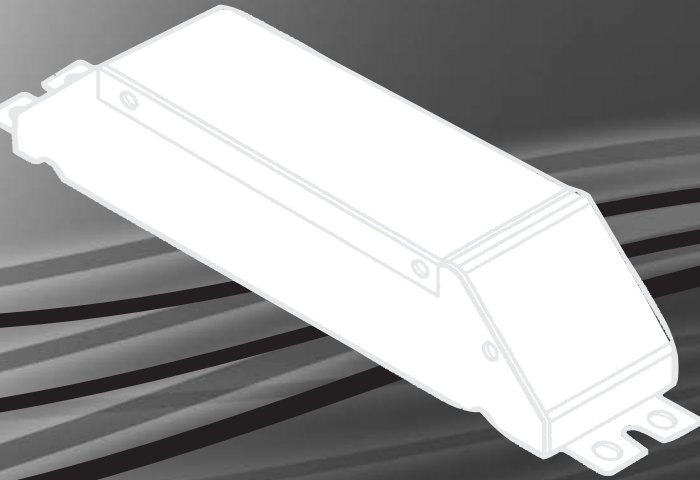


CLIPSAL[®]

by **Schneider Electric**



C-Bus[®]

C-Bus Single Channel Relay

5101R and E5101TR

Series



Installation Instructions

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Product Range

8072/5101R	C-Bus Single Channel Relay (220 - 240V a.c.)
E5101TR	C-Bus Single Channel Relay (110 - 120V a.c.)

Description

The 5101R/E5101TR Single Channel Relay is a C-Bus output device specifically designed for use with fluorescent light fittings. It provides a relay controlled switched active output, and includes an option for control of dimmable electronic ballasts. The Single Channel Relay must be installed in a secure enclosure.

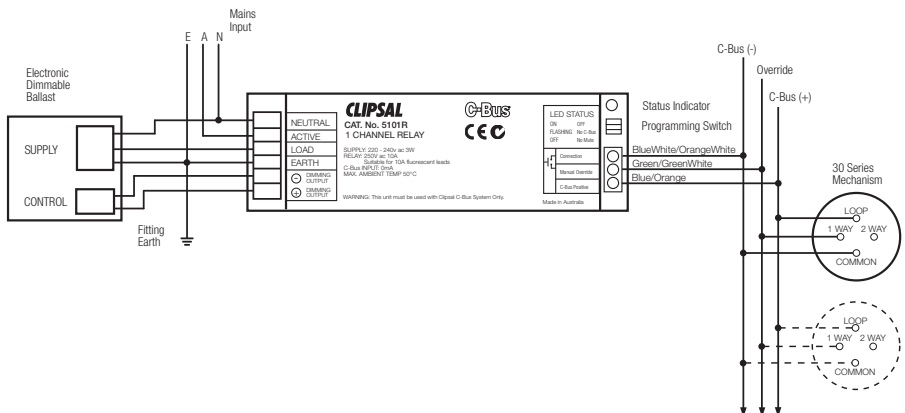
Capabilities

The Single Channel Relay Unit is a relay switch and a 0-10V analog output controlled by instructions from the C-Bus Network. The switch, when closed, provides mains power to its connecting load. When open, the load is turned off. The Single Channel Relay Unit can also control dimmable ballast loads, via the analog output (see Wiring Instructions). Remote Override facilities are available, permitting stand alone operation in the case of a power loss on the C-Bus Network. A special programming mode can be used to configure the unit prior to connection of the mains supply. The unit isolates the mains power from the safe extra low voltage C-Bus Network.

The Single Channel Relay Unit does not draw any current from the C-Bus Network during normal operation.

Wiring Instructions

5101R / E5101TR C-Bus Single Channel Relay Units



Note: The unit must be mounted inside a secure enclosure.

Status Indicator

An indicator has been provided to show the status of the C-Bus connection. This indicator is located under the extra low voltage cover of the unit.

Indicator	Mains Power	C-Bus Communications
ON	OK	OK
FLASHING	OK	ABSENT
OFF	ABSENT	UNKNOWN

Dimming Output

A C-Bus isolated output has been provided for control of dimmable electronic ballasts. This is not a general purpose 0-10V output as available on the 5104AM product, but can be treated as a variable resistance suitable for controlling ballast inputs of the current sourcing type. Factory configuration defines this variable resistance to represent a logarithmic potentiometer of around 100k Ω , which is suitable to drive two common ballasts in parallel. The cable type to be used should be between 0.2 and 1.5mm² (24-16AWG) of solid or stranded construction, and should not exceed three metres in length for each terminal positive or negative.

Remote Override Input

The centre terminal of the extra low voltage C-Bus connector provides Manual Override facility. By shorting the Manual Override Input with the C-Bus negative (-) terminal, the load terminal will be forced to the ON state, and the Dimming Output will assume 100%. Any C-Bus command will be ignored until the Manual Override Input short is removed. Upon release of the Manual Override Input, the load terminal will be forced to the OFF state, and the Dimming Output will assume its minimum level. At this time the C-Bus error detection/correction algorithms will dictate the state of the output (ie: the switched active and Dimming Output will return to the state defined by its controlling input device(s)).

Stand Alone Operation

The C-Bus Single Channel Relay Unit can be operated as a 'stand-alone' device (no C-Bus connection) by means of the Remote Override Input. In this case the cable type of between 0.2 and 1.5mm² (24-16AWG) of solid or stranded construction should be used, not exceeding one hundred metres in length for each terminal, C-Bus negative(-) or Override.

Programming Switch

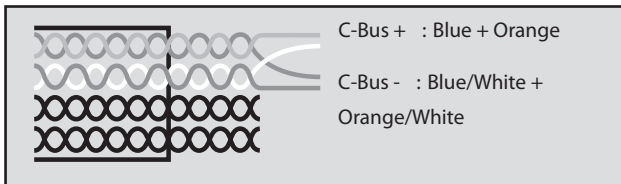
The Single Channel Relay can be programmed without a mains connection. The unit can be connected to any operational C-Bus Network capable of supporting two or more extra C-Bus units (current consumption in Programming mode approximately 36mA). The Programming Button may be pressed and held to enable the Programming Mode. In this mode the unit may be configured using C-Bus Toolkit Software, however the switched mains load and dimming output terminals will not be functional until programming is completed, and a mains connection established. The Programming Switch should not be used during normal mains operation of the unit.

Power Up Load Status

All C-Bus units have on board non-volatile memory which is used to store the operating state of the unit in case of a power loss. The Single Channel Relay Units will, by default, retain the current output status if C-Bus power is lost. Please refer to C-Bus Toolkit Software Help files for information about programming of Relay Output Units.

Connection to the C-Bus Network

It is recommended that Category 5 data cable be used, Clipsal catalogue number 5005C305B (solid) or 5005C305BST (stranded). Installation of the Single Channel Relay Unit on the C-Bus Network requires connection to the unshielded twisted pair C-Bus Network Cable. This connection is polarity sensitive, and is clearly marked on the terminal block of the unit. The instruction below shows the recommended technique for the cable termination giving the best electrical performance. Bootlace crimps may also be used to provide a highly reliable connection.



Programming Requirements

As with other C-Bus units, the relay units must be programmed to set their unique identification and the mode of operation on the C-Bus Network. C-Bus Toolkit Software is used to configure all operational parameters including the specification of control sources, and power up options. Please refer to C-Bus Toolkit Software Help for information about the programming of Relay Output units.

Power Surges

The mains voltage must be limited to the range specified in the specifications. Each unit incorporates transient protection circuitry and additional external power surge protection decided should be used to enhance system immunity to power surges. It is strongly recommended that overvoltage equipment such as the Clipsal 970 is installed at the switchboard.

Megger Testing

Do not megger test the C-Bus network cable.

Important Warning

The use of any non C-Bus Software in conjunction with the hardware installation without the written consent of Clipsal or Schneider Electric Pty Ltd may void any warranties applicable to the hardware.

5.0 Electrical Specifications

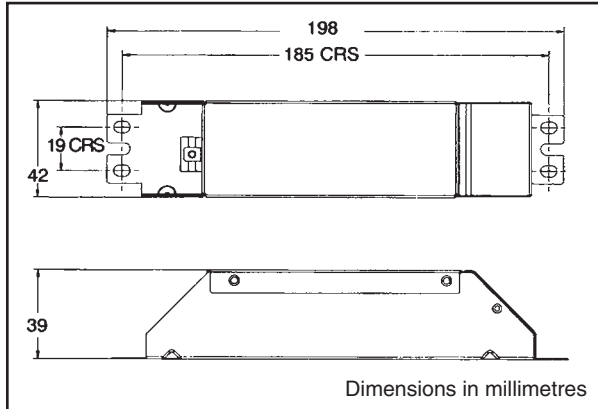
Catalogue Number	5101R	E5101TR
C-Bus Input Power	15-36V d.c. @ 0mA (when mains voltage is connected)	
Normal Operation	15 - 36V d.c. @ 36mA	
Programming mode	The unit does not provide power for the C-Bus network	
Mains Supply	220 - 240V a.c.	110 - 120V a.c.
Mains Frequency	50Hz / 60 Hz	
Mains Power Consumption	<3W Maximum OFF state consumption	
Rated Load Current	10A	
Electronic Endurance		
Resistive Load	60,000 minimum	
Incandescent Load	60,000 minimum	
Fluorescent Load	60,000 minimum	
Inductive Load	60,000 minimum	
Electrical Isolation Rating	3.5kvRMS for one minute	
Mains to C-Bus	(opto-isolated UL recognised File No. E54915)	

Ambient Conditions

Operating Temperature	0 - 50°C
Operating Humidity	10% - 90% non-condensing

Terminals

C-Bus Side	Screw Terminals accommodate 6 x 0.2mm ²
Output Side	Spring Terminals accommodate 0.2 - 1.5mm ² (24 - 16 AWG) solid or stranded cable



Schneider Electric (Australia) Pty Ltd

Contact us: clipsal.com/feedback

National Customer Care Enquiries:

Tel 1300 2025 25

Fax 1300 2025 56

clipsal.com

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