

PROCENTEC



OSIRIS
on **Atlas** and **Mercury**
User Manual

Safety Guidelines

This manual contains notices which you should observe to ensure your own personal safety, as well as to protect the product and connected equipment. These notices are highlighted in the manual by a warning sign and are marked as followed according to the level of danger:



Draws your attention to important information on handling the product, a particular part of the documentation or the correct functioning of the product.

Warning

This device and its components may only be used for the applications described in this manual and only in connection with devices or components that comply with Industrial Ethernet interfaces.

This product can only function correctly and safely if it is transported, stored, set up, installed, operated and maintained as recommended. Atlas and/ or Mercury is a CE class A product. In a domestic environment it may cause radio interference in which case the user may be required to take adequate measures.

Warranty

Warranty is void if you open Atlas and/or Mercury.

Qualified Technicians

Only qualified technicians should be allowed to install and work with this equipment. Qualified technicians are defined as persons who are authorized to commission, to ground, to tag circuits and systems in accordance with established safety practices and standards. It is recommended that the technicians carry a Certified PROFINET Installer or Certified PROFINET Engineer certificate.

Disclaimer of Liability

We have checked the contents of this manual as much as possible. Since deviations cannot be precluded entirely, we cannot guarantee full agreement. However, the content in this manual is reviewed regularly and necessary corrections will be included in subsequent editions. Suggestions for improvements are welcome.

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Important information

Purpose of the Manual

This user manual provides information how to work with Alas or Mercury.

Mercury is based on Panasonic Toughpad FZ-M1 tablet. This manual does not describe usage of the tablet itself. For a manual of the tablet, refer to the manual of FZ-M1 on the Panasonic website

Support

In case of a defective product or unanswered questions, please get in contact with the support department:

T: +31-(0)174-671800
F: +31-(0)174-671801
E: support@procentec.com

Recycling and Disposal

The parts of the Mercury can be recycled.



“WARNING, BATTERY INSIDE; Battery may explode if mistreated. Do not disassemble or dispose of in fire. Dispose product according to the instructions”

For further information about environment-friendly recycling and the procedure for the disposing of your old equipment, please contact:

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Document Updates

You can obtain constantly updated information on PROCENEC products on the Internet at www.procentec.com

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1. Product description

1.1 Introduction

PROCENEC's Osiris on Atlas and Mercury is the solution for monitoring and diagnosing Ethernet networks, where innovative simplicity and predictive capabilities are desired. The tool is perfect for preventing unexpected and expensive downtime within industrial Ethernet networks.

PROCENEC's Osiris provides unique insight in your networks health and topology. With PROCENEC Osiris operators and engineers can easily detect problems and find their causes within your network. This prevents costly down times.

The ease of use and clear overview makes this an ideal solution for the complete understanding of networks, always and anywhere. Atlas is a compact device that can be installed on a DIN rail and plugged in to the network, and Mercury is the portable version. Osiris does not require additional and time-consuming software installations on the PC. You can get all the information using a custom designed web application. All the information Osiris provides can be viewed on the central, customizable dashboard page.

1.2 Your benefits

- Ease of use
- Use of Industrial Ethernet
- Topology
- Standalone device, 24/7 available
- Safe use
- Customizable dashboard
- Resistant to all environmental factors
- No software required

1.3 Product features

- Network Topology
- Customizable dashboard
- Network Quality Factor
- Alarms
- Not vendor or protocol specific

1.4 System requirements

Osiris runs on any browser-enabled computer; the interface is fully web based. HTML5 and JavaScript must be supported by the browser.

The minimum version requirements for web browsers are:

- Chrome version 46 or higher
- Edge version 25 or higher
- Firefox version 42 or higher
- Safari version 5 or higher

For optimal experience it is recommended to use Chrome. Internet Explorer is not supported.

2. Atlas

2.1 Quick Start

This checklist describes all the steps to a quick usage of Atlas.

Step: Instructions: _____

STEP 1 Install the device on a DIN rail.

STEP 2 Connect the Office port to your laptop and the Factory port to the factory network. The factory side should NOT be connected to a mirror port of a switch.

STEP 3 Connect the Atlas to a power supply. Wait until the green RDY LED is on.

STEP 4 Set your laptops IP address to 192.168.1.1 and the netmask to 255.255.255.0.

STEP 5 Open a web browser and go to <https://192.168.1.10/>. You will receive a warning about the certificate:

- Chrome users should click 'ADVANCED followed by 'Proceed ..'
- Edge users should click 'Continue to this website ..'

STEP 6 Enter user 'admin' and password 'admin' for the first login.

STEP 7 Now complete the Setup Wizard but do not change the settings of Office port yet.

STEP 8 Now setup the Office port in the Settings, unplug your laptop and connect the Office port to the office network.

The Atlas is now operational. From here you can change settings, layout and behavior of the Atlas. If connected to a factory network, it will start scanning and gathering information.

2.2 Atlas installation instructions

2.2.1 Location

Atlas can be installed anywhere in a non-hazardous / non-Ex area that complies with IP 20 (DIN 40 050) and the specified temperature range of -20° to +60° Celsius. Do not install the Atlas in a humid or dusty environment. To comply with UL certification regulations, in ambient temperatures higher than 55°C or 131°F it is mandatory to install the Atlas in an industrial installation cabinet with the "HOT HOUSING" warning label visible during operation.



“WARNING, HOT HOUSING. When in use at an ambient temperature higher than 55°C or 131°F, the housing of the Atlas will be hot. Do not touch the housing!”

To comply with UL certification regulations the Atlas is to be used at altitudes not exceeding 2000m and in non-tropical climate regions only.

2.2.2 Position

Atlas can only be installed on a horizontal 35mm DIN rail with the front plates facing forward (see Figure 2 for an example). In this position the generated heat of the module can escape through the grid in the top of the housing. It is also easier to read the status LEDs. Do not install the Atlas in any other position, this could lead to overheating of the device.

2.2.3 Power supply

The Atlas contains a 3-pin screw type power connector on the front.

The layout is as follows:

- 1 = - (upper pin)
- 2 = + (middle pin)
- 3 = SH (lower pin)

The power supply must comply with the following specifications:

- Voltage: 12 .. 24 VDC
- Wire diameter: < 2.5 mm²



Figure 1 – Atlas mounted on a 35mm DIN rail

For more information about the power supply see chapter [13 Technical specifications](#).

After the power has been connected, Atlas will boot up. This process can take up to 90 seconds. When it is booted, the green RDY LED will go on. You will see the Network Status LED blink yellow as long as the Setup Wizard has not been completed and a measurement has not been started.

2.2.4 Ethernet connections

The Atlas has two physical network interfaces named Office and Factory. The networks are not connected with each other one-on-one. The scanning, measuring and reporting of the network does not occur on the Office side, only on the Factory side.

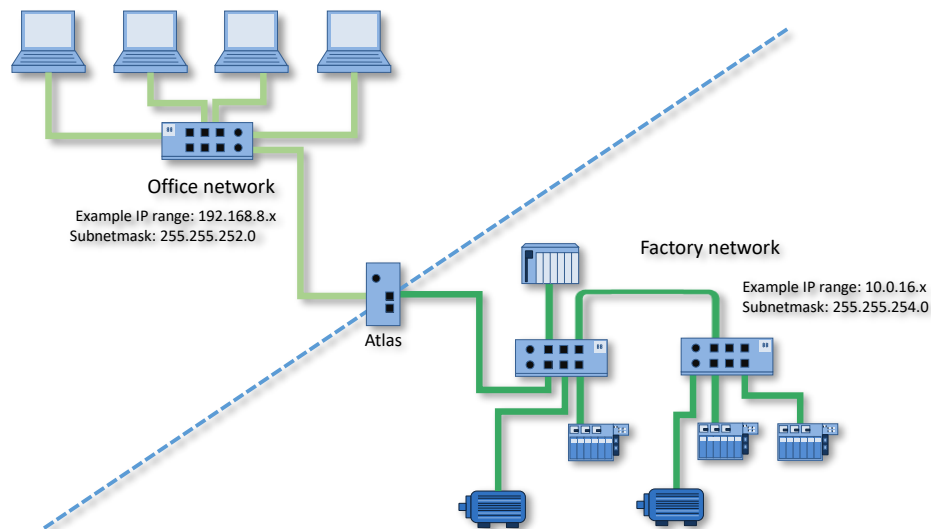
The Atlas may be connected anywhere in the Factory network. Do not use Mirror ports.

Please note: the web interface can be reached on the Office and the Factory network IP range. So it does not matter where you are connected, as long as you have set the correct IP range and netmask settings of your

laptop/client network card. You will only be able to scan and see the devices connected to the Factory network, not the Office network.

Pointers about the IP-address configuration:

In case your office and factory share the same (sub)network you should not connect and configure the Office port. Just make sure that the default Office IP-address does not exist on your network and uses a non-existing subnet. In case your company network does use the 192.168.1.0/24 subnet, please change the IP-address to be part of a non-existing network, for example 192.168.100.10/24.



For a description on how to use Atlas, read on from chapter 5.

3. Mercury

3.1 Quick Start

Step: Instructions: _____ :

STEP 1 Switch on the Mercury by pressing the power button on the top.

STEP 2 Log in by entering your Windows username and/or password/pincode.

STEP 3 Double-click on the OsirisControl icon on the desktop. When Osiris starts, it will show a login window.

STEP 4 Use user 'admin' and password 'admin' for the first login.

STEP 5 Complete the Setup Wizard by entering the requested details.

STEP 6 Connect the RJ45 port of Mercury to an empty port of the factory network (do not use a mirror port).

The Mercury is now operational. From here you can change settings, layout and behavior. If connected to a factory network, it will start scanning and gathering information.

4. Osiris User interface

Osiris displays all information by means of a web page. To access this information, simply open a web browser and type in the IP-address of your device (for Atlas the default address is 192.168.1.10 for the Office side and 192.168.0.10 for the Factory side; for Mercury, simply double-click on the OsirisControl icon on the desktop).

4.1 Terminology and definitions

In this manual the following terms and definitions are used to refer to items in the web interface.

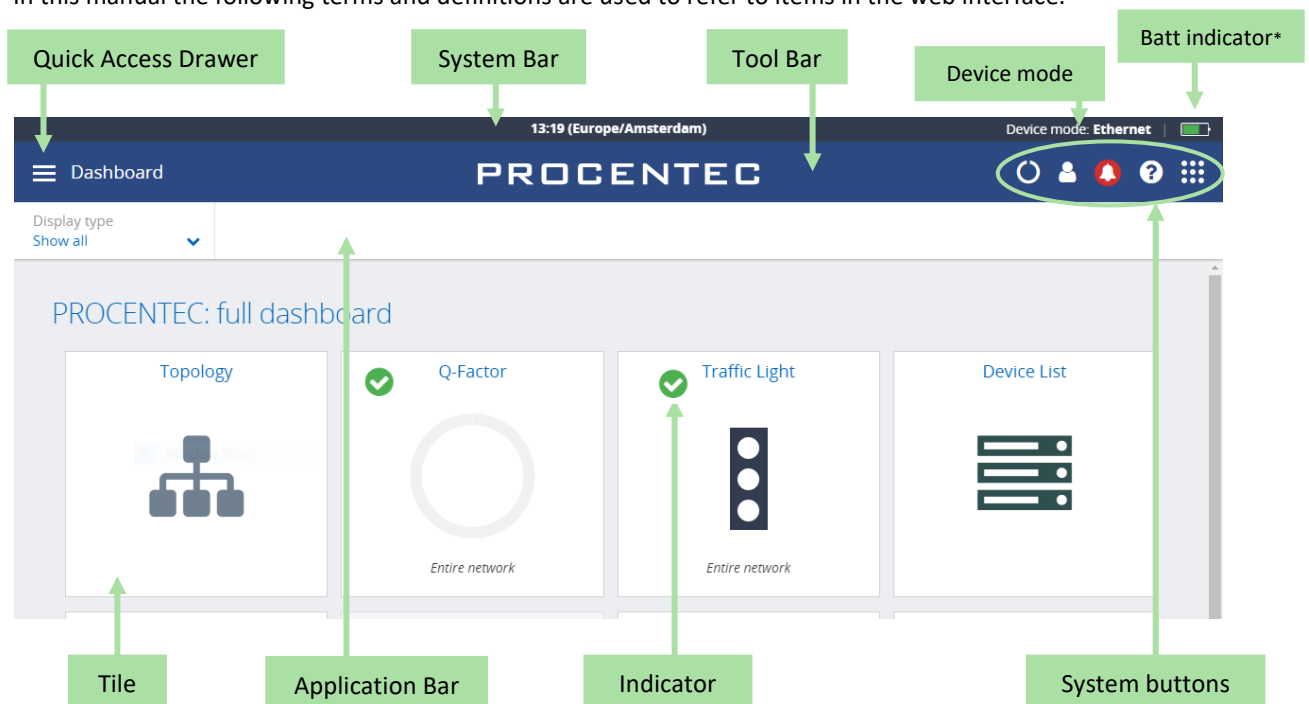


Figure 4 - Terminology used in the web interface

*Note: When using Osiris on a Mercury, a battery indicator icon will be present on the top-right corner of the System Bar. The Atlas does not have this indicator.

Location Icon

Column options

Table Options

Name	Ignored	IP address	MAC address	Up time	Status	Protocol	Last response time	Last incoming load	Last outgoing load	Role
0030DE0CA009		192.168.13.115	00:30:de:0ca0:09	36, 01:28:42	Online	ETHERNET/IP	0.378 ms	0.09%	0%	
110-00013A		192.168.13.105	9cb2:06:1f:40:5d	7, 00:08:42	Online	MODBUS/TCP	4.219 ms	0.08%	0.01%	device VP
7006-2GC-EIP		192.168.13.202	a8:74:1d:6e:26:4e	1, 05:13:01	Online	ETHERNET/IP	1.257 ms	0.58%	0.6%	
Ap1_scalance		192.168.13.51	20:87:56:2a:8f:82	102, 22:40:08	Online	PROFINET	0.447 ms	0.14%	0.13%	device SC
Atlas		192.168.12.123	9cb2:06:2b:42:43	6, 03:55:48	Online	unknown	0.398 ms	0.14%	0.06%	Atl
Baseline		192.168.12.118	9cb2:06:2b:40:3b	1, 05:27:05	Online	unknown	1.787 ms	0.23%	0.14%	Atl
bias		192.168.12.1	00:0c:29:d7:88:8b	268, 09:06:46	Online	unknown	0.38 ms	8.42%	66.54%	
centos7armbuilder		192.168.12.100	9e:5c:13:bf:b7:d3	51, 05:51:21	Online	unknown	0.377 ms			
centos7armbuilder2		192.168.12.101	9cb2:06:2b:40:1d	7, 06:31:46	Online	unknown	0.426 ms	0.1%	0%	Atl
Centos7X86-64Builder		192.168.12.4	00:0c:29:13:a6:c4	313, 00:48:54	Online	unknown	0.54 ms			
client-scalance		192.168.13.52	20:87:56:2e:b0:8d	102, 22:39:51	Online	PROFINET	1.638 ms	0.02%	0.12%	device SC
COMBricks Headstation		192.168.13.238	9cb2:06:00:09:a4	0, 00:13:48	Lost	unknown	0.762 ms			Co

Figure 5 - Terminology used in the web interface (continued)

4.2 System buttons

The right upper corner of the Application Bar shows five buttons. These are the system buttons. They are all clickable and will give extra information or functionality.

Measurement Status
Indicator

 Current User

 Notifications

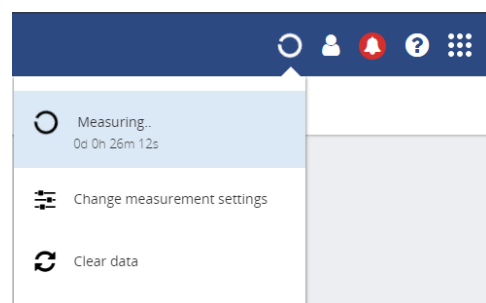
 Online Help
(context sensitive)

 Application Menu



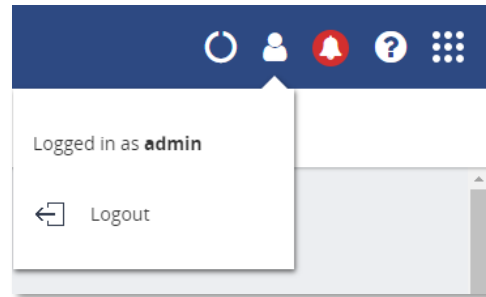
4.3 Measurement Button

When clicking the spinning measurement button, a dropdown menu will show. This dropdown shows how long the measurement is running. . Atlas is a permanent monitoring tool, therefore measurement will always run. In case of Mercury you can start/stop a measurement from this menu. The Change measurement button allows you to quickly change your settings by sending you to the setup wizard. Thirdly there is a button to clear (measurement) data. When the Clear data button is pressed, a popup will ask the user to confirming clearing the measurement data. When pressing “Yes” all errors and notifications will be deleted. This will not affect the trending data related to the current measurement, settings configuration, custom topology views, or the notifications log file which may be exported.






4.4 Current User

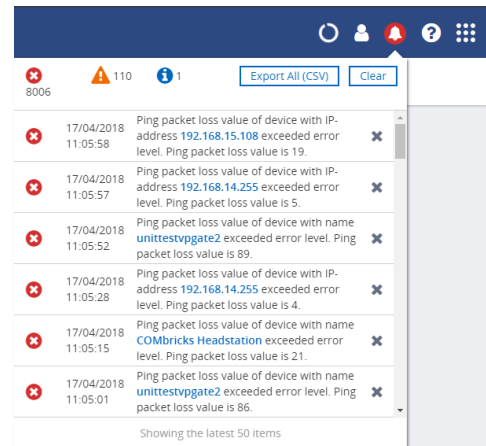
Clicking the current user button shows the current user and the logout button.



4.5 Notifications

The notification bell adjusts its color if notifications are present. In properly working networks the bell is green. In case there are warning it turns orange. Error conditions on your network lead to a red bell. Clicking the icon will bring up the list of notifications. There are three types of notifications:

-  Non-critical user information, such as: 'Your factory network is now connected'
-  Warning notification, such as: 'Ping response time exceeded'
-  Critical errors and warnings, such as: 'Error level for Discards exceeded'

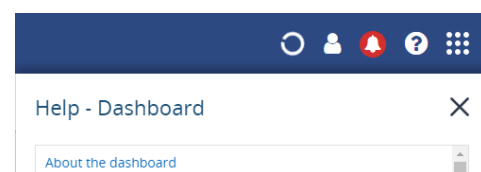


By clicking 'Clear' all the notifications from this list are cleared. Internally the notifications aren't removed and are therefore still available for CSV export.

By clicking 'Export All (CSV)' you can download a full history of all the notifications regardless of any previous clearings of the list. This downloadable file is in CSV format which can be directly opened in spreadsheet software like Microsoft Excel. Errors generated by ignored devices will also be in this list.

4.6 Online Help

The online help function provides specific help on the page you are currently viewing. This means that, for example on the dashboard, it will show help information for the dashboard.

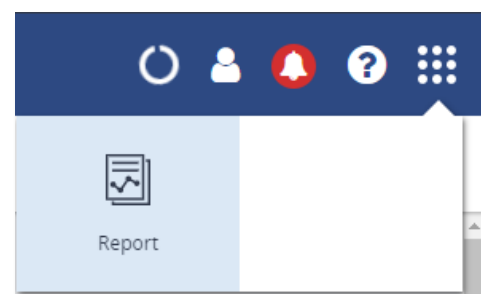


4.7 Application Menu

Within the Application menu there is a function to generate a Report. See paragraph 7.8 about what the generation of the report includes.

The Report generator can be found in the application menu. The report feature allows you to generate a report with all relevant collected data of the network and general information:

- Osiris information
- Q-Factor



- Device List
- Ignored Devices
- Traffic Light
- Firmware Differences

Before generating the Report you need to fill in some mandatory details (marked in red). These details will be shown in the Report.

Please note that the Report window is opened in a separate browser tab. Make sure your browser doesn't block opening new tabs. If you use a pop-up blocker, white-list the IP address of your Osiris device.

5. Setup Wizard



The Setup Wizard helps you setting up the Osiris software for use in your networks and is automatically started at first use. It can also be accessed after initial setup by clicking the Setup Wizard tile on the Dashboard.

Step 1

Select the language. Over time, more interface languages will be released and available for download in the 'Download Software' section on www.procentec.com. Setting a language will take effect after the Setup Wizard has been completed.

Set the correct time zone. The time zone will be used to show the time in the top of the web interface (system bar) and in the reports. Automatic time (NTP) can only be used when Osiris has internet connectivity or when you manually set local time servers in the settings after the Setup Wizard has completed. See paragraph 9.3 for more information.

Step 2

Next, fill in the name and the location of the industrial network. This name will be used in the web interface and reports.

You can also enter optional contact details for colleagues in need of assistance.

Step 3

Then choose an Office and a Factory network IP address. The Office IP address and the Factory IP address must be set to the correct IP ranges with correct Netmasks. If you do not know these, use the DHCP setting or contact your system administrator and / or the machine programmer for correct settings. Note that these two settings are independent of each other and the networks do not 'see' each other. There is no direct connection between the two ports.

Important: it is required that the office IP range and factory IP range are different from each other, and that their subnet masks do not overlap. Also, only enter one gateway, preferably the one for the office interface

Step 4

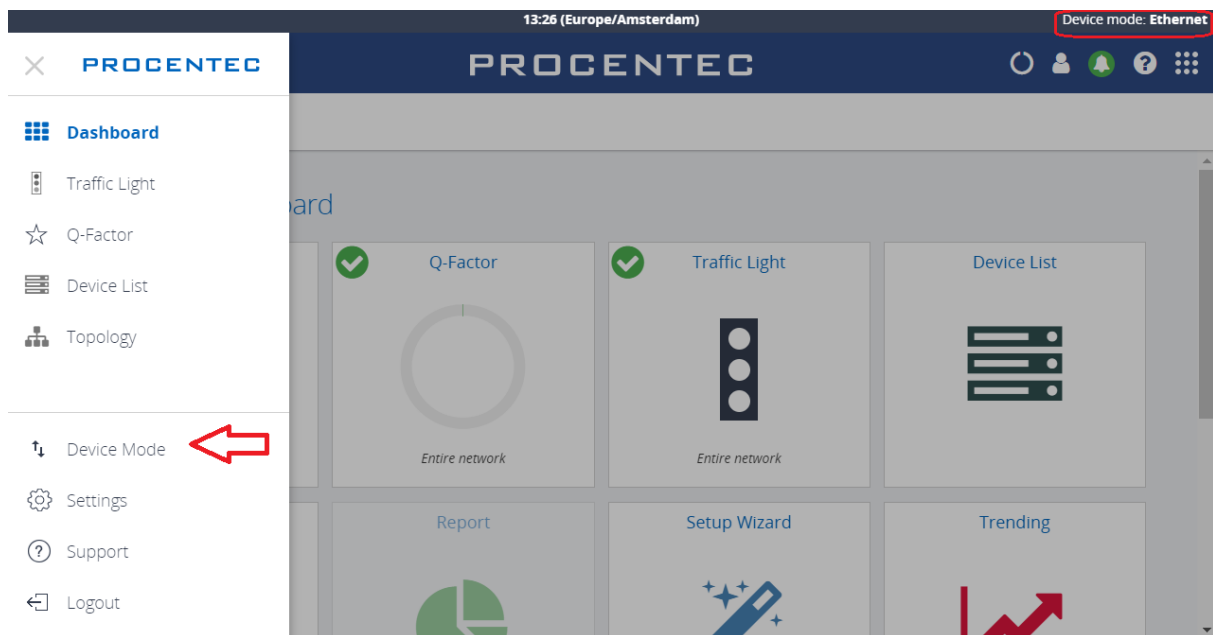
The last step asks you to enter one or more IP address scan ranges. It is important to choose scan ranges which include all the devices which you want to monitor. On the other hand, making the scan range unnecessarily large can negatively influence the Topology scan result and scan time. In case there are large gaps between devices on your network, it is advised to separate a large scan range into smaller ranges to exclude these gaps. This will speed up the scanning process.

6. Device mode (Mercury only)

Osiris has two modes; a PROFIBUS network analyzer (Not available on Atlas), and an Industrial Ethernet analyzer. Tap on one of the options to start the preferred mode:



You can see the currently selected device mode in the upper notification bar on the right side.



If at some point you need to change to another mode, tap the Quick Access Drawer button and click 'Device mode'. This will bring you back to the Device Mode selection screen.

For the Industrial Ethernet mode, continue on Chapter 7. For PROFIBUS mode continue on Chapter 8.

7. Device mode: Industrial Ethernet

7.1 Dashboard

The dashboard is a one-stop-shop and overview with access to all available functions through Tiles. Tiles can be a static picture, but some are also dynamic. These dynamic tiles show an online summary of its information. This way you have a quick and intuitive way to access information. Some tiles also have a general status indication in the upper left corner of the tile (green checkmark, orange exclamation or red cross). This is a uniform way, so you can see quickly if there are problems which need attention.

7.1.1 Dashboard organization

The dashboard is a matrix of tiles and can be organized in 3 different ways:

- Show all: All available tiles are shown in a fixed arrangement
- Show recommended: Only tiles are shown which PROCENTEC deems most important
- Show customized (see paragraph 7.1.2)

7.1.2 Customize Dashboard

To customize the Dashboard, follow the next steps:



- In the Dashboard, go to the upper left corner and click on 'Display type'. Then choose 'Show customized'.
- On the upper right part, select 'Edit dashboard'.
- An empty tile placeholder(s) will appear, marked with a '+' sign.
- By clicking on the '+' sign a popup window will appear.
- Select the tile you would like to place by clicking on it.
- The popup will close and the tile will be placed.
- During edit mode you can drag and drop to a desired grid location.
- By pressing the 'trashcan' icon in the lower right part of the tile you can delete the tile.
- When all changes have been made, select 'Save changes' in the upper right corner

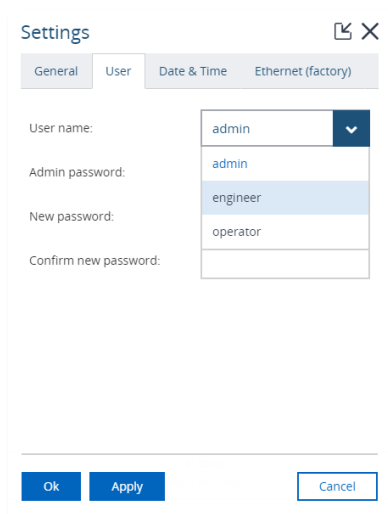
This saved personalized dashboard will remain available after a logout or restart. These settings are stored in a browser session, so this is a personalized setting for a specific user, computer and browser. Opening a customized Dashboard on a different computer or browser will result in a default view.

7.1.3 User administration

Osiris can be protected against unauthorized access or changing of settings. With means of user rights administration you can control the level of authentication a certain user (or group of users) has.

The default password for an account is the same as the username. So the password for the admin account is admin. All letters are lowercase, also for the username.

The default passwords can be changed in the Settings menu. Click on the Quick Drawer Access button , click 'Settings' or double-click on the System Bar (admin only) and click on the  icon. Then choose the 'User' tab.



The screenshot shows a 'Settings' dialog box with four tabs: 'General', 'User', 'Date & Time', and 'Ethernet (factory)'. The 'User' tab is selected. It contains the following fields and options:

- User name:** A dropdown menu with 'admin' selected.
- Admin password:** A text field with 'admin' entered.
- New password:** A dropdown menu with 'engineer' selected.
- operator** is also listed as an option in the dropdown.
- Confirm new password:** An empty text field.

At the bottom of the dialog are three buttons: 'Ok', 'Apply', and 'Cancel'.

7.1.4 Default users

There are three default usernames: admin, engineer and operator. They have the following rights, restrictions and capabilities for the Ethernet device mode:

Action	admin	engineer	operator
View the Traffic Light	Yes	Yes	Yes
View the Notifications	Yes	Yes	Yes
View the Settings	Yes	Yes	Yes
View/use the Commissioning Wizard	Yes	Yes	Yes
View/use the Email settings	Yes	Yes	Yes
Clear the Traffic Light	Yes	Yes	No
Clear the Notifications	Yes	Yes	No
Clear the Measurement Data	Yes	Yes	No
Customize the Dashboard (add/remove tiles)	Yes	Yes	No
View/use the Trending page	Yes	Yes	No
View/use the OPC UA page	Yes	Yes	No
View/use the Topology page	Yes	Yes	No
View/use the Q-Factor page	Yes	Yes	No
View/use the Device List page	Yes	Yes	No
View/use the VPN page	Yes	Yes	No
View/use the Commissioning Wizard	Yes	Yes	No
View/use the 'Factory Reset' button	Yes	No	No
View/use the System Bar	Yes	No	No
View/use the Setup Wizard	Yes	No	No
Edit the users and passwords	Yes	No	No
Edit Osiris settings	Yes	No	No

All user types have access rights for all the pages inside the PROFIBUS device mode.

7.1.5 Password best practice

We encourage you to change the default Administrator password after purchase.

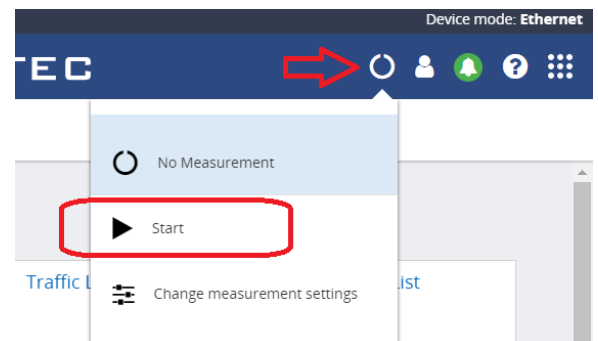
- Change the password(s) immediately after installation or at the office before it is transported to the final destination.
- Never share passwords with anyone.
- Always use strong passwords. Avoid: *test*, *123456*, *<your company name>*, *<your first name>*, *Atlas*, *PROCEN-TEC*, etc.
- Change passwords immediately if they may have been compromised.
- If passwords must be written down, store it in a secure place and destroy it when it is no longer needed.
- Be careful about where passwords are saved on computers. Some dialog boxes, such as those for remote access, present an option to save or remember passwords. Selecting this option poses a potential security threat.

7.2 Starting a measurement

When Osiris has been set up and connected, start a new measurement by clicking on the round progress indicator in the System Buttons area, and click 'Start'.

To indicate the measurement is running, you will now see a spinning progress indicator.

When the measurement has collected enough information, the Topology, Q-factor, Traffic Light and Device List will become available.



7.3 Topology

The topology is a graphical and hierarchical display of a complete network. This view makes connections between devices become clear very quickly and intuitively. This view also clearly shows dependencies to easily identify/mitigate critical paths in the network, or to identify line-depths.



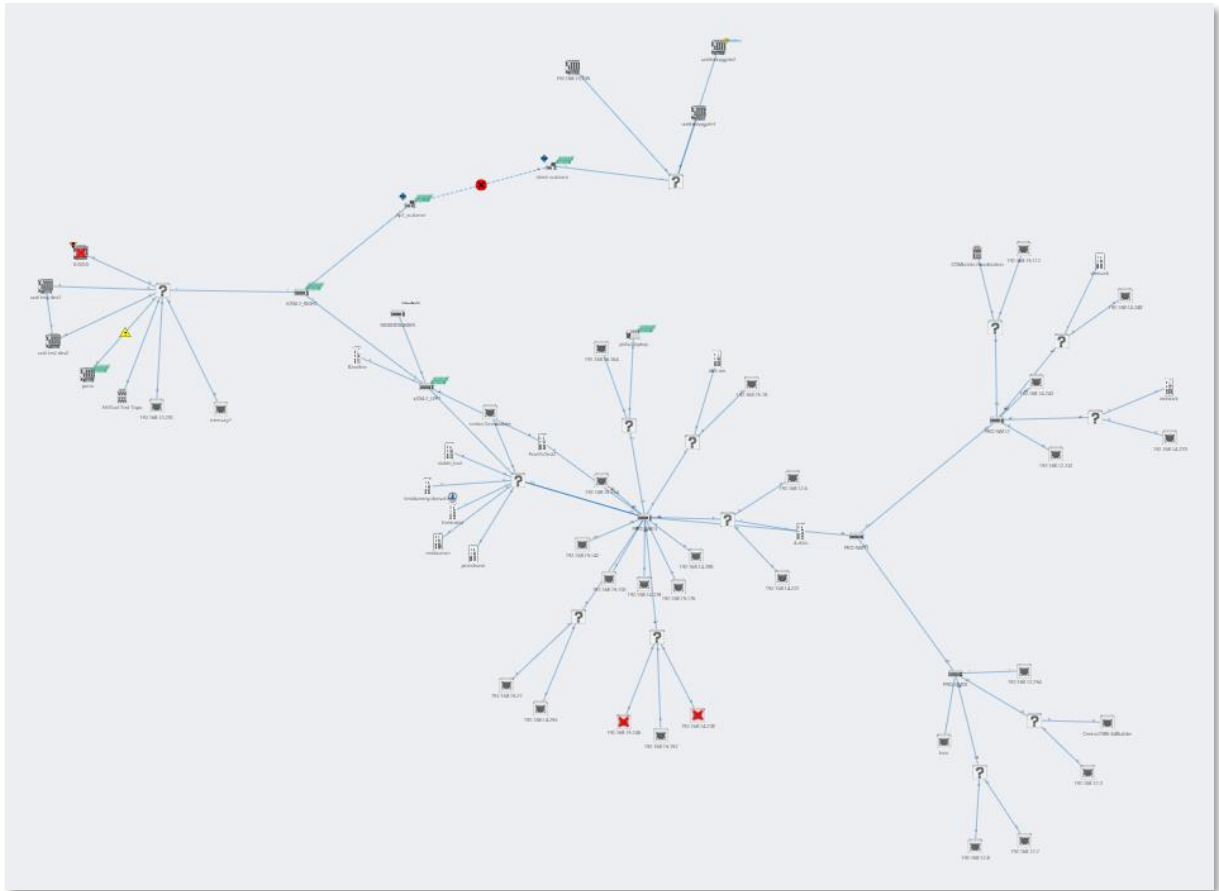
The underlying mechanism to be able to determine a topology is based on SNMP and, if possible, specific industrial protocol functions (e.g. LLPD for PROFINET) will also be used. Unfortunately, some devices do not (properly) supply topology information. These are connected either to a question mark icon or are placed as stand-alone devices. The devices linked to a question mark icon and then in turn to other devices means the connection information is only partly known. In many of those cases it can also be that non-managed switches are used.

7.3.1 View types

There are two default views to choose from: Galaxy and Tree. Next to the default views it is possible to create custom views.

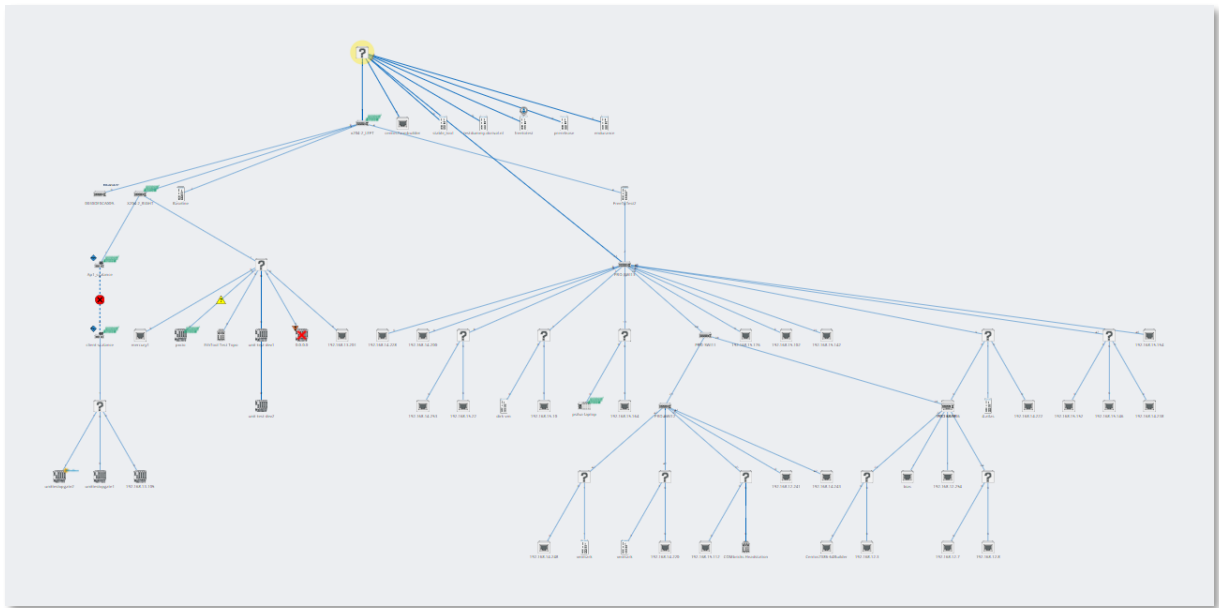
7.3.2 Galaxy view

The Galaxy view shows a self-organizing network diagram where switches are shown as central devices. In the Galaxy view user devices can be dragged to other positions. When dragging a device to a new place, the topology will automatically be re-arranged.



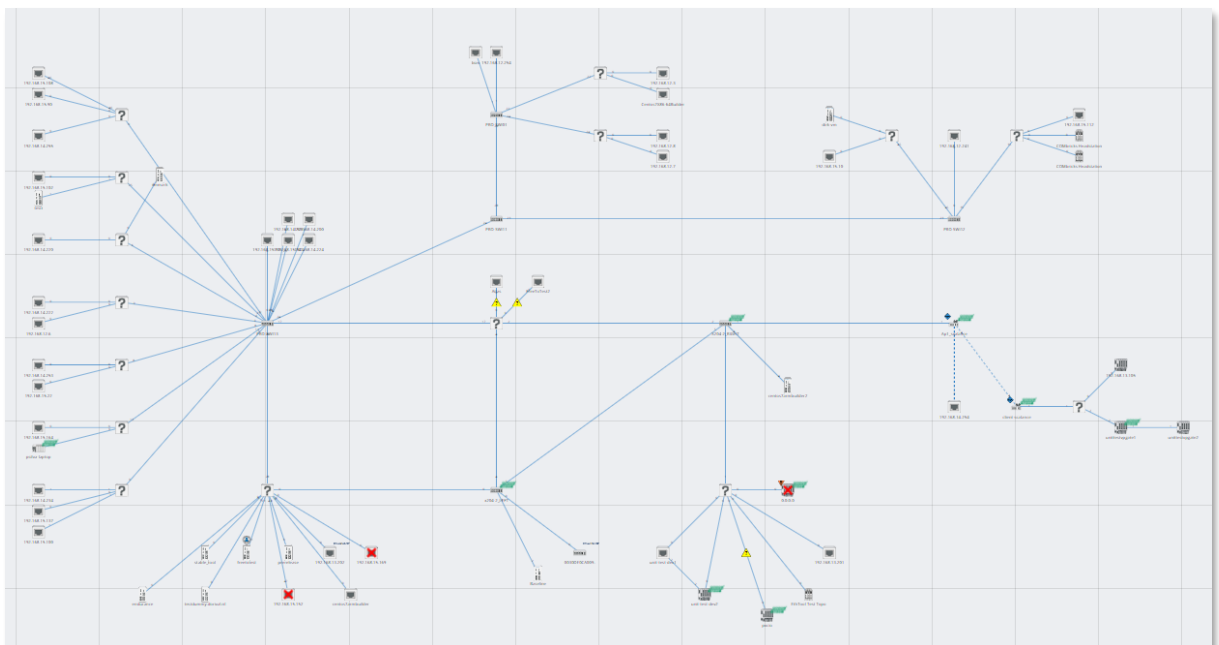
7.3.3 Tree view

The tree view shows a self-organizing layered overview using a top-down organization. In the tree view it is possible to click on a device which will show the device details panel. Within this panel there is an extra button to assign a top node. When setting a device as top node, the tree view will be re-organized with the selected device at the top.



7.3.4 Custom view

From within the galaxy view it is possible to create custom views. Click 'Create view' and assign a name to the view. A grid appears on the background; now all devices have a fixed position which can be changed by dragging them around. The positions will be saved automatically, can be viewed and edited in multiple browsers and are persistent over a restart. Also it is possible to rename or delete a custom view the Delete and Rename buttons



In all views, devices are connected to each other with lines. These connections between devices show how these are connected to each other and how they are co-dependent. In this overview it is much easier to understand that if a device is lost, it will affect the connection to other devices behind it. Lost devices are indicated with a red cross over the device icon. Link problems between devices are indicated with a red cross


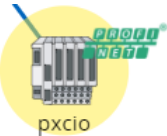





on that particular link. The two numbers shown on both ends of the link lines, specify the port number used for this link.





7.3.5 Graph search

To easily find devices in the Topology view, click on the magnifier icon in the top left of the Topology view. This will show an input field, where you can enter a name, IP address or MAC address of the desired device. Autocomplete will help you to quickly find the device you're looking for. When clicked on, the topology zooms in on the requested device and opens the device details.





7.3.6 Device types in the Topology view

The following icons are used for devices in the Topology view.



Icon	Meaning
	This is your current Atlas, the one you're currently connected to via your browser.
	The yellow halo indicates the selected node.
	This is another Atlas in the network.
	This is an I/O controller. The label next to the device indicates the supported industrial protocol.
	This is an I/O device. The label next to the device indicates the supported industrial protocol.
	This is a managed switch.
	This is a Wi-Fi access point.

	This is a Wi-Fi group access point, with two or more devices connected to its copper port(s).
	This is a ComBricks Head Station.
	This is a generic Ethernet node, such as a PC or laptop that does not support SNMP.
	<p>The devices in (and connected to) this group cannot be accurately placed in the Topology. This is because the necessary data to do so cannot be obtained. There are multiple explanations for this problem:</p> <ol style="list-style-type: none"> 1 It is an unmanaged switch. This is a standard switch that does not supply data to determine the topology of the network. 2 It is a device that does not supply correct data. Note: PROFINET devices certified after v2.3 must have all the required data for Topology as defined in the PROFINET standard. This is not mandatory for other Industrial Ethernet devices. 3 It is a device outside of the scan range. The device can be found based on its MAC address but cannot be accessed via an IP address.





7.3.7 Device status indicators in the Topology view

Icon	Meaning
	This indicates that the device is lost. It has been online on the network in the past, but cannot be reached now.
	The IP address of this device is 0.0.0.0. This indicates it needs to be configured.
	There is another device on the network with the same IP address. This could make both devices unusable. You are advised to resolve this issue immediately by changing the IP address of one of the devices. This issue may also prevent the correct visualization of the topology within Osiris.
	This indicates that the device is lost. It has been online on the network in the past, but cannot be reached now.

7.3.8 Link indicators in the Topology view

Icon	Meaning
	<ul style="list-style-type: none"> The port load is still acceptable but nearing unacceptable levels of 50% (20% < port load < 50%) The link speed is not 100 Mbps full duplex (for PROFINET devices)
	<ul style="list-style-type: none"> The port load is over 50% (port load > 50%) The devices report different link speeds The existence of InDiscards, OutDiscards, InErrors or OutErrors
1..28	The number on the link is the physical switch port of the device that this cable is connected to.

7.3.9 Protocol indicators in the Topology view

Icon	Meaning
	This is shown for devices that support PROFINET.
	This is shown for devices that support PROFIBUS.
	This is shown for devices that support Modbus TCP.
	This is shown for devices that support Ethernet/IP.

Note: if a device supports multiple protocols, the Protocol indicator icon is not displayed. Supported protocols are shown in the Device details.

7.3.10 Device details

By clicking on a device this item will become emphasized and an info panel will appear on the right-hand side. Depending on the type of device, information is shown in groups:

In the Tree view you will find the button in the top to assign a device as 'Top Node'. With this functionality you can set the highest (top) device in the tree. If the selected device is already marked as Top Node, the button will state 'Top Node' and will be inactive. Otherwise it will state 'Assign Top Node' and can be used to move the selected device to the top.

General

General information is shown for the device. For more information on the various items please check the description of the 'overview' section.

ComBricks

In case the device is a ComBricks Head Station it will show a table with Address, Syncs, Lost and Repeats of the connected devices.

Customize: Ignore device errors

In some cases devices generate errors which you, for different reasons, would like to ignore. Such errors can be suppressed by ignoring a device in the device panel. (see Figure 7). Enable this setting to ignore errors generated by this device based on its MAC address. Ignoring a device will be done at a variety of places within Osiris.

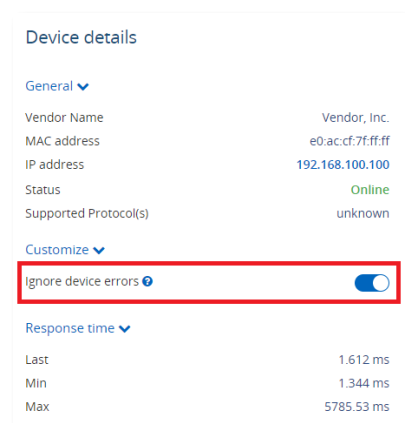


Figure 7 - Ignore device errors

Where	Effects of ignoring device errors
Device details	Errors are <u>still visible</u> in the device details except for firmware differences.
Device List	<ul style="list-style-type: none"> • When a device is ignored they receive a check in the Ignore column • All errors and warnings of the device are hidden
Notifications	<ul style="list-style-type: none"> • New errors will not be shown • Old errors will be removed from the dropdown under the bell. This potentially means that the bell can go back to green • Errors of ignored devices <u>will still show up</u> in CSV export of the Notifications
Q-Factor	<ul style="list-style-type: none"> • Devices will be marked as ignored • Errors will no longer influence the Q-Factor of the device. The device will always have Q-Factor 5000 and therefore have no influence on the overall Q-Factor of the network
Report	The device will appear in the Ignored Device list in the report.
Topology	<ul style="list-style-type: none"> • Lost devices are still visible but the usual the red cross which indicates that the device is lost, will be faded • Double IP-addresses are ignored • Firmware difference are ignored • Link errors and warnings will not be shown if you ignore device errors of the device causing the link errors • A device with IP-address 0.0.0.0 will generate a warning. When ignoring the errors of such a device, it will not generate errors anymore • Devices which don't supply correct SNMP data will show a blue NAMUR icon. When ignoring the errors of such a device, this icon will disappear
Traffic Light	Errors will no longer influence the traffic light (both on the Dashboard as on the physical Atlas itself).

Device errors will still be visible in this Device Details view but will be hidden from the Device List and Topology, and errors related to this device will not influence the Traffic Light or Q-Factor, or be displayed in the notifications log. Ignored devices are labelled in the Q-Factor. Notifications which are generated by the device are stored and downloadable as CSV but are not shown.

Identification and Maintenance

Information about the device itself: the Product ID, vendor name, software and hardware version, order code and serial number. If two devices of the same ID have been found, using different firmware versions, a warning is displayed (see Figure 8).

Response time

The last, min and max ping response times are shown here.

Port load

- In: for each incoming/ingress port the last, min and max port load is shown.
- Out: for each outgoing/egress port the last, min and max port load is shown.
- Warning: some devices report an incorrect link speed (e.g. 10 Mbps instead of 100 Mbps). Since the link speed is used to calculate the load, the reported load can be incorrect. If the reported load is very high, check the link speed.

Role	device
Supported Protocol(s)	PROFINET
Identification & Maintenance ▾	
Product ID	0x0a01
Vendor name	SIEMENS AG
Software version	⚠ V 5.2.1
⚠ Attention: Different software versions are being used for devices of the same model on this network.	
Version	Occurrences
V 5.2.0	1
V 5.2.1	1
Hardware version	9
Order code	6GK5 204-0BA00-2BA3
Serial number	VPH9202452
Response time ▾	
Last	1.007 ms

Figure 8 - Firmware deviation warning

Link details

By clicking on a link or line between devices an info panel will appear on the right-hand side. Depending on the type of device, information is shown in groups:

Linked devices

Device name, MAC address and port number are shown for both sides of the connection.

Load

For each direction the last and max port load is shown in %.

Warning: some devices report an incorrect link speed (e.g. 10 Mbps instead of 100 Mbps). Since the link speed is used to calculate the load, the reported load can be incorrect. If the reported load is very high, check the link speed.

Link status

- General: the link speed is indicated (10Mbps/100Mbps/1Gbps) together with its operational state (up/down);
- For each direction, in and out, the 'discards', and 'errors' are shown. Discards are the number of telegrams which did not fit in the internal buffer (memory overload) and 'errors' are transmission or CRC errors.

Warning: some devices can report an incorrect link speed (e.g. 10 Mbps instead of 100 Mbps). An indication that this occurs is when two devices in a link report different link speeds. This is not possible in Ethernet connections.

7.4 Q-Factor

The Q-Factor is a number that represents the quality of the network. You can choose if you want to use the 0 to 5000 range, commonly used in the Automotive industry, or a percentage.

A value of 5000 or a percentage of 100 is excellent and 0 is critical or unmeasurable. Additionally, a color coding is used to emphasize the severity. Normally the color should be green, meaning excellent or good. Yellow is subpar but not critical, e.g. attention recommended. Red means a bad, critical or urgent issue.



7.4.1 Multiple Q-Factors

There are multiple Q-Factors in use in the tool:

- A Q-Factor for each network device, which indicates the quality for a single network device. Calculation of this Q-Factor is based on a weight of:
 - Network link load: the bandwidth usage on a certain port of a device, is used to determine the value. In general, the lower the load, the higher the Q-Factor.
 - In/Out errors: the number of errors per port of a device.
 - Ping packet loss: the number of unanswered ping requests.
- A single overall Q-Factor, indicating the quality of a complete network. Currently the overall Q-Factor equals to the lowest Q-Factor of an individual network device.

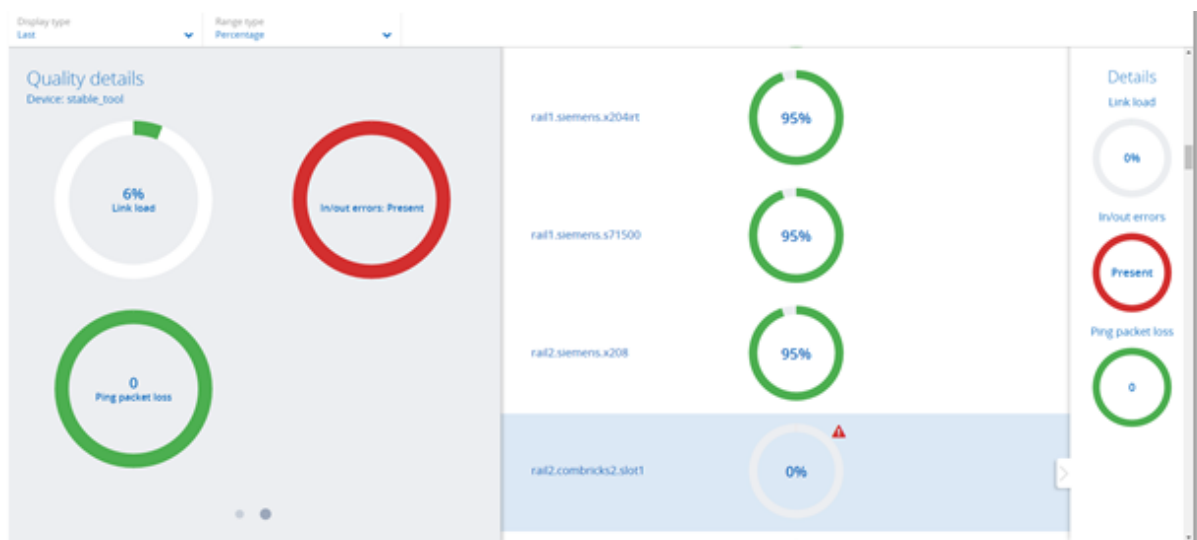
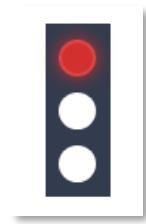


Figure 9 - Multiple Q-Factors: Overall Q-Factor on the left, individual Q-Factors in the middle and on the right

7.5 Traffic Light

The Traffic Light is an overall color coded status to indicate the degree of network status. As it so purposefully describes, the state is in the form of a traffic light. The Network indicator on the front of the Atlas unit (LEDs) corresponds with the traffic light state in the web browser. The traffic light can also be read in the live tile in the Dashboard.



7.5.1 Traffic light state explained

- Red light: a serious problem is present in the network, user attention required.
- Yellow light: a situation is present which is important but not serious, user attention recommended.
- Green light: all seems to be working correctly, no important or critical situation.

7.5.2 Traffic light triggers

The following situations cause the traffic light to turn orange:

- A ping response time between 25 and 50 milliseconds

The following situations cause the traffic light to turn red:

- A ping response time higher than 50 milliseconds
- A device previously seen (e.g. by ping) is not responding anymore
- In or Out discards (the number of telegrams which did not fit in the internal buffer of a switch)
- In or Out Errors (transmission errors or CRC errors)

7.6 Device list


The device list shows a list of all detected network devices. Also, unavailable devices (detected in the past) are listed here. It provides a full overview of all important properties of devices in the network.



The entire list is downloadable as a CSV file which can be directly opened in spreadsheet software like Microsoft Excel.

7.6.1 Table customization

Generally, the table columns can be customized with the following features:

- The left column is pinned, meaning if the scrollbar is horizontally scrolled the leftmost column does not move.
- The list can be sorted by clicking on the column header (ascending, descending or none).
- Columns can be resized by placing the mouse between columns and then selecting/dragging the splitter.
- Columns can be hidden by selecting the  icon on the far right of the table. A list will drop down in which you can select which columns are to be shown/hidden.

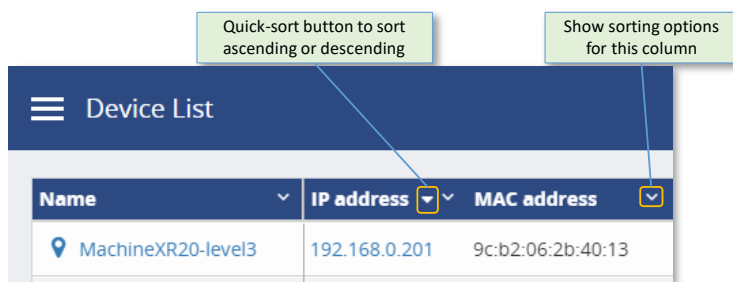


Figure 10 - Sorting

- Certain columns can be filtered (mainly text fields) by clicking on the 'sorting options' button on the right of the column, and then choosing 'Show filter'. Note: these columns can also be optionally pinned left.
- It is also possible to combine two or more filters. Simply enable a filter for each column that you want to filter, for example an IP address filter and a MAC address filter:

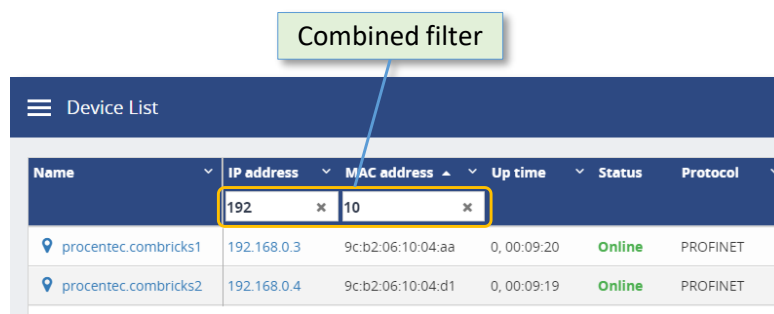


Figure 11 - Combined IP and MAC address filter

7.6.2 Available columns

Column	Description
Name	This name is retrieved from the device if it supports a protocol name identification function (e.g. DCP for PROFINET IO).
IP address	The IP address of the device. It consists of 4 numbers separated by '.' dots. If no IP protocol is supported, it is left blank. Currently only IPV4 is supported.
MAC address	The unique Media Access Control address for the device. It consists of 6 numbers in hexadecimal format separated by colons.
Status	If a network device has been seen previously and is still being seen it remains Online (green). If it has been seen previously but not anymore lately it changes to 'Lost (red).
Last response time	The most recent reaction time measured by a 'ping' to a device and its response.
Min. response time	The fastest 'ping' reaction time.
Max. response time	The slowest 'ping' reaction time.
Last incoming load	The most recent measured network load (in %) for the incoming/ingress port. If a network device has more than one port the highest load is shown. See note below
Min. incoming load	The lowest measured network load (in %) for the incoming/ingress port. If a network device has more than one port the highest load of all the lowest port values is shown. See note below
Max. incoming load	The highest measured network load (in %) for the incoming/ingress port. If a network device has more than one port the highest load of all the highest port values is shown. See note below
Last outgoing load	The most recent measured network load (in %) for the outgoing/egress port. If a network device has more than one port the highest load is shown. See note below
Min. outgoing load	The lowest measured network load (in %) for the outgoing/egress port. If a network device has more than one port the highest load of all the lowest port values is shown. See note below
Max. outgoing load	The highest measured network load (in %) for the outgoing/egress port. If a network device has more than one port the highest load of all the highest port values is shown. See note below

Netmask	The IP netmask address of the device. It consists of 4 numbers separated by '.' dots. If no IP protocol is supported, it is left blank. Currently only IPV4 is supported.
Gateway	The IP gateway address of the device. It consists of 4 numbers separated by '.' dots. If no IP protocol is supported, it is left blank. Currently only IPV4 is supported.
Role	For certain industrial network protocols, a device can have a certain designated role associated with it. For e.g. PROFINET the roles device, controller and supervisor are possible.
Model	For certain industrial network protocols, a device can have a vendor designated model assignment associated with it (e.g. for PROFINET).
Device ID	For certain industrial network protocols, a device can have a certain designated Device ID assignment associated with it (e.g. for PROFINET it helps to define the product code when used in combination with a Vendor ID).
Vendor ID	For certain industrial network protocols, a device can have a certain designated Vendor ID assignment associated with it (e.g. for PROFINET each registered manufacturer has its own number).
Software version	For certain industrial network protocols, the software version can be retrieved (e.g. for PROFINET). This can help to verify that the product has the latest or stable software version.
Hardware version	For certain industrial network protocols, the hardware version can be retrieved (e.g. for PROFINET).
Order ID	For certain industrial network protocols, the order/article number can be retrieved (e.g. for PROFINET). This can help if the product needs to be re-ordered or documented (e.g. when there is a defect, or a spare is needed).
Serial number	For certain industrial network protocols, the serial number can be retrieved (e.g. for PROFINET). A serial number sometimes contains crucial information for a vendor (production date, batch) and for a user as well (tracking/detecting replacements).
Vendor name	The vendor name is either retrieved by looking up the MAC address in a publicly registered MAC/OUI reference list or it can be retrieved by using specific network protocol functions (e.g. I&M0 for PROFINET)
Vendor name (IM0)	Retrieved by using a specific PROFINET IO network protocol function (I&M0 Identification & Maintenance function as defined by PROFIBUS/PROFINET International)
Revision counter	A settings alteration tracking number implemented by some industrial network protocols (e.g. the I&M0 Identification & Maintenance function as defined by PROFIBUS/PROFINET International).

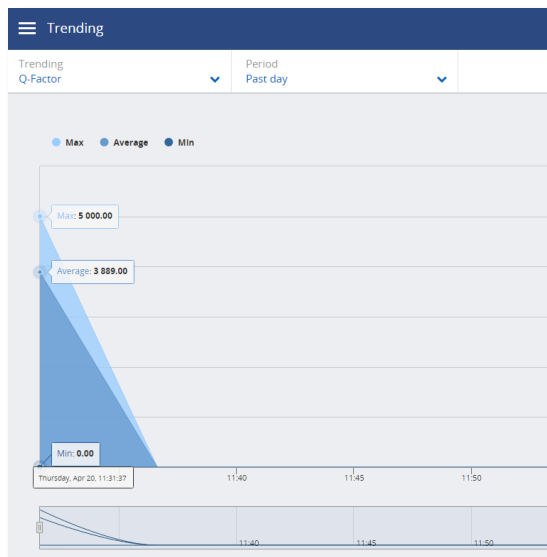
Note: Some devices report an incorrect link speed (e.g. 10 Mbps instead of 100 Mbps). Since the link speed is used to calculate the load, the reported load can be incorrect. If the reported load is very high, check the link speed in the topology overview.

7.7 Trending

The Trending feature visualizes the historical data of the Q-Factor. Every 5 minutes the Q-Factor is recorded. The minimum and maximum values of the Q-Factor during these 5 minutes are also recorded.



When you see a decline in the trend, it is safe to say the quality of the network is going down. The steepness of the trend determines if you could schedule maintenance or if you need to act as soon as possible. The steeper the trend becomes, the quicker you are required to act.



The trend also provides insight into what has happened in the past. This could provide clues on where to look at and what to do next to prevent it from happening again.

The legend of Trending shows the following items:

- Max: The maximum value of Q-Factor of the network found during the chosen period
- Average: The average value of Q-Factor during a period
- Min: The minimum value of Q-Factor of the network found during the chosen period

It is possible to select which of these values you want to have displayed in Trending by clicking on the respective legend items.

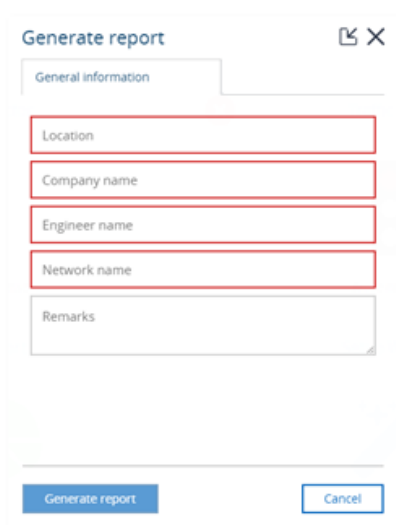
7.8 Report

The generation of the report can be found in the application menu. The report feature allows you to generate a report with all relevant collected data of the network and general information:

- Osiris information
- Q-Factor
- Device List
- Ignored Devices
- Traffic Light
- Firmware Differences



Before generating the Report you need to fill in some mandatory details (marked in red). These details will be shown in the Report.



Please note that the Report window is opened in a separate browser tab. Make sure your browser doesn't block opening new tabs. If you use a pop-up blocker, white-list the IP address of your Atlas.

7.9 OPC UA

OPC UA has been selected as the foundation of Industry 4.0 and it allows for integration with SCADA systems.



The OPC UA server functionality is switched off by default.

On the OPC UA page you will see the address you can use to connect from a client to Osiris and the ability to start the server. Once the OPC UA server is started the button will change into 'Stop server'. This means the OPC UA server is active.

When a connection has been established, the following information can be discovered:

- Device information
- Traffic Light – entire network
- Q-Factor – entire network
- Measurement Status

Warning: this connection is currently not encrypted.

7.10 E-mail Notifications

The E-mail Notifications tile is a shortcut to the Email settings. See paragraph 9.6 for more information.



7.11 IXON VPN service (Atlas only)

A VPN (Virtual Private Network) service makes it possible to connect to a system or network with a secure connection, remotely. As long as both devices are connected to the internet they can securely communicate over the VPN.



PROCENDEC has a partnership with IXON, a secure VPN services provider. You can benefit of the integration of IXON VPN in PROCENDEC products. Currently this service is limited to Atlas only.

Atlas is equipped with IXON VPN Service. This makes it possible to view and use the Atlas web interface from outside the company network. Every function you are used to use in the local network also works via the remote connection of the VPN. A dedicated tile is present by default on the dashboard of Osiris in order to access VPN functionality.

To make the VPN Service available make sure you have:

- An Atlas with firmware 1.170 or higher
- An internet connection
- An IXON Cloud account (a one-time fee for each Atlas applies)

You can register a new IXON Cloud account on <https://connect.ixon.cloud/>.

7.11.1 Configure a VPN Service on your device

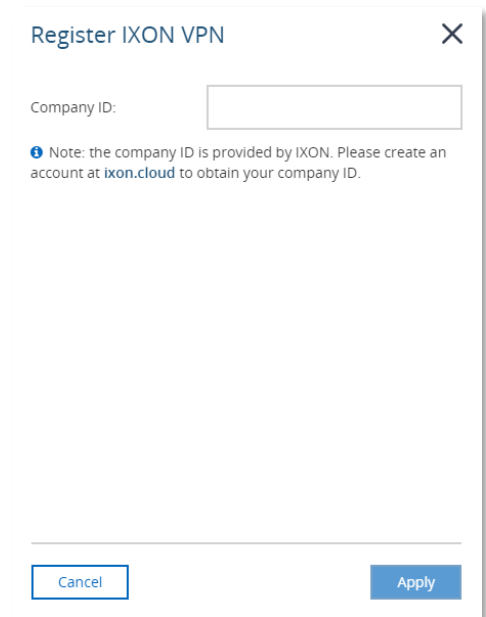
These are the steps to follow to configure your Atlas PROCENTEC device

(First make sure that your PROCENTEC license allows you to use the IXON VPN in Atlas. If not, proceed to a license change as explained in paragraph 9.10.1):

1. Log in into the Atlas web interface. You should see a tile on the dashboard called "IXON VPN". Click on it.
2. You land on a page where you monitor the VPN functionality. Initially the Atlas is not registered in the IXON Service. Thus you will see your status as : "Not registered".
3. Click on "Register" button and enter the validation Company ID that IXON gave you.

Once you have accepted the terms and conditions, the registration form will open. A representation of the registration form is shown in the image below.

This Company ID is assigned to your IXON Cloud account. This can be found on <https://connect.ixon.cloud/> under your company settings (encircled in red).



The image shows a "Register IXON VPN" dialog box with a close button (X) in the top right corner. It contains a text input field labeled "Company ID:". Below the field is a note: "Note: the company ID is provided by IXON. Please create an account at [ixon.cloud](\"https://connect.ixon.cloud/\") to obtain your company ID." At the bottom of the dialog are two buttons: "Cancel" and "Apply".

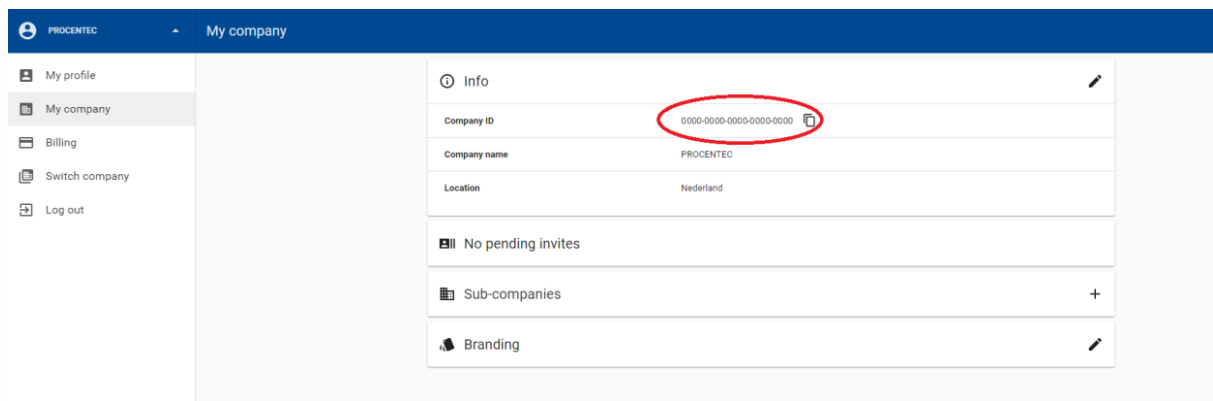
Enter the Company ID into the registration form on the Atlas and press Apply to create the connection to the VPN Service. This could take up to a minute.

If the connection to IXON has successfully been established, the following view will be shown on the VPN page of the web interface:



The image shows the "IXON VPN" status page. It has a dark blue header with a hamburger menu icon and the text "IXON VPN". The main content area is light gray and contains a white box with the following information: "Agent id:", "Company id:", "Company Name:", and "Status:". The "Status:" is highlighted in green and says "Connected". Below this box are two blue buttons: "Disconnect" and "Unregister".

This view contains an overview of the current connection to IXON. This overview above contains the following data:



- Agent ID: This is the ID of the device that is visible in the IXON Cloud webpage.
- Company ID: This is the Company ID entered for registration.
- Company Name: This name is your company.
- Status: Shows whether the service is Disconnected, Connected or Connecting to the IXON VPN service.

The two buttons are for controlling the connection to IXON. These actions can also be performed from the IXON Cloud webpage.

- Disconnect: Disconnects from the VPN service, this will not delete the device in your device list of your IXON Cloud account.
- Connect: Connect to the VPN service.
- Unregister: This will completely remove the device and all its settings in your IXON Cloud account.

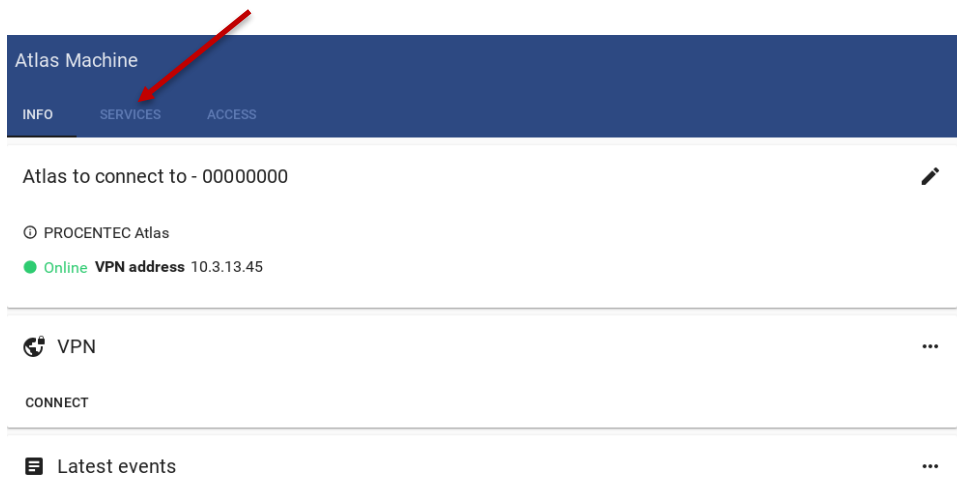
7.11.2 How to use IXON VPN

After the configuration of your device, you can access it remotely via internet. From your distant computer, open the browser, go to IXON login page <https://connect.ixon.cloud/login> and log in.

On the IXON webpage, on the left side is the “Devices” list. You will see the list of devices that you have configured to run IXON VPN. Select the device you want to connect to (which should have a green circle next to his name if the device has been configured and is up and running). You have to specify a name for the device and activate it.

After this device is named and activated, you can select it, and see all its characteristics in a panel on the right.

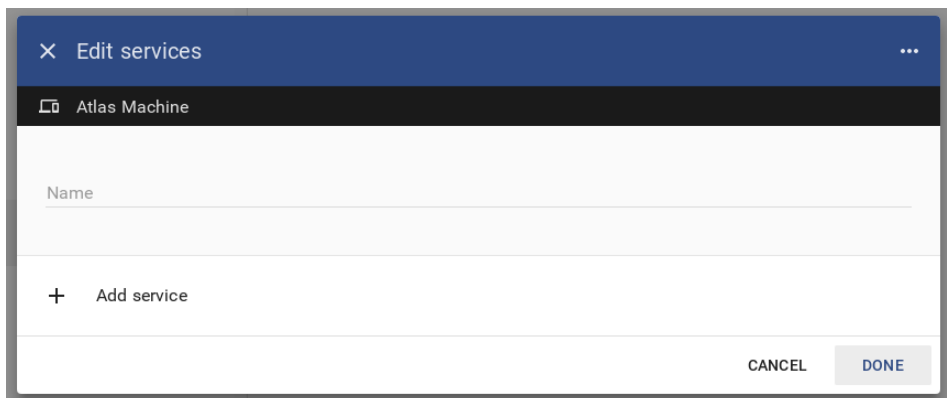
Click the “SERVICES” section.



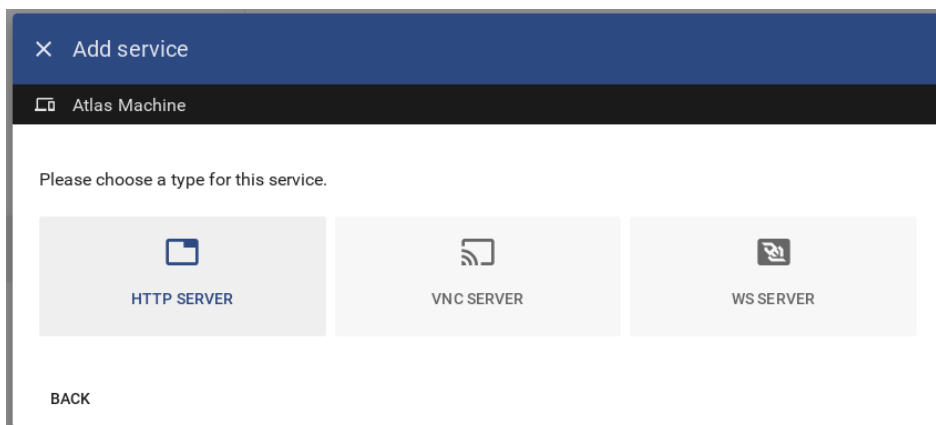
Edit a new service, by clicking the pen icon.



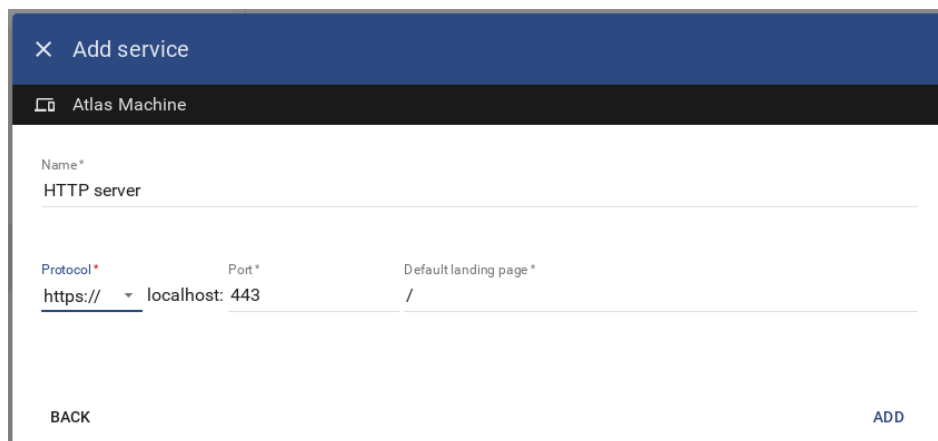
Then add a new service:



And create a new HTTP connection by selecting HTTP SERVER:

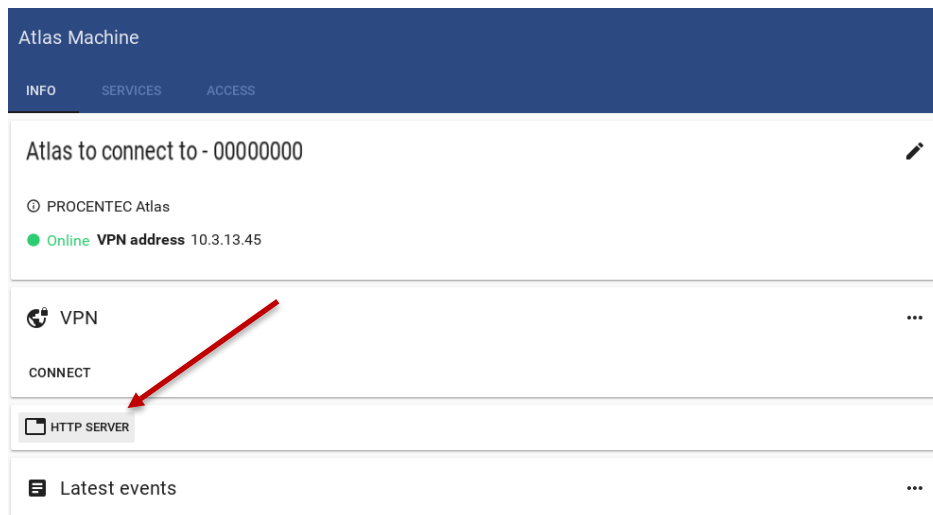


Select the HTTPS secured option:



Add the new service.

Now, below the VPN section in the INFO tab, you can click on the “HTTP SERVER” button and you will be redirected by your browser to your remote device, via the IXON website.



7.12 Commissioning Wizard

The PROCENTEC Commissioning Wizard is a series of automated checks to see if the network is in compliance with the guidelines of the used protocol. The checks are according to the PROFINET Commissioning Guidelines.

Each item can be confirmed as successful or it can be declined after the checks have been performed. When the wizard has finished, an optional report can be generated.

7.12.1 Starting the Commissioning Wizard

Make sure a measurement is already running before starting the PROCENTEC Commissioning Wizard; the wizard cannot run without a measurement.

When starting the Wizard, there are multiple options:

7.12.2 Quickscan

Quickscan will perform only automatic checks. No user interaction is required. Performed checks:

- Check for double IPAddresses
- Discarded messages check
- PROFINET device name check
- Firmware differences between devices of the same type
- DCP broadcasts check
- ARP broadcasts check
- Network load check

7.12.3 Commissioning

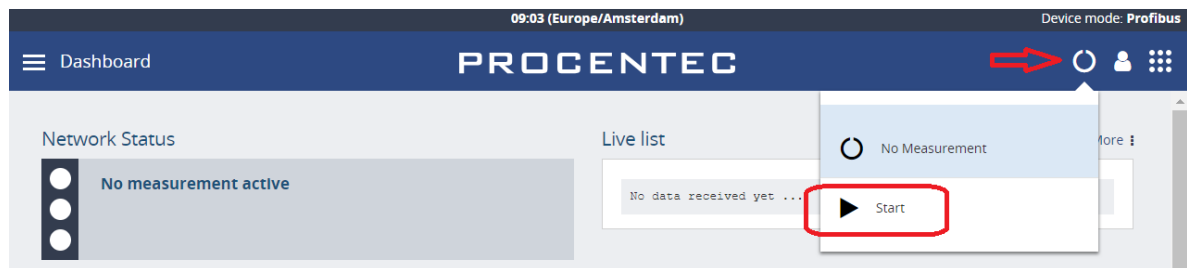
Checks the network without the need for a TAP. It will perform all the check of the Quickscan and:

- Topology check
- Device details check
- Device count

At the end of the wizard you can press 'Generate Report' to create an automated report of all checked items. This is an HTML based report and can be directly printed from the browser or exported to PDF (you need to install a PDF generator first). You can also save as an HTML page.

8. Device mode: PROFIBUS (Mercury only)

To begin using Osiris in PROFIBUS mode, first make sure to connect a ProfiCore Ultra to one of the USB ports. When the Mercury has been set up and connected, start a new measurement by clicking on the round progress indicator in the System Buttons area, and click 'Start'.



To indicate the measurement is running, you will now see a spinning progress indicator.

8.1 Dashboard

The Dashboard gives a clear overview of the Network status of the network (Traffic Light style), a Live list, and a Network summary of all collected data.

8.1.1 Network status

The Network Status indicator or Traffic Light will turn yellow or red if problems or errors occur. The errors that have occurred can be found in the 'Device errors' tab.

When the PROFIBUS network is running without any problems, the Traffic Light will be green. In the following situations the color of the traffic light will change:

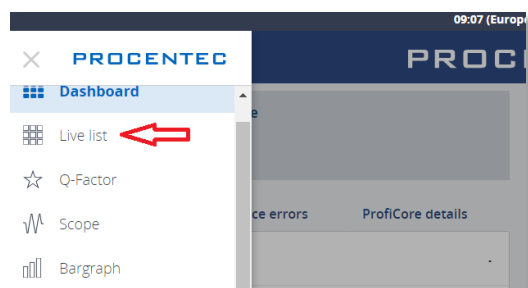
Warning/event	Traffic light state
Idle voltage low (0,9 V to 0,3 V)	●
Critical diagnosis (Ext-diag)	●
Configuration error	●
Parameter error	●
Risk margin low (60 to 40)	●
Slave amplitude low (just above limit 2.5 V)	●
Repeats	●
Syncs	●
Idle voltage below limit (< 0,3 V)	●
Risk margin below limit (< 40)	●
Slave amplitude below limit (< 2,5 V)	●
Slave edge steepness below limit (< 1/16 tBit)	●
Illegals	●
Slave lost	●

8.1.1.1 Network summary

The Network summary gives a clear overview of currently detected network settings, statistics and measurements:

Network summary item	Meaning
Baudrate	The detected bus speed of this PROFIBUS network.
HSA	The Highest Station Address, the highest possible master node in this network.
Masters	Number of detected masters.
Slaves	Number of detected slaves.
In Data Exchange	Number of detected slaves in Data Exchange with a master.
Tslot	The maximum allowed response time for a slave.
MinTSDR	The required waiting time for a slave before it can respond. (only visible when a parameter message has been sent by the master)
MaxTSDR	The maximum time for a slave before it times out.
Tid1	Idle time; the minimum waiting time for the master before it can send a new message.
Watchdog	The safety time-out for a slave. (only visible when a parameter message has been sent by the master)
Actual idle voltage	The voltage on the bus when no node is sending.
Min idle voltage	The lowest recorded idle voltage on the bus when no node is sending.
Max idle voltage	The highest recorded idle voltage on the bus when no node is sending.





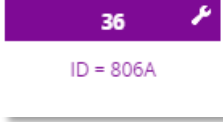
The Live List below the Network Summary is explained in detail in paragraph 8.1.1.2. To get to the LiveList, click upper left menu button.



8.1.1.2 Live list

The live List in the Dashboard shows all the nodes that are present on the bus. Masters have a small crown icon, slaves have colored backgrounds if they are communicating. Below is a full list of possible indications:

Live List indication	Meaning
	Active master.
	Slave in data exchange with a master, no ident number captured.

	Slave in data exchange with a master, ident number captured.
	Idle slave, not assigned to any master.
	Slave configured, but not reachable by the master.
	This slave has been incorrectly parameterized by the master. Possibly a wrong address or a wrong GSD has been used.
	This slave has been incorrectly configured by the master, or the hardware modules in the slave are not correct.

Above the Live List is a button to control the device statistics of the Live List. The Device Statistics button default setting shows the slave model name, if the Ident number has been captured. This only occurs during master or slave startup, or when diagnostic messages are sent from the slave. Another prerequisite is that the GSD file is listed in the library of the Mercury. For more information on this, see paragraph 8.1.6.

The Live List can be 'paused' by switching the 'Auto Update' button to off. No changes will be visible.

8.1.1.3 Info Panel

Under the Live List is the Info Panel. This does not show any information if the network is running without problems. You can click on an address to see the details and any recorded problems, divided over four tabs; General, Diagnostics, Parameter and Configuration. These are shown on the following pages.

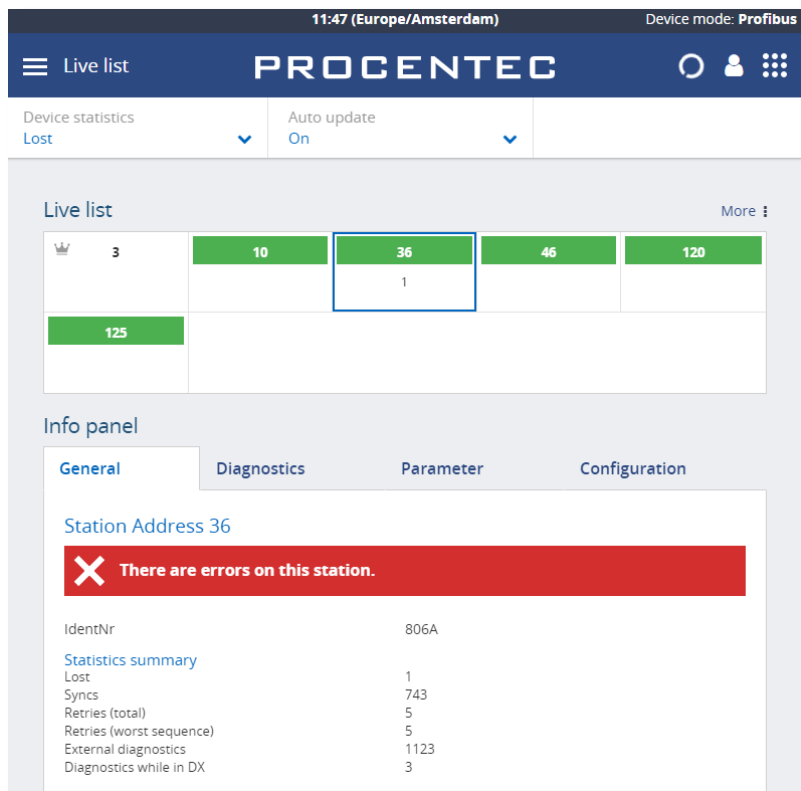


Figure 8 - General errors of the selected station.

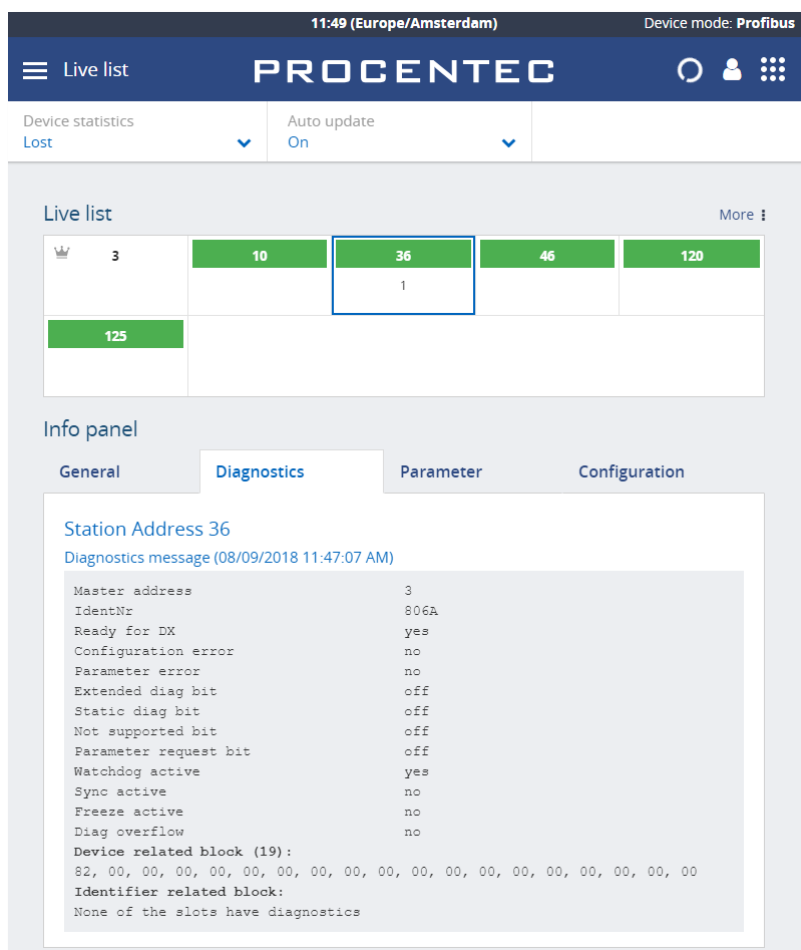
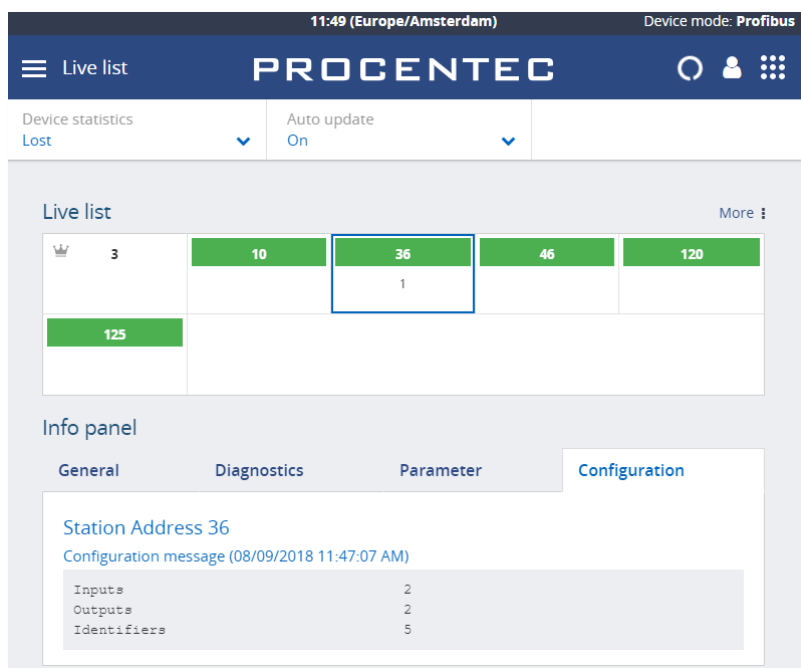
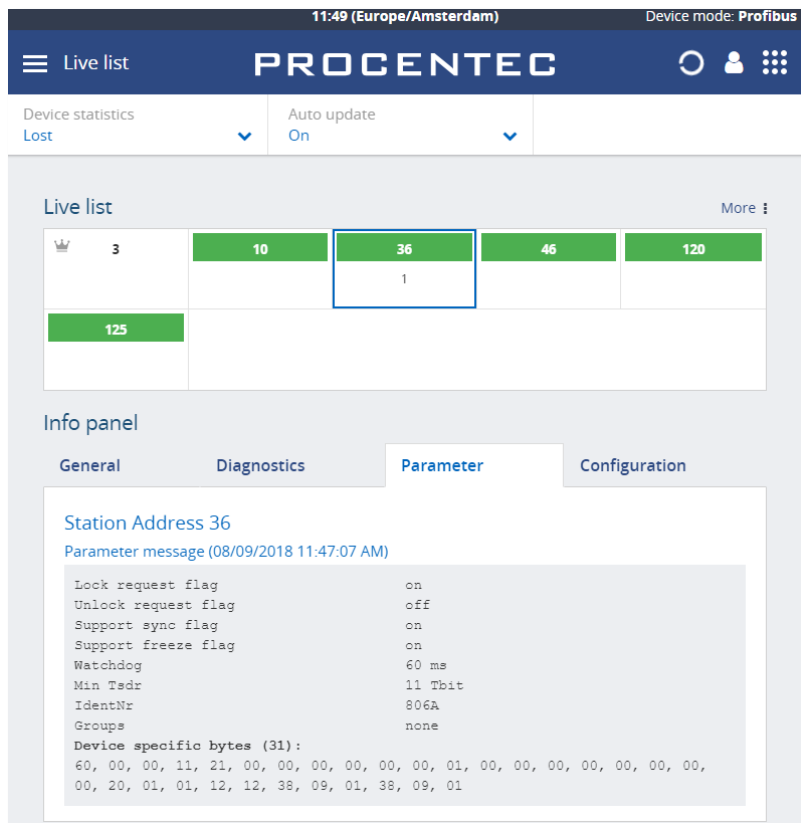


Figure 9 - Diagnostic information from the selected station.



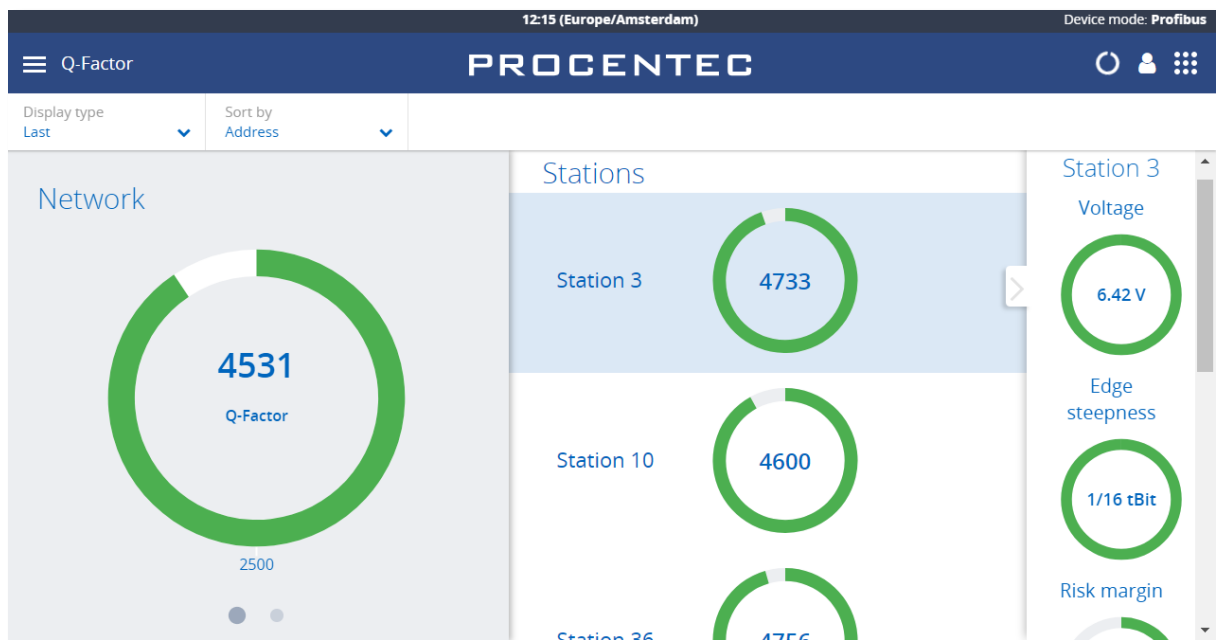
8.1.2 Q-Factor

The Q-Factor is a number that represents the quality of the network.

A value of 5000 is excellent and 0 is critical or unmeasurable. Additionally, a color coding is used to emphasize the severity. Normally the color should be green, meaning excellent or good. Orange is below average but not critical, e.g. attention recommended. Red means a bad, critical or urgent issue.

There are multiple Q-Factors in use in the tool:

- A Q-Factor for each network device, which indicates the quality for a single device. Calculation of this Q-Factor is based on a weight of:
 - Measured voltage, or amplitude
 - Edge steepness
 - Risk margin
- A single overall Q-Factor, indicating the quality of a complete network. Currently the overall Q-Factor equals to the lowest Q-Factor of an individual network device.



The buttons on top can be used to view the last, best or worst values. Swiping the main Q-factor to the left shows a more detailed Q-factor. Clicking a station Q-factor brings up a detailed measurement column on the right.

8.1.3 Scope

The Scope view shows a detailed live oscilloscope waveform of a specific device, and is one of the most important items to check during commissioning or troubleshooting because it gives an accurate view of the health of the network.

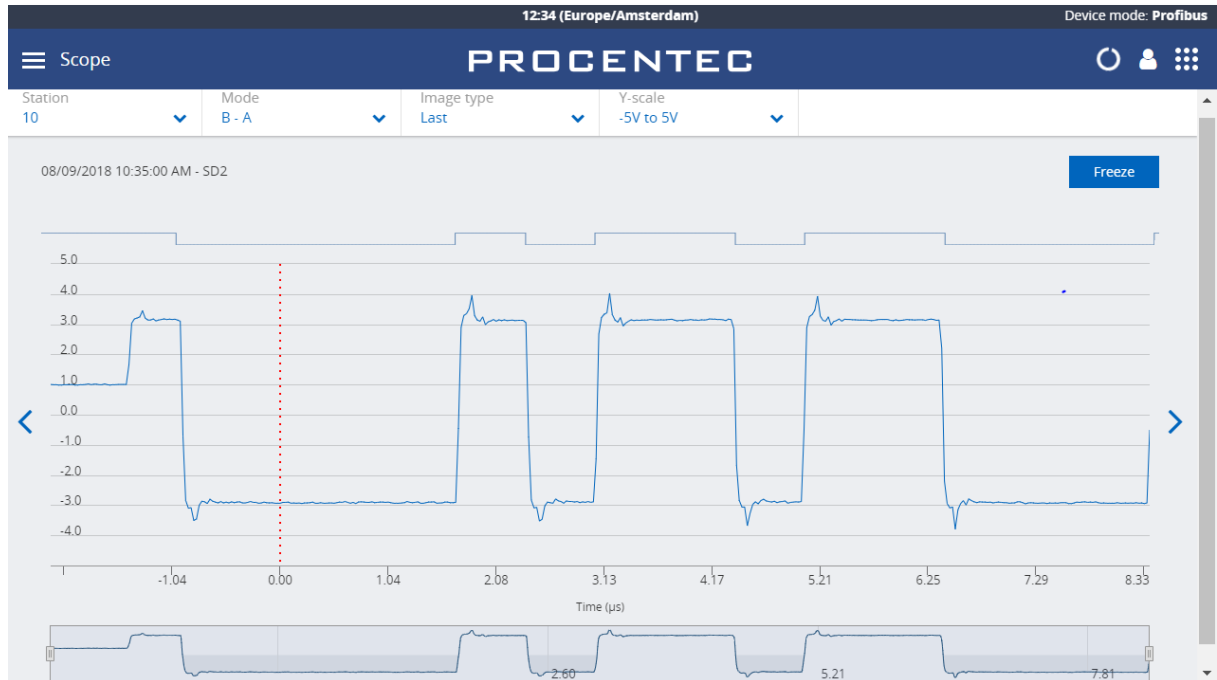


Figure 12 – Normal oscilloscope image of device 10

Use the Station selector in the top left to choose another device or use the '<' and '>' on the left and right to easily cycle through all available addresses.

The 'Mode' button lets you switch between B-A differential mode, the A or B line separately, or both A and B simultaneously. This is useful when troubleshooting a wire break, short circuit with shield or poor connection of one of the wires.

The 'Image type' button allows you to see the last, lowest (minimum) or highest (maximum) measured value. These values are stored in memory from the beginning of the measurement. Leaving the Mercury running for a longer period of time gives a good indication of the lowest / worst oscilloscope signal.

There is also an 'Error' image, this shows the last detected corrupt frame. This only works if the mode is set to 'Error' at the time of the error, so it cannot detect error signals in the background.

Above the oscilloscope image there is a digital representation of the measured signal. This can help determining if there are actual problems with the signal.

Below the oscilloscope image there is a timeline that can be used to scroll left and right in a scope image. Use two fingers to 'pinch' the screen on the oscilloscope line, which zooms in or out. Move the timeline with one finger to scroll.

There is a 'Freeze' button on the top right to stop the screen, to be able to analyze a specific signal.

8.1.4 Bargraph

The Bar graph illustrates the average signal strength from all available devices. It is a helpful utility to get an impression of the overall signal quality of the network.



Figure 13 - Good bargraph levels

The average amplitude should be around 5 V. When there are bus problems the Bar graph will display different voltage levels and the color of the bars will change.

Each bar has a Min and Max level, indicated with blue lines on the bars. These indicate the highest and lowest measured amplitudes, corresponding with the Min and Max levels in the oscilloscope images.

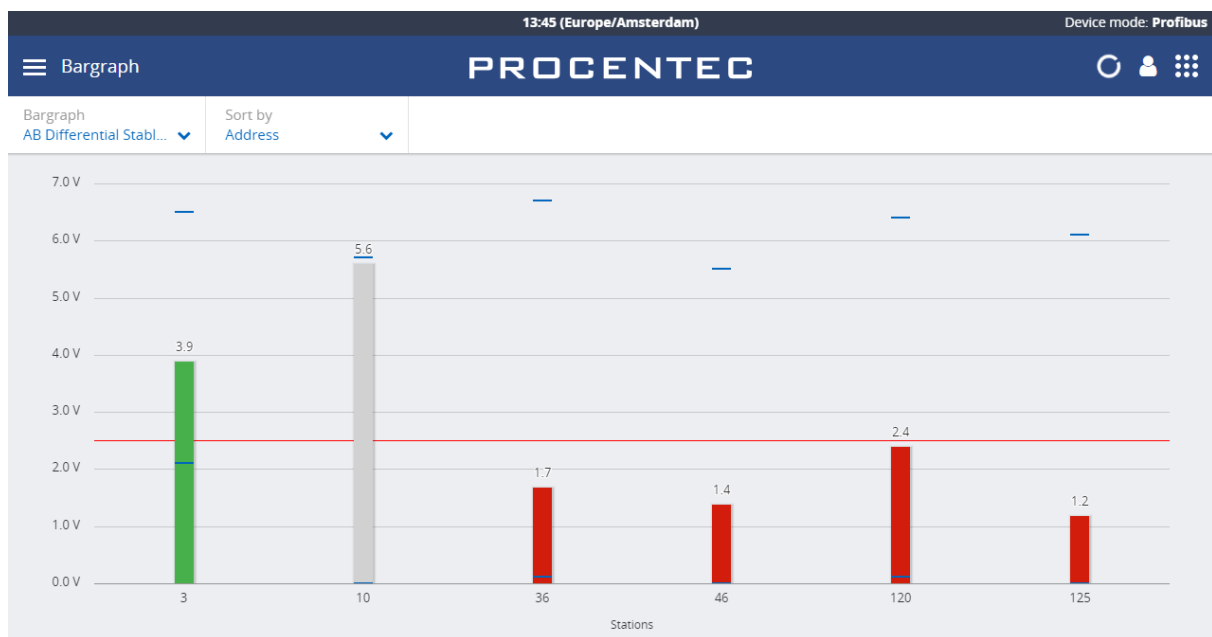


Figure 14 - Inactive and low bars

If a station is not active during the defined time-out (5 seconds), the bar of that station will become grey to indicate inactivity. This can also happen when the signal of this station is so bad that Mercury cannot decode the message.

The bars turn orange when the measured amplitude is between 2.5 V and 3 V. Below 2.5 V the bar turns red. These threshold values can be changed in the settings.

8.1.5 Messages

Message recording lets you record the actual data that is sent over the bus.

Simply press 'Record', and it will record 20000 messages and then stops recording, or press 'Stop' before the 20000 messages are recorded.

The screenshot shows the 'Messages' interface of the PROCENTEC device. At the top, it says '14:32 (Europe/Amsterdam)' and 'Device mode: Profibus'. Below the header, there is a 'Record' button. The main part of the interface is a table with the following columns: Nr., Attention, Idle time, Delta time, Address, Msg. type, Service, Type, Frame, FC, Timestamp, SPS, Length, Data, and Station. The table contains 10 rows of data, each representing a recorded message. The 'Data' column shows hexadecimal values, and the 'Station' column shows the source or destination address.

The columns have the following meaning:

Column	Description	Units
Nr.	The Nr. header specifies the line number in the respective view. This line number is independent of settings, filtering and such.	
Attention	The Attention header gives more information on the message or possible reason for a disturbance or error in the recorded message. (Messages with an "attention" message are tagged with a cross red icon).	
Idle time	The Idle Time is the inactivity between 2 messages. It refers to the time that has elapsed between the end of the previous message and the start of the current message . If the current message is a response, it is called the slave Tsdr (slave response time).	Bit Time
Delta time	This is the time from the first start-bit of the previous message to the first start-bit of the current message.	Bit Time
Address	The 'Address' column specifies the source and destination address of the message. Requests: Source -> Destination Responses: Destination <- Source	Decimal

Column	Description	Units
	An ACK message does not contain addresses, so this field will be empty.	
Msg Type	The Msg Type column specifies the higher level DP, DP-V1 and DP-V2 messages.	
Service	The Service column specifies the type of service of a message. The information is extracted from the FC byte when available (only valid for SD1,SD2 or SD3 messages).	
Type	The Type column indicates a request or response message.	<ul style="list-style-type: none"> • Req • Res
Frame	The 'Frame' specifies the frame type of the message.	<ul style="list-style-type: none"> • SD1 • SD2 • SD3 • SD4 • ACK
FC	Frame Control byte of the message.	Hex
Timestamp	The timestamp is calculated on the basis of a starting moment the user has defined and subsequent messages add to a delta-bittime to this beginning. This means that the timestamp internally consists of 2 parts: the time/date and the delta-bittimes that have passed.	
SAPs	The SAPs column specifies the source and destination SAP of the message. Requests: Source SAP -> Destination SAP Responses: Destination SAP <- Source SAP	Decimal
Length	The Length column specifies length of the user data of a message (only valid for SD2 and SD3 messages and does not include SAPs).	Decimal
Data	The Data column contains the USER DATA or Outputs and Inputs of messages.	Hex
Station	Model name of the device. Can only be displayed if the ident number was captured and the GSD is known (paragraph 8.1.6)	

8.1.6 GSD Management

Mercury features a GSD library with all relevant information from PROFIBUS slaves, such as the device capabilities, device name, manufacturer, version, diagnostic information and possible configurations. This information is used in other parts of the Mercury.

Press the Upload button to select a folder containing GSD files.

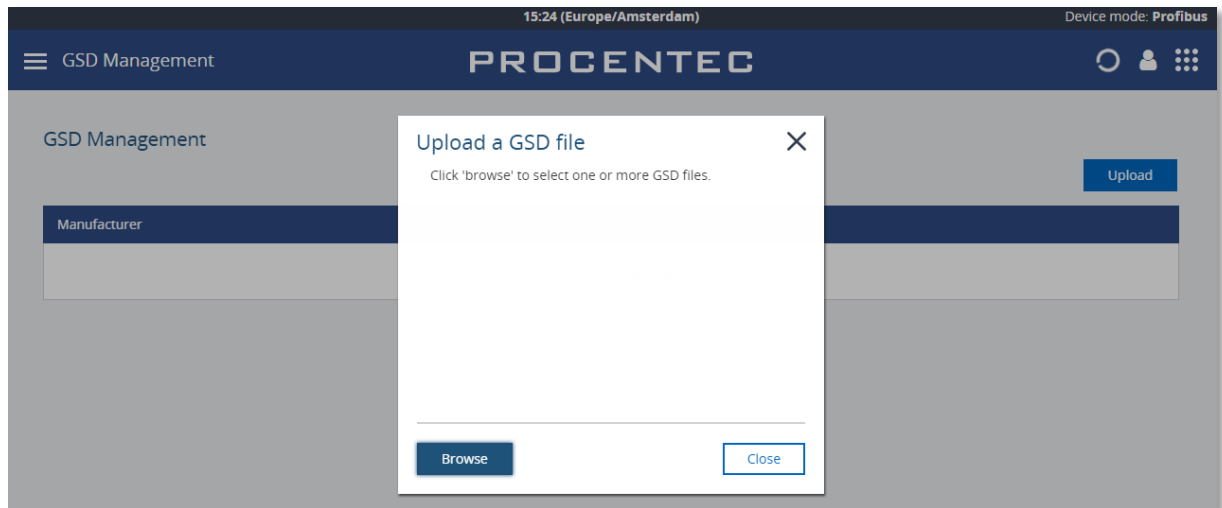


Figure 15 - Click Browse to select a folder containing GSD files..

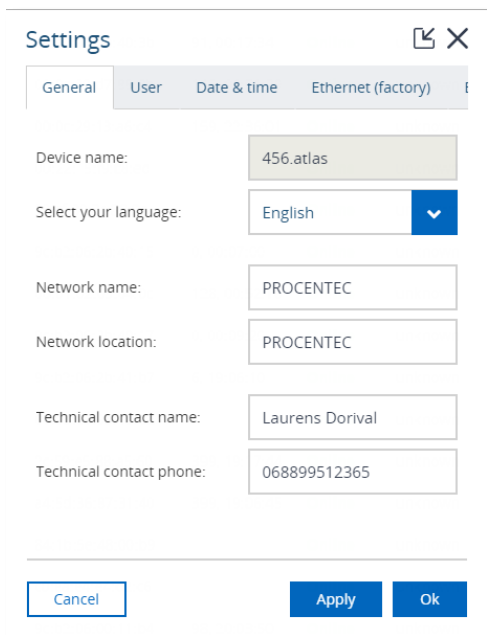
Then click 'Upload' to copy all the selected GSD files to the Mercury. Depending on the number of files, this can take some time. The Mercury automatically makes a library of all GSD files.

The GSD files are then sorted on Manufacturer name and the information in the GSDs is available in the other features of Mercury.

9. Settings

Some of the Osiris settings can be changed manually instead of using the Setup Wizard. Click the Settings tile on the Dashboard, or use the Menu button and select 'Settings'. A window pops up with the following settings (each in their specific tab):

9.1 General tab



In the General settings features the following:

- The Device name: this is the hostname of device.
- Select your language: the interface language.
- The Network name, Network location, Technical contact name and Technical contact phone all show up in the Report

The generation of the report can be found in the application menu. The report feature allows you to generate a report with all relevant collected data of the network and general information:

- Osiris information
- Q-Factor
- Device List
- Ignored Devices
- Traffic Light
- Firmware Differences

Before generating the Report you need to fill in some mandatory details (marked in red). These details will be shown in the Report.

Please note that the Report window is opened in a separate browser tab. Make sure your browser doesn't block opening new tabs. If you use a pop-up blocker, white-list the IP address of your Atlas.

- . The Network name also shows up on the dashboard.

9.2 User tab

Settings

General User Date & time Ethernet (factory)

User name: admin

Admin password:

New password:

Confirm new password:

Cancel Apply Ok

The User tab allows Administrators to assign new passwords to the three standard users (administrator, engineer, operator). Before assigning a new password the administrator first needs to enter his own current password, and subsequently the new password and a confirmation of the new password. More information can be found in paragraph 7.1.3.

9.3 Date & time

Settings

General User Date & time Ethernet (factory)

Timezone: Europe/Amsterdam

Automatic time:

NTP servers:

0.centos.pool.ntp.org

1.centos.pool.ntp.org

2.centos.pool.ntp.org

3.centos.pool.ntp.org

Automatic time (NTP) requires an internet connection

Cancel Apply Ok

The Time zone selection field allows the user to select the time zone of the physical location.

When choosing automatic time, Osiris will try to connect to one of the given NTP servers which require internet connectivity. In case you have a local NTP server(s) then you can remove and replace these defaults servers.

In case you do not want to use automatic time, you can turn it off and manually set the time.

9.4 Ethernet (office) & Ethernet (factory) (Atlas only)

The screenshot shows a 'Settings' window with three tabs: 'Date & time', 'Ethernet (factory)', and 'Ethernet (office)'. The 'Ethernet (factory)' tab is selected. Under 'Addressing:', there is a dropdown menu set to 'Manual'. Below this, the 'Network configuration:' section contains five input fields: 'Address' (192.168.12.114), 'Netmask' (255.255.252.0), 'Gateway' (192.168.12.254), 'DNS 1' (172.16.93.1), and 'DNS 2' (xxx.xxx.xxx.xxx). At the bottom are 'Cancel', 'Apply', and 'Ok' buttons.

Field	Value
Addressing	Manual
Address	192.168.12.114
Netmask	255.255.252.0
Gateway	192.168.12.254
DNS 1	172.16.93.1
DNS 2	xxx.xxx.xxx.xxx

The Factory and Office interface can be configured manually or automatically using DHCP.

In case you configure the interface manually and you would like to make use of automatic time (via the internet) you should enter the Gateway and DNS servers. Make sure to only enter one Gateway; do not use gateways in both interfaces.

In case you are using a Mercury, the 'Office' interface is not available.

9.5 Network monitoring

Settings

< net (office) Network monitoring SNMP com >

IP address scan ranges:

Name	Start	End
Machine TRL-198	192.168.0.1	192.168.0.100
Machine TRJ-177	192.168.14.50	192.168.14.254

Delete Add Edit

Cancel Apply Ok

On this tab you can specify up to ten IP address ranges of devices you would like to scan. Each scan range must be given a name. the order of scan ranges is irrelevant.

In case there are large gaps between devices on your network it is advised to separate a large scan range into smaller ranges to exclude these gaps. This will speed up the scanning process.

On the Atlas, the network monitoring is performed on the Factory network interface so it is important that the entire specified IP address range is reachable by the Atlas through its Factory interface. To do this make sure your scan range falls within the subnet of the Factory interface.

If your IP/subnet configuration is not correct for the specified scan ranges, a notification pop-up will appear.

You can delete or edit a scan range by clicking it first and then click Delete or Edit respectively.

9.6 Email

Settings

< NMP communities Email System Updat >

Enable Email: ☐

Interval: 30 min

Protocol: SMTPS

Server Address: smtp-mail.outlook.com

Server Username: test@test.com

Server Password:

Server Port Number: 587

Sender Email: test@test.com

Cancel Apply Ok

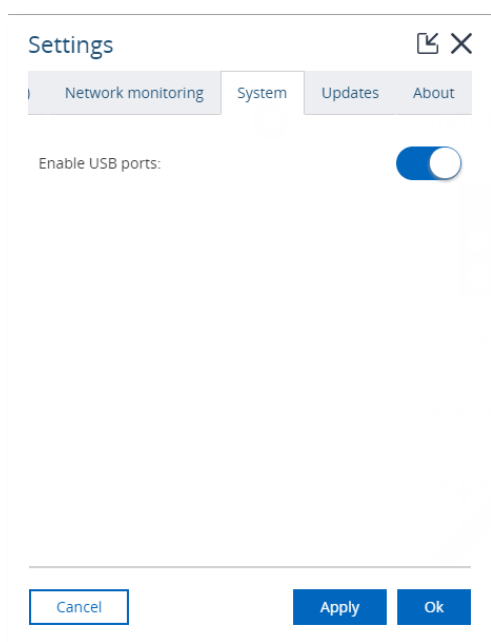
Osiris allows you to be alerted by e-mail about changes in the following properties of your network and/or devices:

- Traffic light
- Devices which are slow to respond
- Devices which are lost
- Devices with InErrors
- Devices with InDiscards
- Devices which have lost ping packets

The e-mail settings tab allows you to specify an SMTPS (secure) or SMTP (not secure) server, login credentials and a list of recipients which will be used for the delivery of the alerts. The interval is the minimum number of minutes between two e-mail alerts.

Before you save your settings, you're advised to test them first by clicking the **Send test email** button. All the recipients will receive this test e-mail.

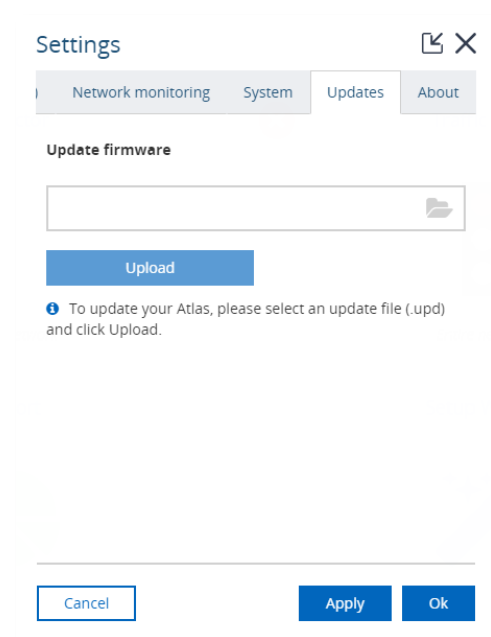
9.7 System



The System tab allows you to disable the USB ports for security reasons or company policy compliance.

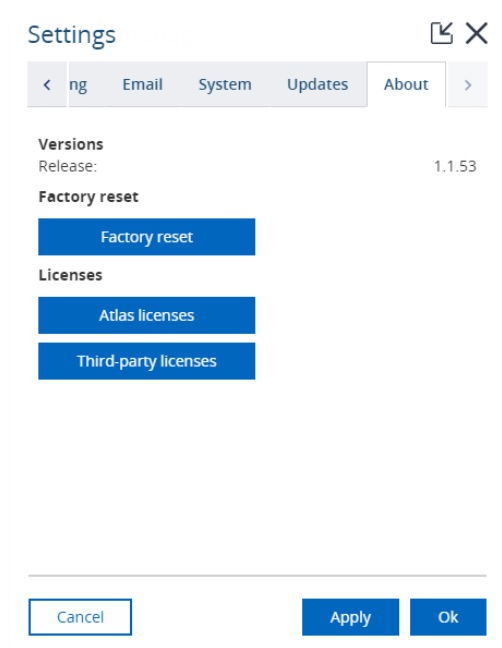
Note: This tab is not available in the Mercury.

9.8 Updates



New firmware can be downloaded from the [PROCENTEC](https://www.procentec.com) website and uploaded in the Updates tab. More instructions about updating can be found in chapter 10.

9.9 About

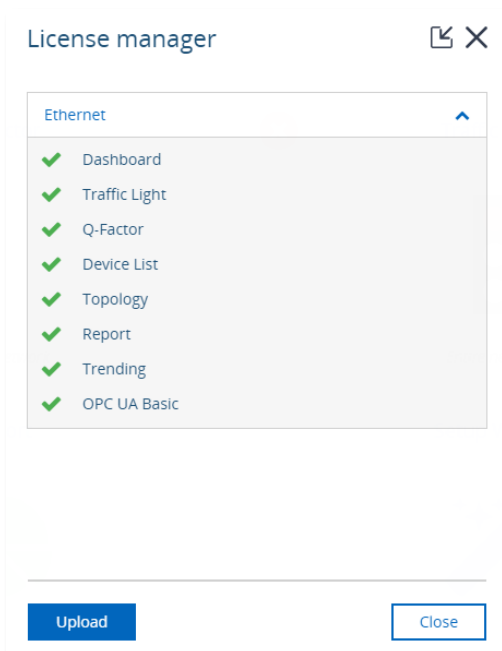


The About tab features the following:

- The current version
- Factory reset
- Licenses: an overview of the current licenses for specific features.
- Third-party licenses: a list of third party open source licenses.

9.10 License Manager

Features of the Mercury are license based. There is a license manager to see which features are enabled, or to upload a new license. The license manager can be reached via the 'Mercury licenses' button within the about tab on the settings page. Another way of opening the license manager is to double click or drag down the dark blue bar on top. In the right upper corner there is an icon of a key which opens the license manager.

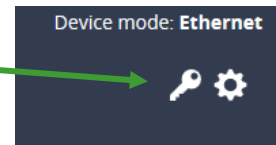


The upload license button will enable to select a new license file. During the upload of a new license file, the file is checked. If the file is not valid the old license will be restored and an error will be shown.

9.10.1 How to upload a new license file

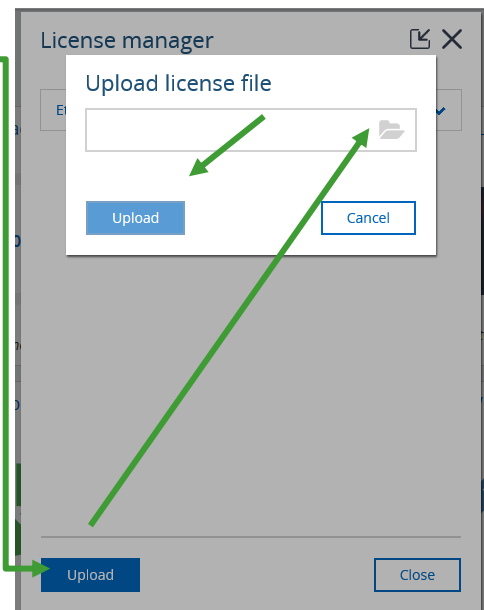
Before you can upload a new license, please make sure you obtain one. To do this please get in contact with your local distributor where you purchased the device, and keep your serial number ready. The serial number can be found at the side of your Atlas, or check the “device name” of the “general” tab of the settings.

- Open the License manager, this can be done in two ways:
 - Double click or drag down the dark blue top bar containing the time.
Click on the key icon located at the right side.
 - From within the settings screen go to the “About” (most right) tab.
Click on the “Licenses” button



- Click the “Upload” button
- Click the folder icon
- Browse to and open your new license file
- Click the “Upload” button
- When you press the Upload button the system will check if your license is valid. If this check fails then please make sure you upload the license to the correct device (check the serial number). If this keeps failing, please contact PROCENTEC.
- When the correct license is uploaded you will be automatically logged out. After logging in again, your new license will take effect.

In the License manager you can now check which new features are enabled.



10. Updating the firmware

The application Osiris will be regularly updated by PROCENTEC. Such an update may include the addition of new valuable features, fixes for issues or updates to the underlying operating system.

Whenever an update becomes available it will be downloadable through the website of PROCENTEC. PROCENTEC will provide details regarding the update and indicate whether the update is regarded as being a critical update.

Administrators can update the firmware by uploading it using the Updates tab in the Settings. The process of updating the firmware is detailed in the following steps:

Step: Instructions:

- STEP 1 Download the latest firmware from the [PROCENTEC](#) website.
- STEP 2 Login into Osiris, open Settings and navigate to the Updates tab.
- STEP 3 Press the folder icon and select the file you just downloaded from the PROCENTEC website.
Press Upload and wait until the firmware has been uploaded successfully.
- STEP 4 Now restart Osiris and wait until it is ready (when only ONE of the traffic light LEDs turns on).
*This may take up to an hour. **Do not unplug the power supply during the update process!***
- STEP 5 Open Osiris again. On the login page you will see the version at the bottom of the page. This is the version of the update package. Only when this is the case, you may unplug the power supply.

10.1 Updating Atlas version 1.0.32

For this version of Atlas the update of the firmware is only possible by means of a USB-stick. The process of updating the firmware is detailed in the following steps:

Step: Instructions for Atlas, only version 1.0.32:

STEP 1 Download the latest firmware for Atlas from the PROCENTEC website.

<https://procentec.nl/service-support/software-firmware/>

STEP 2 Copy the downloaded firmware package onto a USB-stick.

Note: make sure the USB-stick is formatted according the FAT filesystem.

STEP 3 Insert the USB-stick into a USB port of Atlas.

STEP 4 Wait at least 20 seconds and then remove the USB-stick.

STEP 5 Wait 10 seconds and then insert the USB-stick again into the same USB port of Atlas as used at step 3.

STEP 6 Wait 3 minutes and then remove the USB-stick.

STEP 7 Log in as administrator, double click the top bar and then press the restart button.

STEP 8. Now wait until the RDY led turns on.

Note: it will take ± 30 minutes to complete the update process. Do not unplug the power supply during the update process!

11. Resetting Osiris to factory defaults

If Osiris becomes unreachable due to any reason, you can reset the device to factory settings.

Warning: this will reset all settings, clear all measurement data and will restore both the network interfaces to their initial IP address (Factory: 192.168.0.10; Office: 192.168.1.10)

11.1 On Atlas

The Atlas has a reset button at the front, as shown in Figure 12. You can use a small object, such as an unfolded paperclip, to reach the button behind the small hole in the front. Press it for 10 seconds during operation and then release it. Do NOT press too hard; the button requires little pressure. After 10 seconds, the device will start a factory reset which will take approximately 2 minutes.

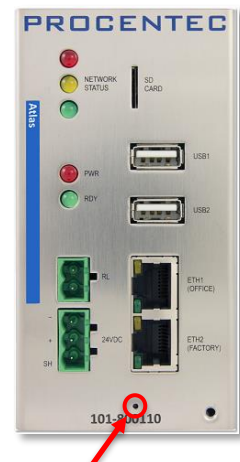



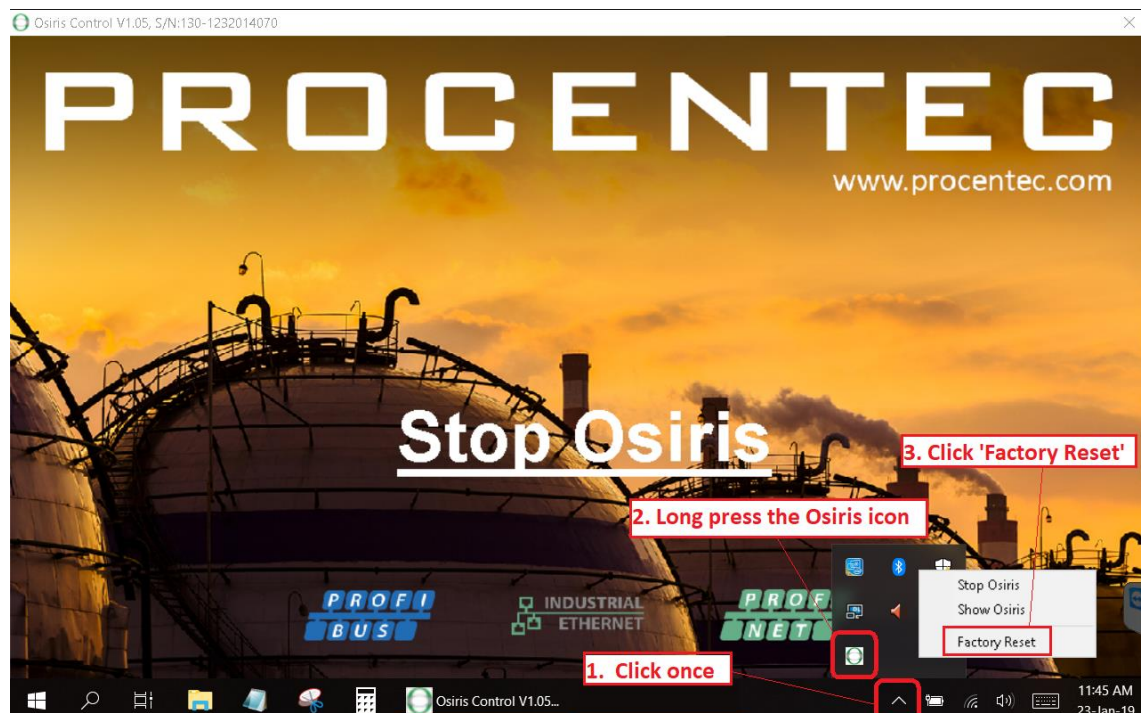
Figure 12 - Factory reset button

After the reset, it will reboot and be reachable on the default IP addresses again. You need to fill out the Setup Wizard before the Atlas can continue normal operation again. Until that time, the yellow traffic light and the green RDY LED will blink.

11.2 On Mercury

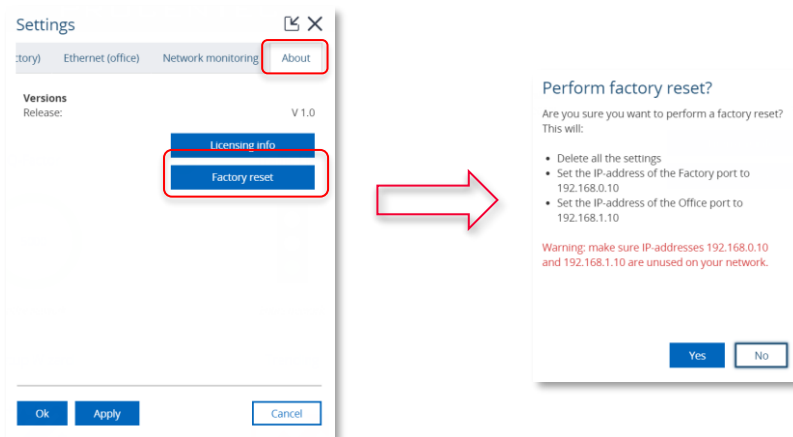
Osiris on Mercury can be reset to factory defaults. First, make sure the OsirisControl application is running. Then press the Windows logo button below the screen.  This will bring up the Windows taskbar and system tray.

Click the UP arrow in the system tray once, then press on the Osiris icon for about 1 second. A small menu appears, then click 'Factory Reset'.



11.3 Using the Settings in the web interface

The other way to factory reset the device is through the web interface. Under the 'Settings' tile, go to the last tab 'About'. In this tab, you can find a button 'Factory reset'. Clicking this button will bring up a confirmation window, where you can confirm the factory reset. The device will start a reload procedure that will take approximately 2 minutes.




After the reset, it will reboot and be reachable on the default IP addresses again. You need to fill out the Setup Wizard before Osiris can continue normal operation again. Until that time, the yellow traffic light and the green RDY LED will blink on Atlas.

12. Firewall settings

Osiris uses the following network ports.

Port number/protocol	Description	Office interface (Atlas only)	Factory interface
80/TCP	HTTP	Used to redirect to HTTPS.	
137/UDP	NetBIOS	To report the hostname to Windows machines.	
161/UDP	SNMP	To report status information to external devices.	To collect topology data from the devices on the factory network.
443/TCP	HTTPS	Used for the web interface.	
502/TCP (OUT)	ModBus/TCP	Closed	Used to find devices supporting Modbus/TCP.
4840/TCP	OPC UA	Only used when the OPC UA service is started.	
5353/UDP	MDNS/Avahi	To report the hostname to Apple machines.	
34964/UDP (OUT)	PROFINET-I&M/RPC	Closed	Used to collect PROFINET specific information.
44819/UDP (OUT)	EtherNet/IP	Closed	Used to find devices supporting EtherNet/IP.

13. Technical specifications Atlas

Technical Data - Atlas in general	
Dimensions, weight and mounting	
Dimensions D x W x H (mm)	120 x 65 x 120 (width without side cover: 58 mm)
Weight	680 grams
DIN-rail	35 mm (minimal 65 mm wide)
Ambient conditions	
Operating temperature	-20° .. +60° Celsius  “WARNING, HOT HOUSING. When in use at an ambient temperature higher than 55°C or 131°F, the housing of the Atlas will be hot. Do not touch the housing!”
Storage temperature	- 20° .. +85° Celsius
Relative air humidity	Maximum 98%
Ingress protection	IP 20 (DIN 40 050)
Power supply	
Pluggable power supply connector	Pin - : 0 V Pin + : +24 VDC Pin SH : Shield
Nominal power supply voltage	12 .. 24 VDC
Absolute maximum rated voltage	9 .. 32 VDC
Nominal power use	4.5 W
Maximum power use	20 W
Current consumption (12VDC)	Max. 1.4A
Reverse polarity protection	Yes
Redundant power supply	No
Wire diameter	<2.5 mm ²
Installation notes: The device shall be powered with a correct power supply: <ul style="list-style-type: none"> For North America the power supply shall be listed and meet the requirements for class 2 For the rest of the world the power supply shall meet the requirements for limited power sources as defined in IEC/EN 60950-1 cl. 2.5 Possible power supplies: Phoenix STEP-PS series Traco power TCL series XP-power DNR120-480 series	
Ethernet	
Connector (Factory and Office)	RJ-45
Maximum cable length	100 m
Link speed	10/100/1000 Mbps
MAC address	Range: 9C:B2:06:2B:40:00 - 9C:B2:06:2D:3F:FF
Supported protocols	OPC UA, PROFINET (detect only), PROFINET I&M0, Modbus TCP (detect only), Ethernet/IP (detect only)
Protocols used	ARP, ICMP, DCP, SNMP, PROFINET I&M0
Default IP address after reset/purchase	Factory: 192.168.0.10

Default login / password	Office: 192.168.1.10 admin / admin
Connections	Up to 20 concurrent web clients
Relay contact	
Resistance	100 .. 150 mΩ (including plug)
UL maximum contact rating	max. 10W 24VDC, 400mA
SD card	
Supported types	SD and SDHC
Size	Maximum 32 GB
USB ports	
Type	USB 2.0
Maximum output power	500 mA per port
Others	
MTBF	To be defined

14. Technical specifications Mercury

Technical Data - Mercury in general	
Mobile Computing Platform	
Manufacturer, type	Panasonic FZ-M1
Processor	Intel® Core™ i5-7Y57 vPro™ processor
Operating System	Windows 10 Pro
RAM	4 GB (Max. 8 GB)
Graphic Chip	Intel® HD Graphics 615
Camera	Front: 2 MPixel Rear: 8 Mpixel with autofocus and LED flash
Storage	128 GB Solid State Drive (Serial ATA)
LCD	7" sunlight-viewable WXGA Active Matrix (TFT) IPS LCD
Touchscreen	10 finger capacitive multi-touchscreen
Bluetooth	Version 4.1 + EDR Class 1
WLAN	Intel® Dual Band Wireless-AC 8265
USB ports	USB 3.0 (1x) USB 2.0 (1x)
Expansion slot	Micro SD/SDXC Memory Card
Dimensions, weight and mounting	
Dimensions D x W x H (mm)	203 x 18 x 132 mm
Weight	540 grams
DIN-rail	No, handheld (handstrap and stylus supplied)
Ambient conditions	
Operating temperature	-29° .. +60° Celsius
Storage temperature	- 51° .. +71° Celsius
Relative air humidity	Maximum 98%
Ingress protection	IP 65 (MIL STD 810G and IEC 60529)
Gravity drop resistance test	180 cm
Power supply	
Power supply	Supplied in box. Rated IP 20
Input	100 – 240 VAC 1.5 A – 0.8 A
Output	16 VDC 3.75 A 3.76
Plug	Middle = + Outer ring = -

Battery	Lithium-Ion (7.2 V, 3220 mAh)
Ethernet	
Connector	RJ-45
Maximum cable length	100 m
Link speed	10/100/1000 Mbps
Supported protocols	OPC UA, PROFINET (detect only), PROFINET I&M0, Modbus TCP (detect only), Ethernet/IP (detect only)
Protocols used	ARP, ICMP, DCP, SNMP, PROFINET I&M0
Default IP address after reset/purchase	Factory: 192.168.0.10
Default login / password	admin / admin

15. Order codes

Component	Order code	Remarks
Atlas	101-800110	Atlas main unit including mounting materials
Mercury IE Reliability Solution FZ-M1	101-820220	<p>Panasonic ToughPAD FZ-M1 with Intel Core 5 Processor 4GB of RAM - 128GB SSD, Wifi ONLY, Bluetooth, 1x USB 3.0, 1 X USB 2.0, 1 X RJ45 LAN Port, 1 X SD Card, Front & Rear Camera with stylus pen & standard. Windows 10. Handstrap- 3 year warranty including 5 day pick up and return repair service.</p> <p>WITH OSIRIS STANDARD LICENSE (101-700100)</p>
Mercury IE Reliability Solution FZ-M1	101-821220	<p>PROCENEC Mercury Standard Kit Includes</p> <p>1 x Mercury Rugged Tablet (101-820220) , 1 x 360 degree strap (101-820221) , 1 x Carrying Case (101-820222) , 1 x RJ45 to RJ45 3 Meter Cable (123-637GRR3) , 1 x RJ45 to M12 3 Meter Cable (123-642EMR3) , 1 x PROFICORE USB Cable (60010003)</p> <p>OSIRIS Software Standard Package (101-700100) pre-installed and tested.</p>
Mercury IE Reliability Solution FZ-M1	101-822220	<p>PROCENEC Mercury Plus Kit Includes</p> <p>1 x Mercury Rugged Tablet (101-820220) , 1 x 360 degree strap (101-820221) , 1 x Carrying Case (101-820222) , 1 x RJ45 to RJ45 3 Meter Cable (123-637GRR3) , 1 x RJ45 to M12 3 Meter Cable (123-642EMR3) , 1 x PROFICORE USB Cable (60010003), 1 X ProfiCore Ultra 2 (10020), 1 X ProfiCore TAP Connectors (13020)</p> <p>OSIRIS Software Standard</p>

		Package (101-700100) pre-installed and tested.
Mercury IE Reliability Solution FZ-M1	101-823220	<p>PROCENDEC Mercury PRO Kit Includes</p> <p>1 x Mercury Rugged Tablet (101-820220) , 1 x 360 degree strap (101-820221) , 1 x Carrying Case (101-820222) , 1 x RJ45 to RJ45 3 Meter Cable (123-637GRR3) , 1 x RJ45 to M12 3 Meter Cable (123-642EMR3) , 1 x PROFICORE USB Cable (60010003), 1 X ProfiCore Ultra 2 (10020), 1 X ProfiCore TAP Connectors (13020), 1 X ProfiTrace 2 Software (22020), 1 x ProfiTrace SCOPE ware (23010), 1 X ProfiCaptain (22020), 1 x Netilities (39020)</p> <p>OSIRIS Software Standard Package (101-700100) pre-installed and tested.</p>
Accessories	Order code	Remarks
Mercury: Optional Panasonic DC Car Charger 12V-32V / 80W	101-820321	Mercury Optional DC powered Car Charging unit for Panasonic Tough PAD 12V-32V/80W
Mercury: Optional Desktop Cradle: Full Version	101-820322	Mercury Optional Desktop Cradle Full Version with: 2 x USB 2.0, 1 x VGA, 1 x HDMI, 1 x LAN RJ45, 1 x Serial
Mercury: Optional Desktop Cradle: Lite Version	101-820323	Mercury Optional Desktop Cradle Lite Version with: 2 x USB 2.0 & 1 x LAN RJ45
Mercury: Optional 4 Bay Battery Charger	101-820324	Mercury Optional 4-Bay Battery Charger (ac adapter is not included. CF-AA5713AG or CF-AA6502A2 is required)
Mercury: Optional EU Plug: AC Charger 220V	101-820325	Mercury Optional Cable for AC Charger that has 220V EU Plug

Mercury: Optional 2-Cell Li-ION Battery	101-820326	Mercury Optional Cell Li-ION Battery for FZ-M1
Mercury: Optional Capacitive Stylus PEN FZ-M1	101-820327	Mercury Optional Capacitive stylus pen for FZ-M1
Mercury: Optional Cleaning Cloths	101-820328	Mercury Optional Cloths (tissue) to clean Touchscreen MOQ
Mercury: Optional Protective Screen Films	101-820329	Mercury Optional Protective Film for FZ-M1
Mercury: Power Plug: Australian	101-820330	Mercury Optional replacement power plug: Australian
Mercury: Power Plug: China	101-820331	Mercury Optional replacement power plug: China
Mercury: Power Plug: India/South Africa	101-820332	Mercury Optional replacement power plug: India/South Africa
Mercury: Power Plug: Brazil	101-820333	Mercury Optional replacement power plug: Brazil
Mercury: Power Plug: Italian	101-820334	Mercury Optional replacement power plug: Italian
Mercury: Power Plug: U.K.	101-820335	Mercury Optional replacement power plug: U.K.
Mercury: Power Plug: US	101-820336	Mercury Optional replacement power plug: US

16. Certificates



certificate

QualityMasters hereby declares that

Procentec B.V.
Wateringen

has a management system that meets the requirements of the standard

NEN-EN-ISO 9001:2008

for the scope

Providing training courses, technical support, product development and the exploitation of the test laboratory.

Date of original approval 10-02-2003

Date of issue 25-01-2016

Valid until 10-02-2019

Certificate number NL 6594-uk

On behalf of Stichting QualityMasters,

N.B. The failure to meet the conditions as set forth in the certification agreement, or non-compliance with the given standard and/or guidelines, may lead to the suspension or cancellation of the certificate.
This certificate remains the property of Stichting QualityMasters, Nieuwland Parc 157, 3354 LJ Papendrecht.



Iso9001 certificate

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For the complete list of our Sales Offices and Distributors see www.procentec.com/company/distributors.

If your country or region is not listed, please contact us. We are still searching for distributors who can cover complete areas or countries.



18. About PROCENTEC

PROCENTEC is a specialist in PROFIBUS and PROFINET technology and develops products to optimize the production processes of end users. Our innovative solutions ensure that our customers successfully operate in the world of industrial automation and enjoy maximum results from their process.

PROCENTEC globally supplies all the components required to install a measurable and steerable network. We develop and produce all products in the Netherlands and they are exported through our worldwide distribution network. At PROCENTEC, we have a professional team of qualified support engineers who provide technical support on-site and online. Our professionals have more than 20 years of experience with PROFIBUS and PROFINET technology. They provide the necessary support to end users during implementation procedures, certification processes, audits and malfunctions. PROCENTEC also is an international accredited Competence and Training center for PROFIBUS and PROFINET. We provide training courses that help employees using those techniques optimally for their business objectives

Products

- Atlas and Mercury
- ComBricks
- ProfiHub
- ProfiTrace
- VPSwitch
- VPGate
- PROFINET tools
- Cables & Connectors

Services

- On-site & Online Support
- Network Audit
- Network Certification
- Consultancy
- Testlab & Democenter
- Competence Center

Training

- PROFIBUS training courses
- PROFINET training courses
- Product training courses

19. Notes

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



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