

PS135-24-PSU05Z  
**Power Supply / Battery Charger**  
**To EN54 Latest Amendment, with Battery Impedance Testing**  
27.6V 5A Unit

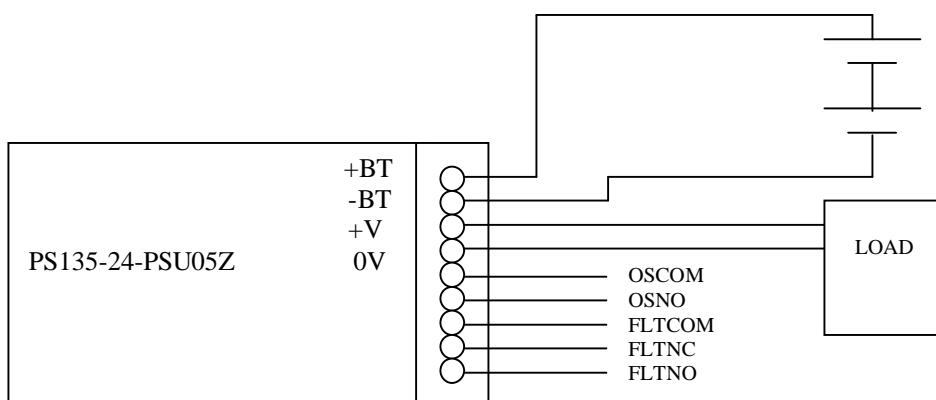


**The PS135- 24- PSU05Z is a high efficiency switch mode battery charger with sophisticated microprocessor controlled battery impedance testing and fault reporting.**

Features

- **27.6V Power Output and Battery Charging up to 5A**
- **Processor Controlled Battery Impedance Testing**
- **Temperature Compensated Battery Charging**
- **Mains Input 90V – 264V**
- **Active Power Factor Correction**
- **Green Mains Indicating LED**
- **Yellow Fault Indicating LED**
- **Specific Fault Reporting to Identify Mains Fail, Battery Missing, Battery Impedance, Charger Fail and Processor Fail**
- **Processor Fail Detection in Accordance with EN54**
- **Fully Protected Against Overload and Short Circuit**
- **Electronic Load Shed to Prevent Deep Discharge of Batteries**
- **Automatic Battery Disconnect in the Event of Over Voltage**
- **Electronic Reverse Polarity Protection**
- **Fault Mode Fail Safe Battery Output Fuse**
- **Separate Output Connection for Load and Batteries**
- **Volt- Free Contacts for Fault Reporting**
- **Fully Boxed**
- **Size: 244mm x 126mm x 56mm**
- **Safety to EN60950- 1: 2006**
- **EMC to EN55022- B**

## Connection Diagram



### Volt-Free Relay Signalling

**There are two independent Volt-Free Relay Contact Outputs:**

#### Volt-Free Contacts: Any Fault

**When all operation is good FLTCOM is connected to FLTNO**  
**When all operation is good FLTCOM is open circuit to FLTNC**  
**When there is any fault FLTCOM is connected to FLTNC**  
**When there is any fault FLTCOM is open circuit to FLTNO**

#### Volt-Free Contacts: DC Power Available

**When DC Power is available OSNO is connected to OSCOM**  
**When no DC Power is available OSNO is open circuit to OSCOM**

## Additional Technical Information

### Connecting the Load and Batteries

**The correct way to connect the load (equipment) to the batteries is to connect the load to the 0V and +V terminals and the battery to the -BT and +BT terminals.**

**When connected like this the PS135- 24- PSU05Z controls charging the batteries and connects the batteries to the load (equipment).**

**When connected like this the PS135- 24- PSU05Z will provide *load shed*\* thus preventing deep discharge of the batteries in the event of long- term mains fail.**

***\*load shed***

***When the unit has no mains power and the batteries are providing power to the load (equipment) it is important that the batteries are not allowed to run down to deep discharge because the batteries may be permanently damaged.***

**The PS135- 24- PSU05Z automatically protects the batteries from deep discharge. The unit measures the output voltage of the batteries when operating without mains and when the battery voltage has fallen to 90% of its nominal voltage an electronic switch disconnects the batteries from the load.**

**On this unit load shed will operate soon after the battery voltage falls below 21.0V (90% of 24V).**

#### **Green Mains Indicating LED**

**This will be ON to indicate mains is present**

#### **Yellow Fault Indication LED**

**No Fault = LED OFF**

**Mains fail = LED single flash repeated at regular intervals**

**Charger fail = LED single flash repeated at regular intervals**

**Incorrect output voltage = LED two flashes repeated at regular intervals**

**Battery impedance fault = LED three flashes repeated at regular intervals**

**Battery missing or Reverse Battery = LED four flashes repeated at regular intervals**

**Microprocessor fail = LED continuously ON**

## Protection

**The PS135- 24- PSU05Z has sophisticated circuits to prevent damage from the high currents that can flow when well- charged batteries are misconnected in some way. In nearly all cases the unit will electronically protect itself from misuse.**

**The 7.5A battery fuse is only present as an absolute fail- safe to prevent against fire risk in the event of additional damage or malfunction of the internal electronics.**

## Operating Temperature

**- 5C to +50C**

## Mechanical

**Overall size: 244mm x 126mm x 56mm**

### Fixings

**The unit can be fixed in two ways:**

- 1) There are four corner holes on the base plate, diameter 3.5mm**
- 2) There are six M3 stand- offs in the base of the unit that can be used to screw into. The stand- offs are blind with a maximum penetration depth of 4.5mm**

**Detail drawing attached**



Power Supply Design & Manufacturing  
6-7 BLOOMFIELD PARK, BLOOMFIELD ROAD, TIPTON, WEST MIDLANDS, DY4 9AP

Tel: 44 (0) 121 557 6499  
Fax: 44 (0) 121 557 6498

[www.psudesigns.co.uk](http://www.psudesigns.co.uk)  
[sales@psudesigns.co.uk](mailto:sales@psudesigns.co.uk)

VAT No: GB 648 5492 95

Reg No: 2600288

