

The HydroMet logo features a stylized white slash mark followed by the word "HydroMet" in a bold, white, sans-serif font. The background of the top half of the cover is a photograph of a bright sun partially obscured by large, white, puffy clouds against a deep blue sky. Two large, diagonal, semi-transparent blue bands cross the image, creating a dynamic geometric pattern.

/HydroMet

User Manual

IoT A 2DL 12V

The KISTERS logo consists of a stylized white 'K' symbol followed by the word "KISTERS" in a bold, white, sans-serif font. Below the company name is the tagline "Empowering decisions of tomorrow" in a smaller, white, sans-serif font.

KISTERS
Empowering decisions of tomorrow

Table of Contents

I	Disclaimer	3
II	Glossary + Abbreviations	4
III	Scope of Delivery	5
IV	Safety Instructions	6
V	Specific Safety Instructions	7
Part I	Introduction	8
Part II	Installation	9
Part III	Power	11
Part IV	Configuration	12
4.1	HyComm – General Description	12
4.2	HyComm for IoTa 2DL 12V SensorNode	12
4.2.1	Downloading Configuration Software	12
4.2.2	Inserting SIM Card	12
4.2.3	Connecting to the Device	13
4.2.4	Device Selection Screen (start-up)	16
4.2.5	Device Overview	17
4.2.6	Device Measurement Testing and Visualisation	18
4.2.7	Device Integrations	19
4.2.8	Device Configuration	19
Part V	Operation	27
5.1	Power Supply	27
5.2	Connecting an SDI-12 Sensor	27
5.3	Data Transmission	28
5.3.1	LTE-M	28
Part VI	Maintenance	29
Part VII	Troubleshooting	30
7.1	Device Stops Operating	30
7.2	Device Stops Transmitting Data	30
Part VIII	Repair	31
Part IX	Technical Data	32
Part X	Obligations of the Operator and Disposal	33
10.1	Obligations of the Operator	33
10.2	Dismantling / Disposal	33

I Disclaimer

The information provided in this manual was deemed accurate as of the publication date. However, updates to this information may have occurred.

This manual does not include all of the details of design, production, or variation of the equipment nor does it cover every possible situation which may arise during installation, operation or maintenance. KISTERS shall not be liable for any incidental, indirect, special or consequential damages whatsoever arising out of or related to this documentation and the information contained in it, even if KISTERS has been advised of the possibility of such damages.

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II Glossary + Abbreviations

Term	Explanation
LTE-M	Long Term Evolution for Machines, a type of low power wide area network (LPWAN) radio technology standard
TLS	Enhanced data transfer security with TLS for data confidentiality and mutual TLS for device authentication
MQTT	Modern message exchange protocol (MQTT: short for Message Queue Telemetry Transport)
SDI-12	Serial Digital Interface at 1200 baud, an asynchronous serial communications protocol for smart sensors, SDI-12 sensors reply to commands send by the data logger, the standard also specifies supply voltage and current and including modes for low-power operation
USB	Universal Serial Bus, an asynchronous serial communication protocol for peripheral devices

III Scope of Delivery

- IoTa 2DL 12V SensorNode
- 4x stainless steel mounting feet and screws
- 1x USB-B to USB-A cable, 0.5m
- Quick Installation Guide

IV Safety Instructions

-  Read the user manual including all operating instructions prior to installing, connecting and powering up the KISTERS IoT A 2DL 12V. The manual provides information on how to operate the product. The manual is intended to be used by qualified personnel, i.e. personnel that have been adequately trained, are sufficiently familiar with installation, mounting, wiring, powering up and operation of the product.
- Keep the user manual on hand for later reference!
- If you encounter problems understanding the information in the manual (or part thereof), please consult the manufacturer or its appointed reseller for further support.
- KISTERS IoT A 2DL 12V is intended to be used in hydrometeorological or environmental monitoring applications.
- Before starting to work, you have to check the functioning and integrity of the system.
 - Check for visible defects on the IoT A 2DL 12V, this may or may not include any or all of the following: mounting facilities, connectors and connections, mechanical parts, internal or external communication devices, power supplies or power supply lines, etc.
 - If defects are identified that could compromise operational safety, work must be stopped immediately. This applies to defects detected both before work begins and during operation.
- Do not use the KISTERS IoT A 2DL 12V in areas where there is a danger of explosion.
- The present user manual specifies environmental/climatic operating conditions as well as mechanical and electrical conditions. Installation, wiring, powering up and operating the KISTERS IoT A 2DL 12V must strictly comply with these specifications.
- Perform maintenance only when tools or machinery are not in operation.
- If guards are removed to perform maintenance, replace them immediately after servicing.
- Never make any electrical or mechanical diagnostics, inspections or repairs under any circumstances. Return the product to the manufacturer's named repair centre. You can find information on how to return items for repair in the relevant section of the KISTERS website.



Disposal instructions: After taking the KISTERS IoT A 2DL 12V out of service, it must be disposed of in compliance with local waste and environmental regulations. The KISTERS IoT A 2DL 12V is never to be disposed of in household waste!



Inputs and outputs of the device are protected against electric discharges and surges (so-called ESD). Do not touch any part of the electronic components! If you need to touch any part, please discharge yourself, i.e. by touching grounded metal parts.

V Specific Safety Instructions



Warning! The lithium-ion battery may only be used under the conditions specified in this user manual. Using the lithium-ion battery under conditions outside the limits specified in this user manual may result in personal injuries and damage to the battery.

The lithium-ion battery must always be kept in a well-ventilated, dry, clean and dust-free environment. Never expose the battery to fire, water or solvents.

For IoTa 2DL BAT models: The lithium-ion battery is installed and operated within a sealed housing. The housing is equipped with a pressure-compensation gland. Ensure that the pressure-compensation gland remains unobstructed at all times. Do not block, clog, remove, or replace the gland with a sealed cap or any similar component.



Overvoltage, wrong wiring, reverse polarity of the terminals or short circuits between the terminals may damage the lithium-ion battery which can be extremely dangerous.

The hazard symbols and safety instructions on the battery label must be observed and must never be removed from the battery.



In case of exceptional heat development during operation, the lithium-ion battery must be disconnected and removed.



In case of battery leakage, the leaking electrolyte must never come into contact with skin or eyes. In case of skin contact, the affected area has to be cleaned with water and soap immediately. In case of eye contamination, the affected eye must be thoroughly rinsed with clean water immediately. In both cases, a doctor must be consulted without delay.



In case of swallowing of leaking electrolyte, a doctor must be consulted immediately.

Please note the markings of the polarities on battery terminals and connection terminals.

Dirty battery terminals must be cleaned with a dry and clean cloth.

At the end of its service life, the lithium-ion battery must be disposed of according to legal provisions.



Warning! The lithium battery must not be mechanically damaged. A damaged lithium-ion battery must never be installed or used.



Warning! The battery terminals must not come into contact with electrically conductive objects.

1 Introduction

In an Internet of Things (IoT) network, a sensor node collects data from one or several sensors. KISTERS' IoTa 2DL 12V SensorNodes interconnect sensors with data management software by means of adding modern wireless connectivity to digital sensors.

IoTa 2DL 12V SensorNode is available in one variant: LTE-M communication only. IoTa 2DL 12V SensorNodes are powered by a 12V power supply and operate autonomously for several years on a single battery charge. IoTa 2DL 12V SensorNodes collect data from sensors connected via SDI-12 and Counter inputs. Between readings of the input channels, the integrated low-power microprocessor falls into hibernation. To further reduce power consumption, SDI-12 sensors are powered only to make a reading and then switched off.

2 Installation

Installation is easy: Three different ways of installing the IoTa 2DL 12V SensorNode are possible.

The package of the IoTa 2DL 12V SensorNode includes 4 mounting feet and screws.

1. Attach the feet to the back of the enclosure. The slotted holes fit M5 screws (not included)
2. Using a backplate: use self-tapping screws
3. When mounting to a wall: use general screws with wall plugs

Alternative Installation: The IoTa 2DL 12V SensorNode is also available as data logger inside KISTERS iBOX Compact. KISTERS iBOX Compact is a small, pre-cabled cabinet equipped with;

- IoTa 2DL 12V SensorNode
- Solar Power Regulator
- 12 V 7.2 Ah SLA battery
- External SDI-12 and pulse counter sensor connectors
- XLR connection to a solar panel

The IoTa 2DL iBOX Compact supports either wall mounts or pole mounts (mounting must be defined at order time).

Note: The IoTa 2DL 12V SensorNode is IP20 and must be installed in a protective cabinet for outdoor use.



Figure 1 – IoTa 2DL 12V SensorNode in portrait view with labelled connectors at the left side

The device is equipped with one 7pin-terminal connector and one USB-B port:

- 7pin-terminal: Terminal to connect pulse counter sensors like a Tipping Bucket Rain Gauge (TBR), up to 7 different SDI-12-sensors as well as the 12 V power supply.
- USB-B-port: Interface between your mobile end device and the IoTa 2DL 12V SensorNode for configuration purposes.

Note: The fourth item is a pressure-compensation gland. It ensures pressure equalization through controlled venting. Avoids build-up of moisture due to negative pressure/vacuum inside the housing when air cools down. Do not modify, perforate or otherwise mechanically alter the gland!



Figure 2 – labelled 7-pin terminal of the IoTa 2DL 12V SensorNode's left side

3 Power

To Power the IoTa 2DL 12 V, connect your power supply as follows:

- Positive Terminal of the battery (usually a red wire): VIN-Terminal on the IoTa 2DL 12V SensorNode
- Negative Terminal of the battery (usually a red wire): GND-Terminal on the IoTa 2DL 12V SensorNode (right to VIN)

4 Configuration

The IoTa 2DL 12V SensorNode can be configured locally using KISTERS' HyComm Windows software (free of charge) or remotely, once the IoTa 2DL 12V SensorNode is integrated either to KISTERS' WISKI or KISTERS' Datasphere.

- [HyComm – General Description](#)¹²
- [HyComm for IoTa 2DL 12V SensorNode](#)¹²

4.1 HyComm – General Description

HyComm provides a framework for implementing on-site device (data logger/sensor) configuration.

4.2 HyComm for IoTa 2DL 12V SensorNode

HyComm is a desktop application that can be used to configure the IoTa 2DL 12V SensorNode devices through their USB-ports.

Connected devices are automatically recognised. In case your device is not showing up, click on the [?] button in the connection screen, this will open up a guide on how to ensure a device connection.

While the USB cable is connected, the device will be in configuration mode and will not transmit any data. Upon disconnecting, the device will resume data transmission.

- [Downloading Configuration Software](#)¹²
- [Inserting SIM Card](#)¹²
- [Connecting to the Device](#)¹³
- [Device Selection Screen \(start-up\)](#)¹⁶
- [Device Overview](#)¹⁷
- [Device Measurement Testing and Visualisation](#)¹⁸
- [Device Integrations](#)¹⁹
- [Device Configuration](#)¹⁹

4.2.1 Downloading Configuration Software

To configure the device, download the HyComm configuration software. You will need a computer with an USB port to connect the device with the computer on which the configuration software is installed.

Note: The first time you connect to the device, you will need access to the internet, as your computer might have to download/update additional USB drivers. Subsequent connections do require this.

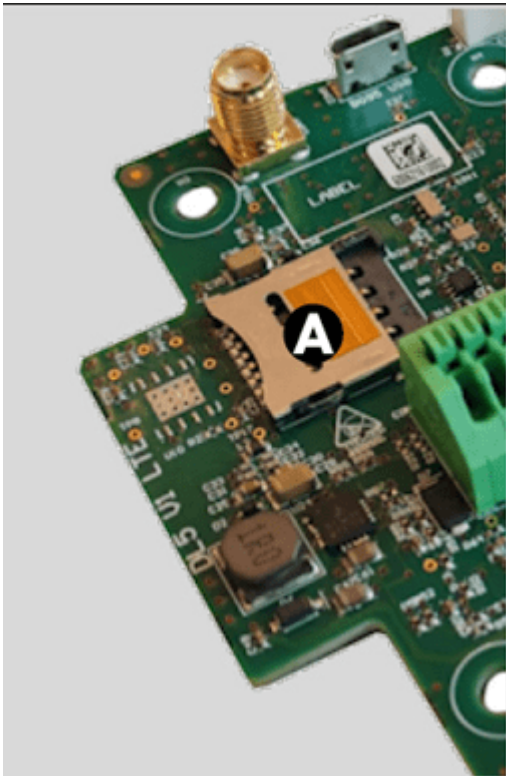
Operating System	Download Link
Windows 7, 8, 10, 11 (x64)	HyComm.exe.zip

Functionality

- Device information overview
- Visualise stored measurement data
- Run integrations to automatically bind the device to **DATASPHERE** or other services
- Easy SDI-12 configuration for supported sensors
- Diagnose error messages related to sensors/manually trigger measurements
- Change the device's configuration:
 - Measured parameters
 - Measurement intervals
 - Etc.
- Save/load configuration files
- Perform firmware upgrades

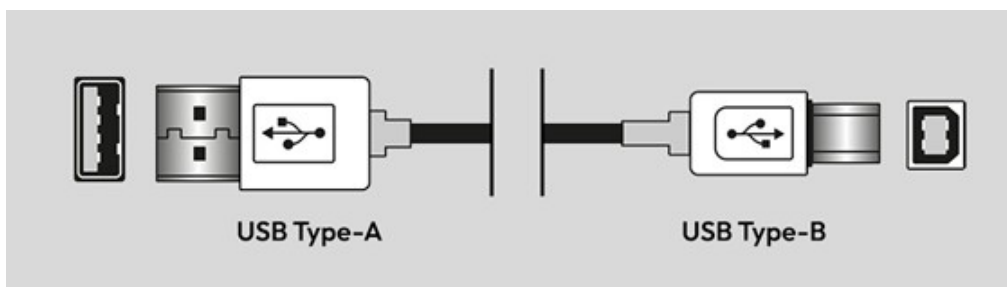
4.2.2 Inserting SIM Card

To establish an internet connection via LTE-M, the IoTa 2DL 12V SensorNode requires an inserted microSIM card. To insert the card, the lid must be opened by unscrew four bolts, one in each corner. Afterwards, the microSIM card must be inserted in the microSIM card holder (A) shown in the picture below.



4.2.3 Connecting to the Device

To connect the computer to the IoTa 2DL 12V SensorNode device, a USB-A to USB-B cable is required.





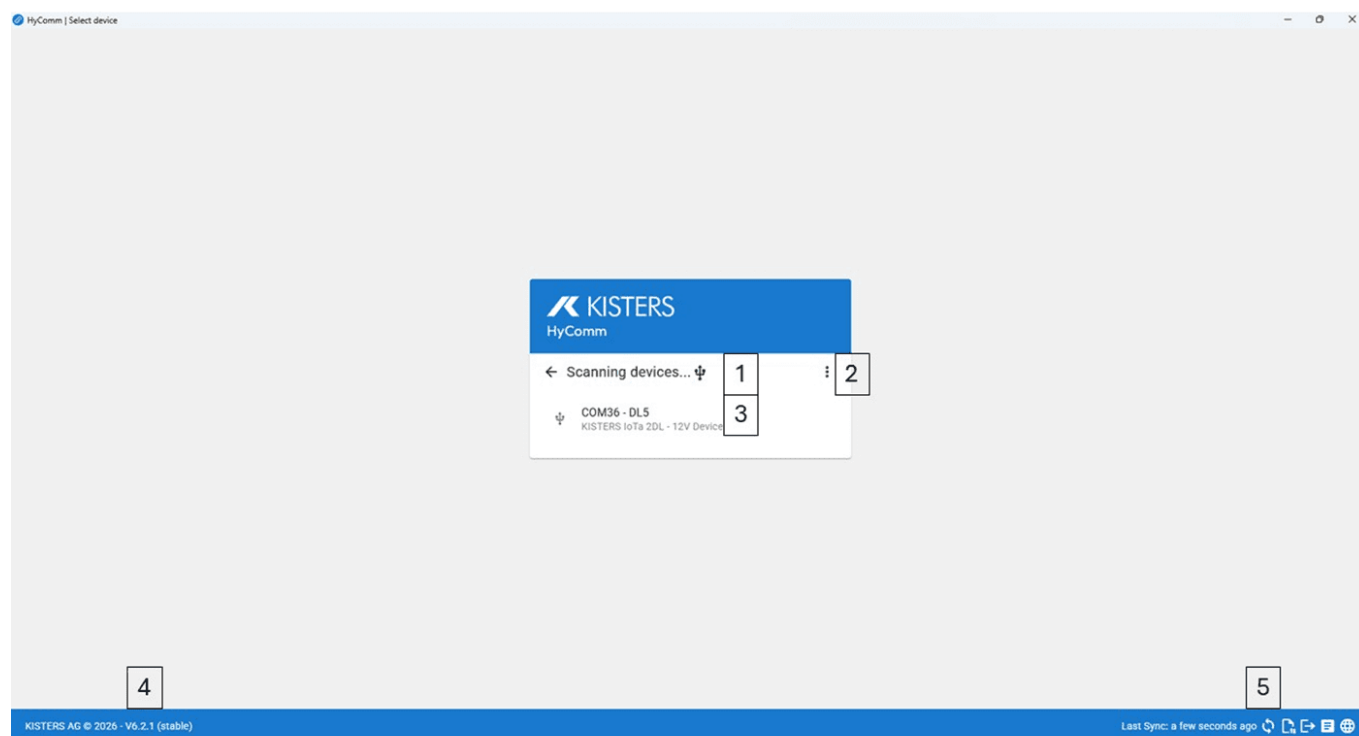


Simply run the provided Windows installer and connect the IoTa device through a USB-B cable to the computer running HyComm.

Once connected, you might see a notification that your computer is updating its drivers. Once this automatic installation is complete, you will be able to see the device in HyComm.

While the USB cable is connected, the device will be in configuration mode and will not transmit any data. Upon disconnecting, the device will resume data transmission.

4.2.4 Device Selection Screen (start-up)



Note	Description
1	Scanning for USB devices
2	Options: - Connection Guide - New offline configuration - Load offline configuration (IoT Middleware) Settings
3	Found devices are displayed here, select one to connect to that device.
4	HyComm version info
5	Last sync information and HyComm Settings - Synchronize - HyComm Firmware Update - IoT Middleware Log-In - Open HyComm Logs - Change Language

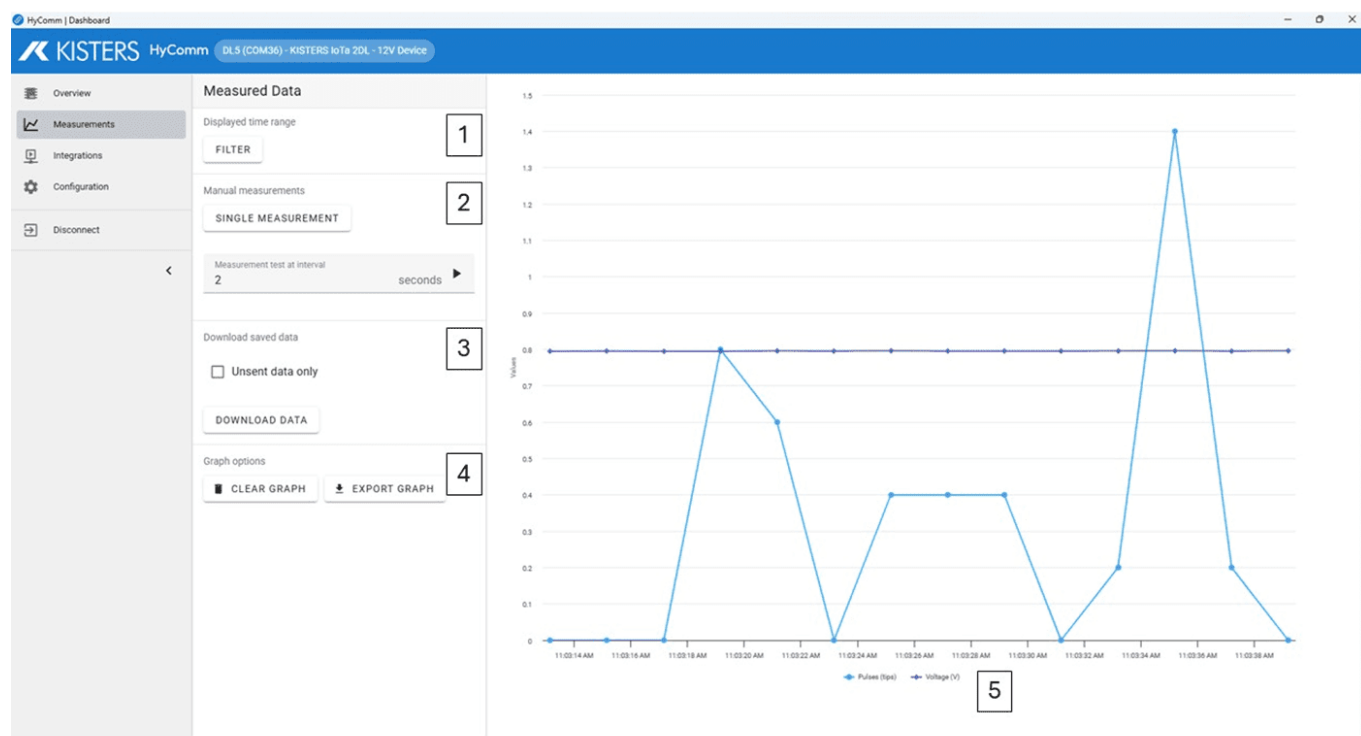
4.2.5 Device Overview

The screenshot shows the 'DL5 (COM36) - KISTERS ioTa 2DL - 12V Device Overview' page. The interface includes a sidebar menu (1) with options like Overview, Measurements, Integrations, Configuration, and Disconnect. The main content area is titled 'COM36 - DL5 Device Overview' (2). It contains several panels: 'General' (3) showing device ID (DL5), model (12V), time (01/01/2000 12:00:35 AM), and firmware version (0x030000be); 'Data Acquisition' (4) showing enabled interfaces (SD-12, Pulse counter, Voltage, Temperature) and a measurement interval of 1 minute; 'Storage' (5) showing storage used (0.00%) and not yet transmitted (~16 records); 'Data Transmission' (6) showing transmission method (MQTT), interval (5 minutes), MQTT server (:8883), and SIM APN (iot.1nce.net); and 'IoT Middleware' (7) showing registration status (Device not registered).

An identical interval of 30 minutes for both measurement and transmission means that enabled interfaces are scanned every 30 minutes, and the readings are forwarded immediately.

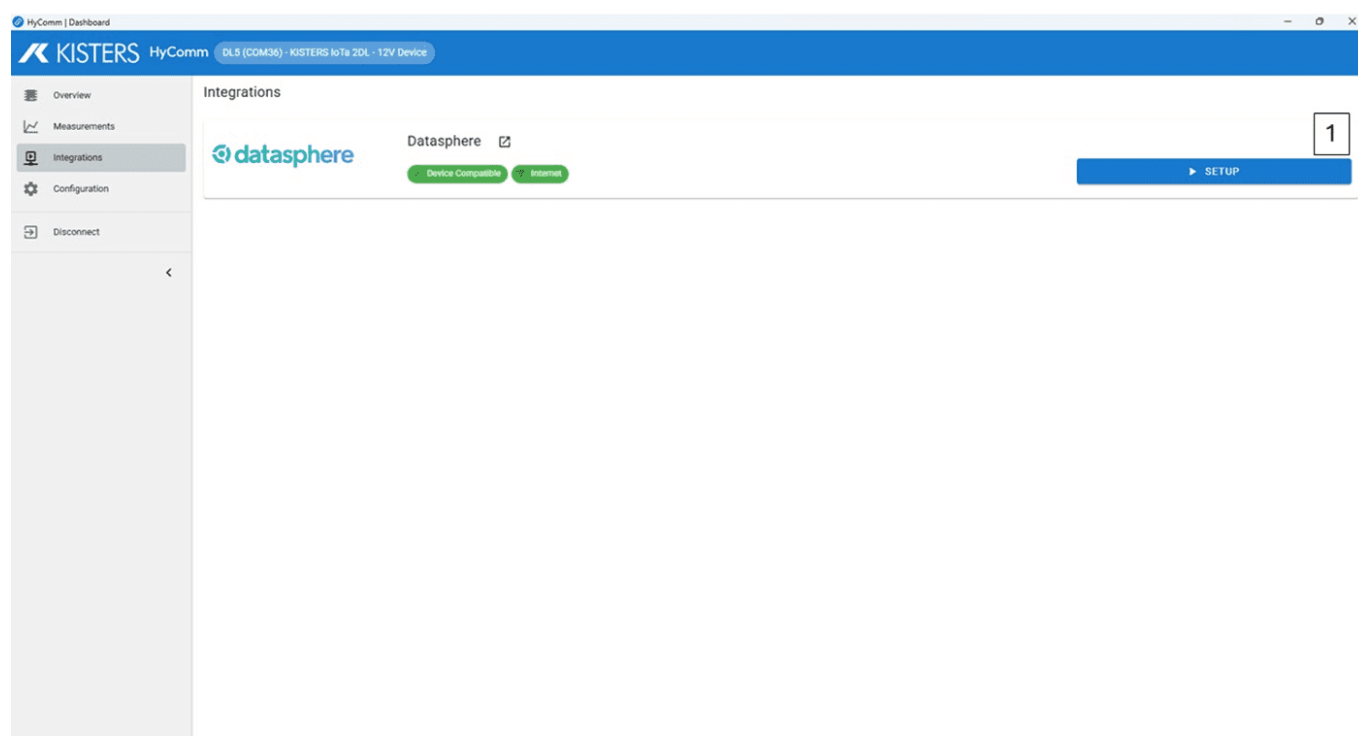
Note	Description
1	Menu sidebar, click to access other pages.
2	Connected device: Port and Device Name
3	General Device Information
4	Configured data acquisition information Enabled interfaces are highlighted blue
5	Internal Storage used
6	Configured transmission information

4.2.6 Device Measurement Testing and Visualisation



Note	Description
1	Adjust the time range displayed on the graph. Click to open a selection menu.
2	Trigger manual measurements: - Single one-time measurement of all enabled interfaces. - Series of measurements at specific intervals, note this does not affect the normal measurement cycle as configured on the device.
3	Load stored data from the device. Enabling “unsent data only” will only display the values that were not transmitted yet when loading stored data.
4	Click to clear the graph. Internal data is not wiped. Export graph allows downloading data as .csv- or .xlsx-file
5	Legend of the graph showing which I/O-interfaces are currently actively monitored. Click on a time series name to hide/show incoming readings from the selected interface.

4.2.7 Device Integrations



Note	Description
1	Devices can be integrated with certain platforms. Access for registered users only with a valid registration key.

Supported Platforms:

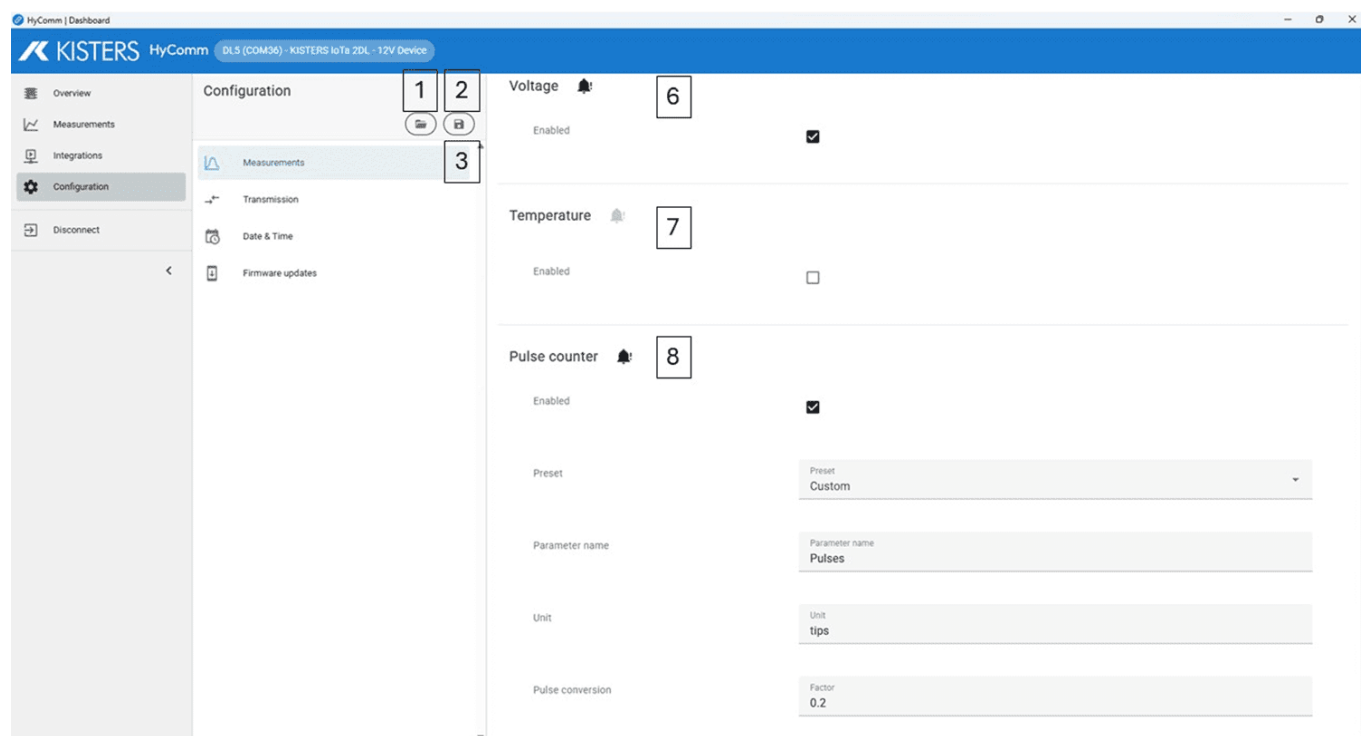
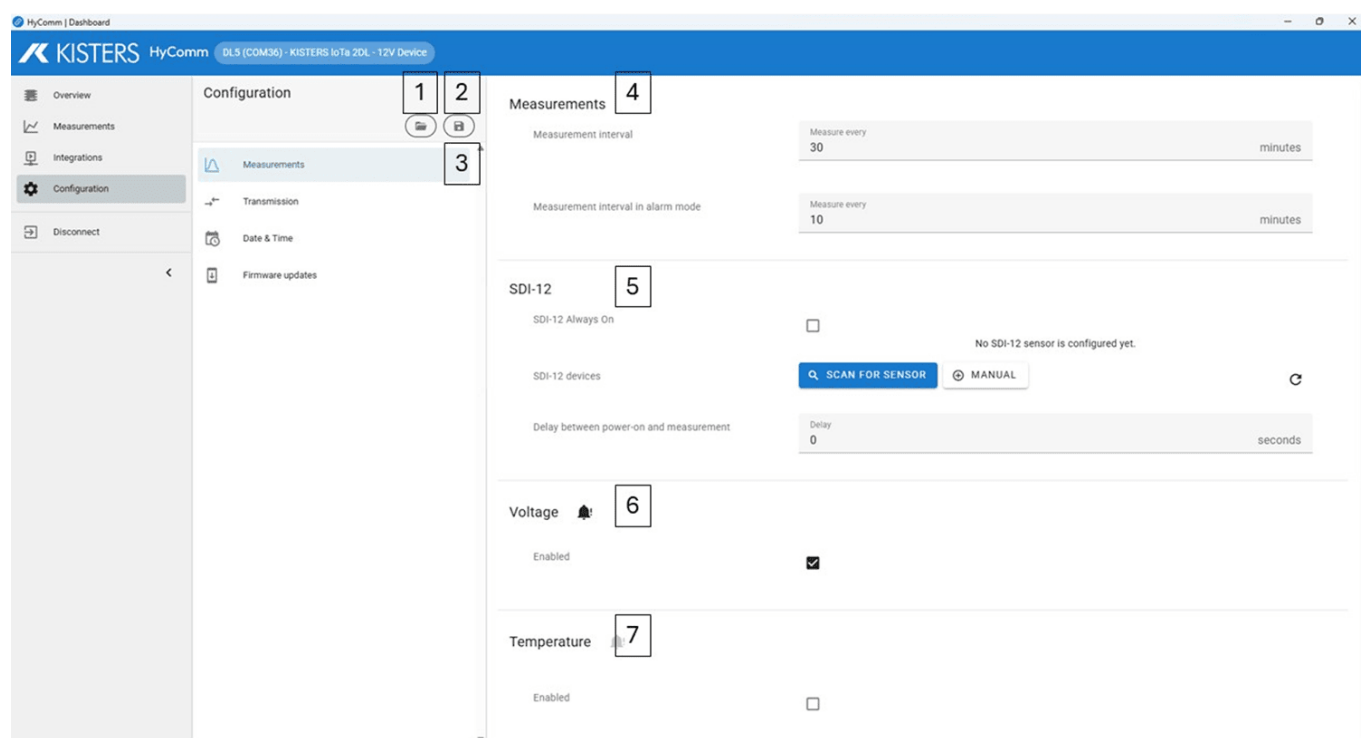
- **datasphere:**
- data management system, cloud-based, operated by KISTERS. <https://www.datasphere.online>

4.2.8 Device Configuration

This chapter contains the following subsections:

- [Configuration](#) ²⁰
- [Automatic SDI-12 Device Configuration](#) ²¹
- [Configuration: Transmission](#) ²³
- [Configuration: Date & Time](#) ²⁴
- [Configuration: Firmware Updates](#) ²⁵

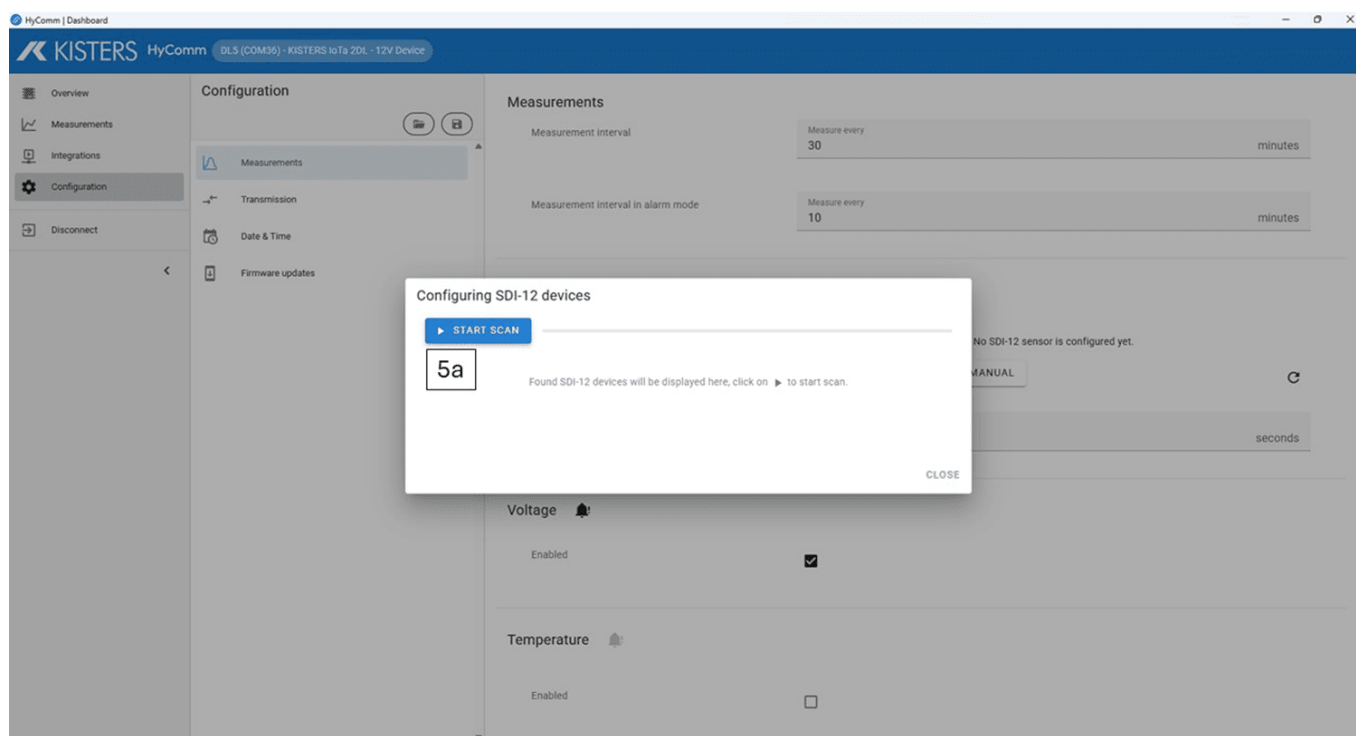
4.2.8.1 Configuration

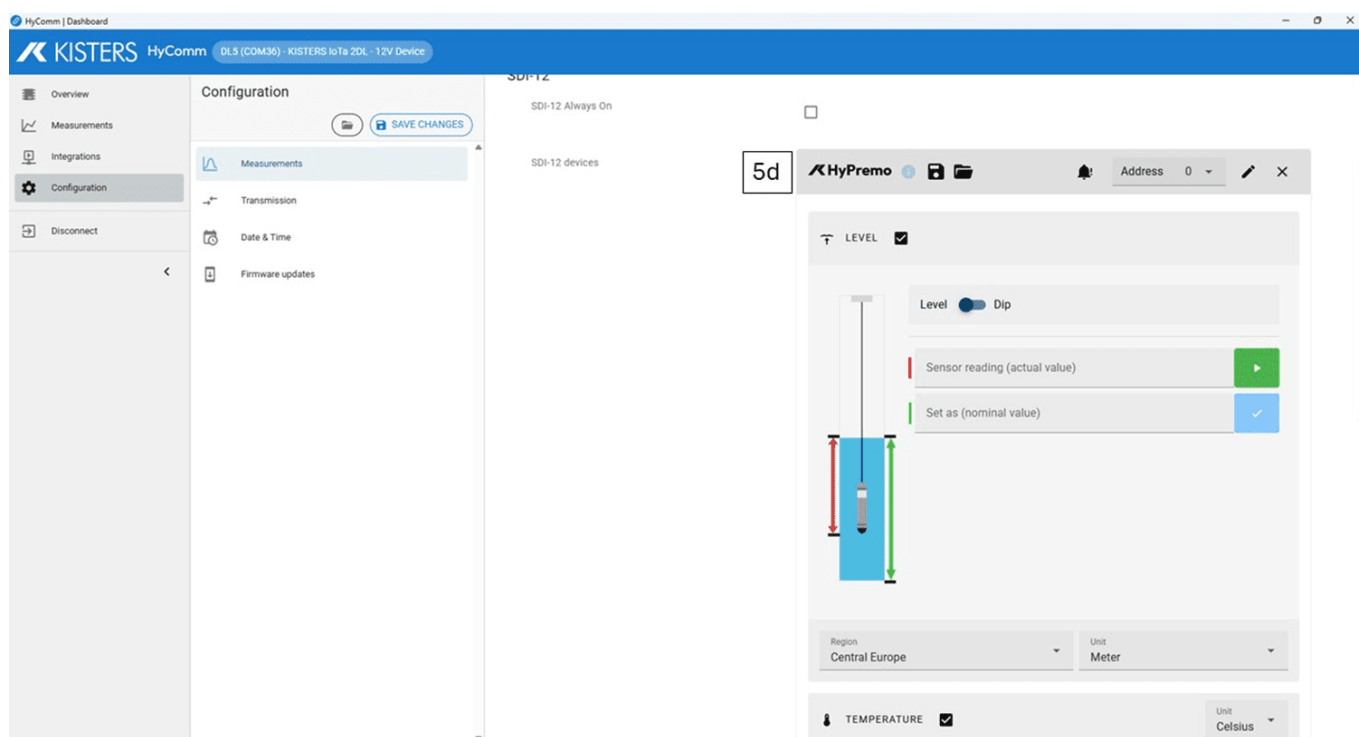
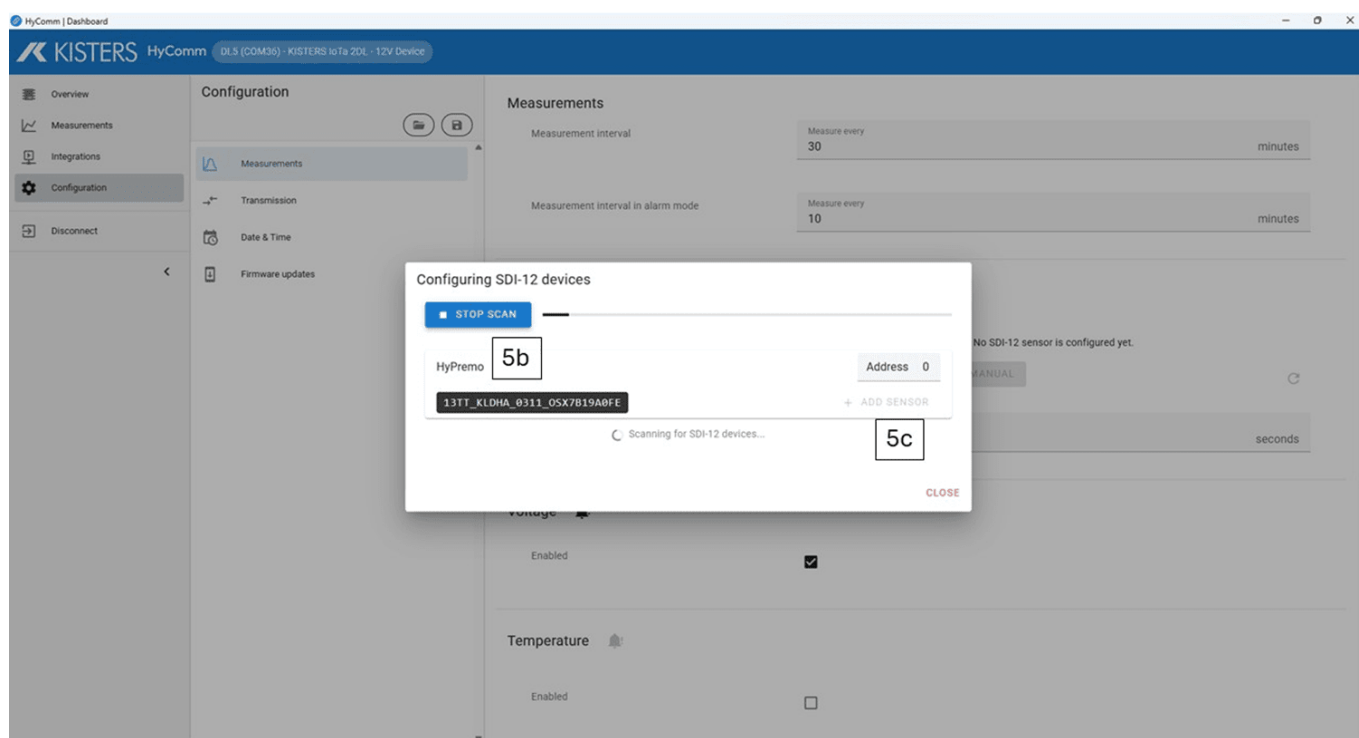


Note	Description
1	Click on the folder button to load a configuration from either: ▪ The connected device ▪ A configuration file on your computer ▪ The device type defaults (reset)

Note	Description
2	Click on the save button to save the current configuration to either: The connected device A configuration file on your computer
3	Click to access pages for various parts of the configuration.
4	Measurements: determine normal and alarm measurement interval. Determines how often a measurement is taken.
5	SDI-12: - tick to activate continuous SDI-12 polling - Set up your SDI-12 sensors - automatically or - manually
6	Voltage: tick to enable
7	Temperature: tick to enable
8	Pulse Counter: - tick to enable - Use a pulse counter preset or - Customize your own pulse counter

4.2.8.2 Automatic SDI-12 Device Configuration





Note	Description
5a	Start the automatic SDI-12 Sensor Scan Note: Using multiple SDI-12 sensors requires different SDI-12 addresses for each sensor.
5b	Stop the Scan for SDI-12 sensors once all are detected.
5c	Add the detected sensor into the list of SDI-12 devices.

Note	Description
5d	Set up the added SDI-12 sensor.

4.2.8.3 Configuration: Transmission

HyComm | Dashboard

KISTERS HyComm DL5 (COM36) - KISTERS IoTa 2DL - 12V Device

Configuration

Transmission

TEST TRANSMISSION

Transmission method

Transmission method used

MQTT

Transmission Interval

Transmit every

5

Measurement Intervals

Transmit every 5 x 30 minutes = 150 minutes

Transmission interval in alarm mode

Transmit every

1

Measurement Intervals

Transmit every 1 x 10 minutes = 10 minutes

TLS

TLS Configuration

TLS Disabled

TLS Validation

Certificates

REPLACE CERTIFICATE AUTHORITY (CA)

REPLACE CLIENT CERTIFICATE/KEY PAIR

Using Default KISTERS Certificate

MQTT

Server

Server address

Server port

8883

Base topic

HyComm | Dashboard

KISTERS HyComm DL5 (COM36) - KISTERS IoTa 2DL - 12V Device

Configuration

Transmission

TEST TRANSMISSION

TLS Validation

Certificates

REPLACE CERTIFICATE AUTHORITY (CA)

REPLACE CLIENT CERTIFICATE/KEY PAIR

Using Default KISTERS Certificate

MQTT

Server

Server address

Server port

8883

Base topic

Credentials

Username

Password

Connection timeout

Give up after

120

seconds

SIM Card

APN

APN

iot.1nce.net

Credentials

Username

Password

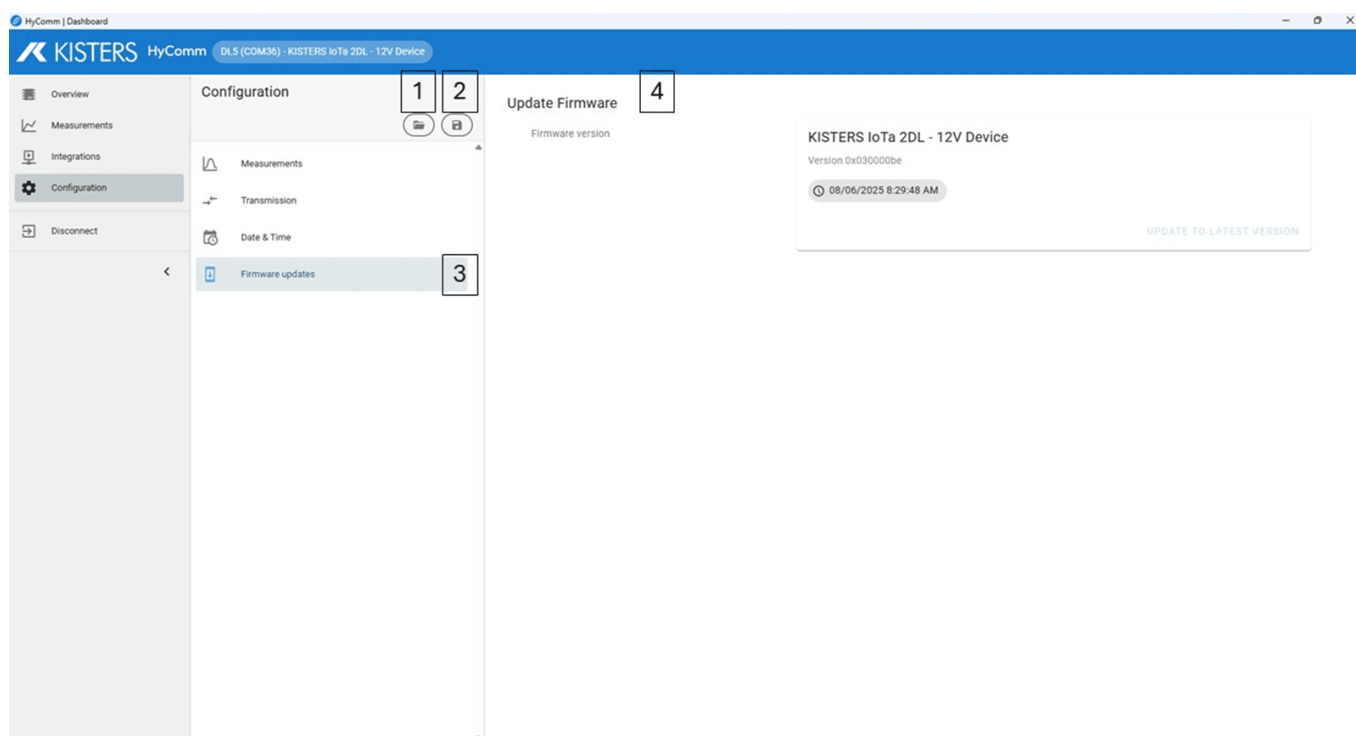
Note	Description
1	Click on the folder button to load a configuration from either: - The connected device - A configuration file on your computer - The device type defaults (reset)
2	Click on the save button to save the current configuration to either: - The connected device - A configuration file on your computer
3	Click to access pages for various parts of the configuration.
4	Configure transmission settings such as - Transmission method - Normal and alarm transmission interval
5	Configure TLS settings
6	Configure MQTT settings such as - Server - Port - Topic
7	Send an end test transmission to your endpoint
8	Configure SIM Card settings such as - APN - Sim Card Credentials

4.2.8.4 Configuration: Date & Time

The screenshot shows the KISTERS HyComm configuration interface for a device (DL5 (COM36) - KISTERS IoT 2DL - 12V Device). The left sidebar contains navigation options: Overview, Measurements, Integrations, Configuration (selected), and Disconnect. The main content area displays the Configuration settings for the selected device. The Configuration section is expanded, showing sub-options: Measurements, Transmission, Date & Time (selected), and Firmware updates. The Date & Time settings page displays the current time on the device (Tuesday, February 10, 2026 10:30:29 UTC) and the LTE Time Sync settings (Enabled checkbox, Timezone offset 60 minutes). Numbered callouts 1 through 5 highlight specific UI elements: 1 and 2 are the load and save buttons; 3 is the Date & Time menu item; 4 is the Date & Time section header; and 5 is the LTE Time Sync Enabled checkbox.

Note	Description
1	Click on the folder button to load a configuration from either: - The connected device - A configuration file on your computer. - The device type defaults (reset)
2	Click on the save button to save the current configuration to either: - The connected device - A configuration file on your computer
3	Click to access pages for various parts of the configuration.
4	Date & Time: shows current date and time of the device
5	LTE Time Sync: Enabled to automatic time sync and add your time zone offset in minutes.

4.2.8.5 Configuration: Firmware Updates



Note	Description
1	Click on the folder button to load a configuration from either: - The connected device - A configuration file on your computer. - The device type defaults (reset)
2	Click on the save button to save the current configuration to either: - The connected device - A configuration file on your computer
3	Click to access pages for various parts of the configuration.

Note	Description
4	Update Firmware: Shows actual firmware version and informs about available device firmware updates.

5 Operation

Operation of an IoTa 2DL 12V SensorNode is straightforward.

It may help to have a basic understanding of the data communication technology used.

Note that the use of data transmission infrastructure – whether it is a provider-supplied network or a shared public network may be subject to both technical and regulatory restrictions. Please keep yourself updated about these rules to ensure proper operation of the devices.

- [Power Supply](#) ²⁷
- [Connecting an SDI-12 Sensor](#) ²⁷
- [Data Transmission](#) ²⁸

5.1 Power Supply

IoTa 2DL 12V SensorNode is a 12V powered device.

The power supply is connected to the IoTa's Terminal in GND for the negative terminal and VBat to the positive terminal of the external 12V battery.

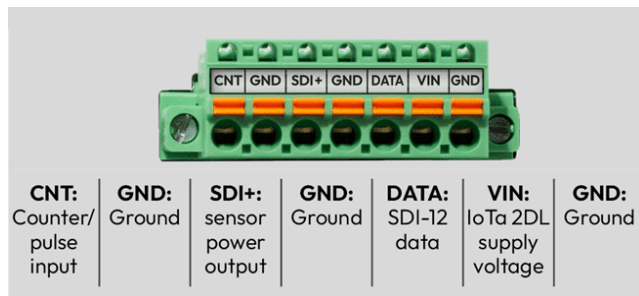


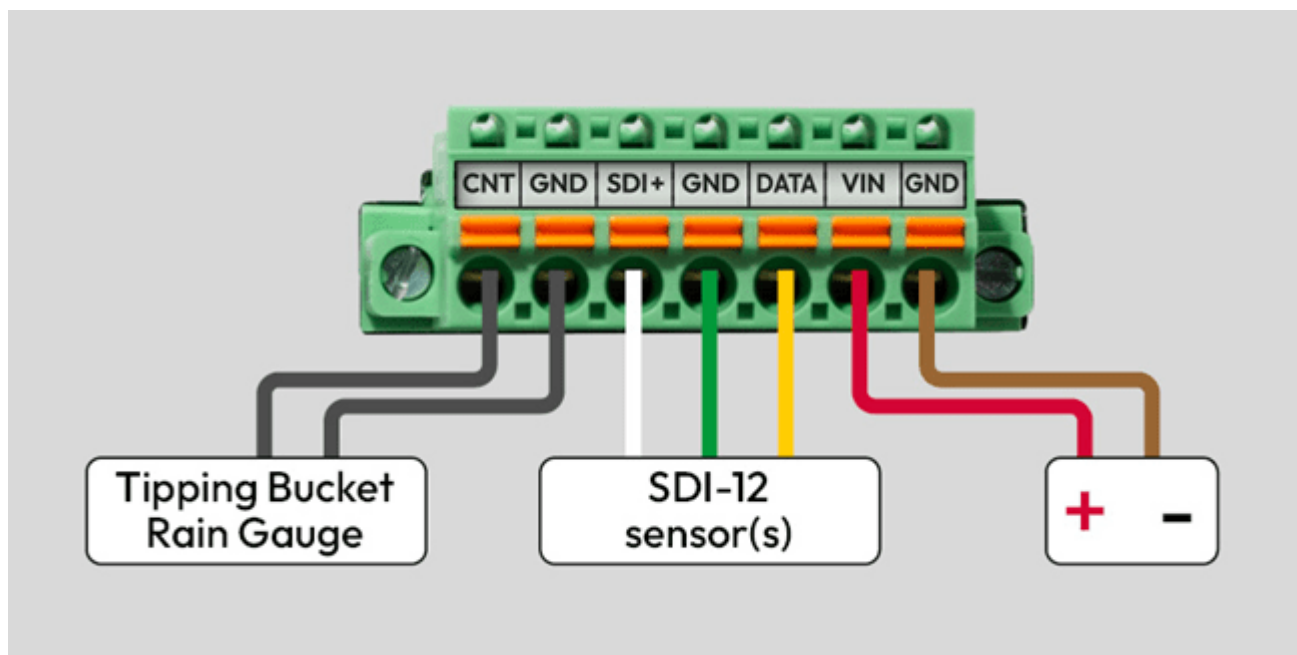
Figure 3 – IoTa 2DL 12V SensorNode



Warning:

- A power supply connected in reverse can destroy the device.
- A power supply with a voltage greater than 16V can destroy the device.

5.2 Connecting an SDI-12 Sensor



Refer to [Technical Data](#)³²⁾ for Technical Specifications of the Pulse/Counter input.

Only a single pulse signal can be connected.

5.3 Data Transmission

5.3.1 LTE-M

Network Coverage: Check network coverage for LTE-M at the monitoring site.

6 Maintenance

- Clean the IoTa 2DL 12V SensorNode2 DL 2V by wiping with light cleaning solution and a soft cloth.
- Replace battery as needed.

7 Troubleshooting

This chapter contains the following subsections:

- [Device Stops Operating](#)  30
- [Device Stops Transmitting Data](#)  30

7.1 Device Stops Operating

Test the voltage of the inserted battery. A simple method for checking battery voltage involves using a voltmeter, which measures the electrical potential difference between two points in an electric circuit, i.e. the voltage. We recommend you opt for a digital voltmeter as they are much easier to use.

1. Extract the battery from the battery holder.
2. Check the terminals on both ends for corrosion and clean it off if necessary.
3. Put the positive lead on the batteries positive pole and the negative lead on the negative pole. Positive (+) and negative (-) poles are indicated on the battery.
4. Check the voltmeter readings: make sure the voltage ranges specified in [Power Supply](#)  27 are respected.
5. Insert a new battery if the voltage is outside the specified range.
6. Caution: the battery voltage may drop once a load is put on the battery. Only qualified technicians should conduct a battery voltage test when the battery is under load.

7.2 Device Stops Transmitting Data

Main causes are loss of connectivity to the transmission network either due to a change made by the provider in its infrastructure, a faulty or defective or missing antenna, an obstacle acting as a shield to the electromagnetic signals, false or changed communication settings in the device. Proceed by checking the simple things first: antenna condition, shielding, etc. Try a system restart: extract and re-insert the battery (wait approximately 15 - 20 seconds before re-inserting the battery). For LTE-M systems, it may be worthwhile to have the data SIM checked – typically these SIMs have limited capacity and stop working once the limit has been exceeded. Next, check the communication settings. Finally, get in touch with the network infrastructure provider.

8 Repair

KISTERS precision instruments and data loggers are produced in quality-controlled processes. All KISTERS production and assembly sites in Australia, New Zealand and Europe are ISO 9001 certified. All equipment is factory tested and/or factory calibrated before it is shipped to the client. This ensures that KISTERS products perform to their fullest capacity when delivered.

Despite KISTERS most rigorous quality assurance (QA), malfunction may occur within or outside of the warranty period. In rare cases, a product may not be delivered in accordance with your order.

In such cases KISTERS' return and repair policy applies. For you as a customer, this means the following:

- Contact KISTERS using the Repair Request Form and the Declaration of Contamination made available online:

Region (Language)	Download Link
Asia-Pacific (English)	Repair Request Form (APAC) Declaration of Contamination (APAC)
Europe, the Middle East and Africa (English)	Repair Request Form (EMEA) Declaration of Contamination (EMEA)
Germany (German)	Repair Request Form (DE) Declaration of Contamination (DE)

In response you will receive a reference number that must be referenced on all further correspondence and on the freight documents accompanying your return shipment.

- Please provide as much information and/or clear instructions within the return paperwork. This will assist our test engineers with their diagnosis.
- Please do not ship the goods prior to obtaining the reference number. KISTERS will not reject any equipment that arrives without reference number; however, it may take us longer to process.

Custom requirements for items sent to KISTERS for warranty or non-warranty repairs: Check with your national customs/tax authorities for details, processes and paperwork regarding tax exempt return of products. Typically, special custom tariff codes are available (such as HS Code = 9802.00) that verify the item is being returned for repair and has no commercial value. Please note that the customs invoice / dispatch documents should also clearly state: "Goods being returned to manufacturer for repair – No Commercial value". It is mandatory to have any returned goods accompanied by a commercial invoice on headed paper. KISTERS reserves the right to charge the customer for time spent rectifying incorrect customs documents.

Note: Please ensure that your goods are packed carefully and securely. Damage that occurs during transit is not covered by our warranty and may be chargeable.

9 Technical Data

Inputs	SDI-12: max. 4 devices or 6 parameters; max. power drain: 500 mA@12 VDC 1x Counter/Pulse input: pull to GND; max.: 200 Hz; pulse width > 1 ms
Data Transmission	LTE CAT M1 / LTE CAT NB2 - requires Micro SIM (frequency plans available on demand) MQTTs 3.1 w/JSON payload
IT / Data Security	TLS 1.3, supports client- and server-site certificates Unique client-site certificate for communication to KISTERS datasphere included
Local Communication	USB accessible via internal USB-B port for data downloads, configuration and firmware upgrades
Memory	8 MB data flash
Internal / Heartbeat Parameters	Temperature, Supply Voltage, Signal Strength
Real-Time Clock	Precision: 3 ppm
Power Supply	Operating: 10 ... 16 V DC Nominal: 12 V DC
Power Consumption	40 mW in sleep mode 1000 mW peak communication
Operating Temperature	-20 °C ... +70 °C -4 °F ... 158 °F
Housing, Dimensions:	Polycarbonate, IP20 166x86.5x55 mm
Compliance	CE, RoHS, WEEE pending

10 Obligations of the Operator and Disposal

This chapter contains the following subsections:

- [Obligations of the Operator](#)³³
- [Dismantling / Disposal](#)³³

10.1 Obligations of the Operator

European Union

In the Single European Market it is the responsibility of the operator to ensure that the following legal regulations are observed and complied with: national implementation of the framework directive (89/391/EEC) and the associated individual directives, in particular 2009/104/EC, on minimum safety and health requirements for the use of work equipment by employees at work.

Worldwide

Regulations: If and where required, operating licences must be obtained by the operator. In addition, national or regional environmental protection requirements must be complied with, regardless of local legal provisions regarding the following topics:

- Occupational safety
- Product disposal

Connections: Local regulations for electrical installation and connections must be observed.

10.2 Dismantling / Disposal

When disposing of the units and their accessories, the applicable local regulations regarding environment, disposal and occupational safety must be observed.

Before dismantling

- Electrical Devices:
 - Switch off the units.
 - Disconnect electrical appliances from the power supply, regardless of whether the appliances are connected to the mains or to another power source.
- Mechanical devices:
 - Fix all loose components. Prevent the device from moving independently or unintentionally.
 - Loosen mechanical fastenings: Please note that appliances can be heavy and that loosening the fastenings may cause them to become mechanically unstable.

Disposal

Operators of old appliances must recycle them separately from unsorted municipal waste. This applies in particular to electrical waste and old electronic equipment.

Electrical waste and electronic equipment must not be disposed of as household waste!

Instead, these old appliances must be collected separately and disposed of via the local collection and return systems.

Integrated or provided batteries and accumulators must be separated from the appliances and disposed of at the designated

collection point. At the end of its service life, the lithium-ion battery must be disposed of according to legal provisions.

EU WEEE Directive

As players in the environmental market, KISTERS AG is committed to supporting efforts to avoid and recycle waste. Please consider:

- Avoidance before recycling!
- Recycling before disposal!



This symbol  indicates that the scrapping of the unit must be carried out in accordance with Directive 2012/19/EU. Please observe the local implementation of the directive and any accompanying or supplementary laws and regulations.

Contact Data

Europe	KISTERS Europe	 +49 2408 9385 0
		 hydromet.sales@kisters.eu
		 www.kisters.eu
Australia	KISTERS Australia	 +612 9601 2022
		 sales@kisters.com.au
		 www.kisters.com.au
New Zealand	KISTERS New Zealand	 +64 7 857 0810
		 sales@kisters.co.nz
		 www.kisters.co.nz
Latin America	KISTERS Latin America	 +57 350 575 4079
		 sales@kisters-latam.com
		 www.kisters-latam.com
North America	KISTERS North America	 +1 561 459 4876
		 kna@kisters.net
		 www.kisters.net
Spain	KISTERS Ibérica	 info@kisters.es
		 www.kisters.es
France	KISTERS France	 +33 1 4120 9200
		 info@kisters.fr
		 www.kisters.fr
Canada	KISTERS Canada	 kna@kisters.net
		 www.kisters.net

