arcus-eds | KNX

Gateway   Modbus/KNX
Application Description
Product Page
KNX-GW-MODBUS-RSxxx

GW
MODBUS

KNX-GW-MODBUS-RSxxx

KNX Gateway Modbus	Product Group 1

Application : KNX bus coupling for counters with Modbus/RTU interface

The bus coupler represents a bus master of the Modbus/RTU interface.

A connection can be realized via RS485 (maximum 32 subscribers incl. Master) or RS232 (P2P).
This selection must be observed when ordering and can not be switched by application.

There are 32 M-Bus data points available, which can be assigned freely to the different devices.

Product Data Base: **MODBUS**

KNX-GW-MODBUS-RSxxx	Article	Article Description	Article-No.
KNX		Document: 4520_ex_ModBus_SK07.pdf	
	KNX-GW-MODBUS-RS485	Modbus gateway for up to 32 data points	40300007
	KNX-GW-MODBUS-RS232	Plastic housing: 50 x 50 x 20 mm 58mm diagonal (for in-wall mounting in dry interiors) IP20	40310007

Application Description

The M-Bus Gateway is set up using the ETS (KNX Tool Software) with the associated application program.
The device is delivered unprogrammed.
All functions are parameterized and programmed by ETS.

1 KNX Parameter and Objects

1.1 General Settings

General Settings		
Channel 1: Channel 1	Modbus Reading Cycle	1 min
Channel 2: Voltage PH1	KNX Writing Cycle	5 min
Channel 3: Total Active Power	Timeout	1,0 sec
. . .	Baudrate	9600
	Parity	even
Channel 31: unconfigured	Number of required Channels	3
Channel 32: unconfigured		

General Settings   -   KNX-GW-MODBUS-RSxxx

Parameter	Setting	Description
Modbus Reading Cycle	10 sec. - 12 h	The measured values are read out from the Modbus device in the set cycle time.
KNX Writing Cycle	1 min. - 12 h	The measured values are sent to the KNX bus in the set cycle time independently of a change in measured value.
Timeout	500ms - 2,5 sec.	If a transmission error lasts longer than the set time, the error bit is set. default : 1 sec.
Baudrate	300 - 115200	Here, the serial communication parameters must be set.
Parity	even odd none	
Number of required Channel	1 - 32	Number of required data points.

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1.2 Channel X

General Settings	Channel ○ unconfigured ● configured
Channel 1: Channel 1	Comment Voltage PH1
Channel 2: Voltage PH1	
Channel 3: Total Active Power	

Setup

Send Cyclically   ○ No ● Yes

Send on Chance   ○ No ● Yes

ID   1

Register Number
(Register 1 is located at Address 0)   3028

Correction

Multiplier   1

Offset   0

KNX

Length   16 Bit

Type   Float

Modbus

Register Type   Holding Register

Custom Type
(Swap Bytes)   ● No ○ Yes

Length   -- A -- 32 Bit float

Channel X   -   KNX-GW-MODBUS-RSxxx

Parameter	Setting	Description
Channel	Radiobutton	- unconfigured - configured
Comment	Up to 64 Character	Naming of the channel
Setup		
Send Cyclically	Radiobutton	- No - Yes
Send on Change	Radiobutton	- No - Yes
ID	1 - 247	Each bus user must have a unique address.
Register Number	1 - 65535	Address of the relevant register.

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Channel X   -   KNX-GW-MODBUS-RSxxx   (Fortsetzung)

Parameter	Setting	Description
Correction		
Multiplier	-3,4E-38 ... 3,4E+38	With this setting, the measured value to a desired value can convert.
Offset	-3,4E-38 ... 3,4E+38	e.g. price / kWh = 0.34€ Multiplier: 3,4E-1 , Offset: 0
KNX		
Length	1 Bit 8 Bit 16 Bit 32 Bit Metering Value	Length of the KNX data type
Type	unsigned integer signed integer float	Selection of the KNX data type
Modbus		
Register Type		Modbus register type
Custom Type (Swap Bytes)		Values from the Modbus are always 2-byte registers. In the event that a value is only 1 byte long, if necessary, the high and low byte can be exchanged.
Length		Length of the ModBus data type
Value Information Field		KNX Association Datapoint Types
Exponent	x 10^-7 ... x 10^7	value adjustment

Only with selection „KNX   Length = Metering Value

KNX

Length	Metering Value ▼

Modbus

Register Type	Holding Register ▼
Custom Type (Swap Bytes)	◉ No ○ Yes
Length	-- A -- 32 Bit float ▼
Value Information Field	Energy [Wh] ▼
Exponent	x 1 ▼

For each Modbus Channel, an object is created as input or output as well as with the parameterized data type and length.

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2   Product Page

The **KNX-GW-MODBUS-RSxxx** is a device that can integrate all kind of consumption measuring devices that are equipped with an ModBus/RTU interface into the KNX-bus.

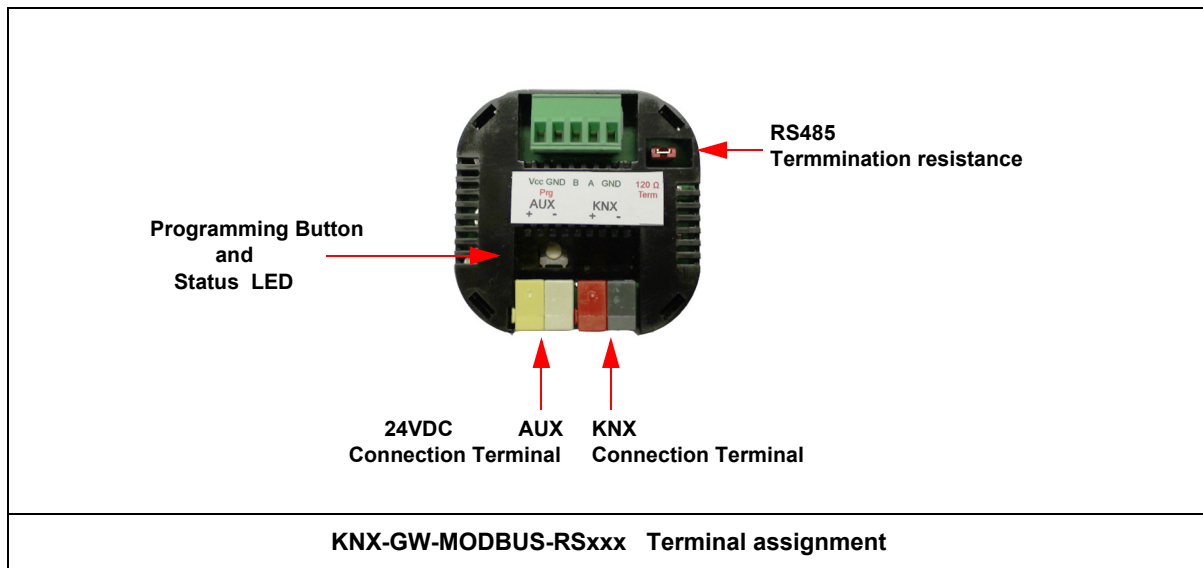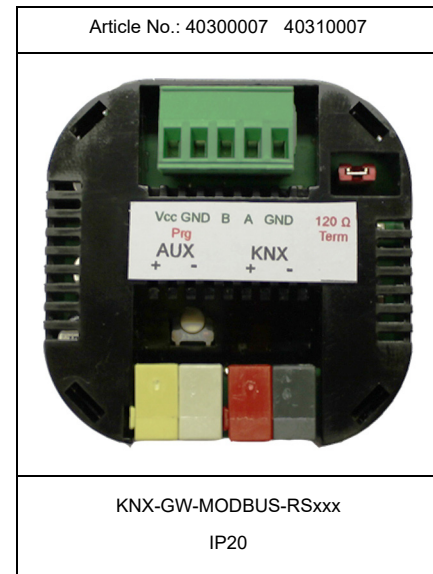The bus coupler represents a bus master of the Modbus/RTU interface.

A connection can be realized via RS485 (max. 32 member incl. Master) or RS232 (P2P).
This selection must be observed when ordering and can not be switched by application.

There are 32 ModBus data points available, which can be assigned freely to the different devices

The device has an integrated bus coupling unit and needs no auxiliary power.

The module is configured with the ETS (KNX Tool Software) and the associated application program.

Article No.: 40300007   40310007

KNX-GW-MODBUS-RSxxx

IP20

Programming Button and Status LED

RS485 Termmination resistance

24VDC Connection Terminal   **AUX**   **KNX Connection Terminal**

KNX-GW-MODBUS-RSxxx   Terminal assignment

In Case of Bus Voltage Recurrence

The values of ModBus devices are available again after a new reading.
The ETS parameter settings are retained.

Discharge Program and Reset Sensor

In order to delete the programming (projecting) and to reset the module back to delivery status, it must be switched to zero potential (disconnect the KNX bus coupler).
Press and hold the programming button while reconnecting the KNX-bus coupler and wait until the programming LED lights up (approx. 5-10 seconds).
Now you can release the programming button.
The module is ready for renewed projecting.
If you release the programming button too early, repeat the aforementioned procedure.

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3 Technical Data

Technical Data   -   KNX-GW-MODBUS-RSxxx

Number of ModBus devices (RS232)	1 Cable length see RS232 specification
Number of ModBus devices (RS485)	max. 31 member Cable length see RS485 specification
Number of consumption data points	32 can be assigned freely
Auxiliary voltage for ModBus devices	12VDC / max. 100mA
Operating voltage KNX	KNX Busvoltage 21 .. 32VDC
Power consumption KNX	approx. 240 mW (at 24VDC)
Auxiliary voltage	24 .. 32VDC
Power consumption auxiliary voltage	Depending on the number of ModBus devices to be supplied max. 100mA
Bus coupler	integrated
Environment temperature	Storage: -20 .. +85 °C Operation: -20 .. +55 °C
Housing	plastic
Housing dimension	(50 x 50 x 20) mm (W x H x D) 58mm diagonal
Protection class	IP20
Article number	40300007 40310007

Imprint

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We take over guarantees as required by law.
Please contact us if malfunctions occur. In this case, please send the device including a description of the error to the company's address named below.

Manufacturer

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