

# AquiTron

# AT-PSU24-1

Power Supply Unit



**INSTALLATION  
INSTRUCTIONS**



**aquilar**  
leak detection solutions

# AT-PSU24-1

## Power Supply Unit

Please read these instructions carefully and keep them in a safe place (preferably close to the module) for future reference. These instructions must be followed carefully to ensure proper operation. The AT-PSU24-1 has been specifically selected for use with TraceTek TTDM-128 leak detection panel.

### A. GENERAL INFORMATION

The model AT-PSU24-1 Power Supply Unit will provide 27.6Vdc at a maximum of 1 A. When fitted with an optional rechargeable battery, the unit provides a standby facility during mains failure. A fault indicator and mains present indicator are fitted as is a battery disconnect feature to protect the rechargeable battery from over discharge. A regulated 27.6Vdc output supplying continuous full rated current to load and up to an additional 0.5A for trickle charging a standby battery.

- Continuous full rated current to load
- Additional 0.5A to charge standby battery
- Electronic overload protection shuts down output until overload or short circuit is removed
- Deep discharge protection disconnects battery from load when battery voltage falls to 21v
- Mains Indicator LED (green) showing mains present
- Fault Indication LED (yellow) showing fault

### B. PRODUCT INFORMATION

#### INPUT SPECIFICATIONS

**Voltage:** 90-264 Vac @ 50-60Hz

**Mains Input Fuse:** T2.0A 20mm HRC

#### OUTPUT SPECIFICATIONS

**Voltage:** 27-28Vdc (27.6Vdc nominal) on mains with rechargeable battery fitted

**Load Current:** Continuous supply at full rated output 1A plus up to 0.5A available for battery charging

**Ripple:** 100mV pk - pk max

**Load Regulation:** 0.9%

**Load Output Fuse:** 1 A

**Overload Protection:**

F1 - Mains input fuse - T2.0A (20mm HRC)

F2 - Output fuse - F1.0A (20mm)

F3 - Battery fuse - 630mA (20mm)

#### STANDBY BATTERY

**Battery Capacity:** 2 x 7Ah / In Series

**Recharge Time:** 24 hours

#### LED INDICATORS

**Mains LED :** GREEN - Mains Present

**Fault LED :** YELLOW - Fault present: output fuse fail, output overload, low battery voltage

#### TEMPERATURE

**Operating:** -10 to +40°C 95 % RH non-condensing.

**Storage:** -20 to +60°C

#### CONNECTIONS

MAINS Live, Earth, Neutral.

O/P + +ve voltage O/P to load equipment

O/P - -ve voltage O/P to load equipment

BATT+ +ve connection to standby battery

BATT- -ve connection to standby battery

#### CASE SIZE

330 x 275 x 80 mm

## AT-PSU24-1 Power Supply Unit

### APPROVALS

Low Voltage 2006/95/EC, EMC 2004/108/EC, WEEE 2002/96/EC, RoHS 2011/65/EU.

### C. OPERATION

The unit is factory adjusted to provide a 27.6Vdc output. The mains present indicator is a green LED. During mains failure the load will be supplied from the rechargeable battery. The battery must be connected correctly to prevent damage. An automatic disconnect circuit will operate if the battery voltage becomes too low. Upon restoration of the mains supply the battery will be recharged. Should however a battery be fitted or replaced with one that which has been damaged or over discharged, the PSU will not recharge. This unit must be used with D.C. appliances only.

### D. INSTALLATION INSTRUCTIONS

This unit is only suitable for installation as permanently connected equipment. The PSU is NOT SUITABLE for external installation. The PSU should be installed according to all relevant safety regulations applicable to the application. This unit must be fed from a mains power source having a separate (approved) disconnect device and fitted with a fuse or other over current protection device rated at 3A maximum. Ensure that the disconnect device used has appropriate earth fault protection to the applicable standard.

1. Fix PSU to wall or other support structure in correct orientation i.e. with hinge on left hand side, using screws of sufficient size and length through the mounting holes. Note: The PSU should be installed in area with free air movement and with a minimum of 100mm clearance between the sides and lid of the power supply case and any adjacent wall, ceiling or other partition.
2. Knock outs are provided in the case for mating with external trunking or conduit.
3. Mains input cable must be to the applicable standard with a 3A or greater current capacity, i.e. 0.5mm<sup>2</sup> nominal conductor area, having a minimum operating voltage of 300 / 500 Vac.
4. The low voltage output cable must be sized to carry the rated load current to the devices connected to the PSU.
5. Mains and low voltage cables should be routed to use different entry/ exit holes in case. Bushes should be used to protect cable sheaths from chamfer. The bushings should meet a minimum flammability specification of UL94 HB and should be correctly sized i.e. close fitting with respect to cable sizing.
6. Mains input cable should be securely fastened in position using the cable tie supplied through the saddle.
7. Where supplied, the ferrite ring should first be fitted onto the output leads and secured (adjacent to PCB terminals) in accordance with the ferrite fixing instructions.
8. The low voltage output cables should be securely fastened in position using the cable tie supplied through the saddle adjacent to the cable exit hole.

## AT-PSU24-1 Power Supply Unit

### E. COMMISSIONING INSTRUCTIONS

1. With no other connections made to the PSU, connect the mains Input wires to the fused mains terminal block, ensuring that the mains isolator (disconnect device) is open. Observe the wiring Information on the (yellow) label adjacent to the terminal block
2. Fasten wiring in place with cable tie to the saddle.**Note:** Equipment must be earthed.
3. Apply mains Input. Ensure that the green Mains LED illuminates.
4. Open mains isolator or remove fuse from PSU mains input block to power down the PSU.
5. Where ferrite ring supplied, pass the load connection wires through the ferrite ring (in accordance with the ferrite fixing kit instructions) and connect to the PCB terminals marked LOAD + and -. Fasten ferrite in place with a cable tie to the saddle (adjacent to PCB terminals).
6. Where ferrite ring NOT supplied, connect the load wires to the PCB terminals marked LOAD + and LOAD.-
7. Fasten load wiring in place with cable tie to saddle (near to cable exit hole).
8. Re-apply mains. Verify that the green Mains LED illuminates.
9. Connect Red battery cable to +ve (Red) terminal of the battery (1 ), and the Black battery cable to the -ve (Black) terminal of the battery (2). Where 2 x 12v batteries are used they should be connected in series i.e. -ve terminal of battery 1 is connected to +ve terminal of battery 2 using the short link lead provided.
10. Disconnect mains supply. Verify that the load equipment maintains energised from the standby battery and the green. 'MAINS ON' LED is extinguished.
11. Reconnect the mains. Verify that the green Mains LED is illuminated.
12. With the unit still powered, remove the PCB output fuse and verify that the Yellow 'FAULT' LED is illuminated. Replace the PCB output fuse and verify that the Yellow 'FAULT' LED is extinguished.
13. Close cover and secure using fastening screws provided.

### OPERATING INSTRUCTIONS

The unit is factory adjusted to provide a 27.6Vdc. This unit is intended for use by Service Personnel only -There are NO USER SERVICEABLE parts inside. The green Mains LED will be illuminated whilst the mains supply is present.

- a. Battery charge current is IN ADDITION to continuous load current.
- b. Mains fuses - 20mm 'T' HBC ceramic type.
- c. Battery fuse -20mm 'F' glass-type.
- d. Standby batteries -Sealed Lead Acid type.
- e. Battery recharge times are for the

maximum battery size and minimum charge current available.

- f. All weights shown do not include standby batteries.
- g. Battery Recharge times shown are to 80% capacity.

### CAUTION

Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the battery manufacturer's instructions and all local and national regulations.

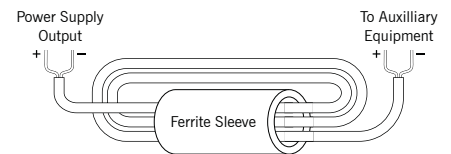
## AT-PSU24-1 Power Supply Unit

### MAINTENANCE

There is no regular maintenance required of the PSU other than periodic testing and replacement of the standby battery. Reference should be made to the battery manufacturers documentation to determine typical/expected battery life with a view to periodic replacement of the battery. If the output of the PSU fails the cause of the failure should be investigated e.g. short circuit load. The fault should be rectified before restoring power to the PSU. The fuses may need to be replaced. Ensure the correct fuse rating and type is used.

### FERRITE SLEEVE

To comply with the E.M.C. European directive the enclosed ferrite sleeve must be installed in line with the power supply output conductors, looping through twice as shown in the diagram. Locate the sleeve within 30mm of PSU output terminals. To comply with current BSEN60950 safety legislation the enclosed tie wraps and bases must be installed adjacent to the case cable entry / exit points (Used to secure mains input and power output / fault relay wiring).

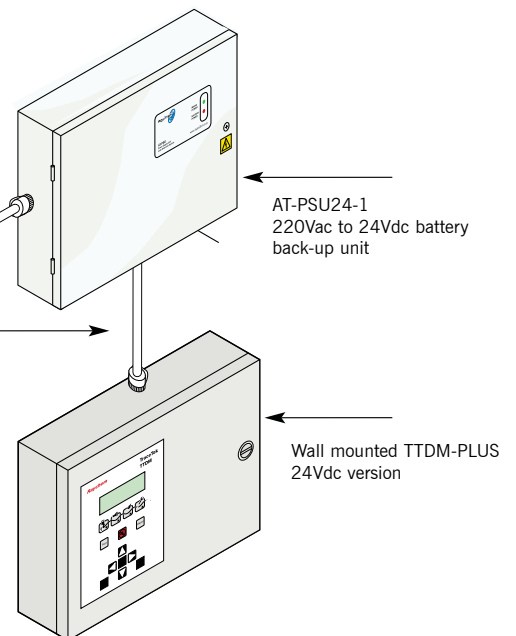


## F. CONFIGURATION EXAMPLES

### PSU mounted within the ceiling void

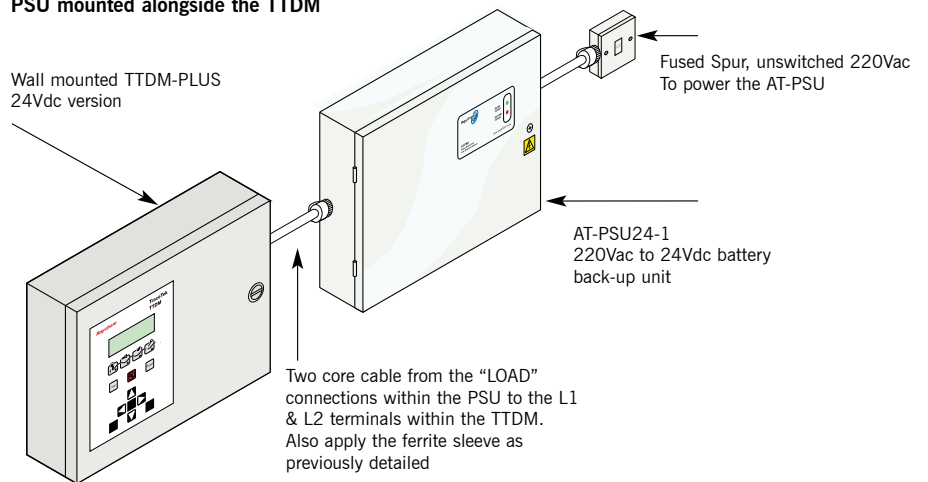
Fused Spur, unswitched 220Vac  
To power the AT-PSU

Two core cable from the  
"LOAD" connections within the  
PSU to the L1 & L2 terminals  
within the TTDM.  
Also apply the ferrite sleeve as  
previously detailed



## AT-PSU24-1 Power Supply Unit

### PSU mounted alongside the TTDM



**Important:** All information, including illustrations, is believed to be reliable. Users, however, should independently evaluate the suitability of each product for their application. Aquilar Limited makes no warranty as to the accuracy or completeness of the information, and disclaims any liability regarding its use. The only obligations of Aquilar Limited are those in the Aquilar Standard Terms and Conditions of Sale for this product, and in no case will Aquilar Limited be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use or misuse of the product. Specifications are subject to change without notice. In addition, Aquilar Limited reserves the right to make changes – without notification to Buyer – to processing or materials that do not affect compliance with any applicable specification.

*AquiTron is a trademark of AquiTron Limited  
Aquilar is a trademark of Aquilar Limited*