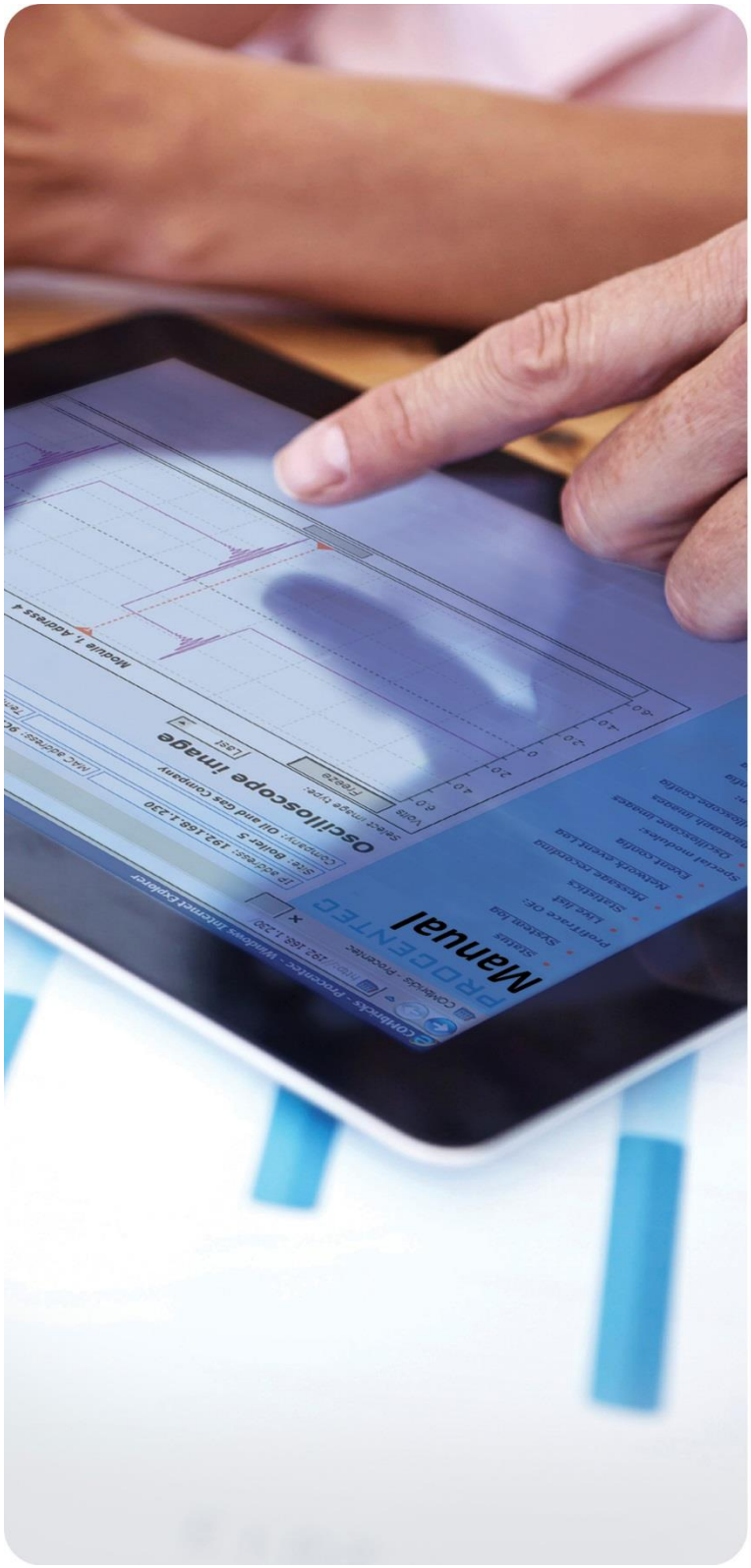
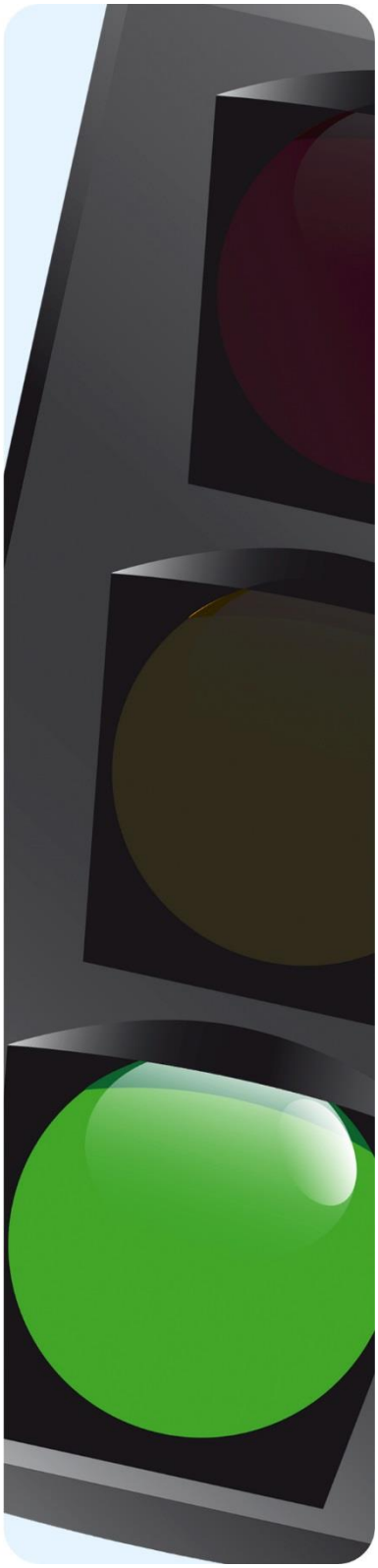
PROCENTEC





Network Condition Indicator

User Manual V1.2.2

Contents

1. Product description

1.1 Introduction

The Network Condition Indicator for ComBricks is a convenient tool to monitor and manage multiple ComBricks sets simultaneously. It features a traffic light indicator, similar to the traffic light in ProfiTrace, to monitor the status of your PROFIBUS network(s).

It turns red when critical problems occur, or yellow when less critical issues arise. This enables maintenance crew to react directly to a problem. One click on the red ComBricks reveals the problem in simple words.

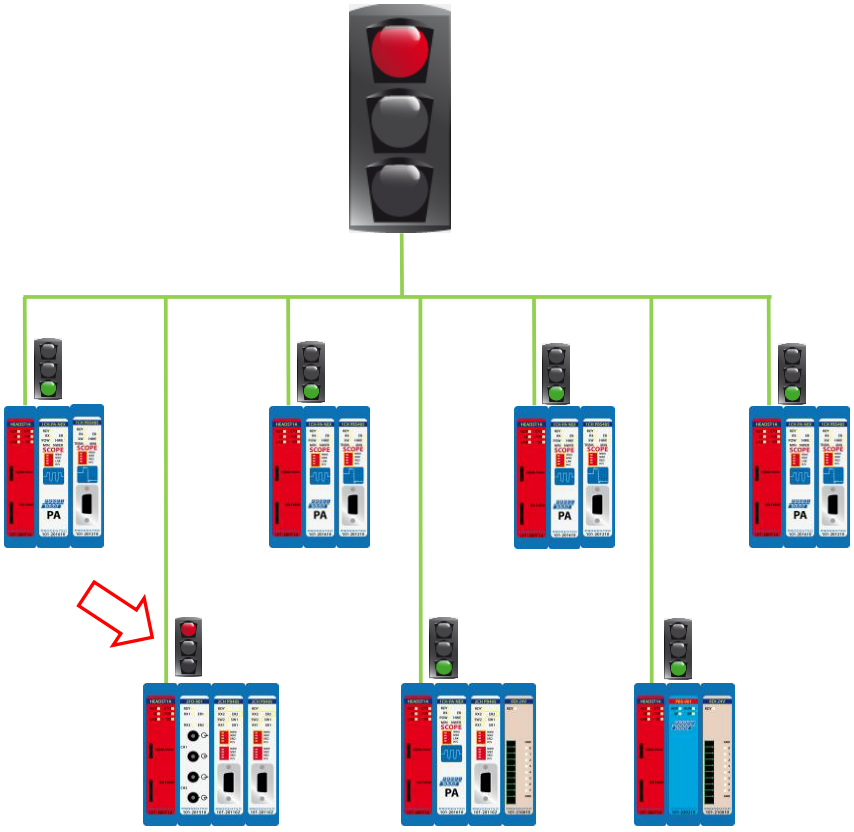


Fig. 1 – Schematic overview. If one ComBricks has a critical problem, the Network Condition Indicator turns red

1.2 Product features

- Real time overview of all ComBricks
- Easy access to individual ComBricks sets
- One interface to set selected ComBricks in maintenance mode
- One interface to reset all measurements of all ComBricks
- One interface to update all ComBricks firmware remotely
- Minimized and stay-on-top mode
- Multi-language support

1.3 Detectable faults

- Lost devices
- Syncs
- Repeats/retries
- Illegal telegrams
- Critical Diagnostics (Ext. Diag)
- Idle voltage problems (Scope module required)
- Amplitude (Bargraph) problems on specific devices (Scope or PA module required)
- PA fault problems: jitter, noise or DC voltage (PA module required)
- System warnings

1.4 System requirements

In order to use the Network Condition Indicator and all sub programs, your computer system should include the hardware and software listed below. The software has been tested to work on Windows 7, Windows 8 and Windows 10.

Minimum requirements:

- Microsoft Windows 7 or higher
- 600 MHz Intel Pentium III processor or equivalent
- 1024 MB of RAM
- 1024x768 resolution display
- 1 free 100Mbit Ethernet port
- 1 mouse or other pointing device

Recommended (differences from minimum):

- 2048MB of RAM
- 1280 x 1024 resolution display or better

2. Software installation instructions

This chapter describes the installation for the Network Condition Indicator. It is assumed that you have a basic knowledge of Windows operating systems. All examples and dialogs are based on a US/UK based Windows installation and may differ slightly based on upgrades, updates and enhancements. Please use the screenshots in conjunction with the description in order to press the appropriate buttons and other user interface items.

2.1 Installation procedure and license

You can run the Network Condition Indicator directly from a local folder or any other location without having to install it on your PC. Just make sure to have the HID_Wrapper.dll and exe file in the same folder and run the executable.

The older versions (v1.4.1 and lower) needed a license if you were monitoring more than 3 ComBricks. Since version 1.4.2 the license is no longer needed; you can use it without restrictions on as many ComBricks as you want.

2.2 Updates

It is the policy of PROCENTEC to release periodic updates.

To update your Network Condition Indicator version, simply download the new ZIP file from our website and copy the contents of the ZIP file to the current folder. This will overwrite your previous version. If you want to keep the previous version you can make a backup of it in a different folder.

3. Main interface window

The Network Condition Indicator has a main window with menu bar and status bar. It allows easy access to all features of the program. It also displays a traffic light with measurement time and a list of all connected ComBricks, including their status, serial number, firmware version, uptime, IP address and used port.

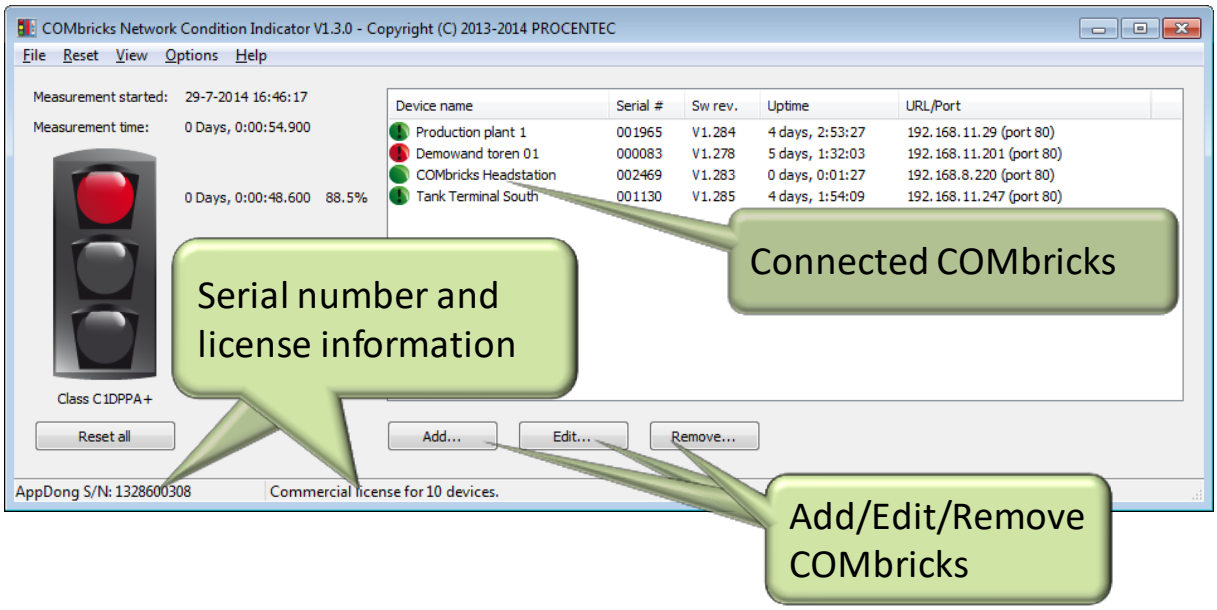


Fig. 2 - Main window

3.1 List of connected ComBricks

3.1.1 Add a ComBricks Head Station

To add a ComBricks set, click 'Add…'. In the following window that pops up, you can add an IP address manually. Enter the port number of the ComBricks (default is 80). If the ComBricks Head Station has a User and/or Admin password, provide it. This is not required to view the traffic light status, but a password is required to be able to reset the measurements.

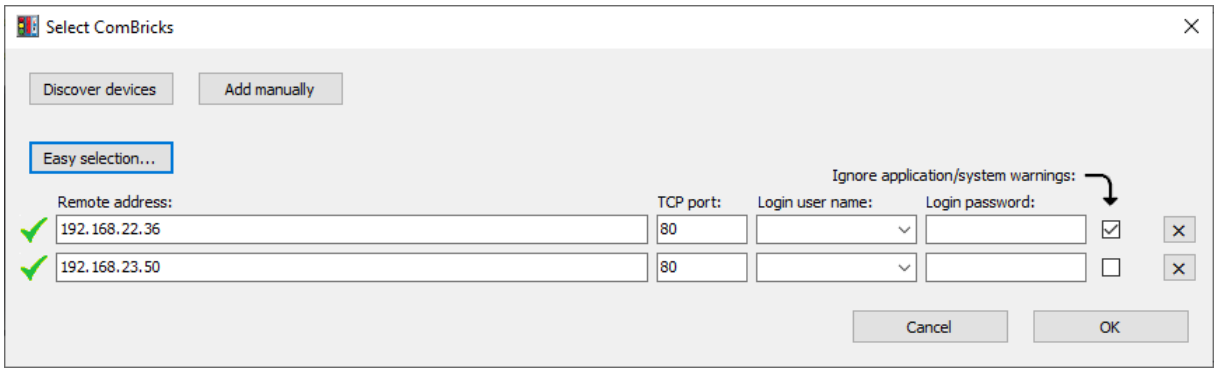


Fig. 3 - ComBricks selection dialog

You can add multiple ComBricks by clicking 'Add manually'; this adds another line where you can fill in the details of other ComBricks.

The 'Easy selection' button allows you to copy properties of a selected ComBricks to other Head Stations.

If you do not know the IP address of the ComBricks that you wish to add, click 'Discover devices'. This opens the Discovery Tool. For help on using this tool, refer to the manual of the Discovery Tool on http://procentec.com/downloads/ComBricks/ComBricks-QuickStart-Discovery-Tool-EN.pdf.

3.1.2 Edit a ComBricks Head Station

When a ComBricks Head Station entry must be edited, for example when the password or IP address has been changed, select the ComBricks in the list and click 'Edit'. Now you can make the required changes and click 'OK'.

3.1.3 Remove a ComBricks Head Station

To erase a ComBricks Head Station from the monitoring list, simply select that ComBricks in the list and click 'Remove…'. Click 'Yes' on the confirmation dialog.

It is also possible to delete the entire list of ComBricks. Go to 'File – Clear' in the menu bar, this will clear all ComBricks Head Stations.

3.2 The Traffic Light

The traffic-light style overview page indicates with easy colours how healthy the PROFIBUS system is.

This paragraph describes the rules for the traffic light; when the colour changes and if it can change back to green. It also explains the measurement details.

3.2.1 Measurement time and Clear button

As soon as the Network Condition Indicator executable has started, the 'Measurement time' starts. You will see the start time and the measurement time.

Right next to the traffic light are three counters. Listed from top to bottom they represent:

- Total measured time (absolute and percentage) of Red traffic light (Critical) state
- Total measured time (absolute and percentage) of Yellow traffic light (Warnings) state
- Total measured time (absolute and percentage) of Green traffic light (Normal) state

To reset these measurements or timers, go to the main menu and choose one of the following (see image below):

- 'Clear NCI related data (Trafficlight' (only resets the measured data on the NCI, not on the Combricks)
- 'Clear NCI related data (Trafficlight + Time counters)' (only resets the measured data and the timers on the NCI, not on the Combricks)
- 'Clear all data (Trafficlight + Time counters)'. Resets all measurement data on the NCI and on all ComBricks, including the timers.

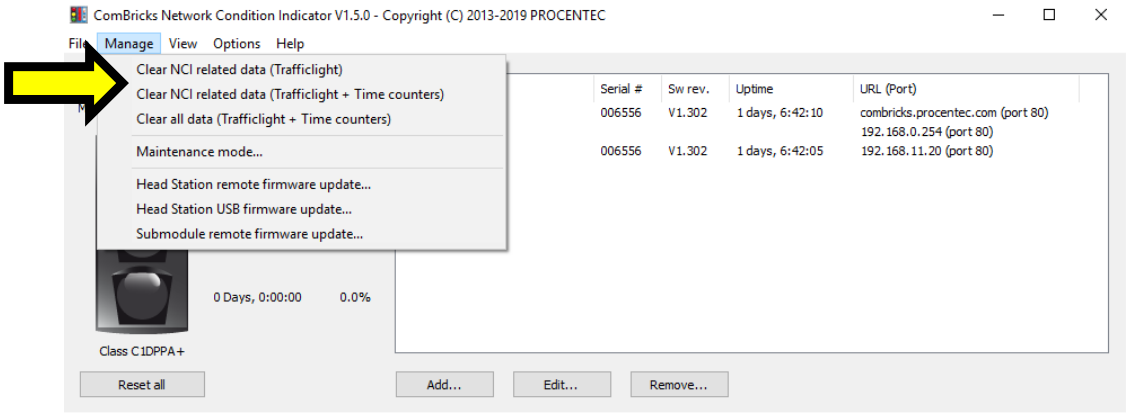
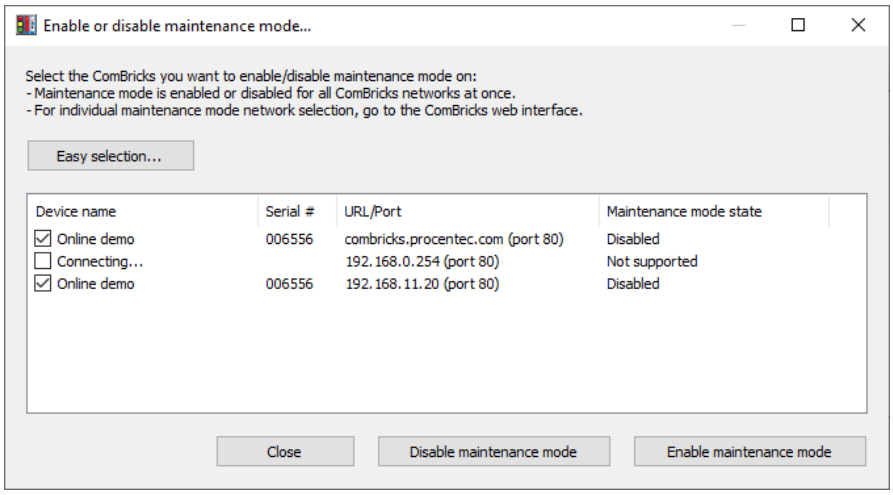


Fig. 4 - Reset measurements and/or timers

The ‘Reset all’-button below the Traffic Light will reset all statistics and measured scope signals/Bar Graph info in ALL of the listed ComBricks. It will not reset the counters.

3.2.2 Maintenance mode

The NCI tool can be used to remotely put multiple selected ComBricks into Maintenance mode (Since firmware version 1.300). For a description on Maintenance mode, see ComBricks manual paragraph ‘Maintenance mode’ under ‘Device management’. Select the ComBricks units that need to be put into Maintenance mode, and select ‘Enable’.

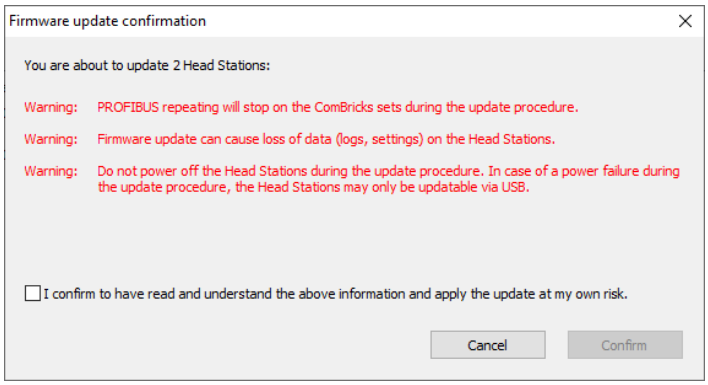


There is an ‘Easy selection’ box to help select large groups of ComBricks.

3.2.3 Remote updating of the Head Station

Since Firmware version 1.302 it is possible to remotely update the firmware of one or more Head Stations, using the NCI tool version 1.5.0.

In the menu, select ‘Manage – Head Station remote Firmware update…’ and select the firmware file that you want to send to the ComBricks. Next, you can select one or more ComBricks Head Stations. There is an ‘Easy selection’ box to help select large groups of ComBricks. The following warning appears, which needs to be confirmed. After checking the checkbox and clicking ‘Confirm’ the update procedure will start.


Firmware update confirmation
You are about to update 2 Head Stations:
Warning: PROFIBUS repeating will stop on the ComBricks sets during the update procedure.
Warning: Firmware update can cause loss of data (logs, settings) on the Head Stations.
Warning: Do not power off the Head Stations during the update procedure. In case of a power failure during the update procedure, the Head Stations may only be updatable via USB.
I confirm to have read and understand the above information and apply the update at my own risk.
Cancel
Confirm

3.2.4 Local updating of the Head Station

NCI can be used to locally update a single Head Station with USB. Select 'Manage – Head Station USB Firmware update…', select the firmware file that you want to send to the ComBricks and follow the instructions on the screen.

3.2.5 Updating ComBricks modules

NCI can also be used to update modules remotely. Select the target ComBricks in the list, choose 'Manage – Submodule Remote Firmware update' and press 'Connect to Head Station'. The modules will load. Then double-click on the module that you wish to update, and select the correct firmware file. After pressing 'OK' the firmware will load directly.

3.2.6 Traffic light rules

Every ComBricks monitors one or more PROFIBUS networks. The traffic light will react according to the following rules:

Warnings/event based on telegrams:	Traffic light state:	Back to green state:
Critical diagnosis (Ext-diag)	🟡	Yes
Repeats	🟡	No
Syncs	🟡	No
Illegals	🔴	No
Device lost	🔴	No
Warnings/events based on physical measurements:		
DP Bargraph close to limit (25% of the set limit)	🟡	Yes
DP idle voltage close to limit (10% of the set limit)	🟡	Yes
PA Bargraph close to limit (10% of the set limit)	🟡	Yes
PA measurements close to limit (10% of the set limit)	🟡	Yes
DP Bargraph voltage below limit	🔴	No
DP idle voltage over/under limit	🔴	No
PA Bargraph over/under limit	🔴	No
PA measurements over/under limit	🔴	No

The last column 'Back to green state' indicates if the traffic light can go back to green during measurement after a problem is fixed. After certain events (e.g. repeats) the traffic light does not go back to green. You must acknowledge this event with the 'Reset' button below the traffic light.

3.2.7 ComBricks Head Station details

If the Network Condition Indicator has turned yellow or red, the corresponding Head Station in the list of connected ComBricks will also have the same colour. You can view the details of this ComBricks Head Station by double-clicking on it in the list, or by selecting it and then right-click on it, and choose 'Details'.

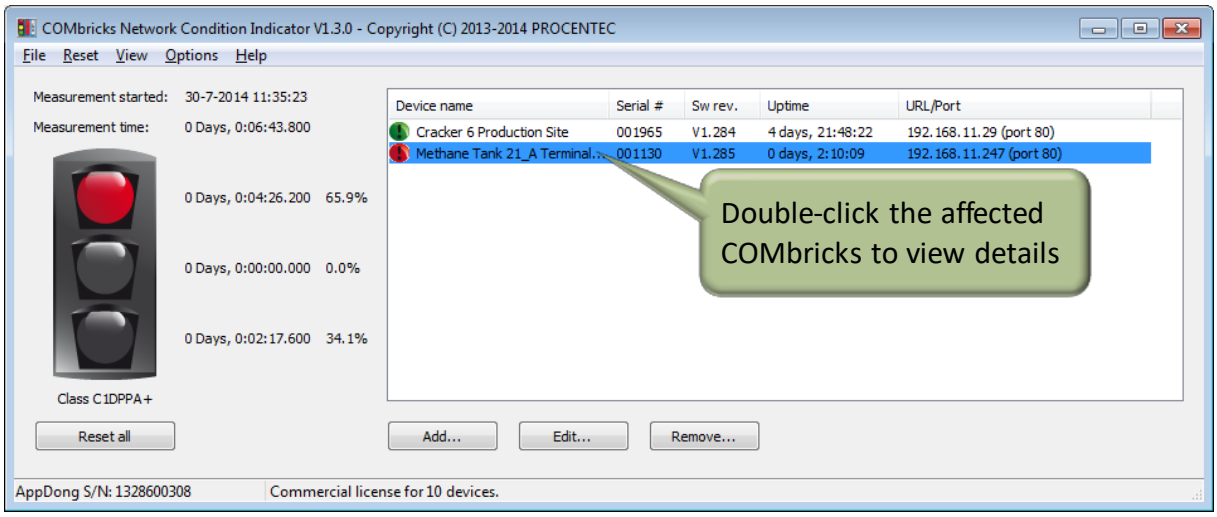


Fig. 5 - Double-click a ComBricks in the list to view details

In this overview all PROFIBUS warnings are displayed. From here you can choose to reset the Indicator for this specific ComBricks, or browse to the webpage of the corresponding ComBricks to investigate further.

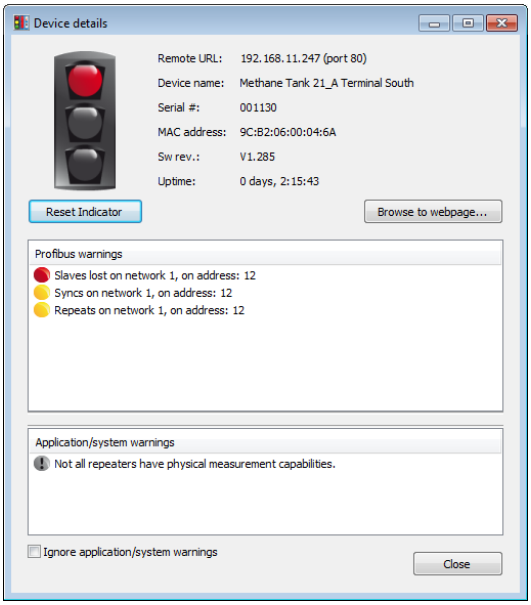
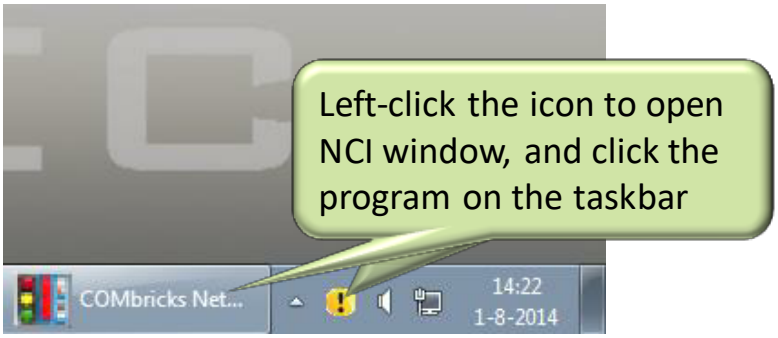


Fig. 6 - Details of ComBricks details with PROFIBUS warnings

3.2.8 System tray icon

When the Network Condition Indicator is running, a system tray icon appears with the same color as the current state of the Traffic Light. It allows easy access to the main window; simply left-click on it and click the program in the task bar to open the Network Condition Indicator.



3.2.9 System warnings: Exclamation mark

The traffic light indication can have an exclamation mark in the green, yellow or red colour. The reason for this is an application or system warning from the ComBricks.

In any of these cases you will see an exclamation mark in the traffic light:

- Unable to connect to the device ([number] attempts)
- Some transactions with the ComBricks failed: [number] since last connect.
- Not all repeaters have physical measurement capabilities.
- The license implies that not all available networks have ProfiTrace-OE capabilities. This means that you have a license for 1 network in the ComBricks Head Station (1B instead of 1C).

To disable the exclamation mark and the corresponding message, click 'Ignore application/system warnings' for each ComBricks Head Station.

3.3 Minimized view

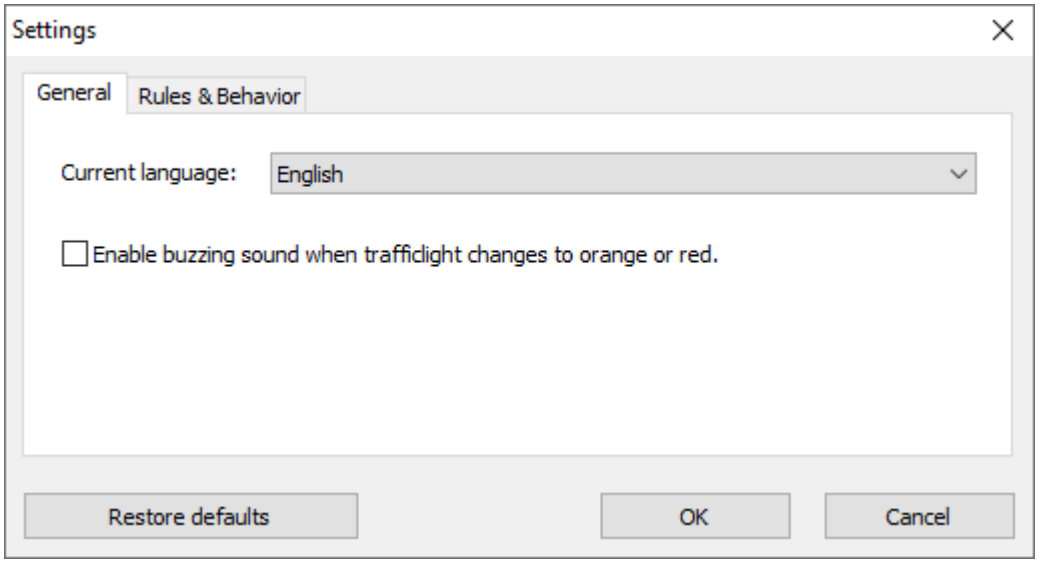
If you want the Network Condition Indicator to take up less space on the Windows desktop, choose 'View – Minimized view'. This will reduce the window to only the traffic light, while the menu function 'Reset' is still available.

You may also choose to enable 'Always on top' so that the traffic light is always visible on the screen.

The system tray icon (described in paragraph 3.2.8) remains active in Minimized mode.

3.4 Settings

In the Options - Settings menu you can change the language. When new languages become available, you can download these from our website. Put the language file (format: lang.xxxxx.dat) in the same folder as the executable of the Network Condition Indicator and restart the program. Next, go to 'Options – Settings' in the menu bar, and choose your language. Click apply and restart again.



You can also enable or disable a buzzer that indicates an escalation of traffic light color (from green to orange or red, or from orange to red).

3.5 Changing rules & behavior

In the menu 'Options – Settings' there is a tab where youcan select that you want to ignore Syncs. This is useful when there are disabled devices in the network.

4. Revision history

Version 1.0

- Minor changes

Version 1.0.1

- Minor changes
- Added explanation about the measurements next to Traffic Light.
- Removed Distributor list

Version 1.0.2

- Removed paragraphs about and references to license; no longer required since version 1.4.2.
- Minor textual changes

Version 1.2.0

- Added Maintenance mode, remote updating and module updating paragraphs.

Version 1.2.2

- Updated paragraph 3.1.1
- Updated paragraph 3.2.1
- Updated paragraph 3.4

6. About PROCENTEC

PROCENTEC are an independent Dutch company that supply products, training and consultancy to the Industrial Automation Market. Of primary focus is the development and manufacturing of automation products for PROFIBUS, PROFINET and Industrial Ethernet.

Some of our products are the most recognized solutions on the Market today. **ProfiTrace**, our mobile troubleshooting and maintenance tool has established itself as one of the most pioneering, yet essential tools available to engineers. In contrast our robust **ProfiHub** has, over the last decade, established itself as the go-to solution for ensuring a reliable network infrastructure. The combination of these products within our **ComBricks** solution has seen PPROCENTEC become the primary manufacturer of network components with the integrated capability for remote monitoring and remote asset-management.

Our training facility, the **PROCENTEC Academy**, has certified over 4000 engineers to implement and maintain their PROFIBUS and PROFINET networks to the highest standards available.

The PROCENTEC **Competence Centre** has established itself as the leading consultancy on PROFIBUS and PROFINET projects worldwide, advising on architecture, engineering, training and commissioning. Once a network is commissioned, we have experts available 24/7 to answer questions with maintenance or help troubleshooting a problem.

Products

- Atlas and Mercury
- EtherTAP and EtherMIRROR
- ProfiHub
- ProfiTrace
- ComBricks
- 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

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