


GPG BHAS | PRODUCT MANAGEMENT |

Modbus KNX Gateway

Sales presentation





Modbus KNX Gateway

Introduction

Modbus KNX Gateway

Today's situation

Modbus is found in multiple devices in a wide variety of applications. It is common to find Modbus devices in the same project where KNX is installed. The gateway allows to integrate Modbus devices and the KNX system quickly and easily.

Some examples:



Metering

Collecting metering data from few single devices into a KNX visualization/display panel.



HVAC

Exchanging set points or adjusting fan speeds from KNX sensors to a single ventilation unit.



Hospitality

Integration of typical room Modbus devices, such as a bedside panel, room thermostat, etc.



Others

Simple data integration to solar, EV charging equipment, etc.

Modbus KNX Gateway

Main features



MG/S 11.100.1.1
2CDG120089R0011

Modbus RTU Client – KNX TP Gateway

- The Modbus KNX Gateway integrates Modbus RTU server devices with KNX installations at field level (**bidirectional**)
- The devices support standard KNX data points (DPT)
- Up to 100 Modbus data points
- Up to 100 Modbus servers¹
- Auxiliary voltage is not required (via bus)
- The device is put into operation with the ETS
- An optional, free-of-charge DCA is available to facilitate the configuration, allowing to export, and import Modbus-KNX mapping in the form of templates.
- Modbus templates are available for download from a database.

¹ The limitation is given by the maximum number of data points (100)

Modbus KNX Gateway

Value propositions



More flexibility

Connect any available Modbus server and be future-proof - integration and mapping of new devices can be done at any time



Faster configuration

Mapping templates simplify configuration and avoid repetitive manual work to save time and effort



Reuse of work

Once a mapping of a Modbus device has been done it can be easily reused



Modbus KNX

Gateway

Product overview

Modbus KNX Gateway

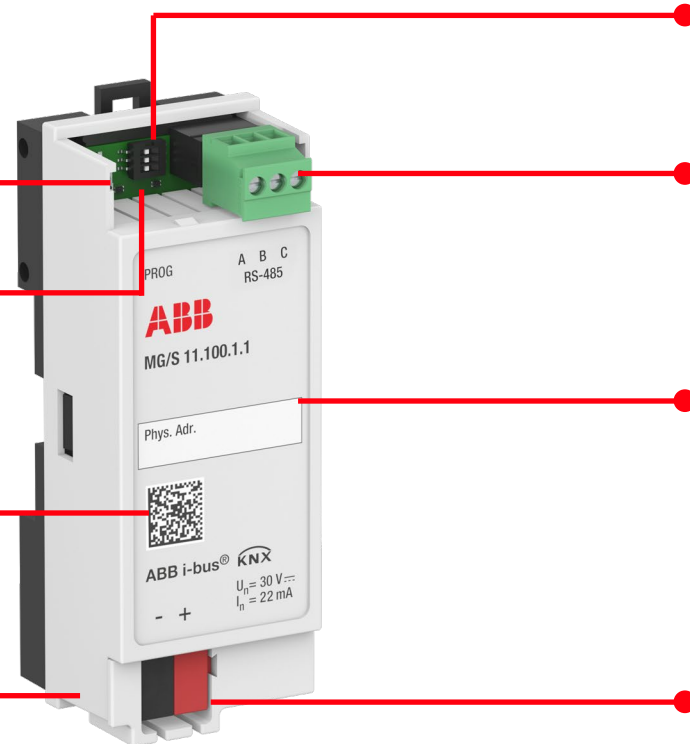
Main features- Hardware

KNX programming button

Status LED:
Modbus & KNX

2D Code for traceability

MDRC
2 module width



DIP Switch for Modbus end
of line termination

Modbus RTU
RS485

Label field

KNX TP
Standard KNX connector

Supply via KNX bus. No
auxiliary power supply
necessary

Modbus KNX Gateway

Main features – ETS application general

General parameters
KNX & Modbus

Individual tab for
the configuration
of each server

General window for KNX and
Modbus parameters.

Overview table of all servers to
configure.

For each server, a parameter
window is created.

--- Modbus RTU - KNX TP Gateway, 100 Points > GENERAL

GENERAL

Download latest database entry for this product and its User Manual from: www.abb.com

Total Gateway Data Points: 30

KNX

Read On Init Delay: 0 sec

Time Telegram Rate: 0 ms

In Operation:

Modbus

Link Layer: RTU

Baud rate: 9600 bps

Data Type: 8bit - None - 1

Response Timeout: 1000 ms

Interframe Timeout: 60 ms

Poll After Write:

Number of Devices: 2

	Name	Server Address	Number of Data Points	Active
Device 1	ABB Meter B23	1	16	<input checked="" type="checkbox"/>
Device 2	Terra AC Wallbox	2	14	<input checked="" type="checkbox"/>

Total number of
data points

General
parameter KNX

General
parameter
Modbus

Server overview
table

Modbus KNX Gateway

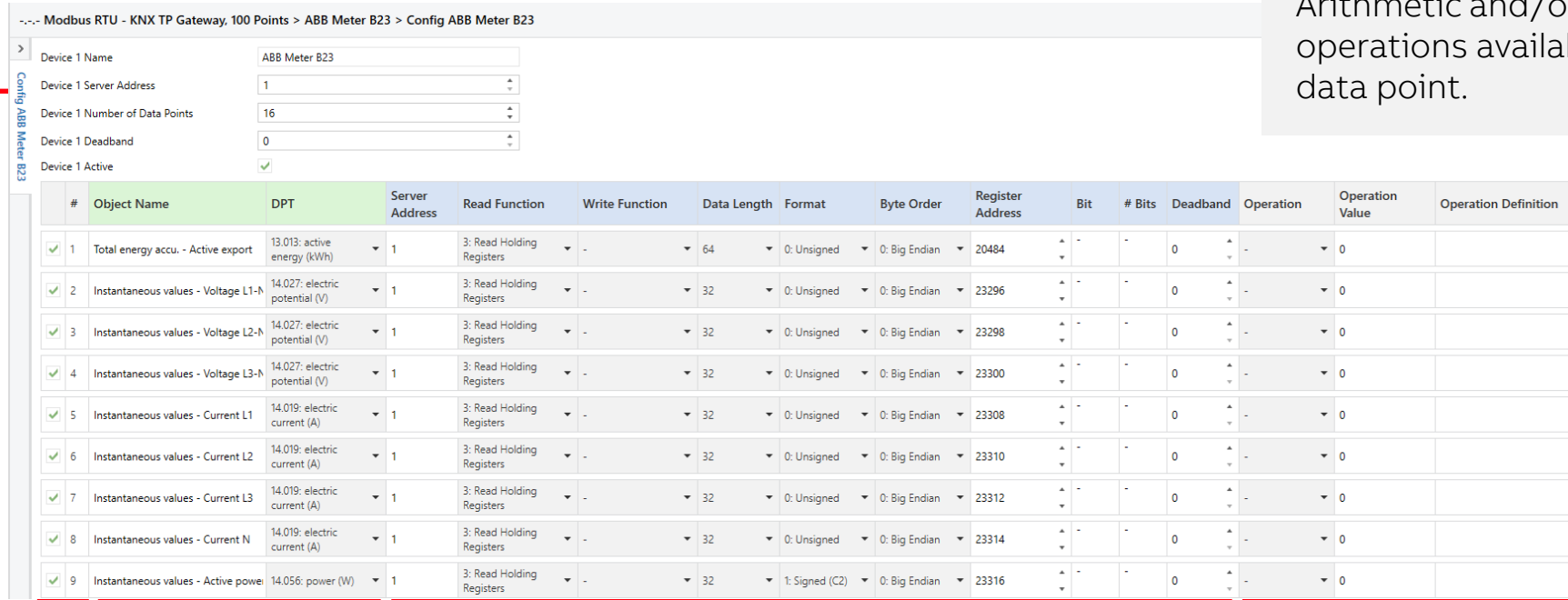
Main features – ETS application server

Each server has a parameter window.

Modbus and KNX mapping to be done via an easy-to-use table.

Arithmetic and/or logical operations available for each data point.

Basic parameter per server



Config ABB Meter B23

Device 1 Name: ABB Meter B23
Device 1 Server Address: 1
Device 1 Number of Data Points: 16
Device 1 Deadband: 0
Device 1 Active:

#	Object Name	DPT	Server Address	Read Function	Write Function	Data Length	Format	Byte Order	Register Address	Bit	# Bits	Deadband	Operation	Operation Value	Operation Definition
1	Total energy accu. - Active export	13.013: active energy (kWh)	1	3: Read Holding Registers	-	64	0: Unsigned	0: Big Endian	20484	-	-	0	-	0	
2	Instantaneous values - Voltage L1-N	14.027: electric potential (V)	1	3: Read Holding Registers	-	32	0: Unsigned	0: Big Endian	23296	-	-	0	-	0	
3	Instantaneous values - Voltage L2-N	14.027: electric potential (V)	1	3: Read Holding Registers	-	32	0: Unsigned	0: Big Endian	23298	-	-	0	-	0	
4	Instantaneous values - Voltage L3-N	14.027: electric potential (V)	1	3: Read Holding Registers	-	32	0: Unsigned	0: Big Endian	23300	-	-	0	-	0	
5	Instantaneous values - Current L1	14.019: electric current (A)	1	3: Read Holding Registers	-	32	0: Unsigned	0: Big Endian	23308	-	-	0	-	0	
6	Instantaneous values - Current L2	14.019: electric current (A)	1	3: Read Holding Registers	-	32	0: Unsigned	0: Big Endian	23310	-	-	0	-	0	
7	Instantaneous values - Current L3	14.019: electric current (A)	1	3: Read Holding Registers	-	32	0: Unsigned	0: Big Endian	23312	-	-	0	-	0	
8	Instantaneous values - Current N	14.019: electric current (A)	1	3: Read Holding Registers	-	32	0: Unsigned	0: Big Endian	23314	-	-	0	-	0	
9	Instantaneous values - Active power	14.056: power (W)	1	3: Read Holding Registers	-	32	1: Signed (C2)	0: Big Endian	23316	-	-	0	-	0	

Data point information

KNX data

Modbus data
(Defined by manufacturer)

Arithmetic operations (x & /)
Logical operations (= ≠ <>)

Modbus KNX Gateway

Main features – Group objects

Modbus RTU - KNX TP Gateway, 100 Points > ABB Meter B23 > Config ABB Meter B23

Config ABB Meter B23

Device 1 Name: ABB Meter B23
 Device 1 Server Address: 1
 Device 1 Number of Data Points: 16
 Device 1 Deadband: 0
 Device 1 Active:

#	Object Name	DPT	Server Address	Read Function	Write Function	Data Length	Format	Byte Order	Register Address	Bit	# Bits	Deadband	Operation	Operation Value	Operation Definition
1	Total energy accu. - Active export	13.013: active energy (kWh)	1	3: Read Holding Registers	-	64	0: Unsigned	0: Big Endian	20484	-	-	0	-	0	
2	Instantaneous values - Voltage L1-N	14.027: electric potential (V)	1	3: Read Holding Registers	-	32	0: Unsigned	0: Big Endian	23296	-	-	0	-	0	

<input checked="" type="checkbox"/>	8	Voltage L1	14.027: electric potential (V)	5	3: Read Holding Registers	32	0: Unsigned	0: Big Endian	23296	-	-	10	Multiply by (x)	0.1	knx = (mbm * 0.1)
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Read

	2	S1 Status Object [DPT_7.001]	Signal Value (MBM -> KNX)
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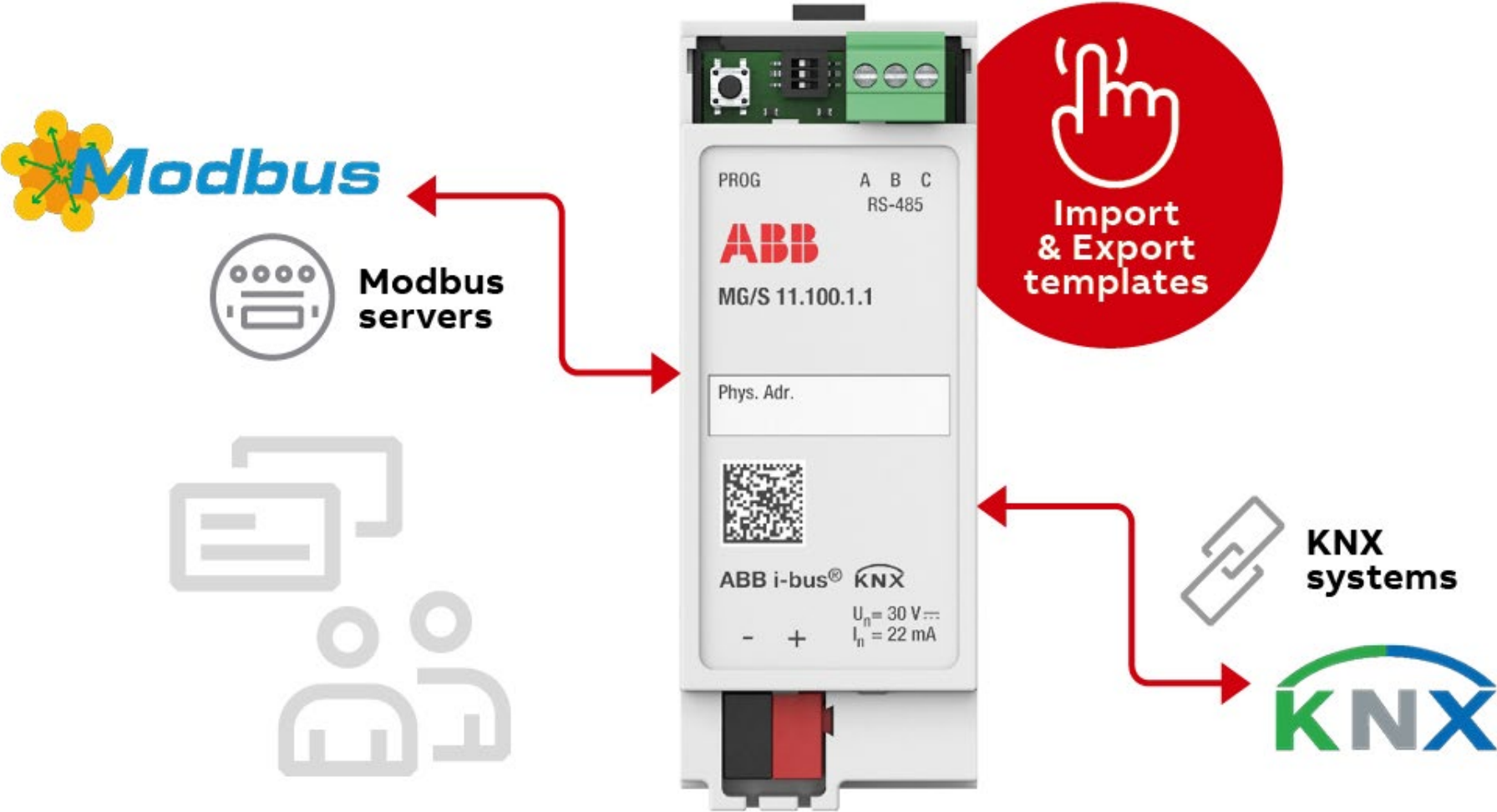
Read / write

	2	S1 Status Object [DPT_7.001]	Signal Value (MBM -> KNX)
	3	S2 Control Object [DPT_7.001]	Signal Value (KNX -> MBM)

Depending on the type of data point (read or write) one or two group objects are enabled

Modbus KNX Gateway

Infographic DCA



Modbus KNX Gateway

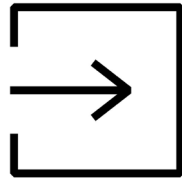
Main features – DCA

- An optional, free-of-charge DCA is available to facilitate the configuration



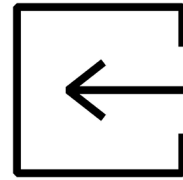
Creation

Do the Modbus - KNX mapping once to reuse it in all other projects



Export

Export the created mapping as a template and save it locally



Import

Import the locally saved template
Import a template from the online database



Database

Avoid manual mapping by using available templates from the online database (ABB and 3rd parties).

Export

1. Select the device
2. Click "Export"
3. Save locally

The screenshot shows the 'ABB MG/S11.100.1.1 Template Configuration' window. The 'Export Device Templates' section is active. A dropdown menu is open, showing 'ABB Meter B23 (1)' and 'Terra AC Wallbox (2)'. The 'Export' button is highlighted with a red box and a '2'. A red circle with '1' points to the dropdown menu. Below the window, a file save dialog is open with 'ABB Meter B23.knxmbr' in the file name field and 'Modbus KNX Template (*.knxmbr)' in the save as type field. The 'Save' button is highlighted with a red box and a '3'.

Modbus RTU - KNX TP Gateway, 100 Points

Import/Export Template

ABB MG/S11.100.1.1 Template Configuration

Export Device Templates

Devices Available to Export: ABB Meter B23 (1) 1

Export Template: **Export** 2

Import Device Templates

Add Device: Add From Template

Total Gateway Data Points: 30/100

Edit Devices

Device Name	Server Address	Number of Data Points	Replace	Delete
ABB Meter B23	1	16		
Terra AC Wallbox	2	14		

Firmware Updates

Update Firmware from File or Online: Firmware Manager

File name: ABB Meter B23.knxmbr

Save as type: Modbus KNX Template (*.knxmbr)

Hide Folders 3 **Save** Cancel

Import

1. Select "Add from template"

The screenshot shows the 'ABB MG/S11.100.1.1 Template Configuration' window. The 'Import Device Templates' section is active. The 'Add From Template' button is highlighted with a red box and a '1'.

Modbus RTU - KNX TP Gateway, 100 Points

Import/Export Template

ABB MG/S11.100.1.1 Template Configuration

Export Device Templates

Devices Available to Export: ABB Meter B23 (1)

Export Template: Export

Import Device Templates

Add Device: **Add From Template** 1

Total Gateway Data Points: 30/100

Edit Devices

Device Name	Server Address	Number of Data Points	Replace	Delete
ABB Meter B23	1	16		
Terra AC Wallbox	2	14		

Firmware Updates

Update Firmware from File or Online: Firmware Manager

Import local

1. Select "Import file"
2. Search file locally
3. Open

Modbus Server Template

Explore Templates

Explore Template Files

1 Import File Download

Template Available Objects

Add a template file to see the available data points

Template selected Data Points 0

Manufacturer - Server Address: 0

Device Name - Total Gateway Data Points 30/100

Apply Cancel

File name: B23_B24_meters_V1_0.knxmbm Modbus KNX Template (*.knxn)

2 Open Cancel

Import database

1. Select "Download"
2. Search template
3. Open

Modbus Server Template

Explore Templates

Explore Template Files

Import File **1** Download

Template Available Objects

Add a template file to see the available data points

Template selected Data Points 0

Manufacturer - Server Address: 0

Device Name - Total Gateway Data Points 30/100

Apply Cancel

Manufacturer: All Manufacturers

Model Name: **2** ABB

Manufacturer	Model	Version
DAIKIN	EKMBDXA-00	V02

Export **3** Load Cancel

Export locally (offline copy)

Import

1. Check information
2. Select data points
3. Apply

Modbus Server Template

Explore Templates

Explore Template Files

Template Available Objects

<input type="checkbox"/> Active	Description	DPT	Group Address	C	U	T	W	R	Server Address	Read Func	Write Func	Data Length	Format	Register Address
<input checked="" type="checkbox"/>	Total energy accu. - Active	13.013: active energy (kWh)		C		T		R	3	3: Read Holding Registers	-	64	0: Unsigned	20480
<input checked="" type="checkbox"/>	Instantaneous values - Volt	14.027: electric potential (V)		C		T		R	3	3: Read Holding Registers	-	32	0: Unsigned	23296
<input checked="" type="checkbox"/>	Instantaneous values - Volt	14.027: electric potential (V)		C		T		R	3	3: Read Holding Registers	-	32	0: Unsigned	23298
<input checked="" type="checkbox"/>	Instantaneous values - Volt	14.027: electric potential (V)		C		T		R	3	3: Read Holding Registers	-	32	0: Unsigned	23300
<input checked="" type="checkbox"/>	Instantaneous values - Curr	14.019: electric current (A)		C		T		R	3	3: Read Holding Registers	-	32	0: Unsigned	23308
<input checked="" type="checkbox"/>	Instantaneous values - Curr	14.019: electric current (A)		C		T		R	3	3: Read Holding Registers	-	32	0: Unsigned	23310
<input checked="" type="checkbox"/>	Instantaneous values - Curr	14.019: electric current (A)		C		T		R	3	3: Read Holding Registers	-	32	0: Unsigned	23312
<input checked="" type="checkbox"/>	Instantaneous values - Curr	14.019: electric current (A)		C		T		R	3	3: Read Holding Registers	-	32	0: Unsigned	23314
<input checked="" type="checkbox"/>	Instantaneous values - Acti	14.056: power (W)		C		T		R	3	3: Read Holding Registers	-	32	1: Signed (C	23316
<input checked="" type="checkbox"/>	Instantaneous values - Acti	14.056: power (W)		C		T		R	3	3: Read Holding Registers	-	32	1: Signed (C	23318

1 Template selected Data Points 14

Manufacturer	Unbekannt	Server Address:	3
Device Name	B23/B24Default	Total Gateway Data Points	44/100

3

Replace

1. Select "Replace"
2. Check and select data points
3. Apply

Modbus RTU - KNX TP Gateway, 100 Points

Import/Export Template

ABB MG/S11.100.1.1 Template Configuration

Export Device Templates

Devices Available to Export: ABB Meter B23 (1)

Export Template: Export

Import Device Templates

Add Device: Add From Template

Total Gateway Data Points: 30/100

Edit Devices

Device Name	Server Address	Number of Data Points	Replace	Delete
ABB Meter B23	1	16	1 [Replace]	[X]
Terra AC Wallbox	2	14	[Replace]	[X]

Firmware Update

Update Firmware from File or Online

2

Modbus Server Template

Explore Template Files

Import File | Download

Template Available Objects

Active	Description	DPT	Group Address	C	U	T	W	R	Server Address	Read Func	Write Func	Data Length	Format	Register Address
<input checked="" type="checkbox"/>	Total energy accu - Active	13.013: active energy (kWh)	C	T	R	3			3	3: Read Holding Registers	-	64	0: Unsigned	23400
<input checked="" type="checkbox"/>	Instantaneous values - Volt	14.027: electric potential (V)	C	T	R	3			3	3: Read Holding Registers	-	32	0: Unsigned	23296
<input checked="" type="checkbox"/>	Instantaneous values - Volt	14.027: electric potential (V)	C	T	R	3			3	3: Read Holding Registers	-	32	0: Unsigned	23298
<input checked="" type="checkbox"/>	Instantaneous values - Volt	14.027: electric potential (V)	C	T	R	3			3	3: Read Holding Registers	-	32	0: Unsigned	23300
<input checked="" type="checkbox"/>	Instantaneous values - Cum	14.019: electric current (A)	C	T	R	3			3	3: Read Holding Registers	-	32	0: Unsigned	23308
<input checked="" type="checkbox"/>	Instantaneous values - Cum	14.019: electric current (A)	C	T	R	3			3	3: Read Holding Registers	-	32	0: Unsigned	23310
<input checked="" type="checkbox"/>	Instantaneous values - Cum	14.019: electric current (A)	C	T	R	3			3	3: Read Holding Registers	-	32	0: Unsigned	23312
<input checked="" type="checkbox"/>	Instantaneous values - Cum	14.019: electric current (A)	C	T	R	3			3	3: Read Holding Registers	-	32	0: Unsigned	23314
<input checked="" type="checkbox"/>	Instantaneous values - Acti	14.056: power (W)	C	T	R	3			3	3: Read Holding Registers	-	32	1: Signed (C)	23316
<input checked="" type="checkbox"/>	Instantaneous values - Acti	14.056: power (W)	C	T	R	3			3	3: Read Holding Registers	-	32	1: Signed (C)	23318

Template selected Data Points: 14

Manufacturer: Unbekannt, Server Address: 3

Device Name: B23/B24Default, Total Gateway Data Points: 44/100

Apply | Cancel

Firmware update

1. Select "Firmware Manager"
2. Search file locally or scan online
3. Upload

Modbus RTU - KNX TP Gateway, 100 Points

Import/Export Template

ABB MG/S11.100.1.1 Template Configuration

Export Device Templates

Devices Available to Export: ABB Meter B23 (1)

Export Template: Export

Import Device Templates

Add Device: Add From Template

Total Gateway Data Points: 30/100

Edit Devices

Device Name	Server Address	Number of Data Points	Replace	Delete
ABB Meter B23	1	16	[Replace]	[X]
Terra AC Wallbox	2	14	[Replace]	[X]

Firmware Updates

Update Firmware from File or Online

1 [Firmware Manager]

Firmware Update Tool

Product: INKNXMBMxxxx02

Version: 0.0.0.128

3 [Update] 2 [Scan]

Device	Version	Status	Progress
Modbus RTU M - KNX TP Gateway 100 Points, MD	-	Not scanned	



Modbus KNX Gateway

Product data

Modbus KNX Gateway

Ordering details



Ordering Details:

Description	EAN	Type	Order Code	Weight Kg
Modbus RTU-KNX TP Gateway, 100 Points, MDRC	4013614571084	MG/S11.100.1.1	2CDG120089R0011	0.082

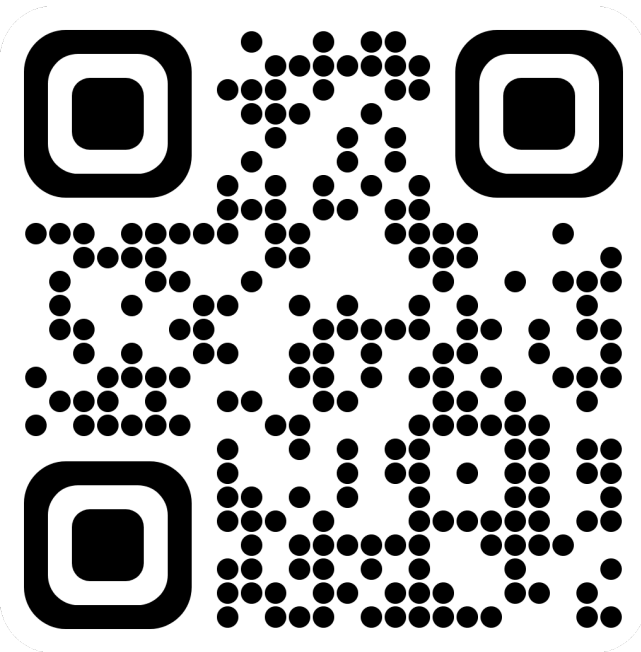


Modbus KNX Gateway

Learn more

Modbus KNX Gateway

The cost-effective gateway with high functionality and ease of use.



to.abb/xXxo2o62

ABB