OFFICIAL DOCUMENT PACKAGE

Manufacturer's Manual

Amikon cover with selected official Siemens technical pages

SIEMENS SIMATIC S7-1500 / PS 60W HF

6ES7505-0RB00-0AB0

SIMATIC S7-1500 PS 60W 24/48/60V DC HF

Selected official pages retain the original technical tables, ratings, notes and pagination.

OFFICIAL SOURCE

Siemens exact datasheet 08/13/2026; A5E03461182-AN system manual, 11/2025

Exact technical pages plus HF configuration and coded power-connector guidance

This technical extract does not replace the complete equipment and system manuals. Check the installed hardware and project before use.

SIEMENS

Data sheet 6ES7505-0RB00-0AB0

SIMATIC S7-1500, System power supply with buffer functionality PS 60W 24/48/60V DC HF, supplies the backplane bus of the S7-1500 with operating voltage and permits the CPU to retain RAM (data) retentively

General information	
Product type designation	PS 60 W 24/48/60 V DC HF
HW functional status	from FS01
Firmware version	from V1.0.0
Engineering with	
● STEP 7 TIA Portal configurable/integrated from version	V14 SP1
Supply voltage	
Rated value (DC)	24 V / 48 V / 60 V
permissible range, lower limit (DC)	19.2 V; Static 19.2 V, dynamic 18.5 V
permissible range, upper limit (DC)	72 V; Static 72 V, dynamic 75.5 V
Reverse polarity protection	Yes
Short-circuit protection	Yes
Mains buffering	
● Mains/voltage failure stored energy time	20 ms
Input current	
Rated value at 24 V DC	3 A
Rated value at 48 V DC	1.5 A
Rated value at 60 V DC	1.2 A
Inrush current, max.	≤ 8 A for t ≤ 1 s
Output current	
Short-circuit protection	Yes
Power	
Infeed power to the backplane bus	60 W
Power loss	
Power loss at nominal rating conditions	12 W
Interrupts/diagnostics/status information	
Status indicator	Yes
Isolation	
Isolation tested with	2 500 V DC (type test)
EMC	
Interference immunity against voltage surge	
● Interference immunity on supply lines acc. to IEC 61000-4-5	Yes; ±1 kV (acc. to IEC 61000-4-5; 1995; surge symm.), ±2 kV (acc. to IEC 61000-4-5; 1995; surge asymm.), no external protective circuit required
Degree and class of protection	
Equipment protection class	I, with protective conductor
Ambient conditions	
Ambient temperature during operation	
● min.	-25 °C; up to FS02: 0 °C
● max.	60 °C

● horizontal installation, min.	-25 °C; up to FS02: 0 °C
● horizontal installation, max.	60 °C
● vertical installation, min.	-25 °C; up to FS02: 0 °C
● vertical installation, max.	40 °C
Ambient temperature during storage/transportation	
● min.	-40 °C
● max.	70 °C
Altitude during operation relating to sea level	
● Installation altitude above sea level, max.	2 000 m
Dimensions	
Width	105 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	865 g

Classifications

	Version	Classification
eClass	16	27-24-22-09
eClass	14	27-24-22-09
eClass	12	27-24-22-09
eClass	9.1	27-24-22-09
eClass	9	27-24-22-09
eClass	8	27-24-22-09
eClass	7.1	27-24-22-09
eClass	6	27-24-22-09
ETIM	10	EC000599
ETIM	9	EC000599
ETIM	8	EC000599
ETIM	7	EC000599
IDEA	4	3575
UNSPSC	15	32-15-17-06

Approvals / Certificates

General Product Approval

Miscellaneous

General Product Approval

BIS CRS

Manufacturer Declaration

China RoHS

EMV

For use in hazardous locations

FM

CCC-Ex

Type Examination Certificate

For use in hazardous locations

Maritime application

Procedure

To set up infeed only via the system power supply, follow these steps:

1. Open the "Properties" tab of the CPU/interface module in STEP 7 and select the "System power supply" in the navigation.
2. Select the option "No connection to supply voltage L+".

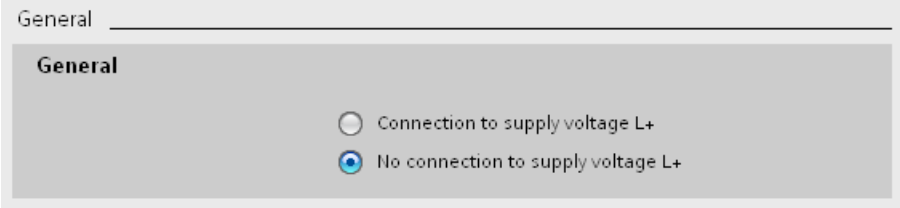

Figure 6-8 No infeed into the backplane bus by means of the CPU/interface module

6.2.3 Special requirements when using the power supply PS 60W 24/48/60VDC HF

S7-1500 - Extended retentive memory for CPUs as of FW V2.1.0

When you use the PS 60W 24/48/60VDC HF system power supply, the entire data area can be used as retentive memory for CPUs as of firmware version V2.1.0 and higher.

The PS 60W 24/48/60VDC HF supplies enough energy in case of a POWER OFF that the CPU can save the entire data area retentively.

Requirements

- STEP 7 V14 SP1 or higher
- PS 60W 24/48/60VDC HF system power supply
- CPU with firmware version as of V2.1.0, see table below

Applicable CPUs

The size of the retentive memory depends on the size of the work memory for data of the CPU used. The table below shows the applicable CPUs with the required hardware function versions.

CPU with firmware version V2.1.0 or higher	Hardware function version	Article number	Max. retentive memory
CPU 1511-1 PN	FS01 or higher	6ES7511-1AK01-0AB0 6ES7511-1AK02-0AB0	1 MB
		6ES7511-1AL03-0AB0	1.5 MB
CPU 1511F-1 PN	FS01 or higher	6ES7511-1FK01-0AB0 6ES7511-1FK02-0AB0	1 MB
		6ES7511-1FL03-0AB0	1.5 MB
CPU 1511T-1 PN	FS01 or higher	6ES7511-1TK01-0AB0	1 MB
		6ES7511-1TL03-0AB0	1.5 MB
CPU 1511TF-1 PN	FS01 or higher	6ES7511-1UK01-0AB0	1 MB
		6ES7511-1UL03-0AB0	1.5 MB

CPU with firmware version V2.1.0 or higher	Hardware function version	Article number	Max. retentive memory
CPU 1511C-1 PN	FS01 or higher	6ES7511-1CK00-0AB0 6ES7511-1CK01-0AB0	1 MB
		6ES7511-1CL03-0AB0	1.5 MB
CPU 1512C-1 PN	FS01 or higher	6ES7512-1CK00-0AB0 6ES7512-1CK01-0AB0	1 MB
		6ES7512-1CM03-0AB0	2 MB
CPU 1513-1 PN	FS01 or higher	6ES7513-1AL01-0AB0 6ES7513-1AL02-0AB0	1.5 MB
		6ES7513-1AM03-0AB0	2.5 MB
CPU 1513F-1 PN	FS01 or higher	6ES7513-1FL01-0AB0 6ES7513-1FL02-0AB0	1.5 MB
		6ES7513-1FM03-0AB0	2.5 MB
CPU 1515-2 PN	FS01 or higher	6ES7515-2AM01-0AB0 6ES7515-2AM02-0AB0	3 MB
		6ES7515-2AN03-0AB0	4.5 MB
CPU 1515F-2 PN	FS01 or higher	6ES7515-2FM01-0AB0 6ES7515-2FM02-0AB0	3 MB
		6ES7515-2FN03-0AB0	4.5 MB
CPU 1515T-2 PN	FS01 or higher	6ES7515-2TM01-0AB0	3 MB
		6ES7515-2TN03-0AB0	4.5 MB
CPU 1515TF-2 PN	FS01 or higher	6ES7515-2UM01-0AB0	3 MB
		6ES7515-2UN03-0AB0	4.5 MB
CPU 1516-3 PN/DP	FS01 or higher	6ES7516-3AN01-0AB0 6ES7516-3AN02-0AB0	5 MB
		6ES7516-3AP03-0AB0	7.5 MB
CPU 1516F-3 PN/DP	FS01 or higher	6ES7516-3FN01-0AB0 6ES7516-3FN02-0AB0	5 MB
		6ES7516-3AP03-0AB0	7.5 MB
CPU 1516T-3 PN	FS01 or higher	6ES7516-3TP10-0AB0	15 MB
CPU 1516T-3 PN/DP	FS01 or higher	6ES7516-3TN00-0AB0	5 MB
CPU 1516TF-3 PN	FS01 or higher	6ES7516-3UP10-0AB0	15 MB
CPU 1516TF-3 PN/DP	FS01 or higher	6ES7516-3UN00-0AB0	5 MB
CPU 1517-3 PN	FS01 or higher	6ES7517-3AQ10-0AB0	50 MB
CPU 1517-3 PN/DP	FS03 or higher	6ES7517-3AP00-0AB0	8 MB
CPU 1517F-3 PN	FS01 or higher	6ES7517-3FQ10-0AB0	50 MB
CPU 1517F-3 PN/DP	FS03 or higher FS01 or higher	6ES7517-3FP00-0AB0 6ES7517-3FP01-0AB0	8 MB
CPU 1517T-3 PN	FS01 or higher	6ES7517-3TQ10-0AB0	50 MB
CPU 1517T-3 PN/DP	FS01 or higher	6ES7517-3TP00-0AB0	8 MB
CPU 1517TF-3 PN	FS01 or higher	6ES7517-3UQ10-0AB0	50 MB
CPU 1517TF-3 PN/DP	FS01 or higher	6ES7517-3UP00-0AB0	8 MB

CPU with firmware version V2.1.0 or higher	Hardware function version	Article number	Max. retentive memory
CPU 1518-3 PN	FS01 or higher	6ES7518-3AT10-0AB0	100 MB
CPU 1518F-3 PN	FS01 or higher	6ES7518-3FT10-0AB0	100 MB
CPU 1518T-3 PN	FS01 or higher	6ES7518-3TT10-0AB0	100 MB
CPU 1518TF-3 PN	FS01 or higher	6ES7 518-3UT10-0AB0	100 MB
CPU 1518-4 PN/DP	FS03 or higher	6ES7518-4AP00-0AB0	20 MB
CPU 1518F-4 PN/DP	FS03 or higher	6ES7518-4FP00-0AB0	20 MB
CPU 1518T-4 PN/DP	FS01 or higher	6ES7518-4TP00-0AB0	20 MB
CPU 1518TF-4 PN/DP	FS01 or higher	6ES7518-4UP00-0AB0	20 MB
CPU 1518-4 PN/DP MFP	FS01 or higher	6ES7518-4AX00-1AB0	20 MB
CPU 1518F-4 PN/DP MFP	FS01 or higher	6ES7518-4FX00-1AB0	20 MB

Connection, structure and configuration of an S7-1500 with PS 60W 24/48/60VDC HF

- You must insert the system power supply PS 60W 24/48/60VDC HF in slot 0.

Figure 6-9 Slot PS 60W 24/48/60VDC HF

- If you are using the PS 60W 24/48/60VDC HF, the 24 V supply of the CPU is not taken into account in the power budget calculation.

NOTE

You may only connect the 24 V DC supply voltage directly to the system power supply and not to the CPU.

You must set the "System power supply" parameter to the option "No connection to supply voltage L+" during configuration of the CPU. STEP 7 checks the setting when compiling the configuration.

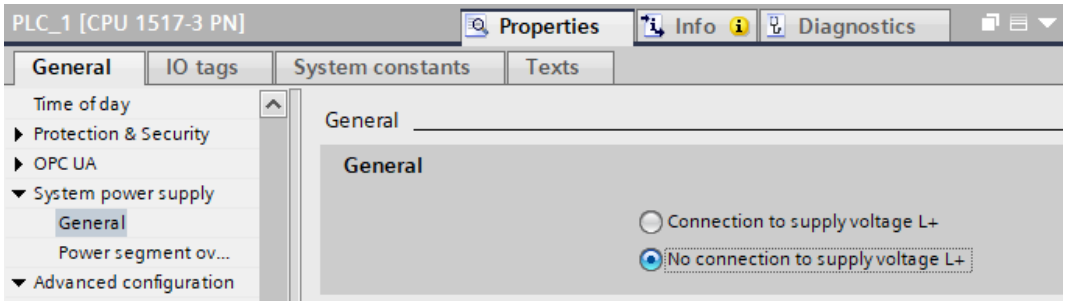

Figure 6-10 Connecting PS 60W 24/48/60VDC HF

- The parameter "Startup > Comparison preset to actual module" must be set to the value "Startup CPU only if compatible" during configuration of the PS 60W 24/48/60VDC HF. Reason: The retentivity of the entire CPU work memory (data) is only guaranteed when the PS 60W 24/48/60VDC HF is inserted.

  When you insert the PS 60W 24/48/60VDC HF, STEP 7 automatically sets the parameter.

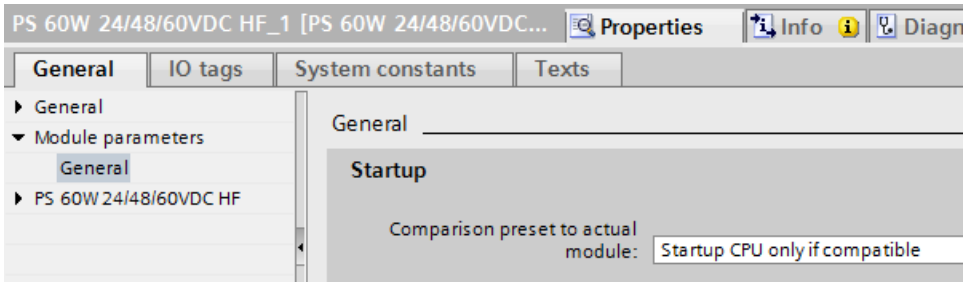

Figure 6-11 Startup of PS 60W 24/48/60VDC HF

NOTE

Other power segments in the configuration

The PS 60W 24/48/60VDC HF must only be inserted to the left of the CPU / interface module.

Use a different system power supply (PS) for other power segments in the configuration to the right of the CPU / interface module.

Missing diagnostics for the PS 60W 24/48/60VDC HF

In case of POWER OFF, saving the extended retentive data is most important. The CPU as of FW V2.1.0 and higher does **no longer** output the following diagnostics of the PS 60W 24/48/60VDC HF:

- Supply voltage fault
- Switch position Off

8.7 Connecting system power supply and load current supply

Introduction

In the delivery condition of the system power supplies/load current supplies, power connectors are inserted. The modules and the associated power connectors are coded. There are two parts to the coding element. One coding element is located in the module, and the other in the power connector. The system power supplies/load current supplies use identical power connectors for the voltage connection.

The coding element prevents the insertion of a power connector into a different type of system power supply/load current supply.

Tools required

3 to 3.5 mm screwdriver

Connecting the supply voltage to a system power supply/load current supply

Watch video sequence (https://support.industry.siemens.com/cs/ww/en/view/78027451)

To connect the supply voltage, follow these steps:

1. Swing the front cover of the module up until the front cover latches.
2. Press down the unlocking button of the power cable connector (Figure 1). Remove the power cable connector from the front of the module.
3. Loosen the screw on the front of the connector. This loosens the housing latch and the cable relief. With a tightened screw the connector's cover can't be removed (Figure 2).
4. Pry off the connector cover using a suitable tool (Figure 3).

Figure 8-6 Connecting the supply voltage to a system power supply/load current supply (1)

5. Strip the cable jacket to a length of 35 mm and the conductors to a length of 7 to 8 mm. Attach the end sleeves.
6. Connect the wires in the connector according to the connection diagram (Figure 4).
7. Close the cover (Figure 5).

8. Retighten the screw (Figure 6). This effects a strain relief on the lines.

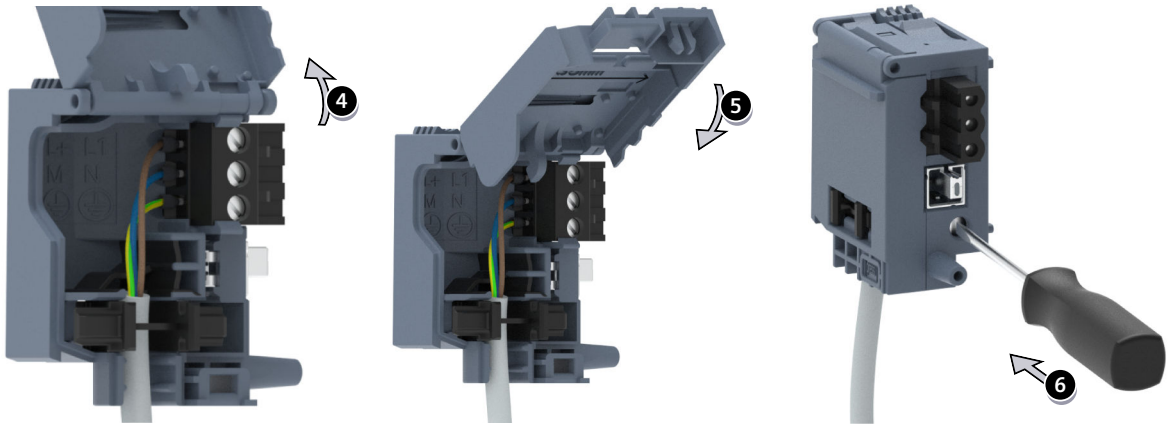

Figure 8-7 Connecting the supply voltage to a system power supply/load current supply (2)

9. Insert the power connector into the module, until the latch engages.

Reference

You can find more information on connecting the 24 V DC output voltage of the load power supply (PM) in the manuals for the relevant modules.

For more information on configuring system power supplies, refer to the System and load current supply (Page 169) section.

8.8 Connecting the CPU/interface module to the load current supply

Introduction

The load current supply is fitted with a plug-in 24 V DC output terminal (behind the front cover at the bottom). You connect the cables for the supply voltage to the CPU/interface module at this terminal.

Requirements

- Only wire the connection plug when the supply voltage is turned off.
- The connection plug for connecting the supply voltage to the CPU/interface module is already mounted.

You can find additional information in the section Connecting the supply voltage (Page 222).

Tools required

3 to 3.5 mm screwdriver