



**MAINS DISTRIBUTION UNIT**  
**MDU2-CO**

**Dual Input Auto Changeover  
2 Output Mains Distribution Unit.**

**Handbook**

**Television Systems Limited.**  
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## SAFETY

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### 1.0 Installation.

Installation of this equipment should be in accordance with BS7671.

In particular, this includes regulation 460-01-02, which states that each source of supply should have a main switch provided, with a durable warning notice permanently fixed in such a position that any person seeking to operate any of these main switches will be warned of the need to operate all such switches to achieve isolation of the installation. Alternatively, a suitable interlock system may be provided.

It is not recommended to use the unit with different phase inputs.

The unit is provided with a front panel double pole switch, which will provide isolation from any supply for all the outputs of the MDU.

Note that this switch does not isolate the incoming supplies from the MDU itself; this can only be done via the above main switches or by removing the input connectors.

Note the MDU internally has 16A fuses in each incoming feed; and also 2A fuses for the internal power supplies.

This equipment is intended for use with TN-S power distribution systems (IEC60364-3). Although all internal switching is double-pole, it is a requirement that each Neutral conductor is connected to earth; internal fusing is present in the Live circuit only.

Unless otherwise stated TSL equipment may be installed at any angle or position within an operating temperature range of 5° ~ 30° C .

All TSL equipment conforms to the EC Low Voltage Directive:

EC Low Voltage Directive (73/23/EEC)(OJ L76 26.3.73)(LVD). Amendment: (93/68/EEC) (OJ L220 30.8.93).
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#### Earthing/Grounding

In all cases, the frame of the equipment must be earthed on installation. Connection to an earthed strip running the length of the frame is ideal.

The earth pin on the mains inlet connector is connected to the metal frame of the equipment, to 0 volts on the internal DC PSU and to signal ground, unless otherwise stated. All metal panels are bonded together. Rack mounted equipment must be earthed (grounded).

#### Mounting

Careful consideration of the equipment location and mounting in racks must be made. In particular, consideration must be given to the stability of free-standing racks by mounting heavy equipment low in the rack. The rear of the unit should be supported in the rack.

#### Ventilation

Due consideration for cooling requirements must be given when mounting the equipment. The equipment contains an internal temperature sensor.

#### General

If equipment is installed in a closed unit, consideration must be given to providing forced air cooling in order that the maximum recommended temperature is not exceeded.

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## **WARRANTY, MAINTENANCE AND REPAIR**

All TSL equipment is guaranteed for one year from the date of delivery to the customer's premises. If the equipment is to be stored for a significant period, please contact TSL concerning a possible extended warranty period.

### **Failure during warranty**

If any TSL product should fail or become faulty within the warranty period, first please check the PSU fuses.

All maintenance work must be carried out by trained and competent personnel.

If equipment has to be returned to TSL for repair or re-alignment, please observe the following overleaf:

### **Technical support information**

E-Mail address: [support@televisionssystemsltd.uk](mailto:support@televisionssystemsltd.uk)

Telephone Support Number for the UK and Europe: +44 (0) 1628 670000

Telephone Support Number for the USA only: 1 877 591 2108

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## **TSL Returns Procedure**

Please telephone +44 (0)1628 676200 (Fax: +44 (0)1682 676299) and ask for Sales who will provide a Returns Number. This will enable us to track the unit effectively and will provide some information prior to the unit arriving.

For each item, this unique Returns Number must be included with the Fault Report sent with the unit.

A contact name and telephone number are also required with the Fault Report sent with the unit.

### **Fault report details required.**

- Company:
- Name:
- Address:
- Contact Name:
- Telephone No:
- Returns Number:
- Symptoms of the fault (to include switch setting positions, input signals etc):

### **Packing**

Please ensure that the unit is well packed as all mechanical damage is chargeable. TSL recommends that you insure your equipment for transit damage.

The original packaging, when available, should always be used when returning equipment..

**If returned equipment is received in a damaged condition, the damage should be reported both to TSL and the carrier immediately.**



**EC DECLARATION OF CONFORMITY**

Application of Council Directives Nos:  
EC Low Voltage Directive (73/23/EEC)(OJ L76 26.3.73)(LVD).  
Amendment: (93/68/EEC) (OJ L220 30.8.93).  
Conformity Standards Declared:  
EN 60950; BS-EN-62040-1-1:2003

EMC Directive: 89/336/EEC, Amended 92/31/EEC.  
Conformity Standards Declared:  
EN 50081-1, EN 50082-1

Manufacturer's Name: Television Systems Ltd  
Manufacturer's Address: Vanwall Road  
Maidenhead SL6 4UB  
England  
United Kingdom

Type of Equipment: Mains Distribution Unit

Model No: Power Change Over

Part Number: MDU2-CO

Date CE Mark Affixed:

I, the undersigned, declare that the equipment specified above conforms to the quoted Directives and Standards.

Place: Maidenhead, England

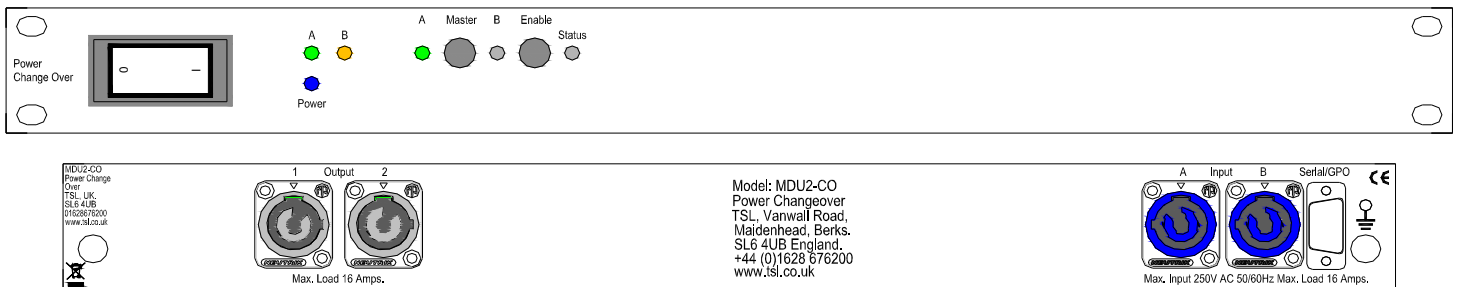
Signature: \_\_\_\_\_

Date: TBA \_\_\_\_\_

Print: A J Mackinder \_\_\_\_\_

Position: PRODUCT MANAGER \_\_\_\_\_

# Power Change over Mains Distribution Unit MDU2-CO



## 2.0 Description

Features:

- 19" 1RU.
- 2 16A Powercon outlets.
- Dual Input Seamless Auto Changeover
- LED Indication
- A/B Tri colour Master/Slave Indicators
- Power - Blue - Power applied to the unit.
- Green A, B, & Remote Master Control indication.

This 1RU unit is designed to fit into a rack in any position. The inlets are via 2 Neutrik Powercon NAC3FCA connectors. 2 free cable mounted connectors are supplied with each unit.

Output power to the 2 Neutrik outlets is via a 2 pole switch fitted to the front panel. The blue power led shows the status of power available on these connectors.

## 3.0 Introduction

The MDU2-CO is a dual power input 2 output power distribution unit intended for racks where equipment needs a constant uninterrupted power supply. The unit can be used as an input device for the TSL Power Manager range of intelligent 12 output distribution units.

The 2 input power supplies go to a set of master changeover relays with control circuitry to detect power presence. In the event of a failure of the input in use the unit seamlessly will switch over to the backup supply within 50ms so no equipment is affected by the change. There is no load taken from the backup supply when not in use.

From the relays the power is fed to a double pole mains switch on the front panel which feeds the 2 outputs. The unit has Master or slave control capability so that when the master power is restored the unit will switch back to the original source. This ensures that any backup power source isn't used unnecessarily.

## 3.0 Operation

This equipment is intended for use by suitably qualified personnel only.

Wire the supply inputs to A and B from the appropriate sources. **NB Ensure you comply with the safety instructions in section 1 of this manual.**

Wire the outputs as required.

#### 4.1 Master Slave Input select.

With the front panel power switch in the off position, power is still supplied to the control circuits and relays. The tri-colour LEDS labelled A & B next to the mains switch show 3 states:

- Green – Power on input & available to the outputs
- Amber – Power on input but in standby
- Red – No power on input.

Either Input A or B or No Master can be selected and this status is indicated by the LEDs either side of the Master select pushbutton. To change from the current status press and hold the enable button and toggle the Master button until the appropriate LED is lit under A or B label. For No Master neither LED will be lit. In this condition the unit will stay on the presently selected source until either this fails or someone changes the state, but it will not automatically return to a nominated input even after power is restored to a failed input source. The red Status LED indicates that there is a fault condition & the unit needs to be repaired. It will not change in this state. There are internal fuses also protecting the low voltage control circuitry. Power is only switched to the 2 outputs when the switch on the front is turned on, and this is indicated by the blue power LED being on.

#### 5.0 Pin-outs

Input

Neutrik Powercon connector – L – Brown (Phase), N – Blue (Neutral), E – Green/Yellow (Earth or Ground).

Serial Connector RS232

SERIAL RS 232 CONNECTOR D9 SOCKET			
1	+5V	6	A status green led
2	TX	7	A status red led
3	RX	8	B status green led
4	Error status led	9	B status red led
5	0v		

#### 6.0 Specifications

Inputs A & B	110-240V AC 50/60Hz Max load 16A protected by internal 16A HRC fuses. Power consumption Standby 2W; Main 8W
Outputs 1 & 2	110-240V AC Max load 16A.
Maximum Load	16A.