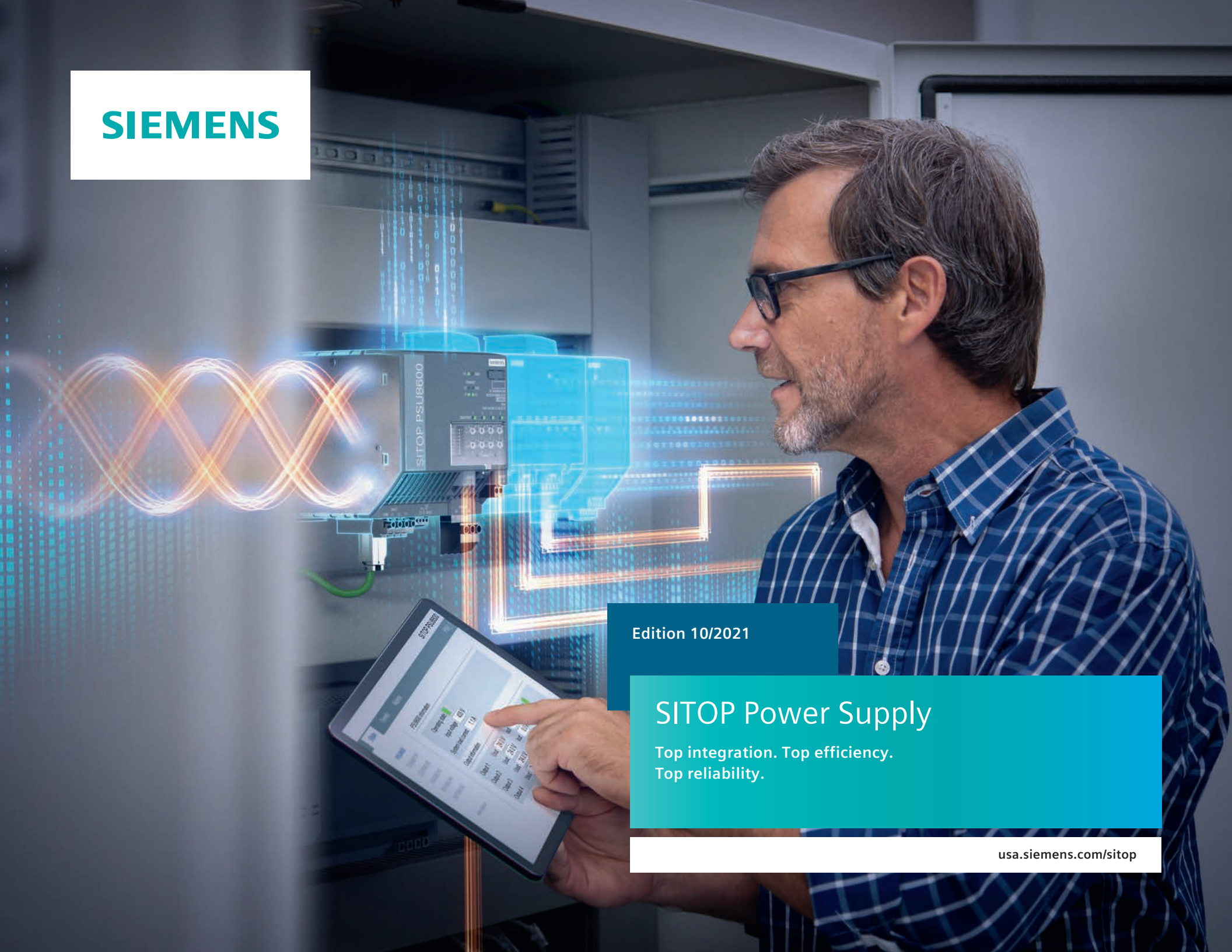
SIEMENS



Edition 10/2021

SITOP Power Supply

**Top integration. Top efficiency.
Top reliability.**

usa.siemens.com/sitop

Overview of SITOP product lines

What an optimal power supply looks like depends on numerous factors – size, performance range, and functions, to name but a few. The extensive range of SITOP products ensures that your power supply will always match your requirements.

Advanced power supplies

SITOP PSU8600

The power supply system for digitalization and Industry 4.0

The innovative SITOP PSU8600 power supply system is fully integrated into Totally Integrated Automation and the TIA Portal. It's integrated directly into networked automation applications via its Ethernet/ PROFINET interface or OPC UA. SITOP PSU8600 not only offers diagnostics options, it also supports the energy management of a plant or machine. The modular system can be expanded to 36 outputs and provides buffer and DC UPS modules for protection against power failures.

Pages 20–23

SITOP PSU8200

The technology power supply for demanding solutions

SITOP PSU8200 is ideal for complex plants and machines. The wide-range input allows it to be connected to any supply system and also to withstand large voltage fluctuations. The power boost briefly delivers up to three times the rated current. And in the event of an overload, you can choose between constant current with automatic restart or latching shutdown. The high degree of efficiency reduces energy consumption, while the compact metal enclosure saves space.

Pages 24–25

Standard power supplies

New: now also for hazardous areas

SITOP PSU6200

The all-around power supply for a wide range of applications

SITOP PSU6200 is the extremely high-performance power supply for standard 24-, 12-, and 48-V applications. The compact and energy-efficient power supply units offer comprehensive functions and features for focused diagnostics, fast installation, and dependable operation. Whether it's LED status indicators, integration into preventive maintenance, push-in terminals, or rugged input – SITOP PSU6200 has it all.

Pages 26–27

SITOP smart

The powerful standard power supply

SITOP smart is the optimal power supply for many 24-V and 12-V applications, featuring powerful performance and an affordable price. Even large loads can be easily switched on, due to its overload characteristics that provide 1.5 times the rated current for 5 seconds. And with a rated capacity of 120 percent at ambient temperatures up to 45°C, these slim power supply units are among the most reliable of their kind.

Pages 28–29

Basic power supplies

SITOP lite

The cost-effective basic power supply

SITOP lite is the power supply series for basic requirements in the industrial environment, offering all the important functions at a low cost – without compromising quality and reliability. The wide-range input with manual switchover supports connection to a wide range of single-phase supply systems.

Page 32

LOGO!Power

The flat power supply for distribution boards

Small. Clever. LOGO!Power. The fourth generation of the globally proven miniature power supply units with a flat, stepped profile features high performance in a small space. The comprehensive functionality with flexible installation, current monitoring, and high energy efficiency permits universal use in applications with 5 V, 12 V, 15 V, and 24 V.

Pages 30–31

SITOP compact

The slim power supply for control boxes

SITOP compact was developed to be an extremely space-saving power supply for the lower power range. It is especially suited to distributed applications in control boxes and in small control cabinets. Its high efficiency over the entire load range and low no-load loss make it exceptionally efficient. It is ideal for applications that are often in standby mode.

Page 33

SIMATIC Design

The optimal supply for SIMATIC S7 and more

Page 34

SITOP DC/DC converters

Stable power supply despite fluctuating DC voltage

Page 35

Special designs

Equipped for special functions and conditions

Pages 36–37

SITOP ensures reliable 24-V supply – even when the power fails

Power outages can bring a plant to a standstill, with high costs in terms of both time and money. The SITOP DC UPS systems with different types of energy storage devices and communication interfaces offer solutions for all buffering time and plant integration requirements.

Uninterruptible power supply

DC UPS module

For expansion to an uninterruptible 24-V power supply

DC UPS module

For expansion to an uninterruptible 24-V power supply

SITOP DC UPS with capacitors

These high-capacitance double-layer capacitors (Ultracaps) store sufficient energy to shut down PC-based systems safely.

Totally maintenance-free

The capacitors have an extremely long life even at high ambient temperatures. No maintenance or replacement of the energy buffer is required, which means that the DC UPS pays for itself within a short time. And because the capacitors do not emit any gas, no ventilation of the control cabinet is required. Short recharging times quickly restore buffering capability following a power failure.

For use both inside and outside the control cabinet

The buffering time of the UPS500S for DIN rail mounting can be extended by adding UPS501S expansion modules.

- Variant expandable up to 20 kWs for longer buffering times
- Capacitors eliminate replacement of batteries
- Long life even at high temperatures
- No ventilation of the installation site required
- Communication via contacts or USB
- Easy engineering via SITOP Manager (as of V1.1, see page 16 for more details)

SITOP DC UPS with battery modules

Compact DC UPS modules ensure continued operation, even over a period of hours, depending on battery capacity and power requirements.

High system availability with battery management

Sophisticated battery management ensures optimal battery charging. The charging process is temperature-controlled thanks to the innovative SITOP UPS1600, which also increases the service life of the UPS1100 battery module.

- DC PSU module SITOP UPS1600 with 24 V and up to 40 A as well as battery module UPS1100 up to 12 Ah (total 72 Ah)
- SITOP UPS1100 5-Ah lithium battery module (LiFePo) with a constant power output and voltage throughout the discharging range as well as a long service life even with high ambient temperatures
- Monitoring of operational readiness, battery feeder, and charging status
- Extended battery life thanks to battery management

Did you know that … you can connect the uninterruptible power supply SITOP UPS1600 to various different systems via OPC UA?

SITOP module for 24-V buffering	Buffer module	UPS500	UPS1600	
Energy storage device				
Buffer time up to	Second	Minutes	Hours	
Storage medium	Electrolytic capacitors	Double-layer capacitors	Lead batteries	Lithium batteries
Service life (also temperature-dependent)	++	++	•	+
Application area (temperature, ventilation)	+	+	•	+
UPS module/electronics				
max. rated output current	40 A	15 A	40 A	
Overload capacity	++	+	++	
Interfaces		I/O, serial, USB	I/O, USB, Ethernet/PROFINET	
Operating and diagnostic information via				
– Signaling contacts		•	•	
– OPC UA server, Web server, S7 FBs, WinCC faceplate			•	
Shutting down multiple PCs/PLCs			•	
Start from battery without mains voltage (island operation)			•	
Engineering via SITOP Manager		•	•	
Engineering via TIA Portal, STEP 7, WinCC, or OPC UA			•	
SITOP library for SIMATIC PCS 7			•	

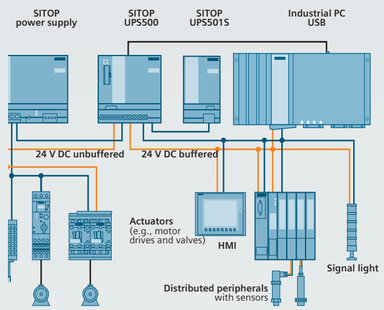
Extremely communicative

Optional communication via USB or Industrial Ethernet/PROFINET. With open communication via Ethernet, configuration and diagnostics are conveniently performed by the SITOP Manager. This PC software with a user interface based on a Web browser permits simple parameterization: for example, for safely shutting down multiple PCs.

The UPS1600 can even be fully integrated into TIA via PROFINET. Remote monitoring is possible with support from the integrated web server.

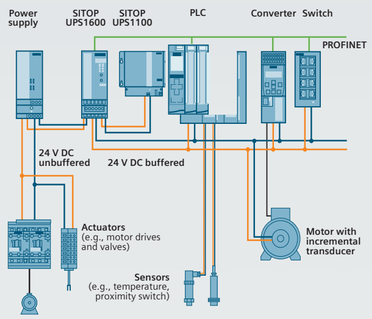
- Communication via contacts, USB, or two Ethernet/PROFINET ports
- Easy engineering and extensive diagnostics in the TIA Portal
- OPC UA server for the flexible integration of a wide variety of automation, operating, and monitoring systems
- User-friendly SITOP Manager engineering and diagnostics tool for simple integration into open systems (more details on page 16)

SITOP DC UPS configuration with capacitors



24-V buffering for saving process data and for correct PC shutdown

SITOP DC UPS configuration with battery modules



24-V buffering for maintaining communications, signaling, sensor-measured values, and position values

SITOP add-on modules – all-round protection à la carte

Processes and plants that are critical for a company's business generally require additional protection measures. SITOP add-on modules individually protect your production against many sources of risk.

Did you know that ... our customers use SITOP power supply units in manufacturing, process, and building automation in over 190 countries worldwide?

Add-on-Module

Add-on modules

For increasing system availability to all-round protection

Selection matrix of the SITOP add-on modules for protection from...

	Redundancy module	Selectivity/ diagnostic module	Buffer module	DC-UPS with capacitors	DC-UPS with batteries
Failure of a power supply unit	•				
Overload in the 24-V circuit		•			
Power failure up to the seconds range			•	•	•
Power failure up to the minutes range				•	•
Power failure up to the hours range					•

Safeguarding against failure through redundancy

Two power supply units can be connected via the SITOP redundancy module for additional failure safety. If one unit fails, the other automatically takes over the power supply function. Even in the event of a short circuit inside a power supply unit, the power supply remains reliable. With its high dielectric strength, the new RED1200 redundancy module also decouples power supplies without output voltages up to 48 V.

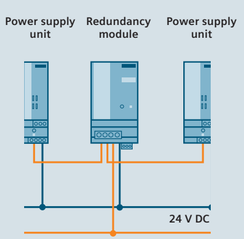
Selective disconnection of faulty 24-V feeders

The SITOP selectivity modules are specifically tailored to switched-mode power supplies. The modules permit brief current peaks and switch off the electricity for longer overloads, even on long, thin cables and with creeping short circuits in which the current is limited by the high ohmic resistance. In this case the circuit-breakers do not trip, or they trip too late, even if the power supply could deliver the current. The selectivity modules reliably disconnect the faulty load circuits, and the supply to the other loads continues with absolutely no interruption so that total failure of the plant can be avoided. The affected feeder is indicated by an LED. The option with single-channel signaling also allows remote output-specific fault location. The new SEL1200 and SEL1400 four or eight-channel modules also have an interface with comprehensive diagnostics options for each output.

Buffer module bridges brief power failures

Although power failures usually last only a fraction of a second, they can cause costly and time-consuming damage. In combination with the 24-V power supply units, the buffer module bridges short-duration voltage dips with its electrolyte capacitors.

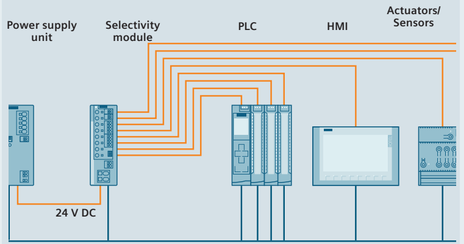
Configuration with redundancy module



Your benefits with the redundancy module:

- Highly secure DC supply thanks to a redundant design
- Reliable supply even when one power supply fails
- Compact redundancy modules for power supply units up to 48 V and 40 A
- 24-V/NEC Class 2 redundancy module limited to 100 VA
- Decoupling of parallel-connected power supply units to enhance performance or of series-connected power supply units to increase voltage

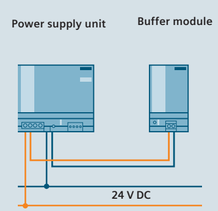
Configuration with selectivity module



Your benefits with the selectivity module:

- Protection against overloads and short circuits in the 24-V circuit
- Reliable tripping, regardless of the line resistance
- SEL1200: switch-off characteristic for standard protection and high starting currents
- SEL1400/PSE200U: power limiting to meet high protection requirements by stabilizing the 24 V
- Sequential connection reduces total inrush current
- Common signaling contact or evaluation of individual channels
- SEL1200/1400: 4 or 8 outputs, each with diagnostics of voltage, current, set threshold, reason for disconnection (if applicable)
- PSE200U: 4 outputs with voltage measuring point for current (1 V ≙ 1 A)

Configuration with buffer module



Your benefits with the buffer module:

- Inexpensive protection against power failure up to several seconds
- Support of power supply unit for temporarily increased power requirements
- High load current up to 40 A
- Connection to the power supply unit only via two lines

SITOP Manager – the software for easy integration of SITOP PSU8600, UPS500, and UPS1600 in open systems

siemens.com/
download-smgr

Did you know that ... with the new SITOP Manager V1.1, you can configure and diagnose uninterruptible SITOP power supplies with a USB interface, which also includes SITOP UPS500 and predecessors of UPS1600?

Optimal interoperability with different control systems: SITOP Manager – the Windows software for the SITOP PSU8600 power supply system and SITOP uninterruptible power supplies – is available free of charge.

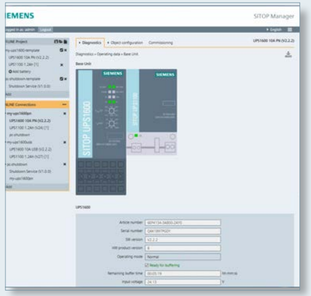
High performance for configuration

With the SITOP Manager software, all the power supplies in a network can be parameterized and diagnosed by a PC with the Windows 7 or 10 operating system. This is ideal, especially if plant configuration and programming isn't performed via the TIA Portal or SIMATIC Step 7. With a user interface based on a Web browser, the application can also run on mobile terminals and automatically adapts the display size.

With the user-friendly SITOP Manager software, it's easy to parameterize the SITOP PSU8600 power supply system and the SITOP uninterruptible power supplies – for example, to define output voltages and current thresholds or to safely shut down PCs in the event of a power failure.

Uncompromising when it comes to security

Communication between SITOP Manager and the connected power supplies is via the open, multi-vendor, Ethernet-based OPC UA communication standard. This standard meets extremely high security requirements for secure data transmission.



The status of the communication-capable SITOP devices can be conveniently obtained via online diagnostics in the SITOP Manager. Here is the operating data for the SITOP UPS1600/UPS1100.

SITOP – the right power supply for every application

			Advanced power supplies		Standard power supplies		Basic power supplies		
			SITOP PSU8600 – power supply system with PROFINET and OPC UA	SITOP PSU8200 – The technology power supply for demanding solutions	SITOP PSU6200 – the all-around power supply for a wide range of applications	SITOP smart – The powerful standard power supply	SITOP lite – The costeffec-tive basic power supply	LOGO!Power – The flat power supply for distribution boards	SITOP compact – The slim power supply unit for control boxes
Selection matrix of the SITOP DIN rail power supply units according to performance data and range of functions									
Input/output	Input	AC/DC	1,3 ~	1,2,3 ~ =	1,3 ~ =	1,3 ~	1 ~	1 ~ =	1 ~ =
	Rated power up to approx.	P	960 W	960 W	480 W	960 W	480 W	100 W	100 W
	Rated output voltages	U	4–28 V DC	24/36/48 V DC	12/24/48 V DC	12/24 V DC	24 V DC	5/12/15/24 V DC	12/24 V DC
	Rated output currents (24 V)	I	20–40 A	5–40 A	1.3–20 A	2.5–40 A	2.5–20 A	0.6–4.0 A	0.6–4.0 A
Properties	Overload behavior	P_{max}	Extra Power	Extra Power, Power Boost	Extra Power	Extra Power		Extra power on startup	
	Energy efficiency		+ + +	+ + +	+ + +	+ +	+	+ +	+ +
	Automation integration		OPC UA	DC o.k. Remote on/off	DC o.k. Diagnostics interface	DC o.k.			
Safety, environment	Explosion protection: ATEX, IECEx, or FM				•[1]			•	
	Marine approval: DNV GL or ABS		•	•	in preparation	•		•	
	Ambient temperature range		–25 ... +60 °C	–25 ... +70 °C	–25...+70 °C	–25 ... +70 °C	0 ... +60 °C	–25 ... +70 °C	–20 ... +70 °C
24-V power supply units expandable with ...	Redundancy module		•	•	•	•	•	•	•
	Selectivity module	I >	integrated	•	•	•	•	•	•
	Buffer module	s	integrated	•	•	•			
	DC UPS with Ultracaps	min	integrated	•	•	•	•	•	•
	DC UPS with batteries	h	integrated	•	•	•	•	•	•

[1] See SITOP EX Portfolio.

Our answers to your requirements with regard to a high-performance power supply:

The selection of the power supply unit is based on the input and output data. On the following two pages (pages 18 and 19), you will find a selection table with the available SITOP power supply units and the product lines to which they belong. The technical data is located on the subsequent pages under the corresponding product line.

But which product line is the right one for my application?

As a decision-making aid, you can refer to the selection matrix containing the most important data, properties, functions, certificates, and expansion options for increasing 24-V availability.

Selection table SITOP power supplies

Input voltage	Output current	Advanced power supplies		Standard power supplies		Basic power supplies			SIMATIC design	SITOP DC/DC converter	Special designs
		SITOP PSU8600	SITOP PSU8200	SITOP PSU6200	SITOP smart	SITOP lite	LOGO!Power	SITOP compact			
DC 24-V output voltage											
1-phase	0.6 A						6EP3330-6SB00-0AY0	6EP1331-5BA00			
120 V, 230 V AC	1.3 A			6EP3331-7SB00-0AX0			6EP3331-6SB00-0AY0	6EP1331-5BA10			
	2 A								6ES7307-1BA01-0AA0		6EP1331-1LD00
	2.5 A			6EP3332-7SB00-0AX0	6EP1332-2BA20	6EP1332-1LB00	6EP3332-6SB00-0AY0	6EP1332-5BA00	6EP1332-1SH71		
	3 A								6EP1332-4BA00		6EP1332-1LD00
	3.5 A								6EP1332-1SH31		
	3.7 A			6EP3333-7LB00-0AX0				6EP1332-5BA20			
	4 A						6EP3333-6SB00-0AY0	6EP1332-5BA10			6EP1332-1LD10
	5 A		6EP1333-3BA10	6EP3333-7SB00-0AX0	6EP1333-2BA20	6EP1333-1LB00			6ES7307-1EA01-0AA0		6EP1333-1AL12
			6EP3333-8SB00-0AY0						6ES7307-1EA80-0AA0		6EP1333-7CA00
									6EP7133-6AB00-0BN0		
	6.2 A										6EP1333-1LD00
	8 A								6EP1333-4BA00		6EP1334-7CA00
	10 A		6EP1334-3BA10	6EP3334-7SB00-3AX0	6EP1334-2BA20	6EP1334-1LB00			6ES7307-1KA02-0AA0		6EP1334-1AL12
			6EP3334-8SB00-0AY0		6EP1334-2AA01-0AB0				6EP7133-6AE00-0BN0		6EP3343-0SA00-0AY0
	12.5 A										6EP1334-1LD00
	20 A		6EP1336-3BA10	6EP3336-7SB00-3AX0	6EP1336-2BA10	6EP1336-1LB00					
	20 A/4 x 5 A	6EP3336-8MB00-2CY0									
	40 A		6EP3337-8SB00-0AY0								
3-phase	5 A		6EP1333-3BA10[1)]	6EP3433-7SB00-0AX0	6EP1433-2BA20						6EP1433-0AA00
400–500 V AC	8 A								6ES7148-4PC00-0HA0		6ES7148-4PC00-0HA0
	10 A		6EP1334-3BA10[1)]	6EP3434-7SB00-3AX0	6EP1434-2BA20						
	17A										6EP3436-8UB00-0AY0
	20 A		6EP3436-8SB00-0AY0	6EP3436-7SB00-3AX0	6EP1436-2BA10						
		6EP3436-8SB00-2AY0									
	20 A/ 4 x 5 A	6EP3436-8MB00-2CY0									
	30 A										6EP3437-8UB00-0AY0
	40 A		6EP3437-8SB00-0AY0		6EP1437-2BA20						6EP3437-8UB00-0AY0
		6EP3437-8SB00-2AY0									
	40 A/ 4 x 10 A	6EP3437-8MB00-2CY0									
12 V DC	4 A									6EP3133-0TA10-0AY0	
24–110 V DC	2 A								6ES7305-1BA80-0AA0		6EP1732-0AA0 (as of 48 V DC)
24 V DC	5 A									6EP3133-0TA00-0AY0	
	10 A									6EP3134-0TA00-0AY0	
	3.5 A									6EP3233-0TA10-0AY0	
48 V DC	5 A									6EP3233-0TA00-0AY0	
	10 A									6EP3234-0TA00-0AY0	
	0.6 A						6EP3330-6SB00-0AY0	6EP1331-5BA00			
	1.3 A			6EP3331-7SB00-0AX0			6EP3331-6SB00-0AY0	6EP1331-5BA10			
	2.5 A			6EP3332-7SB00-0AX0			6EP3332-6SB00-0AY0	6EP1332-5BA00			
110–300 V DC	3.7 A			6EP3333-7LB00-0AX0				6EP1332-5BA20			
120–240 V DC	4 A						6EP3333-6SB00-0AY0	6EP1332-5BA10			
	5 A			6EP3333-7SB00-0AX0							
	10 A			6EP3334-7SB00-3AX0							
	20 A			6EP3336-7SB00-3AX0							
110–220 V DC	20 A/4 x 5 A	6EP3336-8MB00-2CY0									
88–350 V DC	20 A		6EP1336-3BA10			6EP1336-1LB00					
600 V DC	20 A									6EP1536-3AA00	

[1)] Connection to two phases 230–500 V AC – sheet 24/25, SITOP PSU200M 1-/2-phase

Gray: more information in the Industry Mall

Input voltage	Output current	Advanced power supplies		Standard power supplies		Basic power supplies		SITOP DC/DC converter	Special designs and applications
		SITOP PSU8600	SITOP PSU8200	SITOP PSU6200	SITOP smart	LOGO!Power	SITOP compact		
Output voltage 5, 12, 15, 48, etc., V DC									
1-phase	4–28 V/								
120 V, 230 V AC	4 x 5 A	6EP3336-8SB00-2CY0							
	5 V/3 A					6EP3310-6SB00-0AY0			
	5 V/6.3 A					6EP3311-6SB00-0AY0			
	12 V/0.9 A					6EP3320-6SB00-0AY0			
	12 V/1.9 A					6EP3321-6SB00-0AY0			
	12 V/2.0 A			6EP3321-7SB00-0AX0			6EP1321-5BA00		
	12 V/3.0 A								6EP1321-1LD00
	12 V/4.5 A					6EP3322-6SB00-0AY0			
	12 V/6.5 A						6EP1322-5BA10		
	12 V/7 A			6EP3323-7SB00-0AX0	6EP1322-2BA00				
	12 V/8.3 A								6EP1322-1LD00
	12 V/12 A			6EP3324-7SB00-3AX0					
	12 V/14 A				6EP1323-2BA00				
	15 V/1.9 A					6EP3321-6SB10-0AY0			
	15 V/4 A					6EP3322-6SB10-0AY0			
	48 V/5 A			6EP3344-7SB00-3AX0					6EP3344-0SB00-0AY0
	3–52 V/ 2–10 A								6EP3343-0SA00-0AY0
	2 x 15 V/ 3.5 A								6EP1353-0AA00
24 V DC	12 V/2.5 A							6EP1621-2BA00	
	12 V/8 A							6EP3123-0TA00-0AY0	
	12 V/15 A							6EP3124-0TA00-0AY0	
3-phase	4–28 V/20 A	6EP3436-8SB00-2CY0							
400–500 V AC	4–28 V/ 4 x 5 A	6EP3436-8MB00-2CY0							
	4–28 V/ 40 A	6EP3437-8SB00-2CY0							
	4–28 V/ 4 x 10 A	6EP3437-8MB00-2CY0							
	12 V/20 A								6EP3424-8UB00-0AY0
	36 V/13 A		6EP3446-8SB10-0AY0						
	48 V/10 A		6EP3446-8SB00-0AY0						
	48 V/20 A		6EP3447-8SB00-0AY0						

Find out more:

usa.siemens.com/sitop

Additional information on SITOP:

- TIA Selection Tool: siemens.com/tst-powersupply
- Operating instructions as download: siemens.com/sitop/manuals
- Request CAx data via the CAx download manager: siemens.com/cax

More about SITOP on YouTube

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