Programming Manual

1-Wire Gateway
1-Wire Controller
ESERA-Station

1-Wire Controller 1
1-Wire Controller 2 / 1-Wire Controller ECO 200

1-Wire Gateway 10
1-Wire Gateway 11
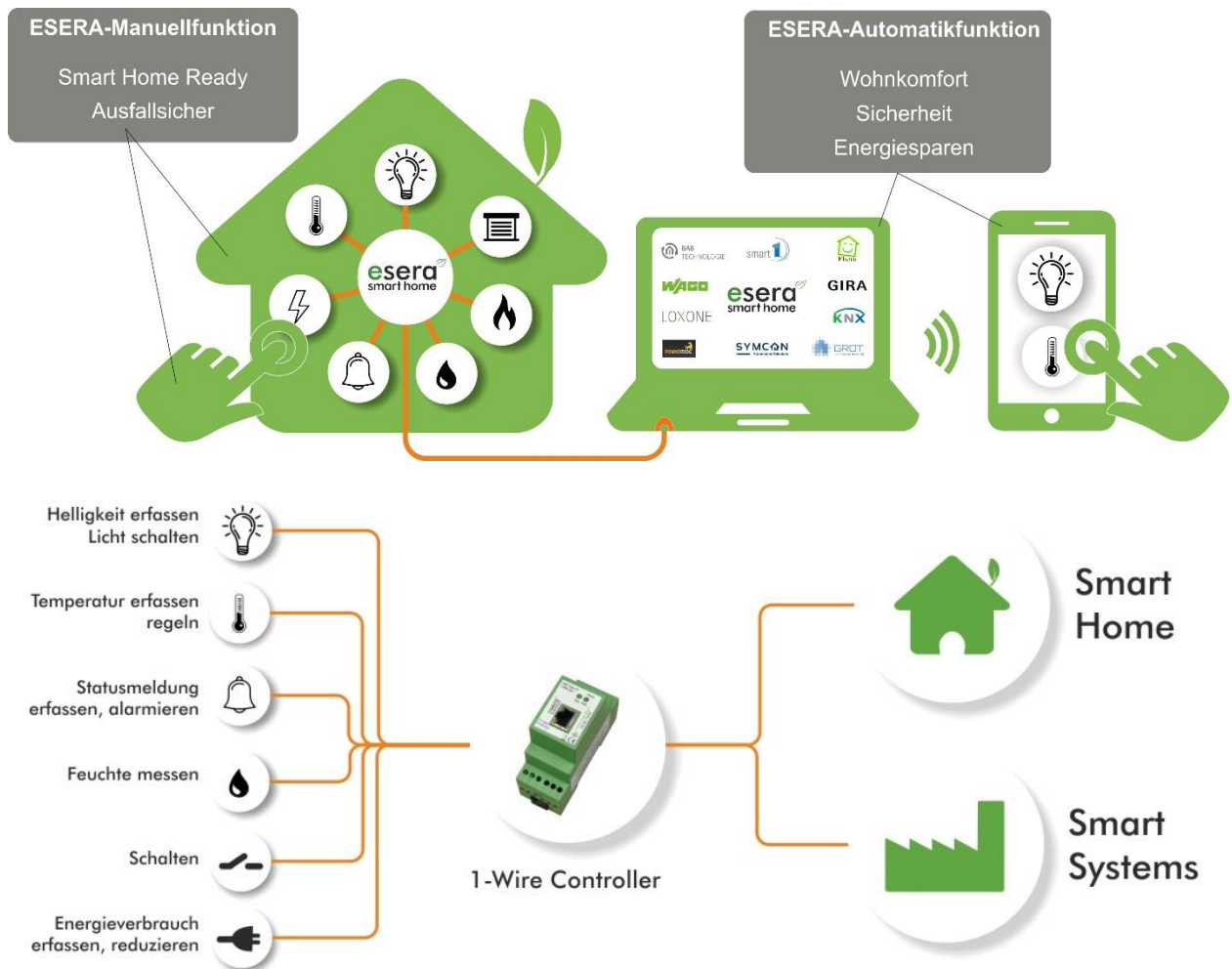1-Wire Gateway 20

ESERA-Station 200

As of firmware V1.19_11

1.   ESERA Concept of Automation

1.1.   1-Wire Controller and 1-Wire Gateway

Sensors and actuators of the 1-Wire bus system are automatically detected, integrated and queried at very high speed via the 1-Wire Controller / 1-Wire Gateway. The sensor and actuator data are transmitted to your controller via Ethernet interface, via ASCII (1-Wire Controller) or via ASCII and Modbus protocol. The 1-Wire Controller and 1-Wire Gateway devices are compatible with all controllers within the Smart Home and Smart Automation area. **The 1-Wire controllers are widely used in private and semi-professional environments. Due to the Modbus RTU and Modbus TCP interface, the 1-Wire Gateway devices are preferred in the demanding Smart Home and professional automation area.**

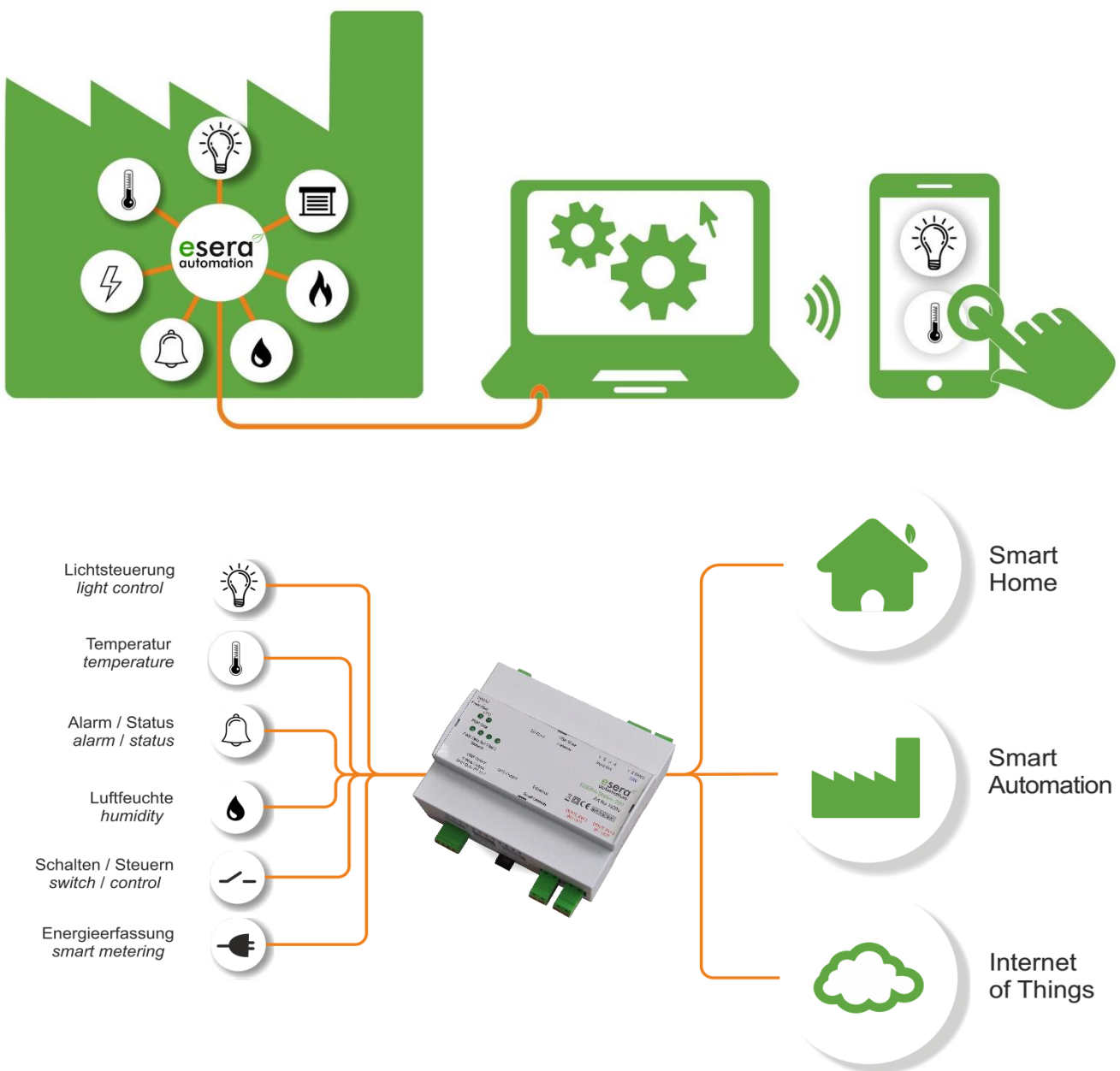**Core functions of the 1-Wire Controller / 1-Wire Gateway concept**

- Independent recognition and management of sensors and actuators
- Fast cyclic data-retrieval of sensors and actuators
- Plausibility check of sensor data
- Data conversion for standard sensors and ESERA-Automation sensors as well as actuators through integrated formula collection
- Data output in ASCII text and Modbus protocol (1-Wire Gateway only)
- Cyclic life signs (heartbeat) among controller / central control unit and 1-Wire Controller / 1-Wire Gateway

1.2. ESERA Station-200 Central Control Unit

Based on the know-how of the 1-Wire Gateway series, the ESERA Station-200 central control unit was developed. Sensors and actuators of the 1-Wire bus system are automatically detected, integrated and interrogated at very high speed via the integrated 1-Wire gateway. The data of the sensors and actuators are transmitted via an internal serial interface as ASCII or Modbus protocol to the very powerful Quad Code Embedded Computer of the ESERA Station.

Depending on the application software, the ESERA Station-200 is ideal for Smart Automation with Codesys 3.x, IoT (Internet of Things) automation tasks or Smart Home applications.

A controller for many applications, in the commercial environment as well as in personal environment. It offers many possibilities and a software-open automation platform.

ESERA Station-200 is a combination of 1-Wire Gateway and embedded computer

- The 1-Wire Gateway System is based on a **standardized bus system** that has been successfully used in industrial environments for many years.
- **Open bus-system,** compatible with sensors and actuators of third-party manufacturers
- **Data preparation** and output in a format readable by many controllers (ASCII characters) or Modbus* protocol

Core functions of the 1-Wire Controller / 1-Wire Gateway concept

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- Cyclic life signs (heartbeat) among controller / central control unit and 1-Wire Controller / 1-Wire Gateway

* 1-Wire Gateway devices only

2. Table of content

3.   Product overview

3.1.   1-Wire Controller 1

Serial- (RS232) and Ethernet-interface
Equipment
- 1-Wire Controller for autonomous communication and updating of the 1-Wire network
- Cyclic output of the prepared 1-Wire data in plain text
- Extremely fast reading of all 1-Wire devices in a 2-second cycle
- No additional driver required for 1-Wire function (e.g. TMEX driver)
- Data logging when communication to the host system is interrupted (option)
- Power supply of the 1-Wire network
- DIN rail housing (32mm) for control cabinet installation
- Wide supply voltage range, 9-30VDC
- Management of all ESERA-Automation 1-Wire modules with customized data output

3.2.   1-Wire Controller 2

Ethernet interface
In addition to the functions of the 1-Wire Controller 1, the 1-Wire Controller 2 offers the following features:
- **Digital input** 4 x 10-30VDC, isolated
- **Digital output** 4 + 1 (relay) for switching function and alarming
- **Analog output** 0-10V, isolated
- **Power supply** of the 1-Wire network **5V and 12V**
- **DIN rail housing** (100mm) for control cabinet installation
- Power supply **15-30VDC**

3.3.   1-Wire Gateway 10 Modbus RTU

Modbus RTU interface (serial RS485-interface)
In addition to the functions of the 1-Wire Controller 1, the 1-Wire Gateway 10 offers the following features:
RS485 and USB-interface for
- **communication, data transfer and firmware update**
- **ESERA ASCII text protocol**
- **MODBUS RTU interface for data transfer**
  Data can be sent and received via the Modbus interface. Configuration via Config-Tool is only possible via the USB interface.

3.4.   1-Wire Gateway 11 Modbus TCP

Modbus TCP / IP interface
In addition to the functions of the 1-Wire Controller 1, the 1-Wire Gateway 11 offers the following features:
Ethernet interface (TCP / IP) for
- **communication, data transfer and firmware update**
- **ESERA ASCII text protocol**
- **MODBUS communication**

3.5.   1-Wire Gateway 20 Modbus TCP

Modbus TCP/IP interface
In addition to the functions of the 1-Wire Controller 1, the 1-Wire Gateway 20 offers the following features:
- **Digital input** 4 x 10-30VDC, isolated
- **Digital output** 4 + 1 (relay) for switching function and alarming
- **Analog output** 0-10V, isolated
- **Power supply** of the 1-Wire network **5V and 12V**
- **DIN rail housing** (100mm) for control cabinet installation
- Power supply **15-30VDC**

4. Introduction

1-Wire Controller / 1-Wire Gateway

In some parts of the document, the term "1-Wire Controller" is used to represent 1-Wire Controller, 1-Wire Gateway and the 1-Wire function of the ESERA station. This keeps the document clear and legible.

For reasons of maintainability, we have compiled the following command list uniformly for all units of the 1-Wire Controller 1 and 1-Wire Controller 2. We have added a note to those parts that are specifically intended for the 1-Wire Controller 2.

The offered device software (firmware) can be used for all 1-Wire Controller 1 and 1-Wire Controller 2. The device software is designed in such a way that commands, that are not intended for this device, are deactivated.

The 1-Wire Controller / 1-Wire Gateway is a self-sufficient working subsystem among a 1-Wire network and a computer, PLC control or web application respectively cloud services. It reads all connected 1-Wire devices in an extremely fast time-cycle of 1-2 seconds. This means that device data is available in a very short time frame. Status changes of input signals, e.g. on digital input modules, are thus quickly detected.

Exclusively for 1-Wire Controller 2 / 1-Wire Gateway 20:

The 1-Wire Controller 2 and 1-Wire Gateway 20 also provide 5 binary outputs with 8A/5A relays, 4 binary inputs 10-30VDC and an isolated 0-10V output.

In addition, the 1-Wire Controller 2 and 1-Wire Gateway 20 provides room for an optional expansion module, e.g. for analog input signals or S0 counters.

4.1. Integration of new 1-Wire devices

If a new 1-Wire device is integrated into the 1-Wire network, it will be automatically detected after a few seconds and added to the internal device list, where it is read out and output.

4.2. Cyclic data output and formatting

The 1-Wire Controller / 1-Wire Gateway outputs the data, read by the devices via the data interface in a prepared and cyclically formatted form.

Further knowledge of 1-Wire protocols is not necessary on the part of the end-user, as the entire 1-Wire communication is handled by the 1-Wire Controller / 1-Wire Gateway.

4.3. Number of 1-Wire devices and types

Up to 30 1-Wire devices of type DS1820, DS18S20, DS18B20, DS2405, DS2408, DS2413, DS2423, DS2438 and DS2450 are supported, that can be read and controlled,.

4.4. iButton access keys or DS2401 serial numbers

Also iButton access keys of type DS2401, DS1990A and DS1963 can be used.
Other modules are available on request.
iButton keys or DS2401 serial number modules can be easily connected to the 1-Wire Controller / DS1963.
1-Wire Gateway can be trained. It is only necessary to hold the iButton key on the iButton reader for 10 seconds. Then the iButton is already present in the 1-Wire Controller / 1-Wire Gateway as an OWD. The iButton key can now be used. Permanent storage requires the "SET,OWB,SAVE" command or the "SAVE ALL OWD PERMANENT" button has to be pressed in Config-Tool 3.

4.5. 1-Wire operating mode

Modules can be connected in normal mode (3-wire system) and in parasitic mode (2-wire system). A mixed operating mode is also possible.

4.6. Power supply 1-Wire network

The 1-Wire Controller 1, 1-Wire Gateway 10 or 1-Wire Gateway 11 provides a 5V voltage for the 1-Wire network with up to approx. 150mA current.

The 1-Wire Controller 2 and 1-Wire Gateway 20 provides the 5V (approx. 150mA) and 12V (approx. 200mA) operating voltage for the 1-Wire bus. If modules that require higher power are to be used, an ESERA-Automation 1-Wire hub must be integrated into the system first.

4.7. Data formatting

Communication with the 1-Wire Controller / 1-Wire Gateway takes place in readable ASCII text with various separators. In the simplest case, communication among the 1-Wire Controller / 1-Wire Gateway is possible via the data-interface using a terminal program. Output data can be read out.

4.8. Power supply 1-Wire Controller / 1-Wire Gateway

Any DC voltage source with a stabilized output voltage between 9 - 30VDC for 1-Wire Controller 1 and 1-Wire Gateway 10 and 11 and 15-30VDC for 1-Wire Controller 2 and 1-Wire Gateway 20 and a minimum power rating of 1A can be used as power supply. Ideally, an independent power supply should be provided for the 1-Wire Controller / 1-Wire Gateway. We offer a suitable DIN rail power supply via our website, https://www.esera.de/produkte/zubehoer/netzteile//.

5. Modbus Communication 1-Wire Gateway

Modbus is de-facto the common bus standard for communication among PLC machine controls and the machine-oriented environment in industry.

No PLC control on the market can operate without this bus interface. The success story of the Modbus standard was launched in 1979 by Gould-Modicon for communication with its programmable logic controllers. In industry, Modbus has become a standard as 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 adopted a Modbus device as bus interface for the 1-Wire Gateway device series and can thus connect two industrial standards, Modbus and 1-Wire, via 1-Wire Gateway.

During the development of the 1-Wire Gateways, special emphasis was placed on user-friendliness and many automatic functions. This is additionally supported by our configuration software, Config-Tool 3, which combines all desirable functions up to the documentation and an installation report.

The ESERA 1-Wire Gateway series makes two industrial bus systems, 1-Wire and Modbus, attractive for a wide range of applications, even far beyond industry. The range includes IoT as well as Smart Automation and Smart Home.

5.1. Modbus test software

To perform first tests via Windows and a test program, e.g. program Modbus Master (QModMaster), can be used. QModMaster is an Open Source program.
Download link: https://sourceforge.net/projects/qmodmaster/
We assume no liability or responsibility for the content of pages we refer to by means of links, hyperlinks or the test program.
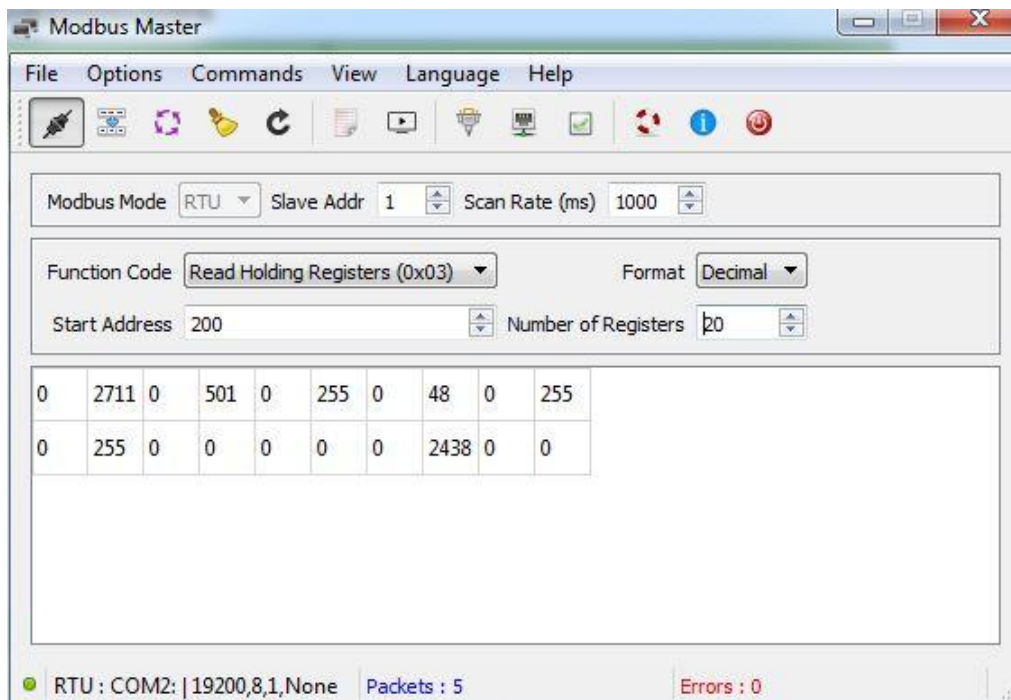
5.2. Interface configuration Modbus TCP

Settings for the Modbus TCP interface are set via the Network Config-Tool. In the standard system 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, Figure 4.2.1.
At the same time, you must also adapt the port for Config-Tool 3 (Figure 4.2.2) to these new settings.

4.2.1 Network Config Tool interface settings
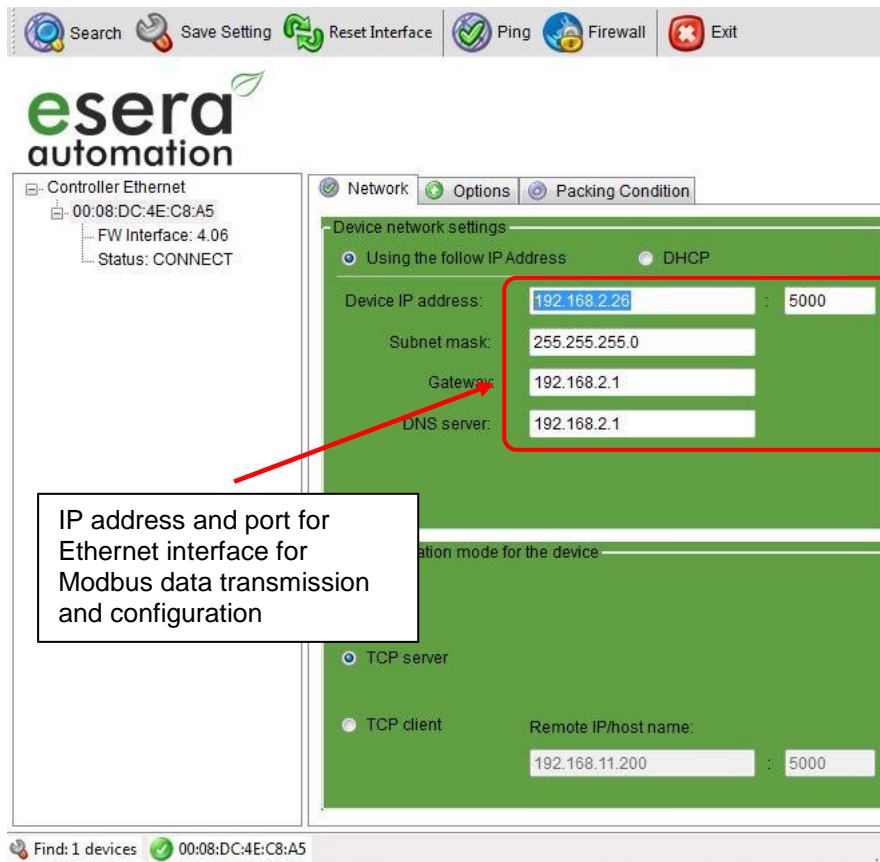
4.2.2 Config Tool 3, Config Tool 3 settings
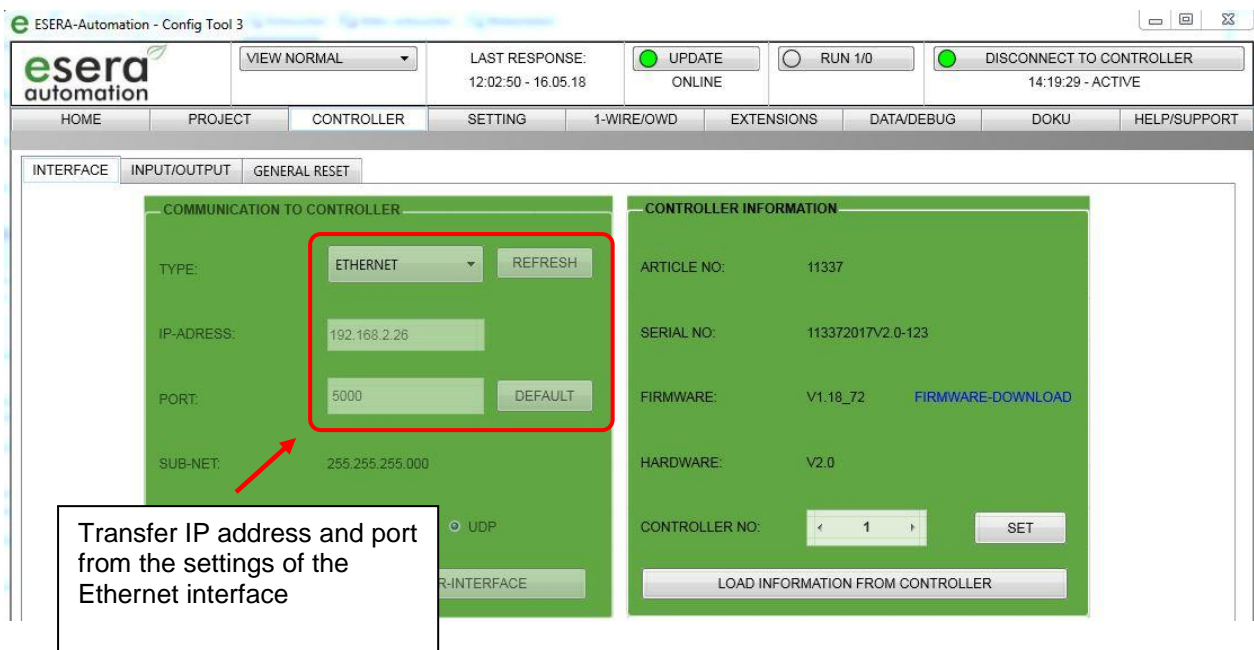
5.3.   Modbus and ASCII data output

Modbus data of the 1-Wire gateway and the ESERA Station-200 can be queried in a 1-second cycle and can be read or written. A maximum of 20 data points can be read with one Modbus query.

The 1-Wire Gateway and the ESERA Station-200 are equipped with automatic protocol recognition. After commissioning, the 1-Wire Gateway or the ESERA Station-200 is in Modbus mode, therefore no data is output via ASCII protocol. The continuous data output in ASCII mode only takes place after receipt of an ASCII command or query. As soon as you send a Modbus query, the 1-Wire gateway or the ESERA Station switches back to Modbus mode and no longer sends ASCII data on its own.

5.4.   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:**
Controller No.	1	Transactionsno high	0
Function code	1	Transactionsno low	0
Startaddress high (Bit)	0	Protocol-Ident high	0
Startaddress 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	Functional code	1
CRC low	x	Startaddress high (Bit)	0
		Startaddress low (Bit)	32
		Number of bits high	0
		Number of bits low	8
FC3,4 (reads words):		**FC3,4 (reads words):**	
Controller No.	1	Transactionsno high	0
Function code	4	Transactionsno low	0
Startaddress high (Wort)	238	Protocol-Ident high	0
Startaddress low (Wort)	102	Protocol-Ident low	0
Number of words high	0	Bytes from here	6
Number of words low	9	Recognition	e.g. 1
CRC high	x	Function code	4
CRC low	x	Startaddress high (Wort)	238
		Startaddress low (Wort)	102
		Number of words high	0
		Number of words low	9
FC5 (sets a Bit):		**FC5 (sets a Bit):**	
Controller No.	1	Transactionsno high	0
Function code	5	Transactionsno low	0
Startaddress high (Bit)	0	Protocol-Ident high	0
Startaddress 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	Startaderess high (Bit)	0
		Startaderess low (Bit)	32
		Bit value high	255 or 0
		Bit value low	0
FC6 (writes one word):		**FC6 (writes one word):**	

Controller No.	1		Transactionsno high	0
Function code	6		Transactionsno low	0
Startaddress high (word)	1		Protocol-Ident high	0
Startaddress low (word)	146		Protocol-Ident low	0
Writing value high	0		Bytes from here	6
Writing value low	85		Recognition	e.g. 1
CRC high	x		Function code	6
CRC low	x		Startaddress high (Wort)	1
			Startaddress low (Wort)	146
			Writing value high	0
			Writing value low	85

FC16 (writes several words):			**FC16 (writes several words):**	
Controller No.	1		Transactionsno high	0
Function code	16		Transactionsno low	0
Startaddress high (word)	238		Protocol-Ident high	0
Startaddress low (word)	102		Protocol-Ident low	0
Number of words high	0		Bytes from here	11
Number of words low	2		Recognition	e.g. 1
Number of bytes	4		Function code	16
Writing value 1 high	0		Startaddress high (Wort)	238
Writing value 1 low	123		Startaddress low (Wort)	102
Writing value 2 high	0		Number of words high	0
Writing value 2 low	234		Number of words low	2
CRC high	x		Number of bytes	4
CRC low	x		Writing value 1 high	0
			Writing value 1 low	123
			Writing value 2 high	0
			Writing value 2 low	234

5.5. Modbus reading addresses, 1-Wire Gateway 10, 11 and 20, system variables

Description	Reading addresses					Note
	Address	Number of words (16Bit)	Type of data	Bit address		
System variables						
Controller 2, Gateway 20 inputs	1	1	Word		Status binary input 1-Wire Controller 2 / 1-Wire Gateway 20	HHLL
Controller 2, Gateway 20 outputs	2	1	Word	32 to 36	Status binary output 1-Wire Controller 2 / 1-Wire Gateway 20	HHLL
Controller 2, Gateway 20 analog output	3	1	Word	16 to 19	Status analog output 1-Wire Controller 2 / 1-Wire Gateway 20	HHLL
Controller No.	60000	1	Word		Output of assigned numbers 1-Wire Controller / 1-Wire Gateway	HHLL
Article-No.	60001	1	Word		Article number 1-Wire Controller / 1-Wire Gateway	HHLL
Firmware version	61000	4	String		Firmware version 1-Wire Controller / 1-Wire Gateway	HHLL
Hardware version	61010	3	String		Hardware version 1-Wire Controller / 1-Wire Gateway	HHLL
Serial number	61020	9	String		Serial number 1-Wire Controller / 1-Wire Gateway	HHLL
Time	61030	4	String		time (RTC) 1-Wire Controller / 1-Wire Gateway	hh:mm:ss
Date	61035	4	String		date (RTC) 1-Wire Controller / 1-Wire Gateway	tt.mm.jj
Time, date	61030	9	String		Combination of time and date (RTC)	hh:mm:ss tt.mm.jj
Number of OWD	61039	1	Word		Output number of 1-Wire (OWD) sensors or actuators are stored	HHLL

5.6. Modbus reading addresses 1-Wire Sensors

	Reading addresses				Temperature- and Humidity-sensor e.g. Art. No. 11131, 11132, 11134, 11135, 11150, 11160 and further more	Temperature-, Humidity- and Air Quality-Sensor e.g. 11151 and 11152	Temperature, Brightness and Solar Radiation e.g. 11112	Brightness-sensor e.g. 11129	Note
	Address	Number of words (16Bit)	Type of data	Bit address					
1-Wire multisensors standard and PRO									
OWD 1	**40100**	**1**	**Integer**		Temperature	Temperature	Not in use (255)	Not in use (255)	Temperature
	40101,40102	**2**	**Dword**	1632 to 1639 (102*16)	Operating voltage	Operating voltage	Temperature	Status input decimal	HH HL LH LL
	40103,40104	**2**	**Dword**		Humidity	Humidity	Operating voltage	Status input binary	HH HL LH LL
	40105,40106	**2**	**Dword**		Dew point	Dew point	Brightness	Status output decimal	HH HL LH LL
	40107,40108	**2**	**Dword**		Brightness	Brightness	Solar Radiation	Status output binary	HH HL LH LL
	40109,40110	**2**	**Dword**		Not in use (255)	Air Quality	Not in use (255)	Not in use (255)	HH HL LH LL
	40111,40112	**2**	**Dword**		Status	Status	Status	Status	HH HL LH LL
	40113,40114	**2**	**Dword**		Error Counter	Error Counter	Error Counter	Error Counter	HH HL LH LL
	40115,40116	**2**	**Dword**		Article number / Type	Article number / Type	Article number / Type	Article number / Type	HH HL LH LL
OWD 2	**40200**	**1**	**Integer**		Temperature	Temperature	Not in use (255)	Not in use (255)	Temperature
	40201,40202	**2**	**Dword**	3232 to 3239 (202*16)	Operating voltage	Operating voltage	Temperature	Status input decimal	HH HL LH LL
	40203,40204	**2**	**Dword**		Humidity	Humidity	Operating voltage	Status input binary	HH HL LH LL
	40205,40206	**2**	**Dword**		Dew point	Dew point	Brightness	Status output decimal	HH HL LH LL

	40207,40208	2	Dword		Brightness	Brightness	Solar radiation	Status output binary	HH HL LH LL
	40209,40210	2	Dword		Not in use (255)	Air Quality	Not in use (255)	Not in use (255)	HH HL LH LL
	40211,40212	2	Dword		Status	Status	Status	Status	HH HL LH LL
	40213,40214	2	Dword		Error Counter	Error Counter	Error Counter	Error Counter	HH HL LH LL
	40215,40216	2	Dword		Articlenumber / Type	Articlenumber / Type	Articlenumber / Type	Articlenumber / Type	HH HL LH LL
OWD 3	40300	1	Integer		Temperature	Temperature	Not in use (255)	Not in use (255)	Temperature
	40301,40302	2	Dword	4832 to 4839 (302*16)	Operating voltage	Operating voltage	Temperature	Status input decimal	HH HL LH LL
	40303,40304	2	Dword		Humidity	Humidity	Operating voltage	Status Input binary	HH HL LH LL
	40305,40306	2	Dword		Dew point	Dew point	Brightness	Status output decimal	HH HL LH LL
	40307,40308	2	Dword		Brightness	Brightness	Solar radiation	Status output binary	HH HL LH LL
	40309,40310	2	Dword		Not in use (255)	Air Quality	Not in use (255)	Not in use (255)	HH HL LH LL
	40311,40312	2	Dword		Status	Status	Status	Status	HH HL LH LL
	40313,40314	2	Dword		Error Counter	Error Counter	Error Counter	Error Counter	HH HL LH LL
	40315,40316	2	Dword		Articlenumber / Type	Articlenumber / Type	Articlenumber / Type	Articlenumber / Type	HH HL LH LL
OWD 4	40400	1	Integer		Temperature	Temperature	Temperature	Status input decimal	Temperature
	40401,40402	2	Dword	6432 to 6439 (402*16)	Operating voltage	Operating voltage	Operating voltage	Status input decimal	HH HL LH LL
	40403,40404	2	Dword		Humidity	Humidity	Brightness	Status input binary	HH HL LH LL
	40405,40406	2	Dword		Dew point	Dew point	Solar Radiation	Status output decimal	HH HL LH LL
	40407,40408	2	Dword		Brightness	Brightness	Not in use (255)	Status output binary	HH HL LH LL

	40409,40410	2	Dword		Not in use (255)	Air Quality	Not in use (255)	Not in use (255)	HH HL LH LL
	40411,40412	2	Dword		Status	Status	Status	Status	HH HL LH LL
	40413,40414	2	Dword		Error Counter	Error Counter	Error Counter	Error Counter	HH HL LH LL
	40415,40416	2	Dword		Articlenumber / Type	Articlenumber / Type	Articlenumber / Type	Articlenumber / Type	HH HL LH LL
… and so on up to OWD 30									

5.7. Modbus reading addresses 1-Wire Temperature Sensors

	Reading addresses				Temperature Sensors	Note
	Address	Number of words (16Bit)	Type of data	Bit address		
	1-Wire Temperature Sensors					
OWD 1	**40100**	**1**	**Integer**		Temperature	Temperature
	40101,40102	**2**	**Dword**	1632 to 1639 (102*16)	Not in use (255)	HH HL LH LL
	40103,40104	**2**	**Dword**		Not in use (255)	HH HL LH LL
	40105,40106	**2**	**Dword**		Not in use (255)	HH HL LH LL
	40107,40108	**2**	**Dword**		Not in use (255)	HH HL LH LL
	40109,40110	**2**	**Dword**		Not in use (255)	HH HL LH LL
	40111,40112	**2**	**Dword**		Status	HH HL LH LL
	40113,40114	**2**	**Dword**		Error Counter	HH HL LH LL
	40115,40116	**2**	**Dword**		Articlenumber / Type	HH HL LH LL
OWD 2 to OWD 30	**40200**	**1**	**Integer**		Temperature	Temperature
	40201,40202	**2**	**Dword**	1632 to 1639 (102*16)	Not in use (255)	HH HL LH LL
	40203,40204	**2**	**Dword**		Not in use (255)	HH HL LH LL
	40205,40206	**2**	**Dword**		Not in use (255)	HH HL LH LL

40207,40208	**2**	**Dword**		Not in use (255)	HH HL LH LL
40209,40210	**2**	**Dword**		Not in use (255)	HH HL LH LL
40211,40212	**2**	**Dword**		Status	HH HL LH LL
40213,40214	**2**	**Dword**		Error Counter	HH HL LH LL
40215,40216	**2**	**Dword**		Articlenumber / Type	HH HL LH LL

5.8. Modbus Reading addresses 1-Wire actuators

Description	Reading addresses				8-fold binary output/ switching module (binary output) with push-button interface e.g. 11220, 11228	Dual switching module e.g. 11218, 11233	8-fold switching module (binary output) e.g. 11229	iButton DS2401 and further more	Note
	Address	**Number of words (16Bit)**	**Type of data**	**Bit address**					
OWD 1	**40100**	**1**	**Integer**	1632 to 1639 (102*16)	Not in use (255)	Not in use (255)	Temperature	Not in use (255)	Temperature
	40101,40102	**2**	**Dword**		Status input decimal	Not in use (0)	Operating voltage	0 or 1 (Bit)	HH HL LH LL
	40103,40104	**2**	**Dword**		Status input binary	Not in use (0)	Brightness	Not in use (255)	HH HL LH LL
	40105,40106	**2**	**Dword**		Status output decimal	Status output decimal	Not in use (255)	Not in use (255)	HH HL LH LL
	40107,40108	**2**	**Dword**		Status output binary	Status output binary	Not in use (255)	Not in use (255)	HH HL LH LL
	40109,40110	**2**	**Dword**		Not in use (255)	Not in use (255)	Not in use (255)	Not in use (255)	HH HL LH LL
	40111,40112	**2**	**Dword**		Status	Status	Status	Status	HH HL LH LL
	40113,40114	**2**	**Dword**		Error Counter	Error Counter	Error Counter	Error Counter	HH HL LH LL
	40115,40116	**2**	**Dword**		Articlenumber / Type	Articlenumber / Type	Articlenumber / Type	Articlenumber / Type	HH HL LH LL
OWD 2	**40200**	**1**	**Integer**	3232 to 3239 (202*16)	Not in use (255)	Not in use (255)	Temperature	Not in use (255)	Temperature
	40201,40202	**2**	**Dword**		Status input decimal	Not in use(0)	Operating voltage	0 or	HH HL LH LL
	40203,40204	**2**	**Dword**		Status input binary	Not in use(0)	Brightness	Not in use (255)	HH HL LH LL
	40205,40206	**2**	**Dword**		Status output decimal	Status output decimal	Not in use (255)	Not in use (255)	HH HL LH LL
	40207,40208	**2**	**Dword**		Status output binary	Status output binary	Not in use (255)	Not in use (255)	HH HL LH LL
	40209,40210	**2**	**Dword**		Not in use (255)	Not in use (255)	Not in use (255)	Not in use (255)	HH HL LH LL
	40211,40212	**2**	**Dword**		Status	Status	Status	Status	HH HL LH LL
	40213,40214	**2**	**Dword**		Error Counter	Error Counter	Error Counter	Error Counter	HH HL LH LL

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

5.9. Modbus write addresses

Description	Reading addresses					Note
	Address	Number of words (16Bit)	Type of data	Bit address		
System variables						
Controller 2, Gateway 20 Inputs	-	-	-	-		
Controller 2, Gateway 20 Outputs	2	1	Word	32 to 36		
Controller 2, Gateway 20 Analog outputs	3	1	Word	-		
Controller No.	-	-	-	-		
Article-No.	-	-	-	-		
Firmware Version	-	-	-	-		
Hardware Version	-	-	-	-		
Serialnumber	-	-	-	-		
Time	**61030**	**3**	**Word**	61030		hh:mm:ss
Date	**61035**	**3**	**Word**	61035		tt.mm.jj
Time, date	-	-	-	-		hh:mm:ss tt.mm.jj

5.10. Modbus write addresses 1-Wire sensors

Description	Reading addresses				Temperature- and Humidity-sensor e.g. Art. No. 11131, 11132, 11134, 11135 and further more	Temperature-, Humidity- and Air Quality sensor e.g. 11127	Temperature, Brightness and Solar Radiation e.g. 11112	Brightness sensor e.g. 11129	Note
	Address	**Number of words (16Bit)**	**Type of data**	**Bit address**					
OWD 1	**40100**	**-**	**-**		-	-	-	-	
	40101,40102	**-**	**Dword**	1632 to 1639 (102*16)	-	-	-	-	
	40103,40104	**2**	**Dword**		-	-	-	-	
	40105,40106	**2**	**Dword**		-	-	-	-	
	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**		-	-	-	-	
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		-	--	-	-	
… and so on up to OWD 30									

5.11. Modbus write addresses 1-Wire actuators

Description	Write addresses				8-fold binary output/ switching module (binary output) with push-button interface e.g. 11220, 11228	Dual switching module e.g. 11218, 11233	8-fold switching module (binary output) e.g. 11229	iButton DS2401 and further more	Note
	Address	Number of words (16Bit)	Type of data	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	-	Range of values 0-255
	40107,40108	1	Byte/Bit		Output binary	Output binary 2	Output binary	-	Range of values 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	-	Range of values 0-255
	40207,40208	1	Byte		Output binary	Output binary 2	Output binary	-	Range of values 0-255
	40209,40210	2	Dword		-	-	-	-	-
	40211,40212	2	Dword		-	-	-	-	-
	40213,40214	2	Dword		-	-	-	-	-
	40215,40216	2	Dword		-	-	-	-	-
OWD 3	40300	1	Integer		-	-	-	-	-
	40301,40302	2	Dword	4832 to 4839 (302*16)	-	-	-	-	-
	40303,40304	2	Dword		-	-	-	-	-
	40305,40306	2	Dword		Output decimal	Output binary 1	Output decimal	-	Range of values 0-255

	Register	#	Type	Range	Value 1	Value 2	Value 3		Value 5
	40307,40308	2	Dword		Output binary	Output binary 2	Output binary	-	Range of values 0-255
	40309,40310	2	Dword		-	-	-	-	-
	311,312	2	Dword		-	-	-	-	-
	313,314	2	Dword		-	-	-	-	-
	315,316	2	Dword		-	-	-	-	-
OWD 4	40400	1	Integer	6432 to 6439 (402*16)	-	-	-	-	-
	40401,40402	1	Dword		-	-	-	-	-
	40403,40404	1	Dword		-	-	-	-	-
	40405,40406	1	Dword		Output decimal	Output binary 1	Output decimal	-	Range of values 0-255
	40407,40408	1	Dword		Output binary	Output binary 2	Output binary	-	Range of values 0-255
	40409,40410	1	Dword		-	-	-	-	-
	40411,40412	1	Dword		-	-	-	-	-
	40413,40414	1	Dword		-	-	-	-	-
	40415,40416	1	Dword		-	-	-	-	-
… and so on up to OWD 30				32 to 36					

6.   Firmware update

With the Config-Tool 3 you can easily download a new firmware from various locations. The firmware can be used for all device versions of the 1-Wire Controller, 1-Wire Gateways and Station-200. The corresponding functionality is released adapted to the installed device.

The firmware update is carried out via the data interface of the 1-Wire Controller / 1-Wire Gateway. For the Station-200 it is carried out via USB slave socket.

Note: Before carrying out the update, we recommend to save the settings using the "SAVE PROJECT AS" function.

Process of firmware update

a. Open the selection menu by clicking on the "DOWNLOAD FIRMWAREFILE" button. You have the choice between "ESERA SERVER BETA", "ESERA SERVER STABLE" and "ESERA WEBSHOP". The latest firmware versions are released via the ESERA SERVER BETA and STABLE.

b. Select "ESERA SERVER STABLE" or "ESERA SERVER BETA". A new window will open in which you can select a firmware version. Here you will also find a "Readme" document for each firmware version. This document lists the changes/updates of the corresponding firmware.
Basically we publish new firmware versions as Beta. These are already pre-tested and are ready to use. The beta versions may still contain errors.

c. Download firmware.

d. Use the "SELECT FIRMWARE-UPDATE" button to select the firmware that you want to transfer to the 1-Wire Controller / 1-Wire Gateway.

e. By clicking on the "START FIRMWARE-UPDATE" button, the transfer of the firmware to the 1-Wire Controller / 1-Wire Gateway will start. As of firmware version V1.18_38, it is no longer necessary to press the reset button of the 1-Wire Controller / 1-Wire Gateway for an update. If the update will not start automatically, start the update via the emergency system.

Firmware update via emergency system

If the update is faulty, e.g. due to a power failure, you can use the emergency system. In order to perform the firmware update via the emergency system, push the reset button, start the update in Config-Tool 3 and then release the reset button approx. 1 second after starting in Config-Tool 3. Now the update should start. After performing an update, we recommend to disconnect the 1-Wire Controller / 1-Wire Gateway from the power supply for approx. 30 seconds and restart it.
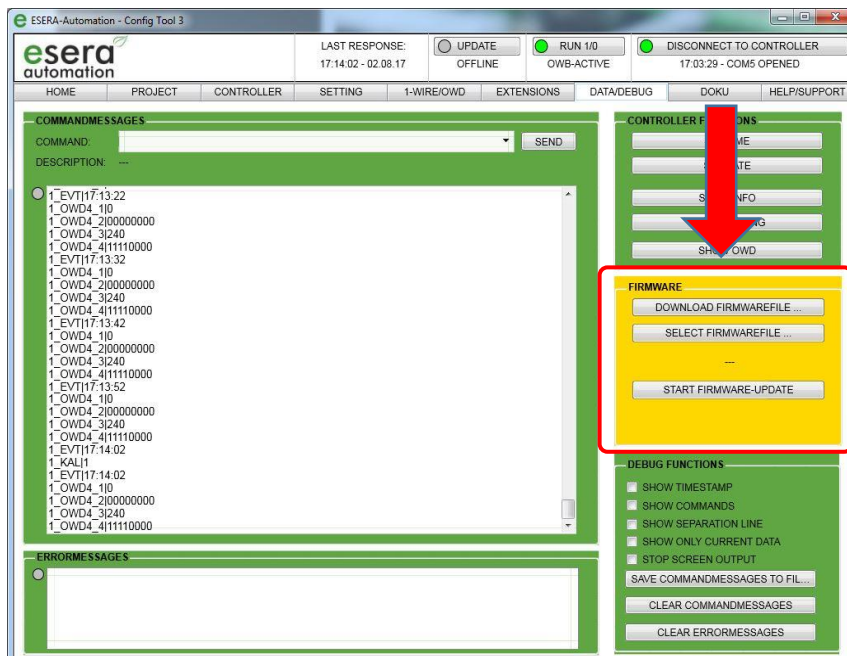
If any issues with the firmware update should occur, we will be happy to assist you.

Please contact our technical support by e-mail, support@esera.de or by phone, +49 8341 99980-29.

After upgrading the firmware, the 1-Wire Controller / 1-Wire Gateway or ESERA Station-200 must be de-energized for at least 10 seconds and ideally a system reset must be performed.

1-Wire Gateway 10 with RS485 + USB interface

The firmware of the 1-Wire Controller 1 RS485 can only be updated via the USB interface.

7. Command structure ASCII protocol

There are basically four types of command- and output identifiers. They can be used to differentiate and evaluate the various data of the outputs and inputs.

SET: Set values or modes of the 1-Wire Controller
GET: Querying data or modes
INF: Data output after a GET command
ERR: Error Output after a wrong input
EVT: Messages sent automatically by the 1-Wire Controller / 1-Wire Gateway
DBG: test issues

8. Configuration and data output ASCII protocol
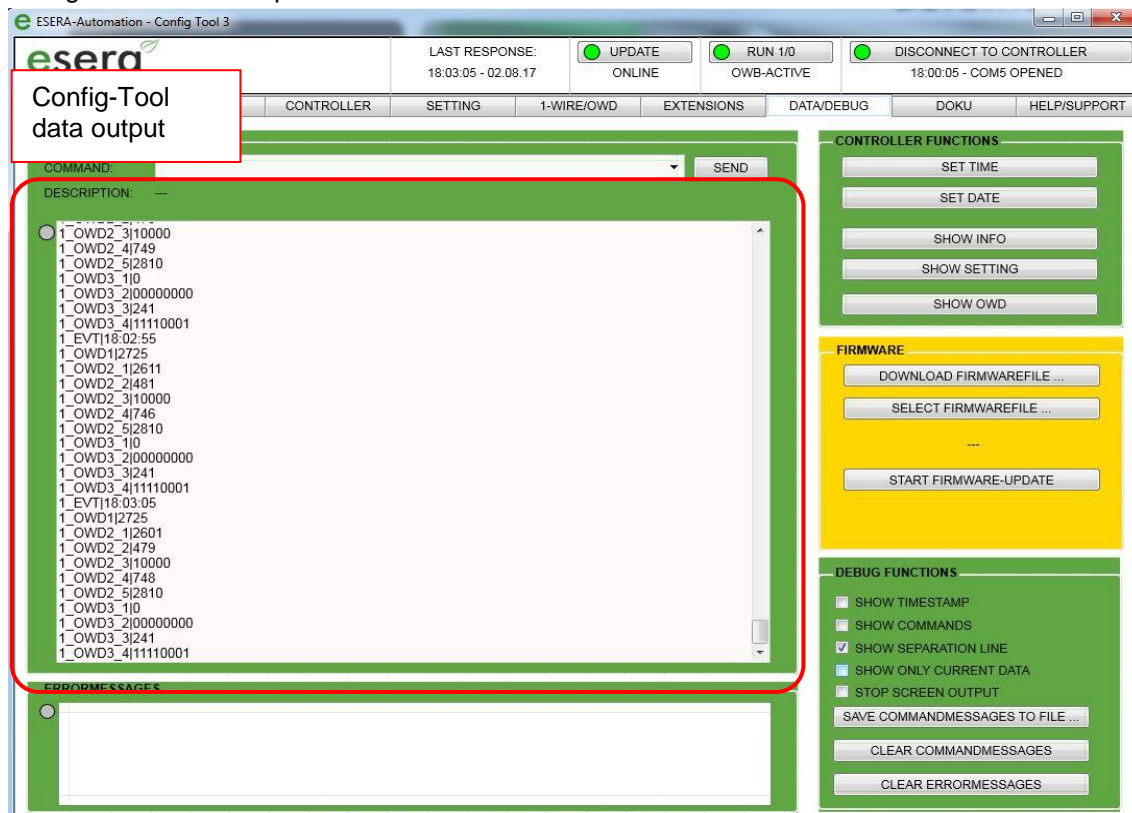
8.1. Command principles

All commands can be written in upper or lower case.
The command parts sent to the 1-Wire Controller / 1-Wire Gateway are separated by a comma (,).

Data output 1-Wire Controller / 1-Wire Gateway, ASCII text output
- Each data output triggered cyclically by the 1-Wire Controller / 1-Wire Gateway is initiated by controller no._EVT|TIME
- Data output by events (digital inputs, e.g. DS2408) are initiated by controller no. _EVT|.
- Data records per 1-Wire device are separated by a semicolon (;)
- The variable name and variable value are separated by a vertical dash (|).
- **Each command to the 1-Wire Controller / 1-Wire Gateway must be terminated with a carriage return (CR, hexadecimal 0D).**
- **Each data output of the 1-Wire Controller / 1-Wire Gateway is terminated with a carriage return (CR, hexadecimal 0D or decimal 13) and line feed (LF, hexadecimal 0A or decimal 10).**
- The 1-Wire Controller / 1-Wire Gateway has a data memory for up to 10 commands. The received commands are processed "First In - First Out".

Config-Tool 3: data output

Settings and 1-Wire devices

By command (SET,SYS,SAVE) all settings of the 1-Wire Controller / 1-Wire Gateway and all
1-Wire devices and modules (SET,OWB,SAVE) can be stored permanently. If these settings are not saved, the 1-Wire Controller / 1-Wire Gateway will start after a reset or a power interruption with the previous basic settings and possibly different device sequence.

- a. All 1-Wire sensors and actuators can be conveniently managed via the Config-Tool.
- b. For many ESERA sensors and actuators, formulas are available within the 1-Wire Controller / 1-Wire gateways. These formulas can be selected via a drop-down list and assigned to a sensor or actuator.

b. Overview sensors and actuators with serial number, status, article number and name

b. Formula selection for ESERA sensors and actuators

Reset device to factory settings

The 1-Wire Controller / 1-Wire Gateway can be reset to the factory settings via the push button "LOAD FACTORY DEFAULT". This also deletes all settings for the 1-Wire devices (OWD).
After loading the factory settings, a reset and a restart will be triggered automatically.
The previous settings are overwritten by the default settings.
Alternatively, only the settings of the 1-Wire Controller / 1-Wire Gateway can be reset.

All factory settings (default)

Factory settings setting only

Debug output

Various debug outputs for the 1-Wire Controller / 1-Wire Gateway can be used, e.g. system status, system setting, 1-Wire sensor and actuator setting etc. can be output via the data connection. In some cases internal 1-Wire Controller / 1-Wire Gateway data are also output.

Data request 1-Wire blocks

In a time window of 1-2 seconds, the 1-Wire Controller / 1-Wire Gateway asks all blocks of the 1-Wire network and, if the data has been recognized as valid, stores it in the internal data register.

8.2. Data output

The data of the 1-Wire devices are output in a selectable cycle, or by request, as a data string. A manual query of individual data values is not provided.

The last valid data of the connected 1-Wire devices are output. If a 1-Wire device is no longer available in the network or the data request is permanently disturbed, no data is output for this sensor.

It can be selected whether the abstracted name "OWD" and its number, One Wire Device or its serial number is output. The data output can be switched by command.

Command: SET,OWB,OWDID,0 or 1.

If an input in a connected digital I/O block has changed, an event with its own data string is output via the data interface for this block.

If an iButton access key is contacted, an event also occurs, independent of the cyclic data output for this block.

8.3. Formatting

The corresponding data for the existing 1-Wire block are output as integer values with no comma. The output form allows further processing of the data. To display analog values, e.g. temperature, only a division by 100 is necessary in your software.

8.4. Controller-number

In order to be able to clearly distinguish data output from several 1-Wire Controllers / 1-Wire Gateways, a number is assigned for each 1-Wire Controller / 1-Wire Gateway, which is output with each data record. In delivery state, the number "1" is assigned for the 1-Wire Controller / 1-Wire Gateway. If more than one 1-Wire Controller / 1-Wire Gateway are available in your network, the 1-Wire Controller / 1-Wire Gateway can be set to e.g. "2" by command (SET,SYS,CONTNO,2) and all outputs of the second 1-Wire Controller / 1-Wire Gateway can be set to "2". Thus, all outputs of the second 1-Wire Controller / 1-Wire Gateway can be uniquely assigned to this controller number.
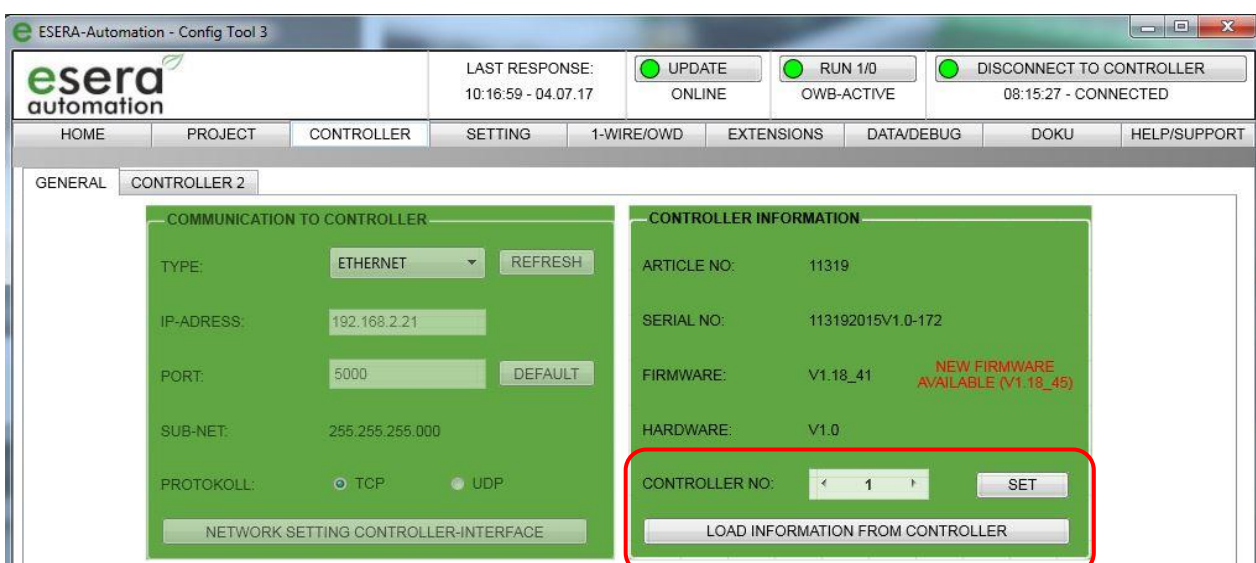
8.5.   „Data header"

Each data output of the 1-Wire Controller / 1-Wire Gateway starts with an abbreviation, e.g. "EVT" for Event. The chart below shows various "data headers".

8.5.1.   Event (EVT), data output

Cyclically output data are 1-Wire data and "Keep Alive" messages (KAL). In order to be able to check that the data outputs are up-to-date, each cyclic data string contains the current time of the 1-Wire Controller / 1-Wire Gateway. By command the format of the data, the 1-Wire device name, can be selected from stored modes.

8.5.2.   1-Wire Controller / 1-Wire Gateway setting (CSE = Controller Setting)

The data header "CSE" is put in front of the output of the 1-Wire Controller / 1-Wire Gateway settings. This allows your software to clearly recognize when this data was output.
1-Wire Controller / 1-Wire Gateway setting data header: 1_CSE|19:17:39

8.5.3.   1-Wire Controller / 1-Wire Gateway info (CSI = Controller System Info)

The data header "CSI" is put in front of the output of the 1-Wire Controller / 1-Wire Gateway. This allows your software to clearly recognize when this data was output.
Info data header: 1_CSI|19:15:02

8.6.   Acknowledgement of receipt

The 1-Wire Controller / 1-Wire Gateway sends an acknowledgement of receipt on each received command. A text or numerical value can be output as confirmation by setting, ECHO 0 or 1. An echo or the numerical value "0" is output for an error-free command.
If a command or part of a command is unknown or is outside the permitted value range, an error message in text- or number format is output. In each case, the first command part recognized as faulty will be output.

Data output:
ECHO 0: Error message as numerical value. 0=ok, 1=first command part, 2=second command part, etc.
ECHO 1: Error message in plain text

The command, "set,sys,echo,0 or 1", for the change of the acknowledgement of receipt can be entered via the "Command" field.
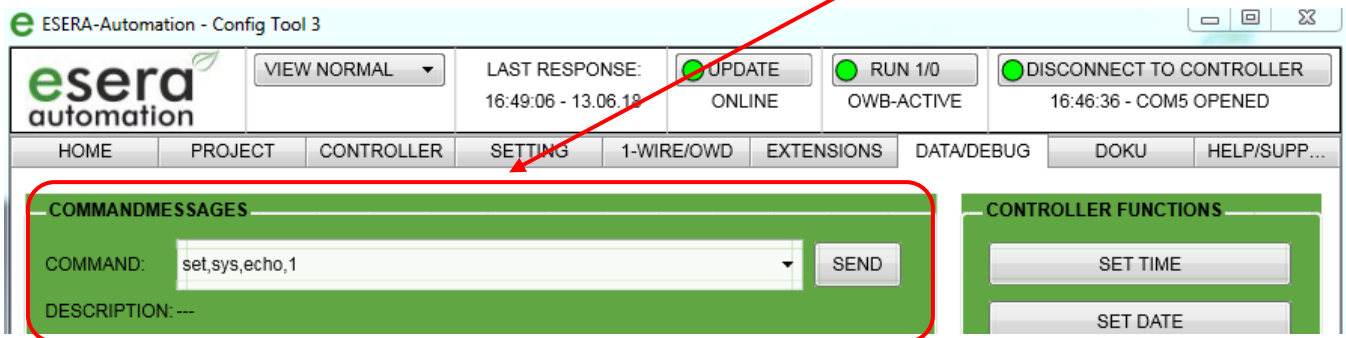
8.7. 1-Wire Controller / 1-Wire Gateway output at system start, ready

After applying the operating voltage, the 1-Wire Controller / 1-Wire Gateway starts automatically. A successful system start is indicated by the 1-Wire Controller / 1-Wire Gateway with the output "RDY|0".
The 1-Wire Controller / 1-Wire Gateway also signals that it is ready for operation by 3 flashes of the data LED. Data can then be read or commands can be entered.
If a debug output is activated, a list of the 1-Wire Controller / 1-Wire Gateway settings is output.
Data output:
1_INF|time
1_RDY|0   => Controller no._RDY|0 = 1-Wire Controller / 1-Wire Gateway is ready
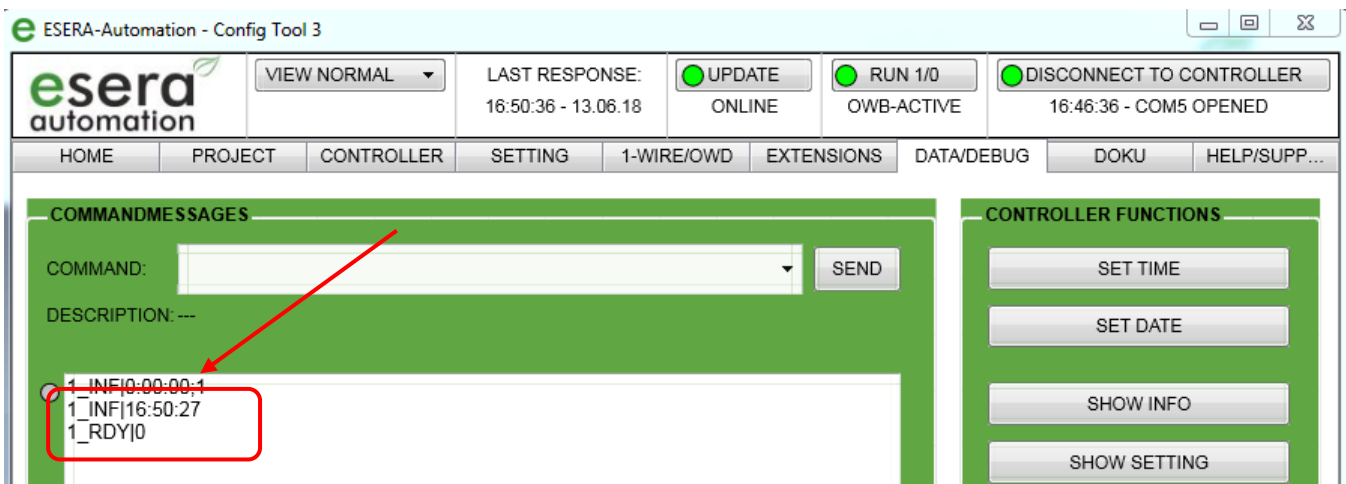
9. Options – settings

9.1. KAL = Keep Alive or heartbeat of the 1-Wire Controller / 1-Wire Gateway

With the Config-Tool 3 you can comfortably set all settings for the KAL function and save them permanently.
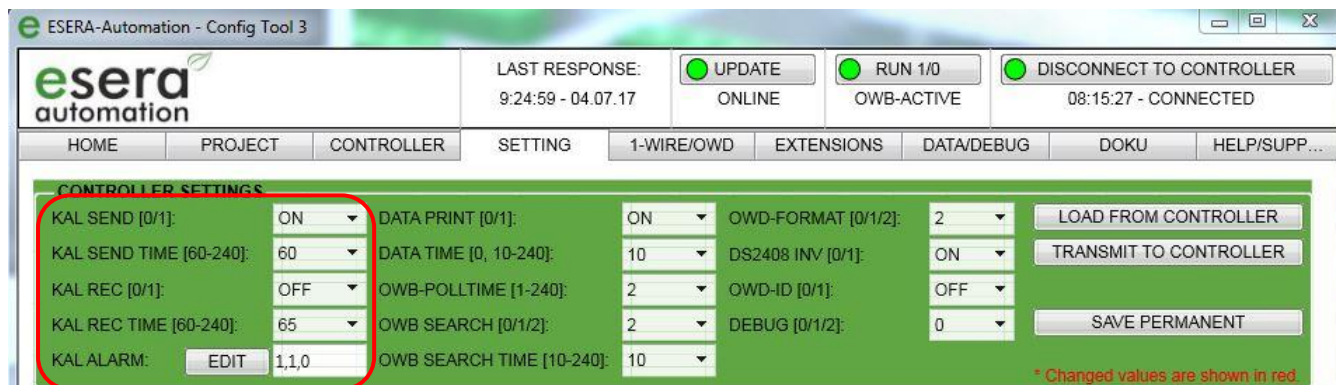
9.1.1. Keep Alive Send, KAL SEND ON/OFF (KAL = Keep Alive or heartbeat)

At a fixed time interval, the 1-Wire Controller / 1-Wire Gateway outputs a so-called "Keep Alive" (KAL) or "Heartbeat" message. This is to signal the correct function of the 1-Wire Controller / 1-Wire Gateway and the data transmission path to the higher-level system.
The time interval of the KAL message can be changed (KALSENDTIME) or completely deactivated (KALSEND).
Selectable states: ON = 1 / OFF = 0, delivery state: ON = 1
Data output:
1_EVT|time   => Controller no._event | time
1_KAL|1   => Controller no._data record |1
Command: SET,SYS,KALSEND,0 or 1

9.1.2. Data and KAL (heartbeat)

If the "KAL SEND" function has been activated, ON, a "sign of life" in the following form is sent in a fixed rhythm. This is also sent if the 1-Wire Controller or 1-Wire Gateway is in run 0 mode, i.e. no data output is enabled.

1_EVT|11:50:20 => 1-Wire Controller / 1-Wire Gateway no. Event|time (H:M:S)
1_KAL|1

9.1.3. KAL SEND TIME 60 - 240 (Keep Alive Send Time)

The time interval of the KAL message can be changed.
Selectable range: 60 - 240 seconds
Factory setting: 60 seconds
Command: SET,SYS,KALSENDTIME,60 - 240

9.1.4. Keep Alive Receive, KAL REC ON/OFF (Keep Alive Receive)

The 1-Wire Controller / 1-Wire Gateway expects in a fixed time interval, default 65 seconds, a "Keep Alive" message from the higher-level system (PC, PLC, ...).
If the KAL message fails to appear, the Data LED flashes rapidly in a fixed cycle and the assigned switching output of a 1-Wire switching module is activated.
The time interval of the KAL message can be changed (KALRECTIME) or completely deactivated (KALREC).
Selectable states: ON = 1 / OFF = 0, delivery state: OFF = 0
Command: SET,SYS,KALREC,0 or 1

9.1.5. KAL REC TIME 60 - 240 (Alive Receive Time)

The time interval of the KAL message from the higher-level system (PC, PLC, ...) can be changed (KALRECTIME).
Selectable range: 60 - 240 seconds, factory setting: 65 seconds
Command: SET,SYS,KALRECTIME,60 - 240

9.1.6. Keep Alive Receive Alarm
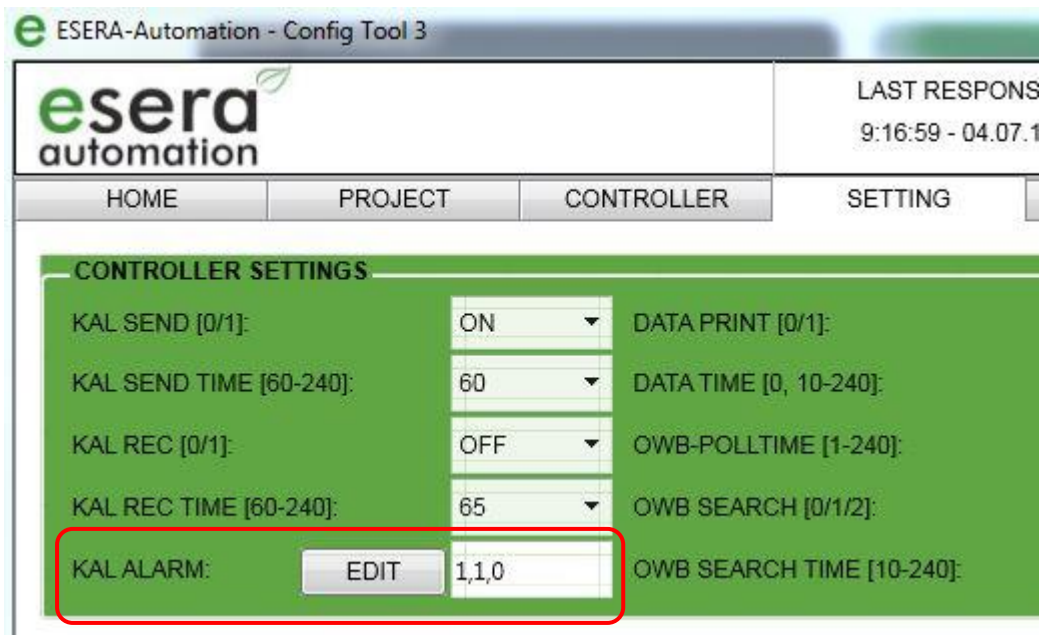
With this function, the entire data transmission path and the control system, PLC, PC, can be monitored backwards and an alarm can be triggered in the event of failure.
An output of a 1-Wire switching module with the components DS2405, DS2413 or DS2408 can be assigned as alarm output for missing KAL messages.
In addition, an internal relay can be assigned to the 1-Wire Controller 2 or 1-Wire Gateway 20 in addition to a 1-Wire switching module.

The assigned output can be used as a normal output in regular operation (without 1-Wire Controller / 1-Wire Gateway alarm). The 1-Wire Controller / 1-Wire Gateway uses this output for its own purposes in the event of an alarm.
To assign an internal relay to a 1-Wire Controller 2 or 1-Wire Gateway 20, enter "0" for the OWD number.

The assignment of the "KAL alarm output" is performed with the
Command: SET,SYS,CALARM,OWD-NUMBER,OUTPUT,VALUE

Example for 1-Wire Controller 1 or 1-Wire Gateway 10 or 1-Wire Gateway 11:
SET,SYS,KALALARM,2,3,1 => OWD 2, binary output 3 becomes 1 when KAL alarm is triggered.

Example for 1-Wire Controller 2 or 1-Wire Gateway 20:
SET,SYS,KALALARM,0,1,1 => Internal relay 1 becomes 1 when KAL alarm is triggered.

Settings for the KAL alarm can be set via Config-Tool 3 settings (from Config-Tool 3 V1.5).
The assigned output remains permanently stored in the 1-Wire Controller or 1-Wire Gateway.
This "KAL Alarm Output" is activated when the max. KAL receive time is exceeded and remains active until the 1-Wire Controller or 1-Wire Gateway again receives "KAL" messages.
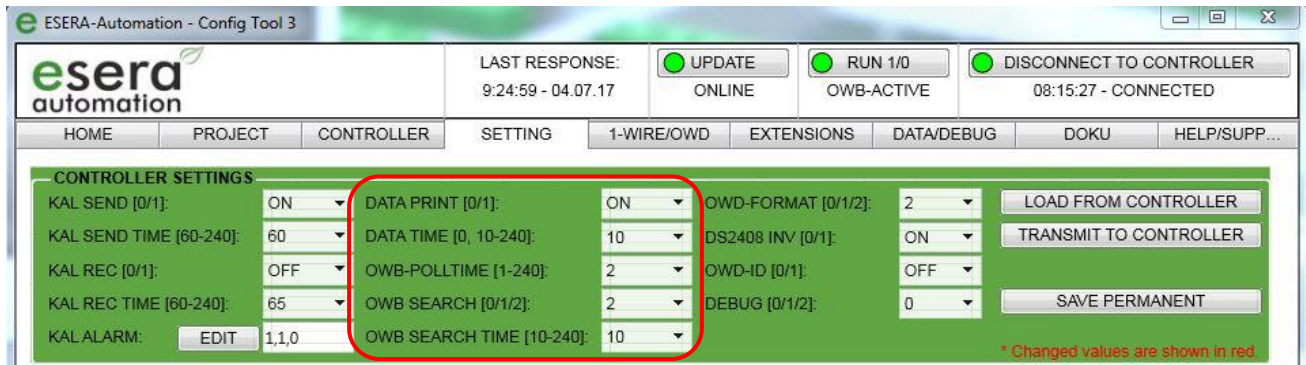
9.2. DATA PRINT ON/OFF

Setting of the operating mode for data output of the sensor data
Selectable states: ON = 1 / OFF = 0
OFF = 0 => Data output in one line with one CR, ON = 1 => Continuous output in one line with separator "|".
Factory setting: ON = 1
Command: SET,SYS,DATAPRINT,0 or 1

9.3. DATA TIME 0, 10 - 240

Setting of the cycle time for sending 1-Wire / OWD data
Selectable range: 0; 10 - 240
0 = Data only on request, cycle time = 10 - 240 seconds
Factory setting: 10
Command: SET,SYS,DATATIME,0 or 10 - 240

9.4. OWB POLLTIME 1 - 240 (data output, available starting with firmware V1.15_51)

Here you can set the poll time for all 1-Wire devices. The time (in seconds) defines, how often the 1-Wire devices are queried.
Selectable range: Poll time (cycle time) = 1 - 240 seconds.
Note: A poll time faster than 2 seconds should only be selected for a small number of max. 5 or 6 1-Wire devices.
Note: The DATA TIME cannot be selected shorter than the OWB POLLTIME.
(DATA TIME>= POLLTIME).
Factory setting: Poll time is 2 seconds
Command: SET,SYS,POLLTIME,1 - 240

9.5. OWB SEARCH ON/OFF

Different methods of searching for OWDs and sorting them into the OWD list can be selected.
Selectable states: ON = 1 or 2, OFF = 0
Details to the two search functions can be found in the programming manual under the tab "DOKU".
0=no search, 1=complete cyclic search (sequence of blocks may change)
2=adaptive cyclic search for new blocks. New blocks are written to the first free space in the OWD list.
Factory setting: ON = 2
Note: With "OWB SEARCH 1" the OWD numbers may be re-sorted.
Command: SET,OWB,SEARCHTIME,0 - 2

9.6. OWB SEARCH TIME 10 - 240

Setting of the cycle time for the search function
Selectable range: 10 - 240
Factory setting: 10 seconds,
Command: SET,OWB,SEARCHTIME,10 - 240
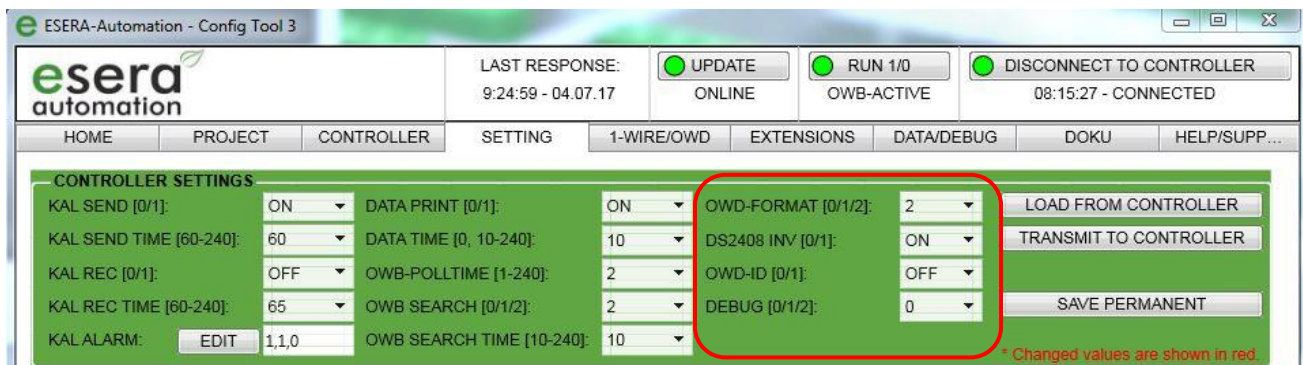
9.7.　OWD FORMAT 0, 1 or 2

Defines the number of decimal places for measured values of the temperature sensors.
Selectable range: 0 - 2 decimal places
Factory setting: 2 decimal places, e.g. 23.45 °C are used as output value 2345
Command: SET,OWD,FORMAT,0 - 2

9.8.　DS2408 INV ON/OFF

Inverting of the outputs of DS2408 devices (8-fold I/O). This inversion is necessary due to the electrical function of the "Open Drain" outputs of the DS2408 chips.
Selectable states: ON = 1 / OFF = 0
Factory setting: ON = 1
Command: SET,OWD,DS2408INV,0 or 1

9.9.　OWD ID ON/OFF

Switching of the output of the module name either with "OWD" or the own serial number.
Selectable states: ON = 1 / OFF = 0,
0 = output "OWD", 1 = output of the block serial number
Factory setting: OFF = 0
Command: GET,SYS,OWDID,0 or 1

9.10.　DEBUG 0, 1 or 2

Different outputs are output for the current activity of the 1-Wire Controller / 1-Wire Gateway. For example, the data raw values of 1-Wire devices are output.
Selectable states: 0 = no debug (additional information), 1 and 2 = debug outputs
Note: The debug output is not specified. It is intended to provide information about the current workload of the 1-Wire Controller / 1-Wire Gateways and also for data output of the 1-Wire devices.
Factory setting: 0
Command: SET,SYS,DEBUG,0/1/2

9.11.　OWDIDFormat, output format of 1-Wire serial numbers

There are basically two ways to output the 1-Wire serial number of a 1-Wire device. The output of the serial number can be displayed on the left or right, starting with the family code. There is no fixed default for this according to the 1-Wire specification.
The output formatting of the 1-Wire serial number can also be switched, starting with firmware V1.18_41.
The serial numbers of the 1-Wire devices can be looked up at different list outputs (List0, List1, etc.) or at the output of the OWD numbers.

Example: In the following two output possibilities are represented. The numbers 28 and 26 in our example stand for the family code of the 1-Wire blocks, by means of which the 1-Wire blocks and their functions can be clearly identified.

OWDIDFORMAT 0:
1_LST3|11:25:05
LST|1_OWD1|**28**10AFAF07000050|S_0|DS1820|
LST|1_OWD2|**26**B460FB010000E5|S_0|11121|

OWDIDFORMAT 1:
1_LST3|11:37:56
LST|1_OWD1|50000007AFAF10**28**|S_0|DS1820|
LST|1_OWD2|E5000001FB60B4**26**|S_0|11121|

Note: This switching of the output formatting cannot be changed directly via the input field in Config-Tool 3. For this an input via the "Command" field is necessary.
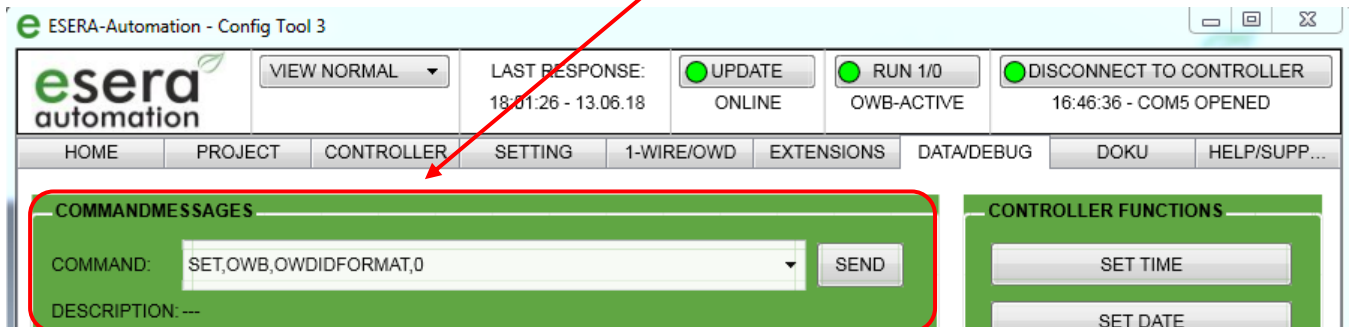
Factory setting: OWDIDFORMAT 1
Command to change: SET,OWB,OWDIDFORMAT,0 or 1

9.12.   1-Wire Controller / 1-Wire Gateway Run 0 or 1
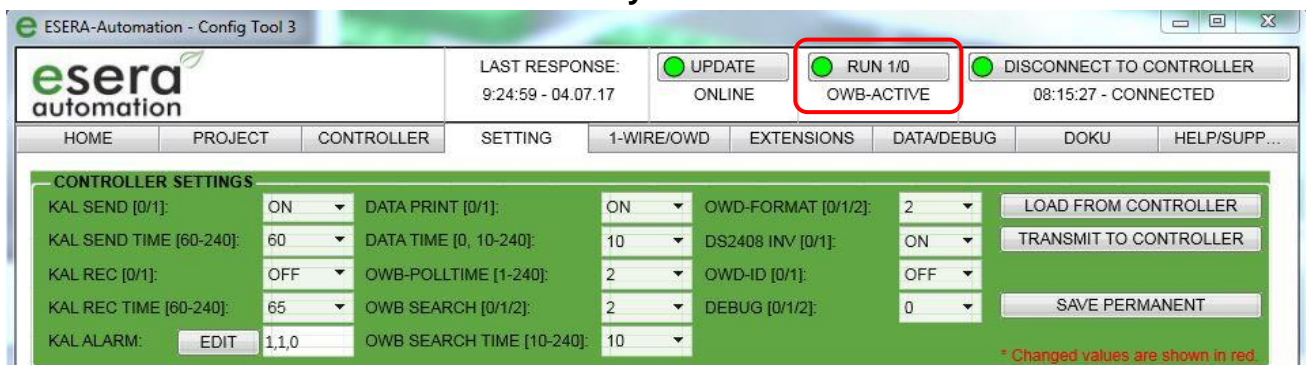
If settings on the 1-Wire controller should be made or a list output should be analyzed, it may make sense to stop the data output.
Use the following **command**: SET,SYS;RUN,0 or 1. (0 = data output stopped, 1 = normal operation).
If the 1-Wire Controller / 1-Wire Gateway is set to "RUN 0", there is no search for new 1-Wire devices and no data retrieval of the 1-Wire devices. During this time, the data LED flashes at a frequency of approx. 200Hz.

The status can be queried by **command**: GET,SYS,RUN.
A set stop is not permanently stored in the 1-Wire Controller / 1-Wire Gateway. After switching back on the supply voltage, the 1-Wire Controller / 1-Wire Gateway will always be in normal operation. Cyclic KAL messages are still sent during a stop.

10. Lists of 1-Wire devices

10.1. List output to 1-Wire devices (LST)

There are different formatted lists available for the output of the 1-Wire devices or sensors and actuators connected to the 1-Wire Controller / 1-Wire Gateway.
In the lists the type of the device, the device serial number and the position on the list are stored.
Each of the output lists begins with a clearly identifiable data header in order to ensure correct software assignment. In order to be able to clearly separate the list and OWD data output, each list line is preceded by "LST|".
Currently there are four lists available for the output of 1-Wire devices or sensors and actuators.

Example: LISTALL
Data header:
    1_LST0|17.06.2014   => 1-Wire Controller / 1-Wire Gateway No._ListNo|Date (dd:mm:yyyy)
List of all stored OWDs with serial number and status
    LST|1_OWD1|A10000000BF08920|S_0|DS2450
    LST|1_OWD2|890000067A5CD728|S_0|DS1820
    => 1-Wire Controller / 1-Wire Gateway No._OWDNo|SerialNo..|Status|Device/Module
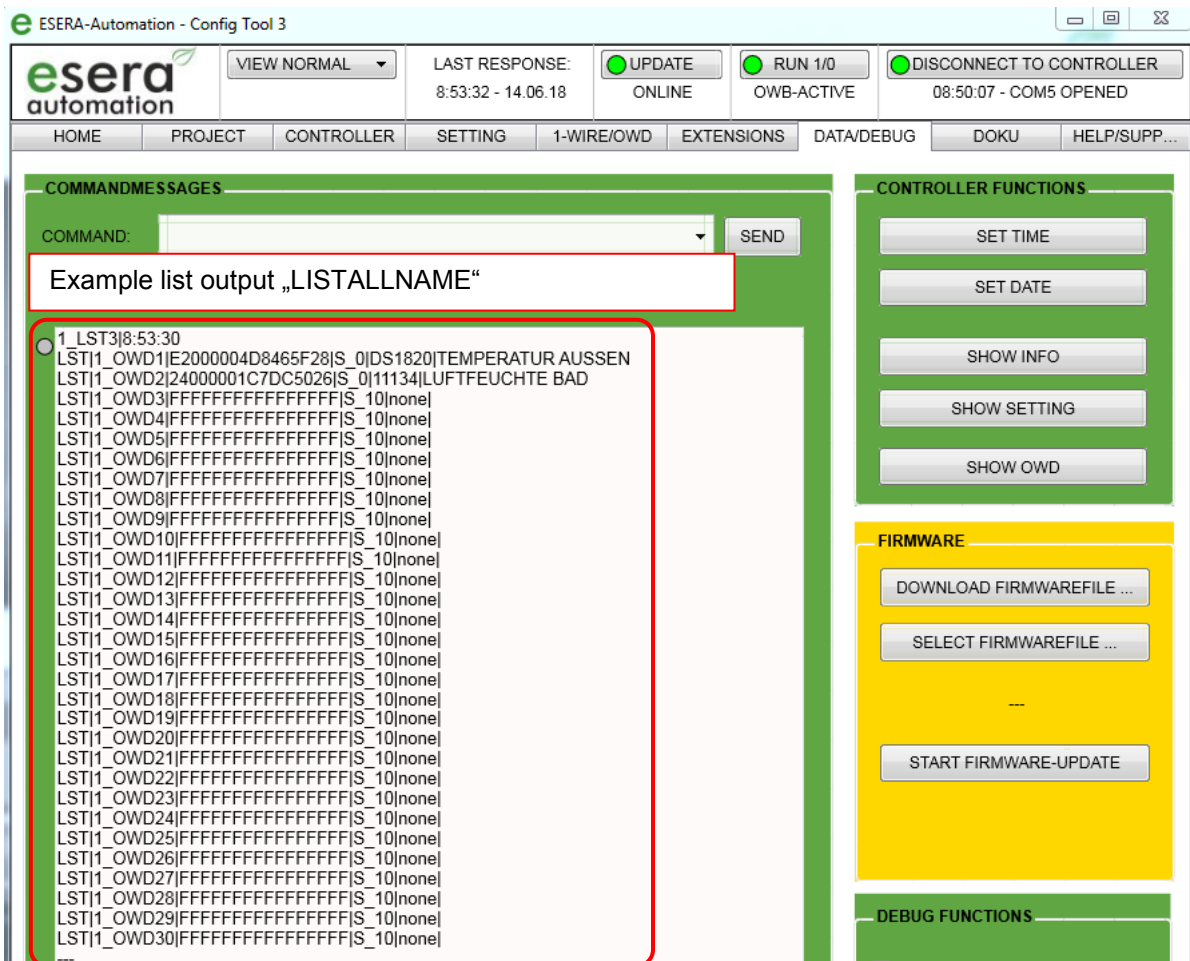
In addition, there is a list output of the stored 1-Wire devices or sensors and actuators. The list output begins with a clearly identifiable data header in order to reliably separate the software assignment, too. Each list line is also preceded by "LST|".

Command for query: GET,OWB,LISTMEM
Data header:
    1_LST4|11:36:42   => 1-Wire Controller / 1-Wire Gateway No._ListNo|Date (dd:mm:yyyy)

List of all stored devices:

LST|1_OWD1|A10000000BF08920|DS2450   => Controller No._OWDNo|SerialNo|Type of device
LST|1_OWD2|890000067A5CD728|DS1820

10.2. List 0, active devices or sensors and actuators

The following command will output all 1-Wire-devices with "OWD" and serial number (ID) as well as type of component.
Command: GET,OWB,LIST0
Example:
1_LST0|18:47:55
LST|1_OWD1|2863DD51040000FF|DS18B20
LST|1_OWD2|26D9DA88010000BE|DS2438

10.3. List 1, active devices or sensors and actuators, LIST1

The following command will output all currently connected or readable 1-Wire devices with serial number.
Command: GET,OWB,LIST1
Example:
1_LST1|18:46:35
LST|2863DD51040000FF
LST|26D9DA88010000BE

10.4. List 2, active devices or sensors and actuators, LIST2

The following command will output all currently connected or readable 1-Wire devices with serial number and type of component.
Command: GET,OWB,LIST2
Example:
1_LST2|18:47:48
LST|2863DD51040000FF|DS18B20
LST|26D9DA88010000BE|DS2438

10.5. List of all devices or sensors and actuators, LISTALL

The following command will output all 1-Wire devices with "OWD", serial number (ID), type of device and status.
"S" stands for device. 0-3 = status, 5 = device not available or not addressable, 10 = space not assigned.
Command: GET,OWB,LISTALL
Example:
1_LST2|18:49:50
LST|1_OWD1|2863DD51040000FF|S_0|DS18B20
LST|1_OWD2|26D9DA88010000BE|S_0|DS2438
LST|1_OWD3|FFFFFFFFFFFFFFFF|S_10|
…
LST|1_OWD30|FFFFFFFFFFFFFFFF|S_10|

10.6. List of all devices or sensors and actuators with names, LISTALLNAME

The following command will output all 1-Wire devices with "OWD", serial number (ID), type of device, status and the name, which you have assigned.
"S" stands for device. 0-3 = status, 5 = device not available or not addressable, 10 = space not assigned.
Command: GET,OWB,LISTALL
Example:
1_LST2|18:49:50
LST|1_OWD1|2863DD51040000FF|S_0|DS18B20,TEMPERATURE
LST|1_OWD2|26D9DA88010000BE|S_0|DS2438,SENSOR
LST|1_OWD3|FFFFFFFFFFFFFFFF|S_10|
…
LST|1_OWD30|FFFFFFFFFFFFFFFF|S_10|

10.7. List of all stored devices or sensors and actuators, LISTMEM

This command will output all 1-Wire devices/modules which are permanently stored in the 1-Wire Controller / 1-Wire Gateway with "OWD number", serial number (ID) and type of device.
Command: GET,OWB,LISTMEM

Example:
1_LST2|18:49:50
LST|1_OWD1|2863DD51040000FF|DS18B20
LST|1_OWD2|26D9DA88010000BE|DS2438
LST|1_OWD3|FFFFFFFFFFFFFFFF|none
…
LST|1_OWD30|FFFFFFFFFFFFFFFF|none

11. Data output of system-internal inputs / outputs Controller 2 / Gateway 20

The following functions are available only for the 1-Wire Controller 2 / 1-Wire Gateway 20.
For the system-internal inputs and outputs a cyclic data output takes place, identical to the 1-Wire devices / modules.
In addition, there is an event-controlled data output as soon as the status of a digital input has changed. The formatting of event-controlled data output is the same as that of cyclic data output.

In order to be able to distinguish the data output of the system-internal inputs and outputs from the data output of the 1-Wire devices or sensors and actuators, the internal data records are designated as "SYS".

11.1. Digital inputs

Data output for the digital / binary inputs is in decimal and binary data format. All four inputs are displayed with a numerical value in the range of 0-15. Each input has a value that is added up. Input 1 active = 1, input 2 active = 2, input 3 active = 4, input 4 active = 8.
An input is active if a DC voltage in the range of 10-30VDC is available.
Data output:
1_SYS1_1|0   => Controller No._ System No._DataRecord| InputValue (DEZ)
1_SYS1_2|00000000   => Controller No._ System No._DataRecord| InputValue (BIN)

11.2. Digital output

The status of the digital / binary relay outputs is in decimal and binary data format.
All 5 outputs are displayed with a numerical value in the range 0-31. Each output has a value that is added up.
Output 1 active = 1, output 2 active = 2, output 3 active = 4, output 4 active = 8 and output 5 active = 16.
An output is active if a relay has been switched on or switched to output 5.
Data output:
1_SYS2_1|0   => Controller No._ System No._DataRecord| OutputImage (DEZ)
1_SYS2_2|00000000   => Controller No._ System No._DataRecord| OutputImage (BIN)

11.3. Analog Output

The current analog value of the 0-10V output is stored as an integer value corresponding to 0-10V with 2 decimal places. This means that a value in the number range from 0 to 1000 is output. This corresponds to an analog value of 0 - 10.00 volts.
Data output:
1_SYS3|850   => Controller No._ System No.| OutputValue, e.g. 850 for 8,5V

12. Data output of 1-Wire devices

Basically there is a cyclic data output for every active 1-Wire device. In addition, status changes for iButton and digital input modules are updated via immediate data output. Event-controlled data output does not differ from cyclic data output in terms of formatting.
A "data header" is sent before each data output. The data header has the following formatting:
Data header:
1_EVT|time   => Controller No._Event|Time

12.1. Data output DS1820, DS18S20 and DS18B20

Temperature sensors are output in the following data format. For the display of analog values, e.g. temperature, only a division by 100 is necessary.
Data output:
1_OWD1|2087   => Controller No._ device number temperature without a comma, Example 20,87°C

12.2. Data output DS2401, DS1963 and DS1990A (iButton)

The serial number-chip is output in the following data format.
Output and event format:
1_OWD1|Serial number   => Controller No._ Device No.| Serial number

12.3. Data output DS2405

Digital I/O is output in the following data format.
Output and event format:
1_OWD1_1|1   => Controller No._ Device No.|InputValue 0 or 1

12.4. Data output DS2406 Input/Output

The output is for each channel with separate input and status.
When switching an output, the status incl. input is mapped, therefore no pure output variable is possible. For the Dual Digital I/O the data output is in the following data format.
Data output:
1_OWD1_1|1   => Controller No._ Device No.| Input 0 (BIT), Example: Input 1 active
1_OWD1_2|1   => Controller No._ Device No.| Input 1 (BIT), Example: Input 2 active, as output 2 is active
1_OWD1_3|0   => Controller No._ Device No.| Status 0 (BIT), Example: Output 1 inactive
1_OWD1_4|1   => Controller No._ Device No.| Status 1 (BIT), Example: Output 2 active

Event formatting for input:
1_EVT|Uhrzeit   => Controller No._Event|Time
1_OWD1_1|4   => Controller No._ Device No.| Input 0 (BIT)
1_OWD1_2|4   => Controller No._ Device No.| Input 1 (BIT)

12.5. Data output DS2413 Input/Output

The output is for each channel with separate input and status.
When switching an output, the status incl. input is mapped, therefore no pure output variable is possible. For the Dual Digital I/O the data output is in the following data format.

Data output:
1_OWD1_1|1   => Controller No._ Device No.| Input 0 (BIT), Example: Input 1 active
1_OWD1_2|1   => Controller No._ Device No.| Input 1 (BIT), Example: Input 2 active, as output 2 is active
1_OWD1_3|0   => Controller No._ Device No.| Status 0 (BIT), Example: Output 1 inactive
1_OWD1_4|1   => Controller No._ Device No.| Status 1 (BIT), Example: Output 2 active

Event formatting for input:
1_EVT|Uhrzeit   => Controller No._Event|Time
1_OWD1_1|4   => Controller No._ Device No.| Input 0 (BIT)
1_OWD1_2|4   => Controller No._ Device No.| Input 1 (BIT)

12.6.   Data output DS2408 Input/Output

For the 8-fold Digital I/O the data output is in the following data format.
The input value represents all 8 inputs and is displayed as byte value (0-255). Each input has a value that is summed up. Input 1 = 1, Input 2 = 2, Input 3 = 4, Input 4 = 8, Input 5 = 16 etc.
Data output:
1_OWD1_1|0   => Controller No. Device No._DataRecord| InputValue (DEZ)
1_OWD1_2|00000000   => Controller No. Device No._DataRecord | InputValue (BIN)
1_OWD1_3|0   => Controller No. Device No._DataRecord | OutputStatus (DEZ)
1_OWD1_4|00000000   => Controller No. Device No._DataRecord | OutputStatus (BIN)

Event formatting for input:
If the status of one of the device inputs changes, a single event is caused.
1_EVT|time   => Controller No._Event|Time
1_OWD1|1   => Controller No._DeviceNo.|InputValue (DEZ)

12.7.   Data output DS2423

For the Dual S0 counter module the following data of the two 32Bit meters are output.
The output, continuous meter values can be used to calculate the performance of electricity meters, gas or water consumption. A wind sensor can also be evaluated.
The data output for the dual counter is in the following data format.
Data output:
1_OWD1_1|MeterValue A => Controller No.One Device No._DataRecord| MeterValue 32Bit
1_OWD1_2|MeterValue B => Controller No.One Device No._DataRecord| MeterValue 32Bit

12.8.   Data output DS2438

For this multi device, the data output is in the following data format. If the values are divided by
100, you will receive the data with two decimal places.
Data output:
1_OWD1_1|2008 => Controller No._Device No._DataRecord|Temperature (°C)
1_OWD1_2|511 => Controller No._Device No._DataRecord |Voltage VCC (V)
1_OWD1_3|197 => Controller No._Device No._DataRecord |Voltage VAD (V)
1_OWD1_4|0   => Controller No._Device No._DataRecord |Current Sens (mV)

12.9.   Data output DS2450

This 1-Wire device has the possibility to be configured as quadruple analog input or quadruple digital output. The 1-Wire controller uses this 1-Wire device exclusively as an analog input with a resolution of 16Bit and 5.0V setting. This setting cannot be used.

As of firmware 1.20_1, it is possible to switch the data output between the measured integer raw values or the analog voltage. Analog values are output as default in delivery status.
With command "SET,OWD,DS2450ADC,0 or 1" the data output can be switched. Please enter the command via the command field (see figure below). The setting can be output with the command "GET,OWD,DS2450ADC".
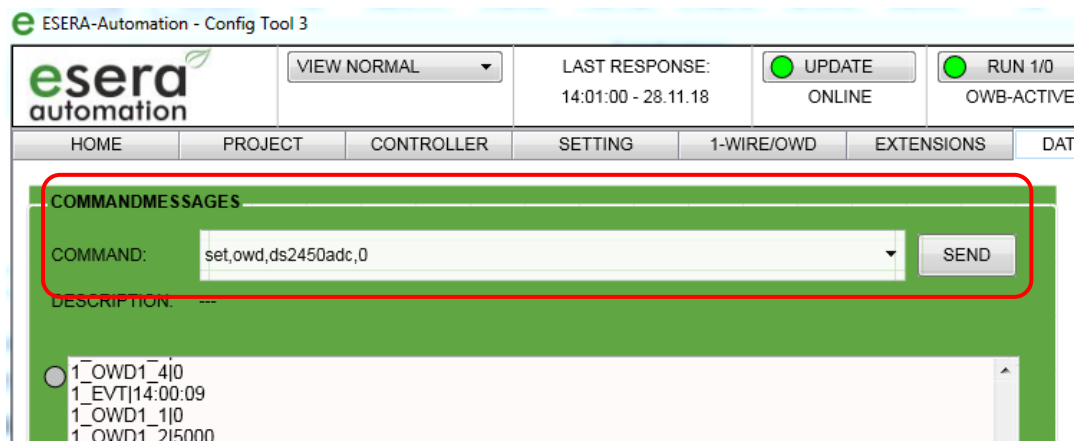
Note: To save this setting permanently, press the „SAVE PERMANENT" button below the „SETTINGS" tab.

SETTING	1-WIRE/OWD	EXTENSIONS	DATA/DEBUG	DOKU	HELP/SUPPO...

NT [0/1]:	ON ▼	OWD-FORMAT [0/1/2]:	2 ▼	**LOAD FROM CONTROLLER**	
E [0, 10-240]:	10 ▼	DS2408 INV [0/1]:	ON ▼	**TRANSMIT TO CONTROLLER**	
LLTIME [1-240]:	2 ▼	OWD-ID [0/1]:	OFF ▼		
ARCH [0/1/2]:	2 ▼	DEBUG [0/1/2]:	0 ▼	**SAVE PERMANENT**	
ARCH TIME [10-240]:	10 ▼			*Changed values are shown in red.	

Data output is either in millivolt or integer raw format, depending on the selected setting.
For data output with analog values you have to divide the values by 1000, then you get the analog value in volts with decimal places.

Data output analog (OWD,DS2450ADC,1):
1_OWD1_1|1200 => Controller No._Device No._DataRecord | analog value (mV), e.g. 1200mV
1_OWD1_2|1200 => Controller No._Device No._DataRecord | analog value (mV), e.g. 1200mV
1_OWD1_3|1200 => Controller No._Device No._DataRecord | analog value (mV), e.g. 1200mV
1_OWD1_4|1200 => Controller No._Device No._DataRecord | analog value (mV), e.g. 1200mV

Data output integer raw value (OWD,DS2450ADC,0):
1_OWD1_1|32000 => Controller No._Device No._DataRecord | Integer raw value max. 16 Bit
1_OWD1_2|32000 => Controller No._Device No._DataRecord | Integer raw value max. 16 Bit
1_OWD1_3|32000 => Controller No._Device No._DataRecord | Integer raw value max. 16 Bit
1_OWD1_4|32000 => Controller No._Device No._DataRecord | Integer raw value max. 16 Bit

12.10. iButton data output (DATA)

There are three possibilities for the data output of iButton keys.

Either the data is output
      0. each with the corresponding serial number of the iButton key,
      1. output value "1" if the iButton was contacted or
      2. output value "1" if the iButton was contacted and one-time output value "0" if the iButton has been removed.

The output formatting of the iButton data output can be switched starting with firmware V1.18_50.
As of firmware V1.18_51, the delivery status of the output value "2" is only when contacted (DATA=2).
Output options are described below.

Data output:
DATA 0:
Output only if iButton was contacted
1_EVT|13:59:46
1_OWD3|2E00000138EE1A01

DATA 1:
Output only if iButton was contacted
1_EVT|13:37:42
1_OWD3|1

DATA 2:
iButton contacted
1_EVT|13:37:42
1_OWD3|1

iButton has been removed

1_EVT|13:37:42
1_OWD3|0

Command to change:
SET,KEY,DATA,0, 1 or 2

12.11. iButton status output (STATUS)

It can be queried whether at least one iButton is connected or contacted with the 1-Wire Controller / 1-Wire Gateway.

STATUS = 0, STATUS = 1 if at least one iButton is contacted
Example:
1_EVT|13:35:03
1_OWD1|2712
1_OWD2|1 => iButton contacted

13. Article number assignment for OWD

You can assign ESERA-Automation article numbers to various ESERA-Automation 1-Wire modules. After assignment they receive a data formatting adapted to the 1-Wire module, extended data output or data conversion.

1-Wire / OWD management of Config-Tool 3
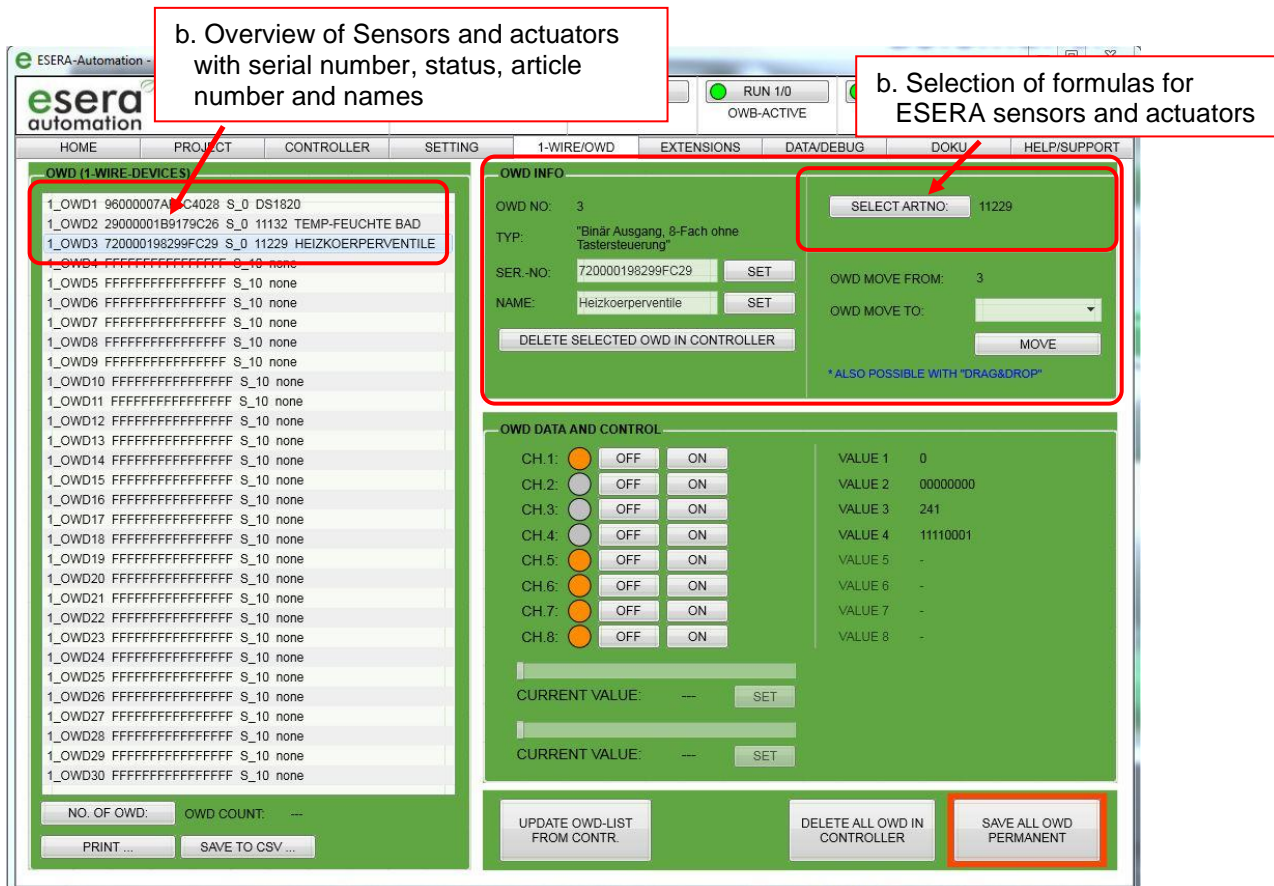
Currently the following formulas are stored for the 1-Wire ESERA modules below:

Group	Function	ESERA article number
Power supply	1-Wire Hub I 1-Wire Hub II 1-Wire Hub III	11300, 11306 11314, 11316 11322
Multisensor	Temperature, humidity	11102, 11113, 11120, 11148
Multisensor	Temperature, humidity and brightness	11121, 11132, 11134, 11135
Multisensor	Temperature and humidity	11150 11160
Multisensor	Temperature, humidity and air quality	11127 (starting with firmware V1.4),11151, 11152
Air Quality sensor	Air quality	11161
Sensor	Brightness outdoor	11111, 11129
Sensor	Brightness, solar radiation (PV)	11112 from Version 2 (with DS2438 module)
Analog Input	Analog input 0-10VDC	11202, 11203
Analog Output	Analog output 0-10VDC, 4-20mA and PWM-output	11208, 11219, 11225
Digital Input	Digital Input 10-30VDC Digital Input 230VAC	11207, 11216, 11217, 11215
Switch Input	Switch Input Switch Input mini	11215
Digital Output	Dual switching module	11208, 11218, 11220, 11228, 11229, 11133
Shutter	Shutter control	11209 starting with firmware 1.2, 11131
Dimmer	Dimmer	11221, 11222 (under development), 11224 (under development)

13.1. Wrong assigned article number, delete article number

If you have accidentally assigned a wrong ESERA-Automation article number to a 1-Wire device, there are two ways to fix it:
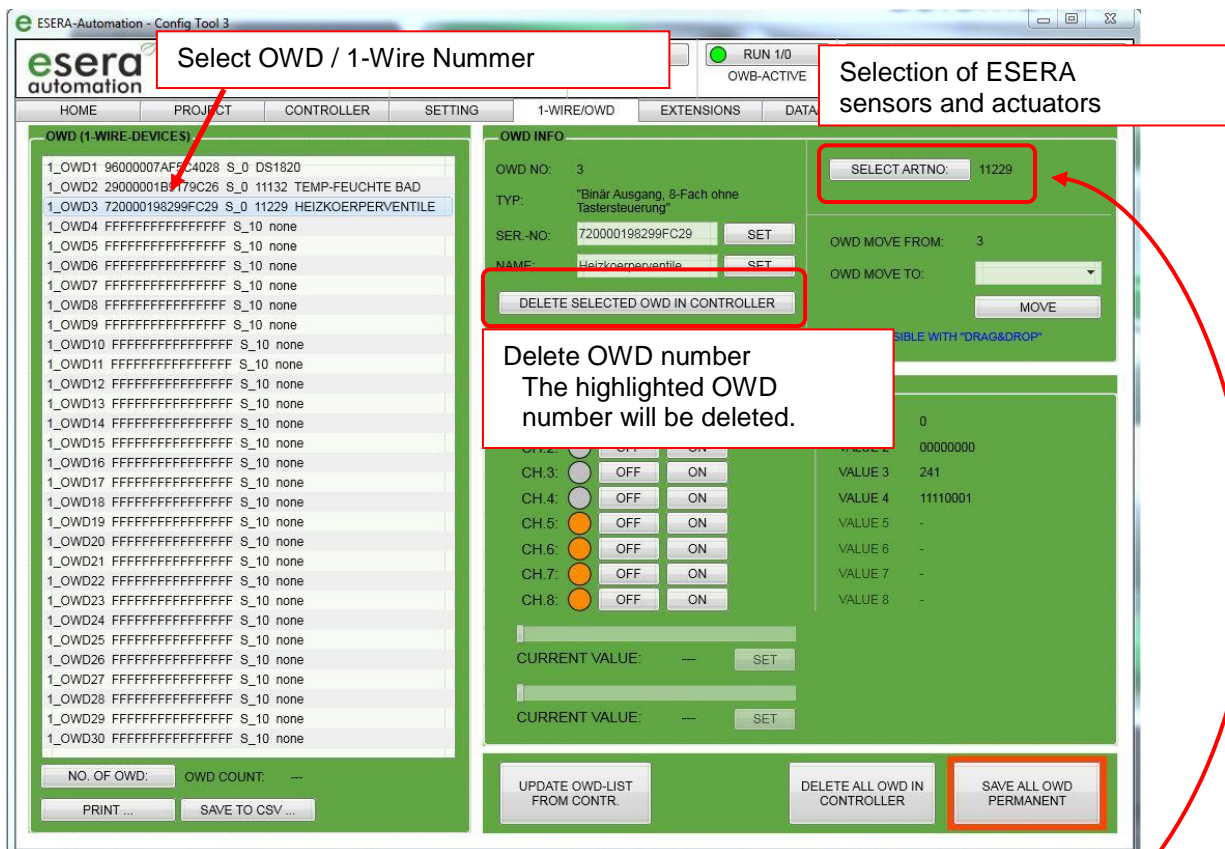
13.2. Reset or change article number

You can reset the naming back to the original type or enter the correct article number.
To reset to the original type, enter the device designation without the "DS" abbreviation, e.g. for a DS18B20 temperature sensor the abbreviation "1820".
Command: SET,OWD,ART,OWD-Number,OWD-Type, Example: SET,OWD,ART,2,1820
You can also enter another ESERA-Automation article number directly. Please note that there is no plausibility check for the device when you enter it.
The correct input can be double-checked via the list output (e.g. LISTALL).

13.3. Delete OWD

You can delete a 1-Wire sensor or a OWD number. With the next search run of the adaptive search, the device should be available again at the previously deleted position in the OWD list.
Now you can enter the correct number.
Command: SET,OWD,DELNO,OWD number, example: SET,OWD,DELNO,2
Note: The adaptive search must be activated (SET,OWB,SEARCH,1).

14. Event data output of 1-Wire devices with digital inputs

For 1-Wire devices with digital inputs, a separate event is output for each status change. The new status of the digital input is output with the cyclic data output. This function is supported for the devices DS2405, DS2413 and DS2408. This function cannot be deactivated.

15. Event data output of iButton keys

For iButton keys and RFID readers, a separate event with the serial number of the key is issued for each new contact. The prerequisite is that the iButton key / RFID card has been saved.
With the cyclic data output, the OWD and serial number of the iButton key / RFID card is also output. This function cannot be deactivated.

Train iButton keys
To train an iButton key / a RFID card to the 1-Wire Controller / 1-Wire Gateway contact the reading unit for at least 10 seconds. A new OWD number is assigned for this key / card.
Please do not forget to save the OWD list (button "SAVE ALL OWD TO CONTROLLER").

Connection example for iButton and 1-Wire Controller / 1-Wire Gateway 10 or 1-Wire Gateway 11
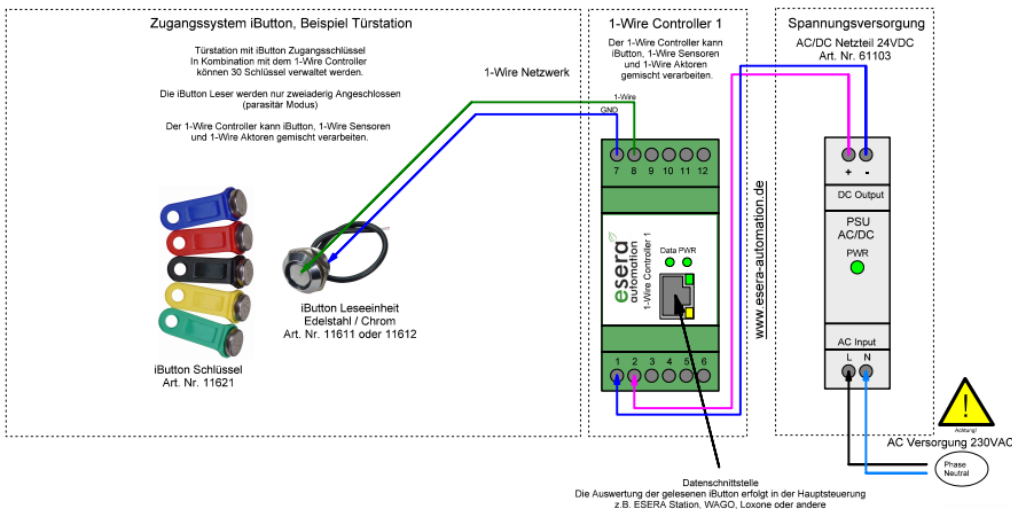
Connection example iButton and 1-Wire Controller / 1-Wire Gateway 10 or 1-Wire Gateway 11.
A 12V system voltage is required for the RFID to 1-Wire reader. This is why the
1-Wire Hub 4 is in use.
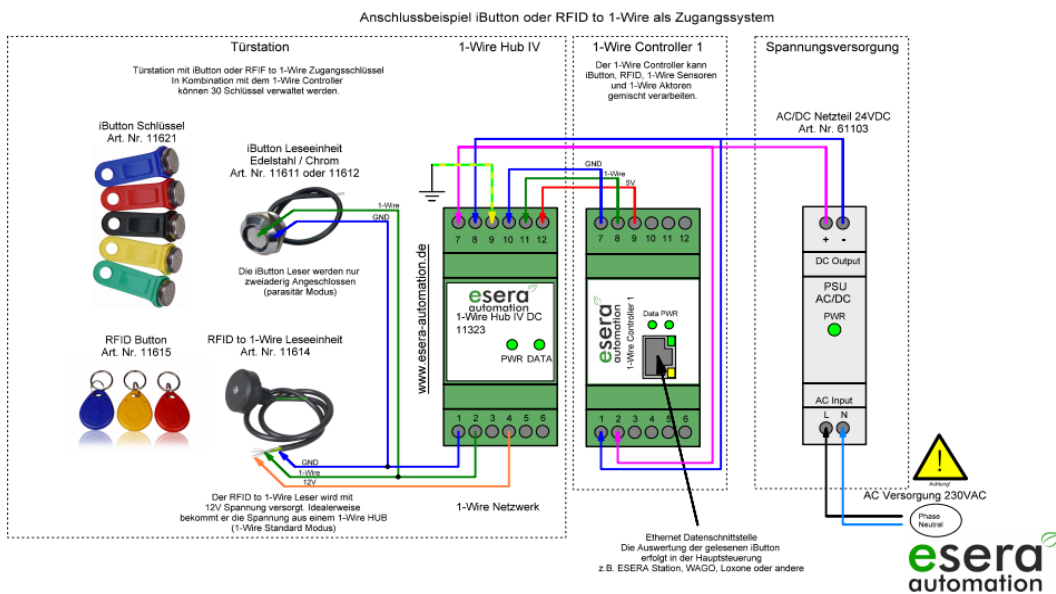
16. Data output to ESERA-Automation modules

If you are using a 1-Wire module from ESERA-Automation, you can assign the article number for this module and the module data will be adjusted accordingly. If, for example, you have a multisensor (temperature-humidity) with Art. No. 11134 in use, enter the article number and immediately receive the data for temperature, humidity, dew point and brightness. If you divide the values by 100, you will receive data with two decimal places.

16.1. Temperature-Humidity sensor, Art. No. 11102, 11113, 11120

The following data formats are output for the ESERA-Automation modules. If you divide the value by 100, you receive the data with two decimal places.

Data output:

1_OWD1_1|2008	=> Controller No._module No. data record|temperature (°C) example: 20,08 °C
1_OWD1_2|511	=> Controller No._module No. data record|voltage VCC (V)
1_OWD1_3|4300	=> Controller No._module No. data record|humidity (rF) example 43,0%
1_OWD1_4|1200	=> Controller No._module No. data record|dew point (°C) example: 12,00 °C

16.2. Temperature-Humidity-Brightness sensor Art. No. 11121, 11132, 11134, 11135

The following data formats are output for the ESERA-Automation modules. If you divide the value by 100, you receive the data with two decimal places.

Data output:

1_OWD1_1|2008	=> Controller No._module No. data record |temperature (°C) example: 20,08 °C
1_OWD1_2|511	=> Controller No._module No. data record |voltage VCC (V)
1_OWD1_3|4300	=> Controller No._module No. data record |humidity (rF) example 43,0%
1_OWD1_4|1200	=> Controller No._module No. data record |dew point (°C) example: 12,00 °C
1_OWD1_5|80000	=> Controller No._module No. data record |brightness (Lux) example: 800,00 Lux

16.3. Temperature-Humidity PRO Multisensor, Art. No. 11150

The following data formats are output for ESERA-Automation multisensor Pro. If you divide the value by 100, you receive the data with two decimal places.

Data output:

1_OWD1_1|2008	=> Controller No._module No. data record |temperature (°C) example: 20,08 °C
1_OWD1_2|511	=> Controller No._module No. data record |voltage VCC (V)
1_OWD1_3|4300	=> Controller No._module No. data record |humidity (rF) example 43,0%
1_OWD1_4|1200	=> Controller No._module No. data record |dew point (°C) example: 12,00 °C

16.4. Temperature-Humidity-Air Quality sensor, Art. No. 11110 und 11127

The following data is output for the ESERA-Automation air quality sensor 11110 and 11127. If you divide the value by 100, you receive the data with two decimal places.

Data output:

1_OWD1_1|2008	=> Controller No._module No. data record |temperature (°C) example: 20,08 °C
1_OWD1_2|511	=> Controller No._module No. data record |voltage VCC (V)
1_OWD1_3|4300	=> Controller No._module No. data record |humidity (rF) example 43,0%
1_OWD1_4|1200	=> Controller No._module No. data record |dew point (°C) example: 12,00 °C
1_OWD1_5|50000	=> Controller No._module No. data record |air quality (ppm CO2) example: 500ppm

16.5. Temperature-Humidity PRO multisensor, Art. No. 11151, 11152

The following data formats are output for ESERA-Automation multisensor Pro. If you divide the value by 100, you receive the data with two decimal places.

Data output:

1_OWD1_1|2008	=> Controller No._module No. data record |temperature (°C) example: 20,08 °C
1_OWD1_2|511	=> Controller No._module No. data record |voltage VCC (V)
1_OWD1_3|850	=> Controller No._module No. data record |humidity (rF) example 85,0%
1_OWD1_4|1200	=> Controller No._module No. data record |dew point (°C) example: 12,00 °C
1_OWD1_4|50000	=> Controller No._module No. data record |air quality (ppm CO2) example: 500ppm

16.6.   Solar-, Brightness- and Temperature sensor V3, Art. No. 11112

The following data is output for the ESERA-Automation solar and brightness sensor 11112.
If you divide the value by 100, you receive the data with two decimal places.
Data output:
1_EVT|10:29:35
1_OWD1_1|2401   => Controller No._module No. data record |temperature (°C) example: 20,08 °C
1_OWD1_2|501   => Controller No._module No. data record |operating voltage (V) example 5,01V
1_OWD1_3|741000   => Controller No._module No. data record |brightness (Lux) example: 7410,00 Lux
1_OWD1_4|7676   => Controller No._module No. data record |solar radiation (w/m2) example: 76,76w/m2

16.7.   Temperature- and Brightness sensor, Art. No. 11129

The following data are output for the ESERA-Automation temperature and brightness sensor 11119. If you divide
the value by 100, you receive the data with two decimal places.
Data output:
1_EVT|10:29:35
1_OWD1_1|2401   => Controller No._module No. data record |temperature (°C) example: 20,08 °C
1_OWD1_2|501   => Controller No._module No. data record |operating voltage (V) example 5,01V
1_OWD1_3|241000   => Controller No._module No. data record |brightness (Lux) example: 2410,00 Lux

16.8.   1-Wire Hub, 1-Wire Hub II and 1-Wire Hub III, Art. No. 11300, 11306, 11314, 11316, 11322

The following data format is output for the ESERA-Automation module. If you divide the value
by 100, you receive the data with two decimal places.
Data output:
1_OWD1_1|5000   => Controller No._module No. data record |current 12V (mA) example: 50mA
1_OWD1_2|491   => Controller No._module No. data record |voltage 5V (mV) example 4,91V
1_OWD1_3|3000   => Controller No._module No. data record |current 5V (mA) example: 30mA
1_OWD1_4|1183   => Controller No._module No. data record |voltage 12V (mV) example: 11,83V

16.9.   1-Wire analog input, Art. No. 11202, 11203

The following data format is output for the ESERA-Automation module. If you divide the value by 100 you receive
the analog values with two decimal places. The OWDx_4 is a fixed internal voltage value.
Data output:
1_OWD1_1|50   => Controller No._module No. data record |voltage 0-10V (mV) example: 0,050V
1_OWD1_2|250   => Controller No._module No. data record |voltage 0-10V (mV) example: 2,50V
1_OWD1_3|491   => Controller No._module No. data record |voltage 0-10V (mV) example: 4,91V
1_OWD1_4|500   => Controller No._module No. data record |voltage 0-10V (mV) example: 5,00V

16.10.   Binary / Digital input 2-fold, Art. No. 11217

The following data is output for the ESERA-Automation dual digital input.
Event and output formatting for input:
1_OWD1_1|1   => Controller No._module No. data record | input 0
1_OWD1_2|0   => Controller No._module No. data record | input 1

16.11.   Binary / Digital input 8-fold, Art. No. 11216

The following data is output for the ESERA-Automation 8-fold digital input.
The status of the inputs is output as decimal value 0-254. Each input has a value that is summed up.
Input 1 = 1, input 2 = 2, input 3 = 4, input 4 = 8, input 5 = 16, input 6 = 32, input 7 = 64, input 8 = 128.
Data output:
1_OWD1_1|3   => Controller No._module No. data record | decimal value
1_OWD1_2|00000111   => Controller No._module No. data record | binary display of decimal value

16.12.   Binary / Digital output dual, Art. No. 11218

The following data is output for the ESERA-Automation dual digital switching module.
Data output:
1_OWD2_1|0   => Controller No._module No. data record |status output 1
1_OWD2_2|1   => Controller No._module No. data record |status output 2

16.13. Binary / Digital output dual, Art. No. 11233

The following data is output for the ESERA-Automation dual digital switching module.
For the ESERA-Automation dual digital output with push-button interface, the following data are output for the status of the output relays and the digital inputs.
The output value is output as decimal value 0-3. Each output has a value that is summed up.
Push-button interface:
input 1 = 1, input 2 = 2
Relais output:
output 1 = 1, output 2 = 2
Data output:
1_OWD1_1|1	=> Controller No._module No. data record	decimal value input
1_OWD1_2|00000001	=> Controller No._module No. data record	binary display input
1_OWD1_3|3	=> Controller No._module No. data record	decimal value output
1_OWD1_4|00000011	=> Controller No._module No. data record	binary display output

16.14. Binary / Digital output 8-fold, Art. No. 11229

The following data are output for the ESERA-Automation 8-fold digital output.
The output value is output as decimal value 0-254. Each output has a value that is summed up.
Output 1 = 1, output 2 = 2, output 3 = 4, output 4 = 8, output 5 = 16, output 6 = 32, output 7 = 64, output 8 = 128.
Data output:
1_OWD1_1|3	=> Controller No._module No. data record	decimal value
1_OWD1_2|00000111	=> Controller No._module No. data record	binary display of decimal value

16.15. Binary/Digital output 8-fold with push-button interface, Art. No. 11228 and 11220

The following data for the status of the output relays and the digital inputs are output for the ESERA-Automation 8-fold digital output with push-button interface.
The output value is output as decimal value 0-254. Each output has a value that is summed up.
The following formatting is available as of firmware version 1.18_38.
Input push-button interface:
Input 1 = 1, Input 2 = 2, Input 3 = 4, Input 4 = 8, Input 5 = 16, Input 6 = 32, Input 7 = 64,
Input 8 = 128.
Relay output:
Output 1 = 1, output 2 = 2, output 3 = 4, output 4 = 8, output 5 = 16, output 6 = 32, output 7 = 64, output 8 = 128.
Data output:
1_OWD1_1|1	=> Controller No._module No. data record	decimal value input, example: input 1
1_OWD1_2|00000001	=> Controller No._module No. data record	binary display input
1_OWD1_3|3	=> Controller No._module No. data record	decimal value output, example:
1_OWD1_4|00000011	=> Controller No._module No. data record	binary display output

16.16. Binary/Digital output 8-fold, Art. No. 11229

For the ESERA-Automation 8-fold digital output, the following data for the status of the output relays are output.
The output value is output as decimal value 0-254. Each output has a value that is summed up.
The following formatting is available as of firmware version 1.18_38.
Relay output:
Output 1 = 1, output 2 = 2, output 3 = 4, output 4 = 8, output 5 = 16, output 6 = 32, output 7 = 64, output 8 = 128.
Data output:
1_OWD1_1|2	=> Controller No._module No. data record	no output, fix 0
1_OWD1_2|00000010	=> Controller No._module No. data record	no output, fix 0
1_OWD1_3|3	=> Controller No._module No. data record	decimal output
1_OWD1_4|00000011	=> Controller No._module No. data record	Binary display output

16.17. Analog output 0-10V, Art. No. 11208

For the ESERA-Automation analog output module 0-10V, the following data for the status of the analog value are output. The following formatting is available as of firmware version 1.18_43.
Data output:
1_OWD1|1000	=> Controller No._module No. data record	analog value, example 1000 = 10,00V

The output is set with the following command:

SET,OWD,OUTA,OWD number,output voltage   example: SET,OWD,OUTA,1,1000
Example: SET,OWD,OUTA,1,1000 => OWD1,10,00V

16.18.   Analog output 0-20mA, Art. No. 11219

For the ESERA-Automation analog output module 0-20mA the following data for the status of the analog value
are output. The following formatting is available as of firmware version 1.18_43.
Data output:
1_OWD1|1500   => Controller No._module No. data record | analog value, example 1500 = 15mA

The output is set with the following command:
SET,OWD,OUTAMA,OWD number,output current   example: SET,OWDM,OUTAMA,1,1500
Example: SET,OWD,OUTAMA,1,1500 => OWD1,15,00mA

16.19.   PWM output 10V, Art. No. 11225

For the ESERA-Automation PWM output module 10V, the following data are output for the status of the PWM
value in percent (0-100). The following formatting is available as of firmware version 1.18_43.
Data output:
1_OWD1|52   => Controller No._module No. data record | analog value, example 52 = 52%

The output is set with the following command:
SET,OWD,OUTPWM,OWD number,PWM value
Example: SET,OWD,OUTPWM,1,52 => OWD1,52%

16.20.   Shutter module, Art. No. 11209 and 11231

For the ESERA-Automation shutter module, roller shutter module, the following data for the status of the output
are output. The status output remains even after stopping by the safety shutdown and thus reflects the status of
the roller shutter / blind. The following formatting is available as of firmware version 1.18_43.
Data output:
1_OWD1_1|1   => Controller No._module No. data record | decimal value input
1_OWD1_2|00000001   => Controller No._module No. data record | binary display input
1_OWD1_3|1   => Controller No._module No. data record | decimal value output
1_OWD1_4|00000001   => Controller No._module No. data record | binary display output

The shutter module is set with the following command:
SET,OWD,SHT,OWD-Number,Command 1=Down, 2=Up, 3=Stop
Example: SET,OWD,SHT,1,1 => OWD1,Down

16.21.   Dual dimmer, Art. No. 11221, 11222

For the ESERA-Automation dual dimmer, the following data is output for the push-button interface and the
dimmer outputs. The following formatting is available as of firmware version 1.18_54.

The 1-Wire interface of the dual dimmers is controlled by standard commands for the DS2408 module.
The 1-Wire interface can be used to read-back every keystroke as well as the dimmer values of the outputs.
The data for the push-button interface and the dimmer outputs are output as decimal values 0-254. For the
push-button interface, the data is additionally stored in a second data set binary with 0 and 1. Each individual
input of the push-button interface, as well as the dimmer values, have a value that is added up.
Note: The dimmer values are interrogated alternately by the dual dimmer module per read cycle. This may cause
delays in updating if dimmer values have changed.
It can also occur that after changing a dimmer value via a 1-Wire interface, the new value is reported back very
quickly. However, the old dimmer value is output again for a short time. The reason for this is, that the first
feedback is sent by the 1-Wire controller. However, the former, still stored value, can be output briefly via the 1-
Wire interface until it is updated. This is not an error but rather occurs due to the time between the read cycles via
the 1-Wire bus.

Input push-button interface:
Push-button interface channel 1 = 1, push-button interface channel 2 = 2,
module button (manual operation) channel 1 = 4, module button (manual operation) channel 2 = 8,
value 16 - 128 no function (always 0).

Output dimmer:
The values of the dimmer outputs are output in the range from 0-31. 0=off, 31=bright

Data output:

```
1_OWD1_1|1              => Controller No._module No. data record | decimal value input
1_OWD1_2|10000001       => Controller No._module No. data record | binary display input
1_OWD1_3|16             => Controller No._module No. data record | dimmer value channel 1 setting level 16
1_OWD1_4|28             => Controller No._module No. data record | dimmer value channel 2 setting level 28
```

17. Inputs and outputs Controller 2 / Gateway 20 / Station

The following function described below is only available for the 1-Wire Controller 2 / 1-Wire Gateway 20.

17.1. Switching binary / digital output 1-Wire Controller 2 / Gateway 20 / Station

The 5 digital outputs (relay, 4 ON/OFF +1xUM) can be easily switched and DC voltage values can be output via the 0-10V interface.
The switching commands for the outputs of the 1-Wire Controller / 1-Wire Gateway are the same as the switching commands for the 1-Wire outputs. They differ only in the addressing "SYS" or "OWD". As the 1-Wire Controller / 1-Wire Gateway has only one digital output unit, the module addressing the 1-Wire Bus is not required.

17.2. Switching of all outputs (Port), 1-Wire Controller 2 / Gateway 20 / Station

There are applications where it is necessary to switch all relay outputs to a certain state with only one command. For this purpose, the command "OUTH" is used to send a decimal value (a so-called output value) from 0-31 by command. Each output has a value that is added to this output value. Please note that only an output value of max. 31 may be written for the 1-Wire Controller / 1-Wire Gateway. For values of 32 or higher, the error message "Error 5" will be output.

Valuation of outputs:
Output 1 active = 1, Output 2 active = 2, Output 3 active = 4, Output 4 active = 8, Output 5 active = 16
If, for example, you want to switch outputs 1 and 3, add up the output value. e.g. 1 + 4 = 5.
At the same time, outputs 2, 4 and 5 are switched off.
If all outputs are to be switched off, the output value is 0.
Command: SET,SYS,OUTH,Output value
After switching the output, the new status is output as confirmation.

17.3. Switching of a single output, 1-Wire Controller 2 / Gateway 20 / Station

To switch a single digital output, use the "OUT" command and the selected output is set to 0 or 1. If, for example, output 6, 7 or 8 has been switched by mistake, an error message will be output (Error 5).
Command: SET,SYS,OUT,output,Value
After switching the output, the new status is output as confirmation.

17.4. Output analog value, 1-Wire Controller 2 / Gateway 20 / Station

DC voltage values are output with a resolution of 12 bits (4096 steps) via the isolated analog interface. Use the "OUTA" command to perform this.
The output value is output as an integer value with 2 decimal places.
If, for example, a value of 8.5V is to be output, use 850 as the output value.
Command: SET,SYS,OUTA,output value
After switching the output, the new status is output as confirmation.

a. Functions of inputs
Displays 1-4 show the status of the digital inputs.

b. DIGITAL INPUT TO OUTPUT MODE
The function of the digital inputs can be switched between normal operation and pulse control using the "DIO" command. Thus, e.g. push-buttons and switches can be used as input devices. The command "DIO" 0 and 1 is used to switch between these two operating modes for the digital inputs.
Command: SET,SYS,DIO,0 or 1

Function of inputs and outputs
In addition, it is also possible for the digital inputs to directly control the digital outputs.
Thus digital input 1 can directly control output 1, digital input 2 can directly control digital output 2 and so on. It is only possible to control one channel number at a time.
This can be used, for example, to implement a "staircase lighting function" (push-button 1 switches light 1 on / off).
Command: SET,SYS,DIO,2 or 3
The digital outputs can still be controlled via the software switching commands "OUTH" and "OUT".

Overview of DIO inputs and outputs functions

Function „DIO"	digital input	digital output
0	Regular function: If a voltage is applied to the input, the corresponding input value is 1	No effect
1	Control by impulse : A short pulse changes the input value from 1 to 0 and back again.	No effect
2	Regular function input-output: If voltage is applied to the input, the corresponding input value is 1	The output with the same number becomes active. If no voltage is applied to the input, the output drops back to zero.
3	Control by impulse input-output: Only during the duration of the pulse the corresponding input value is 1	A short pulse of the input with the same number changes the status of the output from 0 to 1 and back again (staircase light function).

c. Function of inputs

Displays 1-5 show the status of the digital outputs.

By pressing displays 1-5, the corresponding digital outputs can be switched directly.

After switching the output, the new status is output as confirmation.

d. Function of analog output 0-10VDC

You can use the slid-control function to set an analog output value. The value is set by pressing the "SET" button.

The current analog value is output in the "CURRENT VALUE" field.

18. Switching binary / digital output, all 1-Wire actuators

You can easily process a data output or a switching command via the DS2405, DS2413 and DS2408 modules. The switching commands for the 1-Wire bus are the same as the switching commands for the outputs of the 1-Wire Controller / 1-Wire Gateway. They differ only in the addressing "SYS" or "OWD". As several digital output modules can be connected via the 1-Wire bus, a module addressing (OWD number) is necessary.

The following commands can be used to control the following ESERA-Automation modules, among others:
Dual digital output (Art. No. 11218), 8-fold digital output (Art. No. 11206, 11220).

18.1. Switching of all outputs (Port) 1-Wire actuator

There are applications and modules where it is necessary to switch all outputs with a single command, e.g. the ESERA-Automation analog-Out, PWM-Out or dimmer modules.
With a single command all outputs of the 1-Wire device are set to a certain state, which means that the previous output state is overwritten.
The controller takes over the command adaptation to the 1-Wire devices (single, dual or 8-fold). If the written output value is greater than the maximum value for the 1-Wire device / module, an error message is output (Error 5).

The output value is output as decimal value 0-254. Each output has a value that is summed up.
Output 1 = 1, output 2 = 2, output 3 = 4, output 4 = 8, output 5 = 16, output 6 = 32,
Output 7 = 64, output 8 = 128.
If, for example, you wish to switch outputs 1, 3 and 5 to "1", add up the corresponding output values.
In the fore mentioned scenario e.g. 1 + 4 + 16 = 21
All other outputs are switched to 0. If all outputs are to be set to "0" or should be switched off, the output value is 0.

Valid output values for 1-Wire digital outputs:
DS2405 : 0 / 1
DS2413: 0 - 3
DS2408: 0 - 255
Command: SET,OWD,OUTH,OWD-number,output value
Example: set,owd,outh,2,15 => OWD number 2, output 1 to 4 is switched to "On"
After switching the output, the new status is output as confirmation.

18.2. Switching of one output 1-Wire actuator

To switch a single digital or binary output, use the following command to set only the selected output to 0 or 1. The controller adopts the command adaptation to the connected 1-Wire device (single, dual or 8-fold). If the switched 1-Wire device is not equipped with the selected output (e.g. output 4 with a dual output), an error is output (Error 5).
Command: SET,OWD,OUT,OWD-number,output,Value
Example: set,owd,out,2,1,1 => OWD number 2, output 2 is switched to "On"
After switching the output, the new status is output as confirmation.

18.3. Output analog value 0-10V, 1-Wire actuator

Via the ESERA-Automation module "Analog output 0-10V" (Art. no. 11208) you can output analog values in the range of 0-10V with a resolution of 39.2mV (8 bits, 255 levels).
Alternatively, the output voltage can also be output as a percentage value. For this you can use the command for the PWM output. The % value is then output as response.
Command: SET,OWD,OUTA,OWD-number,output voltage
Example: set,owd,outa,2,500 => OWD number 2, becomes output voltage 5,00V
After controlling the module, the new status is output as confirmation.

18.4. Output analog value 0-20mA, 1-Wire actuator

The 0-20mA module is not yet available at the time of creation of this document.
Via the ESERA-Automation module "Analog output 0-20mA" (Art. No. 11219) you can output analog values in the range of 0-10V with a resolution of 39.2mV (8 bit, 255 levels).
Command: SET,OWD,OUTAMA,OWD-number,output current
Example: set,owd,outama,2,1000 => OWD number 2, output current is 10mA.
After controlling the module, the new status is output as confirmation.

18.5. Output PWM output, 1-Wire actuator

Via the ESERA module "PWM output 10V" (Art. No. 11225) you can output analog values in the range of 0-100% with an output voltage of 10V and 2kHz with a resolution of 1% (8 bit, 255 levels).
Command: SET,OWD,OUTPWM,OWD-number,PWM-value
Example: set,owd,outama,2,50 => OWD number 2, PWM signal with 50 % pulse-pause ratio.
After controlling the module, the new status is output as confirmation.

18.6. 1-Wire dimmer control, Art. No. 11221, 11222, 11224

There is a special control command for ESERA dimmer modules to control outputs and the dimming value in levels 0-31. With this command the entire 1-Wire control between the 1-Wire Controller / 1-Wire Gateway and the 1-Wire dimmer is taken over.
Command: SET,OWD,DIM,OWD-number,output,dimming value
Note: There are several 1-Wire dimmers in development at ESERA-Automation. Please refer to the ESERA-Automation Online Shop for availability of the respective modules.

18.7. Roller shutter control, 1-Wire Shutter Art. No. 11209, 11231

For ESERA shutter modules (Art. No. 11209 V2 and V3, 11231) there are special commands for controlling the travel-direction of roller shutters or awnings. With this command setting and resetting of the outputs of the DS2413 device is no longer necessary.
The following functions are available: 1=Down, 2=Up and 3=Stop
Command: SET,OWD,SHT,OWD-number,function
After switching the output, the new status is output as confirmation.

Via the Config-Tool 3 you can directly control different 1-Wire modules.
Please refer to the chart below for the control of an 8-fold digital output module.

a. Select an OWD-module from the list.
b. If an article number has been assigned for this module, adapted functions are activated. In this example push button with status display is activated.
c. In addition, the output ASCII values for the module are displayed.

19. Group commands 1-Wire actuators

A large number (=> group) of 1-Wire actuators can be controlled with a single function. The advantage is that not a single command is required for each individual 1-Wire actuator (OWD).
All 1-Wire actuators (OWD´s) included in a group respond to this single command. Previous individual commands remain completely unaffected by group commands. You can use individual 1-Wire actuators, e.g. control 1-Wire shutter directly by command and/or by a group command.

Each 1-Wire Actuator (OWD) can be assigned up to 8 group addresses in a range of 1-240.
Double group addresses are automatically filtered out by the 1-Wire Controller / 1-Wire Gateway.

Example of the structure of group commands
Steering 1-Wire shutter with upward travel:
Command: SET,OWD,GRP,SHT,function

After performing a group command, the status of each individual 1-Wire actuator (OWD´s) is reported back as usual.

All group commands (including short descriptions) can be referred back under the item "Command list / Set One Wire Device Command, group commands".

In order to quickly apply group commands, we have included the commands in the command list.
The command list can be found under the tab "DATA/DEBUG" / "COMMAND".
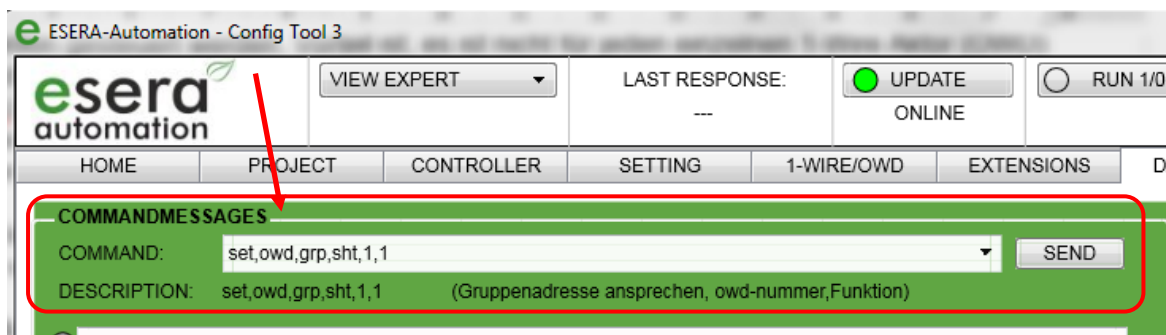
If commands are not listed there, an update of Config-Tool 3 is necessary. The update can be performed under the "HOME" tab with the "CONFIG TOOL UPDATE" button.
All commands in the command list can be used directly for programming the 1-Wire Controller, 1-Wire Gateway and 1-Wire Station.

20. General 1-Wire / OWD functions

20.1. Search-function 1-Wire Bus

The automatic search for new 1-Wire components can be performed in a selectable time window of 10-240 seconds. It is also possible to start a new search by command.
The 1-Wire Controller / 1-Wire Gateway uses two diverse search methods at different times.

20.2. Entire scan for Power On

After switching on the controller, a complete component search is carried out. This search proceeds along the component numbering of the 1-Wire devices. A DS18B20 has, for example, number 28H, a DS18S20 has number 10H. In this example, the DS18S20 blocks are arranged in front of all DS18B20 blocks. The purpose of this search is to identify all connected 1-Wire components very quickly after a Power On.

The entire scan can also be started manually with the **command SET,OWB,SEARCHALL**. After executing the command, the order of the 1-Wire devices may change.

20.3. Adaptive search during operation mode

While in operation, new components are searched cyclically and will then inserted at the first open position in the internal block list. Usually, this means that a new device will be added at the end of the existing list and a new "OWD" number is output.
If an OWD was deleted or moved from the list, the newly found 1-Wire device will now be written to that open position in the list.
The cyclic adaptive search can be switched off or on by using the **command SET,OWB,SEARCH,0 or 1**.
The adaptive search is activated on state of delivery.

20.4. Fixed component sequence after Power On

If you want the existing component sequence to be available even after a Power On, we recommend to save the existing component list in the 1-Wire Controller / 1-Wire Gateway by using the push button "SAVE ALL OWD PERMANENT".
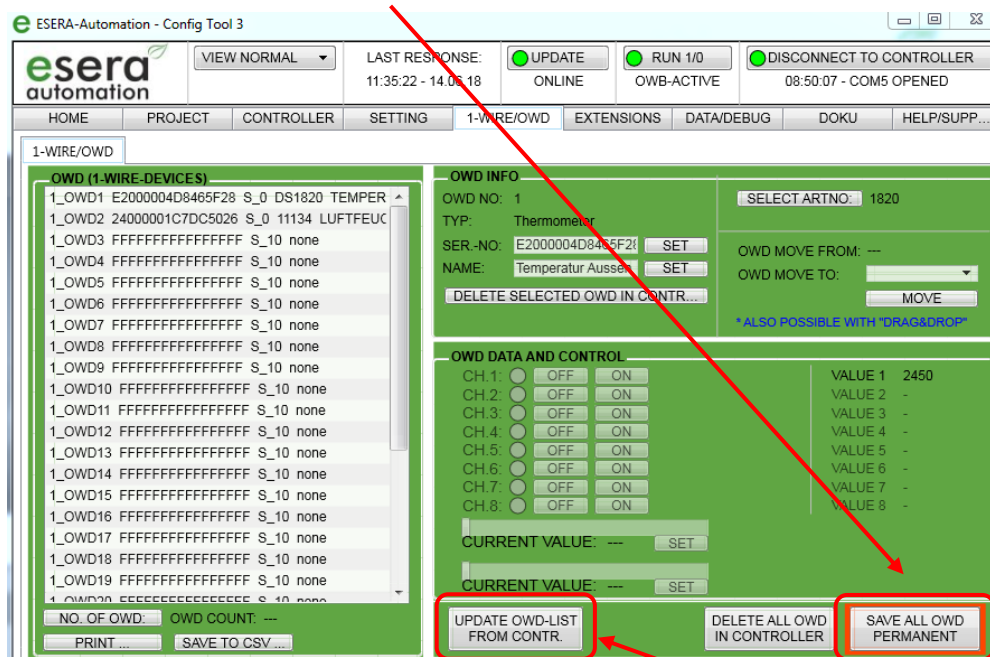
After a Power On, the system checks automatically if components have already been saved and if so, restores this list.

While in operation, a saved list can be loaded at any time using the push button "UPDATE OWD-LIST FROM CONTROLLER". This overwrites the current block list.

20.5. Move device (OWD)

The selection button can be used to change the position of the 1-Wire device on the OWD list, which means that another OWD number can be assigned to the 1-Wire device.
There are two options to assign a new OWD number to an OWD device. Either by drag and drop, by selection via the "OWD MOVE TO" field or by command via command input.

Move by drag and drop (a.)
To start, select the OWD number in the OWD device list (a.) that you want to move.
Now the OWD device can be moved to a new position with left mouse button pressed down. Then, release the left mouse button at the new position.

Move by command „OWD MOVE TO" field (b.)
To start, select the OWD number in the OWD device list (left) that you want to move.
In the drop-down menu, select the new OWD number to which you want to move the OWD device. Then press the push button "MOVE".
After moving an OWD number, the OWD list is automatically updated. To save the change permanently, click on "Save all OWD".
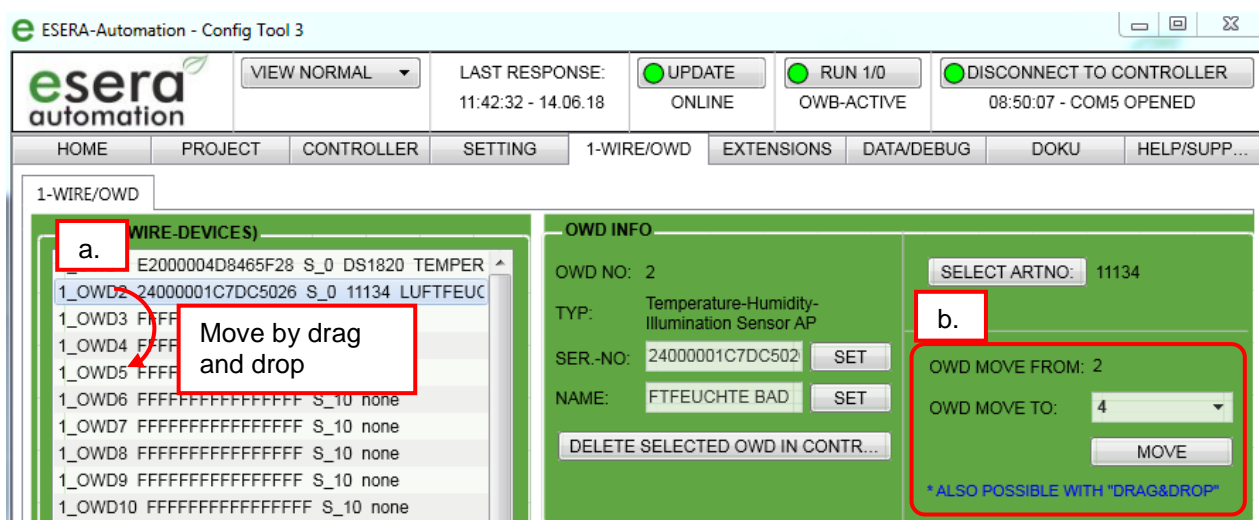
Move by command
An OWD device can also be moved by command via the command field.
Command: SET,OWB,MOVE,from_OWD_number,to_OWD_number

Note:
When moving, note that there is no confirmation if a device already exists at the target position. If it does, the existing block will be overwritten.

20.6. Assign name to device (OWD)

Each OWD device can be assigned its own individual name. Select the corresponding OWD number in the OWD device list and enter the desired name in the entry field "NAME". Press the push button "SET" to accept the new name.
The name is saved permanently by pressing the push button "SAVE ALL OWD PERMANENT".
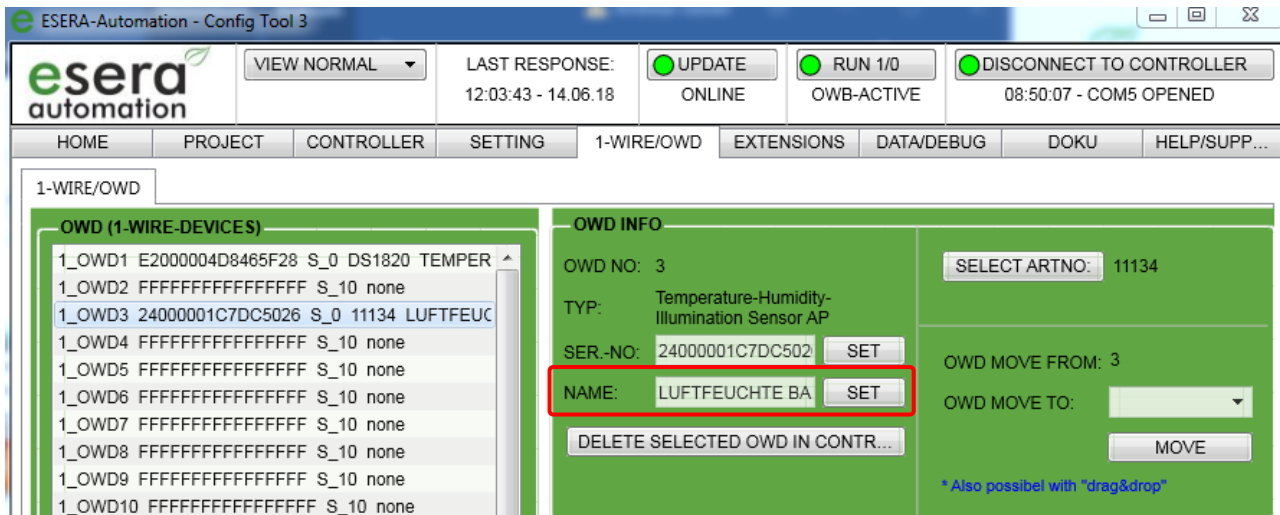
A command can also be entered via the command field.
Command: SET,OWD,NAME,OWD_number,name

Note: An individual text (name) with max. 18 characters can be added to an OWD device. The name is only intended for a more accurate differentiation. No umlauts are accepted and all letters will be saved in upper case.

20.7.   Delete name of device (OWD)

Select the corresponding OWD number in the OWD device list and delete the existing name of the input field "NAME". Then press the push button "SET" to accept the name.
An OWD name can also be deleted by command via the command field.
Command: SET,OWD,CNAME,OWD_number

Note: A deletion cannot be undone.

20.8.   Read name of device (OWD)

With the following command, the name of a 1-Wire device (OWD) can be output via the command field.
Command: GET,OWD,NAME,OWD_number

20.9.   Debug (DBG)

Different levels of debug output can be selected. Debug outputs start with the abbreviation "DBG" for Debug followed by various data. The formatting of the debug data is not fixed and is only intended as extended data output during controller integration or debugging.
The debug outputs are switched off in the state of delivery.

20.10.   Error registers

Various readable error registers are available. There are registers for each 1-Wire component (ERRORDEV and sum-registers ERRORALL).
If a 1-Wire device is no longer readable, or data transmission is faulty, the ERRORDEV register of the corresponding sensor as well as the sum-register (ERRORALL) are increased to a maximum of 5. If there are more than 3 faulty queries in the component register (ERRORDEV), no more data is output for the corresponding device.
The last valid data values are output up to the error limit. If the device, which was recognized as faulty, is re-added to the 1-Wire network or if the data transmission is no longer faulty, the component register (ERRORDEV) will be reset and the data output is continued.
Register ERRORDEV is reset after error-free reading of the 1-Wire device.

21. Functional enhancements and options

Various function extensions are planned or available for the 1-Wire Controller / 1-Wire Gateway, which are only activated by entering a function key. Each function key is only valid for one 1-Wire Controller / 1-Wire Gateway and cannot be transferred to other 1-Wire Controllers / 1-Wire Gateways.

After entry, the function keys are permanently stored in the 1-Wire Controller / 1-Wire Gateway and will not be overwritten by updates.

After 3 incorrect entries of a function key, the 1-Wire Controller / 1-Wire Gateway disables any function key entry for approx. 10 minutes.

The function extensions are supported from the 1-Wire Controller / 1-Wire Gateway firmware version V1.18_x onwards.

Function keys are available for purchase in the ESERA Online Shop.

The following functional enhancements are currently available or in the planning stage:

Functional enhancement	Function	Details
2	Codesys Library	With this option the use of the Codesys Library for e.g. WAGO® can be enabled.

Enter the function key as follows:
Command: SET,SYS,LIZ,functional enhancement,function key

Function keys that have already been released can be read with the following command:
Command: GET,SYS,LIZ,Function number
List of all function keys by using **command: GET,SYS,LIZ,100**
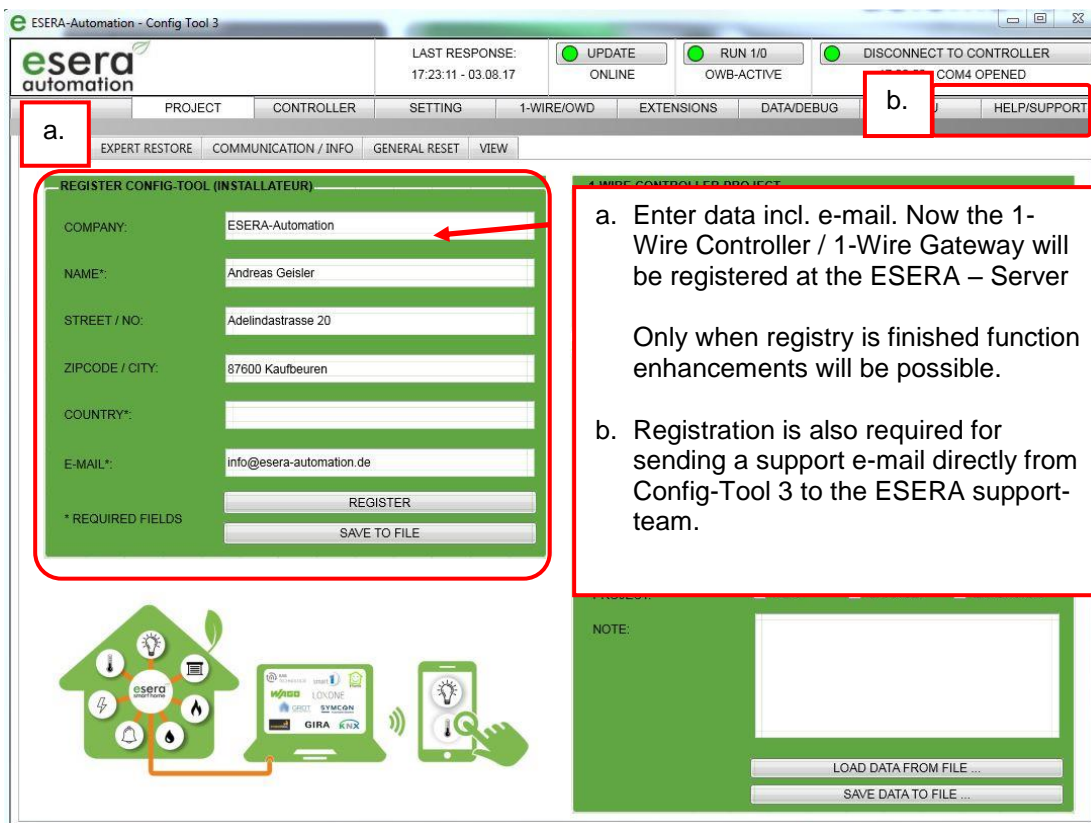
21.1. Registry of 1-Wire Controller / 1-Wire Gateway

There are two ways to activate function enhancements (extensions). Before each activation a registration of the 1-Wire Controller / 1-Wire Gateway is necessary.
Screen shot of input page: function key Config-Tool 3.

a. Enter data incl. e-mail. Now the 1-Wire Controller / 1-Wire Gateway will be registered at the ESERA – Server

Only when registry is finished function enhancements will be possible.

b. Registration is also required for sending a support e-mail directly from Config-Tool 3 to the ESERA support-team.

21.1.1. Transfer function enhancements

After registration of the 1-Wire Controller / 1-Wire Gateway, the function extension can be uploaded into the Config-Tool 3 when payment has successfully been made.

a. Press the "REFRESH" button to upload the function keys into Config-Tool 3 which are currently released for your device.
b. The status field for your personal unlock keys will be updated. Both, the keys stored in the 1-Wire Controller / 1-Wire Gateway as well as the function extensions downloaded from the ESERA server will be displayed.
c. Use the "TRANSFER LICENSE (...)" button to transfer a new function key into your 1-Wire Controller / 1-Wire Gateway.
d. If you have received the function key e.g. by e-mail from ESERA, you can alternatively enter this function key directly, without an online connection, and transfer it to your 1-Wire Controller / 1-Wire Gateway.
e. The e.) field provides information about the available function enhancements.
   The "SHOP LINK" button takes you directly to the corresponding purchase item in the ESERA Online Shop.

Screensho entry-mask function keys Config-Tool 3

22.   Command list / command set

Commands can be sent directly via a terminal program or the Config-Tool 3. With the "SEND" button the entered command is sent to the 1-Wire Controller / 1-Wire Gateway. Blank lines should not be inserted. The separator between the command parts is a comma. Upper and lower case do not need to be considered, too. All data output is in capital letters.

Example: Query time (get,sys,time)
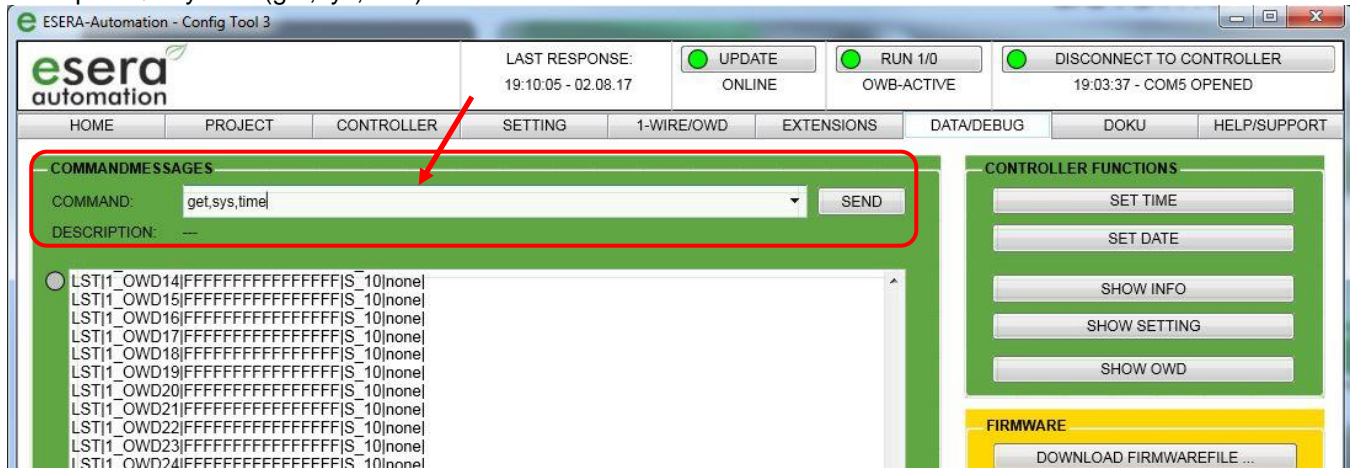
22.1.   SET Command

Commands to change settings or to execute an activity (SET). The subcommand is divided into System (SYS), One Wire Bus (OWB) and One Wire Device (OWD).

22.2.   System Set Command (System Command)

1	2	3	4	5	Description
SET	SYS	RST	1		Reset of the 1-Wire Controller / 1-Wire Gateway with restart
		DATE			Setting the date in the 1-Wire Controller / 1-Wire Gateway Input format: day,month,year => 04.12.14
		TIME			Setting the time in the 1-Wire Controller / 1-Wire Gateway Input format: hour:minutes:seconds
		DEBUG	0-2		Output test output on/off, default: 0
		RUN	0 or 1		Activate/deactivate data output and querying of the 1-Wire blocks. 0=off (Stop), 1= Data output (Run)
		ECHO	0-2		0=Confirmation with "0" (=ok), of the corresponding data record or an error message, 1=Output of the result with data frame 2=Output of the command as pure echo default setting:1
		LOADDEFAULT	1		Loads factory settings. The previous settings are overwritten. The 1-Wire List (OWD List) is not deleted.
		SAVE			Saves the current settings in the S-RAM [1]
		LOAD	1		Loads the last saved 1-Wire Controller / 1-Wire Gateway settings from the S-RAM
		CONTNO	1-254		Sets a 1-Wire Controller / 1-Wire Gateway number, Default=1
		FACRESET	1		The device is set to the factory setting.

---

[1]   Static memory that retains even after the operating voltage has been switched off.

						Loads the entire factory settings • Settings are reset • Deletes the One Wire List (OWD List)
		DATAPRINT	**0-1**			Sets the operating mode for the data output of the sensor data 0 = in one line with one CR 1 = Continuous output with separator "|". Default=1
		DATATIME	**0 or 10-240**			Set the cycle time for sending the 1-Wire data, 0=only query, cycle time=10-240 seconds
		KAL	**1**			KAL signal
		KALSEND	**0-1**			KAL message send on/off, default: on=1
		KALSENDTIME	**60-240**			Set time for KAL send message, Range 60-240 seconds, default=60
		KALREC	**0-1**			KAL message receiver on/off, default: on=1
		KALRECTIME	**60-240**			Sets time for KAL receiver message, Range 60-240 seconds, default=65
		KALALARM	**OWD No. or 0 for SYS**	**output**	**value**	Assigns the alarm output if the KAL signal of the higher-level system is missing. The internal relays can also be used for Controller 2 or Gateway 20. In this case, enter 0 for the OWD number.
		LIZ	**1-10**	**key**		unlock options License: 1: Codesys Lib
		LIZDEL	**1-10**	**1**		Deletes license key
		OUTH	**0-31**			Sets all digital outputs 0 = all channels off
		OUT*	**output**	**0 or 1**		Sets a digital output 0 = off 1= active
		OUTA*	**value**			Analog value 0-10V = 0-1000
		DIO*	**0-3**			Function of the digital inputs 1 and 2 only input, 3 and 4 switches the digital outputs
		BTID	**1000-9999**			Password / key for Bluetooth data connection. **Key 1304 is set at the stage of delivery.** **Not for modules without BT interface!**

* This function is only available for the 1-Wire Controller 2, 1-Wire Gateway 20 and Station 200.

22.3. Set One Wire Bus Command

Commands valid for the entire 1-Wire network

1	2	3	4	5	Description
SET	OWB	RST			One Wire Bus Reset
		OWDID	0 or 1		Switches the output of the module name either with "OWD" or the own serial number 0=Output "OWD", 1=Output of device serial number Default = 0
		OWDIDFORMAT	0 or 1		Switches the output of the OWD serial number with family code beginning left or right. 0=Output family code left 1=Edition family code right Default = 0
		SEARCHALL			Starts a manual search of all 1-Wire devices, the previous OWD list will be overwritten. **Note**: The search function is only recommended for a new system, as the OWD list is overwritten and unconnected devices are deleted.
		SEARCH	0-2		Sets the One Wire Mode 0=no search 1=Cyclic complete search (sequence of devices can change) 2=Adaptive cyclical search for new devices New devices are written to the first free space in the OND list. Default: 2
		SEARCHTIME	10-240		Setting the cycle time for the search function Default: 10 seconds
		SAVE			Saves the OWD list in the S-RAM, After restart the 1-Wire Controller / 1-Wire Gateway the list can be loaded. This command also permanently saves the OWD names.
		LOAD			Loads the saved OWD list with the last saved 1-Wire devices
		POLLTIME	1-240		Cycle time for querying of all 1-Wire modules of the bus. Note: The time can only be selected greater than the transmission time (datatime) of the data. Exception, if datatime = 0 Default: 2 seconds
		MOVE	1-30	1-30	Moves a One Wire device (OWD) within the block list. One Wire device **FROM** OWD list location **TO** OWD list location
		DELNO	1-30		Deletes a One Wire device from the OWD list, but not from the list stored in the S-RAM.
		DELALL			Deletes all 1-Wire devices from the OWD list, but not from the permanently stored OWD list (S-RAM list).
		DISALL			All 1-Wire devices are deactivated but not deleting them.
		DELMEM			Deletes all permanently stored 1-Wire devices (OWDs) in the 1-Wire Controller / 1-Wire Gateway (EEPROM). This command also deletes the stored OWD names

22.4.   Set One Wire Device Command

Befehle die die 1-Wire Bausteine im Einzelnen betreffen

1	2	3		4	5	Description
SET	OWD	FORMAT		0-2		Defines the decimal places for temperature sensors. Range: 0-2 digits Default: Integer value for 2 digits
		DS2408INV		0 or 1		Inverts the data of DS2408 devices (8-fold I/O). Default = 1 Optimized for 8-fold switching module
		DS2450ADC		0 or 1		Setting of the data output for DS2450 devices is output 0=16Bit Integer Values 1=Analog voltage in mV with two decimal places, e.g. 2560 correspond to 2560mV (2.56V)
		ART		number (1-30)	ID	Assigns the ESERA-Automation article number to modules for correspondingly adapted outputs, e.g. for humidity sensors
		OUTH		number (OWD 1-30)	value	Writes a value for a digital output module, e.g. switching module, analog output, etc. All outputs are switched at once. Example 255=all outputs active Command for DS2405, DS2413, DS2408 If the written value is too large for the device, an error message will be issued.
		OUT	No. (OWD 1-30)	output	value	Set a single output of a digital output module. Command for DS2405, DS2413, DS2408
		OUTA		number (OWD 1-30)	value mV	Writes an analog output 0 - 10V for Art. No. 11208 Value = Output value in mV (10V = 1000)
		OUTAMA		number (OWD 1-30)	value mA	Writes an analog output 0 - 20mA for Art. No. 11219 Value = Output value in mV (20mA = 2000)
		OUTPWM		number (OWD 1-30)	value %	Writes a PWM output 0 - 100% for Art. No. 11225 Value = initial value in %
		DIM	No. (OWD 1-30)	number	value	Dimmer value for one output of the 1-Wire dimmers Command for DS2408 module interface
		SHT	OWD	number		Control command for shutter module Art. No. 11209 Value: 1=Down, 2=Up, 3=Stop
		SHT 4*	OWD	output	value	Control command for 4-fold shutter module Art. No. 11209 Output: 1-4, Value: 1=Down, 2=Up, 3=Stop
		NAME		number (1-30)	text	Text field for OWD devices with up to 20 characters. Letters, numbers and special characters are allowed. **No blanks allowed.**
		CNAME		number (1-30)		Deletes an OWD text
		ID		serial-number 1-Wire Device		Manual setting of a 1-Wire serial number (16 digits) even if the sensor is not connected. The entered serial number is double-checked for plausibility. If an error occurs, an error message will be output. For details refer to "Error Code" point 21. A serial number beginning or ending with the family code can be entered.

22.4.1. Set One Wire Device Command, group commands

With the group command, a large number of actuators can perform the same function without having to send a single command to each individual 1-Wire device.

1	2	3	4	5		Description
SET	OWD	GRP	steering command, e.g. SHT	group addresses	data value	**Control command** The control command for the action is integrated here, e.g. SHT for shutter modules. Further modules in preparation. **Group addresses** A maximum of 8 group addresses can be assigned to each 1-Wire module. Group addresses are available in a range from 1-240. **Data value** A data value in the range 0-254 can be written to the 1-Wire modules. Data values from 1 to 3 are available for shutter modules. For 8-fold output modules the data value of 0-254 can be sent. **Data return** Each OWD module gives its own individual feedback.
		GRPDEL	OWD number 1-30			Deletes a group address of an OWD number. To carry out the deletion permanently, new group addresses need to be saved permanently.
		GRPDELALL	OWD number 1-30 or all OWDs			All group addresses per OWD or alternatively all group addresses can be deleted. **Delete OWD group addresses** by specifying the OWD number. **Delete all group addresses** with the OWD number 100.
		GRPSET	OWD number 1-30	group address		Assign a group address in the range of 1-240. If this group address already exists, a response is given. No group address can be assigned twice to an OWD. A maximum of 8 group addresses can be assigned per OWD.
		GRPSAVE	1			Permanent storage of the group addresses within the 1-Wire Controller / 1-Wire Gateway / Station-200.
		GRPDELAY	value			Sets the delay between group commands in the range of 50ms to 1000ms. Value setting is 400ms delay.

22.4.2. Set KEY Command

Befehle die die 1-Wire Bausteine im Einzelnen betreffen

1	2	3	4	5	Description
SET	KEY	DATA	value		The data output can be changed with the command "SET,KEY,DATA,0, 1 or 2". After changing the data output, it needs to be saved with the button "SAVE PERMANENT" in the Setting area! Value: 0 = if iButton available data output with serial number 1 = if iButton available data output with "1" 2 = Data output if iButton available "1" if available "0" if not available
		FAST	value		Activation of iButton fast-mode for very preferred and fast query of iButton keys. Value: 0=Standard query speed 1=Fast mode active, query in approx. 120ms cycle* (query speed depends on number of connected OWDs) **Note**: Activation is only possible when function extension no. 2 or no. 3 has been purchased.

22.5. GET Command

Commands to retrieve data- or 1-Wire Controller / 1-Wire Gateway settings via the data interface (GET). The subcommand is divided into System (SYS), One Wire Bus (OWB) and One Wire Device (OWD).

22.5.1. System Get Command (System Command)

1	2	3	4	ACK	Description
GET	SYS	TIME		time	Output controller time
		DATE		date	Output controller date
		RUN	0 or 1	0 or 1	Data output and querying of 1-Wire devices on/off 0=off (stop), 1= data output (run)
		SETTING		setting	Output of 1-Wire Controller / 1-Wire Gateway Settings. Output starts with "Data header CSE", time and 1-Wire Controller / 1-Wire Gateway number
		FW		value	Output firmware version
		HW		value	Output 1-Wire Controller / 1-Wire Gateway hardware version
		INFO		list	Output of 1-Wire Controller / 1-Wire Gateway data, such as serial number, year of manufacture, firmware version, etc. Output starts with "Data header CSI", time and 1-Wire Controller / 1-Wire Gateway number
		SERIAL		value	Output 1-Wire Controller / 1-Wire Gateway serial number
		ID		value	1-Wire Controller / 1-Wire Gateway article number
		CONTNO		value	Output 1-Wire Controller / 1-Wire Gateway number, default: 1
		DOM		value	Output date of manufacturing
		SETTING		list	Output of all 1-Wire Controller / 1-Wire Gateway settings
		ECHO		value	Output type of the acknowledgement of receipt
		LOADSETTING			Load stored settings from S-RAM to memory
		KALREC		0 or 1	KAL Reception on / off
		KALRECTIME		Wert	Output cycle time for KAL reception. Time in seconds
		KALSEND		0 or 1	KAL send on/off
		KALSENDTIME	value	value	Output cycle time for sending KAL message. Time in seconds
		DATAPRINT	0 or 1	0 or 1	Reads the operating mode for the list output of the sensor data 0 = in one line with one CR 1 = 1 = Continuous output with separator "|". Default=0
		DATATIME	value	value	Cycle time for the output of all block values. Time in seconds
		DATA			Manual query of all sensor data, command to use when setting the "DATAPRINT"=0
		ANA**			Querying the voltages of the 1-Wire bus interface, 5V and 12V
		LIZ	1-10 or 100 (list1) or	0 or 1	Reads the enabled function enhancements 1: Codesys library 2: iButton fast mode 3: Door opener function

			200 (list2)		List 1: Value: 0 = Disabled, 1 = Enabled List 2: Value: 0 = Disabled or if enabled output of the function extension
		BTID	key	Password / key for Bluetooth data connection factory default key is 1304	

** This function is only available for 1-Wire Controller 2 and 1-Wire Gateway 20.

22.5.2. One Wire Bus Command (OWB)

Queries affecting the entire 1-Wire network

GET	OWB	COUNT		number /value	Number of currently connected 1-Wire devices
		COUNTMEM		value	Number of permanently stored 1-Wire devices
		OWDID		value	Query, how is the identification of a 1-Wire device output? With the serial number or the OWD number? 0=OWD number 1=Serial number
		OWDIDFORMAT		value	Query, how is the OWD serial number output? 0=
		LIST0		list0	List output of all active 1-Wire devices with name, serial number and function Output Data header starts with 1-Wire Controller / 1-Wire Gateway number, "Data header LST0" and time
		LIST1		list1	List output of all 1-Wire devices with serial number only Output Data header starts with 1-Wire Controller / 1-Wire Gateway number, "Data header LST1" and time
		LIST2		list2	List output of all 1-Wire devices with serial number and device type Output data header starts with controller number, "data header LST2" and time
		LISTALL		list3	List output of all 1-Wire devices with name, serial number, device type and status. 0-3=error counter, 5=not active 10=not occupied Output Data header starts with 1-Wire Controller / 1-Wire Gateway number, "Data header LST" and time
		LISTALL1		list4	List output of all 1-Wire devices with name, serial number, device type and status. 0-3=error counter, 5=not active 10=not occupied and OWD NAME Output Data header starts with 1-Wire Controller / 1-Wire Gateway number, "Data header LST" and time
		LISTMEM		list4	List of OWD devices/modules permanently stored in the 1-Wire Controller / 1-Wire Gateway
		DEVICEID	1-30	value	Output of the 1-Wire Serial Number for a Module
		SEARCH		value	Output of the search function, Automatic search on/off
		SEARCHTIME		value	Output of the cycle time for the component search
		POLLTIME		value	Output 1-Wire Bus Polling cycle (polling time) in seconds

		ERRSUM		value	Output error counter in total since operation, max. 65000
		ERROWD	1-30	value	Output of the requested OWD number Error counter max. 65000 Default: 255 Note: error counters are reset at midnight.
		ERRLISTALL			List output of all stored OWDs Error counter per OWD, max. 65000 Default: 255 Note: error counters are reset midnight.
		ERRLISTALL1			List output of all 30 OWDs Error counter max. 65000 Default: 255 Note: error counters are reset at midnight.

22.5.3. One Wire Device Command (OWD)

Queries affecting the entire 1-Wire network

GET	OWD	NAME	OWD-number		Output of the stored name to a 1-Wire device (OWD)
		FORMAT	value		Output of decimal places for temperature sensors. Range: 0-2 digits Default: 2 digits, format as integer value, last two digits are output as decimal values.
		STATUS	OWD-number		Output of the status of a 1-Wire device (OWD) 0= no read errors 1-3= number of current read errors 5= device not readable. There is no data output for this 1-Wire block 10= OWD space is not occupied
		TYPE	OWD-number		Output of the 1-Wire device (OWD) type, e.g. DS1820 for a temperature sensor or 11220 as assigned article number
		DS2408INV	value		Data output for the 8-fold I/O blocks DS2408 inverted? 0=no 1=yes
		DS2450ADC	value		Setting of the data output for output of DS2450 blocks 0=16Bit Integer Values 1=Analog voltage in mV with two decimal places, e.g. 2.56V corresponds to 2560
		GRPGET	OWD-number		Output of group addresses for an OWD number or for all OWDs in list format.
		GRPLIST1			Output of the group addresses for all OWDs in list format.

22.5.4. Get KEY Command

Commands which affect the 1-Wire devices in detail

1	2	3	4	5	Description
GET	KEY	DATA			Status query of data output for iButton with command "DATA". Value: 0 = if iButton available; data output with serial number 1 = if iButton is available; data output with "1 2 = Data output if iButton is available "1", if not available "0"

		FAST			Status query of iButton fast mode. Value: 0=Standard query speed 1=Fast mode active, query in approx. 120ms cycle* (query speed depends on number of connected OWDs) Note: Activation is only possible after purchase of function extension no. 2 or no. 3.

23. Output „Echo" and Error code

Echo output:

Setting	Output	Description
ECHO = 0	Output „0"	0 = command recognized, otherwise error code (see below)
ECHO = 1	Command/Data/Response	• Confirmation of command input • Response to GET query • Data output on GET request
ECHO = 2	Command echo	Output of the received command as echo. Output in general in capital letters.

Error Code:

Description of the output error code

Error Code	Description
1	Error in 1st command part or unknown command
2	Error in 2nd command part or unknown command
3	Error in 3rd command part or unknown command
4	Error in 4th command section, unknown command or value outside the accepted range
5	Error in 5th command section, unknown command or value outside the accepted range
6	Error KAL Receive, time window for KAL Receive exceeded. Possible network error
7	Error when storing settings in static RAM
8	Unknown 1-Wire device detected
9	Error when reading out a 1-Wire block
10	Incorrect license key
11	Input is time-locked after input of 3 incorrect license keys. For duration please refer to the document "Config-Tool 3 Guide" under EXTENSIONS, Functional enhancements.
12	Error when entering a non-existent ESERA-Automation Part number
13	OWD ID TO SHORT, the entering serial number is too short
14	OWD CRC Error, the cross sum of the entered serial number is incorrect
20	Group address already exists
22222	Error when reading a temperature sensor
9999	Unknown 1-Wire device

24. Error OWD-Number

Each OWD number has an error counter. If an error occurs while reading an OWD, the OWD error counter is increased by one counter value. The maximum error counter value is 65000.
The error counter is reset at midnight (0 o'clock).
Command: GET,OWB,ERROWD,Number
Example:
GET,OWB,ERROWD,2
1_ERROWD2|0 0 = no errors, 255 = default value, max. 65000

25. Error list, stored OWDs

Error counters for all OWDs (1-Wire devices) stored in the 1-Wire Controller / 1-Wire Gateway are output here in list format.
If an error occurs while reading an OWD, the OWD error counter is increased by one counter value. The maximum error counter value is 65000.
The error counter is reset at midnight (0 o'clock).
Command: GET,OWB,ERRLIST
Example:
1_ERR|18:47:48
1_ERROWD1|255
1_ERROWD2|255

26.   Error list of all OWDs

Hier werden als Liste die Error Counter für alle 30 OWDs (1-Wire Bausteine) des 1-Wire Controller / 1-Wire Gateways ausgegeben.
Wenn es beim Lesen eines OWD einen Fehler gibt, wird der OWD Error Counter um einen Zählerwert erhöht.
Der maximale Error Counter Wert beträgt 65000.
Der Error Counter wird jeweils um Mitternacht (0 Uhr) zurückgesetzt.
Befehl: GET,OWB,ERRLIST1
Beispiel:
1_ERR|18:47:48
1_ERROWD1|255
1_ERROWD2|255
…
1_ERROWD30|255

Error counters for all 30 OWDs (1-Wire devices) of the 1-Wire Controller / 1-Wire Gateway are output here in list format.
If an error occurs while reading an OWD, the OWD error counter is increased by one counter value. The maximum error counter value is 65000.
The error counter is reset at midnight (0 o'clock).
Command: GET,OWB,ERRLIST1
Example:
1_ERR|18:47:48
1_ERROWD1|255
1_ERROWD2|255
…
1_ERROWD30|255

27. Conclusion and feedback

During the development of the 1-Wire Controller / 1-Wire Gateway, we put a lot of effort into integrating as many practical aspects as possible from a user's point of view. As we are manufacturer and not the "end user", we certainly won't succeed to 100%. Therefore, we would like you to send us your feedback, impressions, suggestions for improvement as well as error messages that have occurred in your environment by mail to support@esera.de. We would also be very pleased if you will leave product reviews at our online shop.

Please recommend us also in various forum platforms. Our goal is to operate the 1-Wire bus as professional as possible and to establish it as a fixed standard in the field of IoT, Smart Automation and Smart Home.
My special thanks go especially to all our test customers, who have taken a lot of time to test our
1-Wire Controller / 1-Wire Gateway and to leave very constructive feedback.

28. Warranty

ESERA-Automation (E-SERVICE GmbH) guarantees that the goods sold at the time of transfer of risk to be free from material and workmanship defects and have the contractually assured characteristics. The statutory warranty period of two years begins from date of invoice. The warranty does not extend to the normal operational wear and normal wear and tear. Customer claims for damages, for example, for non-performance, fault in contracting, breach of secondary contractual obligations, consequential damages, damages resulting from unauthorized usage and other legal grounds are excluded. Excepting to this, ESERA-Automation accepts liability for the absence of a guaranteed quality resulting from intent or gross negligence. Claims made under the Product Liability Act are not affected.

If defects occur for which the ESERA-Automation is responsible, and in the case of replacement goods, the replacement is faulty, the buyer has the right to have the original purchase price refunded or a reduction of the purchase price. ESERA-Automation accepts liability neither for the constant and uninterrupted availability of the ESERA-Automation or for technical or electronic errors in the online offer.

We develop our products further and we reserve the right to make changes and improvements to any of the products described in this documentation without prior notice. If you need documentation or information about older product versions, contact us by email at info@esera.de.

29. Trademarks

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30. Contact

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