RoaDyn Plugin

▲ DEWESoft®

APPLICATION USER MANUAL

RoaDyn Plugin V22-1

1. Table of contents

2. About this document

This is the user's manual for the RoaDyn plugin.

2.1. Legend

The following symbols and formats will be used throughout the document.

Important
It gives you important information about the subject.
Please read carefully!

Hint
It gives you a hint or provides additional information about a subject.

Example
Gives you an example of a specific subject.

3. General information

3.1. Links

DEWESoft® homepage
http://www.dewesoft.com
you can download DEWESoft® plugins when you go to: Support - Downloads – Plugins

3.2. Compatibility

The plugin is compatible with DEWESoft® X.

3.3. Files and Directories

The actual location of the directories on your computer may vary dependant on your computer's locale settings and the settings you chose when installing DEWESoft®.

4. Sensor connection

The sensors are connected to the measurement PC (e.g. S-BOX) via the LAN port (TCP/IP for data transfer). The clock and trigger lines of the sensor are connected to the corresponding clock and trigger pins of the sync connector on the DEWE-43 or SIRIUS measurement slice.

If more than one RoaDyn2000 system is connected it is recommended to use an Ethernet-Switch. Clock and trigger are daisy-chained between the RoaDyn systems.
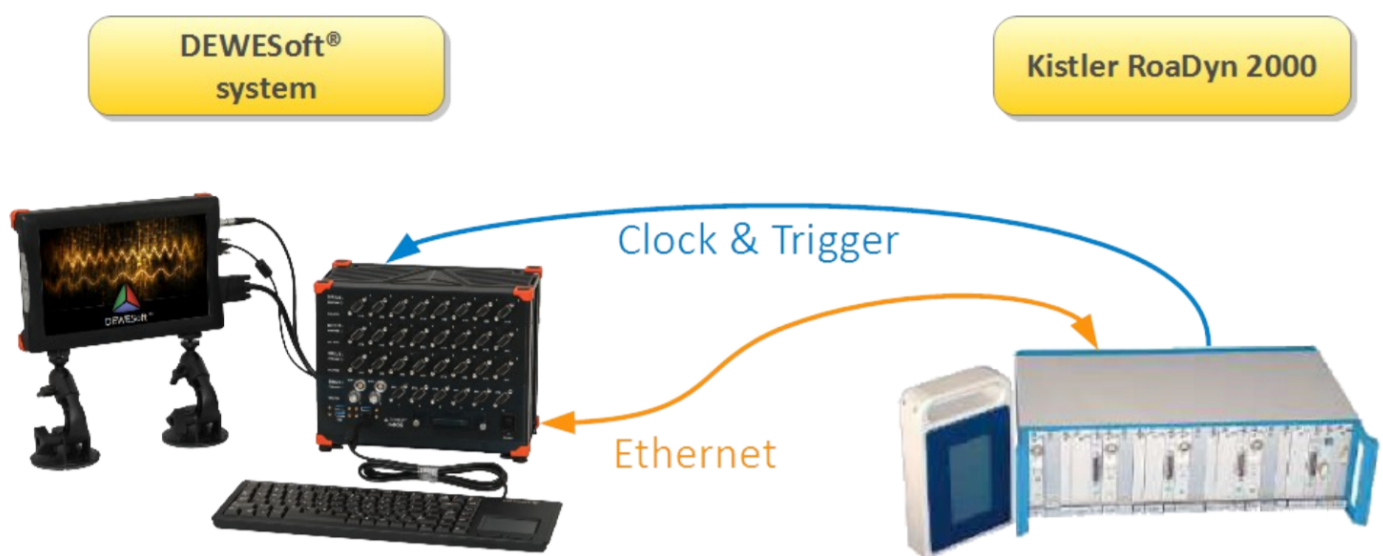

Illustration 1: Sensor connection

Dewesoft offers a suitable sync cable:
Article Number: `L00B4m-2xBNC-2m-ROADYNE-SYNC`
Cable length 2.0 meter
Fits to SIRIUS, DEWE-43, MINITAUR

4.1. Sync Connector

The RoaDyn2000 synchronization wires (clock and trigger) must be connected to Sync connector of the DEWESoft® measurement device (i.e. SIRIUS, DEWE-43):

- The clock output of the RoaDyn2000 is connected to CLK (Pin 1) on the DEWESoft® Sync connector.
- The trigger output of the RoaDyn2000 is connected to Trigger (Pin 2) on the DEWESoft® Sync connector.
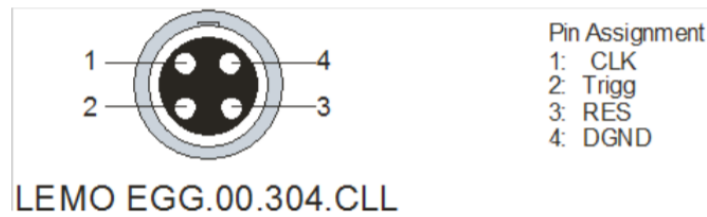- Ground is connected to GND (Pin 4) of the DEWESoft® Sync connector

Illustration 2: DEWESoft® Sync connector 4pin

DEWESoft® Sync-Mating connector: *FGG.00.302.CLAD27Z*
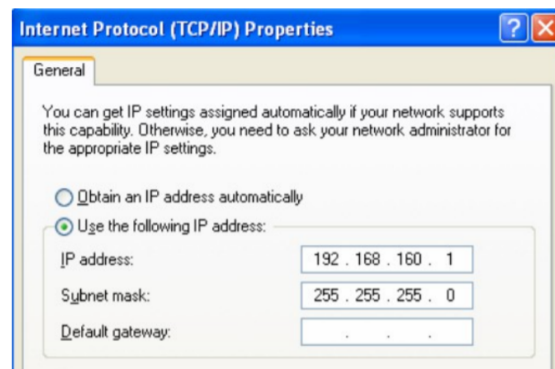
5. Ethernet Configuration

The sensors are connected to the measurement unit via Ethernet cable for the data exchange. To establish a communication between the sensors and the measurement system, the Ethernet interface on the PC and the Ethernet interface/s on the sensor/s must be configured to use the same IP address range (i.e. the *Subnet mask* must match).

Example 1	Configuration of the measurement units Ethernet interface: ● Define the IP address (here `192.168.160.1`) ● Define the Subnet mask (here `255.255.255.0`) ● Click **OK** to confirm the settings

Configuration of the sensors Ethernet interface:
To configure the Ethernet interface of the sensors use the Kistler *RabbitConfig* tool provided with the sensors. With this tool you can also check if the communication to the sensors is working. When clicking the Hello? button you should get a response from the network interface (MAC and IP address).
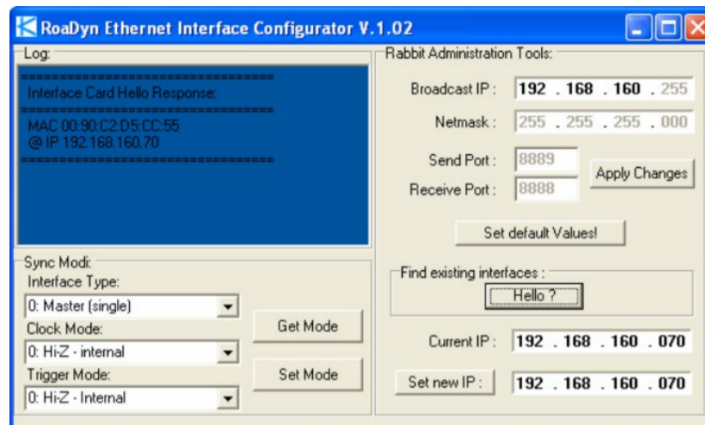
Illustration 3: Ethernet Interface Configuration RoaDyn

If you do not know the IP address of the RoaDyn2000 you can find it out by using the external control display: In the setup screen, click on Diagnostics then on Interface where you will find the currently set IP address and subnet mask.

6. Hardware Setup

After you have installed and enabled the plugin (see Adding/updating plugins), start DEWESoft® and go to the *Hardware Setup*:
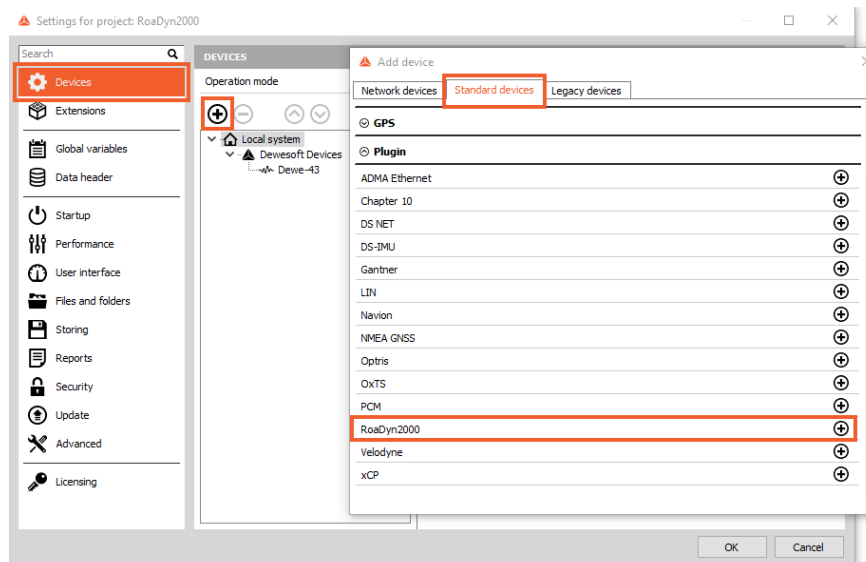
Illustration 4: Hardware setup

The plugin only supports *Master mode*: i.e. do NOT select *Slave Mode*.

6.1. Standalone Mode

When the RoaDyn2000 is connected to a DEWESoft® system without any AD card, the RoaDyn2000 will be configured as a stand-alone system. Since no hardware synchronization is needed in this mode, you cannot (do not need to) connect the clock and trigger to the measurement system.

6.2. Master Mode

In Master mode, the RoaDyn2000 system acts as the clock master, providing clock and trigger for the DEWESoft® measurement slices.

In *Master Mode* it is important to set the DEWESoft® synchronization settings to *External – Clock/Trigger*:

Illustration 5: DEWESoft® Synchronization settings

6.3. Slave Mode

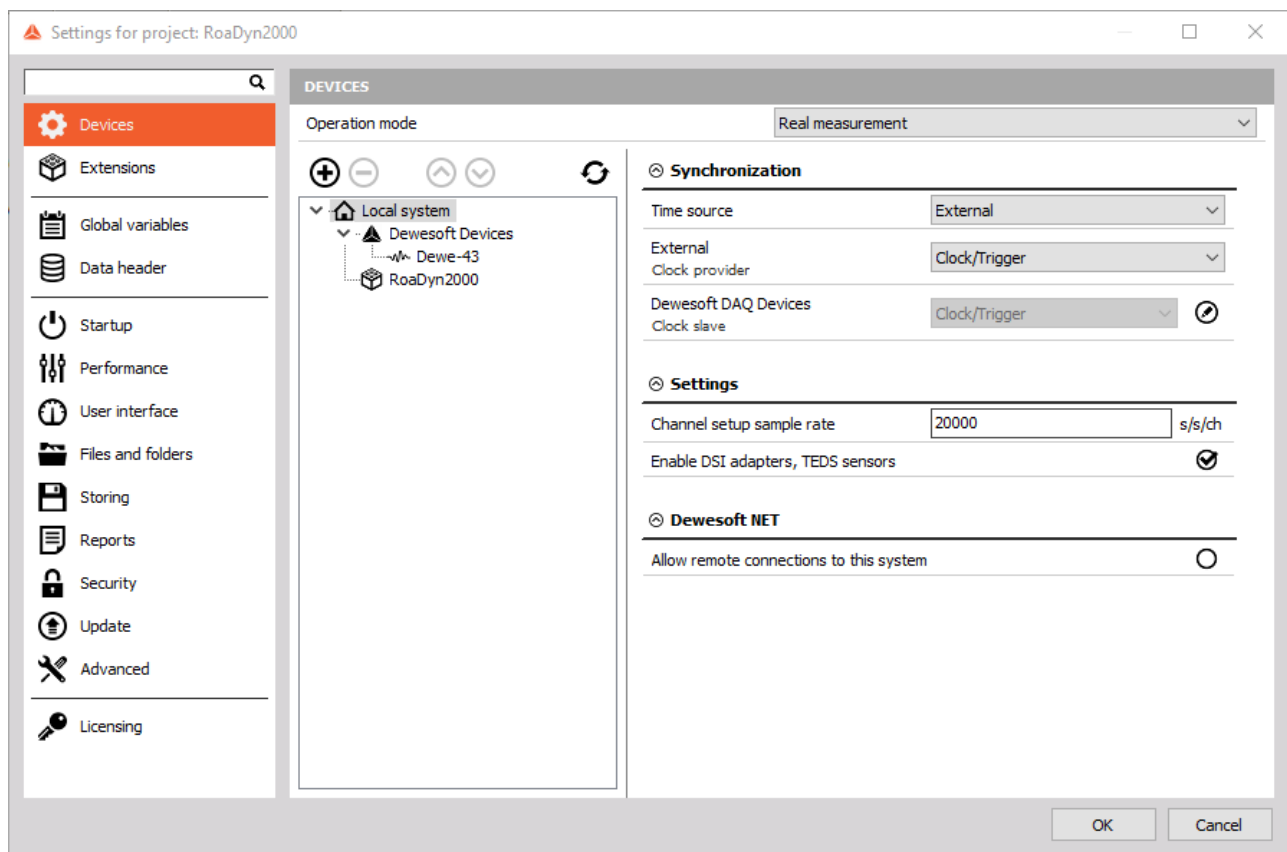**Important**
Slave Mode is NOT supported.

6.4. Demo mode

When no RoaDyn2000 system is found, DEWESoft® will create a virtual system denoted as "Demo device". This is only to show the basic plugin functionality. No data is being simulated however.

7. Channel Setup

In the channel setup of the *Kistler RoaDyn* plugin, you can activate/deactivate channels of the connected sensors.

Illustration 6: Channel Setup Overview

- *Dynamic acquisition rate*: This is the sample rate and can be chosen between 80 Hz and 1250 Hz. Please note that the set sample rate will be valid after switching to *Measurement mode* (e.g. Overview).
- *Rescan external clock*: When the system is set to Slave mode, this button will measure the currently set sample rate. **Note: Slave Mode is NOT supported!**
- *Delay*: Due to the internal hardware of the RoaDyn2000 system, there is a delay between analogue data from the AD card and data from the RoaDyn2000 system. This delay is constant over time but depends on the set sample rate and the synchronization mode (Master or Slave mode). DEWESoft® will automatically set the correct delay, based on the selected sample rate and the synchronization mode. For more information, please refer to 8. Additional Settings.

- *IP:192.168.xxx.xxx:* If more than one RoaDyn2000 system is connected you can switch between the channel lists of each system.
- *Channel list*: The channel list of each system is divided into sub-groups (Wheel channels, Hub channels and Analog input) for easier navigation. A click on the Setup button next to each channel lets you alter each channels name, color, unit and scaling. To change these permanently you can edit the default settings (see 8. Additional Settings for more information).
- *System Setup*: The tab System setup lets you choose the connected measurement wheel type and optionally assign the default channel names. It is also possible to change the default channel names and their units by editing the corresponding `*.ini file`. Please refer to 8. Additional Settings for more information.

8. Additional Settings

8.1. Settings in the RoaDyn2000_LAN.ini file

The hardware configuration of the RoaDyn2000 system is stored in the file:

e.g.: `C:\DEWESoftX\Bin\Addons\RoaDyn2000_LAN.ini`
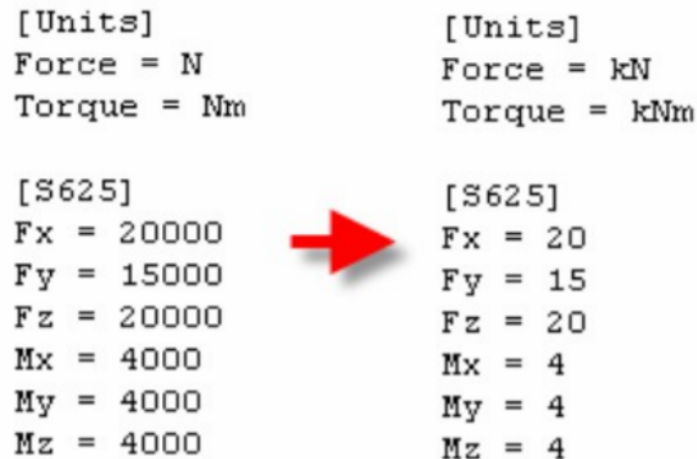
Usually it is not necessary to change any of these parameters because DEWESoft® handles the configuration automatically.

This file consists of the following parameters:

Parameter	Comment
Settings	
`SampleRate=xxxx`	Sample rate in Hz
`MasterMode=x`	0=Slave mode , 1=Master mode
`UseManualDelay=x`	0=Delay is set automatically , 1=Delay can be entered manually
Debug	
`CreateLogFile=x`	0=Create no log 1=Create log file in DEWESoft® root folder
`PutDataInLog=x`	0=No data in log file 1=Data are included in log file
`ForceWheelCount=x`	Force number of wheels

8.2. Changing the units

You can change the units and ranges of the channels by editing the `RoaDynWheelTypes.ini` file. This will affect all wheel types however.

Illustration 7: Units

8.3. Channel names

`RoaDynNames_English.ini` is the configuration file that defines the channels names of the channels generated by DEWESoft® RoaDyn plugin.

Illustration 8: Channel names

In the past, multiple RoaDynNames configuration files could be used, now the DEWESoftX® software uses only `RoaDynNames_English.ini` if needed the channel names could be changed inside that `.ini` file.

9. Warranty information

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

Note:
Dewesoft d.o.o. shall not be liable for any errors contained in this document. Dewesoft MAKES NO WARRANTIES OF ANY KIND CONCERNING THIS DOCUMENT, WHETHER EXPRESS OR IMPLIED. DEWESOFT SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Dewesoft shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory, in connection with the furnishing of this document or the use of the information in this document.

A 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.

9.1. 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.

9.2. 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)

9.3. 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.

9.4. Restricted Rights

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

9.5. Printing History

Version 2.0.0, Revision 217 Released 2015 Last changed: 23. July 2018 at 16:54.

9.6. Copyright

9.7. Trademarks

We take pride in our products and we take care that all key products and technologies are registered as trademarks all over the world. The Dewesoft name is a registered trademark. Product families (KRYPTON, SIRIUS, DSI, DS-NET) and technologies (DualCoreADC, SuperCounter, GrandView) are registered trademarks as well. When used as the logo or as part of any graphic material, the registered trademark sign is used as a part of the logo. When used in text representing the company, product, or technology name, the ® sign is not used. The Dewesoft triangle logo is a registered trademark but the ® sign is not used in the visual representation of the triangle logo.

10. Safety instructions

Your safety is our primary concern! Please be safe!

10.1. Safety symbols in the manual

Warning
Calls attention to a procedure, practice, or condition that could cause bodily injury or death

Caution
Calls attention to a procedure, practice, or condition that could cause damage to equipment or permanent loss of data.

10.2. General Safety Instructions

⚠ Warning

The following general safety precautions must be observed during all phases of operation, service, and repair of this product. Failure to comply with these precautions or with specific warnings elsewhere in this manual 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.

All accessories shown in this document are available as an option and will not be shipped as standard parts.

10.2.1. Environmental Considerations

Information about the environmental impact of the product.

10.2.2. Product End-of-Life Handling

Observe the following guidelines when recycling a Dewesoft system:

10.2.3. System and Components Recycling

Production of these components required the extraction and use of natural resources. The substances contained in the system could be harmful to your health and the environment if the system is improperly handled at its end of life! Please appropriately recycle this product to avoid unnecessary pollution of the environment and to keep natural resources.

This symbol indicates that this system complies with the European Union's requirements according to Directive 2002/96/EC on waste electrical and electronic equipment (WEEE). Please find further information about recycling on the Dewesoft web site www.dewesoft.com

Restriction of Hazardous Substances

This product has been classified as Monitoring and Control equipment and is outside the scope of the 2002/95/EC RoHS Directive. However, we take care of our environment and the product is lead-free.

10.2.4. General safety and hazard warnings for all Dewesoft systems

The safety of the operator and the unit depend on following these rules.
- Use this system under the terms of the specifications only to avoid any possible danger.
- Read your manual before operating the system.
- Observe local laws when using the instrument.
- DO NOT touch internal wiring!
- DO NOT use a higher supply voltage than specified!
- Use only original plugs and cables for harnessing.
- You may not connect higher voltages than rated to any connectors.
- The power cable and connector serve as Power-Breaker. The cable must not exceed 3 meters, the disconnect function must be possible without tools.

- Maintenance must be executed by qualified staff only.
- 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.
- With this product, only use the power cable delivered or defined for the host country.
- DO NOT connect or disconnect sensors, probes, or test leads, as these parts are connected to a voltage supply unit.
- Ground the equipment: For Safety Class 1 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.
- 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.
- The inputs must not, unless otherwise noted (CATx identification), be connected to the main circuit of categories II, III, and IV.
- 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.
- DO NOT use the system if equipment covers or shields are removed.
- If you assume the system is damaged, get it examined by authorized personnel only.
- Adverse environmental conditions are Moisture or high humidity Dust, flammable gases, fumes or dissolver Thunderstorm or thunderstorm conditions (except assembly PNA) Electrostatic fields, etc.
- The measurement category can be adjusted depending on module configuration.
- Any other use than described above may damage your system and is accompanied with dangers like short-circuiting, fire, or electric shocks.
- The whole system must not be changed, rebuilt, or opened.
- DO NOT operate damaged equipment: Whenever the safety protection features built into this product may 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 a more 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 more riskless operation is not possible anymore if the system is damaged obviously 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.
- Warranty void if damages are caused by disregarding this manual. For consequential damages, NO liability will be assumed!
- Warranty void if damage to property or persons caused by improper use or disregarding the safety instructions.
- Unauthorized changing or rebuilding of the system is prohibited due to safety and permission reasons (CE).
- Be careful with voltages >25 VAC or >35 VDC! These voltages are already high enough to get a perilous electric shock by touching the wiring.
- The product heats during operation. Make sure there is adequate ventilation. Ventilation slots must not be covered!
- Only fuses of the specified type and nominal current may be used. The use of patched fuses is prohibited.
- Prevent using metal bare wires! Risk of short circuit and fire hazard!

- DO NOT use the system before, during, or shortly after a thunderstorm (risk of lightning and high energy over-voltage). An advanced range of applications under certain conditions is allowed with therefore designed products only. For details please refer to the specifications.
- Make sure that your hands, shoes, clothes, the floor, the system or measuring leads, integrated circuits, and so on, are dry.
- DO NOT use the system in rooms with flammable gases, fumes, or dust, or adverse environmental conditions.
- Avoid operation near high magnetic or electromagnetic fields, transmitting antennas, or high-frequency generators, for exact values please refer to enclosed specifications.
- Use measurement leads or measurement accessories aligned with the specification of the system only. Fire hazard in case of overload!
- Lithium-ion batteries are classified as not hazardous when used according to the recommendations of the manufacturer described in the Battery Safety Data Sheet, which is available for download from this link.
- 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.
- Do not disassemble the system! There is a high risk of getting a perilous electric shock. Capacitors still might be charged, even if the system has been removed from the power supply.
- 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 connection of the system.
- Please be careful with the product. Shocks, hits, and dropping it from an already- lower level may damage your system.
- Please also consider 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 proper condition. To maintain this condition and guarantee safety use, the user has to consider the security advice and warnings in this manual.

EN 61326-3-1:2008
IEC 61326-1 applies to this part of IEC 61326 but is limited to systems and equipment for industrial applications intended to perform safety functions as defined in IEC 61508 with SIL 1-3.

The electromagnetic environments encompassed by this product family standard are industrial, both indoor and outdoor, as described for industrial locations in IEC 61000-6-2 or defined in 3.7 of IEC 61326-1.

Equipment and systems intended for use in other electromagnetic environments, for example, in the process industry or environments with potentially explosive atmospheres, are excluded from the scope of this product family standard, IEC 61326-3-1.

Devices and systems according to IEC 61508 or IEC 61511 which are considered "operationally well-tried", are excluded from the scope of IEC 61326-3-1.

Fire-alarm and safety-alarm systems, intended for the protection of buildings, are excluded from the scope of IEC 61326-3-1.

10.3. Documentation version history

Version	Date	Notes
1.0.0	12.02.2015	initial revision
V21-1	10.09.2021	Updated Template and screenshots
V22-1	08.0.4.2022	Channel names definition with `.ini` file