FBP FieldBusPlug

Technical Description

V6

PBDTM-FBP
Device Type Manager (DTM)
for PDP22-FBP / PDQ22-FBP
Please note the following

Target group
This description is intended for the use of trained specialists in electrical installation and control and automation engineering, who are familiar with the applicable national standards.

Safety requirements
The responsible staff must ensure that the application or use of the products described satisfy all the requirements for safety, including all the relevant laws, regulations, guidelines and standards.

Using this Handbook
Symbols: This technical document contains sentinels to point the reader to important information, potential risks and precaution information. The following symbols are used:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>!</td>
<td>Sign to indicate a potential dangerous situation that can cause damage of the PDP22 or connected devices or the environment.</td>
</tr>
<tr>
<td>i</td>
<td>Sign to indicate important information and conditions.</td>
</tr>
<tr>
<td>x</td>
<td>Sign that indicates a potential dangerous situation that can cause human injuries.</td>
</tr>
</tbody>
</table>

Terminology

<table>
<thead>
<tr>
<th>Term/Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device Type Manager (DTM)</td>
<td>Software component (device driver) for configuring, diagnosing, forcing, displaying the measured variables, etc. of a field device. It is familiar with the way the device works and supplies device specific documentation.</td>
</tr>
<tr>
<td>Frame Application (FA)</td>
<td>Frame application (run time environment) in accordance with the FDT specification for operating DTMs</td>
</tr>
<tr>
<td>Field Device Tool (FDT)</td>
<td>The FDT concept describes the interface between a frame application and the device-specific software (DTM = Device Type Manager) of the device manufacturer. It enables devices produced by different manufacturers and different fieldbuses to be integrated in a single system. Currently supporting fieldbus protocols for PROFIBUS and HART.</td>
</tr>
<tr>
<td>DCS</td>
<td>Distributed Control System</td>
</tr>
</tbody>
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1 Introduction

FDT (Field Device Tool) technology standardizes the communication interface between field devices and systems. The key feature is its independence from the communication protocol and the software environment of either the device or the host system. FDT allows any device to be accessed from any host through any protocol. DTMs can be compared with printer drivers that we use for our office PC.

Device Type Manager (DTM)

The device manufacturers support software driver called Device Type Manager (DTM) for each of its devices or group of devices. The DTM encapsulates the device-specific data, functions and business rules such as the device structure, its communication capabilities, internal dependencies, and the Human Machine Interface (HMI) structure. DTMs provide functions for accessing device parameters, configuring and operating the devices, and diagnosing problems. DTMs can range from a simple Graphical User Interface (GUI) for setting device parameters to a highly sophisticated application capable of performing complex real-time calculations for diagnosis and maintenance purposes.

There are several types of DTM, as follows:

Device DTM: Represents a „normal“ field device that uses communication channels to communicate with the related physical device.

Communication DTM: Represents a communication device that provides communication capabilities through communication channels. Communication channels provide access to communication infrastructure like PC interface cards, modems... They are used by Device or Gateway DTMs as a service provider for communication.

Gateway DTM: Represents a gateway device. It also provides communication capabilities through communication channels but also requires communication capabilities supported by a Communication or another Gateway DTM.

The DTM is loaded and launched in a FDT container program, or a „frame“ application. Frame applications can be device configuration tools, control system-engineering tools, operator consoles or asset management tools.

Use Case: Pre-Configuration

A panel builder wants to test and pre-configure a Motor Control Center (MCC) equipped with UMC22 connected to PROFIBUS. To do so a Laptop with a PROFIBUS interface card gets connected with the MCC’s PROFIBUS line. The device configuration - as required for the application - can be done in a comfortable way using the graphical user interface of the UMC22 application. The configuration can be prepared offline without any devices connected and then downloaded into the UMCs when they are installed. The project file with all the parameters remains as reference at the panel builder side.

The PROFIBUS communication DTM provides tools to check the bus line. E.g. a life-list can be created on request where alls nodes with their PROFIBUS identifier and bus address are listed.

As next step the pre-configured MCC gets shipped to the customer. During commissioning the configuration can be uploaded from the UMCs into the control system’s data base if it supports the FDT/DTM technology. For a list of companies supporting FDT/DTM please consult the FDT Foundation’s web site.

Use Case: Commissioning

During plant commissioning it is very valuable to be able to monitor the PROFIBUS command telegram sent from the control system to the UMC22 and the monitoring telegram sent from the UMC to the control system. This can help to find out possible problems in the control application or other communication problems. In addition the option to read out the present device configuration allows to verify that the parameters stored in the control system are correct.

Use Case: Service

By displaying all operating, service and diagnostics data, the UMC22 application provides meaningful information and thus helps to prevent faults and to quickly locate and correct them. The information presented in the dialogs includes warnings, faults, operating hours, number of starts, number of trips, motor current as trend curve etc. The option of online parameterization during operation avoids additional plant downtimes.
Benefits at a Glance

The FDT/DTM technology offers the following benefits for intelligent low voltage devices like the UMC22:

- Efficient configuration and parameterization of devices in workshops or during factory commissioning or in the service case.
- Storing of reference configurations
- Upload of the configuration into the control system. No second time configuration and parameterization in the control system required (if it supports the FDT/DTM technology).
- The configuration data can be stored in a central place (either control system's database or service laptop). If a device must be replaced the previous configuration can just be downloaded to the device
- Possibility to offer an own parameterization and monitoring tool for the electrical staff.
- Because a standard technology which is supported by many manufacturers is used also other devices providing a DTM can be configured the same way. Often end users are already familiar with the concept because it is widely used in the instrumentation world.

▲ Usage scenario of the FDT/DTM technology in the context of intelligent low voltage devices such as the Universal Motor Controller UMC22-FBP.
2 Installation

2.1 Requirements Software:
- Windows 2000 with Service Pack 2 or greater.
- Windows XP with service Pack 2 or greater.
- Windows 2003 Server
- A frame application conforming to FDT 1.2

2.2 Hardware (recommended):
- PC or Laptop with 700 MHz and 128MB of RAM at a minimum
- PROFIBUS interface card UPT22-FBP to configure devices via PROFIBUS or the UTF21-FBP interface to configure one FBP device.

The installation requires the following steps:
- Installation of the PROFIBUS hardware interface (UTP22) or the UTF21-FBP. Please note that the UTF21-FBP can’t be used together with the circuit breakers. Only the UTP22 interface can be used.
- Installation of the Frame Application (optional)
- Installation of the PBDTM and the PROFIBUS Communication DTM

The following sections describe the required installation steps in detail.

2.3 Installing the Frame Application

The DTM is loaded and launched in a FDT container program, or a frame application. Frame applications can be device configuration tools, control system-engineering tools, operator consoles or asset management tools.

When using the PBDTM in the context of a control system (e.g. Freelance) this step is not required. In this case the control system is the frame application. Consult the control system vendor for further details.

To use the PBDTM in a standalone frame application - e.g. on a service laptop - requires the installation of a frame application. Different frame applications exist on the market. For installation please follow the installation manual of the frame application in use. On the installation CD the fdtContainer from ‘M&M Software GmbH’ is provided.

The fdtContainer offers a so called “Protected Mode”. This mode is enabled by default but shall be disabled. To disable the “Protected Mode” open [Tools] in the menu bar and select [Options]. In the upcoming dialog box uncheck “Detect accidental shut-downs” as shown in the next figure.

On some PCs the layout of the dialogs and fonts might appear unusual in some details. This is an effect caused by Microsoft Windows when commonly using .Net and Visual Basic components in one application. A known workaround is to select the default screen resolution of 96 dpi. This setting can be changed at the “Screen Properties” in the extended dialog.
2.4 Installing the PROFIBUS Hardware Interface

When using the PBDTM in the context of a control system (e.g. Freelance) this step is not required. In this case the PROFIBUS master acts as hardware interface.

For standalone applications there are two options:

- UTF21-FBP interface device (1SAJ929400R0001) for configuration of single devices. This adapter cable allows to connect one UMC22 directly to a Laptop or PC. This solution shall be used if only few devices must be configured. For the installation and setup please follow the steps described in the UTF21 manual.

- If the configuration shall be done via PROFIBUS or many devices shall be configured we recommend to use the UTP22-FBP (1SAJ924013R0001). For the installation and setup please follow the steps described in the UTP22 manual. In principle also other PROFIBUS DP interface cards providing a Communication DTM can be used.

After installation of the fdtContainer the accidental shutdown settings shall be set according to the figure above.
2.5 Installing the PBDTM

This chapter describes the installation of the PBDTM for UMC22. The following prerequisites must be met:

This DTM will not function in a frame application conforming to Version 0.98 of the FDT specification. The FDT versions differ in the expanded number of interfaces, their meaning and data management.

Installation Directory: The DTM files will be stored in the following path and directories if not specified otherwise.

For English settings: C:\Program Files\ABB Industrial IT\Engineer IT\DTM\Basic PROFIBUS DTM

For German settings: C:\Programme\ABB Industrial IT\Engineer IT\DTM\Basic PROFIBUS DTM

2.5.1 Upgrading from a previous version

Before upgrading from a previous version of the PBDTM it is necessary to uninstall the previous version. To uninstall the installed components using the operating system functions, please select the Windows Start menu (Start). The following menu options should be selected in the following order: Start > Settings > Control Panel > Software

Selecting Add/Remove Programs accesses a list of all installed programs. Find the ABB Basic PROFIBUS DTM and highlight it. Clicking [Remove] and confirming the safety prompt uninstalls the DTM. Perform the same steps for the Shared Components.

Upgrading from DTM Builder Version 4.1.1 to later DTM Builder Versions

• Existing DTM instances can still be used and parameterized
  • If the configured module should be changed (e.g. from UMC22 V3.3 to UMC22 V3.4) a new instance must be created. In this case the parameters of the existing DTM instance gets lost. To get the present parameterization from the physical device a parameter upload can be performed.
2.5.2 Initial Installation

Step 1: General Information

Insert the PBDTM CD into the CD drive. The first window, containing general information about the installation of the ABB product, will appear automatically. If it does not appear automatically, you can view the content of the CD in the Windows Explorer and start the installation program directly from the CD. The name of the file is „Setup.exe“

Step 2: Product Selection

Next, mark all check boxes in the left-hand output field, if not done. A tickmark indicates that the products will be available for installation. You will get some general product-specific information by selecting the certain product component. If the DTM has already been installed on the computer, it will change to maintenance mode.

A list of the files to be installed on the data carrier (CD, hard disk, etc.) can be accessed for checking purposes. To access the list, click [Browse].

If [Copy to Server] is pressed, the program will create a copy of the files on a central distribution server. You will be prompted to select or enter the destination path. Subsequent installations can then take place from this directory instead of from CD. A log file can be created. The file contains detailed information about the installation process. In the event of problems, it can be used for error analysis purposes. Simply click with the mouse in the control box to activate the function.

Press the [Install] button to start the installation from CD. A dialog box for confirmation appears.

Press the [NEXT] button to confirm the installation.
Step 3: FDT Shared Components Setup

The setup program starts up with installing the FDT Shared Components. This software component is mandatory for usage of the DTM in a FDT frame application. Please notice, that ABB Systems with FDT/DTM support may already include the FDT Shared Components software within their setups. In that case the latest version shall be installed, if not mentioned in any Release Notes otherwise. The version index is described in the specific Release Notes document.

If the component is detected as already being installed in a different version, a message box appears informing about a version conflict. Before starting the setup again, conflicting components have to be removed manually. Therefore, use the Add/Remove Programs functionality of the Control Panel.

Before removing any software components, please ensure, that the newest software component is installed on the PC. Do not remove software from the PC, which might be newer as the component which shall be installed. In this case the installation of an old software version shall be skipped.

Step 4: Basic PROFIBUS DTM Setup

After the FDT Shared Components have been installed the setup program continues with the Basic PROFIBUS DTM. Follow the instructions, pressing the [Next>] button to run the next step.

Step 5: License Agreement

The next window contains important license information. Please read the text carefully. If you agree with the license conditions and wish to continue with the setup program, press [Accept>]. A window will appear in which the registration information (name, company) must be entered.

Click [<Back] to return to the previous installation step. Click [Decline] if you do not agree with the license conditions. A dialog window will appear to prompt you to continue with the setup program [Next] or to exit it [Cancel].

Step 6: User specific Entries

Enter the registration data in this window. Your name and company must be entered. Once you have entered the data, click [Next>] to continue with the installation. Click [Cancel] to quit the setup program and the installation process. Click [<Back] to return to the previous installation step.
**Step 7: Type of Installation**

The DTM setup presents the possibility to change the installation settings. To ensure trouble-free installation, you should apply the default settings [Typical]. [Typical] selection will install all software components required to work with the DTM. In this version [Typical] and [Complete] will not differ in the installation.

It is recommended to install the DTM software to the default directory (system drive:\Program Files \ABB Industrial IT \Engineer IT \DTM \....) in order to keep track of DTMs.

**Step 8: Installation Run**

Click [Install] to confirm that you are ready to install the Basic PROFIBUS DTM.

Click [Cancel] to quit the setup program and the installation process.

Click [<Back] to return to the previous installation step.

A progress bar charts the progress of the installation. Wait until the installation process is finished.

**Step 9: PBDTM Setup**

After the FDT Shared Components and the Basic PROFIBUS DTM have been installed the setup program continues with the PBDTM. Follow the instructions, pressing the [Next>] button to run the next step.

**Step 10: End of Installation**

As soon as the installation is complete exit the installer.

**Maintenance Mode**

The following window will appear if the Basic PROFIBUS DTM has already been installed on the computer.

- Change program features
- Reinstall the program (Default)
- Remove the program

The first option is of no significance for the DTM because there are no program features to be changed. Therefore, to ensure trouble-free installation, you should apply the second or third option.

The second selection option will reinstall the Basic PROFIBUS DTM. The scope of the installation can be selected (normal/minimum/complete). License-related data does not have to be entered, as it was checked during the initial installation process. A progress bar charts the progress of the installation. The second option is of no significance for the DTM because there are no program features to be replaced. Therefore, to ensure trouble-free installation, you should apply the first or third option.

The third selection option removes all files and entries from the Windows registry on your computer. In the DTM setup program, this corresponds to uninstalling the DTM with the assistance of the functions provided by the windows operating system. For more detailed information, see next section „Add/Remove Programs with Windows assistance“. 
3 Getting Started with PBDTM

3.1 Basic Configuration

Within this section you learn how to create and configure a single device. A UMC22 is used as example which is connected via UTP22 or directly via UTF21 to your Laptop. The following three figures show the hardware setups for the different options that can be used to follow this tutorial. Ensure that the device

▲ Test setup when using the PDQ22 Fieldbus-Plug with PDA11-FBP.

▲ Test setup when using the PDP22 with PDA11-FBP.
Preparing Basic PROFIBUS DTM

After installation of the Basic PROFIBUS DTM the frame application’s DTM catalog needs to be updated once. Open the [Device Catalogue] by clicking the appropriate button in the tool bar and press the [Update] button. The progress dialog is displayed during the update operation. Now the new DTM types are visible named ABB GPB/DP PDP22-FBP(V1) and ABB GPB/DP PDQ22-FBP 0.

PBDTMs in FDT Frame Applications

Presentation and naming of the two DTMs can differ slightly depending on the used FDT frame application. E.g. some FDT frames allow an instantiation of device DTMs by using windows drag’n drop functionality, other frames require a manual selection.

Create the DTM topology

Perform the following steps to create your device topology:

1. Select the root node „MyNetwork“ to add a device to the top level of the tree.
2. Press the right mouse button to display the context menu for the device. Select [Add]
3. Choose the PROFIBUS Communication DTM from ifak systems and click on OK. You can also choose a device in the Device Catalogue and drag & drop it to the destination device in the topology.
4. Press the right mouse button on the PROFIBUS Communication DTM and insert the PDP22 or PDQ22 depending on the available hardware. If you use the UTF21-FBP only the PDP22 DTM can be used.
5. The FDT frame application will ask for a PROFIBUS address that the slave is using. The address entered here must match the address set in the UMC22 when using a PDP22. When using a PDQ22 the address must match the one set at the PDQ22 address switches. Use the figure below-mentioned as an example on how to set the addresses.
The new PDP22 or PDQ22 is included in the topology tree of the FDT frame application as shown below.

**Configure the PBDTM**

After instantiation of the PBDTM it must be configured to create the PROFIBUS master configuration part related to this device type. Module and parameter configuration for the supported measurement values can be implemented in the Configuration application of the DTM.

The following configuration shall be carried out.

1. Select the device in the topology tree and to start the DTM Configuration application (e.g. by right clicking on the device and selecting the menu item [Parameter]).
2. Switch to the Module tab
3. Select the required module from pull down menu below selection in the module frame.

Please note that for the ATEX Version UMC22 V3.51 (Ident Nr. 1SA-J510000R0500) the Module UMC22-FBP (V3.4) must be selected.
4. Select in the next step the position for the specific module from the pull down menu. In case of PDP22 only one module can be inserted. In case of PDQ22 four modules can be inserted. Please note that the DTM modules count from 0-3. In case not all four modules are used on the PDQ22 empty modules must be inserted.

5. Click the [Insert] button to add the module to the device. Now all the module details are shown in the right part of the dialog box (in-/output data, ...).

Click the [Apply] button or the [Close] button to confirm and close the configuration dialog.

The configuration window as shown above provides three main tab cards each equipped with several sub-tabcards.

- The tab-card "User Parameter" offers access to user parameters related to the PDP22.
- The tab-card "Module" offers access to module related data - e.g. module related user parameters.
- The tab-card "Miscellaneous" collects other relevant settings.
Module Related User Parameters

The User Parameter tab allows to set the parameters of the inserted module (in this case the UMC22). A PROFIBUS DP master can read these parameters from the DTM. During start up phase of the PROFIBUS these parameters are then downloaded to the UMC as so called block parameters. Please consult the technical manual of your Control System to find out if this feature is supported.

The parameters of the UMC are described in the UMC22 technical manual in section <Parameters>.

Block parameters are always sent from the PROFIBUS master to a slave during communication start-up. To avoid configuration conflicts if also DP-V1 parameterization should be used please carefully read section <Avoid configuration conflicts>.

![User parameters for module UMC22 V3.4.](image-url)
Module related Cyclic Input/Output Data Description

A limitation of a GSD file based device integration is that only the number of input and output bytes of a device is defined. The FDT/DTM technology allows to describe also the content of this data in detail. The I/O signals described for the UMC22 modules can be found on the input and output tab as shown below. The meaning of this signals are described in the technical manual of UMC22.

Similar to the block parameters your control system can read out this signal description and offer it directly in the IEC1131 application editor. Please check the technical manual of your control system to find out if this feature is supported.

Please note that the module related signal description is not predefined for all modules.

Now the configuration is finished and the PBDTM can be used to configure and diagnose the connected UMC22. Please read the next sections to learn which applications are provided and what they can be used for.
3.2 Changing Online/Offline State

The application operates in either online or offline mode. In online mode any changes take immediate effect on the UMC22 when pressing [read] or [write]. In offline mode changes to the UMC22 are stored until the UMC22 is online and then applied. When you are online, you can for example monitor the state of the UMC22 and set parameters online. There are also device-specific functions that require the UMC22 to be online before they are available.

Go Online

You can establish an online connection to the selected device in the following ways:

- Device / Go Online in the menu bar
- Go Online in the context menu of the device. All devices that are higher in the hierarchy are switched also in online mode.
- Press the toggle button in the tool bar

Go Offline

You can disconnect from the selected device in the following ways:

- Device / Go Offline in the menu bar.
- Go Offline in the context menu of the device.
- Press the toggle button in the tool bar (see above).
3.3 User Roles

In FDT/DTM a number of user roles are defined. Users have different rights and therefore can only perform actions allowed at the specific user level. The following list below shows the defined user roles.

- **Observer**: A user logged in with this role may only observe the current process.
- **Operator**: A user logged in with this role has the ability to observe and manage the current process.
- **Maintenance Engineer**: A user logged in with this role is able to perform all necessary maintenance operations including device exchange, teaching, calibration, adjustment, etc. This user can download verified parameter sets, modify a subset of parameters online or offline, perform device-specific online operations and at the end of the processing, has the permission to upload the complete parameter set.
- **Planning Engineer**: A user logged in with this role is a specialist. This user plans the whole project. He has access to the complete set of functions of the application and installed devices.
- **Administrator**: A user logged in with this role is responsible for administrative operations within an engineering environment. This user is the only one who can edit the User Accounts.

Higher user roles include the rights of the lower user roles. To open the User Accounts settings click on [Tools / Options] in the application menu bar. For more details about user roles see the online help of the fdtContainer application.

The following user roles are used in the PBDTM:

<table>
<thead>
<tr>
<th>Application</th>
<th>Observer</th>
<th>Operator</th>
<th>Maintenance Engineer</th>
<th>Planning Engineer</th>
<th>Administrator</th>
</tr>
</thead>
<tbody>
<tr>
<td>UMC22 - FPB - V3.30/3.31</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>UMC22 - FPB - V3.10, V3.20 (ATEX)</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>UMC22 - FBP - V3.4/3.41/3.5</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>UMC22 - FBP - V3.41/3.5 (Monitoring)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>PR122 / PR123 / PR332 / PR333 (General Information, Measures, Protection Parameters)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>PR122 / PR123 / PR332 / PR333 (Commands)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>PR222DS (General Information, Manual protection parameters, Electronic protection parameters)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>PR222DS (Commands)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

x = This function is available for this user role.
- = This function is not available for this user role.
4 Graphical User Applications

One of the biggest features of the FDT/DTM technology is that a device can offer a user friendly graphical interface for configuration and monitoring. There are certain functions supported by the PBDTM, which do have a dedicated graphical user interface available via a context menu from the frame application.

PDQ22: Please note that the graphical user applications described in this section provide access to the data of all connected devices in a flat manner. From which device data is provided is indicated with the suffix ".M0 - ".M4. E.g. the "online compare" application compares parameters of all connected UMCs with the internal database.

About Dialog

For general information directly related to the product software, please select the About menu item. It contains all the information you need to identify the PBDTM software version and user data entered during software installation.

Name/Version: Should you have any queries about the product, it is essential to provide the name of the internal software component and the version. The build indices in brackets are also important.

<table>
<thead>
<tr>
<th>Basic PROFIBUS DTM</th>
<th>Version and build index of the Basic PROFIBUS DTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared Components</td>
<td>Version and build index of the FDT Shared Component</td>
</tr>
<tr>
<td>FDT</td>
<td>The DTM was developed in accordance with specification FDT1.2</td>
</tr>
</tbody>
</table>

Details: This field contains important information about DTM vendor, support, installation path and the licensee, which was entered during installation.

Identification Dialog

The Identification dialog provides to the user basic information about the device. It consists of three tab windows showing details about PROFIBUS specific features supported from the device (e.g. supported baud rates etc.)

Online Compare

Online compare is a great feature to know the difference between the values residing in the instance database of the frame application and the device. Instance database is the storage place that is used by the DTM to store the persistent parameters. The user can invoke online compare to compare the values in the local database and the device.

As the next figure shows, the user gets a list of the DPV1 parameters configured (only readable and persistent). Their data type, slot and index are shown too. The next two columns are for the local data and device data. Of course, the device data is empty up to now and it is required to start a read request to get all the values from the device (via the [Read Data] button). The general status box displays the status of the read. Once the connection is established the LED in the centre of the status bar flashes. Once the
values are read they are displayed in the device data column. If the values of the two columns (instance data and device data) differ, the extreme left column “State” highlights it via an icon (explanation mark).

Please note that in case of PDQ22 the data of all connected devices are shown here. The parameters are postfixed so that the user knows to what device they belong.

5 Non-Graphical User Applications

There are certain functions that are supported by the DTM but are available from the frame application. They do not have a dedicated graphical user interface but are available via a context menu from the frame application. Following are the ones that do not have a dedicated graphical user interface but are still available.

Upload

During an upload, all DPV1 parameters are read from the field device and saved to the corresponding instance data record. An upload can be used for commissioning (initial startup) if a device-specific configuration is not available (planning phase), meaning that the instance data record only contains the default values. An upload during commissioning reads the factory-set data from the field device and writes it to the instance data record. The application has no GUI and it is called directly by the frame application e.g. for bulk data management. An upload completely overwrites the data in the instance data record.

The upload function tries to upload all parameters of a node. This means in case of PDQ22 that the parameters of all all configured devices are uploaded. If a device is configured but not available the upload is stopped with an error message. If only data of a single device shall be uploaded the read feature of the device specific application can be used.
Download

If concrete parameter values have already been loaded to the database (instance data record) during the planning phase by means of the configuration, these can be written to the field device by performing a download. The online parameterization application can be used to write data selectively. This application is useful if factory-set data such as the process point, serial numbers, etc. is not to be overwritten with the default values from the instance data record. The application has no GUI and it is called directly by the frame application e.g. for bulk data management. A download completely overwrites the data in the field device.

The download function tries to download all parameters of a node. This means in case of PDQ22 that the parameters of all configured devices are downloaded. If a device is configured but not available the download is stopped with an error message. If only a single device shall be loaded the write feature of the device specific application can be used.

OPC Access

If the OPC access flag within the DPV1 parameter grid is set, these parameters can be accessed from the ABB OPC Server PROFIBUS/HART (only available in ABB 800xA Systems). The OPC Server will request a list of accessible DPV1 parameters from the DTM, then it will start the reading and/or writing of these parameters.

Print

If supported by the frame application, the DTM allows the user to print out the actual set of persistent stored data and their actual values.

Audit Trail

For purposes of data logging within the frame applications audit trail function, the DTM provides in offline mode as well as in online mode the changed data with time stamp and user information. Additionally the start and end of complete functions such as download and upload of the device are logged.

The frame application has to provide the optional FDT audit trail to use this function of the DTM. Standalone Containers like the fdtContainer do typically not support this function. Therefore FDT audit trail related warnings can be ignored.

Export/Import

For purposes of data export and import of the DTM from one project to another project of the same frame application, the DTM provides the functions export and import for the frame application.

The important data of the DTM are exported to a data stream, which is under control of the frame application and imported from this stream.
6 Device Specific Application for UMC22

6.1 UMC22 firmware versions V3.2 - 3.41 and V3.51 (ATEX)

The PBDTM provides device specific applications for all UMC22 modules starting from version 3.2. Depending on the actual software version the applications do differ slightly as more features were added in later versions of UMC. This application is available in online – and offline mode for user level Planning Engineer.

In offline mode the [read] and [write] buttons are not shown. Offline configuration allows device parameterization without a real device. The configuration is stored on the PC.

If the device is connected to the PROFIBUS line and the DTM is in online mode parameters can be written down to the device by pressing the write button. It is also possible to read the parameters out of the connected device by pressing the read button.

The application provides three tab windows. The first window allows the user to parameterize the control related settings like the control function, local control mode etc. This is shown below for UMC22 version V3.4.

![UMC22-V3.4 parameterization application window in online-mode. Following the FDT style guide changed parameters are marked in blue. The graphical user interface follows the style guide of the FDT/DTM users group. I.e. changed parameters are indicated underlined and in blue color. If [Read cyclic] is selected the parameters are read every few seconds from the device.](image-url)
In the second tab window the protection and supervision related parameters are collected. In the upper parameter group (Current Settings) the nominal currents can be configured. The current factor is relevant if an external current transformer is used.

The lower parameter group (Overload Protection) provides access to the protection related parameters such as trip class etc.

The parameter Phase Loss / PTC offers the possibility to disable the phase loss protection. This can be used in test setups e.g. for demonstration purposes. In real application the phase loss protection must be enabled (factory default). If disabled the motor protection is not guaranteed in case of a phase loss. See the UMC22 manual for more information.

![UMC22-V3.4 parameterization application window in online-mode. The motor related protection parameters can be adjusted on this tab page.](image-url)
The third tab window shows service related data. Data provided here might be used for maintenance planning. The following counters are available:

- Motor operation hours
- Number of starts
- Number of trips
6.2 UMC22 firmware version V3.41 and 3.51 (ATEX)

Beginning with the UMC22 firmware version 3.41 a second device specific application for online monitoring purposes was added. This application is only visible in online mode and for user level Observer. Please note that the values are updated about every 5 seconds. This time might increase if the PROFIBUS is very loaded because of other traffic.

The following color schema is used:

<table>
<thead>
<tr>
<th>Signal Type</th>
<th>Inactive / False</th>
<th>Active / True</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm</td>
<td>Gray</td>
<td>Red</td>
</tr>
<tr>
<td>Warning</td>
<td>Grey</td>
<td>Yellow</td>
</tr>
<tr>
<td>Inputs/Outputs, Status Signals</td>
<td>Grey</td>
<td>Blue</td>
</tr>
</tbody>
</table>

Presentation of monitoring and command data

This tab card shows the command and monitoring data as it is described in the UMC22 manual in section 4.2 (Bus data - Monitoring, command, diagnosis).

The figure below shows a device with warning and fault signal active. Additionally one can see that the device is in mode ‘Local Control’ and the motor is not running. Furthermore the digital inputs two and five are active.

There is no active signal in the command data group. This is because no cyclic PROFIBUS master (PLC or DCS) is present.

▲ Monitoring and command data as provided in the tab card Digital IO in the Monitoring Application of the UMC22.
Current

This tab card shows the motor current in two different ways:

- a) in a trend display as percentage of the nominal current over time
- b) the actual current as absolute value in ampere.

The trend display provides the following functions:

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;</code></td>
<td>Click on this button to jump to the first value in the trend display.</td>
</tr>
<tr>
<td><code>&gt;</code></td>
<td>Click on this button to jump to the last value in the trend display.</td>
</tr>
<tr>
<td><code>&lt;</code></td>
<td>Click on this button to scroll the trend view to the left.</td>
</tr>
<tr>
<td><code>&gt;</code></td>
<td>Click on this button to scroll the trend view to the right.</td>
</tr>
<tr>
<td><code>+</code></td>
<td>Click this button to zoom in the trend display to get more details</td>
</tr>
<tr>
<td><code>-</code></td>
<td>Click this button to zoom out the trend display to get a general view of the value (long time values).</td>
</tr>
<tr>
<td>Begin logging</td>
<td>Click this button to start the log file record of the values, which are visible in the trend. After clicking this button the path and the file name in which the values shall be stored must be included.</td>
</tr>
<tr>
<td>Save log</td>
<td>Click this button to save the recorded values to a CSV file on the hard disc.</td>
</tr>
</tbody>
</table>

An example trend is shown below.

![Motor Current Display](chart.png)

▲ Motor current display as provided in the tab card Current in the Monitoring Application of the UMC22. An overload situation is shown that after short time triggers a trip.
Diagnosis

This tab card shows all the diagnosis information as it is described in the UMC22 manual in section 4.2 (Bus data - Monitoring, command, diagnosis). The upper signal group shows alarms while the lower signal group shows warnings.

In the four actuator operation modes some of the signals shown here have a different meaning. The meaning in actuator mode is marked with a '.*'

In case of a 'Parameter out of range' fault the parameter number causing the failure is shown in a text field below the warnings group. In all other cases this field can be ignored.

\[\text{Diagram showing diagnosis data display as provided in the tab card Diagnosis in the Monitoring Application of the UMC22. The example shows the situation after an overload (trip) fault.}\]
Software Version

This tab card shows the software version of the connected UMC. The upper field shows the major number. The lower field shows the minor number. In the shown example the software version is 3.41.

![Version display as provided in the tab card](image)

6.3 UMC22 firmware versions V4.0

Beginning with firmware version 4.0 a third device specific application for online presentation of service data is available. This application is only visible in online mode and for user level Observer. Please note that the values are updated about every 5 seconds. This time might increase if the PROFIBUS is very loaded because of other traffic.

**Note:** So far the service data was part of the configuration application that is only accessible in user level Planning Engineer. Therefore the service data were moved into a separate application.

The configuration application was extended and now shows if the device has password protection enabled or if the parameters are locked - i.e. can’t be changed (see frequently asked questions at the end of this document)
7 Device Specific Application for PR122 / PR123 / PR332 / PR333

The PBDTM provides device specific applications for the following trip units:
- PR122/P (with PR120/D-M COM module)
- PR123/P (with PR120/D-M COM module)
- PR332/P (with PR330/D-M COM module)
- PR333/P (with PR330/D-M COM module)
equipped with EP010 starting from v2.0.

Five different applications are available in online mode. If the device is connected to the PROFIBUS line the parameters can be read out of the device by pressing the read button.

7.1 General Information

Available for user level Observer, this application contains general information and configuration parameters regarding the trip unit and the circuit breaker. The application provides four tab windows.

Information

- Slave ID indicates the trip unit model type
- SW version indicates the trip unit software version, in the format ‘major.minor’
- Product standard reference indicates which standard the trip unit is compliant to (IEC, UL 1066, UL 489)
- Number of poles indicates the number of electric poles in the circuit breaker
- In indicates the trip unit rated current
- CB type indicates the type of circuit breaker
- CB serial number
- CB Tag name and User data are user defined string parameters
Configuration parameters 1

- Product execution indicates which protection algorithms are implemented by the trip unit (L: long time protection, S: short-time protection, I: instantaneous protection, G: earth-fault protection, Rc: residual current protection)
- Trip unit serial number

<table>
<thead>
<tr>
<th>Configuration parameters 1</th>
<th>Configuration parameters 2</th>
<th>Configuration parameters 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product execution:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SG</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Trip unit serial number:</strong></td>
<td>01</td>
<td>00</td>
</tr>
<tr>
<td>02</td>
<td>06</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Configuration parameters 2

- Local bus unit present if checked the trip unit is configured for being connected to local bus accessories.
- VT PR120/V MEASURING module present if checked indicates the trip unit is equipped with the PR120/V MEASURING module.
- Neutral protection ON if checked indicates protection on the neutral is activated.
- Power direction Top->Bottom if checked the trip unit is configured for sensing power flowing from top to bottom of the circuit breaker. This is useful in case of D (Directional) and RP (Reverse Power) protection.
- Neutral voltage present if checked the trip unit is configured for sensing a current sensor on the external neutral.
- Operating mode remote if checked it is possible to send commands (see 1.3) to the trip unit, if not checked the trip unit is in local operation mode and won’t accept remote commands.
- Neutral selection refers to the percentage of In to used by the trip unit as nominal current for the neutral protection.
- Ext. ground toroid indicates the rated current of the external toroid sensor (used for Ext G and Rc protection).
- Un Nominal voltage is the circuit breaker nominal voltage.
- VT secondary voltage is the secondary rated voltage of voltage transformers connected to the PR120/V MEASURING module.
- Net frequency is the nominal net frequency.
- Plant configuration indicates whether the electric plant has 3 phases (3P) or 3 phases plus the neutral (3P+N).
Configuration parameters 3

- Harmonic distortion warning if checked the trip unit will issue a warning (alarm) in case of harmonic distortion out of range
- Measures store time indicates the sampling time of run-time measures into historical measures

The information that follows is available only for PR123 and PR333 trip units

- Dual setting active if checked the trip unit is configured for switching protection parameters between Set A and Set B
- Parameter Set B if checked (and Dual setting active is checked too) protection parameters Set B are being used by the trip unit
- Set B on CB close if checked (and Dual setting active is checked too) trip unit will switch to Set B when the CB is closed
- Dual set CB close time indicates the delay used by the trip unit for switching to Set B when the CB is closed (see Set B on CB close)
- Set B on Vaux off if checked (and Dual setting active is checked too) trip unit will switch to Set B in case when Vaux is off
- Set B on Local bus DI on if checked (and Dual setting active is checked too) trip unit will switch to Set B when Local bus digital input channel is active
- Phase rotation warning if checked the trip unit will issue a warning (alarm) in case of erroneous phase rotation
- Phase rotation cycle if checked the nominal phase rotation cycle is 321, if not checked the nominal value is 123
- CosFi module warning if checked the trip unit will issue a warning (alarm) in case of power factor out of range
- CosFi module threshold indicates the threshold for the power factor
7.2 Measures

This application contains some of the run-time measures available from the trip unit. The required user level is Observer. The application provides four tab windows.

Voltages

Line-to-neutral voltages are shown here. The value 65535.5 indicates the measures are not available (for example, the trip unit is not equipped with the PR120/V MEASURING module).

- V1: 65535 V
- V2: 65535 V
- V3: 65535 V

(65535 = not available)

Frequency

The net frequency is shown here. The value 65535.5 indicates the measure is not available (for example, the trip unit is not equipped with the PR120/V MEASURING module).

- Frequency: 65535 Hz

(65535 = not available)

Power Factor

The total power factor is shown here. The value 327.67 indicates the measures are not available (for example, the trip unit is not equipped with the PR120/V MEASURING module).

- Total power factor: 327.67

(327.67 = not available)
Energies

The total active, reactive and apparent energies are shown here. Energies can be reset issuing the Reset energy counters command (see 7.3).

<table>
<thead>
<tr>
<th>Voltages</th>
<th>Frequency</th>
<th>Powerfactor</th>
<th>Energies</th>
<th>Harmonics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total energies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active:</td>
<td>0</td>
<td>kWh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reactive:</td>
<td>0</td>
<td>kVARh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apparent:</td>
<td>0</td>
<td>kVARh</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Harmonics

The total harmonic distortion and the odd harmonic ratios from the 3rd to the 25th are shown here. This information is available only for PR123 and PR333 trip units. The values shown refer to the last Waveforms and Harmonics acquisition command sent to the trip unit (see section Commands).

<table>
<thead>
<tr>
<th>PR123/PR333 only</th>
<th>0</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total harmonic distortion</td>
<td>0</td>
<td>%</td>
</tr>
<tr>
<td>3rd</td>
<td>0</td>
<td>%</td>
</tr>
<tr>
<td>5th</td>
<td>0</td>
<td>%</td>
</tr>
<tr>
<td>7th</td>
<td>0</td>
<td>%</td>
</tr>
<tr>
<td>9th</td>
<td>0</td>
<td>%</td>
</tr>
<tr>
<td>11th</td>
<td>0</td>
<td>%</td>
</tr>
<tr>
<td>13th</td>
<td>0</td>
<td>%</td>
</tr>
<tr>
<td>15th</td>
<td>0</td>
<td>%</td>
</tr>
<tr>
<td>17th</td>
<td>0</td>
<td>%</td>
</tr>
</tbody>
</table>
7.3 Commands

Available for user level Planning Engineer, this application allows to send commands to the trip unit. Commands can be accepted by the trip unit only if the trip unit is in operating mode remote. Press the read button to refresh the operating mode remote parameter; if it is checked command can be sent.

All the commands are sent by simply pressing the corresponding push button.

Dummy command is useful for resetting EP010 (the fault LED signaling) when an invalid command is sent or a command is sent when the trip unit is in operating mode local.

- CB open sends a command for opening the circuit breaker
- CB close sends a command for closing the circuit breaker
- Trip reset sends a command for resetting the trip unit after a trip has occurred
- Reset signalling sends a command for resetting outputs of the SIGNALLING module
- Reset energy counters is used for resetting the energy measured values
- Reset historical measures clears the whole list of sampled measures
- Reset event logs clears the whole event log list
- Start – current / voltage sends a command for beginning the acquisition of waveforms and harmonics for the specified channel
- Stop send a command for terminating the waveforms and harmonics acquisition
7.4 Protection parameters (Set A and Set B)

Available for user level Observer, these two applications show the settings for protection algorithms L, S, I and G. Set A is the default set, available for all trip units. Set B is available only for PR123 and PR333. It contains a specular set of protection parameters that can be used in alternative to Set A. Automatic switching between Set A and Set B following determined events is possible.

Here is a description of the main information contained in this application:

- Enable if checked indicates the protection algorithm is running.
- Curve type, Threshold and Time are used for determining the time-current curve implemented by the protection.
- Start up if checked indicates the protection algorithm uses a different time-current curve at start up.
- Zone selectivity if checked indicates the protection performs zone selectivity.
- Zone selectivity time indicates the delay the protection waits for a zone selectivity signal before tripping.
- Thermal memory if checked indicates the protection performs thermal memory.

---

<table>
<thead>
<tr>
<th>Protection L</th>
<th>Protection I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curve Type:</td>
<td>Enabled:</td>
</tr>
<tr>
<td>Threshold:</td>
<td>Threshold:</td>
</tr>
<tr>
<td>Time:</td>
<td>Setup:</td>
</tr>
<tr>
<td>Threshold EC235:</td>
<td>Start up threshold:</td>
</tr>
<tr>
<td>Time EC225:</td>
<td>Start up time:</td>
</tr>
<tr>
<td>Thermal memory:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Protection</th>
<th>Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curves Type:</td>
<td>Enabled:</td>
</tr>
<tr>
<td>Threshold 1 + 1/2:</td>
<td>Threshold 1 + 1/2:</td>
</tr>
<tr>
<td>Time 1 + 1/2:</td>
<td>Time 1 + 1/2:</td>
</tr>
<tr>
<td>Threshold 1 + k:</td>
<td>Threshold 1 + k:</td>
</tr>
<tr>
<td>Time 1 + k:</td>
<td>Time 1 + k:</td>
</tr>
<tr>
<td>Start up threshold:</td>
<td>Start up threshold:</td>
</tr>
<tr>
<td>Start up time:</td>
<td>Start up time:</td>
</tr>
<tr>
<td>Zone selectivity:</td>
<td>Zone selectivity:</td>
</tr>
<tr>
<td>Zone selectivity time:</td>
<td>Zone selectivity time:</td>
</tr>
<tr>
<td>Thermal memory:</td>
<td>Thermal memory:</td>
</tr>
</tbody>
</table>
8. Device Specific Application for PR222DS

The PBDTM provides device specific applications for the PR222DS-PD trip unit, equipped with EP010 starting from v2.0.

Four different applications are available in online mode. If the device is connected to the PROFIBUS line the parameters can be read out of the device by pressing the read button.

8.1 General information

Available for user level Observer, this application contains general information and configuration parameters regarding the trip unit and the circuit breaker.

- SW version indicates the trip unit software version, in the format ‘major . minor’
- In indicates the trip unit rated current
- CB type indicates the type of circuit breaker
- Product execution indicates which protection algorithms are implemented by the trip unit (L: long time protection, S: short-time protection, I: instantaneous protection, G: earth-fault protection, Rc: residual current protection)
- System disconnection timeout indicates the delay before disconnecting the communication when PR010/T is connected to the trip unit
- Trip unit serial number
8.2 Commands

Available for user level Planning Engineer, this application allows to send commands to the trip unit. Commands can be accepted by the trip unit only if the trip unit is in operating mode remote. It is possible to switch between local and remote operating mode by moving the corresponding dip-switch on the trip unit human-machine interface.

All the commands are sent by simply pressing the corresponding push button.

- Dummy command is useful for resetting EP010 (the fault LED signaling) when an invalid command is sent or a command is sent when the trip unit is in operating mode local.
- CB open sends a command for opening the circuit breaker
- CB close sends a command for closing the circuit breaker
- Trip reset sends a command for resetting the trip unit after a trip has occurred
- CB reset sends a command for resetting both the trip unit (after a trip has occurred) and the circuit breaker (putting it from the trip to the open position)
8.3 Manual protection parameters

Available for user level Observer, this application shows the manual dip-switch settings for protection algorithms L, S, I and G. It is possible to switch between manual protection parameters and electronic protection parameters by moving the corresponding dip-switch on the trip unit human-machine interface.

Here is a description of the main information contained in this application:

- Disabled (protection) if checked indicated the protection algorithm is not running
- Trip level, Trip delay and Curve type inverse time are used for determining the time-current curve implemented by the protection
- Neutral Enabled if checked the protection on the neutral is enable
- Neutral Selection 100% if checked the rated current for neutral protection is 100% In, if not checked it is 50% In
8.4 Electric protection parameters

Available for user level Observer, this application shows the electronic settings for protection algorithms L, S, I and G. See the previous section for details.
9 Avoiding Configuration Conflicts

The PBDTM can be used in different scenarios. Often a service laptop should be connected to the PROFIBUS network in parallel to the control system. Because there are separate possibilities to configuring a device then (from the control system or from the Laptop or both) it is important to consider some points not creating configuration conflicts. Therefore carefully read the following subsections and decide what scenario best describes your project setup and thereof what points must be considered as a consequence. In the following section the UMC22 is used as an example. For other devices the rules also apply.

Scenario 1

In this setup the GSD file is used in the Control System to set the UMC parameters and to do the I/O configuration. The PBDTM - installed on a separate service laptop - is used only for monitoring purposes.

Points to consider: Ensure that the UMC configuration is only modified in the control system via the GSD file (or HWD file in case of 800xA) and not via the Laptop. Changes done via Laptop directly in an UMC can’t be uploaded into the control system. After next bus start the configuration changes done via Laptop will be overwritten from the PROFIBUS master.

▲ In this scenario the complete configuration and parameterization is done from the control system using the GSD file.
Scenario 2

In this setup the GSD file is used in the Control System to do the I/O configuration only. The PBDM - installed on a separate service laptop - is used for parameterization of the UMCs.

This scenario often applies if electricians want to configure the UMCs but do not have access to the control room and therefore need a DCS independent configuration tool.

Points to consider: The PROFIBUS master will always send user parameters to the UMC22 even if it is not wanted in this case. It must be ensured that these parameters do not overwrite the parameters set via the PBDM running on the Laptop. This can be achieved by setting the PDP22/PDQ22 parameter called “Block Parameter” to “Ignore Block Parameters”. Please note that this must be done using the GSD file in the control system! See the screenshot below showing the Freelance configuration window as an example how to do this.

Parameter window of the PDP22 as it looks like in Freelance. Ensure that the parameter “Block Parameter” is set to “Ignore Block Parameters”. 

In this scenario parameterization shall be done from the Laptop. Only the I/O configuration for the PROFIBUS master is done in the control system using the GSD file.
Scenario 3

In this setup the PBDTM is used to do the I/O configuration in the Control System whereas the PBDTM - installed on a separate service laptop - is used for parameterization of the UMCs. In addition to scenario one or two a Control System like Freelance can retrieve a detailed I/O signal description from the DTM so no GSD file is necessary anymore.

This scenario often applies if electricians want to configure the UMCs but do not have access to the control room and therefore need a DCS independent configuration tool.

Points to consider: The PROFIBUS master will always sent user parameters to the UMC22 even if this is not wanted in this case. It must be ensured that these parameters do not overwrite the parameters set via the PBDTM. This can be achieved by setting the PDP22/PDQ22 parameter called "Block Parameter" to "Ignore Block Parameters". Please note that this must be done using the DTM’s user parameter window installed in the control system! See the screenshot on the bottom of this page.

In this scenario parameterization shall be done from the Laptop. Only the I/O configuration for the PROFIBUS master is done in the control system using a DTM.

User Parameter window of the PBDTM. Ensure that the parameter “Block Parameter” is set to “Ignore Block Parameters”.

![Diagram of scenario 3](attachment:image.png)
**Scenario 4**

In this setup the PBDTM is used to do the I/O configuration and to do parameterization of the UMCs as well from within the Control System. PBDTM - installed on a separate service laptop - is also used for parameterization of the UMCs.

Points to consider: The PROFIBUS master will always send user parameters to the UMC22 even if this is not wanted in this case. It must be ensured that these parameters do not overwrite the parameters set via the PBDTM. This can be achieved by setting the PDP22/PDQ22 parameter called "Block Parameter" to "Ignore Block Parameters". Please note that this must be done using the DTM's user parameter window installed in the control system! See scenario three for an example screenshot.

In this scenario parameterization of the UMCs can be done via Laptop or DCS. Therefore each time the configuration is changed from one side it must be first read back from the UMC to ensure that the latest configuration changes done from the other side are considered.

It is possible to simultaneously parameterize the UMC from both sides at the same time! Such situations shall be avoided.

▲ In this scenario parameterization of the UMCs can be done via Laptop or DCS.
10 Frequently Asked Questions

Q: Establishing a communication to the FBP device does not work i.e. reading or writing of parameters fails with an error message.
A: There might be different reasons.

   Ensure that the UTF21 is connected to the PROFIBUS line and the FieldbusPlugs are powered.

   The device address does not match the node address in the DTM tree. Ensure both addresses match.

   If a cyclic master is active in the network the DP communication settings used in the communication DTM does not match the ones used in the cyclic master. Compare both settings and adjust the settings of the communication DTM accordingly (right-click on the communication DTM and select "Offline Configuration"). If the menu entry is grayed out go offline before. Also ensure that the DP-V1 timeout time is set to 10000.

   The communication in the connected device is disabled.

Q: The read and write buttons on the device applications are missing
A: Close the application window and reopen it again.

Q: Reading the parameters is possible but writing the parameters seems to have no effect.
A: The "parameter lock" is set. Remove the lock via the LCD panel and try again.

Q: The UMC Monitoring application does not show any values. All fields are gray.
A: The UMC firmware supports the monitoring beginning with V3.41 and V3.51(ATEX). Earlier firmware versions does not support the monitoring application.