



**BOSCH**

# Battery charger modules

D8132 and D8132LT



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Installation manual



# 1 Notices

These instructions cover the installation of the D8132 Battery Charger and the D8132LT Battery Charger Less Transformer modules in an alarm system supervised by a fire alarm control panel (FACP), an intrusion alarm panel, or a combination Burglary/Fire control panel. These modules are UL Listed for use in Central Station, Household Fire and Burglary Alarm, Police Connection, and Electrically Actuated Transmitter applications. They can also be installed as non-UL Listed, 12 V, 1 A, standalone power supplies.

To obtain any of the documents referenced in this document, download them from the Bosch website ([www.boschsecurity.com](http://www.boschsecurity.com)).

Install, test and maintain the module according to these instructions, NFPA codes, local codes, and the authority having jurisdiction (AHJ). Failure to follow these instructions can result in failure of a detector to initiate an alarm event. Bosch Security Systems, Inc. is not responsible for improperly installed, tested or maintained devices.

Before installing the module, become familiar with the *Installation and Operation Guide* for the control panel you are using.

**Warning!**

Follow these instructions to avoid personal injury and damage to equipment.

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NFPA 72 requires that you perform a complete system wide functional test following any modifications, repair, upgrades or adjustments made to the system's components, hardware, wiring, programming and software/firmware.

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## 2 Description

The module, combined with external batteries, increases the standby time and provides additional power to the auxiliary output of the compatible control panels listed in the following table.

Control Panels	See section:
<b>Active products:</b>	
GV4 and GV3 panels <sup>1</sup>	<i>Wiring, page 6</i>
<b>Legacy products:</b>	
GV2 and G panels <sup>2</sup>	See control panel's documentation on the Bosch website ( <a href="http://www.boschsecurity.com">http://www.boschsecurity.com</a> )
D6412 and D4412 panels	
D9412, D7412, D7212, D7212B1	
D9112B1, D9112, D8112, D6112	
D9124	
2000-series panels <sup>3</sup>	
<sup>1</sup> GV4 = D9412GV4, D7412GV4, & D7212GV4; GV3 = D9412GV3, D7412GV3, & D7212GV3	
<sup>2</sup> GV2 = D9412GV2, D7412GV2, & D7212GV2; G = D9412G, D7412G, & D7212G	
<sup>3</sup> 2000-series = D2812, D2412, D2212, D2212B, D2212BE, & D2012	

In addition to the batteries that can be installed with the control panel, two additional 12 V, 7 Ah batteries (D126) or up to two 12 V, 13.5 Ah batteries can be installed with the module. The module is ideal for systems requiring extended battery standby time, such as UL Bank Safe and Vault applications, and systems requiring additional auxiliary current output. In addition to providing increased standby time and auxiliary power, the batteries also filter the AC power supply. The amount of ripple that appears on the control panel outputs is dependent on the condition of the batteries.



### Notice!

Bosch does not recommend using the module to power devices that are sensitive to excessive ripple.

A 16.5 V, 40 VA transformer (D1640, supplied with the D8132) is required to power the module. A green LED on the module lights to indicate the presence of AC power. Provided with the D8132LT are two cables, and two sets of lockwashers, nuts, screws, and terminal lugs. The cables connect the module to the transformer, two batteries, and the control panel. The hardware is provided for connecting the battery cable to 12 V, and up to two 13.5 Ah batteries (this hardware is not used when connecting 12 V, 7 Ah batteries).

### 3 Installation

The module and additional batteries are typically mounted inside a separate enclosure (such as, the D8103, the D8108A, or the D8109) adjacent to the control panel's enclosure.

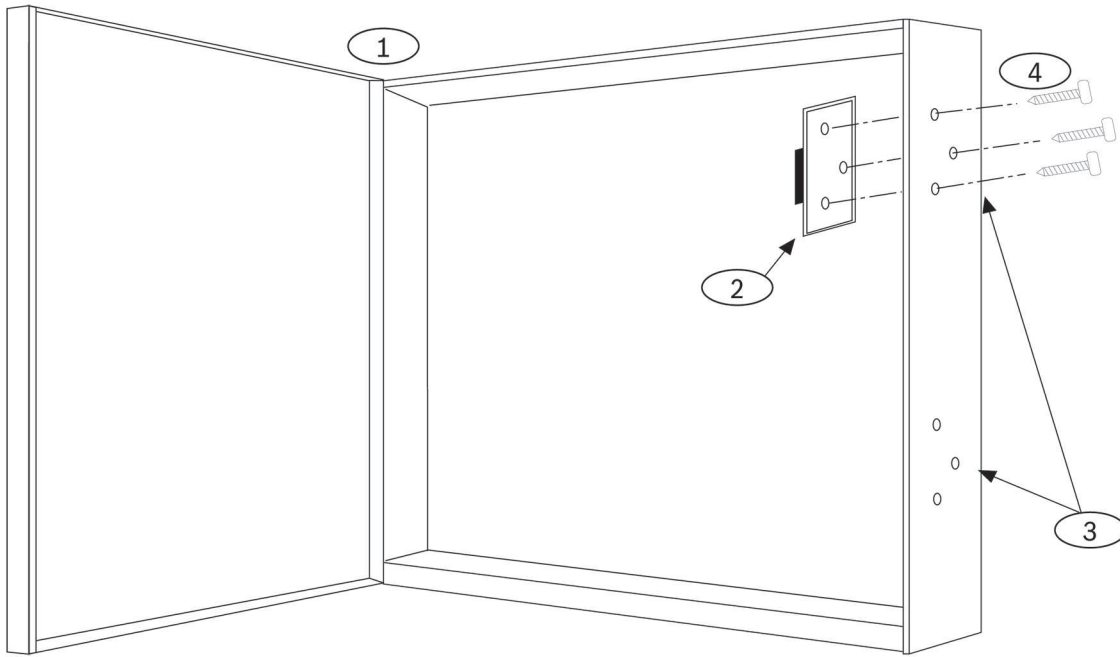


Figure 3.1: Module installation

1	Enclosure	3	Mounting locations
2	Module	4	Mounting screws (3)

Install the module in one of the vertical mounting locations. The upper mounting location is recommended if two 12 V, 13.5 Ah batteries will be installed. Fasten the module in place with the three mounting screws provided. The green AC power LED on the module can be viewed if a knock-out is removed on the front door of the enclosure.

# 4 Wiring

## 4.1 Wiring for extending battery standby time and providing additional auxiliary current output

If the module is to be connected to a control panel to increase stand by time, refer to the appropriate control panel’s Installation and Operation Guide to calculate the total battery Ampere-hours (Ah) required for your system. The recharge time cannot exceed 48 hours for UL listed applications. Once satisfactory recharge time, standby time, Ampere-hour, and auxiliary current values are identified, determine the combination of batteries required for your application using the following table.

24 standby hours		60 standby hours		72 standby hours		Total battery Amp-hrs (Ah)
Aux current load	Recharge time (hrs)	Aux current load	Recharge time (hrs)	Aux current load	Recharge time (hrs)	
430 mA	9	N/A	N/A	N/A	N/A	12
550 mA	10	50 mA	7	10 mA	7	15
680 mA	11	100 mA	9	50 mA	9	18
800 mA	14	150 mA	10	90 mA	10	21
930 mA	17	200 mA	12	130 mA	12	24
1050 mA	21	250 mA	14	180 mA	13	27

Tab. 4.1: Battery requirement

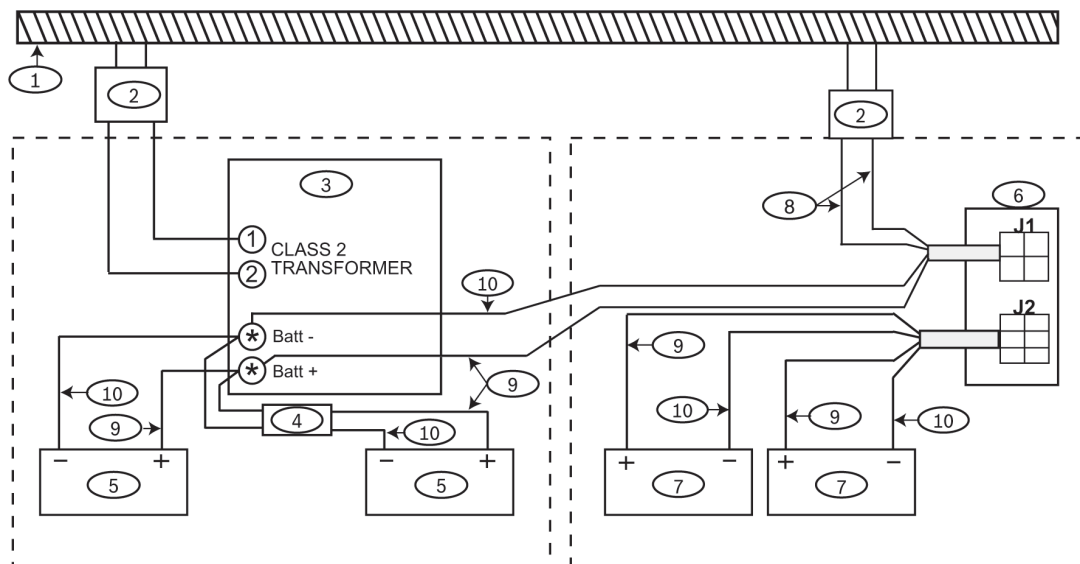


Figure 4.1: Wiring for extended battery standby time and providing additional auxiliary current output

1	AC circuit common to both transformers	2	Transformers*
3	Control panel	4	D122 Dual battery harness

5	Control panel batteries (as needed)	6	D8132 module
7**	Additional batteries (as needed)	8	Gray wires connecting the D8132 module and the D1640 transformer
9	Red wires from positive battery terminals to the D8132 and the control panel and from the D8132 to the control panel	10	Black wires from negative battery terminals to the D81132 and the control panel and from the D8132 to the control panel
* GV3 and GV4 panels require a D1640 transformer. For legacy products refer to the control panel documentation.			
** The D8132 can support up to 27 Ah of backup battery. If two batteries are used they must have the same Ampere-hour (Ah) rating.			

Two cables are provided with the module for connections to the control panel and additional batteries.

1. Connect the black wire of the four-pin connector cable to the control panel’s battery negative terminal.
2. Connect the red wire of the four-pin connector cable to the control panel’s battery positive terminal.



**Warning!**  
Do **not** short these wires!

3. Plug the four-pin connector cable into J1 on the module.
4. Connect the two grey wires to a separate 16.5 V, 40 VA transformer (D1640).



**Warning!**  
Do **not** connect the grey wires to the control panel’s transformer terminals.

5. Connect the D1640 transformer to an unswitched 110-120 VAC 60 Hz outlet.



**Notice!**  
Connect the D8132 and the control panel transformers to the same AC branch circuit. Do not share the transformers with any other devices.

6. Plug the six-pin connector cable into J2 on the module.
7. Connect a red wire to the positive battery terminal, and a black wire to the negative battery terminal of each auxiliary battery. (One or two auxiliary batteries can be installed.)

## 4.2 Wiring for standalone power supply

The D8132 module can operate as a 12 V standalone power supply. Standalone operation does not have battery supervision or load shed, and therefore is not recommended for critical loads requiring supervision.

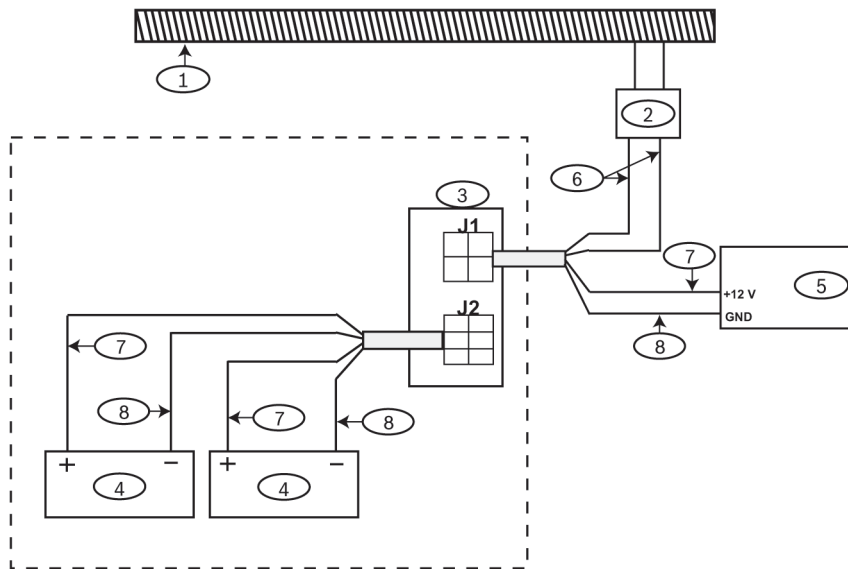


**Notice!**

The D8132 Module is not UL Listed for “standalone” operation, and cannot be used in this configuration for UL applications.

To determine the appropriate batteries for use with the module, see the table which displays auxiliary current and battery recharge values for various battery Ampere-hour combinations in the section *Wiring for extending battery standby time and providing additional auxiliary current output*, page 6. (These values will vary depending upon the condition of the batteries installed.)

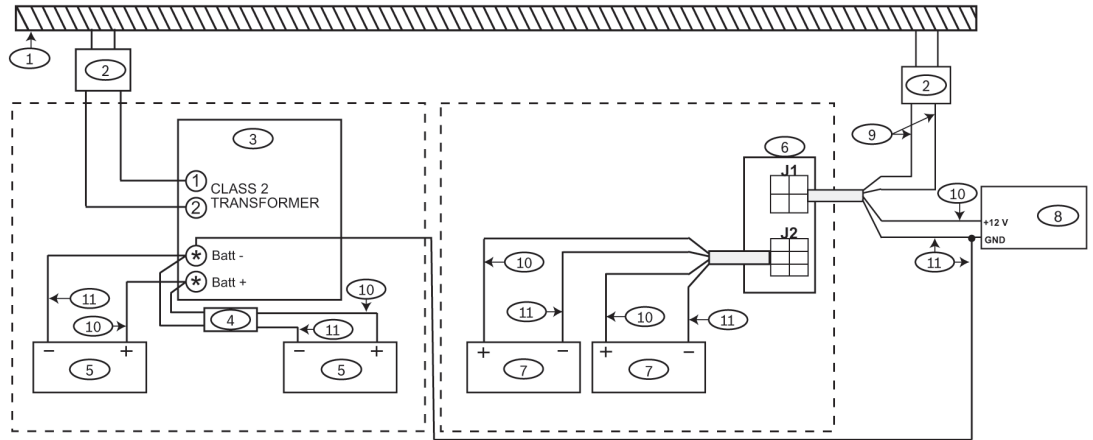
For standalone power supply operation, install the module as shown in the following figure.



**Figure 4.2: Wiring D8132 as standalone power supply**

1	AC branch circuit (unswitched)	5	Devices
2	D1640 transformer	6	Gray wires connecting the D8132 module and the D1640 transformer.
3	D8132 module	7	Red wires from positive battery terminals to the D8132LT module.
4	Batteries	8	Black wires from negative battery terminals to the D8132LT module.





**Figure 4.3: Wiring D8132 to follow control panel indicators for AC power failure and restoration**

1	AC circuit common to both transformers	2	Transformers*
3	Control panel	4	D122 D battery harness
5	Control panel batteries	6	D8132 module
7**	D8132 batteries	8	Devices
9	Gray wires connecting the D8132 module and the D1640 transformer	10	Red wires from positive battery terminal to the D8132 and the control panel, and from the D8132 to the device loop.
11	Black wires from negative battery terminals to the D8132 and the control panel, from the D8132 to the device loop, and from the device loop ground to the control panel earth ground.		
* GV3 and GV4 panels require a D1640 transformer. For legacy products refer to the control panel documentation.			
** The D8132 can support up to 27 Ah of battery backup. If two batteries are used, they must have the same Ampere-hour (Ah) rating.			

When the control panel and the module are connected to the same AC branch circuit, AC power failures and restorals which affect the control panel and the module will be indicated by the control panel. The standalone power supply standby time should be greater than that of the control panel system. The standalone power supply and the control panel must share a common ground.

For this type of standalone power supply operation, install the module as shown in the following figure.

## 5 Troubleshooting

The LED on the module is used to indicate the operational status of the Battery Charger. The following table describes the different states of the LED.

Symptom		Diagnosis	Remedy/description
LED color	LED status		
Green	ON	AC transformer power present	No action
	OFF	AC transformer power <b>not</b> present	<ul style="list-style-type: none"> <li>– Check if the Transformer is plugged into a non-switched outlet.</li> <li>– Check 120 VAC supply to outlet.</li> <li>– Check if transformer has a faulty secondary; fuse may be blown.</li> </ul>

**Tab. 5.2:** LED status troubleshooting

To insure the module is not faulty, meter the battery leads of the module. A reading of 13.80 VDC or higher indicates the unit is functioning normally.

## 6 Specifications

### Electrical

Float Voltage <sup>1</sup>	13.9 VDC maximum
Supplied Voltage	16.5 VAC, 40 VA supplied by D1640 plug-in transformer
Supplied Current	1.2 A
Ampere-hours	27 Ah maximum
<sup>1</sup> measured with batteries in circuit	

### Mechanical

Dimensions (HxWxD)	0.75 in. x 3.0 in. x 5.0 in. (1.9 cm x 7.6 cm x 12 cm)
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