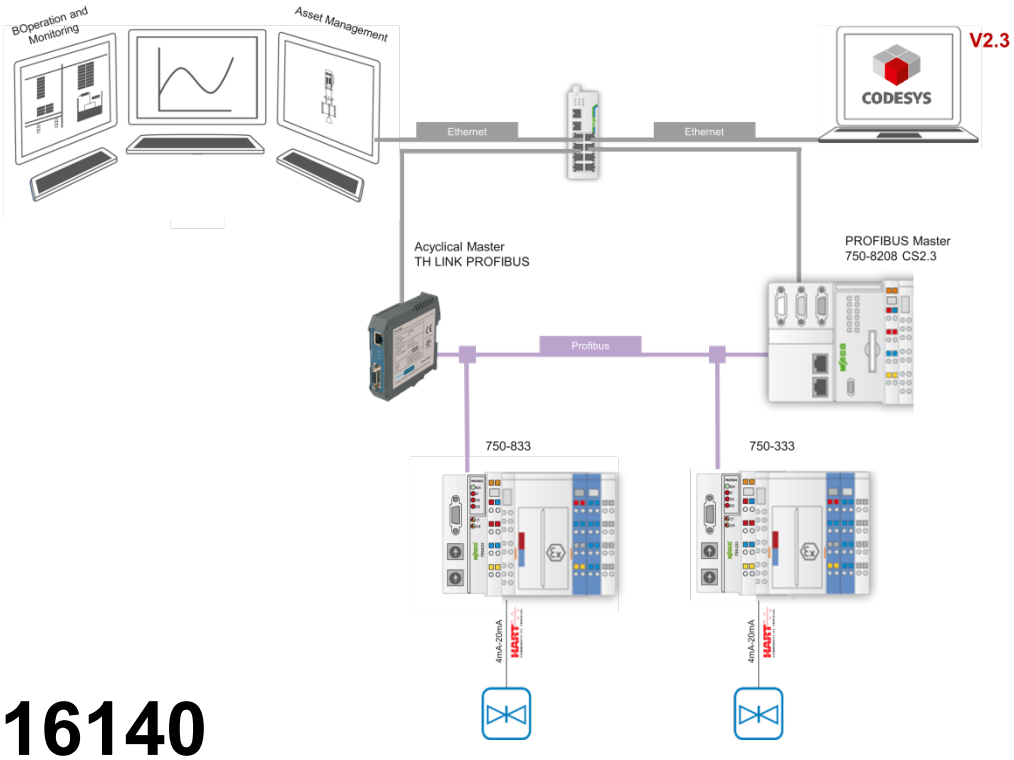
TECHDOCS

Application Note

WAGO-I/O-SYSTEM 750



A116140

HART Tool Routing via PROFIBUS with 750-833 and 750-333

Version 1.0.0

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Every conceivable measure has been taken to ensure the accuracy and completeness of this documentation. However, as errors can never be fully excluded, we always appreciate any information or suggestions for improving the documentation.

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We wish to point out that the software and hardware terms as well as the trademarks of companies used and/or mentioned in the present manual are generally protected by trademark or patent.

WAGO is a registered trademark of WAGO Verwaltungsgesellschaft mbH.

Table of Contents

1 Notes about this Documentation

1.1 Copyright

1.2 Symbols

⚠ DANGER

Personal Injury!
Indicates a high-risk, imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ DANGER

Personal Injury Caused by Electric Current!
Indicates a high-risk, imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

Personal Injury!
Indicates a moderate-risk, potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

Personal Injury!
Indicates a low-risk, potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTICE

Damage to Property!
Indicates a potentially hazardous situation which, if not avoided, may result in damage to property.

NOTICE

Damage to Property Caused by Electrostatic Discharge (ESD)!
Indicates a potentially hazardous situation which, if not avoided, may result in damage to property.

Note

Important Note!
Indicates a potential malfunction which, if not avoided, however, will not result in damage to property.

Information

Additional Information:
Refers to additional information which is not an integral part of this documentation (e.g., the Internet).

1.3 Number Notation

Table 1: Number Notation

Number Code	Example	Note
Decimal	100	Normal notation
Hexadecimal	0x64	C notation
Binary	'100' '0110.0100'	In quotation marks, nibble separated with dots (.)

1.4 Font Conventions

Table 2: Font Conventions

Font Type	Indicates
italic	Names of paths and data files are marked in italic-type. e.g.: *C:\Program Files\WAGO Software*
Menu	Menu items are marked in bold letters. e.g.: **Save**
>	A greater-than sign between two names means the selection of a menu item from a menu. e.g.: **File** > **New**
Input	Designation of input or optional fields are marked in bold letters, e.g.: **Start of measurement range**
“Value”	Input or selective values are marked in inverted commas. e.g.: Enter the value “4 mA” under **Start of measurement range**.
[Button]	Pushbuttons in dialog boxes are marked with bold letters in square brackets. e.g.: **[Input]**
[Key]	Keys are marked with bold letters in square brackets. e.g.: **[F5]**

1.5 Legal Bases

1.5.1 Subject to Changes

WAGO Kontakttechnik GmbH & Co. KG reserves the right to provide for any alterations or modifications. WAGO Kontakttechnik GmbH & Co. KG owns all rights arising from the granting of patents or from the legal protection of utility patents. Third-party products are always mentioned without any reference to patent rights. Thus, the existence of such rights cannot be excluded.

1.5.2 Personal Qualifications

The use of the product described in this document is exclusively geared to specialists having qualifications in PLC programming, electrical specialists or persons instructed by electrical specialists who are also familiar with the appropriate current standards.

Moreover, the persons cited here must also be familiar with all of the products cited in this document, along with the operating instructions. They must also be capable of correctly predicting any hazards which may not arise until the products are combined.

WAGO Kontakttechnik GmbH & Co. KG assumes no liability resulting from improper action and damage to WAGO products and third-party products due to non-observance of the information contained in this document.

1.5.3 Limitation of Liability

This documentation describes the use of various hardware and software components in specific example applications. The components may represent products or parts of products from different manufacturers. The respective operating instructions from the manufacturers apply exclusively with regard to intended and safe use of the products. The manufacturers of the respective products are solely responsible for the contents of these instructions.

The sample applications described in this documentation represent concepts, that is, technically feasible application. Whether these concepts can actually be implemented depends on various boundary conditions. For example, different versions of the hardware or software components can require different handling than that described here. Therefore, the descriptions contained in this documentation do not form the basis for assertion of a certain product characteristic.

Responsibility for safe use of a specific software or hardware configuration lies with the party that produces or operates the configuration. This also applies when one of the concepts described in this document was used for implementation of the configuration.

WAGO Kontakttechnik GmbH & Co. KG is not liable for any actual implementation of the concepts.

2 Description

This application note describes how to set up asset management systems, which facilitate simple, efficient configuration of HART field devices.

Using the Cerabar PMC51 (Endress+Hauser) as an example, connecting any HART sensor to a WAGO PROFIBUS controller and a WAGO PROFIBUS Coupler is explained. The cyclic PROFIBUS Master (750-8208) realizes the data exchange. As an acyclic master, a TH LINK PROFIBUS provides access for the plant asset management applications WAGOframe, PACTware and FieldCare.

The field devices are connected from the HART modules (750-482 and 750-484) to the PROFIBUS controller (750-833) and PROFIBUS Coupler (750-333).

The PROFIBUS controller (750-8206) is in preparation for this function.

After an overview of the components and tools used, Section 3 starts with the requisite preparation. This is followed by a description of the PROFIBUS Master configuration, which facilitates cyclic data exchange. Also, the TH LINK PROFIBUS is integrated.

At the end, Section 4 describes the asset management configuration of the HART sensor with the FDT/DTM frame applications “WAGOframe,” “PACTware” and “FieldCare.”

3 Material Used

The application note was created and tested based on the use of the listed components.

3.1 Devices

Table 3: Devices

Supplier	Quantity	Designation	Item No.	Version*)
WAGO	1	PLC PROFIBUS Master	750-8208	FW 08
WAGO	1	PLC PROFIBUS controller	750-833	FW 17
WAGO	1	PROFIBUS Coupler	750-333	FW 18
WAGO	2	2 AI; 4–20 mA HART	750-482	
WAGO	2	Ex i supply module	750-606	
WAGO	2	2 AI; 4–20 mA HART Ex i	750-484	
WAGO	3	End module	750-600	
WAGO	1	T ECO 5-port switch	852-111	
Endress+Hauser	1	Cerabar PMC51		
Softing	1	TH LINK PROFIBUS	GEA-JN-003006	7.0.1.3

*) This version was used when the instructions for use were created.

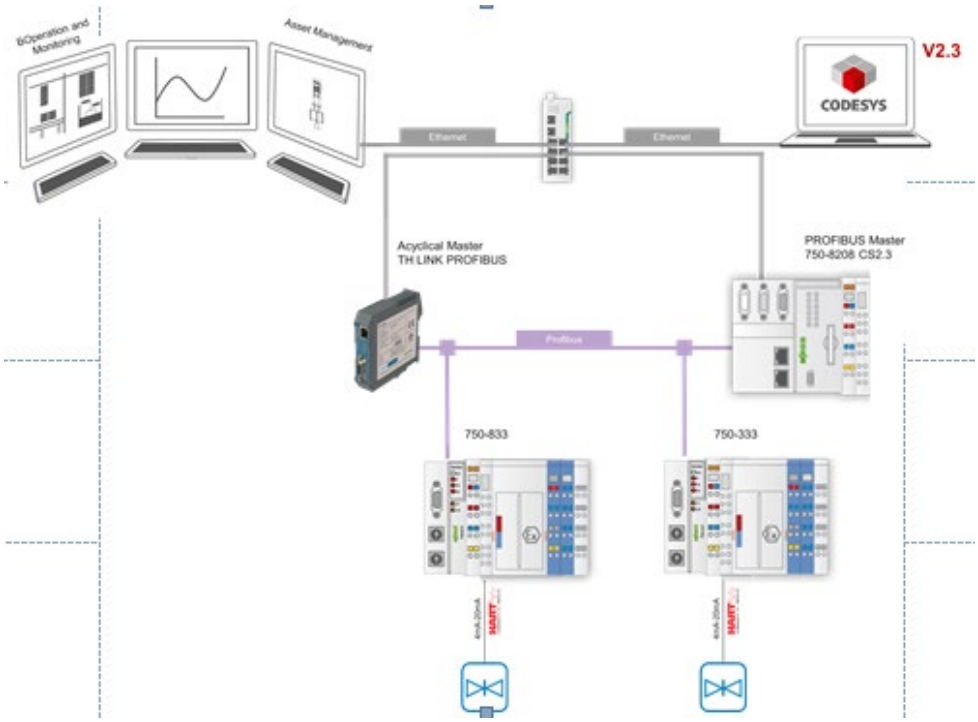
3.2 Tools

Designation	Item No.	Version*)
WAGO-I/O-*PRO* CAA V2.3	759-333	2.3.9.49
WAGO-I/O-C*HECK* 3	759-920	3.8.1(01)
WAGO ETHERNET settings	759-316	6.8.2
WAGOframe	759-370	1.01.00
WAGO PROFIBUS/HART Gateway DTM	759-360	V1.1
Endress+Hauser device DTMs		2.43.00
Endress+Hauser FieldCare SFE500		2.11.00.2025
VEGA Grieshaber PACTware 5.0		5.0.2.22

*) This version was used when the instructions for use were created.

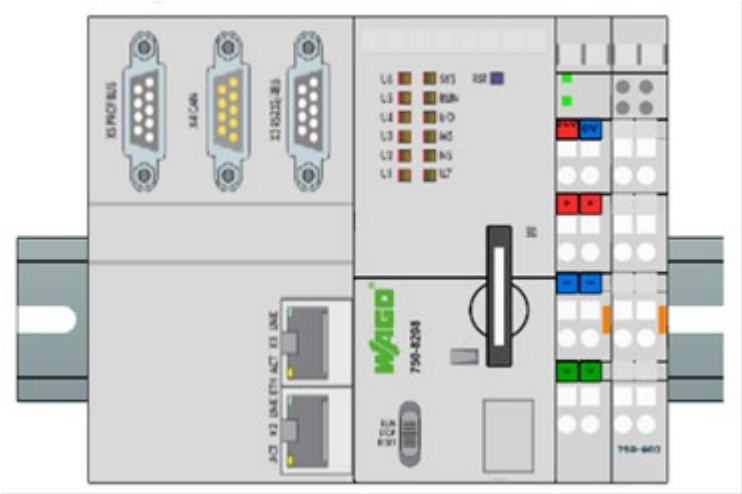
3.3 Setup

General Structure:

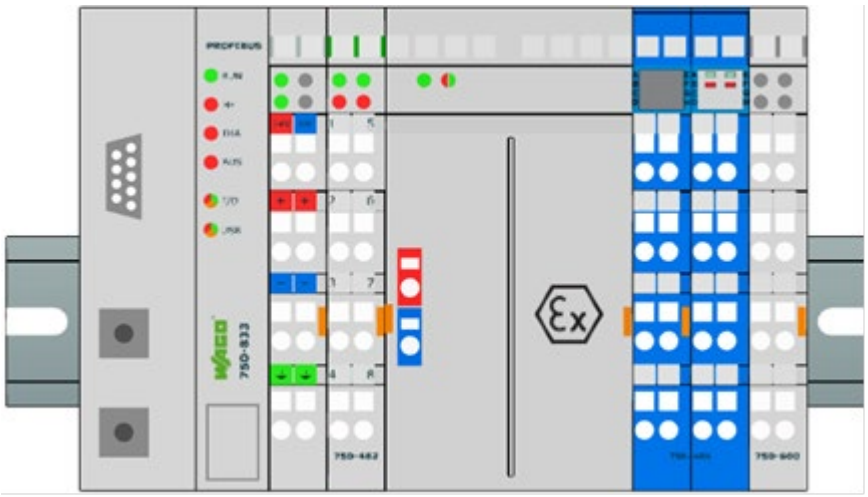


Node No. 1:

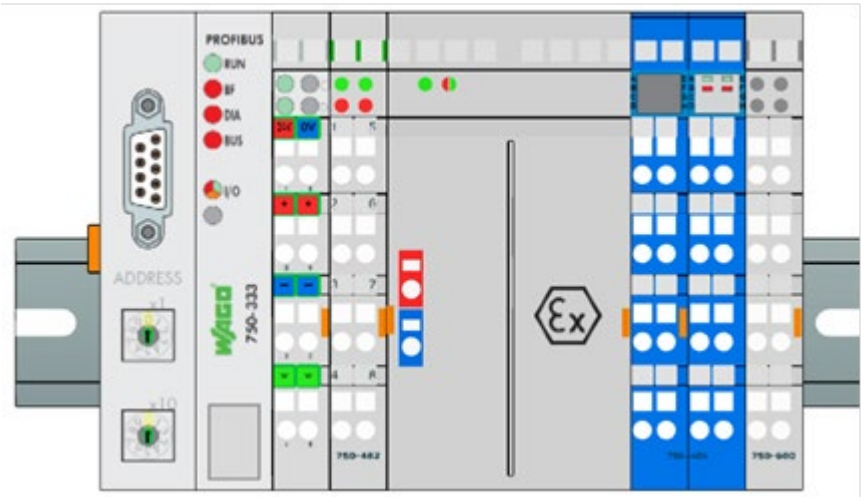
PFC200 PROFIBUS Master (750-8208) with End Module (750-600)



Node No. 2:
PROFIBUS controller (750-833) with Modules 750-482, 750-606, 750-484 and End Module (750-600)



Node No. 3:
PROFIBUS Coupler (750-333) with Modules 750-482, 750-606, 750-484 and End Module (750-600)



4 Parameterization

Most HART device manufacturers use the FDT/DTM standard to configure their devices.

The aim of FDT/DTM is to provide a single application for diagnostics and parameterization of devices from any manufacturer. Such applications are also called “FDT containers” or “FDT frames.” WAGO has its own FDT frame with “WAGOframe.”

The FDT frame operates with “Device Type Managers” (DTMs).
Three groups of DTMs are specified:
- Communication DTMs
- Gateway DTMs
- Device DTMs

A communication DTM provides a protocol-specific driver; e.g., for PROFIBUS. Gateway DTMs function as mediators; e.g., between two bus systems such as HART and PROFIBUS. The device manufacturers provide “Device DTMs” for their devices, which include the graphical user interface for configuration and diagnostics.

4.1 Preparations

An FDT frame requires a PROFIBUS communication DTM, a PROFIBUS/HART Gateway DTM and a device DTM.

In this section, you will see which preparations are necessary for these three DTMs and how you can complete them.

1. **Downloading the Softing “Communication DTM”**
   The TH LINK PROFIBUS requires a communication DTM.
   Open your Internet browser and enter the URL:
   http://industrial.softing.com/de/. Then search for the file “DTM Library” and download it.

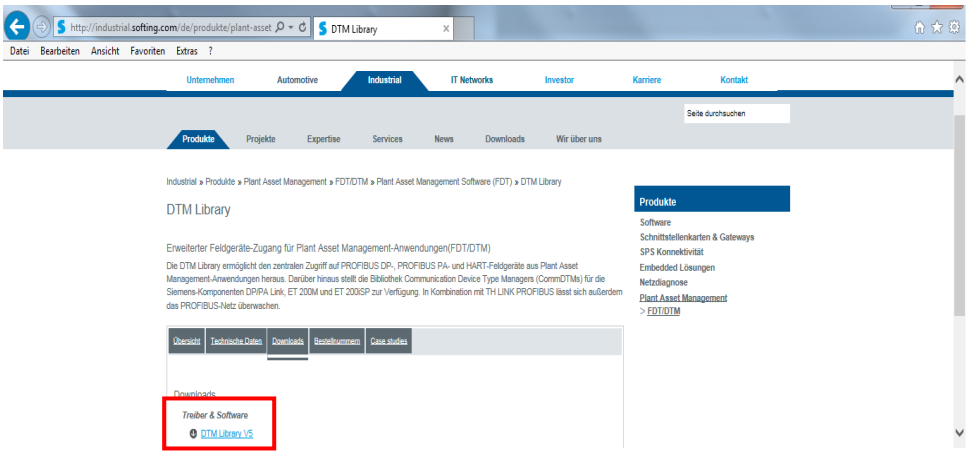


Figure 1: Download

2. **Extracting the File “Install_DTMLib.zip“**
In the Explorer, open the directory containing the downloaded file and extract “Install_DTMLib.zip” (e.g., with the program PowerArchiver).

3. **Installing the Softing “DTM Library”**
In the Explorer, open the extracted folder “Install_ DTMLib.”
Install the application “Install_DTMLib.exe.”

4. **Downloading the “PROFIBUS/HART Gateway DTM 759-360”**
Open your Internet browser and enter the URL: www.wago.com.
Search for the download driver “759-360” and download it.

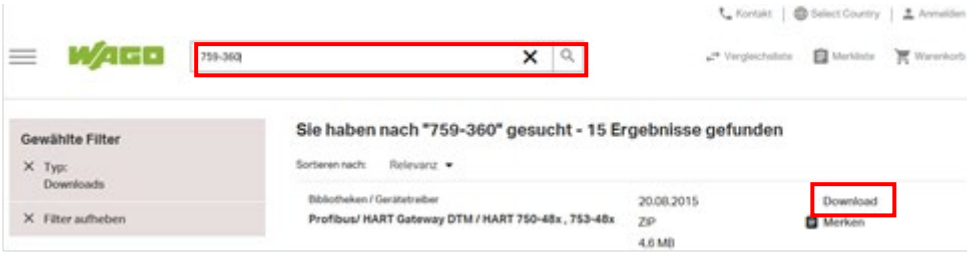


Figure 2: Download File

After the download, the file “759-360.zip” is automatically saved locally.

5. **Extracting “759-360”**
In the Explorer, open the directory containing the downloaded file “759-360” and extract it (e.g., with the program PowerArchiver).

6. **Installing the “PROFIBUS/HART Gateway DTM 759-360”**
In the Explorer, open the extracted folder “Wago759-360.”
Install the application “Wago 750-333 DTM Setup.exe.”

7. **Downloading the Field Device “DTM Library”**
Each field device requires a “device DTM,” to mediate the later parameterization, commissioning and diagnostics of HART field devices. In this example, the Cerabar PMC51 is connected (Endress+Hauser HART sensor).

Open your Internet browser, enter the URL**: www.software-products.endress.com** and register. Then search for the file “Device DTM Library” and download it.

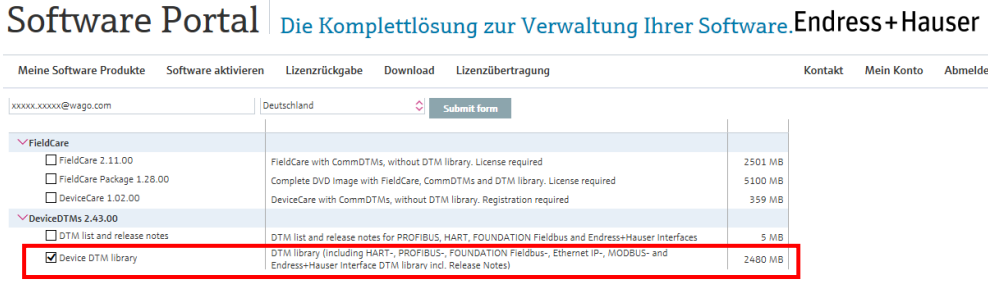


Figure 3: Search File

Information

Note:
Although it is only necessary to download one single specific device DTM, the search often proves difficult. Thus, downloading the complete “Device DTM Library” is recommended.

8. **Extracting “Complete_DTM_library.part1.exe”**
In the Explorer, open the directory containing the downloaded files and run “Complete_DTM_library .part1.exe.”

9. **Installing the Field Device “DTM Library”**
In the Explorer, open the extracted folder “Complete_DTM_library” and then the folder “Single DTM library.”
Install the application “Setup.exe.”

4.2 PROFIBUS Operating Mode for HART Modules (750-482 and 750-484)

To operate the HART bus modules with the PROFIBUS/HART Gateway (759-360) via FDT/DTM in a circuit with PROFIBUS DP/V1 (750-833 and 750-333), the operating mode 2AI + acyclic PROFIBUS Service must be set.

All necessary steps for changing the operating mode are explained below.

1. **Starting WAGO-I/O-*CHECK* 3 and Setting the Serial Communication**
After commissioning the structure and completing the preparations, connect the WAGO Controller (750-833) with the USB communication cable. Start the software “*WAGO-I/O-CHECK 3*” and in the menu bar, click **[Settings]** → **[Communication],** accept the connection **[Serial Connections]** and the connector **[COM4:WAGO USB Cable].**

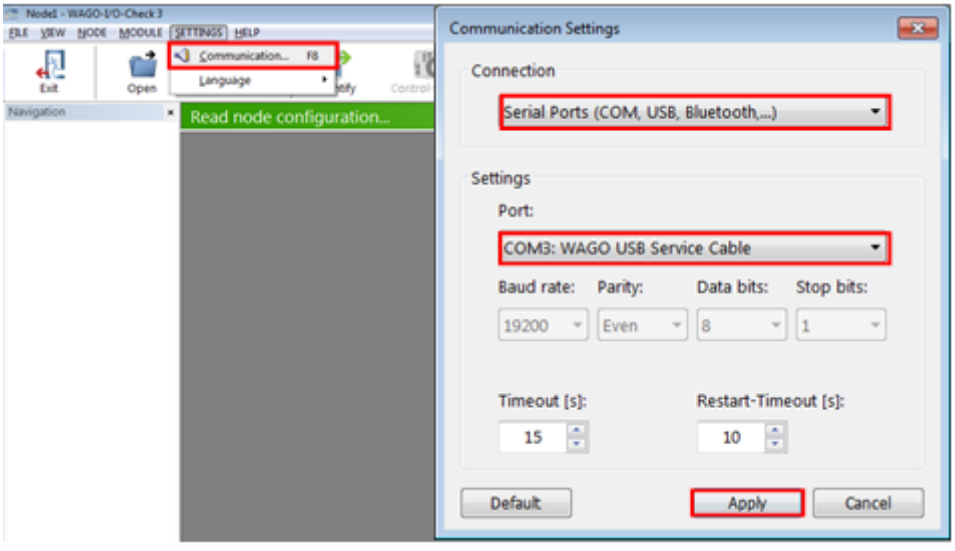


Figure 4: Setting the IP Address

2. **Configuring the HART Module (750-482 and 750-484) on the 750-833**
Identify the connected nodes and right-click to open the HART module (750-482) settings.

Check the process image variant; set “**2 AI + acyclic PROFIBUS Service**.” Then click **[Write]** to transfer it.

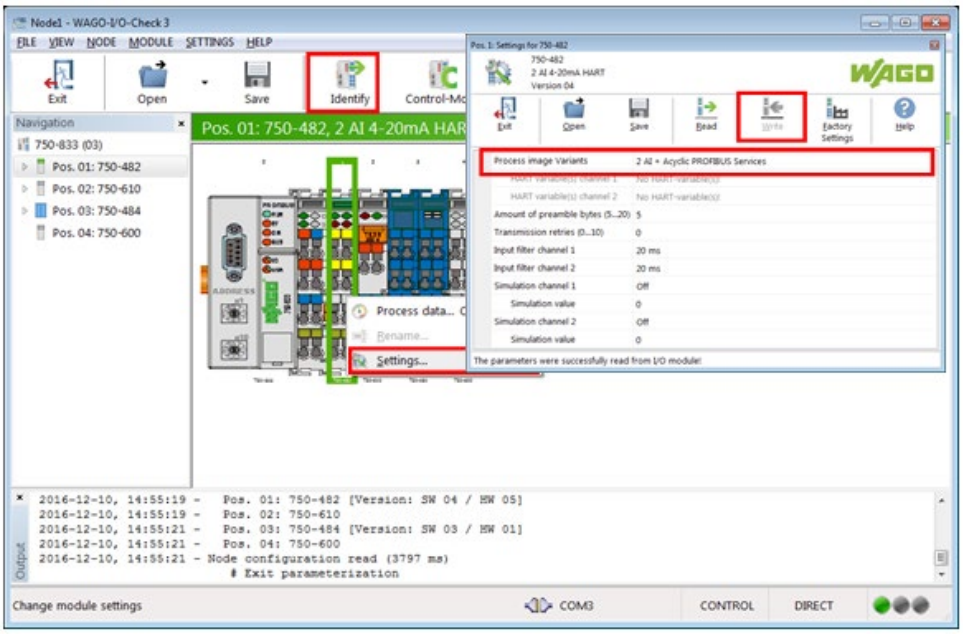


Figure 5: Check Process Image

Repeat the same process for the HART module (750-484); set the process image variant to “**2 AI + acyclic PROFIBUS Service**” here as well.

3. **Configuring the HART Module (750-482 and 750-484) on the 750-333**
Connect the WAGO Controller (750-333) with the USB communication cable. Identify the connected nodes and right-click to open the HART module (750-482) settings.

Check the process image variant; set “**2 AI + acyclic PROFIBUS Service.”** Then click **[Write]** to transfer it.

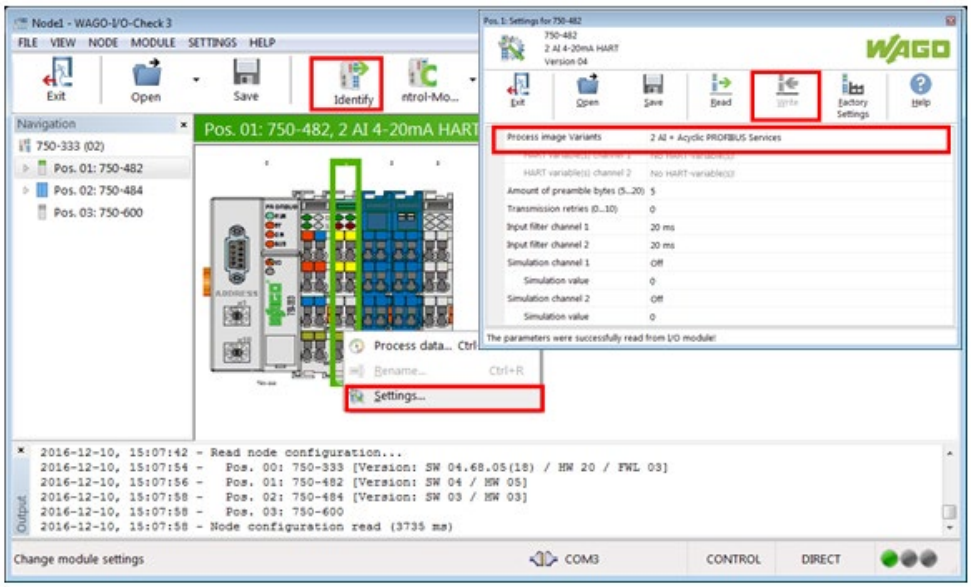


Figure 6: Transfer Settings

Repeat the same process for the HART module (750-484); set the process image variant to “**2 AI + acyclic PROFIBUS Service**” here as well.

WAGO's software “WAGO-I/O-*CHECK* 3” can now be closed.

4.3 750-8208 as Cyclic PROFIBUS Master

If a HART module is on a WAGO PROFIBUS controller or Coupler, communication between the FDT frame and controller occurs via the PROFIBUS protocol.

No data can be exchanged without a PROFIBUS Master configuration.

The control configuration needed on the master and integration of the slave are described in the following.

1. **Setting the Controller IP Address (static)**
   After commissioning the structure, completing the preparations and setting the HART module parameters, connect your WAGO PFC200 (750-8208) with the USB communication cable.
   Start the software “WAGO ETHERNET Settings” and in the menu bar, click **[Settings]** → **[Communication],** accept the connection **[Serial Ports]** and the connector **[COM4:WAGO USB Cable].**

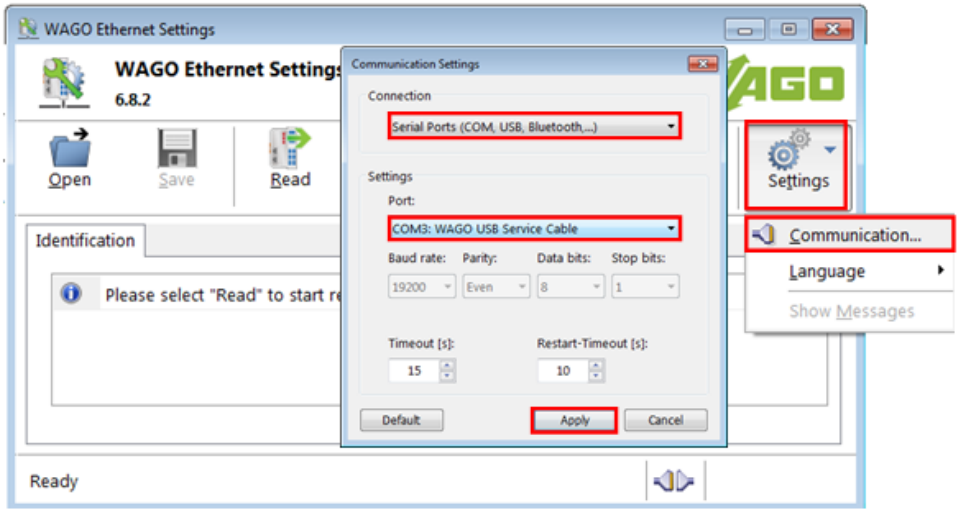


Figure 7: WAGO Ethernet Settings

Enter your desired address in the **[Network]** tab under the address source **[Static Configuration]** and under “IP address.”
Then write the settings on the controller.

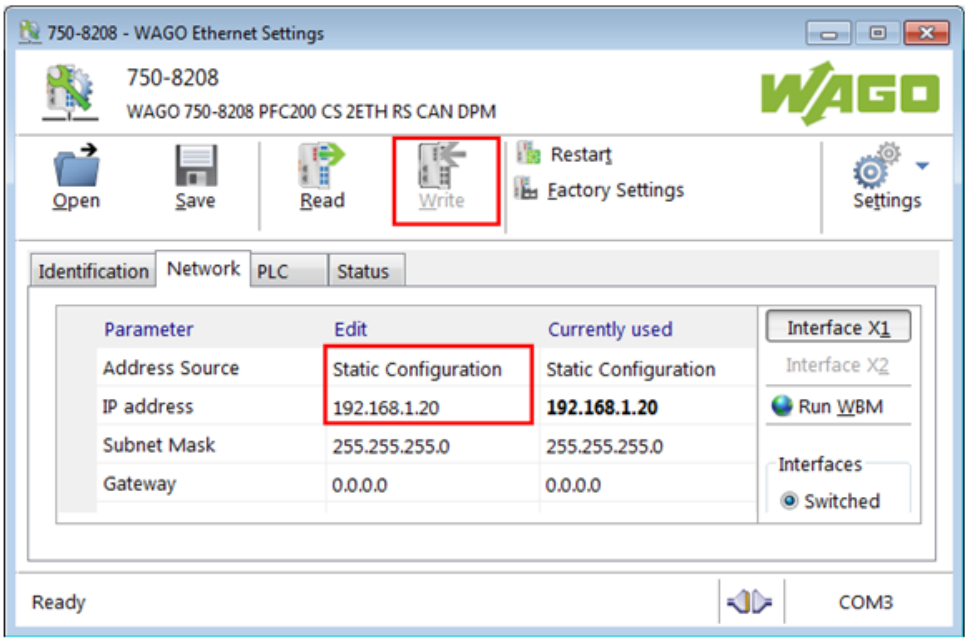


Figure 8: Write Settings

WAGO's “ETHERNET Settings” software can now be closed.

2. **Creating a New CODESYS V2.3 Project**
Open the software “WAGO-I/O-PRO CAA V2.3 (CODESYSs V2.3)” and create a new empty project.
Select **[WAGO_750-8208]** from the prompt for target system settings.

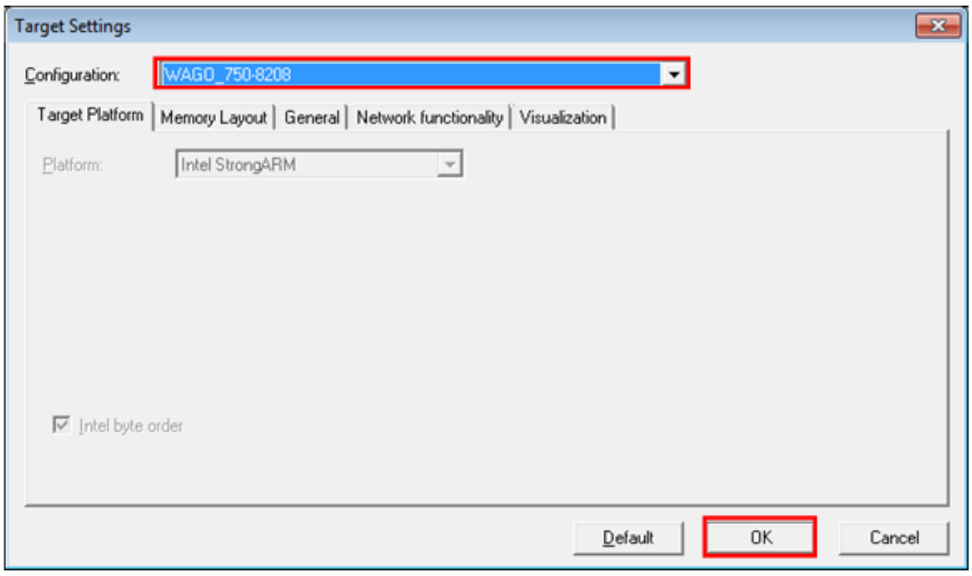


Figure 9: Create Project

Then the dialog for creating a new module opens; name the program “PLC_PRG.” Select any programming language.

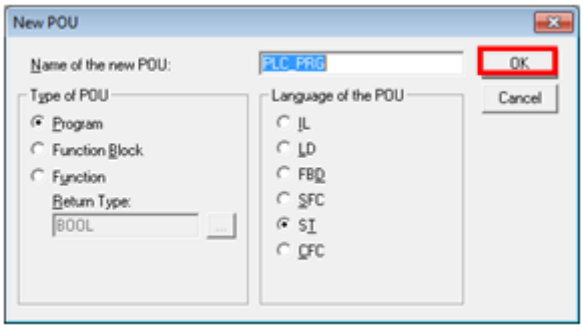


Figure 10: Select Language

3. **Activating the PROFIBUS DP-V1 Master**
Open the tab **[Resources] → [PLC Configuration] → [PLC-Configuration].** To activate the PROFIBUS Master function, use a right-click and replace the **[“unused Slot”]** with a “PROFIBUS DP-V1 master.”

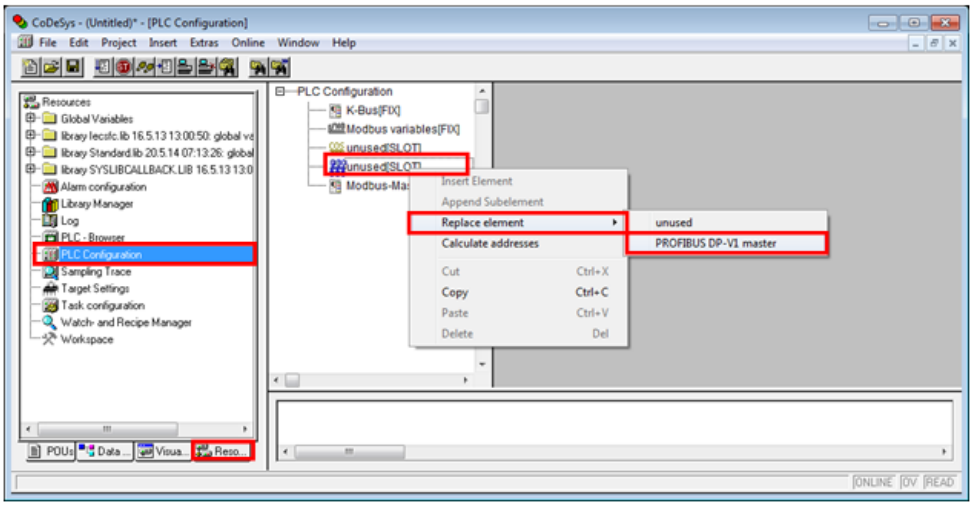


Figure 11: Activating

4. **Managing Station Addresses**
Open the tab **[DP Parameters];** specify the address range of the PROFIBUS devices.

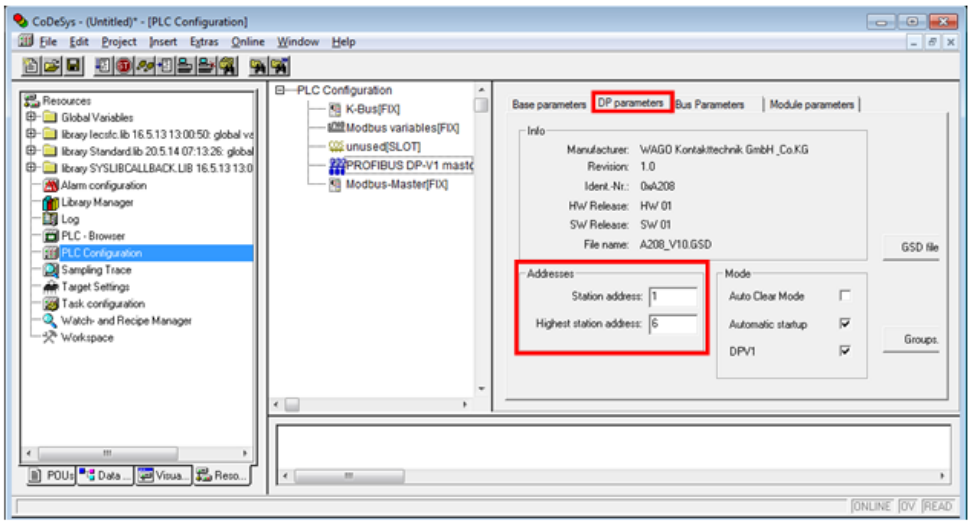


Figure12: Specify Address Range

5. **Add and Configure PROFIBUS Slaves**
To add your device, right-click **[PROFIBUS DP-V1 master]** → **[Append Subelement]**. In this example, the 750-333 is integrated first; then the 750-833.

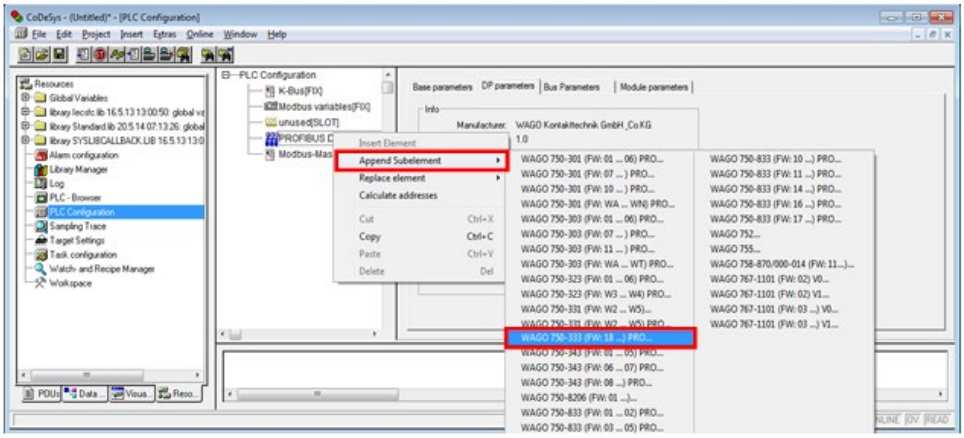


Figure 13: Add Slave

Specify a station address under the **[DP-Parameter]** tab.

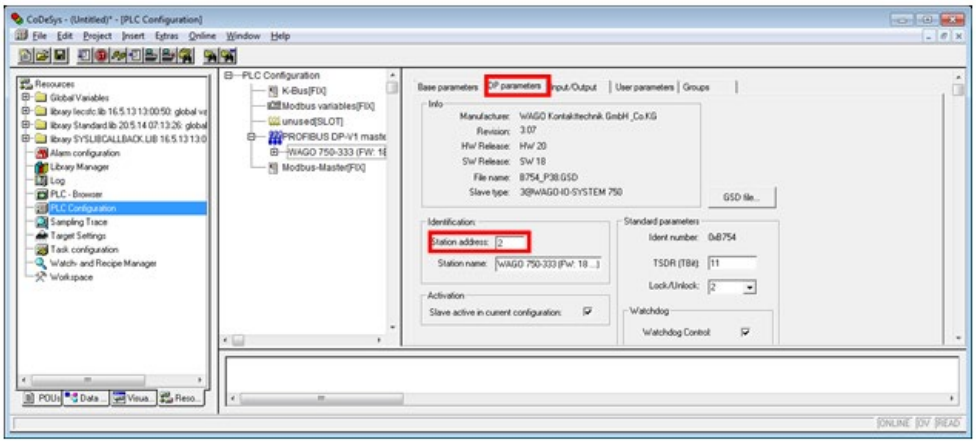


Figure 14: Specify Station Address

Select all connected modules in the right order under the **[Input/Output].**

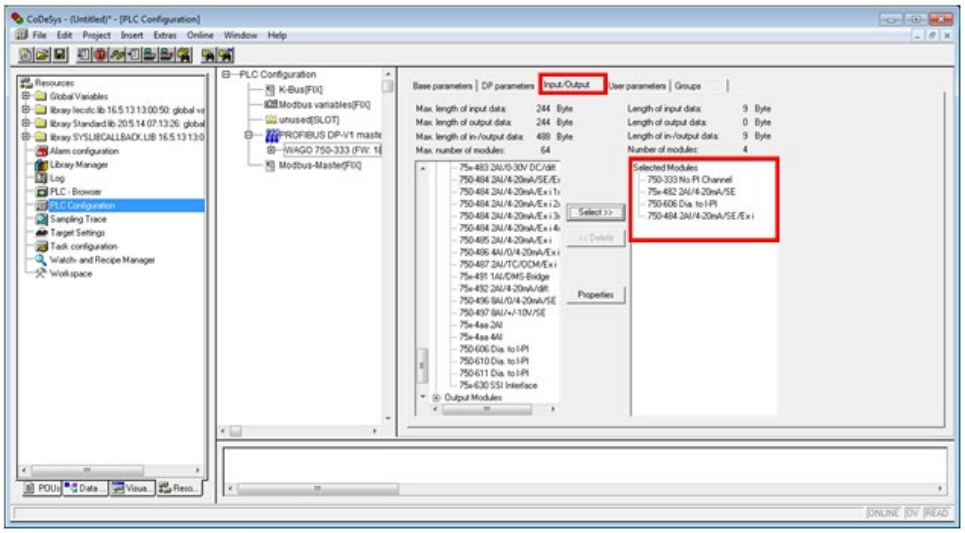


Figure 15: Select Modules

Repeat the same steps for the PROFIBUS controller (750-833). Be sure to specify a different station address.

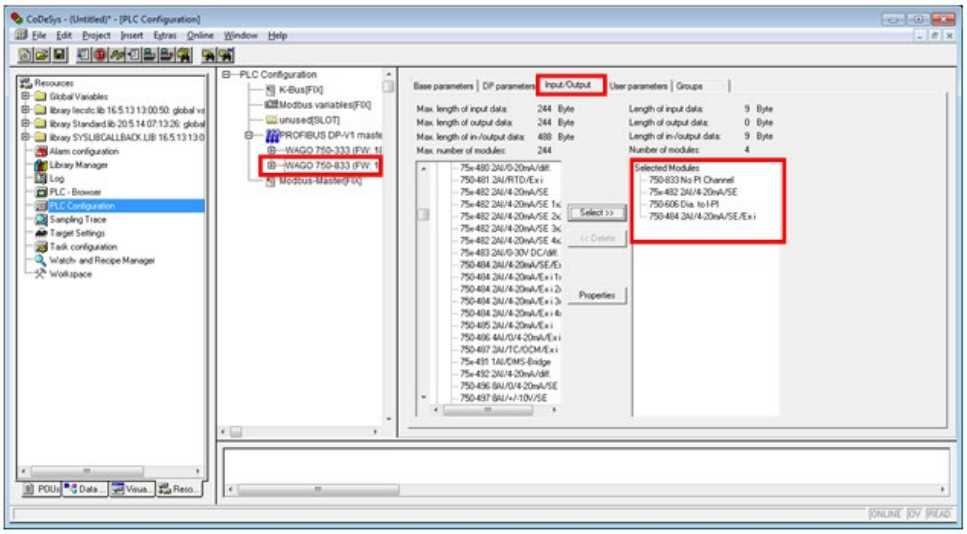


Figure 16: Specify Station Address

6. **Setting the Communication Parameters**
In the menu bar, open the section **[Online]** → **[Communication Parameters]**. Create a new TCP/IP channel (Level 2 Route) and specify the IP address of your PC and Port 2455.

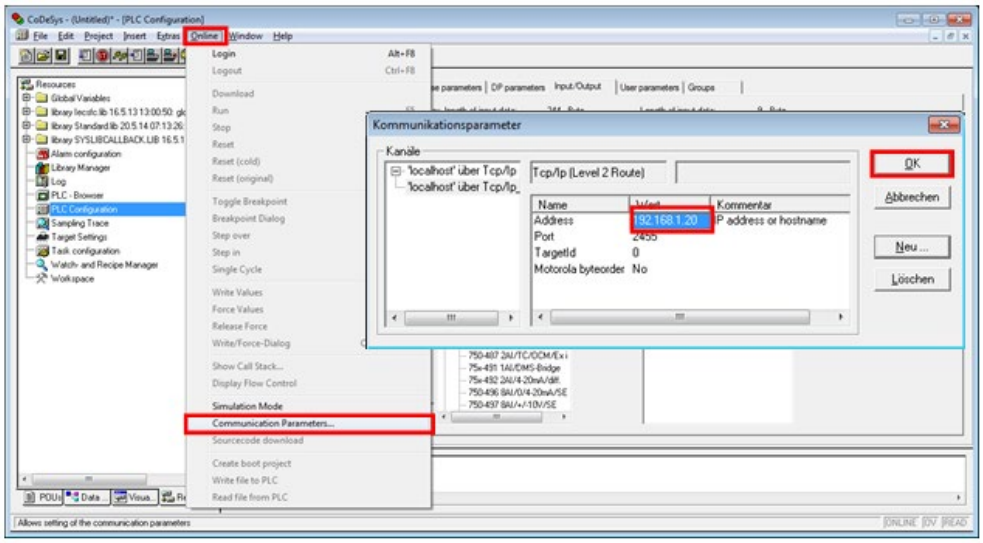


Figure 17: Specify IP Address

7. **Creating a Test Program and Transferring the Configuration**
Under the main program **[PLC_PRG]** under the tab and select any test program.
PROFIBUS parameter settings cannot be transferred without a program.

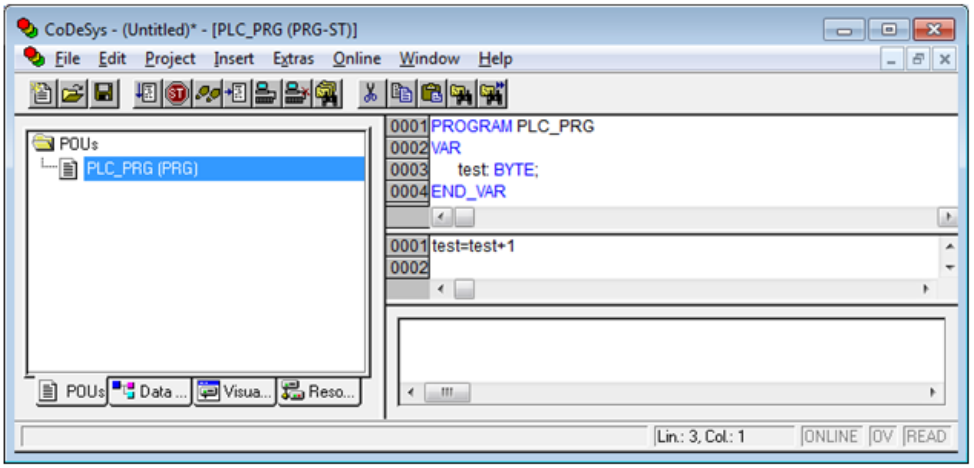


Figure 18: Create Test Program

To transfer the PLC program, click the **[Login]** button; then start it with the **[Start]** button.

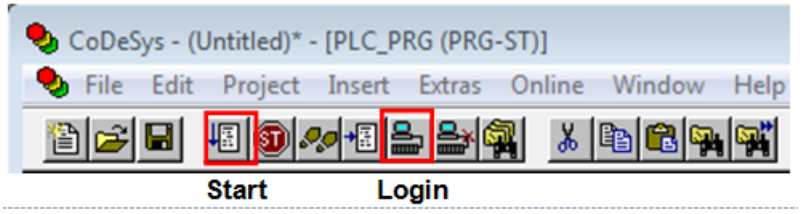


Figure 19: Log in

8. **Backing up PROFIBUS DP-V1 Master Bus Parameters before Adaptation**
Before the TH LINK can be integrated into FDT frame applications, the bus parameters must be adapted. Here, taking a screenshot is recommended.

Open the tab **[Resources]** → **[PLC Configuration]** → **[PLC Configuration]** → **[PROFIBUS DP-V1 master].** All important parameters are under the **[Bus Parameters]** menu; record them with a screenshot.

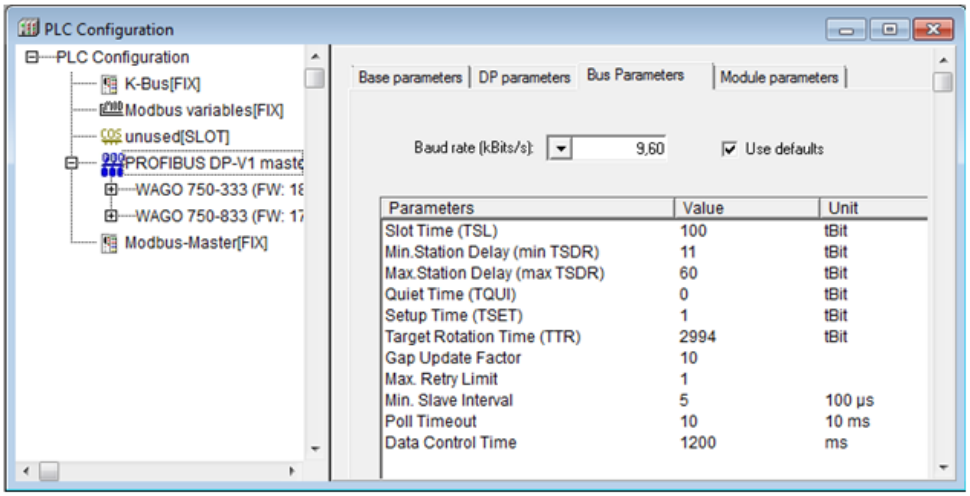


Figure 20: Save Important Parameters via Screenshot

4.4 TH LINK PROFIBUS as Acyclic Master

The TH LINK PROFIBUS brings users controller-independent access to PROFIBUS networks. The device supports both network diagnostics and Plant-Based Management It can be integrated into existing systems and is easy to operate.

The following steps present the necessary settings in the Web-Based Management; the integration can then follow in an FDT framework application.

1. **Opening the Web-Based Management of the TH LINK PROFIBUS**
The TH LINK PROFIBUS settings can be configured through the Web-Based Management.
Select a browser and start it; enter the TH LINK IP address.

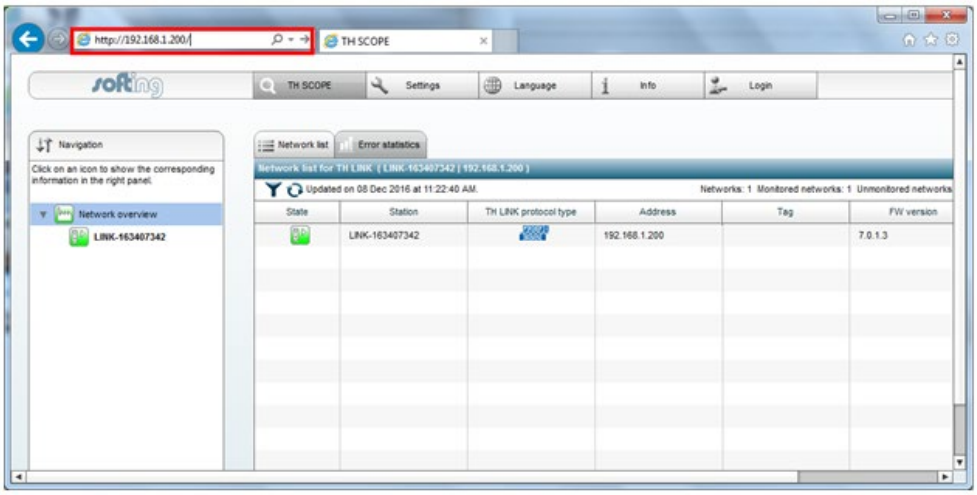


Figure 21: Enter IP Address

Information

Note:
If you are setting the TH LINK PROFIBUS into operation for the first time, you will find the information you need for the ETHERNET network configuration under Section 4 in the operating manual.

2. **Log in to Change the Operating Mode**
   To change settings, first you must log in. The standard password is the nine-place serial number for the TH LINK, which is noted on the type label.

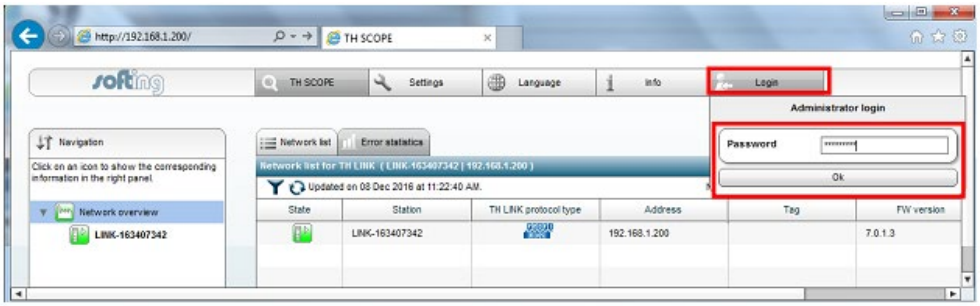


Figure 22: Log in

3. **Changing the Operating Mode to "*Passive/Active PROFIBUS station*"**
   In "Active/Passive PROFIBUS Party" operating mode, the TH LINK can be used in association with an external FDT frame application as Master Class 2 . The TH LINK only changes to an active device after the communication is started in the frame application.

   Open the menu item **[Settings]**; then the tab **[TH LINK].**
   Set the operation mode to "***Passive/Active PROFIBUS station***" and save.

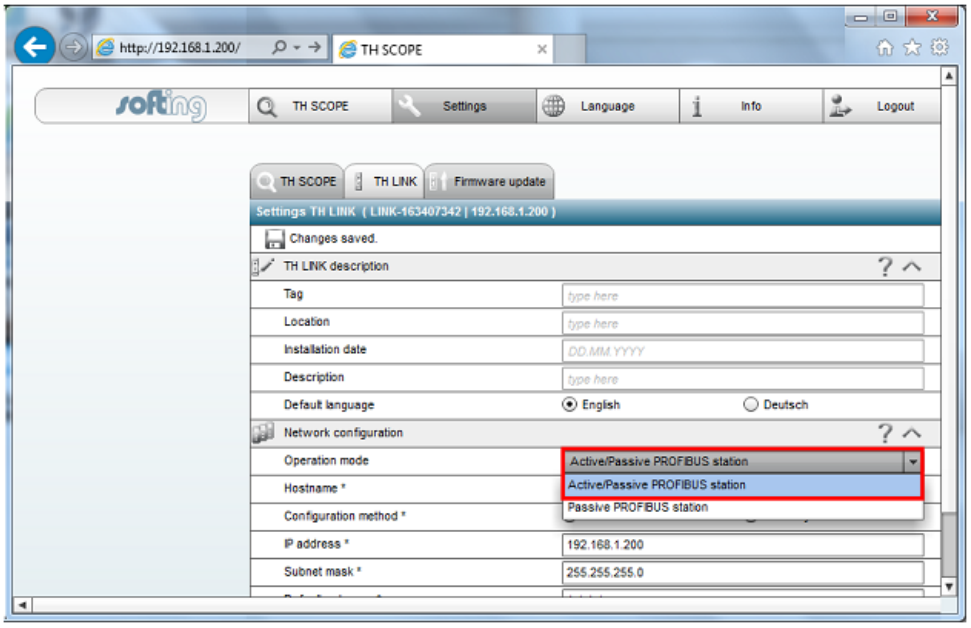


Figure 23: TH LINK Tab

The Web-Based Management can be closed.

5 Asset Management Configuration

5.1 Asset Management with WAGOframe

WAGOframe is an FDT/DTM frame application for configuration, diagnosis and updating of FDT-compliant field devices.

FDT/DTM is a manufacturer-independent concept for setting of parameters for field devices from different manufacturers using only a single program.

The phrase “Field Device Tool” (FDT) not only represents a concrete program, but also defines the interfaces that a program must deal with in order to cooperate with DTMs from different manufacturers.

A “Device Type Manager” (DTM) groups all the setting options for a field device (including graphic interfaces) into a single program that is executed in an FDT/DTM frame application.

In this chapter, you will see which settings in WAGOframe are necessary for the HART Tool routing via PROFIBUS with the 750-333 or the 750-833.

1. **Starting WAGOframe**
   Start the “WAGOframe” program using the icon on the desktop, or via “Start → Programs → WAGO Software → WAGOframe → WAGOframe.”
   After starting, you can select either the “Point to Point Mode” or the “Expert Mode.” The “Point to Point Mode” was developed specially for the configuration of simple devices (such as WAGO's *JUMPFLEX*®).
   Use **[Expert Mode]** to set the parameters; then click **[Next].**

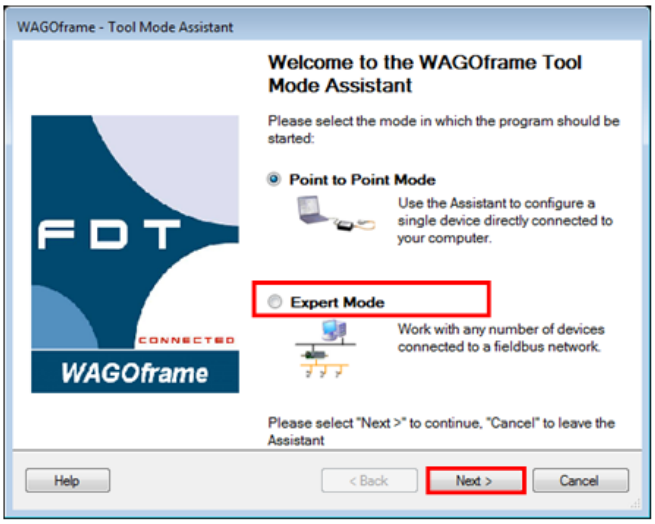


Figure 24: Expert Mode

2. **Automatically Creating/Updating Device Catalog**
   If this is the first time you are starting the program, no device catalogs have been created yet; confirm the automatic system with **[Yes].**

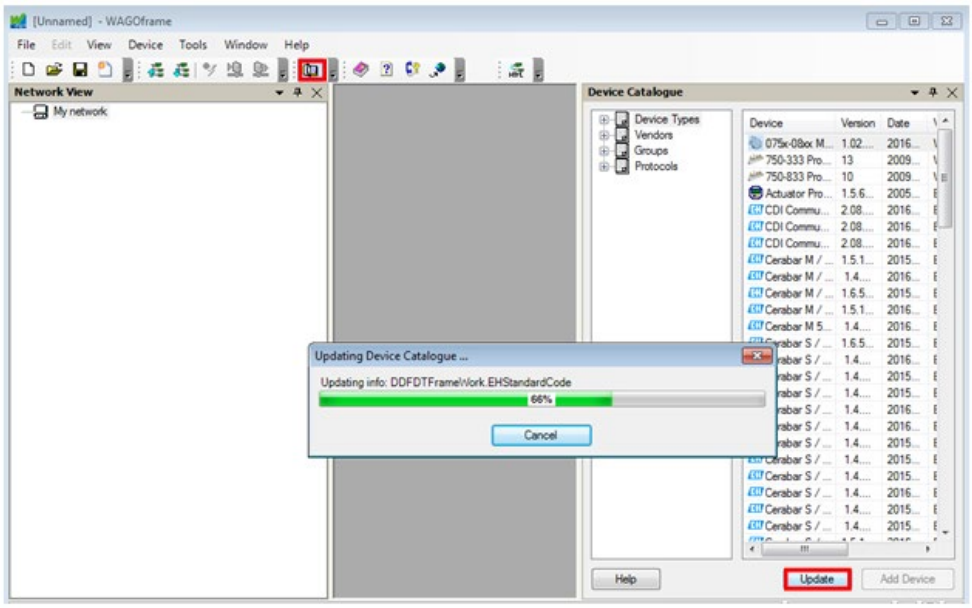


Figure 25: Update

If this is not the first time you are starting the program, the question appears after the device catalogs are automatically updated. This is because of the installation of the WAGO communication DTMs and the Endress+Hauser device DTM library during preparations. Confirm the question with **[Yes].**

3. **Adding the Softing TCP Communication DTM**
In the “Network View” window, mark the element **[My Network]** and select the function **[Add...]** from the background menu (right-click).
A dialog showing all available communication drivers opens. Select **[CommDTM PROFIBUS DP …].**

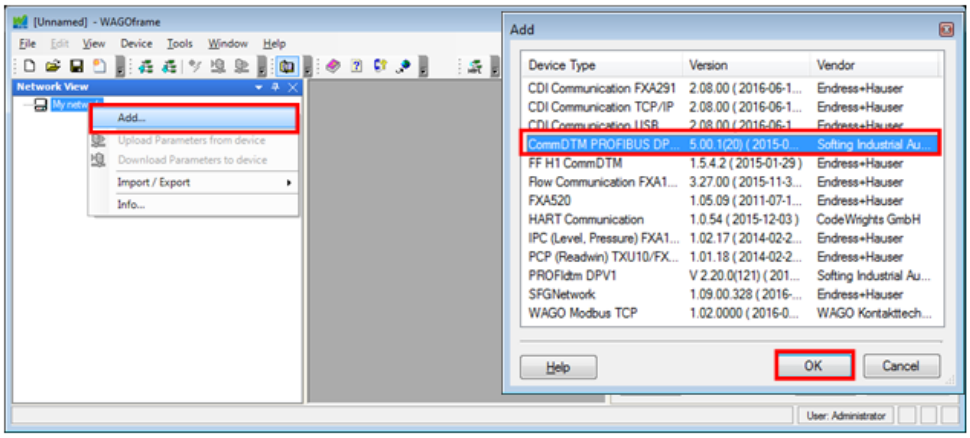


Figure 26: Add Softing TCP Communication DTM

4. **Configuring T+H PB MCL 2**
In the “Network View” window, mark the element **[T+H PB MCL 2]** and select the function **[Configuration]** from the background menu (right-click).

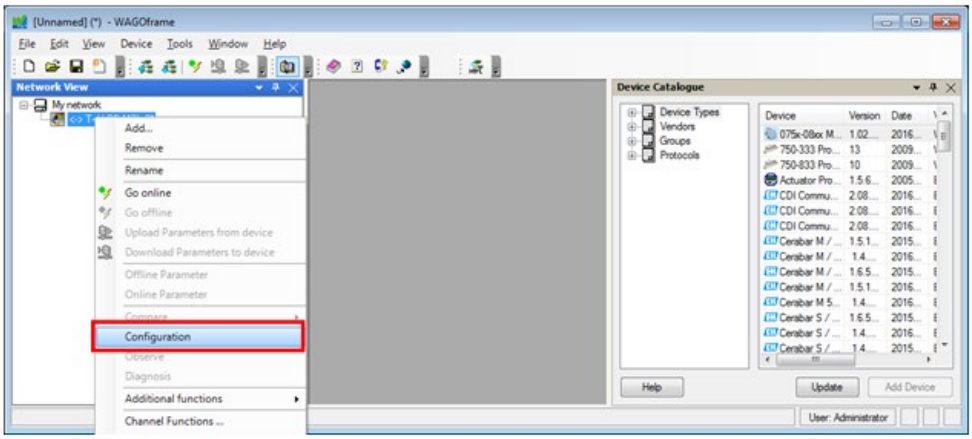


Figure 27: Configuration

Search for the TH LINK you are using and change the profile to **[User defined]**.
Compare all bus parameters with the PROFIBUS Master and adapt as necessary.

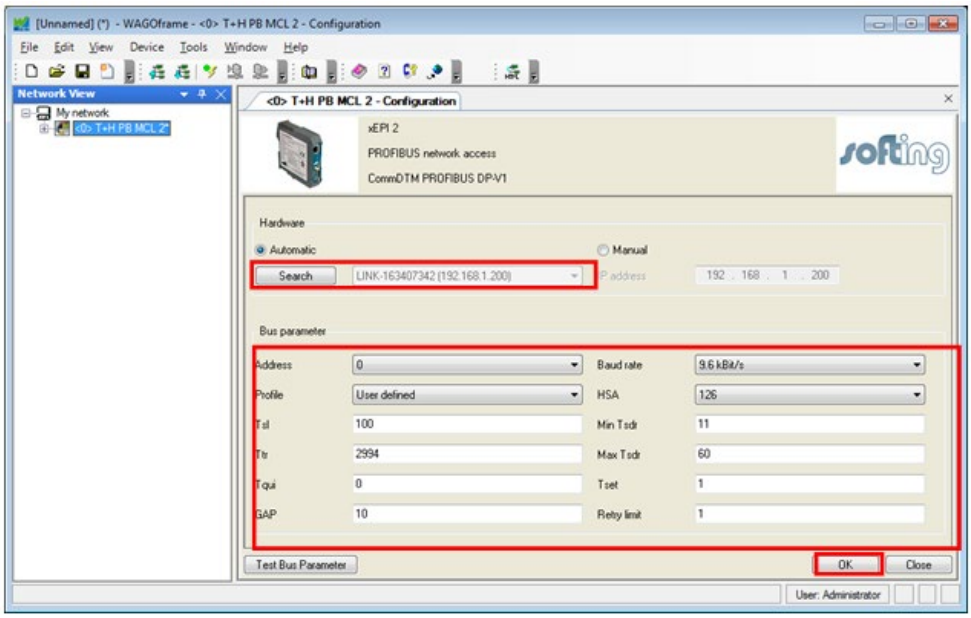


Figure 28: Search for TH LINK

Information

Note:
The bus parameters for the master are in the CODESYS project controller configuration.

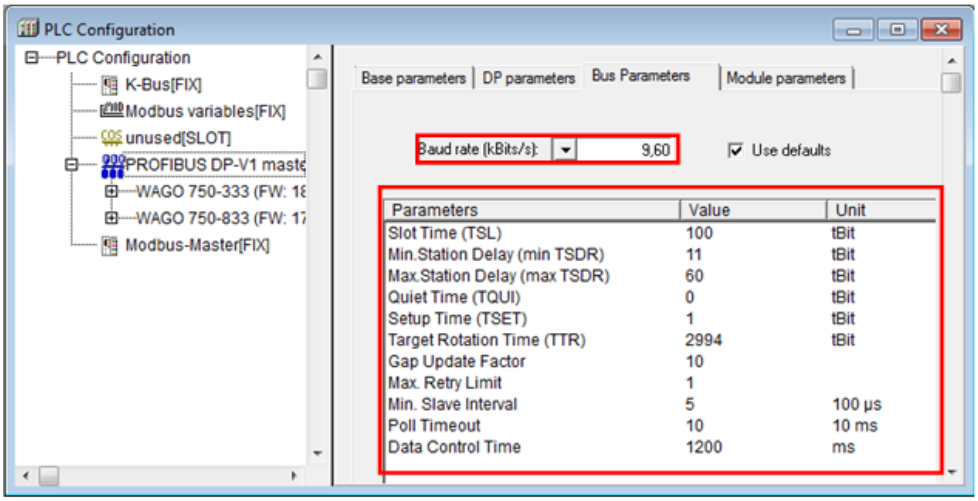


Figure 29: Bus Parameters

5. **Adding the WAGO HART Gateway (750-333)**
In the “Network View” window, mark the element **[T+H PB MCL 2]** and select the function **[Add...]** from the background menu (right-click).

A dialog showing all available gateways opens. In this example, first the 750-333 is configured and then the 750-833.
Select **[750-333 PROFIBUS FC(FW: …].**

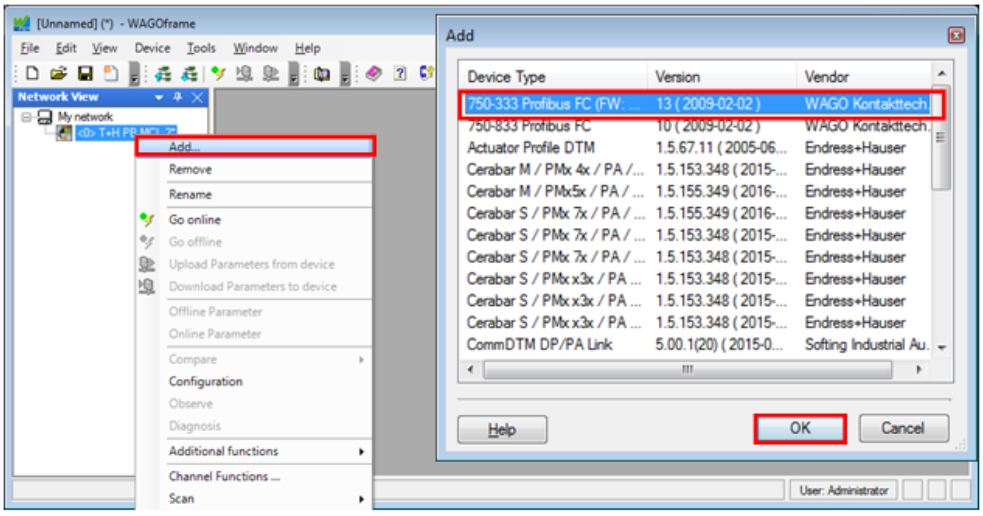


Figure 30: Add 750-333

The prompt for entering a PROFIBUS address appears. In this example, the 750-333 has **Address 2** and the 750-833 has Address 3.

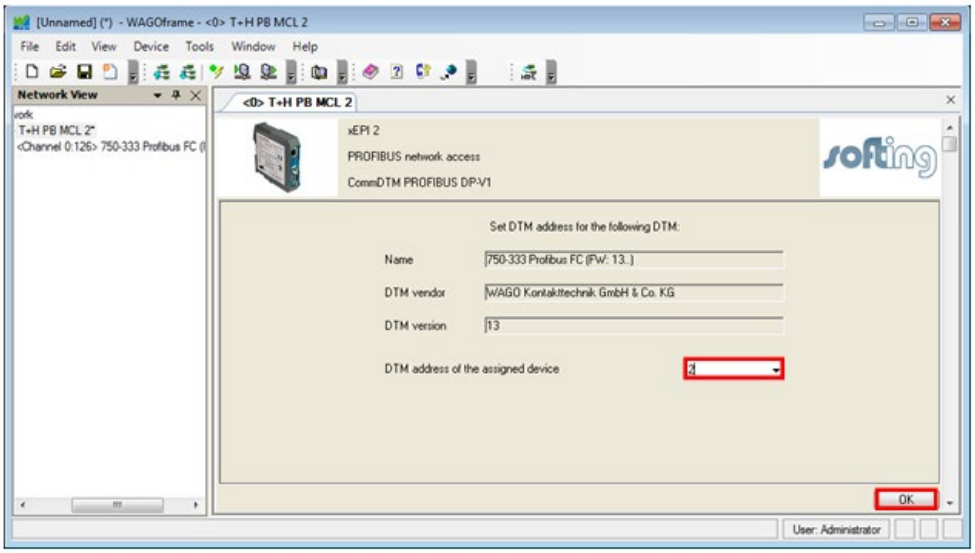


Figure 31: Address

6. **Configuring the WAGO HART/PROFIBUS Gateway (750-333)**
In the “Network View” window, mark the element **[Channel 0.2>750-333…]** and select the function **[Configuration]** from the background menu (right-click).

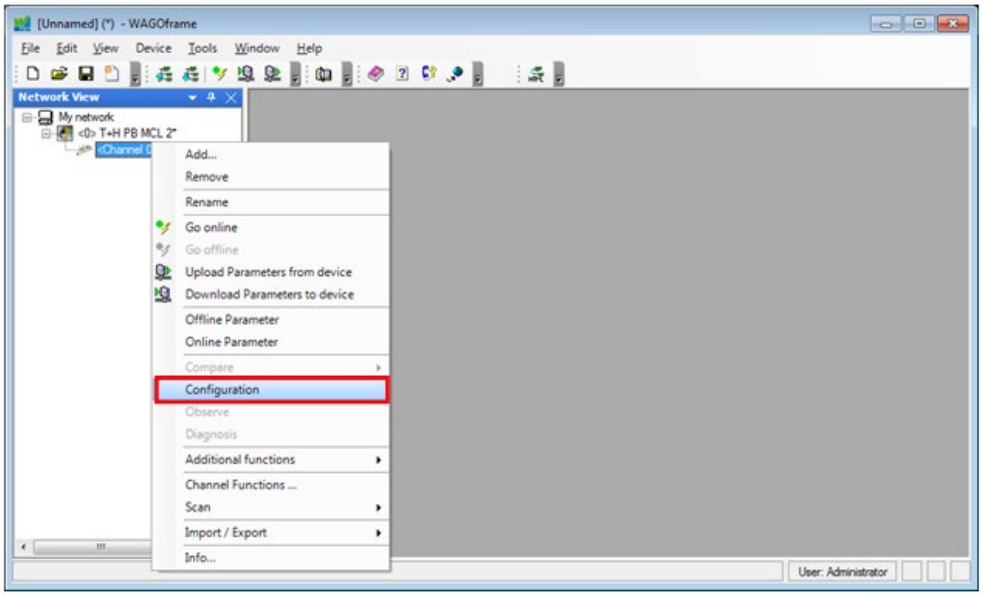


Figure 32: Configuration Function

The device configuration opens. Open the tab **[Module Configuration]**; select all modules used in the right order.

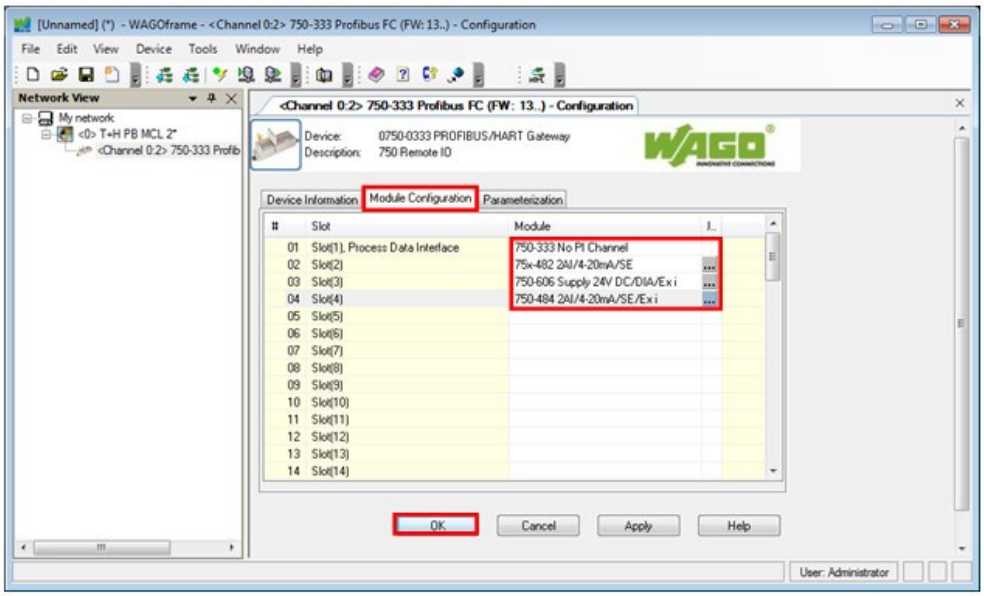


Figure 33: Module Configuration Tab

7. **Adding HART Field Device DTM**

In the “Network View” window, mark the element **[Channel 0.2>750-333…]** and select the function **[Add...]** from the background menu (right-click).
A dialog showing all available device DTMs opens.
Now select the HART device you are using.

In this example, the Cerabar PMC51 is connected (Endress+Hauser HART sensor); therefore, **[Cerabar M5x /PMx 5x/V...]** is selected.

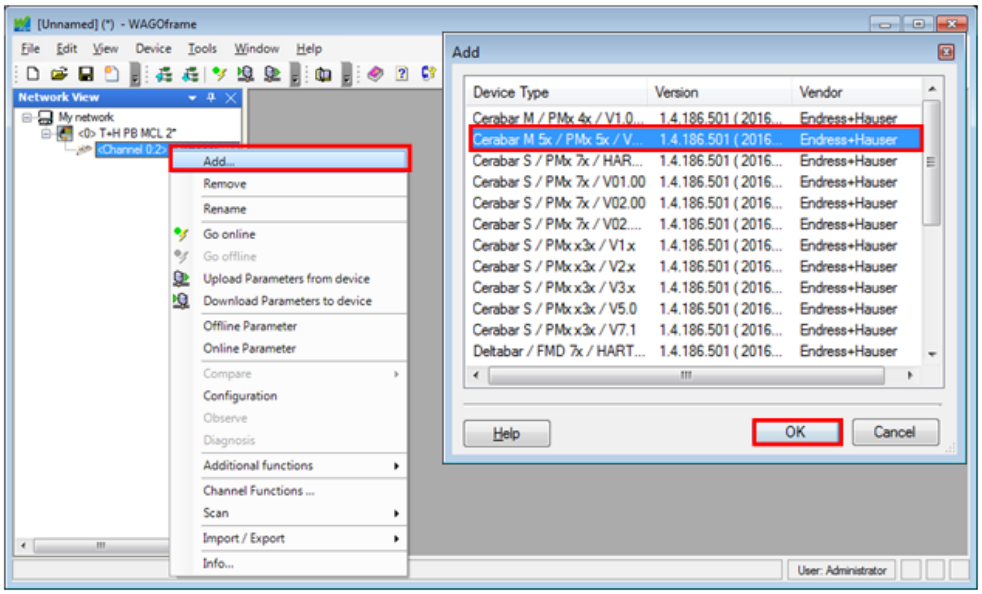


Figure 34: Add HART Field Device DTM

Next, select the channel your field device is connected to.

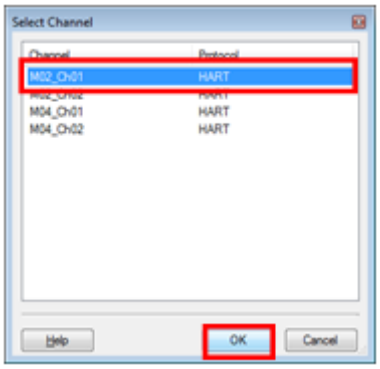


Figure 35: Select Channel

8. **Adding the WAGO HART Gateway (750-833)**
In the “Network View” window, mark the element **[+H PB MCL 2]** and select the function **[Add...]** from the background menu (right-click).
A dialog showing all available gateways opens.
Select **[750-833 PROFIBUS FC(FW: …].**

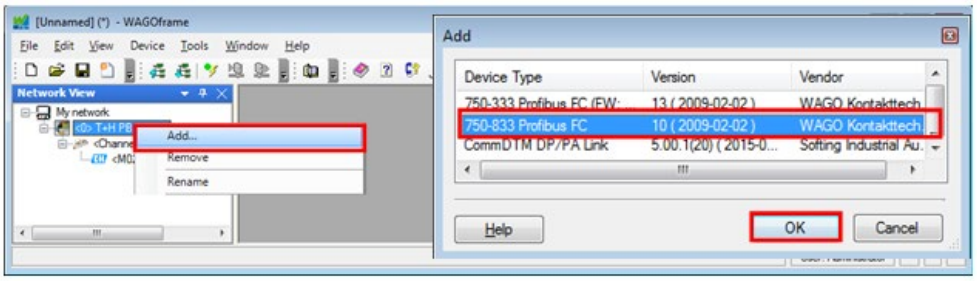


Figure 36: Add 750-833

The prompt for entering a PROFIBUS address appears. In this example, the 750-833 has **Address 3**.

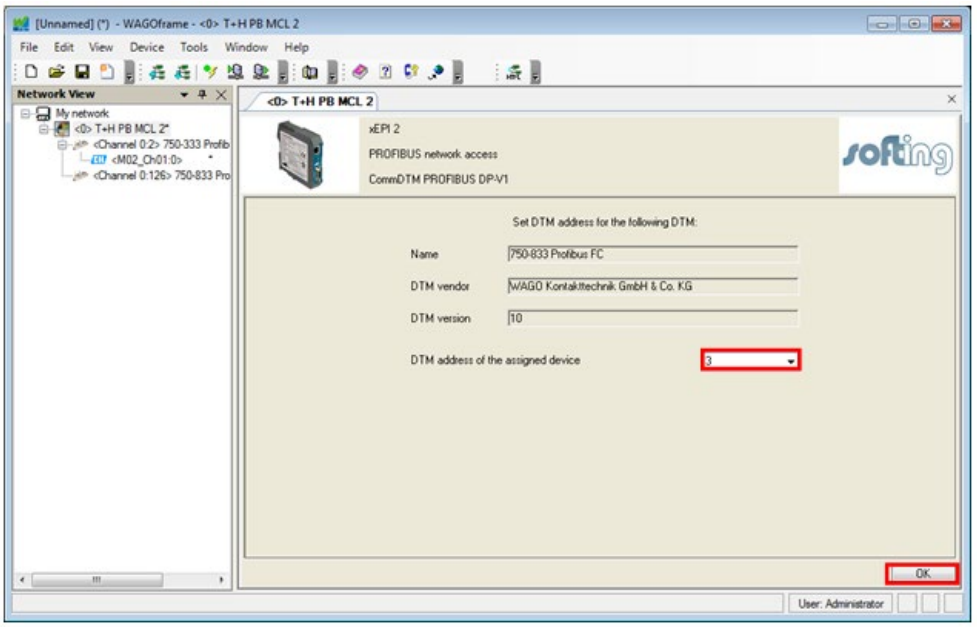


Figure 37: Address

9. **Configuring the WAGO HART/PROFIBUS Gateway (750-833)**
In the “Network View” window, mark the element **[Channel 0.3>750-833…]** and select the function **[Configuration]** from the background menu (right-click).

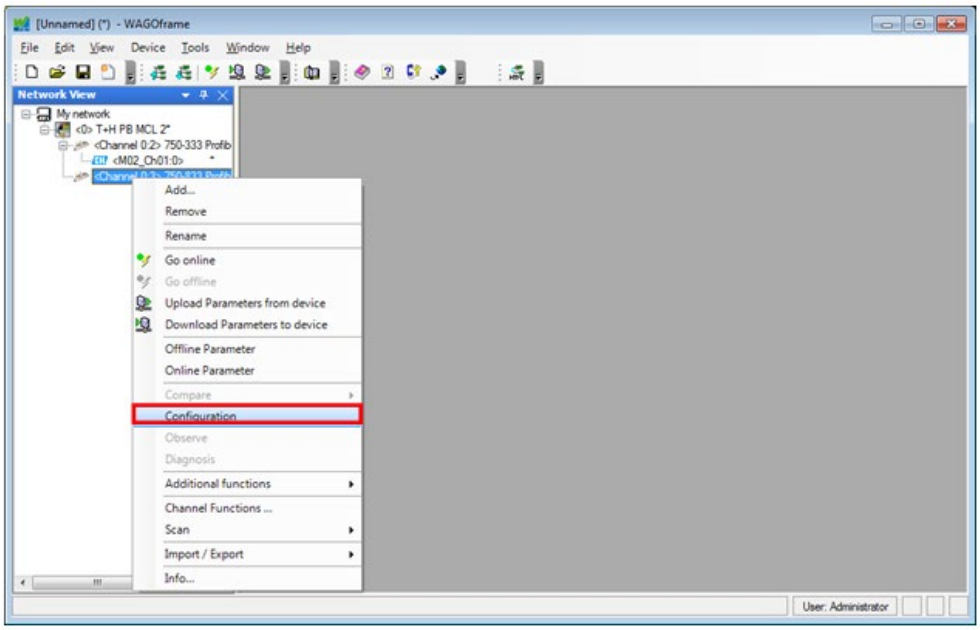


Figure 38: Configuration Function

The device configuration opens. Open the tab **[Module Configuration]**; select all modules used in the right order.

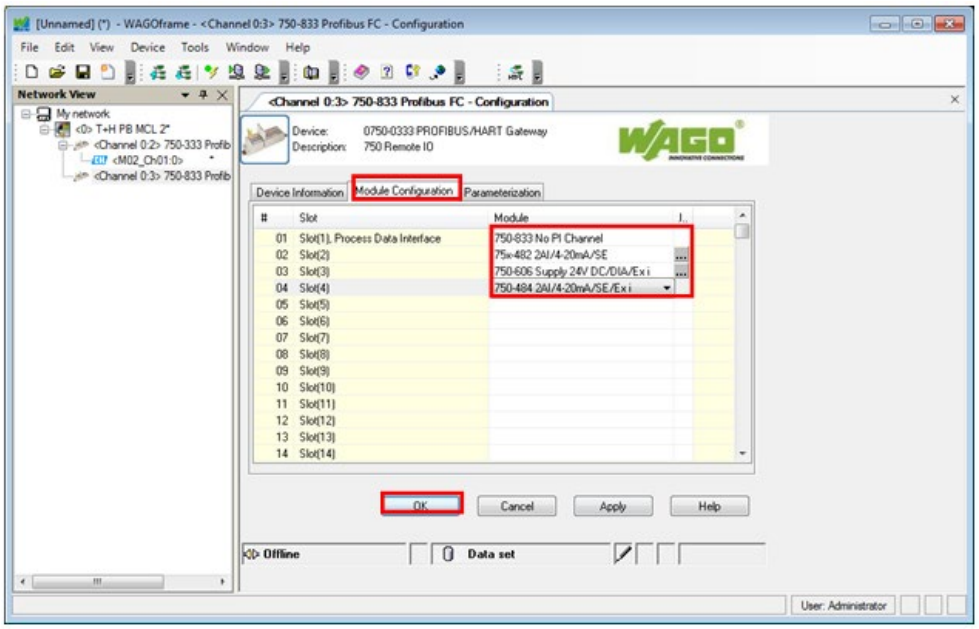


Figure 39: Module Configuration Tab

10. **Adding HART Field Device DTM**
In the “Network View” window, mark the element **[Channel 0.3>750-83 …]** and select the function **[Add…]** from the background menu (right-click).
A dialog showing all available device DTMs opens.
Now select the HART device you are using.

In this example, the Cerabar PMC51 is connected (Endress+Hauser HART sensor); therefore, **[Cerabar M5x /PMx 5x/V...]** is selected.

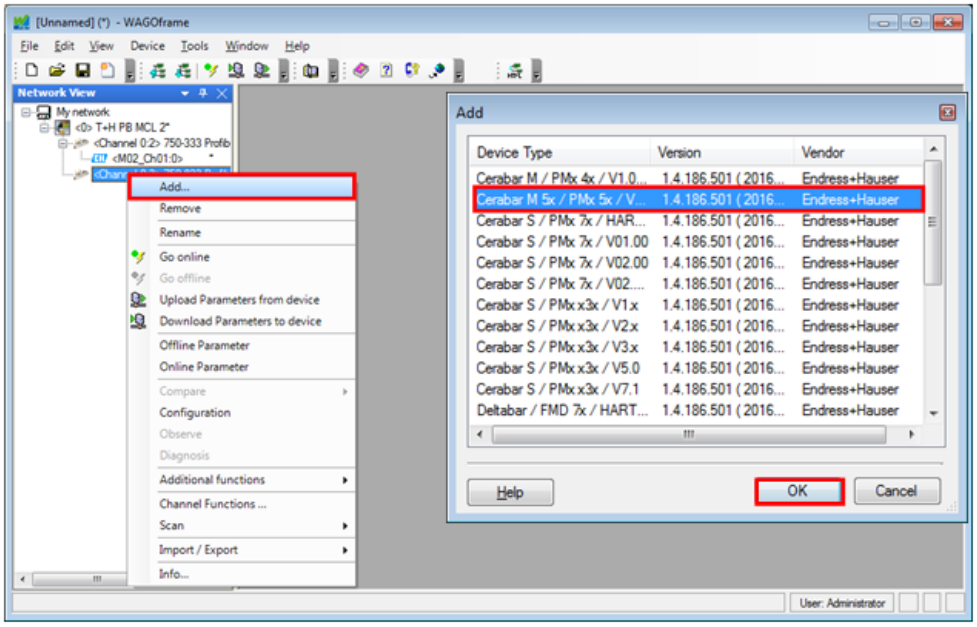


Figure 40: Add HART Field Device DTM

Next, select the channel your field device is connected to.

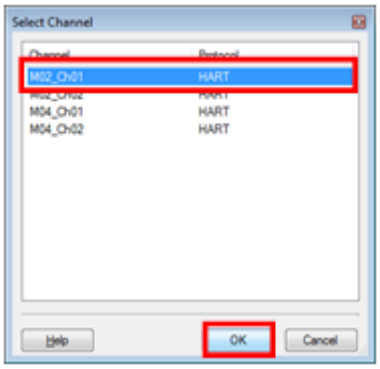


Figure 41: Select Channel

11. **Establish Connection**

In the “Network View” window, mark the element **[<M02_Ch01:0>]** and select the function **[Connect]** from the background menu (right-click).

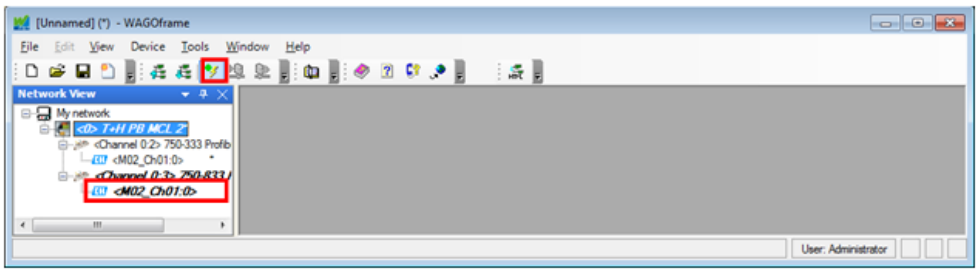


Figure 42: Establish Connection

This completes the setup; now the different functions “Observe, Configuration, Diagnostics” and others can be used at any time.

12. **“Observing” HART Sensor Measurement Values**
In the “Network View” window, mark the element [<M02_Ch01:0>] and select the function [Observe] from the background menu (right-click).

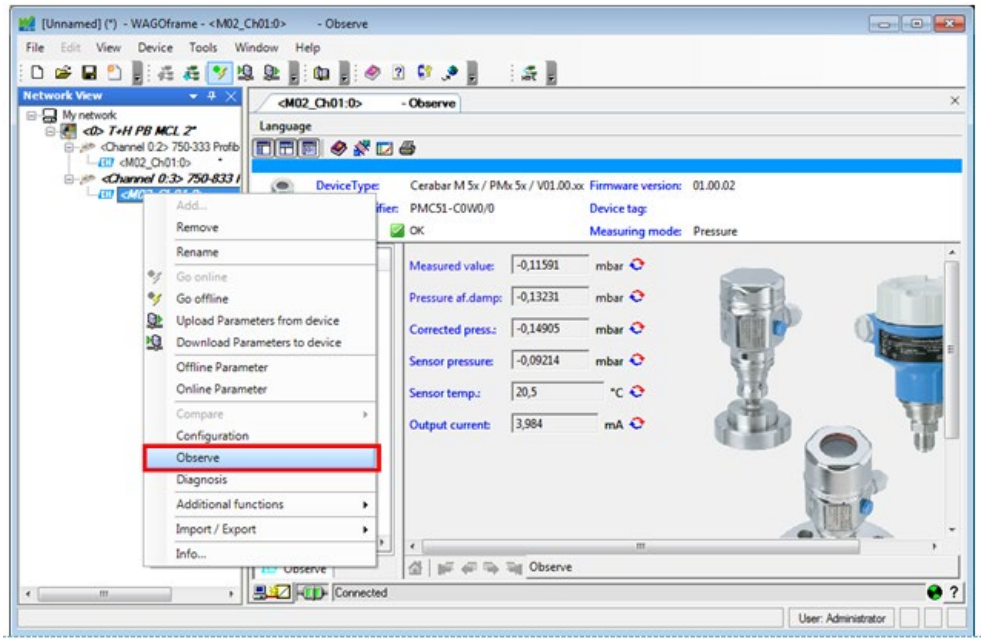


Figure 43: Observe Function

5.2 Asset Management with PACTware

PACTware is an FDT/DTM frame application for configuration, diagnosis and updating of FDT-compliant field devices.

FDT/DTM is a manufacturer-independent concept for setting of parameters for field devices from different manufacturers using only a single program.

The phrase “Field Device Tool” (FDT) not only represents a concrete program, but also defines the interfaces that a program must deal with in order to cooperate with DTMs from different manufacturers.

A “Device Type Manager” (DTM) groups all the setting options for a field device (including graphic interfaces) into a single program that is executed in an FDT/DTM frame application.

In this chapter, you will see which settings in PACTware are necessary for the HART Tool routing via PROFIBUS with the 750-333 or the 750-833.

1. **Starting PACTware**
   Start the “PACTware” program using the icon on the desktop, or via “Start → Programs → PACTware 5.0 → PACTware.”

2. **Updating Device Catalog**
   Due to the installation of the WAGO communication DTMs and the E-H device DTM library as part of the preparations, an update of the device catalog is necessary.

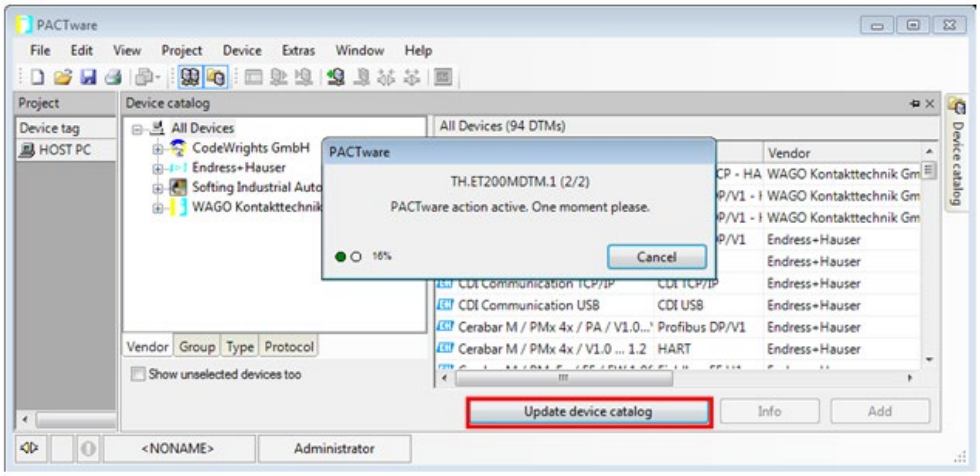


Figure 44: Update Device Catalog

3. Adding WAGO Modbus TCP Communication DTM

In the" Project" window, mark the element **[HOST PC]** and select the function **[Add device]** from the background menu (right-click).

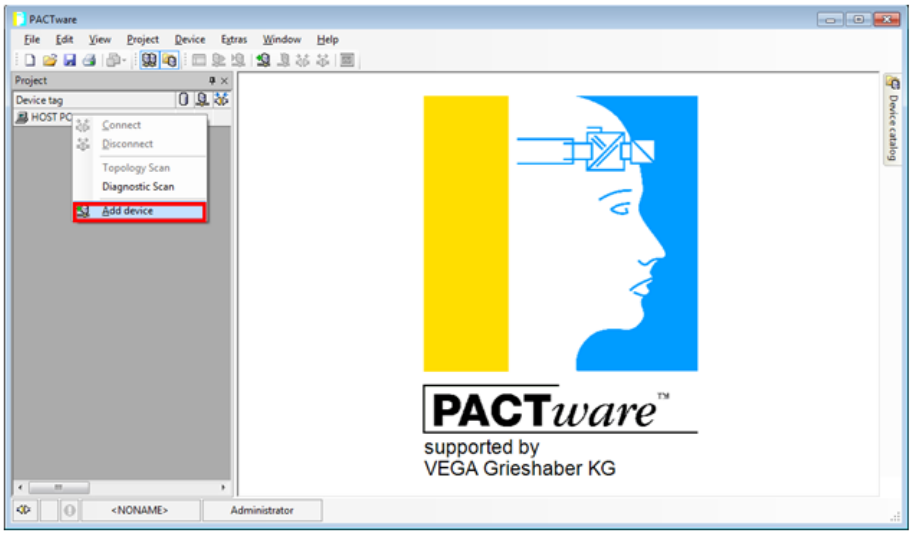


Figure 45: Add Device

A dialog showing all available communication drivers opens.
Select **[CommDTM PROFIBUS DP-V1].**

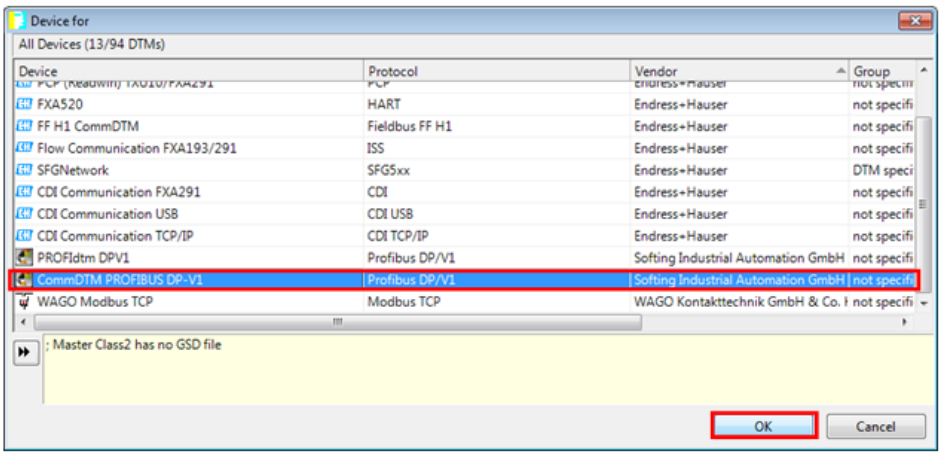


Figure 46: Selection

4. **Configuring T+H PB MCL 2**

In the “Project” window, mark the element **[T+H PB MCL 2]** and select the function **[Parameter]** from the background menu (right-click).

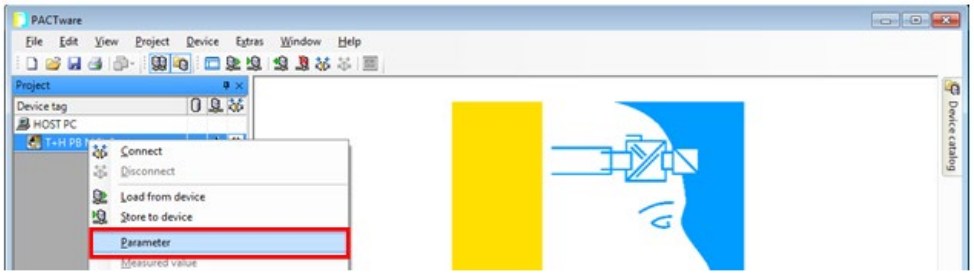


Figure 47: Parameter Function

Search for the TH LINK you are using and change the profile to **[User defined].**

Compare all bus parameters with the PROFIBUS Master and adapt as necessary.

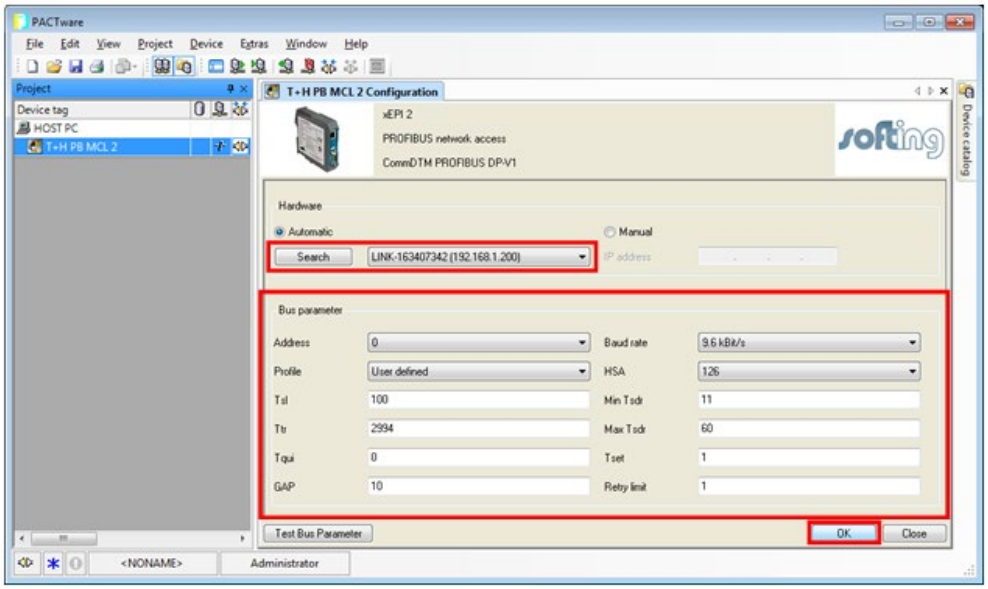


Figure 48: Compare Bus Parameters

Information

Note:
The bus parameters for the master are in the CODESYS project controller configuration.

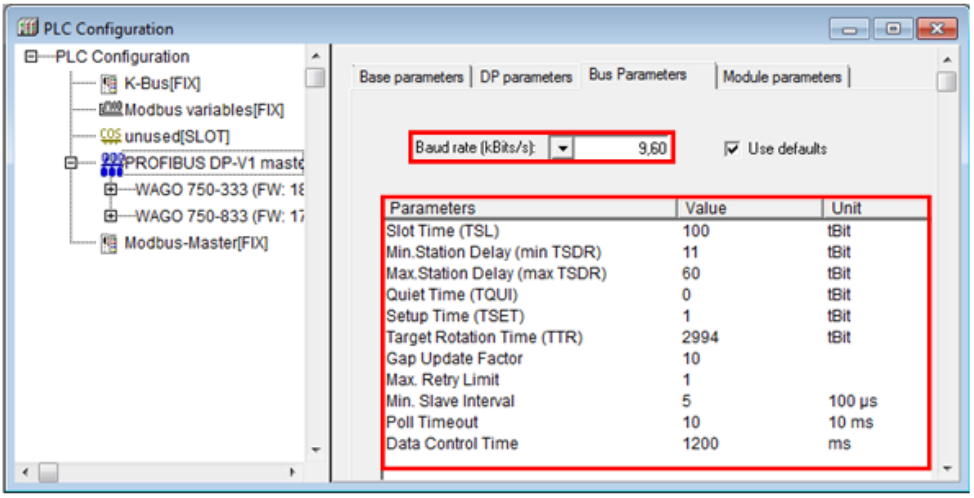


Figure 49: Bus Parameters

5. **Adding the WAGO HART Gateway (750-333)**
In the “Project” window, mark the element **[T+H PB MCL 2]** and select the function **[Add device]** from the background menu (right-click).

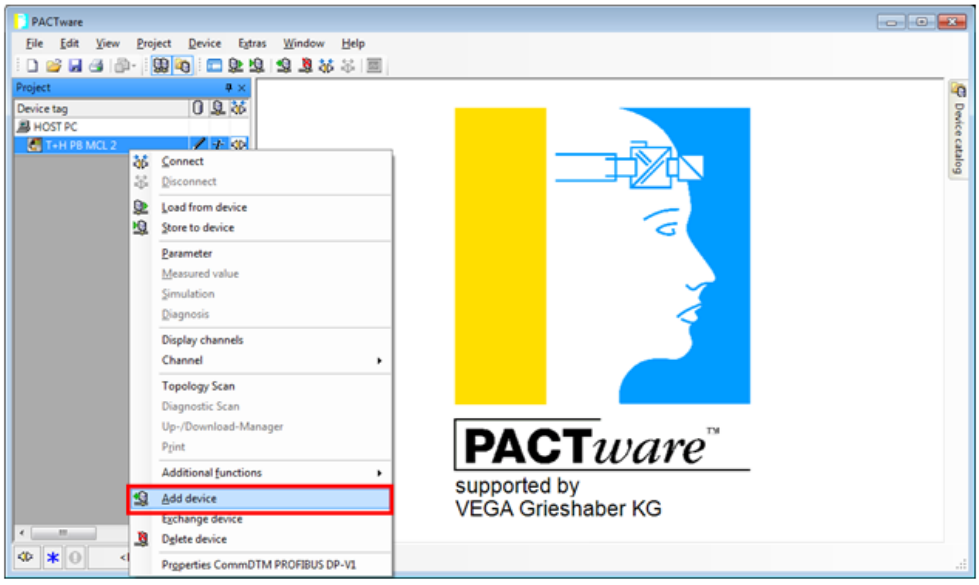


Figure 50: Add Device

A dialog showing all available gateways opens. In this example, first the 750-333 is configured and then the 750-833.
Select **[750-333 Profibus FC(FW: …].**

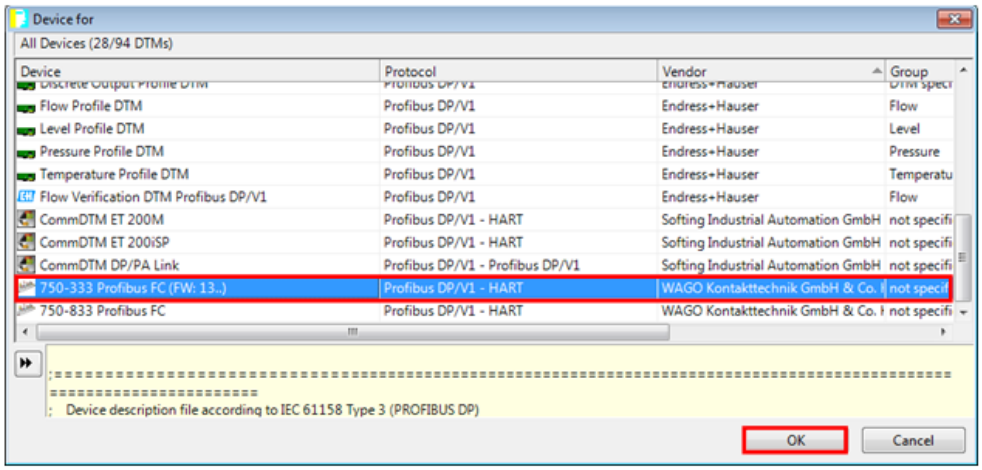


Figure 51: Select 750-333

The prompt for entering a PROFIBUS address appears. In this example, the 750-333 has **Address 2** and the 750-833 has Address 3.

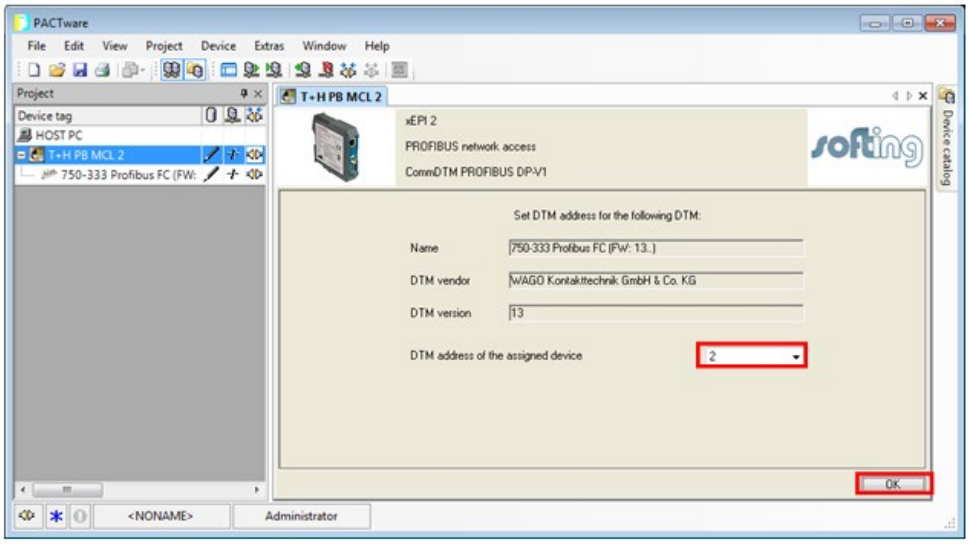


Figure 52: Address

6. **Configuring the WAGO HART/PROFIBUS Gateway (750-333)**
In the “Project” window, mark the element **[750-333 …]** and select the function **[Parameter]** → **[Configuration]** from the background menu (right-click).

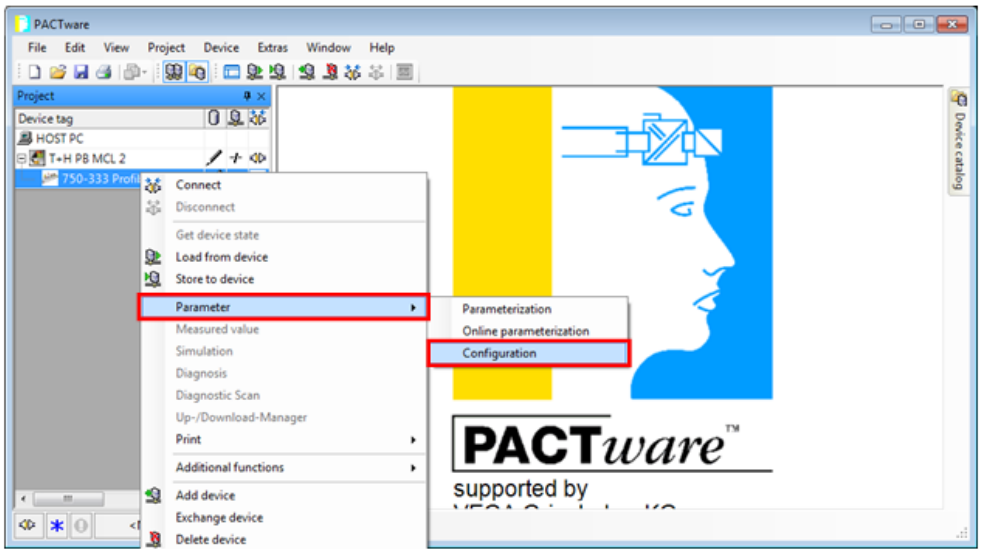


Figure 53: Configuration Function

The device configuration opens. Open the tab **[Module Configuration];** select all modules used in the right order.

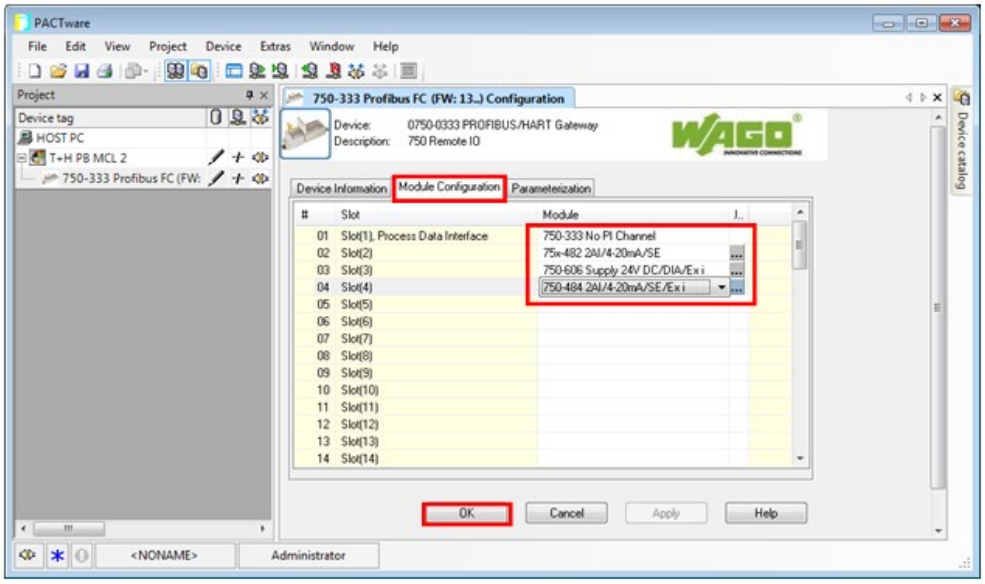


Figure 54: Module Configuration

7. **Adding HART Field Device DTM**

In the “Project” window, mark the element **[0.2> 750-333 …]** and select the function **[Add device]** from the background menu (right-click).

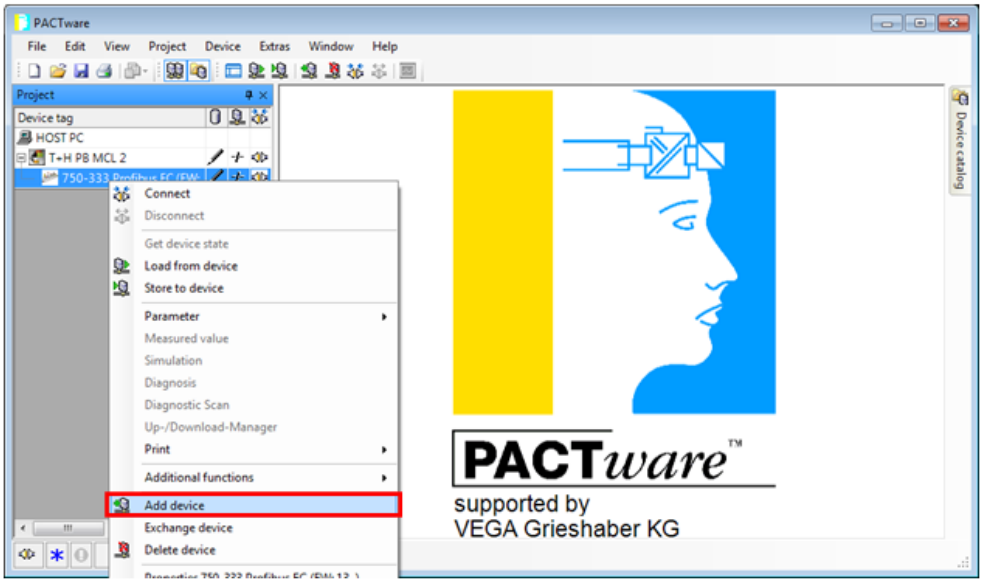
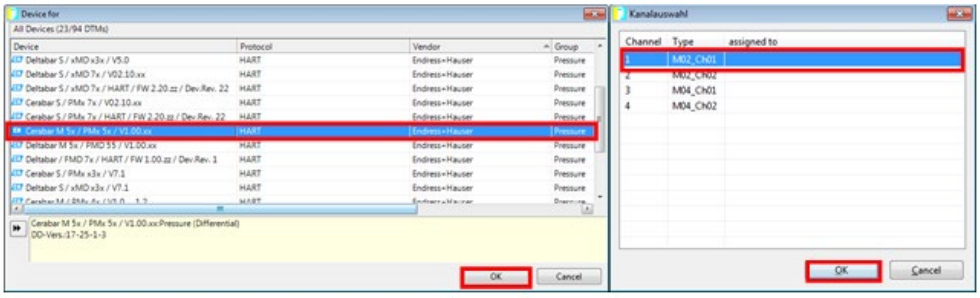


Figure 55: Add Device

A dialog showing all available device DTMs opens.
Now select the HART device you are using.
In this example, the Cerabar PMC51 is connected (Endress+Hauser HART sensor); therefore, **[Cerabar M5x /PMx 5x/V...]** is selected.



Next, select the channel your field device is connected to.

8. **Adding the WAGO HART Gateway (750-833)**
In the “Project” window, mark the element **[T+H PB MCL 2]** and select the function **[Add device]** from the background menu (right-click).

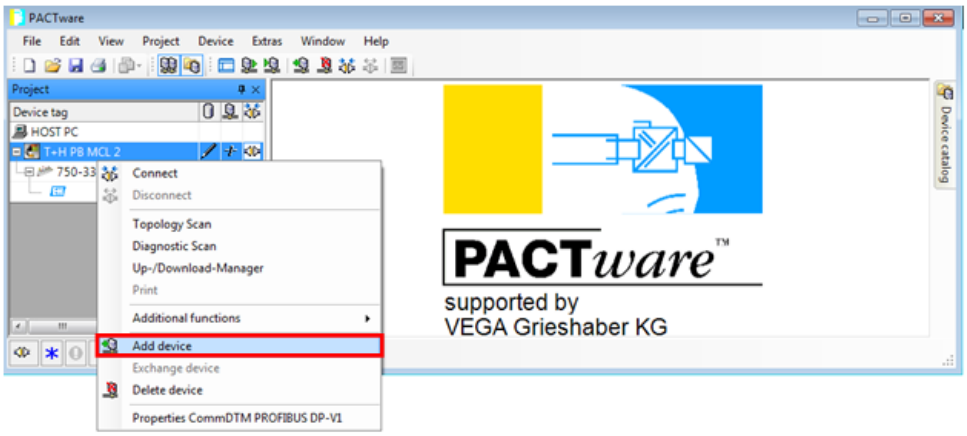


Figure 56: Add Device

A dialog showing all available gateways opens.
Select **[750-833 PROFIBUS FC].**

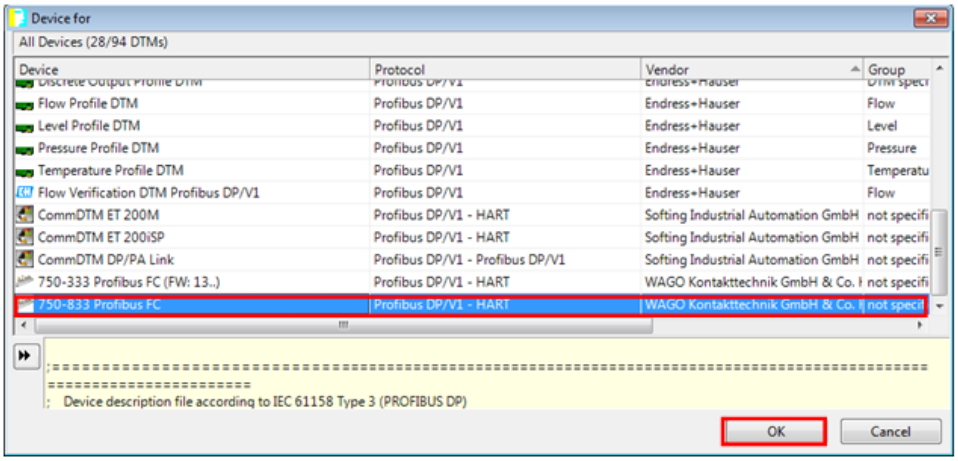


Figure 57: Select 750-833

The prompt for entering a PROFIBUS address appears. In this example, the 750-833 has **Address 3**.

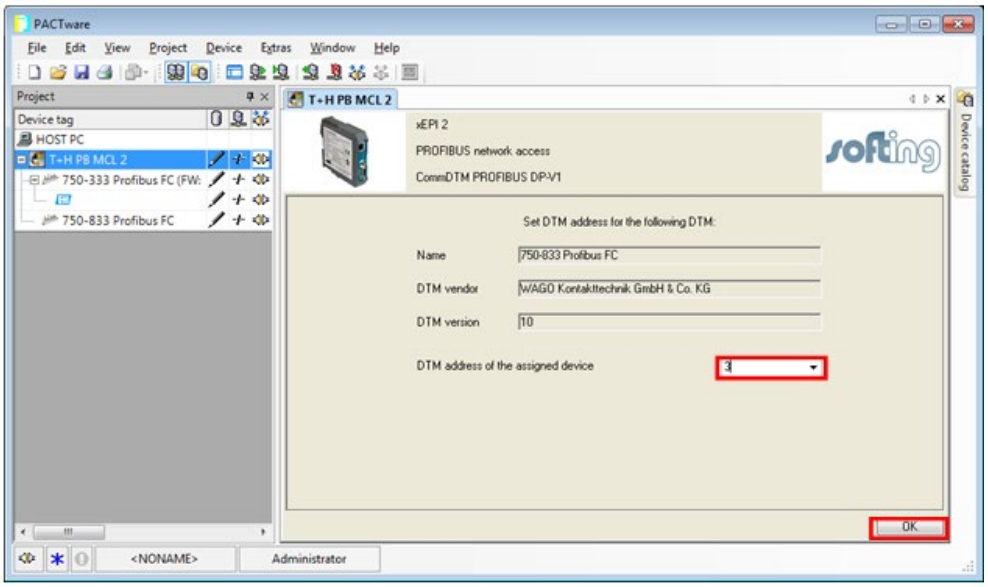


Figure 58: Address

9. **Configuring the WAGO HART/PROFIBUS Gateway (750-833)**
In the “Project” window, mark the element **[750-833 …]** and select the function **[Parameter]** →**[Configuration]** from the background menu (right-click).

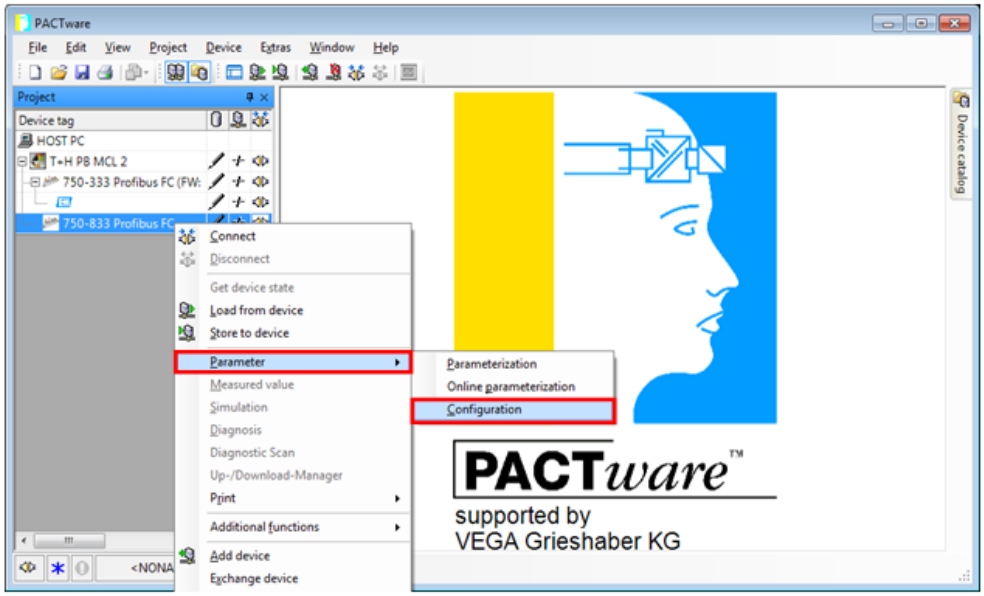


Figure 59: Configuration

The device configuration opens. Open the tab **[Module Configuration]**; select all modules used in the right order.

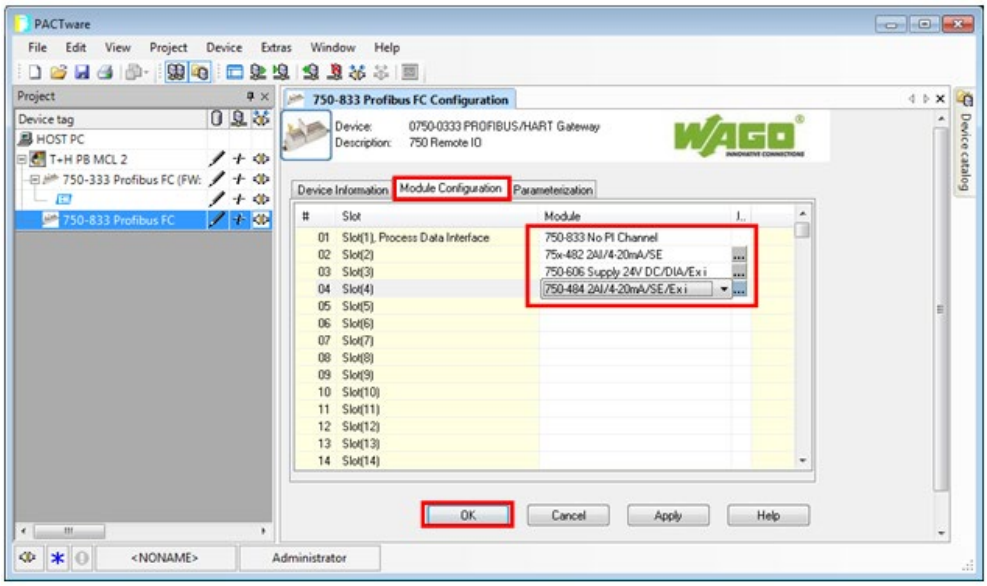


Figure 60: Module Configuration

10. **Adding HART Field Device DTM**
In the “Network View” window, mark the element **[750-833 …]** and select the function **[Add device]** from the background menu (right-click).

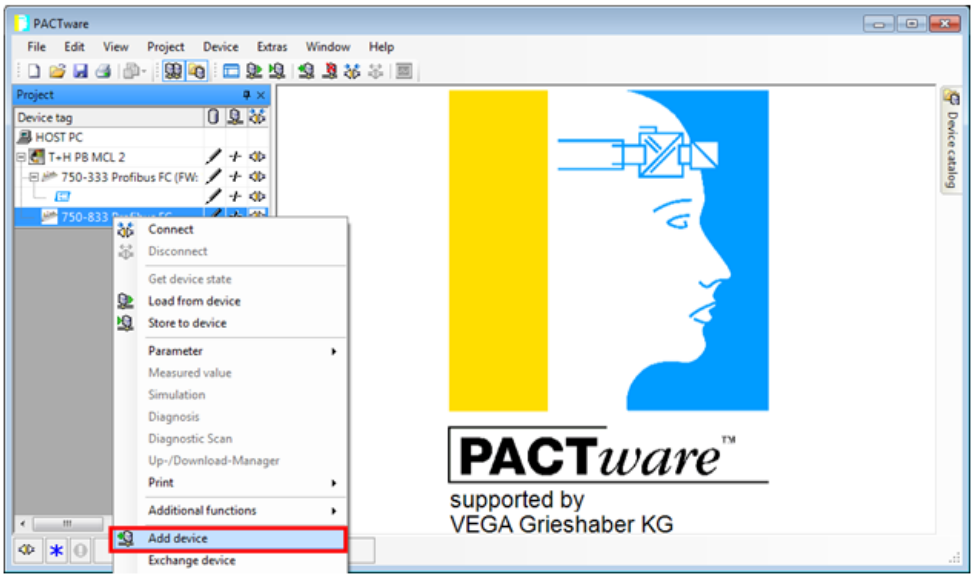


Figure 61: Add Device

A dialog showing all available device DTMs opens.
Now select the HART device you are using.

In this example, the Cerabar PMC51 is connected (Endress+Hauser HART sensor); therefore, **[Cerabar M5x /PMx 5x/V...]** is selected.

Next, select the channel your field device is connected to.

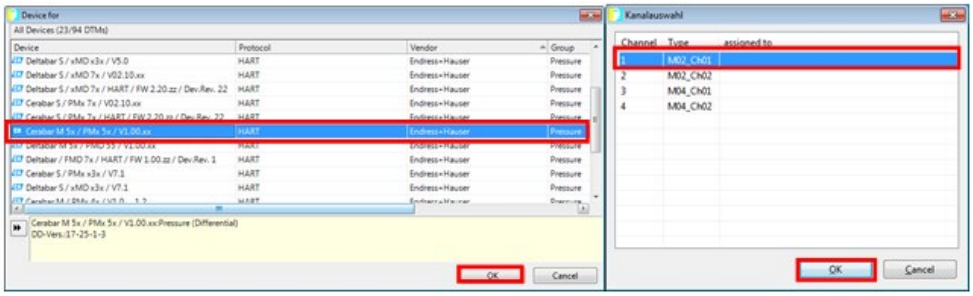


Figure 62: Select Channel

11. **Establish Connection**
In the “Project” window, mark the sensor under the **gateway [750-833 PROFIBUS FC]** and select the function **[Connect]** from the background menu (right-click).

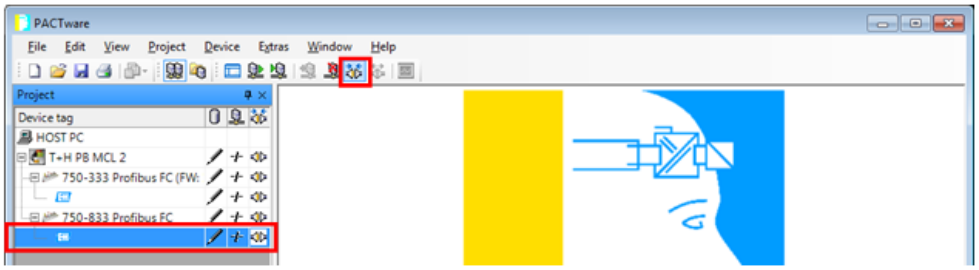


Figure 63: Select Function

This completes the setup; now the different functions “Observe, Configuration, Diagnostics” and others can be used at any time.

12. **“Observing” HART Sensor Measurement Values**
In the “Project” window, mark the sensor under the gateway **[750-833 PROFIBUS FC**] and select the function **[Measured value]** from the background menu (right-click).

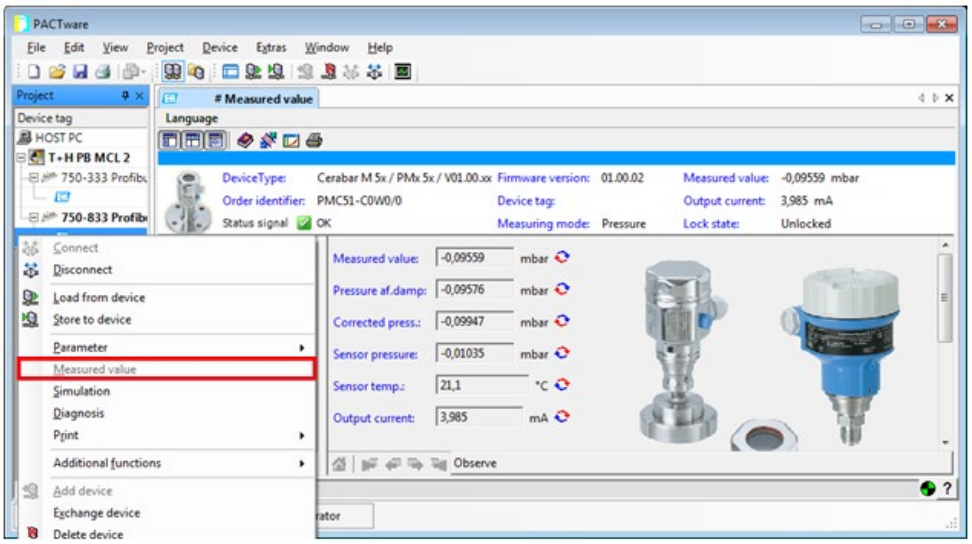


Figure 64: Measured Value Function

5.3 Asset Management with FieldCare

FieldCare is an FDT/DTM frame application for configuration, diagnosis and updating of FDT-compliant field devices.

FDT/DTM is a manufacturer-independent concept for setting of parameters for field devices from different manufacturers using only a single program.

The phrase “Field Device Tool” (FDT) not only represents a concrete program, but also defines the interfaces that a program must deal with in order to cooperate with DTMs from different manufacturers.

A “Device Type Manager” (DTM) groups all the setting options for a field device (including graphic interfaces) into a single program that is executed in an FDT/DTM frame application.

In this chapter, you will see which settings in FieldCare are necessary for the HART Tool routing via PROFIBUS with the 750-333 or the 750-833.

1. **Starting FieldCare**
   Start the “FieldCare” program using the icon on the desktop, or via “Start ☐ Programs → Endress+Hauser → FieldCare SFE500 → FieldCare SFE500.” After the start, you can select between different start options. Select **[Create Project].**

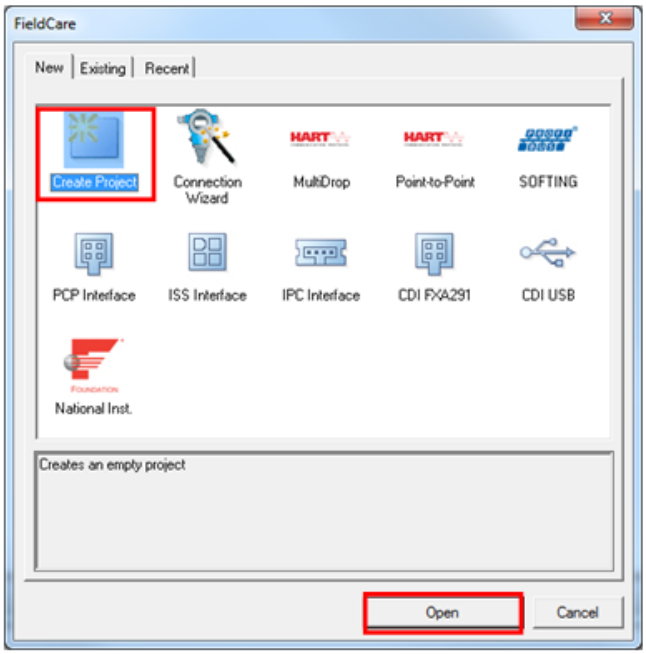


Figure 65: Create Project

2. **Updating Device Catalog**
   Due to the installation of the WAGO communication DTMs and the E-H device DTM library as part of the preparations, an update of the device catalog is necessary.

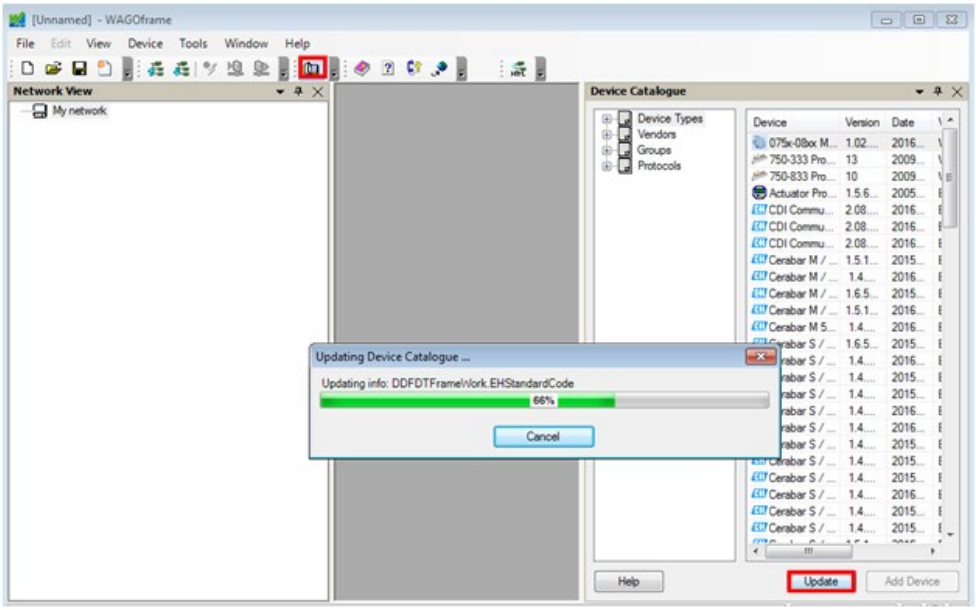


Figure 66: Update

3. **Adding the Softing TCP Communication DTM**
In the “Network” window, mark the element [Host PC] and select the function **[Add Device...]** from the background menu (right-click).
A dialog showing all available communication drivers opens. Select **[CommDTM PROFIBUS DP-V1].**

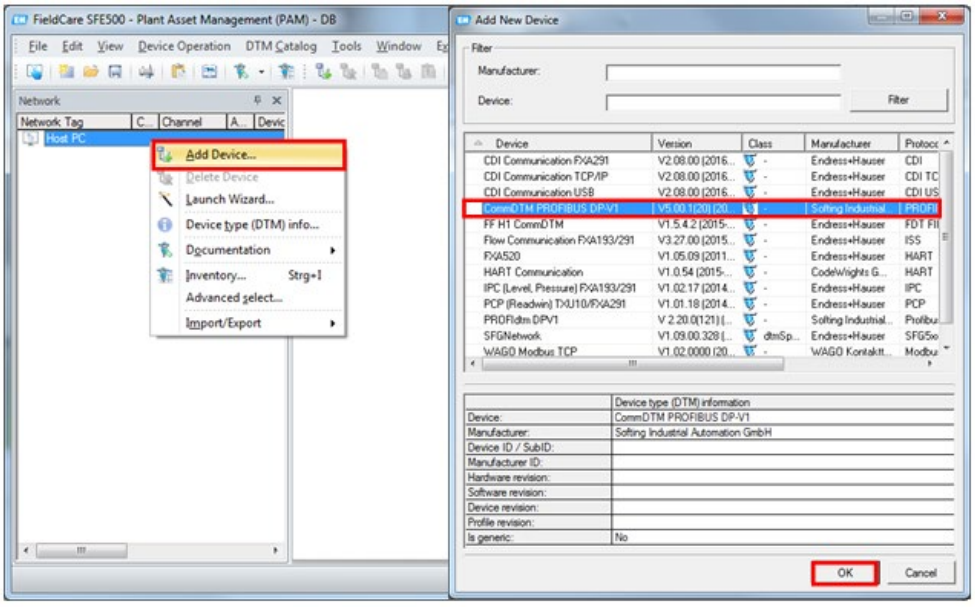


Figure 67: Add Device

4. **Configuring T+H PB MCL 2**
In the “Network” window, mark the element **[CommDTM PROFIBUS …].**

Select the function **[Device Functions]** →**[Configuration]** from the background menu (right-click).

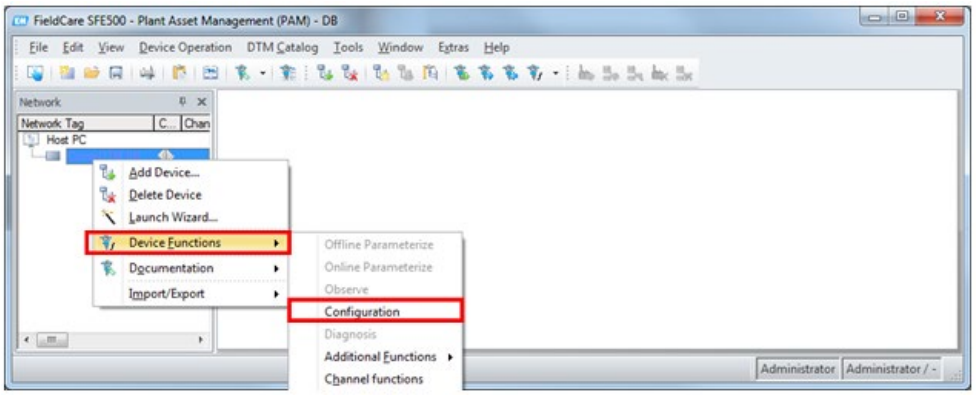


Figure 68: Configuration Function

Search for the TH LINK you are using and change the profile to **[User defined].** Compare all bus parameters with the PROFIBUS Master and adapt as necessary.

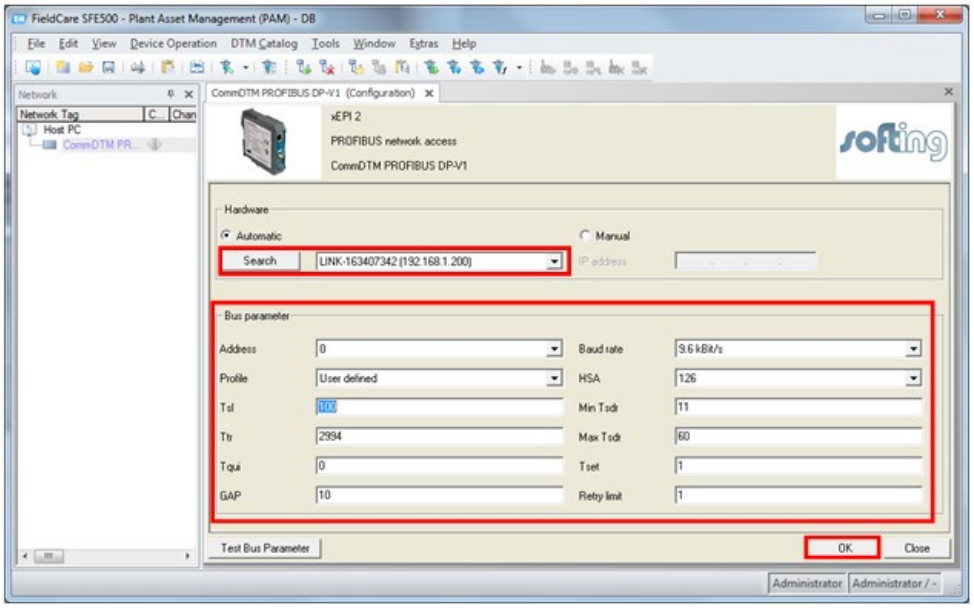


Figure 69: Compare Bus Parameters

Information

Note:
The bus parameters for the master are in the CODESYS project controller configuration.

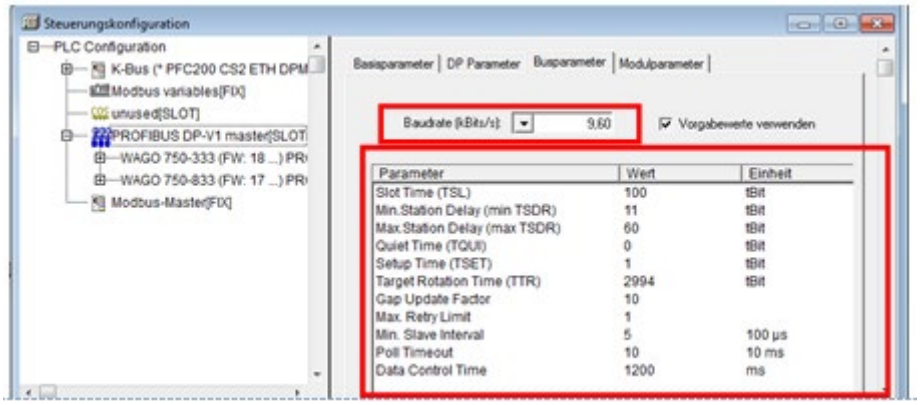


Figure 70: Compare Bus Parameters

5. **Adding the WAGO HART Gateway (750-333)**
In the “Network” window, mark the element **[CommDTM PROFIBUS …].** and select the function **[Add Device...]** from the background menu (right-click).

A dialog showing all available gateways opens. In this example, first the 750-333 is configured and then the 750-833.
Select **[750-333 PROFIBUS FC(FW: …].**

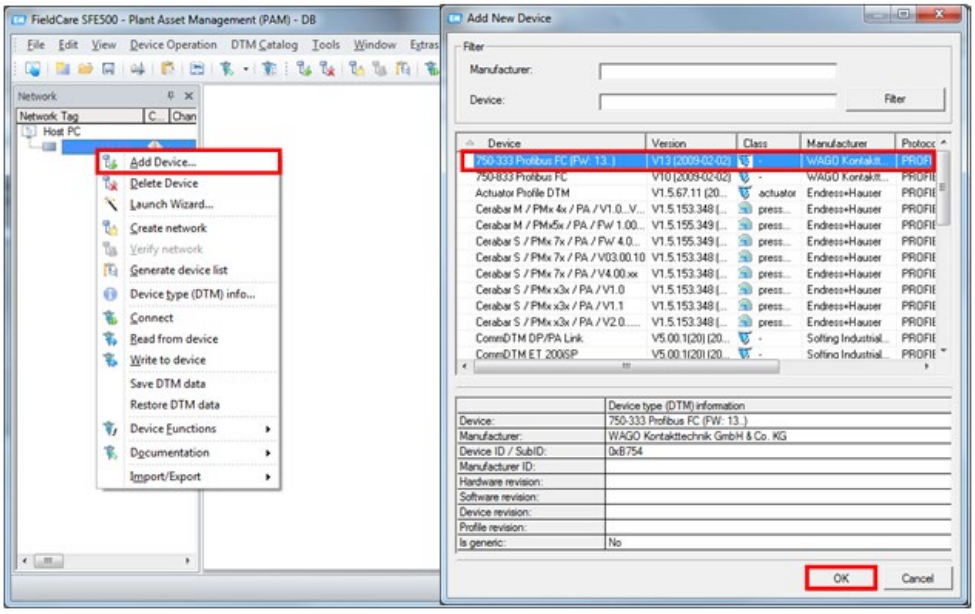


Figure 71: Add 750-333

The prompt for entering a PROFIBUS address appears. In this example, the 750-333 has **Address 2** and the 750-833 has Address 3.

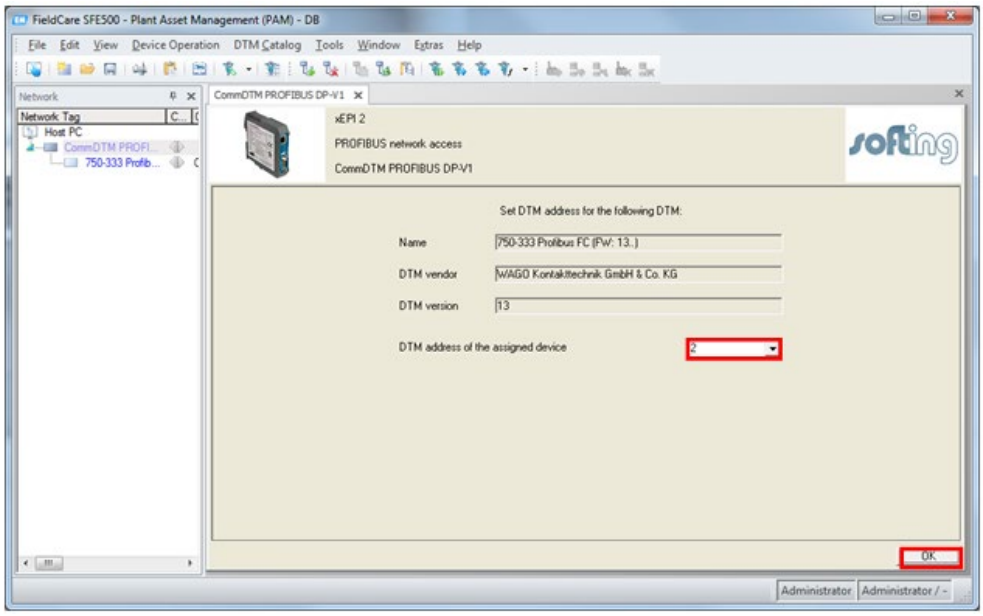


Figure 72: Address

6. **Configuring the WAGO HART/PROFIBUS Gateway (750-333)**
In the “Network” window, mark the element **[750-333 PROFIBUS]** and select the **function [Device Functions]** → **[Configuration]** from the background menu (right-click).

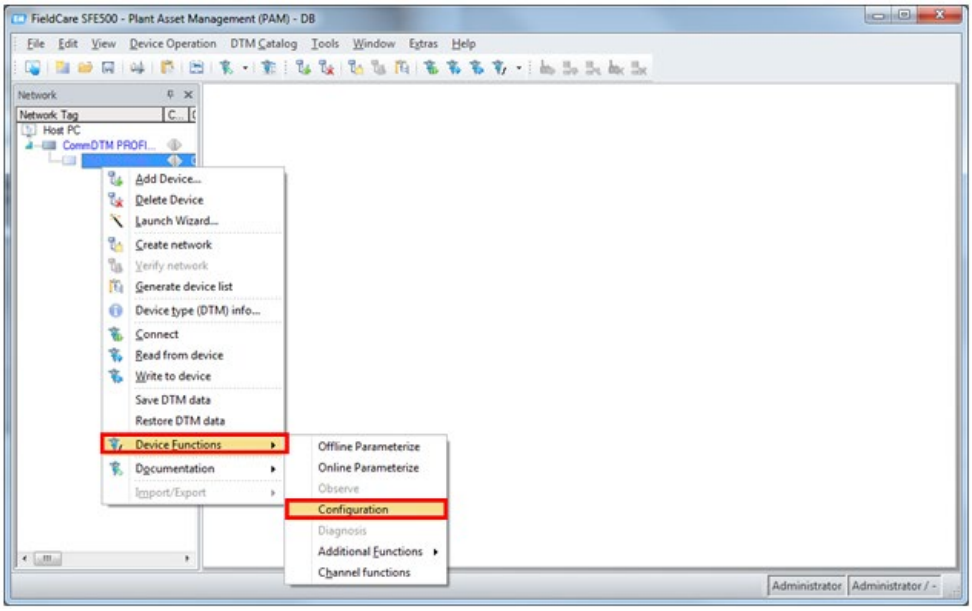


Figure 73: Configuration Function

The device configuration opens. Open the tab **[Module Configuration];** select all modules used in the right order.

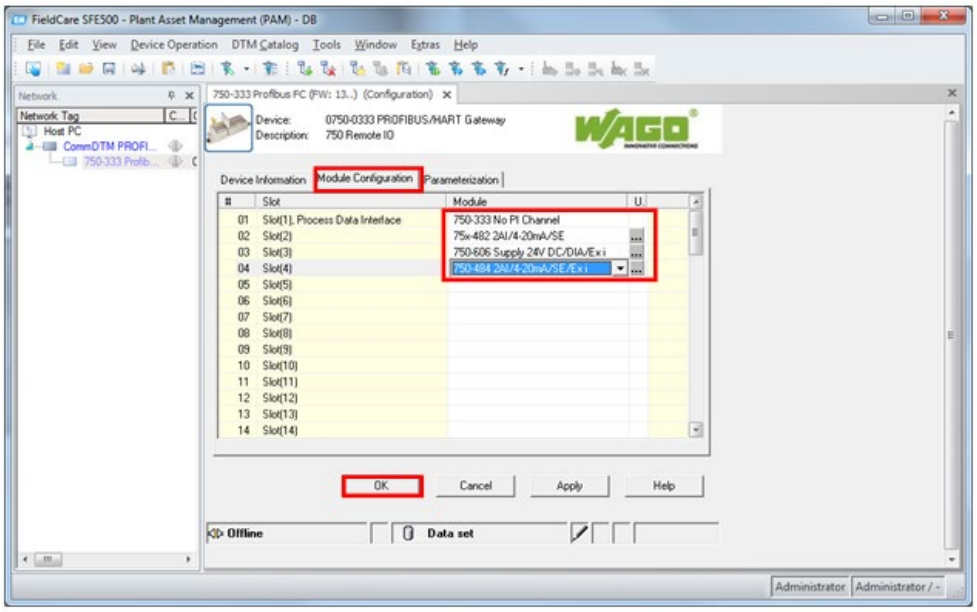


Figure 74: Module Configuration Tab

7. **Adding HART Field Device DTM**

In the “Network” window, mark the element **[750-333 PROFIBUS** …] and select the function **[Add Device...]** from the background menu (right-click).

A dialog showing all available device DTMs opens.
Now select the HART device you are using.
In this example, the Cerabar PMC51 is connected (Endress+Hauser HART sensor); therefore, **[Cerabar M5x /PMx 5x/V...]** is selected.

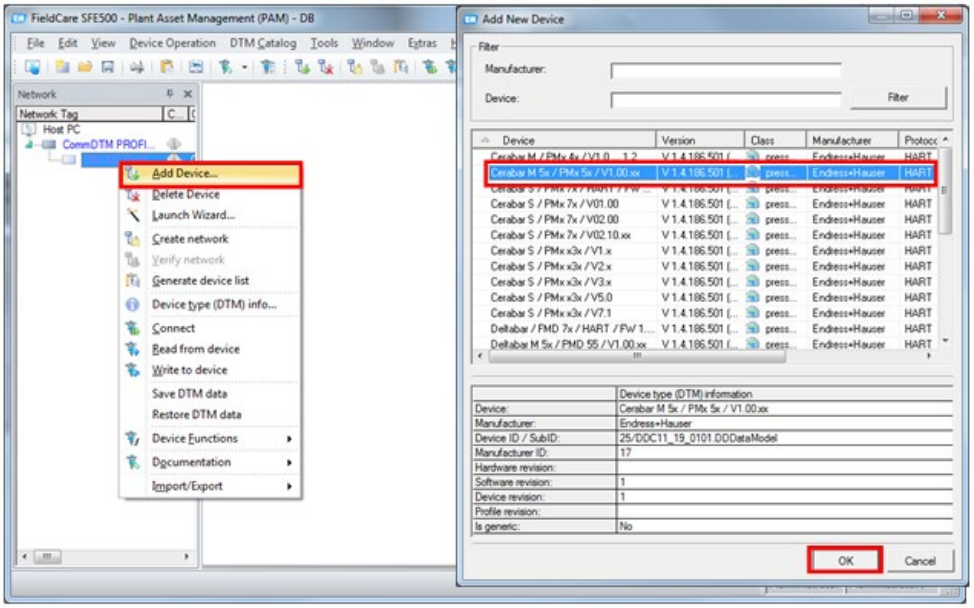


Figure 75: Add Device DTM

Next, select the channel your field device is connected to.

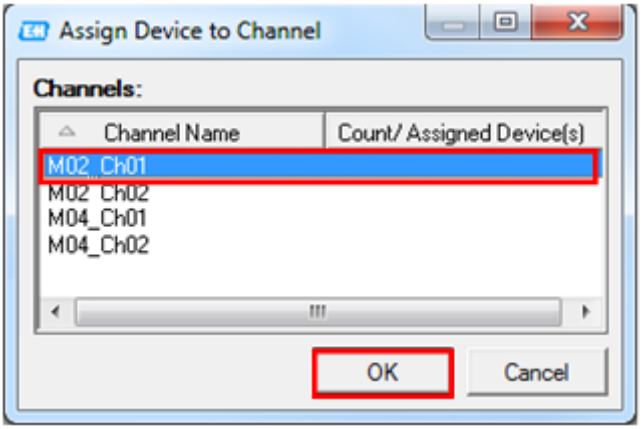


Figure 76: Select Channel

8. **Adding the WAGO HART Gateway (750-833)**
In the “Network” window, mark the element **[CommDTM PROFIBUS …]** and select the function **[Add Device...]** from the background menu (right-click).
A dialog showing all available gateways opens.
Select **[750-833 PROFIBUS FC(FW: …]**.

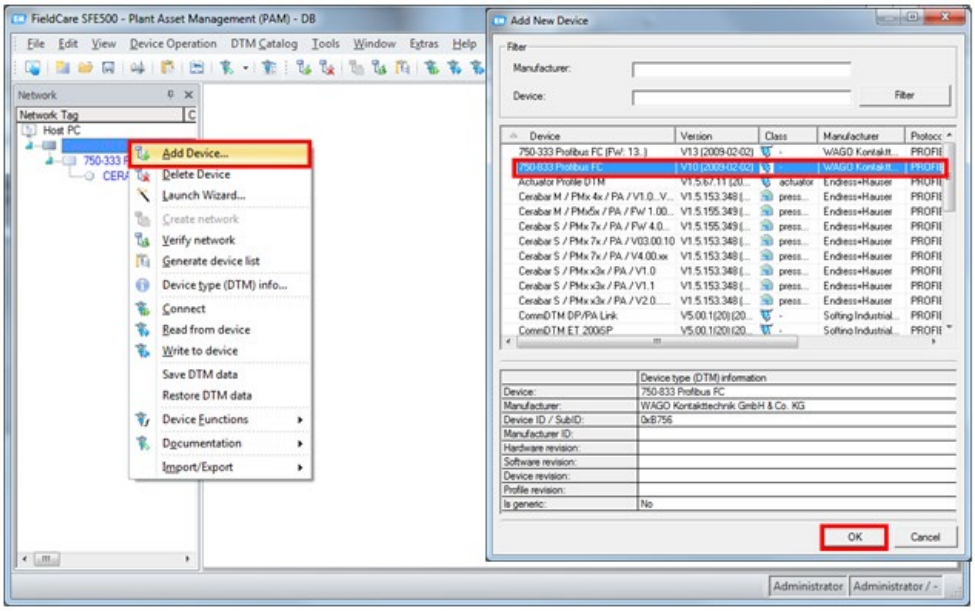


Figure 77: Add 750-833

The prompt for entering a PROFIBUS address appears. In this example, the 750-833 has **Address 3**.

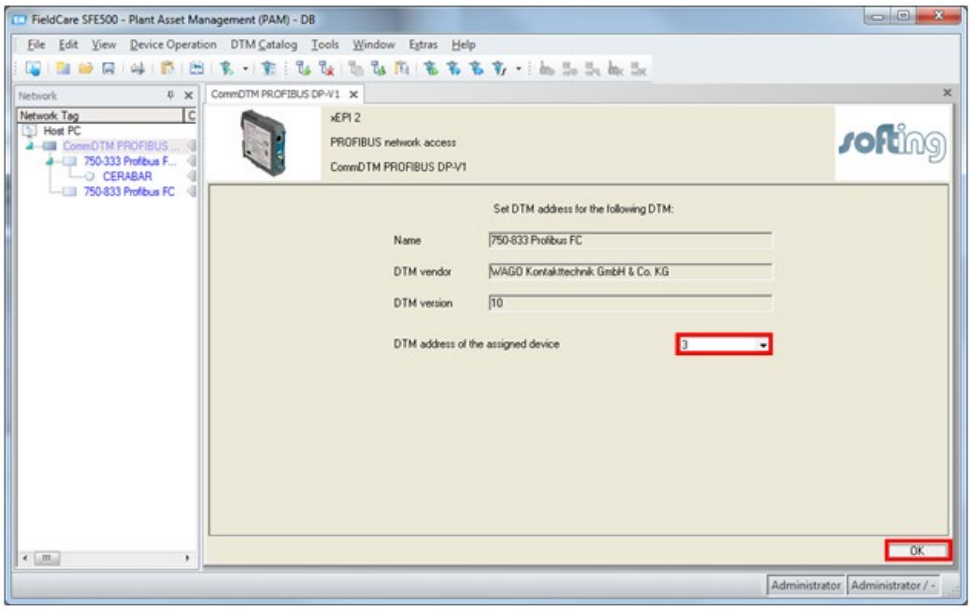


Figure 78: Address

9. **Configuring the WAGO HART/PROFIBUS Gateway (750-833)**
In the “Network” window, mark the element **[750-833 …]** and select the function **[Device Functions]** → **[Configuration]** from the background menu (right-click).

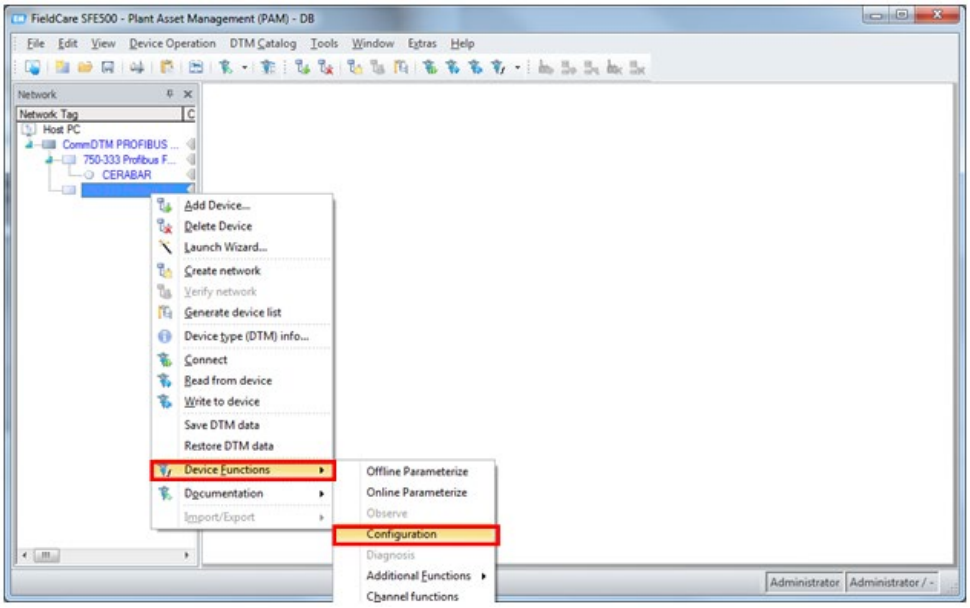


Figure 79: Configuration Function

The device configuration opens. Open the tab **[Module Configuration]**; select all modules used in the right order.

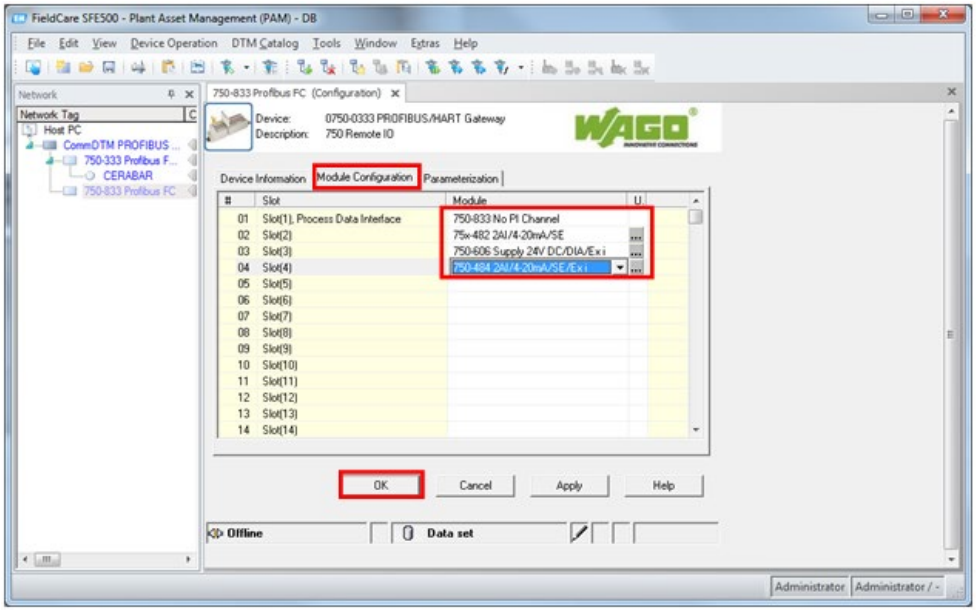


Figure 80: Module Configuration Tab

10. **Adding HART Field Device DTM**

In the “Network” window, mark the element **[750-833 PROFIBUS** …] and select the function **[Add Device...]** from the background menu (right-click).

A dialog showing all available device DTMs opens.
Now select the HART device you are using.
In this example, the Cerabar PMC51 is connected (Endress+Hauser HART sensor); therefore, **[Cerabar M5x /PMx 5x/V...]** is selected.

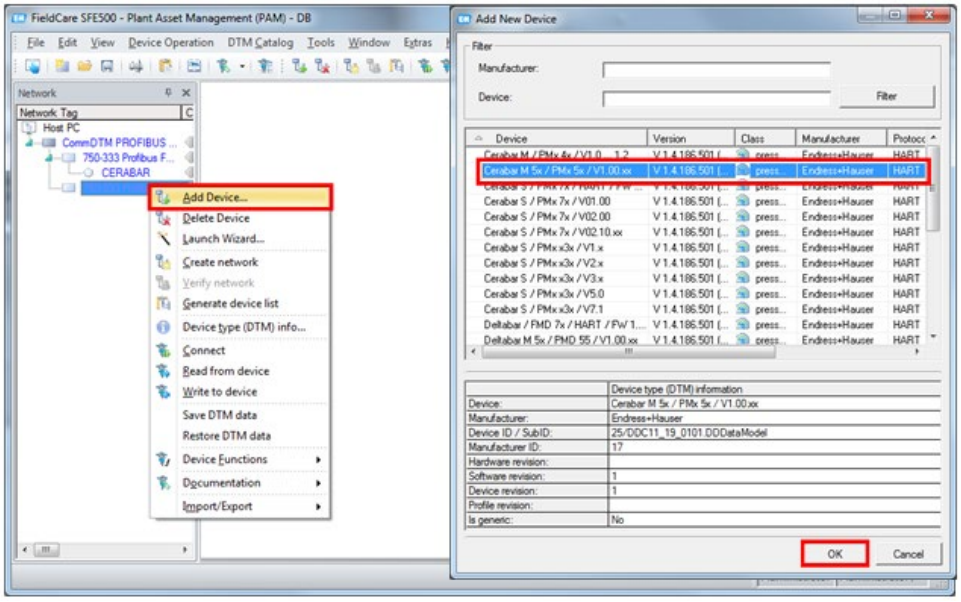


Figure 81: Add Device DTM

Next, select the channel your field device is connected to.

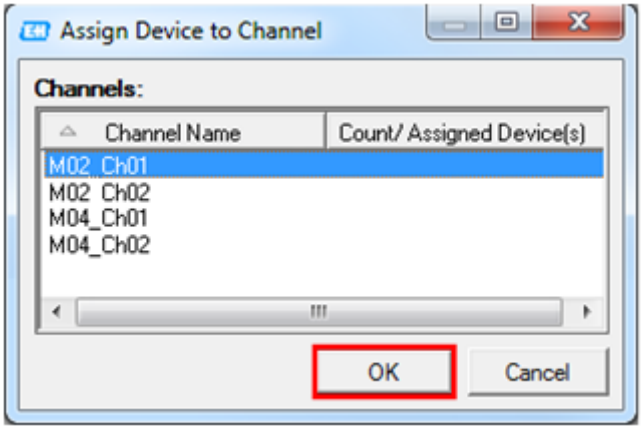


Figure 82: Select Channel

11. **Establish Connection**
In the “Network” window, mark any sensor and select the function **[Connect].**

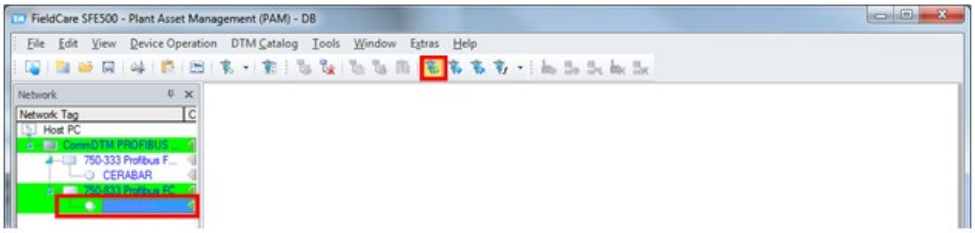


Figure 83: Establish Connection

This completes the setup; now the different functions “Observe, Configuration, Diagnostics” and others can be used at any time.

12. **“Observing” HART Sensor Measurement Values**
In the “Network” window, mark any sensor and select the function **[Device Functions]** → **[Observe]** from the background menu (right-click).

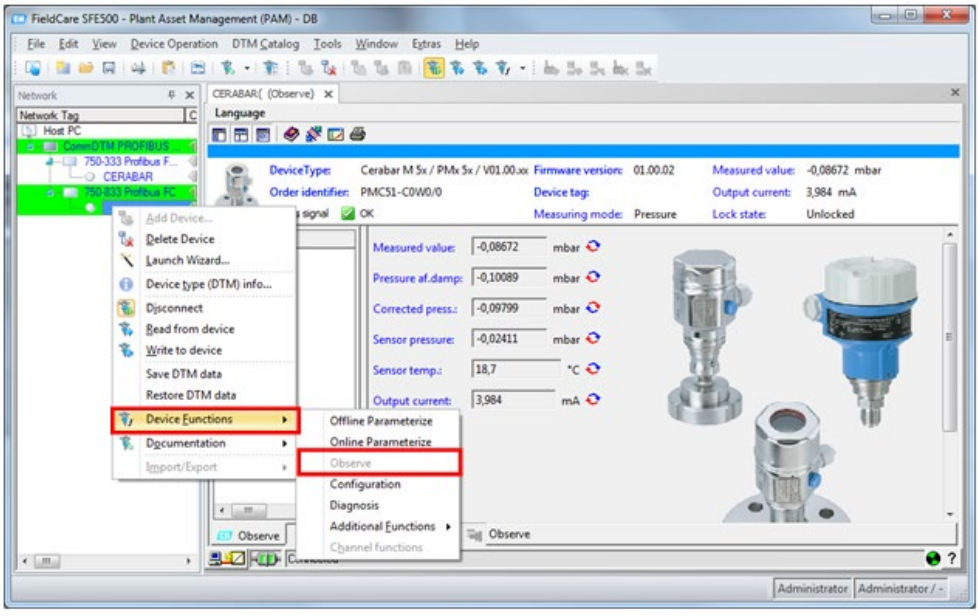


Figure 84: Select Observe Function

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