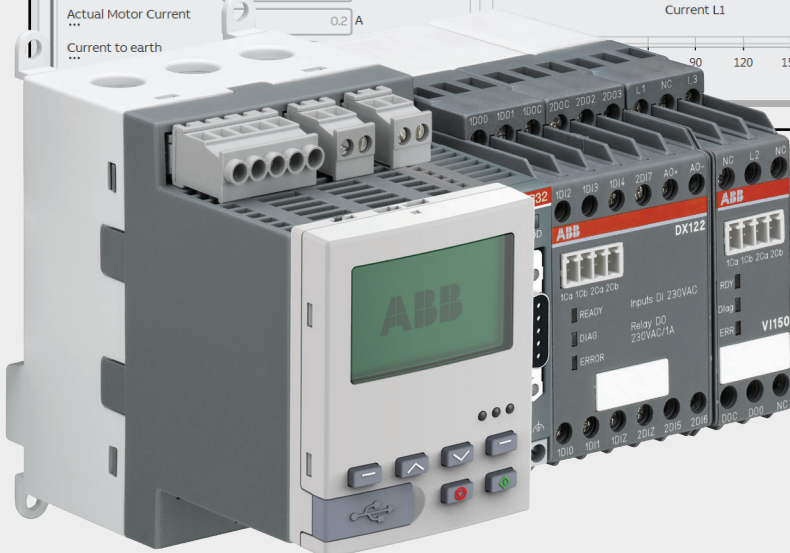# FIM UMC Edition

Configuration Software UMC100.3

Important notice

Target group
This description is intended for use by 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 safety requirements, including all relevant laws, regulations, guidelines and standards.

Using this handbook
The Field Information Manager (FIM) software includes a product manual and user guide when downloading. This additional manual outlines the first steps and handling of the ABB Universal Motor Controller UMC100.3.
Other field devices are not considered in this document.

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Related documents

Technical documentation	Type	Document no.
UMC100.3 Universal Motor Controller	Manual	2CDC135032D0204
UMC100.3 Universal Motor Controller ATEX	Manual	2CDC135033D0202
UMC100.3 Custom Application Editor	Manual	2CDC135034D0201
PDP32.0 Profibus DP communication interface	Manual	2CDC192016D0202
Universal Motor Controller UMC100.3	Catalog	2CDC190022C0206

Symbols
This technical document uses markers to point the reader to important information, potential risks and precautionary information:

⚠	This symbol indicates a potentially dangerous situation that can cause damage to the UMC, connected devices, or the environment.
ⓘ	This symbol indicates important information and conditions.
⊗	This symbol indicates a potentially dangerous situation that can cause personal injury.

—
Terminology

FDI	Field Device Integration Technology. This is a system-wide solution. Host systems, such as asset management systems, configurators, and device managers must support the FDI client-server architecture. Field device suppliers must encapsulate device specific software and documentation into an FDI Device Package. Finally, product registration service providers, such as FieldComm Group, must deliver high quality conformance testing, registration, and FDI Device Package distribution services. When host systems, FDI Device Packages and high-quality registration are combined, end users can take advantage of a truly stress free device integration solution.
FDI Host	An FDI host is a software component that operates with FDI Device Packages. FDI Device Packages are imported by FDI hosts, allowing users to operate the device. An FDI host can be a standalone software component, an integrated software component in a distributed control system or a software component with a client server architecture. An FDI host typically consists of an FDI client, an FDI server and one or more FDI communication servers.
FDI Device Package	The FDI Device Package is the core component of an FDI field device. It is a single file describing a device that includes drivers, interfaces, certificates and documentation.
FDI Communication Server	Part of the FDI Host, enabling communication between the FDI Device package and connected field device. This can be done via standard protocols such as Hart, Profibus, Profinet and Foundation Fieldbus, or by product depending servers.
DCS	Distributed Control System
ABB Field Device Manager	FDI Host software package
ABB FIM Device Window Edition	FDI software, free and functionally limited trial version
ABB FIM UMC Edition	FDI software, provides full functionality for configuration of UMC100.3
UMC100.3	Universal Motor Controller, ABB motor management system

More information about Field Device Integration Technology can be found on the FieldComm Group website https://www.fieldcommgroup.org/

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About Field Information Manager

ABB Field Information Manager (FIM) is a configuration and diagnostic software tool for field devices mainly used in the process industry. It is based on FDI technology (for more information about FDI, visit http://www.fieldcommgroup.org) and equipped with a high-performance graphical user interface for easy handling. It conforms to FDI standards.

The UMC100.3 can be configured with FIM. The required Device Package can be downloaded in the FIM software from the ABB server and ABB web page (internet connection required).

Requirements
Operating System Requirements
• Windows 7 (64 bit), Windows 8.1, Windows 10
• 10 GB storage space, minimum of 1 Gigabyte RAM

The installation of the FIM software requires administrator rights. Other users can start the installation setup file but at a certain point the installation will ask for an administrator username and password. If required, the setup will install the Microsoft .Net framework automatically. This may require a reboot. After the reboot please start the setup file again. Please note that installing the .Net framework will delay the normal installation time.

> ⃝! On nodes where the ABB Asset Vision Basic software (including PBDTM software) is already installed, following drivers must be uninstalled before starting the installation:
> - isHRT CommDTM v2
> - isHRT Driver, version <= 7.1.0
> - isPro Driver, version <= 7.0.0
> Restart the computer before starting the software installation.

Software Versions
Several FIM versions are available.

Features	Device Window Edition (Free edition)	Handheld Edition	Device Management Edition	UMC Edition
Maximum number of tags	1	100 (option to increase)	2500	2500
HART modem support	x	x	x	x
PROFIBUS modem support	x	x	x	x
Automatic device scanning	x	x	x	x
English and German tool language	x	x	x	x
Backup/Restore of tool configuration	x	x	x	x
Online device configuration	x	x	x	x
Offline device configuration		x	x	Only UMC100.3
Import/Export device configuration as file		x	x	Only UMC100.3
Device type template support		x	x	Only UMC100.3
Exporting device configuration for documentation in PDF files		x	x	Only UMC100.3
Project management: Switch between projects for working on several systems with the same FIM computer client		x	x	x
ABB System 800xA Connect – Enables connection to HART & PROFIBUS Devices connected to system 800xA Hardware			x	
Bulk device configuration via device connectivity through System 800xA			x	
ABB Ability™ Connect – Exposes information of devices connected to FIM through OPC UA interface to the ABB Ability™ platform			x	

FIM UMC Edition is the standard software for configuration of the UMC100.3. FIM Device Management Edition is required for UMC configuration with an ABB 800xA system.

Always start with the Device Window Edition, which is a free and functionally limited trial version. Depending on the requirements, this version can then be upgraded to another version by ordering and installing a license. The Device Window Edition can simply be downloaded. See "How to get ABB Field Information Manager". The license for FIM UMC Edition can be ordered from ABB Low Voltage Product sales.

FIM UMC Edition order code: 1SAJ925000R0001

Other licenses are available from ABB Automation.

Device Window Edition (Free Trial Version)
This free limited function version allows online configuration of one UMC100.3. Communication can be established in two ways:
• Point-to-point communication PC – UMC100.3 with operator panel and USB cable
• Profibus DP communication to UMC100.3 with Profibus DP interface PDP32.0. A USB-Profibus interface UTP22-FBP.0 is required

When connecting more than one UMC100.3 via Profibus, the Device Window Edition will show "license Validation Error" for several seconds as a reminder that this version only allows one connected device. One of several devices can be configured online. This message will pop-up again after a few minutes.
The Device Window Edition is for testing, but also fulfills the most common requirements for the configuration of a single UMC100.3.

(!)   As it does not save the settings, this version is not recommended for the configuration of complete projects.

This version offers the following functions:

Device Setting	Online change of all parameters Create individual logic with Custom Application Editor
Diagnostic	Monitor all data: IO data Motor status Diagnostics and Faults Maintenance data
Operate	Direct commands start, stop, fault reset Monitoring most relevant data
Language settings	UMC100.3 configuration is available in the following languages: Chinese, English, German, Italian, Polish, Portuguese, Russian, and Spanish The Custom Application Editor is available in English only FIM base package supports English and German

The Device Window Edition does not support offline configuration, saving of settings or documentation (printing).

FIM UMC Edition
This full version allows configuration of the UMC100.3 in larger projects with advanced functionalities.
• Online/offline configuration
• Project management
• Up to 2500 devices
• Printing
• Import, export
• Additional languages (Chinese)

The Device Window Version can be upgraded to the FIM UMC Edition with a license (available from ABB Low Voltage Products sales).

Other versions
Licenses for upgrading to other versions are available from ABB Automation.

Field Information Manager (FIM) Installation

How to get ABB Field Information Manager
The FIM Device Window Edition can be downloaded after registration at
https://new.abb.com/control-systems/fieldbus-solutions/fim. This ensures you always get the latest version.

Register & Download
• Request your free software download of ABB FIM with your personal data and mail address
• After registration you will receive a mail with a link to the software download
• Download the software and save it on your PC
• Unzip the software package

The package also includes FIM Release Notes and User Guide.

Before installing the software, disconnect UMC100.3 (if connected serially via USB cable) and any Profibus interface such as UTP22-FBP from the USB ports of the computer.

FIM Installation
Start installation of Device Window Edition by executing ABB FIM.

Click on "INSTALL" .

• Accept the licenses

- Next
- Program and data folder can now be changed
- Next
- Start installation

- Installation is finished

Start ABB FIM
As long as no license is installed, this message will appear each time you start the software.
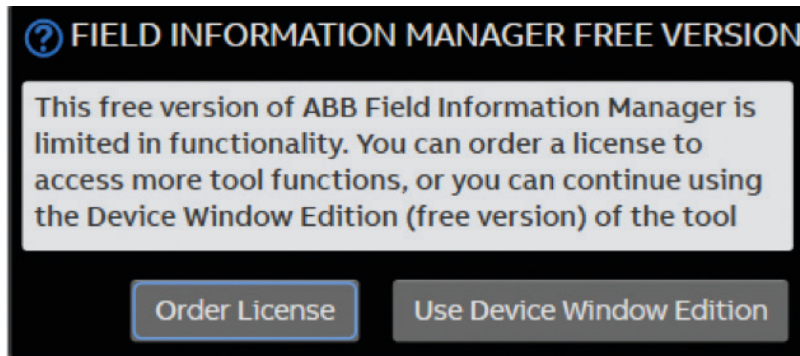
Select Use Device Window Edition.

The installed FDI Communication Servers are shown. Three FDI Communication Servers are installed together with the FIM software package. Two of them will work with UMC100.3 (Profibus FDI Communication Server and UMC USB Serial Communication Server).
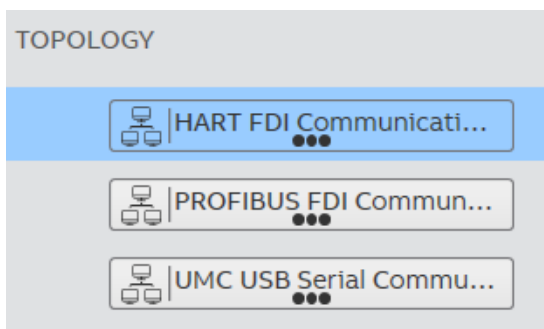
Installation of the UMC100.3 Device Package
To use FIM for the configuration of UMC100.3, the UMC100.3 Device Package needs to be installed.
Drag and drop the file ABB_Stotz-Kontakt_GmbH.100.xxxxx.PROFIBUS.fdix to FIM.

The correct installation is then shown.

The device package is shown in the Device Catalog.

Installation of Custom Application Templates
The UMC100.3 Device Package includes a Custom Application Editor. This editor offers the possibility of creating an individual logic for the UMC100.3 or modifying the integrated control functions.

Modification of a control function is the recommended and easiest way to optimize UMC100.3 for a certain application. The control functions provided by ABB are tested, and in most cases only small modifications are required.

Installation of templates is only required if the Custom Application Editor is likely to be used.

Templates are not installed automatically with FIM or the UMC100.3 Device Package. The templates are in the FIM UMC Edition software package or can be downloaded from the ABB web page.

Now the installation is finished and you can connect FIM to UMC100.3.

Communication with UMC100.3

Communication between the FIM and UMC100.3 is established by FDI Communication Servers.

Two communication servers are available after FIM installation for communication with the UMC100.3. Device configuration is exactly the same regardless of the type of communication server.

The HART FDI Communication Server is also installed, but not used for the UMC100.3. Because it requires the same COM Port, it can disturb serial communication to the UMC100.3. To avoid this, the Hart Communication Server should be disabled (Device Settings / Deactivate the Channel) or deleted (it is still part of the software).

Point-to-point Communication
The Serial Communication Server allows point-to-point communication from PC to the UMC100.3 via a USB cable (Micro-USB type B). The cable needs to be connected to the USB port of the operator panel on the UMC100.3.
• Power-on the UMC100.3 connected with a USB cable to the PC
• The Serial Communication Server then searches for a connected device

Here it detects the COM port that is used by Windows (in this case COM 8) and the connected device (UMC100).
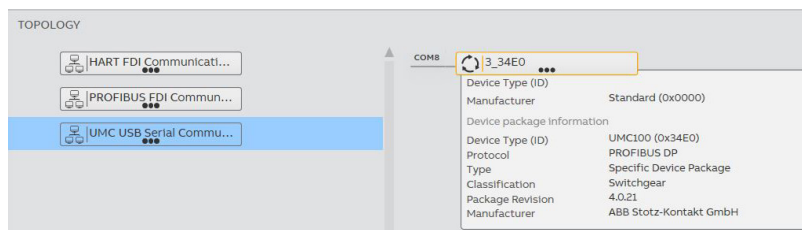
Profibus DP Communication
The Profibus FDI Communication Server allows communication to the UMC100.3 on a Profibus DP network.
This requires:
• A Profibus communication interface UTP22-FBP.0 connected to the Profibus DP network and via USB to the PC
• UMC100.3 with a Profibus communication interface PDP32.0

Start Hardware Scan on the Profibus network.
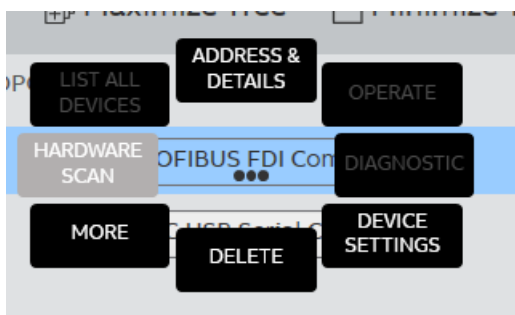
The Profibus FDI Communication Server then searches for connected devices. When removing slaves from the Profibus network, Hardware Scan needs to be re-started manually to identify the new configuration.

Here it detects two UMC100.3 with slave addresses 3 and 4.
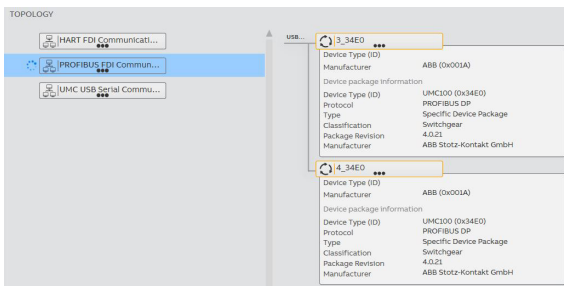
The UTP22-FBP.0 works as a master class II on the Profibus network with acyclic Profibus communication. After installation the UTP22-FBP.0 works with its default settings, which can be changed in the Device Settings menu.

The UTP22-FBP.0 can work in parallel with a Profibus master on the same network at the same time, e.g. in a separate configuration station for parameterizing devices or diagnostic purposes.

In this instance the UTP22-FBP.0 needs to be set exactly to the same parameters (baudrate, timing) as the regular master, but with a different address.

UMC100.3 Configuration

Device Packages are used in FDI technology to describe the functions and settings of field devices. In the ABB FIM software, Device Packages can be used by selecting them in the Device Catalog and downloading them from the ABB server, or by dragging and dropping them into the FIM software. All selected Device Packages are shown in the Device Catalog.
A UMC100.3 connected online to the FIM is shown by:

• Serial communication via USB cable
• Com port 14 used in this example
• UMC100.3 identified as 3_34E0
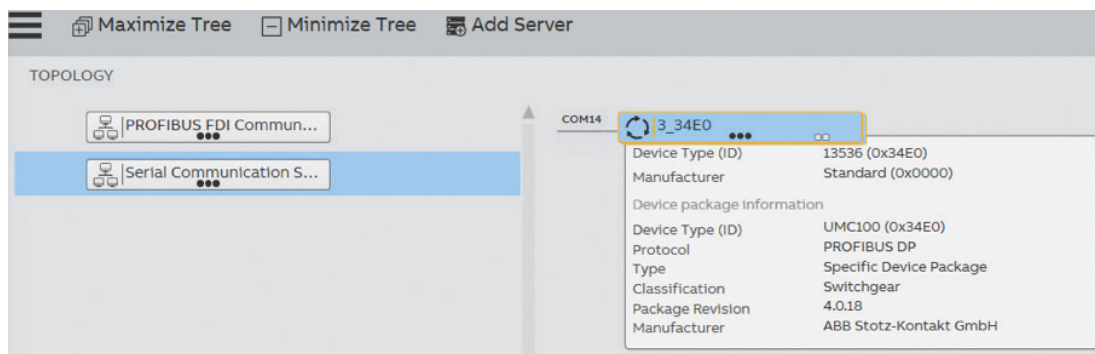
The UMC100.3 Device Package shows three dots
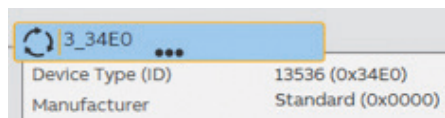
Clicking them opens the main menu selection
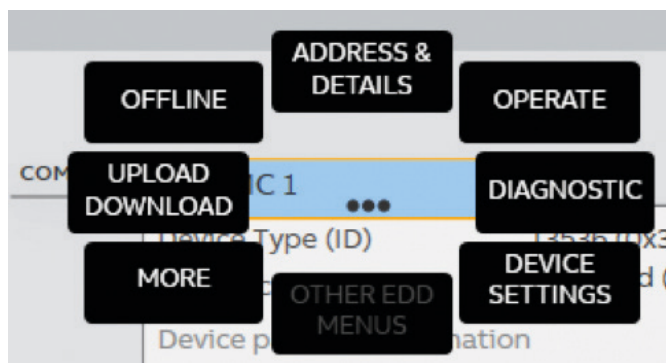
Online Mode
There are three online menu points shown on the right hand side. They are visible as long as there is an online connection to the UMC100.3. Parameters can be changed and sent to the UMC, but not saved on the PC.

Device Settings	Configure – change UMC100.3 parameters
Diagnostic	Monitor – all data is shown
Operate	Test – test mode with start / stop / fault reset and monitoring motor status

Offline Mode

The offline menu points are on the left hand side. They are only visible if the license for the UMC Edition is activated. In the Device Window Edition offline modes are not selectable.

—

Offline

Device Settings	Change parameters and save them on the PC
New Dataset	Create device with default settings
Templates	Create or apply a template
Assign	Assign dataset to a device or device to dataset
Duplicate	Make a copy of a device
Export	Save a dataset
Remove	Remove a dataset

—

Upload/Download

Send to Device	Download parameters and logic
Read from Device	Read parameters

—

More

Replace Device Package	Replace actual used package with another version
Printing	Print the offline parameters in a PDF
Compare	Compare parameters with another device

FIM Device Window Edition

FIM Device Window Edition is the limited free trial version of the software without an installed license.

All online functions are available and allow easy UMC100.3 parametrization without restrictions.

All settings are made online only and not stored on the PC.
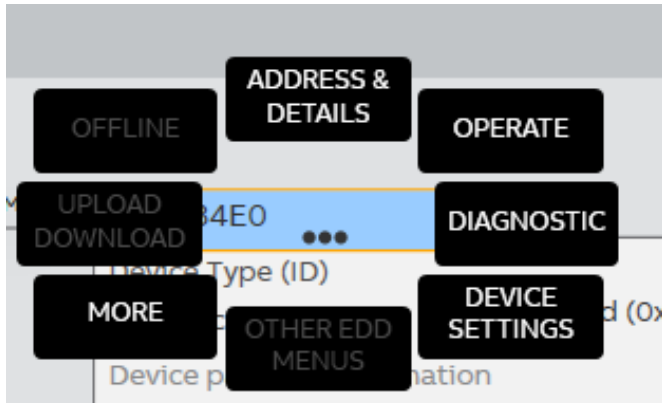
Device Settings

Parametrize
This menu allows access to all UMC100.3 parameters and the Custom Application Editor.
The actual settings are shown. These can be modified and then sent to the UMC100.3.

⚠   Make sure that in the online mode these settings are only made on the UMC100.3 and not saved in a project.

All UMC100.3 parameters are functionally organized in tab cards. Some of them are only visible after a selection in the General Settings Tab (e.g. for expansion modules).

Tab Card Overview:
General Settings: Provides access to general settings of the UMC100.3. Start parameterization here.

Motor Management: Parameters related to motor management are accessible. For more information about the parameters, see the 'Configuring the Motor Management Functions' section in the UMC100.3 manual.

Protections 1/2: Protection functions can be configured. See 'Configuring the Motor Protection Functions' section in the UMC100.3 manual.

Maintenance: Warn level operation/stand still time.

Multifunction Inputs DI0/1/2: Configuration of multifunction inputs. See 'Configuring the Motor Management Functions → Using the Digital UMC Inputs' section in the UMC100.3 manual for more information about the parameters.

Voltage DIP: Configuration of voltage DIP function. See 'Configuring the Motor Protection Functions → Voltage Dips, Load Shedding' section in the UMC100.3 manual for more information about the parameters.

Aux Fault/Warn: Visible if a digital expansion module DX111/DX122 is configured. On this tab card the function block 'Aux Fault Warn' can be configured. See 'Using Expansion Modules' section in the UMC100.3 manual for more information about the parameters.

DX1xx: the parameters for the expansion modules DX111 and DX122 can be set on this tab card. See the 'Using Expansion Modules' section of the UMC100.3 manual for more information about the parameters.

VI15x Power: The power related parameters for the expansion modules VI15x can be set on this tab card.

VI15x Voltage: The voltage related parameters for the expansion modules VI15x can be set on this tab card.

AI111 Module: The analog input module parameters can be set on this tab card.

Custom Application Editor: This tab card allows the creation of custom applications. See the Custom Application Editor manual for more information.

The Device Window Edition shows the parameter value or setting online. After changing a value, a pencil indicates that a value has changed, but not downloaded yet.

Click the Send button to download.

Custom Application Editor
After enabling the Custom Application Editor in the General Settings tab, a new "Custom Application Editor" tab is visible. Opening this tab opens a new window in the editor.

A separate manual for the Custom Application Editor is available, describing all function blocks and the most important functions.

- Import a control function template. For the first import, the path where the templates
  are stored needs to be selected. This path will be remembered.
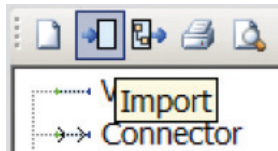
- Export the modified logic. The logic can be stored with its own name

---
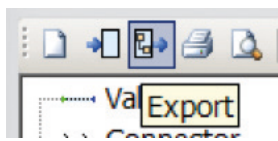
⚠ Make sure that that any modified logic in online mode can be downloaded but not saved as part of the device settings. Using the Export function for saving the logic for any further use is recommended.


- Verify project: this function checks if the program is formally correct (which does not mean that it is functionally correct). The result is shown in the message field in the bottom right of the editor window.
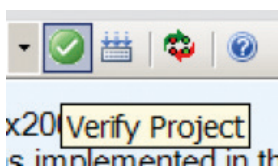
- Apply: this function complies and downloads the logic. This will take a few seconds
  Any formally incorrect logic will not be downloaded
  'Apply' in the message field indicates that there are no faults and that the download is complete
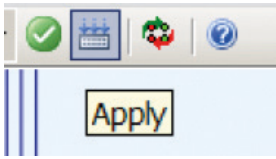
- Online: starts the online status indication of the signals. Online is stopped with the same button and changed to edit mode
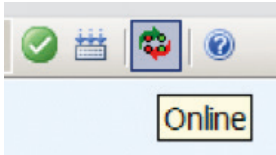
Binary	0	blue
	1	red
Analog	value is shown, line is green	
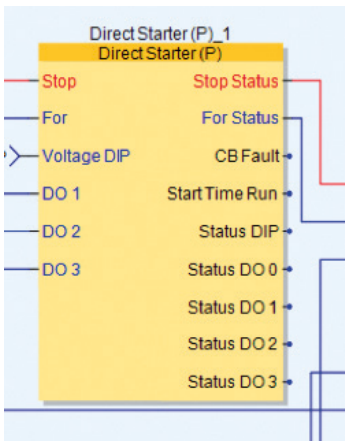
Access
Tab Card Overview:

 Change Bus Address: the slave address of a UMC100.3 can be changed here. Note that this is a critical function that can result in loss of communication or other unexpected behavior. It should only be used if you are aware of the consequences.

Change Password: The password for parameter protection can be changed here (activation needs to be done in the parametrize menu or via control panel)

Change Profile: By selecting 'Short Profile' the amount of data transferred on a fieldbus can be reduced. Make sure when changing this parameter that the setting fits the fieldbus configuration.

Maintenance

Tab Card Overview:
Maintenance Counters: All counters in the UMC100.3 can be reset here.

Diagnostic
All IO and diagnostic data, status, faults and warnings from the UMC100.3 are shown online in this menu.

Tab Card Overview:
- Cyclic Command Telegram: Cyclic output (command) data from the control system to the UMC100.3
- Cyclic Monitoring Telegram: Cyclic monitoring data from the UMC100.3 to the control system
- Motor Status: Shows most important motor status data, analog and counter values
- Diagnostics / Diagnostics2: Shows faults and warnings
- Diagnostics History: Shows Error History with Time of Trip after power on and Error
- Voltage and Power: All the data available when a voltage module VI15x is used

To ensure fast updating, only important data is updated cyclically in some tabs. In these cases use the Refresh button for a complete update.

Operate
The Operate mode allows online testing using the start, stop and fault reset commands, if configured in the motor management settings. Motor start is deactivated for safety reasons by default.

To activate: Motor Management -> Command Control Settings -> Select Bus Acyclic Start

The most important data displayed is updated cyclically. In some folders there is a refresh button to update all data.

FIM UMC Edition

FIM UMC Edition is the full version that provides all required functionalities for effective work with the UMC100.3.

• Online/offline mode
• Project management
• Up to 2500 devices
• Printing
• Import, export
• Additional language settings

This edition enables the creation of projects using several UMCs and the configuration of devices online and offline.

The Device Window Edition can be upgraded to the UMC Edition by buying and installing a license. The license file is provided on the USB stick that is delivered when buying the FIM UMC Edition license. Installation can be done in two ways:
• After Starting FIM → Order License → Load License → Import license file *.SLA
• Drag and drop the license file *.SLA
• Restart FIM

Import Language Pack
On the USB there is also a language pack file. This file supports Chinese for the software.
Install it by dragging and dropping.
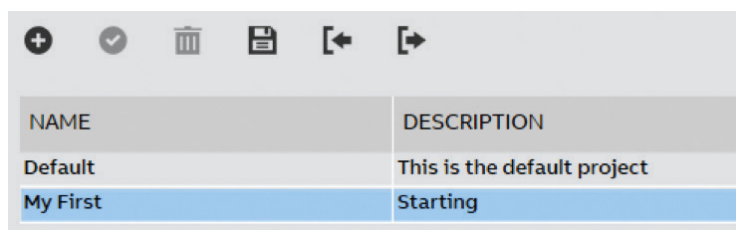
Offline Mode
In addition to the online mode already described (refer to "FIM Device Window Edition" for details) the UMC Edition also includes an offline mode. This mode allows you to:
• Create a project
• Set all parameters offline and save them
• Assign data to a UMC100.3 and download them
• Print the device settings

Projects
New projects can be added here. Existing projects can be saved, deleted, imported, and exported.
The active project is selected here.

After the first software startup the "Default" project is active. To create a new project,
Add a project and open it. It is named "My First".

NAME	DESCRIPTION
Default	This is the default project
My First	Starting

Topology
Select the kind of communication to the UMC100.3 in this project.
'Add Server' opens the communication server selection box.
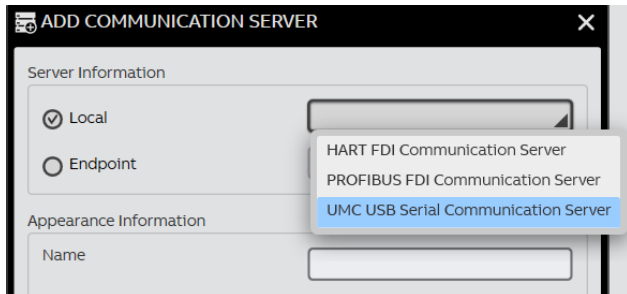
Select the UMC USB Serial Communication Server. It is now part of the project.

Device Catalog
All devices that are installed in the FIM are displayed here. Other available ABB device packages can be selected here and downloaded online.

You can select a new offline dataset of a field device here:
• Click on UMC100, Offline, New Dataset
• Type name (Pump 3 in this example), add device

Configuration
The Configuration now shows the communication server, one connected UMC100.3 and one offline device 'Pump 3'.

More devices can be added in the same way.
It is also possible to duplicate a device and to create templates.

Offline configuration

Device Settings

Devices can be configured offline here. Click on the device > "Offline" >"Device Settings"
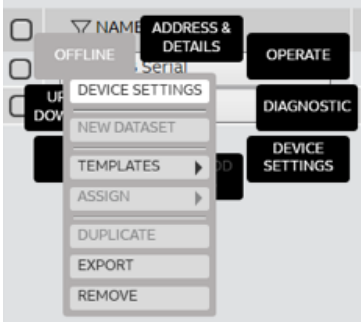
All parameters can be modified in the same way as shown in "FIM Device Window Edition"
Make sure you save the settings.

Templates

Templates can be created e.g. for device settings that are used more often. You can create a template "Pumps" for a general pump type. The parameters can then be modified and stored.
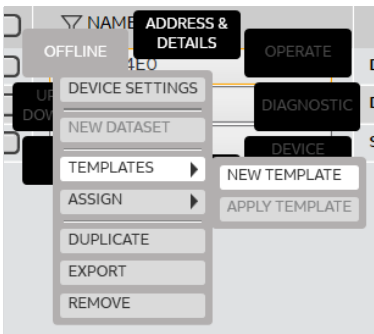
Here we have created a "Pumps" template with which we can make a general pump configuration.
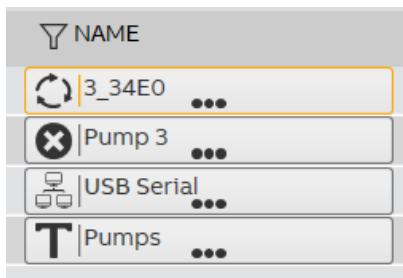
Then the settings of a template can be assigned to an offline device and downloaded.
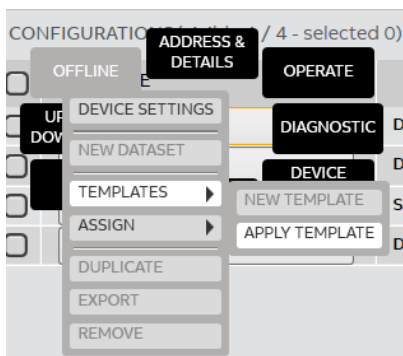
Printing Device Settings

The settings of a device are saved as a PDF and can be printed then. Any special custom application logic is not printed with the parameter setting. This logic needs to be printed directly from within the Custom Application Editor.
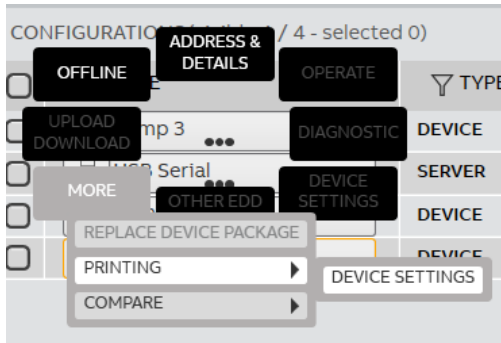

Compare Device Settings

Offline datasets from two devices can be compared. The table shows the settings of each device and the comparison result. This result can be exported and will then open in EXCEL.
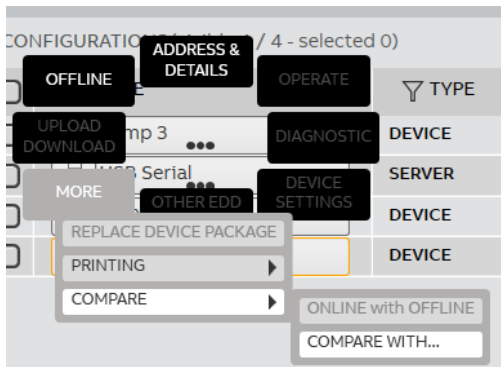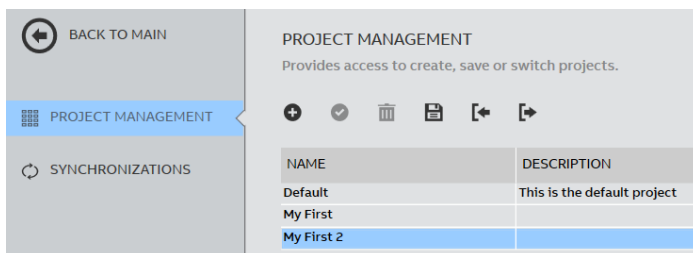

Bulk functions

Some functions such as printing, upload and download can be done for several devices with one command.
This is called bulk functions.

In this example, datasets will be downloaded to three devices on a Profibus network.
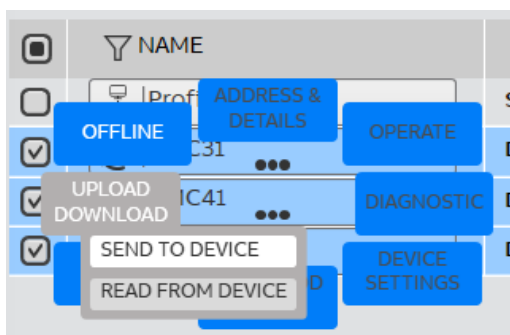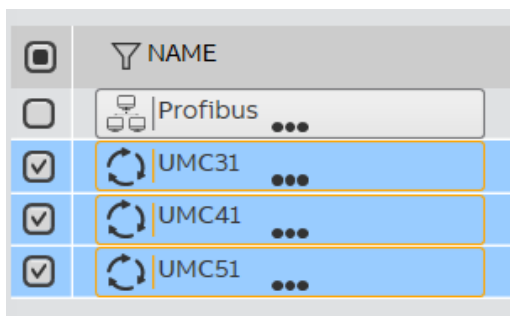
Project Mangement

The FIM UMC Edition also has an additional Project Management

In the Project Management new projects can be added or imported, existing ones can be opened, deleted, saved as a new project or exported as a file.

When starting the FIM UMC Edition, the last project will be opened.

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