K-BUS[®] KNX Gateway for RS485/RS232_V1.7

BTPG-04/03.1



KNX/EIB Home and Building Control System

Attentions

1. Please keep devices away from strong magnetic field, high temperature, wet environment;



2. Do not fall the device to the ground or make them get hard impact;



3. Do not use wet cloth or volatile reagent to wipe the device;



4. Do not disassemble the devices.

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Chapter 1 Summary

KNX Gateway for RS485/RS232 mainly applied in the intelligent control system and installed on the distribution boards with 35mm mounting rail, which can realize Modbus/RS485/RS232 and KNX bus communication.

This manual provides detailed technical information about the KNX Gateway for RS485/RS232 for users as well as assembly and programming details, and explains how to use the device by the application examples.

KNX Gateway for RS485/RS232 powered from KNX bus, and need a 12-30V DC auxiliary supply voltage. It is available to assign the physical address and configure the parameters by engineering design tools ETS with .knxprod (support edition ETS5.7 or higher).

The functions are summarized as followed:

- Configure basic parameters of communication, such as Baud rate, data bit, stop bit, parity bit and etc.
- Channel supports Max.500 datapoints. Each function point is undirectional, which can be configured direction, name and datatype(1bit/2bit/1byte/2byte).
- As Modbus master, read register data from slave and communicate with KNX.
- As Modbus slave, report KNX data to master or BA system.
- As normal gateway, only converting data, without communication mechanisms and logic.
- Support DAIKIN, HITACHI, Mitsubishi and other VRV Air conditioners in Modbus RTU mode, independent control up to 64 devices.
- Support some manufacturers of electric curtains and background music host control protocol.

Chapter 2 Technical Data

Power Supply	Operation voltage	21-30V DC, via the KNX bus
	Bus current	<12mA 30V DC
	Bus power	<360mW
Auxiliary supply	Voltage	12-30V DC
	Current	<60mA 30V DC
	Power consumption	<1.8W
Connection	KNX	Bus connection terminal(red/black)
	Auxiliary power	Screw terminals
	RS485/RS232	Screw terminals
	Wire range	0.2-2.5mm ²
	Torque	0.4N-m
Operation and display	Channel power LED	Yellow, channel power normal
	Channel communication LED	Red flashing, telegram KNX->Other protocol Green flashing, telegram Other protocol ->KNX
	Programming button and LED	Red, assign physical address
Temperature	Operation	−5 °C + 45 °C
	Storage	−25 °C + 55 °C
	Transportation	– 25 °C + 70 °C
Ambient	Humidity	<93%, except dewing
Design	Standard 35 mm DIN rail install	ation
Dimension	72 x 90 x 64mm	
Weight	0.17KG	

Chapter 3 Dimension and Connection Diagram

3.1.Dimension diagram



3.2. Connection diagram



① RS485/RS232 interface

B1, A1 as RS485 interface of Channel 1.

TX1, RX1 as RS232 interface of Channel 1.

Other channels are same as channel 1, not repeat it here.

Note:

Two types of communication of RS485&RS232 need to correspond to the product hardware module and database setting.

220V strong current not allowed to access!

- 2 Channel power LED indicator
- 3 Channel communication LED indicator
- 4 Auxiliary power screw terminals
- 5 Programming LED
- $^{\textcircled{6}}$ Programming button
- $\ensuremath{\overline{\mathcal{O}}}$ KNX bus connection terminal

Chapter 4 Project design and programming

KNX Gateway for RS485/RS232/1.1	2049	4000	4000
	objects	or group addresses	or associations
Applications	communication		of accordiations
	Maximum of	Maximum number	Maximum number

General function

General function includes heartbeat packet, KNX telegram delay time setting and enabling channel functions.

Communication datapoints

Channel supports up to 500 function datapoints. Each function point is undirectional, which can be configured direction, name and datatype(1bit/2bit/4bit/1byte/2byte).

Modbus master function

As Modbus master, read register data from slave and communicate with KNX.

Modbus slave function

As Modbus slave, report KNX data to master or BA system.

Communication data conversion

As normal gateway, only converting data, without communication mechanisms and logic.

Air-conditioning connection

Support DAIKIN, HITACHI, Mitsubishi and other VRV Air conditioners in Modbus RTU mode, independent control up to 64 devices.

Other

Support some manufacturers of electric curtains and background music host control protocol.

Chapter 5 Parameter setting description in the ETS

5.1. Parameter window "General setting"

-.-.- KNX Gateway for RS485/RS232 > General setting

General setting	Send cycle of "In operation" telegram [1240,0=inactive]	0	÷	min
Channel 1 setting	Send delay between KNX telegram	Disable		•
Channel 2 setting	Channel enable			
Channel 3 setting	Channel 1	1		
	Channel 2	1		
Channel 4 setting	Channel 3			
+ Channel 1-VRV/VRF	Channel 4	~		
+ Channel 2-Modbus				
+ Channel 3-RS485				
+ Channel 4-R5232				

Fig.5.1"General setting" parameter window

Parameter "Send cycle of "In operation"telegram [1...240s, 0 = inactive]"

This parameter is for setting the time interval when this module cycle send telegrams through the bus to indicate this module in normal operation. When set to "0", the object " in operation" will not send a telegram. If the setting is not "0", the object "In operation" will send a telegram according to the set period time with logic "1" to the bus. Options: **0...240s,0= inactive**

As to reduce the bus load as much as possible, the maximum time interval should be selected according to actual needs.

Parameter "Send delay between KNX telegram".

This parameter is for setting the send delay between KNX telegram. When set the "Disable", KNX telegram is sent without delay. Options:



This parameter is for enabling the channel function.

5.2.Parameter window "Channel x setting"

-.-.- KNX Gateway for RS485/RS232 > Channel 1 setting

General setting	Channel function	Modbus<->KNX	*
Channel 1 setting	Channel description		
Channel 2 setting	Communication setting		
-	Baudrate	9600	 bits/s
Channel 3 setting	Word length (bits)	8	
Channel 4 setting	Stop bits	1	*
Channel 1-Modbus	Parity	None	•
Channel 2-RS485	Modbus setting		
Channel 3-RS232	Gateway type	O Modbus master O Modbus slave	
	Slave address (common)	1	÷
Channel 4-Audio	Transmission order of 2 byte	O MSB first 🔘 LSB first	
	Register address	0 based 1 based	
	Request setting for master		
	Send delay for the next request	100ms	•
	Send delay for the next request cycle	Minimal	•
	Multi read requests		
	Diagnostic setting		
	Diagnostic objects		

-.-.- KNX Gateway for RS485/RS232 > Channel 1 setting

General setting	Channel function	VRV/VRF gateway	•
Channel 1 setting	Channel description		
Channel 2 setting	Gateway address [0255]	255	* *
channer e secting	Communication setting		
Channel 3 setting	AC unit protocol as	DAIKIN (DTA116A621)	•
Channel 4 setting	Baudrate	9600	▼ bits/s
+ Channel 1-VRV/VRF	Word length (bits)	8	
	Stop bits	1	•
+ Channel 2-Modbus	Parity	None	•

"VRV/VRF gateway" general setting

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General setting	Channel function	RS485<->KNX	*
Channel 1 setting	Channel description		
channel i setting	Communication setting		
Channel 2 setting	Baudrate	9600	▼ bits/s
Channel 3 setting	Word length (bits)	8	
Channel 4 setting	Stop bits	1	•
+ Channel 1. PS 195	Parity	None	•
· channer (10405			
+ Channel 2-Modbus	RS485 setting		
+ Channel 3-RS485	rS485 telegram is HEX Code, support may or 0A,0F,BA,;	x. size is 16 bytes, and format as: 0	A-0F-AB; or 0A 0F AB;
Channel 4-R5232	Send delay between RS485 telegram	100ms	•
 Channel 2-Modbus 	RS232 setting		
 Channel 3-RS485 	RS232 telegram is HEX Code, support max or 0A,0F,BA,;	x. size is 16 bytes, and format as: 0	A-0F-AB; or 0A 0F AB;
Channel 4-PS222	Send delay between RS232 telegram	100ms	•
 Channel 4-K5252 	"RS485/RS232<->KNX" gener	ral setting	
KNX Gateway for F	S485/RS232 > Channel 1 setting		
General setting	Channel function	Audio gateway	*
Channel 1 setting	Channel description		
Channel 2 setting	Communication setting		
Channel 2 setting	Audio unit protocol as	backaudio	•
Channel 2 cotting	P. Jack		
channel 3 setting	Baudrate	4800	▼ bits/s
Channel 4 setting	Word length (bits)	4800 8	▼ bits/s
Channel 4 setting	Word length (bits) Stop bits	4800 8 1	 bits/s
Channel 4 setting + Channel 1-Audio	Word length (bits) Stop bits Parity	4800 8 1 None	▼ bits/s ▼
Channel 4 setting + Channel 1-Audio	Word length (bits) Stop bits Parity "Audio gateway" general s	4800 8 1 None setting	 bits/s
KNX Gateway for F	Word length (bits) Stop bits Parity "Audio gateway" general s tS485/RS232 > Channel 1 setting	4800 8 1 None setting	• bits/s
Channel 4 setting Channel 1-Audio KNX Gateway for F General setting	Word length (bits) Stop bits Parity "Audio gateway" general s States/RS232 > Channel 1 setting Channel function	4800 8 1 None setting Curtain gateway	bits/s
 Channel 4 setting Channel 1-Audio KNX Gateway for F General setting Channel 1 setting 	Word length (bits) Stop bits Parity "Audio gateway" general s S485/RS232 > Channel 1 setting Channel function Channel description	4800 8 1 None setting Curtain gateway	 bits/s * * *
Channel 4 setting Channel 1-Audio Channel 1-Audio Channel 1-Audio General setting Channel 1 setting Channel 2 setting	Word length (bits) Stop bits Parity "Audio gateway" general s tS485/RS232 > Channel 1 setting Channel function Channel description Communication setting	4800 8 1 None Setting Curtain gateway	bits/s
Channel 4 setting Channel 4 setting Channel 1-Audio Channel 1-Audio General setting Channel 1 setting Channel 2 setting	Baudrate Word length (bits) Stop bits Parity "Audio gateway" general s S485/RS232 > Channel 1 setting Channel function Channel description Communication setting Curtain unit protocol as	4800 8 1 None Setting Curtain gateway DOOYA O Other	bits/s
Channel 4 setting Channel 4 setting Channel 1-Audio Channel 1-Audio Channel 2 setting Channel 2 setting Channel 3 setting	Baudrate Word length (bits) Stop bits Parity "Audio gateway" general s KS485/RS232 > Channel 1 setting Channel function Channel description Communication setting Curtain unit protocol as Protocol description	4800 8 1 None Setting Curtain gateway DOOYA Other	bits/s
Channel 4 setting Channel 4 setting Channel 1-Audio Channel 1-Audio Channel 1 setting Channel 1 setting Channel 2 setting Channel 3 setting Channel 4 setting	Baudrate Word length (bits) Stop bits Parity "Audio gateway" general s Channel 1 setting Channel function Channel description Curtain unit protocol as Protocol description Baudrate	4800 8 1 None Setting Curtain gateway DOOYA O Other 9600	 bits/s t <lit< li=""> t t t t t <!--</td--></lit<>
Channel 4 setting Channel 4 setting Channel 1-Audio Channel 1-Audio Channel 3 setting Channel 1 setting Channel 2 setting Channel 3 setting Channel 4 setting + Channel 1-Curtain	Baudrate Word length (bits) Stop bits Parity "Audio gateway" general s St485/RS232 > Channel 1 setting Channel function Channel description Communication setting Curtain unit protocol as Protocol description Baudrate Word length (bits)	4800 8 1 None Setting Curtain gateway DOOYA Other 9600 8	 bits/s t t t t bits/s
Channel 4 setting Channel 4 setting Channel 1-Audio Channel 1-Audio Channel 3 setting Channel 2 setting Channel 3 setting Channel 4 setting Channel 4 setting	Baudrate Word length (bits) Stop bits Parity "Audio gateway" general s St8485/RS232 > Channel 1 setting Channel function Channel description Communication setting Curtain unit protocol as Protocol description Baudrate Word length (bits) Stop bits	4800 8 1 None Setting Curtain gateway DOOYA Other 9600 8 1	 bits/s t t t bits/s t

"Curtain gateway" general setting

Fig.5.2 "Channel x setting" parameter window

KNX/EIB KNX Gateway for RS485/RS232

Parameter "Channel function

This parameter is for setting channel function. Options:

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Modbus<->KNX RS485<->KNX RS232<->KNX VRV/VRF gateway Audio gateway Curtain gateway

Note: VRV/VRF gateway is not supported on Channel 2/3/4. Curtain gateway is not supported on Channel 3/4.

Parameter "Channel description"

This parameter is for setting the custom description of channel, up to 30 characters can be input.

Parameter "Gateway address [0. 255]"

This parameter is visible when channel function is selected as "VRV/VRF gateway". Set the gateway address. Options: **0..255**

Communication setting

Parameter "AC unit protocol as'

This parameter is visible when channel function is selected as "VRV/VRF gateway". Set Air-conditioning unit protocol, and DTA116A621 is currently temporarily supported. Options:

DAIKIN (DTA116A621) HITACHI (HL03B) Mitsubishi (ABJK-CCM10) Fujitsu (UTY-VMGX) Gree Toshiba (IFMB645TLE) Other

Parameter "Curtain unit protocol as"

This parameter is visible when channel function is selected as "Curtain gateway". Set Curtain unit protocol, and DOOYA motor is currently temporarily supported. Options:

DOOYA Other **K-BUS**[®] KNX/EIB KNX Gateway for RS485/RS232

Parameter "Audio unit protocol as"

This parameter is visible when channel function is selected as "Audio gateway". Set Audio unit protocol Options:

backaudio Yodaar MiYue cnWise Other

---Parameter "Protocol description"

This parameter is visible when the above 3 parameters is selected as "Other". Set the name of other protocol, up to 4 characters can be input.

Parameter "Baudrate"

This parameter is for setting the baud rate of communication. Options:

1200 bits/s 2400 bits/s ...

115200 bits/s

arameter "Word length (bits)

This parameter is for setting the word length. The default length is 8.

Parameter "Stop bits'

This parameter is for setting the stop bits of data frames. Options: 0.5 / 1 / 1.5 / 2

Parameter "Parity

This parameter is for setting the Parity of data frames. Options:

Even

Odd

None

Modbus setting(The following parameters are visible when channel function is selected as "Modbus<->KNX")

Parameter "Gateway type"

This parameter is for setting the Gateway type. Options:

Modbus master

Modbus slave

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Note: Channel 2/3/4 only supports Modbus master.

---Parameter "Slave address (common)

If gateway used as slave, this parameter enters slave address;

If gateway used as master, this parameter enters slave common address. If the slave does not use common address, you can configure additional addresses in the channel page.

Options: 0..247

Parameter "Transmission order of 2 byte"

This parameter is for setting the sequence of the 2-byte-value data transmission. Options:

MSB first

LSB first

Parameter "Register address"

This parameter is for setting register address is defined based on 0 or 1. Options:

0 based

1 based

Request setting for master

---Parameter "Send delay for the next request"

This parameter is visible when gateway type is selected as "Modbus master". For setting delay of the next request. Options:

100ms

200ms

300ms

500ms

Note: The setting of the request time should be configured reasonably according to the response time of the access device.

---Parameter "Send delay for the next request cycle"

This parameter is visible when gateway type is selected as "Modbus master". For setting delay of the next request cycle. That is, the time interval to start the next round of requests, which cannot be set too short and ensure that the last round of requests is completed, otherwise the later unrequested telegram will be ignored. Options:

> Minimal 1s 2s ...

10s

---Parameter "Multi read requests"

This parameter is visible when gateway type is selected as "Modbus master". Set enabled, the slave address and function code are the same, and the register address continuous or duplicate channels can be combined into a multiple read request. Up to 16 channels can be combined.

Diagnostic settings

Parameter "Diagnostic objects"

This parameter is for setting the object "Diagnostic: Slave (common)" is visible when enabled. ----Parameter "Send delay for the next request cycle"

This parameter is visible when gateway type is selected as "Modbus slave" and the previous parameter enabled.

This parameter is for setting the communication status of the sending between master and the slave. For the master, a ON telegram will be sent to the KNX bus when without receiving a response from the device. For slave, within a request timeout, a ON telegram is sent to the KNX bus when without a request from the host. Options:

10min 20min

•••

120min

RS485 / RS232 setting(The following parameters are visible when channel function is selected as "RS485/RS232<->KNX")

RS485/RS232 telegram is HEX Code, support max. size is 16 bytes, and format as: 0A-0F-AB-....; o 0A 0F AB ...; or 0A,0F,BA,...;

Parameter "Send delay between RS485/RS232 telegram"

This parameter is for setting the send delay between RS485/RS232 telegram. When set the "Disable", RS485/RS232 telegram is sent without delay. Options:

Disable 50ms ... 500ms

5.3.Parameter window "Modbus<->KNX"

5.3.1. Parameter window "Datapoints setting"

KNY CALLER (PC222) Character I (Marthur & Data and the set

General setting	Make sure the hardware is R	\$485 interface board in the corresponding channel
Channel 1 setting	Datapoints 1-10	~
Channel 2 setting	Slave address type	Common Individual for current page
Channel 3 setting	Datapoints 11-20	~
	Slave address type	Common Individual for current page
Channel <mark>4</mark> setting	Datapoints 21-30	~
Channel 1-Modbus	Slave address type	O Common O Individual for current page

Make sure the hardware is RS485 interface board in the corresponding channel. Parameter "Datapoints 1-10/11-20/21-30/

This parameter is for setting the datapoint window of Modbus<->KNX. Display 10 datapoints per page when enabled.

Note: Modbus<->KNX channel 1 supports most 500 datapoints and channel 2/3/4 most 50 datapoints.

----Parameter "Slave address type"

This parameter is visible when gateway type is selected as "Modbus master" and the previous parameter enabled. Set slave address type per page. Options:

Common

Individual for current page

The following parameters are visible when select "Individual for current page"

--Parameter "Slave address"

This parameter is for setting slave address of the current page when the page uses an individual slave address. For example, the slave address of datapoint 1-10. Option: **0..247**

----Parameter "Slave description (max 30char.)"

This parameter is for setting the custom description of diagnostic object, up to 30 characters can be input.

Each 10 datapoint with a diagnostic object, such as the object "Diagnostic: Slave (Data point 1-10)".

5.3.2. Parameter window "Datapoint x"

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KNX Gateway for RS4	85/RS232 > Channel 1-Modbus >	Datapoints 1-10
General setting	Datapoint 1	1
	Datapoint 2	1
Channel 1 setting	Datapoint 3	1
Channel 2 setting	Datapoint 4	1
	Datapoint 5	~
Channel 3 setting	Datapoint 6	~
Channel 4 setting	Datapoint 7	~
conner i secong	Datapoint 8	~
 Channel 1-Modbus 	Datapoint 9	1
Datapoints setting	Datapoint 10	~

+ Datapoints 1-10

Fig.5.3.2.1 "Datapoints 1-10" parameter window

Parameter "Datapoints 1/2/3/.

This parameter is for setting the datapoint of Modbus<->KNX. Display datapoint when enabled.

The following is the datapoint parameter window for the Modbus <-> KNX.

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General setting	Datapoint type	1 bit binary	2
Channel 1 setting	Description (max 30char.)		
Channel 2 setting	Communication direction	KNX to Modbus O Mod	bus to KNX
channer 2 setting	Send value condition	On value change	
Channel 3 setting	Type (register)	Bit register	
Channel 4 setting	Value inverted		
Channel 1-Modbus	Function	01-Read coils 02-Read	ad discrete inputs
Datapoints setting	Address	1	
Datapoints 1-10	Polling interval	Every cycle	
Datapoint 1			
	"1 bit binary" par	ameter	
KNX Gateway for RS48	5/RS232 > Channel 1-Modbus > Datap	oints 1-10 > Datapoint 1	
	100000000000000000000000000000000000000		
General setting	Datapoint type	1 byte percent value	•
General setting Channel 1 setting	Datapoint type Description (max 30char.)	1 byte percent value	•
General setting Channel 1 setting Channel 2 setting	Datapoint type Description (max 30char.) Communication direction	1 byte percent value	• ous to KNX
General setting Channel 1 setting Channel 2 setting	Datapoint type Description (max 30char.) Communication direction Send value condition	1 byte percent value KNX to Modbus On value change	• bus to KNX
General setting Channel 1 setting Channel 2 setting Channel 3 setting	Datapoint type Description (max 30char.) Communication direction Send value condition Type (register)	1 byte percent value KNX to Modbus O Modb On value change Word register	• ous to KNX
General setting Channel 1 setting Channel 2 setting Channel 3 setting Channel 4 setting	Datapoint type Description (max 30char.) Communication direction Send value condition Type (register) Position (register)	1 byte percent value KNX to Modbus O Modb On value change Word register Low byte	▼ bus to KNX
General setting Channel 1 setting Channel 2 setting Channel 3 setting Channel 4 setting Channel 1-Modbus	Datapoint type Description (max 30char.) Communication direction Send value condition Type (register) Position (register) Minimum register value	1 byte percent value KNX to Modbus Modb On value change Word register Low byte 0	► bus to KNX ►
General setting Channel 1 setting Channel 2 setting Channel 3 setting Channel 4 setting Channel 1-Modbus	Datapoint type Description (max 30char.) Communication direction Send value condition Type (register) Position (register) Minimum register value Maximum register value	1 byte percent value KNX to Modbus Modb On value change Word register Low byte 0 255	bus to KNX
General setting Channel 1 setting Channel 2 setting Channel 3 setting Channel 4 setting Channel 1-Modbus Datapoints setting	Datapoint type Description (max 30char.) Communication direction Send value condition Type (register) Position (register) Minimum register value Maximum register value Minimum KNX value	1 byte percent value KNX to Modbus Modb On value change Word register Low byte 0 255 0	vus to KNX ✓ ↓ ↓ 9
General setting Channel 1 setting Channel 2 setting Channel 3 setting Channel 4 setting Channel 1-Modbus Datapoints setting Datapoints 1-10	Datapoint type Description (max 30char.) Communication direction Send value condition Type (register) Position (register) Minimum register value Maximum KNX value Maximum KNX value	1 byte percent value KNX to Modbus Modb On value change Word register Low byte 0 255 0 100	vus to KNX
General setting Channel 1 setting Channel 2 setting Channel 3 setting Channel 4 setting Channel 1-Modbus Datapoints setting Datapoints 1-10 Datapoint 1	Datapoint type Description (max 30char.) Communication direction Send value condition Type (register) Position (register) Minimum register value Maximum register value Maximum KNX value	1 byte percent value KNX to Modbus Modb On value change Word register Low byte 0 255 0 100	• bus to KNX • • • • • • • • • • • • •
General setting Channel 1 setting Channel 2 setting Channel 3 setting Channel 4 setting Channel 1-Modbus Datapoints setting Datapoints 1-10 Datapoint 1 Datapoint 2	Datapoint type Description (max 30char.) Communication direction Send value condition Type (register) Position (register) Minimum register value Maximum register value Maximum KNX value Maximum KNX value	1 byte percent value KNX to Modbus Modb On value change Word register Low byte 0 255 0 100 03-Read holding registers 04-Read input registers	bus to KNX
General setting Channel 1 setting Channel 2 setting Channel 3 setting Channel 4 setting Channel 1-Modbus Datapoints setting Datapoints 1-10 Datapoint 2 Datapoint 3	Datapoint type Description (max 30char.) Communication direction Send value condition Type (register) Position (register) Minimum register value Maximum register value Maximum KNX value Maximum KNX value	1 byte percent value KNX to Modbus Modd On value change Word register Low byte 0 255 0 100 03-Read holding registers 04-Read input registers	vus to KNX
General setting Channel 1 setting Channel 2 setting Channel 2 setting Channel 3 setting Channel 4 setting Channel 1-Modbus Datapoints setting Datapoints 1-10 Datapoint 1 Datapoint 2 Datapoint 3 Datapoint 4	Datapoint type Description (max 30char.) Communication direction Send value condition Type (register) Position (register) Minimum register value Maximum register value Maximum KNX value Maximum KNX value	1 byte percent value KNX to Modbus Modb On value change Word register Low byte 0 255 0 100 0 03-Read holding registers 04-Read input registers 1	• bus to KNX • • • • • • • • • • • • •

'1 byte percent value" parameter

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General setting	Datapoint type	1 byte configured unsigned value	
Channel 1 setting	Description (max 30char.)		
Channel 2 setting	Communication direction	KNX to Modbus O Modbus to KN	X
	Send value condition	On value change	
Channel 3 setting	Type (register)	Bit register	
Channel <mark>4</mark> setting	When register '1'	No reaction O Set register value	
Channel 1-Modbus	Object value	255	
	When register '0'	No reaction 🔘 Set register value	
Datapoints setting	Object value	0	
Datapoint 1	Function	01-Read coils 02-Read discrete	inputs
Datapoint 2	Address	1	
Datapoint 3	Polling interval	Every cycle	
	i olinig interval	Lively cycle	
	"1 byte configured unsigned	d value" parameter	
KNX Gateway for RS48	"1 byte configured unsigned 85/RS232 > Channel 1-Modbus > Datap	value" parameter points 1-10 > Datapoint 1	
KNX Gateway for RS48	"1 byte configured unsigned B5/RS232 > Channel 1-Modbus > Datag	1 value" parameter points 1-10 > Datapoint 1 1 byte unsigned value	
KNX Gateway for RS48 General setting Channel 1 setting	"1 byte configured unsigned B5/RS232 > Channel 1-Modbus > Datag Datapoint type Description (max 30char.)	1 value" parameter points 1-10 > Datapoint 1 1 byte unsigned value	
KNX Gateway for RS48 General setting Channel 1 setting	"1 byte configured unsigned B5/RS232 > Channel 1-Modbus > Datap Datapoint type Description (max 30char.) Communication direction	a value" parameter points 1-10 > Datapoint 1 1 byte unsigned value KNX to Modbus © Modbus to KN	٧X
KNX Gateway for RS48 General setting Channel 1 setting Channel 2 setting	"1 byte configured unsigned B5/RS232 > Channel 1-Modbus > Datage Datapoint type Description (max 30char.) Communication direction Send value condition	a value" parameter points 1-10 > Datapoint 1 1 byte unsigned value KNX to Modbus Modbus to KM On value change	νx
KNX Gateway for RS48 General setting Channel 1 setting Channel 2 setting Channel 3 setting	"1 byte configured unsigned B5/RS232 > Channel 1-Modbus > Datage Datapoint type Description (max 30char.) Communication direction Send value condition Type (register)	a value" parameter points 1-10 > Datapoint 1 1 byte unsigned value KNX to Modbus () Modbus to KN On value change Word register	νx
KNX Gateway for RS48 General setting Channel 1 setting Channel 2 setting Channel 3 setting Channel 4 setting	"1 byte configured unsigned B5/RS232 > Channel 1-Modbus > Datage Datapoint type Description (max 30char.) Communication direction Send value condition Type (register) Position (register)	Every cycle d value" parameter points 1-10 > Datapoint 1 1 byte unsigned value KNX to Modbus KNX to Modbus On value change Word register Low byte	νx
KNX Gateway for RS48 General setting Channel 1 setting Channel 2 setting Channel 3 setting Channel 4 setting Channel 1-Modbus	"1 byte configured unsigned B5/RS232 > Channel 1-Modbus > Datago Datapoint type Description (max 30char.) Communication direction Send value condition Type (register) Position (register) Eunction	A value" parameter points 1-10 > Datapoint 1 1 byte unsigned value KNX to Modbus () Modbus to KN On value change Word register Low byte () 03-Read holding registers	vx
KNX Gateway for RS48 General setting Channel 1 setting Channel 2 setting Channel 3 setting Channel 4 setting Channel 1-Modbus Datapoints setting	"1 byte configured unsigned B5/RS232 > Channel 1-Modbus > Datago Datapoint type Description (max 30char.) Communication direction Send value condition Type (register) Position (register) Function	Every cycle d value" parameter points 1-10 > Datapoint 1 1 byte unsigned value NX to Modbus KNX to Modbus On value change Word register Low byte 0 03-Read holding registers 04-Read input registers	NX

"1 byte unsigned value" parameter

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General setting	Datapoint type	2 byte configured unsigned value	
Channel 1 setting	Description (max 30char.)		
Channel 2 setting	Communication direction	KNX to Modbus O Modbus to KN	Х
channer 2 setting	Send value condition	On value change	
Channel 3 setting	Type (register)	Bit register	2
Channel 4 setting	When register '1'	○ No reaction	
Channel 1-Modbus	Object value	65535	
Datapoints setting	When register '0'	O No reaction O Set register value	
Datapoints setting Datapoints 1-10	Object value	0	
Datapoint 1	Function	◎ 01-Read coils ○ 02-Read discrete	inputs
Datapoint 2	Address	1	
Datapoint 3	Polling interval	Every cycle	•
	"2 byte configured unsigned	value" parameter	
KNX Gateway for RS48	35/RS232 > Channel 1-Modbus > Data	points 1-10 > Datapoint 1	
KNX Gateway for RS4	35/RS232 > Channel 1-Modbus > Datap Datapoint type	2 byte unsigned value	
KNX Gateway for RS48 General setting Channel 1 setting	35/RS232 > Channel 1-Modbus > Datag Datapoint type Description (max 30char.)	2 byte unsigned value	
KNX Gateway for RS48 General setting Channel 1 setting	35/RS232 > Channel 1-Modbus > Datag Datapoint type Description (max 30char.) Communication direction	2 byte unsigned value KNX to Modbus () Modbus to KN	٨X
KNX Gateway for RS48 General setting Channel 1 setting Channel 2 setting	35/RS232 > Channel 1-Modbus > Datag Datapoint type Description (max 30char.) Communication direction Send value condition	2 byte unsigned value KNX to Modbus Modbus to KM On value change	٧X
KNX Gateway for RS48 General setting Channel 1 setting Channel 2 setting Channel 3 setting	B5/RS232 > Channel 1-Modbus > Datag Datapoint type Description (max 30char.) Communication direction Send value condition Type (register)	2 byte unsigned value KNX to Modbus Modbus to KM On value change Word register	٧X
KNX Gateway for RS48 General setting Channel 1 setting Channel 2 setting Channel 3 setting Channel 4 setting	B5/RS232 > Channel 1-Modbus > Datag Datapoint type Description (max 30char.) Communication direction Send value condition Type (register) Position (register)	2 byte unsigned value 2 byte unsigned value KNX to Modbus KNX to Modbus On value change Word register High/Low byte Configured	νX
KNX Gateway for RS48 General setting Channel 1 setting Channel 2 setting Channel 3 setting Channel 4 setting Channel 1-Modbus	35/RS232 > Channel 1-Modbus > Datag Datapoint type Description (max 30char.) Communication direction Send value condition Type (register) Position (register)	2 byte unsigned value 2 byte unsigned value KNX to Modbus KNX to Modbus On value change Word register High/Low byte Configured 0 03-Read holding registers	٧X
KNX Gateway for RS48 General setting Channel 1 setting Channel 2 setting Channel 3 setting Channel 4 setting Channel 1-Modbus Datapoints setting	B5/RS232 > Channel 1-Modbus > Datas Datapoint type Description (max 30char.) Communication direction Send value condition Type (register) Position (register) Function	2 byte unsigned value 2 byte unsigned value KNX to Modbus KNX to Modbus On value change Word register High/Low byte Configured 0 03-Read holding registers 04-Read input registers	٧X

"2 byte unsigned value" parameter

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	and the second second		
Seneral setting	Datapoint type	2 byte float value	
Channel 1 setting	Description (max 30char.)		
hannel 2 setting	Communication direction	KNX to Modbus O Modbus to KNX	
	Send value condition	On value change	
Channel 3 setting	Type (register)	Word register	
Channel 4 setting	Position (register)	High/Low byte – unsigned	
hannel 1-Modbus	Minimum register value	0	
	Maximum register value	100	
Datapoints setting	Minimum KNX value	0	
Datapoints 1-10	Maximum KNX value	100	
Datapoint 1		100	
Datapoint 2	Function	0 03-Read holding registers	
Datapoint 3		04-Read Input registers	
Datapoint 4	Address	1	
Datapoint 4	Polling interval	Every cycle	

"2 byte float value" parameter

Fig.5.3.2.2 "Datapoints x" parameter window

Parameter "Datapoint type"

This parameter is for setting the datapoint type. Options:

- 1 bit binary
- 1 byte percent value
- 1 byte configured unsigned value
- 1 byte unsigned value
- 2 byte configured unsigned value
- 2 byte unsigned value
- 2 byte float value

Parameter "Description (max 30char.)"

This parameter is for setting the custom description of datapoint, up to 30 characters can be input.

Parameter "Communication direction"

This parameter is for setting the communication direction. Options:

KNX to Modbus

Modbus to KNX

--Parameter "Send value condition"

This parameter is visible when previous parameter is selected as "Modbus to KNX". Set the conditions for the value sending. Options:

Only on read requests On value change Cyclic sends

Cyclic sends and on value change

--Parameter "Cycle time [1..255]min"

This parameter is visible when previous parameter is selected as "Cyclic sends...". Set the cycle time. Options: **1..255**

5.3.2.1. Datapoint type "1 bit binary"

arameter "Type (register)"

This parameter defines the channel function and the size of the register used. Options:

Bit register

Bit in word register

Value in word register

---Parameter "Value inverted"

This parameter is visible when register type is selected as "Bit register" or "Bit in word register". Value inverted when enabled. If inverted, then inversion value of the group object corresponds to the value of the bit register.

---Parameter "Position (register)"

This parameter is visible when register type is selected as "Bit in word register". Define position in the word register. Options:

Bit 00 Bit 01 ... Bit 15 GVS[®] K-BUS[®] KNX/EIB KNX Gateway for RS485/RS232

arameter "Bit count

This parameter is visible when register type is selected as "Value in word register". Define bit count in the word register. Options:

16	bit
15	bit
01	bit

.---Parameter "Offset"

This parameter is visible when register type is selected as "Value in word register". Define offset in the word register. Options:

Bit 00 Bit 01 ... Bit 15

Note: The channel will not work if it is misconfigured for the option "Value in word register".

The number of bit count and offset must not exceed 16bit, value needs to match the bit count. For example, the bit count is 1bit, so the value is only 0 and 1.

If the bit count is 08bit, the offset must not exceed 08bit.

Eg: If bit count is 08bit,Offset is 08bit, then the value actually defined is the following range (bold font):

B15 B14 B13 B12 B11 B10 B9 B8 B7 B6 B5 B4 B3 B2 B1 B0

It is seen from the example that the bit count and offset must not exceed 16bit. If exceeded, it is out of range and this channel fails.

The following parameters are visible when select "Modbus to KNX"

----Parameter "Checked value (register)'

This parameter is visible when register type is selected as "Value in word register". Define checked value in the word register via the number of bit count and offset. Options: **0..65535**

-Parameter "When register value>checked value, object" -Parameter "When register value=checked value, object" -Parameter "When register value<checked value, object"

These parameters are visible when register type is selected as "Value in word register". Set action of group object. When the register value is greater than/equal to/less than checked value, send a

ON/OFF telegram to the bus, or not. Options:

No reaction

Send 'ON'

Send 'OFF'

The following parameters are visible when select "KNX to Modbus"

----Parameter "When object receiving value=ON"

——Parameter "When object receiving value=OFF"

These two parameters are visible when register type is selected as "Value in word register". Set whether to send a value to the register when the object receives a ON/OFF telegram. Options:

No reaction

Set register value

--Parameter "Register value"

This parameters is visible when register type is selected as "Value in word register" and the previous parameter selected "Set register value". Set register value when the object receives a ON/OFF telegram (Note the range of the definable values).

Options: 0..65535

5.3.2.2. Datapoint type "1 byte percent value"

Parameter "Type (register)"

This parameter defines the channel function and the size of the register used.

Read-only by default Word register.

arameter "Position (register)"

This parameter defines position mapped to the word register. Options:

Low byte High byte High/Low byte

Parameter. "Minimum register value"

Parameter "Maximum register value

These two parameters is for setting correspond to the register value of the KNX minimum or maximum value.

When select "Low byte" or "High byte", options: 0..255

When select "Low byte/High byte", options: 0..65535

---Parameter "Minimum KNX value"

-Parameter "Maximum KNX value"

These two parameters is for setting correspond to the KNX value of the register minimum or maximum value. Options: **0..100 (%)**

Note: Realize the mapping of the KNX percentage value to the value in the word register. The conversion is always transferred to the entire register area and there is no limit definition on the minimum and maximum of the register.

The proportional coefficient can be calculated based on the maximum/minimum values of the register and KNX.

Eg:

Value minimum (register) = 0 Value maximum (register) = 100 Value minimum (KNX) = 0 Value maximum (KNX) = 10 The proportional coefficient is 10, and the value maps as follows: Value KNX = 10.5 -->Value Register = 105 **K-BUS**[®] KNX/EIB KNX Gateway for RS485/RS232

5.3.2.3. Datapoint type "1 byte configured unsigned value"

Parameter "Type (register)"

This parameter defines the channel function and the size of the register used. Options:

Bit register

Bit in word register

Value in word register

----Parameter "Position (register)"

This parameter is visible when register type is selected as "Bit in word register". Define position in the word register. Options:

Bit 00 Bit 01 ... Bit 15

Parameter "Bit count"

This parameter is visible when register type is selected as "Value in word register". Define bit count in the word register. Options:

1	6 bit
1	5 bit
•••	
0	1 bit
meter "O	ffset"

This parameter is visible when register type is selected as "Value in word register". Define offset in the word register. Options:

Bit 00 Bit 01 ... Bit 15

The following parameters are visible when select "Modbus to KNX"

---Parameter "When register '1"

---Parameter "When register '0"

These two parameters are visible when register type is selected as "Bit register" or "Bit in word register". Set whether to send a value to the register when register value is 1/0. Options:

No reaction

Set register value

Parameter "Object value"

This parameters is visible when register type is selected as "Bit register" or "Bit in word register" and the previous parameter selected "Set register value". Set object value when the register value is 1/0.

Options: 0..255

----Parameter "Checked value (register)'

This parameter is visible when register type is selected as "Value in word register". Define checked value in the register via the number of bit count and offset. Options: **0..65535**

—Parameter "When register value>checked value" —Parameter "When register value=checked value" —Parameter "When register value<checked value"</p>

These parameters are visible when register type is selected as "Value in word register". Set whether to send a value to the register when the register value is greater than/equal to/less than the checked value. Options:

No reaction

Set register value

--Parameter "Object value"

This parameters is visible when register type is selected as "Value in word register" and the previous parameter selected "Set register value". Set object value when the value of the register is greater than/equal to/less than the value defined via parameter. Options: **0..255**

The following parameters are visible when select "KNX to Modbus"

-Parameter "Checked value (register)"

This parameter is visible when register type is selected as "Bit in word register" or "Value in word register". Define checked value in the register via the number of bit count and offset. Options: **0..255**

---Parameter "When register value>checked value, object"

- ---Parameter "When register value=checked value, object".
- —Parameter "When register value<checked value, object"</p>

These parameters are visible when register type is selected as "Bit register" or "Bit in word register". Set action of group object. When the register value is greater than/equal to/less than the checked value, send a 1/0 telegram to the bus, or not. Options:



No reaction

Set register '1'

Set register '0'

---Parameter "When register value>checked value, object"

Parameter "When register value=checked value, object"

—Parameter "When register value<checked value, object".</p>

These parameters are visible when register type is selected as "Value in word register". Set action of group object. When the register value is greater than/equal to/less than the checked value, set whether to send a value to the register. Options:

No reaction

Set register value

-Parameter "Register value"

This parameters is visible when register type is selected as "Value in word register" and the previous parameter selected "Set register value". Set register value. Options: **0..65535**

5.3.2.4. Datapoint type "1 byte unsigned value"

Parameter ″Type (register)′

This parameter defines the channel function and the size of the register used.

Read-only by default Word register.

Parameter "Position (register)".

This parameter defines position mapped to the word register. Options:

Low byte

High byte

Configured

--Parameter "Bit count"

This parameters is visible when selects "Configured". Define bit count in the word register. Options:

08 bit 07bit ... 01 bit

arameter "Offset'

This parameters is visible when selects "Configured". Define offset in the word register. Options:

Bit 00 Bit 01 ... Bit 15

5.3.2.5. Datapoint type "2 byte configured unsigned value"

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Parameter "Type (register)" This parameter defines the channel function and the size of the register used. Options: Bit register Bit in word register Value in word register Value in word register This parameter "Position (register)" This parameter is visible when register type is selected as "Bit in word register". Define position in the word register. Options: Bit 00

Bit 01 ... Bit 15

-Parameter "Bit count"

This parameter is visible when register type is selected as "Value in word register". Define bit count in the word register. Options:

16 bit 15 bit ... 01 bit

Parameter "Offset"

This parameter is visible when register type is selected as "Value in word register". Define offset in the word register. Options:

Bit 00



Bit 01

•••

Bit 15

The following parameters are visible when select "Modbus to KNX"

Parameter "When register 1"

---Parameter "When register '0'

Parameter "Object value

These two parameters are visible when register type is selected as "Bit register" or "Bit in word register". Set whether to send a value to the register when register value is 1/0. Options:

No reaction

Set register value

This parameters is visible when register type is selected as "Bit register" or "Bit in word register" and the previous parameter selected "Set register value". Set object value when the register value is 1/0.

Options: 0..65535

-Parameter "Checked value (register)"

This parameter is visible when register type is selected as "Value in word register". Define checked value in the register via the number of bit count and offset. Options: **0..65535**

----Parameter "When register value>checked value"

---Parameter "When register value=checked value"

--Parameter "When register value<checked value

These parameters are visible when register type is selected as "Value in word register". Set whether to send a value to the register when the register value is greater than/equal to/less than the checked value. Options:

No reaction

Set register value

-Parameter "Object value"

This parameters is visible when register type is selected as "Value in word register" and the previous parameter selected "Set register value". Set object value when the value of the register is greater than/equal to/less than the value defined via parameter. Options: **0..65535**

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The following parameters are visible when select "KNX to Modbus"

-Parameter "Checked value (register)'

This parameter defines checked value in the register via the number of bit count and offset.

Options: 0..65535

—Parameter "When register value>checked value, object" —Parameter "When register value=checked value, object" —Parameter "When register value<checked value, object"</p>

These parameters are visible when register type is selected as "Bit register" or "Bit in word register". Set action of group object. When register value is greater than/equal to/less than the check value, send a 1/0 telegram to the bus, or not. Options:

No reaction Set register '1' Set register '0' ----Parameter 'When register value>checked value ----Parameter 'When register value=checked value

----Parameter "When register value=checked value" ---Parameter "When register value<checked value"

These parameters are visible when register type is selected as "Value in word register". Set whether to send a value to the register when the register value is greater than/equal to/less than the checked value. Options:

No reaction

Set register value

--Parameter "Object value"

This parameters is visible when register type is selected as "Value in word register" and the previous parameter selected "Set register value". Set Object value when the register value is greater than/equal to/less than the checked value. Options: **0..65535**

5.3.2.6. Datapoint type "2 byte unsigned value"

Parameter "Type (register)"

This parameter defines the channel function and the size of the register used.

Read-only by default Word register.

arameter "Position (register)"

This parameter defines position mapped to the word register. Options:

Low/High byte

Configured

Parameter "Bit count"

This parameters is visible when selects "Configured". Define bit count in the word register. Options:

16 b 15 b	it it
01 b	it
-Parameter "Offs	et"

This parameters is visible when selects "Configured". Define offset in the word register. Options:

Bit	00
Bit	01
•••	
Bit	15

5.3.2.7. Datapoint type "2 byte float value"

Parameter "Type (register)"

This parameter defines the channel function and the size of the register used.

Read-only by default Word register.

arameter "Position (register)"

This parameter defines position mapped to the word register. Options:

Low byte – unsigned

High byte - unsigned

High/Low byte – unsigned

Low byte – 2th complement

High byte – 2th complement

High/Low byte - 2th complement

-Parameter "Minimum register value"

Parameter "Maximum register value

These two parameters is for setting correspond to the register value of the KNX minimum or maximum value.

When select "Low byte - unsigned" or "High byte - unsigned", options: 0..255

When select "High/Low byte - unsigned", options: 0..65535

When select "Low byte - 2th complement" or "High byte - 2th complement", options: -128..127

When select "High/Low byte - 2th complement", options: -32768..32767

---Parameter "Minimum KNX value"

—Parameter "Maximum KNX value

These two parameters is for setting correspond to the KNX value of the register minimum or maximum value. Options: **-671088.00** ...**670760.00**

5.3.2.8. Register function

--Parameter "Function"

This parameter is for setting the Modbus function code of this channel. Different function codes can be configured depending on KNX gateway types (Modbus master/slave), communication direction, and register types.

The following bit register configurations are visible when select "Bit register":

When select "Modbus Master" and "Modbus to KNX", or "Modbus Slave" and "KNX to Modbus", options:

01-Read coils

02-Read discrete inputs

When select "Modbus Master" and "KNX to Modbus", Read-only by default 05-Write single coil

When select "Modbus Slave" and "Modbus to KNX", Read-only by default **05,15-Write single/multi** coils

The following word register configurations are visible when select "word register" or "Bit in word register" or "Value in word register":

When select "Modbus Master" and "Modbus to KNX", or "Modbus Slave" and "KNX to Modbus", options:

03-Read holding registers

04-Read input registers

When select "Modbus Master" and "KNX to Modbus", Read-only by default **06-Write single holding** registers

When select "Modbus Slave" and "Modbus to KNX", Read-only by default **06,16-Write single/multi** holding registers

Parameter "Address"

This parameter is for setting the address of Modbus register. Options: 0..65535

If the address is "based 1", then it will not be configured here as 0, or an error appears and the channel function is disabled.

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Parameter "Polling interval"

This parameter is visible when select "Modbus Master" and "Modbus to KNX". Define polling interval which each register sends read requests. Options:

- Every cycle Every second cycle Every fourth cycle Every sixth cycle
- Every eighth cycle

5.4. Parameter window "RS485/RS232<->KNX"

5.4.1. Parameter window "Datapoints setting"

eneral setting	Make sure the hardware is RS485 interface board in the corresponding channel	
hannel 1 setting	Datapoints 1-10	~
nnel 2 setting	Datapoints 11-20	v
	Datapoints 21-30	~
hannel 3 setting	Datapoints 31-40	~
Channel A series	Datapoints 41-50	~
namer 4 setting	Datapoints 51-60	~
hann <mark>el</mark> 1-RS485	Datapoints 61-70	~
	Datapoints 71-80	~
Datapoints setting	Datapoints 81-90	\checkmark
Datapoints 1-10	Datapoints 91-100	~

Fig.5.4.1 "Datapoints setting" parameter window

Make sure the hardware is RS485/RS232 interface board in the corresponding channel Parameter "Datapoints 1-10/11-20/21-30/..."

This parameter is for setting the datapoint window of RS485/RS232<->KNX. Display 10 datapoints per page when enabled.

Note: RS485/RS232<->KNX channel 1 supports most 100 datapoints and channel 2/3/4 most 50 datapoints.

5.4.2. Parameter window "Datapoint x"

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-.-- KNX Gateway for RS485/RS232 > Channel 1-RS485 > Datapoints 1-10

General setting	Datapoint 1	~
Cl	Datapoint 2	~
Channel I setting	Datapoint 3	~
Channel 2 setting	Datapoint 4	~
	Datapoint 5	~
Channel 3 setting	Datapoint 6	~
Channel 4 setting	Datapoint 7	~
	Datapoint 8	1
 Channel 1-RS485 	Datapoint 9	~
	Datapoint 10	~

Fig.5.4.2.1 "Datapoints 1-10" parameter window

Parameter "Datapoints 1/2/3/.

This parameter is for setting the datapoint of RS48/RS232<->KNX. Display datapoint when enabled.

The following is the datapoint parameter window for the RS48/RS232<->KNX.

General setting	Datapoint type	Thit hinsey	
ocherdi setting	Datapoint type	IDIC DITIALY	
Channel 1 setting	Description (max 30char.)		
-	Communitation disaster		
Channel 2 setting	Communication direction	0 K3465 to KIVA 0 KIVA to K3465	
	RS485 telegram (max. 16 bytes code)		
Channel 3 setting			

Parameter "Datapoint type"

This parameter is for setting the datapoint type. Options:

- 1 bit binary
- 1 byte unsigned value
- 1byte recall scene
- 2 byte unsigned value

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Parameter "Description (max 30char.)"

This parameter is for setting the custom description of datapoint, up to 30 characters can be input.

Parameter "Communication direction"

This parameter is for setting the communication direction. Options:

RS485/RS232 to KNX

KNX to RS485/RS232

---Parameter "RS485/RS232 telegram (max. 16 bytes code)"

This parameter is for setting the telegram of RS485/RS232, up to 16 characters can be input.

Note: RS485/RS232 telegram is HEX Code, support max. size is 16 bytes, and format as: 0A-0F-AB-....; or 0A 0F AB ...; or 0A,0F,BA,...;

---Parameter "KNX object value sending

This parameter is visible when select "RS485/RS232 to KNX". Set the sending value of KNX object via datapoint type.

When select "1 bit binary", options:

OFF

ON

When select "1 byte unsigned value", options: 0..255

When select "1byte recall scene", options:

Scene No.1

Scene No.2

•••

Scene No.64

When select "2byte unsigned value", options: 0..65535

-Parameter "KNX object value receiving"

This parameter is visible when select "RS485/RS232 to KNX". Set the receiving value of KNX object via datapoint type.

When select "1 bit binary", options:

OFF

ON

When select "1 byte unsigned value", options: 0..255

33

When select "1byte recall scene", options:

K-BUS®

Scene No.1

Scene No.2

•••

Scene No.64

When select "2byte unsigned value", options: 0..65535

5.5. Parameter window "VRV/VRF gateway"

5.5.1. Parameter window "VRV/VRF setting"

General setting	Make sure the hardware is RS485 interface board in the corresponding channel		
Channel 1 setting	Number of indoor units in ETS	1	*
Channel 2 setting	Time period for request AC status	10s	•
Channel 3 setting	Object type of setpoint temperature	1byte(real temperature value)	
Channel 4 setting		2byte(knx standard DPT)	
Channel 1-VRV/VRF	Send ambient temperature when the result change by	1.0K	•
	Cyclically send ambient temperature	0	1 min
VRV/VRF settings	[U255,U=inactive]	16	
Mode configuration	Min. setpoint temperature	10	
5 1 5 5	Max. setpoint temperature	50	
Addressing of indoor units	Vanes swing function	\checkmark	
	Window contact function	~	
Channel 2-Modbus	Delay to turn off AC after window	1	^ mir
Channel 3-Modbus	open [0255]		*
	AC behaviour when window closed	O Keep off status ○ Go to last status	

Fig.5.5.1 "VRV/VRF setting" parameter window

Make sure the hardware is RS485 interface board in the corresponding channel Parameter "Number of indoor units in ETS"

This parameter is for setting the number of indoor units, and Air-conditioning objects and addresses will be displayed according to the amount. Options: **1..64**

Parameter "Time period for request AC status"

This parameter is for setting the time period for read request AC status, and need to read the

status when the gateway power on. Options: Disable / 1s / 2s / 3s / 5s / 10s / 15s / 20s / 25s / 30s /

60s

Parameter "Object type of setpoint temperature

This parameter is for setting the object type of setpoint temperature. Options:

1byte(real temperature value)

2byte(knx standard DPT)

Parameter "Send ambient temperature when the result change by

This parameter is for setting the temperature difference to send to bus. Not send when disable. Options:

> Disable 0.5K 1.0K ... 10K

Note: The ambient temperature in this case is the temperature of the air condition vent. Parameter : Cyclically send ambient temperature [0...255,0=inactive] min

Setting the time for cyclically sending the ambient temperature value to the bus. Options: 0..255

This period is independent and starts time counting after programming completion or reset. Transmission change has no affect on this period.

Parameter "Min. / Max. setpoint temperature"

These parameters are for setting to limit the adjustable range of the setpoint temperature, the minimum value should be less than the maximum value. If the setpoint temperature beyond the limited range, the will output the limited temperature.

Options are only read by default, and display different ranges of setpoint temperature according to the AC protocols.

Parameter "Vanes swing function"

This parameter is visible when AC protocol is selected "DAIKIN (DTA116A621)", "Toshiba" or "Other". Set whether to enable the vanes swing and stop.

Parameter "Vanes Up-Down swing function"

This parameter is visible when AC protocol is selected "Fujitsu". Set whether to enable the vanes Up-Down swing.

Parameter "Vanes Left-Right swing function"

This parameter is visible when AC protocol is selected "Fujitsu". Set whether to enable the vanes

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Left-Right swing.

Parameter "Window contact function"

S K-BUS

This parameter is for setting whether to connect window contact function.

---Parameter "Delay to turn off AC after window open [0..255]min

This parameter is visible when Window contact function enabled. Set the delay of turning off Air-conditioning after window open. Options: **0..255**

When value=0, turn off immediately. When the window open and Air-conditioning on again, the timing is reset then off.

--Parameter "AC behaviour when window closed".

This parameter is visible when Window contact function enabled. After the window closed, setting the Air-conditioning status whether to return previous status or stay off. Options:

Keep off status

Go to last status

5.5.2. Parameter window "Mode configuration"

General setting	Mode control setting		
Channel 1 setting	Heating mode	~	
	Control value for heating [0255]	1	\$
Channel 2 setting	Status value for heating [0255]	1	\$
Channel 3 setting	Cooling mode	~	
Channel 4 setting	Control value for cooling [0255]	3	
charmer 4 setting	Control value for cooling [0255]	3	÷
Channel 1-VRV/VRF	Dehumidification mode	~	
VRV/VRF settings	Control value for dehumidification [0255]	14	÷
Mode configuration	Status value for dehumidification [0255]	14	*
Fan speed configuration	Fan mode	~	
Addressing of indoor units	Control value for fan [0255]	9	÷
Channel 2-Modbus	Status value for fan [0255]	9	\$
	Auto mode	~	
Channel 3-RS485	Control value for auto [0255]	0	÷
Channel 4-RS232	Status value for auto (0, 255)	0	

Fig.5.5.2 "Mode configuration" parameter window

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Mode control setting

arameter "Heating/Cooling/Dehumidification/Fan/Auto mode"

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These parameters are for setting whether to enable corresponding control mode.

Auto mode and and its setting parameters are visible when AC protocol is not selected "HITACHI".

--Parameter "Control value for heating/cooling/dehumidification/fan/auto mode [0..255]

These parameters are visible when mode enabled. Set to switch to the each mode control value.

Options: 0..255

-Parameter "Status value for heating/cooling/dehumidification/fan/auto mode [0..255]

These parameters are visible when mode enabled. Set to the each mode status feedback value.

Options: 0..255

5.5.3. Parameter window "Fan speed configuration"

General setting	Fan speed control setting		
-		182	
Channel 1 setting	Object value for fan speed auto	4	
	Object value for fan speed low	1	
Channel 2 setting	Object value for fan speed medium	2	\$
Channel 3 setting	Object value for fan speed high	3	
Channel 4 setting	Fan speed status setting		
Channel 1-VRV/VRF	Status value for fan speed auto	4	
	Status value for fan speed low	1	÷
VRV/VRF settings	Status value for fan speed medium	2	4
Mode configuration	Status value for fan speed high	3	4

Fig.5.5.3 "Fan speed configuration" parameter window

Fan speed control setting

Parameter "Object value for fan speed auto/low/medium/high/super high"

These parameters are for setting to switch to object value sent by each fan speed. Options: 0..255

Fan speed status setting

Parameter "Status value for fan speed auto/low/medium/high/super high"

These parameters are for setting to switch to status feedback value of each fan speed. Options: **0..255**

The setting parameters of auto fan speed are visible when AC protocol is selected "DAIKIN (DTA116A621)", "Fujitsu", "Gree", "Toshiba" or "Other".

The setting parameters of super high fan speed are visible when AC protocol is selected "Mitsubishi".

5.5.4. Parameter window "Addressing of indoor units"

General setting	Address of AC 1	0	
Channel 1 setting	Address of AC 2	1	;
Channel 2 catting	Address of AC 3	2	;
channer z setting	Address of AC 4	3	
Channel 3 setting	Address of AC 5	4	;
Chann <mark>el 4 setting</mark>	Address of AC 6	5	;
Thannel 1-VRV//RF	Address of AC 7	6	

Fig.5.5.4(1) "Addressing of indoor units" parameter window

-.-.- KNX Gateway for RS485/RS232 > Channel 1-VRV/VRF > Addressing of indoor units

General setting	Address of AC	Indoor units		Outdoor units	
Channel 1 setting	Address of AC 1	0	÷	0	÷
Channel I setting	Address of AC 2	1	\$	0	÷
Channel 2 setting	Address of AC 3	2	\$	0	* *
	Address of AC 4	3	\$	0	÷
Channel 3 setting	Address of AC 5	4	÷	0	÷
Channel 4 setting	Address of AC 6	5	÷	0	÷
	Address of AC 7	6	÷	0	÷
Channel 1-VRV/VRF	Address of AC 8	7	÷	0	*

Fig.5.5.4 (2) "Addressing of indoor units" parameter window

Parameter "Address of AC x"(x=64)

This parameter displays address of Air-conditioning according to the number of indoor units. Range of options is according to the address.

Only the address of the indoor units can be set when AC protocol is not selected "HITACHI", shown as Fig.5.5.4 (1).

The address of the indoor and outdoor units can be set when AC protocol is selected "HITACHI", shown as Fig.5.5.4 (2).

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Please note the address settings of DAIKIN:

AC1~AC16 corresponds to the address of the indoor unit 0~15, AC17~AC32 corresponds to the address of the indoor unit 0~15, AC33~AC48 corresponds to the address of the indoor unit 0~15, AC49~AC64 corresponds to the address of the indoor unit 0~15, and the parameters are used to set the slave address.

For example:

If parameter options of AC1~AC16 are set to 2, the slave address corresponding to AC1~AC16 is 2. The encoding of address of indoor units according to DAIKIN protocol is x-xx $\frac{indoor units}{1-00}$, 2-01 indicates the slave address is 2 and indoor unit address is 01.

Example of parameters configuration:

The first 16 AC addresses indicate that the slave address is 1 and the indoor unit addresses are 0~15, the other parameters setting is the similar to this.

Parameter setting	The corresponding register mapping table in the protocol (The first address is 4 in the registration address indicates
	the indoor unit control, 3 is the indoor unit status, and it is control as following figure)



KNX Gateway for RS485/RS232

KNX Gateway for RS485/RS232 > Channel 1-VRV/VRF > Addressing of indoor units			3-2-2.Indoo	Unit control
General setting	Address of AC 1	1	Address	Address of Indoor unit
Channel 1 setting	Address of AC 2	1	42001-42003	1-00
Channel 2 setting	Address of AC 3	1	42004-42006	1-01
Channel 1-VRV//RF	Address of AC 4	1	42007-42009	1-02
	Address of AC 5	1	42010-42012	1-02
VRV/VRF settings	Address of AC 6	1	42010-42012	1-03
Mode configuration	Address of AC 7	1	42013-42015	1-04
Fan speed configuration	Address of AC 8	1	42016-42018	1-05
Addressing of indoor units	Address of AC 9	1	42019-42021	1-06
Channel 2-Curtain	Address of AC 10	1	42022-42024	1-07
	Address of AC 11	1	42025-42027	1-08
	Address of AC 12	1	42028-42030	1-09
	Address of AC 13	1	42031-42033	1-10
	Address of AC 14	1	42034-42036	1-11
	Address of AC 15	1	42037-42039	1-12
	Address of AC 16	1	42040-42042	1-12
	Address of AC 17	2	42042 42045	1-15
	Address of AC 18	2	42043-42045	1-14
	Address of AC 19	2	42046-42048	1-15
	Address of AC 20	2	42049-42051	2-00
	Address of AC 21	2	42052-42054	2-01
	Address of AC 22	2	42055-42057	2-02
	Address of AC 23	2	42058-42060	2-03
	Address of AC 24	2	42061-42063	2-04
	Address of AC 25	2	42064-42066	2-05
			42067-42069	2-06
			42070-42072	2-07
			42072 42075	2-07
			42075-42075	2-00
			42076-42078	2-09
			12020 12001	2 10

5.6.Parameter window "Curtain"

5.6.1. Parameter window "Curtain setting"

-.-- KNX Gateway for RS485/RS232 > Channel 1-Curtain > Curtain setting General setting Make sure the hardware is RS485 interface board in the corresponding channel Channel 1 setting ÷ Number of curtain units in ETS 1 Channel 2 setting Time period for request position status 10s Datatype of position control KNX standard OOOVA definition Channel 3 setting Datatype of position status O KNX standard O DOOYA definition Channel 4 setting All: Central function ~ Channel 1-Curtain Area: Central function ~ Curtain setting Scene function

Fig.5.6.1 "Curtain gateway" parameter window

Make sure the hardware is RS485 interface board in the corresponding channel.

Parameter "Number of curtain units in ETS"

This parameter is for setting the number of curtain units , Up to 16 motor controls can be supported per channel. Options: **1..16**

Parameter "Time period for request position status"

This parameter is visible when selects "Curtain position" or "Venetian blind position and slat". Set whether to enable position status can be read, and the read cycle. Options:

	Disable
	1s
	2s
	60s
Parameter "Datatype o Parameter "Datatype o	of position control" of position status"

These two parameters are visible when selects "Curtain position" or "Venetian blind position and slat". Set data type of position control/status value. Options:

KNX standard

DOOYA definition

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KNX standard: 0%--Top/open position, 100%--Bottom/close position;

DOOYA definition: 100%--Top/open position, 0%--Bottom/close position.

Parameter "All: Central function"

This parameter is for setting whether to enable broadcast control to control all motor connected in channel, and support Up/Down/Stop/Position.

Parameter "Area: Central function"

This parameter is for setting whether to enable area control to control a area motor connected in channel, and support Up/Down/Stop/Position. Up to support 8 groups of this function objects.

Parameter "Scene function"

This parameter is for setting whether to enable scene function, up to support preset 16 scenes. Each scene can connect the motor and control commands created(Open/Close/Stop or Position, decided by curtain type).

5.6.2. Parameter window "Scene setting"

General setting	Number of scene	16		
- KNX Gateway for RS4	85/RS232 > Channel 1-Curtain > Scene setting	g > Scene 1		
Channel 4 setting	1-> Assign scene NO.[1.,64.0=inactive]	1		÷
Channel 1-Curtain	Curtain 1	~		
Curtain setting	Action	Stop		•
 Scene setting 	Curtain 2	~		
Scene 1	Curtain position [0100](0=open, 100=close)	0	* *	9
Scene 2	Curtain 3	~		
Scene 3	Curtain position [0100](0=top, 100=bottom)	0	* *	9
Scene 4	Slat position [0100](0=open, 100=close)	0	* *	9
Scene 5	Curtain 4	~		
Scene 6	Action	Stop		•

This window is visible when scene function enabled.

Parameter "Number of scene

This parameter is for setting the number of scene, each channel up to support 16 scenes. Options:

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arameter "x-> Assign scene NO.[1..64,0=inactive]"(x=16)

This parameter is for setting the scene NO. of curtain or venetian blind position. Options: 0..64, 0=inactive

Parameter "Curtain x"(x=16)

This parameter is for setting motor connected to each preset scene according to the number of curtain units. It will apply to the selected curtain when recall the scene, while no reaction if unselect.

----Parameter "Curtain position 0..100%(0%=open, 100%=close)

This parameter is visible when select "Curtain position". Set curtain position. Options: 0..100

---Parameter "Curtain position 0..100%(0%=top, 100%=bottom)"

This parameter is visible when select "Venetian blind position and slat". Set venetian blind position.

Options: 0..100

—Parameter "Slat position 0..100%(0%=open, 100%=close)"

This parameter is visible when select "Venetian blind position and slat". Set slat position.

Options: 0..100

--Parameter "Action"

This parameter is visible when select "Curtain step/move". Set curtain action. Options:

Stop

Open

Close

5.6.3. Parameter window "Area central"

General setting	Area 1 control	~	
Channel 1 setting	Description (max 30char.)		
	Address of Area 1	1	
Channel 2 setting	Area 2 control	~	
Channel 3 setting	Description (max 30char.)		
Channel 4 setting	Address of Area 2	2	
Channel 4 setting	Area 3 control	1	
Channel 1-Curtain	Description (max 30char.)		
Curtain setting	Address of Area 3	3	
Scene setting	Area 4 control	~	
	Description (max 30char.)		
Area central	Address of Area 4	4	

Fig.5.6.3 "Area central" parameter window

This window is visible when area control enabled.

```
Parameter "Area x control"(x=8)
```

This parameter is for setting whether to enable area control, corresponding objects and parameters are visible after selection.

---Parameter "Description (max 30char.)"

This parameter is for setting the custom description of corresponding area objects, up to 30 characters can be input.

---Parameter "Address of Area x"(x=8).

This parameter is for setting address of corresponding area. Options: 1..254

5.6.4. Parameter window "Addressing of curtain units"

K-BUS

General setting	Curtain units	Curtain type		Device description	Device addres	s	Area addre	ss
Channel 1 setting	Curtain 1	Curtain step/move	•		1	÷	1	
Channel 2 setting	Curtain 2	Curtain position	•		2	¢	1	
channel 2 setting	Curtain 3	Venetian blind position and slat	•		3	ţ.	1	
Channel 3 setting	Curtain 4	Curtain step/move	•		4	<u>+</u>	1	

Fig.5.6.4 "Area central" parameter window

Up to set 16 curtain units, and display corresponding parameters according to the number of curtain units.

Parameter "Curtain type"

This parameter is for setting curtain type. Options:

Curtain step/move

Curtain position

Venetian blind position and slat

Parameter "Device description"

This parameter is for setting the custom description of corresponding curtain objects, up to 30 characters can be input.

Parameter "Device address'

This parameter displays the number of address according to curtain units. Set the address of device.

Options: 1..254

Parameter "Area address"

This parameter displays the number of address according to curtain units. Set the address of area.

Options: 1..254

5.7.Parameter window "Audio"

5.7.1. Parameter window "Audio setting"

-.-.- KNX Gateway for RS485/RS232 > Channel 1-Audio > Audio setting

General setting	Make sure the hardware is RS485 inter	erface board in the corresponding channe	el
Channel 1 setting	Number of audio units in ETS	1	\$
Channel 2 setting	Communication type	© RS485 RS232	50 50
Channel 3 setting	Time period for request device status	Disable	•
Channel 4 setting	Power on/off	~	
- Channel 1-Audio	Mute	v	
Channel PAddio	Volume absolute adjustment	Disable	•

Fig.5.7.1 "Audio setting" parameter window

Make sure the hardware is RS485 interface board in the corresponding channel .

Make sure the hardware is RS232 interface board in the corresponding channel

Parameter "Number of audio units in ETS

This parameter is for setting the number of audio units , Up to 16 devices can be supported per

channel. Options: 1..16

Parameter "Communication type"

This parameter is for setting the communication type. Options:

RS485 RS232

数"Time period for request device status

This parameter is not visible when protocol selects "backaudio", "Yodaar" or "cnWise". Set whether to enable device status can be read, and the read cycle. Options:

	Disable
	1s
	2s
	60s
Parameter "Power on	/off

This parameter is not visible when protocol selects "MiYue". Enable power on/off function of audio after selection, and visible corresponding objects.

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?arameter "Mute"

This parameter is not visible when protocol selects "MiYue". Enable mute function of audio after selection, and visible corresponding objects.

Parameter "Volume absolute adjustment"

This parameter is for setting whether to enable volume adjustment function, and setting the datatype. Options:

Disable Percentage (DPT_5.001) Percentage (DPT_5.004)

--Parameter "Max. volume value [10..100]%".

This parameter is visible when previous parameter enabled. Set maximum volume value.

Options: 10..100

5.7.2. Parameter window "Play mode configuration"

-.-. KNX Gateway for RS485/RS232 > Channel 1-Audio > Play mode configuration

General setting	Single cycle	~	
Channel 1 setting	Control value for single cycle	1	-
	Status value for single cycle	1	÷
Channel 2 setting	Random play	~	
Channel 3 setting	Control value for random play	2	* *
Channel 4 setting	Status value for random play	2	Ť
	Play in order	\checkmark	
- Channel 1-Audio	Control value for play in order	3	× T
Audio setting	Status value for play in order	3	Å. T
Play mode configuration	Playlist cycle	~	
Addressing of audio units	Control value for playlist cycle	4	÷
-	Status value for playlist cycle	4	÷

Fig.5.7.2 "Play mode configuration" parameter window

This window is not visible when protocol selects "backaudio" or "Yodaar".

- Parameter."Single cycle"
- Parameter "Random play"
- Parameter "Play in order"
- Parameter "Playlist cycle"

These parameters for setting whether to enable each play mode, including single cycle, random play, play in order and playlist cycle.

---Parameter "Control value for single cycle"

——Parameter "Control value for random play"

-Parameter "Control value for play in order"

Parameter "Control value for playlist cycle"

These parameters for setting control value of each play mode. Options: 0..255

-Parameter "Status value for single cycle"

Parameter "Status value for random play

-Parameter "Status value for play in order"

-Parameter."Status value for playlist cycle

These parameters for setting status value of each play mode. Options: 0..255

5.7.3. Parameter window "Addressing of audio units"

-.-. KNX Gateway for RS485/RS232 > Channel 1-Audio > Addressing of audio units

General setting	Address of Audio 1	1	Å. •
Channel 1 setting	Description (max 30char.)		
Channel 2 setting	Address of Audio 2 Description (max 30char.)	2	* *
Channel 3 setting	Address of Audio 3	3	÷
Channel 4 setting	Description (max 30char.)		
- Channel 1-Audio	Address of Audio 4	4	÷
	Description (max 30char.)		

Fig.5.7.2 "Addressing of audio units" parameter window

Parameter "Address of Audio x "(x=1..16)

This parameter displays the number of address according to audio units. Set the address of device.

Options: 0..255

---Parameter "Description (max 30char.)"

This parameter is for setting the custom description of corresponding audio objects, up to 30 characters can be input.

Chapter 6 Communication Object Description

The communication object is the medium through which the device communicates with other devices on the bus, that is, only the communication object can perform bus communication.

The function of each communication object of each function block is described in detail below.

Note: "C" in the property bar of the table below represents the communication function of the communication object;

"W" represents the value of the communication object can be rewritten by the bus;

"R" represents the value of the communication object can be read through the bus;

"T" stands for communication object with transmission function;

"U" means that the value of the communication object can be updated.

6.1. "General setting" communication object

Number	Name	Object Fund	tion	Descri Group / Length	C R W T U Data Type	Priority		
■ ≵ 1	General	In operation		1 bit	C R - T - switch	Low		
Fig.6.1 "General" communication object								
NO.	Object Function	Name	Data	Flag	DPT			
			Туре					
1	In operation	General	1bit	C,R,T	1.001 switch			
This communication object is used to periodically send a telegram "1" to the bus to indicate that								
the dev	the device is working properly.							

Table 6.1 "General setting " communication object

6.2.Communication object of channel

6.2.1. "Modbus<->KNX" communication object

Nu	in Name	Object Function	Description	Group Address	Length	С	R	W	т	U	1	Data Type	Priority
■2 2	CH1-Datapoint 1 : Output	1bit binary value			1 bit	С	R	-	Т	4	-	switch	Low
∎‡ 3	CH1-Datapoint 2 : Output	1byte percent value			1 byte	С	R		Т	-	-	percentage (0100%)	Low
∎‡ 4	CH1-Datapoint 3 : Output	1byte configured value			1 byte	C	R	-	Т	4	-	counter pulses (0255)	Low
∎‡ 5	CH1-Datapoint 4 : Output	1byte unsigned value			1 byte	С	R		Т	-	-	counter pulses (0255)	Low
■‡ 6	CH1-Datapoint 5 : Output	2byte configured value			2 bytes	С	R	-	Т	÷.	-	pulses	Low
■27	CH1-Datapoint 6 : Output	2byte unsigned value			2 bytes	С	R		Т	-	-	pulses	Low
∎‡ 8	CH1-Datapoint 7 : Output	2byte float value			2 bytes	C	R	-	Т	÷.	-	2-byte float value	Low
∎‡ 9	CH1-Datapoint 8 : Output	4byte float value			4 bytes	С	R	-	Т	-	-	4-byte float value	Low



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■2 2	CH1-Datapoint 1 : Input	1bit binary value	1 bit	C		W	÷	-	-	switch	Low
∎‡ 3	CH1-Datapoint 2 : Input	1byte percent value	1 byte	С	2	W	2	-	2	percentage (0100%)	Low
∎₹ 4	CH1-Datapoint 3 : Input	1byte configured value	1 byte	C	-	W	-	-	-	counter pulses (0255)	Low
■2 5	CH1-Datapoint 4 : Input	1byte unsigned value	1 byte	С	2	W	2	-	2	counter pulses (0255)	Low
■2 6	CH1-Datapoint 5 : Input	2byte configured value	2 bytes	С	-	W	-	-	-	pulses	Low
■2 7	CH1-Datapoint 6 : Input	2byte unsigned value	2 bytes	С	2	W	2	-	2	pulses	Low
∎‡ 8	CH1-Datapoint 7 : Input	2byte float value	2 bytes	C	-	W	-	-	-	2-byte float value	Low
∎‡ 9	CH1-Datapoint 8 : Input	4byte float value	4 bytes	С	-	W	-	-	2	4-byte float value	Low
■‡ 502	CH1-Diagnostic: Slave (Datapoint 1-10)	No communication	1 bit	С	R	-	Т	-	-	switch	Low
■2 552	CH1-Diagnostic: Slave (common)	No communication	1 bit	С	R	-	Т	-	2	switch	Low

Fig.6.2.1 "Modbus<->KNX" communication object

		J			
NO.	Object Function	Name	Data	Flag	DPT
			Туре		
	1bit binary value				
	1byte percent value				1.001 switch
	1byte configured value	CH1 ((Detencint 1)): Output	1bit		5.001 percentage(0100%)
2	1byte unsigned value	CH1-{{Datapoint 1}}. Output	1byte	C, R, W, I, U	5.010 counter pulses
	2byte configured value		2byte	C, W	7.001 pulses
	2byte unsigned value				9.001 temperature
	2byte float value				

This communication object is used to converter between KNX value and register value. The range of value is determined by the selected data type.

Flag and name is determined by communication direction: KNX to Modbus (Input)/Modbus to KNX (Output)

The name in parentheses changes with the parameter "Description (max 30 char.)". If description is empty, display "...Datapoint x ... " by default.

502	No communication	CH1-Diagnostic:	1 hit	СВТ	1 001 switch
002		{{Slave (Datapoint 1-10)}}		0, 10, 1	1.001 3witch

This communication object is visible when select "Modbus master" and slave address set as "Individual for current page", used for diagnostic.

Send ON telegram to the bus via this object if the master not receives a response from the salve.

The name in parentheses changes with the parameter "Slave description (max 30char.)". If description is empty, display "Slave (Datapoint 1-10)" by default.

522	No communication	CH1-Diagnostic: Slave (common)	1bit	C, R, T	1.001 switch

For the master: Send ON telegram to the bus via this object if the master not receives a response from the salve.

For the slave: Send ON telegram to the bus via this object if not receives a request from the master during the request time.

Table 6.2.1 "Modbus<->KNX" communication object

"RS485/RS485<->KNX" communication object 6.2.2.

S K-BUS

Number	' Name	Object Function	Description	Group Address	Length	C	R	w	т	U	Data Type	Priority
■2 2	CH1-Datapoint 1: Output	1bit binary value			1 bit	С	R	-	Т	-	switch	Low
∎2 2	CH1-Datapoint 1: Input	1bit binary value			1 bit	С	2	W	2	20	switch	Low
∎‡ 2	CH1-Datapoint 1: Output	1byte unsigned value			1 byte	С	R	-	Т		counter pulses (0255)	Low
■2	CH1-Datapoint 1: Input	1byte unsigned value			1 byte	С	a.	W	a	-	counter pulses (0255)	Low
■2 2	CH1-Datapoint 1: Output	1byte scene No.			1 byte	С	R	628	т	20	scene number	Low
∎‡ 2	CH1-Datapoint 1: Input	1byte scene No.			1 byte	С	-	W	-	-	scene number	Low
∎‡ 2	CH1-Datapoint 1: Output	2byte unsigned value			2 bytes	С	R	-	Т	-	pulses	Low
■‡ 2	CH1-Datapoint 1: Input	2byte unsigned value			2 bytes	С	-	W	-	-	pulses	Low
		Eig 6 2 2 "DC 495/DC	2222~~KNV"	ommunicati	on oh	inc	•					

Fig.6.2.2 "RS485/RS232<->KNX" communication object

NO.	Object Function	Name	Data	Flag	DPT
			Туре		
2	1bit binary value 1byte unsigned value 1byte scene No. 2byte unsigned value	CH1-{{Datapoint 1}}: Output CH1-{{Datapoint 1}}: Input	1bit 1byte 2byte	C, R, T C, W	1.001 switch 5.010 counter pulses 17.001 scene number 7.001 pulses

This communication object is used to converter between KNX value and RS485/232 value. The range of value is determined by the selected data type.

Flag and name is determined by communication direction: KNX to RSxxx (Input)/RSxxx to KNX (Output)

The name in parentheses changes with the parameter "Description (max 30 char.)". If description is empty, display "...Datapoint x..." by default.

Table 6.2.2 "RS485/232<->KNX" communication object

6.2.3. "VRV/VRF gateway" communication object

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Nu	ml Name	Object Function	Description	Group Address	Length	C	R	W	Т	U	Data Type	Priority
∎‡ 2	CH1-AC 1 Control	Power on/off			1 bit	C	-	W	4	U	switch	Low
∎ ‡ 3	CH1-AC 1 Control	Current setpoint adjustment			2 bytes	С	-	W	-	U	temperature (°C)	Low
∎‡ 5	CH1-AC 1 Control	Control mode			1 byte	C	-	W	-	U	HVAC control mode	Low
∎‡ 6	CH1-AC 1 Control	Fan speed			1 byte	С	-	W	-	U	percentage (0100%)	Low
■27	CH1-AC 1 Control	Vanes swing (1-swing,0-stop)			1 bit	C	-	W	-	U	start/stop	Low
∎‡ 11	CH1-AC 1 Control	Window contact			1 bit	С	-	W	-	U	window/door	Low
■2 13	CH1-AC 1 Status	Power on/off			1 bit	C	R	-	Т	a 9	switch	Low
■‡ 14	CH1-AC 1 Status	Current temperature setpoint			2 bytes	С	R	-	Т	- 8	temperature (°C)	Low
■‡ 15	CH1-AC 1 Status	Ambient reference temperature			2 bytes	C	R	-	т	÷ .	temperature (°C)	Low
∎‡ 16	CH1-AC 1 Status	Control mode			1 byte	С	R	-	т	-	HVAC control mode	Low
∎‡ 17	CH1-AC 1 Status	Fan speed			1 byte	C	R	×	т	-	percentage (0100%)	Low
■2 18	CH1-AC 1 Status	Vanes swing (1-swing,0-stop)			1 bit	С	R	-	Т	- 1	start/stop	Low
22	CH1-AC 1 Status	Communication error			1 bit	C	R	94 (Т	× 3	alarm	Low

Fig.6.2.3 "VRV/VRF gateway" communication object

NO.	Object Function	Name	Data Type	Flag	DPT							
2	Power on/off	CH1-AC 1 Control	1bit	C, W, U	1.001 switch							
Г	This communication object is use	ed to control power	on/off status	of Air-co	nditioning via bus.							
ר	Felegram value: 1-On/0-Off											
			1byte		5.010 counter							
3	Current setpoint adjustment	CH1-AC 1 Control	2byte	C, W, U	pluses(0255)							
					9.001 temperature							
ר	This communication object is use	ed to adjust the setp	oint value of	current te	emperature.The range of							
value	is determined by the data type o	f setpoint temperat	ure: 0255/0	65535								
5	Control mode	CH1-AC 1 Control	1byte	C, W, U	20.105 HVAC control mode							
٦ Air-co	This communication object is used to receive the control telegram of each mode of Air-conditioning from bus.											
6	Fan speed	CH1-AC 1 Control	1byte	C, W, U	5.001 percentage							
ר	This communication object is use	ed to control Air-con	ditioning fan	speed via	a bus.							
7	Vanes swing (1-swing,0-stop)	CH1-AC 1 Control	1bit	C, W, U	1.010 start/stop							
7	Vanes Up-Down swing	CH1-AC 1 Control	1bit	C, W, U	1.010 start/stop							
	(1-swing,0-stop)											
9	Vanes Left-Right swing	CH1-AC 1 Control	1bit	C, W, U	1.010 start/stop							
	(1-swing,0-stop)											
٦	The object "Vanes swing (1-sw	ving,0-stop)" is vis	ible when A	C protoc	col is selected "DAIKIN							
(DTA	116A621)", "Toshiba" or "Other",	and vanes swing is	enabled.									
1	The object "Vanes Up-Down swing (1-swing,0-stop)" or "Vanes Left-Right swing (1-swing,0-stop)" is											

visible when AC protocol is selected "Fujitsu", and vanes Up-Down swing or vanes Left-Right swing is enabled.

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т	bese communication objects are	e used to control Air	-conditioning	n vanes si	wing via bus
-			conditioning	y vunco o	
I	elegram value: 0-stop/1-swing				
11	Window contact	CH1-AC 1 Control	1bit	C, W, U	5.010 counter pluses(0255)
Г	This communication object is use	ed to receive the wir	ndow contact	t status.	
13	Power on/off	CH1-AC 1 Status	1bit	C,R,T	1.001 switch
1	This communication object is use	ed to send the powe	er on/off teleg	gram of A	ir-conditioning.
	elegram value: 1-0n/0-0ff				5 010 counter
14	Current setpoint adjustment	CH1-AC 1 Status	1byte 2byte	C,R,T	pluses(0255) 9.001 temperature
٦	The communication object is use	d to send the actua	l setpoint ter	nperature	e value of AC units to the
bus.					
ר	The range of value is determined	by the data type of	setpoint tem	perature:	0255 / 065535
16	Control mode	CH1-AC 1 Status	1byte	C,R,T	20.105 HVAC control mode
٦ to bu	This communication object is us s.	ed to send the cont	rol telegram	of each i	mode of Air-conditioning
17	Fan speed	CH1-AC 1 Status	1byte	C,R,T	5.001 percentage
ר	The communication object is use	d to read fan speed	status of Air	-conditio	ning.
18	Vanes swing (1-swing,0-stop)	CH1-AC 1 Status	1bit	C,R,T	1.010 start/stop
18	Vanes Up-Down swing (1-swing,0-stop)	CH1-AC 1 Status	1bit	C,R,T	1.010 start/stop
20	Vanes Left-Right swing (1-swing,0-stop)	CH1-AC 1 Status	1bit	C,R,T	1.010 start/stop
Т	he object "Vanes swing (1-sw	/ing.0-stop)" is vis	ible when A	C protoc	col is selected "DAIKIN
	116Δ621.)" "Toshiha" or "Other"	and vanes swing is	enabled		
(BIX					
Т	he object "Vanes Up-Down swin	g (1-swing,0-stop)"	or "Vanes Le	ft-Right s	wing (1-swing,0-stop)" is
visibl	e when AC protocol is selected	"Fujitsu", and vanes	s Up-Down s	wing or v	anes Left-Right swing is
enabl	ed.				
Т	hese communication objects are	e used to read vane	s swing statu	is of Air-c	onditioning.
Т	elegram value: 0-stop/1-swing				
22	Communication error	CH1-AC 1 Status	1bit	C,R,T	1.005 alarm
٦	The communication object is us	ed to read commu	nication erro	r status k	between Air-conditioning
and g	jateway.				

Table 6.2.3 "VRV/VRF gateway" communication object

6.2.4. "Curtain" communication object

Number	Name	Object Function	Descri Group A	Length	С	R	W	т	U	Data Type	Priority
■#2	CH1-Curtain 1: Control	Close/Open		1 bit	C		W	-	-	open/close	Low
■ ‡ 3	CH1-Curtain 1: Control	Stop		1 bit	С	2	W	2	2	step	Low
∎≵ 98	CH1-Area 1: Central	Up/Down		1 bit	C	-	W	-	-	up/down	Low
∎≵ 99	CH1-Area 1: Central	Stop/step		1 bit	С	2	W	2	2	step	Low
■之 100	CH1-Area 1: Central	Curtain position (0100%)		1 byte	C	10	W	-	~	percentage (0100	Low
■2 101	CH1-Area 1: Central	Slat position (0100%)		1 byte	С	<u>81</u>	W	2	2	percentage (0100	Low
■之 130	CH1-All: Central	Up/Down		1 bit	C	-	W	-	÷	up/down	Low
■# 131	CH1-All: Central	Stop/step		1 bit	С	2	W	2	2	step	Low
■2 132	CH1-All: Central	Curtain position (0100%)		1 byte	С		W	-	-	percentage (0100	Low
∎≵ 133	CH1-All: Central	Slat position (0100%)		1 byte	С	1	W	2	2	percentage (0100	Low
∎≵ 134	CH1-Scene	Scene/save		1 byte	С	-	W	-	-	scene control	Low
		Curtain step/move									
Number	Name	Object Function	Descri Group A	Length	С	R	W	Т	U	Data Type	Priority
1 2	CH1-Curtain 1: Control	Close/Open		1 bit	C	1.00	W	-		open/close	Low
zla	CH1-Curtain 1: Control	Stop		1 bit	c	2	W	2	2	step	Low
	CH1-Curtain 1: Control	Curtain position (0, 100%)		1 byte	c	-	w	-	-	percentage (0, 100	low
zl6	CH1-Curtain 1: Status	Curtain position (0.100%)		1 byte	c	R	2	т	2	percentage (0.100	Low
z 98	CH1-Area 1: Central	Up/Down		1 bit	c	-	w	-		up/down	Low
z 99	CH1-Area 1: Central	Stop/step		1 bit	c	2	w	2	2	sten	Low
z1100	CH1-Area 1: Central	Curtain position (0, 100%)		1 byte	c		w	-		percentage (0, 100	Low
2101	CH1-Area 1: Central	Slat position (0.100%)		1 byte	c	0	w	2	20	percentage (0.100	Low
2130	CH1-All: Central	Un/Down		1 bit	c		w	-		un/down	Low
2131	CH1-All: Central	Stop/step		1 bit	c	2 2	w		2	sten	Low
7132	CH1-All: Central	Curtain position (0, 100%)		1 byte	c		w	-	-	percentage (0, 100	Low
133	CH1-All: Central	Slat position (0.100%)		1 byte	c	12	14/		28	percentage (0.100	Low
=€[133 ∎\$134	CH1-Scene	Scene/save		1 byte	c		w			scene control	Low
	Christene	Curtain position		i byte	-		¥¥			scene control	LOW
Number	Nama	Object Function	Deceri Group /	Longth	C	P	W	т		Data Tumo	Driority
=+lo		Object Function	Descri Group 7	Length	~	n	140		U		Phoney
= ← ∠	CHI-Curtain I: Control	Up/Down		1 bit	C	115	W	- 	*	up/down	Low
-+ 3 -+ ,	CHI-Curtain I: Control	Stop/step		1 bit	C	-	W	-	-	step	Low
■ 4 4	CH1-Curtain 1: Control	Curtain position (0100%)		1 byte	C -	-	W	-	-	percentage (0100	Low
■ 4 5	CH1-Curtain 1: Control	Slat position (0100%)		1 byte	C	-	W	-	-	percentage (0100	Low
4 [6	CH1-Curtain 1: Status	Curtain position (0100%)		1 byte	C -	R	-	Т	-	percentage (0100	Low
■ 	CH1-Curtain 1: Status	Slat position (0100%)		1 byte	C	R	-	T	-	percentage (0100	Low
■ 	CH1-Area 1: Central	Up/Down		1 bit	C -	1	W	-	•	up/down	Low
■ Z 99	CH1-Area 1: Central	Stop/step		1 bit	C	-	W	-	-	step	Low
■ Z 100	CH1-Area 1: Central	Curtain position (0100%)		1 byte	C	-	W	-	•	percentage (0100	Low
■ Z 101	CH1-Area 1: Central	Slat position (0100%)		1 byte	C	-	W	-	-	percentage (0100	. Low
■7 130	CH1-All: Central	Up/Down		1 bit	C	-	W	-	•	up/down	Low
■2 131	CH1-All: Central	Stop/step		1 bit	C	-	W	-	21	step	Low
■7 132	CH1-All: Central	Curtain position (0100%)		1 byte	C	-	W	-	•	percentage (0100	Low
7 133	CH1-All: Central	Slat position (0100%)		1 byte	C	-	W	-	2	percentage (0100	. Low
■2 134	CH1-Scene	Scene/save		1 byte	С	-	W	-	2	scene control	Low

Venetian blind position and slat

Fig.6.2.4 "Curtain" communication object

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NO.	Object Function	Name	Data	Flag	DPT
			Туре		
2	Close/Open	CH1-{{Curtain 1}}: Control	1bit	C,W	1.009 open/close
3	Stop	CH1-{{Curtain 1}}: Control	1bit	C,W	1.007 step

Motor control: Open/Close/Stop. Visible when select "Curtain step/move", is suitable for opening and closing curtains. The object description is as follows:

Obj.2: The communication object is used to receive the open/close telegram from the bus. Telegram value:

1——Close the curtain

0——Open the curtain

Obj.3: The communication object is used to receive a telegram for stopping the curtain movement from the bus. Telegram value:

1--Stop

The name in parentheses changes with the parameter "Device description". If description is empty, display "...Curtain x..." by default.

2	Close/Open	CH1-{{Curtain 1}}: Control	1bit	C,W	1.009 open/close
3	Stop	CH1-{{Curtain 1}}: Control	1bit	C,W	1.007 step
4	Curtain position (0100%)	CH1-{{Curtain 1}}: Control	1byte	C,W	5.001 percentage
6	Curtain position (0100%)	CH1-{{Curtain 1}}: Status	1byte	C,R,T	5.001 percentage

Motor control: Open/Close/Stop/Position. Visible when select "Curtain position", is suitable for roller blind without slat. The object description is as follows:

Obj.2: The communication object is used to receive a telegram value from the bus to control the opening /closing of the roller blind. Telegram value:

1——Close the curtain

0--Open the curtain

Obj.3: The communication object is used to receive a telegram for stopping the curtain movement from the bus. Telegram value:

1--Stop

Obj.4: The communication object is used to receive a telegram controlling the position of the curtain from the bus. Telegram value: 0..100%

Obj.6: The communication object is used to send a telegram controlling the position of the curtain to the bus. Telegram value: 0..100%

2	Up/Down	CH1-{{Curtain 1}}: Control	1bit	C,W	1.008 up/down
3	Stop/step	CH1-{{Curtain 1}}: Control	1bit	C,W	1.007 step
4	Curtain position (0100%)	CH1-{{Curtain 1}}: Control	1byte	C,W	5.001 percentage
5	Slat position (0100%)	CH1-{{Curtain 1}}: Control	1byte	C,W	5.001 percentage
6	Curtain position (0100%)	CH1-{{Curtain 1}}: Status	1byte	C,R,T	5.001 percentage

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7	Slat position (0100%)	CH1-{{Curtain 1}}: Status	1byte	C,R,T	5.001 percentage			
N	Motor control: Up/Down/Stop/Position. Visible when select "Venetian blind position and slat", is							
suitat	suitable for venetian blind with slat. The object description is as follows:							
C C	Obj.3: The communication object is used to receive a telegram from the bus to stop the curtain							
move	movement or adjust the slat angle.Telegram value:							
	1——Stop/Slat adj. Down							
	0——Stop/Slat adj. Up							
tho ol	bj.5: The communication ob	ject is used to receive a te	legram c	ontrolling	the angle position of			
	bi 7 [.] The communication ob	iect is used to send a teler	nram con	trolling th	e angle position of the			
slat to	bus. Telegram value: 0. 100	1%		a oning ai				
c	bj.2,Obj.4 and Obj.6 are the	e same as above.						
98	Up/Down	CH1-{{Area 1}}: Central	1bit	C,W	1.008 up/down			
99	Stop/step	CH1-{{Area 1}}: Central	1bit	C,W	1.007 step			
100	Curtain position (0100%)	CH1-{{Area 1}}: Central	1byte	C,W	5.001 percentage			
101	Slat position (0100%)	CH1-{{Area 1}}: Central	1byte	C,W	5.001 percentage			
А	rea control: Up/Down/Stop/	Position. The object descr	iption is a	as follows	:			
c	bj.98: The communication o	bject is used to receive a t	elegram	value fron	n the bus to control the			
openi	ng /closing of the blind. Tele	gram value:						
	1——Move down							
	0——Move up							
c	bj.99: The communication o	bject is used to receive a t	elegram	for stoppi	ng the curtain			
move	ment from the bus. Telegram	n value:	-					
	1——Stop							
c c	bi.100: The communication	obiect is used to send a te	learam d	ontrollina	the position of the			
curtai	n to the bus. Telegram value	: 0100%		g	F			
c	bi.101: The communication	obiect is used to send a te	learam d	ontrollina	the angle position of			
the sl	at to bus. Telegram value: 0.	100%						
т	he name in parentheses cha	nges with the parameter "	Descrinti	on (max 3	Ochar)" If description			
is em	ptv. displav "Area x" bv de	efault.	beeenpu					
130	Up/Down	CH1-All: Central	1bit	C,W	1.008 up/down			
131	Stop/step	CH1-All: Central	1bit	C,W	1.007 step			
132	Curtain position (0100%)	CH1-All: Central	1byte	C,W	5.001 percentage			
133	Slat position (0100%)	CH1-All: Central	1byte	C,W	5.001 percentage			
В	roadcast control: Up/Down/	Stop/Position. The object	descripti	on is as fo	llows:			
c	Obj.130: The communication object is used to receive a telegram value from the bus to control							
the op	pening /closing of the blind. ⁻	Felegram value:	-					
	1——Move down							
	0——Move up							

Obj.131: The communication object is used to receive a telegram for stopping the curtain movement from the bus. Telegram value:

1--Stop

Obj.132: The communication object is used to send a telegram controlling the position of the curtain to the bus. Telegram value: 0..100%

Obj.133: The communication object is used to send a telegram controlling the angle position of the slat to bus. Telegram value: 0. 100%

134	Scene/save	CH1-Scene	1byte	C,W	18.001 scene control		
The communication object is used to receive a telegram of scene recall from bus. Telegram value:							
063							

Table 6.2.4 "Curtain" communication object

6.2.5. "Audio" communication object

Numł	per * Name	Object Function	Description	Group Address	Length	C	R	W	т	U	Data Type	Priority
∎‡ 2	CH1-Audio 1: Control	Power on/off			1 bit	C	-	W	-	U	switch	Low
∎‡ 3	CH1-Audio 1: Control	Play=1/Pause=0			1 bit	С	5	W	-	U	start/stop	Low
∎‡ 4	CH1-Audio 1: Control	Next track=1/Previous track=0			1 bit	C	-	W	-	-	step	Low
∎‡ 5	CH1-Audio 1: Control	Mute			1 bit	С	7	W	7	U	enable	Low
■2 6	CH1-Audio 1: Control	Volume+=1/Volume-=0			1 bit	C	-	W	-	-	step	Low
■2 7	CH1-Audio 1: Control	Absolute volume			1 byte	C	-	W	-	U	percentage (0100%)	Low
∎‡ 8	CH1-Audio 1: Control	Play mode			1 byte	C	-	W	-	U	counter pulses (0255)	Low
∎‡ 9	CH1-Audio 1: Status	Power on/off			1 bit	С	R	-	Т	-	switch	Low
■2 10	CH1-Audio 1: Status	Play=1/Pause=0			1 bit	С	R	÷.	Т	-	start/stop	Low
■‡ 11	CH1-Audio 1: Status	Mute			1 bit	С	R	-	Т	-	enable	Low
■2 12	CH1-Audio 1: Status	Absolute volume			1 byte	C	R	-	Т	-	percentage (0100%)	Low
∎‡ 13	CH1-Audio 1: Status	Play mode			1 byte	С	R	-	Т	-	counter pulses (0255)	Low

Fig.6.2.5 "Audio" communication object

2	Power on/off	CH1-{{Audio 1}}: Control	1bit	C,W,U	1.001 switch
			Туре		
NO.	Object Function	Name	Data	Flag	DPT

The communication object is used to receive the background music on/off controlling telegram from the bus, to control the power of the background music module. Telegram value:

1--0n

0--Off

The name in parentheses changes with the parameter "Description (max 30 char.)". If description is empty, display "...Audio x..." by default.

3	Play=1/Pause=0	CH1-{{Audio 1}}: Control	1bit	C,W,U	1.010 start/stop
---	----------------	--------------------------	------	-------	------------------

The communication object is used to play/stop the music in the background music module. Telegram value:

1--Play music

0--Pause playing music

4	Next	track=1/Previous	CH1-{{Audio 1}}: Control	1bit	C,W	1.007 step

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The communic	cation object is used to	o switch the play	ing song of the background music module to
the previous song/	the next song. Telegra	am value:	
1Play	the next song		

0——Play the previous song

5	Mute	CH1-{{Audio 1}}: Control	1bit	C,W,U	1.003 enable
6	Volume+=1/Volume-=0	CH1-{{Audio 1}}: Control	1bit	C,W	1.007 step

When 1bit, support volume adjustment and mute function. The object description is as follows: Obj.5: The communication object is used to receive a telegram value from the bus to control

mute. Telegram value:

1--Mute

0--Exit mute

Obj.6: The communication object is used to adjust the volume of the background music module. Telegram value:

1--Increase volume

0--Decrease volume

7	Abaaluta valuma	Chill ((Audia 1)): Control	1 huto	C W II	5.001 percentage		
/	Absolute volume		Ibyle	C,W,U	5.004 percentage		
V	Vhen 1byte, only support vo	lume adjustment. The obje	ct descriptic	on is as fo	ollows:		
C	bj.6: The communication o	bject is used to adjust the	volume of	the back	ground music module.		
The ra	ange of value is determined	by the selected data type:	0100 / 02	55			
8	Play mode	CH1-{{Audio 1}}: Control	1byte	C,W,U	5.010 counter pulses		
Т	he communication object i	s used to receive the play	mode contr	ol telegr	am of the background		
music	from bus. Telegram of d	ifferent mode preset by pa	rameter.				
9	Power on/off	CH1-{{Audio 1}}: Status	1bit	C,R,T	1.001 switch		
Т	The communication object is used to send the on/off status telegram of background music to the						
bus. 1	elegram value:						
	1——On						
	0——Off						
10	Play=1/Pause=0	CH1-{{Audio 1}}: Status	1bit	C,R,T	1.010 start/stop		
Т	he communication object is	s used to send the play sta	tus telegram	of back	ground music to the		
bus. 1	elegram value:						
	1——Play music						
	0——Pause playing mus	ic					
11	Mute	CH1-{{Audio 1}}: Status	1bit	C,R,T	1.003 enable		
V	Vhen 1bit, this communicati	on object is used to send t	he mute sta	tus to the	e bus. Telegram value:		
	1——Mute						
	0——Exit mute						
10	Ale aluta value -		1byte	0.D.T	5.001 percentage		
12	Adsolute volume	CH1-{{Audio 1}}: Status		U,R, I	5.004 percentage		

V	When 1byte, this communication object is used to send the volume status to the bus of							
background music.								
ר	The range of value is determined by the selected data type: 0100 / 0255							
13	Play mode	CH1-{{Audio 1}}: Status	1byte	C,R,T	5.010 counter pulses			
٦ musio	The communication object is used to send the play mode status telegram of the background music to bus. Telegram of different mode preset by parameters.							

Table 6.2.5 "Audio" communication object