

MANUAL

ABB Ability™ Energy Manager and UMC100.3

Users' manual for Integrating UMC100.3 in

ABB Ability[™] Energy Manager





Universal motor controller UMC100.3100.3

Discover the ABB Solution to digitalize your plants with ABB Ability[™] Energy Manager and UMC100.3100.3 Universal Motor Controller.

ABB motor controllers combine intelligent motor protection and control functions, Fieldbus and Ethernet communication, and fault diagnosis in a single device. UMC100.3100.3 provides detailed operational, diagnostic and service data in real time, giving your plant an effective data source for predictive maintenance. UMC100.3100.3 status and alerts can be reported in the Energy Manager cloud platform. Easy!

Table of contents

4	Purpose and basic description
4	Important disclaimers & recommendations
5	Quick guide for integration
6	Basic setup
8	Configuring the Edge Gateway with devices
10	Preparing UMC100.3100.3 for provisioning
14	Provisioning tool
24	Widgets and functions related to UMC100.3100.3
27	Related documents
27	Revisions

1. Purpose and basic description

This document provides step-by-step instructions for integrating UMC100.3100.3 in ABB Ability™ Energy Manager

Please note that this manual gives instructions on:

- Getting the device ready to be connected in ABB Ability[™] Energy Manager.
- Provisioning of the device in ABB Ability[™] Energy Manager.

The user may need other manuals to find more detailed instructions. A list of related documents is given at the end of this document.

2. Important disclaimers & recommendations

2.1. Cyber security legal disclaimer

The Edge Gateway is designed to be connected in the ABB and 3rd-party products and communicate information data via a network interface. It is the user's sole responsibility to provide and continuously ensure a secure connection between the product and the user's network or any other. The user shall establish and maintain any appropriate measures (such as but not limited to the installation of firewalls, application of authentication measures, encryption of data, installation of anti-virus programs, etc.) to protect the product, the network, its system, and the interface against any kind of security breaches, unauthorized access, interference, intrusion, leakage, and/or theft of data or information. ABB and its affiliates are not liable for damages and/or losses related to such security breaches, any unauthorized access, interference, intrusion, leakage, and/ or theft of data or information. The data, examples and diagrams in this manual are included solely for the concept or product description and are not to be deemed as a statement of guaranteed properties. All people responsible for applying the equipment addressed in this manual must satisfy themselves that each intended application is suitable and acceptable, including that any applicable safety or other operational requirements are complied with. Any risks in applications where a system failure and/or product failure would create a risk for harm to property or persons (including but not limited to personal injuries or death) shall be the sole responsibility of the person or entity applying the equipment, and those so responsible are hereby requested to ensure that all measures are taken to exclude or mitigate such risks. This document has been carefully checked by ABB, but deviations cannot be completely ruled out. In case any errors are detected, the reader is kindly requested to notify the manufacturer. Other than under explicit contractual commitments, in no event shall ABB be responsible or liable for any loss or damage resulting from the use of this manual or the application of the equipment.

2.2. Making your Networks more secure:

Following points are strongly recommended to make networks more secure:

- Isolate your network separate the OT network (operation technology) from the IT network (information technology). This helps prevent any attack reaching the IT network from spreading to the OT network.
- 2. Use firewalls Implement firewalls to prevent unauthorized access to the OT network.
- 3. Use access control Implement access controls to restrict the human and device access to the OT network.
- 4. Keep software up to date Make sure all software/firmware of the devices are up to date to have the latest security updates installed.
- 5. Reduce attack surface on devices Disable device functions, services and ports not needed.
- Replace default passwords Replace all default passwords of the devices to prevent attacker from getting access using default credentials.
- 7. **Monitor network activity** Monitor the OT network for any malicious activities that could be a sign of an attack. Example of network monitoring tool is intrusion detection system (IDS).
- 8. Train employees Train operators and service people on IT and OT security best practices.

5

3. Quick guide for integration

The following is the list of steps that need to be performed to integrate devices in the ABB Ability[™] Energy Manager.

3.1. Check device-related details.

- a. Ensure that the device you would like to connect in ABB Ability[™] Energy Manager is in the list of connected devices given in the link below:
 - List of connected devices in ABB Ability[™] EM
- b. Check the firmware of the listed device.
- c. Check to which gateway the device can be connected.

3.2. Setting up wiring.

- a. Connect the devices and the gateway to 24 VDC.
- b. Connect devices to the gateway over Modbus RTU and ModbusTCP
- c. Availability of internet connectivity for the gateway.

Please refer to chapter 4 for details.

3.3. Set up device to be connected.

- a. Set up device setting including:
 - i. The fieldbus which needs to be used to connect the device and the gateway.
 - ii. Set up parameters for the field bus used: it must be identical to what is set up in the gateway.
- b. Ensure that the recommended firmware is used in the device.

Please refer to chapter 5 for details.

3.4. Configure gateway.

- a. Use ABB Provisioning tool to configure the gateway.
- b. Connect gateway to the available internet via cable or Wi-Fi.
- c. Ensure the Modbus RTU setting for the devices to be connected. This setting included baud rate, Stop bit and parity. The Modbus RTU address of the gateway is 1.
- d. Ensure that the setting is applied for both COMs for Modbus RTU.
- e. Similarly, set up parameters for the ModbusTCP

Please refer to chapter 6 for details.

3.5. Provision the device in the gateway.

- a. Provisioning means the integration of the device to be connected in the gateway.
- b. Provisioning can be done in the following ways.
 - i. If the device has a serial number in the Modbus RTU/TCP address range, the provisioning tool will automatically detect the device.
 - ii. If the device lacks a serial number in the Modbus RTU/TCP range, then the user must key-in the serial number manu ally.
- c. After provisioning, the devices need to be populated in the selected ABB Ability™ Energy Manager Plant.

Please refer to chapter 6 for details.

In the ABB Ability[™] Energy Manager platform.

- a. Please ensure that the device provisioning is available in the "Plant," and you can see the widget along with the data.
- b. Also, check if the communication status is set to 'connected' in the "explore page.
- c. In addition, please set up the event and alarms in the "plant."

Please refer to chapter 7 for details.

4. Basic setup

This section describes the basic steps required to set up the UMC100.3100.3, PSTX, CM-UFD and CM-TCN.012 along with Edge Gateway. The setup can be done as shown in the picture below:

4.1. Architecture used

This section describes the basic steps required to commission an architecture consisting of Novolink (OPA UA device), UMC100.3100.3 over Modus TCP, PSTX, CM-UFD and CM-TCN over Modbus RTU, as shown in the picture below:



Number	Description
1	Edge Gateway (not in scope of this document)
2	Industrial Edge Gateway
3	24 VDC Power supply
4	SFM mounted on AF Contactors.
5	B&R Controller
6	Softstarter PSTX
7	UMC100.3 with PNU module
8	CM-UFD
9	CM-TCN.012

4.2. Before you start

4.2.1. Wiring and power up

Refer to the architecture used. Please ensure that all wiring is done and devices are powered up, using the schematic shown below.



24 VDC	24VDC is connected to the Edge Gateway.
	24 VDC is connected to the UMC100.3 or any other device we need to connect to the gateway
220 VAC	220 VAC is required for power supply. 220 VAC can also be used for power up contactors and L1, L2, L3 pins for UMC100.3 and other devices
Modbus RTU	Connect A+ of Modbus RTU device to A+ and A-to A- of Edge Gateway.
	In some devices, it is written as D+ and D- equivalent to A+ and A-
	For example, with PSTX: With Com1 of the Edge Industrial Gateway, the connection should be: PSTX 23 (+) connected to ELGW 7
	(D+) and PSTX 24 (-) connected to ELGW 6 (D-). Note: Please use 120 Ohms resistors (recommended).
ModbusTCP	For ModbusTCP: Connect the Ethernet port 1 to the switch.
	Connect the Ethernet port of the device to the switch. For UMC100.3, connect the Ethernet cable for port 1 to the Ethernet switch.
OPC UA	For OPC UA: Connect the Ethernet port 1 to the switch.
	Connect the Ethernet port of the device to the switch. For Novolink, connect the Ethernet cable for port 1 to the Ethernet switch.

4.2.2. ModbusTCP connectors in Edge Gateway

• ModbusTCP devices need to be connected to the Edge Gateway via the Ethernet switch.

4.2.3. Software required:

Cloud commissioning tool/provisioning Tool	To set up ABB Ability [™] EAM, the user needs the followingsoftware: ABB Cloud commissioning tool. It is also known as the provisioning tool. A cloud commissioning tool is available at this link: https://to.abb/IW3m1coZ
FIM	Field information management for UMC100.3. This software can be downloaded from: https://to.abb/wKCp5UrG
MTQ22 configuration tool	MTQ 22 configuration tool can be downloaded from this link: https://to.abb/vV-TnfFK
MTQ22 configuration driver	MTQ22 driver can be downloaded from this link: https://to.abb/1wTO5av_
SoftCare	Configuration of Modbus RTU addresses in CM-TCN.012 can be done with HMI on the device or SoftCare application. This software is available at this link
Configure TCN	Can be done with HMI on the device or using EPIC app
Collection of Softstarter software and tools	Test our software application. Learn more about Softstarter products and simulate a motor start in your computer using software available at this link.

5. Configuring the Edge Gateway with devices

5.1. Physical connections

5.1.1. All devices are connected and powered on

Please ensure that all the devices are connected and powered on as described in the section 2.1.

5.1.2. Ensure your computer and Edge Gateway are on the same network

Please ensure that the Ethernet address of your computer is set to the range of 192.168.2.x like 192.168.2.10 This can be done by searching for "network connection in windows" search bar.

Then select the network adapter you want to use for configuring the smart gateway network.

Then select IPV4



→ 🐳 🛧 🔄 > Control Panel > All Control Panel Items > Network Connections

onnect Secure Mobility ection		Ethernet DestoDemo5
	S.	Lenovo-USB Ethernet
	ction	ection

X

Change address: The address should be in a range of 192.168.2.1-> computer: 192.168.2.10

Internet Protocol Version 4 (TCP/IPv4) Properties

Network Con

for the appropriate IP settings assigned at this capability. Otherwise, you need for the appropriate IP settings.	utomatically if your network supports d to ask your network administrator
Obtain an IP address automat	bcally
IP address:	192.168.2.11
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	
Obtain DNS server address au	utomatically
Use the following DNS server	addresses:
Preferred DNS server:	1
Alternate DNS server:	
Validate settings upon exit	Advanced

5.2. Connecting to the provisioning tool

5.2.1. Ensure connectivity to the Edge Gateway

After performing the cabling as described in chapter 2, please "Ping" your Edge Gateway using CMD command. CMD command can be opened by pressing the windows button + R button on your keyboard.

A "RUN" window will appear. Type CMD and press enter.

A command screen will appear. Type ping 192.168.2.1 (default IO address of Edge Gateway).

C:\WINDOWS\system32\cmd.exe Microsoft Windows [Version 10.0.19044.2604] (c) Microsoft Corporation. All rights reserved. C:\Users\DEHUAHM>ping 192.168.2.1

In communication is successful, data will be exchanged from the Edge Gateway.





🖃 Run

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014. C:\V	VINDOWS\system32\cmd.ex	re	

Type the name of a program, folder, document, or

X

6. Preparing UMC100.3100.3 for provisioning

6.1. Basic understanding

The following points need to be considered to connect/provision UMC100.3 in ABB Ability™

- UMC can only be connected to ABB Ability via Edge Gateway using ModbusTCP.
- The connection can be made by using either MQT22.
- The UMC100.3 module should be connected to Edge Gateway using an Ethernet cable connected Ethernet switch, which is in turn connected to the Edge Gateway. See section 3.2.1 for cabling details.
- MTQ22 can be configured via a USB connection between the computer and MTQ22 and using the MTQ22 configuration tool (see the list of software required in section 4.2.)
- PNU32.0 can be configured via the DCP protocol.

6.2. Parameters to be set in UMC100.3

Fieldbus: ModbusTCP

The ModbusTCP IP address should be set in the range of the ModbusTCP address defined in Edge Gateway.

6.3. Setting parameters with HMI on the UMC100.3

6.3.1. What is HMI:

HMI refers to the (Human-Machine Interface) HMI keypad, which can be mounted on the UMC100.3:



6.3.2. Parameters to be managed:

- Changing the FBP address
- Depress hot key 2 (menu)
- The UMC100.3100-PAN displays "Communication."
- Depress hot key 2 (select)
- The UMC100.3 100-PAN displays "Bus fault reaction."
- Use the scroll up/down buttons until "Bus address" is highlighted.
- Depress hot key 2 (select)
- Use the scroll up/down buttons until the desired bus address is displayed.
- Depress hot key 2 (next) twice.
- Depress hot key 2 (save)



6.4. Setting parameters with MTQ22 configuration tool

The Modbus TCP address in UMC can be configured with the MTQ22 configuration tool and driver for MTQ22 module. For PNU32, the user needs to have any form of software that features DCP (Discovery and Configuration Protocol). In general, this feature is built in to PLCs, but, but there are also dedicated tools on the market. This software can be downloaded from:

FIM	Field information management for UMC100.3. This software can be downloaded from: https://to.abb/ wKCp5UrG
MTQ22 configuration tool	MTQ 22 configuration tool can be downloaded from this link: https://to.abb/vV-TnfFK
MTQ22 configuration driver	MTQ22 driver can be downloaded from this link: https://to.abb/1wTO5av_

Important: The user should have the administrator rights and the software to run the software.

6.4.1. Running the MTQ22 tool:

- Click the "Windows Icon" on the bottom left of your screen.
- Locate the ABB Config Tool (In this example, the config tool is in the "ABB" folder
- Right Click on "ABB Config Tool"
- Select "More"
- Click on "Run as Administrator"



6.4.2. Connection:

- Use the drop-down menu to select your com port.
- You will see the com port assigned automatically when you first connect the USB cable to your computer and the MTQ22.
- Click on "Connect"



6.4.3. ModbusTCP IP setting:

You will see "Disconnect" if you are successfully connected to the MTQ22.

From this screen, you can set the IP Address, subnet mask and standard gateway of the MTQ22.

- Set the Addressing Mode to "Manual".IP Address: Set to your requirements. In this example we are using 192.168.2.10 (This is because the Gateway IP address is 192.168.2.1).
- Subnet Mask: 255.255.255.0.
- Standard Gateway: Set to your requirements, in this example we are using 192.168.2.1 (This is because the Gateway IP address is 192.168.2.1).



6.4.4. Number of UMC100.3s connected:

In this example, we have a single MTQ22 connected to a single UMC100.3100.3. Note: Up to 4 UMC100.3s can be connected to one MTQ22 module.

The number of MODBUS/TCP master connections under supervision should be set to 1.

The allowed number of supervised connections missing should be set to 0.



6.4.5. ModbusTCP IP addresses range:

Set the allowed ModbusTCP/IP address per your requirements for Master 1. In this example we are using the following ranges:

• Master 1: 192.168.2.0 – 192.168.2.10. Master 1 must have a timeout set to 60 seconds.



6.4.6. Device selection:

Click on "UMC100.3."



6.4.7. Select UMC100.3:

Use the drop-down to select your device. In this example, we select the UMC100.3.



6.4.8. Save project:

Upon success, you will see confirmation that the parameters were saved to the device.

- Click "ok".
- Click "Save Project".

You can now close the ABB Config Tool.



7. Provisioning tool

7.1. Connection and overview

7.1.1. Types of devices

There are two types of devices which can be "provisioned" in the ABB Ability[™]:

- a. Devices with a serial number readable from the Modbus address. These devices can be identified automatically during scanning of the connected device by the provisioning tool. The serial number will be read automatically from the device itself.
- b. Devices without a serial number readable from the Modbus address. These devices cannot be identified automatically during scanning of the connected device by the provisioning tool. The serial number must be keyed in by the user.

Note: UMC100.3 with both PNU and MTQ are type of devices for which serial number has to be keyed-in manually.

7.1.2. How to connect with provisioning tool

Open the ABB Provisioning Tool

Note: Subject to the settings of the computer, the user may need to run the provisioning tool as an admin.



This window will appear:



Important: Your computer IP address should be in the range of 192.168.2.xx. Note: The default address of Edge Gateway is: 192.168.2.1.

7.1.3. Configuring Gateway

Click on "configure gateway" button:



Select Edge Industrial Gateway

Select automatic discovery.	

Note: Select "Automatic Discovery" (takes longer) or "Manual discovery" (requires additional steps) then click "Start Discovery".



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Cher Shini gratatous An packets.	Click "Sniff	gratuitous ARP	packets."
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Select your Ethernet Adapter – Note: It is highly recommended that you do not use Wi-Fi at this time.

Click "Use IP address list."

Enter the IP address of the gateway: 192.168.2.1

Click the + icon.

Click "Confirm."

Manual discovery settings Sniffer	
Sniff gratuitous ARP packets	
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Wi-Fi	
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Timeout [ms]:	
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IP Address	
Use IP address list	
IP Address	
+	- •
192.168.2.1	
Use IP address range	
From 192 . 168 . 2 . 1	To 192 . 168 . 2 . 254
	Canad

Enter the activation code found on the side of the gateway. Note: You will want to save this code in a file, so you don't have to look it up every time. Then click "Go to Configuration."

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Click "Check" to check for new firmware online. If new firmware is detected, download and install the firmware. If it says, "You already have latest firmware," move on to the next step.



ABB

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Protocol Server IP / Port

Click on the "Configuration" tab

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TCP -

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Set your current Date/time and the Time Zone

Click on the "Connectivity" tab



Click on "Ethernet0"

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46 Back to Discovery			

Set the IP address, subnet mask and Gateway (static IP only). If using DHCP, continue to the next step.

Click on the "to Devices" tab.

		Provisioning Tool	
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IP Address		four if Address and Galev	vay will be provided by
Subnet Mask	255.255.255.0	the version the meters in	commented to (DUCD)
Gateway		the router the gateway is	connected to (DHCP)
Force Static IP Address	*		
Static IP Address		If you wish to use a Static	IP address make sure
Static Network Submask 3	0 . 255 . 255 . 0	i you wish to use a static	IF address, make sure
Static Gateway		forme etertic ID address is	an Then enter the ID
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Here you can change the IP address of the Gateway and configure the communications settings for Com0/Com1 for devices connected over ModbusTCP.

Note: Configure Com1 Settings here for nodes 158-244. Note: These settings must match the settings in the device connected over Mod-busTCP: in this case, UMC100.3.

Configure Com0 Settings here for nodes 2-157. Note: These settings in the device are connected over ModbusTCP: in this case, UMC100.3.

Recommendation: Please use an equal number of devices on both coms. This means if you have two devices connected on Com 0, please put two devices on Com 1 too.

Note: If you wish to change the IP address of the gateway, you can do so here. Note: There is no Static Gateway required here. See parameters in red box.



Click on "Back to Discovery"

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ethi	Discard Save	RS-485 COMO Discard	Save	RS-485 COMI Discard	Save			
IP Address	192.168.2.1	Baudrate	19200 -	Baudrate	19200 ~			
Subnet Mask	255,255,255.0	Data Bits	8 ~	Data Bits	8 ~			
Gateway	0.0.0.0	Parity	Even ×	Parity	Even ~			
Static IP Address	194 . 160 . 2 . 1	Stop bits	One v	Stop bits	One ~			
Static Network Submask	255 . 255 . 255 . 0	Write TimeOut (ms)	300 👰	Write TimeOut [ms]	300 👼			
Static Gateway	0.0.0.0	Read TimeOut (ms):	300 🗄	Read TimeOut [ms]:	300 🛧			
Optional DNS Server1	0.0.0.0							
Optional DNS Server2	0.0.0.0							
MacAddress	acid3.64:00:52:4d							
MacAddress	ac.d364400.d24d							
Sack to Discovery								1239.4
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Click on "Back to Select Device"



7.2. Provisioning UMC100.3

The following steps need to be performed for "Provisioning" UMC100.3 in ABB Ability Energy Manager:

7.2.1. Steps

As described in the previous section, please open the provisioning tool and click "Start provisioning."





Click on "Go To Discovery"



er ABB Ability"

Click on "Manual discovery," then click on "Start Discovery."



Make sure "Sniff gratuitous ARP packets is checked." Check your Ethernet Adapter and Use IP Address list.

Note: These steps are given in this previous section.

Click on "Slave Addresses" and make sure the PSTX slave address is checked along with the slave address of the gateway. Then click "Confirm".

It is also important to ensure:

Note: Configure Com1 Settings here for nodes 158-244. Note: These settings must match the settings in the device connected over Mod-busTCP: in this case, UMC100.3.

Configure Com0 Settings here for nodes 2-157. Note: These settings in the device are connected over ModbusTCP: in this case, UMC100.3.

Enter the activation code found on the side of the gateway. Then click "Go to Local Network."







Important:

There are two types of devices which can be "provisioned" in the ABB Ability[™]:

- a. Devices which have a serial number readable from the Modbus address: These devices can be identified automatically during scanning of the connected device by the provisioning tool. The serial number will be automatically read form the device itself.
- b. Devices without a serial number readable from the Modbus address: These devices cannot be identified automatically during scanning of the connected device by the provisioning tool. The serial number must be keyed in by the user.

Please note that UMC100.3 (with both PNU32 and MTQ22) is a device for which the serial number is not readable from the Modbus address. It will not appear in the "Here is your local network" window as shown below. The user must add UMC100.3 manually. See next steps.

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I the devices ro	ound over local net	sione are shown below.							
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evicusly added d DEVICE Industrial Gateway Arc Quard	TAG NAME MEB_EIG	1/2014_NU-9228 8/25010980241W0 00 1514/2004/2144300	# ADDRESS 342 192,058,2.1	AVE ADDRESS STATUS	ACTION Update * >				
eviously added d orvice industrial Gatemay Arc Quard (TVOC-2-48.)	TAG NAME MEB_EKG	325044, MUHBER 825010980241040 00 153160042164300 26	9 ADDRESS SL 192368.2.1 192368.2.5	ANT ADDRESS STATUS 1 2 (inabled	ACTION Update = > Update = >				
eviceusly added d bornot industrial Gateway Arc Quanti (TVOC-2-48.)	TAG NAME MEB_EKG	1/2004_MUH028 825010980241W0 00 151600042164309 20	P ACCHE'S SL 192.568.2.1 192.568.2.5	AVE ADDRESS STATUS 1 2 Enabled	ACTION Update = > Update = >		 		
evfounly added d brinci Industrial Gateway Arc Quard (TVOC-2-48.)	TAG HAVE TAG HAVE MEB_ENG	128304, 30,04828 825010989244390 00 1251400042144310 26	# ACORESS 34.1 192.568.2.1 192.568.2.1	ANT ADDRESS STATUS 1 2 Enabled	ACTION Update = > Update = >			_	
evfounly added d brynci Industrial Gateway Arc Quard (TVOC-2-48.)	Sevices TAC HARE MEB_ERG	5280.4. MJ-9828 825010980241W0 00 155160042104300 26	P ACCHEVS SL 192,558,2,1 192,558,2,5	AUF ADDRESS SEATUR 1 2 Enabled	ACTON Update * > Update * >			_	
evlously added d boxect Industrial Gateway Arc Guant (TVOC-2-48.)	TAC NAME TAC NAME MER_ENG	56104, MJSHEE B25010980344W0 00 E53460062194330 26	# ADDRESS 34.7 192.568.2.1 192.568.2.5	ANT ADDRESS STATUS 1 2 Enabled	ACTON Update * > Update * >				
evlously added d boxect Industrial Gatemay Arc Guard (TVGC-2-48.)	tevices TAG NAME MEB_ENG	52501.0480245W0 00 55340004184300 25340004184300 20	P ADDRESS 34. 192.268.2.1	ANT ADDRESS STATUS 1 2 Enabled	ACTON Update = > Update = >				
evfounly added d SEVICE Industrial Gaberay Arc Guard (TVOC 2-48.)	TAG NAME TAG NAME MEB_ENG	161944, малчаска 86250310980241390 00 1934600462144390 28	P ACORESS SL. 1802/08/2.0 1802/08/2.4	ARE ADDRESS STATUS 1 2 Enabled	ACTON Update = > Update =>		I	_	
evisionly added d crinical industrial Gateway Arc Quard (TVOC-2-48)	Newson Tables	18804, MARKE B20106924890 00 1536000424430 26	9-8208035 SJ. 1902/96224 1902/9623	ant accesses to status 1 2 Enabled	ACTON Update = > Update =>				polate to Plant
eviceoly added a conce industrial didensity Arc (band (NOC-2-46))	TAC NUME TAC NUME	15104-53-00 2000 15100-00 15100-00 20	9 ACORES 31. 1902/08/21 1902/08/21	AN ADDRIVE STATUS L 2 Evabled	ACTON Update = > Update = >				polars has Filed

7.2.2. Steps for adding device manually:

Please click on "Add device" button



You will get this screen



Click on + Add Device.

Select "Universal Motor Controller." Then select "MTQ22".

Enter the IP Address 192.168.2.10 and click "Get sub devices."

Click on "UMC100.3100 on Port 1." Click on "Add Device."

Enter a Tag name for the UMC100.3, in this example it is "UMC_Demo"

Make sure Enable device to send data is on.

Click "Add to Gateway" (new installations) or "Update to Plant" (existing Installations).



After this, please add devices to your plant. If this is a new installation, click create new Plant and follow the prompts. Alternatively, use the plant name in the dropdown menu. Click on "Next step." Note: Might take longer time (up to 10 minutes).

ssociate select	ed devices to new o	or existing plant.							
DEVICE	TAG NAME	SERIAL NUMBER	IP ADDRESS	SLAVE ADDRESS	STATUS	ACTION	PUBLISH STATUS	Add dev	ices to a Plant
CM-UFD	MyUFD1549	M31M22000008 01	192.168.2.1	7	Enabled	Add		Add devices	s to an existing plant
CM-TCN.012	MyTCN1550	000005220000 0014	192.168.2.1	8	Enabled	Add		ADDresto	
UMC100	MyUMCMTQ	UMC1_00:24:59: 03:00:A8	192.168.2.30	1	Enabled	Add			Next stee
PNU32	MyUMCPNU1	1234	192.168.2.38	1	Enabled	Add			~
PSTX RTU	MyPSTX	D1556	192.168.2.1	132	Enabled	Add			Create a new plant
Industrial Gateway	ABB1DestoGW	B28008380241 W000	192.168.2.1	1		Do Nothing			

Devices will be published

ssociate selecte	ed devices to new a	or existing plant.						
DEVICE	TAG NAME	SERIAL NUMBER	IP ADDRESS	SLAVE ADDRESS	STATUS	ACTION	PUBLISH STATUS	
CM-UFD	MyUFD1549	M31M22000008 01	192.168.2.1	7	Enabled	Add		100
CM-TCN.012	MyTCN1550	000005220000 0014	192.168.2.1	8	Enabled	Add		1
UMC100	MyUMCMTQ	UMC1_00:24:59: 03:00:A8	192.168.2.30	1	Enabled	Add		
PNU32	MyUMCPNU1	1234	192.168.2.38	1	Enabled	Add		Your devices are being published
PSTX RTU	MyPSTX	D1556	192.168.2.1	132	Enabled	Add		Completed all container downloads in gateway
Industrial Gateway	A8B1DestoGW	B28008380241 W000	192.168.2.1	1		Do Nothing		

The provisioning tool with open the ABB Ability Energy Manager and the widgets of devices will be populated as shown.

8. Widgets and functions related to UMC100.3.

8.1. Widget

There are four tabs in the widget of UMC100.3 in ABB Ability[™] Favorite Device Alarm Configuration

8.1.1 Favorite

In this tab, main parameters which should be visible for operators are given on two pages under this tab. The status of the motor, current related-parameters and alarms summary are displayed.

UI	~								
Favourite	Device	Alarm	Configu	ration					
PARAMETER			VALUE						
Running hours			1.445	sec					
Fast FWD			False						
FWD			False						
Stop			False						
REV		False							
Fast REV			False						
Reverse lockup tir	ne		False						
General Fault			False						
General Warning			False						
Motor current (av	er		1.00	А					
Run up time			116	sec					
Time to tr <mark>i</mark> p			6553	sec					
Number of starts			(-)						
		Pa	ge 1/2	< >					

8.1.2. Device

Additional parameters are shown in two pages of tab "Device" tab. Motor-related data, current and voltage-related info, along with energy consumed, are displayed.

Asset					
U1	~				
Favourite	Device	Alarm	Configu	ration	
PARAMETER			VALUE		
Thermal load			5	%	
Max starting cu	rrent		2	%	
Remaining cool	dow		2	sec	
Stand still statu	s	1	8618588	sec	
Temperature Inj	out 1		-	к	
Temperature Inj	out 2		-	к	
Temperature Inj	out 3			K	
Total Harmonic	Dist		÷.	%	
Total Harmonic	Dist		2	%	
Total Harmonic	Dist		-	%	
Phase voltages			-	v	
Phase voltages			-	v	
Phase voltages			2	v	
		Pag	e 1/2	< >	

8.1.3. Alarm

Alarms from the devices are displayed here. There is a comprehensive set of alarms for better operation and maintenance. There are two pages showing the alarms from the UMC100.3.

Motor control data

Asset				
UI	~			
Favourite	Device	Alarm	Configuration	
FAULT			VALUE	*
Underload Powe	r		0	
Overload Power			0	
Wrong direction	of operat		0	
Phase loss and i	mbalance		0	
No start possible	e		0	
1 start <mark>le</mark> ft			0	
More than 1 star	t left		0	
Earth fault - war	ning		0	
Earth fault - trip			0	
Analog input1 - v	varning		0	
Analog input1 - t	rigger		0	
Analog input2 - \	varning		0	
Analog input2 - t	rigger		0	
		Pa	ge 1/2 <	> -

:

8.1.4. Configuration

Under the configuration tab, the user can see Device ID/ from the Modbus address..

Serial number: Keyed in manually by the user during provisioning.

DJPSTX	~		
Favourite	Device	Alarm	Configuration
PARAMETER			

8.2. Setting Alert conditions

The user can create alert conditions on the EVENT page of the ABB Ability[™] Energy Manager. By clicking NEW, a window will appear asking for parameters to be set. These alerts can be sent by email or by test messages.

Note: The alert condition can be created for any connected device (asset) by clicking on the device in the list, as shown in the photo here.

BB Ab Inergy	A Abling B Attorner (Constraint) (Constrai									
ents: A	lert condition							V + New		
0		10.05	ASSET NAME	THM	DATE CREATED	CREATED BY	LAST EVENT	NOTIFY ME		
-	UMC28111637 - SisConnected - DeviceDe	: - C		Lost Remote Network Connectivity ()s disconnected)	28/11/2022 4:30:55 PM					
	DestoUMC123 - StsConnected - DeviceDe	1		Lost Remote Network Connectivity ()s disconnected)	28/11/2022 1:17:46 PM					
	HATCN20111 - StoConnected - DeviceDefi	ı		Lost Remote Network Connectivity (Is disconnected)	28/11/2022 1.12:40 PM					
-	UFOVIN	ı		Phase-neutral voltages UI (More than 0 V)	25/10/2022 11/43/57 AM	Massain Ahmed ABB		~		
	UFD251020221136 - \$isConnected - Devic	ı		Lost Remote Network Connectivity (Is disconnected)	25/10/2022 11:36:53 AM					
2	UMC Alarms	í.		Phase-to-phase voltages UI2 (Hore than 200 V)	29/08/2022 3.39.07 PM	Hussain Ahmed ADD		~		
	UNC US alarm			Phase-to-phase voltages UI2 (Hore than 288 V)	24/08/2022 10:17:25 AM	Hassain Ahmed ABB		~		

The following parameters can be set:

Asset: Select the asset from which the alert needs to be created.

Type: Here the user can set the condition under which an alert should be initiated.

Name: Name of the alert

Tags: Tags form the asset to be used

Severity Level: Type of severity to be selected.

Description: Description of the alert to be typed in

Possible cause: As the name suggests, the user can write the possible cause of the alert.

Suggested action: What needs to be done to correct the alert.



Active intervals

Monday : Active Heen 00:00 to 23:59

9. Related Documents

Document type	Document number	Link
List of connected devices in ABB Ability™ Energy Manager		link
Data sheet for Smart Communication Card	1SAC200298H0001	link
SFM1 Manual	2CDC100017M0201	link
User manual for Novolink	1SAC200230M0001	link
User manual for UMC100.3	2CDC135032D0204	link
User manual for PSTX	1SFC132082M9901	link
User manual for CM-UFD	2CDC112270D0201	link
User manual for CM TCN.012	2CDC112285M0201	link
Reference internet page for Edge Gateway		link
Reference documents: Installation instruction for Edge Gateway		link
UMC100.3 MTQ:		link
UMC100.3 PNU:		link
Reference document: FIM related info.docx (PNU)		link
For MQT, we need configuration tool, which is available in the ABB Library		link link
Edge Gateway commissioning video		link
Installation and commissioning manual for PSTX – see chapter 6 for addressing	PSTX - Installation and commissioning manual (abb.com)	
Fieldbus communication Built-in Modbus RTU		link
Softstarters Type PSTX30PSTX1250 Installation and commissioning manual		link
YouTube: Basic settings of PSTX		link
How To Upload And Download Parameters - ABB PSTX with ABB SoftstarterCare - YouTube		link

10. Revisions

Rev.	Page (P) Chapter. (C)	Description	Date Dept./Init.
А	All	Initial draft	29.08.2023/DPM
в	All	Review by Project team	



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abb.com/lowvoltage



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