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# **RESI-MBUSxLVL-ETH**



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## 1 History

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## **3 IMPORTANT SECURITY NOTES**



#### Danger to life through electrical current!

Only skilled personal trained in electro-engineering should perform the described steps in the following chapters. Please observe the country specific rules and standards. Do not perform any electrical work while the device is connected to power.

#### Pay attention to the following rules:

- 1. Disconnect the system from power
- 2. Secure the system against automatic power on
- 3. Check that the system is de-energized
- 4. Cover other energized parts of the system

IMPORTANT HINT: Before you start with the installation and the initial setup of the device, you have to read this document and the attached installation guide and the actual manual for the device very carefully. You have to follow all the herein given information very accurate!

- Only authorized and qualified personnel are allowed to install and setup the device!
- □ The connection of the device must be done in de-energized state!
- Do not perform any electrical work while the device is connected to power!
- Disable and secure the system against any automatic restart or power on procedure!
- □ The device must be operated with the defined voltage level!
- Supply voltage jitters must not exceed the technical specifications and tolerances given in the technical manuals for the product. If you do not obey this issue, the proper performance of the device cannot be guaranteed. This can lead to fail functions of the device and in worst case to a complete breakdown of the device!
- □ You have to obey the current EMC regulations for wiring!
- □ All signal, control and supply voltage cables must be wired in a way, that no inductive or capacitive interference or any other severe electrical noise disturbance may interfere with the device. Wrong wiring can lead to a malfunction of the device!
- □ For signal or sensor cables you have to use shielded cables, to avoid damages through induction!
- □ You have to obey and to apply the current safety regulations given by the ÖVE, VDE, the countries, their control authorities, the TÜV or the local energy supply company!
- □ Obey country-specific laws and standards!
- □ The device must be used for the intended purpose of the manufacturer!
- No warranties or liabilities will be accepted for defects and damages resulting from improper or incorrect usage of the device!
- Subsequent damages, which results from faults of this device, are excluded from warranty and liability!
- □ Only the technical data, wiring diagrams and operation instructions, which are part to the product shipment are valid!

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- □ The information on our homepage, in our datasheets, in our manuals, in our catalogues or published by our partners can deviate from the product documentation and is not necessarily always actual, due to constant improvement of our products for technical progress!
- □ In case of modification of our devices made by the user, all warranty and liability claims are lost!
- □ The installation has to fulfill the technical conditions and specifications (e.g. operating temperatures, power supply, ...) given in the devices documentation!
- Operating our device close to equipment, which do not comply with EMC directives, can influence the functionality of our device, leading to malfunction or in worst case to a breakdown of our device!
- Our devices must not be used for monitoring applications, which solely serve the purpose of protecting persons against hazards or injury, or as an emergency stop switch for systems or machinery, or for any other similar safety-relevant purposes!
- □ Dimensions of the enclosures or enclosures accessories may show slight tolerances on the specifications provided in these instructions!
- □ Modifications of this documentation is not allowed!
- □ In case of a complaint, only complete devices returned in original packing will be accepted!

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## **4** General Information

The RESI-MBUSxLVL-ETH gateways are designed for integrating MBUS smart meters via Ethernet interface into an own building automation or industrial solution with a host system, which is able to interpret the MBUS standard protocol.

The converters offer the following features:

- RESI-MBUSxLVL-ETH: Serial communication with MBUS smart meters with 300-57600baud, even parity, 1 stop bit.
- Different versions of gateways for individual situations:
  - RESI-MBUS24LVL-ETH: Gateway for maximum of 24 MBUS meters
  - RESI-MBUS48LVL-ETH: Gateway for maximum of 48 MBUS meters
  - RESI-MBUS64LVL-ETH: Gateway for maximum of 64 MBUS meters
- Transparent mode: The incoming data on the socket is directly written to the serial line. The received serial characters are directly written to the socket
- MODBUS/TCP to MODBUS/RTU conversion: The incoming MODBUS/TCP frame is internally converted to a MODBUS/RTU frame and send to the serial line to the corresponding MODBUS/RTU slave device. The serial answer of the MODBUS/RTU slave device is received by the gateway, converted into a MODBUS/TCP frame and send to the socket.
- Gateway configuration via special MODBUS/RTU or MODBUS/TCP frames or special ASCII ocmmands.
- IP configuration via DIP switches and web page
- Serial interface is electrically isolated from the Ethernet interface
- Ethernet connection via 10/100Mbit Ethernet interface
- 12-48V= power supply

Туре	Description	Voltage	Power	Weight
RESI-MBUS24LVL-ETH	Ethernet gateway MBUS-SOCKET, bidirectional transport of plain socket data to MBUS interface with automatic direction control, maximum of 24 meters, DIP switch for settings	12-48 V=	<8.4W	90 g
RESI-MBUS48LVL-ETH	Ethernet gateway MBUS-SOCKET, bidirectional transport of plain socket data to MBUS interface with automatic direction control, maximum of 48 meters, DIP switch for settings	12-48 V=	<8.4W	90 g
RESI-MBUS64LVL-ETH	Ethernet gateway MBUS-SOCKET, bidirectional transport of plain socket data to MBUS interface with automatic direction control, maximum of 64 meters, DIP switch for settings	12-48 V=	<8.4W	90 g

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#### 4.1 Technical data for RESI-MBUSxLVL-ETH

Technical Data	RESI-MBUSxLVL-ETH		
Power supply			
Supply voltage	12-48 V= +/-10%	Storage temperature	-2085 °C
Power LED	Yes	Operating	060°C
		Temperature	
Power consumption	<8.4W	Humidity	2590 % rH non-
			condensing
		Protection Class	IP20 (EN 60529)
Serial interface		Dimensions LxWxH	35.8mm x 90mm x 58mm
Protocol	transparent	Weight	90g
Туре	MBUS	Mounting	on DIN EN50022 rail
Baud rates	300,600,900,1200,2400,4800,		
	9600,19200,38400,57600		
Parity	even		
Data bits	8 bits	Factory settings	
Stop bits	1 stop bit	Modbus address for	254
		configuration	
Cable Connection	Via clamps	IP address	RESI-MBUS24LVL-ETH
			192.168.0.215
			RESI-MBUS48LVL-ETH
			192.168.0.216
LED indiactor	Voo	atandard apokat	192.168.0.217
	Voc	standard usor name	DESI
DIP Switches	Tes	standard password	
		MBLIS sorial speed	2400bd
Galvanic insulation to	Ves	MBUS data format	8 data hits 1 stop hit
serial interface	103	WD00 data format	
		MBUS parity	even parity
Clamps		in 200 painty	
Clamp wire cross section	Max. 1.5 mm²		
Tightening torgue	Max. 0.5Nm	CE conformity	Yes

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## **5 Mounting and Connections**

## 5.1 Assembling

Our RESI-MBUSxLVL-ETH converters are designed for mounting on a 35mm DIN-EN50022 rail. Please note, we use symbol pictures in our manual.

At first, put the converter with the top side on the DIN rail (1).



Then open the clamp lever on the bottom side with a screw driver (2) and press the device on the DIN rail (3). Release the clamp lever. The module is now placed correctly on the DIN rail.



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To dismount the module from the DIN rail first open the clamp lever with a screwdriver on the bottom side (4). Hold the clamp lever opened while you lift the module from the DIN rail (5). Then remove the converter from the bar with while pulling it on the top side.



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#### 5.3 DIP switch settings and terminals of RESI-MBUSxLVL-ETH



Illustration: DIP Switch settings for the RESI-MBUSxLVL-ETH converters

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DIP Switch	Description			
Function	=ON: while restarting the module, the module switches to STATIC IP			
FUNC1	configuration with the standard IP settings:			
	P address: 192.168.0.215 (RESI-MBUS24LVL-ETH)			
	192.168.0.216 (RESI-MBUS48LVL-ETH)			
	192.168.0.217 (RESI-MBUS64LVL-ETH)			
	IP mask: 255.255.255.0			
	Gateway: 192.168.0.1			
	=OFF: the current configured IP settings are used			
Function	=ON: while restarting the module, the module switches to DHCP IP			
FUNC2	configuration.			
	=OFF: the current configured IP settings are used			
Mode	Selects a operation mode for factory reset:			
MODE	=OFF: While factory reset, the unit is configured to transparent socket			
	mode			
	=ON: While factory reset, the unit is configured to MODBUS/TCP to			
	MODBUS/RTU conversion mode			
Factory config	=ON: while restarting the module, the module restores the factory			
CFG	defaults for the system. Wait for approx. 30 seconds until the			
	STATE+CFG LED flashes very fast. Then reset the DIP switch. The			
	module will restart automatically and is ready for operation.			
	=OFF: Normal start of module			
HINT	After changing the DIP switches the converter reboots immediately,			
	so no power off or on is necessary. After reboot all the LEDs are on			
	for half a second to signal the power on sequence.			

Table: Description of DIP Switch functions RESI-MBUSxLVL-ETH

CLAMPS/LEDS	RESI-MBUSxLVL-ETH			
L+	Power supply			
M-	L+: 12-48Vdc			
	M-: Ground			
ETHERNET	Ethernet connection for transparent or			
	MODBUS/TCP or internet access.			
	10M/100Mbit adaptive, support AUTO–MDIX			
MB+	Interface to serial MBUS line			
MB-	MB+: MBUS signal #1			
	MB-: MBUS signal #2			
STATE	State-LED, flashes, when converter is ok			
	flash rhythm is 1s in normal mode and 0,1s in			
	configuration mode			
MBUS	Whenever there is a data flow on the serial			
	MBUS line, this LED flashes for a short time			
HOST	HOST-LED, flashes, when host sends/receive			
	data over the socket			
CFG	Factory config LED: In normal mode this LED			
	flashes in the same way like the STATE LED. If			
	CFG switch=ON while rebooting, the STATE			
	LED is always ON and this LED flashes slowly.			
	When this process is finished, both LED blink			
	very fast.			
LINK	This LED is on if Ethernet port is connected			
	correctly to network			
DATA	The LED shows the data flow on the Ethernet			
1	port			

Table: Description of connectors and LEDs of RESI-MBUSxLVL-ETH

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Illustration: wiring diagram for RESI-MBUSxLVL-ETH converter

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## 6 RESI-MBUSxLVL-ETH operation modes

The gateway supports basically two different operation modes:

 TRANSPARENT MODE: Bidirectional transparent gateway between Ethernet socket data and serial line. All incoming data on the Ethernet socket is directly forwarded to the serial line. All received data from the serial line is directly forwarded to the Ethernet socket.



Illustration: TRANSPARENT MODE on RESI-MBUSxLVL-ETH converters

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## 7 RESI-MBUSxLVL-ETH web configuration

All our RESI-MBUSxLVL-ETH gateways have a build in web server to configure basic access to the Ethernet interface. Therefore open an Internet explorer and type in the configured IP address of the selected gateway.

The standard configuration for STATIC IP (See DIP switch selection of RESI-MBUSxLVL-ETH gateways) is:

RESI-MBUS24LVL-ETH: IP: 192.168.0.215 Mask: 255.255.255.0 Gateway: 192.168.0.1 Socket: 1024 RESI-MBUS48LVL-ETH: IP: 192.168.0.216 Mask: 255.255.255.0 Gateway: 192.168.0.1 Socket: 1024 RESI-MBUS64LVL-ETH: IP: 192.168.0.217 Mask: 255.255.255.0 Gateway: 192.168.0.1 Socket: 1024

The standard user name is RESI and the standard password is also RESI. You should see the following page:

MBUS64LVL-ETH	× +					×
← → ⊂ ☆ 0	<b>⅔ ⊷</b> 192.168.0.217	⊌ ☆	<b>Q</b> Suchen	III\ 🗊	۵ 🔊	Ξ
V3015				<u>Visit RESI v</u>	vebpage	
						i
	MBUS64LVL-					
	MBUS64LVL-	-EIH				
Current Status	Cu	rrent settings		h	ielp	
Local IP Config	Module Name: MBUS64LV	L-ETH		• Run tir	ne:	
TTL1	Firmware Revision: 3015	17		the mir	e means nutes	
Web to Serial	MAC Address: 192.106.0.2	2-d0-58		reboot	itest	
Misc Config	Run Time: Oday: Obou	r: Omin		• TX/RX	Count:	
Reboot	TX Count(ETH) : 0/ bytes			us a ca	lculation	
	RX Count(ETH) : 0/ bytes			we have	ve been d or send	
	Conn Status(ETH)A: LISTEN				a or sena.	
	Conn Status(ETH)B: IDLE					
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## 7.1 HOWTO setup IP address

Choose page "Local IP Config". Use the following mask to edit the IP settings:

MBUS64LVL-ETH	×						
)→ C' û (	) 🔏 🗝 192.168.0.217	🚥 🗵 😭 🔍 Suchen	III\ 🗉 💐 👼 😑				
V3015			<u>Visit RESI webpage</u>				
RESI MBUS64LVL-ETH MBUS64LVL-ETH							
Current Status	Cu	irrent settings	help				
Local IP Config	Static IP ▼ IP Type: for RESI-xxx-ETH select or STATIC for manual co	DHCP for automatic IP adressing Infiguration of the IP settings	• IP type: StaticIP or DHCP				
Web to Serial	Static IP: 192 · 168 · 0 for RESI-xxx-ETH enter y	· 217 your desired module IP adress here	• StaticIP Module's static ip				
Misc Config	Submask: 255 · 255 · 255 for RESI-xxx-ETH enter y	• 0 your desired Subnet mask here	<ul> <li>Submask usually 255.255.255.0</li> </ul>				
	1 - 192 168 0	· 1	Gateway				
Reboot	Gateway: 192 100 100 for RESI-xxx-ETH enter y	your desired gateway IP address here	Usually router's				

- IP type: Select between STATIC IP to use a own static IP or DHCP mode for automatic assignment of IP address
- Static IP: Select your desired IP address in IPv4 format
- Submask: Define you desired subnet mask in IPv4 format
- Gateway: Define your desired gateway IP address in IPv4 format
- DNS Server: Define your desired DNS Server IP address in IPv4 format

Click on save to store your data but don't forget to reboot the device, so that the new IP settings are effective. If you have problems, set the CFG DIP switch to ON and reboot the device. Wait for more than 30 seconds. The gateway will do a factory reset to the standard IP settings defined above. Don't forget to put the DIP switch to OFF position after successful factory reset.

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## 7.2 HOWTO change socket number

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HINT: Don't change the TTL communication parameters (eg Baudrate,...). You can lose the connection to the gateway!

- Work mode: Here you can select TCP Server/none if you want to communicate in transparent mode. All the incoming data on the socket is directly outputted to the serial line. If you want to use the internal MODBUS/TCP to MODBUS/RTU converter, you have to select TCP server/MODBUS TCP. If you select TCP Server/None, you can communicate also with MODBUS/RTU protocol over Ethernet.
- **Socket number:** Here you can select your desired socket number, you want to use for the Ethernet connection. Default for our converters is 1024, for MODBUS/TCP is 502

Please let the rest of the parameters unchanged. They are for expert usage only!

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## 7.3 HOWTO change user name and password

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If you select the page Misc config you will see the current configured username and password. Also you will see the current module name.

MBUS64LVL-ETH	× +		
$\rightarrow$ C' $\textcircled{0}$	<b>‰ ⊷•</b> 192.168.0.217	🚥 🗵 😭 🔍 Suchen	III\ 🗉 🔹 🗟 🗏
V3015			<u>Visit RESI webpage</u>
11ES	MBUS64LVL-E	TH	
	MBUS64LVL-E	ГН	
Current Status	Additiona	al settings	help
ocal IP Config	Module Name:	MBUS64LVL-ETH for RESI-xxx-ETH enter your own module	• module name
TL1	Websocket Port :	6432 for RESTANCE FTH default is 6432	char • Web port
1isc Config	Webserver Port:	80 for RESI-xxx-ETH default is 80	default 80 • ID and ID type
eboot	MAC Address:	a6-4c-5e-e3-d0-a8	we could use it for D2D
	Username:	RESI for RESI-xxx-ETH default is RESI	<ul> <li>Mac address user could modify this MAC address</li> </ul>
	Password:	RESI for RESI-xxx-ETH default is RESI	Buffer data
	Buffer Data Before Connected:	for RESI-xxx-ETH always OFF	checked, buffer data before tcp
	Reset Timeout:	3600 ( 60~65535 ) s for RESI-xxx-ETH default is 3600s	connection established
	Save	Cancel	<ul> <li>reset timeout default 0, 0-60 mean no timeout, &gt;60 mean when there is no data received during this time, the device will restart</li> </ul>

- **Module name**: Here you can enter a new module name. It's for better identification if you have more than one gateway in your network.
- **Username:** Here you can enter a new user name for accessing the web configuration.
- **Password**: here you can enter a new password for accessing the web configuration.

Don't forget to save the new settings with the button SAVE below! Please let the rest of the parameters unchanged. They are for expert usage only!

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### 7.4 HOWTO restart the module via Ethernet

First select page Reboot. Then select button Restart Module to perform a software reboot.

	MBUS64LVL-ETH	× +		
¢	)→ ୯ ଜ 🛛	<b>‰ ⊷</b> 192.168.0.217	🚥 🖂 🏠 🔍 Suchen	III\ 🗉 🔹 🗟 🗏
	V3015			<u>Visit RESI webpage</u>
	RE	MBUS64LVL- MBUS64LVL-	eth eth	
	Current Status	Rel	boot/Reset	help
	Local IP Config	Restart Module	Restart Module	Rehout:
	Local IP Config	Restart Module	Restart Module	• <b>Reboot:</b> Click to make your config take
	Local IP Config TTL1 Web to Serial	Restart Module	Restart Module	• <b>Reboot:</b> Click to make your config take effect
	Local IP Config TTL1 Web to Serial Misc Config	Restart Module	Restart Module	• <b>Reboot:</b> Click to make your config take effect
	Local IP Config TTL1 Web to Serial Misc Config Reboot	Restart Module	Restart Module	• Reboot: Click to make your config take effect

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## 8 HOWTO configure the serial MBUS interface

After you have successfully changed the IP parameters via Web page, you can configure the serial MBUS line parameters with this steps.

There are two ways to do so:

- 1. Use the MODBUS/RTU or MODBUS/TCP protocol to setup the serial MBUS parameters
- 2. Use ASCII commands on the socket to configure the serial MBUS parameters

## 8.1 ASCII commands for configuration

The following table show the ASCII commands for setup of the serial MBUS line. Please note, that there must be at least 2s pause on the serial line to activate an ASCII command. Send this ASCII string over the socket to the gateway and wait for the answer. Socket must be in transparent mode.

Direction	ASCII command
Host	#RESIVERSION <sub>CR</sub>
	#RESIVER <sub>CR</sub>
Answer	#RESIVERSION: <versionhi>.<versionlo><sub>CR</sub></versionlo></versionhi>
	Returns the version number of the module
	VersionHi: Version number high (1255)
	VersionLo: Version number low (1255)
Host	#RESITYPE <sub>CR</sub>
	#RESITYP <sub>CR</sub>
Answer	#RESITYPE:RESI-MBUS24LVL-ASCII <sub>CR</sub>
	#RESITYPE:RESI-MBUS48LVL-ASCII <sub>CR</sub>
	#RESITYPE:RESI-MBUS64LVL-ASCII <sub>CR</sub>
	Returns the current type of the module
Heat	
HUSI	
Answer	#RESIBAUD: <baudrate> 8 F 1cp</baudrate>
	Returns the current baud rate of the serial MBUS line
	BAUDRATE: 300.600.900.1200.2400.4800.9600.19200.38400.57600
	8 stands for 8 data bits
	E stands for even parity
	1 stands for one stop bit
Host	#RESIADDRESS <sub>CR</sub>
	#RESIADR <sub>CR</sub>
Answer	#RESIADDRESS: <address><sub>CR</sub></address>
	Returns the current UnitID for configuration, usually 254
	ADDRESS: valid address between 0 and 255
l la at	
HOST	#RESIPROTOCOLCR #RESIPROTOCR
Answer	#RESIPROTO: <protocol><sub>CR</sub></protocol>
	Returns the current protocol for future use
	PROTOCOL: valid protocol type between 0 and 255

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Weiterg wertung nicht sonder

Direction	ASCII command
Host	#RESISETBAUD: <baudrate><sub>CR</sub></baudrate>
	#RESISB: <baudrate>CR</baudrate>
Answer	#RESIOK <sub>CR</sub>
	Sets a new baud rate for the serial MBUS line.
	BAUDRATE: 300,600,900,1200,2400,4800,9600,19200,38400,57600
	HINT: The new settings are valid after a reboot of the gateway
Host	#RESISETADDRESS: <address>CR</address>
	#RESISADR: <address>CR</address>
Answer	#RESIOK <sub>CR</sub>
	Set a new address for MODBUS configuration, usually 254
	ADDRESS: valid address between 0 and 255
	HINT: The new settings are valid after a reboot of the gateway
Host	#RESISETPROTOCOL: <protocol><sub>CR</sub> #RESISPROTO:<protocol><sub>CR</sub></protocol></protocol>
Answer	#RESIOK <sub>CR</sub>
	Set a new protocol for future use
	PROTOCOL: valid protocol type between 0 and 255
	HINT: The new settings are valid after a reboot of the gateway
Host	#RESIRESET <sub>CR</sub> #RESIRST <sub>CR</sub>
Answer	none
	Performs a module reset
Host	#RESIFACTORYRESET <sub>CR</sub> #RESIFRST <sub>CR</sub>
Answor	none

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### 8.2 MODBUS holding register table for configuration

The following table show the registers for setup of the serial MBUS line.

The module holds internally a list of 16 bit wide holding register. Those registers can be read by the host with the function READ HOLDING REGISTER (function code: 3). If the register can also be modified by the host, the host can use the functions PRESET SINGLE REGISTER (function code: 6).

The MODBUS convention defines 65535 possible holding register with the notation 4x00001 to 4x65536. Please refer the software MODBUS POLL as a sample for this notation. Internally in the MODBUS/RTU frames an index notation is used, which starts with 0 and ends with 65535. So we decided to note in the following document a register with: 4x00100 for the holding register 100, and in addition also the real index of the protocol index 99 with the notation I:99. Also we have added the hexadecimal number of the real index with H:0xNNNN.

HINT: Standard unit ID for internal configuration is 254. You can change this unit ID with a special holding register!

Register	Description	
4x65521	If the host writes the value 1 (0x0001) to this register, the module executes a soft	
I:65520	reset (reboot).	
H:0xFFF0		
R/W Reading this register will always return 0.		
RESET SYSTEM		
4x65522	With this register you can select various standard configurations for the serial	
I:65521	MBUS line:	
H:0xFFF1	Reading this register will always return 0.	
R/W		
STANDARD	Write the following value to select the serial MBUS configuration you want to use.	
CONFIG	The Unit ID for configuration is always set to 254 and the pause time before	
	entering the configuration mode is set to 2000ms.	
	10: 300bd, even parity, 8 data bits, 1 stop bit	
	11: 600bd, even parity, 8 data bits, 1 stop bit	
	12: 900bd, even parity, 8 data bits, 1 stop bit	
	13: 1200bd, even parity, 8 data bits, 1 stop bit	
	14: 2400bd, even parity, 8 data bits, 1 stop bit	
	15: 4800bd, even parity, 8 data bits, 1 stop bit	
	16: 9600bd, even parity, 8 data bits, 1 stop bit	
	17: 19200bd, even parity, 8 data bits, 1 stop bit	
	18: 38400bd, even parity, 8 data bits, 1 stop bit	
	19: 57600bd, even parity, 8 data bits, 1 stop bit	
	HINT: You have to perform a reset to activate the new serial configuration!	

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Pogistor	Description		
Av65522	While reading, the return value defines the type of the module:		
4x00020	write reading, the return value defines the type of the module:		
	48: RESI-MBUS48LVL-ETH		
MBUSXLVL-ETH	64: RESI-MBUS64LVL-ETH		
4x65524	While reading, the return value defines the current software version:		
1:65523			
H:0xFFF3	0xMMNN -> e.g. 0x100 means version 1.00		
R/O			
SOFTWARE			
VERSION			
4x65525	Read: The current configured baud rate for the serial line		
1:65524	Write: In configuration mode: define the new baud rate for the serial line.		
H:0xFFF4			
R/W	The following values are accepted:		
BAUD RATE			
	3: 300bd 6: 600bd 9: 900bd 12: 1200bd		
	24: 2400bd 48:4800bd 96: 9600bd 192: 19200bd		
	384: 38400bd 576: 57600bd		
	HINT: You have to perform a reset to activate the new serial configuration!		
4x65526	Read: The current configured parity for the serial line		
1:65525	Write: In configuration mode: define the new parity for the serial line.		
H:0xFFF5			
R/W	The following values are accepted:		
PARITY	1: even parity		
	HINT: You have to perform a reset to activate the new serial configuration!		
4x65527	Read: The current configured data bits for the serial line		
1:65526	Write: In configuration mode: define the new data bits for the serial line.		
H:0xFFF6			
R/W	The following values are accepted:		
DATA BITS	8: 8 data bits		
_			
	HINT: You have to perform a reset to activate the new serial configuration!		
4x65528	Read: The current configured stop bits for the serial line		
1:65527	Write: In configuration mode: define the new stop bits for the serial line.		
H:0xFFF7	5		
R/W	The following values are accepted:		
STOP BITS	1: 1 stop bit		
_			
	HINT: You have to perform a reset to activate the new serial configuration!		
4x65529	Read: The current configured protocol for the serial line		
1:65528	Write: In configuration mode: define the new protocol for the serial line		
H:0xFFF8			
R/W	The following values are accepted:		
PROTOCOL	0.65535 (0x0000-0xFFFF)		
	For future applications reserved		
	HINT: You have to perform a reset to activate the new serial configuration!		

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Register	Description	
4x65530	Read: The current configured unit id for the configuration mode	
I:65529	Write: In configuration mode: define the new unit id for the configuration mode.	
H:0xFFF9		
R/W	Standard unit ID for configuration is 254. You can change this unit ID, if you have	
CONFIG	conflicts with connected Modbus devices on the serial line.	
UNIT ID		
	Allowed values 0-255 (0x0000-0x00FF)	
	HINT: You have to perform a reset to activate the new serial configuration!	
4x65531	Read: The current configured pause in ms for the configuration mode	
1:65530	Write: In configuration mode: define the new pause time in ms for entering the	
H:0xFFFA	configuration mode.	
R/W		
CONFIG	Standard pause time for configuration is 2000ms (2 seconds).	
PAUSE		
	Allowed values 0-65535 (0x0000-0xFFFF)	
	HINT: You have to perform a reset to activate the new serial configuration!	
4x65532-35	Reserved for future use	
1:65531-34		
H·0xFFFB-0xFFFF		
R/W		
RESERVED		
4x65536	Read: The current status for the configuration mode:	
1:65535	=0: normal mode is active	
H:0xFFFF	=1: configuration mode is active	
R/W		
ENTER CONFIG	Write: write the magic number 21321 (0x5349) to this register to activate the	
MODE	configuration mode.	
	Write the value 0 to deactivate the configuration mode.	
	The STATUS LED will flash fast to indicate that the configuration mode is	
	activated. In normal mode, the STATE LED flashes with a period of 1 second.	
	HIN I: Only in the configuration mode, you can write new parameters to the	
	configuration register. Don't forget to reset the converter after configuration	

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#### 8.3 Initial step: Select transparent or MODBUS/RTU over Ethernet mode

A gateway can be switched very fast to one of the following states:

- 1. Deactivate DIP switch 3: MODE
- 2. Activate DIP switch 4: CFG
- 3. Wait for approx.. 30s. The gateway will flash very fast
- 4. Deactivate all DIP switches

Now you have done a factory reset to the IP standard settings and you have selected transparent mode. To configure the gateway use the software MODBUS POLL with the following parameters:

월 Modbus Poll	
File Connection View Help	
Соппесtion Setup	
Connection	ОК
Modbus RTU/ASCII Over TCP/IP -	
Serial Settings	Cancel
COM4 -	Mode
57600 Baud 👻	● RTU  ◎ ASCII
8 Data bits 👻	Response Timeout
None Parity 👻	Delay Between Polls
1 Stop Bit	100 [ms]
Remote Modbus Server IP Address or Node Name	
192.168.0.217	-
Server Port Connect Timeout	● IPv4
1024 3000 [ms]	© IPv6
For Help, press F1. [192.168.0.217]:	1024 .d

Then select the function Setup/Read-Write Definition.. and configure the shown parameters. If successful you should see the following values:

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Mbpo           Tx = 7: E           0           1           2           3           4           5           6           7           8           9	Alias	254: F = 03: S 65520 0 0 64 4096 24 1 8 1 0 254	R = 5000ms	65530 2000 0 0 0 0	Read/Write Definition       Image: Stave ID: 254       OK         Function:       03 Read Holding Registers (4x)       Cancel         Address:       65520       Protocol address. E.g. 40011 -> 10         Ouantity:       16         Scan Rate:       5000       [ms]         Disable       Read/Write Disabled       Disable         Disable on error       Read/Write Once         View       Rows       10       20       50       100       Fit to Quantity         Hide Alias Columns       PLC Addresses (Base 1)       Address in Cell       Enron/Daniel Mode

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#### 8.4 Initial step: Select MODBUS/TCP to MODBUS/RTU gateway mode

A gateway can be switched very fast to one of the following states:

- 5. Activate DIP switch 3: MODE
- 6. Activate DIP switch 4: CFG
- 7. Wait for approx.. 30s. The gateway will flash very fast
- 8. Deactivate all DIP switches

Now you have done a factory reset to the IP standard settings and you have selected MODBUS/TCP to MODBUS/RTU gateway mode. To configure the gateway use MODBUS POLL with the following parameters:

웹 Modbus Poll				
File Connection View Help				
D 🖻 🖬 🚳   X   🗆   🗒 🏲	Connection Setup		8	
	Connection Modbus TCP/IP	•	OK	
	COM4	•	Mode	
	8 Data bits -		Response Timeout 1000 [ms]	
	1 Stop Bit +	Advanced	Delay Between Polls 100 [ms]	
	Remote Modbus Server IP Address or Node Nam	е		
	192.168.0.217 Server Port	Connect Timeout	• • IPv4	
	1024	3000 [ms]	© IP∨6	
For Help, press F1.			[192.168.0.217]: 1024	

Then select the function Setup/Read-Write Definition.. and configure the following parameters. If successful you should see the following values:

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Modbus Poll - M ile Edit Conne	1bpoll3 ction Setup I	unctions Displa	av View Wind	low Help			
0 🖻 🖬 🎒	×∎₿	]	15 16 17 22	2 23 TC 🗵	<b>? №</b>		
1	1 1						
					Read/Write Defi	inition	X
📴 Mbp	oll3				Slave ID:	254	
Tx = 19	3: Err = 1: ID =	: 254: F = 03: :	SR = 500ms				
	41	(5500		(55.20	Function:	03 Read Holding Registers	(4x) 🔻 Cancel
	Alias	00020	Alias	2000	Address:	65520 Protocol addre	ass E a 40011->10
1		0		2000	Address.		555. E.g. 10011 7 10
2		64		0	Quantity:	16	
3		4096		0	Seen Deter	500 [ms]	Applu
4		96		0	Disable	[iiis]	Арру
5		1		0	Disable	Write Dischlad	
0		8			Reau/	vvnie Disabled	Read (Write Onco
8		0			Disable	e on error	riedu/ write Orice
9		254			View		
		· · · · · ·			Rows		
					● 10	◎ 20 ◎ 50 ◎ 100	C Fit to Quantity
ļ.					🗖 Hide A	lias Columns 📃 PL	.C Addresses (Base 1)
					Addres	s in Cell 📃 Er	nron/Daniel Mode
Help, press F1.						[192,168,0,217]: 10	024

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#### 8.5 HOWTO change gateway configuration with ASCII commands

- Step 1: First of all, there must be at least 2 seconds silence on the socket (no data transfer), before • you can use an ASCII command for setting some parameters. If you have changed the parameter CONFIG PAUSE you have to wait at least you configured pause time in ms.
- Step 2: Check if your gateway is in transparent mode: Work mode must be NONE. If not change the work mode with the Webpage or set DIP switch 3 MODE to OFF and DIP Switch 4 CFG to ON, wait for approx.. 30s until the Config-LED flashes very fast, the reset DIP Switch 4 to OFF.



		Registry Type:	None for RESI-MBUS×LV
		Socket B	Parameters
		Work Mode:	NONE - for RESI-MBUS×LV
		(	Save Cancel
	Copyright © 2009 - 2	2020 · by RESI Informatik & Automatio	on GmbH and DI H

**RESI-MBUSxLVL-ETH Manual** Title:

The correct IP p	arameters.	
Category:		
Session	Basic options for your PuTTY session	
Logging	Specify the destination you want to connect to	
E Terminal	Host Name (or IP address) Port	
Keyboard	192.168.0.217 1024	
Features	Connection type:	
	Raw Telnet Rlogin SSH Serial	
- Appearance	l oad, save or delete a stored session	
Behaviour Translation	Saved Sessions	
Selection		
Colours	Default Settings	
E Connection	1EGYDC_RS485	
Data Provi	DALI TESTER	
- Telnet	KNX TESTER Delete	
Rlogin	KNXGW-ETH	
····· Serial	Close window on exit:	
	🔘 Always 💿 Never 💿 Only on clean exit	
About	Open Cancel	
Keyboard	Auto wap mode initially on	
Keyboard Bell Features Window Appearance	<ul> <li>Add wap inde initially on</li> <li>DEC Origin Mode initially on</li> <li>Implicit CR in every LF</li> <li>Implicit LF in every CR</li> <li>Use background colour to erase screen</li> </ul>	
Keyboard Bell Features Window Appearance Behaviour	<ul> <li>Add wap inde initially on</li> <li>DEC Origin Mode initially on</li> <li>Implicit CR in every LF</li> <li>Implicit LF in every CR</li> <li>Use background colour to erase screen</li> <li>Enable blinking text</li> </ul>	
<ul> <li>Keyboard</li> <li>Bell</li> <li>Features</li> <li>Window</li> <li>Appearance</li> <li>Behaviour</li> <li>Translation</li> <li>Calculation</li> </ul>	<ul> <li>Add wap inde initially on</li> <li>DEC Origin Mode initially on</li> <li>Implicit CR in every LF</li> <li>Implicit LF in every CR</li> <li>Use background colour to erase screen</li> <li>Enable blinking text</li> <li>Answerback to ^E:</li> </ul>	
Keyboard Bell Features Window Appearance Behaviour Translation Selection Colours	<ul> <li>Add wap inde initially on</li> <li>DEC Origin Mode initially on</li> <li>Implicit CR in every LF</li> <li>Implicit LF in every CR</li> <li>Use background colour to erase screen</li> <li>Enable blinking text</li> <li>Answerback to ^E:</li> <li>PuTTY</li> </ul>	
Keyboard Bell Features Window Appearance Behaviour Translation Selection Colours Connection	Add wap inde initially on     DEC Origin Mode initially on     Implicit CR in every LF     Implicit LF in every CR     Use background colour to erase screen     Enable blinking text     Answerback to ^E:     PuTTY     Line discipline options	
Keyboard Bell Features Vindow Appearance Behaviour Translation Selection Colours Connection Data	Add wap inde initially on     DEC Origin Mode initially on     Implicit CR in every LF     Implicit LF in every CR     Use background colour to erase screen     Enable blinking text     Answerback to ^E:     PuTTY     Line discipline options     Local echo:	
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<ul> <li>Keyboard</li> <li>Bell</li> <li>Features</li> <li>Window</li> <li>Appearance</li> <li>Behaviour</li> <li>Translation</li> <li>Selection</li> <li>Colours</li> <li>Connection</li> <li>Data</li> <li>Proxy</li> <li>Telnet</li> <li>Blogin</li> </ul>	Add wap inde initially on     DEC Origin Mode initially on     DEC Origin Mode initially on     Implicit CR in every LF     Implicit LF in every CR     Use background colour to erase screen     Enable blinking text     Answerback to ^E:     PuTTY     Line discipline options     Local echo:	
<ul> <li>Keyboard</li> <li>Bell</li> <li>Features</li> <li>Window</li> <li>Appearance</li> <li>Behaviour</li> <li>Translation</li> <li>Selection</li> <li>Collours</li> <li>Connection</li> <li>Data</li> <li>Proxy</li> <li>Telnet</li> <li>Rlogin</li> <li>SSH</li> </ul>	Add wap inde initially on DEC Origin Mode initially on Implicit CR in every LF Implicit LF in every CR Use background colour to erase screen Enable blinking text Answerback to ^E: PuTTY Line discipline options Local echo: Auto Force on Force off Local line editing: Auto Force on Force off	
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<ul> <li>Keyboard</li> <li>Bell</li> <li>Features</li> <li>Window</li> <li>Appearance</li> <li>Behaviour</li> <li>Translation</li> <li>Selection</li> <li>Colours</li> <li>Connection</li> <li>Data</li> <li>Proxy</li> <li>Telnet</li> <li>Rlogin</li> <li>SSH</li> <li>Serial</li> </ul>	Add wap inde initially on DEC Origin Mode initially on Implicit CR in every LF Implicit LF in every CR Use background colour to erase screen Enable blinking text Answerback to ^E: PuTTY Line discipline options Local echo: Image: Auto for the procession of the pr	
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<ul> <li>Keyboard</li> <li>Bell</li> <li>Features</li> <li>Window</li> <li>Appearance</li> <li>Behaviour</li> <li>Translation</li> <li>Selection</li> <li>Colours</li> <li>Ocnection</li> <li>Data</li> <li>Proxy</li> <li>Telnet</li> <li>Rlogin</li> <li>SSH</li> <li>Serial</li> </ul> About Step 5: Now cl Step 6: Now res	Add wap inde initially on DEC Origin Mode initially on Implicit CR in every LF Implicit LF in every CR Use background colour to erase screen Enable blinking text Answerback to ^E: PuTTY Line discipline options Local echo: Auto Force on Force off Local line editing: Auto Force on Force off Remote-controlled printing Printer to send ANSI printer output to: None (printing disabled) Open Cancel Cancel	in. f the gateway:
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<ul> <li>Keyboard         <ul> <li>Bell</li> <li>Features</li> </ul> </li> <li>Window         <ul> <li>Appearance</li> <li>Behaviour</li> <li>Translation</li> <li>Selection</li> <li>Colours</li> </ul> </li> <li>Connection         <ul> <li>Data</li> <li>Proxy</li> <li>Telnet</li> <li>Rlogin</li> <li>SSH</li> <li>Serial</li> </ul> </li> <li>About</li> </ul>	Add wap indefinitially on DEC Origin Mode initially on Implicit CR in every LF Implicit LF in every CR Use background colour to erase screen Enable blinking text Answerback to ^E: PuTTY Line discipline options Local echo: Auto Force on Force off Local line editing: Auto Force on Force off Remote-controlled printing Printer to send ANSI printer output to: None (printing disabled) Open Cancel ick OPEN to establish a socket connection equest the current type and parameters of	n. f the gateway:
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Keyboard Bell Features Window Appearance Behaviour Translation Selection Onnection Data Proxy Telnet Rlogin SSH SSH Serial About About About Step 5: Now cl Step 6: Now reference #RESITYPE #RESITYPE: RESI-MB #RESIBAUD #RESIBAUD #RESIBAUD	Add wap indefinitially on DEC Origin Mode initially on Implicit CR in every LF Implicit LF in every CR Use background colour to erase screen Enable blinking text Answerback to ^E: PuTTY Line discipline options Local echo: Auto Force on Force off Local line editing: Auto Force on Force off Remote-controlled printing Printer to send ANSI printer output to: None (printing disabled) Open Cancel Use 64LVL-ETH E, 1	on. f the gateway:
<ul> <li>Keyboard         <ul> <li>Bell</li> <li>Features</li> </ul> </li> <li>Window         <ul> <li>Appearance</li> <li>Behaviour</li> <li>Translation</li> <li>Selection</li> <li>Connection</li> <li>Data</li> <li>Proxy</li> <li>Telnet</li> <li>Rlogin</li> <li>SSH</li> <li>Serial</li> </ul> </li> <li>About</li> </ul> About Step 5: Now cl Step 6: Now restant and the second seco	Add wap inde initially on DEC Origin Mode initially on Implicit CR in every LF Implicit LF in every CR Use background colour to erase screen Enable blinking text Answerback to ^E: PuTTY Line discipline options Local echo: Auto Force on Force off Local line editing: Auto Force on Force off Remote-controlled printing Printer to send ANSI printer output to: None (printing disabled) Open Cancel US64LVL-ETH E, 1	on. f the gateway:
<ul> <li>Keyboard         <ul> <li>Bell</li> <li>Features</li> </ul> </li> <li>Window         <ul> <li>Appearance</li> <li>Behaviour</li> <li>Translation</li> <li>Selection</li> <li>Colours</li> </ul> </li> <li>Connection         <ul> <li>Data</li> <li>Proxy</li> <li>Telnet</li> <li>Rlogin</li> <li>SSH</li> <li>Serial</li> </ul> </li> <li>About</li> </ul> About Step 5: Now cl Step 6: Now ref #RESITYPE: RESI-MB #RESITYPE: RESI-MB #RESIBAUD #RESIBAUD #RESIADDRESS #RESIADDRESS: 6553	Add wap indefinitially on DEC Origin Mode initially on Implicit CR in every LF Implicit LF in every CR Use background colour to erase screen Enable blinking text Answerback to ^E: PuTTY Line discipline options Local echo: Auto Force on Force on Force off Local line editing: Auto Force on Force off Remote-controlled printing Printer to send ANSI printer output to: None (printing disabled)  Den Cancel Cancel Cancel CS64LVL-ETH E, 1	m. f the gateway:

Wettergabe sowie Vorvieltätigung dieset Unterlage. Vor wentung die Mittelung indes Inhals nicht gestiett, sowiet wentung aus Gricklich zugest. Ander handen handen aus nicht ausst Gricklich zugest. Auf er denhe vorheitelign in soei prichten zu Schradenka zugest. Auf er denhe vorheitelign in soei sondere für den Fall der Patenterelung der GM-Entragung

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• **Step 7**: Now we change the baud rate settings to 300 Baud for the MBUS settings and then we reboot the module to activate the new settings:



• **Step 8**: Now we reopen the socket with the putty (Use Duplicate session), because the socket was closed with the reset of the gateway and we check the parameters for the MBUS line with:



• Finished: Your gateway works with your new settings.

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## 8.6 HOWTO enter configuration mode

RESI®

- Step 1: First of all, there must be at least 2 seconds silence on the socket (no data transfer), before you can switch to configuration mode for changing serial parameter. If you have changed the parameter CONFIG PAUSE you have to wait at least you configured pause time in ms.
- Step 2: Write the magic number 21321 (0x5349) to the register 4x65536 I:65535 H:0xFFFF. As a result the content of the register will show the value 1 and the STATE LED flashes faster. You have entered the configuration mode successfully.

Image: Second	. 23
Image: Control of the second secon	
For Help, press F1. [192.168.0.198]: 1024	

- **Step 3**: Change now the register contents according to the register table for your purposes.
  - **Step 4**: Don't forget to reset the gateway either by shortly unplugging the power or by writing 1 to the RESET register. 4x65521 I:65520 H:0xFFF0 RESET SYSTEM

Write Single Register		<b>X</b>				
Slave ID:	254	Send				
Address:	65520	Cancel				
Value:	1					
Result N/A Close dialog on "Response ok"						
Use Function O 6: Write sing O 16: Write mul	gle register tiple registers					

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## 9 Using software MODBUS Doctor to configure

In this chapter we show the configuration with software MODBUS Doctor. You can download this free software under <a href="https://www.kscada.com/modbusdoctor.html">https://www.kscada.com/modbusdoctor.html</a>

When you start the software	you will see the following screen:
-----------------------------	------------------------------------

K Modbus Doctor v2.8		
Settings RTU	- COM1 : 19200,8,Even,One 💉 CONNECTION	EXIT
Slave n° 1 Register	0 Length 1 Type 3 Holding registers • Mode DECIMAL •	
READING	Register n°     Value       0     0         ERASE	
WRITING	MODBUS Doctor	?
Auto connect		
🔲 Cycle mode 🛛		
STOP CYCLE	$\langle \cdot \rangle$	
Swap bytes		
Swap words		
🔲 Unsigned		
Display mode		
16 bits word •	<b>K</b> SCADA	
	http://www.kscada.com/modbusdoctor	
Status :		

Now click on the drop down field RTU and select TCP/IP mode. The open the settings. The result will look like this:

Adresse IP         192.168.0.217           NumPort         1024           TimeOut         1000	ength 1 Type 3 Holding registers  Mode DECIMAL  Value SPY MODE ERASE
CLOSE Auto connect Cycle mode STOP CYCLE Swap bytes Swap words Unsigned Display mode 16 bits word	MODBUS Doctor ?
Status :	

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Enter the following data into the settings field:

- IP address of your gateway e.g. 192.168.0.217 ٠
- Socket for MODBUS/TCP communication e.g. 1024 •
- Timeout for polling e.g. 1000ms •

Then we set the correct register range to enter setup mode of the gateway:

- Slave ID 254 for setup of gateway •
- Register 65535 to enter configuration mode •
- Length to 1, only one register should be read out

#### Now open the web page of our gateway and select the page TTL1:

	MBUS64LV	L-ETH	
Current Status		Current settings	help
Local IP Config	Baud Rate:	for RESI-MBUSXLVL-ETH always 115200	<ul> <li>local port 1~65535, when</li> </ul>
Web to Serial	Data Size:	8 ▼ DIC for RESI-MBUS×LVL-ETH always 8 bit	TCP Client, set this to 0 means
Misc Config	Parity:	None  for RESI-MBUS×LVL-ETH always None	use random loca port
Reboot	Stop Bits:	1 ▼ bit for RESI-MBUS×LVL-ETH always 1	• remote port 1~65535
	Run Serial Mode:	RS232	<ul> <li>packet time/length</li> </ul>
	Flow Control:	NONE	default 0/0, means automatio
	UART Packet Time:	2 (0~255)ms	mechanism; you can modify it as
	UART Packet Length:	TOT RESI-MBUSXLVL-ETH should be 0 0 (0~1460)chars	none-zero value
	Sync Baudrate(RF2217 Similar):	tor RESI-MBUS×LVL-ETH should be 0	
	Enable Vart Heartbeat Packet:	tor RESI-MBUS×LVL-ETH always OFF	
	Socket A	for RESI-MBUS×LVL-ETH always OFF Parameters	
	Work Mode:	TCP Server  None for RESI-MBUSxLVL-ETH always TCPServer+Modbus TCP	
	Socket Number:	1024 23 (1~65535) for RESI-MBUSxLVL-ETH default is 502	
	PRINT:	for RESI-MBUSXLVL-FTH always OFF	
	ModbusTCP Poll:	Poll Timeout : 200 (200~9999) ms	
	Enable Net Heartbeat Packet:	TOT RESI-MBUSXLVL-ETH always OFF+200ms	
	Registry Type:	tor RESI-MBUS×LVL-ETH always OFF None   Location Connect With	
	Socket B	for RESI-MBUS×LVL-ETH always None Parameters	
	Work Mode:	NONE	
	[	Save	
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RESI®	)

Concentrate on the current mode of the gateway. Usually it is in transparent mode:

Socket A	Parameters				
Work Mode:	TCP Server	• N	lone	•	
WORK HOUS.	for RESI-MBUS	×LVL	-ETH always	тс	PServer+Modbus TCP
Socket Number:	1024 23	3	(1~655	635	i)
	for RESI-MBUS	XLVL	-ETH default	: is	502

In this mode the gateway simple sends all commands incoming from the socket to the serial line and sends all received bytes from the serial line to the socket.

To configure our gateway, we use MODBUS/RTU protocol. The software MODBUS Doctor supports on the TCP side only MODBUS/TCP protocol. So we have to activate the mode MODBUS/TCP to MODBUS/RTU conversion in our gateway. You can do this in two ways:

First way:

- 1. Set DIP switch 3 MODE to ON
- 2. Now our gateway will initialize all parameters
- 3. Wait until the gateway has rebooted
- 4. Now the gateway works in MODBUS/TCP to MODBUS/RTU conversion mode
- 5. Set DIP switch 3 MODE to OFF
- 6. Wait until the gateway has rebooted

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Second way: You can also change the behaviour with the web interface. Open the page TTL1 and select the following parameters:

	MBUS64	LVL-ET	т <b>э.</b> ТН	×	+		
$\overleftarrow{\leftarrow}$	ଟାଧ	â	0	🔏 192.168.0	0.217	🖂 🗘 🔍 Suchen	\ 🗉 🔹 🖃 😑
V301	5						Visit RESI webpage
		7		Им		/I_ETH	
			-)	M	BUS64LV	L-ETH	
Currer	nt Status	s				Current settings	help
Local I	P Confi	g			Baud Rate:	115200 bps for RESI-MBUS×LVL-ETH always 115200	• local port
TTL1					Data Size:	8 ▼ bit for RESI-MBUS×LVL-ETH always 8 bit	1~65535. when TCP Client, set this to 0 means
Web to Misc C	onfin				Parity:	None  T for RESI-MBUS×LVL-ETH always None	use random local port
Reboo	t				Stop Bits:	1 ▼ bit for RESI-MBUS×LVL-ETH always 1	• remote port 1~65535
					Run Serial Mode:	R5232  Tor RESI-MBUS×LVL-ETH always RS232	packet     time/length     default 8/8
					Flow Control:	NONE - for RESI-MBUSxLVL-ETH always None	means automatic packet
					UART Packet Time:	2 (0~255)ms for RESI-MBUS×LVL-ETH should be 0	mechanism; you can modify it as a none-zero value
				UΑ	RT Packet Length:	0 (0~1460)chars for RESI-MBUS×LVL-ETH should be 0	
			9	Sync Baudrat	e(RF2217 Similar):	for RESI-MBUS×LVL-ETH always OFF	
				Enable Vart	Heartbeat Packet:	for DEST-MBLICKLIN -ETH Shappy OFF	
					Socket A	Parameters	
					Work Mode:	TCP Server  ModbusTCP for RESI-MBUSXLVL-ETH always TCPServer+Modbus TCP	
					Socket Number:	1024 23 (1~65535) for RESI-MBUS×LVL-ETH default is 502	
					PRINT:	for RESI-MBUSxLVL-ETH always OFF	
					ModbusTCP Poll:	Poll Timeout : 200 (200~9999) ms for RESI-MBUSxLVL-ETH always OFF+200ms	
				Enable Net	Heartbeat Packet:	for RESI-MBUS×LVL-ETH always OFF	
					Registry Type:	None   Location Connect With   for RESI-MBUSxLVL-ETH always None	
					Socket B	Parameters	
					Work Mode:	for RESI-MBUSxLVL-ETH always NONE	
					(	Save Cancel	
	vial-t-2	2000	2000		formostil, o tratación		
Сору	ngnt ©	2009	-2020	- Uy RESI IM			WEDSILET WWW.KESI.CC
•						III	F

After you have changed the parameters, lick on save and then on "Restart Module" button in the web interface. Now you have activated the MODBUS/TCP to MODBUS/RTU conversion.

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The next step is to test the communication with the gateway via the MODBUS Doctor software. First lick on CONNECTION to establish a TCP/IP connection, then select the button READING to test the readout of register 65535. If everything is ok, you will see in the Status in the left bottom corner the hint Request OK. If you cannot connect or read values, you will see an error message here.

Modbus Doctor v2.8	- 192 168 0 217:1024 🔊 C	
ave n° 254 Register	65535 Length 1 Typ	e 3 Holding registers   Mode DECIMAL
READING	Register n°Value655350	SPY MODE ERASE
WRITING		MODBUS Doctor
Auto connect     Cycle mode		
STOP CYCLE		
Swap bytes		
Swap words		
Unsigned		
Display mode		
16 bits word -		http://www.kscada.com/modbusdoctor
Status : Request OK (1/	0	

In the next step enter the magic number 21321 into the field Value beside the Field 65535 and click on WRITING:

K Modbus Doctor v2.8							
Settings TCP/IP - 192.168.0.217:1024 💉 CONNECTION 💉 DISCONNECTION							
Slave n° 254 Register	65535 Lengt	th 1 Type	3 Holding registers   Mode DECIMAL	•			
READING	Register n° 65535	Value 21321	SPY MODE ERASE				
WRITING			MODBUS Doctor	?			

Then click on READING. You will see the following picture, if you are successful:

K Modbus Doctor v2.8								
Settings TCP/IP	Settings TCP/IP 192.168.0.217:1024 SCONNECTION DISCONNECTION							
Slave n° 254 Register	65535 Length 1 Type 3 H	lolding registers 👻 Mode DECIMAL	•					
READING	Register n°Value655351	SPY MODE ERASE						
WRITING		MODBUS Doctor	?					

The displayed 1 indicates, that you are in configuration mode. Now we change the field Register to I:65520 and the field Length to 16 and click on READING.

Be aware, that the software uses the protocol indexes starting with 0, not the MODBUS index of registers starting with 1!

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Modbus Doctor v2.8			
SETTINGS TCP/IF	> - 192.168.0.2	17:1024 💉 🤇	CONNECTION X DISCONNECTION
ve n° 254 Register	65520 Length	16 Ty	Type 3 Holding registers • Mode DECIMAL •
READING	Register n°	Value	
INEADINO	65520		
WRITING	65521	0	MODBLIS Doctor
	65522	64	?
Auto connect	65523	4096	
Cycle mode	65524	96	$\frown$
	65525	1	
STOP CYCLE	65526	8	
Swan hytee	65527	1	
Owap bytes	65528	0	ᢙᢅ᠋᠊ᠷᡀᢅᡵ᠋
Swap words	65529	254	
Unsigned	65530	2000	
Display mode	65531	0	
16 bits word 🔹	65532	0	
	65533	0	
	65534	0	
	65535	1	
			http://www.kscada.com/modbusdoctor

You will see all current selected parameters. In our example we want to connect to change the MBUS settings to 300bd.

Therefore we use the quick setup register 4x65522, I:65521 STANDARD CONFIG, and we want to write the value 10 into it. For that we do the following steps: We change Register to 65521 and Length to 1. Then we click on READING. The Value should be 0, After that we enter the new value 10 into the field Value and then we click on the WRITING button:

Modbus Doctor v2.8								
	SETTINGS TCP/IP 192.168.0.217:1024 SCONNECTION DISCONNECTION							
Slave n° 254 Register	65521 Length 1 Type 3	Holding registers   Mode DECIMAL	•					
READING	Register n°Value6552110	SPY MODE ERASE						
WRITING		MODBUS Doctor	?					

Then we change the field Register back to 65520 and the field Length to 16 and click on READING. We see the new settings:

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RESIR

ve n° 254 Register	P - 192.168.0. 65520 Lengt	217:1024 🔊 CO h 16 Type	NNECTION     DISCONNECTION       3 Holding registers     Mode
PEADING	Register n°	Value	
READING	65520	0	
WRITING	65521	0	MODBUS Doctor
	65522	64	?
Auto connect	65523	4096	
🗖 Cycle mode 🔝	65524	3	$\frown$
	65525	1	(
	65526	8	
Swap bytes	65527	1	
Swap words	65528	0	(`ℴᠮ℩ <b>ⅉ</b> ჾႢჷ
Unsigned	65529	254	
Dianlau mada	65530	2000	
16 bits word	65531	0	
	65532	0	
	65533	0	
	65534	0	
	65535	1	
			http://www.kscada.com/modbusdoctor

Now we have to reboot the gateway to leave the setup mode. Therefore we set the field Length to 1 and we write 1 into the register 65520 Value in the list and click on WRITING. The gateway will reboot.

Now the gateway works in MODBUS/TCP to MODBUS/RTU mode and will convert incoming MODBUS/TCP requests into MODBUS/RTU requests on the serial line.

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MBUS64LVL-ETH	H X	+					<u>×</u>
→ C' 🏠 🤇	0 🔏 192.168.	0.217	⊍ ☆	<b>Q</b> Suchen	\ ⊡	۵ 🔊	Ξ
/3015					<u>Visit RESI</u>	webpage	
- KE	5 M	BUS64LV	/L-ETH				
	M	BUS64LV	/L-ETH				
urrent Status			Current settings			help	
cal IP Config		Baud Rate:	115200 bps			_	
11		Bada Naco.	for RESI-MBUS×LVL-ETH always 11	15200	• local 1~65	p <b>ort</b> 535. when	
		Data Size:	8 ▼ DIC for RESI-MBUS×LVL-ETH always 8	bit	TCP C this to	lient, set ) O means	
eo to senal		Parity:			use ra port	andom local	
sc Config		Ctop Bita	1 → bit	one l	• remot	te port	
boot		Stop Bits.	for RESI-MBUS×LVL-ETH always 1		1~655	535 .+	
		Run Serial Mode:	For RESI-MBUS×LVL-ETH always R	5232	time/	length	
		Flow Control:	NONE -		mean:	it 0/0, s automatic	
			for RESI-MBUS×LVL-ETH always No	one	packe mecha	t anism; you	
		UART Packet Time:	for RESI-MBUS×LVL-ETH should be	≥ 0	can m none-	odify it as a zero value	
	UA	ART Packet Length:	0 (0~1460)chars	• •			
	Sync Baudrat	te(RE2217 Similar):		••			
			for RESI-MBUS×LVL-ETH always O	FF			
	Enable Uart	Heartbeat Packet:	for REST-MBLICKEDULETH Shape OF				
		Socket A	Parameters				
		Work Mode:	for RESI-MBUS×LVL-ETH always TO	CPServer+Modbus TCP			
		Socket Number:	1024 23 (1~6553)	5) 502			
		PRINT:					
			for RESI-MBUS×LVL-ETH always Of	FF			
		ModbusTCP Poll:	for RESI-MBUS×LVL-ETH always O	FF+200ms			
	Enable Net	Heartbeat Packet:	for RESI-MBUSXIVI -FTH always O	FF			
		Registry Type:	None   Location	Connect With 👻			
		Socket B	for RESI-MBUS×LVL-ETH always No Parameters	one			
		Work Mode	NONE -				
			for RESI-MBUS×LVL-ETH always NO	DNE			
			Save Cancel				
		formatik % Automati	on Grobh and DI HC SIGL MSS		website: w		

Now we have to change the mode of the gateway from MODBUS/TCP to Transparent. Therefore we open the

To set the transparent mode of the gateway you can also use the DIP switches.

Set the DIP switch 3 MODE to OFF and DIP switch 4 CFG to ON, wait for approx.. 30 seconds, and reset both switches. It's the same as if you change the parameters on the webpage.

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## **10 Specifications**

## 10.1 Dimensions RESI-MBUSxLVL-ETH



Illustration: dimension illustration in mm for RESI-MBUSxLVL-ETH

Dimensions				
Enclosure dimensions L x W x H (mm)	35.8 x 90 x 58			
Weight	90 g			
Colour	Grey RAL7035			
Material	PA - UL 94 V0			
Protection class	IP20 based on DIN 40050/EN 60529			

Table: Data of enclosure for RESI-MBUSxLVL-ETH

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