

Power Supplies



11/2	Introduction
	Non-Stabilized Power Supplies
	<u>Filtered for Supply of Electronic Controls</u>
11/4	General data
11/5	SIRIUS 4AV2, 4AV4 power supplies, filtered, single-phase
11/7	SIRIUS 4AV3, 4AV5 power supplies, filtered, three-phase
	<u>Unfiltered for Supply of General Loads</u>
11/9	SIRIUS 4AV98 power supplies, unfiltered, single-phase
11/10	SIRIUS 4AV96 power supplies, unfiltered, three-phase
	Stabilized Power Supplies
	<u>SITOP 6EP Power Supplies</u>
11/11	LOGO!Power, single-phase
11/12	SITOP smart, single-phase and three-phase
11/13	SITOP modular basic units 24 V, single-phase, two-phase and three-phase
11/14	Expansion modules
11/15	DC-UPS uninterruptible power supplies
	Technical Information
	can be found at www.siemens.com/industrial-controls/support
	under Product List: - Technical Specifications
	under Entry List: - Updates - Downloads - FAQ - Manuals - Characteristic curves - Certificates
	and at www.siemens.com/industrial-controls/configurators - Configurators

Power Supplies

Introduction

Overview

4AV non-stabilized power supplies



	4AV21/23	4AV20/22/24/26	4AV4	4AV3	4AV5
Filtered for supply of electronic controls					
Ripple	< 5 %	< 5 %	< 5 %	< 5 %	< 5 %
Phase	1	1	1	3	3
Rated input voltage	V AC	115 ... 415	115 ... 415	230 ... 415	200 ... 600
Rated output voltage acc. to EN 61131-2 suitable for SIMATIC systems	V DC	24	24	24	24
Rated output current	A	1 ... 4.2	2.5 ... 18	1.5 ... 10	15 ... 180
Connection		Screw terminals/ flat connectors	Screw terminals/ flat connectors or Cage Clamp terminals	Screw terminals/ flat connectors or Cage Clamp terminals	Screw terminals/ flat connectors
Mounting		Standard rail mount- ing	Screw and/or standard rail mounting	Screw and/or standard rail mounting	Screw mounting
cULus approval at 60 °C	Yes	Yes	No	Partially	No
Page	11/5	11/6	11/6	11/7, 11/8	11/7



	4AV98	4AV96
Unfiltered for supply of general loads		
Ripple	48.3 %	< 5 %
Phase	1	3
Rated input voltage	V AC	230 or 400
Rated output voltage	V DC	24
Rated output current/ rated power		50 ... 500 W
Connection		Screw/flat connectors
Mounting		Screw mounting
cULus approval	No	No
Page	11/9	11/10

6EP stabilized power supplies



	6EP1 LOGO!Power	6EP1 SITOP smart	6EP1 SITOP modular	6EP1 SITOP uninterruptible
Phase	1	1, 3	1, 2, 3	1
Rated input voltage	V	100 ... 240 AC	48 ... 220 DC, 120 ... 230 AC, 120/230 AC, 3 AC 400 ... 500	120/230 ... 500 AC, 120/230 AC, 3 AC 400 ... 500
Rated output voltage	V DC	5, 12, 15, 24	24, 48, 3 ... 52	24
Rated output current	A	1.3 ... 6.3	0.375 ... 10	6, 15, 40
Connection		Screw terminals	Screw terminals	Screw terminals
Mounting		Standard rail mounting	Standard rail mounting	Standard rail mounting
Approval	UL, cUL	UL, cUL	UL, cUL	UL, cUL
Page	11/11	11/12	11/13	11/15, 11/16

Further products for power supplies can be found in Catalog KT 10.1 or
on the Internet at www.siemens.com/sirius-supplying and www.siemens.com/sitop.

Introduction

Options***Delivery time class DT***

The delivery time classes are specified in the selection tables in front of the order numbers.

The standard transport time for Germany is 1 day (see "Explanations" on page 4).

The delivery time class for 6EP1 power supplies does not depend on the quantity.

The quoted delivery time class for the 4AV power supplies is applicable to an order quantity of up to 5 units.

► Preferred type

This delivery time class applies with the degree of protection IP00, i. e. these units can be supplied immediately from stock¹⁾ and will be dispatched within 24 hours. The transport times depend on the destination and the mode of delivery.

Delivery time class B is applicable to an order quantity of 6 units and more.

Delivery time class A

The ordered units will be dispatched within 2 working days.

Delivery time class B is applicable to an order quantity of 6 units and more.

Delivery time class B

The ordered units will be dispatched within 1 week.

Delivery time class C is applicable to an order quantity of 6 units and more.

Delivery time class C

The ordered units will be dispatched within 3 weeks.

Delivery time class D is applicable to an order quantity of 6 units and more.

Delivery time class D

The ordered units, including enclosure and additional options, will be dispatched within 6 weeks.

Orders of power supplies with selectable input and output voltages

Please send your selection by e-mail with the basic Order No. and the required options specified in plain text to:

Anfrage@mdexx.com

In response you will receive the complete Order No. for completing your order.

Ordering power supplies in customized versions or with special applications

Inquiries for customized power supplies not found in our catalog should be sent to:

Anfrage@mdexx.com

or by fax to: +49 (0)421/5125 333.

In reply you will receive the complete Order No. which should be quoted in your order.

More information

More information about power supplies, transformers, fans, reactors and filters can be found on the Internet at

www.siemens.com/sirius-supplying

For products and information on

- Reactors and filters, see Catalog LV 60,
Order No.: E86060-K2803-A101-A5-7600
- 2CC and 2CQ axial fans, see Catalog LV 65,
Order No.: E86060-K1865-A101-A1-7600

Transformers for converter systems from Siemens can be found in the following catalogs:

Catalog NC 60, SINUMERIK & SIMODRIVE
Order No.: E86060-K4460-A101-B3-7600

Catalog DA 65.10, SIMOVERT MASTERDRIVES Vector Control
Order No.: E86060-K5165-A101-A3-7600

Catalog DA 65.11, SIMOVERT MASTERDRIVES Motion Control
Order No.: E86060-K5165-A111-A3-7600

4AV Non-Stabilized Power Supplies

Filtered for Supply of Electronic Controls

General data

Overview

4AV2, 4AV3, 4AV4 and 4AV5 power supplies deliver a non-stabilized DC voltage of 24 V DC based on single-phase or three-phase safety transformers with downstream rectifiers and capacitor filtering.

Note



Screw terminals



Cage Clamp terminals



Flat connectors

The terminals are indicated in the selection and ordering data by orange backgrounds.

Application

The 4AV2, 4AV3, 4AV4 and 4AV5 units are used for:

- Supplying general electrical loads
- Supplying control circuits
- Power supply to electronic controllers They comply with the requirements of EN 61131-2 "Programmable controllers – equipment specifications and tests" and are suitable for SIMATIC or other systems.

Rated power and rated current

The specifications in the selection tables are based on fixed reference conditions in which the devices have the rated power or rated current:

- Uninterrupted duty P_n
- Frequency AC 50 Hz ... 60 Hz
- Installation height up to 1000 m above sea level
- Degree of protection IP00
- Ambient temperature t_a .

Ambient conditions

The units are designed for mounting in enclosed controllers and electronics cabinets. They are climate-proof for installation in rooms with an external climate according to DIN 50010.

Limit values:

- Ambient temperature with rated power and rated current for types:
 - 4AV2 and 4AV3: Up to +60 °C
 - 4AV4 and 4AV5: Up to +40 °C
 - Minimum value for all types: -25 °C.
- Relative air humidity:
 - At +40 °C occasionally up to 100 %
 - Annual average up to 80 %
 - Occasional condensation possible.

Overview

- Rated output voltage U_{2N} 24 V DC according to EN 61131-2¹⁾ and SIMATIC at input voltage +6 % to -10 % and load 0 % to 100 %
- Safety transformer according to EN 61558-2-6
- 4AV21, 4AV23: cPlus at 60 °C,
- 4AV20, 4AV22, 4AV24, 4AV26: cPlus at 60 °C,
- 4AV41:
- 4AV2: t_a = max. 60 °C/B, 4AV41: t_a = 40 °C/B
- Varistor suppressor circuit
- Status LED
- EMC according to EN 62041:
 - 4AV2: Suitable for connection to the public supply (residential environments) and industrial networks (industrial environments)
 - 4AV4: Suitable for connection to industrial networks (industrial environments)
- Ripple < 5 %



4AV21, 4AV23 (left) and 4AV20, 4AV22 to 4AV24 (right)

¹⁾ EN 61131-2: equipment specification for power supply and interface for programmable controllers. [For limit values for 24 V DC see note on Technical Information on page 11/1.](#)

Selection and ordering data

Rated input voltage U_{1N} ¹⁾ 230 (240)-115 (120) V,
rated output voltage U_{2N} 24 V DC



Rated output current I_d 60 °C/B EN 61558 c <u>Pl</u> us DC A	40 °C/B EN 61558 DC A	DT ²⁾	Screw terminals/ flat connectors		Price per PU	Cu weight per PU approx.	Total weight per PU approx.
			Order No.	Icon: screw terminals and flat connector			
1	1.2	▶	4AV21 02-2EB00-0A		0.600	0.600	1.500
3.5	4.2	▶	4AV23 02-2EB00-0A		0.900	0.900	2.500

¹⁾ During operation at the mains voltages listed in brackets, the upper limit for 24 V DC according to EN 61131-2 at +6 % mains voltage is met for a basic load of 10 %. Under no-load operation, 30.6 V can be achieved.

²⁾ The delivery time class depends on the quantity, [see page 11/3 "Options".](#)

Rated input voltage U_{1N} ¹⁾ 400 (415) V,
rated output voltage U_{2N} 24 V DC



Rated output current I_d 60 °C/B EN 61558 c <u>Pl</u> us DC A	40 °C/B EN 61558 DC A	DT ²⁾	Screw terminals/ flat connectors		Price per PU	Cu weight per PU approx.	Total weight per PU approx.
			Order No.	Icon: screw terminals and flat connector			
1	1.2	▶	4AV21 06-2EB00-0A		0.600	0.600	1.500
3.5	4.2	▶	4AV23 06-2EB00-0A		0.900	0.900	2.500

¹⁾ During operation at the mains voltages listed in brackets, the upper limit for 24 V DC according to EN 61131-2 at +6 % mains voltage is met for a basic load of 10 %. Under no-load operation, 30.6 V can be achieved.

²⁾ The delivery time class depends on the quantity, [see page 11/3 "Options".](#)

4AV Non-Stabilized Power Supplies

Filtered for Supply of Electronic Controls

**SIRIUS 4AV2, 4AV4 power supplies,
filtered, single-phase**

Rated input voltage $U_{1N}^{(1)}$

400 (415)-230 (240) V with tapping ±15 V,
rated output voltage U_{2N} 24 V DC

4AV2: c^Wus, ; 4AV41:

PU (UNIT, SET, M)=1
PS* =1 unit
PG =104

Rated output current I_d 60 °C/B EN 61558	40 °C/B EN 61558	c ^W us DC A	DT ²⁾ Order No.	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ²⁾ Order No.	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
									Price per PU	Price per PU		
Screw mounting³⁾												
2.5	3	►	4AV20 00-2EB00-0A			0.620	2.300	B	4AV20 00-2EB00-1A		0.620	2.300
5	6	►	4AV22 00-2EB00-0A			0.600	4.900	►	4AV22 00-2EB00-1A		0.600	4.900
10	12	►	4AV24 00-2EB00-0A			0.900	7.500	►	4AV24 00-2EB00-1A		0.900	7.500
15	18	►	4AV26 00-2EB00-0A			2.300	9.800	B	4AV26 00-2EB00-1A		2.300	9.800
--	1.5	►	4AV41 01-2EB00-0A			0.300	1.400	B	4AV41 01-2EB00-1A		0.300	1.400
--	3	►	4AV41 03-2EB00-0A			0.310	2.300	►	4AV41 03-2EB00-1A		0.310	2.300
--	6	►	4AV41 06-2EB00-0A			0.510	4.000	►	4AV41 06-2EB00-1A		0.510	4.000
--	10	►	4AV41 10-2EB00-0A			1.100	5.300	B	4AV41 10-2EB00-1A		1.100	5.300
Standard rail mounting												
2.5	3	►	4AV20 00-2EB00-0A			0.620	2.300	B	4AV20 00-2EB00-1A		0.620	2.300
5	6	►	4AV22 00-2EB00-0B			0.600	4.900	B	4AV22 00-2EB00-1B		0.600	4.900
10	12	B	4AV24 00-2EB00-0B			0.900	7.500	B	4AV24 00-2EB00-1B		0.900	7.500
--	1.5	B	4AV41 01-2EB00-0B			0.300	1.400	B	4AV41 01-2EB00-1B		0.300	1.400
--	3	►	4AV41 03-2EB00-0A			0.310	2.300	►	4AV41 03-2EB00-1A		0.310	2.300
--	6	►	4AV41 06-2EB00-0A			0.510	4.000	►	4AV41 06-2EB00-1A		0.510	4.000
--	10	B	4AV41 10-2EB00-0B			1.100	5.300	B	4AV41 10-2EB00-1B		1.110	5.300

¹⁾ During operation at the mains voltages listed in brackets, the upper limit for 24 V DC according to EN 61131-2 at +6 % mains voltage is met for a basic load of 10 %. Under no-load operation with types 4AV4 31.4 V can be achieved.

²⁾ The delivery time class depends on the quantity, see page 11/3 "Options".

³⁾ Types 4AV20, 4AV41 03 and 4AV41 06 are equipped with an integrated standard rail mounting as standard.

**Rated input voltage U_{1N} 400 (415)-230 (240)-115 (120) V,
rated output voltage U_{2N} 24 V DC**

c^Wus,

PU (UNIT, SET, M)=1
PS* =1 unit
PG =104

Rated output current I_d 60 °C/B EN 61558	40 °C/B EN 61558	c ^W us DC A	DT ¹⁾ Order No.	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾ Order No.	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
									Price per PU	Price per PU		
Screw mounting²⁾												
2.5	3	►	4AV20 01-2EB00-0A			0.620	2.300	B	4AV20 01-2EB00-1A		0.620	2.300
5	6	►	4AV22 01-2EB00-0A			0.600	4.900	B	4AV22 01-2EB00-1A		0.600	4.900
10	12	►	4AV24 01-2EB00-0A			0.900	7.500	B	4AV24 01-2EB00-1A		0.900	7.500
15	18	►	4AV26 01-2EB00-0A			2.300	9.800	B	4AV26 01-2EB00-1A		2.300	9.800
Standard rail mounting												
2.5	3	►	4AV20 01-2EB00-0A			0.620	2.300	B	4AV20 01-2EB00-1A		0.620	2.300
5	6	►	4AV22 01-2EB00-0B			0.600	4.900	B	4AV22 01-2EB00-1B		0.600	4.900
10	12	B	4AV24 01-2EB00-0B			0.900	7.500	B	4AV24 01-2EB00-1B		0.900	7.500

¹⁾ The delivery time class depends on the quantity, see page 11/3 "Options".

²⁾ Types 4AV20 are equipped with an integrated standard rail mounting as standard.

4AV Non-Stabilized Power Supplies

Filtered for Supply of Electronic Controls

**SIRIUS 4AV3, 4AV5 power supplies,
filtered, three-phase****Overview**

- Rated output voltage U_{2N} 24 V DC according to EN 61131-2¹⁾ and SIMATIC at input voltage +6 % to -10 % and load 0 % to 100 %
- Safety transformer according to EN 61558-2-6
- 4AV30 to 4AV35: cPlus at 60 °C, ; 4AV36, 4AV38, 4AV51:
- 4AV3: $t_a = \text{max. } 60 \text{ °C/B}$, 4AV51: $t_a = 40 \text{ °C/B}$
- Varistor suppressor circuit
- Status LED
- EMC according to EN 62041:
 - 4AV3: suitable for connection to the public supply (residential environments) and industrial networks (industrial environments)
 - 4AV5: suitable for connection to industrial networks (industrial environments)
- Ripple < 5 %



4AV30 to 4AV33 (left) and 4AV38 (right)

¹⁾ EN 61131-2: equipment specification for power supply and interface for programmable controllers. For limit values for 24 V DC see note on Technical Information on page 11/1.

Selection and ordering data

**Rated input voltage U_{1N} 400 (415) V
with tapping ±20 V, Δ 230 V with tapping ±10 V,
rated output voltage U_{2N} 24 V DC**



Rated output current I_d 60 °C/B EN 61558	Additional capaci- tance EN 61558	Ripple	Backup time at $U_1 = U_{IN} - 10\%$	DT ¹⁾	Screw terminals/ flat connectors		Price per PU	Cu weight per PU approx.	Total weight per PU approx.
					Order No.				
Standard version									
10	12	--	< 5	--	▶ 4AV30 00-2EB00-0A		1.600	5.000	
15	18	--	< 5	--	▶ 4AV31 00-2EB00-0A		1.600	6.500	
20	24	--	< 5	--	▶ 4AV32 00-2EB00-0A		2.400	8.000	
30	36	--	< 5	--	▶ 4AV33 00-2EB00-0A		2.600	11.000	
40	48	--	< 5	--	▶ 4AV34 00-2FB00-0A		4.900	17.000	
50	60	--	< 5	--	▶ 4AV35 00-2FB00-0A		4.100	21.000	
Additional capacitors (aluminum electrolyte)									
10	12	10000	2	1	B	4AV30 00-2EB00-0C	1.600	5.200	
15	18	10000	3	0.6	B	4AV31 00-2EB00-0C	1.600	6.700	
20	24	10000	3	0.4	B	4AV32 00-2EB00-0C	2.400	8.200	
30	36	10000	4	0.7	B	4AV33 00-2EB00-0C	2.600	11.200	
40	48	10000	3	0.7	B	4AV34 00-2FB00-0C	4.900	17.200	
50	60	10000	4	0.3	B	4AV35 00-2FB00-0C	4.100	21.200	

¹⁾ The delivery time class depends on the quantity, see page 11/3 "Options".

**Rated input voltage U_{1N} 400 (415) V
with tapping ±20 V,
rated output voltage U_{2N} 24 V DC**

Rated output current I_d 60 °C/B EN 61558	Ripple	DT ¹⁾	Screw terminals/ flat connectors		Price per PU	Cu weight per PU approx.	Total weight per PU approx.
			Order No.				
Standard version							
--	25	< 5	▶ 4AV51 25-2EB00-0A		2.000	10.300	
--	35	< 5	▶ 4AV51 35-2EB00-0A		3.400	14.500	

¹⁾ The delivery time class depends on the quantity, see page 11/3 "Options".

4AV Non-Stabilized Power Supplies

Filtered for Supply of Electronic Controls

**SIRIUS 4AV3, 4AV5 power supplies,
filtered, three-phase**

Rated input voltage U_{1N} 500-400 (415) V,
rated output voltage U_{2N} 24 V DC



PU (UNIT, SET, M)=1
PS* =1 unit
PG =104

Rated output current I_d 60 °C/B EN 61558	Additional capaci- tance 40 °C/B EN 61558	Ripple	Backup time at $U_1 = U_{1N} - 10\%$	DT ¹⁾	Screw terminals/ flat connectors	Order No.	Price per PU	Cu weight per PU approx.	Total weight per PU approx.
DC A	DC A	μF	%	ms				kg	kg
Standard version									
15	18	--	< 5	--	►	4AV31 01-2EB00-0A		1.600	6.500
30	36	--	< 5	--	►	4AV33 01-2EB00-0A		2.600	11.000
50	60	--	< 5	--	►	4AV35 01-2FB00-0A		4.100	21.000
Additional capacitors (aluminum electrolyte)									
15	18	10000	3	0.6	B	4AV31 01-2EB00-0C		1.600	6.700
30	36	10000	4	0.7	B	4AV33 01-2EB00-0C		2.600	11.200
50	60	10000	4	0.3	B	4AV35 01-2FB00-0C		4.100	21.200

¹⁾ The delivery time class depends on the quantity, see page 11/3 "Options".

Rated input voltage U_{1N} 500-400 (415) V,
rated output voltage U_{2N} 24 V DC



PU (UNIT, SET, M)=1
PS* =1 unit
PG =104

Rated output current I_d 60 °C/B EN 61558	Additional capaci- tance 40 °C/B EN 61558	Ripple	Backup time at $U_1 = U_{1N} - 10\%$	DT ¹⁾	Screw terminals/ flat connectors	Order No.	Price per PU	Cu weight per PU approx.	Total weight per PU approx.
DC A	DC A	μF	%	ms				kg	kg
Standard versions (unfiltered)									
80	96	--	< 5	--	►	4AV36 01-2EB00-0A		8.600	32.000
150	180	--	< 5	--	►	4AV38 01-2EB00-0A		14.400	46.000
Additional capacitors (aluminum electrolyte)									
80	96	2 x 10000	4	0.2	B	4AV36 01-2EB00-0C		8.600	32.400
150	180	3 x 10000	4	0.2	B	4AV38 01-2EB00-0C		14.400	46.600

¹⁾ The delivery time class depends on the quantity, see page 11/3 "Options".

Rated input voltage U_{1N}
575 (600)-500-460 (480)-400 (415)-230 (240)-200 V,
rated output voltage U_{2N} 24 V DC



PU (UNIT, SET, M)=1
PS* =1 unit
PG =104

Rated output current I_d 60 °C/B EN 61558	Additional capaci- tance 40 °C/B EN 61558	Ripple	Backup time at $U_1 = U_{1N} - 10\%$	DT ¹⁾	Screw terminals/ flat connectors	Order No.	Price per PU	Cu weight per PU approx.	Total weight per PU approx.
DC A	DC A	μF	%	ms				kg	kg
Standard version									
9	11	--	< 5	--	►	4AV30 02-2EB00-0A		1.600	5.000
13.5	16	--	< 5	--	►	4AV31 02-2EB00-0A		1.600	6.500
18	21.5	--	< 5	--	►	4AV32 02-2EB00-0A		2.400	8.000
27	32.5	--	< 5	--	►	4AV33 02-2EB00-0A		2.600	11.000
36	43	--	< 5	--	►	4AV34 02-2FB00-0A		4.900	17.000
45	54	--	< 5	--	►	4AV35 02-2FB00-0A		4.100	21.000
Additional capacitors (aluminum electrolyte)									
9	11	10000	2	1	B	4AV30 02-2EB00-0C		1.600	5.200
13.5	16	10000	3	0.6	B	4AV31 02-2EB00-0C		1.600	6.700
18	21.5	10000	3	0.4	B	4AV32 02-2EB00-0C		2.400	8.200
27	32.5	10000	4	0.7	B	4AV33 02-2EB00-0C		2.600	11.200
36	43	10000	3	0.7	B	4AV34 02-2FB00-0C		4.900	17.200
45	54	10000	4	0.3	B	4AV35 02-2FB00-0C		4.100	21.200

¹⁾ The delivery time class depends on the quantity, see page 11/3 "Options".

* You can order this quantity or a multiple thereof.

4AV Non-Stabilized Power Supplies

Unfiltered for Supply of General Loads

SIRIUS 4AV98 power supplies,
unfiltered, single-phase

Overview

The 4AV98 power supplies comprise single-phase safety transformers according to EN 61558-2-6 with downstream bridge connection rectifiers without capacitor filtering.

- Rated output voltage U_d 24 V DC
- Safety transformer according to EN 61558-2-6
-
- $t_a = 50^\circ\text{C}/\text{B}$
- Varistor suppressor circuit
- Short-circuit and overload protection on the output side with top-mounted fuse
- Ripple 48 %



4AV98

Application

The single-phase 4AV98 devices are especially suitable for supplying resistive and inductive loads whose operational voltages place no special demands with regard to ripple.

Rated power and rated current

The specifications in the selection tables are based on fixed reference conditions in which the devices have the rated power or rated current:

- Uninterrupted duty P_n
- Frequency AC 50 Hz ... 60 Hz
- Installation height up to 1000 m above sea level
- Degree of protection IP00
- Ambient temperature t_a

Ambient conditions

The devices are climate-proof for installation in rooms with an external climate to DIN 50010.

Limit values:

- Ambient temperature
 - At rated power or rated current: +50 °C
 - Minimum value: -25 °C.
- Relative air humidity
 - At +40 °C occasionally up to 100 %
 - Annual average up to 80 %
 - Occasional condensation possible.

Selection and ordering data

**Rated input voltage U_{1N} 230 V,
rated output voltage U_d 24 V DC**



Rated power P_n	Voltage rise during no-load operation U_A	DT ¹⁾	Screw terminals/ flat connectors		Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Cu weight per PU approx.	Total weight per PU approx.
							W			%	kg
50	24	►	4AV98 06-4CB00-2N				1	1 unit	104	0.200	0.900
80	18	►	4AV98 06-5CB00-2N				1	1 unit	104	0.030	1.600
125	14	►	4AV98 06-6CB00-2N				1	1 unit	104	0.400	2.300
200	11	B	4AV98 06-7CB00-2N				1	1 unit	104	0.600	3.300
315	10	C	4AV98 06-8CB00-2N				1	1 unit	104	1.100	4.900
500	9	C	4AV98 00-5CB00-2N				1	1 unit	104	1.700	10.000

¹⁾ The delivery time class depends on the quantity, see page 11/3 "Options".

**Rated input voltage U_{1N} 400 V,
rated output voltage U_d 24 V DC**



Rated power P_n	Voltage rise during no-load operation U_A	DT ¹⁾	Screw terminals/ flat connectors		Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Cu weight per PU approx.	Total weight per PU approx.
							W			%	kg
50	24	►	4AV98 07-0CB00-2N				1	1 unit	104	0.200	0.900
80	18	C	4AV98 07-1CB00-2N				1	1 unit	104	0.300	1.600
125	14	►	4AV98 07-2CB00-2N				1	1 unit	104	0.400	2.300
200	11	►	4AV98 07-3CB00-2N				1	1 unit	104	0.600	3.300
315	10	C	4AV98 07-4CB00-2N				1	1 unit	104	1.100	4.900
500	9	C	4AV98 02-5CB00-2N				1	1 unit	104	1.700	10.000

¹⁾ The delivery time class depends on the quantity, see page 11/3 "Options".

* You can order this quantity or a multiple thereof.

4AV Non-Stabilized Power Supplies

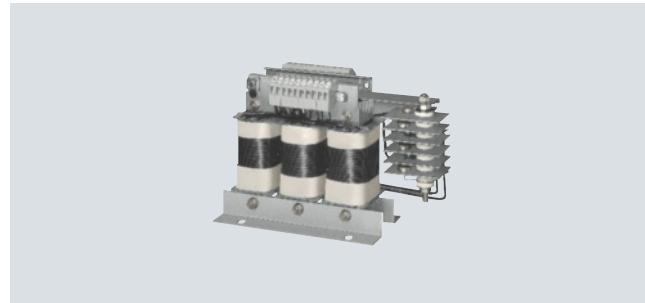
Unfiltered for Supply of General Loads

**SIRIUS 4AV96 power supplies,
unfiltered, three-phase**

Overview

The 4AV96 power supplies comprise three-phase safety transformers according to EN 61558-2-6 with downstream bridge connection rectifiers without capacitor filtering.

- Rated output voltage U_d 30-27-24 V DC
- Safety transformer according to EN 61558-2-6
-
- $t_a = 50^\circ\text{C}/\text{B}$
- Shield winding between input and output winding
- Varistor suppressor circuit
- Designed and approved according to VW equipment specification
- Ripple < 5 %



4AV96

Application

VW approval

The 4AV96 three-phase units are designed and approved in accordance with the VW equipment specifications.

Rated power and rated current

The specifications in the selection tables are based on fixed reference conditions in which the devices have the rated power or rated current:

- Uninterrupted duty P_n
- Frequency AC 50 Hz ... 60 Hz
- Installation height up to 1000 m above sea level
- Degree of protection IP00
- Ambient temperature t_a .

Ambient conditions

The devices are climate-proof for installation in rooms with an external climate to DIN 50010.

Limit values:

- Ambient temperature
 - At rated power or rated current: +50 °C
 - Minimum value: -25 °C.
- Relative air humidity
 - At +40 °C occasionally up to 100 %
 - Annual average up to 80 %
 - Occasional condensation possible.

Selection and ordering data

**Rated input voltage U_{1N} 400 V with tapping ±5 %,
rated output voltage U_d DC 30-27-24 V**

Rated output current I_d	Voltage rise during no-load operation u_A	Primary-side short-circuit and overload protection for the rectifier with motor starter protector Type	VW material No.	DT ¹⁾	Screw terminals/ flat connectors		PU (UNIT, SET, M)	PS*	PG	Cu weight per PU approx.	Total weight per PU approx.
					Order No.	Price per PU					
DC A	V	A								kg	kg
4	3.5	3RV10 11-0EA10	0.28	6142	►	4AV96 04-1CB00-2N		1	1 unit	104	0.800
12	3.3	3RV10 11-0JA10	0.8	6141	►	4AV96 04-5CB00-2N		1	1 unit	104	1.400
25	3.1	3RV10 11-1CA10	1.8	6145	►	4AV96 04-2CB00-2N		1	1 unit	104	2.500

¹⁾ The delivery time class depends on the quantity, see page 11/3 "Options".

Overview

With LOGO!Power power supplies it is possible not only for 24 V loads to benefit from the advantages of a stabilized power supply - loads with a 5 V, 12 V and 15 V supply voltage can now do likewise. For each of these three voltages there are two levels of current available, and for 24 V there is even a 4 A version in a width of only 90 mm.

The primary switched power supplies can be used for a wide range of different applications: In automation systems for industry and buildings, solar technology, measurement and closed-loop control, sensors, for supplying electronic circuits in TTL technology, etc.

Advantages of LOGO!Power power supplies:

- 2 performance classes, each with 5 V, 12 V and 15 V; 3 performances classes with 24 V
- Compact design with a width of 54 mm, 72 mm or 90 mm
- Flat step profile, ideal also for mounting in small distribution boards

- Design adapted to LOGO!
- Constant current in case of overloading, for reliable connection of difficult loads such as DC/DC converters and motors
- Large setting range for the output voltage, using potentiometers which are easy to reach from the front
- Green LED indicator for "output voltage OK"
- For universal use – in industry and public low-voltage systems – worldwide
- Wide range input from 85 V AC to 264 V AC for virtually any network in the world
- Large temperature range from -20 °C to +55 °C for universal use
- High EMC standards
- Extensive approvals and certifications according to CE, UL/cUL, FM and shipbuilding (GL and ABS)
- Constant stabilized output voltage protects connected loads
- Parallel switching option permitted to increase performance

Selection and ordering data

	Version	Input Rated voltage U_e Rated	Output Rated voltage U_a Rated	Rated current I_a Rated	Dimensions (W x H x D) mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Power supplies 5 V													
Enclosure 54 mm wide	3 A	100 ... 240 V AC (85 ... 264 V)	5 V DC ± 3 %	3 A	54 x 90 x 55	►	6EP1 311-1SH02			1	1 unit	401	0.170
	6.3 A	100 ... 240 V AC (85 ... 264 V)	5 V DC ± 3 %	6.3 A	72 x 90 x 55	►	6EP1 311-1SH12			1	1 unit	401	0.250
Power supplies 12 V													
Enclosure 72 mm wide	1.9 A	100 ... 240 V AC (85 ... 264 V)	12 V DC ± 3 %	1.9 A	54 x 90 x 55	►	6EP1 321-1SH02			1	1 unit	401	0.170
	4.5 A	100 ... 240 V AC (85 ... 264 V)	12 V DC ± 3 %	4.5 A	72 x 90 x 55	►	6EP1 322-1SH02			1	1 unit	401	0.250
Power supplies 15 V													
Enclosure 90 mm wide	1.9 A	100 ... 240 V AC (85 ... 264 V)	15 V DC ± 3 %	1.9 A	54 x 90 x 55	►	6EP1 351-1SH02			1	1 unit	401	0.170
	4 A	100 ... 240 V AC (85 ... 264 V)	15 V DC ± 3 %	4 A	72 x 90 x 55	►	6EP1 352-1SH02			1	1 unit	401	0.250
Power supplies 24 V													
Enclosure 90 mm wide	1.3 A	100 ... 240 V AC (85 ... 264 V)	24 V DC ± 3 %	1.3 A	54 x 90 x 55	►	6EP1 331-1SH02			1	1 unit	401	0.170
	2.5 A	100 ... 240 V AC (85 ... 264 V)	24 V DC ± 3 %	2.5 A	72 x 90 x 55	►	6EP1 332-1SH42			1	1 unit	401	0.250
	4 A	100 ... 240 V AC (85 ... 264 V)	24 V DC ± 3 %	4 A	90 x 90 x 55	►	6EP1 332-1SH51			1	1 unit	401	0.340

For other units and versions, see Catalog KT 10.1.

* You can order this quantity or a multiple thereof.

Stabilized Power Supplies

SITOP 6EP Power Supplies

SITOP smart single-phase and three-phase

Overview

Small in size, big in performance. SITOP smart requires little room on the standard mounting rail and offers high functionality at an attractive price. With its good-natured overload behavior, even loads with a high inrush current can be smoothly switched on. If required, 50 % extra power can be supplied for a duration of 5 s. In addition, the single-phase versions will permanently supply 120 % of the rated power provided the ambient temperature does not exceed 45 °C.

- For 24 V standard applications from 2.5 A to 10 A
- Compact design with a width of only 32.5 mm, 50 mm and 70 mm for a small mounting surface, no side clearances required for mounting
- Easy standard rail mounting

- Smooth switching on of loads with high inrush current such as DC/DC converters and motors
- More performance thanks to permanent 120 % of rated power up to an ambient temperature of 45 °C
- Large setting range for output voltage up to 28 V, using potentiometers which are easy to reach from the front
- Parallel switching option to increase performance
- Extensive certifications according to UL, CSA, GL (Germanischer Lloyd) and ATEX directives (Atmosphère Explosible)
- For universal use – in industry and public low-voltage systems – worldwide
- Can be combined with SITOP expansion modules and the uninterruptible power supplies

Selection and ordering data

	Design	Input Rated voltage U_e Rated	Output Rated voltage U_a Rated	Rated current I_a Rated	Dimensions (W x H x D) mm	DT	Order No.	Price per PU (UNIT, SET, M)	PU PS*	PG	Weight per PU approx. kg	
Power supplies 24 V												
Limitation of input current harmonics according to EN 61000-3-2												
6EP1 332-2BA10	2.5 A	120/230 V AC (85 ... 132 V/ 170 ... 264 V)	24 V DC ± 3 %	2 A	32.5 x 125 x 125	►	6EP1 332-2BA10		1	1 unit	404	0.320
Limitation of input current harmonics according to EN 61000-3-2												
6EP1 333-2.A10	5 A	120/230 V AC (85 ... 132 V/ 170 ... 264 V)	24 V DC ± 3 %	5 A	50 x 125 x 125	►	6EP1 333-2BA01		1	1 unit	404	0.500
Limitation of input current harmonics according to EN 61000-3-2												
6EP1 334-2.A01	5 A	120/230 V AC (85 ... 132 V/ 170 ... 264 V)	24 V DC ± 3 %	5 A	50 x 125 x 125	►	6EP1 333-2AA01		1	1 unit	404	0.500
Limitation of input current harmonics according to EN 61000-3-2												
6EP1 334-2.A01	10 A	120/230 V AC (85 ... 132 V/ 170 ... 264 V)	24 V DC ± 3 %	10 A	70 x 125 x 125	►	6EP1 334-2BA01		1	1 unit	404	0.800
Limitation of input current harmonics according to EN 61000-3-2												
6EP1 334-2.A01	10 A	120/230 V AC (85 ... 132 V/ 170 ... 264 V)	24 V DC ± 3 %	10 A	70 x 125 x 125	►	6EP1 334-2AA01		1	1 unit	404	0.750

The following SITOP versions provide standard solutions for small power requirements and applications with unusual voltages. Instead of the usual 24 V, the three-phase 48-V power supply double the voltage for powerful loads.

	Design	Input Rated voltage U_e Rated	Output Rated voltage U_a Rated	Rated current I_a Rated	Dimensions (W x H x D) mm	DT	Order No.	Price per PU (UNIT, SET, M)	PU PS*	PG	Weight per PU approx. kg	
Power supplies 24 V												
6EP1 731-2BA00, 6EP1 331-2BA10	0.375 A	48 ... 220 V DC (30 ... 264 V DC, 30 ... 187 V AC)	24 V DC ± 3 %	0.375 A	22.5 x 80 x 91	►	6EP1 731-2BA00		1	1 unit	400	0.140
Limitation of input current harmonics according to EN 61000-3-2; adjustable output voltage 3 ... 52 V, output max. 10 A or 120 W												
6EP1 353-2BA00	0.5 A	120 ... 230 V AC (93 ... 264 V AC)	24 V DC ± 3 %	0.5 A	22.5 x 80 x 91	►	6EP1 331-2BA10		1	1 unit	400	0.110
Power supplies 3 ... 52 V												
6EP1 456-2BA00	max. 10 A or 120 W	120/230 V AC (85 ... 132 V/ 170 ... 264 V)	3 ... 52 V DC ± 1 %	10 A	75 x 125 x 125	►	6EP1 353-2BA00		1	1 unit	404	0.900
Power supplies 48 V												
6EP1 456-2BA00	10 A	3 AC 400 ... 500 V (360 ... 550 V)	48 V DC ± 3 %	10 A	70 x 125 x 125	A	6EP1 456-2BA00		1	1 unit	404	1.200

For other units and versions, see Catalog KT 10.1.

* You can order this quantity or a multiple thereof.

Stabilized Power Supplies

SITOP 6EP Power Supplies

**SITOP modular basic units 24 V,
single-phase, two-phase and three-phase**

Overview

Compact basic units for single-phase, two-phase or three-phase connections and output currents from 5 A to 40 A form the basis of the stabilized 24 V supply. Depending on the requirements, SITOP expansion modules can be connected in addition.

The compact design of the primary switched power supply requires only a small mounting surface. The rugged metal enclosure is also suitable for the harshest industrial applications. The standard mounting rail fixture is made likewise of metal. Mounting is therefore fast, easy and vibration-proof. Reliability and quality are further characteristics of the electronic design.

The large input voltage range and the international certifications enable operation in virtually any network worldwide. The single-phase basic units 5 A and 10 A have an ultra-wide input range up to 550 V, which even enables connection to 2 phases.

- Rugged metal enclosure for standard rail mounting
- 5 A and 10 A units with ultra-wide input range up to 500 V AC for single-phase and two-phase operation
- 20 A and 40 A units with wide input range for single-phase or three-phase connection.
- Limitation of input current harmonics according to EN 61 000-3-2; (except 6EP1 337-3BA00)
- Adjustable output voltage up to 28.8 V
- 3-way status LED
- Selectable short-circuit response, constant current or latching disconnection
- Changeover for parallel operation
- 20 A and 40 A units with single-phase and three-phase connection and new 20 A and 40 A units in compact design (70 mm or 150 mm wide)
- Can be combined with SITOP expansion modules and the uninterruptible power supplies

Selection and ordering data

	Version	Input Rated voltage U_e Rated	Output Rated voltage U_a Rated	Rated current I_a Rated	Dimensions (W x H x D) mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Power supplies 24 V													
	5 A	120/230 ... 500 V AC (85 ... 264 V/ 176 ... 550 V)	24 V DC ± 3 %	5 A	70 x 125 x 125	►	6EP1 333-3BA00			1	1 unit	405	1.200
	10 A	120/230 ... 500 V AC (85 ... 264 V/ 176 ... 550 V)	24 V DC ± 3 %	10 A	90 x 125 x 125	►	6EP1 334-3BA00			1	1 unit	405	1.400
	20 A	120/230 V AC (85 ... 132 V/ 176 ... 264 V)	24 V DC ± 3 %	20 A	160 x 125 x 125	►	6EP1 336-3BA00			1	1 unit	405	2.200
	20 A	3 AC 400 ... 500 V (320 ... 550 V)	24 V DC ± 3 %	20 A	160 x 125 x 125	►	6EP1 436-3BA00			1	1 unit	405	2.000
	20 A	3 AC 400 ... 500 V (320 ... 575 V)	24 V DC ± 3 %	20 A	70 x 125 x 125	D	6EP1 436-3BA10			1	1 unit	405	1.200
	40 A	120/230 V AC (85 ... 132 V/ 176 ... 264 V)	24 V DC ± 3 %	40 A	240 x 125 x 125	►	6EP1 337-3BA00			1	1 unit	405	2.900
	40 A	3 AC 400 ... 500 V (320 ... 575 V)	24 V DC ± 3 %	40 A	150 x 125 x 150	C	6EP1 437-3BA10			1	1 unit	405	3.400
	40 A	3 AC 400 ... 500 V (320 ... 550 V)	24 V DC ± 3 %	40 A	240 x 125 x 125	►	6EP1 437-3BA00			1	1 unit	405	3.200
													

For other units and versions, see Catalog KT 10.1.

* You can order this quantity or a multiple thereof.

Stabilized Power Supplies

SITOP 6EP Power Supplies

Expansion modules

Overview

The SITOP expansion modules offer further functions:

The signaling module can be snapped onto the side of the basic unit; with floating signaling contacts "Output voltage OK" and "Ready"; with signal input for remote ON/OFF switching of the basic unit.

The redundancy module uses diodes to disconnect the basic units from one another so that a redundant 24 V power supply can be constructed.

The two SITOP PSE200U selectivity modules and the SITOP select diagnostics module are used in combination with 24 V power supplies for distributing the load current among up

to 4 current branches per module and for monitoring the individual partial currents. Overloads or short-circuits in individual branches are selectively switched off and the remaining load current paths remain unaffected. Individually adjustable rated current, LED, group alarm contact, standard rail mounting.

The buffer module bridges mains interruptions in the range of milliseconds. 100 ms at 40 A, 800 ms at 5 A, up to max. 3 s at low load current; standard rail mounting in any part of the control cabinet.

Power supplies and expansion modules with

- an ambient temperature of 0 °C to +60 °C.

Selection and ordering data

Input Rated voltage U_e Rated	Output Rated voltage U_a Rated	Rated current I_a Rated	Dimensions (W x H x D) mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Signaling modules										
--	--	--	25 x 125 x 125	►	6EP1 961-3BA10	1	1 unit	405	0.150	
Redundancy modules										
24 V DC (24 ... 28.8 V)	U_e – approx. 0.5 V	20 A	70 x 125 x 125	►	6EP1 961-3BA20	1	1 unit	408	1.000	
SITOP PSE200U selectivity modules										
24 V DC (22 ... 30 V)	--	4 x 3 A (0.5 ... 3 A)	72 x 80 x 72	A	6EP1 961-2BA10	1	1 unit	406	0.170	
24 V DC (22 ... 30 V)	--	4 x 10 A (0.5 ... 10 A)	72 x 80 x 72	A	6EP1 961-2BA20	1	1 unit	406	0.220	
SITOP select diagnostics modules										
24 V DC	--	4 x 10 A (2 ... 10 A)	72 x 90 x 90	►	6EP1 961-2BA00	1	1 unit	406	0.400	
Buffer modules										
24 V DC (24 ... 28.8 V)	U_e – approx. 1 V	40 A	70 x 125 x 125	A	6EP1 961-3BA01	1	1 unit	400	1.200	



6EP1 961-3BA10



6EP1 961-3BA20



6EP1 961-2BA00



6EP1 961-3BA01,
6EP1 961-3BA20

For other units and versions, see Catalog KT 10.1.

* You can order this quantity or a multiple thereof.

Stabilized Power Supplies

SITOP 6EP Power Supplies

DC-UPS uninterruptible power supplies

Overview

To combat prolonged mains failures the 24 V SITOP power supply units can be upgraded into a DC-UPS uninterruptible power supply.

SITOP offers two systems for this purpose: with battery modules which provide a buffer in the hour range and with capacitors for a 24 V buffer in the minute range.

The combination is used for example in machine-tool building, in the textile industry, on all types of production lines and filling plants, and in conjunction with 24 V industrial PCs. They prevent the negative consequences which often result from mains failures.

For the SIMATIC IPC this means that all running applications, including the operating system, can be shut down under stabilized conditions.

The DC-UPS 24 V uninterruptible power supply with battery modules is comprised of DC-USV modules with 6 A, 15 A or 40 A output current and the battery modules 1.2 Ah, 3.2 Ah, 7 Ah and 12 Ah (containing lead rechargeable batteries with corrosion-resistant lead-calcium high-performance grid plates and glass fiber fleece) and 2.5 Ah (containing "high-temperature rechargeable batteries" type Reinblei).

Selection and ordering data

Version	Input Rated voltage U_e Rated	Output Rated voltage U_a Rated	Rated current I_a Rated	Dimensions (W x H x D) mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	--	---	---------------------------------	---------------------------------	----	-----------	-----------------	----------------------------	-----	----	-----------------------------------



6EP1 931-2.C..



6EP1 931-2FC..

DC UPS modules				
6 A	24 V DC (22 ... 29 V)	24 V DC (mains operation: 21.5 ... 28.5 V, battery operation: 27.0 ... 18.5 V)	6 A	50 x 125 x 125 ► 50 x 125 x 125 ► 50 x 125 x 125 ►
With serial interface				6EP1 931-2DC21 6EP1 931-2DC31
With USB interface				6EP1 931-2DC42
15 A	24 V DC (22 ... 29 V)	24 V DC (mains operation: 21.5 ... 28.5 V, battery operation: 27.0 V ... 18.5 V)	15 A	50 x 125 x 125 ► 50 x 125 x 125 ► 50 x 125 x 125 ►
With serial interface				6EP1 931-2EC21 6EP1 931-2EC31
With USB interface				6EP1 931-2EC42
40 A	24 V DC (22 ... 29 V)	24 V DC (mains operation: 21.5 ... 28.5 V, battery operation: 27.0 ... 18.5 V)	40 A	102 x 125 x 125 ► 102 x 125 x 125 ►
With USB interface				6EP1 931-2FC21 6EP1 931-2FC42

Version	Charging voltage at +25 °C U_{Charge}	Output Rated voltage U_a Rated	Dimensions (W x H x D) mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	--	---	---------------------------------	----	-----------	-----------------	----------------------------	-----	----	-----------------------------------

Battery modules				
For DC-UPS modules 6 A and 15 A				
1.2 Ah	27.0 V DC	24 V DC (end of charge voltage: 27.0 V, exhaustive discharge protection: 18.5 V)	96 x 106 x 108 ►	6EP1 935-6MC01
2.5 Ah/ high temperature rechargeable battery	27.7 V DC	24 V DC (end of charge voltage: 27.7 V, exhaustive discharge protection: 18.5 V)	265 x 151 x 91 ►	6EP1 935-6MD31
3.2 Ah	27.0 V DC	24 V DC (end of charge voltage: 27.0 V, exhaustive discharge protection: 18.5 V)	190 x 151 x 82 ►	6EP1 935-6MD11

For DC-UPS modules 6 A to 40 A				
7 Ah	27.0 V DC	24 V DC (end of charge voltage: 27.0 V, exhaustive discharge protection: 18.5 V)	186 x 168 x 121 ►	6EP1 935-6ME21
12 Ah	27.0 V DC	24 V DC (end of charge voltage: 27.0 V, exhaustive discharge protection: 18.5 V)	253 x 168 x 121 ►	6EP1 935-6MF01

6EP1 935-6ME21



6EP1 935-6MF01

6EP1 935-6MD11

* You can order this quantity or a multiple thereof.

Stabilized Power Supplies

SITOP 6EP Power Supplies

DC-UPS uninterruptible power supplies

The maintenance-free SITOP UPS500 with capacitors are especially suited as buffers for use at high ambient temperatures.

The highly capacitive double-layer capacitors store enough energy to shut down PC-based systems safely. Another advantage of the double-layer capacitors is their shorter charging times.

For flexible deployment the SITOP UPS500S 15 A basic unit comes in a 2.5 kW and 5 kW version. For longer buffer times it is possible to attach up to three SITOP UPS501S expansion modules with 5 kW.

Version	Input Rated voltage U_a Rated	Output Rated voltage U_a Rated	Rated current I_a Rated	Dimensions (W x H x D) mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
SITOP UPS500S, basic units 15 A												
2.5 kW	24 V DC (22 ... 29 V)	24 V DC $\pm 3\%$	15.2 A + approx. 2.3 A (charging mode)	120 x 125 x 125 A		6EP1 933-2EC41			1	1 unit	407	1.000
5 kW	power supply through SITOP 24 V DC			120 x 125 x 125 A		6EP1 933-2EC51			1	1 unit	407	1.200
SITOP UPS501 expansion modules												
5 kW	Supply through basic unit	--	--	120 x 125 x 125 A		6EP1 935-5PG01			1	1 unit	407	0.700



6EP1 933-2EC41,
6EP1 935-5PG01

For other units and versions, see Catalog KT 10.1.