

PSU-24
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 has been designed and manufactured by

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

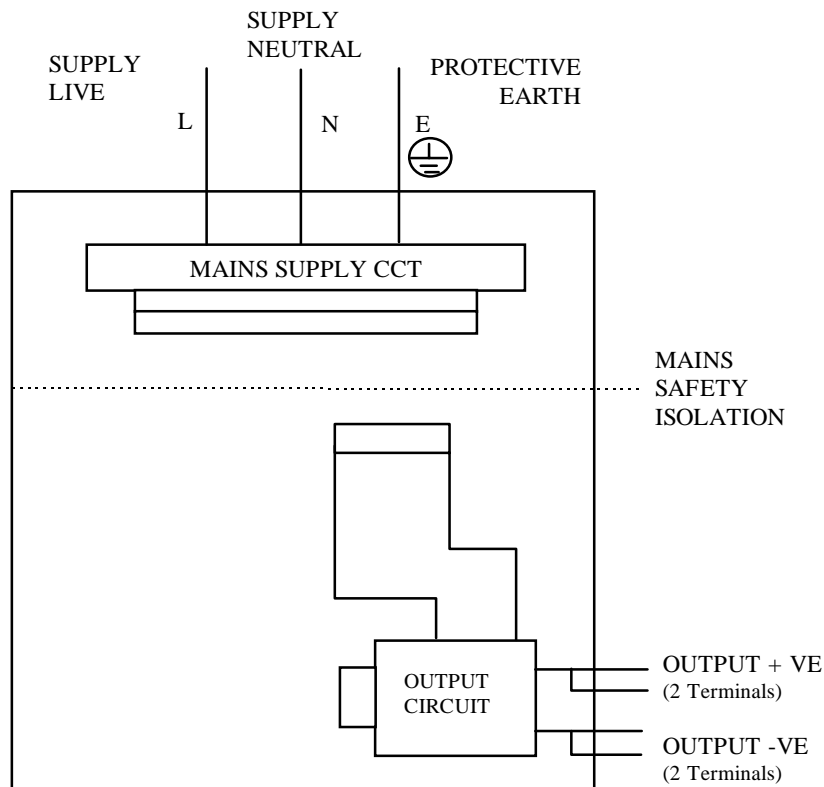
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1 INTRODUCTION

This unit is intended to accept a mains supply between 85 and 270V ac 50/60 Hz and provide a safety isolated 24V dc (12V dc option available) output capable of supplying up to 1A.

The output is isolated internally from the mains supply input for safety reasons. The protective earth terminal must be connected. Please read the whole of this guide before installing your unit.



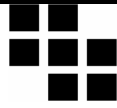

2 UNPACKING AND INSPECTION

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-24 - 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:

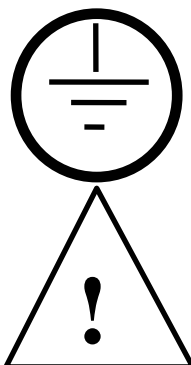
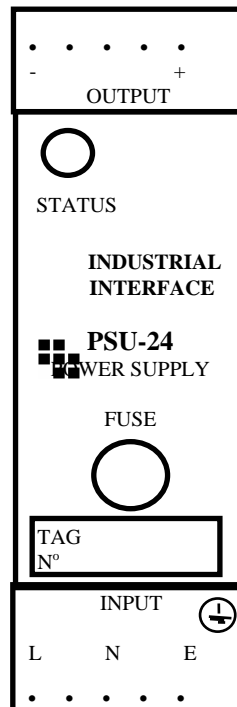
 Industrial Interface		
Part Number		PSU-24
Process Input		-
Output		24V dc; 0-1A
Power	Voltage	85-270V ac
	Frequency	50/60 Hz
Supply	Power	32W
Options		-
Serial N°		PSU97-123

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

3 WIRING CONNECTIONS AND INSTALLATION

On the front panel you will find the Connection Details, as shown below:

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



This symbol indicates that the unit is of Class I construction - ie the protective earth terminal must be connected.

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

The unit should be wired up with the connectors fitted. Since the input and output connectors are keyed, this will ensure that if the unit is unplugged for any reason it cannot subsequently be connected incorrectly.

Input L Supply Live

This unit is protected by a 1A fuse (F 1A) 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-24, or a supply over-voltage. It should only be replaced by a 20 x 5mm fuse of the same type, with a voltage rating of 250V ac and a breaking capacity of at least 35A.

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.

Input N Supply Neutral

Connect to mains supply neutral conductor.

Input E Protective Earth

Connect to protective earth

Output + Output +ve

The output conductor which is at a more +ve potential. (The two outer terminals are connected together)

Output - Output -ve

The output conductor which is at a more -ve potential. (The two outer terminals are connected together)

3.2 NOTES ON PSU-24 OUTPUT

- a) **Operational** The output is protected against short circuit and open circuit conditions. If a current of greater than 1A is drawn the output voltage will 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-24 unit clips directly onto 'Top Hat' (TS35) symmetrical DIN rail or TS32 asymmetrical G-rail. Ideally mounting orientation should be vertical to minimise internal temperature rise. Do not mount unit with slots facing downwards. Ensure 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 pushing gently downwards on the top (slotted) face of the enclosure and lifting the bottom away from the DIN rail.

4 **OPERATION**

The PSU-24 unit has the following front panel components:

- | | |
|-------------------------|--|
| (i) Status LED | In normal operation this will be lit showing that the output is good. |
| <i>WARNING!</i> | Under some fault conditions the LED may be off whilst mains is still present on the supply terminals. <u>ALWAYS</u> isolate mains supply before removing unit. |
| (ii) Fuse Holder | Fuse fitted is 20 X 5mm 1A (F1A); replace with same type and rating only. |
| <i>WARNING!</i> | Isolate mains supply before attempting to replace or examine fuse. |

5 **ELECTRICAL AND ENVIRONMENTAL SPECIFICATION**

5.1 **POWER SUPPLY AND INSTALLATION CATEGORY:**

Installation Category (according to IEC 664):	II*
Pollution Degree (according to EN61010-1 1993):	2
Supply voltage (stated on serial n ^o label):	85 to 270V ac, 50/60 Hz
Power consumption:	32W maximum
Equipment Class (according to IEC 536):	I
External fusing requirement (minimum):	External fuse is not required

* If it is required to employ units in installation category III, please contact the factory.

5.2 **ENVIRONMENTAL CONDITIONS**

(units are for indoor use):

Operating altitude:	Sea level to 2000m
Operating temperature:	0 to 40°C
Storage temperature:	-40 to +70°C
Operating/storage humidity:	0 to 90% RH

If it is required to exceed any of these parameters, please contact the factory.

5.3 COMPLIANCE WITH EUROPEAN COMMISSION DIRECTIVES:

The PSU-24 units comply with the following directives:

89/336/EEC as amended by 92/31/EEC and 93/68/EEC	\	EMC
73/23/EEC as amended by 93/68/EEC	\	LVD