

ELMDENE

Protecting People & Property

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13.8V DC 8A / 27.6V DC 4A (SELECTABLE)

Model:

SWITCH MODE POWER SUPPLY

ACCESS-PSU2-8A

FOR VARIOUS ACCESS CONTROL PCBs – SEE TABLE FOR DETAILS

FEATURES

A high efficiency cost effective power supply, for use in Access Control. Featuring a selectable regulated output of 13.8V dc or 27.6V dc, supplying continuous full rated current to load plus an additional 0.5A for charging one or two 12V standby batteries. The universal mains input voltage enables the power supply to be used across a wide geographical area. The highly efficient switch mode design ensures low operating costs while generating less heat. The modular construction simplifies maintenance.

- Selectable 12V dc or 24V dc output
- Mains fail volt free fault output
- Independent ancillary relay
- Continuous full rated current to load
- Up to 0.5A to charge one or two 12V standby batteries
- Reverse battery connection protection
- Multi-fused output models available
- Modular construction for ease of maintenance
- Electronic short circuit and overload protection
- Universal mains input voltage 90-264V ac
- Installer safe design with all high voltage electronics fully shrouded
- Green Mains present LED
- Yellow Fault LED
- Also available in unboxed format

SPECIFICATION

Input Specification

Voltage	Rated: 100-240Vac (50-60Hz) Operating: 90-264Vac (50-60Hz)
Max Current	See Model Specification Table
Mains Input Fuse	See Model Specification Table
Max standby Power	1.5W (No load and no battery connected)

Output Specification

	<i>12V Mode</i>	<i>24V Mode</i>
Voltage (under mains)	13.5 – 14.0V dc (13.8V nominal)	27.0 – 28.0V dc (27.6V dc nominal)
Voltage (under battery)	10.5 – 12.4V dc	21.0 – 24.7V dc
Fused Output Models	4-way fused outputs	

Max load current	See Model Specification Table
Ripple	100 mV pk-pk max
Load output Fuse	See Model Specification Table below
Overload	Electronic shutdown (mains operation) and fuse protection Battery protection by self-resetting thermal fuse

Standby Battery

Battery Type	One or two 12V Valve Regulated Lead Acid
Battery Capacity	See below under enclosure size.
Battery Charging Fuse protection	0.5A thermal fuse (self-resetting)

Environmental

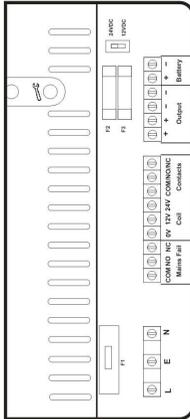
Temperature	-10 to +40°C (operating) 75% RH non-condensing -20 to +80°C (storage)
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Mechanical

Model	Enclosure Dimensions w x h x d mm (External)	Max Battery Capacity	Weight (Kg)
ACCESS-PSU2-8A	400 x 500 x 80	1 x NP17 (17Ah)*	6.50

*For 12V applications only. Ensure voltage selector is set **12V** before applying load or connecting battery.

CONNECTIONS



- Batt +, -**
Connection to standby battery. Use cables provided.
Note: Observe polarity
- O/P +, +, -, -**
Dual (common) output connection to equipment to be powered.
Note: Observe polarity
- 0V, 12V, 24V, COM, N/O, N/C**
Independent Ancillary relay
Relay available for installer use, operated by either 0V / 12V or 0V / 24V, local or remote source (e.g. fire alarm interface). Contact rating is 30V, 5A
- Mains Fail**
Mains fail relay contacts
COM connects to N/O when mains is on.
COM connects to N/C when mains is off.
Contact rating is 30V, 0.5A

INSTALLATION INSTRUCTIONS

This unit is only suitable for installation as permanently connected equipment. This PSU is *NOT SUITABLE* for external installation. 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. *EQUIPMENT MUST BE EARTHED*. Before installation, ensure that external disconnect device is *OFF*. The PSU should be installed according to all relevant safety regulations applicable to the application.

Mounting

- 1) Mount securely in correct orientation allowing minimum clearance of 100mm to other objects or walls.
- 2) Route mains and low voltage output cables via different knockouts and/or cable entry holes.
- 3) Use bushes and cable glands rated to UL94 HB minimum.

Mains Power Up

- 4) Attach correctly rated mains cable (minimum 0.5mm² [3A], 300/500Vac). Fasten with cable ties.
 - 5) Select required output voltage using PCB switch: 13.8V dc (12V battery) or 27.6V dc (2 x 12V batteries)
- Note: Only select/change voltage output with unit powered down (mains and battery).**
- 6) Apply mains power. Check for 13.8V or 27.6V dc on load outputs. Check Green Mains LED is ON.
 - 7) Disconnect mains power.

Load Output

- 8) Attach correctly rated load cable and fasten using cable ties. Note polarity. Ensure rated load voltage is the same as supply is set to.
- 9) Apply mains power. Check Green Mains LED is ON and output is healthy before connecting load.
- 10) Connect and verify load is operating correctly.
- 11) Disconnect mains power.

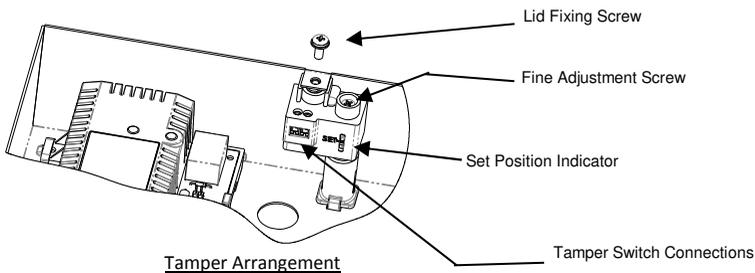
Standby Battery

- 12) **Ensure a single 12V battery is used for 12V operation, and two 12V batteries in series for 24V.**
- 13) Attach supplied battery cables to terminal block and batteries.
NOTE: If in 24V mode, ensure correct polarity of battery connections: **Red** lead to **+ve of battery 1**, **Black** lead to **-ve of battery 2**. Connect **-ve of battery 1** to **+ve of battery 2** using short link lead
- 14) Position batteries to avoid lid fixing screw.
- 15) Apply mains power. Check Green Mains LED is ON.
- 16) Check there is no fault indication on Yellow Fault LED.
- 17) Disconnect mains power. Check that the batteries continue to supply the load. Check Green Mains LED is OFF and Mains Fail relay operated.
NOTE: Batteries must have sufficient charge to supply the load

- 18) Reconnect mains power. Check Green Mains LED is ON and Mains Fail relay showing healthy.
- 19) Remove Output fuse (F3) and check Yellow Fault LED is ON.
- 20) Replace Output fuse, and remove PSU protection fuse (F2). Check Yellow Fault LED is ON.
- 21) Replace PSU protection fuse (F2). Check Yellow Fault LED is OFF.
- 22) Test operation of Ancillary relay as required.

Tamper (See diagram below)

- 23) Connect tamper switch to appropriate inputs of control and indicating equipment (CIE).
- 24) Check that the tamper switch is CLOSED when the lid/cover is closed and the retaining screw is fitted, OPEN when the retaining screw is removed and the lid/cover is open. Use fine adjustment screw if necessary, no more than one turn in either direction, to align indicator with set point.
- 25) Close the lid and fasten with screw supplied. Alternatively fit the cover in place, the correct orientation is with the cover retaining feature engaging over the bottom lip of the base, fasten with screws supplied.
- 26) Re-check tamper circuit is closed at the control panel.



Lid Fixing Screw
(Sets tamper switch)
Note The Lid Fixing Screw at the tamper position MUST be the 12mm screw supplied for the tamper mechanism to operate correctly

MODEL SPECIFICATION TABLE

	ACCESS-PSU2-8A
Output Current (13.8V dc)	8A
Output Current (27.6V dc)	4A**
Battery Charge Current	0.5A
Mains LED (Green)	✓
Fault LED (Yellow)	✓
Max Mains Input Current (at 90V ac)	2.0A
Mains Input Fuse (20mm HRC)	T3.15A
F3 - Output Fuse (20mm)	F8.0A
F2 - PSU Protection Fuse (20mm)	F4.0A
Battery Fuse	PTC (self-resetting) fuse – Internal to unit

** Only suitable when 2 batteries are fitted in series

FUSE VALUES (4 WAY FOM)

		FOM Fuse Values for 12V / 24V	
Product	Default Fuse	4-way FOM @ 12V	4-way FOM @ 24V
ACCESS-PSU2-8A	12V	4 x 2A (8A)	4x 1A (4A)

CONTROL BOARDS

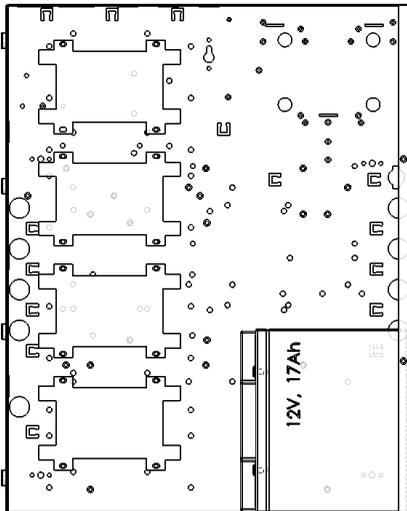
Ensure the PSU rating is suitable by checking the Access Control board's manual.

This ACCESS-PSU is supplied with an adaptor plate (AP1) which has fixing positions for a range of Access Control boards and also has fixing positions in the main base which can be accessed by removing the AP1 plate. The PSU contains a pack of various fixings which suit most access control boards but please ensure it is securely in place once fitted.

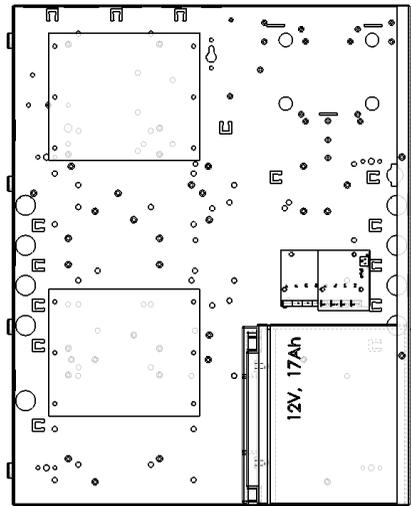
Please note hole positions are subject to change without notice and Elmdene International Ltd are not responsible for any changes made by the manufacturers of the listed access control boards

PCB Holes in the Tin		Max Qty	PCB Holes in AP1-B (Adaptor plate 1)		Max Qty
Mercury	EP1501 (Type 3)	4	Salto	Xs4 2.0 (CU4200)	2
	MR51e (Type 3)	4		CV505VN	
	MR50 (Type 5)	1	Vanderbilt (ACT)	ACTPro 1500e	4
	EP2500 (Type 1)	2		AP7003	3
	EP1502 (Type 2)	2	NEDAP	AP7031	3
	EP4502 (Type 2)	2		AP7803	3
	MR52 (Type 2)	2			
		MR161N (Type 2)	2		
	MR16OUT (Type 2)	2			
Paxton	Net2 plus	4			
	Net2 I/O	4			
	Net2 classic	4			

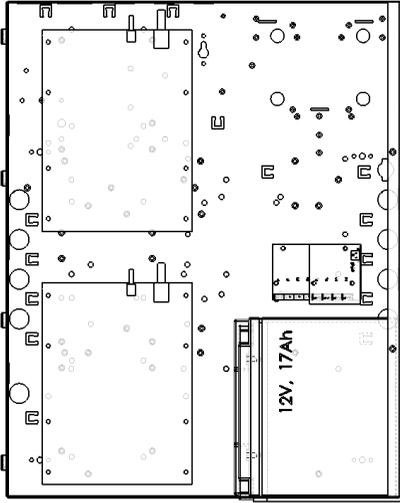
Access Control board positions



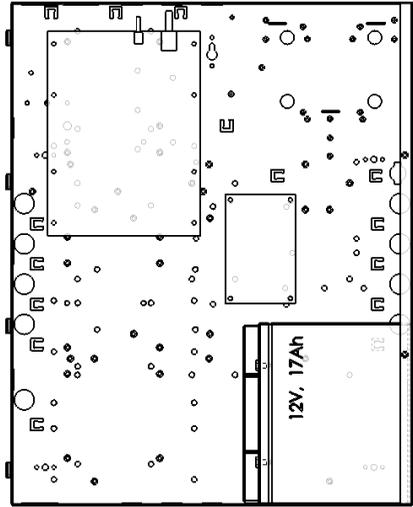
Type 3



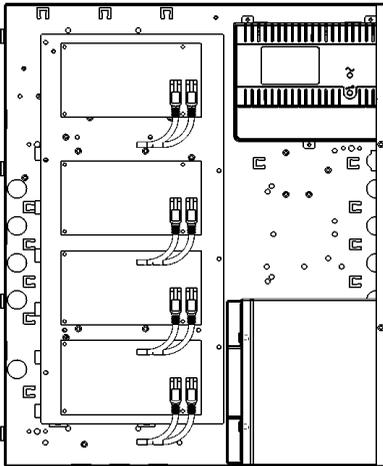
Type 1



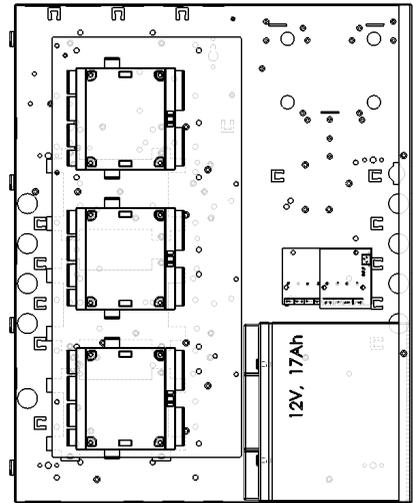
Type 2



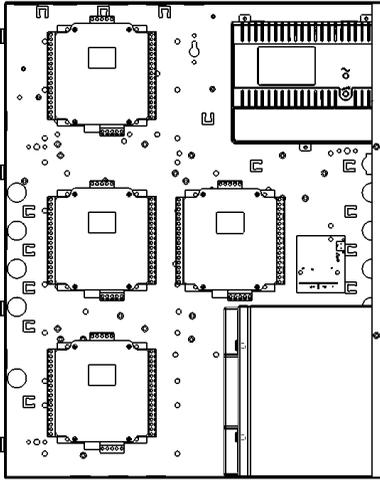
Type 2 + Type 5



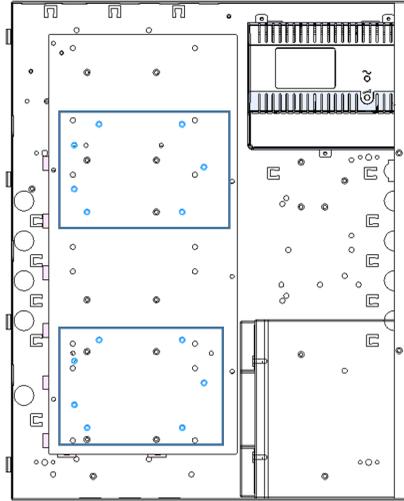
ACT



NEDAP



Paxton



SALTO

OPERATING INSTRUCTIONS

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. In the event of a fault condition, the Yellow Fault LED will be illuminated.

MAINTENANCE

There is no regular maintenance required of the PSU other than periodic testing and replacement of the standby batteries.

Reference should be made to the battery manufacturer's 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 Output (F3) or PSU Protection (F2) fuses may need to be replaced.

Ensure the correct fuse rating and type is used.

LOCAL INDICATORS

MAINS LED (Green)

Mains present

FAULT LED (Yellow)

Fault present: Output fuse fail or Protection fuse fail (requires load and battery to be connected); battery shorted, reversed, or low voltage.

COMPLIANCE

This power supply unit meets the essential requirements of the following European Directives:

Low Voltage: 2014/35/EU

EMC: 2014/30/EU

WEEE: 2012/19/EU

RoHS2: 2011/65/EU



DISPOSAL OF PRODUCT AT END OF LIFE

This product falls within the scope of EU Directives 2012/19/EU Waste Electrical and Electronic Equipment (WEEE) and 2013/56/EU (Battery). At the end of life, the product must be separated from the domestic waste stream and disposed via an appropriate approved WEEE disposal route in accordance with all national and local regulations.

Before disposal of the product, any batteries must be removed, and disposed separately via an appropriate approved battery disposal route in accordance with all national and local regulations. Package used batteries safely for onward transport to your supplier, collection point or disposal facility.

Caution: Risk of fire or explosion if bare battery wires are allowed to touch.

See Specification for battery type information. The battery is marked with the crossed out wheellie bin symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For more information see: www.recyclethis.info

Explanation of symbols: (Not all may apply)



Fault Indication



Shock Risk - isolate before attempting access



Certification Level



Mains Present



Protective Earth



Do not dispose of in unsorted waste

Specifications subject to change without notice

The packaging supplied with this product may be recycled. Please dispose of packaging accordingly.