

D9142 Auxiliary Power Supplies

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Invented for life



- ▶ Up to 4 A of power for charging batteries and powering auxiliary or indicating devices
- ▶ Supervises batteries for low or missing conditions
- ▶ LED indicators for AC power and Trouble status
- ▶ Summary Trouble Relay
- ▶ Switched output control

The D9142F Auxiliary Power Supply is UL Listed, for use in commercial fire alarm system applications. It provides up to 4 A of power for charging batteries and powering auxiliary or indicating devices. The D9142F is provided either in its own red enclosure (louvered for ventilation) or without the enclosure. A green AC LED and a red Trouble LED are visible through the enclosure door. The enclosure also has room to install two 12 V, 7 Ah batteries. Battery supervision is provided for both batteries. Power is supplied to the system through a D1601 Transformer. This specialized transformer provides power to both the D9142F and to the control panel. The D9142F supervises all critical circuits of the power supply. It has several installation and service outputs for troubleshooting. Five different trouble conditions can be recognized and optionally communicated to a central station. These trouble conditions are also annunciated by on-board and off-board LED indicators. A summary trouble relay can be programmed to give a general trouble indication.

Functions

Auxiliary Devices

These devices are 4 A, 24 VDC power supplies with a current-limited output for powering devices like smoke detectors, bells, horns, strobes, or other 24 V devices.



Notice

Power-limited and non-power-limited wiring inside the enclosure should be kept separate. Maintain at least 0.25 in. (0.64 cm) spacing between all field wiring and the AC and Battery harnesses. Be sure to observe correct polarity when connecting devices. For a list of compatible devices, see the *D9142F Compatibility List*.

Battery Supervision

The power supply supervises the batteries for both missing and low battery conditions.

Over-Current Protection

A 120 VAC fuse is located on the lower right-hand corner of the power supply, above the 120 VAC terminals. This fuse protects the D9142F and D1601 from damage due to power surges or overloads. The fuse is a type 3 AG, 4 A, 250 VDC slow blow fuse (P/N: 57-01338-004).

Summary Trouble Relay

The Summary Trouble Relay is used as a common trouble indicator. Set the DIP switches to activate the relay for one or more of the following trouble conditions:

- AC Power Failure
- On-Board AC Fuse Failure
- Power Output Fault
- Battery Test Failure
- Battery Trouble: Low, Missing or Shorted

These trouble conditions can be individually identified to the central station or grouped to activate the Summary Trouble Relay.

Switched Output Control

A remote device can switch the power output on or off with a 12 VDC trigger voltage or a dry contact closure. Use this feature to remove power from devices or to apply power to notification devices that require power during a fire alarm such as horns, strobes and bells. When used for notification appliances, the power supply must be installed within 20 ft (6 m) of the control unit and the trigger wire must be in conduit.

System Power

The power supply provides power to and receives low voltage AC power back from the D1601 Transformer. The power supply can also provide 16.5 VAC, 40 VA to power the control panel. If the power supply is used to power the control panel, mount the D8109L Enclosure next to the control panel's enclosure and run the wire through conduit.

Certifications and approvals

Region	Certification	
USA	UL	UTRZ: Power Supply Units (UL1481) D9142F only
	FM	D9142
	CSFM	see our website

Installation/configuration notes

Battery Requirements

The power supply uses two sealed lead acid batteries connected in series to provide a 24 V of standby power. Two batteries must be used. The power supply does not provide standby power with only one battery connected.



Notice

You must use sealed lead acid batteries: The power supply is designed to charge only sealed lead acid batteries. Using any other type of battery might cause damage to the power supply or the batteries.

Selecting the correct batteries for the system depends on the total continuous current draw of all devices, the amount of standby time required, the amount of intermittent current draw (in alarm) needed, and

finally the time it takes to recharge the batteries. For calculating standby power requirements, see the *D9142F Operation and Installation Guide*.

Compatible Products

It is compatible with all Bosch Security System control panels but only use it with a UL-Listed control panel for fire alarm applications. For devices compatible with the power supply, refer to the *D9142F Compatibility List*.

Enclosure Information

The D8109L is a louvered version of the standard D8109, UL-Listed fire enclosure. It is supplied with the standard D101F lock and key set. The D8109L is designed to house the D9142M, the D1601 Transformer and the batteries. Standard sized knockouts are provided for conduit connections. Only use the D8109L Enclosure with the D9142M, D9142LC, or D9142EXP Power Supplies. This enclosure is designed to allow the air circulation needed to keep the power supply cool. The enclosure requires 0.5 in. (1.3 cm) clearance on all sides.

Mounting Considerations

Typically, the power supply is installed adjacent to the control panel. To attach the enclosure to the wall, use mounting hardware that is capable of supporting 55 lbs (25 kg) of equipment. You might need to mount a plywood sheet to the wall in order to support the weight of the power supply and batteries.

Parts included

D9142F

Quant.	Component
1	D9142M Power Supply with Mounting Skirt
1	D8109L Louvered Enclosure
1	D1601 Transformer
	Hardware packs for each of the above components
	Literature packs for each of the above components

D9142LC

Quant.	Component
1	D9142LC Power Supply Board

D9142M

Quant.	Component
1	D9142LC Power Supply Board
1	D9102 Mounting Skirt
1	Control Panel Power Wiring Harness (yellow)
1	Communicator Wiring Harness (five conductor)
1	Dual Battery Wiring Harness and Ground Connector
1	Power and Trouble LED Assembly

1	Hardware pack
1	Literature pack

Technical specifications

Battery Characteristics

Load Shed Restoral:	23.1 VDC to 24.7 VDC
Load Shed Threshold:	18.9 VDC to 20.5 VDC
Low Battery Restoral:	24.2 VDC to 26.5 vDC
Low Battery Threshold:	22.0 VDC to 24.1 VDC

Environmental Considerations

Relative Humidity:	85% at +86°F (+30°C) non-condensing
Temperature (operating):	+32°F to +122°F (0°C to +50°C)

Mechanical Properties

Color:	Cardinal red (powder coat)
Dimensions (HxWxD):	16.25 in. x 16.25 in. x 3.5 in. (41.3 cm x 41.3 cm x 8.9 cm)
Material:	16 gauge (1.5 mm) cold rolled steel

Outputs

Charging Current:	2.0 A maximum
Communication Header:	Open-collector output current sink, 5 mA maximum
DC Output:	18.9 VDC to 28.0 VDC
Summary Trouble Relay:	Form C, rated for 2 A at 12 VDC or 24 VDC

Power Requirements

Input:	120 VAC, 60 Hz 360 VA
Output:	4.0 A

Ordering information

D9142F 24 VDC Auxiliary Power Supply

UL Listed auxiliary power supply for use in Commercial Fire Alarm System applications. Comes with D9142M Power Supply with Mounting Skirt (and wiring harnesses), red enclosure, and D1601 Transformer. Order number **D9142F**

D9142M Power Supply with Mounting Skirt

UL Listed auxiliary power supply for use in Commercial Fire Alarm System applications. Comes with power supply board, mounting skirt, LED assembly, and three wiring harnesses. Order number **D9142M**

D9142LC 24 V Power Supply (less case)

UL Listed auxiliary power supply board for use in Commercial Fire Alarm System applications. Order number **D9142LC**

Accessories

D126 Standby Battery (12 V, 7 Ah)

A rechargeable sealed lead-acid power supply used as a secondary power supply or in auxiliary or ancillary functions.

Order number **D126**

D1224 Battery (12 V, 26-28 Ah)

A 12 V sealed lead-acid battery for standby and auxiliary power with two bolt-fastened terminals. Includes hardware for attaching battery leads or spade connectors.

Order number **D1224**

D1238 Battery (12 V, 38 Ah)

A 12 V sealed lead-acid battery for standby and auxiliary power with two bolt-fastened terminals. Includes hardware for attaching battery leads or spade connectors.

Order number **D1238**

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