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Modbus KNX Gateway

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ABB

Modbus KNX Gateway

Dagens situation

- Modbus RTU findes i flere enheder i en lang række applikationer
 - Måling
 - HVAC
 - EV opladning
 - Rum kontrol
 - ...
- Det er almindeligt at finde Modbus-enheder i det samme projekt, hvor KNX er installeret
- Modbus RTU – KNX TP Gateway MG/S gør det muligt at integrere Modbus-enheder i en KNX-installation hurtigt og nemt på feltniveau

Nogle eksempler:



Måling

Indsamling af måledata fra få enkelte enheder til en KNX-visualisering/display panel.



HVAC

Udskiftning af sætpunkter eller justering af ventilatorhastigheder fra KNX-sensorer til en enkelt ventilationsenhed.



Hospitality

Integration af typiske rum-Modbus-enheder, såsom et betjeningspanel, rumtermostat osv.



Andre

Simple dataintegration til solenergi, el-opladningsudstyr osv.

Modbus KNX Gateway

Hovedfunktioner



MG/S 11.100.1.1
2CDG120089R0011

Modbus RTU Client – KNX TP Gateway

- Modbus KNX Gateway integrerer Modbus RTU serverenheder med KNX installationer på feltniveau (2-vejs)
- Enhederne understøtter standard KNX-datapunkter (DPT)
- Op til 100 Modbus-datapunkter
- Op til 100 Modbus-servere ¹
- Hjælpespænding er ikke påkrævet (via bus)
- Apparatet sættes i drift med ETS
- DCA er tilgængelig for at lette konfigurationen, hvilket gør det muligt at eksportere og importere Modbus-KNX-kortlægning i form af skabeloner.
- Modbus skabeloner er tilgængelige for download fra en database.

¹ Begrænsningen er givet af det maksimale antal datapunkter (100)

Modbus KNX Gateway

Værdier



Mere fleksibilitet

Tilslut enhver tilgængelig Modbus-server og vær fremtidssikret - integration og kortlægning af nye enheder kan udføres til enhver tid



Hurtigere konfiguration

Kortlægningsskabeloner forenkler konfigurationen og undgår gentagne manuelt arbejde for at spare tid og kræfter



Genbrug af arbejde

Når først en kortlægning af en Modbus-enhed er udført, kan den let genbruges



Modbus KNX Gateway

Produkt oversigt

Modbus KNX Gateway

Hovedtræk- Hardware

KNX programmeringsknop

Status LED:
Modbus & KNX

2D-kode for sporbarhed

MDRC
2 modul bredde



DIP-switch til Modbus-
endemodstand af linje

Modbus RTU
RS485

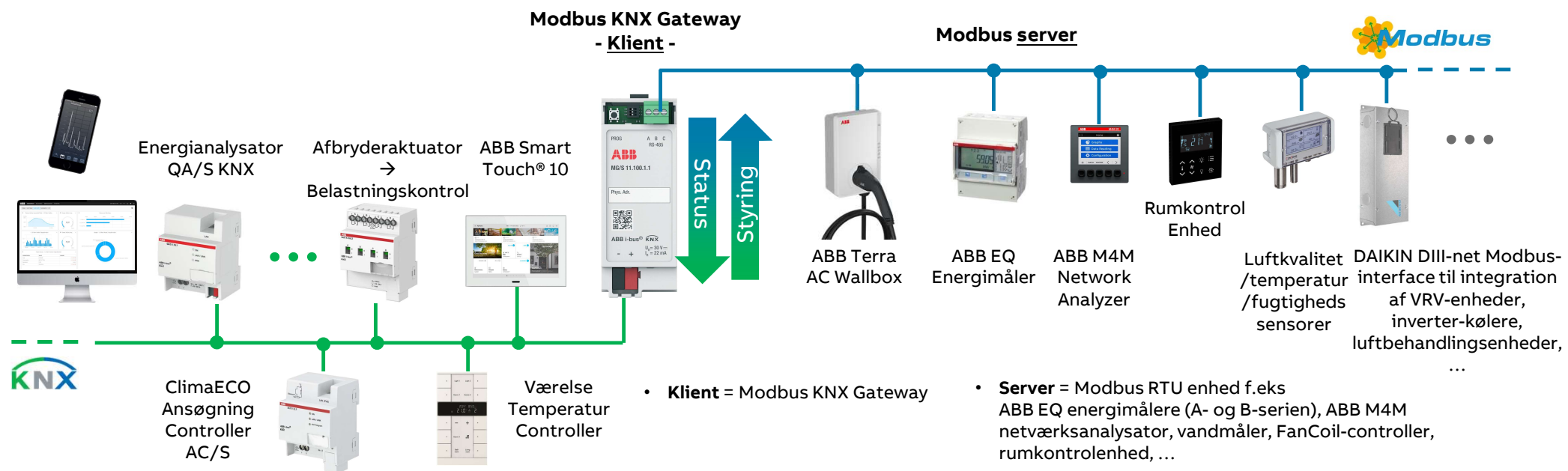
Adressefelt

KNX TP
Standard KNX stik

Forsyning via KNX bus. Ingen
ekstra strømforsyning
nødvendig

Modbus KNX Gateway

System overblik



Modbus KNX Gateway

Hovedfunktioner – ETS-applikation generelt

Generelle parametre KNX & Modbus

Individuel fane for konfigurationen af hver server

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"/>

Samlet antal datapunkter

Generel parameter KNX

Generel parameter Modbus

Serveroversigtstabel

Generelt vindue for KNX- og Modbus-parametre.

Oversigtstabel over alle servere, der skal konfigureres.

For hver server oprettes et parametervindue.

Modbus KNX Gateway

Hovedfunktioner – ETS applikationsserver

Grundlæggende parameter pr. server

#	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	

Hver server har et parametervindue.

Modbus- og KNX-kortlægning skal udføres via en letanvendelig tabel.

Aritmetiske og/eller logiske operationer tilgængelige for hvert datapunkt.

Datapunktopsninger

KNX data

Modbus data
(Defineret af producenten)

Aritmetiske operationer (x & /)
Logiske operationer (= ≠ <>)

Modbus KNX Gateway

Hovedfunktioner – Gruppér objekter

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

Læs

	2	S1 Status Object [DPT_7.001]	Signal Value (MBM -> KNX)
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Læse skrive

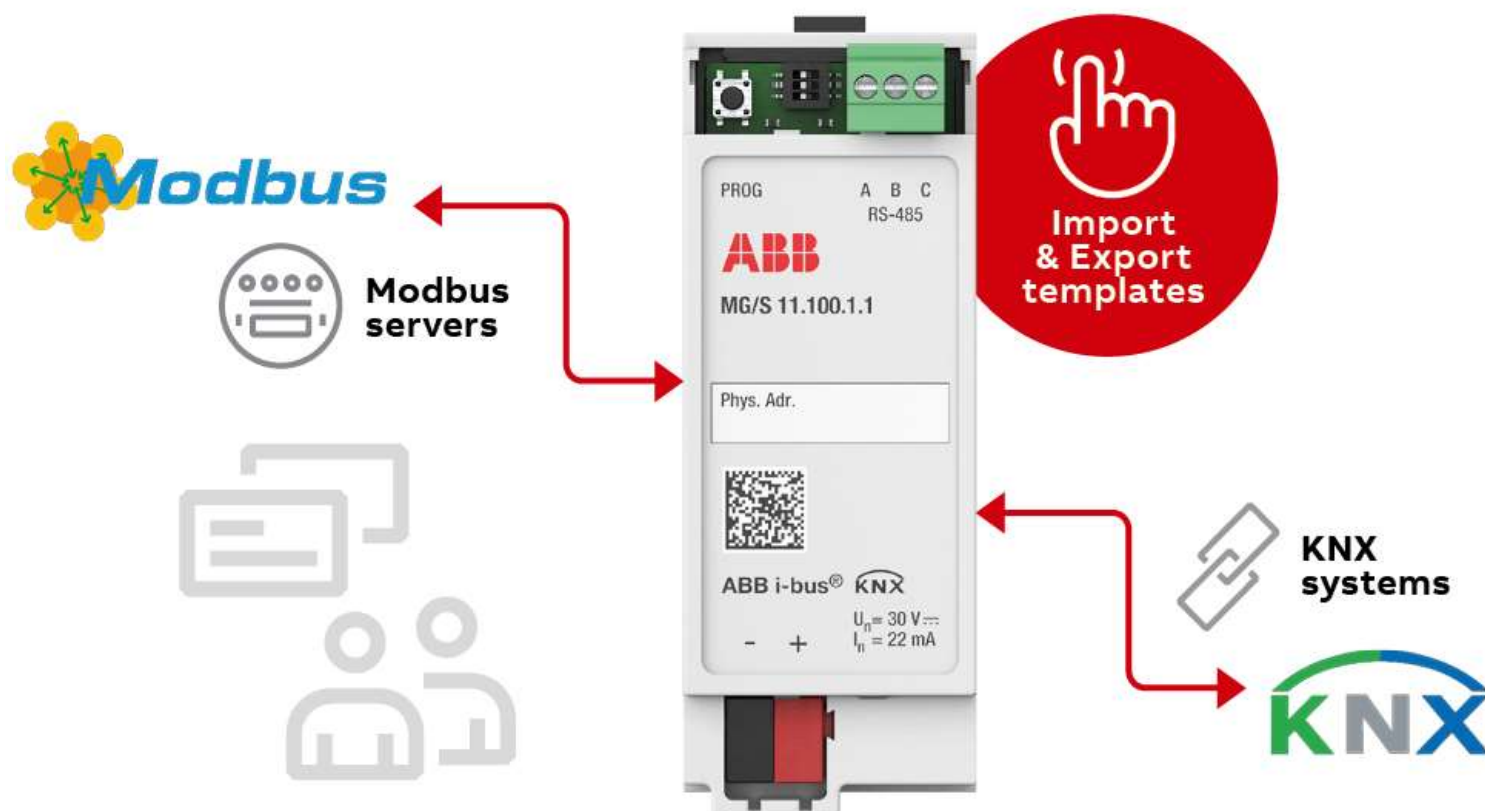
	2	S1 Status Object [DPT_7.001]	Signal Value (MBM -> KNX)
	3	S2 Control Object [DPT_7.001]	Signal Value (KNX -> MBM)

Afhængigt af typen af datapunkt (læse eller skrive) er et eller to gruppeobjekter aktiveret

Eksempel med ABB B23 Meter

Modbus KNX Gateway

Infografisk DCA



Modbus KNX Gateway

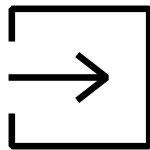
Hovedtræk – DCA

- ETS/ DCA er tilgængelig for at lette konfigurationen



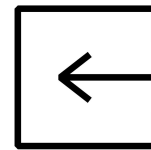
Skabelse

Udfør Modbus - KNX-kortlægningen én gang for at genbruge den i alle andre projekter



Eksport

Eksporterer den oprettede kortlægning som en skabelon, og gem den lokalt



Importere

Importerer den lokalt gemte skabelon
Importerer en skabelon fra onlinedatabasen



Database

Undgå manuel kortlægning ved at bruge tilgængelige skabeloner fra onlinedatabasen (ABB og 3. parter).

Eksport

1. Vælg enheden
2. Klik på "Eksporter"
3. Gem lokalt

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	↔	✖
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)

Save Cancel

Importere

1. Vælg "Tilføj fra skabelon"

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

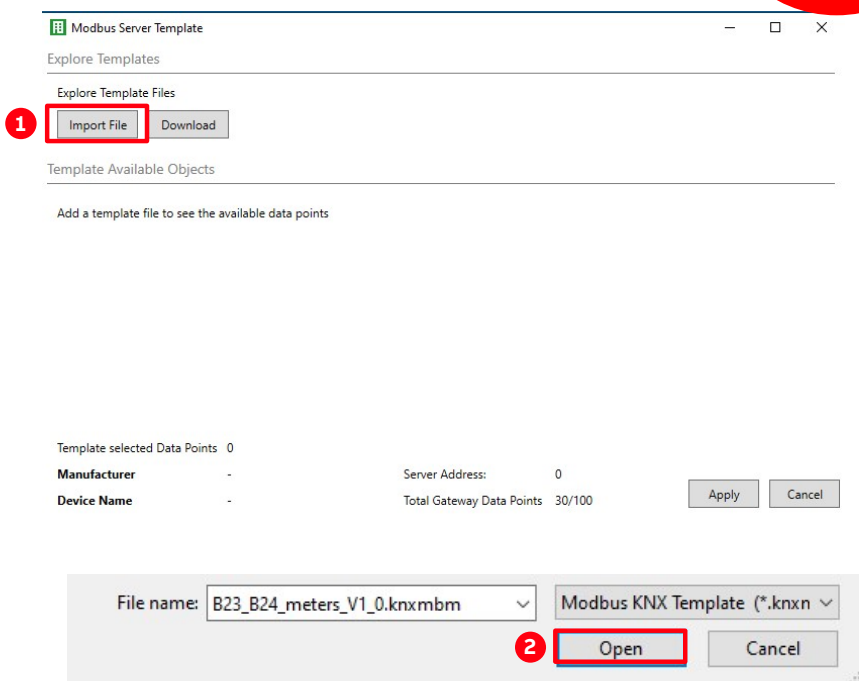
Device Name	Server Address	Number of Data Points	Replace	Delete
ABB Meter B23	1	16	↔	✖
Terra AC Wallbox	2	14	↔	✖

Firmware Updates

Update Firmware from File or Online: Firmware Manager

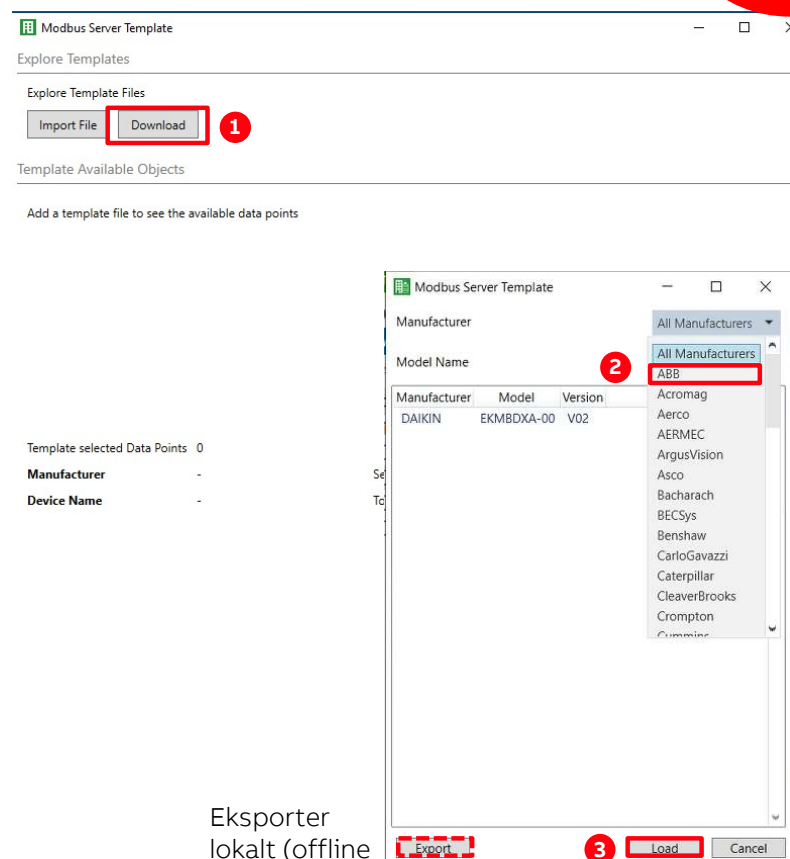
Importer lokalt

1. Vælg "Importer fil"
2. Søg fil lokalt
3. Open



Importer database

1. Vælg "Download"
2. Søg skabelon
3. Load



Eksporter lokalt (offline kopi)

Importere

1. Kontroller Information
2. Vælg datapunkter
3. Apply

Modbus Server Template

Explore Templates

Explore Template Files

Import File Download

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 Apply Cancel

Erstatte

1. Vælg "Erstatte"
2. Tjek og vælg datapunkter
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 (highlighted)	X
Terra AC Wallbox	2	14		X

Firmware Update

Update Firmware from File or Online

2 (highlighted)

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	13013: active energy (kWh)		C	T	R	3			3: Read Holding Registers	-	64	0: Unsigned	20480
<input checked="" type="checkbox"/>	Instantaneous values - Volt	14027: electric potential (V)		C	T	R	3			3: Read Holding Registers	-	32	0: Unsigned	23296
<input checked="" type="checkbox"/>	Instantaneous values - Volt	14027: electric potential (V)		C	T	R	3			3: Read Holding Registers	-	32	0: Unsigned	23300
<input checked="" type="checkbox"/>	Instantaneous values - Volt	14027: electric potential (V)		C	T	R	3			3: Read Holding Registers	-	32	0: Unsigned	23304
<input checked="" type="checkbox"/>	Instantaneous values - Cum	14019: electric current (A)		C	T	R	3			3: Read Holding Registers	-	32	0: Unsigned	23308
<input checked="" type="checkbox"/>	Instantaneous values - Cum	14019: electric current (A)		C	T	R	3			3: Read Holding Registers	-	32	0: Unsigned	23312
<input checked="" type="checkbox"/>	Instantaneous values - Cum	14019: electric current (A)		C	T	R	3			3: Read Holding Registers	-	32	0: Unsigned	23316
<input checked="" type="checkbox"/>	Instantaneous values - Act	14056: power (W)		C	T	R	3			3: Read Holding Registers	-	32	1: Signed (C)	23316
<input checked="" type="checkbox"/>	Instantaneous values - Act	14056: power (W)		C	T	R	3			3: Read Holding Registers	-	32	1: Signed (C)	23318

Template selected Data Points: 14

Manufacturer: Unbekannt Server Address: 3

Device Name: 823/824Default Total Gateway Data Points: 44/100

Apply Cancel

Firmware opdatering

1. Vælg "Firmware Manager"
2. Søg file lokalt eller 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		X
Terra AC Wallbox	2	14		X

Firmware Updates

Update Firmware from File or Online

Firmware Manager (highlighted)

1 (highlighted)

Firmware Update Tool

Product: J/KNX08MBA002

Version: 0.0.0.128

Update (highlighted)

Scan (highlighted)

3 (highlighted)

2 (highlighted)

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

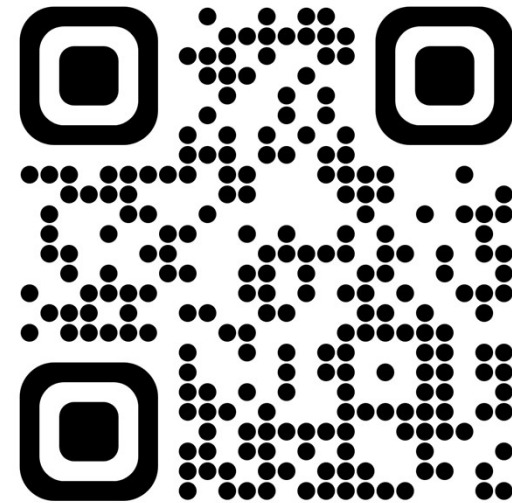


Modbus KNX Gateway

Lær mere

Modbus KNX Gateway

Den omkostningseffektive gateway med høj funktionalitet og brugervenlighed.



to.abb/xXxo2o62

Hov lige en ting mere



Link til YouTube:

<https://www.youtube.com/watch?v=OWzJ9AB90ng>



ABB