



# PSU-60 - AMC Power Supply Unit

APS-PSU-60



**BOSCH**

en Installation Manual



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# 1 Safety Instructions

## 1.1 Important Safety Notes

1. **Read, follow, and retain instructions** - All safety and operating instructions must be read and followed properly before putting the unit into operation. Retain instructions for future reference.
2. **Do not ignore warnings** - Adhere to all warnings on the unit and in the operating instructions.
3. **Accessories** - Use only accessories recommended by the manufacturer or those sold with the product. Accessories not recommended by the manufacturer must not be used, as they may cause hazards.
4. **Installation precautions** - Do not place this unit on an unstable stand, tripod, bracket, or mount. The unit may fall, causing serious injury to persons and damage to the unit. Mount the unit according to the manufacturer's instructions.
5. **Service** - Do not attempt to service this unit by yourself. Opening or removing covers may expose you to dangerous voltages or other hazards. Refer all servicing to qualified service personnel.
6. **Damage which requires service** - Disconnect the unit from the main AC or DC power source and refer servicing to qualified service personnel under the following conditions:
  - If the power supply cord or plug is damaged.
  - If liquid has been spilled or an object has fallen into the unit.
  - If the unit has been exposed to water and/or inclement weather (rain, snow, etc.).
  - If the unit does not operate normally when following the operating instructions. Adjust only those controls specified in the operating instructions. Improper adjustment of other controls may result in damage, and require extensive work by a qualified technician to restore the unit to normal operation.
  - If the unit has been dropped or the cabinet damaged.
  - If the unit exhibits a distinct change in performance
7. **Replacement parts** - If replacement parts are required, the service technician must use only replacement parts that are specified by the manufacturer. Unauthorized replacements may result in fire, electrical shock or other hazards.
8. **Safety check** - Upon completion of service or repair work on the unit, ask the service technician to perform safety checks to ensure that the unit operates properly
9. **Power sources** - Operate the unit only from the type of power source indicated on the label. If unsure of the type of power supply to use, contact your dealer
  - For units intended to operate on battery power, refer to the operating instructions.
  - For units intended to operate with external power supplies, use only the recommended approved power supplies corresponding to norm EN/UL 60950.
  - For units intended to operate with a limited power source, this power source must comply with EN/UL 60950. Unsuitable replacements may damage the unit or cause fire or shock.
  - For units intended to operate at 12V DC normal input voltage is 12V DC. Voltage input must never exceed 15V DC.
10. **Lightning** - For added protection during electrical storms external lightning conductors can be installed. This prevents power surges from damaging the unit.
11. The units should be installed in **locations with restricted access**.

## 1.2 Safety Precautions

### Read instructions!

Before working with the device, read these instructions carefully. Make sure you have understood all information described in this document.



### Warning!

#### Risk of electric shock

External power supplies must be installed and put into service by qualified personnel. Ensure compliance with the relevant regulations. Ground the controller. Disconnect both AC and battery power supply before working on the controller.



### Caution!

#### Risk of explosion of lead acid battery

The battery can explode if it is replaced incorrectly. Replace only with the same type as recommended by the manufacturer. Dispose used batteries according to the battery manufacturer's instructions.



### Caution!

#### Risk of fire

Before disposing a used battery, review the battery warning label. DO NOT disassemble, expose to extreme heat, crush or puncture, short circuit external contacts, or dispose of in fire or water.



### Warning!

#### Danger of electrocution

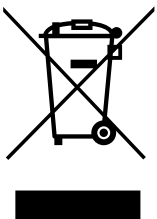
Do not touch exposed components when connected to the power supply. Always disconnect the power supply before making wiring changes.



### Notice!

#### Risk of damage to equipment

Protect the hardware from electrostatic discharge by observing ESD instructions before unpacking or touching connectors of electronics. Always switch off power of the device before modifying the installation. Do not connect or disconnect plug connectors, data cables, or screw connectors while power is on. Do not overload or connect a short-circuit load.



### Old electrical and electronic appliances

Electrical or electronic devices that are no longer serviceable must be collected separately and sent for environmentally compatible recycling (in accordance with the European Waste Electrical and Electronic Equipment Directive).

To dispose of old electrical or electronic devices, you should use the return and collection systems put in place in the country concerned.

## 1.3 Unpacking

Check the packaging for visible damage. If anything has been damaged during transport, please inform the transport agency.

Unpack the unit carefully. This is an electronic device that must be handled with care to avoid damage. Do not attempt to put the unit into operation if components are damaged.

If any parts are missing, inform your customer service representative or a Bosch Security Systems salesperson. The shipping carton is the safest transport container for the unit. Store it and the other packaging material for future use. If the unit has to be sent back, use the original packaging.

## 2 Important Information

### Remarks

This hardware is part of a security system. Access should be limited to authorized persons only.

Some states do not allow the exclusion or limitation of implied warranties, or limitation of liability for incidental or consequential damages, hence the above limitation or exclusion might not apply to you.

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Robert-Bosch-Ring 5  
85630 Grasbrunn  
Germany.

### 2.1 Explanation of symbols in this document

Throughout this document, warning messages, important notes, and helpful tips are presented for the reader. These appear as follows:



#### **Danger!**

Cause of Hazard

Indicates a hazardous situation, which, if not avoided, will result in death or serious injury.

---



#### **Warning!**

Cause of Hazard

Indicates a hazardous situation, which, if not avoided, could result in death or serious injury.

---



#### **Caution!**

Cause of Hazard

Indicates a hazardous situation, which, if not avoided, could result in minor or moderate injury.

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#### **Notice!**

Cause of Hazard

Important Notes that must be followed to avoid damage to the equipment or environment, and to ensure successful operation and programming.

Tips and shortcuts may also be included in such notes.

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### 2.2 Internet

If you are interested in further information on this product or information on other products, please consult our website at <http://www.boschsecurity.com>.

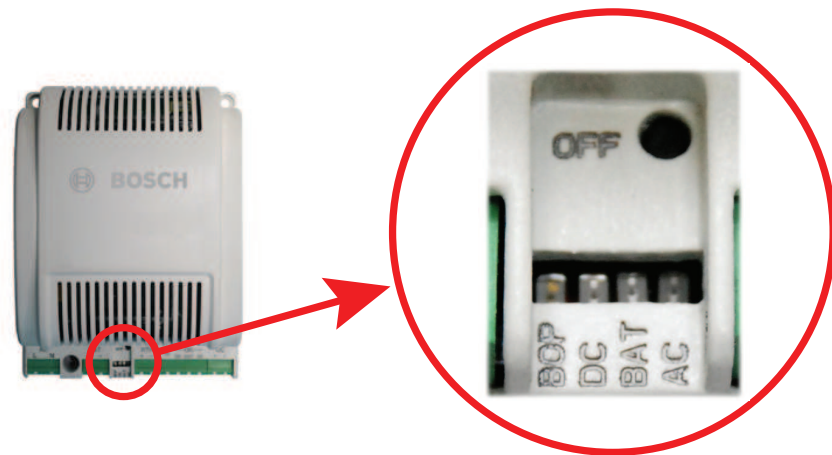
## 3 System Overview

The PSU-60 is a power supply unit with an integrated battery charging device. Includes pre-configured cable connectors for AMC controllers, I/O boards and batteries.

### 3.1 Features

- Supports 12 V/7 Ah, 12 V/14 Ah and 24 V/7 Ah batteries
- Selectable 12 VDC or 24 VDC voltage output
- Selectable 5 A @ 12 VDC or 2.5 A @ 24 VDC current output
- Overvoltage protection
- Regulates battery charging voltage

### 3.2 Functions



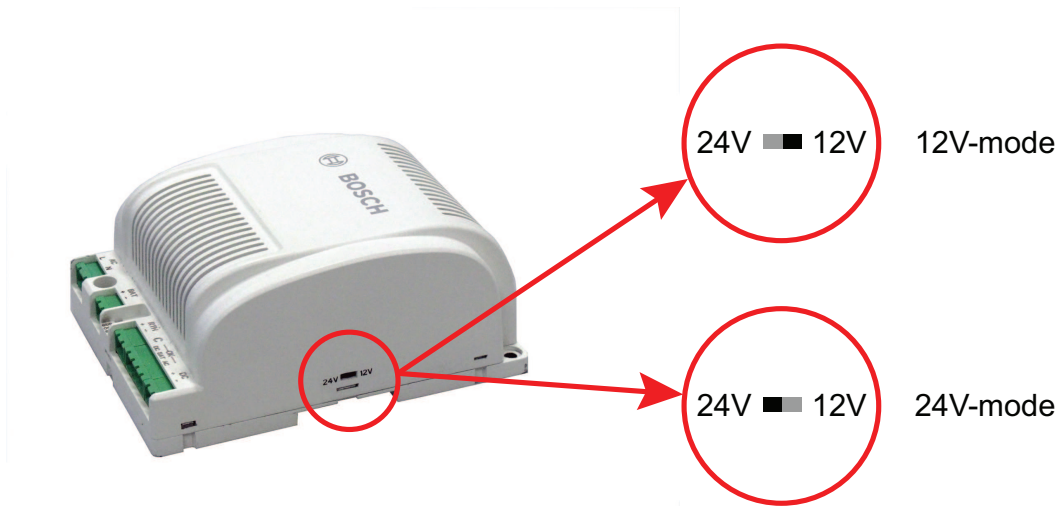
The PSU-60 includes the following LED voltage status indicators:

- If the input voltage (AC) is greater than 85 VAC, the green LED lights up next to AC and the AC relay is closed.
- If the output voltage (DC) is greater than 12 V or 24 V (depending on the mode), the green LED lights up next to DC and the DC relay is closed.
- If the battery voltage is greater than 11 V or 22 V (depending on the mode), the green LED lights up next to BAT and the BAT relay is closed.

The following applies to the battery mode:

- If the input voltage is less than 85 VAC, the power supply switches to “Battery operation” mode and the yellow LED lights up next to BOP.
- The OFF button is only activated in “Battery operation” mode. Press this button to switch off the PSU-60.
- Restart is only possible when the alternating current supply is restored.
- This power supply unit can be switched to 12 V or 24 V mode. To do this, the switch must be configured as shown below, when there is **no voltage input** on the power supply.





**Notice!**

The power supply must only be installed by qualified personnel.

**3.3**

**Certifications and approvals**

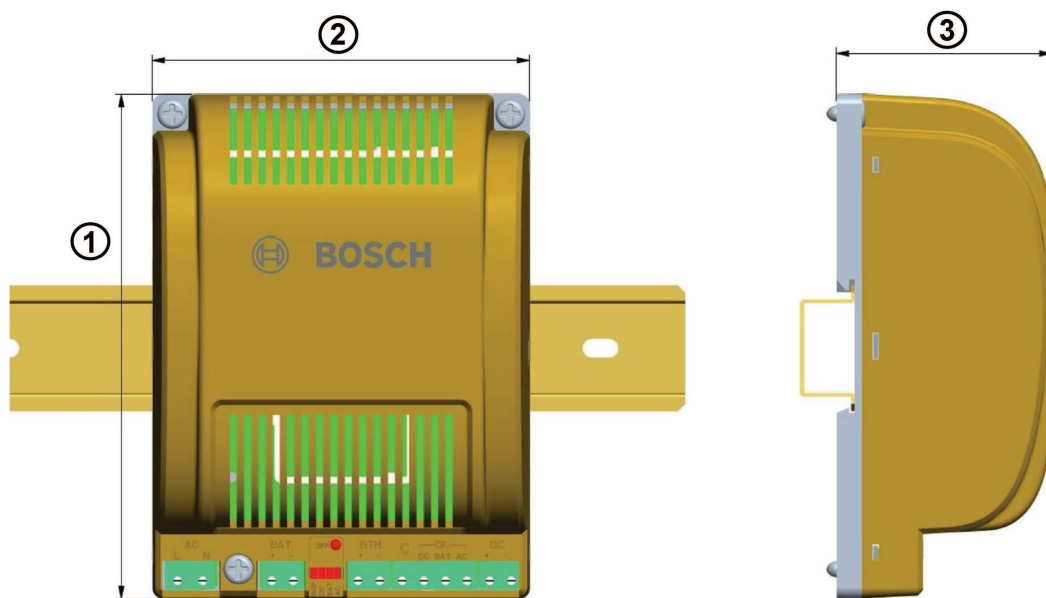
The product is classified in accordance with the following standards:

- EN 55022 Class B
- EN 55024
- IEC / UL / EN 60950 & CSA (product safety)
- CE
- RCM (Australia)
- RoHS 2.0

Please refer to <http://www.boschsecurity.com> for further information.

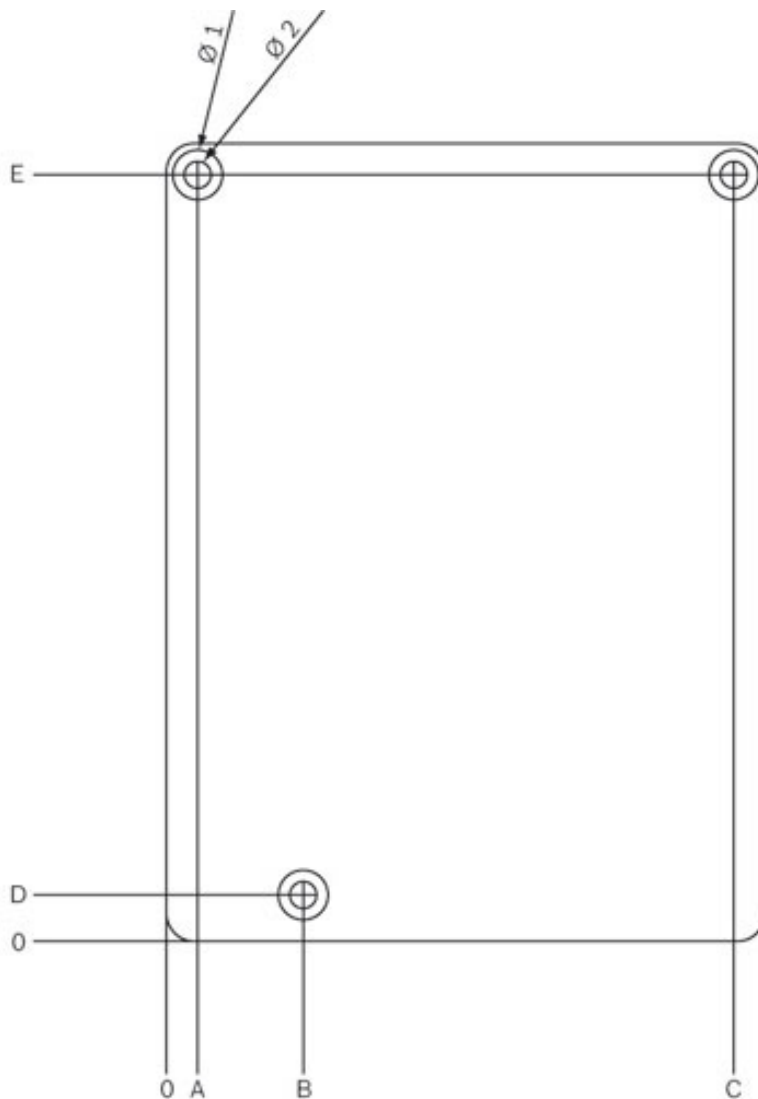
## 4 Installation

The PSU-60 can be mounted on rails and installed in the AMC housing. The PSU-60 dimensions are shown in the diagrams below:



1	140 mm (5.51 in.)	3	60 mm (2.36 in.)
2	105 mm (4.13 in.)		

Alternatively, it can be screw-mounted directly to the wall. There are pre-drilled holes for this purpose on the base of the housing. These holes have the following dimensions:



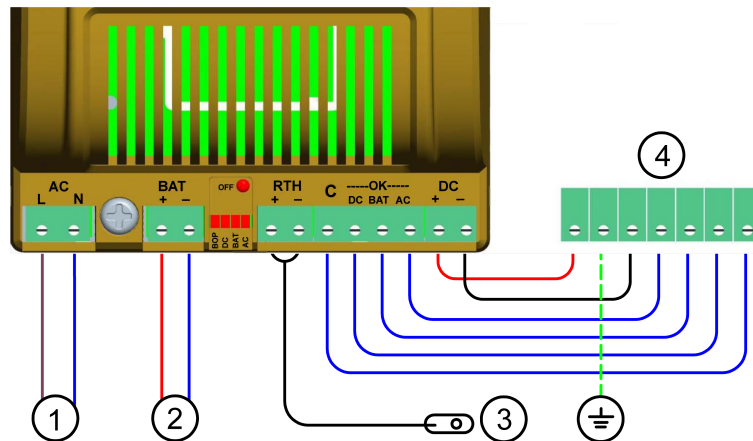
$\varnothing 1$	8.6 mm (0.34 in.)	$C$	99.5 mm (3.92 in.)
$\varnothing 2$	4.5 mm (0.18 in.)	$D$	8.1 mm (0.32 in.)
$A$	5.5 mm (0.22 in.)	$E$	134.5 mm (5.30 in.)
$B$	24 mm (0.94 in.)		

\* Include tolerances (in mm)

0 – 5 mm =  $\pm 0.10$   
 5 – 30 mm =  $\pm 0.20$

30 – 100 mm =  $\pm 0.30$   
 100 – 500 mm =  $\pm 0.50$

The following diagram shows the connections to the AMC.



1	AC power	3	Temperature sensor
2	Battery connection	4	Power supply to AMC wiring connection *

\* For cables exceeding 3m, it is recommended to use a cylindrical Ferrite Core:

- impedance @ 100 MHz = 90 or 140  $\Omega$
- min. inner diameter = 7.0  $\pm$  0.8 mm
- 100 MHz > Freq > 25 MHz

## 4.1

### Parts Included

The components supplied are as follows:

- Power supply
- Plug
  - 1 x 2-pin for mains (primary AC) connection
  - 3 x 2-pin
  - 1 x 4-pin
- Accompanying documentation (installation manual)

## 5 Technical data

### Output values

Output voltage:	12V mode	10-15V
	24V mode	20-30V
Output current:	12V mode	max. 5A
	24V mode	max. 2.5A
Output power:		60 W (constant)
Over voltage protection at:	12V mode	16.5V
	24V mode	33V

### Input values

Input voltage:	AC 100-240V~, 50-60Hz
Input current (AC):	Max. 2A, to the specified max. load at 85 VAC

Input protection in case of a failure, the primary voltage is cut off from the power supply by a fuse.

### Battery information

Output voltage:	12V mode	10-15V
	24V mode	20-30V
Output current for charging the battery:	12V mode	700mA *
	24V mode	350mA †

\* according to battery capacity 14Ah

† according to battery capacity 7Ah

Periodic battery checks – approx. every 5 minutes.

Protection from total battery discharge:	12V mode	9.5V
	24V mode	19V

The power supply switches to normal operation as soon as the AC incoming voltage has normalized.

Temperature equalization is performed by an external NTC resistor.

Reverse polarity protection.

### Environment variables

Working temperature:	-20°C to 60°C (-4°F to 140°F)
Storage temperature:	-40°C to 85°C (-40°F to 185°F)
Relative humidity:	5% to 95%





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