

# PERTRONIC INDUSTRIES PTY LTD

## DATASHEET

### AS 7240.4 V2 Power Supplies

#### AUX24/5PSU-7240, AUX24/11PSU-7240

#### 24/5PSUV2-7240, 24/11PSUV2-7240, 24/22PSUV2-7240



### Power Supply Systems

- ✓ 24 Volt 5 Amp Auxiliary Power Supply in Lockable Battery Cabinet
- ✓ 24 Volt 11 Amp Auxiliary Power Supply in Lockable Battery Cabinet

### PSU Modules

- ✓ 24 Volt 5 Amp Supervised Power Supply Unit
- ✓ 24 Volt 11 Amp Supervised Power Supply Unit
- ✓ 24 Volt 22 Amp Supervised Power Supply Unit

## Overview

Pertronic AS 7240.4 Power Supplies provide 28 volt dc power from the ac mains supply, with automatic battery backup, fault supervision, and optional remote control & monitoring. They are designed for systems built with the Pertronic F220® fire panel, and they are well-suited to any 24 volt dc (nominal) AS 7240.2-compliant fire system. The V2 models provide increased output current during periods of high demand.

During normal mains-powered operation the load is supplied from a regulated 28 volt dc switched mode supply. If mains power is lost, the PSU automatically switches to battery power.

Batteries can be changed without interrupting power delivery. The battery connection is protected against damage from short or open circuits. Shorting the battery cables while they are disconnected from the batteries will not damage the power supply or interrupt its operation.

Pertronic AS 7240.4 power supplies are able to supply full load current without any batteries connected.

A Timed Power Relay allows external equipment to be switched on or off during a mains failure. The Timed Power Relay is activated thirty seconds after mains power is lost, and deactivated after mains power is restored. For example, the Timed Power Relay contacts can be wired in series with a door holder circuit, so that the door holders



*Pertronic 24 Volt 5 Amp  
Auxiliary Power Supply  
AUX24/5PSU-7240*

are released during an extended power outage. This would reduce the system's power demand and extend its operating time on battery power.

Automatic fault supervision includes an automatic battery capacity check, an automatic battery presence check, and real-time monitoring for a range of fault conditions. The Fault LED lights up if the system has a fault. An internal seven-segment LED display identifies fault conditions. A normally energised fault relay provides a voltage-free changeover contact for signalling a fault condition to external equipment.

## Features

- » Mains-operated dc power supplies
- » Charger output for 24 volt (nominal) standby batteries
- » Batteries can be changed without interrupting power supply to the load
- » Timed Power Relay allows external equipment (such as door holders) to be turned off during extended mains outages
- » Automatic battery backup
- » Capable of supplying full system load without batteries
- » Automatic fault supervision
- » Fault relay (normally energised)
- » Internal diagnostic 7-segment fault indicator
- » Fuse-protected 6-way output distribution
- » Temperature-compensated charging controlled by internal or remote battery temperature sensor
- » DIP-switch configurable for fire panel (Panel mode) or stand-alone applications (Stand-Alone mode)
- » The auxiliary power supply systems include:
  - » External panel indicators: MAINS present, AUTOMATIC TEST, FAULT
  - » Lockable front door
  - » 32 mm diameter knockouts for cable entry

## Auxiliary Power Supply Systems



### AUX24/5PSU-7240, AUX24/11PSU-7240 (Note 1)

Auxiliary power supply system complete with AS 7240.4 supervised power supply unit in lockable battery cabinet.

Suitable for sealed valve-regulated lead-acid batteries as specified on page 3.

#### Dimensions

- External 350 H x 550 W x 190 D mm
- Battery Compartment 200 H x 400 W x 170 D mm

#### Weight

- AUX24/5PSU-7240 7.0 kg
- AUX24/11PSU-7240 7.5 kg

Auxiliary power supply systems are supplied without batteries.

## Power Supply Units



*Pertronic 24/22PSUV2-7240  
AS 7240.4 Power Supply Unit*

### 24/5PSUV2-7240 (Notes 2 to 5)

24 volt 5 amp supervised power supply unit with 2.1 amp charging output.

- Dimensions: 217 L x 108 W x 71 D mm
- Weight: 1.0 kg

### 24/11PSUV2-7240 (Notes 2 to 5)

24 volt 11 amp supervised power supply unit with 2.1 amp charging output.

- Dimensions: 217 L x 108 W x 74 D mm
- Weight: 1.4 kg

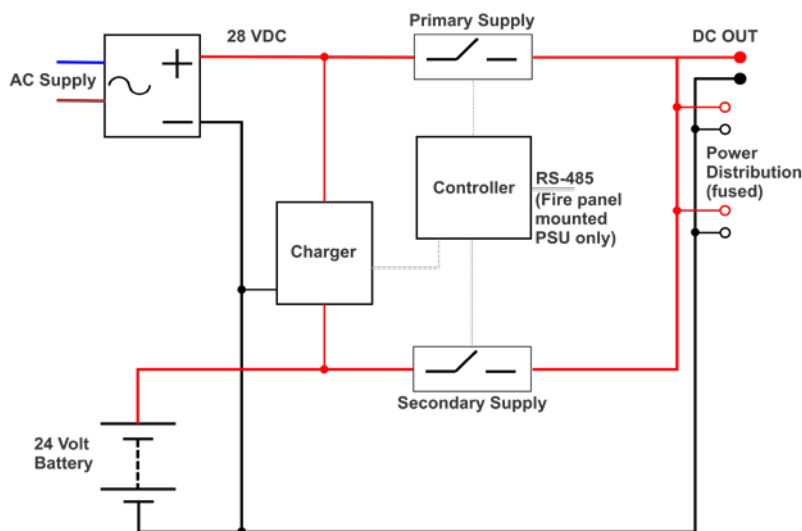
### 24/22PSUV2-7240 (Notes 2 to 4)

24 volt 22 amp supervised power supply unit with 5.2 amp charging output.

- Dimensions: 248 L x 108 W x 96 D mm
- Weight: 1.9 kg

Power supply units are supplied without remote temperature sensors. The sensor is available with cable lengths to suit large or small cabinets. See "Ordering Information" on page 4 for details.

## Simplified Schematic



*Simplified Schematic of Pertronic AS 7240.4 Power Supply Unit*

### Notes

1. A Pertronic auxiliary power supply (AUX24/5PSU-7240 or AUX24/11PSU-7240) may be used with a separate fire detection and alarm system (FDAS). However, to comply with AS 7240.4:2018 section 5.7, the power supply and FDAS cabinets must butt together so that cabling between power supply and FDAS is not exposed outside of the cabinets.
2. To fully comply with regulatory requirements the 24/5PSUV2-7240, 24/11PSUV2-7240, or 24/22PSUV2-7240 Power Supply Unit must be mounted inside an enclosure that prevents access by unauthorised persons. The enclosure must provide adequate heat dissipation.
3. To comply with AS 7240.4:2018, a 24/5PSUV2-7240, 24/11PSUV2-7240, or 24/22PSUV2-7240 Power Supply Unit must not be used with an FDAS mounted in a separate cabinet.
4. The 24/5PSUV2-7240, 24/11PSUV2-7240, and 24/22PSUV2-7240 are genuine replacement power supplies for Pertronic F220® fire panels.
5. The 24/5PSUV2-7240 and 24/11PSUV2-7240 are recommended replacements for Pertronic 24/5PSU-7240 and 24/11PSU-7240 PSUs.
6. For accurate charge voltage temperature compensation, Pertronic AS 7240.4 power supplies must be fitted with remote temperature sensors, which must be positioned as close as possible to the batteries. Pertronic Auxiliary Power Supply Systems are supplied complete with remote temperature sensors. Stand-alone power supply units are supplied without remote sensors. Please refer to "Ordering Information" on page 4 for details.
7. On all models, the maximum output current is available with battery charge current reduced to approximately 225 mA.

## Specification

		5 Amp	11 Amp	22 Amp (PSU Only)	
Product Code	Power Supply Unit	24/5PSUV2-7240	24/11PSUV2-7240	24/22PSUV2-7240	
	Aux. PSU System (notes 11, 12)	AUX24/5PSU-7240	AUX24/11PSU-7240	Refer to note 11	
Input Power		176 VA	350 VA	680 VA	
Input Voltage		85 - 264 V ac			
Input Frequency		50 - 60 Hz			
Load Output Voltage		27.5 +0.5 /-1.0 V dc			
Charging Output Voltage		27.4 V dc @ 20 °C			
Charge Voltage Temperature Coefficient		-40 mV / °C, from 0 °C to +40 °C (to suit lead-acid batteries. See note 6.)			
Maximum Output Current (Note 7)		4.5 A	10.5 A	21.5 A	
Output Current (Note 8)		2.7 A	8.25 A	15.5 A	
Maximum Charging Output Current (Note 9)		2.1 A	2.1 A	5.2 A	
Quiescent Current		15 mA	15 mA	15 mA	
Battery Type		AGM or Gel, Valve-Regulated Lead-Acid (VRLA) only			
Battery Voltage (Nominal)		2 x 12 V dc, series-connected			
Recommended Minimum Battery Size		7 amp-hour	7 amp-hour	16 amp-hour	
Aux. PSU Maximum Battery Capacity (Note 9)		40 amp-hour	40 amp-hour	not applicable	
External Fault Relay		1 A @ 30 VDC Form C, resistive load			
Timed Power Relay		5 A @ 30 VDC Form C, resistive load			
Fault Supervision		Mains Lost, Supply Low Voltage, Supply High Voltage, Battery Missing, Battery Low, Charger Fault, External Temperature Sensor Missing, Charger Current High, Comms Lost, Program CRC failure, Load Shutdown, Watchdog Reset			
Battery Presence Check		Automatic check every sixty seconds for battery on charging output			
Battery Capacity Check (Note 10)		Automatic 40-minute load test once per day with the PSU configured in Stand-Alone mode, or when initiated via the RS-485 data bus when the PSU is configured in Panel mode.			
RS-485 Data Bus (Note 10)		115.2 kbit/s			
RS-485 Data Reporting (Note 10)		Input / Output DC Voltage, Battery Voltage, Charger Voltage, Float Voltage, System Current, Charger Current, Temperature, Fault Status, Firmware Version.			
Output Connections		Six individually fused DC outputs One unfused DC output			
Output Termination	Fused Outputs	Plug-in screw terminals, 0.5 mm <sup>2</sup> to 2.5 mm <sup>2</sup> (stranded cable)			
	Unfused Output	Fixed screw terminals, 0.5 mm <sup>2</sup> to 2.5 mm <sup>2</sup> (stranded cable)			
Fuse Ratings	F1, F2	DC Input, Battery	15 amp	15 amp	25 amp
	F3, F4	Power Distribution	3 amp	3 amp	3 amp
	F5	Power Distribution	3 amp	3 amp	5 amp
	F6	Power Distribution	5 amp	5 amp	25 amp
	F7, F8	Power Distribution	10 amp	10 amp	10 amp
Cable Entry		2 x 32 mm diameter knockouts, back, upper left 1 x 32 mm diameter knockout, bottom, right			
Operating Temperature		-10 °C to +50 °C			
Humidity		≤ 95 % RH, non-condensing			

### Notes (continued)

8. Full battery charge output (2.1 A or 5.2 A) is available at these output current levels.
9. The 5 Amp and 11 Amp power supplies are capable of charging batteries up to 50 amp-hours, and the 22 Amp PSU will charge batteries up to 100 Ah. However, please note that the auxiliary power supply cabinet is designed for batteries up to 40 amp-hours. Larger batteries will require a separate cabinet.
10. In auxiliary power supply systems the PSU is configured in Stand-Alone mode and does not use the RS-485 data bus. The RS-485 data bus is available only when the power supply unit is configured in Panel mode and supervised by a Pertronic F220® fire alarm control panel.
11. Please contact Pertronic Industries for information about 22 amp auxiliary power supply systems.
12. AS 7240.4 auxiliary power supply systems manufactured before Q4 2021 had V1 PSU modules. Please refer to <https://pertronic.com.au> for details

## Battery Selection

The battery capacity must be sufficient to supply the full system load. For most projects, the following formula gives the approximate battery capacity required to power the system for 24 hours on Standby plus 30 minutes in Alarm:

$$\text{Ah} = 1.25 \times [(24 \times I_Q) + 2 \times (0.5 \times I_A)]$$

Where: Ah = Battery capacity in amp-hours,  
I<sub>Q</sub> = Standby (non-alarm) current in amps,  
I<sub>A</sub> = Alarm current in amps,  
1.25 = Allowance for battery lifetime capacity fade,  
2 = Allowance for reduced capacity due to high current in Alarm mode.

The Pertronic website has a battery capacity and system load calculator: <https://pertronic.com.au/> ([or click here](#)).

### Caution:

- » The above formula is valid only if the average battery operating temperature is between 15 °C and 30 °C, and if the power supply failure signal is externally monitored. Please refer to Australian Standard AS 1670.1:2018 section 3.15.6 for a complete description of the battery capacity calculation.
- » The battery's rated maximum charge current must be greater than the PSU's maximum charging output current.
- » We strongly recommend that AS 7240.4 power supplies are used only with high-quality batteries. The use of inferior batteries may affect compliance with the requirements of AS 7240.4:2018 section 6.3.

## Automatic Fault Supervision and Reporting

Normal Charge Mode	<p>During normal float charge operation:</p> <ul style="list-style-type: none"><li>» The Battery Presence check occurs 15 seconds after startup, then once every sixty seconds,</li><li>» The Battery Capacity check runs once per day (in Stand-Alone mode) or when initiated via the RS-485 data bus (in Panel mode).</li><li>» Decimal point on the 7 segment display blinks.</li></ul> <p>If the charge current exceeds 1 amp for more than 60 seconds, the PSU initiates Boost Charge mode.</p>
Boost Charge Mode	<p>During boost charge operation</p> <ul style="list-style-type: none"><li>» The charging voltage increases to approximately 28 volts,</li><li>» The Battery Presence check does not occur,</li><li>» Battery Capacity check after the PSU goes into boost charge is suspended,</li><li>» The "Battery Voltage" parameter reported over the RS-485 data bus is equal to the charger voltage (approx. 28 volts),</li><li>» Decimal point on the 7 segment display lights continuously.</li></ul> <p>The PSU switches to Normal Charge mode if the charge current is less than 500 mA for more than 60 seconds.</p> <p>Boost charge operation is automatically limited to a maximum of 48 hours.</p>

## Ordering Information

Product Code	Description
24/5PSUV2-7240	24V 5A Supervised PSU (AS7240.4)
24/11PSUV2-7240	24V 11A Supervised PSU (AS7240.4)
24/22PSUV2-7240	24V 22A Supervised PSU (AS7240.4)
AUX24/5PSU-7240	24V 5A PSU (AS7240.4) in CABBAT19 & 003 Camlock
AUX24/11PSU-7240	24V 11A PSU (AS7240.4) in CABBAT19 & 003 Camlock
24/EXTEMP5-1200	External Temperature Sensor board; 1200mm Cable for 10U, 13U, 16U
24/EXTEMP5-1750	External Temperature Sensor board; 1750mm Cable for 22U, 28U
24/EXTEMP5-2200	External Temperature Sensor board; 2200mm Cable for 40U

This information must not be treated as partial or complete instructions for the design, construction, installation, commissioning, or maintenance of fire detection, fire alarm, or building evacuation systems. Fire and evacuation systems must be designed and installed by properly qualified persons, in accordance with all regulatory requirements.

Unless explicitly stated otherwise, typical specifications and nominal dimensions are provided. Actual product performance and dimensions may vary.

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