

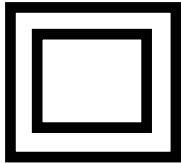
**PSU-3**  
**ISOLATED MAINS POWER SUPPLY UNIT**

**Safe Installation and Operation Guide**



**CAUTION:**

This equipment is designed for connection to mains voltages and must be used in accordance with this guide. If it is not, the safety protection provided by the equipment may be impaired.



This equipment relies on double/reinforced insulation for safety and does not require a protective earth.

*This equipment has been designed and manufactured by*

**INDUSTRIAL INTERFACE RESEARCH LTD - 2002**  
**Chosen View Road, Cheltenham, Glos GL51 9LT, UK**

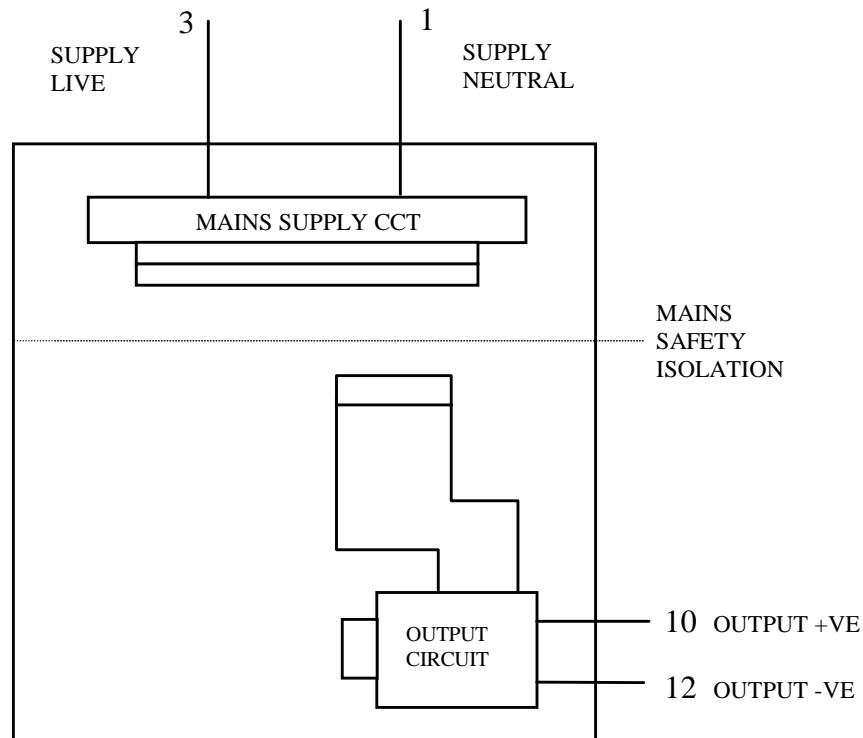
## CONTENTS

1	INTRODUCTION	Page 3
2	UNPACKING AND INSPECTION	Page 3
3	WIRING CONNECTIONS AND INSTALLATION	Page 4
	3.1 CONNECTIONS	Page 5
	3.2 NOTES ON PSU-3 OUTPUT	Page 5
	3.3 INSTALLATION	Page 5
4	OPERATION	Page 6
5	ELECTRICAL AND ENVIRONMENTAL SPECIFICATION	Page 6
	5.1 POWER SUPPLY AND INSTALLATION CATEGORY	Page 6
	5.2 ENVIRONMENTAL CONDITIONS	Page 6
	5.3 COMPLIANCE WITH EUROPEAN COMMISSION DIRECTIVES	Page 6

# 1 INTRODUCTION

This unit is intended to accept a mains supply input of either 115V ac or 230V ac 50/60 Hz and provide a safety isolated 24V dc (12V dc option available) output capable of powering up to four 4-20mA process loops.

The output is double insulated internally from the mains supply input for safety reasons. Please read the whole of this guide before installing your unit.



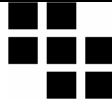

## 2 UNPACKING AND INSPECTION

Please inspect the power supply unit carefully for signs of shipping damage. The unit is packaged to give maximum protection but we cannot guarantee that mishandling will not have damaged the instrument. In the case of this unlikely event:

- i) Do not use the PSU-3 - physical damage may have compromised the safety insulation.
- ii) Please contact your supplier immediately and retain the packaging for subsequent inspection.

Assuming the unit is undamaged please check the side labels as follows:

On one side of the enclosure you will find the serial number label, example of which is shown below:

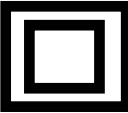

 Industrial Interface		
Part Number		PSU-3
Process Input		-
Output		24V dc; 0-100mA
Power	Voltage	230V ac +/- 10%
	Frequency	50/60 Hz
Supply	Power	3VA
Options		-
Serial N°		P97-123

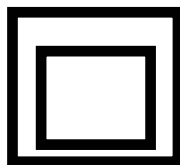
Please check that all the parameters are correct, especially the Power Supply Voltage and Frequency.

### 3 WIRING CONNECTIONS AND INSTALLATION

On the other side of the enclosure you will find the Connection Details label, as shown below:

Please study this carefully to ensure that the unit will be wired correctly. In particular please note the following:

PSU-3 CONNECTION DETAILS		
3	Supply Live	 
1	Supply Neutral	
10	Output +ve	
12	Output -ve	
<i>Do not exceed maximum torque of 0.4 Nm</i>		



This symbol indicates that the unit is of Class II construction - ie it provides double insulation between mains supply and output inside the enclosure. It is up to the installer to preserve the level of insulation outside the unit.



This symbol means **CAUTION!** refer to this guide

It is recommended that bootlace ferrules are used on all wiring terminations. In any case the maximum terminal torque of 0.4Nm must not be exceeded. If it is the resulting damage to the terminal blocks and internal connections could compromise the integrity of the safety insulation. *If in doubt get a smaller screwdriver.*

#### 3.1 CONNECTIONS

**Terminal 3  
Supply Live**

This unit is protected internally by a non-resettable internal thermal cut-out and a 100mA fuse (F 100mA) in the live circuit. This fuse will not blow under normal output short circuit conditions but only if there is an internal fault with the PSU-3. Therefore it is not user replaceable.

It is essential that the following provision is made in the installation:

- i) An appropriately marked or labelled switch or circuit breaker meeting the requirements of IEC947-1 and IEC947-3 shall be included in the supply installation in close proximity to the equipment, within easy reach of the operator.

**Terminal 1  
Supply Neutral**

Connect to mains supply neutral conductor.

**Terminal 10  
Output +ve**

The output conductor which is at a more +ve potential.

**Terminal 12  
Output -ve**

The output conductor which is at a more -ve potential.

### 3.2 NOTES ON PSU-3 OUTPUT

**a) Operational**

The output is protected against short circuit and open circuit conditions. If a current of greater than 100mA is drawn the output voltage will gradually collapse to zero. It will recover when the excessive load is removed.

**b) Safety**

The output circuit is classed as Separated Extra Low Voltage (SELV). This means that it must not be externally connected to voltages exceeding 30V ac or 60V dc, nor does it generate voltages above these limits internally.

### 3.3 INSTALLATION (and removal)

The PSU-3 unit clips directly onto 'Top Hat' (TS35) symmetrical DIN rail. Ideally mounting orientation should be vertical to minimise internal temperature rise. However successful operation in any orientation is possible, provided ambient temperature is below 40°C.

*NOTE: Good airflow around the unit will maximise reliability.*

The use of bootlace ferrules is recommended on wiring terminations.

Do not exceed terminal torque rating of 0.4 Nm - Use an appropriate screwdriver.

This unit can be removed from the DIN rail by sliding a small screwdriver into the slot at the rear of the enclosure on the lower face and gently levering the black plastic clip, whilst lifting the unit from the rail.

## 4 OPERATION

