

JUMO LOGOSCREEN 601/700

Paperless recorder



Modbus interface description



70653000T92Z001K000

V3.00/EN/00710390/2023-12-06

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1.1 Warning symbols



DANGER!

This symbol indicates that **personal injury from electrocution** may occur if the appropriate precautionary measures are not taken.



WARNING!

This symbol in connection with the signal word indicates that **personal injury** may occur if the respective precautionary measures are not carried out.



CAUTION!

This symbol in connection with the signal word indicates that **material damage or data loss** will occur if the respective precautionary measures are not taken.



CAUTION!

This symbol indicates that **components could be destroyed** by electrostatic discharge (ESD = Electro Static Discharge) if the respective cautionary measures are not taken.

Only use the ESD packages intended for this purpose to return device inserts, assembly groups, or assembly components.

1.2 Note symbols



NOTE!

This symbol refers to **important information** about the product, its handling, or additional benefits.



REFERENCE!

This symbol refers to **additional information** in other sections, chapters, or other manuals.



FURTHER INFORMATION!

This symbol is used in tables and indicates that **further information** is provided after the table.



DISPOSAL!

At the end of its service life, the device and any batteries present do not belong in the trash! Please ensure that they are **disposed of** properly and in an **environmentally friendly** manner.

1 Safety information

2 Interfaces on the device

2.1 Location of interfaces

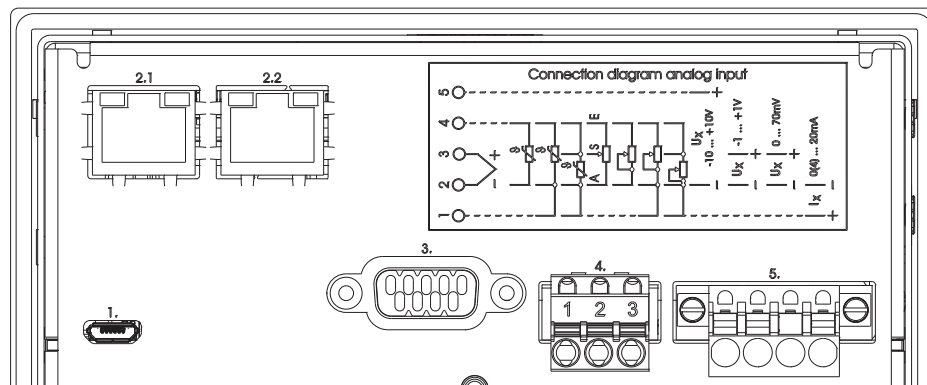
The paperless recorder features a serial interface and an Ethernet interface as standard.

The serial interface may be configured as an RS232 or RS485 interface and supports the Modbus protocol (Modbus RTU) as a master or slave. Alternatively, a barcode scanner may be connected.

The device may be integrated into a company network via the Ethernet interface. The following functions are provided for this purpose:

- Communication with PC software, such as a setup program, PCC, PCA3000 (HTTP)
- Web server for using a web browser (HTTP)
- Communication with SMTP server and email server (SMTP)
- Communication with a Modbus master or slave via Modbus-TCP

Connection sockets (back)



- 2.1 Ethernet interface (as a standard feature)
or
- 2.1, 2.2 PROFINET IO device interface (including Ethernet; extra code)
- 3. Serial interface (for Modbus or barcode scanner)

2 Interfaces on the device

2.2 Serial interface

Version	Connection element.pin – assignment	Connection element
RS232 9-pin SUB-D socket (switchable to RS485)	3.2 – RxD (received data) 3.3 – TxD (transmission data) 3.5 – GND (ground)	
RS485 9-pin SUB-D socket (switchable to RS232)	3.3 – TxD+/RxD+ (transmission/received data +) 3.5 – GND (ground) 3.8 – TxD-/RxD- (transmission/received data -)	



NOTE!

A connecting cable with shielding must be used to connect the RS232 interface.
A twisted connecting cable with shielding must be used to connect the RS485 interface.
To avoid transmission errors, only the signals listed above may be connected.

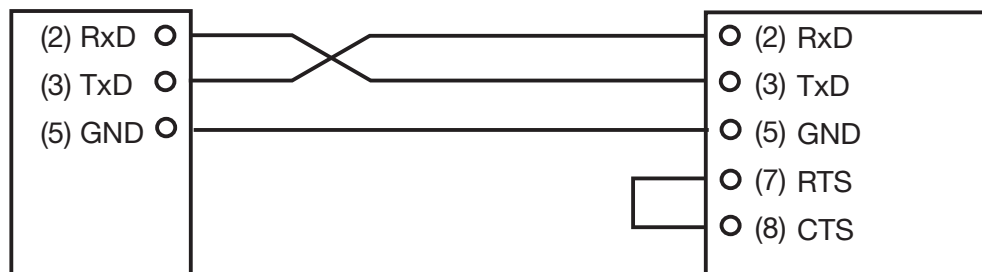


NOTE!

To ensure fault-free operation, terminating resistors are required at the beginning and end of an RS485 transmission path.

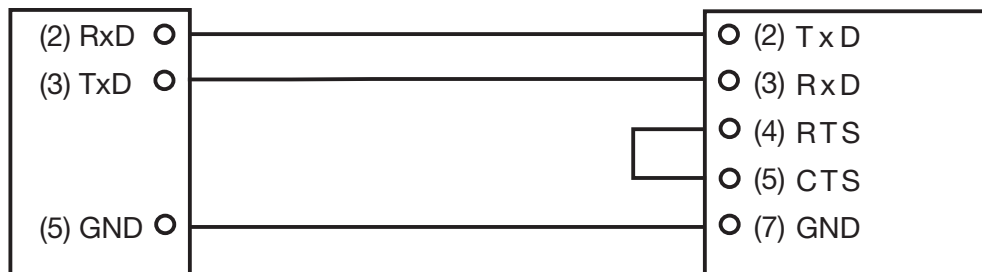
Handshake lines for RS232

No handshake signals (RTS, CTS) are used when using as an RS232 interface. The two pins are not assigned at the Sub D socket of the slave. If the signals are evaluated by the master (for example, through a PC program) they must be bridged in the connector.



Slave

Master with 9-pin Sub D socket



Slave

Master with 25-pin Sub D socket

Configuration

**NOTE!**

Refer to the operating manual of the paperless recorder for the configuration parameters and their settings (Configuration > Serial interface).

2.3 Ethernet interface

Connection

**NOTE!**

An RJ45 patch/crossover cable (Cat5 or higher) must be used to connect the Ethernet interface.

**CAUTION!**

The device is not suitable for connection to a PoE port (power over Ethernet).

There is the risk of damage to the device.

- ▶ Connect the device to an Ethernet port without PoE.
-

Configuration

**NOTE!**

Refer to the operating manual of the paperless recorder for the configuration parameters and their settings (Configuration > Ethernet).

2.4 Settings for Modbus-TCP

The settings for the Modbus-TCP operating mode are implemented in a separate configuration menu.

If the paperless recorder functions as a Modbus slave, two external devices (masters 1 and 2) can simultaneously access the paperless recorder. If it functions as a Modbus master, it can communicate with up to four external devices (Modbus slaves: device 1 to 4).

Configuration

**NOTE!**

Refer to the operating manual of the paperless recorder for the configuration parameters and their settings (Configuration > Modbus-TCP).

Terms "Modbus/TCP" and "Modbus-TCP"

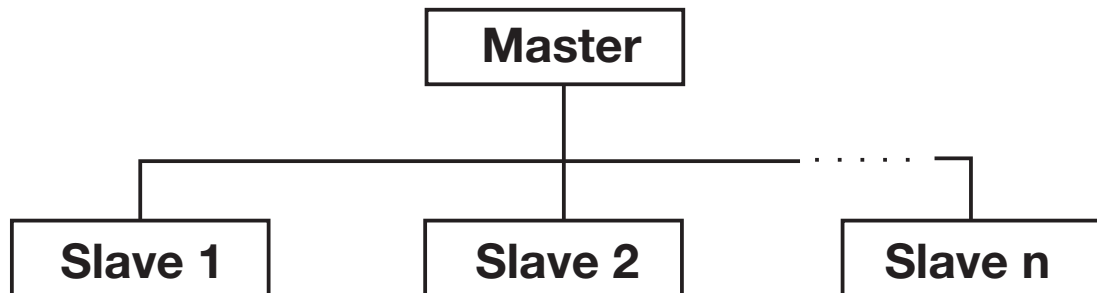
The previously used term "Modbus/TCP" has now been replaced by "Modbus-TCP". In the following chapters of this document the old term "Modbus/TCP" is still used.

2 Interfaces on the device

3 Modbus protocol description

3.1 Master-slave principle

Communication between a master and a slave device with Modbus takes place according to the master/slave principle in the form of data request/instruction – response.



The master controls the data exchange; the slaves only have a response function. They are identified by their device address.



NOTE!

The paperless recorder can be operated either as a Modbus master or as a Modbus slave. The master and slave function can also be used in parallel.

This means external analog and digital signals, as well as texts, may be transmitted from a master to a paperless recorder (slave) as well as actively read in from one or more slaves by the paperless recorder (master). Conversely, the external device may access the process values of the paperless recorder as a master or slave.

If the paperless recorder functions as a master, the corresponding Modbus and device addresses must be assigned using the setup settings of the Modbus frames.

3.2 RTU transmission mode

In addition to Modbus/TCP, the RTU mode (Remote Terminal Unit) can also be used as the transmission mode. The transmission of a character is thus performed in binary format with 8 data bits, 1 start bit, 1 stop bit, and, if necessary, 1 parity bit. The highest value bit (MSB, most significant bit) is transmitted first.

The ASCII operating mode is not supported.

Data format

The data format describes the structure of a transmitted character.

Data format (Configuration)	Start bit	Data bits	Parity bit	Stop bit	Number of bits
8 - 1 - no parity	1	8	0	1	10
8 - 1 - odd parity	1	8	1	1	11
8 - 1 - even parity	1	8	1	1	11

3 Modbus protocol description

3.3 Chronological sequence of communication

Character transmission time

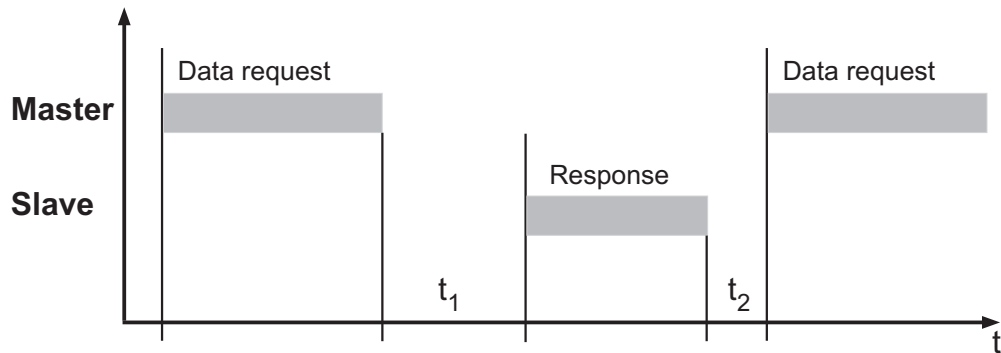
The character transmission time (time taken to transmit one character with 8 data bits) depends on the baud rate and the number of bits of the character (see table for data format):

$$\text{Character transmission time [ms]} = 1000 \times \text{number of bits/baud rate}$$

Baud rate[Bd]	Number of bits	Character transmission time[ms]
115200	11	0.095
	10	0.087
38400	11	0.286
	10	0.26
19200	11	0.573
	10	0.521
9600	11	1.146
	10	1.042

Time diagram of a data request

A data request runs according to the following time diagram:



The data request and response consist of several characters (each with a start bit, 8 data bits, a parity bit if necessary, and a stop bit) which are transmitted coherently.

t ₁	<p>The slave has to observe this waiting period before sending the response.</p> <p>min.: 5 ms typical: 5 to 35ms max. 35 ms or the minimum response time set in the configuration</p>
t ₂	<p>The master has to observe this waiting period before starting a new data request.</p> <p>For RS232: at least 3.5 times the character transmission time (end identifier) For RS485: 35 ms</p>



NOTE!

The waiting periods t₁ and t₂ also contain the end identifier (3.5 × character transmission time), which follows after each data request or response.



NOTE!

In the configuration of the serial interface of the paperless recorder, a minimum response time can be set (0 to 500 ms). This set time is the minimum waiting period before an answer is transmitted. If a smaller value is set, then the response time may be longer than the set value (internal processing takes lon-

3 Modbus protocol description

ger); the paperless recorder responds as soon as internal processing is completed. A set time of 0 ms means that the paperless recorder responds at the maximum possible speed.

The adjustable minimum response time is required by the master for the RS485 interface in order to switch the interface drivers from transmitting to receiving. This parameter is not required for the RS232 interface.



NOTE!

During t_1 and t_2 , and during the response time of the slave, no data requests may be generated by the master. Requests made during t_1 and t_2 are ignored by the slave. Requests during the response time invalidate all the data currently on the bus.

3.4 Structure of a Modbus telegram

Data structure

All telegrams have the same structure:

Slave address	Function code	Data field	Checksum CRC
1 byte	1 byte	x bytes	2 bytes

Each telegram has four fields:

Slave address	Device address of a specific slave
Function code	Function selection (read/write words)
Data field	Contains information (according to the function code) <ul style="list-style-type: none">• Word address• Number of words• Word value(s)
Checksum	Detection of transmission errors

3 Modbus protocol description

3.5 Device address

The device address can be set to between 1_{DEC} and 254_{DEC}. Each Modbus station must have a unique device address.

The following data exchange variants are available for accessing the connected stations:

Query

This is a data request/instruction from the master to a slave via the corresponding device address (1 to 254). The addressed slave responds.

Broadcast

The broadcast is an instruction by the master to all slaves via the device address 0 (for example, to transmit a specific value to all slaves).

The connected slaves do not respond. In such a case, the correct acceptance of the value by the slaves should be checked by a subsequent readout at each individual slave. A data request with the device address 0 is meaningless.



NOTE!

A maximum of 31 slaves can be addressed via the RS485 interface.

The device address 0 is reserved as the Modbus broadcast address.

An instruction by the master to address 0 is carried out by all slaves, but no response is transmitted by them (as this would result in a data collision).

In the transmission protocol the address is specified in binary format.

3.6 Function codes

Function overview

The functions described in the following are available for the readout of measured values, device and process data, as well as for writing specific data.

Function number	Function	Limit
0x03 or 0x04	Reading n words	Max. 127 words (254 bytes)
0x06	Writing one word	Max. 1 word (2 bytes)
0x10	Writing n words	Max. 127 words (254 bytes)



NOTE!

A hexadecimal number is identified by "0x" preceding the actual number.

Example: 0x0010 (= 16_{DEC})



NOTE!

If the paperless recorder does not respond to these functions or outputs an error code, it can be evaluated.

⇒ chapter 3.9 "Error messages", Page 22

3 Modbus protocol description

3.6.1 Reading n words

This function is used to read n words, starting from a specific address.

Data request

Slave address	Function 0x03 or 0x04	Address First word	Number of words	Checksum CRC
1 byte	1 byte	2 bytes	2 bytes	2 bytes

Response

Slave address	Function 0x03 or 0x04	Number of bytes read	Word value(s)	Checksum CRC
1 byte	1 byte	1 byte	x bytes	2 bytes

Example

Reading the IP address of the paperless recorder (slave, device address 1). Here, the example deals with the address 10.10.1.69. Since each IP address range is stored in a word, 4 words (8 bytes) must be read in.

Data request:

01	03	00 1B	00 04	34 0E
Slave	Function	Address 1st word	Number of words	CRC

Response (values in Modbus floating-point format):

01	03	08	00 0A	00 0A	00 01	00 45	37 E5
Slave	Function	Bytes read	10	10	1	69	CRC
			IP address				

3 Modbus protocol description

3.6.2 Writing one word

The data blocks for the instruction and response are identical when writing a word.

Instruction

Slave address	Function 0x06	Word address	Word value	Checksum CRC
1 byte	1 byte	2 bytes	2 bytes	2 bytes

Response

Slave address	Function 0x06	Word address	Word value	Checksum CRC
1 byte	1 byte	2 bytes	2 bytes	2 bytes

Example

Writing value 1 to external binary input 1 to word address 0x1144.

Instruction:

01	06	11 44	00 01	06 23
Slave	Function	Word address	Value	CRC

Response:

01	06	11 44	00 01	06 23
Slave	Function	Word address	Value	CRC

3 Modbus protocol description

3.6.3 Writing n words

Instruction

Slave address	Function 0x10	Address of first word	Number of words	Number of bytes	Word val- ue(s)	Checksum CRC
1 byte	1 byte	2 bytes	2 bytes	1 byte	x bytes	2 bytes

Response

Slave address	Function 0x10	Address of first word	Number of words	Checksum CRC
1 byte	1 byte	2 bytes	2 bytes	2 bytes

Example

Writing the word "Test" (ASCII encoding: 0x54 0x65 0x73 0x74 0x00) to external text variable 1 from word address 0x1218.

Instruction:

01	10	12 18	00 03	06	54 65 73 74 00 00	22 C5
Slave	Function	Address 1st word	Number of words	Number of bytes	Text in ASCII	CRC

Response:

01	10	12 18	00 03	05 77
Slave	Function	Address 1st word	Number of words	CRC

3 Modbus protocol description

3.7 Transmission formats (integer, floating-point, and text values)

Functions 0x03 or 0x04 (reading n words) are used to read out integer, floating-point, double, and text values.

Data request

Slave address	Function 0x03 or 0x04	Address First word	Number of words	Checksum CRC
1 byte	1 byte	2 bytes	2 bytes	2 bytes

Integer values are transmitted via Modbus in the following format:
The high byte first, followed by the low byte.

Response

Slave address	Function 0x03 or 0x04	Number of bytes read	Word value(s)	Checksum CRC
1 byte	1 byte	1 byte	x bytes	2 bytes

3.7.1 Integer values

Example

In this hypothetical example, the integer value should be read out at address 0x11F1. The value here should be "4" (word value 0x0004).

Data request:

01	03	11 F1	00 01	D0 C5
Slave	Function	Address 1st word	Number of words	CRC

Response:

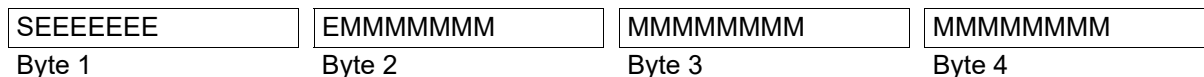
01	03	02	00 04	B9 87
Slave	Function	Bytes read	Integer value	CRC

3 Modbus protocol description

3.7.2 Floating-point values

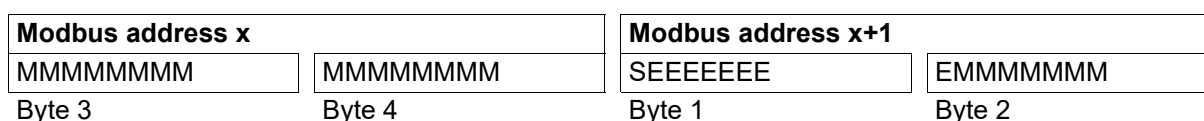
For floating-point values, Modbus functions with the IEEE 754 standard format (32-bit), but with the difference that bytes 1 and 2 are interchanged with bytes 3 and 4.

Single floating-point format (32-bit) acc. to standard IEEE 754



S - Prefix sign bit
 E - Exponent (two's complement)
 M - 23-bit normalized mantissa

Modbus floating-point format



Example

In this example, the value of analog input 1 should be read out at address 0x1006. The value here should be 550.0 (0x44098000 in the IEEE 754 format).

Data request:

01	03	10 06	00 02	20 CA
Slave	Function	Address 1st word	Number of words	CRC

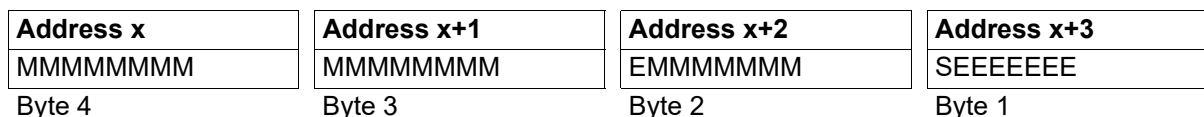
Response (values in Modbus floating-point format):

01	03	04	80 00	44 09	20 F5
Slave	Function	Bytes read	Floating-point value		CRC

After being transmitted from the paperless recorder, the bytes for the floating-point value must be interchanged accordingly.

Many compilers (for example, Microsoft® Visual C++) store the floating-point values in the following sequence:

Floating-point value



NOTE!

The sequence of the bytes depends on how floating-point values are saved in the application concerned. It may be necessary for the bytes to be interchanged in the interface program accordingly.



3 Modbus protocol description

3.7.3 Text values (character strings)

Character strings are transmitted in ASCII format.



NOTE!

A "\0" (ASCII code 0x00) must always be transmitted as the terminating code. Characters after this mark have no significance.

Knowing that the transmission of texts takes place word by word (16-bit), 0x0 is additionally appended where an odd number of characters is used (incl. "\00").

The maximum lengths specified in the address tables for character strings also include the terminating "/0". This means the text can consist of max. 63 readable characters for "char 64".

Example

Text query from address 0x1218 that may be 64 characters long (incl. terminating code). In the example, the character string "Test" (ASCII code: 0x54, 0x65, 0x73, 0x74, 0x00) is under this address. However, in the request the maximum value is assumed for the number of words to be read: 64 characters per 1 byte = 64 bytes = 32_{DEC} words = 0x20 words.

Request: 010312180020 (+ 2 bytes CRC16)

Response: 010340**54657374**00 ... 00 (+ 2 bytes CRC16)

All 64 characters are read here (64_{DEC} bytes = 0x40 bytes): 4 text characters (0x54, 0x65, 0x73, 0x74) + 1 terminating code character (0x00) + 59 further characters. The characters following the terminating code are not evaluated.

3 Modbus protocol description

3.8 Checksum (CRC16)

Calculation principle

Transmission errors are detected with the aid of the checksum (CRC16). If an error is detected during evaluation, the device concerned does not respond.

CRC = 0xFFFF									
CRC = CRC XOR BytesOfMessage									
For (1 to 8)									
<table border="1"> <tr> <td colspan="2">CRC = SHR(CRC)</td> </tr> <tr> <td colspan="2">if (flag shifted to the right = 1</td> </tr> <tr> <td>then</td> <td>else</td> </tr> <tr> <td>CRC = CRC XOR 0xA0001</td> <td></td> </tr> </table>		CRC = SHR(CRC)		if (flag shifted to the right = 1		then	else	CRC = CRC XOR 0xA0001	
CRC = SHR(CRC)									
if (flag shifted to the right = 1									
then	else								
CRC = CRC XOR 0xA0001									
while (not all BytesOfMessage processed);									



NOTE!

The low byte of the checksum is the first to be transmitted!

Example: The CRC16 checksum 0x3291 is transmitted and presented in the sequence 0x9132.

Example

Query status of digital input 1 (address 0x10D5):

Data request (CRC16 = 0x3291)

01	03	10 D5	00 01	91 32
Slave	Function	Address	Read one word	CRC

Response (CRC16 = 0x8479)

01	03	02	00 01	79 84
Slave	Function	Number of bytes	Value	CRC

3 Modbus protocol description

3.9 Error messages

3.9.1 Modbus error codes

The slave device does not respond

The slave will not respond in the following cases:

- The baud rate and/or data format of the master and slave do not match
- The used device address does not match with the slave address contained in the protocol
- The checksum (CRC) is not correct
- The instruction from the master is defined incompletely or excessively
- The number of words to read is zero

In these cases, the data request should be sent again after a timeout time of approx. 1 s has elapsed.

Error codes

If the data request from the master has been received by the slave without transmission errors but cannot be processed, the slave responds with an error code. The following error codes may occur:

- 01 = Invalid function
- 02 = Invalid address or too many words should be read or written
- 03 = Value is outside the admissible range
- 08 = Value is write-protected

Response in case of error

Slave address	Function XX OR 80h	Error code	Checksum CRC
1 byte	1 byte	1 byte	2 bytes

The function code is ORed with 0x80. As a result, the highest value bit (MSB) is set to 1.

Example

Data request:

01	06	1099	0001	9CE5
Slave	Write word	Word address	Word value	CRC

Response:

01	86	08	43A6
Slave	OR function	Error	CRC

Response with error code 08, because address 0x1099 is write-protected.

3 Modbus protocol description

3.9.2 Error messages for invalid values

For measured values in the floating-point format, the error is displayed in the value itself, i.e. it contains the error code instead of the measured value.

Error code for floating-point values	Error
1.0×10^{37}	Underrange
2.0×10^{37}	Overrange
3.0×10^{37}	Value invalid/integrator or statistics destroyed
4.0×10^{37}	Division by zero
5.0×10^{37}	Math error
6.0×10^{37}	Error: terminal temperature/compensation signal
7.0×10^{37}	Probe short circuit
8.0×10^{37}	Probe break

Example

Reading in the analog input 1 at address 0x1006:

Data request:

01	03	10 06	00 02	20 CA
Slave	Function	Word address	Number of words	CRC

Response:

01	03	04	8E 52	7D B4	51 ED
Slave	Function	Read bytes	Error code		CRC

The error code 0x7DB48E52 ($=3.0 \times 10^{37}$) received from analog input 1 indicates that this is an invalid input value.

3 Modbus protocol description

3.9.3 Error codes as integer return values



NOTE!

The following table contains error codes which apply to the various devices. The device in question may only support part of the error codes specified here.

For some longer processes (for example, sending an email or active transmission of frames as Modbus master), an error code is entered in a result field or event list at the end.

Error codes

Error code	Description
Error list: Program memory management	
1	Program cannot be created
2	Program does not exist
3	Program cannot be deleted
4	Section cannot be deleted
5	Checksum cannot be stored
6	Checksum cannot be read
7	Program cannot be copied
8	Section cannot be copied
9	Program checksum error
10	Program pointer tab. checksum error
11	Program memory end
12	Section does not exist
13	Repeat jump marks
Error list: General input and output	
14	Please use the ENTER key to confirm
15	Invalid number of digits
16	The entry contains invalid characters
17	Value outside of limits
18	Section not programmed correctly
19	Password error
Error list: PROFIBUS order processing	
20	Busy flag not reset by the master
21	Inadmissible job
22	Error on data acceptance
23	No cyclical data existing
24	Inadmissible structure length
25	Inadmissible header ID
Error list: Keypad and program lock	
26	Keypad is locked
27	Programming is locked
28	Write error in the ser. EEPROM (calib)
29	Hardware error: MANUAL + AUTO locked
30	Editing during active program inadmissible
31	Copying during active program inadmissible
32	MANUAL is inadmissible during AUTO lead time
33	Section change! Image update needed

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Error code	Description
34	No DB number, image update from PLC
35	No DB number for process values from PLC
36	Printer busy or not ready
37	Setpoint value 1 not programmed
38	Set up printer (config. / interface)
39	Possible only when device in MANUAL mode
40	Autotuning already running
41	Time axis elapsed or not programmed
42	Time axis cannot be copied
43	Time axis does not exist
44	Program change is locked
45	MANUAL operation is locked
46	Program start is locked
Error list: Interface processing	
47	Incorrect response length
48	Timeout error (no response)
49	Error reported in telegram protocol
50	Checksum error
51	Parity error
52	Framing error
53	Interface buffer full
54	Addressing error (for example, address does not exist)
55	Incorrect or unexpected command
Error list: Event processing	
60	Event could not be created
61	Event setting failed
62	Event clear failed
63	Event wait failed
64	Event close failed
65	Event open failed
66	Sync error between group and data manager
Error list: Message processing	
70	No queue memory available
71	Message queue cannot be opened
72	Message pool cannot be created
73	Memory cannot be requested from memory pool
74	Message cannot be sent
Error list: Processing of MQX functions	
80	Task creation failed
81	Hardware timer not created
Error list: Flash processing	
90	Flash memory write error
Error list: Other errors	
100	Undefined error
101	Division by zero

3 Modbus protocol description

Error code	Description
102	Cannot find RAM
103	RTC runtime exceeded
104	ID does not exist
105	Index too large (overflow)
106	Invalid data
107	Invalid parameter
109	String without 0 characters
110	Timeout during initialization
111	Value must not be written to
112	Log entry with error bits that trigger debug mode
Error list: Sending email via modem and Ethernet	
120	Step error in state automation
121	Invalid response length
122	No CONNECT from modem
123	FCS checksum incorrect
124	Unexpected value or response
125	Conf request not accepted
126	No conf request from opposite end
127	No CHAP request from opposite end
128	Response timeout
129	Unknown modem response
130	Unexpected OK from modem
131	Unexpected CONNECT from modem
132	Unknown frame received
133	Unexpected PROTOCOL from modem
134	Unexpected COMPRESS from modem
135	Invalid PPP packet received
136	Unexpected BUSY from modem
137	Unknown authentication protocol
138	Ignored LCP option
139	Unexpected DELAYED from modem
140	Unexpected NODIALTONE
141	Unknown PPP protocol
142	Unknown PAP code
143	Ignored IPCP option
144	Ignored IPCP code
145	Unknown CHAP code
146	IP checksum incorrect
147	Unknown IP protocol
148	Unknown ICMP type
149	Unknown LCP type
150	Received as client DNS request
151	Unknown DNS error
152	DNS response is split
153	No IP received via DNS

3 Modbus protocol description

Error code	Description
154	Unknown UDP port
155	TCP checksum incorrect
156	Incorrect TCP port
157	Unknown TCP-SYN option
158	TCP port not used
159	Unknown POP3 response
160	Unknown SMTP response
161	Unknown DNS name
162	No MD5 requested for CHAP
163	Authentication error
164	Canceled from opposite end
165	Error creating TCP socket
166	Error binding TCP socket
167	Error during TCP connect
168	Error sending TCP telegram
169	Error closing TCP socket
170	Error during TCP listen
171	Reset during TCP accept
172	Error during TCP accept
173	SMTP server reports syntax error
174	TCP socket is already closed
175	Incorrect frame configuration
Error list: File system processing	
200	Error installing partition manager
201	Error installing MFS file system
202	Error uninstalling partition manager
203	Error uninstalling MFS file system

3 Modbus protocol description

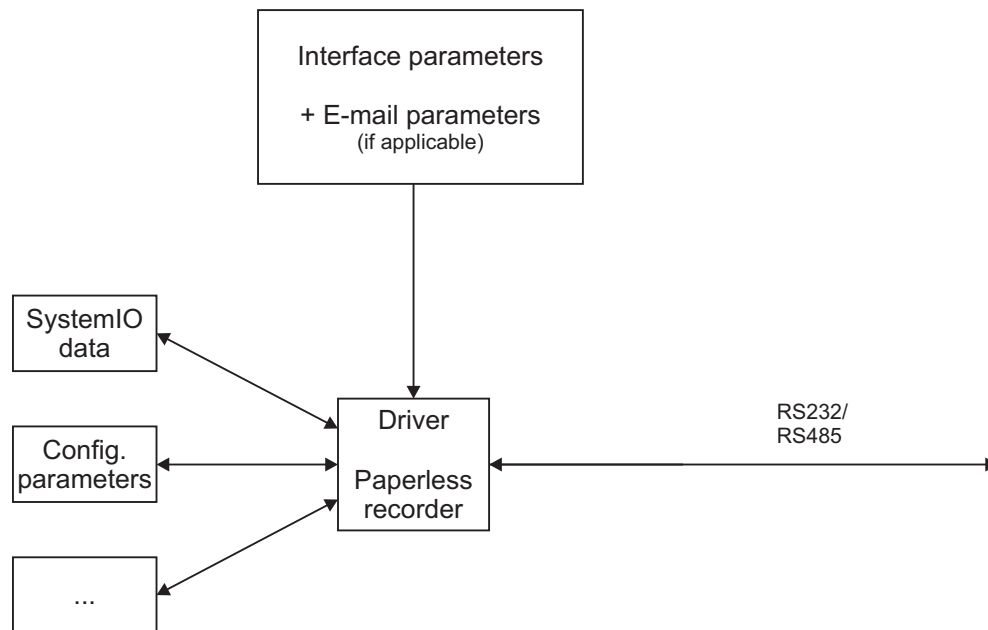
4 Serial transmission modes

The serial interface is configurable as an RS232 or RS485 interface.

The interface may be used in Modbus slave operation, for example, to connect to a PLC, a PC with visualization software, or an SCADA system.

In Modbus master operation, external devices may be connected as a Modbus slave, for example, controllers, power controllers, or sensors. It is therefore possible to transmit external analog and digital signals, as well as texts, to a paperless recorder.

4.1 Modbus slave operation via serial interface



If the paperless recorder has been configured as a slave, it responds to Modbus requests from the master in the network. The master controls the data exchange and the slaves only have a response function. They are identified by their device address.

The master can query all device variables according to the Modbus address tables of this slave.

⇒ chapter 7 "Modbus address tables", Page 47

Refer to the operating manual of the paperless recorder for the configuration parameters and their settings (Configuration > Serial interface > Modbus slave).

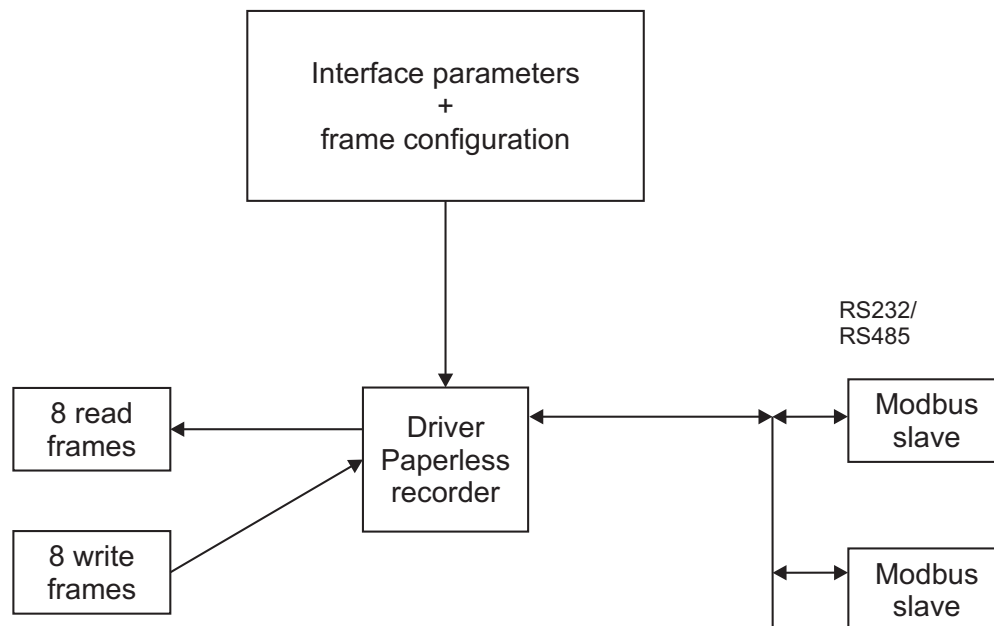
Timeout monitoring

This function monitors the communication between the Modbus master and Modbus slave from the perspective of the Modbus slave. After activated timeout monitoring, a timer starts to run with the first received request (timer time is the time set in the configuration under "Timeout"). The timer starts to run again after each new request. If the request does not appear, an internal digital signal is activated after the timer has elapsed and an entry is made in the alarm and event list. The signal is reset with the next request.

The signal (slave timeout Com1) is available in the digital selector (also as an inverted signal) and can also be queried via Modbus (addresses 0x113E and 0x113F). It is therefore possible to evaluate the connection status of the serial interface.

4 Serial transmission modes

4.2 Modbus master operation via serial interface



If the paperless recorder has been configured as a master, it can send requests on the bus to slaves. The frames transmitted here are always complete. The corresponding Modbus and device addresses must be specified when configuring the frames in the setup program. For each frame, it is possible to enter the device address and Modbus address used to query the value. Each programmed frame can be disabled by selecting the "Modbus slave" setting for the "Interface" parameter.

A maximum of 32 frames can be activated for reading and a maximum of 32 frames for writing. The activated frames are cyclically processed in sequence. This also applies to writing frames regardless of whether a process value has changed or not. This rules out a transmission that depends on the condition of a change. The complete frame is always transmitted with the frame length configured in the setup program.



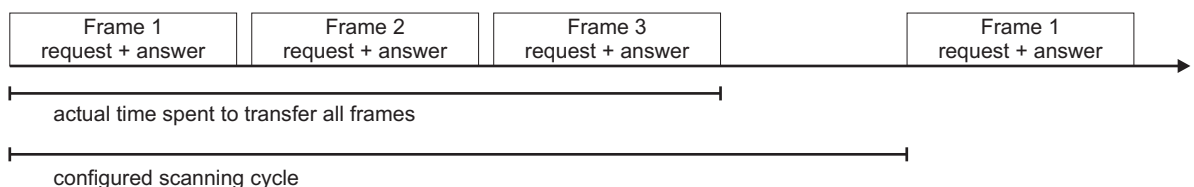
NOTE!

Double writing of a target variable, for example, the same variable selector in two read frames, will lead to undefined states and must be avoided.

Refer to the operating manual of the paperless recorder for the configuration parameters and their settings (Configuration > Serial interface > Modbus master).

Chronological sequence

The relevant interface (setup program: **ONLY SETUP > MODBUS FRAMES FOR READING/WRITING > Parameter INTERFACE**) searches for all frames configured for it and cyclically transmits them in sequence, to frame 1, frame 2, and frame 3, such as in the example below.



If the configured scanning cycle is greater than the elapsed actual time required for scanning, the paperless recorder waits to process the next cycle and thus minimizes the bus load. If the configured scanning cycle is too short, all configured frames are completely processed cyclically without a break.

5 Ethernet transmission modes

5.1 Modbus/TCP

Modbus/TCP uses Ethernet as a transmission standard. Two transmission options can be used here:

- Modbus/TCP slave for transmitting individual values
- Modbus/TCP master for transmitting entire data frames

The advantage of using Modbus/TCP and the Ethernet interface is in the high speed and the company-wide availability of the connected devices.

Modbus/TCP is a standardized process, in which a Modbus telegram is packed in a TCP frame (tunneled) and transmitted via Ethernet. The Modbus telegram (without CRC) is transmitted with an additional 6 or 7 byte "MBAP header" (Modbus Application Header). The seventh byte corresponds to the first serial byte, but has a different designation here.

Structure of a Modbus/TCP telegram

MBAP header				Modbus telegram
2 bytes Transaction ID	2 bytes Protocol ID	2 bytes Length	1 byte Unit ID	Additional bytes as below, however, without CRC
Identical in request and response	Must be 0 for Modbus	Length of request/response in bytes starting with (incl.) "Unit ID"	Corresponds to device address and must be TCP 0xFF or 0 (0 = broadcast)	

For comparison: The "normal" Modbus telegram

Slave Address 1 byte	Function code 1 byte	Data field x bytes	CRC16 2 bytes
-------------------------	-------------------------	-----------------------	------------------

With Modbus/TCP, a suitable process data visualization program can read and write device values via a company-wide Ethernet network, for example. All device variables from the Modbus address tables can be accessed.

⇒ chapter 7 "Modbus address tables", Page 47

5 Ethernet transmission modes

Example: Reading n words

Reading the IP address of the device. Here in the example, it is the address 10.10.1.69. Since each IP address range is stored in a word, 4 words (8 bytes) must be read in.

See also the Modbus example in chapter "Reading n words", Page 15

Request:

MBAP header				Modbus telegram (without slave address and CRC)		
00 01	00 00	00 06	FF	03	00 1B	00 04
2 bytes Transaction ID	2 bytes Protocol ID	2 bytes Length	1 byte Unit ID	1 byte Function code	2 bytes Address First word	2 bytes Number of words
Assignment of response to request (consecutive numbering)	For Modbus always 0x00	Length of the request in bytes starting with (incl.) "Unit ID"; 6 bytes here (0x06)	Always 0xFF with TCP (except for broadcast)	Function code for "Reading n words"	First word of IP address to be read	4 words should be read

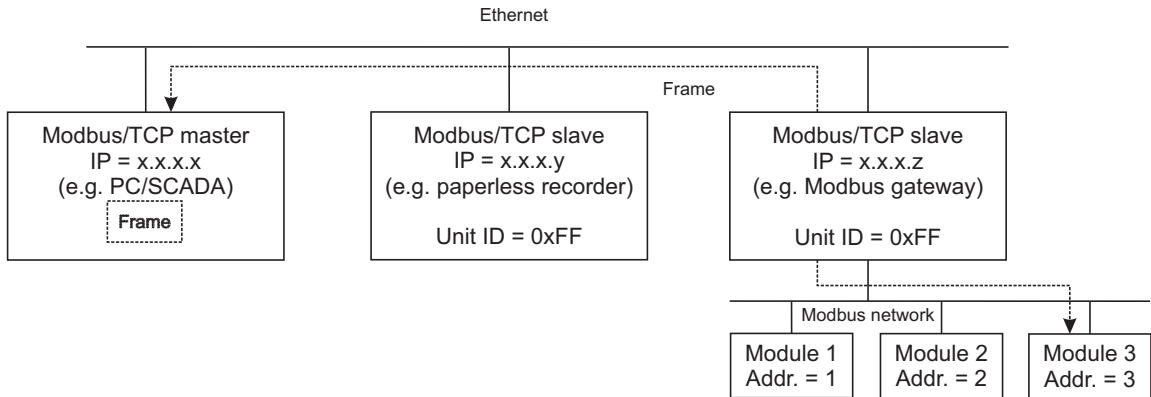
Response:

MBAP header				Modbus telegram (without slave address and CRC)					
00 01	00 00	00 0B	FF	03	08	00 0A	00 0A	00 01	00 45
2 bytes Transaction ID	2 bytes Protocol ID	2 bytes Length	1 byte Unit ID	1 byte Function code	1 byte Number of bytes read	8 bytes Data read			
Assignment of response to request (consecutive numbering)	For Modbus always 0x00	Length of the request in bytes starting with (incl.) "Unit ID"; 11 bytes here (0x0B)	Always 0xFF with TCP (except for broadcast)	Function code for "Reading n words"	8 bytes were read	IP address consisting of 4 words (8 bytes): 10. 10. 1. 69			

5 Ethernet transmission modes

5.2 Networking with Modbus/TCP

The image below provides an overview of the networking options when using the Modbus/TCP protocol:



Each Modbus/TCP node is accessible via a unique IP address. The "Unit ID" also contained in the protocol (= device address) must be 0xFF for the node directly attached to the network. However, a node can present itself virtually as several subordinate devices. For example, this may be the case with a Modbus gateway with the connected modules. These modules can then be accessed with device addresses 1 to 254.

5.3 Modbus master with Modbus/TCP

Up to 4 connections are possible to different Modbus/TCP devices which allow the exchange of a maximum of 32 reading and 32 writing frames. A frame can be used to transmit up to 254 bytes. It operates just like the Modbus master function via the serial interface.

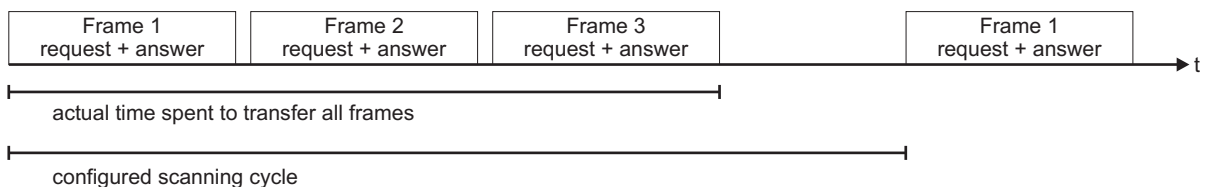
⇒ chapter 4 "Serial transmission modes", Page 29

Frames with 4 opposing ends (devices 1 to 4) can be exchanged using 4 sockets. The Modbus device address that can be edited inside each frame mask and that is transmitted in the Modbus/TCP protocol can also be used to address modules behind Modbus gateways. The frame from Modbus gateway can thus be forwarded to the module.

Refer to the operating manual of the paperless recorder for the configuration parameters and their settings (Configuration > Modbus/TCP > Modbus master).

Chronological sequence

The relevant interface (setup program: **Only setup > Modbus frames for reading/writing > Parameter Interface**) searches for all frames configured for it and cyclically transmits them in sequence, to frame 1, frame 2, and frame 3, such as in the example below.



If the configured scanning cycle is greater than the elapsed actual time required for scanning, the paperless recorder waits to process the next cycle and thus minimizes the bus load. If the configured scanning cycle is too short, all configured frames are completely processed cyclically without a break.

5 Ethernet transmission modes

5.4 Modbus slave with Modbus/TCP

Here, the paperless recorder functions as a slave and is available for requests on the bus from the Modbus master. A master can query all device variables according to the Modbus address tables for this slave.

⇒ chapter 7 "Modbus address tables", Page 47



NOTE!

Only two Modbus masters (clients) can access this slave (server) simultaneously via Modbus/TCP. A connection opened by a master is closed by the slave after 30 seconds of inactivity. If a Modbus/TCP port is closed (by a slave or from the opposite end), it can only be reopened after 10 seconds have elapsed.

The TCP port no. is preset to the value 502_{DEC}. This value can be edited.

Refer to the operating manual of the paperless recorder for the configuration parameters and their settings (Configuration > Modbus/TCP > Modbus slave).

Timeout monitoring

This function monitors the communication between the Modbus master and Modbus slave from the perspective of the Modbus slave. After activated timeout monitoring, a timer starts to run with the first received request (timer time is the time set in the configuration under "Timeout"). The timer starts to run again after each new request. If the request does not appear, an internal digital signal is activated after the timer has elapsed and an entry is made in the alarm and event list. The signal is reset with the next request.

The signal of the relevant connection (Master 1: slave timeout TCP1; Master 2: slave timeout TCP2) is available in the digital selector (also as an inverted signal) and can also be queried via Modbus (addresses from 0x1140). It is therefore possible to evaluate the connection status of the Modbus/TCP interface.

5.5 HTTP

In this case, the paperless recorder is configured as a slave and handles incoming requests as a server via port 80. These requests can come, for example, from a PC with setup program, PC Evaluation Software (PCA3000), or PCA Communication Software (PCC).

5.6 Web server

The paperless recorder can also be accessed by a browser using the HTTP protocol. The URL required for this purpose is the IP address of the paperless recorder. The HTML start page "index.htm" is accessed and can be used to branch to further HTML pages.

The start page "index.htm" and other HTML pages can be loaded into the paperless recorder using the setup program.

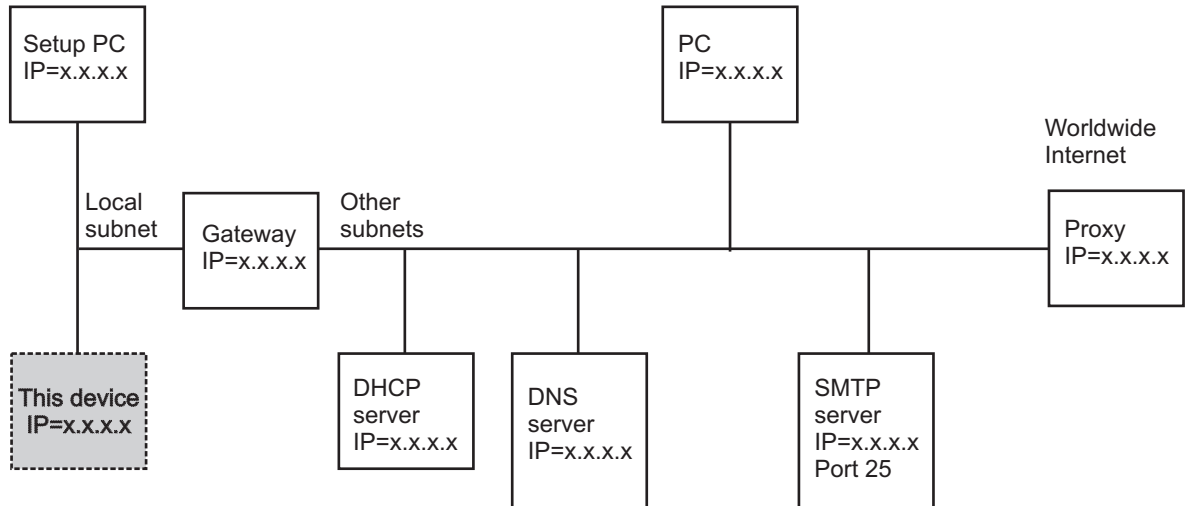
Refer to the operating manual of the paperless recorder for the configuration parameters and their settings (Configuration – only in the setup program > Web server).

5 Ethernet transmission modes

5.7 Email (SMTP)

The paperless recorder can send emails (for example, alarms). In this case, it is the master (client) and can access SMTP servers at the standard port (25).

Typical networking in the company network



Gateway:

Separates local subnets from each other and thus filters the packets. Not all packets are received in every subnet. Packets from outside the local subnet must be addressed to the gateway.

DHCP server:

Can automatically assign an IP address, subnet mask, and gateway address to other nodes when switching on. These parameters can also be entered manually; a DHCP server is then no longer needed.

DNS server:

Converts symbolic names into IP addresses. Example: the query "www.name.de" will generate the response "www.name.de has IP = 10.12.32.45".

SMTP server:

Used to send emails.

Proxy:

Serves as a gateway from the local company network to the worldwide Internet. It is also used for the conversion of "local" IP addresses (used in the company network) to "one-time" IP addresses (used on the Internet). The device software cannot address a proxy! However, there are also "transparent proxies" that make it possible to address IP addresses worldwide without a special protocol.

5 Ethernet transmission modes

Parameters for email and mail server

Refer to the operating manual of the paperless recorder for the configuration parameters and their settings (Configuration – only in the setup program > Email).



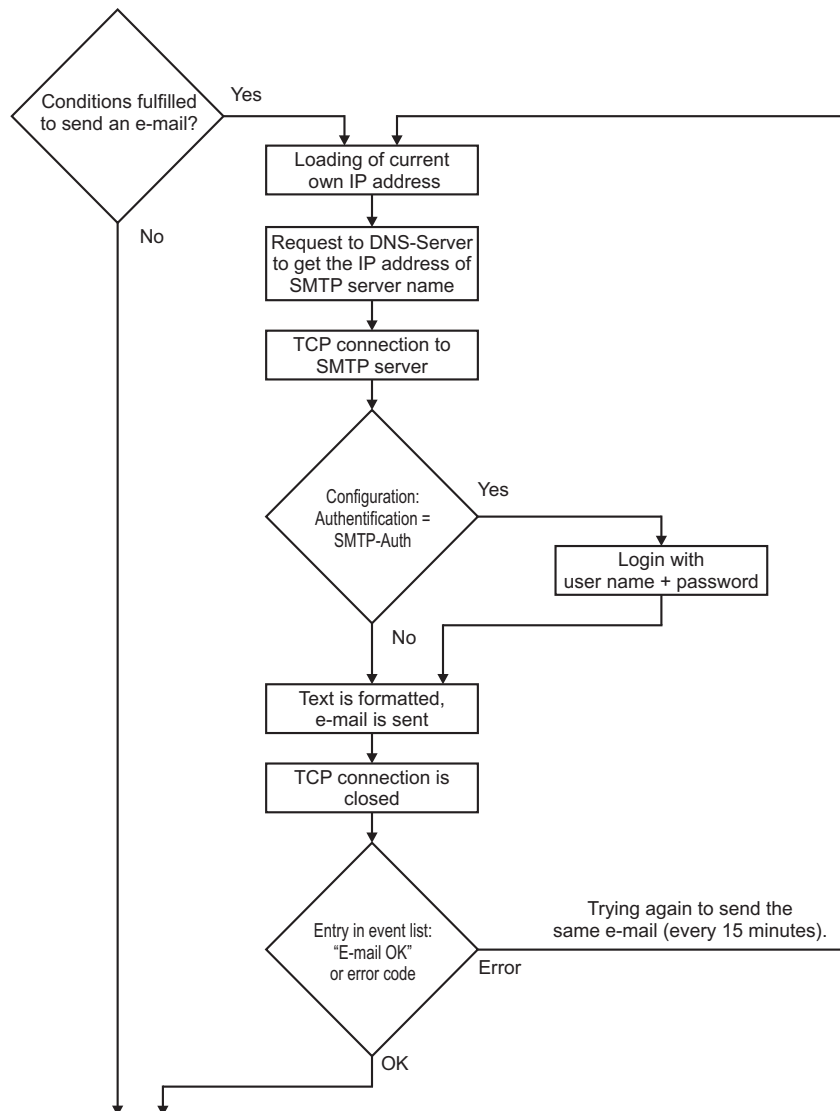
NOTE!

The mail server must be on the company network (not accessible on the Internet or without proxy addressing). This mail server should also be able to transmit emails via the Internet.

Sending an e-mail via the Internet

Here, several steps depend on configured device parameters. An error code of the event entry can suggest an incorrectly set parameter. An incorrectly entered IP address of the DNS server, for example, generates the error code 153 = "No IP received via DNS"

⇒ chapter 3.9.3 "Error codes as integer return values", Page 24



6.1 General information

The paperless recorder allows the user to individually compile Modbus frames for their application. As a result, the highest level of flexibility is reached and the data exchange on the bus is reduced.

This offers a considerable advantage with regard to the transfer speed. Numerous variables can be compiled in a large data packet, thus improving the transmission speed, which, in turn, means that the bus is subject to less protocol overhead and fewer changes between the request and response.

The maximum size of a frame is set to 254 bytes. This corresponds to 127 words for each command. The activated reading or writing frames are cyclically processed in sequence. The frame length specified in the setup program is always used. This length is automatically calculated using the number of entries (24 per frame) in the respective frame. All frames can be used for the Modbus master or Modbus slave.

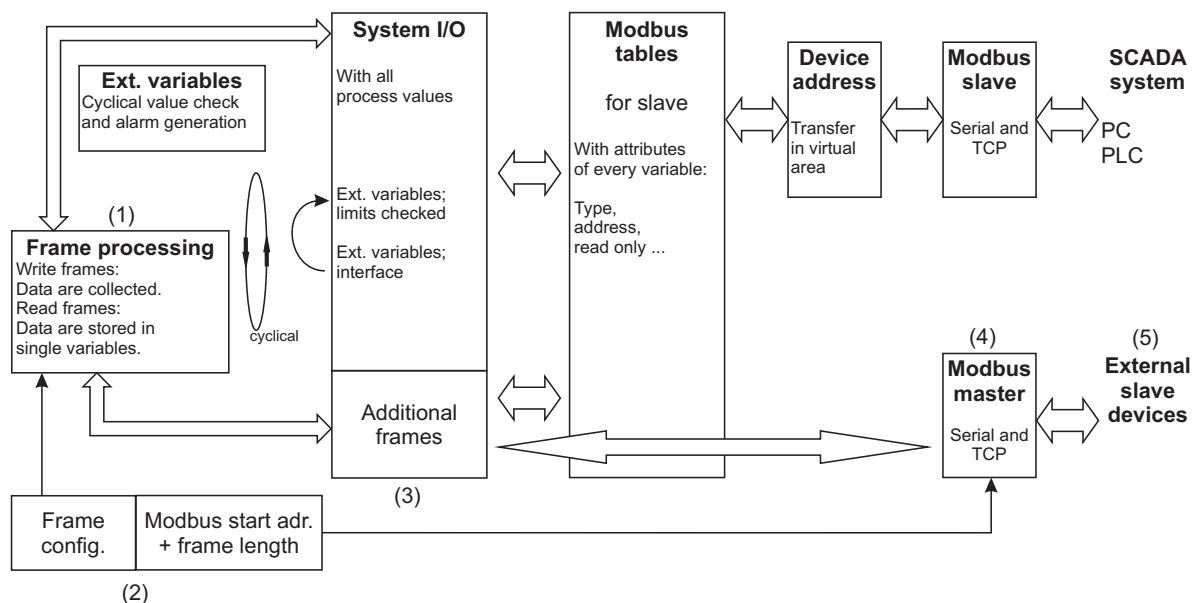


NOTE!

There is no locking function against multiple use of the same input variables within several reading frames. The user must prevent this from happening to avoid a data collision.

6.2 Structure of the reading and writing processes

Block diagram of the inputs and outputs for the master function



Reading/writing Modbus (master)

(1)	A cyclical function compiles the individual variables into frames.
(2)	To do this, it accesses the frame arrangement configured in the setup program.
(3)	The complete cyclically updated frames are available.
(4)	Each interface configured as a master transmits (reading or writing) the frames configured for it to the opposite end.
(5)	The opposite end receives these frames and responds.

6 Modbus frames



NOTE!

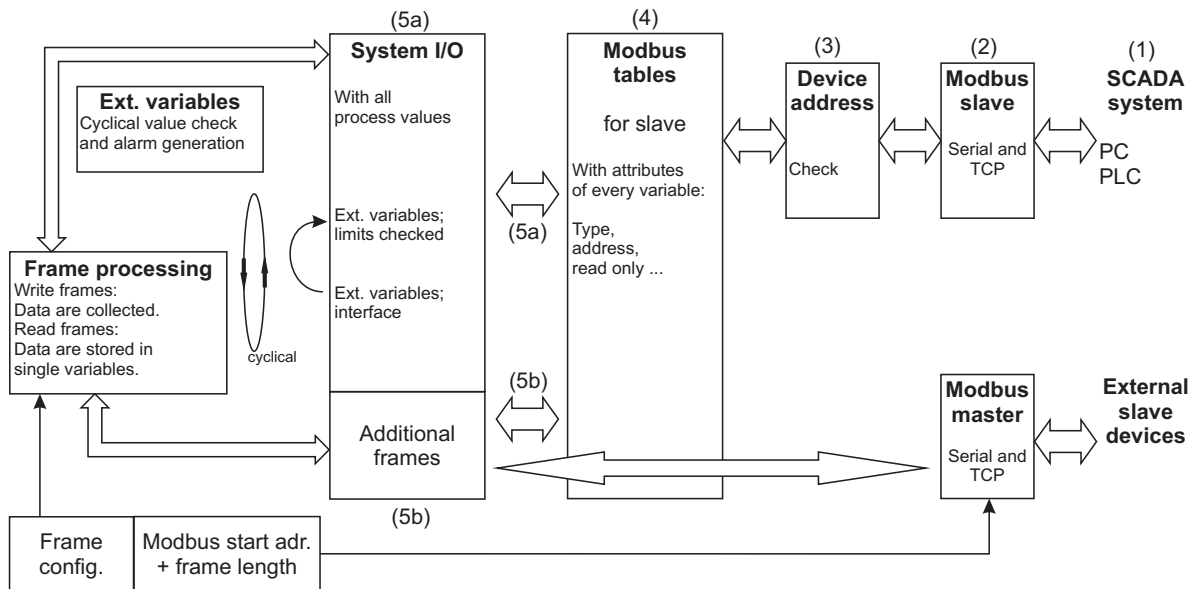
When actively transmitting as a Modbus master, repetitive errors are entered in the event list. Corresponding error codes can be found in chapter 3.9.3 "Error codes as integer return values", Page 24.

Error monitoring

Each frame is monitored for data transmission. If an error occurs, the corresponding error flag is set, an error code is also stored for each frame, and an entry is written in the event list. This entry is not cyclically generated and set; instead, it is generated and set once when the error occurs and then again when the transmission functions again. The following applies for all read frames:

If there is no valid response after 3 recurrences, all values for this frame are set to "No input value".

Block diagram of the inputs and outputs for the slave function



Reading/writing Modbus (slave)

(1)	An external master issues a request (reading or writing).
(2)	The interface receives the request.
(3)	The device address is checked for validity.
(4)	The Modbus table assigns the Modbus addresses to the device variables.
(5a)	The variable value is accessed and the Modbus response is generated.
(5b)	The frames configured for the Modbus master can also be accessed for checking or variable scaling/type conversions.

6.3 Compiling Modbus frames

The functions "Modbus frames for reading" and "Modbus frames for writing" are in the setup program in the navigation tree under *Only setup*.

6.3.1 Modbus frames for reading

This function is used to compile up to 32 Modbus frames for reading process values from external devices (via interface) individually for each opposite end. The process values (analog and digital values; texts) are written to the selected variables (external inputs and texts) from the received Modbus telegram and are available for use in the paperless recorder.

Each frame can be used to configure up to 24 frame entries with a process value each, which are then grouped and transmitted in a Modbus telegram.

Setup dialog box

No.	External input	Modb.add...	Modb.add...	Data type	Bit posi...	Factor
1	Process values\No selection	0x0000	0x8000	None	-	-
2	Process values\No selection	0x0000	0x8000	None	-	-
3	Process values\No selection	0x0000	0x8000	None	-	-
4	Process values\No selection	0x0000	0x8000	None	-	-
5	Process values\No selection	0x0000	0x8000	None	-	-
6	Process values\No selection	0x0000	0x8000	None	-	-
7	Process values\No selection	0x0000	0x8000	None	-	-
8	Process values\No selection	0x0000	0x8000	None	-	-
9	Process values\No selection	0x0000	0x8000	None	-	-
10	Process values\No selection	0x0000	0x8000	None	-	-
11	Process values\No selection	0x0000	0x8000	None	-	-
12	Process values\No selection	0x0000	0x8000	None	-	-
13	Process values\No selection	0x0000	0x8000	None	-	-
14	Process values\No selection	0x0000	0x8000	None	-	-



CAUTION!

A variable can be used in multiple frames.

This means that different process values are written to the same variable.

- ▶ You must ensure that no variables are overwritten unintentionally.

6 Modbus frames

Parameters

Parameters	Selection/settings	Description
Comment	Frame 01 Use default text or edit text.	Comment on the more detailed description of the frame
Interface	The selection determines whether the frame is actively transmitted as a master or only available for queries as a slave. In the case of a Modbus master, the interface on which the relevant frame is used is also specified. If it is an Ethernet interface, the external device to be addressed must also be selected.	
	Modbus slave	Compiled frame only available for queries as a slave
	Modbus master TCP 1	Modbus master; Modbus/TCP via Ethernet, device 1 addressed
	Modbus master TCP 2	Modbus master; Modbus/TCP via Ethernet, device 2 addressed
	Modbus master TCP 3	Modbus master; Modbus/TCP via Ethernet, device 3 addressed
	Modbus master TCP 4	Modbus master; Modbus/TCP via Ethernet, device 4 addressed
	Modbus master serial	Modbus master; Modbus RTU via RS232/485
Device address	1 to 255	Device address of the external device (Modbus slave) Address 255 must be set for Modbus/TCP.
Modbus start address, master (paperless recorder is the Modbus master)	0x0000 to 0xFFFF	Modbus start address (offset) of the external slave device The setup program uses the start address as an initial value for the addresses of the entries. The Modbus description of the external device must be observed for this.
Modbus start address, slave (paperless recorder is the Modbus slave)	0x8000	Display of the Modbus start address (offset) of the paperless recorder The start address is used for the setting in the external Modbus master.
Entry 1 to Entry 24	Select the desired entry (double-click the line with the entry or mark and then click the "Edit" button).	
Frame length	0 to 254	Displays the frame length (byte(s))

Copy (entries)

With this function entries within a Modbus frame can be copied.

Editing

When the "Edit" button is clicked, this window appears:

Parameters

Parameters	Selection/settings	Description
External input	External process values (analog inputs, digital inputs, texts)	
	No selection Select process value	No process value selected Selector for selecting a process value
Data type	The data type is preset depending on the type of external input. It can subsequently be changed.	
	None	No data type selected
	Float (AB CD) – (LSB)	Floating-point number, IEEE 754 Big Endian; old designation: Float (LSB)
	Float (CD AB) – (MSB)	Floating-point number, Modbus standard coding; old designation: Float (MSB)
	Float (BA DC)	Floating-point number, IEEE 754 Little Endian Byte Swap
	Float (DC BA)	Floating-point number, IEEE 754 Little Endian
	Integer (1 byte)	Integer with length of 1 byte
	Integer (2 bytes)	Integer with length of 2 bytes
	Integer (4 bytes)	Integer with length of 4 bytes
	Unsigned int. (1 byte)	Integer without prefix sign, with length of 1 byte
	Unsigned int. (2 bytes)	Integer without prefix sign, with length of 2 bytes
	Unsigned int. (4 bytes)	Integer without prefix sign, with length of 4 bytes
	Text (1 char./word)	Text, 1 character per word
Text (2 char./word)	Text, 2 characters per word	
Bit pos./text length	Integer (1 byte): 0 to 7 Integer (2 bytes): 0 to 15 Integer (4 bytes): 0 to 31 Text (1 char./word): 1 to 127 Text (2 char./word): 1 to 254	The setting ranges of the bit position or text length depend on the data type selected. (This parameter is inactive with an external analog input.)

6 Modbus frames

Parameters	Selection/settings	Description
Factor	Using the factor makes it possible to transmit floating-point values in the integer format, for example. The transmitter must multiply the data with the corresponding factor before transmission. The data must be divided by the same value in the receiver.	
	Complete floating-point range allowed; default value = 1.0	This factor is used to rescale values during the transmission, in particular for simultaneous type conversions. (This parameter is inactive with an external digital input or text.)

Copy (frames)

With this function Modbus frames within a project can be copied.

Import

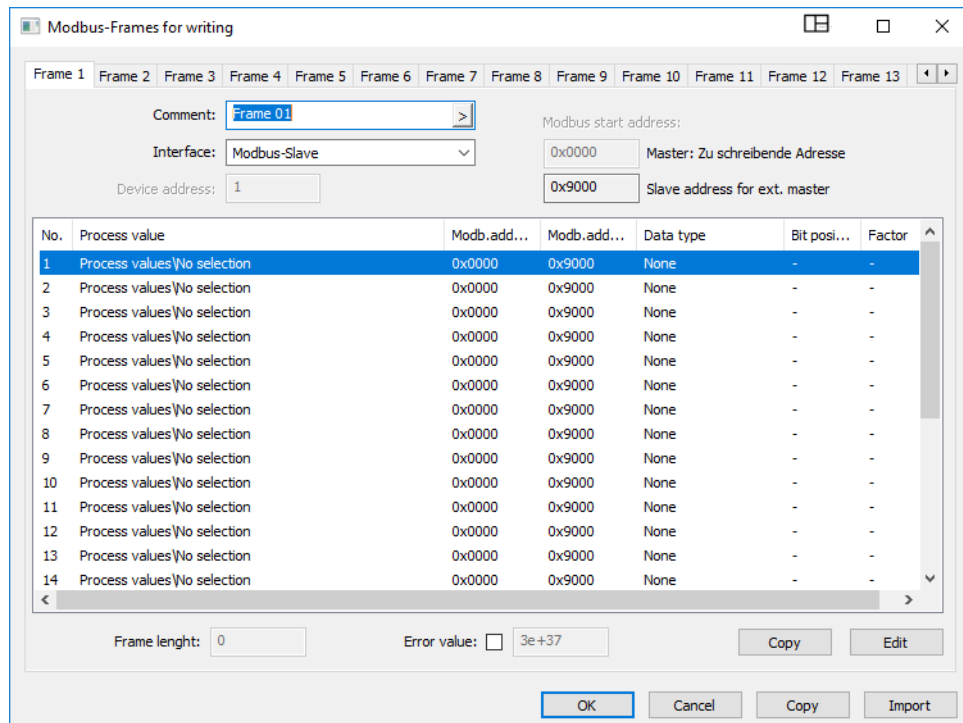
With this function Modbus frames can be imported from another project. First, the setup file from which you want to import is temporarily opened. Then all frames to be copied have to be selected (individual frames or all). As a result, all entries of the relevant frames are transferred into your own project.

6.3.2 Modbus frames for writing

This function can be used to compile up to 32 Modbus frames for writing the paperless recorder's process values to external devices (via interface) individually for each opposite end. The paperless recorder writes the process values (analog and digital values; texts) to the frames, where they are available for external devices.

Each frame can be used to configure up to 24 frame entries with a process value each, which are then grouped and transmitted in a Modbus telegram.

Setup dialog box



6 Modbus frames

Parameters

Parameters	Selection/settings	Description
Comment	Frame 1 Use default text or edit text.	Comment on the more detailed description of the frame
Interface	The selection determines whether the frame is actively transmitted as a master or only available for queries as a slave. In the case of a Modbus master, the interface on which the relevant frame is used is also specified. If it is an Ethernet interface, the external device to be addressed must also be selected.	
	Modbus slave	Compiled frame only available for queries as a slave
	Modbus master TCP 1	Modbus master; Modbus/TCP via Ethernet, device 1 addressed
	Modbus master TCP 2	Modbus master; Modbus/TCP via Ethernet, device 2 addressed
	Modbus master TCP 3	Modbus master; Modbus/TCP via Ethernet, device 3 addressed
	Modbus master TCP 4	Modbus master; Modbus/TCP via Ethernet, device 4 addressed
	Modbus master serial	Modbus master; Modbus RTU via RS232/485
Device address	0 to 1 to 255	Device address of the external device (Modbus slave). With writing frames, the 0 is permitted as the device address. Address 255 must be set for Modbus/TCP.
Modbus start address, master (paperless recorder is the Modbus master)	0x0000 to 0xFFFF	Modbus start address (offset) of the external slave device The setup program uses the start address as an initial value for the addresses of the entries. The Modbus description of the external device must be observed for this.
Modbus start address, slave (paperless recorder is the Modbus slave)	0x9000	Display of the Modbus start address (offset) of the paperless recorder The start address is used for the setting in the external Modbus master.
Entry 1 to entry 24	Select the desired entry (double-click the line with the entry or mark and then click the "Edit" button).	
Frame length	0 to 254	Displays the frame length (byte(s))
Error value	-3.37E+38 to +3.0E+37 to +3.37E+38	Value (code) that is transmitted instead of the measured value if an error occurs (for measured values in the floating-point format).

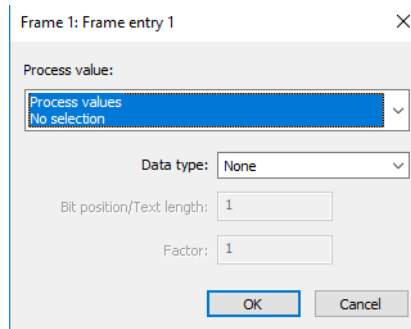
Copy (entries)

With this function entries within a Modbus frame can be copied.

6 Modbus frames

Editing

When the "Edit" button is clicked, this window appears:



Parameters

Parameters	Selection/settings	Description
Process value	Process values of the paperless recorder (analog signals, digital signals, texts)	
	No selection Select process value	No process value selected Selector for selecting a process value
Data type	The data type is preset depending on the type of process value. It can subsequently be changed.	
	None	No data type selected
	Float (AB CD) – (LSB)	Floating-point number, IEEE 754 Big Endian; old designation: Float (LSB)
	Float (CD AB) – (MSB)	Floating-point number, Modbus standard coding; old designation: Float (MSB)
	Float (BA DC)	Floating-point number, IEEE 754 Little Endian Byte Swap
	Float (DC BA)	Floating-point number, IEEE 754 Little Endian
	Integer (1 byte)	Integer with length of 1 byte
	Integer (2 bytes)	Integer with length of 2 bytes
	Integer (4 bytes)	Integer with length of 4 bytes
	Unsigned int. (1 byte)	Integer without prefix sign, with length of 1 byte
	Unsigned int. (2 bytes)	Integer without prefix sign, with length of 2 bytes
	Unsigned int. (4 bytes)	Integer without prefix sign, with length of 4 bytes
Text (1 char./word)	Text (1 char./word)	Text, 1 character per word
	Text (2 char./word)	Text, 2 characters per word
Bit pos./text length	Integer (1 byte): 0 to 7	The setting ranges of the bit position or text length depend on the data type selected. (This parameter is inactive with an analog signal.)
	Integer (2 bytes): 0 to 15	
	Integer (4 bytes): 0 to 31	
	Text (1 char./word): 1 to 127	
	Text (2 char./word): 1 to 254	

6 Modbus frames

Parameters	Selection/settings	Description
Factor		Using the factor makes it possible to transmit floating-point values in the integer format, for example. The transmitter must multiply the data with the corresponding factor before transmission. The data must be divided by the same value in the receiver.
	Complete floating-point range allowed; default value = 1.0	This factor is used to rescale values during the transmission, in particular for simultaneous type conversions. (This parameter is inactive with a digital signal or text.)

Copy (frames)

With this function Modbus frames within a project can be copied.

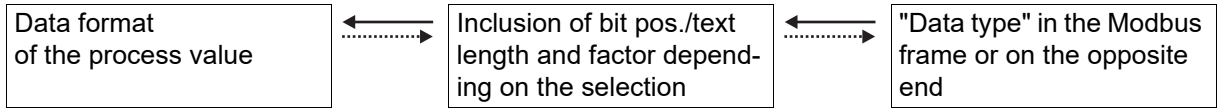
Import

With this function Modbus frames can be imported from another project. First, the setup file from which you want to import is temporarily opened. Then all frames to be copied have to be selected (individual frames or all). As a result, all entries of the relevant frames are transferred into your own project.

6 Modbus frames

6.4 Examples for the data transmission options with frames

There are flexible customization options between the content of the variables in the paperless recorder and the data format on the opposite end. The process value selected from the selector determines the data format within the paperless recorder; the selection under "Data type" determines the data format in the Modbus frame or on the opposite end. The two data formats do not have to match. As a result, type conversion can be carried out. The logical direction is displayed in the following diagram:



NOTE!

For reading frames, the logical direction is the arrow to the left and for writing frames, the arrow to the right.

The admissible setting options are:

Floating-point value	←→	x factor	←→	Floating-point value
Floating-point value	←→	x factor	←→	Integer value
Integer value	←→	x factor	←→	Floating-point value
Integer value	←→	x factor	←→	Integer value
Binary/Boolean value	←→	Bit position	←→	Integer value ^a
Binary/Boolean value	←→	Bit position	←→	"None" ^b
Text	←→	Text length in bytes	←→	Text (1 character/word) Text (2 characters/word)

^a Only the configured bit (bit position within the integer value) is used.

^b Other bits from the previous frame entry are used with the data type "Integer...". The bit position must be specified in every frame entry with the data type "None". This determines at which point the bit for the relevant frame entry is transmitted within the previous integer value.

7 Modbus address tables



NOTE!

These tables are important for external devices that access the paperless recorder as a Modbus master (configured as a Modbus slave). Alternatively, external devices can also access the paperless recorder using the Modbus frames.



NOTE!

Device address 255 must be used if the paperless recorder is accessed via its IP address (Modbus slave).

7.1 Data types and access types

Data types

Bool	The least significant bit of a word (16-bit) as a Boolean value (1 = TRUE; 0 = FALSE); the remaining bits are not used.
Byte	Low byte of a word as an integer value (value range 0 to 255); the high byte is not used.
Byte[n]	Data field with n bytes (n/2 words); max. size of a reading or writing frame; the data type depends on the use in the frame.
Word	Word (16-bit) as an integer value (value range 0 to 65535)
Int32	Double word (32-bit) as a signed integer value (signed integer, value range: -2,147,483,648 to 2,147,483,647)
Uint32	Double word (32-bit) as an unsigned integer value (unsigned integer, value range: 0 to 4,294,967,295)
Uint16	Word (16-bit) as an unsigned integer value (unsigned integer, value range: 0 to 65535)
Uint8[n]	Data field from n unsigned integer values (n/2 words; unsigned integer, each value range 0 to 255); is used for a MAC address, for example.
Floating point	Double word (32-bit) as floating-point value according to IEEE 754
Char[n]	Text with n characters (2 characters in one word)

Access types

R/O	Read only
W/O	Write only
R/W	Read/write



CAUTION!

Write operations in some R/W parameters result in them being saved in the EEPROM or flash memory.

The storage components have only a limited number of writing cycles (approx. 10,000 or 100,000), which is why no fast cyclical writing operations should be performed, since there is otherwise a risk of a storage error in case of a power failure.

7 Modbus address tables

7.2 Addresses of the paperless recorder

The following tables contain important device data, process values, and configuration parameters for the paperless recorder including their address, data type, and type of access.

7.2.1 Types 706521 and 706530

Device data: versions, addresses, date/time

Address		Data type	Access	Designation
Hex.	Dec.			
0x0001	1	UInt32	R/O	Software version Basic device (main circuit board)
0x0003	3	UInt16	R/O	---
0x0004	4	UInt16	R/O	Internal SW version
0x0005	5	UInt32	R/O	VdN number
0x0007	7	UInt32	R/O	HW compatibility index
0x0009	9	UInt32	R/O	HW version
0x000B	11	UInt32	R/O	HW VdN number
0x000D	13	Char[22]	R/O	Fabrication number
0x0018	24	UInt8[6]	R/O	MAC address
0x001B	27	Byte	R/O	Ethernet: IP address, 1st byte
0x001C	28	Byte	R/O	Ethernet: IP address, 2nd byte
0x001D	29	Byte	R/O	Ethernet: IP address, 3rd byte
0x001E	30	Byte	R/O	Ethernet: IP address, 4th byte
0x001F	31	Char[190]	R/O	DNS device name
0x007E	126	UInt32	R/O	Software version Option 1 (slot 1)
0x0080	128	UInt16	R/O	---
0x0081	129	UInt16	R/O	Internal SW version
0x0082	130	UInt32	R/O	VdN number
0x0084	132	UInt32	R/O	HW version
0x0086	134	Char[22]	R/O	Fabrication number
0x0091	145	UInt16	R/O	---
0x0092	146	UInt32	R/O	Software version Option 2 (slot 2)
0x0094	148	UInt16	R/O	---
0x0095	149	UInt16	R/O	Internal SW version
0x0096	150	UInt32	R/O	VdN number
0x0098	152	UInt32	R/O	HW version
0x009A	154	Char[22]	R/O	Fabrication number
0x00A5	165	UInt16	R/O	---
0x00A6	166	UInt32	R/O	Software version Option 3 (slot 3)
0x00A8	168	UInt16	R/O	---
0x00A9	169	UInt16	R/O	Internal SW version
0x00AA	170	UInt32	R/O	VdN number
0x00AC	172	UInt32	R/O	HW version

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x00AE	174	Char[22]	R/O	Fabrication number
0x00B9	185	Uint16	R/O	---
				For type 706530 only:
0x00BA	186	Uint32	R/O	Software version Option 4 (slot 4)
0x00BC	188	Uint16	R/O	---
0x00BD	189	Uint16	R/O	Internal SW version
0x00BE	190	Uint32	R/O	VdN number
0x00C0	192	Uint32	R/O	HW version
0x00C2	194	Char[22]	R/O	Fabrication number
0x1000	4096	Word	R/O	Time: year
0x1001	4097	Word	R/O	Time: month
0x1002	4098	Word	R/O	Time: day
0x1003	4099	Word	R/O	Time: hour
0x1004	4100	Word	R/O	Time: minute
0x1005	4101	Word	R/O	Time: second

Process values and texts

Address		Data type	Access	Designation
Hex.	Dec.			
0x1006	4102	Float	R/O	Actual value of analog input 1
0x1008	4104	Float	R/O	Actual value of analog input 2
0x100A	4106	Float	R/O	Actual value of analog input 3
0x100C	4108	Float	R/O	Actual value of analog input 4
0x100E	4110	Float	R/O	Actual value of analog input 5
0x1010	4112	Float	R/O	Actual value of analog input 6
0x1012	4114	Float	R/O	Internal Pt100 cold junction (in degrees) of analog input 1
0x1014	4116	Float	R/O	Internal Pt100 cold junction (in degrees) of analog input 2
0x1016	4118	Float	R/O	Internal Pt100 cold junction (in degrees) of analog input 3
0x1018	4120	Float	R/O	Internal Pt100 cold junction (in degrees) of analog input 4
0x101A	4122	Float	R/O	Internal Pt100 cold junction (in degrees) of analog input 5
0x101C	4124	Float	R/O	Internal Pt100 cold junction (in degrees) of analog input 6
0x101E	4126	Float	R/O	Actual value of analog output 1
0x1020	4128	Float	R/O	Actual value of analog output 2
0x1022	4130	Float	R/O	Flow 1

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1024	4132	Float	R/O	Flow 1 frequency (revolutions per minute)
				For counter values from -99999 to +99999:
0x1026	4134	Float	R/O	Counter status of counter 1
0x1028	4136	Float	R/O	Counter status of counter 2
0x102A	4138	Float	R/O	Counter status of counter 3
0x102C	4140	Float	R/O	Counter status of counter 4
0x102E	4142	Float	R/O	Counter status of counter 5
0x1030	4144	Float	R/O	Counter status of counter 6
0x1032	4146	Float	R/O	Result of math 1
0x1034	4148	Float	R/O	Result of math 2
0x1036	4150	Float	R/O	Result of math 3
0x1038	4152	Float	R/O	Result of math 4
0x103A	4154	Float	R/O	Result of math 5
0x103C	4156	Float	R/O	Result of math 6
0x103E	4158	Float	R/W	Actual value of external analog input 1
0x1040	4160	Float	R/W	Actual value of external analog input 2
0x1042	4162	Float	R/W	Actual value of external analog input 3
0x1044	4164	Float	R/W	Actual value of external analog input 4
0x1046	4166	Float	R/W	Actual value of external analog input 5
0x1048	4168	Float	R/W	Actual value of external analog input 6
0x104A	4170	Float	R/W	Actual value of external analog input 7
0x104C	4172	Float	R/W	Actual value of external analog input 8
0x104E	4174	Float	R/W	Actual value of external analog input 9
0x1050	4176	Float	R/W	Actual value of external analog input 10
0x1052	4178	Float	R/W	Actual value of external analog input 11
0x1054	4180	Float	R/W	Actual value of external analog input 12
0x1056	4182	Float	R/W	Actual value of external analog input 13
0x1058	4184	Float	R/W	Actual value of external analog input 14
0x105A	4186	Float	R/W	Actual value of external analog input 15
0x105C	4188	Float	R/W	Actual value of external analog input 16
0x105E	4190	Float	R/W	Actual value of external analog input 17
0x1060	4192	Float	R/W	Actual value of external analog input 18
0x1062	4194	Float	R/W	Actual value of external analog input 19
0x1064	4196	Float	R/W	Actual value of external analog input 20
0x1066	4198	Float	R/W	Actual value of external analog input 21
0x1068	4200	Float	R/W	Actual value of external analog input 22
0x106A	4202	Float	R/W	Actual value of external analog input 23
0x106C	4204	Float	R/W	Actual value of external analog input 24
0x106E	4206	Word	R/O	High-speed counter 1

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x106F	4207	Bool	R/O	Alarm 1 of analog input 1
0x1070	4208	Bool	R/O	Alarm 2 of analog input 1
0x1071	4209	Bool	R/O	Alarm 1 of analog input 2
0x1072	4210	Bool	R/O	Alarm 2 of analog input 2
0x1073	4211	Bool	R/O	Alarm 1 of analog input 3
0x1074	4212	Bool	R/O	Alarm 2 of analog input 3
0x1075	4213	Bool	R/O	Alarm 1 of analog input 4
0x1076	4214	Bool	R/O	Alarm 2 of analog input 4
0x1077	4215	Bool	R/O	Alarm 1 of analog input 5
0x1078	4216	Bool	R/O	Alarm 2 of analog input 5
0x1079	4217	Bool	R/O	Alarm 1 of analog input 6
0x107A	4218	Bool	R/O	Alarm 2 of analog input 6
0x107B	4219	Bool	R/O	Alarm 1 of counter 1
0x107C	4220	Bool	R/O	Alarm 2 of counter 1
0x107D	4221	Bool	R/O	Alarm 1 of counter 2
0x107E	4222	Bool	R/O	Alarm 2 of counter 2
0x107F	4223	Bool	R/O	Alarm 1 of counter 3
0x1080	4224	Bool	R/O	Alarm 2 of counter 3
0x1081	4225	Bool	R/O	Alarm 1 of counter 4
0x1082	4226	Bool	R/O	Alarm 2 of counter 4
0x1083	4227	Bool	R/O	Alarm 1 of counter 5
0x1084	4228	Bool	R/O	Alarm 2 of counter 5
0x1085	4229	Bool	R/O	Alarm 1 of counter 6
0x1086	4230	Bool	R/O	Alarm 2 of counter 6
0x1087	4231	Bool	R/O	Status of math 1
0x1088	4232	Bool	R/O	Status of math 2
0x1089	4233	Bool	R/O	Status of math 3
0x108A	4234	Bool	R/O	Status of math 4
0x108B	4235	Bool	R/O	Status of math 5
0x108C	4236	Bool	R/O	Status of math 6
0x108D	4237	Bool	R/O	Alarm 1 of math 1
0x108E	4238	Bool	R/O	Alarm 2 of math 1
0x108F	4239	Bool	R/O	Alarm 1 of math 2
0x1090	4240	Bool	R/O	Alarm 2 of math 2
0x1091	4241	Bool	R/O	Alarm 1 of math 3
0x1092	4242	Bool	R/O	Alarm 2 of math 3
0x1093	4243	Bool	R/O	Alarm 1 of math 4
0x1094	4244	Bool	R/O	Alarm 2 of math 4
0x1095	4245	Bool	R/O	Alarm 1 of math 5
0x1096	4246	Bool	R/O	Alarm 2 of math 5
0x1097	4247	Bool	R/O	Alarm 1 of math 6

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1098	4248	Bool	R/O	Alarm 2 of math 6
0x1099	4249	Bool	R/O	Result of logic 1
0x109A	4250	Bool	R/O	Result of logic 2
0x109B	4251	Bool	R/O	Result of logic 3
0x109C	4252	Bool	R/O	Result of logic 4
0x109D	4253	Bool	R/O	Result of logic 5
0x109E	4254	Bool	R/O	Result of logic 6
0x109F	4255	Bool	R/O	Alarm of logic 1
0x10A0	4256	Bool	R/O	Alarm of logic 2
0x10A1	4257	Bool	R/O	Alarm of logic 3
0x10A2	4258	Bool	R/O	Alarm of logic 4
0x10A3	4259	Bool	R/O	Alarm of logic 5
0x10A4	4260	Bool	R/O	Alarm of logic 6
0x10A5	4261	Bool	R/O	Alarm 1 of external analog input 1
0x10A6	4262	Bool	R/O	Alarm 2 of external analog input 1
0x10A7	4263	Bool	R/O	Alarm 1 of external analog input 2
0x10A8	4264	Bool	R/O	Alarm 2 of external analog input 2
0x10A9	4265	Bool	R/O	Alarm 1 of external analog input 3
0x10AA	4266	Bool	R/O	Alarm 2 of external analog input 3
0x10AB	4267	Bool	R/O	Alarm 1 of external analog input 4
0x10AC	4268	Bool	R/O	Alarm 2 of external analog input 4
0x10AD	4269	Bool	R/O	Alarm 1 of external analog input 5
0x10AE	4270	Bool	R/O	Alarm 2 of external analog input 5
0x10AF	4271	Bool	R/O	Alarm 1 of external analog input 6
0x10B0	4272	Bool	R/O	Alarm 2 of external analog input 6
0x10B1	4273	Bool	R/O	Alarm 1 of external analog input 7
0x10B2	4274	Bool	R/O	Alarm 2 of external analog input 7
0x10B3	4275	Bool	R/O	Alarm 1 of external analog input 8
0x10B4	4276	Bool	R/O	Alarm 2 of external analog input 8
0x10B5	4277	Bool	R/O	Alarm 1 of external analog input 9
0x10B6	4278	Bool	R/O	Alarm 2 of external analog input 9
0x10B7	4279	Bool	R/O	Alarm 1 of external analog input 10
0x10B8	4280	Bool	R/O	Alarm 2 of external analog input 10
0x10B9	4281	Bool	R/O	Alarm 1 of external analog input 11
0x10BA	4282	Bool	R/O	Alarm 2 of external analog input 11
0x10BB	4283	Bool	R/O	Alarm 1 of external analog input 12
0x10BC	4284	Bool	R/O	Alarm 2 of external analog input 12
0x10BD	4285	Bool	R/O	Alarm 1 of external analog input 13
0x10BE	4286	Bool	R/O	Alarm 2 of external analog input 13
0x10BF	4287	Bool	R/O	Alarm 1 of external analog input 14
0x10C0	4288	Bool	R/O	Alarm 2 of external analog input 14

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x10C1	4289	Bool	R/O	Alarm 1 of external analog input 15
0x10C2	4290	Bool	R/O	Alarm 2 of external analog input 15
0x10C3	4291	Bool	R/O	Alarm 1 of external analog input 16
0x10C4	4292	Bool	R/O	Alarm 2 of external analog input 16
0x10C5	4293	Bool	R/O	Alarm 1 of external analog input 17
0x10C6	4294	Bool	R/O	Alarm 2 of external analog input 17
0x10C7	4295	Bool	R/O	Alarm 1 of external analog input 18
0x10C8	4296	Bool	R/O	Alarm 2 of external analog input 18
0x10C9	4297	Bool	R/O	Alarm 1 of external analog input 19
0x10CA	4298	Bool	R/O	Alarm 2 of external analog input 19
0x10CB	4299	Bool	R/O	Alarm 1 of external analog input 20
0x10CC	4300	Bool	R/O	Alarm 2 of external analog input 20
0x10CD	4301	Bool	R/O	Alarm 1 of external analog input 21
0x10CE	4302	Bool	R/O	Alarm 2 of external analog input 21
0x10CF	4303	Bool	R/O	Alarm 1 of external analog input 22
0x10D0	4304	Bool	R/O	Alarm 2 of external analog input 22
0x10D1	4305	Bool	R/O	Alarm 1 of external analog input 23
0x10D2	4306	Bool	R/O	Alarm 2 of external analog input 23
0x10D3	4307	Bool	R/O	Alarm 1 of external analog input 24
0x10D4	4308	Bool	R/O	Alarm 2 of external analog input 24
0x10D5	4309	Bool	R/O	Value of digital input 1
0x10D6	4310	Bool	R/O	Value of digital input 2
0x10D7	4311	Bool	R/O	Value of digital input 3
0x10D8	4312	Bool	R/O	Value of digital input 4
0x10D9	4313	Bool	R/O	Value of digital input 5
0x10DA	4314	Bool	R/O	Value of digital input 6
0x10DB	4315	Bool	R/O	Value of digital input 7
0x10DC	4316	Bool	R/O	Value of digital input 8
0x10DD	4317	Bool	R/O	Value of digital input 9
0x10DE	4318	Bool	R/O	Value of digital input 10
0x10DF	4319	Bool	R/O	Value of digital input 11
0x10E0	4320	Bool	R/O	Value of digital input 12
0x10E1	4321	Bool	R/O	Value of digital input/output 1
0x10E2	4322	Bool	R/O	Value of digital input/output 2
0x10E3	4323	Bool	R/O	Value of digital input/output 3
0x10E4	4324	Bool	R/O	Value of digital input/output 4
0x10E5	4325	Bool	R/O	Value of digital input/output 5
0x10E6	4326	Bool	R/O	Value of digital input/output 6
0x10E7	4327	Bool	R/O	Value of digital input/output 7
0x10E8	4328	Bool	R/O	Value of digital input/output 8
0x10E9	4329	Bool	R/O	Value of digital input/output 9
0x10EA	4330	Bool	R/O	Value of digital input/output 10

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x10EB	4331	Bool	R/O	Value of digital input/output 11
0x10EC	4332	Bool	R/O	Value of digital input/output 12
0x10ED	4333	Bool	R/O	Value of relay output 1
0x10EE	4334	Bool	R/O	Alarm of digital input 1
0x10EF	4335	Bool	R/O	Alarm of digital input 2
0x10F0	4336	Bool	R/O	Alarm of digital input 3
0x10F1	4337	Bool	R/O	Alarm of digital input 4
0x10F2	4338	Bool	R/O	Alarm of digital input 5
0x10F3	4339	Bool	R/O	Alarm of digital input 6
0x10F4	4340	Bool	R/O	Alarm of digital input 7
0x10F5	4341	Bool	R/O	Alarm of digital input 8
0x10F6	4342	Bool	R/O	Alarm of digital input 9
0x10F7	4343	Bool	R/O	Alarm of digital input 10
0x10F8	4344	Bool	R/O	Alarm of digital input 11
0x10F9	4345	Bool	R/O	Alarm of digital input 12
0x10FA	4346	Bool	R/O	Alarm of digital input/output 1
0x10FB	4347	Bool	R/O	Alarm of digital input/output 2
0x10FC	4348	Bool	R/O	Alarm of digital input/output 3
0x10FD	4349	Bool	R/O	Alarm of digital input/output 4
0x10FE	4350	Bool	R/O	Alarm of digital input/output 5
0x10FF	4351	Bool	R/O	Alarm of digital input/output 6
0x1100	4352	Bool	R/O	Alarm of digital input/output 7
0x1101	4353	Bool	R/O	Alarm of digital input/output 8
0x1102	4354	Bool	R/O	Alarm of digital input/output 9
0x1103	4355	Bool	R/O	Alarm of digital input/output 10
0x1104	4356	Bool	R/O	Alarm of digital input/output 11
0x1105	4357	Bool	R/O	Alarm of digital input/output 12
0x1106	4358	Bool	R/O	Alarm of external digital input 1
0x1107	4359	Bool	R/O	Alarm of external digital input 2
0x1108	4360	Bool	R/O	Alarm of external digital input 3
0x1109	4361	Bool	R/O	Alarm of external digital input 4
0x110A	4362	Bool	R/O	Alarm of external digital input 5
0x110B	4363	Bool	R/O	Alarm of external digital input 6
0x110C	4364	Bool	R/O	Alarm of external digital input 7
0x110D	4365	Bool	R/O	Alarm of external digital input 8
0x110E	4366	Bool	R/O	Alarm of external digital input 9
0x110F	4367	Bool	R/O	Alarm of external digital input 10
0x1110	4368	Bool	R/O	Alarm of external digital input 11
0x1111	4369	Bool	R/O	Alarm of external digital input 12
0x1112	4370	Bool	R/O	Alarm of external digital input 13

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1113	4371	Bool	R/O	Alarm of external digital input 14
0x1114	4372	Bool	R/O	Alarm of external digital input 15
0x1115	4373	Bool	R/O	Alarm of external digital input 16
0x1116	4374	Bool	R/O	Alarm of external digital input 17
0x1117	4375	Bool	R/O	Alarm of external digital input 18
0x1118	4376	Bool	R/O	Alarm of external digital input 19
0x1119	4377	Bool	R/O	Alarm of external digital input 20
0x111A	4378	Bool	R/O	Alarm of external digital input 21
0x111B	4379	Bool	R/O	Alarm of external digital input 22
0x111C	4380	Bool	R/O	Alarm of external digital input 23
0x111D	4381	Bool	R/O	Alarm of external digital input 24
0x111E	4382	Bool	R/O	Status of limit value monitoring 1
0x111F	4383	Bool	R/O	Status of limit value monitoring 2
0x1120	4384	Bool	R/O	Status of limit value monitoring 3
0x1121	4385	Bool	R/O	Status of limit value monitoring 4
0x1122	4386	Bool	R/O	Status of limit value monitoring 5
0x1123	4387	Bool	R/O	Status of limit value monitoring 6
0x1124	4388	Bool	R/O	Alarm of limit value monitoring 1
0x1125	4389	Bool	R/O	Alarm of limit value monitoring 2
0x1126	4390	Bool	R/O	Alarm of limit value monitoring 3
0x1127	4391	Bool	R/O	Alarm of limit value monitoring 4
0x1128	4392	Bool	R/O	Alarm of limit value monitoring 5
0x1129	4393	Bool	R/O	Alarm of limit value monitoring 6
0x112A	4394	Bool	R/O	Alarm of upper tolerance band, group 1
0x112B	4395	Bool	R/O	Alarm of upper tolerance band, group 2
0x112C	4396	Bool	R/O	Alarm of upper tolerance band, group 3
0x112D	4397	Bool	R/O	Alarm of upper tolerance band, group 4
0x112E	4398	Bool	R/O	Alarm of lower tolerance band, group 1
0x112F	4399	Bool	R/O	Alarm of lower tolerance band, group 2
0x1130	4400	Bool	R/O	Alarm of lower tolerance band, group 3
0x1131	4401	Bool	R/O	Alarm of lower tolerance band, group 4
0x1132	4402	Bool	R/O	Alarm 1 of flow 1
0x1133	4403	Bool	R/O	Alarm 2 of flow 1
0x1134	4404	Bool	R/O	Collective alarm
0x1135	4405	Bool	R/O	Collective alarm with acknowledgement
0x1136	4406	Bool	R/O	Memory alarm (internal flash memory)
0x1137	4407	Bool	R/O	User logged on
0x1138	4408	Bool	R/O	Fault
0x1139	4409	Bool	R/O	USB flash drive active

7 Modbus address tables

Address Hex.	Dec.	Data type	Access	Designation
0x113A	4410	Bool	R/O	Battery empty
0x113B	4411	Bool	R/O	Battery low
0x113C	4412	Bool	R/O	Temperature unit of interface: °F
0x113D	4413	Bool	R/O	Temperature unit of device (display): °F
0x113E	4414	Bool	R/O	Modbus slave timeout Com1
0x113F	4415	Bool	R/O	Modbus slave timeout Com1, inverted
0x1140	4416	Bool	R/O	Modbus slave timeout TCP1
0x1141	4417	Bool	R/O	Modbus slave timeout TCP1, inverted
0x1142	4418	Bool	R/O	Modbus slave timeout TCP2
0x1143	4419	Bool	R/O	Modbus slave timeout TCP2, inverted
0x3DB7	15799	Bool	R/O	Timeout PROFINET
0x3DB8	15800	Bool	R/O	Timeout GPS
0x1144	4420	Bool	R/W	Value of/for external digital input 1
0x1145	4421	Bool	R/W	Value of/for external digital input 2
0x1146	4422	Bool	R/W	Value of/for external digital input 3
0x1147	4423	Bool	R/W	Value of/for external digital input 4
0x1148	4424	Bool	R/W	Value of/for external digital input 5
0x1149	4425	Bool	R/W	Value of/for external digital input 6
0x114A	4426	Bool	R/W	Value of/for external digital input 7
0x114B	4427	Bool	R/W	Value of/for external digital input 8
0x114C	4428	Bool	R/W	Value of/for external digital input 9
0x114D	4429	Bool	R/W	Value of/for external digital input 10
0x114E	4430	Bool	R/W	Value of/for external digital input 11
0x114F	4431	Bool	R/W	Value of/for external digital input 12
0x1150	4432	Bool	R/W	Value of/for external digital input 13
0x1151	4433	Bool	R/W	Value of/for external digital input 14
0x1152	4434	Bool	R/W	Value of/for external digital input 15
0x1153	4435	Bool	R/W	Value of/for external digital input 16
0x1154	4436	Bool	R/W	Value of/for external digital input 17
0x1155	4437	Bool	R/W	Value of/for external digital input 18
0x1156	4438	Bool	R/W	Value of/for external digital input 19
0x1157	4439	Bool	R/W	Value of/for external digital input 20
0x1158	4440	Bool	R/W	Value of/for external digital input 21
0x1159	4441	Bool	R/W	Value of/for external digital input 22
0x115A	4442	Bool	R/W	Value of/for external digital input 23
0x115B	4443	Bool	R/W	Value of/for external digital input 24
0x115C	4444	Char[94]	R/W	External event text, group 1
0x118B	4491	Char[94]	R/W	External event text, group 2
0x11BA	4538	Char[94]	R/W	External event text, group 3
0x11E9	4585	Char[94]	R/W	External event text, group 4
0x1218	4632	Char[64]	R/W	External text variable 1

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1238	4664	Char[64]	R/W	External text variable 2
0x1258	4696	Char[64]	R/W	External text variable 3
0x1278	4728	Char[64]	R/W	External text variable 4
0x1298	4760	Char[64]	R/W	External text variable 5
0x12B8	4792	Char[64]	R/W	External text variable 6
0x12D8	4824	Char[64]	R/W	External text variable 7
0x12F8	4856	Char[64]	R/W	External text variable 8
0x1318	4888	Char[64]	R/W	External text variable 9
0x1338	4920	Char[64]	R/W	External text variable 10
0x1358	4952	Char[244]	R/W	External event text (long), group 1
0x13D2	5074	Char[244]	R/W	External event text (long), group 2
0x144C	5196	Char[244]	R/W	External event text (long), group 3
0x14C6	5318	Char[244]	R/W	External event text (long), group 4
0x1540	5440	Char[244]	R/W	External text variable (long) 1
0x15BA	5562	Char[244]	R/W	External text variable (long) 2
0x1634	5684	Char[244]	R/W	External text variable (long) 3
0x16AE	5806	Char[244]	R/W	External text variable (long) 4
0x1728	5928	Char[244]	R/W	External text variable (long) 5
0x17A2	6050	Char[244]	R/W	External text variable (long) 6
0x181C	6172	Char[244]	R/W	External text variable (long) 7
0x1896	6294	Char[244]	R/W	External text variable (long) 8
0x1910	6416	Char[244]	R/W	External text variable (long) 9
0x198A	6538	Char[244]	R/W	External text variable (long) 10
0x1A04	6660	Bool	R/O	Limit value monitoring 1: status
0x1A05	6661	Bool	R/O	Limit value monitoring 2: status
0x1A06	6662	Bool	R/O	Limit value monitoring 3: status
0x1A07	6663	Bool	R/O	Limit value monitoring 4: status
0x1A08	6664	Bool	R/O	Limit value monitoring 5: status
0x1A09	6665	Bool	R/O	Limit value monitoring 6: status
0x1A0A	6666	Bool	R/O	Limit value monitoring 7: status
0x1A0B	6667	Bool	R/O	Limit value monitoring 8: status
0x1A0C	6668	Bool	R/O	Limit value monitoring 9: status
0x1A0D	6669	Bool	R/O	Limit value monitoring 10: status
0x1A0E	6670	Bool	R/O	Limit value monitoring 11: status
0x1A0F	6671	Bool	R/O	Limit value monitoring 12: status
0x1A10	6672	Bool	R/O	Limit value monitoring 13: status
0x1A11	6673	Bool	R/O	Limit value monitoring 14: status
0x1A12	6674	Bool	R/O	Limit value monitoring 15: status
0x1A13	6675	Bool	R/O	Limit value monitoring 16: status
0x1A14	6676	Bool	R/O	Limit value monitoring 17: status
0x1A15	6677	Bool	R/O	Limit value monitoring 18: status

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1A16	6678	Bool	R/O	Limit value monitoring 19: status
0x1A17	6679	Bool	R/O	Limit value monitoring 20: status
0x1A18	6680	Bool	R/O	Limit value monitoring 21: status
0x1A19	6681	Bool	R/O	Limit value monitoring 22: status
0x1A1A	6682	Bool	R/O	Limit value monitoring 23: status
0x1A1B	6683	Bool	R/O	Limit value monitoring 24: status
0x1A1C	6684	Bool	R/O	Limit value monitoring 1: alarm
0x1A1D	6685	Bool	R/O	Limit value monitoring 2: alarm
0x1A1E	6686	Bool	R/O	Limit value monitoring 3: alarm
0x1A1F	6687	Bool	R/O	Limit value monitoring 4: alarm
0x1A20	6688	Bool	R/O	Limit value monitoring 5: alarm
0x1A21	6689	Bool	R/O	Limit value monitoring 6: alarm
0x1A22	6690	Bool	R/O	Limit value monitoring 7: alarm
0x1A23	6691	Bool	R/O	Limit value monitoring 8: alarm
0x1A24	6692	Bool	R/O	Limit value monitoring 9: alarm
0x1A25	6693	Bool	R/O	Limit value monitoring 10: alarm
0x1A26	6694	Bool	R/O	Limit value monitoring 11: alarm
0x1A27	6695	Bool	R/O	Limit value monitoring 12: alarm
0x1A28	6696	Bool	R/O	Limit value monitoring 13: alarm
0x1A29	6697	Bool	R/O	Limit value monitoring 14: alarm
0x1A2A	6698	Bool	R/O	Limit value monitoring 15: alarm
0x1A2B	6699	Bool	R/O	Limit value monitoring 16: alarm
0x1A2C	6700	Bool	R/O	Limit value monitoring 17: alarm
0x1A2D	6701	Bool	R/O	Limit value monitoring 18: alarm
0x1A2E	6702	Bool	R/O	Limit value monitoring 19: alarm
0x1A2F	6703	Bool	R/O	Limit value monitoring 20: alarm
0x1A30	6704	Bool	R/O	Limit value monitoring 21: alarm
0x1A31	6705	Bool	R/O	Limit value monitoring 22: alarm
0x1A32	6706	Bool	R/O	Limit value monitoring 23: alarm
0x1A33	6707	Bool	R/O	Limit value monitoring 24: alarm
				For counter values from -999,999,999 to +999,999,999 (as of device software version 323.04.07):
0x3DB9	15801	Int32	R/O	Counter status of counter 1
0x3DBB	15803	Int32	R/O	Counter status of counter 2
0x3DBD	15805	Int32	R/O	Counter status of counter 3
0x3DBF	15807	Int32	R/O	Counter status of counter 4
0x3DC1	15809	Int32	R/O	Counter status of counter 5
0x3DC3	15811	Int32	R/O	Counter status of counter 6
0xA000	40960	Char[1204]	R/W	Batch 1: batch recipe
0xA600	42496	Char[480]	R/O	Batch 1: Batch text, line 1
0xA800	43008	Char[480]	R/O	Batch 1: Batch text, line 2

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0xAA00	43520	Char[480]	R/O	Batch 1: Batch text, line 3
0xAC00	44032	Char[480]	R/O	Batch 1: Batch text, line 4
0xAE00	44544	Char[480]	R/O	Batch 1: Batch text, line 5
0xB000	45056	Char[480]	R/O	Batch 1: Batch text, line 6
0xB200	45568	Char[480]	R/O	Batch 1: Batch text, line 7
0xB400	46080	Char[480]	R/O	Batch 1: Batch text, line 8
0xB600	46592	Char[480]	R/O	Batch 1: Batch text, line 9
0xB800	47104	Char[480]	R/O	Batch 1: Batch text, line 10

NOTE!



The external text variables and the external event texts can also be transmitted as long text. For this, separate Modbus addresses are available. It must be ensured in the application that only one of the two possible addresses of a variable is used.

NOTE!



If a GPS receiver is operated at the serial interface (NMEA 0183), the GPS data are entered as event text in the event list of the assigned group. In this case, the external event text of the relevant group must not be used (GPS data will be overwritten).

Configuration parameters

Address		Data type	Access	Designation
Hex.	Dec.			
0x1A34	6708	Float	R/W	Limit value monitoring 1: limit value
0x1A36	6710	Float	R/W	Limit value monitoring 2: limit value
0x1A38	6712	Float	R/W	Limit value monitoring 3: limit value
0x1A3A	6714	Float	R/W	Limit value monitoring 4: limit value
0x1A3C	6716	Float	R/W	Limit value monitoring 5: limit value
0x1A3E	6718	Float	R/W	Limit value monitoring 6: limit value
0x1A40	6720	Float	R/W	Limit value monitoring 7: limit value
0x1A42	6722	Float	R/W	Limit value monitoring 8: limit value
0x1A44	6724	Float	R/W	Limit value monitoring 9: limit value
0x1A46	6726	Float	R/W	Limit value monitoring 10: limit value
0x1A48	6728	Float	R/W	Limit value monitoring 11: limit value
0x1A4A	6730	Float	R/W	Limit value monitoring 12: limit value
0x1A4C	6732	Float	R/W	Limit value monitoring 13: limit value
0x1A4E	6734	Float	R/W	Limit value monitoring 14: limit value
0x1A50	6736	Float	R/W	Limit value monitoring 15: limit value
0x1A52	6738	Float	R/W	Limit value monitoring 16: limit value
0x1A54	6740	Float	R/W	Limit value monitoring 17: limit value
0x1A56	6742	Float	R/W	Limit value monitoring 18: limit value
0x1A58	6744	Float	R/W	Limit value monitoring 19: limit value
0x1A5A	6746	Float	R/W	Limit value monitoring 20: limit value
0x1A5C	6748	Float	R/W	Limit value monitoring 21: limit value
0x1A5E	6750	Float	R/W	Limit value monitoring 22: limit value
0x1A60	6752	Float	R/W	Limit value monitoring 23: limit value

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1A62	6754	Float	R/W	Limit value monitoring 24: limit value
0x1A64	6756	Float	R/W	Limit value monitoring 1: switching differential
0x1A66	6758	Float	R/W	Limit value monitoring 2: switching differential
0x1A68	6760	Float	R/W	Limit value monitoring 3: switching differential
0x1A6A	6762	Float	R/W	Limit value monitoring 4: switching differential
0x1A6C	6764	Float	R/W	Limit value monitoring 5: switching differential
0x1A6E	6766	Float	R/W	Limit value monitoring 6: switching differential
0x1A70	6768	Float	R/W	Limit value monitoring 7: switching differential
0x1A72	6770	Float	R/W	Limit value monitoring 8: switching differential
0x1A74	6772	Float	R/W	Limit value monitoring 9: switching differential
0x1A76	6774	Float	R/W	Limit value monitoring 10: switching differential
0x1A78	6776	Float	R/W	Limit value monitoring 11: switching differential
0x1A7A	6778	Float	R/W	Limit value monitoring 12: switching differential
0x1A7C	6780	Float	R/W	Limit value monitoring 13: switching differential
0x1A7E	6782	Float	R/W	Limit value monitoring 14: switching differential
0x1A80	6784	Float	R/W	Limit value monitoring 15: switching differential
0x1A82	6786	Float	R/W	Limit value monitoring 16: switching differential
0x1A84	6788	Float	R/W	Limit value monitoring 17: switching differential
0x1A86	6790	Float	R/W	Limit value monitoring 18: switching differential
0x1A88	6792	Float	R/W	Limit value monitoring 19: switching differential
0x1A8A	6794	Float	R/W	Limit value monitoring 20: switching differential
0x1A8C	6796	Float	R/W	Limit value monitoring 21: switching differential
0x1A8E	6798	Float	R/W	Limit value monitoring 22: switching differential
0x1A90	6800	Float	R/W	Limit value monitoring 23: switching differential
0x1A92	6802	Float	R/W	Limit value monitoring 24: switching differential

ST code

Address		Data type	Access	Designation
Hex.	Dec.			
0x2087	8327	Float	R/W	real_out01
0x2089	8329	Float	R/W	real_out02
0x208B	8331	Float	R/W	real_out03
0x208D	8333	Float	R/W	real_out04
0x208F	8335	Float	R/W	real_out05
0x2091	8337	Float	R/W	real_out06
0x2093	8339	Float	R/W	real_out07
0x2095	8341	Float	R/W	real_out08
0x2097	8343	Float	R/W	real_out09
0x2099	8345	Float	R/W	real_out10
0x209B	8347	Float	R/W	real_out11
0x209D	8349	Float	R/W	real_out12
0x209F	8351	Float	R/W	real_out13
0x20A1	8353	Float	R/W	real_out14
0x20A3	8355	Float	R/W	real_out15

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x20A5	8357	Float	R/W	real_out16
0x20A7	8359	Float	R/W	real_out17
0x20A9	8361	Float	R/W	real_out18
0x20AB	8363	Float	R/W	real_out19
0x20AD	8365	Float	R/W	real_out20
0x20AF	8367	Float	R/W	real_out21
0x20B1	8369	Float	R/W	real_out22
0x20B3	8371	Float	R/W	real_out23
0x20B5	8373	Float	R/W	real_out24
0x20B7	8375	Float	R/W	real_out25
0x20B9	8377	Float	R/W	real_out26
0x20BB	8379	Float	R/W	real_out27
0x20BD	8381	Float	R/W	real_out28
0x20BF	8383	Float	R/W	real_out29
0x20C1	8385	Float	R/W	real_out30
0x20C3	8387	Float	R/W	real_out31
0x20C5	8389	Float	R/W	real_out32
0x20C7	8391	Float	R/W	real_out33
0x20C9	8393	Float	R/W	real_out34
0x20CB	8395	Float	R/W	real_out35
0x20CD	8397	Float	R/W	real_out36
0x20CF	8399	Float	R/W	real_out37
0x20D1	8401	Float	R/W	real_out38
0x20D3	8403	Float	R/W	real_out39
0x20D5	8405	Float	R/W	real_out40
0x20D7	8407	Bool	R/W	bool_out01
0x20D8	8408	Bool	R/W	bool_out02
0x20D9	8409	Bool	R/W	bool_out03
0x20DA	8410	Bool	R/W	bool_out04
0x20DB	8411	Bool	R/W	bool_out05
0x20DC	8412	Bool	R/W	bool_out06
0x20DD	8413	Bool	R/W	bool_out07
0x20DE	8414	Bool	R/W	bool_out08
0x20DF	8415	Bool	R/W	bool_out09
0x20E0	8416	Bool	R/W	bool_out10
0x20E1	8417	Bool	R/W	bool_out11
0x20E2	8418	Bool	R/W	bool_out12
0x20E3	8419	Bool	R/W	bool_out13
0x20E4	8420	Bool	R/W	bool_out14
0x20E5	8421	Bool	R/W	bool_out15
0x20E6	8422	Bool	R/W	bool_out16
0x20E7	8423	Bool	R/W	bool_out17
0x20E8	8424	Bool	R/W	bool_out18

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x20E9	8425	Bool	R/W	bool_out19
0x20EA	8426	Bool	R/W	bool_out20
0x20EB	8427	Bool	R/W	bool_out21
0x20EC	8428	Bool	R/W	bool_out22
0x20ED	8429	Bool	R/W	bool_out23
0x20EE	8430	Bool	R/W	bool_out24
0x20EF	8431	Bool	R/W	bool_out25
0x20F0	8432	Bool	R/W	bool_out26
0x20F1	8433	Bool	R/W	bool_out27
0x20F2	8434	Bool	R/W	bool_out28
0x20F3	8435	Bool	R/W	bool_out29
0x20F4	8436	Bool	R/W	bool_out30
0x20F5	8437	Bool	R/W	bool_out31
0x20F6	8438	Bool	R/W	bool_out32
0x20F7	8439	Bool	R/W	bool_out33
0x20F8	8440	Bool	R/W	bool_out34
0x20F9	8441	Bool	R/W	bool_out35
0x20FA	8442	Bool	R/W	bool_out36
0x20FB	8443	Bool	R/W	bool_out37
0x20FC	8444	Bool	R/W	bool_out38
0x20FD	8445	Bool	R/W	bool_out39
0x20FE	8446	Bool	R/W	bool_out40
0x20FF	8447	Bool	R/W	alarm01
0x2100	8448	Bool	R/W	alarm02
0x2101	8449	Bool	R/W	alarm03
0x2102	8450	Bool	R/W	alarm04
0x2103	8451	Bool	R/W	alarm05
0x2104	8452	Bool	R/W	alarm06
0x2105	8453	Bool	R/W	alarm07
0x2106	8454	Bool	R/W	alarm08
0x2107	8455	Bool	R/W	alarm09
0x2108	8456	Bool	R/W	alarm10
0x2109	8457	Bool	R/W	alarm11
0x210A	8458	Bool	R/W	alarm12
0x210B	8459	Bool	R/W	alarm13
0x210C	8460	Bool	R/W	alarm14
0x210D	8461	Bool	R/W	alarm15
0x210E	8462	Bool	R/W	alarm16
0x210F	8463	Bool	R/W	alarm17
0x2110	8464	Bool	R/W	alarm18
0x2111	8465	Bool	R/W	alarm19
0x2112	8466	Bool	R/W	alarm20
0x2113	8467	Bool	R/W	alarm21

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x2114	8468	Bool	R/W	alarm22
0x2115	8469	Bool	R/W	alarm23
0x2116	8470	Bool	R/W	alarm24
0x2117	8471	Bool	R/W	alarm25
0x2118	8472	Bool	R/W	alarm26
0x2119	8473	Bool	R/W	alarm27
0x211A	8474	Bool	R/W	alarm28
0x211B	8475	Bool	R/W	alarm29
0x211C	8476	Bool	R/W	alarm30
0x211D	8477	Bool	R/W	alarm31
0x211E	8478	Bool	R/W	alarm32

Reading frames

Address		Data type	Access	Description
Hex.	Dec.			
0x8000	32768	Byte[254]	R/W	Frame 1 reading
0x8080	32896	Byte[254]	R/W	Frame 2 reading
0x8100	33024	Byte[254]	R/W	Frame 3 reading
0x8180	33152	Byte[254]	R/W	Frame 4 reading
0x8200	33280	Byte[254]	R/W	Frame 5 reading
0x8280	33408	Byte[254]	R/W	Frame 6 reading
0x8300	33536	Byte[254]	R/W	Frame 7 reading
0x8380	33664	Byte[254]	R/W	Frame 8 reading
0x8400	33792	Byte[254]	R/W	Frame 9 reading
0x8480	33920	Byte[254]	R/W	Frame 10 reading
0x8500	34048	Byte[254]	R/W	Frame 11 reading
0x8580	34176	Byte[254]	R/W	Frame 12 reading
0x8600	34304	Byte[254]	R/W	Frame 13 reading
0x8680	34432	Byte[254]	R/W	Frame 14 reading
0x8700	34560	Byte[254]	R/W	Frame 15 reading
0x8780	34688	Byte[254]	R/W	Frame 16 reading
0x8800	34816	Byte[254]	R/W	Frame 17 reading
0x8880	34944	Byte[254]	R/W	Frame 18 reading
0x8900	35072	Byte[254]	R/W	Frame 19 reading
0x8980	35200	Byte[254]	R/W	Frame 20 reading
0x8A00	35328	Byte[254]	R/W	Frame 21 reading
0x8A80	35456	Byte[254]	R/W	Frame 22 reading
0x8B00	35584	Byte[254]	R/W	Frame 23 reading
0x8B80	35712	Byte[254]	R/W	Frame 24 reading
0x8C00	35840	Byte[254]	R/W	Frame 25 reading
0x8C80	35968	Byte[254]	R/W	Frame 26 reading
0x8D00	36096	Byte[254]	R/W	Frame 27 reading
0x8D80	36224	Byte[254]	R/W	Frame 28 reading
0x8E00	36352	Byte[254]	R/W	Frame 29 reading

7 Modbus address tables

Address		Data type	Access	Description
Hex.	Dec.			
0x8E80	36480	Byte[254]	R/W	Frame 30 reading
0x8F00	36608	Byte[254]	R/W	Frame 31 reading
0x8F80	36736	Byte[254]	R/W	Frame 32 reading

Writing frames

Address		Data type	Access	Description
Hex.	Dec.			
0x9000	36864	Byte[254]	R/O	Frame 1 writing
0x9080	36992	Byte[254]	R/O	Frame 2 writing
0x9100	37120	Byte[254]	R/O	Frame 3 writing
0x9180	37248	Byte[254]	R/O	Frame 4 writing
0x9200	37376	Byte[254]	R/O	Frame 5 writing
0x9280	37504	Byte[254]	R/O	Frame 6 writing
0x9300	37632	Byte[254]	R/O	Frame 7 writing
0x9380	37760	Byte[254]	R/O	Frame 8 writing
0x9400	37888	Byte[254]	R/O	Frame 9 writing
0x9480	38016	Byte[254]	R/O	Frame 10 writing
0x9500	38144	Byte[254]	R/O	Frame 11 writing
0x9580	38272	Byte[254]	R/O	Frame 12 writing
0x9600	38400	Byte[254]	R/O	Frame 13 writing
0x9680	38528	Byte[254]	R/O	Frame 14 writing
0x9700	38656	Byte[254]	R/O	Frame 15 writing
0x9780	38784	Byte[254]	R/O	Frame 16 writing
0x9800	38912	Byte[254]	R/O	Frame 17 writing
0x9880	39040	Byte[254]	R/O	Frame 18 writing
0x9900	39168	Byte[254]	R/O	Frame 19 writing
0x9980	39296	Byte[254]	R/O	Frame 20 writing
0x9A00	39424	Byte[254]	R/O	Frame 21 writing
0x9A80	39552	Byte[254]	R/O	Frame 22 writing
0x9B00	39680	Byte[254]	R/O	Frame 23 writing
0x9B80	39808	Byte[254]	R/O	Frame 24 writing
0x9C00	39936	Byte[254]	R/O	Frame 25 writing
0x9C80	40064	Byte[254]	R/O	Frame 26 writing
0x9D00	40192	Byte[254]	R/O	Frame 27 writing
0x9D80	40320	Byte[254]	R/O	Frame 28 writing
0x9E00	40448	Byte[254]	R/O	Frame 29 writing
0x9E80	40576	Byte[254]	R/O	Frame 30 writing
0x9F00	40704	Byte[254]	R/O	Frame 31 writing
0x9F80	40832	Byte[254]	R/O	Frame 32 writing

7 Modbus address tables

7.2.2 Type 706530

Process values and texts - type 706530 only

Address		Data type	Access	Designation
Hex.	Dec.			
0x1A94	6804	Float	R/O	Actual value of analog input 7
0x1A96	6806	Float	R/O	Actual value of analog input 8
0x1A98	6808	Float	R/O	Actual value of analog input 9
0x1A9A	6810	Float	R/O	Actual value of analog input 10
0x1A9C	6812	Float	R/O	Actual value of analog input 11
0x1A9E	6814	Float	R/O	Actual value of analog input 12
0x1AA0	6816	Float	R/O	Actual value of analog input 13
0x1AA2	6818	Float	R/O	Actual value of analog input 14
0x1AA4	6820	Float	R/O	Actual value of analog input 15
0x1AA6	6822	Float	R/O	Actual value of analog input 16
0x1AA8	6824	Float	R/O	Actual value of analog input 17
0x1AAA	6826	Float	R/O	Actual value of analog input 18
0x1AAC	6828	Float	R/O	Internal Pt100 cold junction (in degrees) of analog input 7
0x1AAE	6830	Float	R/O	Internal Pt100 cold junction (in degrees) of analog input 8
0x1AB0	6832	Float	R/O	Internal Pt100 cold junction (in degrees) of analog input 9
0x1AB2	6834	Float	R/O	Internal Pt100 cold junction (in degrees) of analog input 10
0x1AB4	6836	Float	R/O	Internal Pt100 cold junction (in degrees) of analog input 11
0x1AB6	6838	Float	R/O	Internal Pt100 cold junction (in degrees) of analog input 12
0x1AB8	6840	Float	R/O	Internal Pt100 cold junction (in degrees) of analog input 13
0x1ABA	6842	Float	R/O	Internal Pt100 cold junction (in degrees) of analog input 14
0x1ABC	6844	Float	R/O	Internal Pt100 cold junction (in degrees) of analog input 15
0x1ABE	6846	Float	R/O	Internal Pt100 cold junction (in degrees) of analog input 16
0x1AC0	6848	Float	R/O	Internal Pt100 cold junction (in degrees) of analog input 17
0x1AC2	6850	Float	R/O	Internal Pt100 cold junction (in degrees) of analog input 18
0x1AC4	6852	Float	R/O	Actual value of analog output 3
0x1AC6	6854	Float	R/O	Flow 2
0x1AC8	6856	Float	R/O	Flow 2 frequency (revolutions per minute)
0x1ACA	6858	Float	R/O	Flow 3
0x1ACC	6860	Float	R/O	Flow 3 frequency (revolutions per minute)

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1ACE	6862	Float	R/O	Flow 4
0x1AD0	6864	Float	R/O	Flow 4 frequency (revolutions per minute)
0x1AD2	6866	Float	R/O	Flow 5
0x1AD4	6868	Float	R/O	Flow 5 frequency (revolutions per minute)
0x1AD6	6870	Float	R/O	Flow 6
0x1AD8	6872	Float	R/O	Flow 6 frequency (revolutions per minute)
0x1ADA	6874	Float	R/O	Flow 7
0x1ADC	6876	Float	R/O	Flow 7 frequency (revolutions per minute)
0x1ADE	6878	Float	R/O	Flow 8
0x1AE0	6880	Float	R/O	Flow 8 frequency (revolutions per minute)
				For counter values from -99999 to +99999:
0x1AE2	6882	Float	R/O	Counter status of counter 7
0x1AE4	6884	Float	R/O	Counter status of counter 8
0x1AE6	6886	Float	R/O	Counter status of counter 9
0x1AE8	6888	Float	R/O	Counter status of counter 10
0x1AEA	6890	Float	R/O	Counter status of counter 11
0x1AEC	6892	Float	R/O	Counter status of counter 12
0x1AEE	6894	Float	R/O	Counter status of counter 13
0x1AF0	6896	Float	R/O	Counter status of counter 14
0x1AF2	6898	Float	R/O	Counter status of counter 15
0x1AF4	6900	Float	R/O	Counter status of counter 16
0x1AF6	6902	Float	R/O	Counter status of counter 17
0x1AF8	6904	Float	R/O	Counter status of counter 18
0x1AFA	6906	Float	R/O	Counter status of counter 19
0x1AFC	6908	Float	R/O	Counter status of counter 20
0x1AFE	6910	Float	R/O	Counter status of counter 21
0x1B00	6912	Float	R/O	Counter status of counter 22
0x1B02	6914	Float	R/O	Counter status of counter 23
0x1B04	6916	Float	R/O	Counter status of counter 24
0x1B06	6918	Float	R/O	Counter status of counter 25
0x1B08	6920	Float	R/O	Counter status of counter 26
0x1B0A	6922	Float	R/O	Counter status of counter 27
0x1B0C	6924	Float	R/O	Counter status of counter 28
0x1B0E	6926	Float	R/O	Counter status of counter 29
0x1B10	6928	Float	R/O	Counter status of counter 30
0x1B12	6930	Float	R/O	Result of math 7
0x1B14	6932	Float	R/O	Result of math 8
0x1B16	6934	Float	R/O	Result of math 9
0x1B18	6936	Float	R/O	Result of math 10
0x1B1A	6938	Float	R/O	Result of math 11
0x1B1C	6940	Float	R/O	Result of math 12
0x1B1E	6942	Float	R/O	Result of math 13

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1B20	6944	Float	R/O	Result of math 14
0x1B22	6946	Float	R/O	Result of math 15
0x1B24	6948	Float	R/O	Result of math 16
0x1B26	6950	Float	R/O	Result of math 17
0x1B28	6952	Float	R/O	Result of math 18
0x1B2A	6954	Float	R/O	Result of math 19
0x1B2C	6956	Float	R/O	Result of math 20
0x1B2E	6958	Float	R/W	Actual value of external analog input 25
0x1B30	6960	Float	R/W	Actual value of external analog input 26
0x1B32	6962	Float	R/W	Actual value of external analog input 27
0x1B34	6964	Float	R/W	Actual value of external analog input 28
0x1B36	6966	Float	R/W	Actual value of external analog input 29
0x1B38	6968	Float	R/W	Actual value of external analog input 30
0x1B3A	6970	Float	R/W	Actual value of external analog input 31
0x1B3C	6972	Float	R/W	Actual value of external analog input 32
0x1B3E	6974	Float	R/W	Actual value of external analog input 33
0x1B40	6976	Float	R/W	Actual value of external analog input 34
0x1B42	6978	Float	R/W	Actual value of external analog input 35
0x1B44	6980	Float	R/W	Actual value of external analog input 36
0x1B46	6982	Float	R/W	Actual value of external analog input 37
0x1B48	6984	Float	R/W	Actual value of external analog input 38
0x1B4A	6986	Float	R/W	Actual value of external analog input 39
0x1B4C	6988	Float	R/W	Actual value of external analog input 40
0x1B4E	6990	Float	R/W	Actual value of external analog input 41
0x1B50	6992	Float	R/W	Actual value of external analog input 42
0x1B52	6994	Float	R/W	Actual value of external analog input 43
0x1B54	6996	Float	R/W	Actual value of external analog input 44
0x1B56	6998	Float	R/W	Actual value of external analog input 45
0x1B58	7000	Float	R/W	Actual value of external analog input 46
0x1B5A	7002	Float	R/W	Actual value of external analog input 47
0x1B5C	7004	Float	R/W	Actual value of external analog input 48
0x1B5E	7006	Float	R/W	Actual value of external analog input 49
0x1B60	7008	Float	R/W	Actual value of external analog input 50
0x1B62	7010	Float	R/W	Actual value of external analog input 51
0x1B64	7012	Float	R/W	Actual value of external analog input 52
0x1B66	7014	Float	R/W	Actual value of external analog input 53
0x1B68	7016	Float	R/W	Actual value of external analog input 54
0x1B6A	7018	Float	R/W	Actual value of external analog input 55
0x1B6C	7020	Float	R/W	Actual value of external analog input 56
0x1B6E	7022	Float	R/W	Actual value of external analog input 57
0x1B70	7024	Float	R/W	Actual value of external analog input 58
0x1B72	7026	Float	R/W	Actual value of external analog input 59
0x1B74	7028	Float	R/W	Actual value of external analog input 60

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1B76	7030	Float	R/W	Actual value of external analog input 61
0x1B78	7032	Float	R/W	Actual value of external analog input 62
0x1B7A	7034	Float	R/W	Actual value of external analog input 63
0x1B7C	7036	Float	R/W	Actual value of external analog input 64
0x1B7E	7038	Float	R/W	Actual value of external analog input 65
0x1B80	7040	Float	R/W	Actual value of external analog input 66
0x1B82	7042	Float	R/W	Actual value of external analog input 67
0x1B84	7044	Float	R/W	Actual value of external analog input 68
0x1B86	7046	Float	R/W	Actual value of external analog input 69
0x1B88	7048	Float	R/W	Actual value of external analog input 70
0x1B8A	7050	Float	R/W	Actual value of external analog input 71
0x1B8C	7052	Float	R/W	Actual value of external analog input 72
0x1B8E	7054	Float	R/W	Actual value of external analog input 73
0x1B90	7056	Float	R/W	Actual value of external analog input 74
0x1B92	7058	Float	R/W	Actual value of external analog input 75
0x1B94	7060	Float	R/W	Actual value of external analog input 76
0x1B96	7062	Float	R/W	Actual value of external analog input 77
0x1B98	7064	Float	R/W	Actual value of external analog input 78
0x1B9A	7066	Float	R/W	Actual value of external analog input 79
0x1B9C	7068	Float	R/W	Actual value of external analog input 80
0x1B9E	7070	Float	R/W	Actual value of external analog input 81
0x1BA0	7072	Float	R/W	Actual value of external analog input 82
0x1BA2	7074	Float	R/W	Actual value of external analog input 83
0x1BA4	7076	Float	R/W	Actual value of external analog input 84
0x1BA6	7078	Float	R/W	Actual value of external analog input 85
0x1BA8	7080	Float	R/W	Actual value of external analog input 86
0x1BAA	7082	Float	R/W	Actual value of external analog input 87
0x1BAC	7084	Float	R/W	Actual value of external analog input 88
0x1BAE	7086	Float	R/W	Actual value of external analog input 89
0x1BB0	7088	Float	R/W	Actual value of external analog input 90
0x1BB2	7090	Float	R/W	Actual value of external analog input 91
0x1BB4	7092	Float	R/W	Actual value of external analog input 92
0x1BB6	7094	Float	R/W	Actual value of external analog input 93
0x1BB8	7096	Float	R/W	Actual value of external analog input 94
0x1BBA	7098	Float	R/W	Actual value of external analog input 95
0x1BBC	7100	Float	R/W	Actual value of external analog input 96
0x1BBE	7102	Float	R/W	Actual value of external analog input 97
0x1BC0	7104	Float	R/W	Actual value of external analog input 98
0x1BC2	7106	Float	R/W	Actual value of external analog input 99
0x1BC4	7108	Float	R/W	Actual value of external analog input 100
0x1BC6	7110	Float	R/W	Actual value of external analog input 101
0x1BC8	7112	Float	R/W	Actual value of external analog input 102
0x1BCA	7114	Float	R/W	Actual value of external analog input 103
0x1BCC	7116	Float	R/W	Actual value of external analog input 104

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1BCE	7118	Float	R/W	Actual value of external analog input 105
0x1BD0	7120	Float	R/W	Actual value of external analog input 106
0x1BD2	7122	Float	R/W	Actual value of external analog input 107
0x1BD4	7124	Float	R/W	Actual value of external analog input 108
0x1BD6	7126	Float	R/W	Actual value of external analog input 109
0x1BD8	7128	Float	R/W	Actual value of external analog input 110
0x1BDA	7130	Float	R/W	Actual value of external analog input 111
0x1BDC	7132	Float	R/W	Actual value of external analog input 112
0x1BDE	7134	Float	R/W	Actual value of external analog input 113
0x1BE0	7136	Float	R/W	Actual value of external analog input 114
0x1BE2	7138	Float	R/W	Actual value of external analog input 115
0x1BE4	7140	Float	R/W	Actual value of external analog input 116
0x1BE6	7142	Float	R/W	Actual value of external analog input 117
0x1BE8	7144	Float	R/W	Actual value of external analog input 118
0x1BEA	7146	Float	R/W	Actual value of external analog input 119
0x1BEC	7148	Float	R/W	Actual value of external analog input 120
0x1BEE	7150	Word	R/O	High-speed counter 2
0x1BEF	7151	Word	R/O	High-speed counter 3
0x1BF0	7152	Word	R/O	High-speed counter 4
0x1BF1	7153	Word	R/O	High-speed counter 5
0x1BF2	7154	Word	R/O	High-speed counter 6
0x1BF3	7155	Word	R/O	High-speed counter 7
0x1BF4	7156	Word	R/O	High-speed counter 8
0x1BF5	7157	Bool	R/O	Alarm 1 of analog input 7
0x1BF6	7158	Bool	R/O	Alarm 2 of analog input 7
0x1BF7	7159	Bool	R/O	Alarm 1 of analog input 8
0x1BF8	7160	Bool	R/O	Alarm 2 of analog input 8
0x1BF9	7161	Bool	R/O	Alarm 1 of analog input 9
0x1BFA	7162	Bool	R/O	Alarm 2 of analog input 9
0x1BFB	7163	Bool	R/O	Alarm 1 of analog input 10
0x1BFC	7164	Bool	R/O	Alarm 2 of analog input 10
0x1BFD	7165	Bool	R/O	Alarm 1 of analog input 11
0x1BFE	7166	Bool	R/O	Alarm 2 of analog input 11
0x1BFF	7167	Bool	R/O	Alarm 1 of analog input 12
0x1C00	7168	Bool	R/O	Alarm 2 of analog input 12
0x1C01	7169	Bool	R/O	Alarm 1 of analog input 13
0x1C02	7170	Bool	R/O	Alarm 2 of analog input 13
0x1C03	7171	Bool	R/O	Alarm 1 of analog input 14
0x1C04	7172	Bool	R/O	Alarm 2 of analog input 14
0x1C05	7173	Bool	R/O	Alarm 1 of analog input 15
0x1C06	7174	Bool	R/O	Alarm 2 of analog input 15
0x1C07	7175	Bool	R/O	Alarm 1 of analog input 16

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1C08	7176	Bool	R/O	Alarm 2 of analog input 16
0x1C09	7177	Bool	R/O	Alarm 1 of analog input 17
0x1C0A	7178	Bool	R/O	Alarm 2 of analog input 17
0x1C0B	7179	Bool	R/O	Alarm 1 of analog input 18
0x1C0C	7180	Bool	R/O	Alarm 2 of analog input 18
0x1C0D	7181	Bool	R/O	Alarm 1 of counter 7
0x1C0E	7182	Bool	R/O	Alarm 2 of counter 7
0x1C0F	7183	Bool	R/O	Alarm 1 of counter 8
0x1C10	7184	Bool	R/O	Alarm 2 of counter 8
0x1C11	7185	Bool	R/O	Alarm 1 of counter 9
0x1C12	7186	Bool	R/O	Alarm 2 of counter 9
0x1C13	7187	Bool	R/O	Alarm 1 of counter 10
0x1C14	7188	Bool	R/O	Alarm 2 of counter 10
0x1C15	7189	Bool	R/O	Alarm 1 of counter 11
0x1C16	7190	Bool	R/O	Alarm 2 of counter 11
0x1C17	7191	Bool	R/O	Alarm 1 of counter 12
0x1C18	7192	Bool	R/O	Alarm 2 of counter 12
0x1C19	7193	Bool	R/O	Alarm 1 of counter 13
0x1C1A	7194	Bool	R/O	Alarm 2 of counter 13
0x1C1B	7195	Bool	R/O	Alarm 1 of counter 14
0x1C1C	7196	Bool	R/O	Alarm 2 of counter 14
0x1C1D	7197	Bool	R/O	Alarm 1 of counter 15
0x1C1E	7198	Bool	R/O	Alarm 2 of counter 15
0x1C1F	7199	Bool	R/O	Alarm 1 of counter 16
0x1C20	7200	Bool	R/O	Alarm 2 of counter 16
0x1C21	7201	Bool	R/O	Alarm 1 of counter 17
0x1C22	7202	Bool	R/O	Alarm 2 of counter 17
0x1C23	7203	Bool	R/O	Alarm 1 of counter 18
0x1C24	7204	Bool	R/O	Alarm 2 of counter 18
0x1C25	7205	Bool	R/O	Alarm 1 of counter 19
0x1C26	7206	Bool	R/O	Alarm 2 of counter 19
0x1C27	7207	Bool	R/O	Alarm 1 of counter 20
0x1C28	7208	Bool	R/O	Alarm 2 of counter 20
0x1C29	7209	Bool	R/O	Alarm 1 of counter 21
0x1C2A	7210	Bool	R/O	Alarm 2 of counter 21
0x1C2B	7211	Bool	R/O	Alarm 1 of counter 22
0x1C2C	7212	Bool	R/O	Alarm 2 of counter 22
0x1C2D	7213	Bool	R/O	Alarm 1 of counter 23
0x1C2E	7214	Bool	R/O	Alarm 2 of counter 23
0x1C2F	7215	Bool	R/O	Alarm 1 of counter 24
0x1C30	7216	Bool	R/O	Alarm 2 of counter 24
0x1C31	7217	Bool	R/O	Alarm 1 of counter 25
0x1C32	7218	Bool	R/O	Alarm 2 of counter 25

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1C33	7219	Bool	R/O	Alarm 1 of counter 26
0x1C34	7220	Bool	R/O	Alarm 2 of counter 26
0x1C35	7221	Bool	R/O	Alarm 1 of counter 27
0x1C36	7222	Bool	R/O	Alarm 2 of counter 27
0x1C37	7223	Bool	R/O	Alarm 1 of counter 28
0x1C38	7224	Bool	R/O	Alarm 2 of counter 28
0x1C39	7225	Bool	R/O	Alarm 1 of counter 29
0x1C3A	7226	Bool	R/O	Alarm 2 of counter 29
0x1C3B	7227	Bool	R/O	Alarm 1 of counter 30
0x1C3C	7228	Bool	R/O	Alarm 2 of counter 30
0x1C3D	7229	Bool	R/O	Status of math 7
0x1C3E	7230	Bool	R/O	Status of math 8
0x1C3F	7231	Bool	R/O	Status of math 9
0x1C40	7232	Bool	R/O	Status of math 10
0x1C41	7233	Bool	R/O	Status of math 11
0x1C42	7234	Bool	R/O	Status of math 12
0x1C43	7235	Bool	R/O	Status of math 13
0x1C44	7236	Bool	R/O	Status of math 14
0x1C45	7237	Bool	R/O	Status of math 15
0x1C46	7238	Bool	R/O	Status of math 16
0x1C47	7239	Bool	R/O	Status of math 17
0x1C48	7240	Bool	R/O	Status of math 18
0x1C49	7241	Bool	R/O	Status of math 19
0x1C4A	7242	Bool	R/O	Status of math 20
0x1C4B	7243	Bool	R/O	Alarm 1 of math 7
0x1C4C	7244	Bool	R/O	Alarm 2 of math 7
0x1C4D	7245	Bool	R/O	Alarm 1 of math 8
0x1C4E	7246	Bool	R/O	Alarm 2 of math 8
0x1C4F	7247	Bool	R/O	Alarm 1 of math 9
0x1C50	7248	Bool	R/O	Alarm 2 of math 9
0x1C51	7249	Bool	R/O	Alarm 1 of math 10
0x1C52	7250	Bool	R/O	Alarm 2 of math 10
0x1C53	7251	Bool	R/O	Alarm 1 of math 11
0x1C54	7252	Bool	R/O	Alarm 2 of math 11
0x1C55	7253	Bool	R/O	Alarm 1 of math 12
0x1C56	7254	Bool	R/O	Alarm 2 of math 12
0x1C57	7255	Bool	R/O	Alarm 1 of math 13
0x1C58	7256	Bool	R/O	Alarm 2 of math 13
0x1C59	7257	Bool	R/O	Alarm 1 of math 14
0x1C5A	7258	Bool	R/O	Alarm 2 of math 14
0x1C5B	7259	Bool	R/O	Alarm 1 of math 15
0x1C5C	7260	Bool	R/O	Alarm 2 of math 15

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1C5D	7261	Bool	R/O	Alarm 1 of math 16
0x1C5E	7262	Bool	R/O	Alarm 2 of math 16
0x1C5F	7263	Bool	R/O	Alarm 1 of math 17
0x1C60	7264	Bool	R/O	Alarm 2 of math 17
0x1C61	7265	Bool	R/O	Alarm 1 of math 18
0x1C62	7266	Bool	R/O	Alarm 2 of math 18
0x1C63	7267	Bool	R/O	Alarm 1 of math 19
0x1C64	7268	Bool	R/O	Alarm 2 of math 19
0x1C65	7269	Bool	R/O	Alarm 1 of math 20
0x1C66	7270	Bool	R/O	Alarm 2 of math 20
0x1C67	7271	Bool	R/O	Result of logic 7
0x1C68	7272	Bool	R/O	Result of logic 8
0x1C69	7273	Bool	R/O	Result of logic 9
0x1C6A	7274	Bool	R/O	Result of logic 10
0x1C6B	7275	Bool	R/O	Result of logic 11
0x1C6C	7276	Bool	R/O	Result of logic 12
0x1C6D	7277	Bool	R/O	Result of logic 13
0x1C6E	7278	Bool	R/O	Result of logic 14
0x1C6F	7279	Bool	R/O	Result of logic 15
0x1C70	7280	Bool	R/O	Result of logic 16
0x1C71	7281	Bool	R/O	Result of logic 17
0x1C72	7282	Bool	R/O	Result of logic 18
0x1C73	7283	Bool	R/O	Result of logic 19
0x1C74	7284	Bool	R/O	Result of logic 20
0x1C75	7285	Bool	R/O	Alarm of logic 7
0x1C76	7286	Bool	R/O	Alarm of logic 8
0x1C77	7287	Bool	R/O	Alarm of logic 9
0x1C78	7288	Bool	R/O	Alarm of logic 10
0x1C79	7289	Bool	R/O	Alarm of logic 11
0x1C7A	7290	Bool	R/O	Alarm of logic 12
0x1C7B	7291	Bool	R/O	Alarm of logic 13
0x1C7C	7292	Bool	R/O	Alarm of logic 14
0x1C7D	7293	Bool	R/O	Alarm of logic 15
0x1C7E	7294	Bool	R/O	Alarm of logic 16
0x1C7F	7295	Bool	R/O	Alarm of logic 17
0x1C80	7296	Bool	R/O	Alarm of logic 18
0x1C81	7297	Bool	R/O	Alarm of logic 19
0x1C82	7298	Bool	R/O	Alarm of logic 20
0x1C83	7299	Bool	R/O	Alarm 1 of external analog input 25
0x1C84	7300	Bool	R/O	Alarm 2 of external analog input 25
0x1C85	7301	Bool	R/O	Alarm 1 of external analog input 26

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1C86	7302	Bool	R/O	Alarm 2 of external analog input 26
0x1C87	7303	Bool	R/O	Alarm 1 of external analog input 27
0x1C88	7304	Bool	R/O	Alarm 2 of external analog input 27
0x1C89	7305	Bool	R/O	Alarm 1 of external analog input 28
0x1C8A	7306	Bool	R/O	Alarm 2 of external analog input 28
0x1C8B	7307	Bool	R/O	Alarm 1 of external analog input 29
0x1C8C	7308	Bool	R/O	Alarm 2 of external analog input 29
0x1C8D	7309	Bool	R/O	Alarm 1 of external analog input 30
0x1C8E	7310	Bool	R/O	Alarm 2 of external analog input 30
0x1C8F	7311	Bool	R/O	Alarm 1 of external analog input 31
0x1C90	7312	Bool	R/O	Alarm 2 of external analog input 31
0x1C91	7313	Bool	R/O	Alarm 1 of external analog input 32
0x1C92	7314	Bool	R/O	Alarm 2 of external analog input 32
0x1C93	7315	Bool	R/O	Alarm 1 of external analog input 33
0x1C94	7316	Bool	R/O	Alarm 2 of external analog input 33
0x1C95	7317	Bool	R/O	Alarm 1 of external analog input 34
0x1C96	7318	Bool	R/O	Alarm 2 of external analog input 34
0x1C97	7319	Bool	R/O	Alarm 1 of external analog input 35
0x1C98	7320	Bool	R/O	Alarm 2 of external analog input 35
0x1C99	7321	Bool	R/O	Alarm 1 of external analog input 36
0x1C9A	7322	Bool	R/O	Alarm 2 of external analog input 36
0x1C9B	7323	Bool	R/O	Alarm 1 of external analog input 37
0x1C9C	7324	Bool	R/O	Alarm 2 of external analog input 37
0x1C9D	7325	Bool	R/O	Alarm 1 of external analog input 38
0x1C9E	7326	Bool	R/O	Alarm 2 of external analog input 38
0x1C9F	7327	Bool	R/O	Alarm 1 of external analog input 39
0x1CA0	7328	Bool	R/O	Alarm 2 of external analog input 39
0x1CA1	7329	Bool	R/O	Alarm 1 of external analog input 40
0x1CA2	7330	Bool	R/O	Alarm 2 of external analog input 40
0x1CA3	7331	Bool	R/O	Alarm 1 of external analog input 41
0x1CA4	7332	Bool	R/O	Alarm 2 of external analog input 41
0x1CA5	7333	Bool	R/O	Alarm 1 of external analog input 42
0x1CA6	7334	Bool	R/O	Alarm 2 of external analog input 42
0x1CA7	7335	Bool	R/O	Alarm 1 of external analog input 43
0x1CA8	7336	Bool	R/O	Alarm 2 of external analog input 43
0x1CA9	7337	Bool	R/O	Alarm 1 of external analog input 44
0x1CAA	7338	Bool	R/O	Alarm 2 of external analog input 44
0x1CAB	7339	Bool	R/O	Alarm 1 of external analog input 45
0x1CAC	7340	Bool	R/O	Alarm 2 of external analog input 45
0x1CAD	7341	Bool	R/O	Alarm 1 of external analog input 46
0x1CAE	7342	Bool	R/O	Alarm 2 of external analog input 46
0x1CAF	7343	Bool	R/O	Alarm 1 of external analog input 47
0x1CB0	7344	Bool	R/O	Alarm 2 of external analog input 47
0x1CB1	7345	Bool	R/O	Alarm 1 of external analog input 48

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1CB2	7346	Bool	R/O	Alarm 2 of external analog input 48
0x1CB3	7347	Bool	R/O	Alarm 1 of external analog input 49
0x1CB4	7348	Bool	R/O	Alarm 2 of external analog input 49
0x1CB5	7349	Bool	R/O	Alarm 1 of external analog input 50
0x1CB6	7350	Bool	R/O	Alarm 2 of external analog input 50
0x1CB7	7351	Bool	R/O	Alarm 1 of external analog input 51
0x1CB8	7352	Bool	R/O	Alarm 2 of external analog input 51
0x1CB9	7353	Bool	R/O	Alarm 1 of external analog input 52
0x1CBA	7354	Bool	R/O	Alarm 2 of external analog input 52
0x1CBB	7355	Bool	R/O	Alarm 1 of external analog input 53
0x1CBC	7356	Bool	R/O	Alarm 2 of external analog input 53
0x1CBD	7357	Bool	R/O	Alarm 1 of external analog input 54
0x1CBE	7358	Bool	R/O	Alarm 2 of external analog input 54
0x1CBF	7359	Bool	R/O	Alarm 1 of external analog input 55
0x1CC0	7360	Bool	R/O	Alarm 2 of external analog input 55
0x1CC1	7361	Bool	R/O	Alarm 1 of external analog input 56
0x1CC2	7362	Bool	R/O	Alarm 2 of external analog input 56
0x1CC3	7363	Bool	R/O	Alarm 1 of external analog input 57
0x1CC4	7364	Bool	R/O	Alarm 2 of external analog input 57
0x1CC5	7365	Bool	R/O	Alarm 1 of external analog input 58
0x1CC6	7366	Bool	R/O	Alarm 2 of external analog input 58
0x1CC7	7367	Bool	R/O	Alarm 1 of external analog input 59
0x1CC8	7368	Bool	R/O	Alarm 2 of external analog input 59
0x1CC9	7369	Bool	R/O	Alarm 1 of external analog input 60
0x1CCA	7370	Bool	R/O	Alarm 2 of external analog input 60
0x1CCB	7371	Bool	R/O	Alarm 1 of external analog input 61
0x1CCC	7372	Bool	R/O	Alarm 2 of external analog input 61
0x1CCD	7373	Bool	R/O	Alarm 1 of external analog input 62
0x1CCE	7374	Bool	R/O	Alarm 2 of external analog input 62
0x1CCF	7375	Bool	R/O	Alarm 1 of external analog input 63
0x1CD0	7376	Bool	R/O	Alarm 2 of external analog input 63
0x1CD1	7377	Bool	R/O	Alarm 1 of external analog input 64
0x1CD2	7378	Bool	R/O	Alarm 2 of external analog input 64
0x1CD3	7379	Bool	R/O	Alarm 1 of external analog input 65
0x1CD4	7380	Bool	R/O	Alarm 2 of external analog input 65
0x1CD5	7381	Bool	R/O	Alarm 1 of external analog input 66
0x1CD6	7382	Bool	R/O	Alarm 2 of external analog input 66
0x1CD7	7383	Bool	R/O	Alarm 1 of external analog input 67
0x1CD8	7384	Bool	R/O	Alarm 2 of external analog input 67
0x1CD9	7385	Bool	R/O	Alarm 1 of external analog input 68
0x1CDA	7386	Bool	R/O	Alarm 2 of external analog input 68
0x1CDB	7387	Bool	R/O	Alarm 1 of external analog input 69
0x1CDC	7388	Bool	R/O	Alarm 2 of external analog input 69
0x1CDD	7389	Bool	R/O	Alarm 1 of external analog input 70

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1CDE	7390	Bool	R/O	Alarm 2 of external analog input 70
0x1CDF	7391	Bool	R/O	Alarm 1 of external analog input 71
0x1CE0	7392	Bool	R/O	Alarm 2 of external analog input 71
0x1CE1	7393	Bool	R/O	Alarm 1 of external analog input 72
0x1CE2	7394	Bool	R/O	Alarm 2 of external analog input 72
0x1CE3	7395	Bool	R/O	Alarm 1 of external analog input 73
0x1CE4	7396	Bool	R/O	Alarm 2 of external analog input 73
0x1CE5	7397	Bool	R/O	Alarm 1 of external analog input 74
0x1CE6	7398	Bool	R/O	Alarm 2 of external analog input 74
0x1CE7	7399	Bool	R/O	Alarm 1 of external analog input 75
0x1CE8	7400	Bool	R/O	Alarm 2 of external analog input 75
0x1CE9	7401	Bool	R/O	Alarm 1 of external analog input 76
0x1CEA	7402	Bool	R/O	Alarm 2 of external analog input 76
0x1CEB	7403	Bool	R/O	Alarm 1 of external analog input 77
0x1CEC	7404	Bool	R/O	Alarm 2 of external analog input 77
0x1CED	7405	Bool	R/O	Alarm 1 of external analog input 78
0x1CEE	7406	Bool	R/O	Alarm 2 of external analog input 78
0x1CEF	7407	Bool	R/O	Alarm 1 of external analog input 79
0x1CF0	7408	Bool	R/O	Alarm 2 of external analog input 79
0x1CF1	7409	Bool	R/O	Alarm 1 of external analog input 80
0x1CF2	7410	Bool	R/O	Alarm 2 of external analog input 80
0x1CF3	7411	Bool	R/O	Alarm 1 of external analog input 81
0x1CF4	7412	Bool	R/O	Alarm 2 of external analog input 81
0x1CF5	7413	Bool	R/O	Alarm 1 of external analog input 82
0x1CF6	7414	Bool	R/O	Alarm 2 of external analog input 82
0x1CF7	7415	Bool	R/O	Alarm 1 of external analog input 83
0x1CF8	7416	Bool	R/O	Alarm 2 of external analog input 83
0x1CF9	7417	Bool	R/O	Alarm 1 of external analog input 84
0x1CFA	7418	Bool	R/O	Alarm 2 of external analog input 84
0x1CFB	7419	Bool	R/O	Alarm 1 of external analog input 85
0x1CFC	7420	Bool	R/O	Alarm 2 of external analog input 85
0x1CFD	7421	Bool	R/O	Alarm 1 of external analog input 86
0x1CFE	7422	Bool	R/O	Alarm 2 of external analog input 86
0x1CFF	7423	Bool	R/O	Alarm 1 of external analog input 87
0x1D00	7424	Bool	R/O	Alarm 2 of external analog input 87
0x1D01	7425	Bool	R/O	Alarm 1 of external analog input 88
0x1D02	7426	Bool	R/O	Alarm 2 of external analog input 88
0x1D03	7427	Bool	R/O	Alarm 1 of external analog input 89
0x1D04	7428	Bool	R/O	Alarm 2 of external analog input 89
0x1D05	7429	Bool	R/O	Alarm 1 of external analog input 90
0x1D06	7430	Bool	R/O	Alarm 2 of external analog input 90
0x1D07	7431	Bool	R/O	Alarm 1 of external analog input 91
0x1D08	7432	Bool	R/O	Alarm 2 of external analog input 91
0x1D09	7433	Bool	R/O	Alarm 1 of external analog input 92

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1D0A	7434	Bool	R/O	Alarm 2 of external analog input 92
0x1D0B	7435	Bool	R/O	Alarm 1 of external analog input 93
0x1D0C	7436	Bool	R/O	Alarm 2 of external analog input 93
0x1D0D	7437	Bool	R/O	Alarm 1 of external analog input 94
0x1D0E	7438	Bool	R/O	Alarm 2 of external analog input 94
0x1D0F	7439	Bool	R/O	Alarm 1 of external analog input 95
0x1D10	7440	Bool	R/O	Alarm 2 of external analog input 95
0x1D11	7441	Bool	R/O	Alarm 1 of external analog input 96
0x1D12	7442	Bool	R/O	Alarm 2 of external analog input 96
0x1D13	7443	Bool	R/O	Alarm 1 of external analog input 97
0x1D14	7444	Bool	R/O	Alarm 2 of external analog input 97
0x1D15	7445	Bool	R/O	Alarm 1 of external analog input 98
0x1D16	7446	Bool	R/O	Alarm 2 of external analog input 98
0x1D17	7447	Bool	R/O	Alarm 1 of external analog input 99
0x1D18	7448	Bool	R/O	Alarm 2 of external analog input 99
0x1D19	7449	Bool	R/O	Alarm 1 of external analog input 100
0x1D1A	7450	Bool	R/O	Alarm 2 of external analog input 100
0x1D1B	7451	Bool	R/O	Alarm 1 of external analog input 101
0x1D1C	7452	Bool	R/O	Alarm 2 of external analog input 101
0x1D1D	7453	Bool	R/O	Alarm 1 of external analog input 102
0x1D1E	7454	Bool	R/O	Alarm 2 of external analog input 102
0x1D1F	7455	Bool	R/O	Alarm 1 of external analog input 103
0x1D20	7456	Bool	R/O	Alarm 2 of external analog input 103
0x1D21	7457	Bool	R/O	Alarm 1 of external analog input 104
0x1D22	7458	Bool	R/O	Alarm 2 of external analog input 104
0x1D23	7459	Bool	R/O	Alarm 1 of external analog input 105
0x1D24	7460	Bool	R/O	Alarm 2 of external analog input 105
0x1D25	7461	Bool	R/O	Alarm 1 of external analog input 106
0x1D26	7462	Bool	R/O	Alarm 2 of external analog input 106
0x1D27	7463	Bool	R/O	Alarm 1 of external analog input 107
0x1D28	7464	Bool	R/O	Alarm 2 of external analog input 107
0x1D29	7465	Bool	R/O	Alarm 1 of external analog input 108
0x1D2A	7466	Bool	R/O	Alarm 2 of external analog input 108
0x1D2B	7467	Bool	R/O	Alarm 1 of external analog input 109
0x1D2C	7468	Bool	R/O	Alarm 2 of external analog input 109
0x1D2D	7469	Bool	R/O	Alarm 1 of external analog input 110
0x1D2E	7470	Bool	R/O	Alarm 2 of external analog input 110
0x1D2F	7471	Bool	R/O	Alarm 1 of external analog input 111
0x1D30	7472	Bool	R/O	Alarm 2 of external analog input 111
0x1D31	7473	Bool	R/O	Alarm 1 of external analog input 112
0x1D32	7474	Bool	R/O	Alarm 2 of external analog input 112
0x1D33	7475	Bool	R/O	Alarm 1 of external analog input 113
0x1D34	7476	Bool	R/O	Alarm 2 of external analog input 113
0x1D35	7477	Bool	R/O	Alarm 1 of external analog input 114

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1D36	7478	Bool	R/O	Alarm 2 of external analog input 114
0x1D37	7479	Bool	R/O	Alarm 1 of external analog input 115
0x1D38	7480	Bool	R/O	Alarm 2 of external analog input 115
0x1D39	7481	Bool	R/O	Alarm 1 of external analog input 116
0x1D3A	7482	Bool	R/O	Alarm 2 of external analog input 116
0x1D3B	7483	Bool	R/O	Alarm 1 of external analog input 117
0x1D3C	7484	Bool	R/O	Alarm 2 of external analog input 117
0x1D3D	7485	Bool	R/O	Alarm 1 of external analog input 118
0x1D3E	7486	Bool	R/O	Alarm 2 of external analog input 118
0x1D3F	7487	Bool	R/O	Alarm 1 of external analog input 119
0x1D40	7488	Bool	R/O	Alarm 2 of external analog input 119
0x1D41	7489	Bool	R/O	Alarm 1 of external analog input 120
0x1D42	7490	Bool	R/O	Alarm 2 of external analog input 120
0x1D43	7491	Bool	R/O	Value of digital input 13
0x1D44	7492	Bool	R/O	Value of digital input 14
0x1D45	7493	Bool	R/O	Value of digital input 15
0x1D46	7494	Bool	R/O	Value of digital input 16
0x1D47	7495	Bool	R/O	Value of digital input 17
0x1D48	7496	Bool	R/O	Value of digital input 18
0x1D49	7497	Bool	R/O	Value of digital input/output 13
0x1D4A	7498	Bool	R/O	Value of digital input/output 14
0x1D4B	7499	Bool	R/O	Value of digital input/output 15
0x1D4C	7500	Bool	R/O	Value of digital input/output 16
0x1D4D	7501	Bool	R/O	Value of digital input/output 17
0x1D4E	7502	Bool	R/O	Value of digital input/output 18
0x1D4F	7503	Bool	R/O	Value of digital input/output 19
0x1D50	7504	Bool	R/O	Value of digital input/output 20
0x1D51	7505	Bool	R/O	Value of digital input/output 21
0x1D52	7506	Bool	R/O	Value of digital input/output 22
0x1D53	7507	Bool	R/O	Value of digital input/output 23
0x1D54	7508	Bool	R/O	Value of digital input/output 24
0x1D55	7509	Bool	R/O	Value of relay output 2
0x1D56	7510	Bool	R/O	Value of relay output 3
0x1D57	7511	Bool	R/O	Value of relay output 4
0x1D58	7512	Bool	R/O	Value of relay output 5
0x1D59	7513	Bool	R/O	Value of relay output 6
0x1D5A	7514	Bool	R/O	Value of relay output 7
0x1D5B	7515	Bool	R/O	Alarm of digital input 13
0x1D5C	7516	Bool	R/O	Alarm of digital input 14
0x1D5D	7517	Bool	R/O	Alarm of digital input 15

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1D5E	7518	Bool	R/O	Alarm of digital input 16
0x1D5F	7519	Bool	R/O	Alarm of digital input 18
0x1D60	7520	Bool	R/O	Alarm of digital input 18
0x1D61	7521	Bool	R/O	Alarm of digital input/output 13
0x1D62	7522	Bool	R/O	Alarm of digital input/output 14
0x1D63	7523	Bool	R/O	Alarm of digital input/output 15
0x1D64	7524	Bool	R/O	Alarm of digital input/output 16
0x1D65	7525	Bool	R/O	Alarm of digital input/output 17
0x1D66	7526	Bool	R/O	Alarm of digital input/output 18
0x1D67	7527	Bool	R/O	Alarm of digital input/output 19
0x1D68	7528	Bool	R/O	Alarm of digital input/output 20
0x1D69	7529	Bool	R/O	Alarm of digital input/output 21
0x1D6A	7530	Bool	R/O	Alarm of digital input/output 22
0x1D6B	7531	Bool	R/O	Alarm of digital input/output 23
0x1D6C	7532	Bool	R/O	Alarm of digital input/output 24
0x1D6D	7533	Bool	R/O	Alarm of external digital input 25
0x1D6E	7534	Bool	R/O	Alarm of external digital input 26
0x1D6F	7535	Bool	R/O	Alarm of external digital input 27
0x1D70	7536	Bool	R/O	Alarm of external digital input 28
0x1D71	7537	Bool	R/O	Alarm of external digital input 29
0x1D72	7538	Bool	R/O	Alarm of external digital input 30
0x1D73	7539	Bool	R/O	Alarm of external digital input 31
0x1D74	7540	Bool	R/O	Alarm of external digital input 32
0x1D75	7541	Bool	R/O	Alarm of external digital input 33
0x1D76	7542	Bool	R/O	Alarm of external digital input 34
0x1D77	7543	Bool	R/O	Alarm of external digital input 35
0x1D78	7544	Bool	R/O	Alarm of external digital input 36
0x1D79	7545	Bool	R/O	Alarm of external digital input 37
0x1D7A	7546	Bool	R/O	Alarm of external digital input 38
0x1D7B	7547	Bool	R/O	Alarm of external digital input 39
0x1D7C	7548	Bool	R/O	Alarm of external digital input 40
0x1D7D	7549	Bool	R/O	Alarm of external digital input 41
0x1D7E	7550	Bool	R/O	Alarm of external digital input 42
0x1D7F	7551	Bool	R/O	Alarm of external digital input 43
0x1D80	7552	Bool	R/O	Alarm of external digital input 44
0x1D81	7553	Bool	R/O	Alarm of external digital input 45
0x1D82	7554	Bool	R/O	Alarm of external digital input 46
0x1D83	7555	Bool	R/O	Alarm of external digital input 47
0x1D84	7556	Bool	R/O	Alarm of external digital input 48
0x1D85	7557	Bool	R/O	Alarm of external digital input 49
0x1D86	7558	Bool	R/O	Alarm of external digital input 50
0x1D87	7559	Bool	R/O	Alarm of external digital input 51

7 Modbus address tables

Address Hex.	Dec.	Data type	Access	Designation
0x1D88	7560	Bool	R/O	Alarm of external digital input 52
0x1D89	7561	Bool	R/O	Alarm of external digital input 53
0x1D8A	7562	Bool	R/O	Alarm of external digital input 54
0x1D8B	7563	Bool	R/O	Alarm of external digital input 55
0x1D8C	7564	Bool	R/O	Alarm of external digital input 56
0x1D8D	7565	Bool	R/O	Alarm of external digital input 57
0x1D8E	7566	Bool	R/O	Alarm of external digital input 58
0x1D8F	7567	Bool	R/O	Alarm of external digital input 59
0x1D90	7568	Bool	R/O	Alarm of external digital input 60
0x1D91	7569	Bool	R/O	Alarm of external digital input 61
0x1D92	7570	Bool	R/O	Alarm of external digital input 62
0x1D93	7571	Bool	R/O	Alarm of external digital input 63
0x1D94	7572	Bool	R/O	Alarm of external digital input 64
0x1D95	7573	Bool	R/O	Alarm of external digital input 65
0x1D96	7574	Bool	R/O	Alarm of external digital input 66
0x1D97	7575	Bool	R/O	Alarm of external digital input 67
0x1D98	7576	Bool	R/O	Alarm of external digital input 68
0x1D99	7577	Bool	R/O	Alarm of external digital input 69
0x1D9A	7578	Bool	R/O	Alarm of external digital input 70
0x1D9B	7579	Bool	R/O	Alarm of external digital input 71
0x1D9C	7580	Bool	R/O	Alarm of external digital input 72
0x1D9D	7581	Bool	R/O	Alarm of external digital input 73
0x1D9E	7582	Bool	R/O	Alarm of external digital input 74
0x1D9F	7583	Bool	R/O	Alarm of external digital input 75
0x1DA0	7584	Bool	R/O	Alarm of external digital input 76
0x1DA1	7585	Bool	R/O	Alarm of external digital input 77
0x1DA2	7586	Bool	R/O	Alarm of external digital input 78
0x1DA3	7587	Bool	R/O	Alarm of external digital input 79
0x1DA4	7588	Bool	R/O	Alarm of external digital input 80
0x1DA5	7589	Bool	R/O	Alarm of external digital input 81
0x1DA6	7590	Bool	R/O	Alarm of external digital input 82
0x1DA7	7591	Bool	R/O	Alarm of external digital input 83
0x1DA8	7592	Bool	R/O	Alarm of external digital input 84
0x1DA9	7593	Bool	R/O	Alarm of external digital input 85
0x1DAA	7594	Bool	R/O	Alarm of external digital input 86
0x1DAB	7595	Bool	R/O	Alarm of external digital input 87
0x1DAC	7596	Bool	R/O	Alarm of external digital input 88
0x1DAD	7597	Bool	R/O	Alarm of external digital input 89
0x1DAE	7598	Bool	R/O	Alarm of external digital input 90
0x1DAF	7599	Bool	R/O	Alarm of external digital input 91
0x1DB0	7600	Bool	R/O	Alarm of external digital input 92
0x1DB1	7601	Bool	R/O	Alarm of external digital input 93
0x1DB2	7602	Bool	R/O	Alarm of external digital input 94
0x1DB3	7603	Bool	R/O	Alarm of external digital input 95

7 Modbus address tables

Address Hex.	Dec.	Data type	Access	Designation
0x1DB4	7604	Bool	R/O	Alarm of external digital input 96
0x1DB5	7605	Bool	R/O	Alarm of external digital input 97
0x1DB6	7606	Bool	R/O	Alarm of external digital input 98
0x1DB7	7607	Bool	R/O	Alarm of external digital input 99
0x1DB8	7608	Bool	R/O	Alarm of external digital input 100
0x1DB9	7609	Bool	R/O	Alarm of external digital input 101
0x1DBA	7610	Bool	R/O	Alarm of external digital input 102
0x1DBB	7611	Bool	R/O	Alarm of external digital input 103
0x1DBC	7612	Bool	R/O	Alarm of external digital input 104
0x1DBD	7613	Bool	R/O	Alarm of external digital input 105
0x1DBE	7614	Bool	R/O	Alarm of external digital input 106
0x1DBF	7615	Bool	R/O	Alarm of external digital input 107
0x1DC0	7616	Bool	R/O	Alarm of external digital input 108
0x1DC1	7617	Bool	R/O	Alarm of external digital input 109
0x1DC2	7618	Bool	R/O	Alarm of external digital input 110
0x1DC3	7619	Bool	R/O	Alarm of external digital input 111
0x1DC4	7620	Bool	R/O	Alarm of external digital input 112
0x1DC5	7621	Bool	R/O	Alarm of external digital input 113
0x1DC6	7622	Bool	R/O	Alarm of external digital input 114
0x1DC7	7623	Bool	R/O	Alarm of external digital input 115
0x1DC8	7624	Bool	R/O	Alarm of external digital input 116
0x1DC9	7625	Bool	R/O	Alarm of external digital input 117
0x1DCA	7626	Bool	R/O	Alarm of external digital input 118
0x1DCB	7627	Bool	R/O	Alarm of external digital input 119
0x1DCC	7628	Bool	R/O	Alarm of external digital input 120
0x1DCD	7629	Bool	R/O	Status of limit value monitoring 25
0x1DCE	7630	Bool	R/O	Status of limit value monitoring 26
0x1DCF	7631	Bool	R/O	Status of limit value monitoring 27
0x1DD0	7632	Bool	R/O	Status of limit value monitoring 28
0x1DD1	7633	Bool	R/O	Status of limit value monitoring 29
0x1DD2	7634	Bool	R/O	Status of limit value monitoring 30
0x1DD3	7635	Bool	R/O	Status of limit value monitoring 31
0x1DD4	7636	Bool	R/O	Status of limit value monitoring 32
0x1DD5	7637	Bool	R/O	Status of limit value monitoring 33
0x1DD6	7638	Bool	R/O	Status of limit value monitoring 34
0x1DD7	7639	Bool	R/O	Status of limit value monitoring 35
0x1DD8	7640	Bool	R/O	Status of limit value monitoring 36
0x1DD9	7641	Bool	R/O	Status of limit value monitoring 37
0x1DDA	7642	Bool	R/O	Status of limit value monitoring 38
0x1ddb	7643	Bool	R/O	Status of limit value monitoring 39
0x1DDC	7644	Bool	R/O	Status of limit value monitoring 40
0x1DDD	7645	Bool	R/O	Status of limit value monitoring 41
0x1DDE	7646	Bool	R/O	Status of limit value monitoring 42

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1E0B	7691	Bool	R/O	Status of limit value monitoring 87
0x1E0C	7692	Bool	R/O	Status of limit value monitoring 88
0x1E0D	7693	Bool	R/O	Status of limit value monitoring 89
0x1E0E	7694	Bool	R/O	Status of limit value monitoring 90
0x1E0F	7695	Bool	R/O	Status of limit value monitoring 91
0x1E10	7696	Bool	R/O	Status of limit value monitoring 92
0x1E11	7697	Bool	R/O	Status of limit value monitoring 93
0x1E12	7698	Bool	R/O	Status of limit value monitoring 94
0x1E13	7699	Bool	R/O	Status of limit value monitoring 95
0x1E14	7700	Bool	R/O	Status of limit value monitoring 96
0x1E15	7701	Bool	R/O	Status of limit value monitoring 97
0x1E16	7702	Bool	R/O	Status of limit value monitoring 98
0x1E17	7703	Bool	R/O	Status of limit value monitoring 99
0x1E18	7704	Bool	R/O	Status of limit value monitoring 100
0x1E19	7705	Bool	R/O	Status of limit value monitoring 101
0x1E1A	7706	Bool	R/O	Status of limit value monitoring 102
0x1E1B	7707	Bool	R/O	Status of limit value monitoring 103
0x1E1C	7708	Bool	R/O	Status of limit value monitoring 104
0x1E1D	7709	Bool	R/O	Status of limit value monitoring 105
0x1E1E	7710	Bool	R/O	Status of limit value monitoring 106
0x1E1F	7711	Bool	R/O	Status of limit value monitoring 107
0x1E20	7712	Bool	R/O	Status of limit value monitoring 108
0x1E21	7713	Bool	R/O	Status of limit value monitoring 109
0x1E22	7714	Bool	R/O	Status of limit value monitoring 110
0x1E23	7715	Bool	R/O	Status of limit value monitoring 111
0x1E24	7716	Bool	R/O	Status of limit value monitoring 112
0x1E25	7717	Bool	R/O	Status of limit value monitoring 113
0x1E26	7718	Bool	R/O	Status of limit value monitoring 114
0x1E27	7719	Bool	R/O	Status of limit value monitoring 115
0x1E28	7720	Bool	R/O	Status of limit value monitoring 116
0x1E29	7721	Bool	R/O	Status of limit value monitoring 117
0x1E2A	7722	Bool	R/O	Status of limit value monitoring 118
0x1E2B	7723	Bool	R/O	Status of limit value monitoring 119
0x1E2C	7724	Bool	R/O	Status of limit value monitoring 120
0x1E2D	7725	Bool	R/O	Alarm of limit value monitoring 25
0x1E2E	7726	Bool	R/O	Alarm of limit value monitoring 26
0x1E2F	7727	Bool	R/O	Alarm of limit value monitoring 27
0x1E30	7728	Bool	R/O	Alarm of limit value monitoring 28
0x1E31	7729	Bool	R/O	Alarm of limit value monitoring 29
0x1E32	7730	Bool	R/O	Alarm of limit value monitoring 30
0x1E33	7731	Bool	R/O	Alarm of limit value monitoring 31
0x1E34	7732	Bool	R/O	Alarm of limit value monitoring 32
0x1E35	7733	Bool	R/O	Alarm of limit value monitoring 33

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1E36	7734	Bool	R/O	Alarm of limit value monitoring 34
0x1E37	7735	Bool	R/O	Alarm of limit value monitoring 35
0x1E38	7736	Bool	R/O	Alarm of limit value monitoring 36
0x1E39	7737	Bool	R/O	Alarm of limit value monitoring 37
0x1E3A	7738	Bool	R/O	Alarm of limit value monitoring 38
0x1E3B	7739	Bool	R/O	Alarm of limit value monitoring 39
0x1E3C	7740	Bool	R/O	Alarm of limit value monitoring 40
0x1E3D	7741	Bool	R/O	Alarm of limit value monitoring 41
0x1E3E	7742	Bool	R/O	Alarm of limit value monitoring 42
0x1E3F	7743	Bool	R/O	Alarm of limit value monitoring 43
0x1E40	7744	Bool	R/O	Alarm of limit value monitoring 44
0x1E41	7745	Bool	R/O	Alarm of limit value monitoring 45
0x1E42	7746	Bool	R/O	Alarm of limit value monitoring 46
0x1E43	7747	Bool	R/O	Alarm of limit value monitoring 47
0x1E44	7748	Bool	R/O	Alarm of limit value monitoring 48
0x1E45	7749	Bool	R/O	Alarm of limit value monitoring 49
0x1E46	7750	Bool	R/O	Alarm of limit value monitoring 50
0x1E47	7751	Bool	R/O	Alarm of limit value monitoring 51
0x1E48	7752	Bool	R/O	Alarm of limit value monitoring 52
0x1E49	7753	Bool	R/O	Alarm of limit value monitoring 53
0x1E4A	7754	Bool	R/O	Alarm of limit value monitoring 54
0x1E4B	7755	Bool	R/O	Alarm of limit value monitoring 55
0x1E4C	7756	Bool	R/O	Alarm of limit value monitoring 56
0x1E4D	7757	Bool	R/O	Alarm of limit value monitoring 57
0x1E4E	7758	Bool	R/O	Alarm of limit value monitoring 58
0x1E4F	7759	Bool	R/O	Alarm of limit value monitoring 59
0x1E50	7760	Bool	R/O	Alarm of limit value monitoring 60
0x1E51	7761	Bool	R/O	Alarm of limit value monitoring 61
0x1E52	7762	Bool	R/O	Alarm of limit value monitoring 62
0x1E53	7763	Bool	R/O	Alarm of limit value monitoring 63
0x1E54	7764	Bool	R/O	Alarm of limit value monitoring 64
0x1E55	7765	Bool	R/O	Alarm of limit value monitoring 65
0x1E56	7766	Bool	R/O	Alarm of limit value monitoring 66
0x1E57	7767	Bool	R/O	Alarm of limit value monitoring 67
0x1E58	7768	Bool	R/O	Alarm of limit value monitoring 68
0x1E59	7769	Bool	R/O	Alarm of limit value monitoring 69
0x1E5A	7770	Bool	R/O	Alarm of limit value monitoring 70
0x1E5B	7771	Bool	R/O	Alarm of limit value monitoring 71
0x1E5C	7772	Bool	R/O	Alarm of limit value monitoring 72
0x1E5D	7773	Bool	R/O	Alarm of limit value monitoring 73
0x1E5E	7774	Bool	R/O	Alarm of limit value monitoring 74
0x1E5F	7775	Bool	R/O	Alarm of limit value monitoring 75
0x1E60	7776	Bool	R/O	Alarm of limit value monitoring 76
0x1E61	7777	Bool	R/O	Alarm of limit value monitoring 77

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1E62	7778	Bool	R/O	Alarm of limit value monitoring 78
0x1E63	7779	Bool	R/O	Alarm of limit value monitoring 79
0x1E64	7780	Bool	R/O	Alarm of limit value monitoring 80
0x1E65	7781	Bool	R/O	Alarm of limit value monitoring 81
0x1E66	7782	Bool	R/O	Alarm of limit value monitoring 82
0x1E67	7783	Bool	R/O	Alarm of limit value monitoring 83
0x1E68	7784	Bool	R/O	Alarm of limit value monitoring 84
0x1E69	7785	Bool	R/O	Alarm of limit value monitoring 85
0x1E6A	7786	Bool	R/O	Alarm of limit value monitoring 86
0x1E6B	7787	Bool	R/O	Alarm of limit value monitoring 87
0x1E6C	7788	Bool	R/O	Alarm of limit value monitoring 88
0x1E6D	7789	Bool	R/O	Alarm of limit value monitoring 89
0x1E6E	7790	Bool	R/O	Alarm of limit value monitoring 90
0x1E6F	7791	Bool	R/O	Alarm of limit value monitoring 91
0x1E70	7792	Bool	R/O	Alarm of limit value monitoring 92
0x1E71	7793	Bool	R/O	Alarm of limit value monitoring 93
0x1E72	7794	Bool	R/O	Alarm of limit value monitoring 94
0x1E73	7795	Bool	R/O	Alarm of limit value monitoring 95
0x1E74	7796	Bool	R/O	Alarm of limit value monitoring 96
0x1E75	7797	Bool	R/O	Alarm of limit value monitoring 97
0x1E76	7798	Bool	R/O	Alarm of limit value monitoring 98
0x1E77	7799	Bool	R/O	Alarm of limit value monitoring 99
0x1E78	7800	Bool	R/O	Alarm of limit value monitoring 100
0x1E79	7801	Bool	R/O	Alarm of limit value monitoring 101
0x1E7A	7802	Bool	R/O	Alarm of limit value monitoring 102
0x1E7B	7803	Bool	R/O	Alarm of limit value monitoring 103
0x1E7C	7804	Bool	R/O	Alarm of limit value monitoring 104
0x1E7D	7805	Bool	R/O	Alarm of limit value monitoring 105
0x1E7E	7806	Bool	R/O	Alarm of limit value monitoring 106
0x1E7F	7807	Bool	R/O	Alarm of limit value monitoring 107
0x1E80	7808	Bool	R/O	Alarm of limit value monitoring 108
0x1E81	7809	Bool	R/O	Alarm of limit value monitoring 109
0x1E82	7810	Bool	R/O	Alarm of limit value monitoring 110
0x1E83	7811	Bool	R/O	Alarm of limit value monitoring 111
0x1E84	7812	Bool	R/O	Alarm of limit value monitoring 112
0x1E85	7813	Bool	R/O	Alarm of limit value monitoring 113
0x1E86	7814	Bool	R/O	Alarm of limit value monitoring 114
0x1E87	7815	Bool	R/O	Alarm of limit value monitoring 115
0x1E88	7816	Bool	R/O	Alarm of limit value monitoring 116
0x1E89	7817	Bool	R/O	Alarm of limit value monitoring 117
0x1E8A	7818	Bool	R/O	Alarm of limit value monitoring 118
0x1E8B	7819	Bool	R/O	Alarm of limit value monitoring 119
0x1E8C	7820	Bool	R/O	Alarm of limit value monitoring 120

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1E8D	7821	Bool	R/O	Alarm of upper tolerance band, group 5
0x1E8E	7822	Bool	R/O	Alarm of upper tolerance band, group 6
0x1E8F	7823	Bool	R/O	Alarm of upper tolerance band, group 7
0x1E90	7824	Bool	R/O	Alarm of upper tolerance band, group 8
0x1E91	7825	Bool	R/O	Alarm of upper tolerance band, group 9
0x1E92	7826	Bool	R/O	Alarm of upper tolerance band, group 10
0x1E93	7827	Bool	R/O	Alarm of lower tolerance band, group 5
0x1E94	7828	Bool	R/O	Alarm of lower tolerance band, group 6
0x1E95	7829	Bool	R/O	Alarm of lower tolerance band, group 7
0x1E96	7830	Bool	R/O	Alarm of lower tolerance band, group 8
0x1E97	7831	Bool	R/O	Alarm of lower tolerance band, group 9
0x1E98	7832	Bool	R/O	Alarm of lower tolerance band, group 10
0x1E99	7833	Bool	R/O	Alarm 1 of flow 2
0x1E9A	7834	Bool	R/O	Alarm 2 of flow 2
0x1E9B	7835	Bool	R/O	Alarm 1 of flow 3
0x1E9C	7836	Bool	R/O	Alarm 2 of flow 3
0x1E9D	7837	Bool	R/O	Alarm 1 of flow 4
0x1E9E	7838	Bool	R/O	Alarm 2 of flow 4
0x1E9F	7839	Bool	R/O	Alarm 1 of flow 5
0x1EA0	7840	Bool	R/O	Alarm 2 of flow 5
0x1EA1	7841	Bool	R/O	Alarm 1 of flow 6
0x1EA2	7842	Bool	R/O	Alarm 2 of flow 6
0x1EA3	7843	Bool	R/O	Alarm 1 of flow 7
0x1EA4	7844	Bool	R/O	Alarm 2 of flow 7
0x1EA5	7845	Bool	R/O	Alarm 1 of flow 8
0x1EA6	7846	Bool	R/O	Alarm 2 of flow 8
0x1EA7	7847	Bool	R/W	Value of external digital input 25
0x1EA8	7848	Bool	R/W	Value of external digital input 26
0x1EA9	7849	Bool	R/W	Value of external digital input 27
0x1EAA	7850	Bool	R/W	Value of external digital input 28
0x1EAB	7851	Bool	R/W	Value of external digital input 29
0x1EAC	7852	Bool	R/W	Value of external digital input 30
0x1EAD	7853	Bool	R/W	Value of external digital input 31
0x1EAE	7854	Bool	R/W	Value of external digital input 32
0x1EAF	7855	Bool	R/W	Value of external digital input 33
0x1EB0	7856	Bool	R/W	Value of external digital input 34
0x1EB1	7857	Bool	R/W	Value of external digital input 35
0x1EB2	7858	Bool	R/W	Value of external digital input 36
0x1EB3	7859	Bool	R/W	Value of external digital input 37
0x1EB4	7860	Bool	R/W	Value of external digital input 38
0x1EB5	7861	Bool	R/W	Value of external digital input 39
0x1EB6	7862	Bool	R/W	Value of external digital input 40

7 Modbus address tables

Address Hex.	Dec.	Data type	Access	Designation
0x1EB7	7863	Bool	R/W	Value of external digital input 41
0x1EB8	7864	Bool	R/W	Value of external digital input 42
0x1EB9	7865	Bool	R/W	Value of external digital input 43
0x1EBA	7866	Bool	R/W	Value of external digital input 44
0x1EBB	7867	Bool	R/W	Value of external digital input 45
0x1EBC	7868	Bool	R/W	Value of external digital input 46
0x1EBD	7869	Bool	R/W	Value of external digital input 47
0x1EBE	7870	Bool	R/W	Value of external digital input 48
0x1EBF	7871	Bool	R/W	Value of external digital input 49
0x1EC0	7872	Bool	R/W	Value of external digital input 50
0x1EC1	7873	Bool	R/W	Value of external digital input 51
0x1EC2	7874	Bool	R/W	Value of external digital input 52
0x1EC3	7875	Bool	R/W	Value of external digital input 53
0x1EC4	7876	Bool	R/W	Value of external digital input 54
0x1EC5	7877	Bool	R/W	Value of external digital input 55
0x1EC6	7878	Bool	R/W	Value of external digital input 56
0x1EC7	7879	Bool	R/W	Value of external digital input 57
0x1EC8	7880	Bool	R/W	Value of external digital input 58
0x1EC9	7881	Bool	R/W	Value of external digital input 59
0x1ECA	7882	Bool	R/W	Value of external digital input 60
0x1ECB	7883	Bool	R/W	Value of external digital input 61
0x1ECC	7884	Bool	R/W	Value of external digital input 62
0x1ECD	7885	Bool	R/W	Value of external digital input 63
0x1ECE	7886	Bool	R/W	Value of external digital input 64
0x1ECF	7887	Bool	R/W	Value of external digital input 65
0x1ED0	7888	Bool	R/W	Value of external digital input 66
0x1ED1	7889	Bool	R/W	Value of external digital input 67
0x1ED2	7890	Bool	R/W	Value of external digital input 68
0x1ED3	7891	Bool	R/W	Value of external digital input 69
0x1ED4	7892	Bool	R/W	Value of external digital input 70
0x1ED5	7893	Bool	R/W	Value of external digital input 71
0x1ED6	7894	Bool	R/W	Value of external digital input 72
0x1ED7	7895	Bool	R/W	Value of external digital input 73
0x1ED8	7896	Bool	R/W	Value of external digital input 74
0x1ED9	7897	Bool	R/W	Value of external digital input 75
0x1EDA	7898	Bool	R/W	Value of external digital input 76
0x1EDB	7899	Bool	R/W	Value of external digital input 77
0x1EDC	7900	Bool	R/W	Value of external digital input 78
0x1EDD	7901	Bool	R/W	Value of external digital input 79
0x1EDE	7902	Bool	R/W	Value of external digital input 80
0x1EDF	7903	Bool	R/W	Value of external digital input 81
0x1EE0	7904	Bool	R/W	Value of external digital input 82
0x1EE1	7905	Bool	R/W	Value of external digital input 83
0x1EE2	7906	Bool	R/W	Value of external digital input 84

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1EE3	7907	Bool	R/W	Value of external digital input 85
0x1EE4	7908	Bool	R/W	Value of external digital input 86
0x1EE5	7909	Bool	R/W	Value of external digital input 87
0x1EE6	7910	Bool	R/W	Value of external digital input 88
0x1EE7	7911	Bool	R/W	Value of external digital input 89
0x1EE8	7912	Bool	R/W	Value of external digital input 90
0x1EE9	7913	Bool	R/W	Value of external digital input 91
0x1EEA	7914	Bool	R/W	Value of external digital input 92
0x1EEB	7915	Bool	R/W	Value of external digital input 93
0x1EEC	7916	Bool	R/W	Value of external digital input 94
0x1EED	7917	Bool	R/W	Value of external digital input 95
0x1EEE	7918	Bool	R/W	Value of external digital input 96
0x1EEF	7919	Bool	R/W	Value of external digital input 97
0x1EF0	7920	Bool	R/W	Value of external digital input 98
0x1EF1	7921	Bool	R/W	Value of external digital input 99
0x1EF2	7922	Bool	R/W	Value of external digital input 100
0x1EF3	7923	Bool	R/W	Value of external digital input 101
0x1EF4	7924	Bool	R/W	Value of external digital input 102
0x1EF5	7925	Bool	R/W	Value of external digital input 103
0x1EF6	7926	Bool	R/W	Value of external digital input 104
0x1EF7	7927	Bool	R/W	Value of external digital input 105
0x1EF8	7928	Bool	R/W	Value of external digital input 106
0x1EF9	7929	Bool	R/W	Value of external digital input 107
0x1EFA	7930	Bool	R/W	Value of external digital input 108
0x1EFB	7931	Bool	R/W	Value of external digital input 109
0x1EFC	7932	Bool	R/W	Value of external digital input 110
0x1EFD	7933	Bool	R/W	Value of external digital input 111
0x1EFE	7934	Bool	R/W	Value of external digital input 112
0x1EFF	7935	Bool	R/W	Value of external digital input 113
0x1F00	7936	Bool	R/W	Value of external digital input 114
0x1F01	7937	Bool	R/W	Value of external digital input 115
0x1F02	7938	Bool	R/W	Value of external digital input 116
0x1F03	7939	Bool	R/W	Value of external digital input 117
0x1F04	7940	Bool	R/W	Value of external digital input 118
0x1F05	7941	Bool	R/W	Value of external digital input 119
0x1F06	7942	Bool	R/W	Value of external digital input 120
0x211F	8479	Char[244]	R/W	External event text (long), group 5
0x2199	8601	Char[244]	R/W	External event text (long), group 6
0x2213	8723	Char[244]	R/W	External event text (long), group 7
0x228D	8845	Char[244]	R/W	External event text (long), group 8
0x2307	8967	Char[244]	R/W	External event text (long), group 9
0x2381	9089	Char[244]	R/W	External event text (long), group 10

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x23FB	9211	Char[244]	R/W	External text variable (long) 11
0x2475	9333	Char[244]	R/W	External text variable (long) 12
0x24EF	9455	Char[244]	R/W	External text variable (long) 13
0x2569	9577	Char[244]	R/W	External text variable (long) 14
0x25E3	9699	Char[244]	R/W	External text variable (long) 15
0x265D	9821	Char[244]	R/W	External text variable (long) 16
0x26D7	9943	Char[244]	R/W	External text variable (long) 17
0x2751	10065	Char[244]	R/W	External text variable (long) 18
0x27CB	10187	Char[244]	R/W	External text variable (long) 19
0x2845	10309	Char[244]	R/W	External text variable (long) 20
0x28BF	10431	Char[244]	R/W	External text variable (long) 21
0x2939	10553	Char[244]	R/W	External text variable (long) 22
0x29B3	10675	Char[244]	R/W	External text variable (long) 23
0x2A2D	10797	Char[244]	R/W	External text variable (long) 24
0x2AA7	10919	Char[244]	R/W	External text variable (long) 25
0x2B21	11041	Char[244]	R/W	External text variable (long) 26
0x2B9B	11163	Char[244]	R/W	External text variable (long) 27
0x2C15	11285	Char[244]	R/W	External text variable (long) 28
0x2C8F	11407	Char[244]	R/W	External text variable (long) 29
0x2D09	11529	Char[244]	R/W	External text variable (long) 30
0x2D83	11651	Char[244]	R/W	External text variable (long) 31
0x2DFD	11773	Char[244]	R/W	External text variable (long) 32
0x2E77	11895	Char[244]	R/W	External text variable (long) 33
0x2EF1	12017	Char[244]	R/W	External text variable (long) 34
0x2F6B	12139	Char[244]	R/W	External text variable (long) 35
0x2FE5	12261	Char[244]	R/W	External text variable (long) 36
0x305F	12383	Char[244]	R/W	External text variable (long) 37
0x30D9	12505	Char[244]	R/W	External text variable (long) 38
0x3153	12627	Char[244]	R/W	External text variable (long) 39
0x31CD	12749	Char[244]	R/W	External text variable (long) 40
0x3247	12871	Char[244]	R/W	External text variable (long) 41
0x32C1	12993	Char[244]	R/W	External text variable (long) 42
0x333B	13115	Char[244]	R/W	External text variable (long) 43
0x33B5	13237	Char[244]	R/W	External text variable (long) 44
0x342F	13359	Char[244]	R/W	External text variable (long) 45
0x34A9	13481	Char[244]	R/W	External text variable (long) 46
0x3523	13603	Char[244]	R/W	External text variable (long) 47
0x359D	13725	Char[244]	R/W	External text variable (long) 48
0x3617	13847	Char[244]	R/W	External text variable (long) 49
0x3691	13969	Char[244]	R/W	External text variable (long) 50
0x370B	14091	Char[244]	R/W	External text variable (long) 51
0x3785	14213	Char[244]	R/W	External text variable (long) 52
0x37FF	14335	Char[244]	R/W	External text variable (long) 53
0x3879	14457	Char[244]	R/W	External text variable (long) 54

7 Modbus address tables

Address Hex.	Dec.	Data type	Access	Designation
0x38F3	14579	Char[244]	R/W	External text variable (long) 55
0x396D	14701	Char[244]	R/W	External text variable (long) 56
0x39E7	14823	Char[244]	R/W	External text variable (long) 57
0x3A61	14945	Char[244]	R/W	External text variable (long) 58
0x3ADB	15067	Char[244]	R/W	External text variable (long) 59
0x3B55	15189	Char[244]	R/W	External text variable (long) 60
0x3BCF	15311	Char[244]	R/W	External text variable (long) 61
0x3C49	15433	Char[244]	R/W	External text variable (long) 62
0x3CC3	15555	Char[244]	R/W	External text variable (long) 63
0x3D3D	15677	Char[244]	R/W	External text variable (long) 64
				For counter values from -999,999,999 to +999,999,999 (as of device software version 323.04.07):
0x3DC5	15813	Int32	R/O	Counter status of counter 7
0x3DC7	15815	Int32	R/O	Counter status of counter 8
0x3DC9	15817	Int32	R/O	Counter status of counter 9
0x3DCB	15819	Int32	R/O	Counter status of counter 10
0x3DCD	15821	Int32	R/O	Counter status of counter 11
0x3DCF	15823	Int32	R/O	Counter status of counter 12
0x3DD1	15825	Int32	R/O	Counter status of counter 13
0x3DD3	15827	Int32	R/O	Counter status of counter 14
0x3DD5	15829	Int32	R/O	Counter status of counter 15
0x3DD7	15831	Int32	R/O	Counter status of counter 16
0x3DD9	15833	Int32	R/O	Counter status of counter 17
0x3DDB	15835	Int32	R/O	Counter status of counter 18
0x3DDD	15837	Int32	R/O	Counter status of counter 19
0x3DDF	15839	Int32	R/O	Counter status of counter 20
0x3DE1	15841	Int32	R/O	Counter status of counter 21
0x3DE3	15843	Int32	R/O	Counter status of counter 22
0x3DE5	15845	Int32	R/O	Counter status of counter 23
0x3DE7	15847	Int32	R/O	Counter status of counter 24
0x3DE9	15849	Int32	R/O	Counter status of counter 25
0x3DEB	15851	Int32	R/O	Counter status of counter 26
0x3DED	15853	Int32	R/O	Counter status of counter 27
0x3DEF	15855	Int32	R/O	Counter status of counter 28
0x3DF1	15857	Int32	R/O	Counter status of counter 29
0x3DF3	15859	Int32	R/O	Counter status of counter 30
0x6A00	27136	Char[1204]	R/W	Batch 5: batch recipe
0x6D00	27904	Char[480]	R/O	Batch 5: batch text, line 1
0x6F00	28416	Char[480]	R/O	Batch 5: batch text, line 2
0x7100	28928	Char[480]	R/O	Batch 5: batch text, line 3
0x7300	29440	Char[480]	R/O	Batch 5: batch text, line 4

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x7500	29952	Char[480]	R/O	Batch 5: batch text, line 5
0x7700	30464	Char[480]	R/O	Batch 5: batch text, line 6
0x7900	30976	Char[480]	R/O	Batch 5: batch text, line 7
0x7B00	31488	Char[480]	R/O	Batch 5: batch text, line 8
0x7D00	32000	Char[480]	R/O	Batch 5: batch text, line 9
0x7F00	32512	Char[480]	R/O	Batch 5: batch text, line 10
0xBA00	47616	Char[1204]	R/W	Batch 2: batch recipe
0xBD00	48384	Char[480]	R/O	Batch 2: batch text, line 1
0xBF00	48896	Char[480]	R/O	Batch 2: batch text, line 2
0xC100	49408	Char[480]	R/O	Batch 2: batch text, line 3
0xC300	49920	Char[480]	R/O	Batch 2: batch text, line 4
0xC500	50432	Char[480]	R/O	Batch 2: batch text, line 5
0xC700	50944	Char[480]	R/O	Batch 2: batch text, line 6
0xC900	51456	Char[480]	R/O	Batch 2: batch text, line 7
0xCB00	51968	Char[480]	R/O	Batch 2: batch text, line 8
0xCD00	52480	Char[480]	R/O	Batch 2: batch text, line 9
0xCF00	52992	Char[480]	R/O	Batch 2: batch text, line 10
0xD100	53504	Char[1204]	R/W	Batch 3: batch recipe
0xD400	54272	Char[480]	R/O	Batch 3: batch text, line 1
0xD600	54784	Char[480]	R/O	Batch 3: batch text, line 2
0xD800	55296	Char[480]	R/O	Batch 3: batch text, line 3
0xDA00	55808	Char[480]	R/O	Batch 3: batch text, line 4
0xDC00	56320	Char[480]	R/O	Batch 3: batch text, line 5
0xDE00	56832	Char[480]	R/O	Batch 3: batch text, line 6
0xE000	57344	Char[480]	R/O	Batch 3: batch text, line 7
0xE200	57856	Char[480]	R/O	Batch 3: batch text, line 8
0xE400	58368	Char[480]	R/O	Batch 3: batch text, line 9
0xE600	58880	Char[480]	R/O	Batch 3: batch text, line 10
0xE800	59392	Char[1204]	R/W	Batch 4: batch recipe
0xEB00	60160	Char[480]	R/O	Batch 4: batch text, line 1
0xED00	60672	Char[480]	R/O	Batch 4: batch text, line 2
0xEF00	61184	Char[480]	R/O	Batch 4: batch text, line 3
0xF100	61696	Char[480]	R/O	Batch 4: batch text, line 4
0xF300	62208	Char[480]	R/O	Batch 4: batch text, line 5
0xF500	62720	Char[480]	R/O	Batch 4: batch text, line 6
0xF700	63232	Char[480]	R/O	Batch 4: batch text, line 7
0xF900	63744	Char[480]	R/O	Batch 4: batch text, line 8
0xFB00	64256	Char[480]	R/O	Batch 4: batch text, line 9

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0xFD00	64768	Char[480]	R/O	Batch 4: batch text, line 10

Configuration parameters - type 706530 only

Address		Data type	Access	Designation
Hex.	Dec.			
0x1F07	7943	Float	R/W	Limit value monitoring 25: limit value
0x1F09	7945	Float	R/W	Limit value monitoring 26: limit value
0x1F0B	7947	Float	R/W	Limit value monitoring 27: limit value
0x1F0D	7949	Float	R/W	Limit value monitoring 28: limit value
0x1F0F	7951	Float	R/W	Limit value monitoring 29: limit value
0x1F11	7953	Float	R/W	Limit value monitoring 30: limit value
0x1F13	7955	Float	R/W	Limit value monitoring 31: limit value
0x1F15	7957	Float	R/W	Limit value monitoring 32: limit value
0x1F17	7959	Float	R/W	Limit value monitoring 33: limit value
0x1F19	7961	Float	R/W	Limit value monitoring 34: limit value
0x1F1B	7963	Float	R/W	Limit value monitoring 35: limit value
0x1F1D	7965	Float	R/W	Limit value monitoring 36: limit value
0x1F1F	7967	Float	R/W	Limit value monitoring 37: limit value
0x1F21	7969	Float	R/W	Limit value monitoring 38: limit value
0x1F23	7971	Float	R/W	Limit value monitoring 39: limit value
0x1F25	7973	Float	R/W	Limit value monitoring 40: limit value
0x1F27	7975	Float	R/W	Limit value monitoring 41: limit value
0x1F29	7977	Float	R/W	Limit value monitoring 42: limit value
0x1F2B	7979	Float	R/W	Limit value monitoring 43: limit value
0x1F2D	7981	Float	R/W	Limit value monitoring 44: limit value
0x1F2F	7983	Float	R/W	Limit value monitoring 45: limit value
0x1F31	7985	Float	R/W	Limit value monitoring 46: limit value
0x1F33	7987	Float	R/W	Limit value monitoring 47: limit value
0x1F35	7989	Float	R/W	Limit value monitoring 48: limit value
0x1F37	7991	Float	R/W	Limit value monitoring 49: limit value
0x1F39	7993	Float	R/W	Limit value monitoring 50: limit value
0x1F3B	7995	Float	R/W	Limit value monitoring 51: limit value
0x1F3D	7997	Float	R/W	Limit value monitoring 52: limit value
0x1F3F	7999	Float	R/W	Limit value monitoring 53: limit value
0x1F41	8001	Float	R/W	Limit value monitoring 54: limit value
0x1F43	8003	Float	R/W	Limit value monitoring 55: limit value
0x1F45	8005	Float	R/W	Limit value monitoring 56: limit value
0x1F47	8007	Float	R/W	Limit value monitoring 57: limit value
0x1F49	8009	Float	R/W	Limit value monitoring 58: limit value
0x1F4B	8011	Float	R/W	Limit value monitoring 59: limit value
0x1F4D	8013	Float	R/W	Limit value monitoring 60: limit value
0x1F4F	8015	Float	R/W	Limit value monitoring 61: limit value
0x1F51	8017	Float	R/W	Limit value monitoring 62: limit value
0x1F53	8019	Float	R/W	Limit value monitoring 63: limit value

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1F55	8021	Float	R/W	Limit value monitoring 64: limit value
0x1F57	8023	Float	R/W	Limit value monitoring 65: limit value
0x1F59	8025	Float	R/W	Limit value monitoring 66: limit value
0x1F5B	8027	Float	R/W	Limit value monitoring 67: limit value
0x1F5D	8029	Float	R/W	Limit value monitoring 68: limit value
0x1F5F	8031	Float	R/W	Limit value monitoring 69: limit value
0x1F61	8033	Float	R/W	Limit value monitoring 70: limit value
0x1F63	8035	Float	R/W	Limit value monitoring 71: limit value
0x1F65	8037	Float	R/W	Limit value monitoring 72: limit value
0x1F67	8039	Float	R/W	Limit value monitoring 73: limit value
0x1F69	8041	Float	R/W	Limit value monitoring 74: limit value
0x1F6B	8043	Float	R/W	Limit value monitoring 75: limit value
0x1F6D	8045	Float	R/W	Limit value monitoring 76: limit value
0x1F6F	8047	Float	R/W	Limit value monitoring 77: limit value
0x1F71	8049	Float	R/W	Limit value monitoring 78: limit value
0x1F73	8051	Float	R/W	Limit value monitoring 79: limit value
0x1F75	8053	Float	R/W	Limit value monitoring 80: limit value
0x1F77	8055	Float	R/W	Limit value monitoring 81: limit value
0x1F79	8057	Float	R/W	Limit value monitoring 82: limit value
0x1F7B	8059	Float	R/W	Limit value monitoring 83: limit value
0x1F7D	8061	Float	R/W	Limit value monitoring 84: limit value
0x1F7F	8063	Float	R/W	Limit value monitoring 85: limit value
0x1F81	8065	Float	R/W	Limit value monitoring 86: limit value
0x1F83	8067	Float	R/W	Limit value monitoring 87: limit value
0x1F85	8069	Float	R/W	Limit value monitoring 88: limit value
0x1F87	8071	Float	R/W	Limit value monitoring 89: limit value
0x1F89	8073	Float	R/W	Limit value monitoring 90: limit value
0x1F8B	8075	Float	R/W	Limit value monitoring 91: limit value
0x1F8D	8077	Float	R/W	Limit value monitoring 92: limit value
0x1F8F	8079	Float	R/W	Limit value monitoring 93: limit value
0x1F91	8081	Float	R/W	Limit value monitoring 94: limit value
0x1F93	8083	Float	R/W	Limit value monitoring 95: limit value
0x1F95	8085	Float	R/W	Limit value monitoring 96: limit value
0x1F97	8087	Float	R/W	Limit value monitoring 97: limit value
0x1F99	8089	Float	R/W	Limit value monitoring 98: limit value
0x1F9B	8091	Float	R/W	Limit value monitoring 99: limit value
0x1F9D	8093	Float	R/W	Limit value monitoring 100: limit value
0x1F9F	8095	Float	R/W	Limit value monitoring 101: limit value
0x1FA1	8097	Float	R/W	Limit value monitoring 102: limit value
0x1FA3	8099	Float	R/W	Limit value monitoring 103: limit value
0x1FA5	8101	Float	R/W	Limit value monitoring 104: limit value
0x1FA7	8103	Float	R/W	Limit value monitoring 105: limit value
0x1FA9	8105	Float	R/W	Limit value monitoring 106: limit value
0x1FAB	8107	Float	R/W	Limit value monitoring 107: limit value

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x1FAD	8109	Float	R/W	Limit value monitoring 108: limit value
0x1FAF	8111	Float	R/W	Limit value monitoring 109: limit value
0x1FB1	8113	Float	R/W	Limit value monitoring 110: limit value
0x1FB3	8115	Float	R/W	Limit value monitoring 111: limit value
0x1FB5	8117	Float	R/W	Limit value monitoring 112: limit value
0x1FB7	8119	Float	R/W	Limit value monitoring 113: limit value
0x1FB9	8121	Float	R/W	Limit value monitoring 114: limit value
0x1FBB	8123	Float	R/W	Limit value monitoring 115: limit value
0x1FBD	8125	Float	R/W	Limit value monitoring 116: limit value
0x1FBF	8127	Float	R/W	Limit value monitoring 117: limit value
0x1FC1	8129	Float	R/W	Limit value monitoring 118: limit value
0x1FC3	8131	Float	R/W	Limit value monitoring 119: limit value
0x1FC5	8133	Float	R/W	Limit value monitoring 120: limit value
0x1FC7	8135	Float	R/W	Limit value monitoring 25: switching differential
0x1FC9	8137	Float	R/W	Limit value monitoring 26: switching differential
0x1FCB	8139	Float	R/W	Limit value monitoring 27: switching differential
0x1FCD	8141	Float	R/W	Limit value monitoring 28: switching differential
0x1FCF	8143	Float	R/W	Limit value monitoring 29: switching differential
0x1FD1	8145	Float	R/W	Limit value monitoring 30: switching differential
0x1FD3	8147	Float	R/W	Limit value monitoring 31: switching differential
0x1FD5	8149	Float	R/W	Limit value monitoring 32: switching differential
0x1FD7	8151	Float	R/W	Limit value monitoring 33: switching differential
0x1FD9	8153	Float	R/W	Limit value monitoring 34: switching differential
0x1FDB	8155	Float	R/W	Limit value monitoring 35: switching differential
0x1FDD	8157	Float	R/W	Limit value monitoring 36: switching differential
0x1FDF	8159	Float	R/W	Limit value monitoring 37: switching differential
0x1FE1	8161	Float	R/W	Limit value monitoring 38: switching differential
0x1FE3	8163	Float	R/W	Limit value monitoring 39: switching differential
0x1FE5	8165	Float	R/W	Limit value monitoring 40: switching differential
0x1FE7	8167	Float	R/W	Limit value monitoring 41: switching differential
0x1FE9	8169	Float	R/W	Limit value monitoring 42: switching differential
0x1FEB	8171	Float	R/W	Limit value monitoring 43: switching differential
0x1FED	8173	Float	R/W	Limit value monitoring 44: switching differential
0x1FEF	8175	Float	R/W	Limit value monitoring 45: switching differential
0x1FF1	8177	Float	R/W	Limit value monitoring 46: switching differential
0x1FF3	8179	Float	R/W	Limit value monitoring 47: switching differential
0x1FF5	8181	Float	R/W	Limit value monitoring 48: switching differential
0x1FF7	8183	Float	R/W	Limit value monitoring 49: switching differential
0x1FF9	8185	Float	R/W	Limit value monitoring 50: switching differential
0x1FFB	8187	Float	R/W	Limit value monitoring 51: switching differential
0x1FFD	8189	Float	R/W	Limit value monitoring 52: switching differential
0x1FFF	8191	Float	R/W	Limit value monitoring 53: switching differential
0x2001	8193	Float	R/W	Limit value monitoring 54: switching differential

7 Modbus address tables

Address		Data type	Access	Designation
Hex.	Dec.			
0x2003	8195	Float	R/W	Limit value monitoring 55: switching differential
0x2005	8197	Float	R/W	Limit value monitoring 56: switching differential
0x2007	8199	Float	R/W	Limit value monitoring 57: switching differential
0x2009	8201	Float	R/W	Limit value monitoring 58: switching differential
0x200B	8203	Float	R/W	Limit value monitoring 59: switching differential
0x200D	8205	Float	R/W	Limit value monitoring 60: switching differential
0x200F	8207	Float	R/W	Limit value monitoring 61: switching differential
0x2001	8209	Float	R/W	Limit value monitoring 62: switching differential
0x2013	8211	Float	R/W	Limit value monitoring 63: switching differential
0x2015	8213	Float	R/W	Limit value monitoring 64: switching differential
0x2017	8215	Float	R/W	Limit value monitoring 65: switching differential
0x2019	8217	Float	R/W	Limit value monitoring 66: switching differential
0x201B	8219	Float	R/W	Limit value monitoring 67: switching differential
0x201D	8221	Float	R/W	Limit value monitoring 68: switching differential
0x201F	8223	Float	R/W	Limit value monitoring 69: switching differential
0x2021	8225	Float	R/W	Limit value monitoring 70: switching differential
0x2023	8227	Float	R/W	Limit value monitoring 71: switching differential
0x2025	8229	Float	R/W	Limit value monitoring 72: switching differential
0x2027	8231	Float	R/W	Limit value monitoring 73: switching differential
0x2029	8233	Float	R/W	Limit value monitoring 74: switching differential
0x202B	8235	Float	R/W	Limit value monitoring 75: switching differential
0x202D	8237	Float	R/W	Limit value monitoring 76: switching differential
0x202F	8239	Float	R/W	Limit value monitoring 77: switching differential
0x2031	8241	Float	R/W	Limit value monitoring 78: switching differential
0x2033	8243	Float	R/W	Limit value monitoring 79: switching differential
0x2035	8245	Float	R/W	Limit value monitoring 80: switching differential
0x2037	8247	Float	R/W	Limit value monitoring 81: switching differential
0x2039	8249	Float	R/W	Limit value monitoring 82: switching differential
0x203B	8251	Float	R/W	Limit value monitoring 83: switching differential
0x203D	8253	Float	R/W	Limit value monitoring 84: switching differential
0x203F	8255	Float	R/W	Limit value monitoring 85: switching differential
0x2041	8257	Float	R/W	Limit value monitoring 86: switching differential
0x2043	8259	Float	R/W	Limit value monitoring 87: switching differential
0x2045	8261	Float	R/W	Limit value monitoring 88: switching differential
0x2047	8263	Float	R/W	Limit value monitoring 89: switching differential
0x2049	8265	Float	R/W	Limit value monitoring 90: switching differential
0x204B	8267	Float	R/W	Limit value monitoring 91: switching differential
0x204D	8269	Float	R/W	Limit value monitoring 92: switching differential
0x204F	8271	Float	R/W	Limit value monitoring 93: switching differential
0x2051	8273	Float	R/W	Limit value monitoring 94: switching differential
0x2053	8275	Float	R/W	Limit value monitoring 95: switching differential
0x2055	8277	Float	R/W	Limit value monitoring 96: switching differential
0x2057	8279	Float	R/W	Limit value monitoring 97: switching differential
0x2059	8281	Float	R/W	Limit value monitoring 98: switching differential

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Address		Data type	Access	Designation
Hex.	Dec.			
0x205B	8283	Float	R/W	Limit value monitoring 99: switching differential
0x205D	8285	Float	R/W	Limit value monitoring 100: switching differential
0x205F	8287	Float	R/W	Limit value monitoring 101: switching differential
0x2061	8289	Float	R/W	Limit value monitoring 102: switching differential
0x2063	8291	Float	R/W	Limit value monitoring 103: switching differential
0x2065	8293	Float	R/W	Limit value monitoring 104: switching differential
0x2067	8295	Float	R/W	Limit value monitoring 105: switching differential
0x2069	8297	Float	R/W	Limit value monitoring 106: switching differential
0x206B	8299	Float	R/W	Limit value monitoring 107: switching differential
0x206D	8301	Float	R/W	Limit value monitoring 108: switching differential
0x206F	8303	Float	R/W	Limit value monitoring 109: switching differential
0x2071	8305	Float	R/W	Limit value monitoring 110: switching differential
0x2073	8307	Float	R/W	Limit value monitoring 111: switching differential
0x2075	8309	Float	R/W	Limit value monitoring 112: switching differential
0x2077	8311	Float	R/W	Limit value monitoring 113: switching differential
0x2079	8313	Float	R/W	Limit value monitoring 114: switching differential
0x207B	8315	Float	R/W	Limit value monitoring 115: switching differential
0x207D	8317	Float	R/W	Limit value monitoring 116: switching differential
0x207F	8319	Float	R/W	Limit value monitoring 117: switching differential
0x2081	8321	Float	R/W	Limit value monitoring 118: switching differential
0x2083	8323	Float	R/W	Limit value monitoring 119: switching differential
0x2085	8325	Float	R/W	Limit value monitoring 120: switching differential

7 Modbus address tables



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