

Technical Description

MSX-ilog-xx-xx

Intelligent Ethernet data logger



Product information

This manual contains the technical installation and important instructions for correct commissioning and usage, as well as production information according to the current state before printing.

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Warning!

The following risks result from the improper implementation of the Ethernet data logger and from use contrary to the regulations:



Personal injury



Damage to the Ethernet data logger, the PC and peripherals



Pollution of the environment.

- Protect yourself, others and the environment!
- Read the safety precautions (yellow leaflet) carefully!
If this leaflet is not enclosed with the documentation, please contact us and ask for it.
- Observe the instructions of this manual!
Make sure that you do not forget or skip any step!
We are not liable for damages resulting from the wrong use of the Ethernet data logger.
- Pay attention to the following symbols:



NOTICE!

Designates hints and other useful information.



NOTICE!

Designates a possibly dangerous situation.
If the instructions are ignored, the Ethernet data logger, the PC and/or peripherals may be **destroyed**.



WARNING!

Designates a possibly dangerous situation.
If the instructions are ignored, the Ethernet data logger, the PC and/or peripherals may be **destroyed** and persons may be **endangered**.

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Chapter overview

In this manual, you will find the following information:

Chapter	Content
1	Important information on the application, the user and on handling the MSX-ilog data logger
2	Brief description of the MSX-ilog data logger (functions and features)
3	Information on mounting the MSX-ilog data logger including pin assignments
4	Description of the MSX-ilog web interface
5	Procedure for returning (repairing, etc.) or disposing of the MSX-ilog data logger
6	Appendix with glossary and index
7	Contact and support address

1 Definition of application, user, handling

1.1 Definition of application

1.1.1 Intended use

The Ethernet data logger **MSX-ilog-xx-xx** for the acquisition and processing of signals is intended for the connection to a network which is used as electrical equipment for measurement, control and laboratory pursuant to the standard DIN EN IEC 61010-1.

1.1.2 Usage restrictions

The Ethernet data logger **MSX-ilog-xx-xx** must not be used as a safety-related part (SRP).

The Ethernet data logger **MSX-ilog-xx-xx** must not be used for safety-related functions.

The Ethernet data logger **MSX-ilog-xx-xx** must not be used in potentially explosive atmospheres.

The Ethernet data logger **MSX-ilog-xx-xx** must not be used as electrical equipment according to the Low Voltage Directive 2014/35/EU.

1.1.3 Limits of use

All safety information and the instructions in the manual must be followed to ensure proper intended use.

Uses of the Ethernet data logger beyond these specifications are considered as improper use.

The manufacturer is not liable for damages resulting from improper use.

The Ethernet data logger must remain in its anti-static packaging until it is installed.

Please do not delete the identification numbers of the Ethernet data logger or the warranty claim will be invalid.

1.2 Safety precautions

1.2.1 Current sources

All connected devices must be supplied from current sources that comply with ES1 according to DIN EN IEC 62368-1 or PELV according to DIN EN 60204-1.

1.2.2 Degrees of protection

**NOTICE!**

The protection according to the defined degree of protection is only given if the openings are protected with adequate protection caps or connectors.

If you are not sure, please contact us:

Phone: +49 7229 1847-0

E-mail: info@addi-data.com

1.2.3 Cables

The cables must be installed safely against mechanical load.

1.2.4 Housing

The housing must not be opened. It may only be opened by persons who have been authorised by ADDI-DATA.

1.3 User

1.3.1 Qualification

Only persons trained in electronics are entitled to perform the following works:

- Installation
- Commissioning
- Use
- Maintenance.

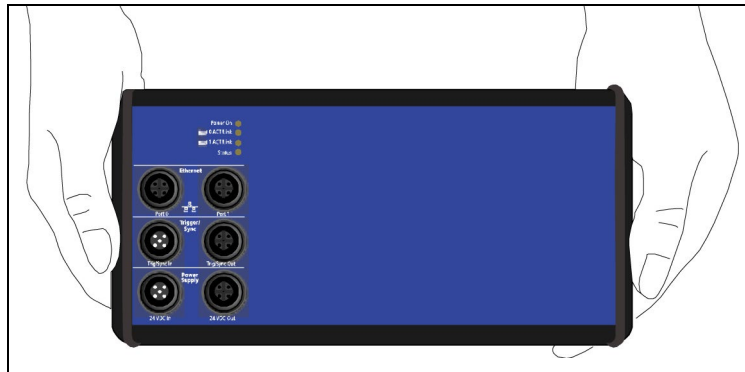
1.3.2 Country-specific regulations

Do observe the country-specific regulations regarding

- the prevention of accidents
- electrical and mechanical installations
- Electromagnetic compatibility (EMC).

1.4 Handling of the Ethernet data logger

Fig. 1-1: Correct handling



- Hold the Ethernet data logger by the bottom and the black sides.
- Do not hold the Ethernet data logger by the connectors!

1.5 Questions and updates

If you have any questions, do not hesitate to call us or to send us an e-mail:

Phone: +49 7229 1847-0

E-mail: info@addi-data.com

Manual download from the Internet

The latest version of the technical manual for the Ethernet data logger **MSX-ilog-xx-xx** can be downloaded for free at: www.addi-data.com



NOTICE!

Before using the Ethernet data logger and in case of malfunction during operation, check if there is a manual update available. Current data can be found on our website or contact us directly.

2 Brief description

MSX-ilog data loggers are used to record and store data of several signal types over a longer period of time and to visualise this data in a curve diagram. All of these processes run automatically. The data can be parameterised and visualised live on an integrated web interface.

With the pre-trigger function, you can define the number of acquisitions to be saved before the start trigger occurs. Two start and three stop trigger types are available: digital, analog and time. For each channel, a high and low alarm level can be defined. The recorded data can be exported in a CSV, XML or JSON file.

A PC-based application with a constant connection via Ethernet is also an option, as is individual use as a "stand-alone" terminal and self-sufficient power supply.

Features:

- Internal 4 GB memory (2 GB for measurement data)
- Buffered real-time clock
- Robust metal housing
- Optical isolation, input filters and overvoltage protection
- 24 V trigger input
- 2-port Ethernet switch

3 Mounting and connection

**Risk of injury!**

Please follow the safety precautions! An improper handling of the Ethernet data logger may cause property damage and injury.

- Discharge any static by touching an earth wire.
- Remove the Ethernet data logger from its protective packaging.
- Check the type label on the bottom side of the Ethernet data logger to know if the data logger corresponds to your requested version.

3.1 Fixing the Ethernet data logger

3.1.1 DIN rail mounting

With the mounting set **MX-Rail**¹, you can attach the Ethernet data logger to a DIN rail.

**Risk of injury!**

If you have already mounted this Ethernet data logger on a DIN rail and want to transport it in a switch cabinet or in other systems, please ensure that it is adequately secured for transport! The Ethernet data logger could, for example, fall off the DIN rail, which could cause damage to the Ethernet data logger and/or other objects or injury of persons.

- Mount the Ethernet data logger on the DIN rail by inserting the clips with the springs under the DIN rail.

**NOTICE!**

The spring in the fastening clips points to the bottom of the housing (see the following figure).

¹ Please specify when ordering the Ethernet data logger!

Fig. 3-1: Fastening clips

- Push the Ethernet data logger as much as possible up and then backwards until the top of the fastening clips engages with the DIN rail.

3.1.2 Angle bracket mounting

With the mounting set **MX-Screw**, you can fit the Ethernet data logger for direct attachment to machines or other devices.

According to your requirements, you can fix all four brackets pointing either outwards or inwards.

Fig. 3-2: Brackets pointing outwards**Fig. 3-3: Brackets pointing inwards**

To mount the brackets, proceed as follows:



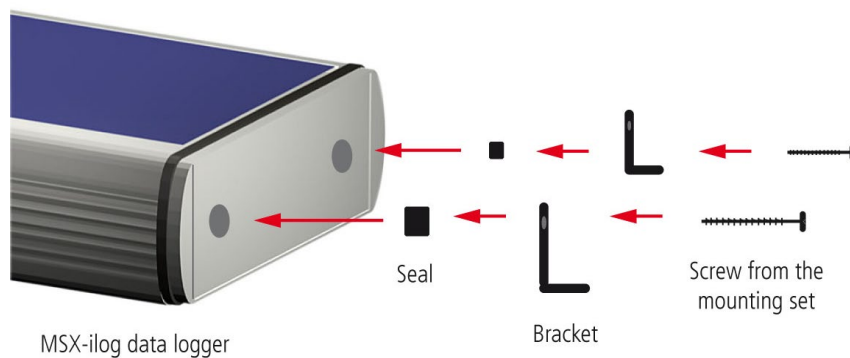
NOTICE!

The housing of the Ethernet data logger must not be opened or the warranty claim will be invalid (see also Chapter 1.2.4)!

For this reason, the housing part to which the angle brackets are fixed has to be in a horizontal position during mounting to prevent it from loosening from the entire housing.

If the Ethernet data logger cannot be positioned in this way, the respective housing part has to be pushed towards the inside of the data logger during the whole mounting process so that the housing remains closed (see the following figure).

Fig. 3-4: Angle bracket mounting

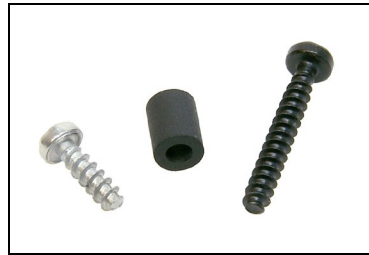


- Loosen the screws at the side of the Ethernet data logger.
- For the remainder of the mounting process, please use only the **short** seals and screws from the mounting set.

Fig. 3-5: Mounting set: Seal and screw (short)



The original screw from the Ethernet data logger and the long seals or screws from the mounting set must **not** be used any longer.

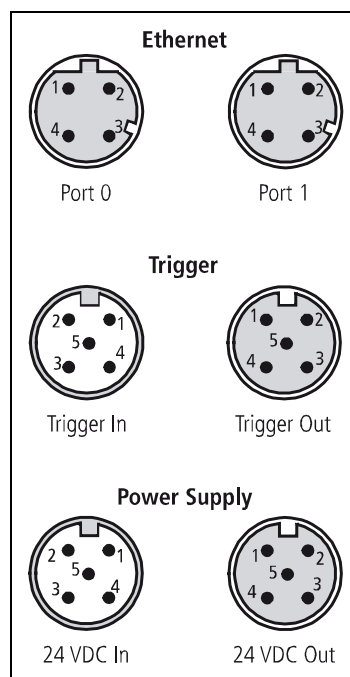
Fig. 3-6: Mounting set: Original screw, seal and screw (long)

- Place a seal in one of the screw holes.
- Place the bracket on the seal.
- Fix the bracket with a short screw from the mounting set.
- Repeat these steps with the other screw holes.

Once you have mounted the brackets on the Ethernet data logger, you can attach the data logger directly to other devices or machines by using other screws.

3.2 Pin assignment

In this chapter, you will find the pin assignments of the connectors for Ethernet, trigger and the power supply of the Ethernet data logger **MSX-ilog-xx-xx** as well as the pin assignments for analog I/O, digital I/O and temperature sensor inputs (RTD).

Fig. 3-7: Connectors

3.2.1 Ethernet

In order to access the MSX-ilog data logger, you have to connect one of the Ethernet interfaces (Port 0 or Port 1) to your PC. For this, you can use a **CMX-6x** cable.

To cascade the MSX-ilog data loggers with one another, you need a **CMX-7x** cable.

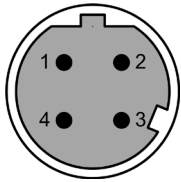
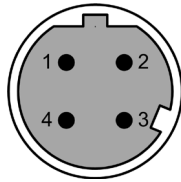
The LED display "Port 0 ACT/Link" or "Port 1 ACT/Link" gives you information on the status of the corresponding interface. For more details, see Chapter 3.4.1.



NOTICE!

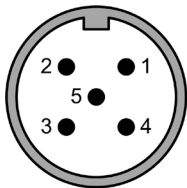
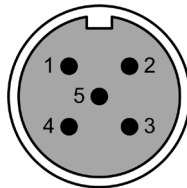
The LED display only works if the MSX-ilog data logger is connected to the power supply.

Table 3-1: Pin assignment: Ethernet ports

	Port 0	Port 1	Cable (green)
Pin No.	Female connector, D-coded, M12	Female connector, D-coded, M12	Lead colour
1	TD0+	TD1+	yellow
2	RD0+	RD1+	white
3	TD0-	TD1-	orange
4	RD0-	RD1-	blue
			

3.2.2 Trigger

Table 3-2: Pin assignment: Trigger

Pin No.	Trigger In	Trigger Out	Cable (purple)	
	Male connector, 5-pin, M12	Female connector, 5-pin, M12	Lead colour	Lead pair
1	Trigger input -	Trigger input -	blue	1
2	Trigger input +	Trigger input +	white	
3	not connected	not connected	red	2
4	not connected	not connected	black	
5	not connected	not connected		
				

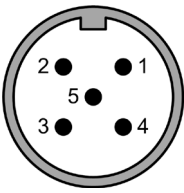
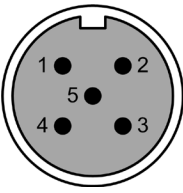
■ Please use a shielded trigger cable.

Table 3-3: Trigger cables

Name	Cable end	Length
CMX-40	Open end / female connector, 5-pin	1.5 m
CMX-41	Open end / female connector, 5-pin	3 m
CMX-42	Open end / female connector, 5-pin	5 m
CMX-43	Open end / female connector, 5-pin	10 m
CMX-49	Open end / female connector, 5-pin	on request
CMX-50	Male connector, 5-pin / female connector, 5-pin	1.5 m
CMX-51	Male connector, 5-pin / female connector, 5-pin	3 m
CMX-52	Male connector, 5-pin / female connector, 5-pin	5 m
CMX-59	Male connector, 5-pin / female connector, 5-pin	on request
CMX-59_0,3	Male connector, 5-pin / female connector, 5-pin	0.3 m

3.2.3 Power supply

Table 3-4: Pin assignment: Power supply (input and output)

	24 VDC In	24 VDC Out	Cable (black)
Pin No.	Male connector, 5-pin, M12	Female connector, 5-pin, M12	Lead colour
1	24 V	24 V	brown
2	24 V	24 V	white
3	GND	GND	blue
4	GND	GND	black
5	not connected	not connected	grey
			

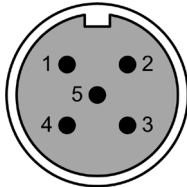
3.2.4 Analog inputs

MSX-ilog-AI-16, MSX-ilog-3122

To each M12 female connector, one sensor can be connected. One analog input consists of input + and input -. Optionally, a 24 V voltage is available to supply a sensor if required.

Table 3-5: Pin assignment: Analog inputs

Pin No.	Female connector, 5-pin, M12	Cable
		Lead colour
1	24 V	brown
2	Differential input -	white
3	GND	blue
4	Differential input +	black
5	not connected	grey



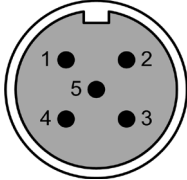
3.2.5 Analog outputs

MSX-ilog-3122

To each M12 female connector, two actuators can be connected. One analog output consists of output x+ and output -. Optionally, a 24 V voltage is available to supply an actuator if required.

Table 3-6: Pin assignment: Analog outputs

Pin No.	Female connector, 5-pin, M12	Cable (black)
		Lead colour
1	+24 V (supply)	brown
2	Analog output - *	white
3	GND (supply)	blue
4	Analog output 0+	black
5	Analog output 1+	grey



* Common GND for channels 0 and 1

3.2.6 Digital I/O

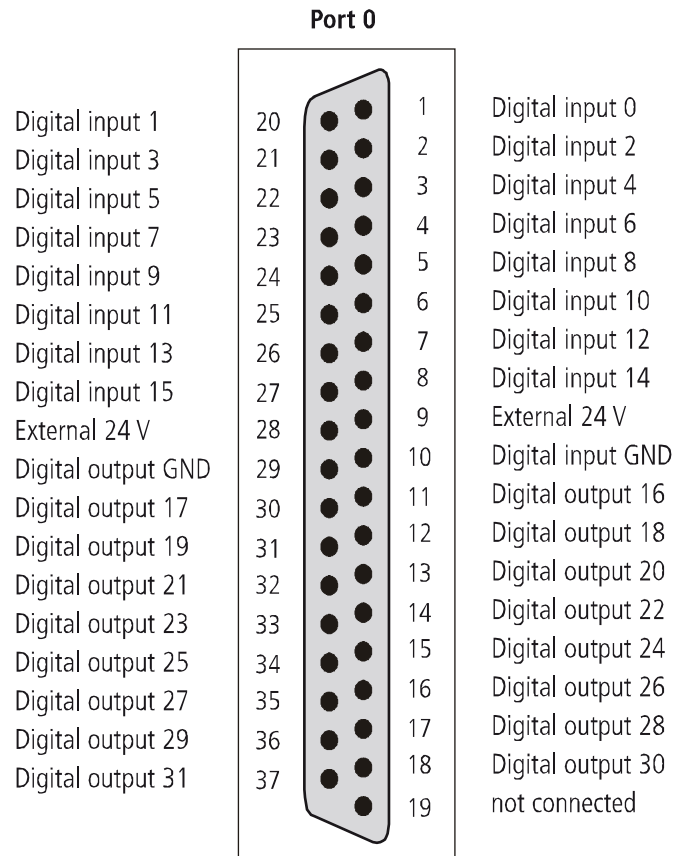
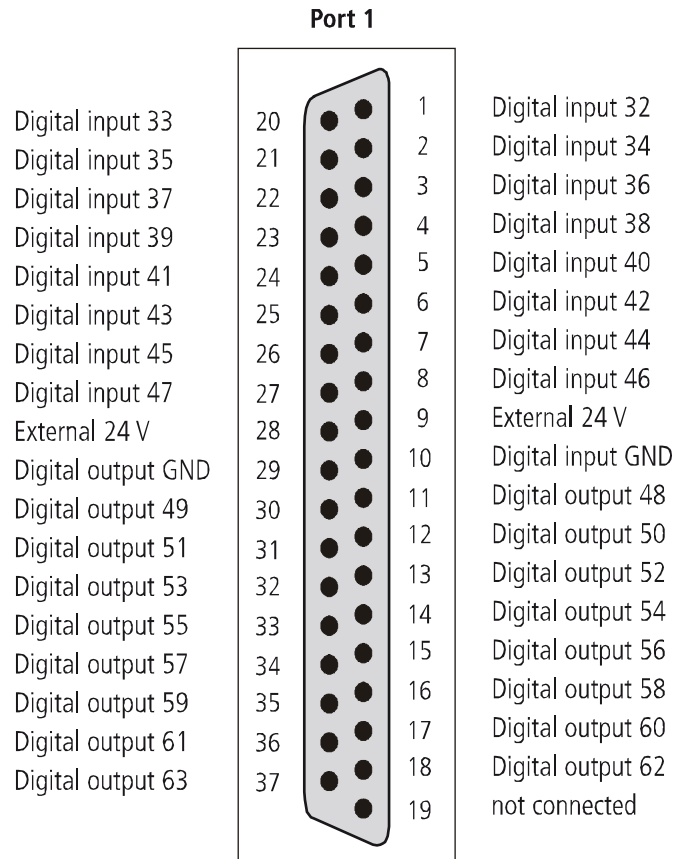
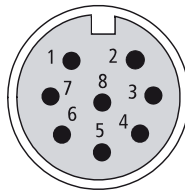
MSX-ilog-3122**Fig. 3-8: Pin assignment: Digital I/O port 0 (37-pin D-Sub male connector)**

Fig. 3-9: Pin assignment: Digital I/O port 1 (37-pin D-Sub male connector)

3.2.7 Temperature sensor inputs: RTD inputs

MSX-ilog-RTD-8, MSX-ilog-RTD-16**Table 3-7: Pin assignment: RTD inputs**

Pin No.	Female connector, 8-pin, M12	Cable (black)
		Lead colour
1	RTD1+	white
2	RTD1-	brown
3	EXC1	green
4	GND	yellow
5	RTD2+	grey
6	RTD2-	pink
7	EXC2	blue
8	GND	red



RTD = Resistance temperature detector
 EXC = Current source (excitation)

3.3 Connecting the peripherals

3.3.1 Ethernet

- Connect the Ethernet cable to the female connector "Port 0".

Fig. 3-10: Connect peripherals



3.3.2 Trigger

- Connect the trigger cable to the male connector "Trigger In".

3.3.3 Power supply

- Connect the power supply cable to the male connector "24 VDC In".

3.3.4 Sensors or actuators

Information concerning the type of sensor or actuator and the corresponding pin assignment can be found in Chapter 3.2.

Fig. 3-11: Connect sensors or actuators (example)











3.4 LED display

3.4.1 Overview

The LEDs give you the following information:







Table 3-8: LED display



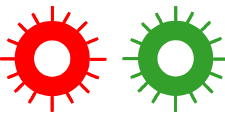
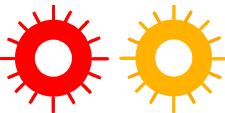
LED	Display	Meaning
ADDI-DATA logo	Lights white 	The data logger is ready for operation.
	No display 	The data logger is in energy-saving mode.
Power On	No display 	There is no voltage applied.
	Lights green 	Voltage is applied. The data logger is ready for operation.
Port 0 ACT/Link or Port 1 ACT/Link	No display 	There is no network connection.
	Lights yellow 	The Ethernet cable is connected to Port 0 or 1. The network connection is established.
	Flashes yellow 	
Status	Lights green  For further display settings, see the following table.	The data logger is ready for operation.

3.4.2 “Status” LED

The “Status” LED provides information on the current operating state of your MSX-ilog data logger.

Table 3-9: “Status” LED

Display	Meaning	Possible cause	Recommendation
No display 	The data logger is switched off.		Connect the data logger to the supply voltage.
Lights green 	The data logger is ready for operation.		
Flashes green 	The data logger is working.	<ul style="list-style-type: none"> - A firmware update is being applied. - Data acquisition is in progress. 	
Flashes yellow/green 	Data acquisition is possible, but some components are not working correctly.	<ul style="list-style-type: none"> - The flash memory is no longer working properly. - An attempt has been made to configure the data logger with an incorrect IP address. 	<ul style="list-style-type: none"> - Check your IP address. - Contact us for a replacement or repair.
Lights yellow 	The data logger is operational but cannot be accessed via the network.	<ul style="list-style-type: none"> - The data logger is booting up. - The network cables are not connected. 	<ul style="list-style-type: none"> - Wait until the data logger initialisation has been completed (approx. 40 seconds). - Check the Ethernet connection (see LEDs “Port 0 ACT/LINK” and “Port 1 ACT/LINK”).
Flashes yellow 	Data acquisition is not possible, but the data logger can be accessed via the network connection.	<ul style="list-style-type: none"> - An update has been applied with faulty firmware. - A major component is not working correctly. - There has been a short circuit on the primary side of one or more sensors. 	<ul style="list-style-type: none"> - Check the diagnosis on the web interface of the data logger. - Check the cables and sensors connected to the Ethernet data logger. Use the latest firmware for your data logger. - Contact us for a replacement or repair.

Display	Meaning	Possible cause	Recommendation
Lights red 	The data logger cannot start up.	Hardware error (e.g. RAM)	Contact us for a replacement or repair.
Flashes red 	Harmful ambient conditions	The internal temperature is outside the working range ($< -40\text{ °C}$ or $> +85\text{ °C}$).	<ul style="list-style-type: none"> - The data logger should be quickly exposed to warmer or colder temperatures (according to the working range temperatures). - Under these conditions, the measurement values may be inaccurate and the whole operation of the data logger be restricted. - Conditions of this kind may damage the internal components and therefore make the whole data logger unusable.
Flashes red/green 	The data logger is working and communicating correctly, but possible risks may be anticipated.	The internal temperature is LOW or HIGH.	<ul style="list-style-type: none"> - The data logger should be quickly exposed to warmer or colder temperatures (according to the working range temperatures).
Flashes red/yellow 	The data logger cannot be accessed via a network connection, and possible risks may be anticipated.	The internal temperature is LOW or HIGH and the network cables are not connected.	<ul style="list-style-type: none"> - The data logger should be quickly exposed to warmer or colder temperatures (according to the working range temperatures). - Check the Ethernet connection (see LEDs "Port 0 ACT/LINK" and "Port 1 ACT/LINK"). - Note that other faults may also occur in the meantime, which prevent data acquisition (e.g. a short-circuit).

4 Web interface: Quick access to the Ethernet data logger

From the web interface of your MSX-ilog data logger, you can access the data logger quickly and manage your functions conveniently without programming.

4.1 Requirements

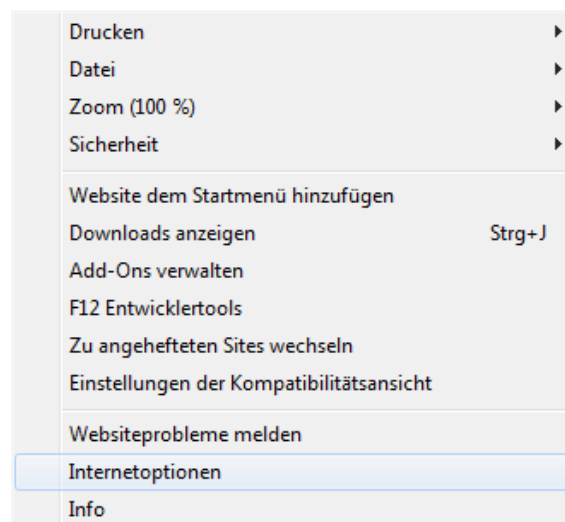
4.1.1 Internet Explorer 11

If you want to use Internet Explorer 11 (IE 11) as your web browser, you have to deactivate the webpage caching. To do so, you have to perform the following steps:

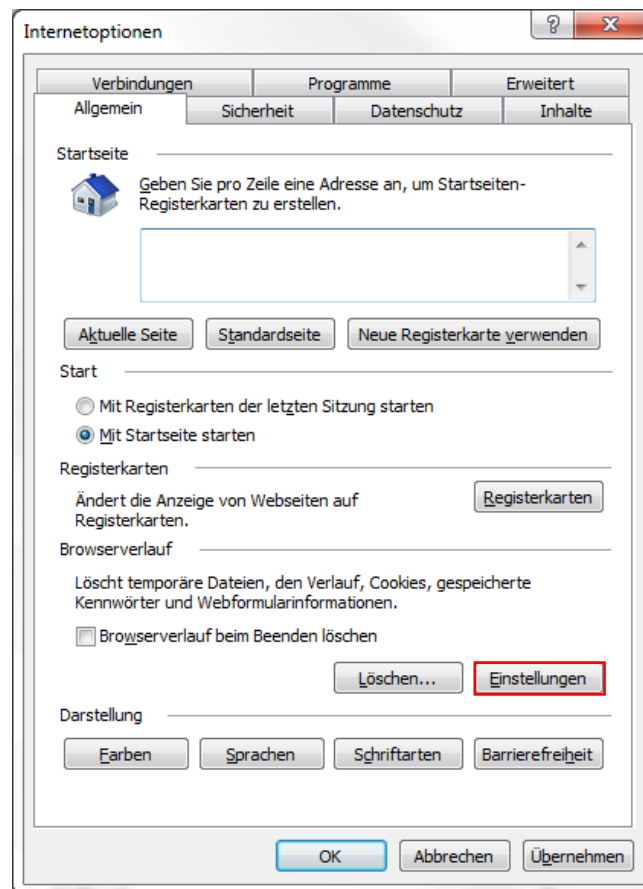
1. Open Internet Explorer 11.
2. On the top right of the window, click on the "Gear" icon.



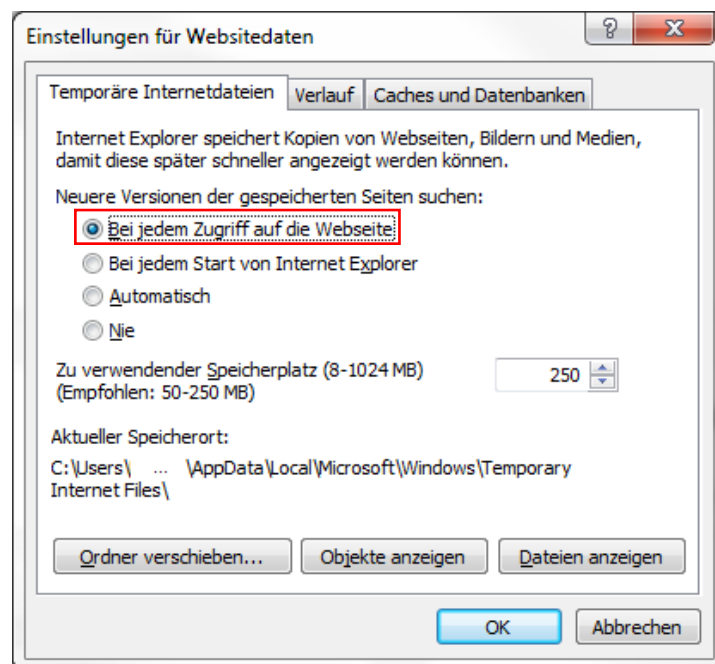
3. Select the menu item "Internet options".



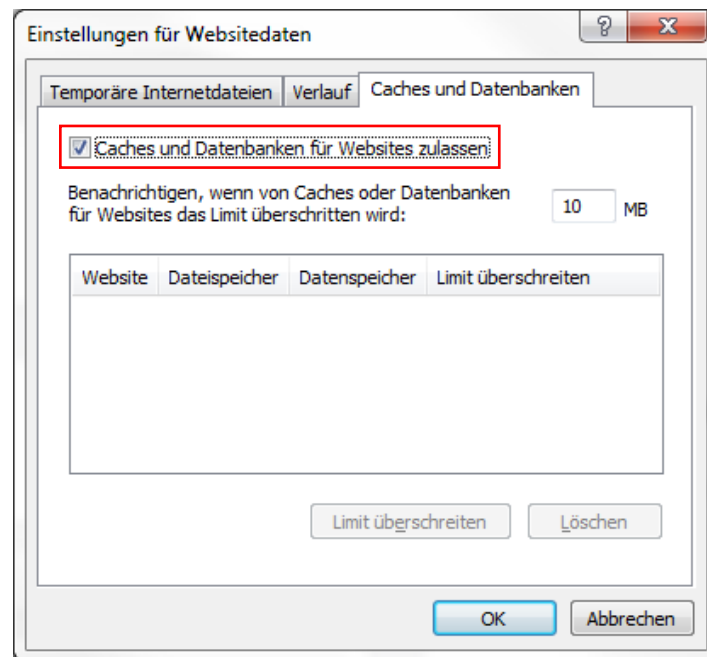
4. On the "General" tab, in the "Browsing history" section, click on "Settings".



5. On the "Temporary Internet Files" tab, select the option "Every time I visit the webpage".



6. On the “Caches and databases” tab, activate the check box “Allow website caches and databases”.



7. Click on “OK”.

4.2 Login

To open the web interface of your MSX-ilog data logger, proceed as follows:

- Open a web browser (Google Chrome and Mozilla Firefox work best).
- Enter the following address: “http://[IP address of the Ethernet data logger]”.

The IP address of the Ethernet data logger is indicated in the supplied software tool “MSX-E Quick App” (see Chapter 4.6.1).

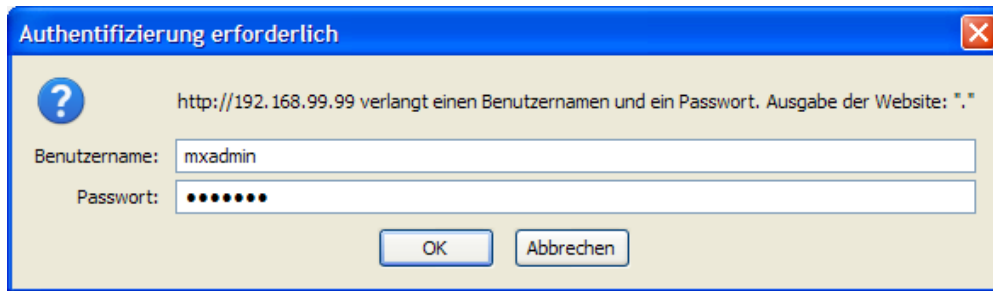


NOTICE!

Please ensure that the default IP address of the Ethernet data logger (192.168.99.99) is not assigned to another system on your network yet.

A login window is displayed:

Fig. 4-1: Web interface: Login window



- Enter "mxadmin" as the user name and password.

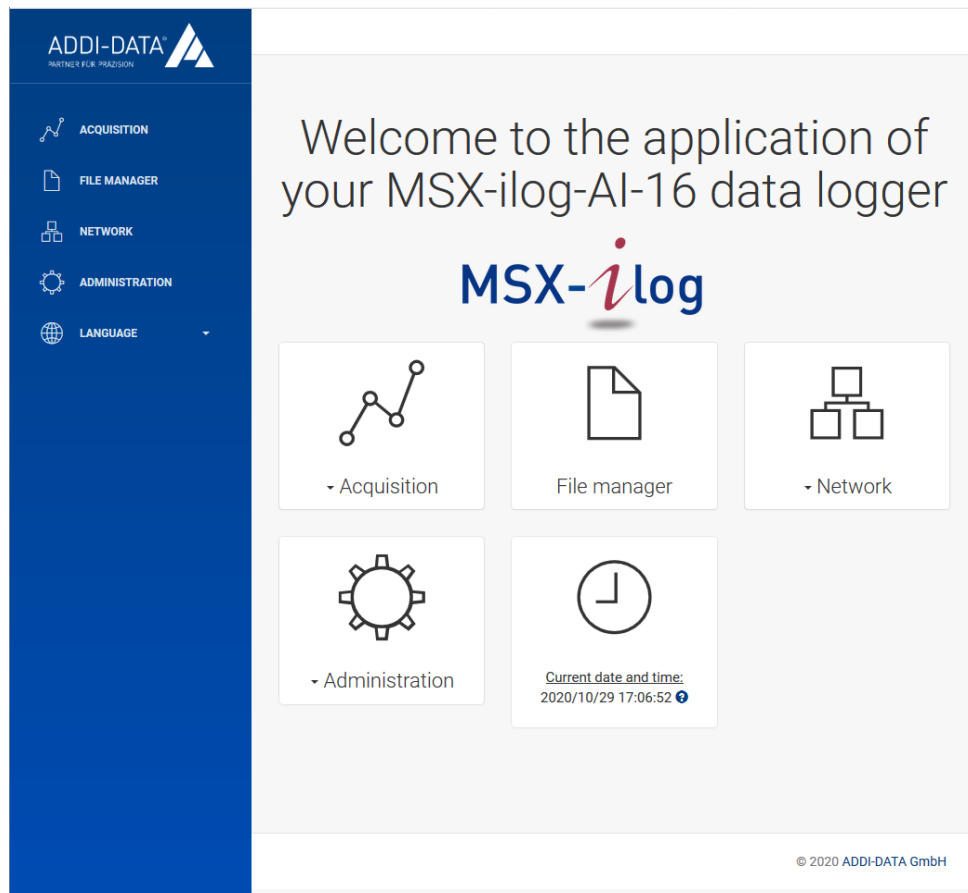


NOTICE!

The user name and password can be changed (see Chapter 4.6.2.).

Afterwards, the homepage of the web interface is displayed:

Fig. 4-2: Web interface: Homepage



4.3 Menu item “Acquisition”

4.3.1 “Channel configuration” tab

Fig. 4-3: Acquisition: Channel configuration (master system)

The screenshot shows the 'Channel configuration' tab in the ADDI-DATA web interface. The sidebar on the left contains navigation links: ACQUISITION (selected), FILE MANAGER, NETWORK, ADMINISTRATION, and LANGUAGE. The main content area is titled 'Channel configuration' and includes a 'Save configuration' button. Below this, there are two dropdown menus: 'Master system (MSX-IL0G-AI-16)' and '192.168.99.99 (MSX-E3211-RTD-16)'. The main part of the interface is a table for configuring channels. The table has columns: CHANNEL, SELECT, COLOUR, IDENTIFIER, UNIT, FREQUENCY (Hz), OFFSET, MULTIPLIER, GAIN, and POLARITY. There are six channels listed, numbered 0 to 5. Channel 0 is selected (checkbox checked) and has a black color swatch, identifier 'a dsg', unit 'unit space', frequency 10 Hz, offset 0, multiplier 1, gain 1, and unipolar polarity. Channels 1 to 5 are not selected (checkbox unchecked) and have various color swatches (red, purple, pink, brown, orange). All channels have a frequency of 10 Hz, offset of 0, multiplier of 1, gain of 1, and unipolar polarity.

CHANNEL	SELECT	COLOUR	IDENTIFIER	UNIT	FREQUENCY (Hz)	OFFSET	MULTIPLIER	GAIN	POLARITY
0	<input checked="" type="checkbox"/>		a dsg	unit space	10	0	1	1	unipolar
1	<input checked="" type="checkbox"/>		b		10	0	1	1	unipolar
2	<input type="checkbox"/>		c		10	0	1	1	unipolar
3	<input type="checkbox"/>		d		10	0	1	1	unipolar
4	<input type="checkbox"/>				10	0	1	1	unipolar
5	<input type="checkbox"/>				10	0	1	1	unipolar

On this tab, you can configure the channels of your MSX-ilog data logger. For each channel, you can set the following parameters:

- **Select:** You can select the channels you want to acquire.
- **Colour:** Each channel can be assigned a colour. This colour is used for the visualisation of the channel.
- **Identifier:** It is possible to define a name for each channel, such as “Transducer1”, “Pt100_1”, etc. This name helps to identify the channel when it is visualised.
- **Unit:** In this field, you can enter the desired unit for each channel.
- **Frequency (Hz):** You can select the frequency at which each channel should be acquired. It is not necessary to set the same frequency for each channel. For example, channel 1 can be acquired at 100 Hz and channel 2 at 500 Hz at the same time.
- **Offset:** You can specify an offset for each channel. This value is added to the real value of the respective channel.
- **Multiplier:** For each channel, a multiplication factor can be specified. The real value of the channel is multiplied by this factor. If you enter both an offset and a multiplication factor, the first operation will be the multiplication and the second one the addition of the offset.
- **Gain:** The measurement gain for each channel can be selected.
- **Polarity:** The channels can be acquired in bipolar or unipolar mode.



NOTICE!

After setting all parameters, you have to click on the “Save configuration” button above.

Fig. 4-4: Acquisition: Channel configuration (slave system)

Channel configuration

Save configuration

Master system (MSX-ILOG-AI-16) 192.168.99.99 (MSX-E3211-RTD-16)

CHANNEL	SELECT	COLOUR	IDENTIFIER	UNIT	FREQUENCY (HZ)	OFFSET	MULTIPLIER	SAMPLING RATE	MODULE TYPE	SENSOR TYPE
0	<input checked="" type="checkbox"/>				10	0	1	160	TC	type k
1	<input type="checkbox"/>				10	0	1	160	TC	type k
2	<input type="checkbox"/>				10	0	1	160	TC	type k
3	<input type="checkbox"/>				10	0	1	160	TC	type k
4	<input type="checkbox"/>				10	0	1	160	RTD	pt100
5	<input type="checkbox"/>				10	0	1	160	RTD	pt100

If a slave system is connected to the data logger (see next chapter), you can also configure these channels.

4.3.2 “Slave systems” tab

Fig. 4-5: Acquisition: Slave systems

Slave systems

SELECTED SYSTEM	IP ADDRESS	SYSTEM NAME	STATUS
<input checked="" type="checkbox"/>	192.168.99.99	MSX-E3211-RTD-16	●

Save

It is possible to connect the Ethernet system **MSX-E3211** as a slave to the MSX-ilog data logger. To configure its channels (see previous chapter), you first need to select the system from the list and click on “Save”.

4.3.3 “Virtual channel configuration” tab

Fig. 4-6: Acquisition: Virtual channel configuration

VIRTUAL CHANNEL	SELECT	COLOUR	IDENTIFIER	UNIT	OPERATION	FREQUENCY (Hz)
V0			virtual 1	V	-\$0	20
V1			virtual 2	V	\$0-\$8	20
V2						10
V3						10
V4						10

This tab is similar to that of the real channels. You can select the channels to be acquired, the corresponding colours and the frequency. Also, you can define channel identifiers and specify the unit of the acquired data.

As a virtual channel is the result of a mathematical operation, another parameter is “Operation”. It allows you to carry out such an operation using the values of the real channels. For example, you can enter the formula $\$1 + \2 . This means that the value of the virtual channel results from the addition of the real channels 1 and 2.



NOTICE!

After setting all parameters, you have to click on the “Save configuration” button above.

4.3.4 “Alarm configuration” tab

Fig. 4-7: Acquisition: Alarm configuration

The screenshot shows the 'Alarm configuration' tab in the ADDI-DATA web interface. The sidebar on the left contains the following menu items: ACQUISITION, FILE MANAGER, NETWORK, ADMINISTRATION, and LANGUAGE. The main content area has a title 'Alarm configuration' and a 'Save configuration' button. Below this is a table with columns: ALARM, SELECT, CHANNEL, BOTTOM VALUE, and TOP VALUE. The table contains 7 rows of configuration data.

ALARM	SELECT	CHANNEL	BOTTOM VALUE	TOP VALUE
0	<input checked="" type="checkbox"/>	0	1,92	4,04
1	<input type="checkbox"/>	1	1	2
2	<input type="checkbox"/>	2	4	6
3	<input type="checkbox"/>	0	0	0
4	<input type="checkbox"/>	0	0	0
5	<input type="checkbox"/>	0	0	0
6	<input type="checkbox"/>	0	0	0

On this tab, you can select the alarms to be activated and the channels to be monitored. In addition, you can specify a range for each channel value. An alarm will be triggered if the channel value is out of this range, i.e. lower than the bottom value or higher than the top value. It is possible to specify only one value (bottom or top value) or both values.



NOTICE!

After setting all parameters, you have to click on the “Save configuration” button above.

4.3.5 “Trigger configuration” tab

Fig. 4-8: Acquisition: Trigger configuration

On this tab, you can configure the triggers. These are mechanisms that enable you to acquire the data at a given time and to start the acquisition when an event occurs. For each trigger, you can specify the following settings:

- **Activate:** Click on the toggle switch button to activate the trigger.
- **Pre-trigger acquisition:** There is a pre-trigger saving mechanism, which allows you to acquire x values before the start trigger occurs.
- **Pre-trigger channels:** You can specify which of the selected channels should be acquired before the start trigger occurs.
- **Start configuration:**
 - **Start type:** Each acquisition is started by a trigger event. From the following two categories, you can select the desired type of trigger:
 - **Analog:** The acquisition is started when the value of the selected channel (“Channel”) is higher or lower than (“Type”) the value defined by you (“Value”).
 - **Digital:** The acquisition is started when there is a rising or falling edge at the digital input of the MSX-ilog data logger. You can define the number of edges (“Number of rising edges” or “Number of falling edges”) after which the acquisition should be started.
- **Acquisition:**
 - **Channel:** You can select the channels that should be acquired when a trigger occurs.

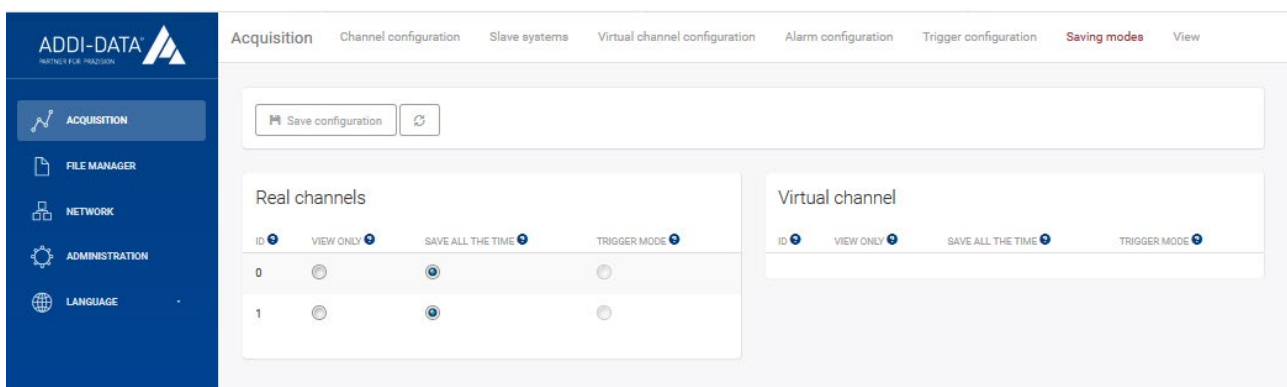
- **Stop configuration:**

- **Stop type:** Each acquisition is stopped by a trigger event. From the following three categories, you can select the desired type of trigger:
 - **Analog:** The acquisition is stopped when the value of the selected channel ("Channel") is higher or lower than ("Type") the value defined by you ("Value").
 - **Digital:** The acquisition is stopped when there is a rising or falling edge at the digital input of the MSX-ilog data logger. You can define the number of edges ("Number of rising edges" or "Number of falling edges") after which the acquisition should be stopped.
 - **Time:** The acquisition is stopped as soon as the time (in seconds, milliseconds or microseconds) defined by you ("Time elapsed") has elapsed.

**NOTICE!**

After setting all parameters, you have to click on the "Save configuration" button above.

4.3.6 "Saving modes" tab

Fig. 4-9: Acquisition: Saving modes

For each of the real and virtual channels, you can choose between three saving modes:

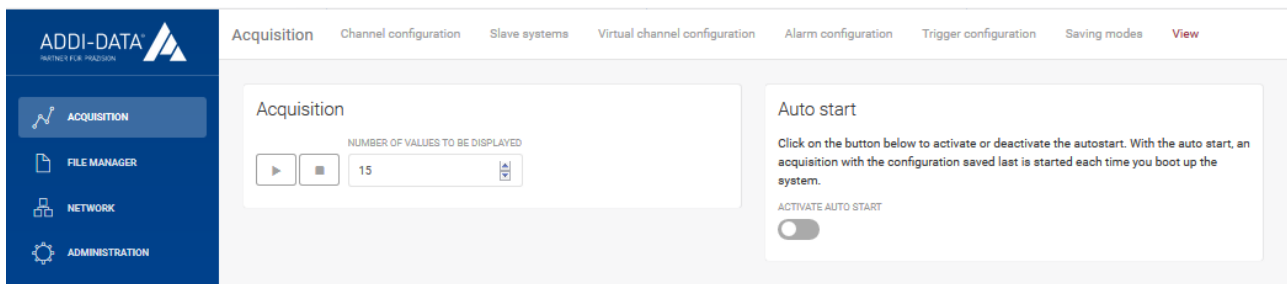
- **View only:** The values of the channel are not saved and thus can only be viewed live on the "View" tab.
- **Save all the time:** The values of the channel are acquired and saved all the time.
- **Trigger mode:** The values of the channel are only saved during an acquisition that is started and stopped by a trigger. This mode is preselected if you have activated a trigger for the channel.

**NOTICE!**

After setting all parameters, you have to click on the "Save configuration" button above.

4.3.7 “View” tab

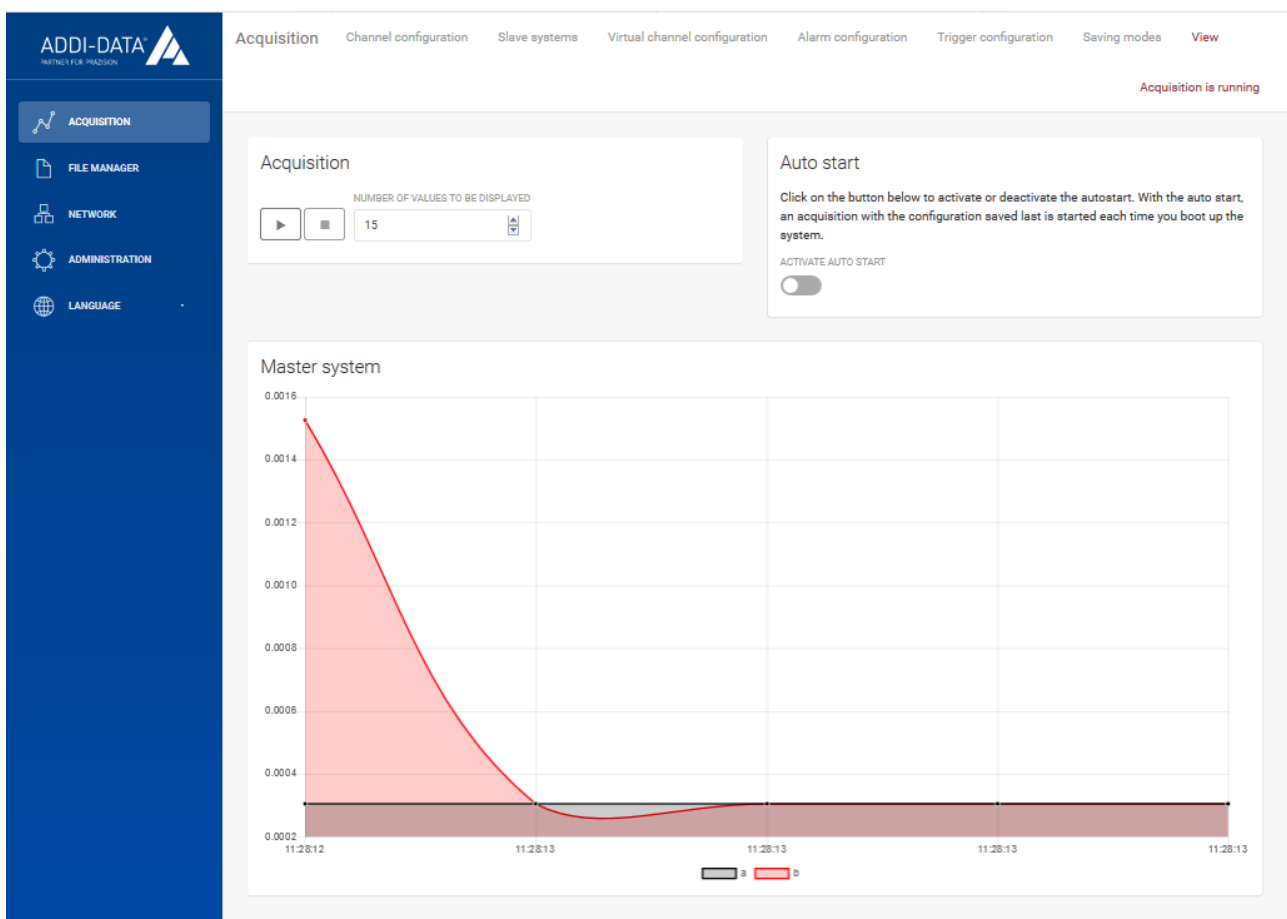
Fig. 4-10: Acquisition: View



1) Acquisition

The acquired data can be viewed live in a curve diagram on this tab when an acquisition is running. In this section, you can specify the number of values to be displayed in the diagram.

Fig. 4-11: Live view: Curve diagram (example)



- To start the acquisition after configuring it, click on the “Start” button on the left.



- To stop the acquisition, click on the “Stop” button on the right.

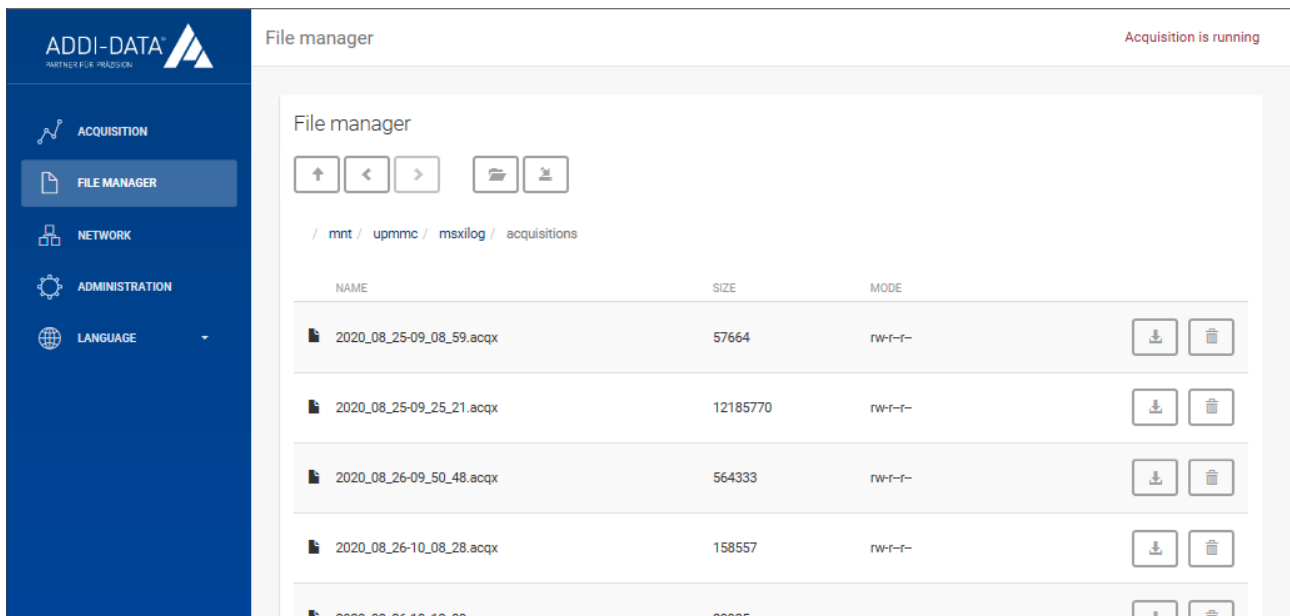


2) Auto start

If this option is activated, an acquisition with the configuration saved last can be started automatically as soon as the data logger has booted up.

4.4 Menu item “File manager”

Fig. 4-12: File Manager



On this tab, you can find a list of the acquisitions that have been run.

To download the data of the desired acquisition, you have to click on the “Download” button on the right of the corresponding line.

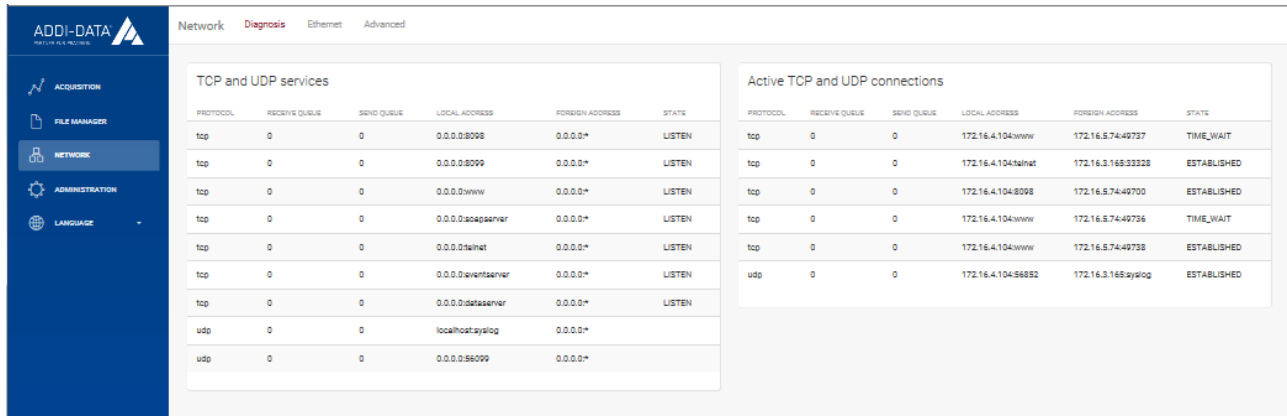
As the downloaded data is only available as binary data, you have to use the “ilog Exporter” program to export or view this data (see Chapter 4.6.1).

4.5 Menu item “Network”

4.5.1 “Diagnosis” tab

On this tab, the states of the TCP and UDP connections are displayed.

Fig. 4-13: Network: Diagnosis



TCP and UDP services					
PROTOCOL	RECEIVE QUEUE	SEND QUEUE	LOCAL ADDRESS	FOREIGN ADDRESS	STATE
tcp	0	0	0.0.0.0:8098	0.0.0.0*	LISTEN
tcp	0	0	0.0.0.0:8099	0.0.0.0*	LISTEN
tcp	0	0	0.0.0.0:www	0.0.0.0*	LISTEN
tcp	0	0	0.0.0.0:soapserver	0.0.0.0*	LISTEN
tcp	0	0	0.0.0.0:telnet	0.0.0.0*	LISTEN
tcp	0	0	0.0.0.0:eventsrvier	0.0.0.0*	LISTEN
tcp	0	0	0.0.0.0:datasrvier	0.0.0.0*	LISTEN
udp	0	0	localhost:syslog	0.0.0.0*	
udp	0	0	0.0.0.0:56099	0.0.0.0*	

Active TCP and UDP connections					
PROTOCOL	RECEIVE QUEUE	SEND QUEUE	LOCAL ADDRESS	FOREIGN ADDRESS	STATE
tcp	0	0	172.16.4.104:www	172.16.5.74:49737	TIME_WAIT
tcp	0	0	172.16.4.104:telnet	172.16.3.165:33328	ESTABLISHED
tcp	0	0	172.16.4.104:8098	172.16.5.74:49700	ESTABLISHED
tcp	0	0	172.16.4.104:www	172.16.5.74:49736	TIME_WAIT
tcp	0	0	172.16.4.104:www	172.16.5.74:49738	ESTABLISHED
udp	0	0	172.16.4.104:56852	172.16.3.165:syslog	ESTABLISHED

4.5.2 “Ethernet” tab

On this tab, you can change the network configuration of your Ethernet data logger.



NOTICE!

Changes that are not appropriate to your local network may cause problems in communication with the Ethernet data logger.

Fig. 4-14: Network: Ethernet



NOTICE!

Once you have changed a parameter, you have to click on the respective “Save” button to save your settings.

1) Configuration

In the field “Network hostname”, you can enter up to 64 characters of any kind. When you click on “Save”, this change takes immediately effect.

- In the field “Network address”, enter an IP address in the form of “198.168.99.99” and click on “Save”.

The new value will be used when the Ethernet data logger is restarted.

The following parameters can also be set:

- **Netmask:** IP network mask for this interface; default value of the usual class A, B or C network mask (as derived from the interface IP address) or any value
- **Gateway:** is added to the routing table; valid or symbolic IP address, or 0.0.0.0 if not available
- **Broadcast address:** Broadcast address of the protocol for this interface; in case of the value 0.0.0.0, it is automatically computed from IP address and network mask; optional field

2) DHCP server

The Ethernet data logger has a DHCP server which is used to automatically assign an IP address to a PC that has just connected to the DHCP server.

The DHCP server is activated for the Ethernet network when you click on the button “Use DHCP server”. The range of the IP addresses to be entered in the “Start address” and “End address” fields must correspond to the IP address of the Ethernet data logger, i.e. it must be on the same network.

3) DHCP server log

This section contains logs of the DHCP server.

4) DHCP client

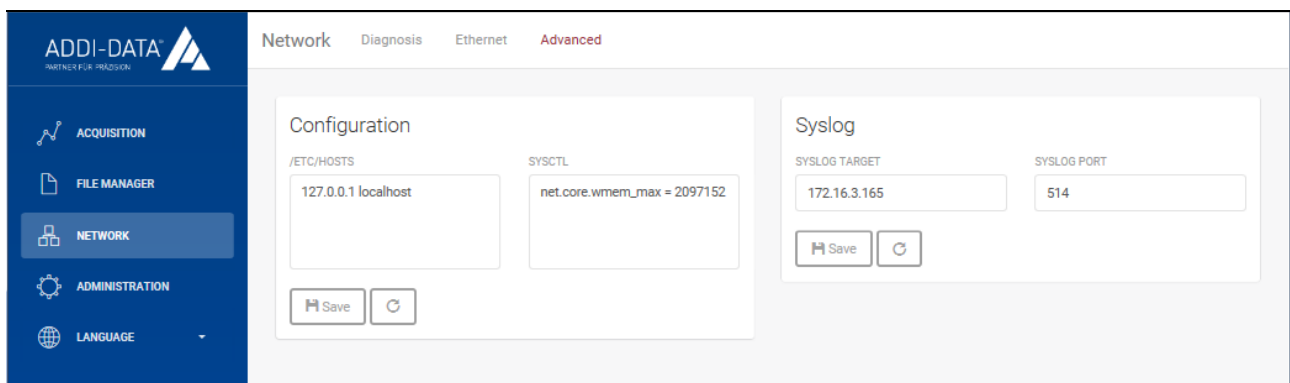
If a DHCP server is available on your network, you can use it to get an IP address for your Ethernet data logger. The relevant parameters need to be set in the "DHCP client" section.

5) Eth0 initialisation log

In the "Eth0 initialisation log" section, the logs of the eth0 interface are displayed.

4.5.3 "Advanced" tab

Fig. 4-15: Network: Advanced



NOTICE!

Once you have changed a parameter, you have to click on the respective "Save" button to save your settings.

1) Configuration

In the "/Etc/Hosts" field, you can connect hostnames with IP addresses.

The maximum size of the socket receive buffer can be defined in the "Sysctl" field.

2) Syslog

The Ethernet data logger can send logging information to a system on the network by using the syslog protocol.

■ In the "Syslog Target" field, enter the IP address of the system that receives the information.

If the "Syslog Target" field is left blank, this function is deactivated.

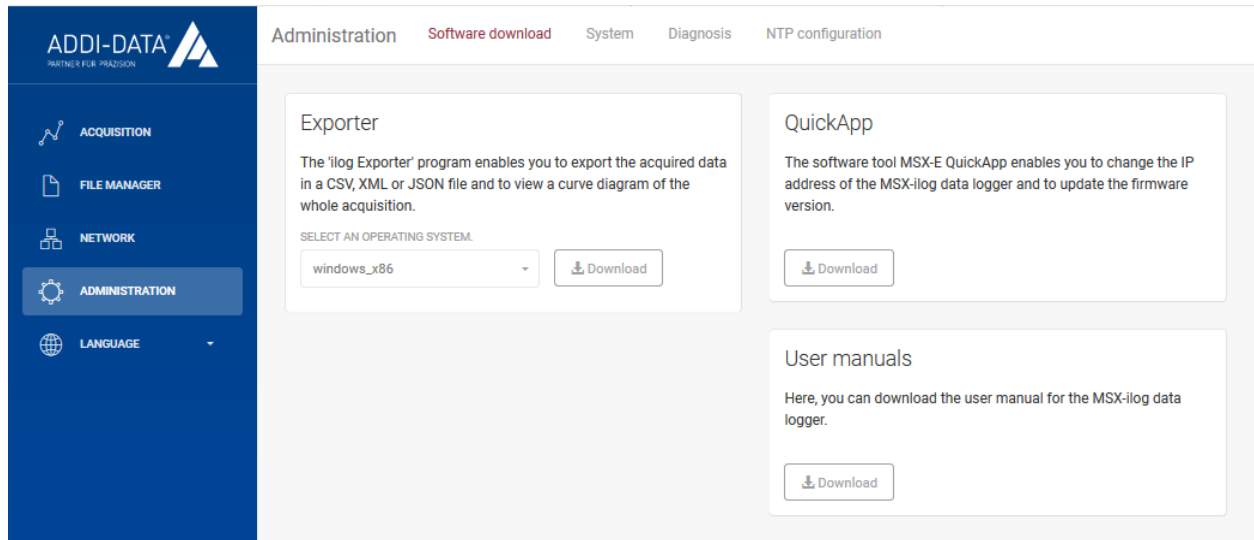
The "Syslog Port" field contains the port number (UDP) that should be used. It must be a number between 1 and 65535. 514 is defined as the default value.

The new configuration will take effect when the Ethernet data logger is restarted.

4.6 Menu item “Administration”

4.6.1 “Software download” tab

Fig. 4-16: Administration: Software download

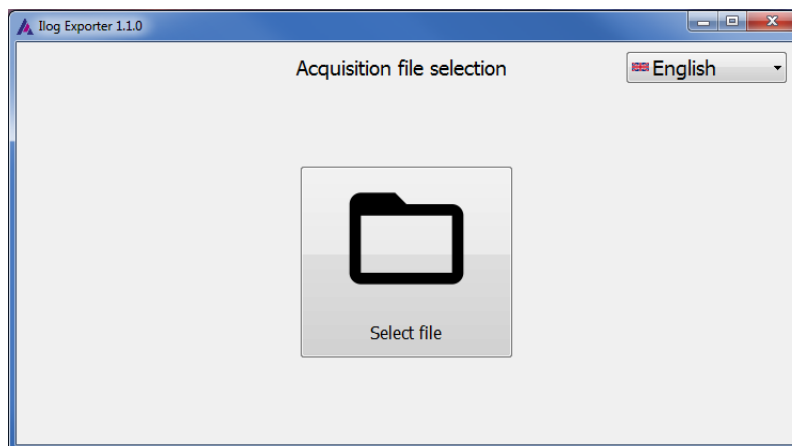


1) Exporter

In this section, the “ilog Exporter” program is available for download. This software enables you to export and view the acquired data.

1. Select your operating system and click on “Download”.
2. Save the .zip file.
3. In the “Downloads” directory of your Windows Explorer, right-click on the saved .zip file and select “Extract All...”.
4. Extract all files.
5. In the “Ilog_exporter” subfolder (e.g. “Ilog_exporter-Windows_x86”), double-click on the file “Ilog_exporter.exe”.

Fig. 4-17: Ilog Exporter: Acquisition file selection



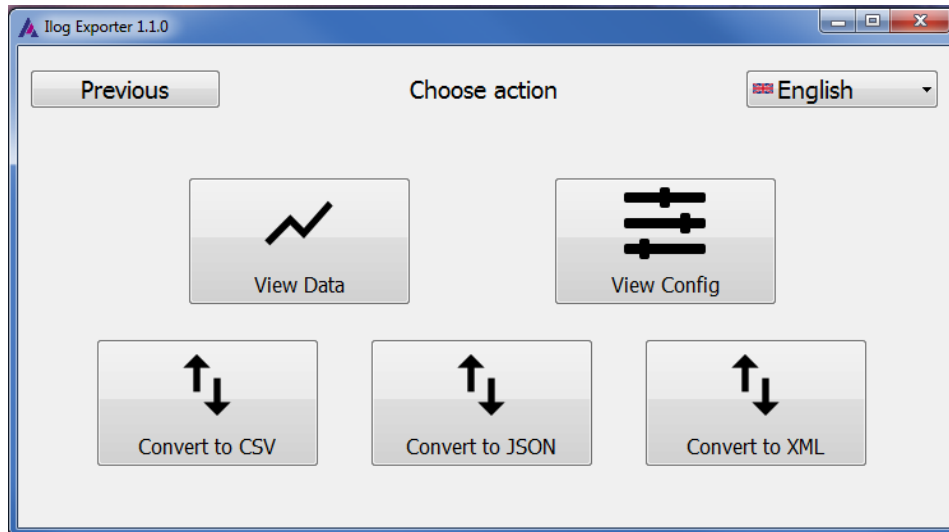
**NOTICE!**

In order to select an acquisition file, you first have to download it as described in Chapter 4.4.

6. In the “ilog Exporter” window, click on the “Select file” button.

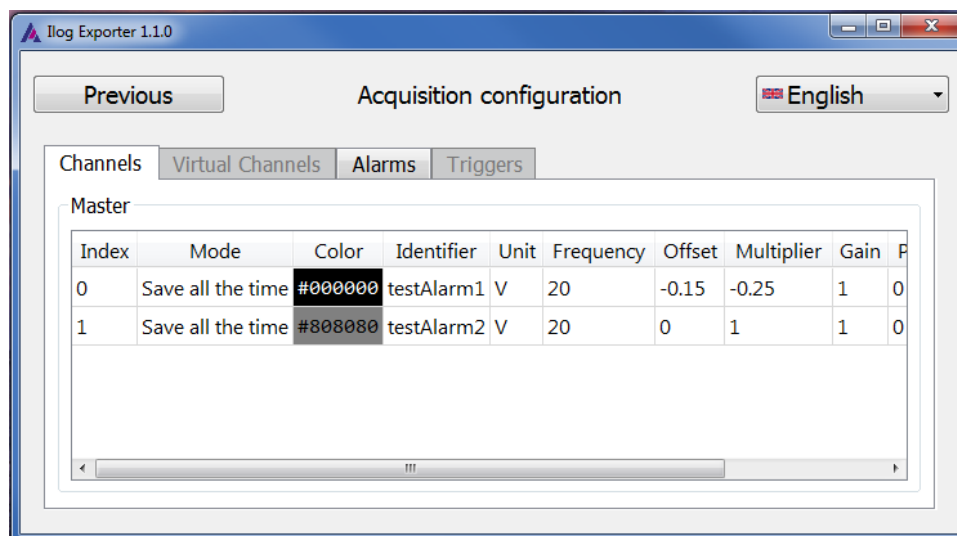
7. Select the desired acquisition file.

Fig. 4-18: ilog Exporter: Choose action



If you click on the „View Data” button, a curve diagram of the whole acquisition is displayed. Via the “View Config” button, you can view the configuration for the acquisition. By clicking on a “Convert to ...” button, you can export the acquired data in a CSV, JSON or XML file.

Fig. 4-19: ilog Exporter: Acquisition configuration (example)

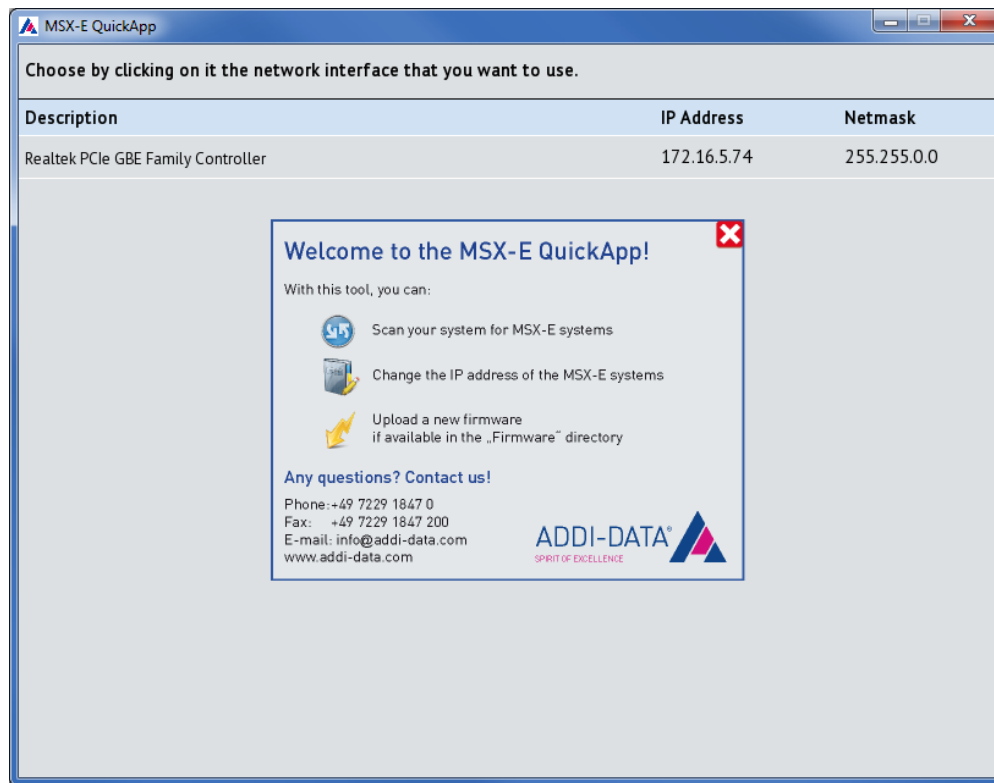


2) QuickApp

In this section, you can download the software tool “MSX-E QuickApp”.

It allows you to scan the connected systems, change the IP address of your MSX-ilog data logger and to update the firmware version.

Fig. 4-20: Software tool „MSX-E QuickApp“



3) User manuals

The user manual for the MSX-ilog data logger can be downloaded [here](#).

4.6.2 “System” tab

In the sections “General”, “Date and time” and “Internal temperature”, you can get general information on the Ethernet data logger such as firmware version, system time and internal temperature of the device.

Fig. 4-21: Administration: System

Administration Software download **System** Diagnosis NTP configuration

General

ITEM	VALUE
MSX-ilog type	MXILOG302X
OS version	MXILOG302X(1000)_9379
Serial number	A-D 816052
PLD type	EP2C5
PLD firmware version	ADDI 301X 0000002A
MAC address	00:0F:6C:0C:73:B4
IP address	172.16.4.110
Network hostname	MSX-ILOG-AI-16

Date and time
2020/11/11 13:19:55

Internal temperature
33 °Celsius

Reboot
When you click on the 'Reboot' button, the system is restarted.

Security
Notice!
The password for the web interface can only be changed here in this section.
The only way to reset the password (in case you have forgotten it) is to send the data logger back to ADDI-DATA GmbH.
So please keep the password in mind!

NEW USER NAME: CONFIRM NEW USER NAME:

NEW PASSWORD: CONFIRM NEW PASSWORD:

1) Security

The user name and password for accessing the web interface can be changed in this section.



NOTICE!

If you have forgotten your new password, you must send the data logger back to ADDI-DATA in order to reset the password.

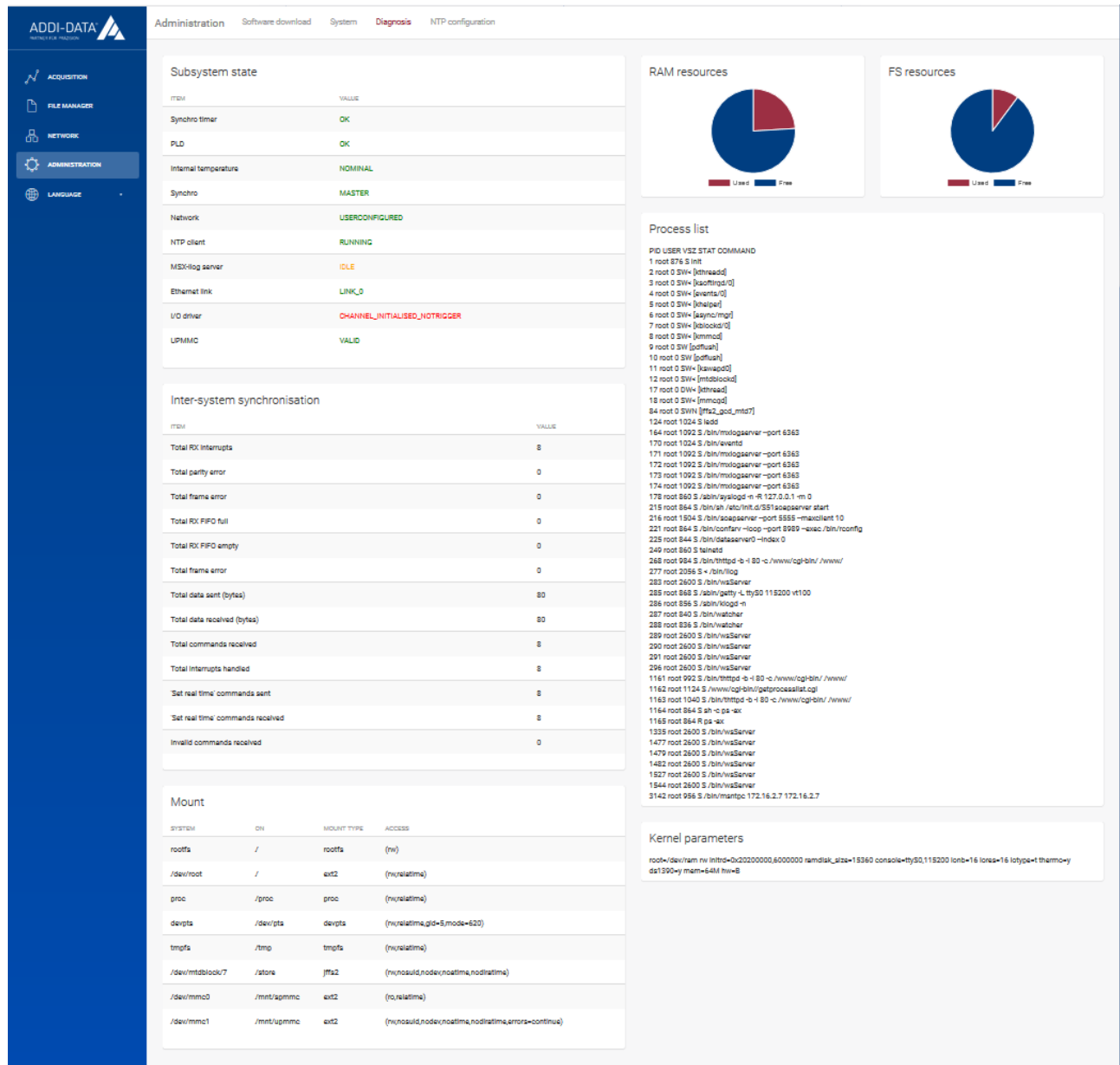
2) Reboot

You can reboot your Ethernet data logger by clicking on the corresponding button.

4.6.3 “Diagnosis” tab

This tab gives you information on the current state of the Ethernet data logger.

Fig. 4-22: Administration: Diagnosis



1) Subsystem state

Here, the states of the different subsystems are displayed.

2) Inter-system synchronisation

This section contains information on synchronisation commands.

3) Mount

In the "Mount" section, there is a list containing the different partitions of the Ethernet data logger.

4) RAM resources / FS resources

In these sections, the current memory space of the RAM memory and that of the permanent memory (FS = file system) are displayed.

5) Process list

In the "Process list" section, the processes running in the Ethernet data logger are listed.

6) Kernel parameters

In this section, the kernel parameters of the Ethernet data logger are specified.

4.6.4 "NTP configuration" tab

Fig. 4-23: Administration: NTP configuration



NOTICE!

Once you have changed a parameter, you have to click on the respective "Save" button to save your settings.

1) Date and time configuration

You can configure the date (dd/mm/yyyy) and the time of the Ethernet data logger manually.

2) Set the time of this system

To set the current time for the data logger, you have to click on the "Apply" button.

3) NTP client

In order to synchronise the data logger time with that of the NTP server, the NTP client has to be configured.

The following parameters need to be defined:

- **NTP server 1:** IP address of NTP server 1 (if not activated, enter 0.0.0.0)
- **NTP server 2:** IP address of NTP server 2 (if not activated, enter 0.0.0.0)
- **Number of seconds to wait before retrying**



NOTICE!

After configuring the NTP client, you need to restart it by clicking on the corresponding button.

4.7 Menu item “Language”

The language of the web interface can be selected: English, French or German.

5 Return or disposal

5.1 Return

If you need to return your Ethernet data logger, you should read the following checklist before.

Checklist for returning the Ethernet data logger:

- Specify the reason for returning your Ethernet data logger (e.g. exchange, modification, repair), the serial number of the Ethernet data logger, the contact person in your company including his/her telephone extension and e-mail address, as well as the mailing address for a potential new delivery. You do not have to indicate the RMA number.

Fig. 5-1: Serial number



- Note down the serial number of the Ethernet data logger.
- Place the Ethernet data logger in an ESD protective cover. Then pack it in a cardboard box so that it is well-protected for shipping. Send the packed Ethernet data logger together with your details to:

ADDI-DATA GmbH
Airpark Business Center
Airport Boulevard B210
77836 Rheinmünster
Germany

- If you have any questions, do not hesitate to contact us:
Phone: +49 7229 1847-0
E-mail: info@addi-data.com

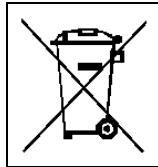
5.2 Disposal of ADDI-DATA waste equipment

ADDI-DATA organises the disposal of ADDI-DATA products that were put on the German market after 13 August 2005.

If you want to return waste equipment, please e-mail your request to: info@addi-data.com.

Ethernet data loggers that were delivered after 13 August 2005 can be recognised by the following label:

Fig. 5-2: Disposal: Label



This symbol indicates the disposal of waste electrical and electronic equipment. It is valid in the European Union and in other European countries that have a separate collection system. Products carrying this symbol must not be treated as household waste.

For more detailed information on the recycling of these products, please contact your local citizens' office, your household waste collection service, the shop where you bought this product or the distributor you purchased this product from.

If you dispose of this product correctly, you will help to prevent damage that could be caused to the environment and to human health by inappropriate disposal. The recycling of materials will help to conserve our natural resources.

Disposal in other countries than Germany

Please dispose of the product according to the country-specific regulations.

6 Appendix

6.1 Glossary

Acquisition

Data acquisition means gathering information from sources such as sensors and transducers in an accurate, timely and organised manner. Modern systems convert this information to digital data which can be stored and processed by a computer.

Buffer

The buffer is used for the temporary storage of information that is only needed at a later time.

Cable shield

This is the conductive cover for a cable or a line to protect individual leads or the whole cluster against electromagnetic interference from outside. Cable shields consist either of a network of bare copper wires (mesh shield, density $\geq 80\%$), copper wires with counter helix conductors, copper strips or conductive plastic layers.

ESD

= Electrostatic Discharge

ESD is the sudden and momentary electric current that flows between two objects at different electrical potentials caused by direct contact or induced by an electrostatic field. The term is usually used in the electronics and other industries to describe momentary unwanted currents that may cause damage to electronic equipment.

Event

An event is an occurrence detected by the MSX-ilog data logger. Where e.g. a short-circuit is detected and an event is activated, a short-circuit warning can be sent via the event server.

IP degree of protection

The IP standard defines the degree of protection of a system against dirt and water. The first figure after the "IP" (e.g. 6 in IP 65) indicates the degree of protection against solid objects penetrating the housing.

The second figure indicates the degree of protection against liquids penetrating the housing.

In IP 65, the figures 6 and 5 have the following meaning: 6 = full protection against moving parts and against dirt penetration; 5 = protection against jets of water from any direction.

In IP 40, the figure 4 equates to protection against contact with small objects and protection against small foreign bodies (larger than 1 mm). The figure 0 means that there is no protection.

Level

Logic levels are defined for processing and displaying information.

In binary switches, voltages are used for digital values. Here, the two voltage ranges H (high) und L (low) represent the information. The 'H' range is closer to plus infinity; the 'H' level corresponds to digital 1. 'L' denotes the range closer to minus infinity; the 'L' level corresponds to digital 0.

Optical isolation

Optical isolation means that two networks are only connected through an optoelectric transmitter and receiver with no electrical continuity between the two networks.

Short-circuit

A short-circuit is an electrical circuit in a device of lower resistance than that of a normal circuit, typically resulting from the unintended contact of components, and consequent accidental diversion of the current.

Trigger

A trigger is a pulse or signal for starting or stopping a special task. Triggers are often used for controlling data acquisition.

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7 Contact and support

Do you have any questions? Write or call us:

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E-mail: info@addi-data.com

Manual and software download from the Internet:

www.addi-data.com