

# ADN PS

Power Supply



Instruction manual



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## For your safety



Please make sure to read the “Safety information” supplement included separately with the product. This supplement contains important information on the safe operation of the product as well as the manufacturer’s declaration and warranty notes.



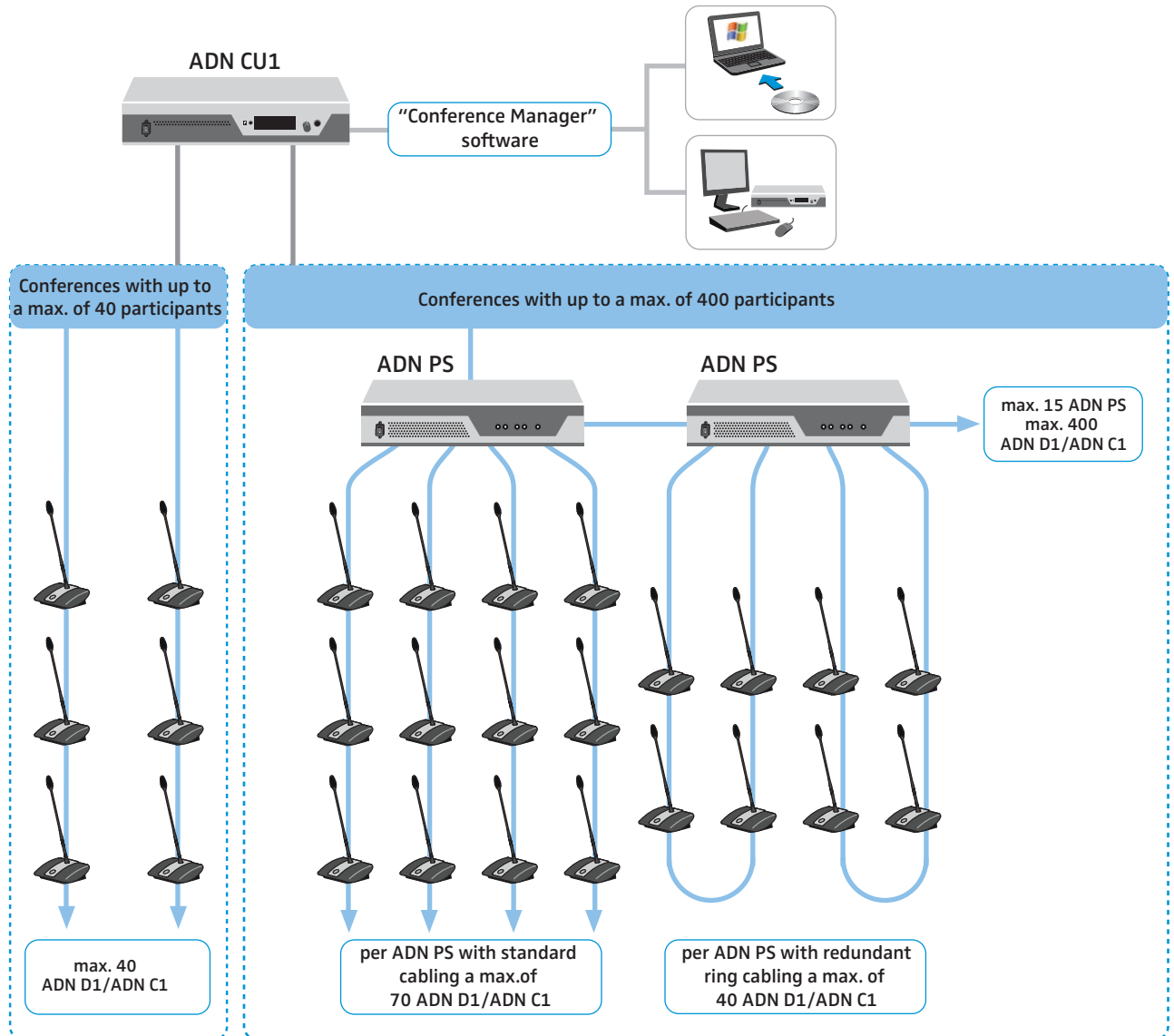
A detailed instruction manual for the overall ADN conference system can be found

- on the Internet at [www.sennheiser.com](http://www.sennheiser.com) or
- on the DVD-ROM supplied with the ADN CU1 central unit.

# The ADN PS power supply

The ADN PS power supply is part of the Sennheiser ADN conference system.

For large conference systems with up to 400 conference units, you require ADN PS power supplies. A max. of 15 ADN PS power supplies can be used in a conference system. When the conference units are connected in simple strings, one ADN PS power supply can power up to 70 conference units. When the conference units are connected in ring topology, one ADN PS power supply can power a max. of 40 conference units.



## Package contents

- 1 ADN PS power supply with premounted rack mount "ears"
- 1 mains cable (with EU, UK or US mains plug, depending on version), length 1.8 m
- 1 instruction manual
- 1 "Safety information" supplement

## Components required for operation

### Central unit/ Power supplies

Number	Description	Cat. No.	Function
1	ADN CU1-EU central unit, EU version	505553	Controls the conference (wired and wireless components) and supplies power to a max. of 40 conference units and/or one antenna module
	ADN CU1-UK central unit, UK version	505554	
	ADN CU1-US central unit, US version	505555	
1 - 15 (optional)	ADN PS-EU power supply, EU version	505546	Supplies power to conference units connected in simple strings or in redundant ring topology, for conferences with up to 400 conference units
	ADN PS-UK power supply, UK version	505547	
	ADN PS-US power supply, US version	505548	

### Wired conference units

Number	Description	Cat. No.	Function
max. 400	ADN D1 delegate unit	502758	Allows to make contributions to the conference
1 - 10 (optional)	ADN C1 chairperson unit	502759	Allows to manage the conference

### System cables

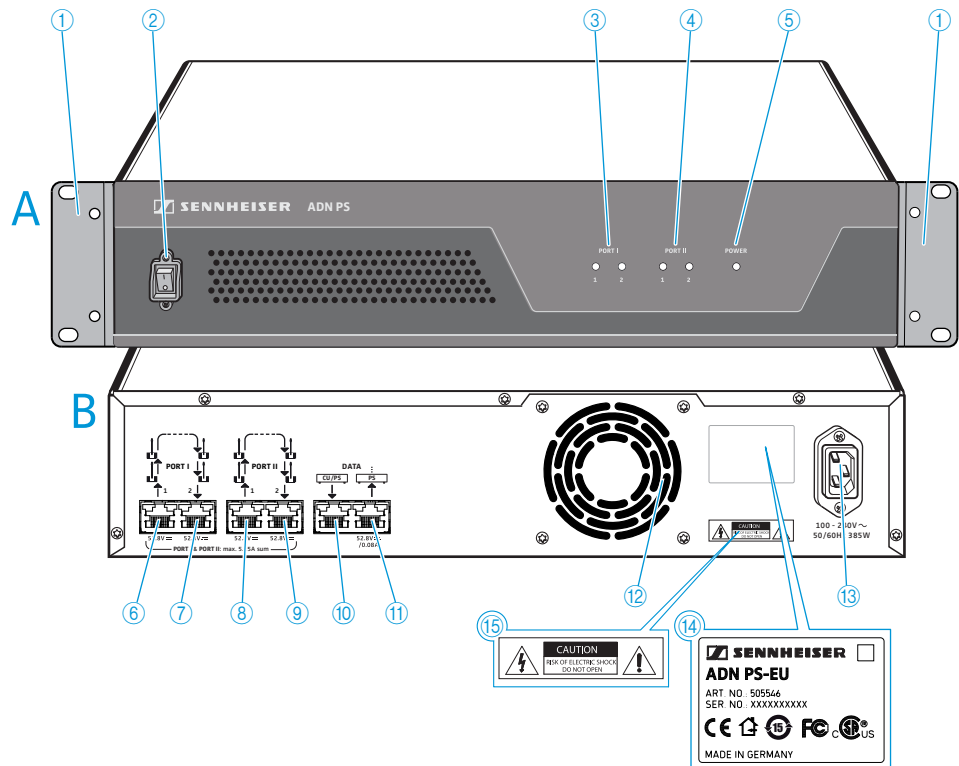
The system cables are black and have two shielded RJ45 plugs.

Number	Description, length	Cat. No.	Function
Divers	SDC CBL RJ45-2, 2 m	009842	Allows to interconnect components and wired conference units
	SDC CBL RJ45-3, 3 m	009843	
	SDC CBL RJ45-5, 5 m	009844	
	SDC CBL RJ45-10, 10 m	009845	
	SDC CBL RJ45-20, 20 m	009846	
	SDC CBL RJ45-50, 50 m	009847	



Additional accessories for the ADN conference system can be found at [www.sennheiser.com](http://www.sennheiser.com).

# Product overview ADN PS power supply



## A Front view

- ① Rack mount "ears"
- ② On/off switch
- ③ PORT I status LED for outputs 1 and 2
- ④ PORT II status LED for outputs 1 and 2
- ⑤ POWER status LED

## B Rear view

- ⑥ PORT I socket – output 1 (RJ 45) for connection of conference units/ADN-W AM
- ⑦ PORT I socket – output 2 (RJ 45) for connection of conference units/ADN-W AM
- ⑧ PORT II socket – output 1 (RJ 45) for connection of conference units/ADN-W AM
- ⑨ PORT II socket – output 2 (RJ 45) for connection of conference units/ADN-W AM
- ⑩ DATA CU/PS input socket (RJ45) for connection of ADN CU1 central unit or ADN PS power supply
- ⑪ DATA PS output socket (RJ45) for connection of additional ADN PS
- ⑫ Fan
- ⑬ Mains socket
- ⑭ Type plate
- ⑮ Hazard warnings

## Overview of the status LEDs

Status LED	Color	Meaning
POWER ⑤	green	ADN PS is switched on
PORT I ③ / PORT II ④ output 1/2	–	not used, switched off
	orange	Conference units are connected in strings
	green	Conference units are connected in redundant ring topology via outputs 1 and 2
	flashing orange	Error in a cable string; output is switched off

# Structuring and controlling the conference system

## Structuring the conference system

The ADN conference system is suitable for conferences with up to 400 conference units (with a maximum of 150 wireless conference units). For safe operation of the conference system, make sure that all wired conference units are supplied with a voltage of at least 35 V! The voltage supplied depends on the number of connected conference units and on the cable lengths. The standard cable length between the central unit or power supply and the first conference unit is 50 m max. and the standard cable length between the individual conference units is 2 to 5 m.

If these cable lengths are observed, safe operation of conference systems with the following number of conference units is ensured:

- small conference systems comprising only an ADN CU1 central unit
  - 30-40 conference units connected in simple strings
- large conference systems comprising an ADN CU1 central unit and a max. of 15 ADN PS power supplies
  - max. 400 conference units connected in simple strings or in ring topology per ADN PS power supply
  - 60-70 conference units connected in simple strings
  - 30-40 conference units connected in ring topology

If cable lengths are shorter, it might be that more conference units can be used.

ADN D1 delegate units and ADN C1 chairperson units can be combined in an arbitrary order. The number of chairperson units, however, is limited to 10 max. per conference system. All wired components of the conference system are interconnected using SDC CBL RJ-45 system cables.



A wired ADN conference system can be expanded by adding wireless components. For detailed information, refer to the ADN system manual.

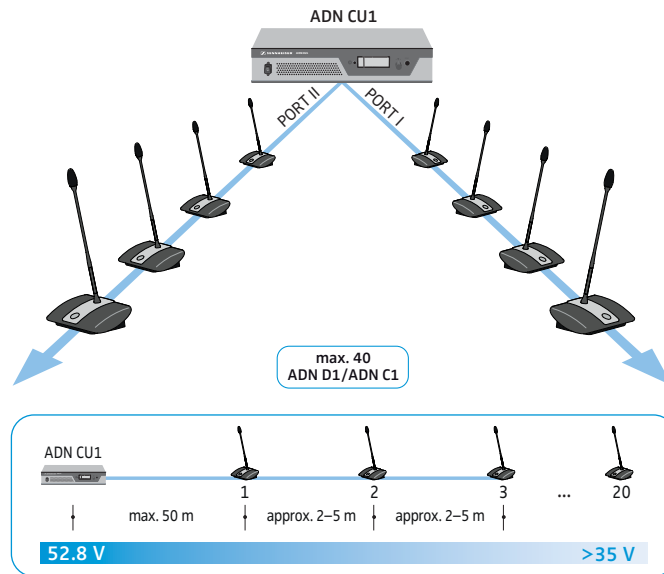
## Calculating the voltage supply of the conference units

The “ADN Cable Calculator” software allows you to calculate the voltage supply of the wired conference units on the individual sections of a cable string or cable ring and to plan the structure of the conference system. The software is included on the DVD-ROM (supplied with the ADN CU1) or is available from your Sennheiser partner or from the “Downloads” area on the product page at [www.sennheiser.com](http://www.sennheiser.com).

For further information on the installation and use of the “ADN Cable Calculator” software, refer to the help section of the “ADN Cable Calculator” software and to the ADN system manual.

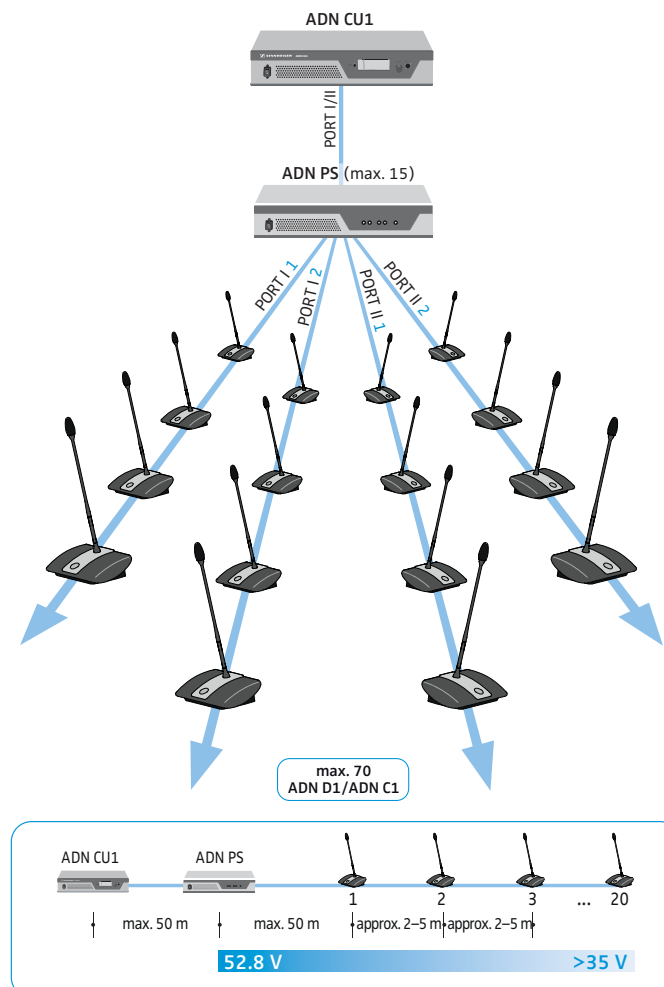
### Small conference system with simple cabling

For small conference systems with approx. 30–40 conference units, you require one ADN CU1 central unit for controlling the conference. The conference units are interconnected in two cable strings which are directly connected to the central unit.



### Large conference system with simple cabling

For setting up a large conference system with the maximum number of conference units (i.e. up to 400), you require one ADN CU1 central unit for controlling the conference and additional ADN PS power supplies for powering the conference units. The conference units are interconnected in cable strings and up to four cable strings can be connected to each ADN PS power supply.

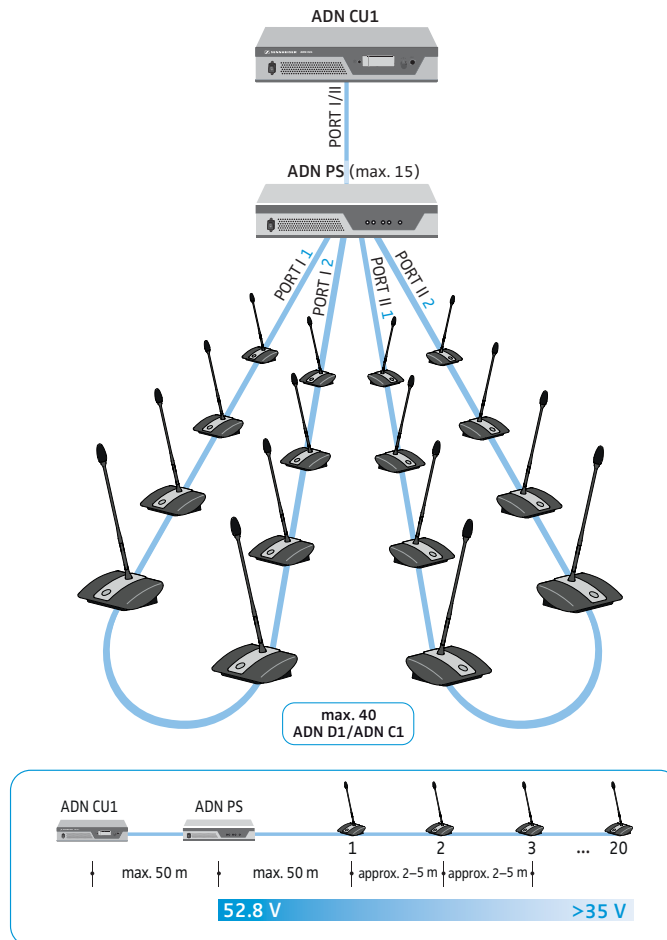




### Large conference system with redundant ring topology

The redundant ring topology ensures that, should one conference unit or system cable fail or be manipulated, all other conference units of the cable ring will continue to function reliably.

For setting up a large conference system with redundant ring topology, you require one ADN CU1 central unit for controlling the conference and additional ADN PS power supplies for powering the conference units. The conference units are interconnected in rings and two rings can be connected to each ADN PS power supply.



**i** When connecting the conference units to an ADN PS power supply, you can mix different cable topologies (simple cabling with cable strings or redundant ring topology).

# Preparing the ADN PS power supply for operation

## Setting up the power supply



### CAUTION

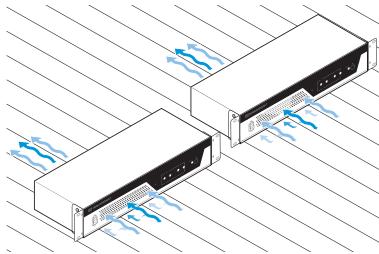
**Danger of material damage and personal injury due to stacked power supplies!**

When stacking several ADN PS power supplies on top of each other,

- the stack may topple over,
- the temperature of the individual ADN PS power supplies may drastically increase,
- high mechanical loading may be exerted on e.g. the housings, cables or installation surfaces.

This can cause material damage and personal injury.

- ▶ Never stack several ADN PS power supplies on top of each other.



- ▶ Make sure that the air vents are not covered or blocked.
- ▶ Place the ADN PS power supply on a flat surface as shown.



For information on how to mount the power supply into a 19" rack, refer to the ADN system manual.

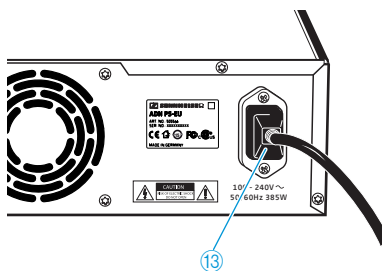
## Connecting the ADN PS power supply to the mains power supply

### CAUTION

**Product damage due to unsuitable mains cables or power outlets!**

An unsuitable power supply can damage the product.

- ▶ Use the mains cable (supplied) for connecting the product to the mains power supply.
- ▶ Only use multi-outlet power strips or extension cables with protective ground contacts.
- ▶ Only use mains cables with a 3-pin connector.





- ▶ First connect the connector of the mains cable (supplied) to the mains socket 13.
- ▶ Connect the mains plug of the mains cable to a wall socket. The ADN PS power supply is now ready for operation.

# Setting up the conference system

## CAUTION

### Product damage due to an unsuitable power supply!

If you connect standard network devices with RJ45 plugs (e.g. switches or network cards) to the connection sockets **PORT I**, **PORT II**, **DATA PS** and , the network devices can be damaged due to an unsuitable power supply.

- ▶ Only connect ADN C1 and ADN D1 conference units, ADN PS power supplies and the ADN AM antenna module to the connection sockets **PORT I**, **PORT II**, **DATA PS** and .

## Basic information on the set-up of the conference system

Regardless of the number of conference units and the room size, we recommend the following procedure for setting up the conference system:

- ▶ Decide if you require wired or mobile wireless conference units. You can also combine wired and wireless conference units.
- ▶ Plan the number of conference units required for your conference system. A total of 400 conference units (of which up to 150 can be wireless) can be used in a conference system (the maximum number of ADN C1 or ADN-W C1 chair-person units is limited to 10). Always take the largest possible number of participants as a starting point.



For detailed information on the ADN wireless components, refer to the ADN system manual.

If you are using wired conference units:

- ▶ Plan if simple cabling is sufficient or if you require a redundant ring topology (see page 5).
- ▶ If necessary, calculate the number of ADN PS power supplies required (a maximum of 15 ADN PS power supplies can be used in a conference system).
- ▶ If necessary, calculate the maximum length of the cabling in order to ensure that all conference units connected are supplied with sufficient voltage (see page 5).
- ▶ Place the ADN CU1 central unit and, if necessary, the ADN PS power supplies e.g. in the electrical equipment room or in the conference room.
- ▶ Place the conference units at the corresponding seats.
- ▶ Put out a sufficient number of SDC CBL RJ45 system cables in the required lengths.

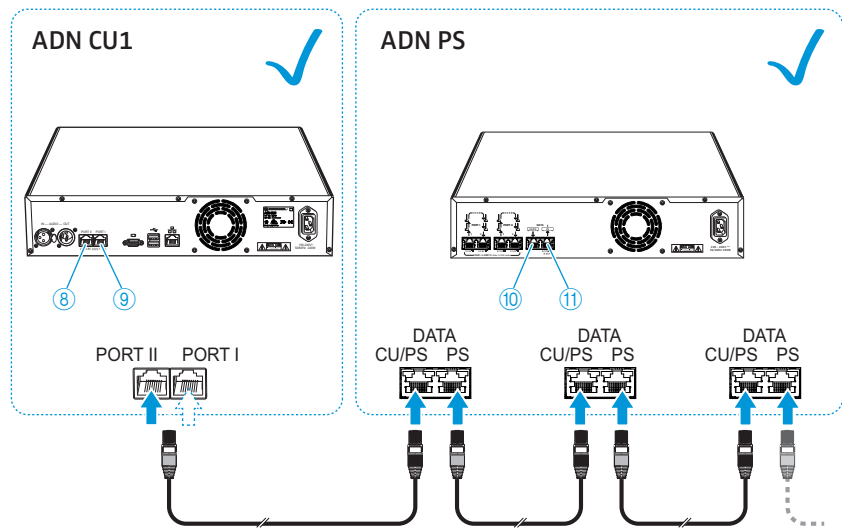
## Setting up a small conference system with only the central unit

For a small conference system, you do not require ADN PS power supplies. The conference units can be directly connected to the ADN CU1 central unit (for detailed information, refer to the instruction manual of the ADN CU1 central unit or to the ADN system manual).

### Connecting ADN PS power supplies to the ADN CU1 central unit

For conference systems comprising more than 40 conference units or when the conference units are connected in a redundant ring topology, you require ADN PS power supplies. A maximum of 15 ADN PS power supplies can be used in a conference system.

- ▶ Use a system cable to connect the **PORT II** socket ⑧ or **PORT I** socket ⑨ of the ADN CU1 central unit to the **DATA CU/PS** input socket ⑩ of the first ADN PS power supply (the maximum cable length allowed is 50 m).
- ▶ Use a system cable to connect the **DATA PS** output socket ⑪ of the first ADN PS power supply to the **DATA CU/PS** input socket ⑩ of the second ADN PS power supply.
- ▶ Repeat these steps for the remaining ADN PS power supplies.



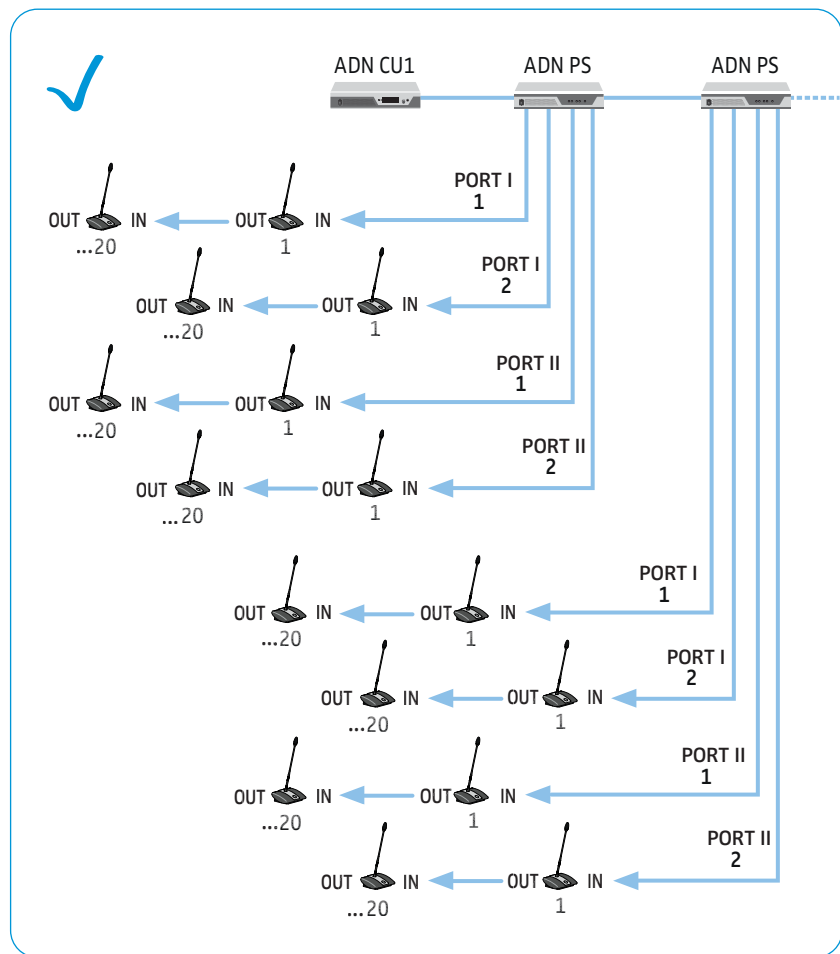
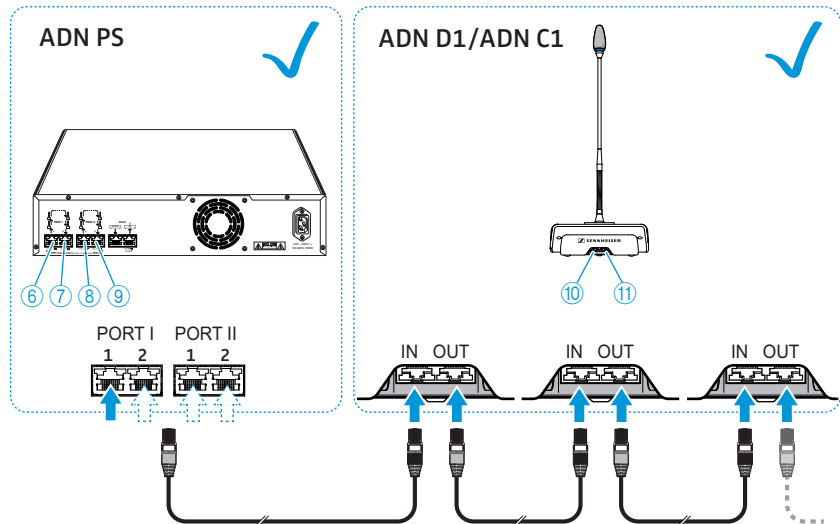
### Setting up a large conference system comprising ADN PS power supplies and conference units connected in cable strings

For large conference systems with up to 400 conference units, you require ADN PS power supplies. When the conference units are connected in simple strings, one ADN PS power supply can power approx. 60-70 conference units.

#### Connecting conference units connected in a cable string to the ADN PS power supply

The following describes how to connect one cable string to an ADN PS power supply. If necessary, repeat these steps for additional cable strings and additional ADN PS power supplies.

- ▶ Connect the required number of ADN PS power supplies to the ADN CU1 central unit (see above).
- ▶ Use a system cable to connect the **PORT I** or **PORT II** socket – output 1 ⑥/⑧ or 2 ⑦/⑨ – of the ADN PS power supply to the **IN** socket ⑩ of the first conference unit.
- ▶ Use a system cable to connect the **OUT** socket ⑪ of the first conference unit to the **IN** socket ⑩ of the second conference unit.
- ▶ Repeat these steps for additional conference units.
- ▶ If necessary, repeat all steps for a second, third and fourth cable string and additional ADN PS power supplies.



**i** Please note that there is a limited number of approx. 15-20 conference units per cable string due to the voltage drop on the cable string (see page 5).

One ADN PS power supply can power a total of 60-70 conference units if all connection sockets (PORT I and PORT II/outputs 1 and 2) are used.

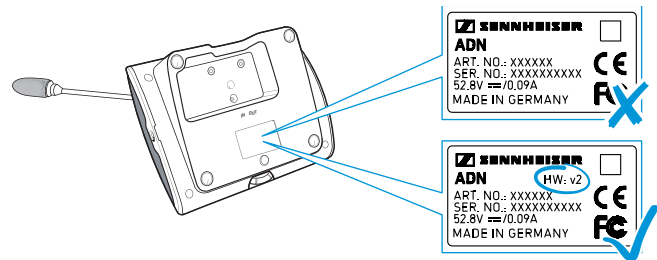
**i** You can use optional cable holders for guiding the system cables. For detailed information, refer to the ADN system manual.

### Setting up a large conference system comprising ADN PS power supplies conference units connected in redundant ring topology

In large conference systems with up to 400 conference units, the redundant ring topology ensures that, should one conference unit or system cable fail or be manipulated, all other conference units of the cable ring will continue to function reliably. When the conference units are connected in ring topology, one ADN PS power supply can power approx. 30-40 conference units.

**i** To ensure full operational reliability in a redundant ring topology, the hardware of the ADN C1 and ADN D1 has been revised. If you combine conference units with hardware revision 1 (no marking on the type plate) and conference units with hardware revision 2 ("HW: v2" is printed on the type plate), fail-safe operation is only possible to a limited extent.

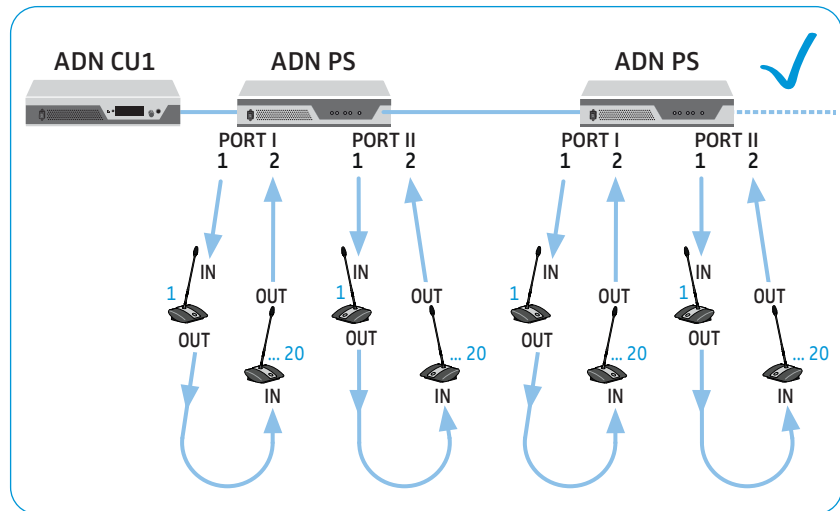
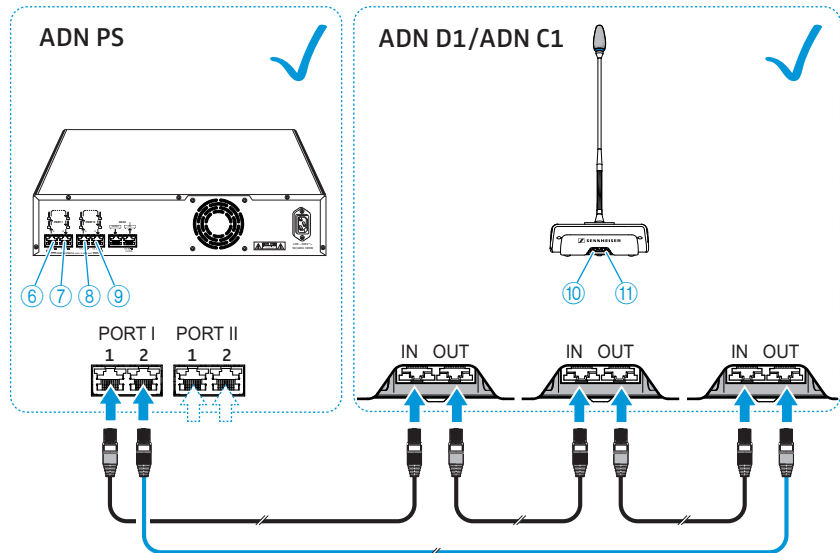
- ▶ In a redundant ring topology, only use conference units with hardware revision 2.



### Connecting conference units connected in a cable ring to the ADN PS power supply

The following describes how to connect one cable ring to an ADN PS power supply. If necessary, repeat these steps for a second cable ring and additional ADN PS power supplies.

- ▶ Connect the required number of ADN PS power supplies to the ADN CU1 central unit (see page 10).
- ▶ Use a system cable to connect output 1 ⑥ of the PORT I socket of the ADN PS power supply to the IN socket ⑩ of the first conference unit.
- ▶ Use a system cable to connect the OUT socket ⑪ of the first conference unit to the IN socket ⑩ of the second conference unit.
- ▶ Repeat these steps for additional conference units.
- ▶ Use a system cable to connect the OUT socket ⑪ of the last conference unit in the cable ring to output 2 ⑦ of the PORT I socket of the ADN PS power supply.
- ▶ If necessary, repeat all steps for a second cable ring on PORT II and the additional ADN PS power supplies.

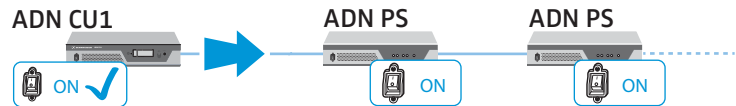


**i** Please note that there is a limited number of approx. 15-20 conference units per cable ring due to the voltage drop on the cable ring (see page 5).

**i** You can use optional cable holders for guiding the system cables. For detailed information, refer to the ADN system manual.

## Switching the ADN PS power supply on/off

**i** The ADN PS power supplies can only be switched on when the ADN CU1 central unit and the previous ADN PS connected in series are also switched on.

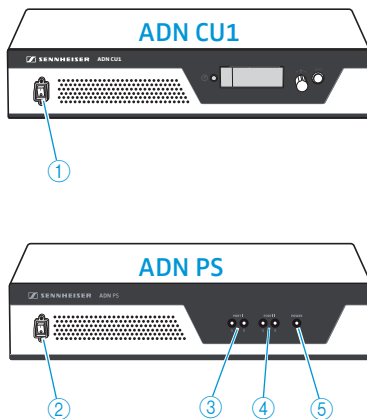


You can set up your conference system so that you can increase or reduce the number of conference units used by simply switching individual ADN PS on or off.

### Switching the conference system on

▶ On the ADN CU1 central unit and the ADN PS power supplies, set the on/off switch ① or ② to position "I".

The central unit switches on and its display panel lights up. The power supplies switch on and their status LEDs light up:



Status LED	Color	Meaning
POWER ⑤	green	ADN PS is switched on
PORT I ③ / PORT II ④ output 1/2	–	not used, switched off
	orange	Conference units are connected in strings
	green	Conference units are connected in redundant ring topology via output 1 and 2
	flashing orange	Error in a cable string; output is switched off

### Switching the conference system off

▶ Set the on/off switch ① of the ADN CU1 central unit to position "0". The central unit is switched off and the display panel goes off. All ADN PS power supplies connected to the central unit and switched on are switched off and the status LEDs go off.

To **switch individual ADN PS power supplies off**:

▶ Set the on/off switch ② of the ADN PS power supply to position "0". The power supply is switched off and all status LEDs go off. Additional connected ADN PS power supplies are also switched off.

To **completely switch** the ADN CU1 central unit or the ADN PS power supply **off**:

▶ Pull out the mains plug from the wall socket.



## Cleaning and maintaining the conference system

### CAUTION

#### Liquids can damage the product!

Liquids entering the product can cause a short-circuit in the electronics or damage the mechanics.

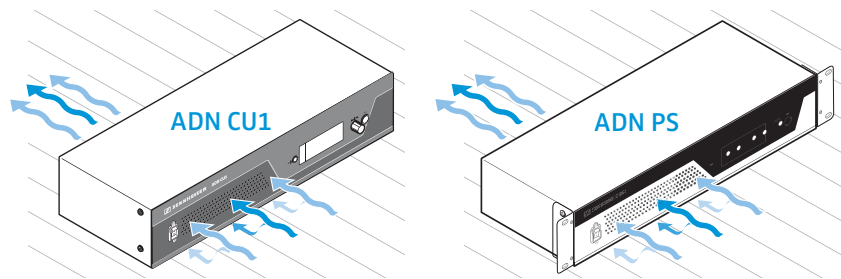
Solvents or cleansing agents can damage the surfaces of the product.

- ▶ Keep all liquids away from the product.
- ▶ Do not use any solvents or cleansing agents.

- ▶ Switch the conference system off (see page 14).
- ▶ Before cleaning, disconnect the ADN CU1 central unit and the ADN PS power supplies from the mains power supply.
- ▶ Only use a dry and soft cloth to clean the product.

To ensure optimum cooling of the ADN CU1 central unit and the ADN PS power supplies:

- ▶ Clean the air vents on the front, back and bottom from time to time with a soft brush or paintbrush in order to avoid dust deposits.



## Specifications ADN PS

Nominal input voltage	100 to 240 V~
Mains frequency	50 to 60 Hz
Power consumption	385 W
Output voltage at RJ45 PORT I/II output 1/2	52.8 V ===
Nominal output current at RJ45 PORT I/II output 1/2	max. 5.25 A in total max. 1.75 A per output
Output voltage at RJ45 DATA	52.8 V ===
Nominal output current at RJ45 DATA	max. 0.08 A
Temperature range	operation: +5°C to +50°C storage: -25°C to +70°C
Nominal input voltage	operation: 10 to 80% storage: 10 to 90%
Dimensions (W x H x D)	approx. 482.5 x 168 x 100 mm
Weight	approx. 4.6 kg





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