MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6EP1333-4BA00

SITOP REGULATED POWER SUPPLY

Used with the applicable PLC System configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens official manufacturer documentation

5.9 Power supply

The power supply of an automation system to be dimensioned according to plant size. The SIMATIC S7-1500 CPUs are supplied via a load power supply or a system power supply. A system power supply that supplies the backplane bus is integrated in the CPUs. Depending on the system configuration, you can expand the integrated system power supply with up to two additional system power supply modules. If your plant has high power requirements, e.g. I/O load groups, you can connect additional load power supplies.

The table below shows the main differences between the two power supplies for the SIMATIC S7-1500 automation system:

Power supply	Description
Load current supply (PM)	Supplies 24 V DC to the S7-1500 system components such as CPU, system power supply (PS), input/output circuits of the I/O modules and any sensors and actuators. You can install the load power supply directly to the left of the CPU (without connection to the backplane bus). If you supply the voltage for the backplane bus via a system power supply, then the supply of the CPU or the interface module with DC 24 V is optional.
System power supply (PS)	Supplies only internally required system voltage. Supplies parts of the module electronics and the LEDs. Additionally the PS 60W 24/48/60V DC HF keeps the complete work memory of the CPU retentive.

Configuration example of a system with load power supply and system power supply

The following figure shows a system configuration with load power supply and additional system power supply.

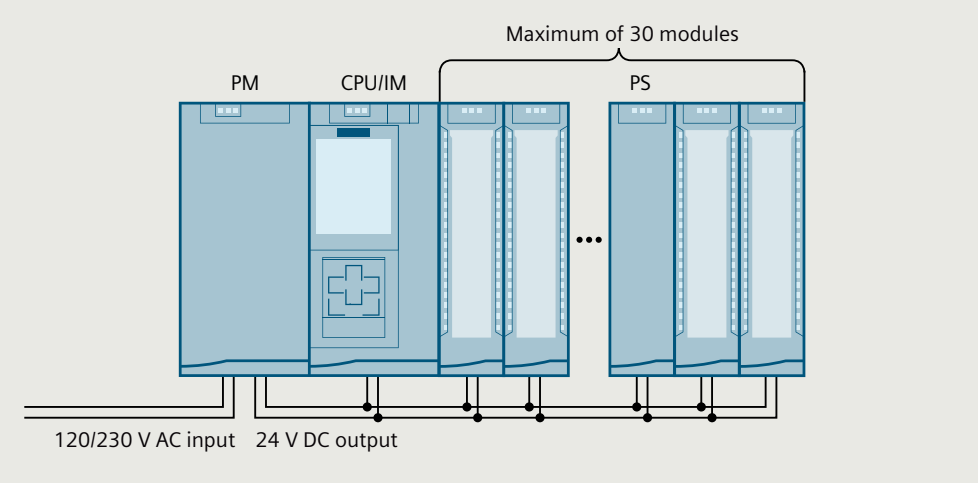


Figure 5-23 Overall configuration of power supply

In order to ensure the supply of the modules from the backplane bus, the incoming power is compared with the required power in the TIA Portal engineering system or in the TIA Selection Tool.

As early as in the planning stages, make sure that the power fed into the backplane bus is always greater than or equivalent to the power drawn.

System power supply modules

System power supplies supply the internal electronics of the S7-1500 modules with power via the backplane bus. The table below shows the available system power supply modules:

Short designation	PS 25 W 24 V DC	PS 60 W 24/48/60 V DC	PS 60 W 24/48/60 V DC HF	PS 60 W 120/230 V AC/DC
Article number	6ES7505-0KA01-0AB0 (https://mall.industry.siemens.com/mall/en/WW/Catalog/Product/6ES7505-0KA00-0AB0)	6ES7505-0RA00-0AB0 (https://mall.industry.siemens.com/mall/en/WW/Catalog/Product/6ES7505-0RA00-0AB0)	6ES7505-0RB00-0AB0 (https://mall.industry.siemens.com/mall/en/WW/Catalog/Product/6ES7505-0RB00-0AB0)	6ES7507-0RA00-0AB0 (https://mall.industry.siemens.com/mall/en/WW/Catalog/Product/6ES7507-0RA00-0AB0)
Equipment Manual	↓ (https://support.industry.siemens.com/cs/ww/en/view/5919-3552)	↓ (https://support.industry.siemens.com/cs/ww/en/view/5919-2919)	↓ (https://support.industry.siemens.com/cs/ww/en/view/109746400)	↓ (https://support.industry.siemens.com/cs/ww/en/view/5919-3004)
Rated input voltage	24 V DC	24 VDC, 48 VDC, 60 VDC	24 VDC, 48 VDC, 60 VDC	120 V AC, 230 V AC 120 V DC, 230 V DC
Output power	25 W	60 W	60 W	60 W
Electrical isolation from the backplane bus	X	X	X	X
Diagnostic interrupt	X	X	X	X
Energy buffering for data backup in the CPU	---	---	Up to 20 MB retentive	---

Load power supply modules

The load power supply modules with automatic range selection of the input voltage are optimally adapted in design and functionality to the SIMATIC S7-1500 controller. The table below shows the available load power supply modules:

Short designation	PM 70 W 120/230 V AC	PM 190 W 120/230 V AC
Article number	6EP1332-4BA00 (https://mall.industry.siemens.com/mall/en/WW/Catalog/Product/6EP1332-4BA00)	6EP1333-4BA00 (https://mall.industry.siemens.com/mall/en/WW/Catalog/Product/6EP1333-4BA00)
Equipment Manual	↓ (https://support.industry.siemens.com/cs/ww/en/view/68036174)	↓ (https://support.industry.siemens.com/cs/ww/en/view/68022506)
Rated input voltage	120/230 V AC, with automatic switchover	120/230 V AC with automatic switchover
Output voltage	24 V DC	24 V DC
Rated output current	3 A	8 A
Power consumption	84 W	213 W

Using a SITOP power supply as an alternative to a load power supply

Alternatively, an external 24 V power supply from the SITOP range (https://mall.industry.siemens.com/mall/en/WW/Catalog/Products/10008864) (SITOP smart or SITOP modular) can be used:

- For higher output currents and 1-phase or 3-phase infeed
- With redundant installation (https://support.industry.siemens.com/cs/ww/de/view/109768676/en) of the 24 V power supply as protection against failure of a power supply unit
- With buffering of the 24 V power supply (e.g. with DC UPS) as protection against power failure
- With selective monitoring of 24 V loads as protection against overload or short-circuit

5.10 Connection elements and system cabling

Front connector and shield contact

The front connectors are used to wire the I/O modules. For modules with EMC-critical signals, such as analog modules and technology modules, the front connectors also need a shield contact.

The front connectors are available for 35 mm modules optionally with screw terminals and push-in terminals and for 25 mm modules with push-in terminals. The front connectors for 25 mm modules are included in the scope of delivery of the I/O modules.

24 V DC is supplied, for example, via a plug-in infeed element for analog modules.

The shield contact consists of shield bracket and shield terminal. Together with the shield terminal, the shield bracket allows the low-impedance, module-level connection of cable shields with minimum installation times. The shielding takes place without tools.