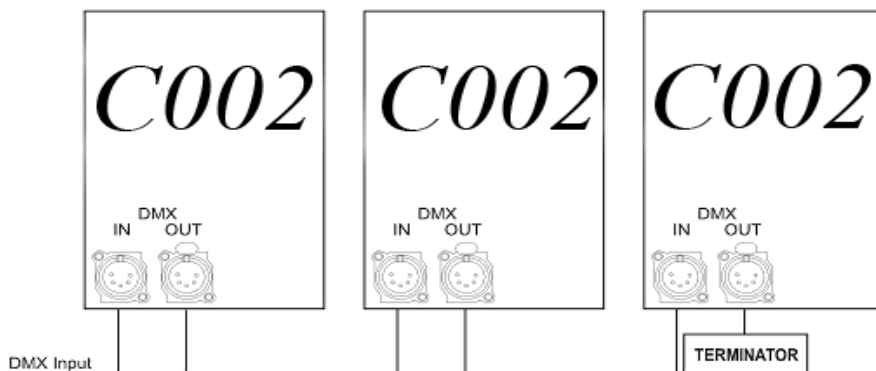
DMX AND PRE-SET PROGRAMME SETTINGS



Terminate with a metal-film resistor of 120 [Ohm]

Solder side: male

The C002 can be networked from one single DMX input.



Wiring configurations for 5-pin XLR
 G (ground cable shield) to XLR pin No. 1
 - (negative) to XLR pin No. 2
 + (positive) to XLR pin No. 3

C002 RGB High Power Controller The intelligent 55W LED Driver

WIRING SPECIFICATION INFORMATION RJ45 WIRING INPUT

- 1 = Red +
- 2 = Red
- 3 = Green +
- 4 = Green
- 5 = Blue +
- 6 = Blue
- 7 = Thermistor ground*
- 8 = LED Temperature**

* IST Ltd recommend that a 10K ohm SMT thermistor type: EPCOS B57621C103J62 is located in the centre of the LED board for effective thermal management control.

WARNING!

Accidental connection of the RJ45 LED fixture output to non LED equipment may result in damage (e.g. an Ethernet Hub)



C002 CONFORMS TO THE FOLLOWING PSU SPECIFICATIONS.

EMC:

EN 55022/55015
EN 61000-6-3
EN-61000-6-4
EN 61547

Harmonic & Flicker

EN 61000-3-2
EN 61000-4-2 to EN61000-4-11

Safety:

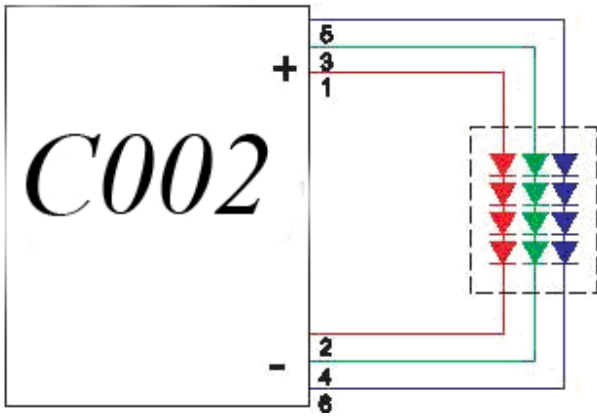
EN 60595-1 & 61558-1



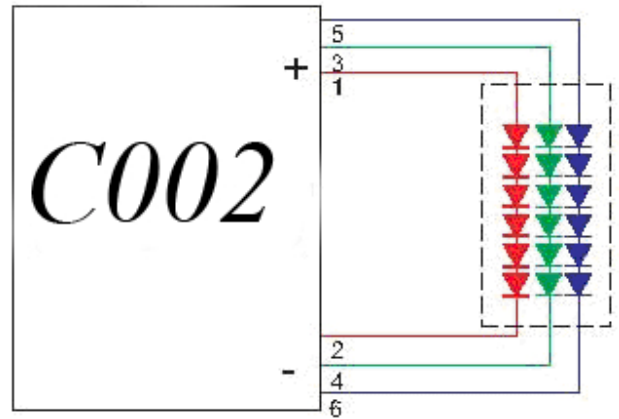
C002 RGB High Power Controller The intelligent 55W LED Driver

Typical wiring configurations for 350mA LED RGB system

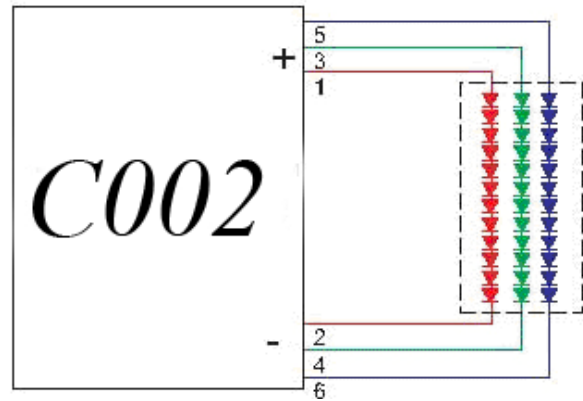
12 x RGB systems



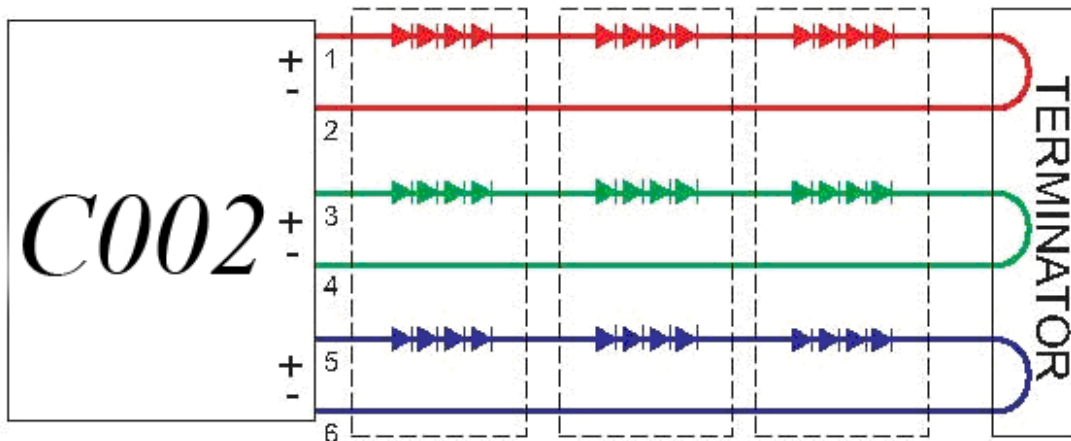
18 x RGB Systems



36 x RGB Systems



These are typical wiring configurations but many other combinations can be used including white LED systems.



C002 RGB High Power Controller The intelligent 55W LED Driver

SPECIFICATIONS ELECTRICAL CHARACTERISTICS

Input
Input Voltage Range : 100 - 240V AC
Input Frequency : 50 - 60Hz Power
Consumption : 6 - 55W Power
Power Factor : 0.95
Efficiency : 88%
Connection : standard IEC
Insulation Class : One

Output
Power Output Range : 0 - 16.8W Per Channel
Maximum Output Current : 350mA @ 100% Maximum Output
Voltage : 14V - 48V DC
Connection : RJ45 (8 pin)

Control Input
Dimming Control : DMX-512A
Connection : standard XLR 5 pin
Dimming Range : 0 - 100 %
DMX Start Address Range : 1 - 510 via 3 rotary BCD switches.
Programmes : See user manual for all pre-sets :

Mechanical
Mounting : Four 3mm holes for wall fixing.
Construction : Aluminum casing for improved thermal performance.

Warranty and Returns Policy:

Product warranty or service will not be honored if:

1. The product has been repaired, modified or altered
2. The serial number is defaced or missing
3. Operation of the product has occurred outside of the published environmental specification.

Should the C002 fail in service within 12 months from the purchase date, please return the unit to your supplier for replacement.

There are no serviceable parts in the C002 , opening of the unit will void all warranties.

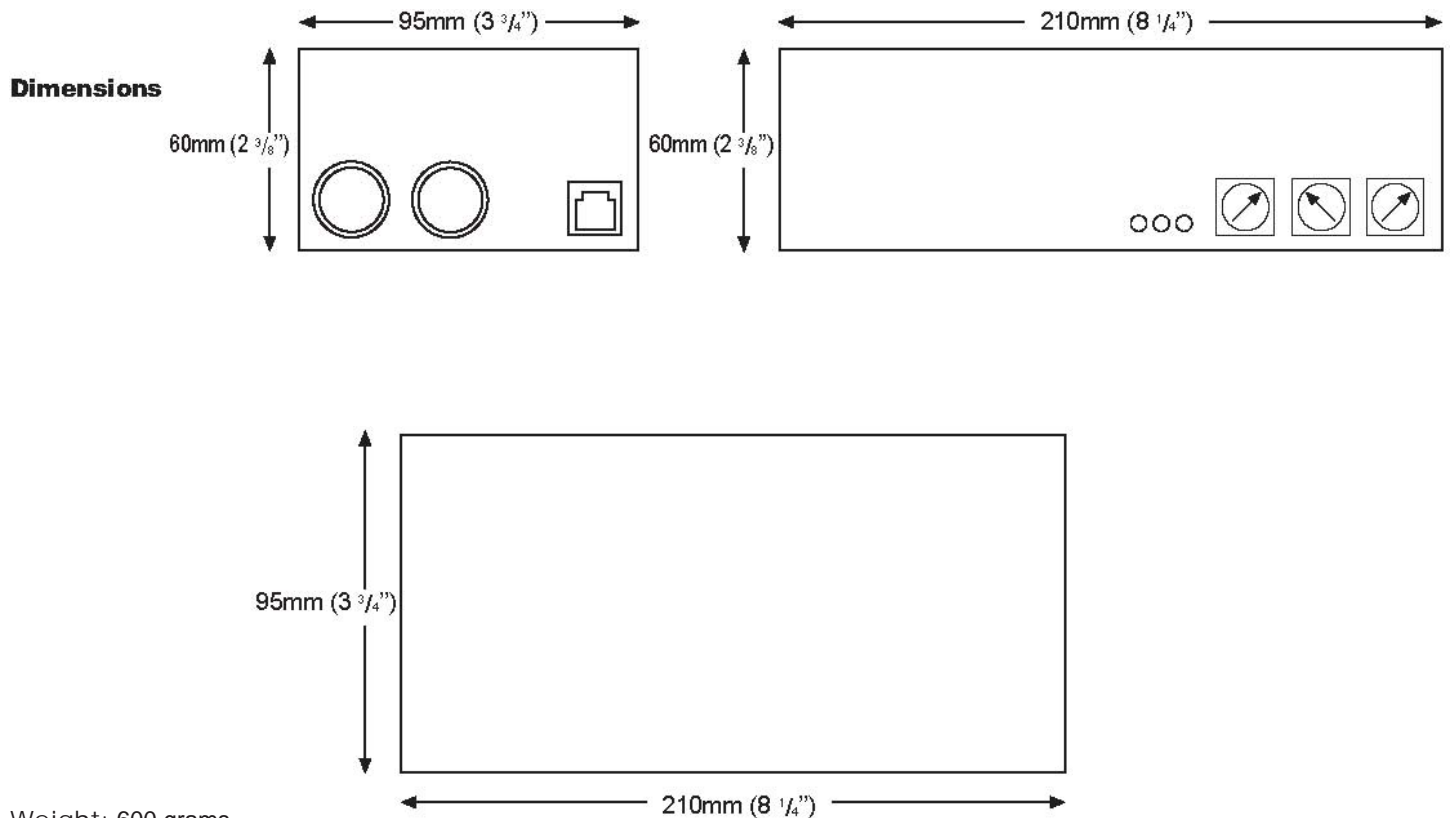
Thermal Protection:

To protect the components used in the production of the C002 , a thermal over-load protection system has been built into the circuit.

Should the ambient temperature, inside the C002 casing exceed 65° centigrade, the thermal protection system will be activated and the C002 will be switched off.

Once the internal temperature falls to a normal operating level the C002 will automatically switch itself back on.

C002 RGB High Power Controller The intelligent 55W LED Driver



Weight: 600 grams

Environmental

Operating Ambient Temperature : -20°C to + 50°C

Storage Ambient Temperature : -20°C to + 70°C

Case Temperature : + 65°C

Relative Humidity : 80%

Lifetime (failures after 50,000 hours): 5% 95mm (3 3/4") 210mm (8 1/4")