

Modbus/TCP, Modbus/RTU INTERFACE MANUAL

**ECO GATEWAYS UNTIL YEAR OF CONSTRUCTION 2023
WITHOUT WEBSERVER**

**ESERA STATION 200 V1 and V2
ECO 100 SENSOR GATEWAY PRO
1-WIRE GATEWAY10
1-WIRE GATEWAY 20**

V1.0 R1.2

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2. PRODUCT OVERVIEW ECO AND EC GATEWAYS

The ESERA EC and ECO gateways of the latest generation are divided into different series.

We offer the right device for different requirements and areas of application, such as private, commercial and industrial use.

The following is an overview of the ECO and EC gateways. Gateways WITHOUT WEBSERVER and ACCESS POINT will be discussed in this manual. In the following overview, the devices for this manual are marked in green.

For the gateways with web server and access point, use the manual version 2.0.

ECO GATEWAY WITH MAXI INTERFACE, MODBUS interface AND ACCESS POINT AND WEBSERVER NOT described in this manual.	EC and ECO GATEWAY STANDARD INTERFACE, WITHOUT WEBSERVER Described in this manual
<ul style="list-style-type: none"> • ECO 110 Sensor Gateway 1-Wire Interface • ECO 501 Pro, Sensor Gateway Modbus/TCP MQTT, with 1-Wire Interface • ECO 502 Pro, Sensor Gateway Modbus/RTU with 1-Wire Interface • ECO 503, IT/IoT Switch Gateway, Modbus/TCP, MQTT, 8-channel switching module 10/16A and dig. inputs • ECO 608 Pro, Security Sensor Gateway, Modbus/TCP, MQTT, with 1-Wire Interface, digital I/O • UMS 2206 Pro, Smart City environmental measurement system, wall mount, 8 environmental sensors, UPS, 1-Wire interface, digital I/O 	<ul style="list-style-type: none"> • 1-Wire Gateway 10, Smart Home Sensor Gateway, with 1-Wire Interface • 1-Wire Gateway 20, Smart Home Sensor Gateway, with 1-Wire Interface Relay + analog Out • ECO 100, Smart Building Sensor Gateway with 1-Wire Interface

3. MODBUS/TCP GENERAL

Modbus/TCP is a protocol for communication between devices in a network, based on the Modbus protocol and the TCP/IP protocol.

Modbus is a serial-based protocol that is widely used in industrial automation to transmit measurement data, control commands, and status messages.

It is also widely used in computer network technology and is used to connect devices in a network.

The Modbus/TCP protocol allows to connect controllers and gateways in Ethernet networks by embedding Modbus data packets into TCP/IP data packets. It uses the standard port number 502.

The protocol works with two types of packets: Requests and responses. A request is sent from one device to another to retrieve data or send commands. The response contains the data or confirmation that the command has been executed.

It also supports various functions, including reading and writing data registers, reading input registers, and reading and writing lock bits.

Modbus/TCP provides an effective and reliable way to exchange data between different devices on a network and is used in many different applications in industrial automation, building automation and other fields.

4. MODBUS COMMUNICATION ECO GATEWAY

Modbus is de facto the common bus standard for communication between PLC machine controllers and the machine-related environment in industry.

No PLC controller on the market can do without this bus interface. The success story of the Modbus standard was started in 1979 by Gould-Modicon for communication with its [programmable logic](#) controllers.

In the industry, Modbus has become a standard because it is an open protocol. Since 2007, the Modbus TCP version has been part of the [IEC 61158](#) standard. (Source: <https://de.wikipedia.org/wiki/Modbus>)

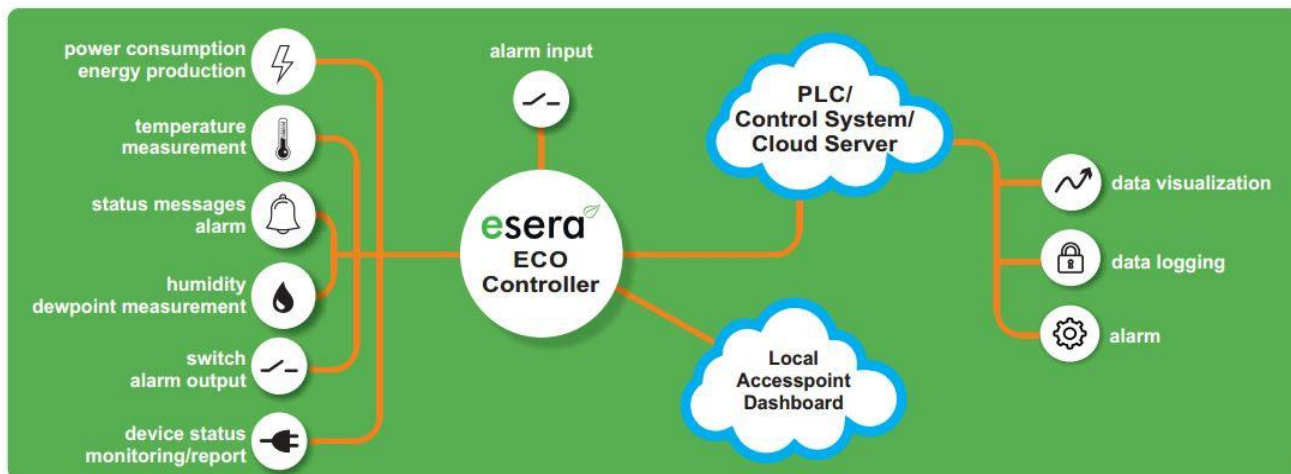
ESERA has Modbus/TCP and Modbus/RTU as an integral part of the data interfaces of the ECO Gateway product series, and can thus connect various industry standards, such as Modbus, MQTT, LoRaWAN, NB-IoT and 1-Wire, via gateways.

During the development of the ECO Sensor Gateways, special emphasis was placed on user-friendliness and many automatic functions. This is additionally supported by a configuration software, Config Tool 3, which combines all desirable functions up to the documentation and an installation report.

By the ESERA gateways are intended for a wide range of applications, even far outside the industry attractive. The application areas include all commercial applications, such as smart home, smart building, data center, OT and IoT systems.

5. ECO GATEWAY SYSTEM

Many sensors, a powerful interface, a web server and access point, and a fully automated plug and play system.



6. The ESERA ECO Gateway Concept

- A large number of sensors can be connect fully automatically via Industrial 1-Wire Bus using Auto-E-Connect.
- Up to 30 sensors with a maximum of 150 sensor values can be connected.
- In addition, there are direct analog and digital inputs of the ECO Gateway.
- Data interface with a data connection to control rooms and PLC controllers

7. INTERFACE AND 1-WIRE SECTION

For all ESERA ECO gateways up to year of manufacture 2023, the basic structure is such that the devices consist of an internal controller.

The basic design of all ESERA ECO gateways up to year of manufacture 2023 is such that the devices consist of two sections.

The first section consists of an I/O gateway (1-Wire bus, eBus and/or sensor unit) and the second section consists of an interface. The two sections communicate with each other internally. With the gateways, the 1-Wire bus and Modbus interface data are processed by the I/O section. The interface forwards all Modbus data without interference.

This structure means that latency times may occur when processing the Modbus data. These latency times can vary greatly depending on the number of 1-Wire sensors and sensor types.

In addition, a waiting time of at least 25ms must be scheduled between two Modbus commands. This waiting time depends on the design.

If you cannot cope with the above limitations in your application, we recommend using the new ECO Gateways with web server.

7.1. MODBUS/TCP AND ASCII INTERFACE, ETHERNET

The ECO 100 gateway and the ESERA station 200 have an automatic protocol detection.

You can communicate with the ECO Gateway via the ESERA text or Modbus RTU protocol.

To recognize the protocol you want, only one command is required in the respective protocol. From this moment on, the communication of the 1-Wire gateway will snap to the new protocol. This means, for example, that you send a command in the Modbus RTU protocol and from now on the gateway works with the Modbus protocol.

If you want to access the ECO 100 gateway with the Config Tool 3, a command via the Config Tool is necessary to switch to ASCII protocol. You can e.g. query the time. With this the gateway recognizes the ASCII protocol and now writes data in the ASCII protocol independently.

After a power on, the 1-Wire gateway / ECO 100 devices or the ESERA station 200 is in the Modbus protocol, therefore no data is output via ASCII protocol, e.g. to the Config Tool 3.

7.2. MODBUS/RTU INTERFACE

In addition to a USB interface, the 1-Wire Gateway 10 also has a Modbus RTU interface.

The Modbus RTU interface is based on **EIA-485**, also known as **RS-485**. This serial interface is an industry standard for a physical interface for asynchronous serial data transmission. The symmetrical line increases the electromagnetic compatibility. Modbus RTU is used here as the protocol.

7.3. PARAMETERS MODBUS RTU INTERFACE

The Modbus RTU (RS485) interface is fixed to the following parameters:

- **19200 baud**
- **8 data bits, no start bit, one stop bit (8N1)**

8. CONFIGURATION MODBUS INTERFACE

NOTE

The following description applies to 1-Wire gateways and ECO gateways up to year of manufacture 2023 and WITHOUT WEBSERVER.

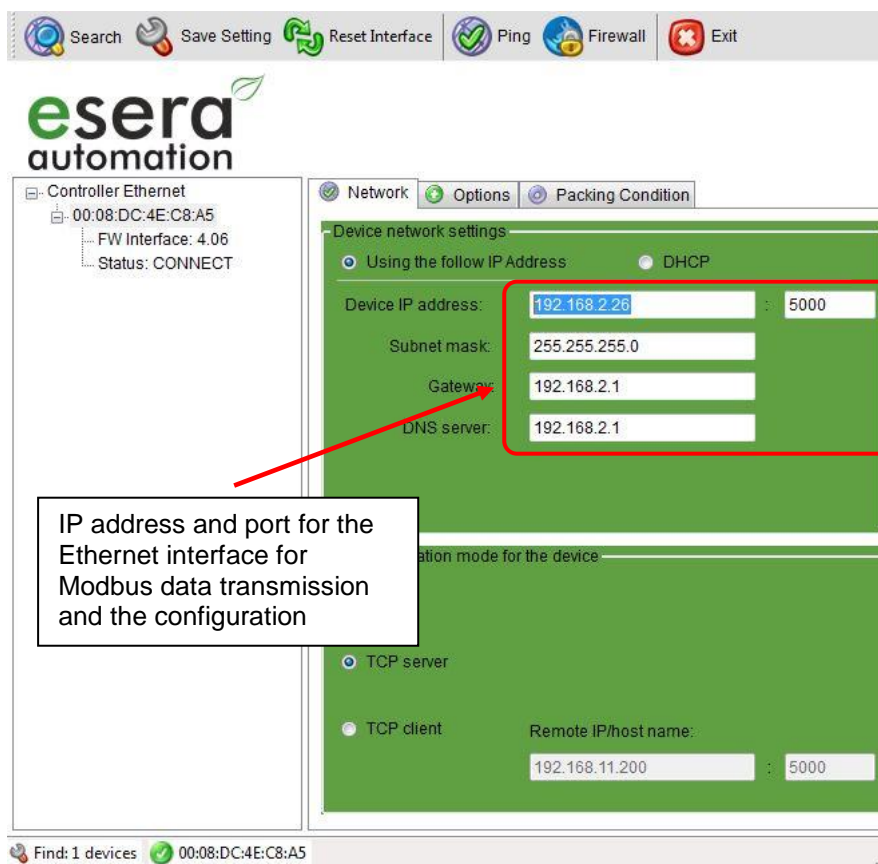
If you have an ECO gateway with web server, please use the interface manual Modbus V2.0

8.1. CONFIGURATION MODBUS/TCP interface

The settings for the Modbus/TCP interface for ESERA Gateway without web server, can be set via the Network Config Tool. By default, the interface is set to port 5000. If you want to use port 502 for Modbus/TCP, change the port for the Ethernet interface in the Network Config Tool, see figure 5.2.1.

In the course of this, you must also adjust the port for Config Tool 3 (Figure 4.2.2) to these new settings.

8.2. NETWORK CONFIG TOOL FOR INTERFACE SETTING



8.3. SETTINGS FOR CONFIG TOOL 3

The screenshot shows the 'ESERA-Automation - Config Tool 3' interface. At the top, there are status indicators: 'VIEW NORMAL', 'LAST RESPONSE: 12:02:50 - 16.05.18', 'UPDATE ONLINE', 'RUN 1/0', and 'DISCONNECT TO CONTROLLER 14:19:29 - ACTIVE'. The main menu includes 'HOME', 'PROJECT', 'CONTROLLER', 'SETTING', '1-WIRE/OWD', 'EXTENSIONS', 'DATA/DEBUG', 'DOKU', and 'HELP/SUPPORT'. The 'CONTROLLER' section is active, showing 'INTERFACE', 'INPUT/OUTPUT', and 'GENERAL RESET' tabs. The 'COMMUNICATION TO CONTROLLER' section is highlighted in green and contains the following fields: 'TYPE' (dropdown menu set to 'ETHERNET' with a 'REFRESH' button), 'IP-ADDRESS' (text input field with '192.168.2.26'), 'PORT' (text input field with '5000' and a 'DEFAULT' button), 'SUB-NET' (text input field with '255.255.255.000'), and 'PROTOKOLL' (radio buttons for 'TCP' and 'UDP', with 'UDP' selected). A red box encloses the 'TYPE', 'IP-ADDRESS', and 'PORT' fields. A red arrow points from a text box to the 'SUB-NET' field. The 'CONTROLLER INFORMATION' section is also highlighted in green and contains: 'ARTICLE NO: 11337', 'SERIAL NO: 113372017V2.0-123', 'FIRMWARE: V1.18_72' with a 'FIRMWARE-DOWNLOAD' link, 'HARDWARE: V2.0', and 'CONTROLLER NO: 1' with a 'SET' button. A 'LOAD INFORMATION FROM CONTROLLER' button is at the bottom of this section.

Take over IP address and port from the settings of the Ethernet interface

8.3.1. TERMINATOR / TERMINATION MODBUS RTU

Since the EIA-485 interface is a bus system (in contrast to the point-to-point connection for RS232), the line ends should be terminated (at least for longer line lengths or higher transmission rates). As a rule, passive termination is used by connecting the signal lines via a 120-Ω resistor at each of the two bus ends. Within the 1-Wire gateway there is a termination resistor with 120 Ohm. You can activate this by establishing a cable connection between PIN A and A_R of the RS485 connector.

8.3.2. MODBUS POLLING CYCLE

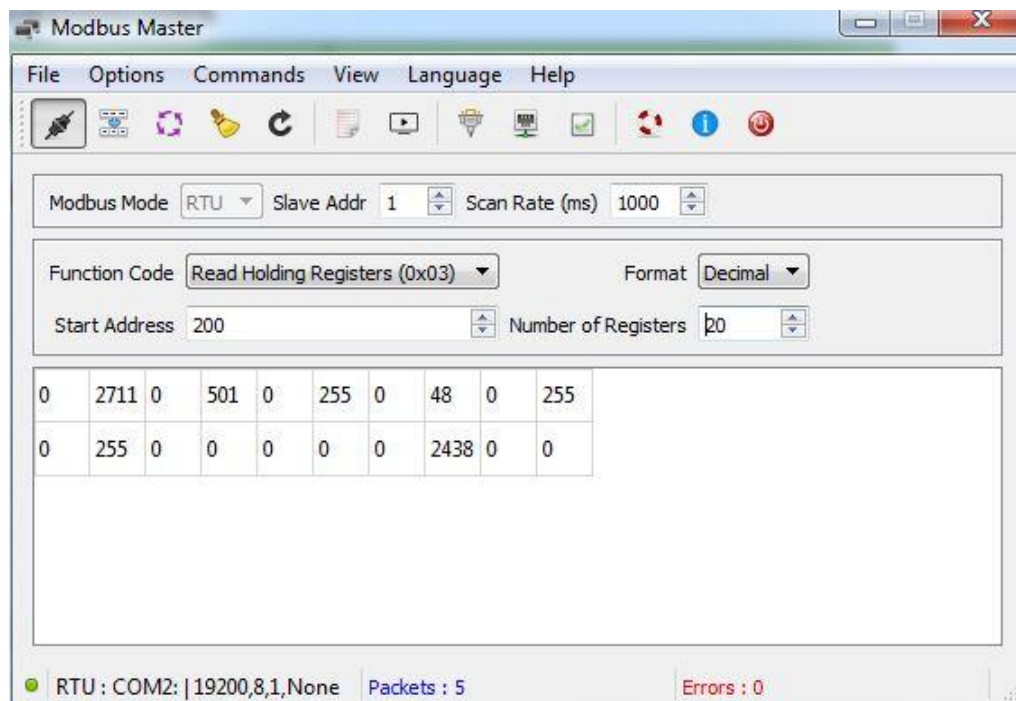
With the ECO 100 gateway, 1-Wire gateway and the ESERA station 200, Modbus data can be read or written in a polling cycle of typically 1-10 seconds. The query cycle should not be selected below 500ms. A maximum of 20 data points can be read with one Modbus query.

10. MODBUS TEST SOFTWARE

To perform first tests via Windows and a small test program, you can use e.g. the program *Modbus Master* (qmodmaster). It is an open source program. Below the link for the download.

<https://sourceforge.net/projects/qmodmaster/>

We do not take any liability for the link and the test program.



10.1. MODBUS FUNCTION CODES

Structure and function codes Modbus RTU, RS485 interface		Structure and function codes Modbus TCP, Ethernet interface	
FC1,2 (reads single bits):	Example:	FC1,2 (reads single bits):	Example:
Gateway no.	1	Transactionsnr high	0
Function code	1	Transactionsnr low	0
Start address high (bit)	0	Protocol ident high	0
Start address low (bit)	32	Protocol ident low	0
Number of bits high	0	Bytes from here	6
Number of bits low	8	Recognition	e.g. 1
CRC high	x	Function code	1
CRC low	x	Start address high (bit)	0
		Start address low (bit)	32
		Number of bits high	0
		Number of bits low	8
FC3,4 (reads words):		FC3,4 (reads words):	
Gateway no.	1	Transactionsnr high	0
Function code	4	Transactionsnr low	0
Start address high (word)	238	Protocol ident high	0
Start address low (word)	102	Protocol ident low	0
Word count high	0	Bytes from here	6
Word count low	9	Recognition	e.g. 1
CRC high	x	Function code	4
CRC low	x	Start address high (word)	238
		Start address low (word)	102
		Word count high	0
		Word count low	9
FC5 (sets one bit):		FC5 (sets one bit):	
Gateway no.	1	Transactionsnr high	0
Function code	5	Transactionsnr low	0
Start address high (bit)	0	Protocol ident high	0
Start address low (bit)	32	Protocol ident low	0
Bit value high	255 or 0	Bytes from here	6
Bit value low	0	Recognition	e.g. 1
CRC high	x	Function code	5
CRC low	x	Start address high (bit)	0
		Start address low (bit)	32
		Bit value high	255 or 0
		Bit value low	0
FC6 (writes a word):		FC6 (writes a word):	
Gateway no.	1	Transactionsnr high	0
Function code	6	Transactionsnr low	0
Start address high (word)	1	Protocol ident high	0
Start address low (word)	146	Protocol ident low	0
Write value high	0	Bytes from here	6
Write value low	85	Recognition	e.g. 1
CRC high	x	Function code	6
CRC low	x	Start address high (word)	1
		Start address low (word)	146
		Write value high	0
		Write value low	85

FC16 (writes words):		FC16 (writes words):	
Gateway no.	1	Transactionsnr high	0
Function code	16	Transactionsnr low	0
Start address high (word)	238	Protocol ident high	0
Start address low (word)	102	Protocol ident low	0
Word count high	0	Bytes from here	11
Word count low	2	Recognition	e.g. 1
Byte count	4	Function code	16
Write value1 high	0	Start address high (word)	238
Write value1 low	123	Start address low (word)	102
Write value2 high	0	Word count high	0
Write value2 low	234	Word count low	2
CRC high	x	Byte count	4
CRC low	x	Write value1 high	0
		Write value1 low	123
		Write value2 high	0
		Write value2 low	234

11. MODBUS ADDRESSES FOR BASE INTERFACE

ECO 100, 1-WIRE GATEWAY 10,11 AND 20 ONLY

11.1. MODBUS READ ADDRESSES SYSTEM VARIABLES

Description	Reading addresses				Comment	
	Address	Word Quantity (16Bit)	Data type	Bit address		
System variables						
Gateway 2, Gateway 20 Inputs	1	1	Word		Status of the binary inputs of the 1-Wire Gateway 2 / 1-Wire Gateway 20	HHLL
Gateway 2, Gateway 20 Outputs	2	1	Word	32 to 36	Status of the binary outputs of the 1-Wire Gateway 2 / 1-Wire Gateway 20	HHLL
Gateway 2, Gateway 20 Analog output	3	1	Word	16 to 19	Status of the analog output of the 1-Wire gateway 2 / 1-Wire gateway 20	HHLL
Gateway no.	60000	1	Word		Output of the assigned number of the 1-Wire gateway / 1-Wire gateway	HHLL
Item no.	60001	1	Word		Part number of the 1-Wire gateway / 1-Wire gateway	HHLL
Firmware version	61000	4	String		Firmware version of the 1-Wire gateway / 1-Wire gateway	HHLL
Hardware version	61010	3	String		Hardware version of the 1-Wire gateway / 1-Wire gateway	HHLL
Serial number	61020	9	String		Serial number of the 1-Wire gateway / 1-Wire gateway	HHLL
Time	61030	4	String		Time off (RTC)of the 1-Wire gateway / 1-Wire gateway	hh:mm:ss
Date	61035	4	String		Date (RTC) 1-Wire Gateway / 1-Wire Gateway	dd.mm.yy

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Time, date	61030	9	String		Combination of time and date (RTC)	hh:mm:ss dd.mm.yy
OWD Quantity	61039	1	Word		Output how many 1-Wire (OWD) sensors or actuators are stored	HLL

11.2. MODBUS READ ADDRESSES 1-WIRE SENSORS

ECO 100, 1-WIRE GATEWAY 10,11 AND 20 ONLY

	Reading addresses				Temperature and humidity sensor e.g. Art. No. 11131, 11132, 11134, 11135, 11150, 11160 and others	Temperature, humidity air quality sensor e.g. 11151 and 11152	Temperature, brightness and irradiation e.g. 11112	Brightness sensor e.g. 11129	Comment
	Address	Word Quantity (16Bit)	Data type	Bit address					
1-Wire Multisensors Standard and PRO									
OWD 1	40100	1	Integer		Temperature	Temperature	not used (255)	not used (255)	Temperature
	40101,40102	2	Dwort	1632 to 1639 (102*16)	Operating voltage	Operating voltage	Temperature	Status input decimal	HH HL LH LL
	40103,40104	2	Dwort		Humidity	Humidity	Operating voltage	Status input binary	HH HL LH LL
	40105,40106	2	Dwort		Dew point	Dew point	Brightness	Status output decimal	HH HL LH LL
	40107,40108	2	Dwort		Brightness	Brightness	Irradiation	Status output binary	HH HL LH LL
	40109,40110	2	Dwort		not used (255)	Air Quality	not used (255)	not used (255)	HH HL LH LL
	40111,40112	2	Dwort		Status	Status	Status	Status	HH HL LH LL
	40113,40114	2	Dwort		Error Counter	Error Counter	Error Counter	Error Counter	HH HL LH LL
	40115,40116	2	Dwort		Part number / Type	Part number / Type	Part number / Type	Part number / Type	HH HL LH LL
OWD 2	40200	1	Integer		Temperature	Temperature	not used (255)	not used (255)	Temperature
	40201,40202	2	Dwort	3232 to 3239 (202*16)	Operating voltage	Operating voltage	Temperature	Status input decimal	HH HL LH LL
	40203,40204	2	Dwort		Humidity	Humidity	Operating voltage	Status input binary	HH HL LH LL
	40205,40206	2	Dwort		Dew point	Dew point	Brightness	Status output decimal	HH HL LH LL

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	40207,40208	2	Dwort		Brightness	Brightness	Irradiation	Status output binary	HH HL LH LL
	40209,40210	2	Dwort		not used (255)	Air Quality	not used (255)	not used (255)	HH HL LH LL
	40211,40212	2	Dwort		Status	Status	Status	Status	HH HL LH LL
	40213,40214	2	Dwort		Error Counter	Error Counter	Error Counter	Error Counter	HH HL LH LL
	40215,40216	2	Dwort		Part number / Type	Part number / Type	Part number / Type	Part number / Type	HH HL LH LL
OWD 3	40300	1	Integer		Temperature	Temperature	not used (255)	not used (255)	Temperature
	40301,40302	2	Dwort	4832 to 4839 (302*16)	Operating voltage	Operating voltage	Temperature	Status input decimal	HH HL LH LL
	40303,40304	2	Dwort		Humidity	Humidity	Operating voltage	Status input binary	HH HL LH LL
	40305,40306	2	Dwort		Dew point	Dew point	Brightness	Status output decimal	HH HL LH LL
	40307,40308	2	Dwort		Brightness	Brightness	Irradiation	Status output binary	HH HL LH LL
	40309,40310	2	Dwort		not used (255)	Air Quality	not used (255)	not used (255)	HH HL LH LL
	40311,40312	2	Dwort		Status	Status	Status	Status	HH HL LH LL
	40313,40314	2	Dwort		Error Counter	Error Counter	Error Counter	Error Counter	HH HL LH LL
	40315,40316	2	Dwort		Part number / Type	Part number / Type	Part number / Type	Part number / Type	HH HL LH LL
OWD 4	40400	1	Integer		Temperature	Temperature	Temperature	Status input decimal	Temperature
	40401,40402	2	Dwort	6432 to 6439 (402*16)	Operating voltage	Operating voltage	Operating voltage	Status input decimal	HH HL LH LL
	40403,40404	2	Dwort		Humidity	Humidity	Brightness	Status input binary	HH HL LH LL
	40405,40406	2	Dwort		Dew point	Dew point	Irradiation	Status output decimal	HH HL LH LL

	40407,40408	2	Dwort		Brightness	Brightness	not used (255)	Status output binary	HH HL LH LL
	40409,40410	2	Dwort		not used (255)	Air Quality	not used (255)	not used (255)	HH HL LH LL
	40411,40412	2	Dwort		Status	Status	Status	Status	HH HL LH LL
	40413,40414	2	Dwort		Error Counter	Error Counter	Error Counter	Error Counter	HH HL LH LL
	40415,40416	2	Dwort		Part number / Type	Part number / Type	Part number / Type	Part number / Type	HH HL LH LL
etc. until OWD 30									

11.3. MODBUS READ ADDRESSES 1-WIRE TEMPERATURE SENSORS

ECO 100, 1-WIRE GATEWAY 10,11 AND 20 ONLY

	Reading addresses				Temperature sensors	Comment
	Address	Word Quantity (16Bit)	Data type	Bit address		
1-Wire temperature sensor						
OWD 1	40100	1	Integer		Temperature	Temperature
	40101,40102	2	Dwort	1632 to 1639 (102*16)	not used (255)	HH HL LH LL
	40103,40104	2	Dwort		not used (255)	HH HL LH LL
	40105,40106	2	Dwort		not used (255)	HH HL LH LL
	40107,40108	2	Dwort		not used (255)	HH HL LH LL
	40109,40110	2	Dwort		not used (255)	HH HL LH LL
	40111,40112	2	Dwort		Status	HH HL LH LL
	40113,40114	2	Dwort		Error Counter	HH HL LH LL
	40115,40116	2	Dwort		Part number / Type	HH HL LH LL
OWD 2 to OWD 30	40200	1	Integer		Temperature	Temperature
	40201,40202	2	Dwort	1632 to 1639 (102*16)	not used (255)	HH HL LH LL
	40203,40204	2	Dwort		not used (255)	HH HL LH LL
	40205,40206	2	Dwort		not used (255)	HH HL LH LL

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40207,40208	2	Dwort		not used (255)	HH HL LH LL
40209,40210	2	Dwort		not used (255)	HH HL LH LL
40211,40212	2	Dwort		Status	HH HL LH LL
40213,40214	2	Dwort		Error Counter	HH HL LH LL
40215,40216	2	Dwort		Part number / Type	HH HL LH LL

11.4. MODBUS READ ADDRESSES 1-WIRE ACTUATORS

ECO 100, 1-WIRE GATEWAY 10,11 AND 20 ONLY

Description	Reading addresses				8-fold binary output/ Switch module (binary output) with pushbutton interface e.g. 11220, 11228	Dual switch module e.g. 11218, 11233	8-fold switching module (binary output) e.g. 11229	iButton DS2401 and more	Comment
	Address	Word Quantity (16Bit)	Data type	Bit address					
OWD 1	40100	1	Integer	1632 to 1639 (102*16)	not used (255)	not used (255)	Temperature	not used (255)	Temperature
	40101,40102	2	Dwort		Status input decimal	not used (0)	Operating voltage	0 or 1 (bit)	HH HL LH LL
	40103,40104	2	Dwort		Status input binary	not used (0)	Brightness	not used (255)	HH HL LH LL
	40105,40106	2	Dwort		Status output decimal	Status output decimal	not used (255)	not used (255)	HH HL LH LL
	40107,40108	2	Dwort		Status output binary	Status output binary	not used (255)	not used (255)	HH HL LH LL
	40109,40110	2	Dwort		not used (255)	not used (255)	not used (255)	not used (255)	HH HL LH LL
	40111,40112	2	Dwort		Status	Status	Status	Status	HH HL LH LL
	40113,40114	2	Dwort		Error Counter	Error Counter	Error Counter	Error Counter	HH HL LH LL
40115,40116	2	Dwort		Part number / Type	Part number / Type	Part number / Type	Part number / Type	HH HL LH LL	
OWD 2	40200	1	Integer	3232 to 3239 (202*16)	not used (255)	not used (255)	Temperature	not used (255)	Temperature
	40201,40202	2	Dwort		Status input decimal	not used (0)	Operating voltage	0 or 1	HH HL LH LL
	40203,40204	2	Dwort		Status input binary	not used (0)	Brightness	not used (255)	HH HL LH LL
	40205,40206	2	Dwort		Status output decimal	Status output decimal	not used (255)	not used (255)	HH HL LH LL
	40207,40208	2	Dwort		Status output binary	Status output binary	not used (255)	not used (255)	HH HL LH LL
	40209,40210	2	Dwort		not used (255)	not used (255)	not used (255)	not used (255)	HH HL LH LL
	40211,40212	2	Dwort		Status	Status	Status	Status	HH HL LH LL
	40213,40214	2	Dwort		Errorcounter	Errorcounter	Errorcounter	Error Counter	HH HL LH LL

	40215,40216	2	Dwort		Part number /Type	Part number/ Type	Part number/ Type	Part number/ Type	HH HL LH LL
OWD 3	40300	1	Integer	4832 to 4839 (302*16)	not used (255)	not used (255)	Temperature	not used (255)	Temperature
	40301,40302	2	Dwort		Status input decimal	not used (0)	Operating voltage	0 or 1 (bit)	HH HL LH LL
	40303,40304	2	Dwort		Status input binary	not used (0)	Brightness	not used (255)	HH HL LH LL
	40305,40306	2	Dwort		Status output decimal	Status output decimal	not used (255)	not used (255)	HH HL LH LL
	40307,40308	2	Dwort		Status output binary	Status output binary	not used (255)	not used (255)	HH HL LH LL
	40309,40310	2	Dwort		not used (255)	not used (255)	not used (255)	not used (255)	HH HL LH LL
	40311,40312	2	Dwort		Status	Status	Status	Status	HH HL LH LL
	40313,40314	2	Dwort		Error Counter	Error Counter	Error Counter	Error Counter	HH HL LH LL
	40315,40316	2	Dwort		Part number / Type	Part number / Type	Part number / Type	Part number / Type	HH HL LH LL
OWD 4 to OWD 30	40400	1	Integer	6432 to 6439 (402*16)	not used (255)	not used (255)	Temperature	not used (255)	Temperature
	40401,40402	2	Dwort		Status input decimal	not used (0)	Operating voltage	0 or 1 (bit)	HH HL LH LL
	40403,40404	2	Dwort		Status input binary	not used (0)	Brightness	not used (255)	HH HL LH LL
	40405,40406	2	Dwort		Status output decimal	Status output decimal	not used (255)	not used (255)	HH HL LH LL
	40407,40408	2	Dwort		Status output binary	Status output binary	not used (255)	not used (255)	HH HL LH LL
	40409,40410	2	Dwort		not used (255)	not used (255)	not used (255)	not used (255)	HH HL LH LL
	40411,40412	2	Dwort		Status	Status	Status	Status	HH HL LH LL
	40413,40414	2	Dwort		Errorcounter	Errorcounter	Errorcounter	Error Counter	HH HL LH LL
	40415,40416	2	Dwort		Part number / Type	Part number / Type	Part number / Type	Part number / Type	HH HL LH LL

11.5. MODBUS WRITE ADDRESSES

ECO 100, 1-WIRE GATEWAY 10,11 AND 20 ONLY

Description	Reading addresses				Comment
	Address	Word Quantity (16Bit)	Data type	Bit address	
System variables					
Gateway 2, Gateway 20 Inputs	-	-	-	-	
Gateway 2, Gateway 20 Outputs	2	1	Word	32 to 36	
Gateway 2, Gateway 20 Analog output	3	1	Word	-	
Gateway no.	-	-	-	-	
Item no.	-	-	-	-	
Firmware version	-	-	-	-	
Hardware version	-	-	-	-	
Serial number	-	-	-	-	
Time	61030	3	Word	61030	hh:mm:ss
Date	61035	3	Word	61035	dd.mm.yy
Time, date	-	-	-	-	hh:mm:ss dd.mm.yy

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11.6. MODBUS WRITE ADDRESSES 1-WIRE SENSORS

ECO 100, 1-WIRE GATEWAY 10,11 AND 20 ONLY

Description	Reading addresses				Temperature and humidity sensor e.g. Art. No. 11131, 11132, 11134, 11135 and others	Temperature, humidity air quality sensor e.g. 11127	Temperature, brightness and irradiation e.g. 11112	Brightness sensor e.g. 11129	Comment
	Address	Word Quantity (16Bit)	Data type	Bit address					
OWD 1	40100	-	-		-	-	-	-	
	40101,40102	-	Dwort	1632 to 1639 (102*16)	-	-	-	-	
	40103,40104	2	Dwort		-	-	-	-	
	40105,40106	2	Dwort		-	-	-	-	
	40107,40108	2	Dword 4		-	-	-	-	
	40109,40110	2	Dword 5		-	-	-	-	
	40111,40112	2	Dword 6		-	-	-	-	
	40113,40114	2	Dword 7		-	-	-	-	
40115,40116	2	Dword 8		-	-	-	-		
OWD 2	40200	1	Integer		-	-	-	-	
	40201,40202	2	Dword 1	3232 to 3239 (202*16)	-	-	-	-	
	40203,40204	2	Dword 2		-	-	-	-	
	40205,40206	2	Dword 3		-	-	-	-	
	40207,40208	2	Dword 4		-	-	-	-	
	40209,40210	2	Dword 5		-	-	-	-	
	40211,40212	2	Dword 6		-	-	-	-	
	40213,40214	2	Dword 7		-	-	-	-	
40215,40216	2	Dword 8		-	-	-	-		

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OWD 3	40300	1	Integer		-	-	-	-	
	40301,40302	2	Dword 1	4832 to 4839 (302*16)	-	-	-	-	
	40303,40304	2	Dword 2		-	-	-	-	
	40305,40306	2	Dword 3		-	-	-	-	
	40307,40308	2	Dword 4		-	-	-	-	
	40309,40310	2	Dword 5		-	-	-	-	
	40311,40312	2	Dword 6		-	-	-	-	
	40313,40314	2	Dword 7		-	-	-	-	
	40315,40316	2	Dword 8		-	-	-	-	
OWD 4	40400	1	Integer		-	-	-	-	
	40401,40402	2	Dword 1	6432 to 6439 (402*16)	-	-	-	-	
	40403,40404	2	Dword 2		-	-	-	-	
	40405,40406	2	Dword 3		-	-	-	-	
	40407,40408	2	Dword 4		-	-	-	-	
	40409,40410	2	Dword 5		-	-	-	-	
	40411,40412	2	Dword 6		-	-	-	-	
	40413,40414	2	Dword 7		-	-	-	-	
	40415,40416	2	Dword 8		-	--	-	-	
etc. until OWD 30									

11.7. MODBUS WRITE ADDRESSES 1-WIRE ACTUATORS

ECO 100, 1-WIRE GATEWAY 10,11 AND 20 ONLY

Description	Writing addresses				8-fold binary output/ Switch module (binary output) with pushbutton interface e.g. 11220, 11228	Dual switch module e.g. 11218 and 11233	8-fold switching module (binary output) e.g. 11229	iButton DS2401 and more	Comment
	Address	Word Quantit y (16Bit)	Data type	Bit address					
OWD 1	40100	1	Integer	-	-	-	-	-	-
	40101,40102	1	Byte		-	-	-	-	-
	40103,40104	1	Byte		-	-	-	-	-
	40105,40106	1	Byte/bit		Output decimal	Output binary 1	Output decimal		Value range 0-255
	40107,40108	1	Byte/bit		Output Binary	Output binary 2	Output Binary	-	Value range 0-255
	40109,40110	1	-		-	-	-	-	-
	40111,40112	1	-		-	-	-	-	-
	40113,40114	1	-		-	-	-	-	-
40115,40116	1	-		-	-	-	-	-	
OWD 2	40200	1	Integer	3232 to 3239 (202*16)	-	-	-	-	-
	40201,40202	1	Byte		-	-	-	-	-
	40203,40204	1	Byte		-	-	-	-	-
	40205,40206	1	Byte		Output decimal	Output binary 1	Output decimal	-	Value range 0-255
	40207,40208	1	Byte		Output Binary	Output binary 2	Output Binary	-	Value range 0-255
	40209,40210	2	Dwort		-	-	-	-	-
	40211,40212	2	Dwort		-	-	-	-	-
	40213,40214	2	Dwort		-	-	-	-	-
40215,40216	2	Dwort		-	-	-	-	-	
OWD 3	40300	1	Integer		-	-	-	-	-
	40301,40302	2	Dwort	4832 to 4839 (302*16)	-	-	-	-	-
	40303,40304	2	Dwort		-	-	-	-	-

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	40305,40306	2	Dwort		Output decimal	Output binary 1	Output decimal	-	Value range 0-255
	40307,40308	2	Dwort		Output Binary	Output binary 2	Output Binary	-	Value range 0-255
	40309,40310	2	Dwort		-	-	-	-	-
	311,312	2	Dwort		-	-	-	-	-
	313,314	2	Dwort		-	-	-	-	-
	315,316	2	Dwort		-	-	-	-	-
OWD 4	40400	1	Integer	6432 to 6439 (402*16)	-	-	-	-	-
	40401,40402	1	Dwort		-	-	-	-	-
	40403,40404	1	Dwort		-	-	-	-	-
	40405,40406	1	Dwort		Output decimal	Output binary 1	Output decimal	-	Value range 0-255
	40407,40408	1	Dwort		Output Binary	Output binary 2	Output Binary	-	Value range 0-255
	40409,40410	1	Dwort		-	-	-	-	-
	40411,40412	1	Dwort		-	-	-	-	-
	40413,40414	1	Dwort		-	-	-	-	-
etc. up to OWD 30				32 to 36					

12. CONCLUSION AND RESPONSE

We have put a lot of effort into the development of the 1-Wire gateways to incorporate as many practical concerns as possible from a user's point of view. However, since we are not really an "uninitiated user", we certainly do not succeed 100%. Therefore we would like to ask you to send us your feedback, your impressions and suggestions for improvement as well as possible errors by mail to support@esera.de. We would be very happy about a product review in our online store.

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