WAGO-I/O-SYSTEM 750

A116140

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

Version 1.0.0
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.

E-Mail: documentation@wago.com

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 .............................................................. 4
  1.1 Copyright.......................................................................................... 4
  1.2 Symbols............................................................................................ 4
  1.3 Number Notation ............................................................................. 6
  1.4 Font Conventions ........................................................................... 6
  1.5 Legal Bases ..................................................................................... 7
    1.5.1 Subject to Changes ..................................................................... 7
    1.5.2 Personal Qualifications............................................................. 7
    1.5.3 Limitation of Liability ................................................................ 7

2 Description .......................................................................................... 8

3 Material Used ........................................................................................ 9
  3.1 Devices ............................................................................................ 9
  3.2 Tools ............................................................................................... 9
  3.3 Setup .............................................................................................. 10

4 Parameterization ............................................................................... 12
  4.1 Preparations ................................................................................... 12
  4.2 PROFIBUS Operating Mode for HART Modules
      (750-482 and 750-484) ................................................................... 14
  4.3 750-8208 as Cyclic PROFIBUS Master .......................................... 16
  4.4 TH LINK PROFIBUS as Acyclic Master ........................................ 22

5 Asset Management Configuration ..................................................... 25
  5.1 Asset Management with WAGOframe .......................................... 25
  5.2 Asset Management with PACTware ............................................. 35
  5.3 Asset Management with FieldCare .............................................. 46

List of Figures .......................................................................................... 56
List of Tables ............................................................................................ 58
1 Notes about this Documentation

1.1 Copyright

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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

<table>
<thead>
<tr>
<th>Number Code</th>
<th>Example</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decimal</td>
<td>100</td>
<td>Normal notation</td>
</tr>
<tr>
<td>Hexadecimal</td>
<td>0x64</td>
<td>C notation</td>
</tr>
<tr>
<td>Binary</td>
<td>'100'</td>
<td>In quotation marks, nibble separated</td>
</tr>
<tr>
<td></td>
<td>'0110.0100'</td>
<td>with dots (.)</td>
</tr>
</tbody>
</table>

1.4 Font Conventions

Table 2: Font Conventions

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

1.5.1 Subject to Changes

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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.

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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

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

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

3.2 Tools

<table>
<thead>
<tr>
<th>Designation</th>
<th>Item No.</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAGO-I/O-PRO CAA V2.3</td>
<td>759-333</td>
<td>2.3.9.49</td>
</tr>
<tr>
<td>WAGO-I/O-CHECK 3</td>
<td>759-920</td>
<td>3.8.1(01)</td>
</tr>
<tr>
<td>WAGO ETHERNET settings</td>
<td>759-316</td>
<td>6.8.2</td>
</tr>
<tr>
<td>WAGOframe</td>
<td>759-370</td>
<td>1.01.00</td>
</tr>
<tr>
<td>WAGO PROFIBUS/HART Gateway DTM</td>
<td>759-360</td>
<td>V1.1</td>
</tr>
<tr>
<td>Endress+Hauser device DTM</td>
<td></td>
<td>2.43.00</td>
</tr>
<tr>
<td>Endress+Hauser FieldCare SFE500</td>
<td></td>
<td>2.11.00.2025</td>
</tr>
<tr>
<td>VEGA Grieshaber PACTware 5.0</td>
<td></td>
<td>5.0.2.22</td>
</tr>
</tbody>
</table>

*) 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](image-url)
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](image)

   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).

   ![Figure 3: Search File](image)

   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.
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](image)
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.

![Check Process Image](image)

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.
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]**.
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.

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.
Then the dialog for creating a new module opens; name the program “PLC_PRG.” Select any programming 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.”
4. **Managing Station Addresses**
Open the tab [DP Parameters]; specify the address range of the PROFIBUS devices.

![Specify Address Range](image)

Figure 12: 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.

![Add Slave](image)

Figure 13: Add Slave

Specify a station address under the [DP-Parameter] tab.
Select all connected modules in the right order under the [Input/Output].

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

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](image)

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

![Figure 19: Log in](image)
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](image)

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.
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.

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](image)

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].
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 ...].

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).
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.

---

**Information**

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

![Image of Bus Parameters](image)

**Figure 29: Bus Parameters**

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

![Image of Add 750-333](image)

**Figure 30: Add 750-333**
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).

   ![Configuration Function](image)

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

Next, select the channel your field device is connected to.
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](image)

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

   ![Figure 37: Address](image)
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).

![Configuration Function](image1)

Figure 38: Configuration Function

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

![Module Configuration Tab](image2)

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](image)

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

![Figure 41: Select Channel](image)

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](image)

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.
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).

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

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

![Configuration Function](image)

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

![Module Configuration](image)
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](image)

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

![Figure 57: Select 750-833](image)

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

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

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.
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).

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).
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].

   ![Create Project](image)

   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.
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 PROFINET DP-V1]**.

![Figure 66: Update](image)

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

In the “Network” window, mark the element **[CommDTM PROFINET ...]**.

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

![Figure 67: Add Device](image)
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.

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

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

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

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

The prompt for entering a PROFIBUS address appears. In this example, the 750-833 has **Address 3**.
9. **Configuring the WAGO HART/PROFIBUS Gateway (750-833)**

   In the “Network” window, mark the element [750-833 ...] and select the function [Device Functions] \(\rightarrow\) [Configuration] from the background menu (right-click).

   ![Configuration Function](image)

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

Next, select the channel your field device is connected to.
11. **Establish Connection**
In the “Network” window, mark any sensor and select the function [Connect].

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).
List of Figures

Figure 1: Download .............................................................................................. 12
Figure 2: Download File ....................................................................................... 13
Figure 3: Search File ........................................................................................... 13
Figure 4: Setting the IP Address .......................................................................... 14
Figure 5: Check Process Image .......................................................................... 15
Figure 6: Transfer Settings .................................................................................. 16
Figure 7: WAGO Ethernet Settings ..................................................................... 17
Figure 8: Write Settings ...................................................................................... 17
Figure 9: Create Project ....................................................................................... 18
Figure 10: Select Language ................................................................................ 18
Figure 11: Activating ............................................................................................ 18
Figure 12: Specify Address Range ....................................................................... 19
Figure 13: Add Slave ........................................................................................... 19
Figure 14: Specify Station Address ..................................................................... 20
Figure 15: Select Modules ................................................................................... 20
Figure 16: Specify Station Address ..................................................................... 20
Figure 17: Specify IP Address ............................................................................. 21
Figure 18: Create Test Program .......................................................................... 21
Figure 19: Log in .................................................................................................. 21
Figure 20: Save Important Parameters via Screenshot ....................................... 22
Figure 21: Enter IP Address ................................................................................ 23
Figure 22: Log in .................................................................................................. 23
Figure 23: TH LINK Tab ....................................................................................... 24
Figure 24: Expert Mode ....................................................................................... 25
Figure 25: Update ................................................................................................ 26
Figure 26: Add Softing TCP Communication DTM .............................................. 26
Figure 27: Configuration ..................................................................................... 27
Figure 28: Search for TH LINK ............................................................................ 27
Figure 29: Bus Parameters .................................................................................. 28
Figure 30: Add 750-333 ....................................................................................... 28
Figure 31: Address .............................................................................................. 29
Figure 32: Configuration Function ....................................................................... 29
Figure 33: Module Configuration Tab .................................................................. 30
Figure 34: Add HART Field Device DTM ............................................................. 30
Figure 35: Select Channel ................................................................................... 31
Figure 36: Add 750-833 ....................................................................................... 31
Figure 37: Address .............................................................................................. 31
Figure 38: Configuration Function ..................................................................... 32
Figure 39: Module Configuration Tab .................................................................. 32
Figure 40: Add HART Field Device DTM ............................................................. 33
Figure 41: Select Channel ................................................................................... 33
Figure 42: Establish Connection .......................................................................... 33
Figure 43: Observe Function ............................................................................... 34
Figure 44: Update Device Catalog ...................................................................... 36
Figure 45: Add Device ......................................................................................... 36
Figure 46: Selection ............................................................................................ 36
Figure 47: Parameter Function .......................................................................... 37
<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>48</td>
<td>Compare Bus Parameters</td>
<td>37</td>
</tr>
<tr>
<td>49</td>
<td>Bus Parameters</td>
<td>38</td>
</tr>
<tr>
<td>50</td>
<td>Add Device</td>
<td>38</td>
</tr>
<tr>
<td>51</td>
<td>Select 750-333</td>
<td>39</td>
</tr>
<tr>
<td>52</td>
<td>Address</td>
<td>39</td>
</tr>
<tr>
<td>53</td>
<td>Configuration Function</td>
<td>40</td>
</tr>
<tr>
<td>54</td>
<td>Module Configuration</td>
<td>40</td>
</tr>
<tr>
<td>55</td>
<td>Add Device</td>
<td>41</td>
</tr>
<tr>
<td>56</td>
<td>Add Device</td>
<td>42</td>
</tr>
<tr>
<td>57</td>
<td>Select 750-833</td>
<td>42</td>
</tr>
<tr>
<td>58</td>
<td>Address</td>
<td>43</td>
</tr>
<tr>
<td>59</td>
<td>Configuration</td>
<td>43</td>
</tr>
<tr>
<td>60</td>
<td>Module Configuration</td>
<td>44</td>
</tr>
<tr>
<td>61</td>
<td>Add Device</td>
<td>44</td>
</tr>
<tr>
<td>62</td>
<td>Select Channel</td>
<td>45</td>
</tr>
<tr>
<td>63</td>
<td>Select Function</td>
<td>45</td>
</tr>
<tr>
<td>64</td>
<td>Measured Value Function</td>
<td>45</td>
</tr>
<tr>
<td>65</td>
<td>Create Project</td>
<td>46</td>
</tr>
<tr>
<td>66</td>
<td>Update</td>
<td>47</td>
</tr>
<tr>
<td>67</td>
<td>Add Device</td>
<td>47</td>
</tr>
<tr>
<td>68</td>
<td>Configuration Function</td>
<td>48</td>
</tr>
<tr>
<td>69</td>
<td>Compare Bus Parameters</td>
<td>48</td>
</tr>
<tr>
<td>70</td>
<td>Compare Bus Parameters</td>
<td>49</td>
</tr>
<tr>
<td>71</td>
<td>Add 750-333</td>
<td>49</td>
</tr>
<tr>
<td>72</td>
<td>Address</td>
<td>50</td>
</tr>
<tr>
<td>73</td>
<td>Configuration Function</td>
<td>50</td>
</tr>
<tr>
<td>74</td>
<td>Module Configuration Tab</td>
<td>51</td>
</tr>
<tr>
<td>75</td>
<td>Add Device DTM</td>
<td>51</td>
</tr>
<tr>
<td>76</td>
<td>Select Channel</td>
<td>52</td>
</tr>
<tr>
<td>77</td>
<td>Add 750-833</td>
<td>52</td>
</tr>
<tr>
<td>78</td>
<td>Address</td>
<td>53</td>
</tr>
<tr>
<td>79</td>
<td>Configuration Function</td>
<td>53</td>
</tr>
<tr>
<td>80</td>
<td>Module Configuration Tab</td>
<td>54</td>
</tr>
<tr>
<td>81</td>
<td>Add Device DTM</td>
<td>54</td>
</tr>
<tr>
<td>82</td>
<td>Select Channel</td>
<td>55</td>
</tr>
<tr>
<td>83</td>
<td>Establish Connection</td>
<td>55</td>
</tr>
<tr>
<td>84</td>
<td>Select Observe Function</td>
<td>55</td>
</tr>
</tbody>
</table>
List of Tables

Table 1: Number Notation .......................................................................................... 6
Table 2: Font Conventions ....................................................................................... 6
Table 3: Devices ........................................................................................................ 9