

PSU power pack

Original operating manual

PSU
series



Version BA-2017.09.20 EN
Print-No. 301 236
TR MA DE Rev001

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We reserve the right to make
technical changes.

Read carefully before use.
Save for future use.



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1 About this document

This manual

- is part of the equipment
- applies to all series referred to
- describes safe and proper operation during all operating phases

1.1 Target groups




Operating company

- Responsibilities:
 - Always keep this manual accessible where the device is used on the system.
 - Ensure that employees read and observe this document, particularly the safety instructions and warnings, and the documents which also apply.
 - Observe any additional country-specific rules and regulations that relate to the system.

Qualified personnel, fitter








- Mechanics qualification:
 - Qualified employees with additional training for fitting the respective pipework.
- Electrical qualification:
 - Qualified electrician
- Transport qualification:
 - Qualified transport specialist
- Responsibility:
 - Read, observe and follow this manual and the other applicable documents, especially all safety instructions and warnings.

1.2 Other applicable documents

<p>To download: Resistance lists Resistance of materials used to chemicals</p>	 <p>www.asv-stuebbe.de/pdf_resistance/300051.pdf</p>
	<p>To download: Data sheet Technical specifications, conditions of operation</p> <p>www.asv-stuebbe.de/pdf_datasheets/301230.pdf</p>
<p>To download: Operating manual Modbus® RTU Serial Communication User Manual</p>	<p>www.asv-stuebbe.de/pdf_manuals/301244.pdf</p>
	<p>To download: CE declaration of conformity Conformity with standards</p> <p>www.asv-stuebbe.de/pdf_DOC/301242.pdf</p>


Tab. 1 Other application documents, purpose and where found

1.3 Warnings and symbols

Symbol	Meaning
	<ul style="list-style-type: none"> • Immediate acute risk • Death, serious bodily harm
	<ul style="list-style-type: none"> • Potentially acute risk • Death, serious bodily harm
	<ul style="list-style-type: none"> • Potentially hazardous situation • Minor injury
	<ul style="list-style-type: none"> • Potentially hazardous situation • Material damage
	<p>Safety warning sign</p> <ul style="list-style-type: none"> ▶ Take note of all information highlighted by the safety warning sign and follow the instructions to avoid injury or death.
	Instruction
1., 2., ...	Multiple-step instructions
✓	Precondition
→	Cross reference
	Information, notes

Tab. 2 Warnings and symbols

2 General safety instructions

 The manufacturer accepts no liability for damages caused by disregarding any of the documentation.

2.1 Intended use


The unit is intended for provision of power to ASV Stübbe sensors.

The optional digital Modbus RTU – WIFI MD gateway interface provides a connection between one or more Modbus RTU sensors and a TCP network in “Station Mode” or direct communication between a mobile devices and the connected Modbus RTU sensors.

The unit is protected against chemical contamination and media vapors.

- The unit may not be used for any purpose other than provision of power to sensors.
- 1 sensor or up to a maximum of 5 sensors may be connected to the unit.

2.2 General safety instructions

 Observe the following regulations before carrying out any work.

2.2.1 Obligations of the operating company

Safety-conscious operation

- Only operate the device if it is in perfect technical condition and only use it as intended, staying aware of safety and risks, and in adherence to the instructions in this manual.
- Ensure that the following safety aspects are observed and monitored:
 - Intended use
 - Statutory or other safety and accident-prevention regulations
 - Safety regulations governing the handling of hazardous substances
 - Applicable standards and guidelines in the country where the pump is operated
- Make personal protective equipment available.

Qualified personnel

- Make sure all personnel tasked with work on the device have read and understood this manual and all other applicable documents, especially the safety, maintenance and repair information, before they start any work.
- Organize responsibilities, areas of competence and the supervision of personnel.
- The following work should be carried out by specialist technicians only:
 - Installation, repair and maintenance work
 - Work on the electrical system
- Make sure that trainee personnel only work on the device under supervision of specialist technicians.

2.2.2 Obligations of personnel

Only complete work on the device if the following requirements are met:

- System is empty
- System has been flushed
- System is depressurized
- System has cooled down
- System is secured against being switched back on again
- Do not make any modifications to the device.

2.3 Specific hazards

2.3.1 Hazardous media

- When handling hazardous media, observe the safety regulations for the handling of hazardous substances.
- Use personal protective equipment when carrying out any work on the device.
- Collect leaking pumped liquid and residues in a safe manner and dispose of in accordance with environmental regulations.

3 Layout and Function

3.1 Type plate

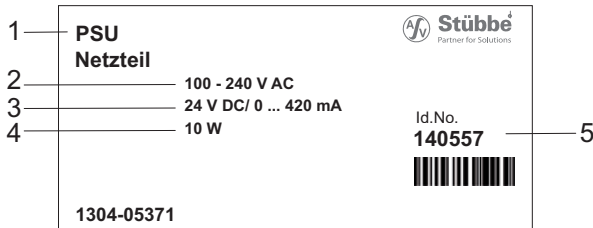


Fig. 1 Type plate (example)

- 1 Device type
- 2 Input voltage
- 3 Output voltage
- 4 Rating
- 5 ID number

Device types

- PSU

3.2 Description

The unit is a power supply unit. The unit converts the input voltage into a constant output voltage of 24 V DC. The unit is protected against short circuits, overload and overvoltage. The unit provides power to 1 sensor or up to a maximum of 5 sensors.

The optional digital Modbus RTU – WIFI MD gateway interface provides a connection between one or more Modbus RTU sensors and a TCP network in “Station Mode” or direct communication between a mobile devices and the connected Modbus RTU sensors.

Installation:

- Wall mounting

3.3 Layout



Fig. 2 Layout

- 1 Housing cover
- 2 Connecting the input voltage
- 3 Connection cable to the sensor (provided by the operating company)
- 4 Connector
- 5 Pipe clamp
- 6 Spacer
- 7 Housing

4 Transport, Storage and Disposal

4.1 Unpacking and inspection on delivery

1. Unpack the device when received and inspect it for transport damage and completeness.
2. Check that the information on the type plate agrees with the order/design data.
3. Report any transport damage to the manufacturer immediately.
4. If fitted immediately: Dispose of packaging material according to local regulations.
 - If fitted at a later point: leave device in its original packaging.

4.2 Transportation

- ▶ Device should preferably be transported in the original packaging.

4.3 Storage

NOTE

Material damage due to inappropriate storage!

- ▶ Store the device properly.
-
1. Make sure the storage room meets the following conditions:
 - Dry
 - Frost-free
 - Vibration-free
 - Not in direct sunlight
 - Storage temperature +10 °C to +60 °C
 2. Device should preferably be stored in the original packaging.

4.4 Disposal

- ⓘ Plastic parts can be contaminated by poisonous or radioactive media to such an extent that cleaning will not be sufficient.

WARNING

Risk of poisoning and environmental damage from medium.

- ▶ Use personal protective equipment when carrying out any work on the device.
- ▶ Prior to the disposal of the device: Neutralize residues of medium adhering to the unit housing.

-
1. Remove electronic parts and dispose of in accordance with local regulations.
 2. Dispose of plastic parts in accordance with local regulations.

5 Installation and connection

5.1 Check operating conditions

1. Ensure the required operating conditions are met:
 - Ambient temperature (→ Data sheet)
 - If mounted on a container wall: Resistance of the materials of the unit housing to the medium (→ Resistance lists).
2. Consult with the manufacturer regarding any other use of the device.

5.2 Install device

- ✓ The installation location on the container wall must be carefully chosen:
 - Avoid sustained contact with media

WARNING

Risk of injury and poisoning due to media adhering to the container wall!

- ▶ Use personal protective equipment when carrying out any work on the device.

-
1. Depending on the installation situation, attach a spacer to the container wall or building wall.
 2. Attach a pipe clamp to the spacer.
 3. Fasten the housing top the pipe clamp.

5.3 Electrical connection of device

- ✓ Power supply is switched off and secured against being switched back on again.
- ✓ The unit must be installed properly.
- ✓ A sensor cable must be provided by the operating company.
- ✓ The sensor must be installed and the sensor cable connected.

⚠ DANGER


Risk of electrocution

- ▶ All electrical work must be carried out by qualified electricians only.
- ▶ Switch off system power supply and secure it against being switched back on again.

1. Before installation, ensure the cable lengths are sufficient:
 - sensor cable from the unit to the sensor
 - connection cable for provision of power supply by the unit
2. Unscrew the housing cover from the housing.
3. Guide the connection cable through the cable glands and connect:
 - Cables (→ Data sheet).
 - Power supply connection diagram (→ 8.3.1 Current connection diagram, Page 10).
4. Tighten the cable gland securely.
5. Screw on the housing cover.
6. Fit the plug to the sensor cable (→ 8.3.2 Pin assignment on sensor cable, Page 10).
7. Insert the plug.

6 Operation

6.1 Preparing sensors for commissioning

 Sensors can be adjusted and calibrated prior to commissioning.

- ▶ If necessary, perform preparatory work on the sensors prior to connection and commissioning (→ Sensor operating manual).

6.2 Commissioning the power supply unit

- ✓ The device must be installed properly and connected to the sensor.
 - ✓ Preparatory work on the connected sensors must be performed prior to commissioning.
1. Connect the power supply to the unit.
The unit provides the operating power supply to the connected sensors.
 2. Check at the connected sensors that the power supply voltage is present (→ Sensor operating manual).
 3. If necessary, perform preparatory work on the connected sensors prior to commissioning (→ Sensor operating manual).

6.3 Commissioning the optional digital interface: Modbus RTU - WIFI

The functionality and commissioning of the Modbus RTU – WIFI optional digital interface is described in the "Modbus® RTU Serial Communication User Manual".

To download:
Operating manual
 Modbus® RTU Serial Communication
 User Manual
www.asv-stuebbe.de/pdf_manuals/301244.pdf

7 Maintenance

⚠ DANGER

Risk of electrocution!

- ▶ All electrical work must be carried out by qualified electricians only.

⚠ WARNING

Risk of injury and poisoning due to hazardous media liquids on the unit housing!

- ▶ Use personal protective equipment when carrying out any work on the device.
- ▶ Switch off the power supply to the system.
- ▶ Secure power supply against being switched back on again.
- ▶ Provide warning of maintenance and repair work and set up warning signs.

7.1 Servicing

Interval	Action
As necessary	<ul style="list-style-type: none"> • Clean the unit with a damp cloth.
Six-monthly	Visual and function check: <ul style="list-style-type: none"> • Normal operating conditions unchanged

Tab. 3 Servicing activities

- ▶ Perform maintenance tasks according to the table.

7.2 Maintenance

7.2.1 Removing the device

- ✓ System is secured against being switched back on again.
1. Disconnect the power supply.
 2. Unplug connection cable.
 3. Take the unit off the wall.
 4. Decontaminate the unit housing if necessary.

7.2.2 Replacement parts and return


1. Have the following information ready to hand when ordering spare parts (→ 3.1 Type plate, Page 6).
 - Device type
 - ID number
2. Please complete and enclose the document of compliance for returns (→ www.asv-stuebbe.com/service/downloads).




3. Only use spare parts from ASV Stübbe.

8 Appendix

8.1 Technical specifications

 Technical data (→ Data sheet).

8.2 Dimensions

 Dimensions (→ Data sheet).

8.3 Connection diagrams

8.3.1 Current connection diagram

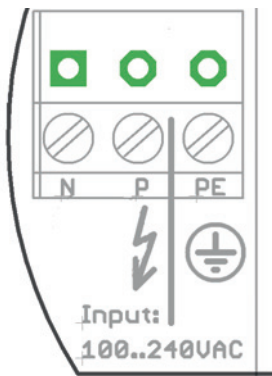


Fig. 3 Current connection diagram

N Neutral

P Phase

PE Protective Earth

8.3.2 Pin assignment on sensor cable

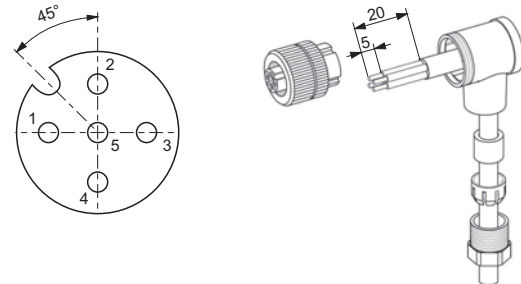


Fig. 4 Plug assignment

1 RS485 A (applicable for PSU+WiFi)

2 RS485 B (applicable for PSU+WiFi)

3 n.c.

4 GND

5 24 V DC