

# KNX M/RS485MNI.1 KNX-RS485 Interface Mini User Manual

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GZ HDL Technology Co., Ltd



# **Modification Record**

This record accumulates instructions for each document update. The latest version of the document contains updates from all previous document versions.

Num	Version	Modification Content	Date
1	V1.0.0	First official release	2021/12/28



# 1. Overview

# **1.1. General Information**

### 1.1.1. Description

KNX-RS485 Interface Mini (See Figure 1-2) is a small module that used for bidirectional data exchange between KNX and RS485. Accordingly, the module has two interfaces, RS485 and KNX. Its small size makes it easy to install and greatly increases space utilization.



Figure 1. KNX-RS485 Interface Mini

#### Figure 2. Base

### 1.1.2. Function

- 3 working modes: String mode, Hexadecimal mode, Data mode
- Baud rates: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200bps. Users can choose baud rates according to their requirements.
- Gateway between KNX and RS485: RS485 (string mode or hexadecimal mode, data mode) <-> KNX/EIB.
- Supports up to 200 control targets
- Up to 200 characters for each target (varies from different targets)
- 24 sequences supported

# HDL

### 1.1.3. Important Notes

- Installation Distribution box
- Programming The device is compliant with the KNX standard and the parameters are set by the Engineering Tool Software (ETS).
- KNX Bus voltage 21~30V DC, no AC power supply allowed

# 1.1.4. Product Information

• Dimensions & Components

Dimensions of KNX-RS485 Interface Mini - See Figure 3 - 4



Figure 3. Dimensions - Front View Figure 4. Dimensions - Side View

KNX-RS485 Interface Mini

Dimensions of Base - See Figure 5 – 6



#### Wiring - See Figure 7

#### 1. Programming button / LED indicator



The red LED indicator indicates programming mode.

When the module is running normally, the indicator is green and flashing once for 1s.

- 2. RS485 connector
- 3. KNX interface



# 2. Configurations

# 2.1. Import Device

Add device/database before program it.

(1) Create project in ETS5, if you have project, ignore it. Select three level group address

style when create project.

ETS5™ - RS485MNI ETS Edit Workplace Commis	sioning Diagnostics Apps W	lindow		- 0 ×
Overview Bus	Catalogs Settings			KNX
Projects Archive ETS In	side		KNX News	New KNX Products
+ 🗶 🛓		Search	KNXperience 2021 Show Preview: THE event of the year for smart homes and buildings	KNX flush-mounted actuators Albrecht Jung GmbH & Co. KG (Germany)
	Last Modified 🔻	Status	2021/9/17	
Create New Project	2021/10/11 10:29	Editing	missed KNX event of the year, KNXperience, and	JUNG
Name	2021/10/8 15:52	Unknown	<ul> <li>gives some insider info on what visitors can expect and what the highlights will be.</li> </ul>	
RS485MNI	2021/10/8 10:08	Unknown	Held for the first time last year, KNXperience was	10
Backbone	2021/9/30 11:19	Editing	created by KNX Association in response to pandemic restrictions and the cancellation of the	
₩ <b>•</b>	2021/9/28 20-33	Editing	Light +Building trade show normally held by	
Create Line 1.1	2021/9/20 20:33	Editing	community and other professionals involved with	JUNG presents a new generation of KNX actuators
TP •	2021/9/27 10:50	Editing	considered so successful that KNX Association is	Dimming actuator, switch- and blinds actuator and
Group Address Stule	2021/9/24 15:44	Editing	<ul> <li>holding a second event, KNXperience 2021, online</li> <li>from 28 - 30 September. This not-to-be-missed</li> </ul>	switch actuator 1-gang handle KNX Secure, receive firmware updates via the ETS Service app,
Group Address Skyle	r Actuator(V1. 2021/9/22 16:02	Unknown	event is open to all, whether a KNX professional or not, and will feature top-class speakers and the	have an addition-al binary input and thus allow additional connection possibilities such as new
	2021/9/15 16:14	Editing	latest technological developments in the world of	external temperature sensors (NTC), Leakage or
Three Level	.0 2021/9/14 11:38	Unknown	energy efficiency.	fully-fledged logic module that now offers
	2021/9/10 16:03	Editing	**The Event** KNXperience 2021 will be held as a purely online	significantly more connections and possibili-ties. Additionally, the latest generation, flush-mounted
Create Project Cancel	2021/9/9 19:27	Editing	event in German and English. It will entail an online expo (trade show) area with booths from	actuators have a smaller size.
DLP 1.1+FCU 2.0 FH A	2021/9/8 17:26	Editing	KNX Association, KNX Members and KNX Training Centres: plus a three-day conference programme	
美院南山路	2021/9/2 11:20	Editing	<ul> <li>For some added fun and excitement, there will be lots of games and lotteries every day, with fabulaus prize to be won According to Casto</li> </ul>	Certified KNX Products See a list of all certified KNX products here.



(2) Refer to the device version from the label, select Catalog, drag the database to current

Line. According to the label of device, you can ask HDL technical support for corresponding database.

								^		×			
🛃 Downlo	ad ( • )	🕜 Help	🤌 Highlight Changes Default Parameters Grant Cus	tomer Acce	ss								
1.1.100 M	1.1.100 M/RS485MNI.1 > Serial port config												
Seria	al port co	onfig	Operation delay after power on(2200s)	2			÷			^			
Func	tion page	,	Baud rate	9600			-						
RSs	->KNX-O	viect 1	Parity	None			*						
			Data bits	8 bits			-						
RS<-	->KNX:Ol	oject 2	Stop bits	1 bit			-						
Paramet	er /	Group O	bjects										
	$\mathbf{X}$							^		×			
S 🖓 Do	ownload		HDL > HDL-Products > fun2				Search			ρ			
^	Se	Magufa	cturer Name		Order Number	Medi	u Application	Version *					
	1	HDL	Line repeater		M/LCR01	TP	Line repeater	1.0		^			
	÷	HDL	M/FCHC.4.1		M/FCHC 1605 F002	TP	FCHC Actuator(V1.0)	1.0					
		HDL	Dry Contact 4CH Sensor		M/S04 1206 S001	TP	Dry Contact 4CH Sensor	1.0					
•	1	HDL	Dry Contact 8CH Sensor		M/S08 1405 S003	TP	Dry Contact 8CH Sensor	1.0					
		HDL	Panel Tile 6Buttons OLED Controller(V1.0)		M/PTOL6 1805 P22	TP	Panel Tile 6Buttons OLED Controller(	1.0					
ion c	<u> </u>	HDL	M/RS485MN.1		M/RS485MINI1905	TP	KNX-RS485 Mini Interface(V1.0)	1.0					
SAS	1	HDL	Line coupler		M/LCR01	TP	Line coupler	1.0					
~	1	HDL	DALI Gateway		M/DALI 1410 DL001	TP	DALI Gateway	1.0					
	Downle     Downle     I.1.100 M     Seria     Func     RS<-     Parame      Parame      on c     SAS	Download  I.1.100 M/RS48  Serial port cc Function page RS<->KNX:Ol RS<->KNX:Ol Parameter  On c SAS	Download + Help  1.1.100 M/RS485MNI.1 =  Serial port config  Function page  RS<->KNX:Object 1  RS<->KNX:Object 2  Parameter Group O  Set Mounta  HDL HDL HDL HDL HDL HDL HDL HDL HDL HD	Download      Help     Highlight Changes Default Parameters     Grant Cus     Intro M/RS485MNI.1 > Serial port config     Geration delay after power on(2200s)     Baud rate     Parity     Data bits     Stop bits     Parameter     Group Objects     Parameter     Group Objects     Sei Manufacturer Name     HDL      HDL      HDL      HDL      Products      fun2     Sei Manufacturer Name     HDL      HDL      HDL      HDL      HDL     MrK-HCA.1     MrK-HCA.1     HDL     MrK-HCA.1     HDL     MrK-HCA.1     HDL     MrK-HCA.	Download • • Help • Highlight Changes Default Parameters Grant Customer Acce   1.1100 M/RS485MNI.1 > Serial port config   Serial port config   Operation delay after power on(2200s)   Party   Baud rate   9600   Parity   None   RS<->KNX:Object 1   Parameter   Group Objects   Se Manufacturer Name   HDL   HDL   Protocottat BCH Sensor   HDL   Parte Lie Gebutons OLED Controller(V1.0)   HDL   L   HDL   Data tell   Sei Manufacturer Name   HDL   HDL   Dry Contact 4CH Sensor   HDL   HDL   Parent Lie Gebutons OLED Controller(V1.0)   HDL   L   HDL    HDL   HDL <td>Download      Performed Parameters     Grant Customer Access      Introperformed Parameter     Grant     Baud rate     9600     Parity     None     Parameter     Group Objects      Introperformed     HDL &gt; HDL &gt; HDL-Products &gt; fun2      Sei Magnafacturer Name     Order Number     HDL Mr/CHC4.1     HDL Mr/CHC4.1     Mr/CHC1605 F002     HDL Products 8 fun2      Order Number     MicRoi     HDL Mr/CHC4.1     M</td> <td>Download Help   Highlight Changes Default Parameters   Grant Customer Access     1.100 M/RS485MNI.1 &gt; Serial port config     Serial port config     Operation delay after power on(2200s)     Function page   Baud rate   Parity   Data bits   Stop bits     1 bit     Parameter     Group Objects     Se Macufacturer Name     Order Number     MLCR01     TP   HDL   HDL   Drive Contact 4CH Sensor   MySol 1405 Scola   HDL   Drive Contact 4CH Sensor   MySol 1405 Scola   HDL   HDL   Drive Contact 4CH Sensor   MySol 1405 Scola   HDL   HDL   HDL   HDL   Parentile 68uttons OLED Controller(V1.0)   MyPTOL6 1805 P022   HDL   HDL   L   HDL   Directopler   MACR01   TP   HDL   Directopler   MACR01   TP   HDL   Data bits   Marce Coupler   MACR01   TP   HDL   Directopler   MACR01   TP   HDL   Directopler   MACR01   TP   HDL   Directopler</td> <td>Download      Highlight Changes Default Parameters Grant Customer Access    1.100 M/RS485MNI.1 &gt; Serial port config     Serial port config   Operation delay after power on(2200s)   2   Function page   Baud rate   9600   Parity   None   Parity   Data bits   8 bits   Stop bits   1 bit   Parameter Group Objects   Se Monufacturer Name   Order Number Mediu Application   M/CR01   PhDL   HDL   Uncontact 4CH Sensor   M/Sde Minis Interface(Y10)   HDL   Parent Coopler   Sensor   HDL   Parent Coopler   Sensor   Productor   M/CR01   HDL   Parent Coopler   Sensor   HDL   Parent Coopler   Mice Contact 4CH Sensor M/Sde Minis Interface(Y10) M/REdeSiministre OLED Controller(V1.0) M/PEdeSiministre Trafface(Y10) M/REdeSiministre Trafface(Y10) M/REdeSiministre Trafface(Y10) M/REdeSiministre Trafface(Y10) M/REdeSiministre Trafface(Y10) M/REdeSiministor HDL DAUL Gateway M/DAUL 1410 DL001 TP DAUL Gateway</td> <td>Download * @ Help * Highlight Changes Default Parameters Grant Customer Access              1.1.100 M/RS485MNI.1 &gt; Serial port config           Serial port config       Operation delay after power on(2.200s)         Punction page       Baud rate       9600       •         Parity       None       •         Bsc-&gt;KNKCObject 1       Data bits       B bits       •         Parameter       Group Objects       •       •         Parameter       Group Objects       Search       •            <ul> <li>Moufacturer</li> <li>Name</li> <li>NMCR01</li> <li>P Line repeater</li> <li>MLCK 100</li> <li>P DU</li> <li>HDL</li> <li>Une repeater</li> <li>MCR100</li> <li>P Dy Contact 4CH Sensor</li> <li>MS04 105 S003</li> <li>P Dry Contact 4CH Sensor</li> <li>MS04 105 S003</li> <li>P Dry Contact 4CH Sensor</li> <li>MS04 105 S003</li> <li>P Dry Contact 4CH Sensor</li> <li>MRX485MM11</li> <li>MRX485MM11</li> <li>MRX485MM11005 IP</li> <li>P Annet the 6Buttons OLED Controller(V1.0)</li> <li>MPC 105 1805 P22 IP</li> <li>P Panel The 6Buttons OLED Controller(V1.0)</li> <li>MPC 105 1805 P22 IP</li> <li>P Panel The 6Buttons OLED Controller(V1.0)</li> <li>MPC 405 MIN 1 Metrace(V1.0)</li> <li>MPC 405 MIN 1 Metrace(V1.0)</li> <li>MDL MRX485MM1 Metracouper</li> <li>MDL MRX485MM1 Metrace(V1.0)</li></ul></td> <td>Download         Image: Provide a field Planameters         Grant Customer Access           1.100 M/RS485MNI.1 &gt; Serial port config         Operation delay after power on(2.200s)         2         2           Function page         Baud rate         9600         2           Parity         None         2         2           Data bits         B bits         2         2           Stop bits         1 bit         2         2           Parameter         Group Objects         2         2           Parameter         Group Objects         2         2           Image: Provide a field prov</td>	Download      Performed Parameters     Grant Customer Access      Introperformed Parameter     Grant     Baud rate     9600     Parity     None     Parameter     Group Objects      Introperformed     HDL > HDL > HDL-Products > fun2      Sei Magnafacturer Name     Order Number     HDL Mr/CHC4.1     HDL Mr/CHC4.1     Mr/CHC1605 F002     HDL Products 8 fun2      Order Number     MicRoi     HDL Mr/CHC4.1     M	Download Help   Highlight Changes Default Parameters   Grant Customer Access     1.100 M/RS485MNI.1 > Serial port config     Serial port config     Operation delay after power on(2200s)     Function page   Baud rate   Parity   Data bits   Stop bits     1 bit     Parameter     Group Objects     Se Macufacturer Name     Order Number     MLCR01     TP   HDL   HDL   Drive Contact 4CH Sensor   MySol 1405 Scola   HDL   Drive Contact 4CH Sensor   MySol 1405 Scola   HDL   HDL   Drive Contact 4CH Sensor   MySol 1405 Scola   HDL   HDL   HDL   HDL   Parentile 68uttons OLED Controller(V1.0)   MyPTOL6 1805 P022   HDL   HDL   L   HDL   Directopler   MACR01   TP   HDL   Directopler   MACR01   TP   HDL   Data bits   Marce Coupler   MACR01   TP   HDL   Directopler   MACR01   TP   HDL   Directopler   MACR01   TP   HDL   Directopler	Download      Highlight Changes Default Parameters Grant Customer Access    1.100 M/RS485MNI.1 > Serial port config     Serial port config   Operation delay after power on(2200s)   2   Function page   Baud rate   9600   Parity   None   Parity   Data bits   8 bits   Stop bits   1 bit   Parameter Group Objects   Se Monufacturer Name   Order Number Mediu Application   M/CR01   PhDL   HDL   Uncontact 4CH Sensor   M/Sde Minis Interface(Y10)   HDL   Parent Coopler   Sensor   HDL   Parent Coopler   Sensor   Productor   M/CR01   HDL   Parent Coopler   Sensor   HDL   Parent Coopler   Mice Contact 4CH Sensor M/Sde Minis Interface(Y10) M/REdeSiministre OLED Controller(V1.0) M/PEdeSiministre Trafface(Y10) M/REdeSiministre Trafface(Y10) M/REdeSiministre Trafface(Y10) M/REdeSiministre Trafface(Y10) M/REdeSiministre Trafface(Y10) M/REdeSiministor HDL DAUL Gateway M/DAUL 1410 DL001 TP DAUL Gateway	Download * @ Help * Highlight Changes Default Parameters Grant Customer Access              1.1.100 M/RS485MNI.1 > Serial port config           Serial port config       Operation delay after power on(2.200s)         Punction page       Baud rate       9600       •         Parity       None       •         Bsc->KNKCObject 1       Data bits       B bits       •         Parameter       Group Objects       •       •         Parameter       Group Objects       Search       • <ul> <li>Moufacturer</li> <li>Name</li> <li>NMCR01</li> <li>P Line repeater</li> <li>MLCK 100</li> <li>P DU</li> <li>HDL</li> <li>Une repeater</li> <li>MCR100</li> <li>P Dy Contact 4CH Sensor</li> <li>MS04 105 S003</li> <li>P Dry Contact 4CH Sensor</li> <li>MS04 105 S003</li> <li>P Dry Contact 4CH Sensor</li> <li>MS04 105 S003</li> <li>P Dry Contact 4CH Sensor</li> <li>MRX485MM11</li> <li>MRX485MM11</li> <li>MRX485MM11005 IP</li> <li>P Annet the 6Buttons OLED Controller(V1.0)</li> <li>MPC 105 1805 P22 IP</li> <li>P Panel The 6Buttons OLED Controller(V1.0)</li> <li>MPC 105 1805 P22 IP</li> <li>P Panel The 6Buttons OLED Controller(V1.0)</li> <li>MPC 405 MIN 1 Metrace(V1.0)</li> <li>MPC 405 MIN 1 Metrace(V1.0)</li> <li>MDL MRX485MM1 Metracouper</li> <li>MDL MRX485MM1 Metrace(V1.0)</li></ul>	Download         Image: Provide a field Planameters         Grant Customer Access           1.100 M/RS485MNI.1 > Serial port config         Operation delay after power on(2.200s)         2         2           Function page         Baud rate         9600         2           Parity         None         2         2           Data bits         B bits         2         2           Stop bits         1 bit         2         2           Parameter         Group Objects         2         2           Parameter         Group Objects         2         2           Image: Provide a field prov			

# 2.2. Serial Port Configuration

This document mainly describes 1.0 version KNX M/RS485MNI.1.

Topology Backbone	1.1.100 M/RS485MNI.1 > Seria	l port config	
▲ I New area	Serial port config	Operation delay after power on(2200s)	2
<ul> <li>1.1 New line</li> <li>1.1 100 M/RS485MNI 1</li> </ul>	Function page	Baud rate	9600 👻
	RS<->KNX:Object 1	Parity	None 🔻
	RS<->KNX:Object 2	Data bits	8 bits 💌
	RS<->KNX:Object 3		1 bit
	PS < > KNV:Object 4	Interval time of sending frame	100ms 👻
	N3<->KINX.ODJECI 4	Interval time of receiving frame	10ms 💌
	RS<->KNX:Object 5		DC 40F
	RS<->KNX:Object 6	Packet check	None •
	RS<->KNX:Object 7	Start mark	None
	RS<->KNX:Object 8	End mark	None 👻
	RS<->KNX:Object 9		
	RS<->KNX:Object 10		
	Parameter Group Objects	./	

The setting items are explained below:



- (1) Operation delay after power on (2...200s): time-delay function, namely a delay time between powering on the device and activating the system, which ranges from 2 to 200s. The default value is 2s.
- (2) Baud rate: the default value is 9600.
- (3) Parity: to set parity check. The converter disables parity check by default (None).
- None: to disable parity check.
- ODD: to enable odd parity.
- EVEN: to enable even parity.
- (4) Data bits: the default value is 8 bits.
- (5) Stop bits: the default value is 1 bit.
- (6) Interval time of sending frame: the default value is 100ms.
- (7) Interval time of receiving frame: the default value is 10ms.
- (8) Communication port: set communication port, only including port RS485.
- Packet check: to set packet check. The converter disables packet check by default (None).
  - a) None: to disable packet check.
  - b) Xor check
  - c) And check
  - d) CRC-16, High-byte-front
  - e) CRC-16, Low-byte-front
- Start mark: the converter disables start mark by default (None).
  - a) None: to disable start mark.
  - b) Any: any hexadecimal number can be set to start mark.
  - c) Any start mark (hexadecimal): enter hexadecimal number, which can be up to 2 bytes. 1 byte consists of two characters and two bytes are separated by one space. Namely up to 5 characters can be entered. The default value is "aa 03", namely "0xaa0x03".
  - d) aa (hexadecimal): hexadecimal number "0xaa" is set to start mark.



- End mark: the converter disables end mark by default (None).
  - a) None: disable end mark.
  - b) Any: any hexadecimal number can be set to end mark.
  - c) Any end mark (hexadecimal): enter hexadecimal number, which can be up to 2 bytes.
    1 byte consists of two characters and two bytes are separated by one space. Namely up to 5 characters can be entered. The default value is "0d 0a", namely "0x0d0x0a".
  - d) 0d (hexadecimal): hexadecimal number "0x0d" is set to end mark.

# 2.3. Function Selection

Click "Function page" in the left parameter list and enable/disable corresponding function of the converter in the open page.

Serial port config	Enable object 110(MAX 14 bytes)	🔵 No 🔘 Yes
Function page	Enable object 1120(MAX 14 bytes)	O No O Yes
RS<->KNX:Object 1	Enable object 2130(MAX 14 bytes)	O No O Yes
RS<->KNX:Object 2	Enable object 3140(MAX 14 bytes)	◎ No ○ Yes
RS<->KNX:Object 3	Enable object 4150(MAX 14 bytes)	◎ No ○ Yes
Nov PRIM.Object 5	Enable object 5160(MAX 14 bytes)	O No OYes
RS<->KNX:Object 4	Enable object 6170(MAX 14 bytes)	O No O Yes
RS<->KNX:Object 5	Enable object 7180(MAX 14 bytes)	O No O Yes
RS<->KNX:Object 6	Enable object 8190(MAX 14 bytes)	O No O Yes
RS<->KNX:Object 7	Enable object 91100(MAX 14 bytes)	O No O Yes
RS<->KNX:Obiect 8	Enable object 101110(MAX 14 bytes)	◎ No ○ Yes
	Enable object 111120(MAX 14 bytes)	O No OYes
KS<->KNX:Object 9	Enable object 121130(MAX 14 bytes)	O No OYes
RS<->KNX:Object 10	Enable object 131140(MAX 14 bytes)	🔘 No 🔵 Yes

1.1.100 M/RS485MNI.1 > Function pag

The setting items are explained below:



(1) Enable object: object function. The converter enables object 1-10 by default. Up to 200 objects are supported.

- No: to disable object function.
- Yes: to enable object function.

(2) Enable Sequence: sequence function. Sequence number ranges from 1 to 24. The converter disables sequence function by default.

- No: to disable sequence function.
- Yes: to enable sequence function.

# 2.4. Object Settings & Example Description of Work Mode

# 2.4.1. RS<->KNX: Object 1(n)

erial port config	Enable object 1	🔵 Disable 🔘 Enable
unction page	Name	Name
S<->KNX:Object 1	Work mode	String mode
S<->KNX:Object 2	Send repeatedly	O No Ves
, 		
S<->KNX:Object 3	RS485: Transmit mode	Read(only to knx)
S<->KNX:Object 4	no los. maisine mode	Write/Response(Two-way)
	RS485: String(MAX 200 chars)	String
S<->KNX:Object 5		
S<->KNX:Object 6	->KNX: Data Point	[1.xxx] DPT (1bit)
S<->KNX:Object 7	->KNX: Data (1bit)	,0,
S<->KNX:Object 8		
S<->KNX:Object 9		
S<->KNX:Object 10		

(1) After the first option in the Function page (take "enable object 1.. 10 (max 14 bytes)" as an example here), click the "RS < - > KNX: object 1" tab in the parameter list on the left to enable the single target function in the open page.Enable object N (N=1, 2, ...,

200) : select "Enable" to enable this object function.



- (2) Name: edit the object name.
- (3) Send repeatedly: No: the converter will not send data repeatedly; Yes: the converter will send data repeatedly
  - Repeatedly send to : the converter can send data to port RS485 or KNX bus repeatedly.
  - Interval time of repeat (2..255s) : set the time interval of sending data repeatedly, which ranges from 2 to 255s. The default value is 10s.
  - Repeat times : set the number of sending data repeatedly. The default value is once.
- (4) RS485: Transmit mode : set the data transmission mode of the converter.

"Write/Response (Two-way)" is the default mode.

- Read (only to knx): the converter will only send "read request" to KNX bus without sending converted data. This configuration is not available for the data transmission between the converter and port RS232/RS485.
- Write/Response (Two-way): the converter will send converted data to port RS485 or KNX bus.

#### 2.4.2. Work mode

String mode, Hexadecimal mode and data mode can be selected.



Serial port config	Enable object 1	Oisable O Enable	
Function page	Name	Name	
RS<->KNX:Object 1	Work mode	String mode	•
RS<->KNX:Object 2	Send repeatedly	String mode Hexadecimal mode	~
RS<->KNX:Object 3	RS485: Transmit mode	Data mode Read(only to knx)	
RS<->KNX:Object 4		Write/Response(Two-way)	
RS<->KNX:Object 5			
RS<->KNX:Object 6	->KNX: Data Point	[1.xxx] DPT (1bit)	
RS<->KNX:Object 7	->KNX: Data (1bit)	,0,	
RS<->KNX:Object 8			
RS<->KNX:Object 9			
RS<->KNX:Object 10			

#### 2.4.2.1. String mode

RS485: String (MAX 200 chars): set the string transmitted at the 485 port of the converter (no more than 200 characters), and the default value is "string".

Example : Select string mode, the data point is "[1. XXX] DPT (1 bit)" and the value is 1,

fill in "Hello KNX!", and create a new group address 1/1/1 and link to object 1. Partial download to M/RS485MNI.1as shown in the following figure:



ropology backbone		DDT (1)-ia	DCADCAANI	100		Low
analagu Backhana	r Number i News	Object Exerction	Description	Group Address	Length C. P. W. T. H. Dut-Time	Duite
RSz-SKNX Obie	act 7	->KNX: Data (1bit)		'1'		•
RS<->KNX:Obje	ect 6	->KNX: Data Point		[1.xxx] DPT (1bit)		•
RS<->KNX:Obje	ect 5					
RS<->KNX:Obje	ect 4	RS485: String(MAX 200 chars)	[	Hello KNX!		
RS<->KNX:Obje	ect 3	RS485: Transmit mode		<ul> <li>Read(only to kr</li> <li>Write/Response</li> </ul>	וx) e(Two-way)	
RS<->KNX:Obje	ect 2					
K3<-2KNX.OD		Send repeatedly		🔘 No 🖳 Yes		
PS>KNX-Ob	iect 1	Work mode	0	String mode		•
Function page		Name		String 1		
Serial port confi	g	Enable object 1		🔵 Disable 🔘 En	able	

After sending value "1" to group address "1/1/1", the serial port software will receive a string "Hello KNX!", as shown in the figure below.

lopology	Diagnostics	×									
Diagnostics 🔻											 • 🗉 🗡
- Monitor	🕨 Start 📕 Stop 🤞	Clear 🤆 Open	🛃 Save	📄 Print 🛛 🖵	Replay Telegrams	Option	🔺 Group F	unctions		Search	ρ
Group Mo	Group Address 1/1/	1 Data	point type	1.* 1-bit 🔻					Delay time	[sec] 0 *	 Write
Bus Monitor	Last received value \$01	Value		001		use l	nex values		Send cyclic	ally	Read
<ul> <li>Diagnostics</li> </ul>	# * Time	Service Flags	Prio	Source Ad	d Source Name	Destination	Destination Na	a Rout Type	DPT	Info	
Device Info	1 2021/11/19 10:51:42.110 2 2021/11/19 10:51:43.17	0 to bus 3 to bus	Low Low	1.1.210 1.1.210		1/1/1 1/1/1	RS485MNI RS485MNI	6 GroupValueW 6 GroupValueW	1.* 1-bit 1.* 1-bit	\$01   On \$01   On	
<ul> <li>Individual Addr</li> </ul>		· · /			Uart Ass	istant		4	×		
Programmi		COM Configs		Data log				UartAssist V5.0.2	\$ <del>\$</del>		
Individual		Baudrate 9600		[2021-11-19 10	0:51:42.358]# REC	V ASCII>					
		Paritybits NON Databits 8	· · ·	[2021-11-19 10	):51:43.362]# REC	V ASCII>					
		Stopbits 1		(ello KNX!							
		Flowetri INUN	se								
		Recy Online									
		ASCII C	HEX								
	٤	✓ Log Display ✓ Auto Linefe	Mode <								
	SKNX IP Router 🔺 C	urren 📃 Hide Becei	ord Data								

When sending string "Hello KNX!" from serial port software to M/RS485MNI.1, group address "1/1/1" will receive value "1". As shown in the figure below.



••	Uar	l Assistant		TH.	- 🗆 ×								
COM Configs	Data log		Uart	Assist V5.0.2	94								
Baudrate 9600 -	[2021-11-19 10:53:17.129	# SEND ASCII>			^								
Paritybits NONE   Databits 8	[2021-11-19 10:53:17.760	# SEND ASCII>				-	and other states	100				-	1
Flowetri NDNE	ETSS Edit Workp	l Ilace <u>C</u> ommissioning <u>D</u> i	agnostics A	pps Wi <u>n</u> do	w								
Recv Options	Close Project	Diagnostics	Reports	Wor	kplace •	Catalog	gs 💽 Diagn	ostics					
Auto Linefeed     Hide Received Data     Save Recy to File	Diagnostics ▼ — Monitor	Start 📕 Stop 🥖	Clear   [	Open  层	Save (	📄 Print 🛛 🖵 R	teplay Telegrams	Options	Group F	Functio	ons		Searc
AutoSoroll Clear	Group Mo	Group Address 1/1/1	1	Data poin	t type	1.* 1-bit 🔻						Delay time[	sec] 0
Send Options	Bus Monitor	Last received value \$01		Value		001		use h	ex values			Send cyclica	ally
Use Escape Chars Auto Append Bytes	– Diagnostics	# * Time	Service	Flags	Prio	Source Add	Source Name	Destination	Destination Na	a Rou	Туре	DPT	Info
Send from File Cycle 1000 ms	D He Device Info	1 2021/11/19 10:53:17.176 2 2021/11/19 10:53:17.811	6 from bus I from bus		Low Low	1.1.100 1.1.100	M/RS485MNI.1 M/RS485MNI.1	1/1/1 1/1/1	RS485MNI RS485MNI	6 6	GroupValueW GroupValueW	.1.* 1-bit .1.* 1-bit	\$01   On \$01   On
Shortcut Mistory													

### 2.4.2.2. Hexadecimal mode

RS485: Hexadecimal (MAX 200 chars) : the hexadecimal number transmitted at the

485 end of the converter can be set. Every two characters form a hexadecimal number. The hexadecimal numbers can be separated by spaces. The data length shall not exceed 200 characters (including spaces). The default value is 102030, i.e., "0x10", "0x20", "0x30".

For example, select Hexadecimal mode, data point is [1.xxx] DPT (1 bit) and data(1bit)

value is 1, fill "a0 01 a9 90 00 b1", create a new group address 4/6/10 and link to object

2. Then partial download to M/RS485MNI.1.

1.1.100 M/RS485MNI.1 > RS<->K	NX:Object 2	
Serial port config	Enable object 2	Disable O Enable
Function page	Name	Hex Example
RS<->KNX·Object 1	Work mode	Hexadecimal mode
	Send repeatedly	● No ○ Yes
RS<->KNX:Object 2		
RS<->KNX:Object 3	RS485: Transmit mode	<ul> <li>Read(only to knx)</li> <li>Write/Response(Two-way)</li> </ul>
RS<->KNX:Object 4	RS485: Hexadecimal(MAX 200 bytes)	a0 01 a9 90 00 b1
RS<->KNX:Object 5		
RS<->KNX:Object 6	->KNX: Data Point	[1.xxx] DPT (1bit) -
	->KNX: Data (1bit)	η



When sending value 1 to group address "4/6/10", serial port software will receive a string of hexadecimal codes "A0 01 A9 90 00 B1". As shown in the figure below.

Diagnostics *						^ 🗇 🗙
- Monitor	🕨 Start 📕 Stop 🥜 Clear 🛛	Open 📓 Save 🛛 🚍	Print 📮 Replay Telegrams 💮 Option	S Group Functions		Search 🔎
Group Mo	Group Address 4/6/10	Data point type 1.*	1-bit 🔻		Delay time[sec] 0	Write
Bus Monitor	Last received value \$01	Value 00	1 use	hex values	Send cyclically	Read
- Diagnostics	# * Time Service	Flags Prio	Source Add Source Name Destination	Destination Na Rout Type	DPT Info	
Device late	1 2021/11/19 11:30:28.746 Start				Recordin	ng was started, Host=LAPTOP-DHDETC
Device Into	2 2021/11/19 11:30:37.900 to bus	Low	1.1.210 - 4/6/10	RS485MNI 6 GroupValueW.	1.* 1-bit \$01   On	
<ul> <li>Individual Addr</li> </ul>						
Programmi		•••	Uart Assista	nt 👘 🗌	4 ×	
Individual		Closered COM4#UST	Data log	<u>UartAssist 1</u>	<u>v5.0.2</u> 🧇 🏳	
Line Scan		Raudrate 9600	[0001 11 10 11 00 00 202]# PECY NE	× \	^	
		Paritubite NONE	A0 01 A9 90 00 B1	<i>1</i> 2		
		Databite 8 -	· •			
		Stophits 1				
		Flowetri NONE				
		Close				
		Hecy Options				
	(	C ASULI (* HEX				>
	SKNX IP Router 🔺 Current project	Auto Linefeed				
		_				

Send a string of hexadecimal codes "a0 01 a9 90 00 b1" from serial port software, the group address will receive value 1 as you can see the feedback from ETS Diagnosis interface.

••	Uart Ass	listant		×				
COM Configs	Data log		UartAssist V	5.0.2 @ <del>Q</del>		1.00		
Baudrate 9600 -	[2021-11-19 11:31:41.399]# SE	ND HEX>						
Paritybits NONE	NO 01 NO 00 01			r i i				
Databits 8								
Stopbits 1 T								
Flowetri Indine				t	Diagnostics			
Close								
Recy Options								^ Č
C ASCII @ HEX				9	ams 🛞 Options 🔥	Group Functions	Search	
✓ Log Display Mode	<							
V Auto Lineteed							Delay time[sec] 0 🌐	Write
Save Recy to File								
AutoScroll Clear								- 0 ×
		Topology	Diagnostics	×				X
Send Options		Diagnostics *	Start 📕 Stop 🥒 Class	The Open III Star	Rint Recity Telegrams	Cotion & Group Exertions	Search	
Lise Escape Chars ()		- Monitor		Ces oben - 88 pen	Contract of the party reagand	C Options In Group reneating		
Auto Append Bytes	1 	Group Mo	Group Address 4/6/10	Data point typ	⊷e 1.º 1-bit 💌		Delay time[sec] 0	Write
Send from File	Data Send 1. DCD • 2. RXD • 3	3 Bus Monitor	Last received value \$01	Value	001	use hex values	Send cyclically	Read
Cycle 1000 ms	a0 01 a9 90 00 b1	- Diagnostics	# * Time Serv	vice Flags P	io Source Add Source Name	Destination Destination Na Rour Typ	e DPT mo	
Shortout Mistory		Device Info	1 2021/11/19 11:31:41.443 from	bus Lo	w 1.1.100 M/RS485MINU1	4/6/10 RS485MNI 6 Grou	ipValueW1.* 1-b \$01   On	

# 2.4.2.3. Data mode



Data transmit format: The data transmission format is object + data by default ( Object

+ Data )

a) Object+Data: What data is received by the corresponding group address, and the output object + the same data.

For example, select [1.xxx] DPT(1bit), send value 0 to group address 4/6/11, serial

port software receives "03 3A 00"; send value 1 to group address 4/6/11, serial

port software receives "03 3A 01"



### [2.xxx] DPT (2bits)

. /	Uart Assista	Close Project	🖍 U	Indo \land Redo	Reports	Workp	lace *	Catalogs		Diagnostics	
COM Configs	Data log	Topology		Diagnostics	×						
Channel COM4 #U! -		Diagnostics *									
Baudrate 9600 -	[2021-11-19 13:14:34.991]# RECV H	– Monitor		Start 📕 Stop	🤌 Clear 📗 💽	Open 🛛 🛃 Sav	ve   1	📄 Print 🛛 🗔 Repla	ay Tele	grams • Se	arch
Paritybits NUNE   Databits 8	[2021-11-19 13:14:36.884]# RECV HI	Group Mo	Gro	up Address 4/6	5/12	Data point ty	pe	2.001 switch control	•	Delay time[sec	0 0
Stopbits 1	03 34 01	Bus Monitor	Last	received value \$03	Phone. Or	Value	F	Priority, On	•	Send cyclically	
Close	[2021-11-19 13:14:38.778]# RECV HI 03 3A 02	- Diagnostics	# *	Time	Service	Flags	Prio	No priority, Off		lame Destination	Destination Na Ro
Recv Options	[2021-11-19 13:14:42.461]# RECV HD 03 3A 03	Device Info	1	2021/11/19 13:14:34. 2021/11/19 13:14:36.	650 to bus 794 to bus	t. Li	ow	No priority, On Priority, Off		4/6/12 4/6/12	MRS485MNI O 6 MRS485MNI O 6
C ASCII	<	– Individual Addr	3	2021/11/19 13:14:38.	631 to bus	L	ow	Priority, Un	~	4/6/12	MRS485MNI O 6
Auto Linefeed		Programmi	4	2021/11/19 13:14:42.	158 to bus	L	OW	1.1.210 -		4/6/12	WIK5485IVINI O 6

[3.007] DPT\_Control\_Dimming (4bits)



#### KNX M/RS485MNI.1 KNX-RS485 Interface Mini

[2021-11-19 13:22:23.519]# RECV HEX	🕨 Start 📕 S	top 🥜 Clear 🛛 🚺	Open 🕜	0 01	02 (	3.04 (	25 06 (	7 A Group Fun	ctions		Search	4
[2021-11-19 13:22:25.411]# RECV HER 03 3A 01	Group Address 4/6/13 _ Data point type 0.007 imm/g coeffol Last received value SOF   Increase, 1 % Value Decrease Increase Increase, 1 %						Delay time[sec] 0  Send cyclically		Write			
[2021-11-19 13:22:27.306]# RECV HEX	# * Time	Service	Flags	Prio	Source	Add Source Na	pe Destinatio	n Destination No. R	out Type	DPT	Info	
03 3A 02	1 2021/11/19 1	22:23.056 to bus		Low	LE	OE OD	0C.0B	CARSTERNING-0	8 GroupValueW.	3.007 dim.	S00   Decrease, Break	
[2021-11-19 13:22:28.750]# RECV HEX 03 3A 03	3 2021/11/19 1 4 2021/11/19 1	22:26.887 to bus		Low	1.1.210	•	4/6/13	MRS485MNI O., 6 MRS485MNI O. 6	GroupValueW.	3.007 dim.	- \$02   Decrease, 50 %	
[2021-11-19 13:22:30.196]# RECV HEX 03 3A 04	5 2021/11/19 1 6 2021/11/19 1 7 2021/11/19 1	122:30.006 to bus 122:31.706 to bus 122:33.264 to bus		Low Low Low	1.1.210 1.1.210 1.1.210	*	4/6/13 4/6/13 4/6/13	MRS485MNI O 6 MRS485MNI O 6 MRS485MNI O 6	GroupValueW GroupValueW GroupValueW	3.007 dim. 3.007 dim. 3.007 dim.	. \$04   Decrease, 12 % . \$05   Decrease, 6 % . \$06   Decrease, 3 %	
[2021-11-19 13:22:32.088]# RECV HEX 03 3A 05	8 2021/11/19 13 9 2021/11/19 13 10 2021/11/19 13	122:34.566 to bus 123:33.926 to bus 123:35.662 to bus		Low Low Low	1.1.210 1.1.210 1.1.210	*	4/6/13 4/6/13 4/6/13	MRS485MNI O 6 MRS485MNI O 6 MRS485MNI O 6	GroupValueW GroupValueW GroupValueW	3.007 dim. 3.007 dim. 3.007 dim.	507   Decrease, 1 % 508   Increase, Break 509   Increase, 100 %	
[2021-11-19 13:22:33.532]# RECV HEX 03 3A 06	11 2021/11/19 1: 12 2021/11/19 1: 13 2021/11/19 1:	23:37.005 to bus 23:38.790 to bus 23:40.088 to bus		Low Low Low	1.1.210 1.1.210 1.1.210		4/6/13 4/6/13 4/6/13	MRS485MNI O 6 MRS485MNI O 6 MRS485MNI O 6	GroupValueW GroupValueW GroupValueW	3.007 dim. 3.007 dim. 3.007 dim.	\$0A   Increase, 50 % \$0B   Increase, 25 % \$0C   Increase, 12 %	
[2021-11-19 13:22:34.975]# RECV HEN 03 3A 07	14 2021/11/19 1 15 2021/11/19 1 16 2021/11/19 1	1:23:41.372 to bus 1:23:42.782 to bus 1:23:44.053 to bus		Low Low Low	1.1.210 1.1.210 1.1.210		4/6/13 4/6/13 4/6/13	MRS485MNI O 6 MRS485MNI O 6 MRS485MNI O 6	GroupValueW GroupValueW GroupValueW	3.007 dim. 3.007 dim. 3.007 dim.	- \$0D   Increase, 6 % - \$0E   Increase, 3 % - \$0F   Increase, 1 %	

b) String+Data+String: The string header (STR1) and string tail (STR2) are fixed, and only data can be changed. Each time the converter transmits data, it will transmit it together with STR1 and STR2. The total length of the string cannot exceed 200 characters.

Add channels   * 👗 De	nete 🗶 Downloa		o * 🛃 neset - y Onioad * 📄 Print					Se	arch		2	
Topology Backbone	* Number	1 Name	Object Function	Description	Group Address	Length (	R	w	τl	J Data Type	Prie	
Dynamic Folders		Object 1	DPT (1bit)	RS485MNI	1/1/1	1 bit C	R	WT	0	1-bit	Low	
1 New area	-€ 2   2  3	Object 2	DPT (bit)	MRS485MNI Object 3	4/6/10	1 bit C	R	wı	- 11	1-bit	Low	
1.1 New line		Object 5		MIKS405IMINI Object 5	547 GF 11	TOIL C	n		0	1-MIL	Low	
1.1.0 M/IPRT.1												
1.1.100 M/RS485MNI 1.1.100 M/RS485MNI	.1											
1.1.100 M/RS48	5MNI.1 >	RS<->K	NX:Object 3									
Serial port co	nfig		Enable object 3	O Dis	able 🔘 Er	able						
Function page	е		Name	Data	Mode Exam	ple						
RS<->KNX:Object 1		Work mode	Data r	node						•		
			Send repeatedly	O No	<b>Yes</b>							
RS<->KNX:O	bject 2		Data transmit format	Ob	ject + Data	O Str	ing	+	Da	ta + String		
RS<->KNX:C	bject 3			=								
RS<->KNX:Object 4			RS485: Transmit mode Read(only to knx) Write/Response(Tw				wo-way)					
RS<->KNX:0	bject 5		RS485: String(MAX 200 chars by 2 spaces)	,separatec Str1 a	bcd Str2							
RS<->KNX:O	bject 6			=								
RS<->KNX:O	bject 7		->KNX: Data Point	[1.xxx]	DPT (1bit)						•	
			*RS485 Format: String+Data+String	a								



### 2.5. Sequence Control

After sequence function is enabled in function selection page (Take "Enable Sequence 1...8" as an example), click "RS<->KNX: Sequence 1", as shown in Figure 5-1.

Note: sequence function is only available for string mode or hexadecimal mode (invalid for data mode). Sequence function is only available for data transmission between the converter and serial port RS485 (invalid for data transmission between the converter and KNX bus).

1.1.100 M/RS485MNI.1 > RS<->KNX:Sequence 1									
RS<->KNX:Object 8	Enable sequence 1	O Disable O Enable							
RS<->KNX:Object 9	Name	Name							
	Operation mode	"1"-Start,"0"-Stop							
RS<->KNX:Object 10	Enable step 1	Oisable O Enable							
RS<->KNX:Sequence 1	->Object for Step 1	invalid 👻							
RS<->KNX:Sequence 2	Delay after step 1 ([065535]*0.1S)	0							
RS<->KNX:Sequence 3	Enable step 2	O Disable C Enable							

The setting items are explained below:

Enable sequence N (N=1, ..., 24): enable/disable sequence function. If "Disable" is selected, none of the following options will appear.

(1) Name: to edit the sequence name.

(2) Operation: set the control type of sequence, the default type is "1'-Start, '0'-Stop"

- "1"-Start, "0"-Stop: the sequence will start running after "1" is received, while the sequence will stop after "0" is received.
- "0"-Start, "1"-Stop: the sequence will start running after "0" is received, while the sequence will stop after "1" is received.
- "0/1"-Start, can't stop: the sequence will start running until power down after "1" or "0" is received.

(3) Enable step 1:

- Disable: disable the step 1 of sequence.
- Enable: enable the step 1 of sequence.
- a) Object for Step 1: set object data to be sent by the step 1 of the sequence or disable sending data (invalid).
- b) Delay after step 1 ([0..65535]\*0.1s): set the time interval between step 1 ends and



step 2 starts, which ranges from 0.1 to 6553.5. The default value is 0s.

(4) Enable step N (N=2, ..., 10): please refer to the settings in the third point "Enable step 1"

# 3. Download Data

# 3.1 Interface Setting

If users need to download data to the converter, KNX interface is necessary.

After connecting KNX interface to a computer via USB, click "Bus" tab in ETS' main page,

"HDL USB Interface" will show up in "Discovered Interfaces". Double click to add and the interface will show up in "Current Interface".

ETS	
Overview Bus Catalogs Settings	KNX
Overview     Bus     Catalogs     Settings       - Connections     Current Interface       Interfaces     HDL USB Interface (HDL) Individual Address: 0.2.255       Options     - Configured Interfaces       - Monitor     - Discovered Interfaces       Bus Monitor     - Discovered Interface (HDL)       Bus Monitor     - Diagnostics       Unload Device     - Diagnostics	Image: Constraint of the system         Manufacturer         HDL         Manufacturer         HDL         Medium         TP         Individual Address         0.2.255       Address free?         Max telegram length (APDU):
Device Info Individual Addresses Programming Mo Individual Addres Line Scan	220 Test Select

# 3.2 Download Data

Press the programming button of the converter, and the red indicator keeps on. Right click the database to be downloaded to the converter and select "Download->Fully download". The information indicates the end of the process on the right side of ETS.



After each modification, it should be downloaded and applied to the M/RS485MNI.1. You can use "partial download" or "download application".

<mark>≣1</mark> ETS5™ - RS485M ETS Edit W	<b>/INI</b> orkplace Commissioning Diagnost	ics Apps Windov	v		- 0 ×
Close Project	: 🏠 Undo 🛝 Redo 🚔 R	eports Work	xplace 👻 🏢 Catalogs 🛛 📰 Diagno	stics	
Topology	× Diagnostics				<
Topology ▼           ▲ Add Channels           ▲ Topology Back           ▷ Dynamic Fo           ▲ 1 New area           ▲ 1.1 New lin           ▶ 1.1.0 M/H           ▲ 1.1.00 M	<ul> <li>Download</li> <li>Unload</li> <li>Info</li> <li>Reset Device</li> <li>Compare Device</li> <li>Print Labels</li> <li>Transfer Parameters and Flags</li> <li>Unlink</li> </ul>	, Ctrl + R	Full download     Ctrl       Partial download     Ctrl       Download Individual Address     Ctrl       Overwrite Individual Address     Ctrl       Download Application     Ctrl       peration mode     table step 1	<ul> <li>Shift + L</li> <li>D</li> <li>Shift + I</li> <li>Shift + Alt + I</li> <li>Shift + Alt + D</li> <li>T''-Start,"0"-Stop</li> <li>Disable (© Enable</li> </ul>	
	Add To Device Templates	,	•Object for Step 1	Object 1	
	Add Channels Suggest Channels	Ctrl + Shift + A	elay after step 1 ([065535]*0.1S) nable step 2	0 ÷	
	Cut	Del Ctrl + X			
	Copy  Paste Paste Paste Special	Ctrl + C			
	Paste Extended				
KNX IP Router (1	Properties	Alt + Enter	1.1.100 M/RS485MNI.1	Last u	sed workspace