Remote Access for Mitsubishi PLC(s)

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Table of Contents

1   Preface

1.1   About This Document

This guide explains in a few steps how to configure the Ewon device, the Talk2M account and the PLC software to access the Mitsubishi for remote diagnosis and programming.

For additional related documentation and file downloads, please visit www.ewon.biz/support.

1.2   Document history

Version	Date	Description
1.0	2011-05-12	First release
1.1	2012-11-29	Add Telnet RFC 2217 variant for Q-Series
1.2	2016-12-15	Added: PLC Discovery
2.3	2019-04-24	Talk2M easy setup and new layout added

1.3   Related Documents

Document	Author	Document ID
Ewon Configuration for Internet Access Using the Wizard	HMS	AUG-0019-00
Easy Commissioning via SD Card and USD Drive	HMS	AUG-0062-00
PLC Discovery through Talk2M	HMS	AUG-0070-00
WAN Connection Fallback	HMS	KB-0286-00

1.4   Trademark Information

Ewon® is a registered trademark of HMS Industrial Networks SA. All other trademarks mentioned in this document are the property of their respective holders.

2   Requirements

2.1   Hardware

To complete this guide, you need the following items:

*   an Ewon with VPN capabilities,

*   Mitsubishi PLC,

*   a computer to configure the Ewon and the Mitsubishi PLC.

2.2   Software

2.2.1   Ewon Related

The following pieces of software are needed to configure your Ewon:

*   a modern web browser (min. version: Firefox 15, Chrome 16, Safari 6 and Edge 13),

*   eBuddy: Ewon configuration and maintenance utility.

*   eCatcher: Talk2M remote access utility. Version 6.4 or higher.

2.2.2   Mitsubishi Related

One of the following Mitsubishi Electric MelSoft® software is required:

*   **GX IEC Developer**: most powerful version supporting the entire PLC range.

*   **GX IEC Developer FX**: cut-down version of GX IEC Developer supporting the FX series only.

*   **GX Developer**: basic version which supports the entire PLC range.

*   **GX Developer FX**: cut-down version of GX Developer supporting the FX series only.

*   **GX Works 3**.

3   Objective

The objective of this document is to guide you through the steps required to enable remote access of the Mitsubishi.

The remote access setup is composed of 4 different parts:

- communication with the Ewon through the Internet,

- connection of your Ewon to the Mitsubishi PLC,

- configuration of the PLC software so it can communicate through the Ewon,

- access to your PLC through the Internet.

If you connect to an Ewon for the first time, we recommend reading the "Quick Start Guide" document shipped with your Ewon.

4 Prepare your Ewon for Remote Access

The LAN IP address of your Ewon and of your PLC must be in the same IP range.

If you choose the Ethernet or Wi-Fi WAN interface to connect to the Internet, the Ewon requires a LAN IP address on the machine side and a WAN IP address on the network (remote site) side.

Before configuring your Ewon LAN IP address and by consequence, the IP address of your PLC, ask to your network administrators what is the specified company LAN network range used as WAN connection by the Ewon to connect to the Internet.

The LAN ports of your Ewon and thus the PLCs plugged in the Ewon must be in a range outside the ones used by the *Site LAN*.
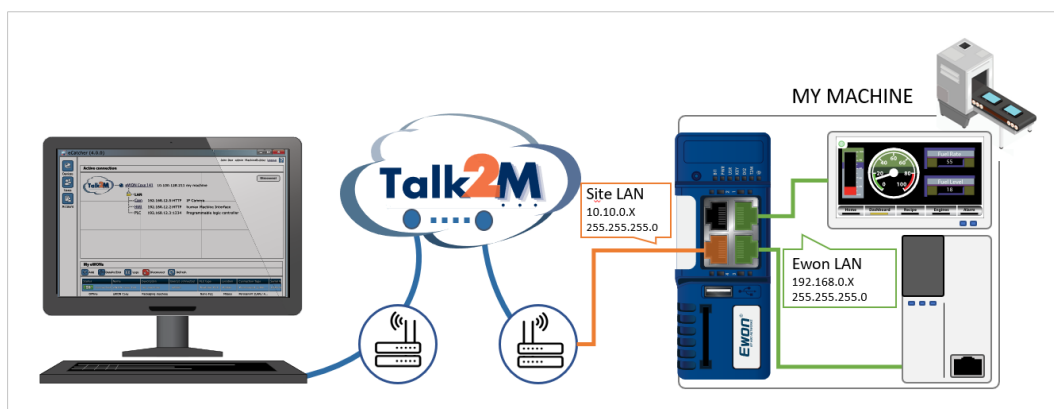

Fig. 1   IP ranges involved in an Ethernet / Wi-Fi network.

In the above example, we could select IP addresses in the **192.168.0.#** range for the Ewon LAN and PLCs since it does not overlap with the *Site LAN* range.

If you choose the cellular WAN interface to connect to the Internet, the Ewon requires only a LAN IP address compatible with the PLC IP address.

5 Configure your Ewon for Remote Access

This section explains how to configure the remote access of your Ewon through Talk2M service.

Before going through the configuration of your Ewon to set the remote access, we recommend reading the *Prepare your Ewon for Remote Access, p. 6*.

5.1 Step 1: Create your Ewon in Talk2M

The first step consists in listing your Ewon inside your Talk2M account using the eCatcher software.

> **ℹ** *If you already created your Ewon in your Talk2M account, through eCatcher, you can skip this step and go to the next step.*

To create your Ewon in Talk2M, apply the following procedure:

1. Connect your computer to the Internet.

2. Verify that you have an Internet connection.

   For example: open your web browser and browse to your favorite web page.

3. Open eCatcher and log in to your Talk2M account.

   If you don't have any Talk2M account, please follow the video tutorial "Create a Talk2M Account" available on the Ewon elearning platform.
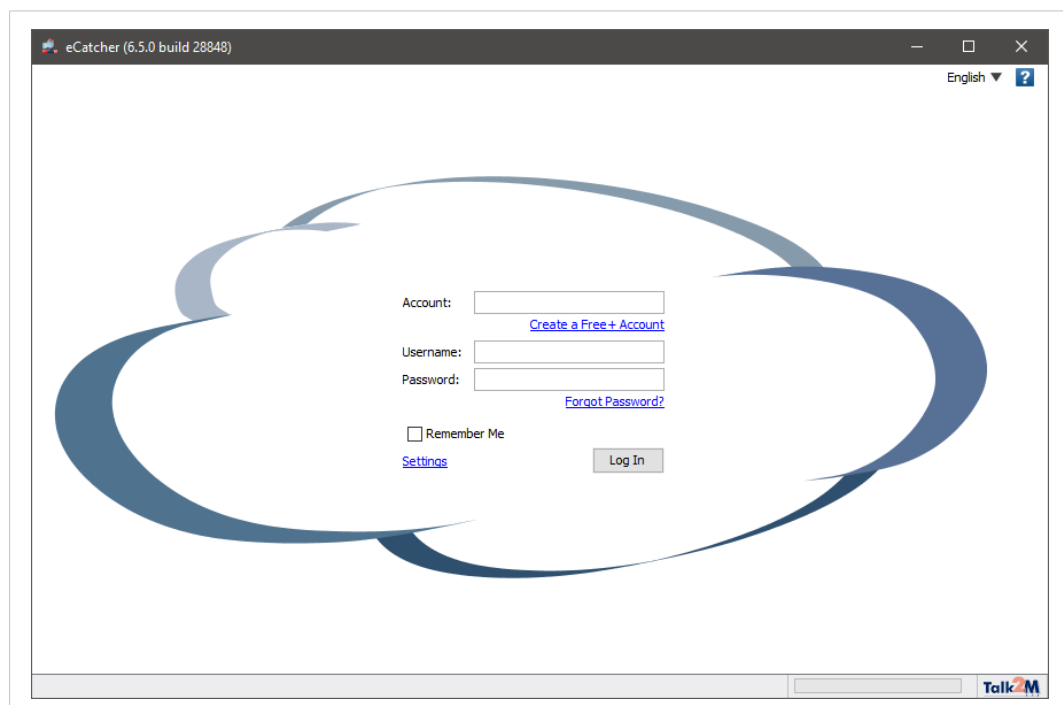

Fig. 2   Add an Ewon in eCatcher — 1

4. On eCatcher's main interface, click the **+ Add** icon. A new window appears.
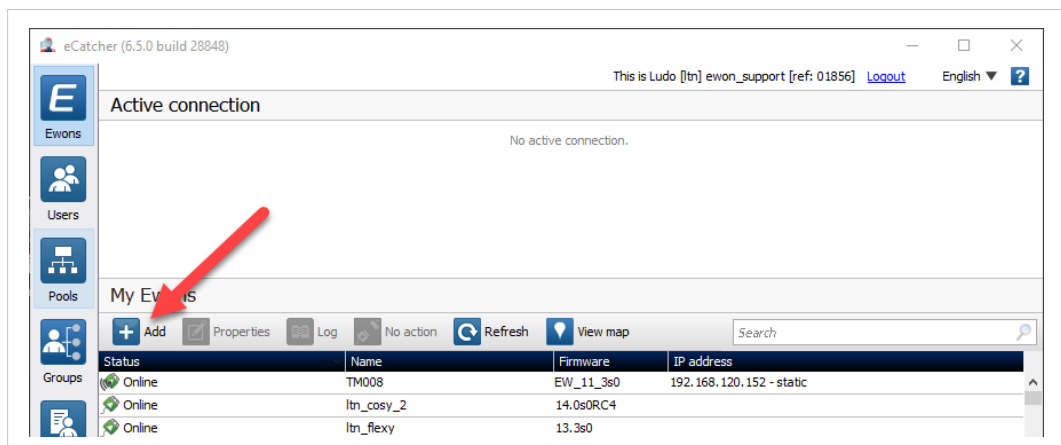

Fig. 3   Add an Ewon in eCatcher — 2

5. Enter the name of your Ewon.

    The Talk2M server displays this name to identify the remote connection to your Ewon

6. Select the **Connection Type** to specify how your Ewon connects to the Talk2M server. You can choose between two possibilities:

    – Permanent: for Ethernet, Wi-Fi or cellular models. Your Ewon stays permanently online.

    – Triggered: only for cellular models. Your Ewon is offline (but still functional) until you wake it up with an SMS.

        If you specify a triggered connection, then eCatcher asks for the phone number of your Ewon. The phone number allows Talk2M to send an SMS which wakes up your Ewon.
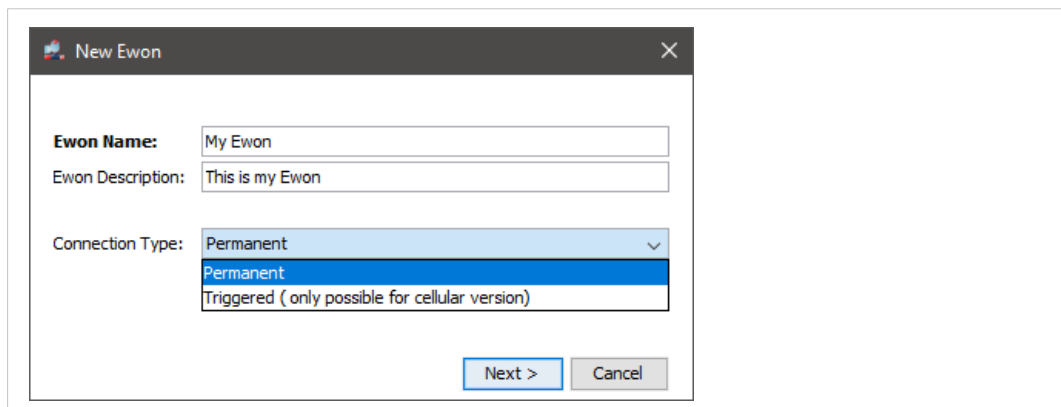

Fig. 4   Add an Ewon in eCatcher — 3

7. Click **Next**.

8. Enter custom information concerning your remote connection. You can use the **Custom Fields** to classify or filter your different remote connections (your different Ewons).
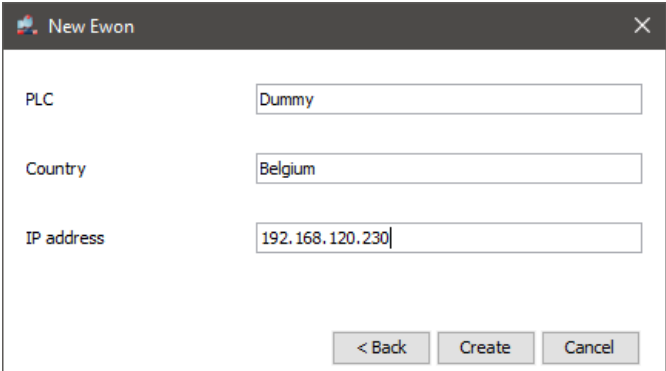

Fig. 5   Add an Ewon in eCatcher — 4

9. Click **Create**.

The newly created Ewon is now linked to your Talk2M account.

> ℹ️ *If you have a Talk2M Pro account, you need to add the Ewon to a pool/group of Ewons before being able to create the new Ewon entry.*

eCatcher displays the "Talk2M Connectivity" frame. Follow the to continue the configuration of the remote access.
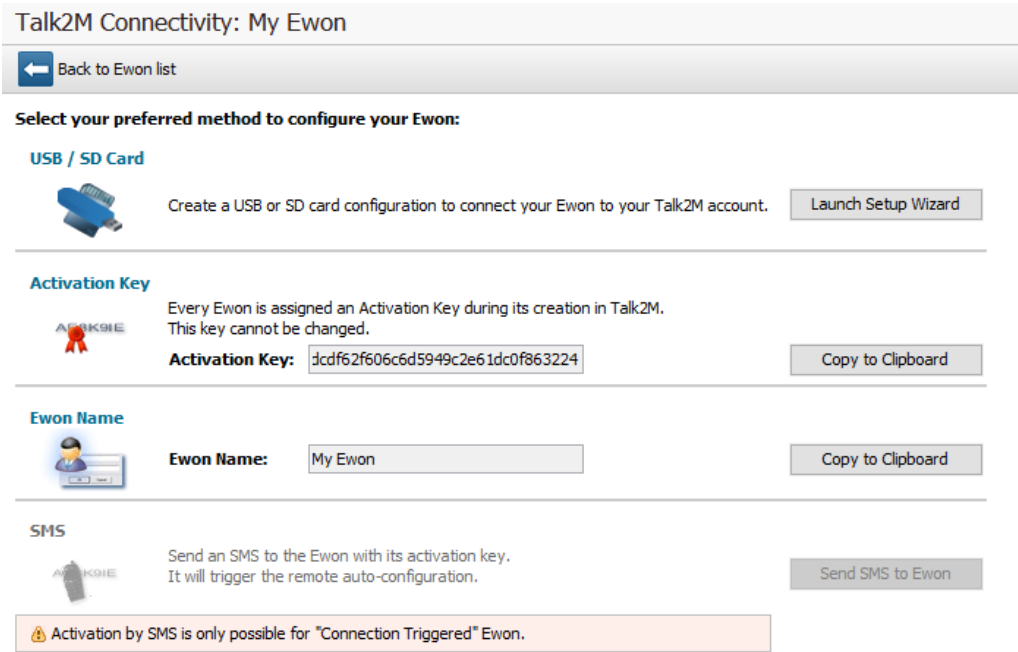

Fig. 6   Talk2m Connectivity in eCatcher

5.2   Step 2: Prepare the Configuration File

To access remotely your Ewon, you need to configure the Internet and the Talk2M VPN connection of your Ewon.

The configuration explained in this section uses the *Talk2M Easy Setup* feature embedded in the eCatcher (as of v6.4). If you wish to configure your Ewon through eBuddy and Ewon web interface, please refer to *Configure your Ewon for Remote Access using the Web Interface, p. 31* from the Appendix.

eCatcher offers the possibility to create a commissioning file which includes all the configuration parameters useful to configure such connections.

eCatcher stores the commissioning file on an SD card or a USB flash drive. You can then insert the SD card or USB flash drive in your Ewon which automatically applies the configuration parameters available on the SD card / USB flash drive.

> **!**   To apply the following configuration, your Ewon must run (minimum) Ewon firmware version 13.2s0 for the USB drive and 11.0s0 for the SD card.

> **ⓘ**   *If you decide to use a USB flash drive combined with a Ewon Flexy, you need the Flexy USB extension card: FLB 3601.*

Once eCatcher displays the "Talk2M Connectivity" frame, apply the following procedure:

1. Insert an SD card or USB flash drive in your computer. Make sure the card or the key is of FAT32 format.

2. Click the **Launch Setup Wizard** button of the **USB / SD Card** first row.

3. Select the WAN interface of your Ewon.

4. Depending on the interface you choose, different configuration fields are required:

    –   Ethernet: WAN IP settings.

    –   Wi-Fi: SSID settings.

    –   Cellular: SIM card and APN settings.

    For Ethernet and Wi-Fi, make sure to complete the advanced settings if necessary.

5. Click **Next**.

6. Set the LAN IP address of your Ewon. Check *Prepare your Ewon for Remote Access, p. 6* for more information.

7. Click **Next**.

8. Select the location where eCatcher should export the file.

9. Click **Save** twice to confirm the export.

The last screen is an explanation how to proceed with the SD card / USB flash drive and your Ewon. You can also follow *Step 3: Apply the Configuration File, p. 10*.

5.3   Step 3: Apply the Configuration File

> **!**   The following configuration works only if your Ewon hasn't been registered on Talk2M (or is not currently linked to a Talk2M account).

To configure your Ewon for remote access, apply the following procedure:

1. Make sure your Ewon is powered on.

2. Insert the SD card or the USB flash drive in your Ewon.

    The Ewon detects the insertion in a very short period (5 seconds maximum) and you can visualize this detection by the quick orange blinking pattern of the USR LED (ON / OFF each 150 msec).

3. Wait for the Ewon to process the configuration files.

    After the detection of your SD card or USB flash drive, comes the process of what inside. You can visualize the process of the files by the slow orange blinking pattern of the USR LED (ON / OFF each second).

4. Check the status of the USR LED.

    After the process of the configuration files, your Ewon shows if it was able to apply the configuration. The result is as follows:

    –   solid green: success

    –   solid red: failure

5. Remove the SD card or the USB flash drive. The removal induces the reboot of the Ewon.

6. Within 2 minutes after the reboot, your Ewon should be online in eCatcher.

You can find a complete explanation on the Ewon easy commissioning with the "Easy Commissioning via SD Card and USD Drive" document from .

5.4   Step 4: Connect to your Ewon Remotely

Now that the Ewon is connected to Talk2M, you can establish the remote connection to this Ewon.

Depending on the type of connection you set, the procedure changes.

5.4.1   Permanent Connection

To connect remotely to an Ewon tagged as permanent connection, follow the procedure:

1. Connect your computer to the Internet.

2. Verify that you have an Internet connection.

    For example: open your web browser and browse to your favorite web page.

3. Open eCatcher (if not already opened).

4. Select the Ewon you just configured in the "My Ewons" list.

5. Click the green **Connect** button displayed in the Ewon list menu to establish the remote connection. eCatcher is now attempting to establish a VPN connection to the Talk2M server.
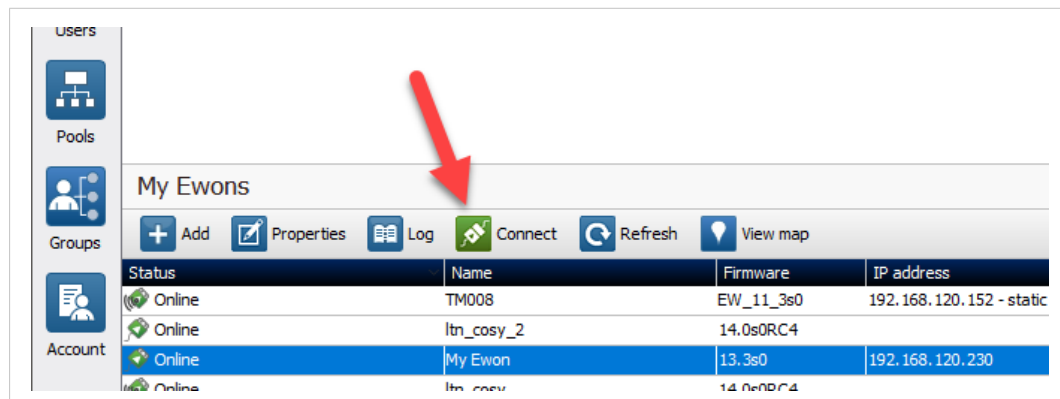

Fig. 7 **Connection to an Ewon**

6. Once the VPN connection established, eCatcher displays the Ewon in the "Active connection" section.

The computer is now connected to the Ewon using the VPN tunnel and you can use the remote connection.

You can click the **IP address** link in the "Active Connection" section to display, in a web browser, the homepage of the Ewon web interface.

5.4.2 Triggered Connection

To connect remotely to an Ewon tagged as triggered connection, follow the procedure:

1. Connect your computer to the Internet.

2. Verify that you have an Internet connection.
For example: open your web browser and browse to your favorite web page.

3. Open eCatcher (if not already opened).

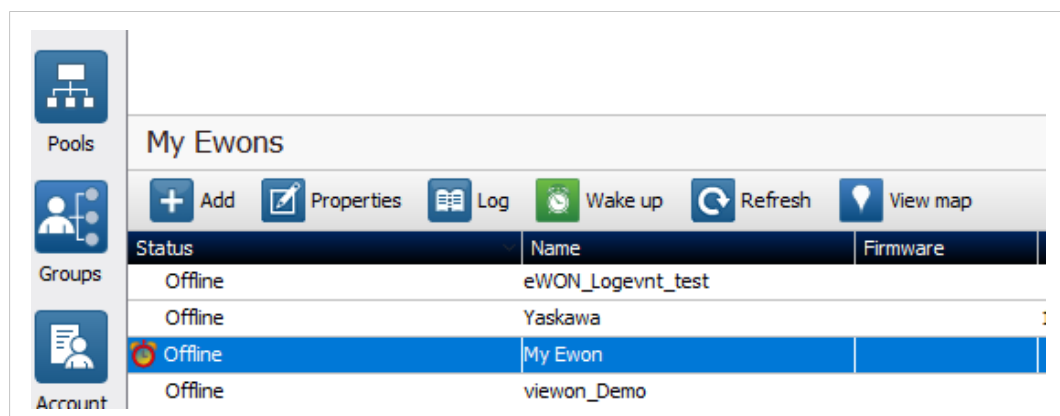4. Select the Ewon you just configured in the "My Ewons" list.

Fig. 8 **Wake up your Ewon — 1**

5. Click the green **Wake up** button displayed in the Ewon list menu to wake up your Ewon.

By doing so, eCatcher sends an SMS to switch your Ewon online.
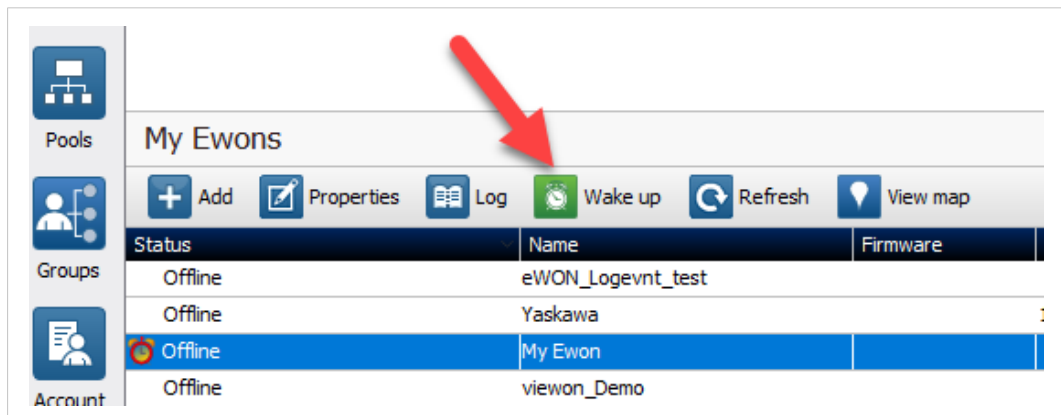

Fig. 9 Wake up your Ewon — 2

6. Click the green **Connect** button (previously **Wake up** button) displayed in the Ewon list menu to establish the remote connection. eCatcher is now attempting to establish a VPN connection to the Talk2M server.
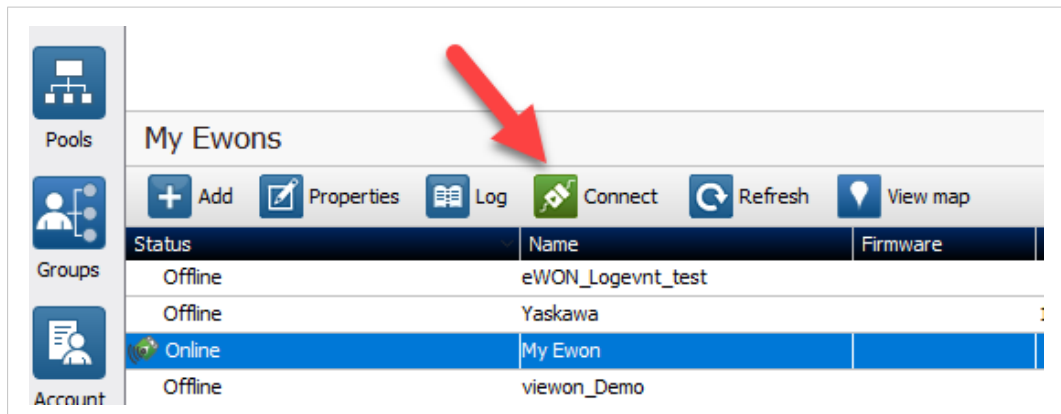

Fig. 10 Wake up your Ewon — 3

7. Once the VPN connection established, eCatcher displays the Ewon in the "Active connection" section.

ⓘ *With your smartphone, you can also send the SMS "Talk2M_Connect" or "Talk2MConnect" to your Ewon to wake it up.*

The computer is now connected to the Ewon using the VPN tunnel and you can use the remote connection.

You can click the **IP address** link in the "Active Connection" section to display, in a web browser, the homepage of the Ewon web interface.

5.5 Step 6: Terminate the Remote Connection

<table>
<tr><td>❗</td><td>Before terminating the Talk2M VPN connection to the Ewon, it is mandatory to change the administrator password which is set by default to adm. Please refer to Login security, p. 42.</td></tr>
</table>

To end the VPN connection and so the remote access to your Ewon, apply the following procedure:

1. Open eCatcher while you are remotely connected to your Ewon.

2. Click the red **Disconnect** button to terminate the remote access.

3. Optionally, leave a log message for future use.

You are now disconnected from your Ewon and can no longer use the remote access.

> **(i)** *By disconnecting, you terminate only the VPN tunnel. If you also want to send your Ewon offline (in case of a triggered Ewon), right-click on the Ewon in eCatcher and select* **Go offline***.*

6   Link an Ewon to the PLC

The configuration of the Ewon can be slightly different if the connection between the PLC and the Ewon is serial- or Ethernet-based.

You can combine both connection types without any problem.

For example: at the same time, you can connect to an FX-series PLC using the Ewon serial port and connect to a (or multiple) Q-Series PLC(s) using the Ewon Ethernet port(s).
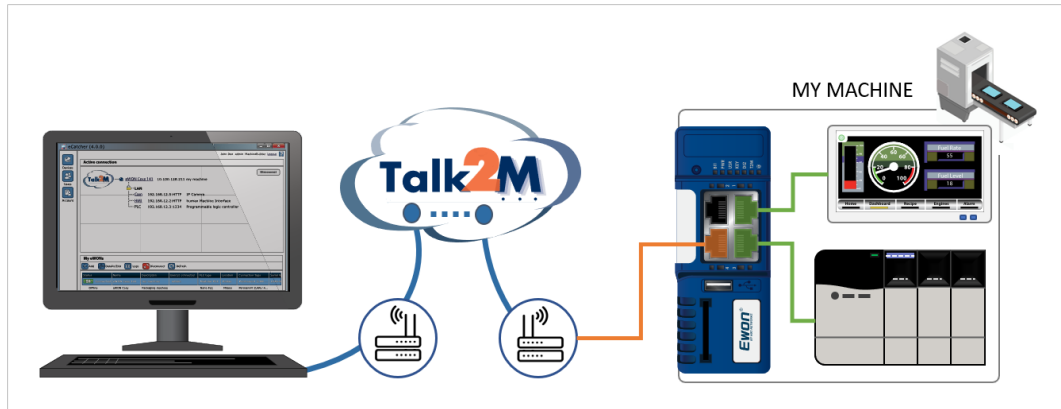

Fig. 11   Serial and Ethernet links between Ewon and Mitsubishi

6.1   Serial Port Configuration

The remote access to a serial Mitsubishis through an Ewon uses a *VCOM* solution (using a virtual port), not an IO server. The *MitsuFX IO* server is for polling purposes only.
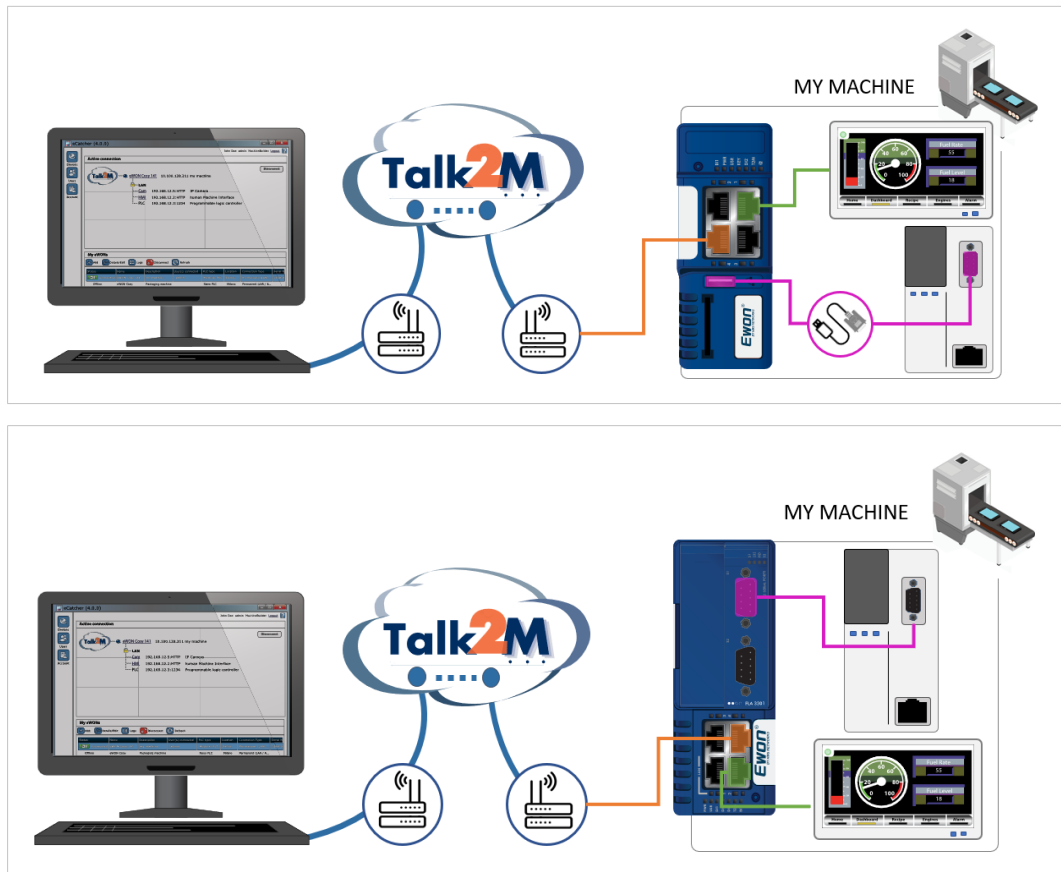
Fig. 12   Serial connection

Before you configure the VCOM of the Ewon, you must set the serial port dip switch of this Ewon:

- For FX-series: the serial port dip switch of the Ewon are set to RS422/RS485 mode (1 ON, all others OFF).

- For Q-series: the serial port dip switch of the Ewon device are set to RS232 mode (all OFF).

To configure the VCOM feature on the Ewon:

1. Go to the Ewon web interface either using the VPN tunnel or a point-to-point connection to the Ewon LAN port.

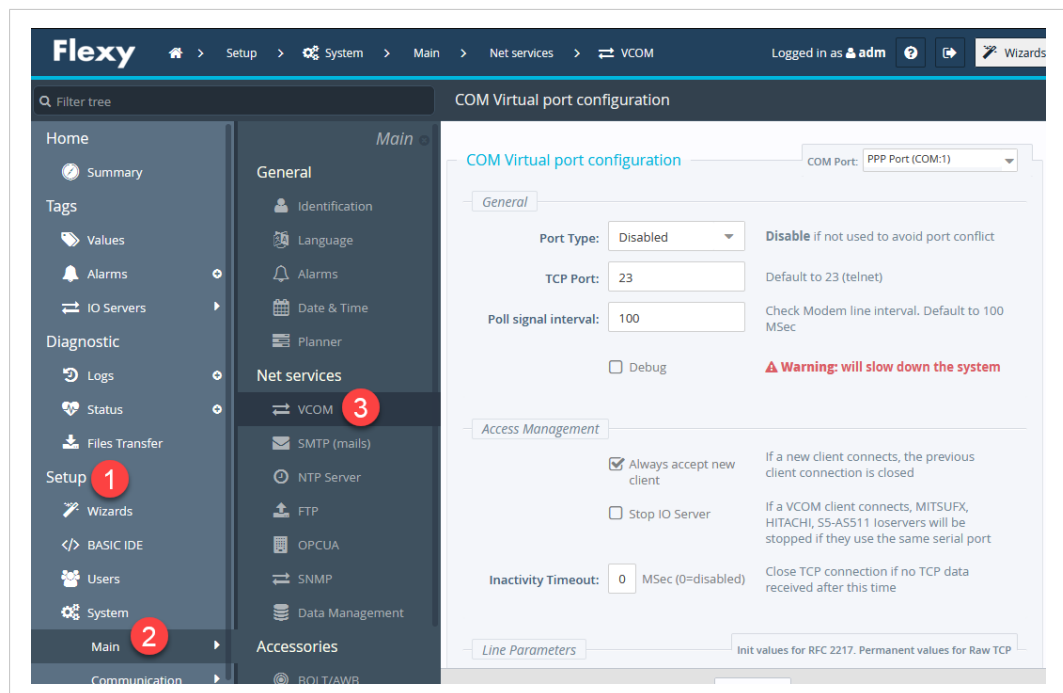2. Go to **Setup ▸ Main ▸ Net Services ▸ VCOM**.

Fig. 13   **VCOM path in the Ewon web interface**

3. Set the VCOM settings based on the following sections.

6.1.1   FX Series

The VCOM of the Ewon must configured as follows:

1. Set the **Port type** to *Raw TCP* or *Telnet RFC 2217*

2. Set the **TCP Port** to *23*

3. Tick the **Stop IO server** checkbox.

ⓘ   *If this option is not enabled, the PLC does not allow the remote connection while the serial port is busy with polling activity.*

When ticked, the option stops the IO server activity during the remote connection and restores it automatically as soon as the port is released.

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4. Set the **Baud Rate** to *9600*.

5. Set the **Data size** to *7*.

6. Set the **Parity** to *Even*.

7. Set the **Stop bits** to *1*.

8. Set the **HW Mode** to *Full Duplex NO Handshaking*.

9. Click on **Update**.

Fig. 14   VCOM for FX-series

Connect the Ewon serial port to the serial port of the PLC, using the serial cable as shown in *Types of Serial Cables, p. 44*.

6.1.2   Q Series

The VCOM of the Ewon must configured as follows:

1.   Set the **Port type** to *Telnet RC 2217*

2.   Set the **TCP Port** to *23*

3.   Tick the **Stop IO server** checkbox.

ⓘ   *If this option is not enabled, the PLC does not allow the remote connection while the serial port is busy with polling activity.*

    When ticked, the option stops the IO server activity during the remote connection and restores it automatically as soon as the port is released.

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4.   Set the **Baud Rate** to *115200.*

    We recommend to avoid going higher than *57600* even if, using Telnet, there is an auto-negociation.

5.   Set the **Data size** to *8*.

6.   Set the **Parity** to *Odd*.

7.   Set the **Stop bits** to *1*.

8.   Set the **HW Mode** to *Full Duplex NO Handshaking*.

9.   Click on **Update**.

Fig. 15   VCOM for Q-series

Connect the Ewon serial port to the serial port of the PLC, using the serial cable as shown in *Types of Serial Cables, p. 44*.

6.2   Ethernet Port Configuration

As of Ewon firmware 13.2s1, your Ewon embeds a feature called *PLC Discovery*.

The *PLC Discovery* allows the automatic detection of PLC(s) linked to an Ewon on the network while you are connected through Talk2M even if the PLC and the Ewon are not in the same IP range.

For more detail, please refer to the "PLC Discovery through Talk2M" from the *Related Documents, p. 3*.

> **!**   The automatic detection is only for the FX5U when using the GX Works 3® software.

The *PLC Discovery* does not prevent you from configuring the Ewon and the PLC to be in the same IP range. The Ewon and the PLC in the same IP range is a requirement to make the remote access successful.

In most cases, it is no longer necessary to set the Ewon as gateway in the PLC.

7 PLC Software Mapping

7.1 Serial Connection

The serial connection with a Mitsubishi requires the creation of a virtual port on your PC.

You need to install the eVCOM application to create this virtual port. You can download this software from www.ewon.biz/support.

7.1.1 Virtual Serial Port on a PC

To create a virtual port on your computer, follow the procedure:

1. Start *eVCOM* on your PC.
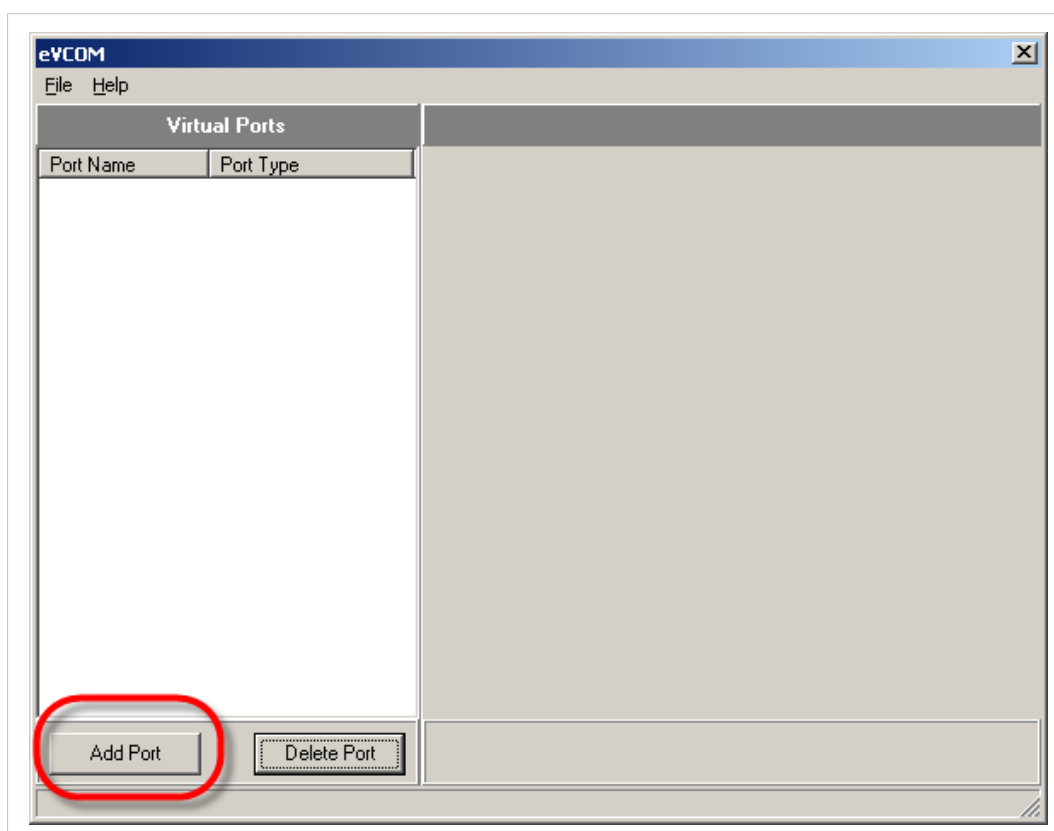
2. Click on *Add port* to create a new virtual port.

Fig. 16   Create a virtual port in eVCOM

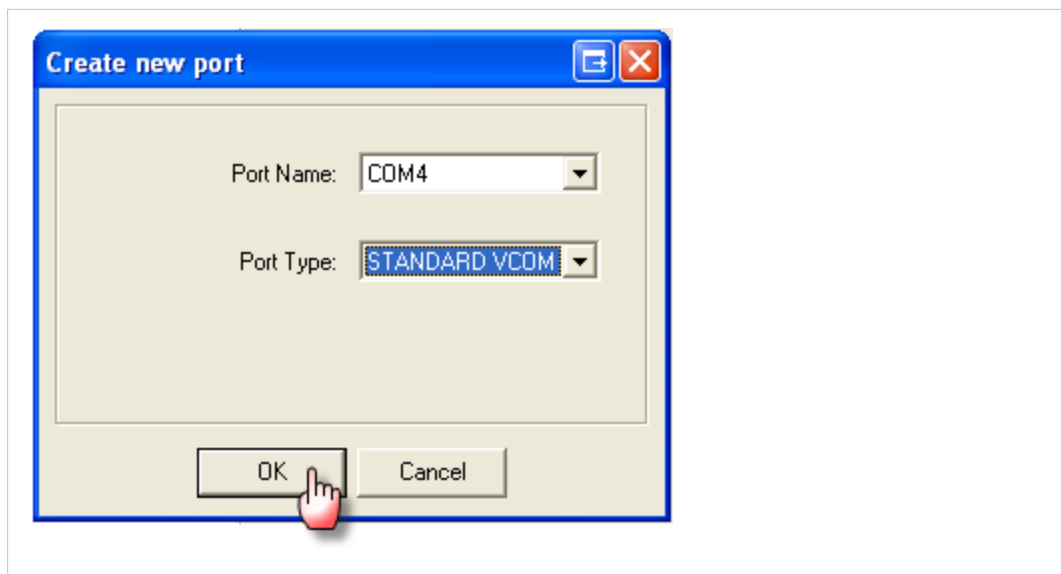3.   Choose the **COM Name** and set the **Port Type**.

Fig. 17   Port settings in eVCOM

4.   Click **OK**.

In the *Port Name* dropdown menu, eVCOM shows only ports that are available on your machine. In our example, we selected *COM4* for FX-series and *COM5* for Q-series to stay away from the normal ports of the machine.

Once created, eVCOM shows your new virtual COM port as follows:

Key to status icons	
	Enabled
	Disabled
	Communication OK
	Communication with errors

You should leave eVCOM open with port enabled until you don't need the communication anymore.

If you try to close eVCOM while the virtual port is still enabled, the program asks if you want to minimize it with all functions active, or if you really want to quit it. If you click on *Really Quit*, the software closes the port, retains the existing parameters until you reopen a new session.

7.1.2   FX-Series

For the FX-series, configure the virtual port parameters as follows:

1.   The **Gateway address** is the IP address used to reach the Ewon through Talk2M.

   If your Ewon is on your LAN network, you must use its LAN address (e.g.: in this first example: 192.168.0.53).

2.   Set the **Gateway port** to *23*.

3.   Set the **Communication mode** to *RAWTCP*.

4.   Set **Specific settings** to *fx melsoft gx developer*.

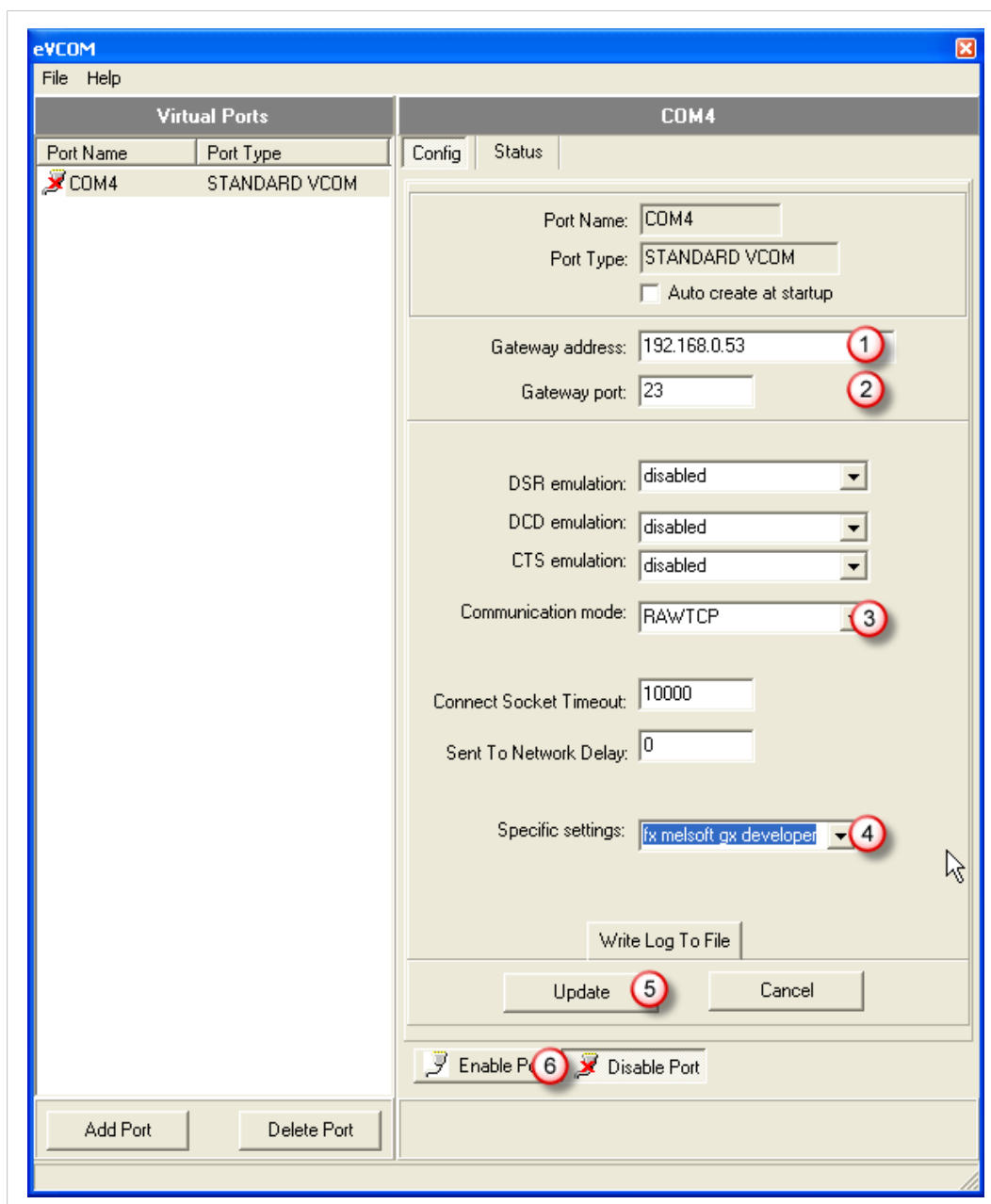5.   Click on **Update**.

6.   Click on **Enable Port**.

Fig. 18   eVCOM settings for FX-series

7.1.3   Q-Series

For the Q-series, configure the virtual port parameters as follows:

1.   The **Gateway address** is the IP address used to reach the Ewon through Talk2M.

      If your Ewon is on your LAN network, you must use its LAN address (e.g.: in this first example: 192.168.120.202).

2.   Set the **Gateway port** to *23*.

3.   Set the **Communication mode** to *RFC2217*.

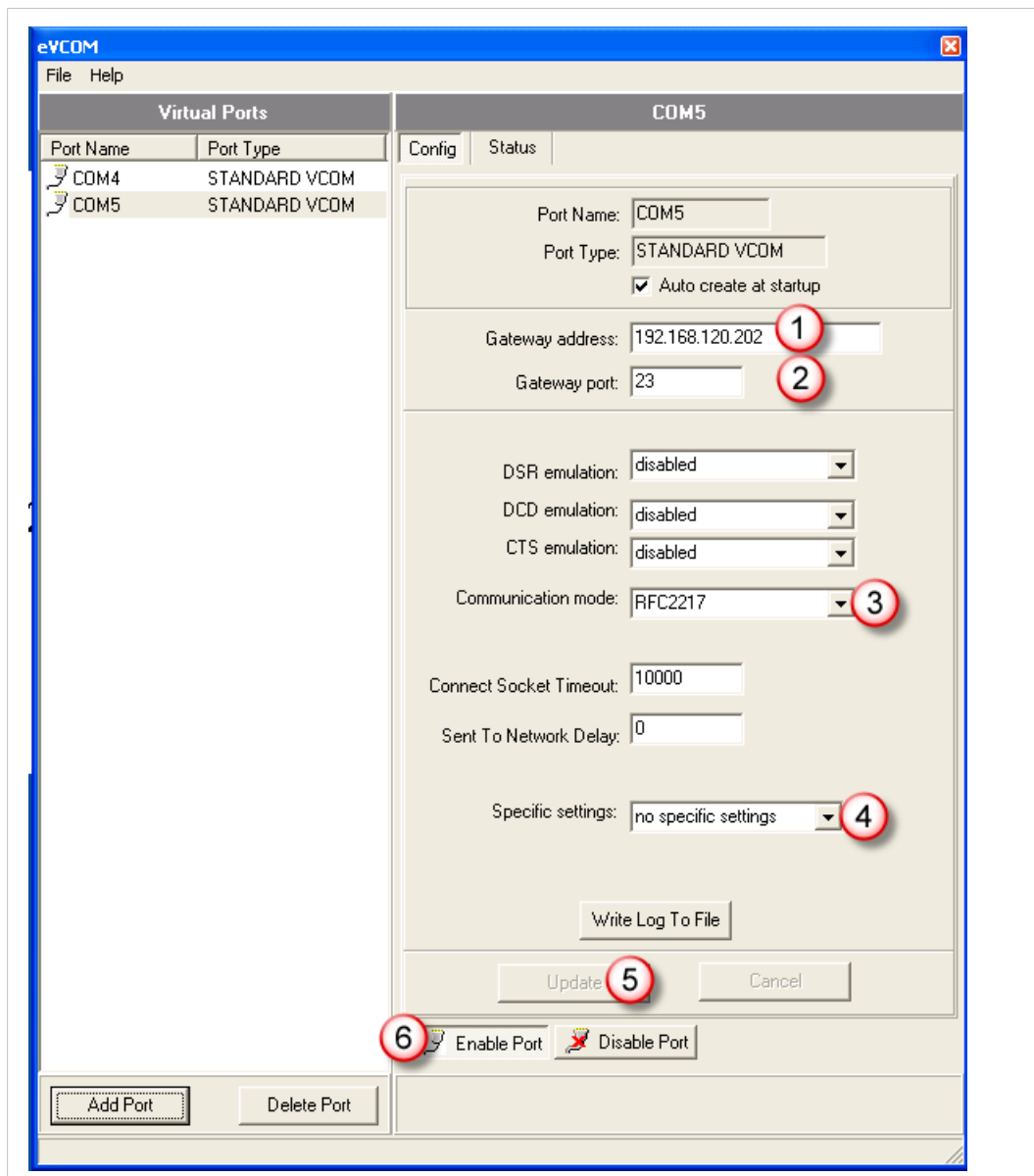4.   Set **Specific settings** to *no specific settings*.

5.   Click on **Update**.

6. Click on *Enable Port*.

Fig. 19 eVCOM settings for Q-series

7.1.4   MelSoft GX Configuration

To configure Mitsubishi MelSoft GX® software, follow the procedure:

1.   Open Melsoft GX.

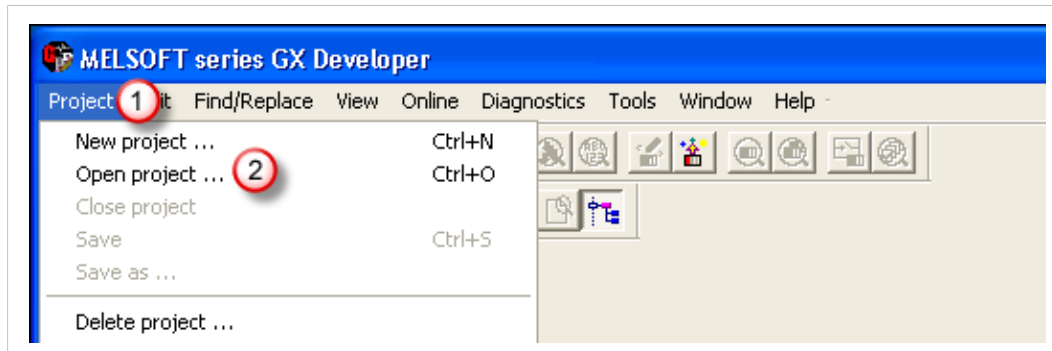2.   Open your project.

Fig. 20   Melsoft GX — Open project

3.   Click on *Online*.
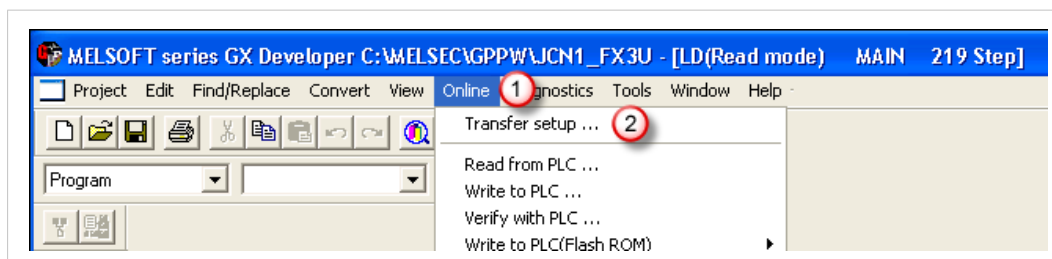
4.   Select *Transfer Setup* from the top menu bar.

Fig. 21   Melsoft GX — Configure transfer settings

FX Series

For the FX series, follow the procedure:

1.   Select *serial* on the *PC side I/F* menu.

2.   Set the *Serial* parameters: *RS-232C*, *COM4* and *Transmission Speed 9.6k bps*.
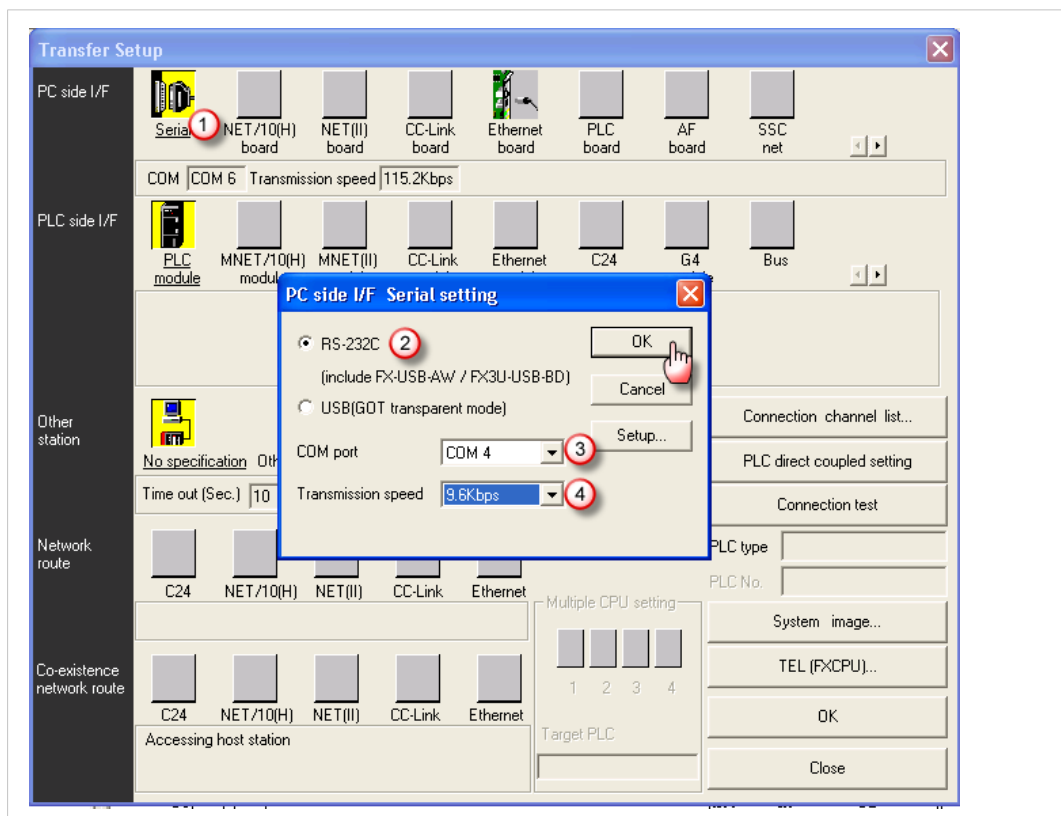
3.   Click on **OK**.

Fig. 22   Melsoft GX — Serial configuration for FX series

4.   Click on **Connection test** to test the PLC connection.

To test the communication remotely, you need to establish the Talk2M VPN bridge first (as explained in *Step 4: Connect to your Ewon Remotely, p. 11*).

Fig. 23   Melsoft GX — Connection test

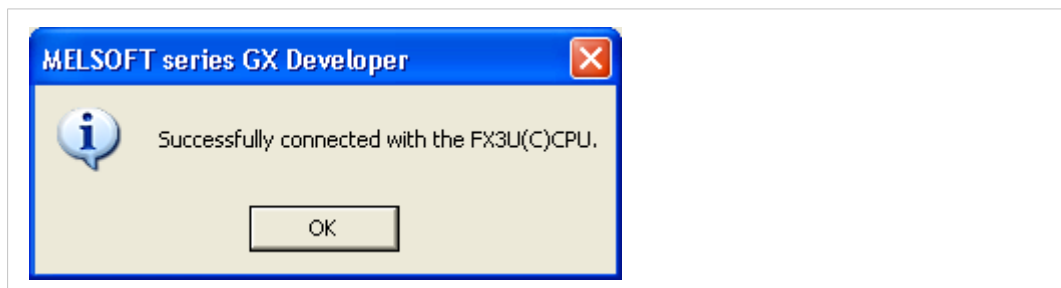You should see a success message if everything is correctly configured.

Fig. 24   Melsoft GX — Connection successful

Q Series

For the Q series, follow the procedure:

1. Select **Serial** on the *PC side I/F* menu

2. Set the *Serial* parameters: **RS-232C**, **COM5** and **Transmission Speed 115.2 kbps**.
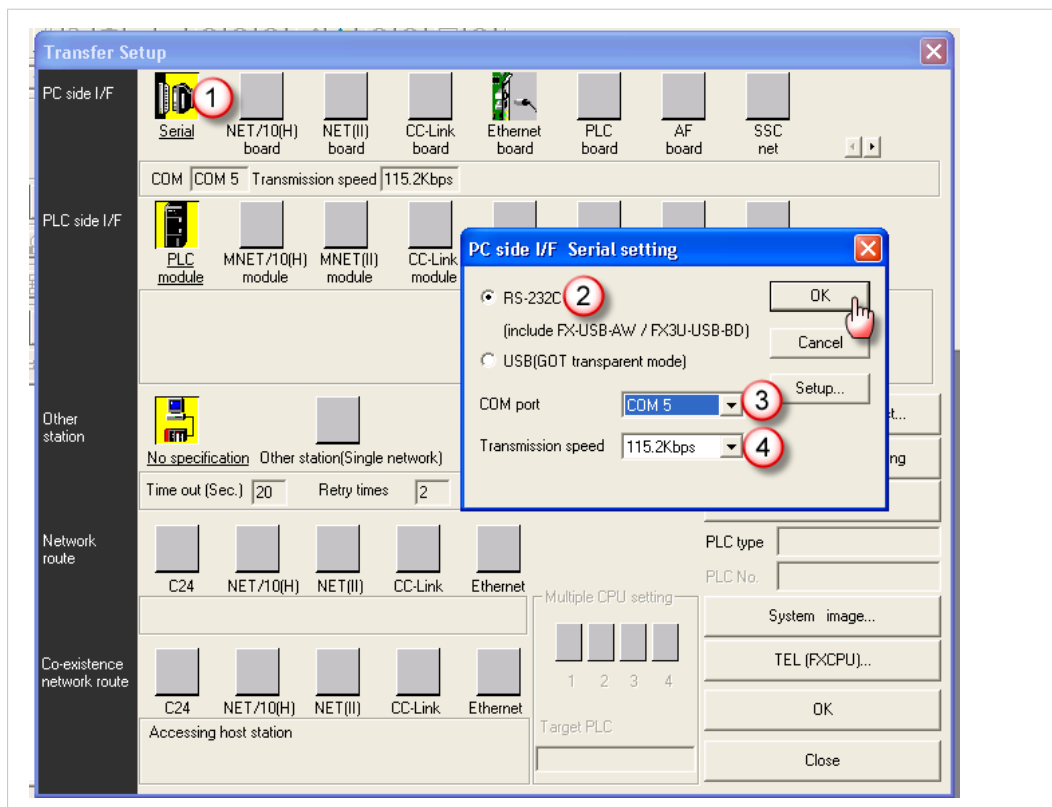
3. Click on **OK**

Fig. 25   **Melsoft GX — Serial configuration for Q series**

4. Click on **Connection test** to test the PLC connection.

To test the communication remotely, you need to establish the Talk2M VPN bridge first (as explained in *Step 4: Connect to your Ewon Remotely, p. 11*).

Fig. 26 **Melsoft GX — Connection test**

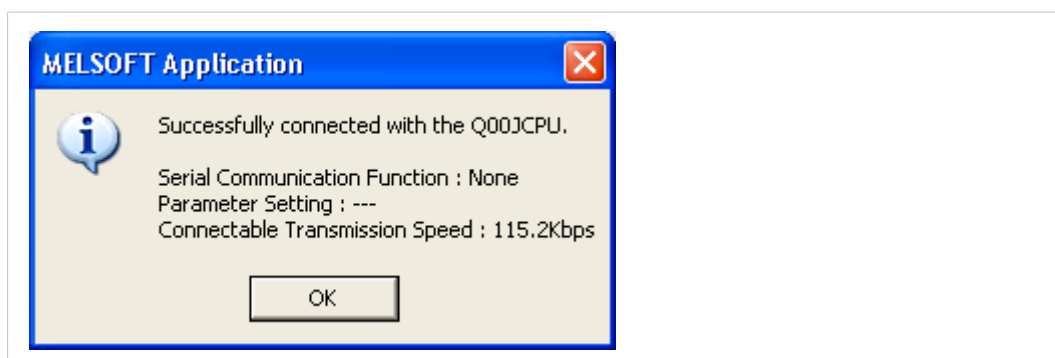You should see a success message if everything is correctly configured.

Fig. 27 **Melsoft GX — Connection successful**

7.2 Ethernet Connection

To configure the MelSoft GX software, follow the procedure:
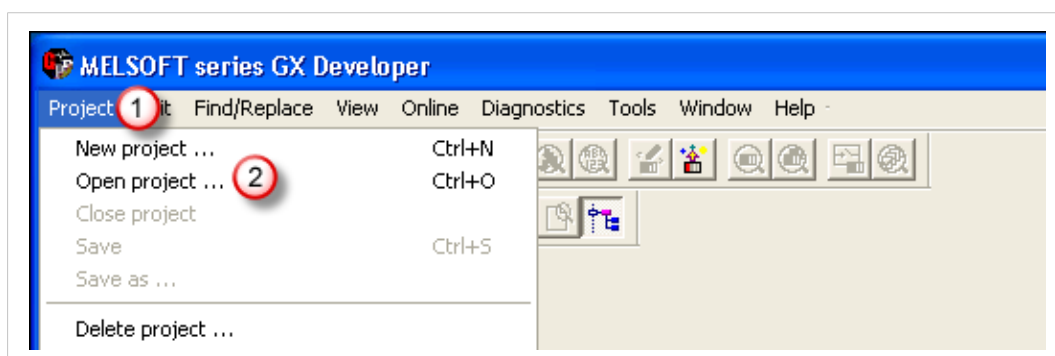
1. Open Melsoft GX.

2. Open your project.

Fig. 28 **Melsoft GX — Open project**

3. Click on **Online**

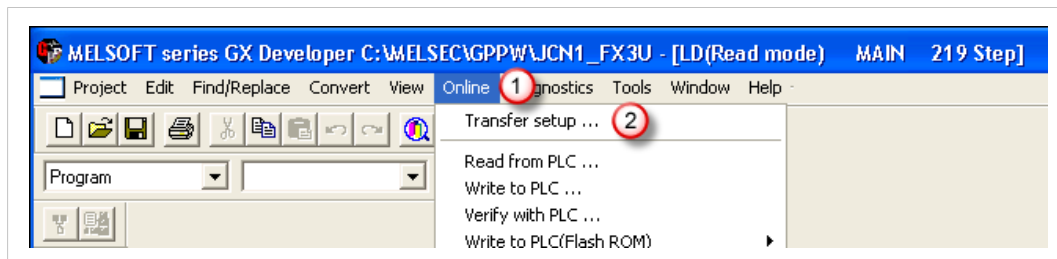4. Select **Transfer Setup** from the top menu bar.

Fig. 29 Melsoft GX — Configuration transfer settings

5. Select **Ethernet Boad** from the *PC side I/F* menu.

In some Mitsubishi® software versions such as GX IEC, the interface asks you to define a station number which is the station number of the PC that has to be different from the PLC station. number.

6. Select **Ethernet Module** from the *PLC side I/F* menu.

Set the *PLC* to the **Ethernet module**.

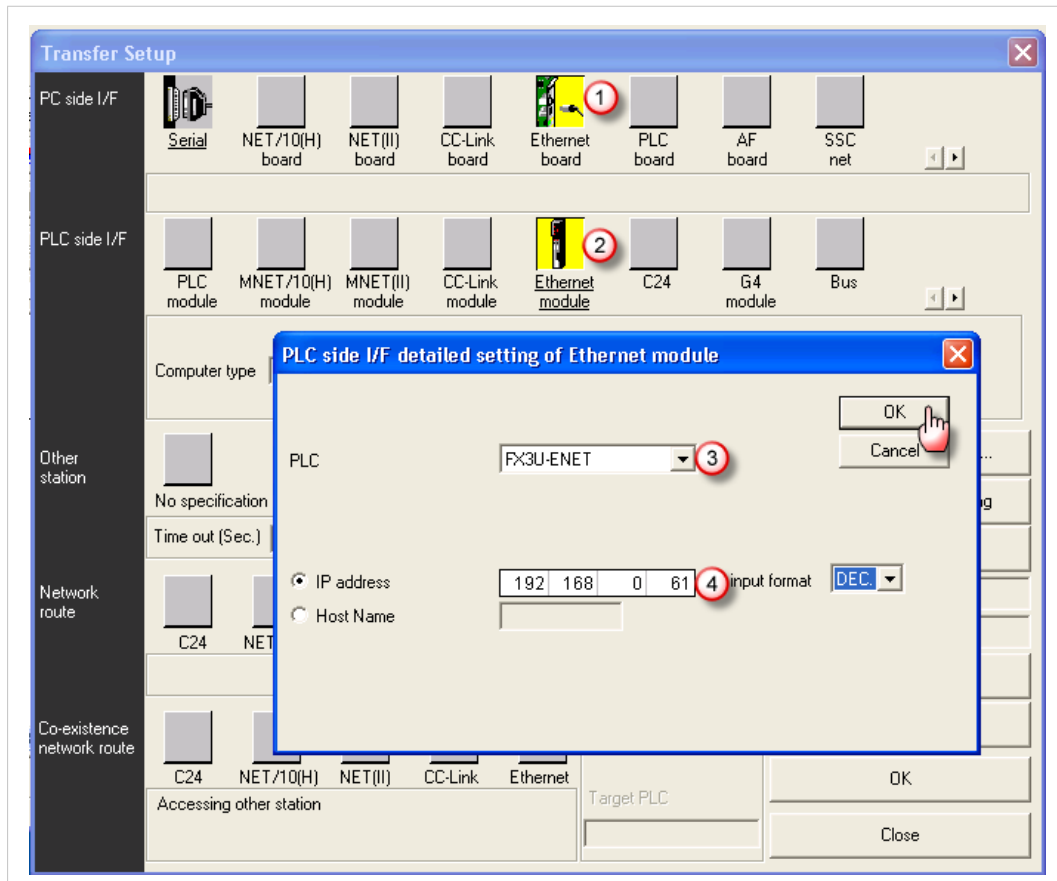Set the *IP Address* of your PLC (e.g.: in our case, 192.168.0.61).

Fig. 30 Melsoft GX — Ethernet module configuration

7. Click on **OK**.

ⓘ *To test the communication remotely, you need to establish the Talk2M VPN bridge first (as explained in* *).*

8   PLC Remote Access

To perform the remote access through the PLC software, follow this procedure:

1. Establish the remote connection to the Ewon as explained in *Step 4: Connect to your Ewon Remotely, p. 11*.

2. Start the MelSoft GX® software once eCatcher has established the Talk2M VPN tunnel between you and your Ewon.

3. Select **Online ► Remote operation** in MelSoft GX®.

4. Allow enough time for the connection to actually take place, especially when using a modem connection since the throughput may be relatively slow.

5. As soon as the connection is working, the connection status appears in the status bar of MelSoft GX®.

You can now work in remote programming mode.

Once you have finished your work with MelSof GX:

*   Go **offline** and **close** the software.

*   Terminate the remote connection to the Ewon as explained in *Step 6: Terminate the Remote Connection, p. 13*.

9   Troubleshooting

9.1   Cannot Reach Serial PLC?

If you cannot reach the serial PLC connected to the Ewon then verify the following items:

- Check the serial dip switch positions of the Ewon:
    - FX series: RS422.
    - Q series: RS232.

    See *Serial Port Configuration, p. 15*.

- Check the VCOM configuration in the Ewon web interface by browsing to **System ► Main ►Net services ► VCOM**.

- Open the Ewon *Event Log* located at **Main Menu >► Diagnostic >► Event Log** to check for error messages.

- In eVCOM, check if the correct IP address has been configured: use either the Ewon LAN IP address or the Ewon VPN IP address.

9.2   Cannot reach Ethernet PLC ?

If you cannot reach the Ethernet PLC connected to the Ewon then verify the following items:

- You did not reboot the PLC after you modified the IP address and/or the gateway.

- There is a possible mismatch between your Ewon's current IP address and the LAN IP address of your Ewon recorded in the Talk2M account.

    Check these settings in eCatcher and, if necessary, modify them. To do so, select your Ewon in eCatcher and hit the **Properties** button, then click on the **Modify LAN subnet** button.

    Disconnect and reconnect to your Ewon in eCatcher to apply the modification.

To verify if the Ewon port and the Ewon IO server are correctly configured, you can create a tag inside the Ewon which polls a register from the PLC. If the polling succeeds, the PLC connection works correctly.

A Configure your Ewon for Remote Access using the Web Interface

This section explains how to configure the remote access of your Ewon through Talk2M with the help of eBuddy and Ewon web interface.

Before going through the configuration of your Ewon to set the remote access, we recommend reading the *Prepare your Ewon for Remote Access, p. 6*.

A.1 Step 1: Set the LAN IP Address of your Ewon

Once you have selected your IP addresses, you can start configuring your Ewon.

In our example, the Ewon is set to LAN IP address 192.168.0.53. This address fits into the PLC range and does not interfere with the *Company LAN*.
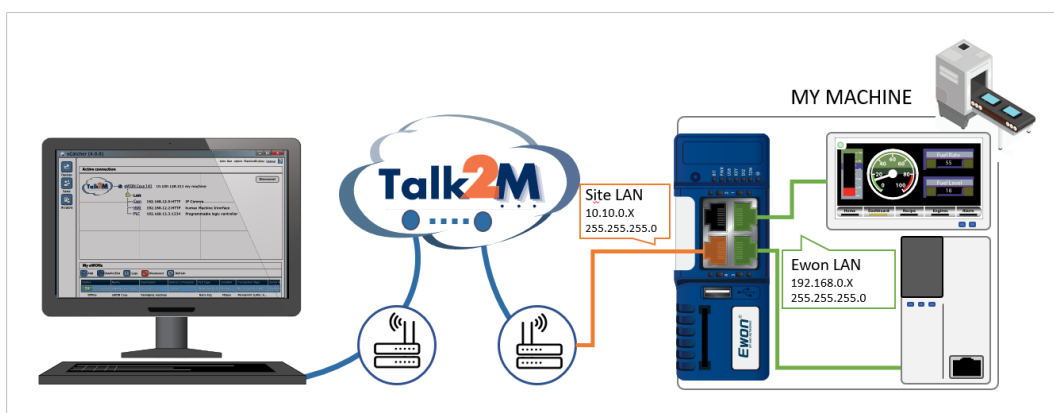

Fig. 31   Example of IP addresses involved

In this step, there is no constraint on the IP range of your computer.

To configure the LAN IP address of your Ewon:

1. Link your computer to the LAN port of your Ewon.

   Usually, this link is made through the company network but It can also be made with a point-to-point link.

Fig. 32   Connect the computer indirectly to the Ewon though Company LAN

Fig. 33   Connect the computer directly to the Ewon

2. Open eBuddy.

   eBuddy can display your Ewon in its list even if your computer has a different network address range than your Ewon.

3. Highlight (click on) your Ewon in the eBuddy list.

Fig. 34   eBuddy — Selection of the Ewon

4. Click the **Set IP** button.

Fig. 35   eBuddy — Set IP button

5. Set the **Serial Number** of your Ewon if the field is empty.

Fig. 36   eBuddy — Serial number field

If you don't know your Ewon's serial number, you can look it up on the right side of the Ewon itself.

6. Click **Next**.

7. Set the new LAN IP address and Subnet Mask of your Ewon, based on *Prepare your Ewon for Remote Access, p. 6*.

Fig. 37   eBuddy — LAN IP address and Subnet mask

8. Click **Next**.

9. Wait until the Ewon reboots.

Fig. 38 eBuddy — Reboot of the Ewon

10. Click **Finish**.

A.2 Step 2: Configure the Ewon Internet Connection

To configure the Internet connection of your Ewon, follow these steps:

1. Link your computer to the LAN port of your Ewon.

   Usually, this link is made through the company network but It can also be made with a point-to-point link.
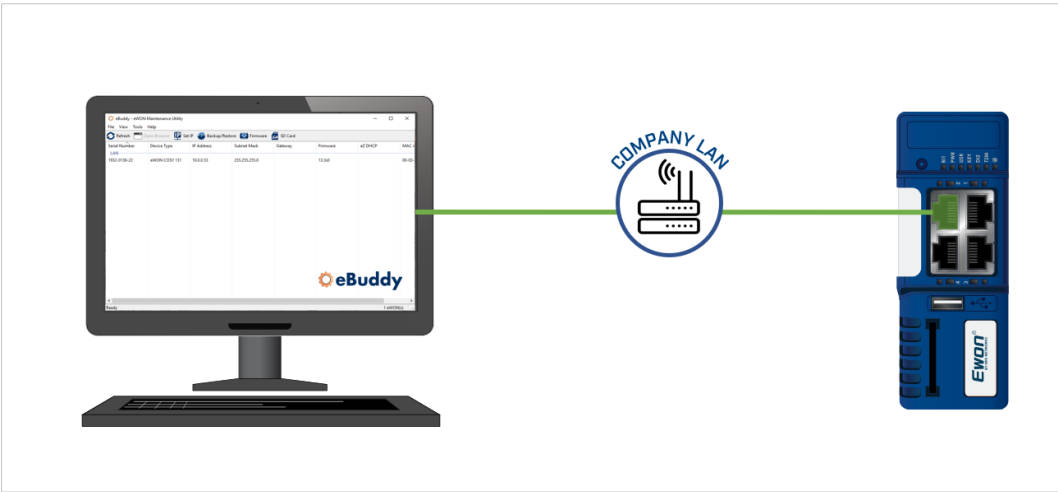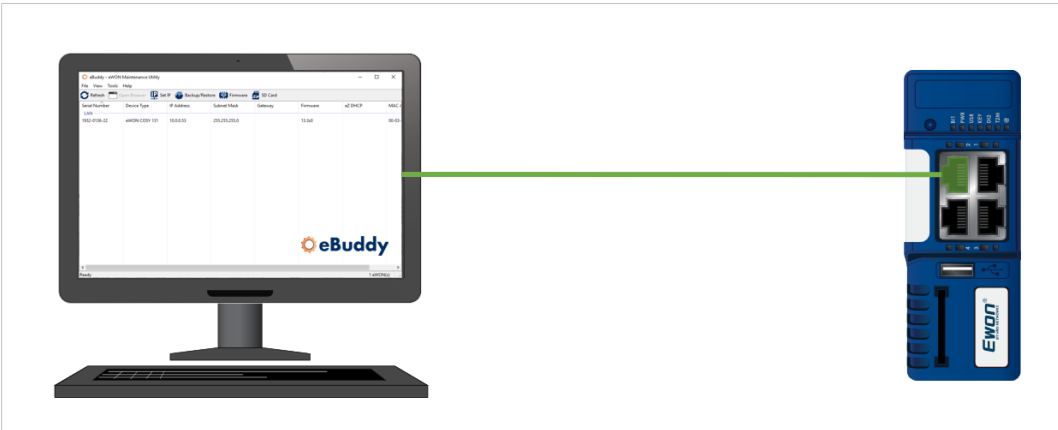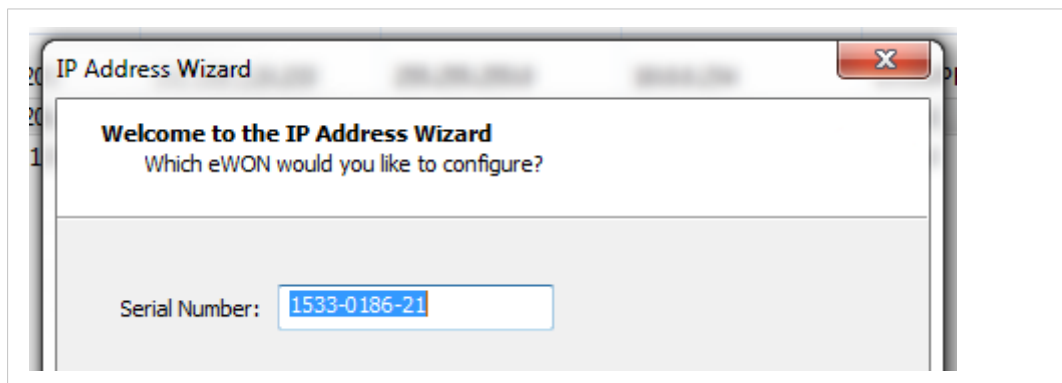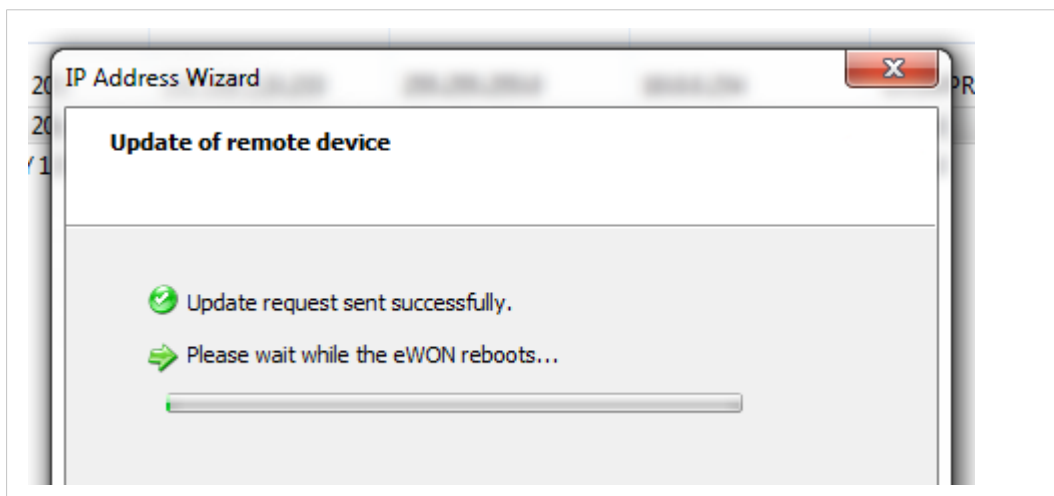
2. Open **eBuddy** (if not already open).

3. Highlight the **Ewon** you want to connect to.

4. Right-click on this Ewon.

5. Select **Open in browser**.

6. Log in to your Ewon.

7. Click the **Wizard** button in the top right corner.

8. [Recommended] Go through the System wizard before setting the Internet connection.

   The system wizard lets you change the password of the administrator but also sets the date & time of the Ewon.

   Click the **System** button in the right-side menu and follow the different steps.

9. Click the **Internet** button in the right-side menu.

10. Select the WAN interface of your Ewon. The propositions displayed are based on the model of your Ewon

> (i) *WAN refers to Wide Area Network which is the network covering a broad external area using the Internet infrastructure. It is opposed to LAN referring to Local Area Network which is restricted to internal networks.*

To continue the Internet step-by-step guide, select your interfaces:

- *Ethernet Connection, p. 35*;

- *Wi-Fi Connection, p. 35*;

- *Cellular Connection, p. 36*.

A.2.1 Ethernet Connection

1. Make sure the WAN port of the Ewon is physically connected to the company network.

   The LED dedicated to WAN traffic activity doesn't blink yet as the WAN connection is not yet defined.

2. Click *Next*.

3. Select the network management protocol:

   – static;

   – BootP;

   – DHCP.

   We recommend using *DHCP*. This way, your Ewon receives an IP address and Internet access automatically from host.

4. Click *Next*.

5. *Enable* the Internet connection test.

6. Click *Next*.

The last step of the Internet configuration consist in a communication test.

The *Online IP Check* performed during the connectivity test aims at validating the WAN IP address by reaching a specific domain on Internet on a specific port.

If your network parameters are correct, this test should end up successfully.

If the Internet connection test is not successful, then go back through the previous configuration steps and recheck all settings for compatibility and accuracy.

> **ⓘ** *Your network firewall should allow connections to *.talk2m.com on port 80. Otherwise, the Online IP Check fails.*

More information about the configuration of your Ewon for Internet access using the wizard can be found in the *Related Documents, p. 3*.

A.2.2 Wi-Fi Connection

1. Click *Next*.

2. Enter the name of the Wi-Fi network (SSID) and its password.

3. Select the network management protocol:

   – static;

   – BootP;

   – DHCP.

   We recommend using *DHCP*. This way, your Ewon receives an IP address and Internet access automatically from host.

4. Click *Next*.

5. *Enable* the Internet connection test.

6. Click *Next*.

The last step of the Internet configuration consist in a communication test.

The *Online IP Check* performed during the connectivity test aims at validating the WAN IP address by reaching a specific domain on Internet on a specific port.

If your network parameters are correct, this test should end up successfully.

If the Internet connection test is not successful, then go back through the previous configuration steps and recheck all settings for compatibility and accuracy.

> **ⓘ** *Your network firewall should allow connections to *.talk2m.com on port 80. Otherwise, the Online IP Check fails.*

More information about the configuration of your Ewon for Internet access using the wizard can be found in the *Related Documents, p. 3*.

A.2.3 Cellular Connection

1. Click *Next*.

2. Enter the information related to the SIM card and the APN.

3. Click *Next*.

4. Select the connection type:
   – Maintain connection: your Ewon is permanently connected.
   – Triggered: you must wake up your Ewon by sending an SMS so it initializes the connection.

5. Click *Next*.

6. Set the call budget if the connection type is set *triggered*:
   – Idle time: the amount of time before the Ewon shuts down the connection if there is no traffic from/to the Ewon.
   – Call duration: the amount of time the Ewon stays online before closing the outgoing connection.

7. Click *Next*.

The *Online IP Check* performed during the connectivity test aims at validating the WAN IP address by reaching a specific domain on Internet on a specific port.

If your network parameters are correct, this test should end up successfully.

If the Internet connection test is not successful, then go back through the previous configuration steps and recheck all settings for compatibility and accuracy.

> **ⓘ** *Your network firewall should allow connections to *.talk2m.com on port 80. Otherwise, the Online IP Check fails.*

More information about the configuration of your Ewon for Internet access using the wizard can be found in the *Related Documents, p. 3*.

A.2.4 WAN Fallback

If another WAN interface is available, a popup appears at the end of the Internet wizard and offers to configure this secondary WAN interface.

If configured, the Ewon switches automatically to this secondary WAN interface in case the primary interface fails.

The configuration of the secondary WAN interface is a replay of the Internet wizard where the proposed settings are based on this second WAN interface type.

More info on the WAN Fallback in the "WAN Connection Fallback"from *Related Documents, p. 3*.

A.3 Step 3: Create Your Ewon in Talk2M

This step consists in listing your Ewon inside your Talk2M account using the eCatcher software.

> **ⓘ** *If you already created your Ewon in your Talk2M account, through eCatcher, you can skip this step and go to the next step.*

To create your Ewon in Talk2M, apply the following procedure:

1. Connect your computer to the company LAN.

2. Set the network parameters of your computer to **DHCP enabled**. An IP address is automatically provided from the DHCP server of the company network.

3. Verify that you have an Internet connection. For example: open your web browser and browse to your favorite web page.

4. Open eCatcher if your Internet connection works.

5. On eCatcher's main interface, click the **+ Add** icon. A new window appears.

6. Enter the name of your Ewon. The Talk2M server displays this name to identify the remote connection to your Ewon

7. Select the **Connection Type** to specify how your Ewon connects to the Talk2M server. You can choose between two possibilities:

   – Permanent: for Ethernet, Wi-Fi or cellular models. Your Ewon stays permanently online.

   – Triggered: only for cellular models. Your Ewon is offline (but still functional) until you wake it up with an SMS.

   If you specify a triggered connection, then eCatcher asks for the phone number of your Ewon. The phone number allows Talk2M to send a n SMS which wakes up your Ewon.

8. Click **Next**.

9. Enter custom information concerning your remote connection. You can use the **Custom Fields** to classify or filter your different remote connections (your different Ewons).

10. Click **Create**.

The newly created Ewon is now linked to your Talk2M account.

eCatcher displays the "Talk2M Connectivity" frame. Follow the *Step 4: Retrieve the Talk2M Activation Key, p. 37* to continue the configuration of the remote access.

A.4 Step 4: Retrieve the Talk2M Activation Key

Up to now, we only added the Ewon in your Talk2M account but we didn't configure the Ewon to connect to the Talk2M server.

One way to enable the link between your Ewon and the Talk2M server is with the activation key. The activation key allows the Ewon to retrieve the VPN keys and certificates useful to establish the VPN connection.

Continue the *Step 3: Create Your Ewon in Talk2M, p. 37* and, in the "Talk2M Connectivity" frame, get the activation key by proceeding as follows:

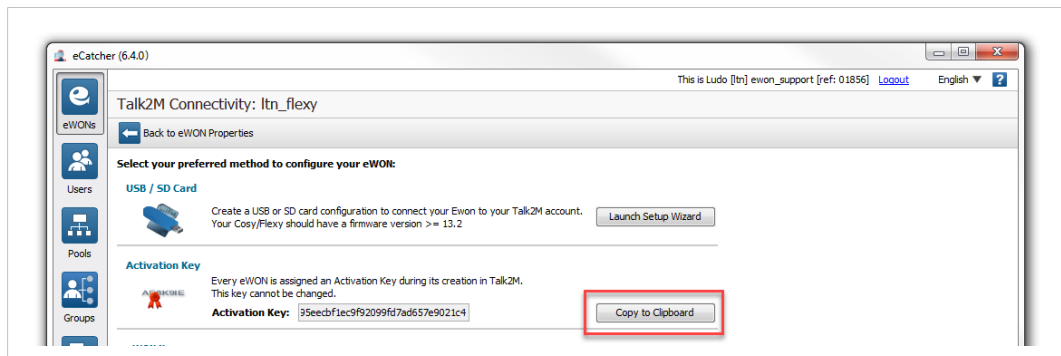1. Click the **Copy to Clipboard** button from the **Activation Key** row.

Fig. 39   eCatcher — Activation key

If you are not in the "Talk2M Connectivity" frame but in eCatcher's main window instead, follow this process to retrieve the activation key:

1. Select your Ewon in the "My Ewons" list.
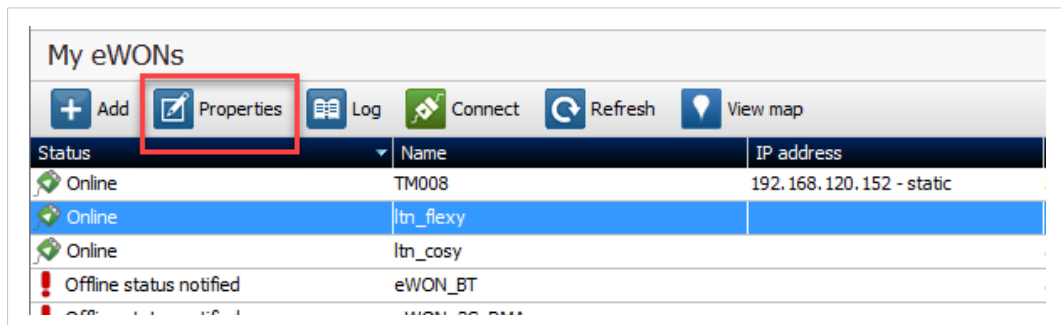
2. Click the **Properties** button.

Fig. 40   eCatcher — Properties of an Ewon

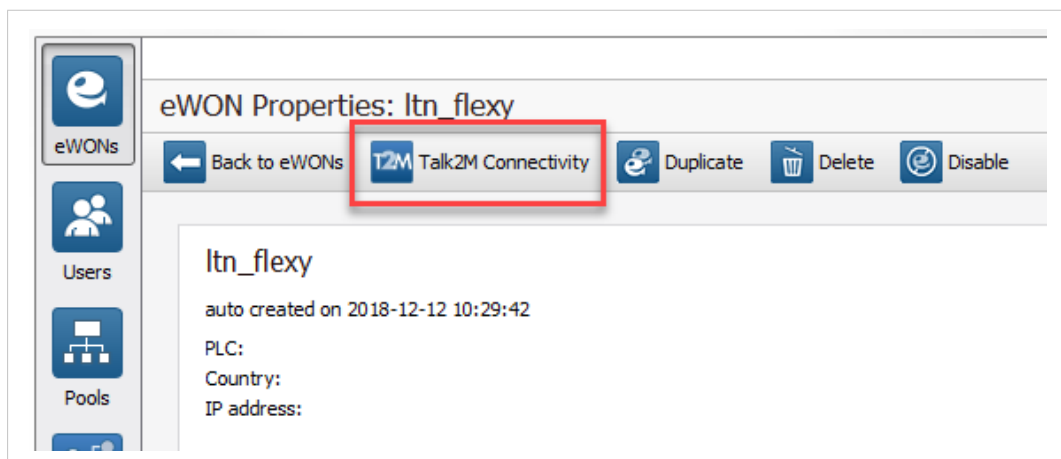3. Click the **Talk2M Connectivity** button.

Fig. 41   eCatcher — Talk2M Connectivity

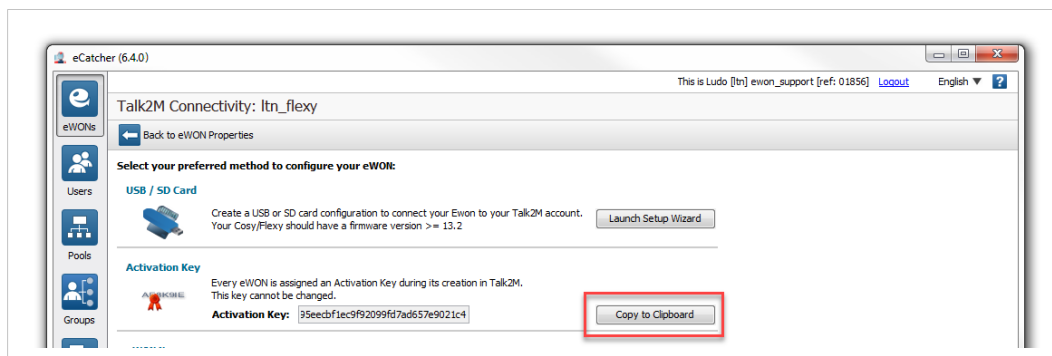4. Click the **Copy to Clipboard** button from the **Activation Key** row.

Fig. 42   eCatcher — Activation key

A.5   Step 5: Connect Your Ewon to Talk2M

To configure the Ewon Talk2M connection, follow the steps below:

1. Configure the network parameters of your computer to fit into the IP range of your Ewon LAN.

   If you need help to do this, please refer to Google®.

2. Connect your computer to a LAN port of your Ewon.

3. Open your web browser and target the Ewon internal web page by browsing the LAN address you configured in *Step 1: Set the LAN IP Address of your Ewon, p. 31*.

   In our example, that would be: http://192.168.0.53.

4. Click the **Wizard** button in the top right corner.

5. Click the **Talk2M – VPN** button.

6. Click the **T2M** button.

7. Insert the activation key copied from *Step 4: Retrieve the Talk2M Activation Key, p. 37*.

8. Click **Next**.

9. Set the advanced configuration if needed. The advanced settings concern:

   – the use of a proxy for the WAN connection,

   – the obligation to use TCP packets instead of UDP for the WAN connection.

10. Click **Next**.

The last step of this wizard is the Talk2M registration and so the establishment of the VPN tunnel between your Ewon and Talk2M. The following tests are performed:

• the Ewon tests the different connections needed to reach the Talk2M server (UDP/TCP, HTTP with/without proxy),

• the Ewon connects to the Talk2M server and retrieves the VPN keys,

• once the keys retrieves, the VPN tunnel is established.

The result is displayed on the wizard page. Click **Finish** to end the wizard.

Your Ewon now appears online in eCatcher.

A.6 Step 6: Connect to Your Ewon Remotely

Now that the Ewon is configured to connect to Talk2M, you can establish the remote connection to this Ewon.

Depending on the type of connection you set, the procedure changes.

A.6.1 Permanent Connection

To connect remotely to an Ewon tagged as permanent connection, follow the procedure:

1. Connect your computer to the company LAN.

2. Set the network parameters of your computer to "DHCP enabled". An IP address is automatically provided from the DHCP server of the company network.

3. Verify that you have an Internet connection. For example: open your web browser and browse to your favorite web page.

4. Open eCatcher (if not already opened).

5. Select the Ewon you just configured in the "My Ewons" list.

6. Click the green *Connect* button displayed in the Ewon list menu to establish the remote connection. eCatcher is now attempting to establish a VPN connection to the Talk2M server.

7. Once the VPN connection established, eCatcher displays the Ewon in the "Active connection" section.

The computer is now connected to the Ewon using the VPN tunnel and you can use the remote connection.

You can click the *IP address* link in the "Active Connection" section to display, in a web browser, the homepage of the Ewon web interface.

A.6.2 Triggered Connection

To connect remotely to an Ewon tagged as triggered connection, follow the procedure:

1. Connect your computer to the company LAN.

2. Set the network parameters of your computer to "DHCP enabled". An IP address is automatically provided from the DHCP server of the company network.

3. Verify that you have an Internet connection. For example: open your web browser and browse to your favorite web page.

4. Open eCatcher (if not already opened).

5. Select the Ewon you just configured in the "My Ewons" list.

6. Click the green *Wake up* button displayed in the Ewon list menu to wake up your Ewon.

   By doing so, eCatcher sends an SMS to switch your Ewon online.

7. Click the green *Connect* button (previously *Wake up* button) displayed in the Ewon list menu to establish the remote connection. eCatcher is now attempting to establish a VPN connection to the Talk2M server.

8. Once the VPN connection established, eCatcher displays the Ewon in the "Active connection" section.

The computer is now connected to the Ewon using the VPN tunnel and you can use the remote connection.

You can click the *IP address* link in the "Active Connection" section to display, in a web browser, the homepage of the Ewon web interface.

A.7   Step 7: Terminate the Remote Connection

> **!** Before terminating the Talk2M VPN connection to the Ewon, it is mandatory to change the administrator password which is set by default to *adm*. Please refer to *Login security, p. 42*.

To end the VPN connection and so the remote access to your Ewon, apply the following procedure:

1.   Open eCatcher while you are remotely connected to your Ewon.

2.   Click the red **Disconnect** button to terminate the remote access.

3.   Optionally, leave a log message for future use.

You are now disconnected from your Ewon and can no longer use the remote access.

> **i** *By disconnecting, you terminate only the VPN tunnel. If you also want to send your Ewon offline (in case of a triggered Ewon), right-click on the Ewon in eCatcher and select **Go offline**.*

B   Security Aspects

B.1   Login security

It is required to modify the login and password of the default administrator which are both *adm*.

> ℹ️   *The default adm administrator can be modified but not deleted.*

B.1.1   For Ewon Cosy

To modify the default administrator, follow these steps:

- Log in to the Ewon web interface.

- Click on **Wizards** in the upper right corner.
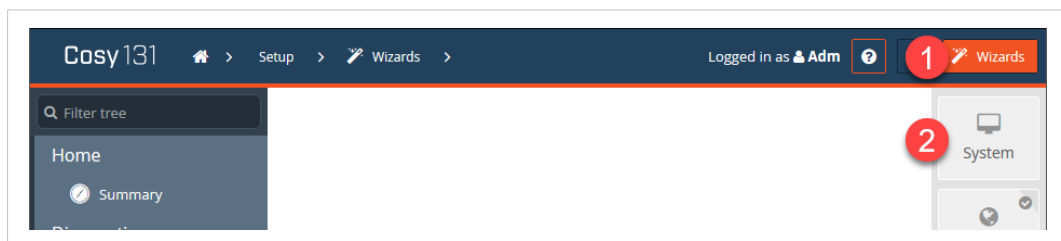
- Click on **System**.

Fig. 43   Change administrator password — 1

- Set the new password for the Adm user.

Fig. 44   Change administrator password — 2

- Click on **Next**.

- Follow and end the rest of the wizard to apply the new configuration.

B.1.2   For Ewon Flexy

To modify the default administrator, follow these steps:

- Log in to the Ewon web interface.

- Click on **Setup**.

- Click on **Users**.

- Click on **Adm** user.

- Click on **Configure**.
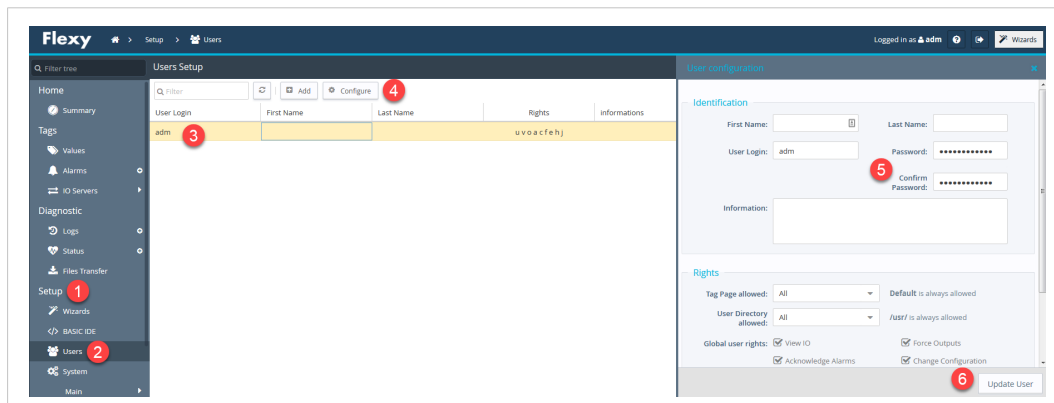
- Set the new password.

- Click on *Update User*.

Fig. 45   Modification of administrator password

C   Types of Serial Cables

C.1   FX-Series - RS422

The serial link between a Mitsubishi® FX series PLC and the Ewon is normally an RS422 connection.

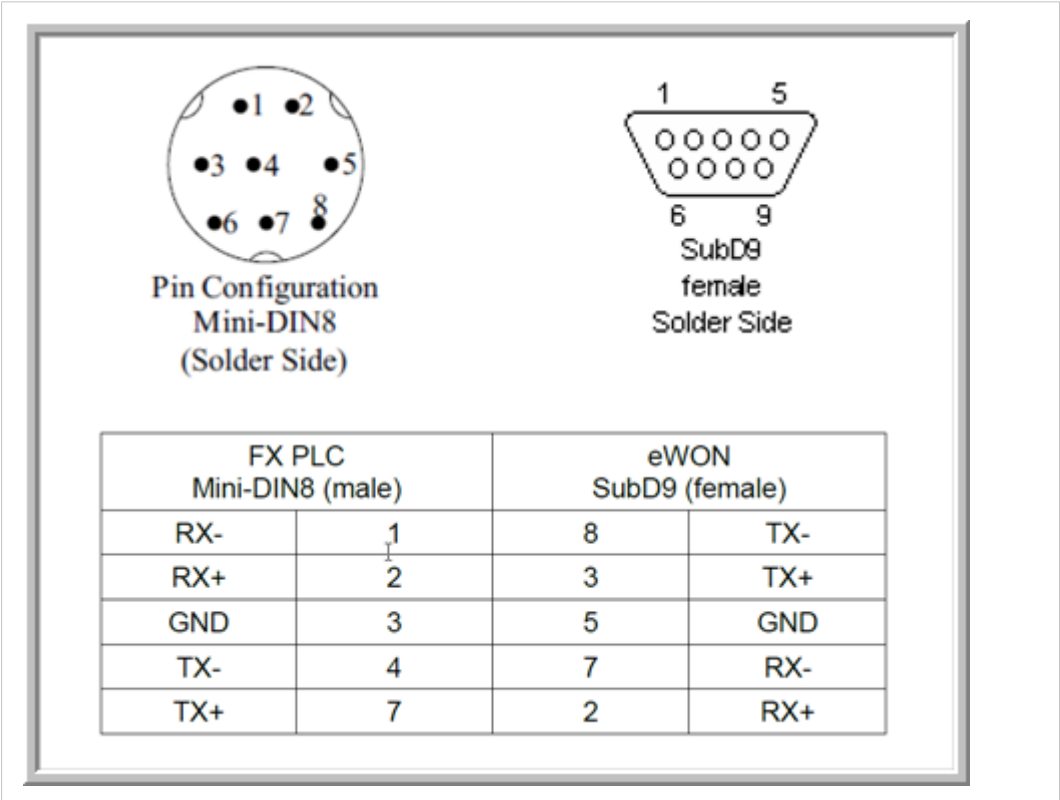The FX PLC connector is a Mini-DIN8 connector.

Fig. 46   Serial cable for FX series

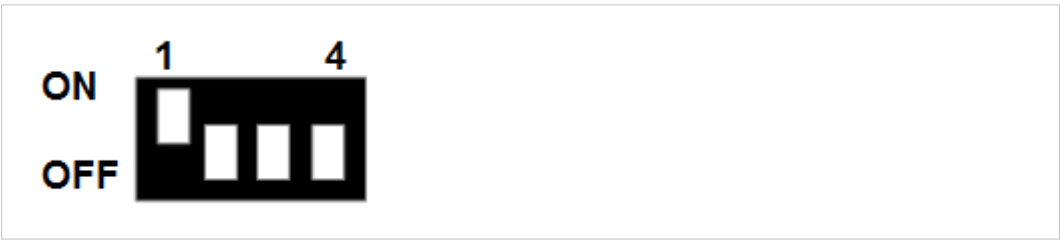You must configure the Ewon dip switch to reflect the RS422 settings.

Fig. 47   Dip switch – RS 422

Alternatively, the FX series can be connected using a RS422 to RS232 converter cable. This cable is red and its reference is SC-09.

RS232 Ewon dip switch must be set as follow to be used with a SC-09 converter (all OFF):
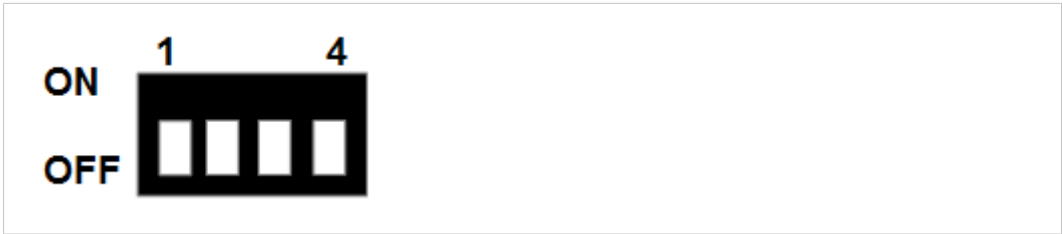
Fig. 48   Dip switch – RS 232

C.2   Q-Series - RS232

The serial link between a Mitsubishi® Q series PLC and the Ewon is an RS232 connection.
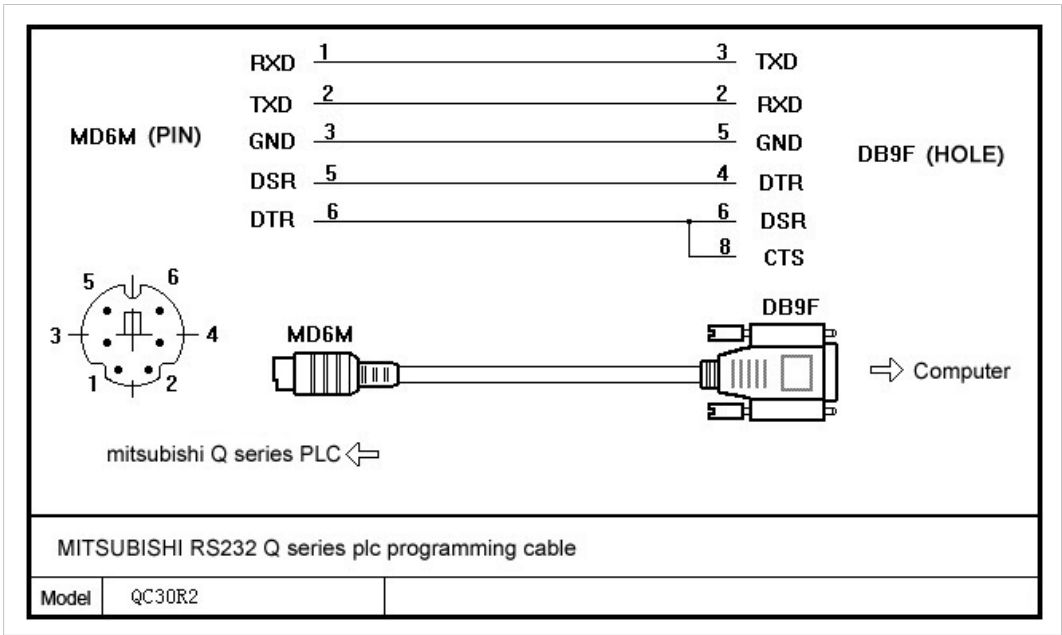
The Mitsubishi cable reference is QC30R2.

Fig. 49   Serial cable for Q series
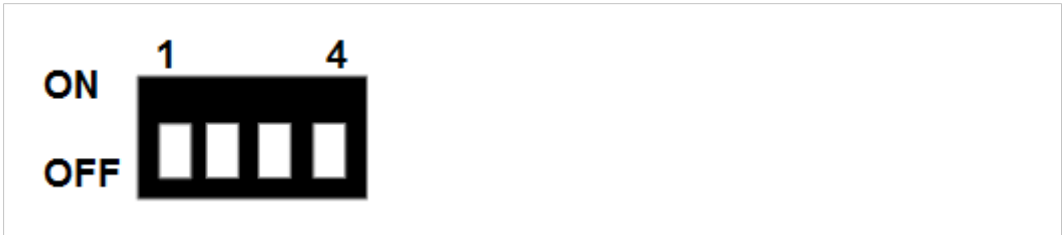
RS232 Ewon dip switch must be set as follow (all OFF):

Fig. 50   Dip switch – RS 232