

## Power supplies for AS interface



14/2 1-phase / 1-2-phase / DC,  
AS-i 30 V (with data decoupling)

14/3 1-phase, 30 V DC  
(without data decoupling)

## Power supplies for AS interface

1-phase / 1-2-phase / DC, AS-i 30 V (with data decoupling)

### Overview



AS-Interface power supply unit for 3 A

AS-Interface power supply units feed 30 V DC into the AS-Interface cable and supply the AS-Interface components. They contain performance-optimized data decoupling for separating communication signals and supply voltage. As the result, AS-Interface is able to convey both data and power along a single line. The power packs are overload and short-circuit proof.

### Dimensions

AS-Interface power supply units have compact dimensions in widths of 50 / 70 / 120 mm. No clearance to other devices is required when mounting.

### Features

- Higher rating: The power supply units deliver currents of 2.6 to 8 A.
- Integrated data decoupling: As the result, AS-Interface is able to convey both data and power along a single line.
- Integrated ground-fault detection: The power supply units perform the reliable detection and signaling of ground faults according to IEC 60204-1. The AS-Interface voltage can be disconnected automatically in the event of a ground fault.
- Integrated overload detection: An output overload is identified and signaled over a diagnostics LED.
- Diagnostics memory: Any ground faults or overloads on the output side are stored in a diagnostics memory until the device is RESET.
- Remote RESET and remote signaling: A ground fault can be signaled and evaluated by relay contacts over a central control and/or indicator light.
- Diagnostics LEDs: Three different LEDs indicate the status of the AS-Interface power supply locally at the power supply unit.
- Ultra-wide input range / 2-phase connection: The ultra-wide input range of 120 to 500 V of the 8 A version means that the supply units can be used in virtually any network worldwide. In addition, this version dispenses with the need for an N conductor as the device can be connected directly between 2 phases of a network.
- Operation with 24 V DC: The 3 A power supply unit is also available as a version with a 24 V DC input. This power supply unit is suitable for use in battery-operated plants or plants with uninterrupted power supply (UPS).
- Removable terminal blocks in spring-type connection: The power supply units are equipped with three removable terminal blocks for simple device replacement: for the input side, for the output side and for Signal/RESET connections.

### Benefits

- All-in one solution for supplying AS Interface networks with full use of the possible cable length per AS-i segment
- Only necessary to connect AS-i Master and AS-i Slaves to the AS Interface cable to operate AS Interface
- Compact, room-saving footprint
- Safe power supply even with a large number of AS-Interface modules with a high power requirement
- Increased safety and savings on additional components owing to the integrated ground fault and overload detection
- Quick error recognition and reduced downtime due to diagnostics memory, remote signaling and remote reset:
- Reduced downtime due to removable terminal blocks, which allow for quicker device replacement
- Single and two-phase use and savings on an N conductor owing to the ultra-wide range input on the 8 A version
- World-wide use e.g. through UL/CSA approval
- Output power restricted for the 2.6-A version to a maximum of 100 W for use in NEC Class 2 circuits

### Ordering data

### Article No.

#### AS-Interface power supply units, IP20

- AS-i single output 30 V DC
- With integrated ground-fault detection
- With spring-type terminals, removable terminals,
- With the 2.6 A version, the output power is restricted to max. 100 W (for use in NEC Class 2 circuits)

#### Dimensions:

Width:  
50 mm (2.6 A / 3 A),  
70 mm (5 A),  
120 mm (8 A);  
Height: 125 mm;  
Depth: 125 mm

• Output current: 2.6 A / max. 100 W Input voltage: 120 / 230 V AC (selectable)	<b>3RX9501-2BA00</b>
• Output current: 3 A Input voltage: 120 / 230 V AC (selectable)	<b>3RX9501-0BA00</b>
• Output current: 3 A Input voltage: 24 V DC	<b>3RX9501-1BA00</b>
• Output current: 5 A Input voltage: 120 / 230 V AC (selectable)	<b>3RX9502-0BA00</b>
• Output current: 8 A Input voltage: 120 / 230 ... 500 V AC (selectable)	<b>3RX9503-0BA00</b>

### More information

More information on AS-Interface, see Catalog IC 10, Chapter 2 "Industrial Communication".

## Overview



PSN130S 30 V power supply units for 3 A, 4 A and 8 A

The PSN130S 30 V power supplies feed 30 V DC into the AS-Interface cable and supply the AS-Interface components, but do not include data decoupling. Additional data decoupling units are needed to separate communication signals and supply voltage, see "S22.5 Data Decoupling Modules" or "DCM 1271 Data Decoupling Module", see Accessories, page 14/4

The power supplies are overload and short-circuit proof.

### Dimensions

The 30 V power supply units have compact dimensions in widths of 50 and 70 mm. No distances to other devices must be observed during the installation.

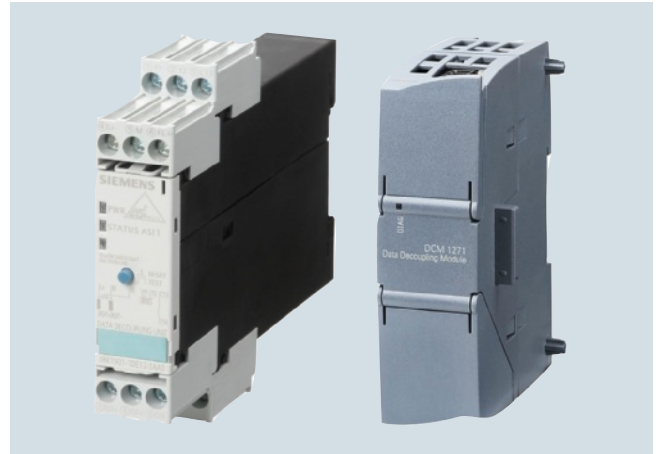
### Features

- Primary-clocked power supplies for connecting to a single-phase AC power supply system
- Power for currents of 3 A, 4 A and 8 A
- The output voltage is floating, and resistant to short-circuits and no-load operation. After a short-circuit or an overload, the devices start up again on their own. If there is an overload, the output voltage is reduced or cut-off. After a short-circuit or overload, the devices start up again automatically.
- In the event of a device fault, the output voltage will be limited to max. 37 V.
- Modular installation devices in degree of protection IP20 and safety class I
- Diagnostics: With an output voltage > 26.5 V DC, the green LED (30V O.K.) is lit and the signaling contact 13-14 is closed.

### Benefits

- Low-cost alternative solution for supplying AS-Interface networks while making full use of the maximum possible cable length per AS-i segment
- Cost advantage particularly for multiple networks
- Compact, space-saving dimensions
- Reliable power supply even for large numbers of AS-Interface modules with high power requirements
- Can be used worldwide thanks to, for example, UL/CSA approval (UL 508)

## Application



Data decoupling modules S22.5 and DCM 1271

A data decoupling module is also required in order to use a PSN130S 30 V power supply unit for AS-Interface.

With the aid of the data decoupling module, the AS-Interface network can be supplied with 30 V DC from a standard power supply unit and the transmission of data and power can be realized along one cable.

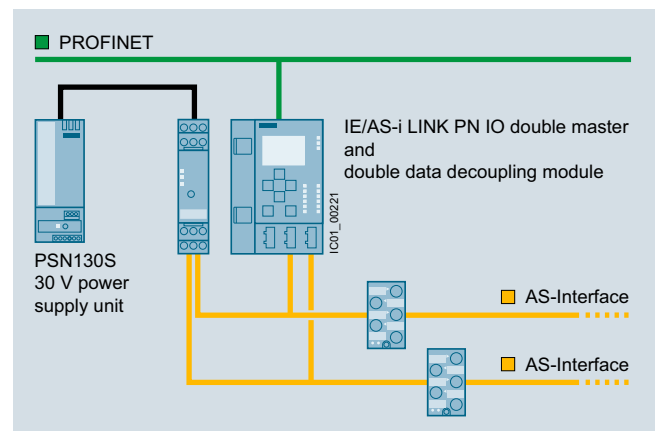
Alternatively, it is also possible to use a standard 24 V DC power supply unit (AS-i Power24V). However, in this case please note that all components involved must be designed for the reduced voltage and that the maximum length of an AS-i Power24V network is limited to 50 m.

The power supply units must comply with the PELV (Protective Extra Low Voltage) or SELV (Safety Extra Low Voltage) standards, have a residual ripple of < 250 mVpp and in the event of a fault, must limit the output voltage to a maximum of 40 V.

The combination of data decoupling modules and standard power supply units is therefore a cost-efficient alternative to the service-proven AS-Interface power supply units.

The quality of the data signals and the reliable operation of the AS-i network are not negatively affected as the result.

### Configuration examples of AS-Interface networks with a 30 V power supply unit

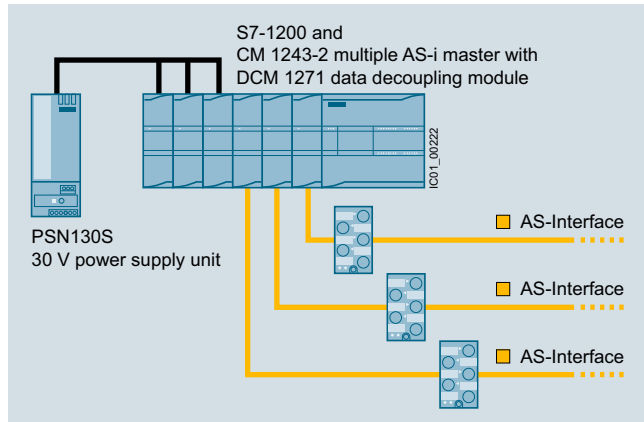


Configuration of AS-Interface multiple networks, each with one PSN130S 30 V power supply unit (examples with schematic representation): Double network based on S22.5 double data decoupling module and double master IE/AS-i LINK PN IO

## Power supplies for AS interface

### 1-phase, 30 V DC (without data decoupling)

#### Application (continued)



Configuration of AS-Interface multiple networks, each with one PSN130S 30 V power supply unit (examples with schematic representation):  
Triple network based on SIMATIC S7-1200 with DCM 1271 data decoupling modules and CM 1243-2 communication processors

#### Ordering data

#### Article No.

##### PSN130S 30 V DC power supply units (without AS-i data decoupling)

Output voltage 30 V DC, with screw terminals,

Dimensions:  
Width: 50 mm (3 A / 4 A), 70 mm (8 A);  
Height: 125 mm; Depth: 126.5 mm

- Output current: 3 A  
Input voltage: 120 / 230 V AC (automatic selection)
- Output current: 4 A  
Input voltage: 120 / 230 V AC (automatic selection)
- Output current: 8 A  
Input voltage: 120 / 230 V AC (automatic selection)

3RX9511-0AA00

3RX9512-0AA00

3RX9513-0AA00

#### Technical specifications

Product	PSN130S 30 V DC power supply unit			
	Version	3 A	4 A	8 A
<b>Input data</b>				
• Input voltage, rated value $U_e$	V AC	120 / 230 V, single-phase, automatic selection		
• Input voltage range	V AC	85 ... 132 / 174 ... 264		
• Mains frequency	Hz	50 / 60		
• Power consumption at full load, typ.	W	103	139	270
<b>Output data</b>				
• Output voltage, rated value $U_a$	V DC	30		
• Residual ripple	mV <sub>ss</sub>	< 150		
• Output current, rated value at -20 ... +60 °C	A	3	4	8
• Max. output current at +60 ... +70 °C	A	3	3	4
<b>Degree of efficiency in rated conditions</b>				
• Degree of efficiency	%	87	88	90
• Power loss, typ.	W	12	17	25
<b>Protection and monitoring</b>				
• Output overvoltage protection	V	< 37		
• Current limit, typ.	A	4	5,5	11
<b>Safety</b>				
• Electrical separation primary / secondary		Output voltage PELV / SELV according to IEC 60950 and EN 50178		
• Protection class		I		
• Degree of protection		IP20		
<b>Approvals</b>				
• UL		UL 508 / CSA 22.2		
• Pollution degree		IEC 60950		
• Overvoltage category and electrical separation		EN 50178 and IEC 61558		
<b>EMC</b>				
• Emitted interference (class B)		IEC 61000-6-3		
• Line harmonics limit		IEC 61000-3-2		
• Interference immunity		IEC 61000-6-2		
<b>Operating data</b>				
Ambient temperature				
• Operation	°C	-20 ... +70		
• Transport / storage	°C	-40 ... +85		
Pollution degree				
Humidity class				
2				
Climate class according to DIN 50010, relative air humidity max. 100 %, without condensation				
<b>Dimensions and weight</b>				
• Width	mm	50	50	70
• Height x depth	mm	125 x 126.5		
• Weight	kg	0.4	0.4	0.7

#### Accessories

#### Article No.

##### Data decoupling modules in enclosure, 22.5 mm

##### S22.5 data decoupling modules

With screw terminals, removable terminals,  
Dimensions:  
Width: 22.5 mm; Height: 101 mm; Depth: 115 mm

- Single data decoupling module, 1 x 4 A
- Double data decoupling module, 2 x 4 A

3RK1901-1DE12-1AA0

3RK1901-1DE22-1AA0

With spring-type terminals, removable terminals,  
Dimensions:  
Width: 22.5 mm; Height: 105 mm; Depth: 115 mm

- Single data decoupling module, 1 x 4 A
- Double data decoupling module, 2 x 4 A

3RK1901-1DG12-1AA0

3RK1901-1DG22-1AA0

##### Data decoupling modules in enclosure for S7-1200

##### DCM 1271 data decoupling module

With screw terminals, removable terminals (included in the scope of supply),  
Dimensions:  
Width: 30 mm; Height: 100 mm; Depth: 75 mm

3RK7271-1AA30-0AA0

##### Screw terminals (replacement) for AS-i DCM 1271 data decoupling module

- 5-pole
- 3-pole for connecting the power supply unit

3RK1901-3MA00

3RK1901-3MB00

#### More information

For operating instructions and other technical information see <http://support.automation.siemens.com/WWW/view/en/64364000>.

More information on AS-Interface, see Catalog IC 10, Chapter 2 "Industrial Communication".