

Power Supply PS-24V



Introduction

The PS-24V power supply module is designed to accommodate the specific power requirements of the Automation Server and its connected I/O modules.

Features

The PS-24V is a power supply module that accommodates 24 VAC or 24 VDC input power.

Reliable consistent output power

Each power supply module delivers reliable and consistent output power of 24 VDC to the terminal base.

30 W rating

This power supply module can supply power for loads up to 30 W. The consumption of downstream modules can vary. A PS-24V can deliver power to one Automation Server and a number of I/O modules calculated from the Power Budget table. If more I/O modules are needed, another power supply can be added to the bus. The output power

delivered by the previous power supply on the bus is interrupted in the terminal base of the next power supply while also providing communication and ground pass-through.

Table: Power Budget

Module	DC input supply power
Automation Server	7 W
DI-16	1.6 W
UI-16	1.8 W
RTD-DI-16	1.6 W
DO-FA-12(-H)	1.8 W
DO-FC-8(-H)	2.2 W
AO-8(-H)	4.9 W
AO-V-8(-H)	0.7 W
UI-8/DO-FC-4(-H)	1.9 W
UI-8/AO-4	3.2 W
UI-8/AO-V-4(-H)	1.0 W

Modular and scalable system

The modules are part of a modular system that delivers power and communications on a common bus. Connecting modules is a one-step process: just slide the modules together using the built-in connectors.

Polarity independent

The main AC/DC input (L/+ and N/-) is galvanically isolated from the DC output (to the I/O bus). This removes the risk of damage due to earth currents and permits the input power to be wired without concern for polarity matching.

Overload protection

When a power supply module's load (total load of Automation Server, I/O modules, communication modules) exceeds its rating, the power supply module will protect itself from being damaged.

Patented two-piece design

Each module can be separated from its terminal base to allow the site to be wired prior to the installation of the electronics. The patented locking mechanism serves as handles for removing the module from its base. All critical components have a protective cover that permits convection cooling to occur.

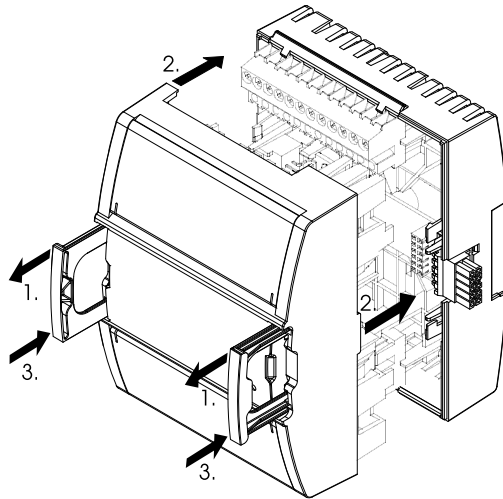


Figure: Two-piece design

Auto-addressing

The auto-addressing feature eliminates the need for setting DIP switches or pressing commission buttons. With the Automation Server family, each module automatically knows its order in the chain and assigns itself accordingly – significantly reducing engineering and maintenance time.

Simple DIN-rail installation

Fasteners easily snap into a locked position for panel installation. The fastener has a quick-release feature for easy DIN-rail removal.

Accommodates multiple row panel installations

The Automation Server module family uses built-in connectors for single row connectivity, side by side. If a panel size requires multiple rows, extension cords are available.

LED status indicators

The front panel of the PS-24V module includes status LEDs for input and output power. The LED for input power indicates the status of the main power. The output power indicator shows if the power supply output is within the proper range.

Specifications

DC output

Voltage	24 VDC
Accuracy	+/-1 VDC
Maximum power	30 W

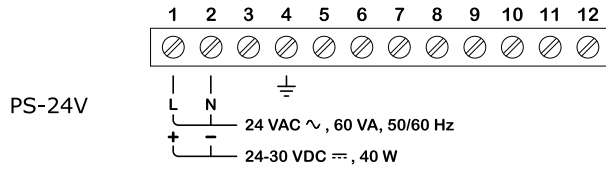
AC input

Nominal voltage	24 VAC
Operating voltage range	+/-20 %
Frequency	50/60 Hz
Maximum current	2.5 A rms
Recommended transformer rating	60 VA or higher

DC input

Nominal voltage	24 to 30 VDC
Operating voltage range	21 to 33 VDC
Maximum power consumption	40 W

Terminals



Environment

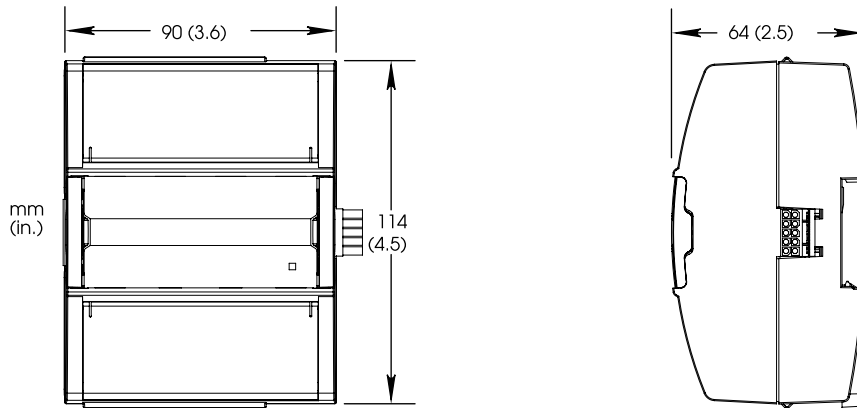
Ambient temperature, operating0 to 50 °C (32 to 122 °F)
 Ambient temperature, storage-20 to +70 °C (-4 to +158 °F)
 Maximum humidity.....95 % RH non-condensing

Material

Plastic rating.....UL94-5VB
 Enclosure.....Eco Friendly ABS/PC
 Enclosure rating.....IP 20

Mechanical

Dimensions including terminal base90 W x 114 H x 64 D mm (3.6 W x 4.5 H x 2.5 D in.)



Weight including terminal base0.285 kg (0.63 lb)
 Weight excluding terminal base0.186 kg (0.41 lb)

Agency compliances

EmissionC-Tick; EN 61000-6-3; FCC Part 15, Sub-part B, Class B
 ImmunityEN 61000-6-2
 SafetyUL 916 C-UL US Listed

Part numbers

PS-24V Power Supply 24 VAC/VDCSXWPS24VX10001
 TB-PS-W1, Terminal Base for Power Supply
 (Required for each power supply)SXWTBPSW110001

Internal Configuration

The PS-24V power supply module does not connect to the address and communication busses in the terminal base. The AC/DC converter terminals L/+ and N/- are isolated from the circuits on the secondary side of the converter. You can wire these terminals without concern for polarity matching, but it is good practice to connect the positive supply voltage to L/+ and the negative supply voltage to N/- in order to prevent confusion.

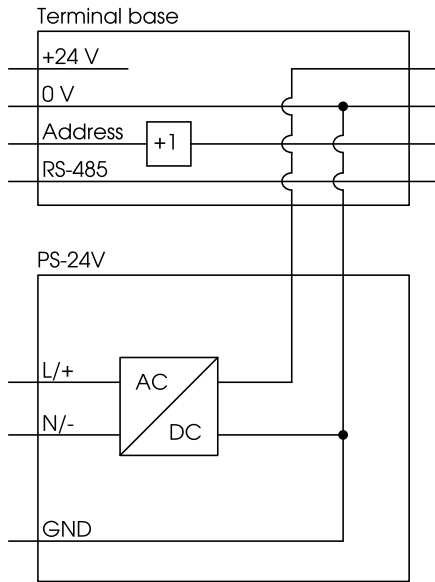


Figure: PS-24V internal configuration

The ground terminal (GND) on the PS-24V power supply is connected to signal ground, which is the same as the negative output from the power supply. The purpose of this connection is to comply with EMC directives.

The address value in the I/O bus is increased by one for each terminal base. The I/O bus also enables RS-485 communication between the I/O module and the Automation Server.

Regulatory Notices

FC Federal Communications Commission

FCC Rules and Regulations CFR 47, Part 15, Class B
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference. (2) This device must accept any interference received, including interference that may cause undesired operation.

Industry Canada

ICES-003
This is a Class B digital device that meets all requirements of the Canadian Interference Causing Equipment Regulations.



N1831 C-Tick (Australian Communications Authority (ACA))

AS/NZS 3548
This equipment carries the C-Tick label and complies with EMC and radio communications regulations of the Australian Communications Authority (ACA), governing the Australian and New Zealand (AS/NZS) communities.

CE - Compliance to European Union (EU)

2004/108/EC Electromagnetic Compatibility Directive
This equipment complies with the rules, of the Official Journal of the European Union, for governing the Self Declaration of the CE Marking for the European Union as specified in the above directive(s) per the provisions of the following standards: IEC/EN 61326-1 Product Standard, IEC/EN 61010-1 Safety Standard.



WEEE - Directive of the European Union (EU)

This equipment and its packaging carry the waste of electrical and electronic equipment (WEEE) label, in compliance with European Union (EU) Directive 2002/96/EC, governing the disposal and recycling of electrical and electronic equipment in the European community.



UL 916 Listed products for the Unites States and Canada, Open Class Energy Management Equipment.