


Power Supply Module (CyBi-SV)

User Manual

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1 General Information

1.1 General User Manual Advice

This User Manual informs about the setup and function of the module. It provides qualified operating personnel with the knowledge that is required to handle the module in a safe manner.

This User Manual must be readily available to operating and maintenance personnel at all times!



NOTE

The information contained herein reflects the latest state of knowledge at the moment of going to press. Analytik Jena AG reserves the right to make changes if deemed necessary in the interest of technical progress.

1.2 Target Group

This User Manual addresses:

- ❑ Qualified and properly trained expert personnel who are able to operate the module and provide general care
(→ *“Requirements for Operating Personnel”* on page 12).
- ❑ Employees with responsibility for:
 - the planning of process sequences/operating procedures,
 - preventive maintenance & cleaning work,
 - safety devices, etc.

1.3 Conventions

1.3.1 Textual Markups

Work instructions involving a timed sequence are numbered and merged to action units to specify related results.

Enumeration involving no timed sequence is shown as a bullet-style list, sub-level numbering or as a dash-style list.

Safety notes are marked by a pictogram and a signal word (→ “Warning Signs” on page 3).

Specific action-related safety notes will **precede** the actual instruction.

Instructions, commands, control buttons, text fields, check boxes and the like are marked as shown for “Load” command sample.

Optional outfit components or versions are marked with *.

For graphic design styles of cross-references, you are referred to the table below:

Table 1: Graphic design styles of cross-references

Type of cross-reference	Graphic style	Explanatory note
Reference to an illustration	→ Fig. 1	Illustration is on the same page
Reference to an illustration and a page	→ Fig. 1 on page 17	Illustration is on another page
Reference to a position (within an illustration)	Pos. 2, → Fig. 1	Provides reference to a position within a specified illustration – illustration is on the same page
Reference to a position (within an illustration and a page)	Pos. 2, → Fig. 1 on page 17	References a position within a specified illustration – illustration is on another page
Reference to a page	→ page 1	References a given page
Reference to a headline and a page	→ “Conventions” on page 2	References a given page, supplemented by a headline
Reference to a table and a page	→ Table 2, “Scope of delivery (depending on selected model option)”, on page 7	References a given table

1.3.2 Warning Signs



WARNING

Indicates a potentially hazardous situation.

May result in death or serious injury if not avoided.



CAUTION

Dangerous situation!

Potential consequences: light or moderate physical injury.

NOTICE

Dangerous situation!

Potential consequences: material damage.



NOTE

Useful application advice, no potential danger involved.



NOTE

Note regarding environmental protection.

1.4 Intended Purpose

The power supply module provides a tool for centralized supply of all individual equipment units with required voltage levels.

It is connected to line power supply via a power cable with PE contact. A set of connection cables is included for connection of pertaining equipment components. They carry labels on their cable ends for unequivocal assignment of connection points.

1.5 Conforming Use



NOTE

The power supply module is exclusively intended for electric supply of systems and system components from Analytik Jena AG.

The term **conforming use** also presupposes that:

- the module is operated by qualified and trained research and laboratory personnel
- all operating requirements, procedural sequences and related safety notes quoted or described in this User Manual are duly observed
- all specifications in this Manual regarding system start-up, operation, preventive maintenance and care are met
- applicable safety standards or rules are always fulfilled.

Any use other than or in excess of these rules will be regarded as non-conforming! The user will be solely liable for damage resulting from a case of non-conformance.

The definition for **non-conforming use** includes:

- operating the module in medical laboratories of a non-research profile
- working with explosive substances
- working in an explosive atmosphere – operation in a potentially explosive zone is prohibited

**NOTE**

CyBi[®]-Accessories module operation involving dangerous substances will be at the sole responsibility of the user!

This shall include compliance with all valid safety requirements for the protection of persons and material goods during work with radioactive, infectious, poisonous, corrosive, combustible and other hazardous substances. The user is under obligation to fulfil all requirements for laboratory equipment and the conduct of personnel handling substances of this nature and on the practices in place for cleanliness, sterilization, environmental protection and waste disposal.

The user is advised to issue special operating instructions where the module is to be operated with the involvement of hazardous substances. Accordingly, this User Manual contains no safety note warning of personal injury or material damage caused by substances being examined.

Process control must rely on included Analytik Jena AG software. Alterations or damage to system software may give rise to faults in process flow and damage the module or its components. Software protection is the sole responsibility of the user.

1.6 Warranty & Liability

The period of warranty and scope of liabilities will be as stipulated under binding law and provided for in the General Terms of Business of Analytik Jena AG.

Warranty will be limited to repair services or replacement of damaged parts. It will exclude consequential damage of any kind. Damage to wear & tear parts and cases of glass breakage are not covered by warranty.

Any deviation from conforming use as defined in this User Manual (operating requirements, process sequences) will result in restricted acceptance of warranty or liability claims in the event of damage.

In the event of personal injury or material damage, no claim for warranty and liability will be accepted, unless the module is operated as specified in section → *“Conforming Use” on page 4.*



NOTE

This loss-of-warranty clause shall apply to potential periods of interruption in business and to any system component that had not been directly affected by authorized warranty work.

1.7 Scope of Delivery

Depending on the selected model option, the product can be delivered in configurations as listed below:

- CyBi®-Accessories
- Cabling
- Documentation
- Packaging

2 Technical Data

2.1 General Data

General	
Designation	Power supply module
Modelnumber	OL3402-501-25 ¹ OL3402-503-25 ²
Max. number of equipment units that may be connected	Four - via PSPL
Dimensional & weight	
Dimensional: Width x height x depth	(280 x 100 x 180) mm
Weight:	Approx. 5,0 kg

1 Marketplace Europe

2 Marketplace US/CN

2.2 Summary Table of Operating Data & Conditions

Operating data	
Utility class	Bench-top device, closed room facilities in clean condition
Protection class	I
Protection type	IP 20
Input voltage	115/230 V 50/60 Hz
Primary fusing	for 115 V: 2x 3.15 A for 230 V: 2x 1.6 A
Output voltage	12 VAC/± 12 VDC; unstabilized
Secondary fusing	2x 6.3 A
Power consumption	150 VA
Interference suppression	EN 55011 (DIN VDE 0875, Part 11) limit value class A
Interference immunity	EN 61000-6-2 (industrial area)

Storage & operating conditions	
Storage & transportation: – Permissible ambient temperature – Permissible relative air humidity	- 10 °C to + 50 °C ≤ 85% at 30°C
Operation – Permissible ambient temperature – Permissible relative air humidity	+ 15 °C to + 35 °C ≤ 75% at 30°C, no formation of condensate

3 Safety Notes

3.1 General



NOTE

For your own safety and to ensure failsafe, you should carefully read this chapter before proceeding to any kind of start-up work!

Follow all safety notes that precede described action in the various chapters of this User Manual, as well as any message or advisory prompt that may be displayed on the monitor screen by control and evaluation software tools.

In addition to the safety notes in this Manual and local safety practices as may be applicable to system operation from case to case, generally established accident prevention, industrial labor protection and environmental protection rules must be considered and duly observed.

A reference to potential danger cannot be regarded as replacing the appropriate labor protection rule that must be observed in each particular case.

Follow these general safety rules:

- Do not make changes in system engineering design, unless by prior agreement with Analytik Jena AG!
- Do not manipulate or damage software or software configuration settings!
- Do not operate the module with safety devices in a defective state or with safety and protection devices installed in a nonconforming manner!
- Operate the module only at a line voltage that complies with the label specifications!
- Observe prescribed maintenance intervals!
- Use only accessory items, consumable materials and spare parts specified in this User Manual or provided or recommended by Analytik Jena AG!
- Service and repair work and procedures for starting up or shutting down for transportation may not be performed by anyone other than authorized service personnel!
- Refrain from any kind of unauthorized conversions or changes in system setup, notably those impacting the safety of personnel or the environment.

3.2 Standards & Guidelines

The module has been built to meet currently valid rules of technology and generally established requirements on safety engineering.

The module and its components have been designed in accordance with basic safety and health requirements under applicable laws, standards and guideline regulations.

CE-labelling and a declaration of conformity (see manufacturer) are included to document the safety of the module and its components.¹

All specifications relating to safety reference the European Union regulations in their latest binding revisions.

Other specific national laws and regulations must equally be observed.

¹ 2006/95/EG and 2004/108/EG – 2014/35/EU and 2014/30/EU (20.04.2016).

3.3 Safety Labeling Provided at the module





NOTE


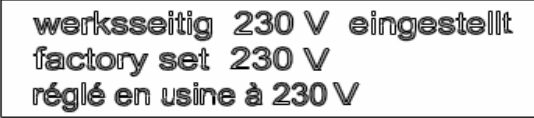
Affixed warning notes and safety symbols are an integral part of the module and its components and must be followed under any circumstances!

Check warning labels and safety symbols for intactness and completeness before you begin any kind of start-up action. Do not proceed to start-up action if you have identified a missing or damaged warning note or safety symbol!

Damaged or missing warning notes or safety symbols may lead to faulty action with consequential injury to persons or material damage to equipment! Warning notes and safety symbols must not be removed! Replace damaged warning labels and safety symbols immediately!

The following safety symbols are affixed on the module:

Safety symbol	Meaning	Comment
	Warns of a danger point	Warns of mechanical hazard from mechanically moving system parts
	Warns of dangerous electrical voltage	Refer to warning note

Warning note	Meaning	Comment
 <p>Warns of dangerous electrical voltage!</p>		Refrain from system shielding or cover part removal at all times! Allow repair to be carried out only by qualified experts! Replace defective fusing with a fuse of specified type in all cases!
 <p>Factory setting for permitted supply voltage!¹</p>		Operation at a different supply voltage may lead to destruction of electrical or electronic components! Claims for warranty or liability will be null and void in such cases!

¹ Label shows the model OL 3402-501-25; 115 V factory set (model variant OL 3402-503-25).

3.4 Requirements for Operating Personnel

- ❑ The module may not be started up, operated or maintained other than by duly trained expert personnel having received instructions on operational safety. Such training will also include familiarization with the contents of this Manual and manuals of related system components or additional equipment units as may be appropriate from case to case.
- ❑ The module must not be operated by minors or persons under the influence of alcohol, drugs or medication.
- ❑ A security schedule must be put in place to ensure that only authorized personnel can work with the module.
- ❑ You are prohibited from eating, drinking, smoking or using open a naked flame at or near the system installation site!

3.5 Safety Requirements for Transportation & Installation

The module must be installed by service personnel of Analytik Jena AG or by expert personnel duly trained and authorized by Analytik Jena AG in all cases. You are prohibited from any kind of unauthorized mounting or installation work. Faulty installation may create considerable danger.

Follow these general safety rules:

- ❑ There is danger of physical injury if module parts are not secured in a conforming manner! For transportation, system components must be secured as prescribed in the relevant transporting equipment manuals or in this User Manual.
- ❑ Use only original packaging for the transportation of system components! Make sure that all shipping retainers are installed and system components are completely empty where necessary.
- ❑ In order to prevent damage to people's health, relocation (lifting and carrying) of system components within a laboratory complex must be done with due consideration and observation of currently binding benchmark specifications and limit values applicable to the lifting and carrying of loads without the use of aids.

3.6 Safety Notes for Operation

3.6.1 General Advice

- ❑ Operating personnel are obliged to convince themselves of the proper technical condition of the module and its components, including that of safety devices, before they can proceed to action for powering up. Notably, this requirement applies following a change in, an extension to or a repair of the module.
- ❑ Do not operate the module, unless all protective devices are in place, properly installed and fully functional.
- ❑ Protection and safety devices must not be removed, altered or defeated during normal operation.

- ❑ Ensure easy access to the main power switch, as well as emergency shutdown and locking points at any time during system operation.
- ❑ Take care that all ventilation devices of the module are in a properly functioning condition. Obstructed ventilation grids, air inlet/outlet slits, etc. may result in malfunction or system damage.
- ❑ Operating personnel are required to immediately notify the owner of any change identified in the system and likely or known to impact the level of safety

3.6.2 Explosion Proofness, Fire Prevention

- ❑ The module must not be operated in an explosive environment or using explosive substances.
- ❑ It is forbidden to smoke or use open fire inside of the operating room!
- ❑ Operating personnel must be duly informed about the locations and the proper handling of fire-extinguishing equipment in the operating room.

3.6.3 Electrical

- ❑ Work on electrical and electronic parts of the system and its components may only be carried out by a suitably qualified electrician and in accordance with latest binding electrical regulations.
- ❑ Refrain from start-up action of any kind if cables are damaged (e.g. cuts in cabling, worn or chafed places)!
- ❑ Observe prescribed maintenance intervals.
- ❑ The main power plug includes a ground (PE) contact that may only be connected to a socket with ground (PE) contact. The PE conductor may not be interrupted (e.g. through the use of a voltage regulating transformer). Do not use extension cables without a PE conductor!
- ❑ Power cabling must be installed in a workmanlike manner!
- ❑ To detach a power cable from the mains socket, always hold it by the plug.
- ❑ Under no circumstances may system shielding be removed. There is life-threatening danger due to electrical shock if shielding parts are removed!
- ❑ Do not insert objects into a module opening and make sure that no liquid can penetrate through openings or joints into the inner module space.
- ❑ The main fuse prevents danger of fire from electrical overload situations. Do not short this fuse and use only a line fuse of the type specified in this User Manual for replacement.

3.6.4 Fundamental Maintenance & Care Rules

- ❑ System maintenance may not be carried out by anyone other than service personnel of Analytik Jena AG or expert personnel properly trained and duly authorized by Analytik Jena AG.
- ❑ Unauthorized maintenance work may cause damage to the module. For this reason, operating personnel are not allowed to carry out work of any kind other than described in chapter.
- ❑ Always turn system power off before you perform work for maintenance or cleaning of the module. Pull the main power plug from the power socket at first. Components in direct physical contact with substances being processed:

3.7 Rules of Conduct in Cases of Emergency

Use the system's main power switch (On/Off switch) immediately on noticing a dangerous situation and/or disconnect the power plug from the line socket in this case!

Since prompt reaction can save lives in a situation of danger, make sure that the following requirements are met:

- Operating personnel must be aware of the locations and the proper handling of safety devices, accident and hazard alarms, as well as first-aid kits and emergency/rescue equipment.
- The system owner/operator will be responsible for providing adequate training for operating personnel.
- All first-aid items (medical chest, eyewash bottles, stretchers, etc.) and fire-fighting equipment (fire extinguishers) must be kept within easy reach and readily available at all times. Related equipment must be in a fault-free condition and undergo regular inspection for normal operating condition.

4 Technical Description

4.1 Setup/Components

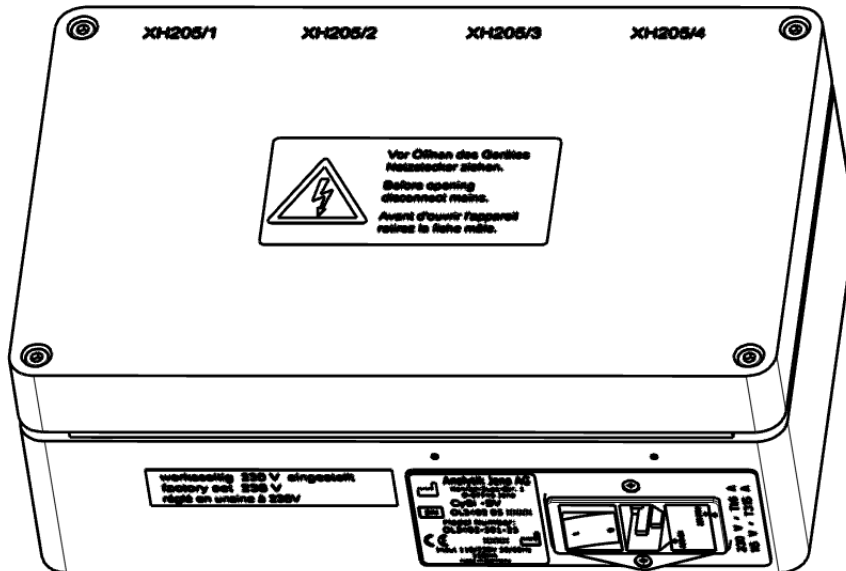


Fig. 1: Overview

- Switch
 - On/Off
- Identifier
 - Safety symbol
 - Nameplate
 - Warning note

4.1.1 Nameplate

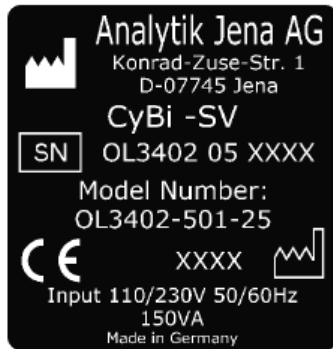


Fig. 2: Nameplate

Nameplate specifications:

- Manufacturer details
- Product designation details (type designation, tradename)
- Identification code (model/serial number)
- Year of manufacture

4.1.2 Terminals



CAUTION

There is danger of injury or potential damage to equipment if cables are removed in energized state!

Never remove cabling as long as voltage is supplied! Make sure that the power supply module is actually in power-off condition and its line power cord detached from the line power socket before you remove a cable from the module.

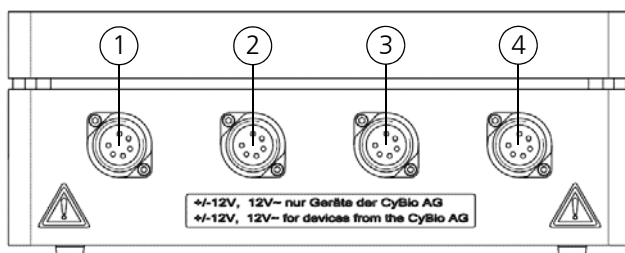


Fig. 3: Terminals & controls

- 1 XH205/1 - terminal for systems or system components
- 2 XH205/2 - terminal for systems or system components
- 3 XH205/3 - terminal for systems or system components
- 4 XH205/4 - terminal for systems or system components

4.1.3 Conversion of Voltage Level



WARNING

Please note that contact with voltage-carrying parts may lead to physical injury or even death!



Turn power supply module off before you begin any kind of work described hereafter. Disconnect the power cord from the line power socket and remove the power cord from the module.



NOTE

Depending on the country of destination, the voltage level comes factory-set.

For necessary conversion of the power supply module to another voltage level, the primary fuse must be replaced and the fuse socket adapted. To do this, proceed as follows:

1. Use a small screwdriver to open the fuse socket compartment.
2. Replace the fuse. A fuse of following type must be installed:
 - for 230 V = T1,6 A
 - for 115 V = T3,15 A
3. Turn fuse socket onto the voltage level that is available in the operating room.

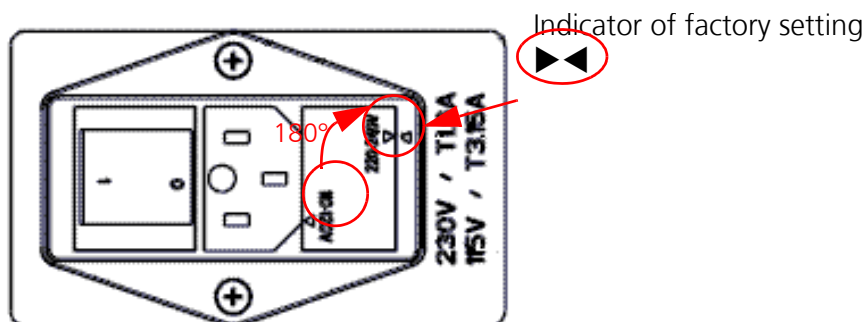


Fig. 4: Fuse socket at power supply module

5. Reinsert fuse socket.
6. Replace sticker label.
 - ✓ **Voltage supply has been converted.**



NOTICE

There is danger of material damage from operation at the wrong supply voltage level. Remember to replace the voltage label after voltage supply has been converted on the power supply module!

4.1.4 Replacement of Primary Fuse



WARNING

Please note that contact with voltage-carrying parts may lead to physical injury or even death!



Turn power supply module off before you begin any kind of work described hereafter. Disconnect power cord from line socket and remove power cord from the module.

To replace a defective fuse, proceed as follows:

1. Turn power supply module off and disconnect its power cord from line power supply.
2. Remove power cord from power supply module.
3. Open fuse socket compartment with the help of a small screwdriver.
4. Replace defective fuse.
5. Return the fuse socket to the power supply module.
Make sure that the arrow on the fuse insert and the arrow on the combination seal do meet factory set voltage levels.
6. Reconnect power supply module to the line power net.
✓ **The primary fuse has been replaced and the module can be turned on.**