

SAFETY REFERENCE MANUAL

SIRIUSi XHS-PWR V22-2



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1. About this document

This is the user manual for SIRIUSi-XHS-PWR module.

1.1. Legend

The following symbols and formats will be used throughout the document and/or are used on the module.



Caution

Indicate that the current situation needs operator awareness or operator action in order to avoid undesirable consequences. Consult manuals and follow all instructions.



Caution, hot surface

Indicate that the item can be hot and should not be touched without taking care.



Caution, risk of electric shock

Follow all instructions to avoid electrical shock.

1.2. Online versions

1.2.1. Device Technical Reference Manual

The most recent version of this manual can be downloaded from our homepage:

<https://download.dewesoft.com/list/manuals-brochures/hardware-manuals>

In the *Hardware Manuals* section click the download link for the *Device® technical reference manual*.

1.2.2. DEWESoft® User Manual

The DEWESoft® User Manual document provides basics and additional information and examples for working with DEWESoft® and certain parts of the program.

The latest version of the DEWESoft® tutorials can be found here:

<https://download.dewesoft.com/list/manuals-brochures/software-manuals>

In the Software Manuals section click the download link of the DEWESoft X User Manual entry.

2. Safety instructions







Your safety is our primary concern! Please be safe! Read carefully following instructions and use common sense when operating the equipment.






Warning

The following general safety precautions must be observed during all phases of operation, service, and maintenance of this product. Failure to comply with these precautions or with specific warnings elsewhere in the product manuals violates safety standards of design, manufacture, and intended use of the product. Dewesoft d.o.o. assumes no liability for the customer's failure to comply with these requirements.

If accessories for the product are available they are not covered with following instructions. Please read the safety manual for the accessory.

	Only trained persons can operate, make maintenance or service actions.
	Product safety isolation relies on reliable safety ground connection. Before any other cable attachment please connect product safety ground first to the system safety ground. When removing the product, safety ground connection shall be removed last. Not grounding the product reduces safety isolation of the product and can lead to electrical shock in case of product malfunction.
	When operating high voltage in excess of 1000 V and high currents can be present inside of the product. Newer do any servicing or maintenance actions if power cables are live to prevent electrical shock or arc as a result of current flow or its interruption.
	Before any work on the product check that surface temperature is safe for handling. During operation at high currents product internal and surface temperature can increase a lot. This combined with potential high ambient temperature can lead to product surface temperature exceeding safe touch temperature.
	Before any work on a product check that all power sources are off. If power sources are not under visual control of the servicing person use safety locks to prevent unintended power source turn on. Install safety warnings at power switch location that maintenance is going on and try to inform all persons with access to the power source about intended operation.
	Newer open any cover on the products which have power cables already supplied with the product. There are no serviceable parts inside. All repairs or calibration must be done at the Dewesoft or Dewesoft approved service centers.

	<p>For the units where customers can connect their own cables, only the orange cover can be opened. Before cover opening make sure that all above requirements are fulfilled (disconnection from the power source, low enough surface temperature etc.). Please check in the Technical Reference Manual about required cable minimum cross sections for intended currents, type of the approved wires and suitable cable lugs and nuts. Use only specified products. Please follow all other instructions from the same chapter on how to properly prepare and install cables.</p> <p>After cable installation, cover must be attached back before the first test or use to avoid electrical shock or burns in case of any system failure.</p> <p>During first runs, after cable installation, monitor temperature in the product cable department via Dewesoft software (link), if possible at full load, to check if temperature is inside normal operating temperature range. Too high contact resistance, the result of bad lug connection or poore contact to the internal bus bar can increase internal temperature considerably. If the temperature is rising in a non normal way or is too high, immediately disconnect power. Follow all safety precautions from this chapter and verify cables and their connections as possible sources of the problem.</p> <p>In case of any doubt please contact Dewesoft support center.</p>
	<p>Do not use higher voltage than specified on the product power supply pins. Power supply input is protected for some short term transients, however longer exposure to higher voltage levels will damage input circuit.</p>
	<p>DO NOT use the system in rooms with flammable gases, fumes or dust or in adverse environmental conditions.</p>

Please follow also general safety instructions:

- DO NOT operate damaged equipment: Whenever it is assumed that the safety protection features built into this product have been impaired, either through physical damage, excessive moisture, or any other reason, REMOVE POWER and do not use the product until the safe operation can be verified by service-trained personnel. If necessary, return the product to Dewesoft sales and service office for service and repair to ensure that safety features are maintained.
- Do not switch on the system after transporting it from a cold into a warm room and vice versa. The thereby created condensation may damage your system. Acclimatise the system unpowered to room temperature.
- Please contact a Dewesoft support team if you have doubts about the method of operation, safety or the connection of the system.
- Please be careful with the product. Shocks, hits or dropping it even from low height may damage your system.
- Please read the detailed technical reference manual as well as the security advice of the connected systems.
- This product has left the factory in safety-related flawlessness and in proper condition. In order to maintain this condition and guarantee safety use, the user has to consider the security advice and warnings in this manual.

2.1. General safety and hazard warnings for all Dewesoft systems

Safety of the operator and the unit depend on following rules:

- Use this system under the terms of the specifications only, to avoid any possible danger.
 - Read the Technical Reference Manual and Safety Reference Manual before operating the system.
 - Please note the characteristics and indicators on the system to avoid fire or electric shocks. Before connecting the system, please read the corresponding specifications in the product manual carefully.
 - Any other use than described in manuals may damage your system and can result in dangers like short-circuiting, fire or electric shocks.
 - Please also consider the detailed technical reference manual as well as the security advice of the connected systems.
 - Observe local laws when using the instrument.
-
- DO NOT use higher supply voltage than specified!
 - You may not connect higher voltages than rated to any connectors.
 - The inputs must not, unless otherwise noted (CATx identification), be connected to the main circuit of category II, III and IV.
 - Use only original plugs and cables for harnessing.
 - The power cable and connector serve as Power-Breaker. The cable must not exceed 3 meters, the disconnect function must be possible without tools.
 - The power cord separates the system from the power supply. Do not block the power cord, since it has to be accessible for the users.
 - With this product, only use the power cable delivered or defined for the host country.
 - During the use of the system, it might be possible to access other parts of a more comprehensive system. Please read and follow the safety instructions provided in the manuals of all other components regarding warning and security advice for using the system.
 - Ground the equipment: For Safety Class I equipment (equipment having a protective earth terminal), a non-interruptible safety earth ground must be provided from the mains power source to the product input wiring terminals or dedicated ground terminal.
 - DO NOT power up the unit under test until the sensors, probes or test leads, as well as measuring system are not connected and powered up.
-
- Maintenance must be executed by qualified staff only.
 - The whole system must not be changed, rebuilt or opened.
 - Unauthorized changing or rebuilding the system is prohibited due to safety reasons.
 - Do not disassemble the system! There is a high risk of getting a perilous electric shock. Capacitors can still be charged, even if the system has been removed from the power supply.
 - DO NOT use the system if equipment covers or shields are removed or damaged.
 - DO NOT touch internal wiring!
 - If you assume the system is damaged, get it examined by authorized personnel only.
 - DO NOT operate damaged equipment: Whenever it is possible that the safety protection features built into this product have been impaired, either through physical damage, excessive moisture, or any other reason, REMOVE POWER and do not use the product until the safe operation can be verified by service-trained personnel. If necessary, return the product to Dewesoft sales and service office for service and repair to ensure that safety features are maintained.
 - If you assume riskless use is not provided anymore the system has to be rendered inoperative and should be protected against inadvertent operation.
It is assumed that a riskless operation is not possible anymore when:

- The system is obviously damaged or causes strange noises.
 - The system does not work anymore.
 - The system has been exposed to long storage in adverse environments.
 - The system has been exposed to heavy shipment strain.
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- Be careful with voltages >25 VAC or >35 VDC! These voltages are already high enough in order to create a hazardous electric shock by touching the wiring.
 - Make sure that your hands, shoes, clothes, the floor, the system or measuring leads, integrated circuits and so on, are dry.
 - The product heats during operation. Make sure there is adequate ventilation. Ventilation slots, if present, must not be covered!
 - Only fuses of the specified type and nominal current may be used. The use of patched fuses is prohibited.
 - DO NOT use metal bare wires! Risk of short circuit and fire hazard!
 - Use measurement leads or measurement accessories aligned with the specification of the measurement system only.
 - DO NOT use the system before, during or shortly after a thunderstorm (risk of lightning and high energy over-voltage). An advanced range of application under certain conditions is allowed with therefore designed products only. For details please refer to the specifications.
 - DO NOT use the system in rooms with flammable gasses, fumes or dust or in adverse environmental conditions.
 - Avoid operation in the immediate vicinity of high magnetic or electromagnetic fields, transmitting antennas or high-frequency generators, for allowed values please refer to product specifications.
 - Use lithium ion batteries according to the recommendations of the manufacturer described in Battery Safety Data Sheet.
 - Do not switch on the system after transporting it from a cold into a warm room and vice versa. The thereby created condensation may damage your system. Acclimatize the system unpowered to room temperature.
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- The electrical installations and equipment in industrial facilities must be observed by the security regulations and insurance institutions.
 - The use of the measuring system in schools and other training facilities must be observed by skilled personnel.
 - The measuring systems are not designed for use in humans and animals.
 - Please contact a professional if you have doubts about the method of operation, safety or the connection of the system.
 - Please be careful with the product. Shocks, hits and drops may damage your system.

2.2. Chassis grounding



Caution, risk of electric shock

Product safety isolation relies on reliable safety ground connection. Before any other cable attachment please connect the safety ground cable first to the system safety ground. When removing the product, safety ground connection shall be removed last.

Not grounding the product reduces safety isolation of the product and can lead to electrical shock in case of product malfunction.

2.2.1. Direct grounding with a cable

To make a reliable safety ground connection is to connect the chassis of the SIRIUSi-XHS-PWR product with a grounding cable with a cross-section dependent on the HV conducting cable cross-section. Cable lug on the grounding cable with a hole for M6 size screw. For the reliable connection use washers. Recommended tightening torque for binding screw assemblies for the thread size 6 mm is 3 Nm.

Grounding cable size	See below
Screw size	M6
Tightening torque	3.0 Nm

Recommended grounding cable size based on HV conductor size according to standard IEC 60364-5-54:

Cross-section of HV conductor S mm ²	Minimum cross-section Grounding type Conductor or earth strap mm ²
$S \leq 16$	S
$16 < S \leq 35$	16
$S > 35$	$0,5 \times S$

2.3. EU Declaration of Conformity

2.3.1. Manufacturer

DEWESoft d.o.o.
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tel.: +386 3 56 25 300
e-mail: support@dewesoft.com
www.dewesoft.com



2.3.2. Product:

- SIRIUSi-XHS-PWR-1xHV-1xDC-CT-1000A-UNI
- SIRIUSi-XHS-PWR-1xHV-1xDC-CT-1000A-CON
- SIRIUSi-XHS-PWR-1xHV-1xDC-CT-250A-UNI

Product is in conformity with following directives:

2014/35/EU	<ul style="list-style-type: none">• Low Voltage Directive (LVD)
2014/30/EU	<ul style="list-style-type: none">• Electromagnetic Compatibility (EMC) Directive
2011/65/EU	<ul style="list-style-type: none">• RoHS Directive

Applied standards:

Safety	<ul style="list-style-type: none">• EN 61010-1:2010 Safety requirement, General
EMC	<ul style="list-style-type: none">• EN 55011:2016 Radio-frequency disturbance characteristics• EN 61326-1:2013 EMC requirements, General• EN 61000-4-2:2009 (EMC), ESD immunity• EN 61000-4-3:2006 (EMC), Radiated immunity• EN 61000-4-4:2012 (EMC), EFT Burst immunity test• EN 61000-4-5:2014 (EMC), Surge immunity test• EN 61000-4-6:2014 (EMC) Conducted disturbances immunity test• EN 61000-4-8:2010 (EMC), Power frequency magnetic field immunity test
Temperature	<ul style="list-style-type: none">• EN 60068-2-1:2007 Environmental testing, Cold• EN 60068-2-2:2007 Environmental testing, Dry heat
Protection	<ul style="list-style-type: none">• EN 60529:1997 Degrees of protection provided by enclosures (IP Code)
Mechanical	<ul style="list-style-type: none">• EN 60068-2-6:2008 Environmental testing, Vibration (sinusoidal)• EN 60068-2-27:2009 Environmental testing, Shock• EN 60068-2-64:2008 Environmental testing, Vibration (broadband random)

DEWESoft d.o.o. is certified according to ISO 9001:2015 and ISO 14001:2015 Standards (Certificate Registration No.: 12 100/104 47045 TMS)

Trbovlje, 24. 08. 2022

Tilen Sotler, CEO

3. Notice

The information contained in this document is subject to change without notice.

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3.1. Warranty information

The copy of the specific warranty terms applicable to your Dewesoft product and replacement parts can be obtained from your local sales and service office. To find a local dealer for your country, please visit <https://dewesoft.com/support/distributors>.

3.2. Calibration

Every instrument needs to be calibrated at regular intervals. The standard norm across nearly every industry is annual calibration. Before your Dewesoft data acquisition system is delivered, it is calibrated. Detailed calibration reports for your Dewesoft system can be requested. We retain them for at least one year, after system delivery.

3.3. Support

Dewesoft has a team of people ready to assist you if you have any questions or any technical difficulties regarding the system. For any support please contact your local distributor first or Dewesoft directly.

Dewesoft d.o.o.
Gabrsko 11a
1420 Trbovlje Slovenia

Europe Tel.: +386 356 25 300
Web: <http://www.dewesoft.com>
Email: Support@dewesoft.com
The telephone hotline is available Monday to Friday from 07:00 to 16:00 CET (GMT +1:00)

3.4. Service/repair

The team of Dewesoft also performs any kinds of repairs to your system to assure a safe and proper operation in the future. For information regarding service and repairs please contact your local distributor first or Dewesoft directly on <https://dewesoft.com/support/rma-service>.

3.5. Restricted Rights

Use Slovenian law for duplication or disclosure. Dewesoft d.o.o. Gabrsko 11a, 1420 Trbovlje, Slovenia / Europe.

3.6. Printing History

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3.7. Copyright

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3.9. Documentation version history

Version	Date	Notes
V21-1	26.06.2021	Initial document version.
V22-1	24.08.2022	Modifications of 2.1 General safety and hazard warnings for all Dewesoft systems Added 2.2 Chassis grounding Added 2.3 EU Declaration of Conformity
V22-2	15.02.2022	2.2.1. Direct grounding with a cable (updated)