

Installation and operation manual

Converter I-7188En-MGTCP
Modbus TCP to Modbus RTU Gateway

and

Router I-7188En-MRTCP
Modbus RTU to Modbus TCP Router.



GDAŃSK 09.2006
v. 2.0.1.

TABLE OF CONTENTS

GENERAL DESCRIPTION	3
INTRODUCTION.....	3
APPLICATION	3
MODBUS GATEWAY INSTALLATION BLOCK DIAGRAM.	3
MODBUS GATEWAY OPERATION PRINCIPLE	3
MODBUS ROUTER INSTALLATION BLOCK DIAGRAM.....	4
MODBUS ROUTER OPERATION PRINCIPLE.....	4
BLOCK DIAGRAM OF MODBUS ROUTER AND GATEWAY IN ONE SYSTEM.	4
ACCESORIES SUPPLIED WITH CONVERTER.....	5
CONFIGURATION	6
LOCAL CONFIGURATION - RS232	6
CONNECTING CONVERTER TO PC COMPUTER	6
<i>OPERATOR CONSOLE "7188XW.EXE"</i>	7
<i>AVAILABLE COMMANDS FOR ETHERNET NETWORK PROTOCOL CONFIGURATION</i>	8
<i>EXAMPLES OF CORRECT AND INCORRECT CONFIGURATION OF NETWORK ADDRESS (IP, MASK, GATEWAY)</i>	9
<i>AUXILIARY COMMANDS, AVAILABLE IN "7188XW.EXE" CONSOLE</i>	10
REMOTE CONFIGURATION – TCP/ETHERNET	11
<i>GENERAL NOTES</i>	11
<i>USED TCP COMMUNICATION PORTS</i>	12
<i>"TELNET.EXE" CONSOLE START IN CONVERTER CONFIGURATION MODE</i> A.....	12
<i>CONFIGURATION COMMANDS, AVAILABLE THROUGH "TELNET.EXE"</i>	14
<i>RECOMMENDED CONFIGURATION FOR MASTER AND SLAVE CONVERTERS</i>	19

General description

Introduction

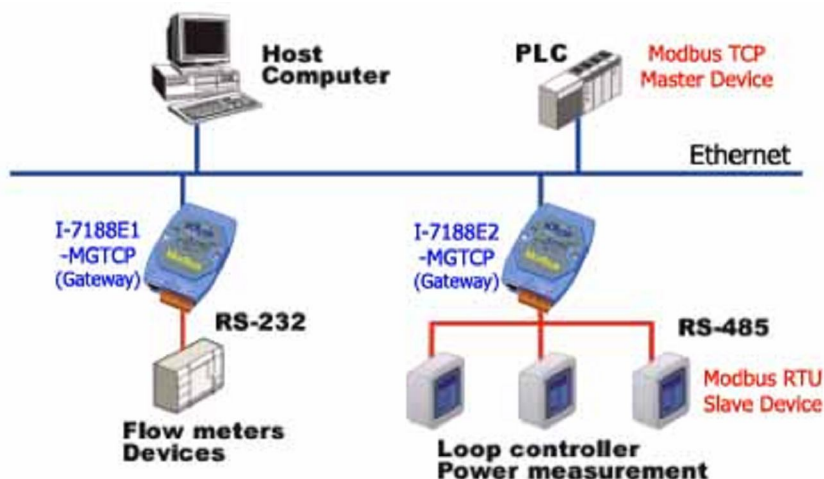
This documentation contains the description of basic functionality of converters and does not exhaust all possible technical parameters and application of those devices. Converters may be equipped, according to the requirements, with the additional data recorder module or mini WWW server, allowing for preview of Modbus registries in online mode.

If You are looking for such devices with non-typical functions, please contact our company by e-mail info@a2s.pl or phone +48 58 345 39 22.

Application

Converters of Gateway or Router type are designed for conversion between Modbus TCP and Modbus RTU protocol, and vice versa. Below three most typical installation methods are presented.

Modbus Gateway installation block diagram.

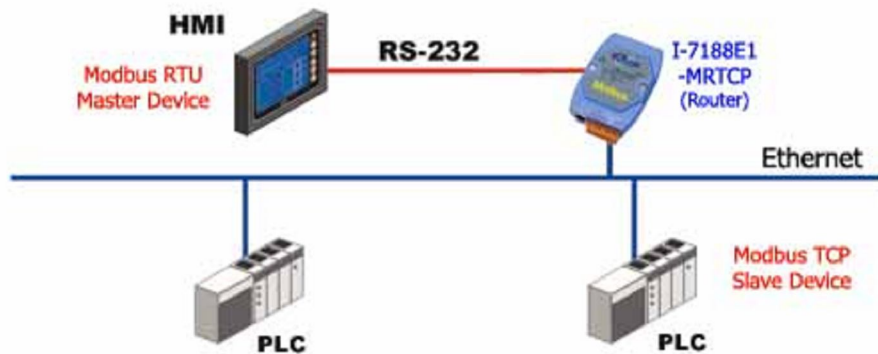


Modbus Gateway operation principle

Converter from the Ethernet side operates as Modbus TCP Slave. This allows for receiving incoming TCP connections from Modbus TCP master. Received query is converted to Modbus RTU standard and sent through the serial port to Slave RTU device. Then converter switches into waiting mode on the serial port for the response. If in the

preset time (1000 ms by default) Slave RTU returns the answer, it is converted by the converter into Modbus TCP standard and sent back to the TCP Master.

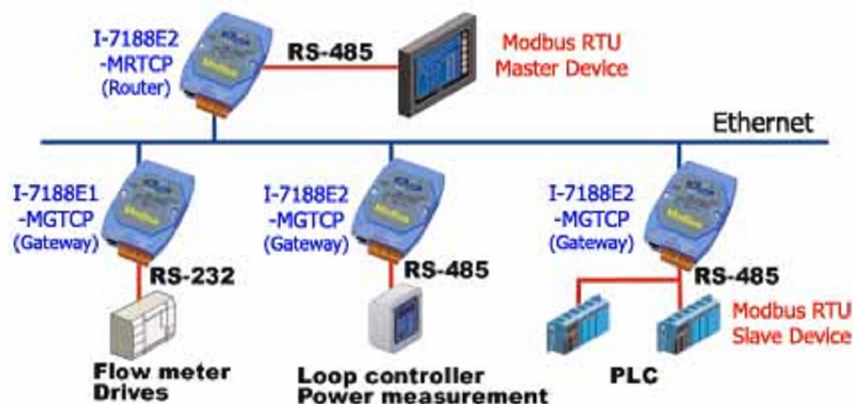
Modbus Router installation block diagram.



Modbus Router operation principle

Converter from the RS-232 or RS-485 serial port side operates as Modbus RTU Slave. This allows for receiving communication frames of Modbus RTU protocol, coming from Modbus RTU master. Received query is converted into Modbus TCP standard, and the destination device IP address is determined upon the basis of so called Modbus Routing Table, connecting Modbus RTU address with IP address. Then the Modbus TCP query is sent through the serial port to the Modbus Slave TCP device. Then converter switches into waiting mode on the Ethernet port for the response. If in the preset time (1000 ms by default) Slave TCP returns the answer, it is converted by the converter into Modbus RTU standard and sent back to the RTU Master.

Block diagram of Modbus Router and Gateway in one system.



Accessories supplied with Converter

Full set of I-7188En-MxTCP Converter includes:

1. Converter with symbol I-7188E1 (one serial communication port COM1-RS232) or 7188E2 (two serial communication ports COM1-RS232 i COM2-RS485)
2. There is software installed in Converter, adjusting it to realizing proper Gateway functions from Modbus TCP to Modbus RTU (I-7188En-MGTCP) or Router from Modbus RTU to Modbus TCP (I-7188En-MRTCP).
3. Cable for Converters configuration from PC computer through port RS232.
4. FDD 1,44" or CD, containing software "7188xw.exe", allowing for converter configuration through serial port RS232.
5. DIN installation strip, approximately 15 cm long.
6. Set of clamped pipe ends.

Configuration

Converters configuration procedure is divided into two stages.

In the **first stage** it is necessary to configure Ethernet network interface parameters through serial port RS232.

In the **second stage**, if necessary, it is possible to configure other Converter parameters. However configured default parameters usually allow for proper Converter operation.

Local configuration - RS232

Connecting Converter to PC computer

To start Converter local configuration procedure, connect supplied RS232 cable to Converter COM1 port according to terminals description on cable ends. Connect DB9 plug to serial port RS232 of PC computer. It is very important to connect terminal "INIT*" to power supply ground (GND).

Details of individual connections are shown below.

After all above connections turn on Converter power supply.

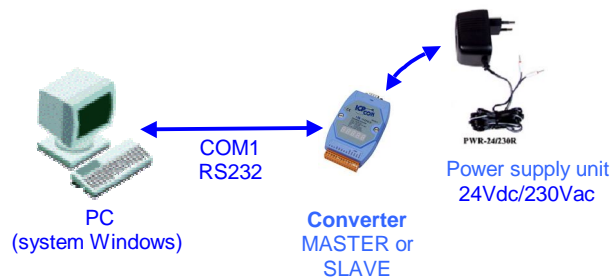


Fig. Block diagram of connections for Converter configuration

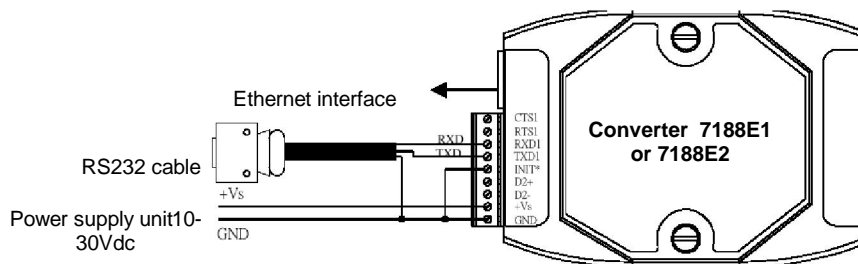


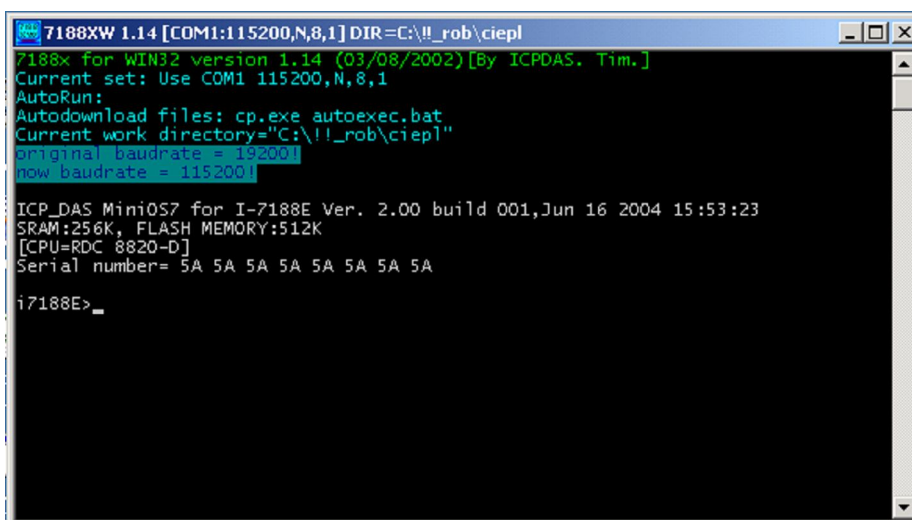
Fig. Detailed diagram of connections for Converter configuration

Operator console “7188xw.exe”

Converter is configured with use of “7188xw.exe” program, included on supplied CD. It is communication interface in form of text terminal between master PC computer and Converter. Through serial port RS232 it is possible to configure controller and perform software update.

7188xw.exe program is designed for operation in Windows 2000NT system. In case of Windows 98 system use it is necessary to use 7188x.exe program.

Exemplary terminal window view after 7188xw.exe program activation is shown below:



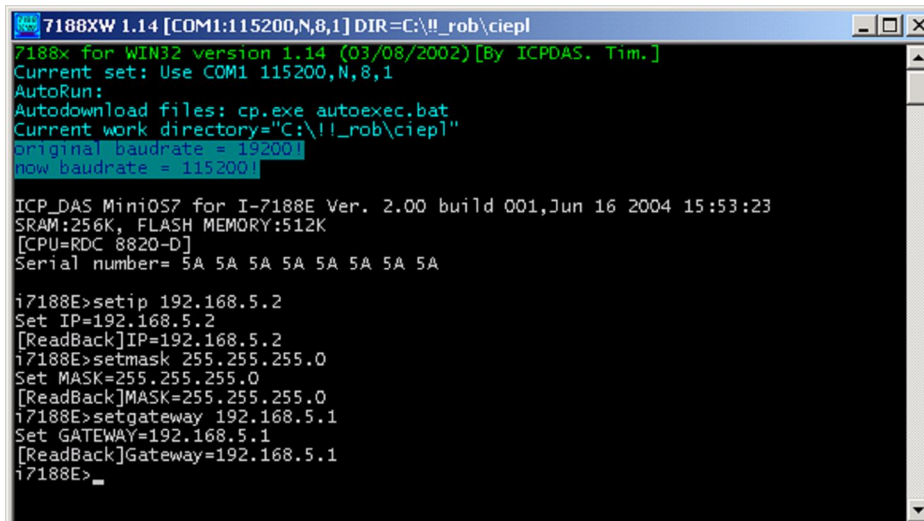
```
7188XW 1.14 [COM1:115200,N,8,1] DIR=C:\\!_rob\\ciepl
7188x for WIN32 version 1.14 (03/08/2002) [By ICPDAS. Tim.]
Current set: Use COM1 115200,N,8,1
AutoRun:
Autodownload files: cp.exe autoexec.bat
Current work directory="C:\\!_rob\\ciepl"
original baudrate = 19200
now baudrate = 115200!
ICP_DAS MiniOS7 for I-7188E Ver. 2.00 build 001,Jun 16 2004 15:53:23
SRAM:256K, FLASH MEMORY:512K
[CPU=RDC 8820-D]
Serial number= 5A 5A 5A 5A 5A 5A 5A 5A
i7188E> _
```

Available commands for Ethernet network protocol configuration

From operator console level user may assign network configuration static parameters to controller:

- IP number using “**setip**” command
example: „setip 192.168.5.56”+’Enter’
- subnet mask (MASK) using “**setmask**” command
example: „setmask 255.255.255.0”+’Enter’
- gate (GATEWAY) using “**setgateway**” command
example: „setgateway 192.168.5.1”+’Enter’

Result of exemplary entering of configuration procedure is shown below:



```

7188XW 1.14 [COM1:115200,N,8,1] DIR=C:\!!_rob\ciepl
7188x for WIN32 version 1.14 (03/08/2002) [By ICPDAS, Tim.]
Current set: Use COM1 115200,N,8,1
AutoRun:
Autodownload files: cp.exe autoexec.bat
Current work directory="C:\!!_rob\ciepl"
original baudrate = 19200
now baudrate = 115200

ICP_DAS MiniOS7 for I-7188E Ver. 2.00 build 001,Jun 16 2004 15:53:23
SRAM:256K, FLASH MEMORY:512K
[CPU=RDC 8820-D]
Serial number= 5A 5A 5A 5A 5A 5A 5A 5A

i7188E>setip 192.168.5.2
Set IP=192.168.5.2
[ReadBack]IP=192.168.5.2
i7188E>setmask 255.255.255.0
Set MASK=255.255.255.0
[ReadBack]MASK=255.255.255.0
i7188E>setgateway 192.168.5.1
Set GATEWAY=192.168.5.1
[ReadBack]Gateway=192.168.5.1
i7188E>_
    
```

NOTES:

1. IP number and default gate (GATEWAY) **MUST** be configured as addresses of the same Ethernet network segment. If they are programmed as addresses of different subnets, it may cause improper operation of 7188E1 controller.
2. If in Ethernet network, where 7188E1 devices are installed, there is **no computer with GATEWAY function**, e.g. when communication within the same network segment is realized, then it is necessary to configure default gate as IP number of any computer of the same network segment.

It is important, because 7188E1 device during restart performs communication test through triple sending ICMP packet to address configured as GATEWAY. If computer with that address is not available in network, then 7188E1 device restart procedure may be prolonged of 3 to 4 seconds. In particular for case described in that paragraph it is possible to program IP address of another 7188E1 device from mutually communicating pair as GATEWAY.

Examples of correct and incorrect configuration of network address (IP, MASK, GATEWAY)

Below there are examples of correct and incorrect configuration of network addresses

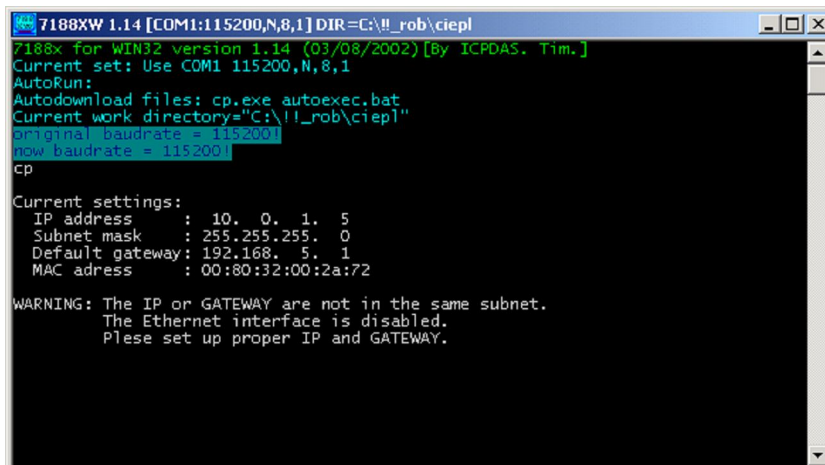
Example of **CORRECT** configuration of IP and GATEWAY numbers:

- IP = 192.168.1.175
- GATEWAY = 192.168.1.1 or 192.168.1.156 or 192.168.1.x or
- MASK = 255.255.255.0

Example of **INCORRECT** configuration of IP and GATEWAY numbers:

- IP = 10.0.1.5
 - GATEWAY = 10.0.45.1 or 192.168.0.1 or 192.168.5.5 or
 - MASK = 255.255.255.0
- Converter does not accept IP and GATEWAY from different subnets.

Below there is message presented, which appears in console window "7188xw.exe" after command "cp"+'Enter' in case of incorrectly configured network interface parameters (IP, MASK, GATEWAY).



```
7188XW 1.14 [COM1:115200,N,8,1] DIR=C:\!!_rob\ciepl
7188x for WIN32 version 1.14 (03/08/2002) [By ICPDAS. Tim.]
Current set: Use COM1 115200,N,8,1
AutoRun:
Autodownload files: cp.exe autoexec.bat
Current work directory="C:\!!_rob\ciepl"
original baudrate = 115200
now baudrate = 115200
cp
Current settings:
IP address      : 10. 0. 1. 5
Subnet mask     : 255.255.255. 0
Default gateway : 192.168. 5. 1
MAC address     : 00:80:32:00:2a:72

WARNING: The IP or GATEWAY are not in the same subnet.
The Ethernet interface is disabled.
Please set up proper IP and GATEWAY.
```

Auxiliary commands, available in “7188xw.exe” console

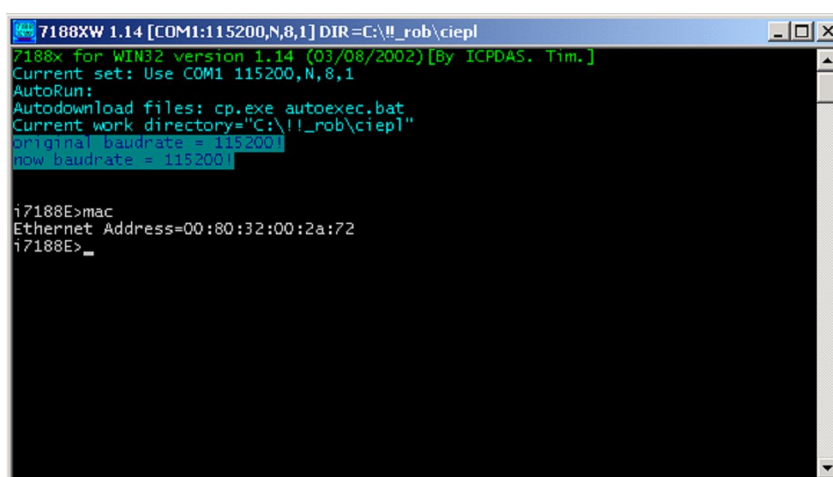
Besides Ethernet network interface parameters configuration, from “7188xw.exe” console level it is possible to:

Check Converter MAC address

Command: “*mac*”+’*Enter*’

After its execution in console window Current Converter MAC address is displayed.

Example of this command execution is shown below:



```
7188XW 1.14 [COM1:115200,N,8,1] DIR=C:\!!_rob\ciepl
7188x for WIN32 version 1.14 (03/08/2002) [By ICPDAS, Tim.]
Current set: Use COM1 115200,N,8,1
AutoRun:
Autodownload files: cp.exe autoexec.bat
Current work directory="C:\!!_rob\ciepl"
original baudrate = 115200
now baudrate = 115200

i7188E>mac
Ethernet Address=00:80:32:00:2a:72
i7188E>_
```

Remote configuration – TCP/Ethernet

After initial configuration of network interface parameters (IP, MASK, GATEWAY) through port RS232, Converter may be connected to Ethernet network and configured through that interface with use of Telnet console.

Brand new Converter has default parameters configured. Usually such configuration is sufficient for correct Converter operation. The only exception is the necessity of current updating of Modbus Routing Table in the Converter operating as Modbus Router I-7188En-MRTCP.

Remote configuration may be also performed after Converter installation in place of destination.

General notes

7188En device may be configured with use of Telnet console, available as standard tool is Windows2000/NT/XP system.

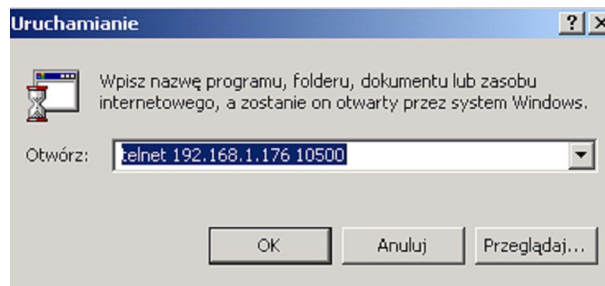
Program is started by clicking “Start” button in Windows taskbar, and selecting “Run” command. In window type: telnet *nnn.nnn.nnn.nnn* *TCPport*, where:

nnn.nnn.nnn.nnn – IP number of 7188E1 device to connect with

TCPport –TCP port number

Used TCP ports numbers are described in further paragraph of this manual.

Exemplary use of Telnet program is shown below:



Used TCP communication ports

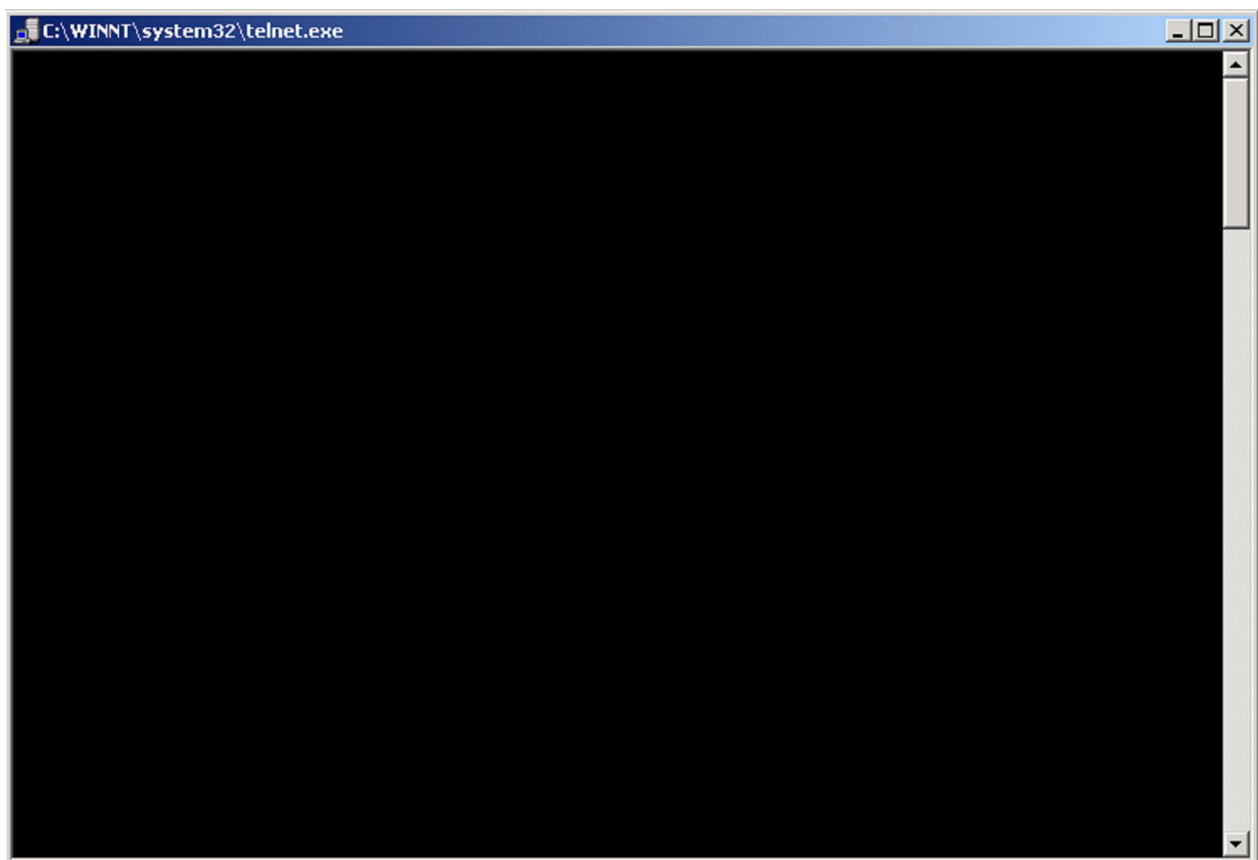
The following TCP ports numbers are implemented in the device:

1. **502** – ModbusTCP communication – sending of communication frames between MASTER and SLAVE Converters.
2. **10500** – port used for communication correctness tracking
3. **10750** – port used for Converter configuration
4. **11000** – SATCHWELL communication – sending of communication frames for SATCHWELL controllers. Protocols SNP and NCP.

”Telnet.exe” console start in Converter configuration modea

To start Telnet console for remote Converter configuration, use the following command
'telnet *nnn.nnn.nnn.nnn* 10750'

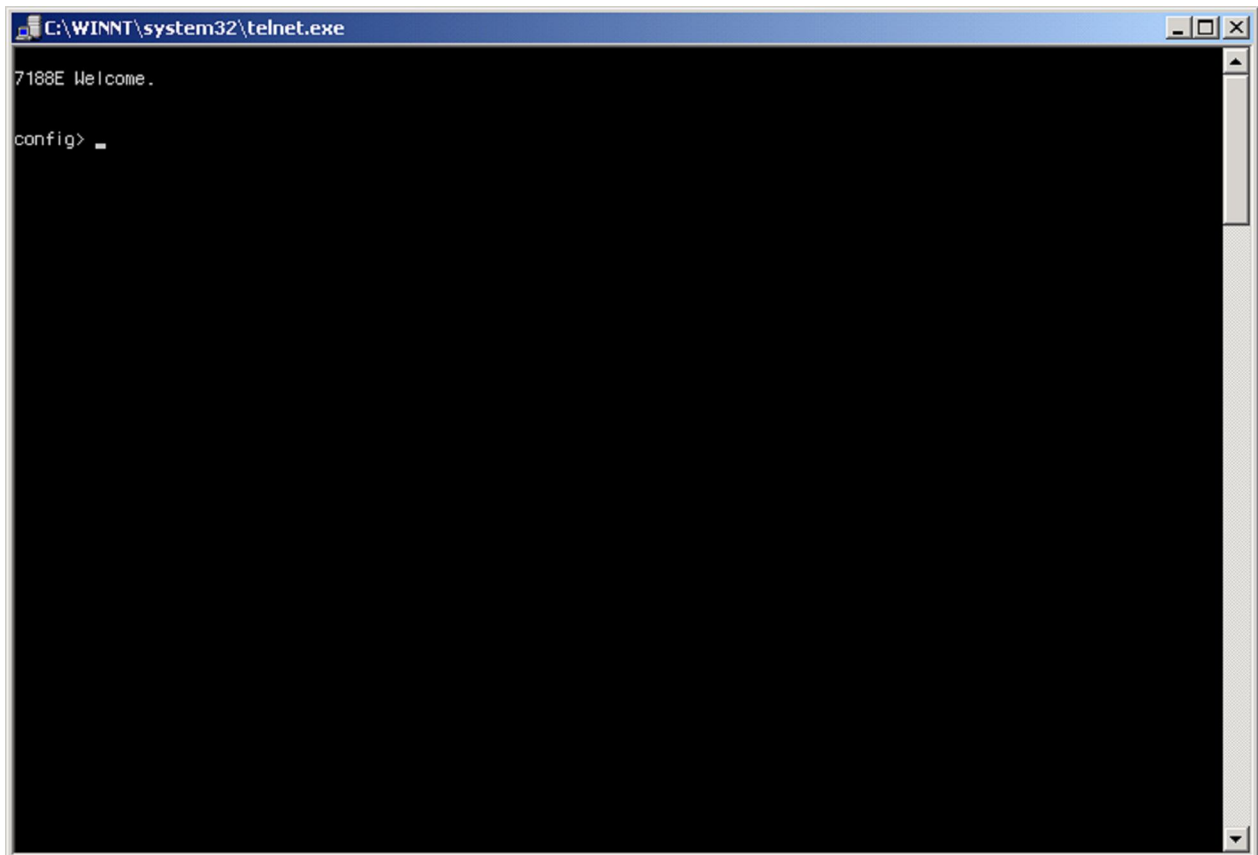
Access to Converter configuration is protected by default with password: '1234 5678'.
Enter that password from keyboard, when window shown below appears:



Finish password entering with 'Enter' key.

CAUTION: Entered password is not displayed in terminal window.

If password is entered correctly, then it will be confirmed by displaying the following Telnet application window:



Operator may then enter further devices configuration commands.

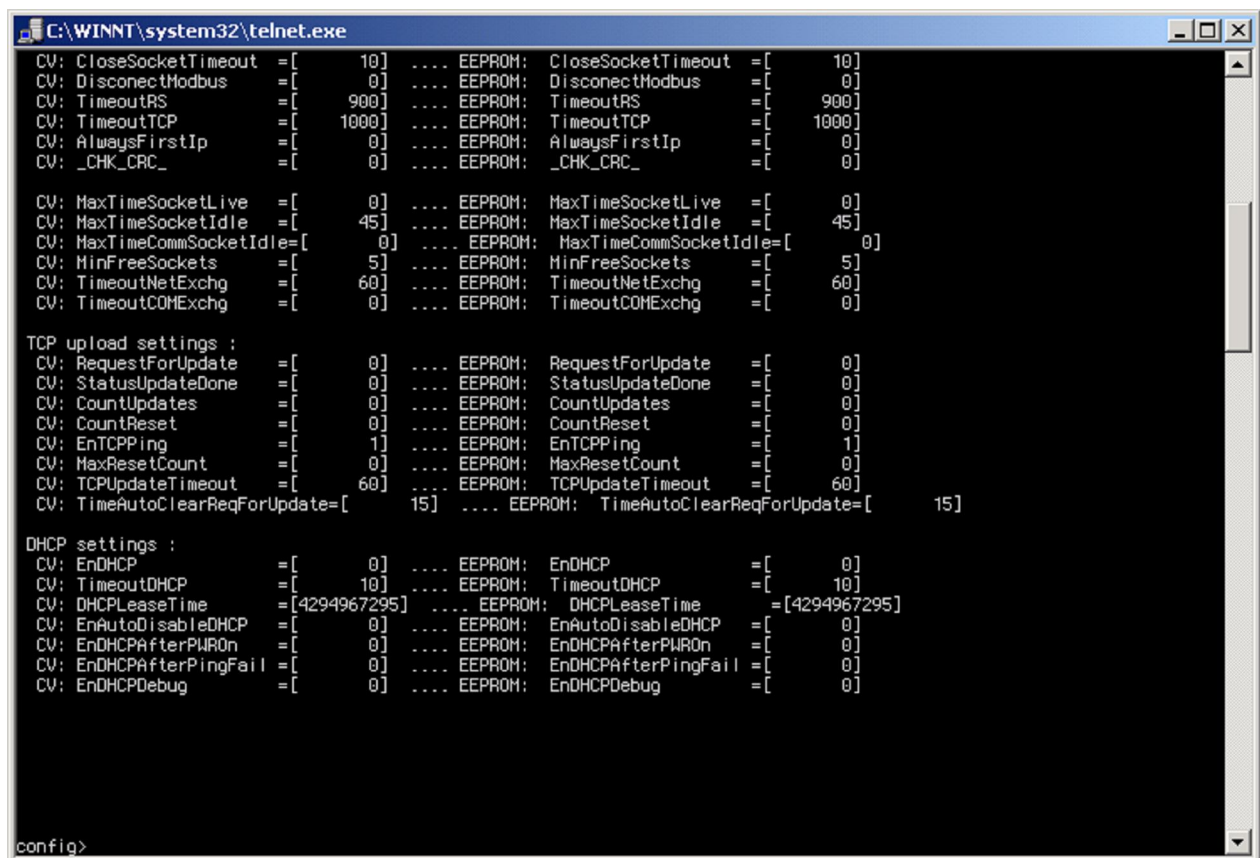
Details of their syntax with detailed description are presented in next chapter.

Configuration commands, available through “Telnet.exe”

1. Reading of current configuration:

<i>Description</i>	command causes displaying of current configuration parameters in console window
<i>Syntax</i>	GETCONF
<i>Parameters (description)</i>	None
<i>Performed operation result</i>	Displaying of current configuration parameters on screen
<i>Example of use</i>	Getconf

“Telnet.exe” console view after getconf command:



```

C:\WINNT\system32\telnet.exe
CV: CloseSocketTimeout = [ 10] .... EEPROM: CloseSocketTimeout = [ 10]
CV: DisconnectModbus = [ 0] .... EEPROM: DisconnectModbus = [ 0]
CV: TimeoutRS = [ 900] .... EEPROM: TimeoutRS = [ 900]
CV: TimeoutTCP = [ 1000] .... EEPROM: TimeoutTCP = [ 1000]
CV: AlwaysFirstIp = [ 0] .... EEPROM: AlwaysFirstIp = [ 0]
CV: _CHK_CRC_ = [ 0] .... EEPROM: _CHK_CRC_ = [ 0]

CV: MaxTimeSocketLive = [ 0] .... EEPROM: MaxTimeSocketLive = [ 0]
CV: MaxTimeSocketIdle = [ 45] .... EEPROM: MaxTimeSocketIdle = [ 45]
CV: MaxTimeCommSocketIdle = [ 0] .... EEPROM: MaxTimeCommSocketIdle = [ 0]
CV: MinFreeSockets = [ 5] .... EEPROM: MinFreeSockets = [ 5]
CV: TimeoutNetExchg = [ 60] .... EEPROM: TimeoutNetExchg = [ 60]
CV: TimeoutCOMExchg = [ 0] .... EEPROM: TimeoutCOMExchg = [ 0]

TCP upload settings :
CV: RequestForUpdate = [ 0] .... EEPROM: RequestForUpdate = [ 0]
CV: StatusUpdateDone = [ 0] .... EEPROM: StatusUpdateDone = [ 0]
CV: CountUpdates = [ 0] .... EEPROM: CountUpdates = [ 0]
CV: CountReset = [ 0] .... EEPROM: CountReset = [ 0]
CV: EnTCPping = [ 1] .... EEPROM: EnTCPping = [ 1]
CV: MaxResetCount = [ 0] .... EEPROM: MaxResetCount = [ 0]
CV: TCPUpdateTimeout = [ 60] .... EEPROM: TCPUpdateTimeout = [ 60]
CV: TimeAutoClearReqForUpdate = [ 15] .... EEPROM: TimeAutoClearReqForUpdate = [ 15]

DHCP settings :
CV: EnDHCP = [ 0] .... EEPROM: EnDHCP = [ 0]
CV: TimeoutDHCP = [ 10] .... EEPROM: TimeoutDHCP = [ 10]
CV: DHCPLeaseTime = [ 4294967295] .... EEPROM: DHCPLeaseTime = [ 4294967295]
CV: EnAutoDisableDHCP = [ 0] .... EEPROM: EnAutoDisableDHCP = [ 0]
CV: EnDHCPAfterPWRon = [ 0] .... EEPROM: EnDHCPAfterPWRon = [ 0]
CV: EnDHCPAfterPingFail = [ 0] .... EEPROM: EnDHCPAfterPingFail = [ 0]
CV: EnDHCPDebug = [ 0] .... EEPROM: EnDHCPDebug = [ 0]

config>
    
```

After that command all available configuration parameters are displayed. User should however modify only parameters described in this manual.

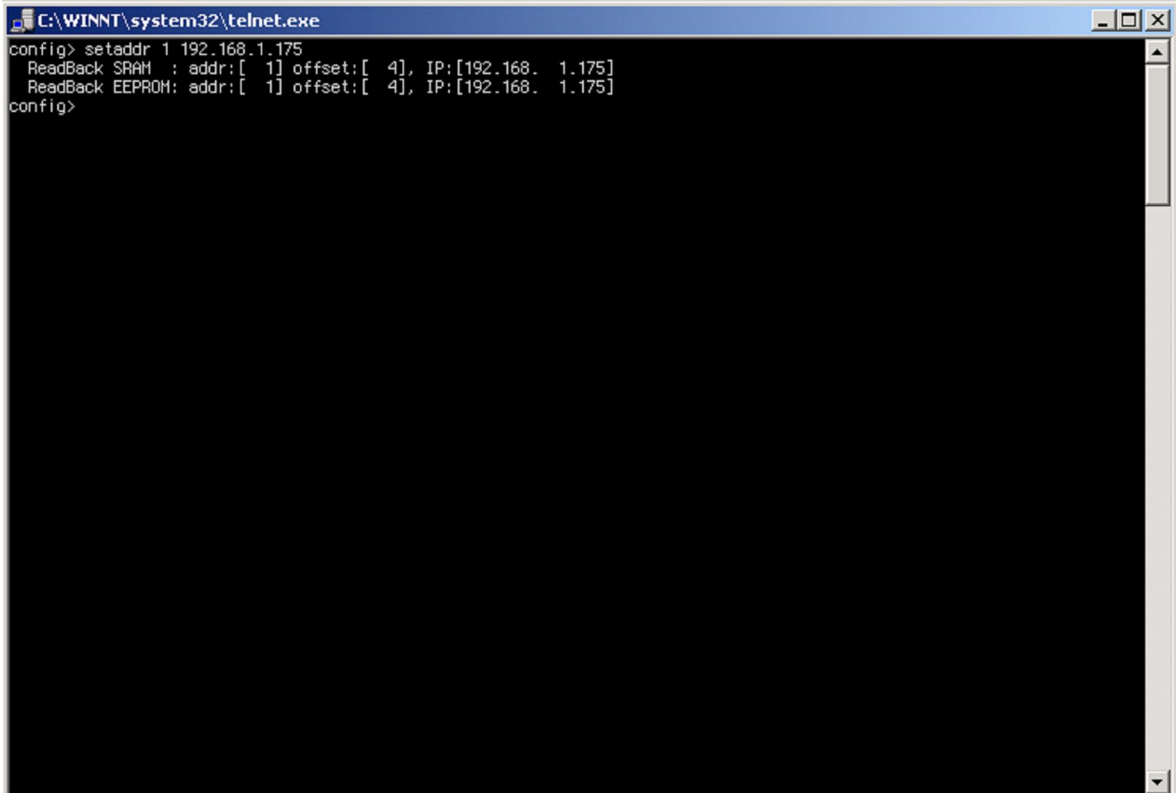
CAUTION: all configuration parameters do not fit in one console window. To view all of them, use scroll bar on the console right side.

2. Introducing Modbus Routing Table

This command allows for defining IP SLAVE Converter addresses pairs and Modbus RWS address.

<i>Description</i>	this command allows for setting IP address of remote device 7188E1
<i>Syntax</i>	SETADDR [ADDR] [NNN.NNN.NNN.NNN]
<i>Parameters (description)</i>	[ADDR] – address Modbus [NNN.NNN.NNN.NNN] – IP address for remote SLAVE Converter
<i>Performed operation result</i>	Writing of new configuration of IP and Modbus Address in the EEPROM memory
<i>Notes</i>	Restart 7188E1 devices after configuration parameters modification.
<i>Example of use</i>	setaddr 1 192.168.1.175
CAUTION!	Maximum Modbus address, serviced by the MASTER converter 63

The example of command, setting IP=192.168.1.175 address for Modbus_Address=1



```
C:\WINNT\system32\telnet.exe
config> setaddr 1 192.168.1.175
ReadBack SRAM : addr:[ 1] offset:[ 4], IP:[192.168. 1.175]
ReadBack EEPROM: addr:[ 1] offset:[ 4], IP:[192.168. 1.175]
config>
```

3. Configuration of serial port COM1 parameters

<i>Description</i>	command allows to configure parameters of the first serial port COM1
<i>Syntax</i>	SETCOM [PORT] [BAUD] [DATA_FORMAT] [PARITY] [STOPBITS]
<i>Parameters (description)</i>	[port] –COM port number – in this case 1 [baud] – transmission rate [data_format] - data format [parity] – parity [stopbits] – stop bits number
<i>Performed operation result</i>	Saving new COM1 configuration in EEPROM memory
<i>Notes</i>	Restart 7188E1 devices after configuration parameters modification.
<i>Example of use</i>	setcom 1 2400 8 0 1

4. Setting timeout (response time) for communication through serial port COM1

<i>Description</i>	command allows to set timeout (response time) in TCP communication through serial port.
<i>Syntax</i>	SETTIMEOUTRS [TIMEOUT]
<i>Parameters (description)</i>	[TIMEOUT] –timeout in [ms]
<i>Performed operation result</i>	Saving new timeout value in EEPROM memory
<i>Notes</i>	Restart 7188E1 devices after configuration parameters modification.
<i>Example of use</i>	settimeoutrs 900

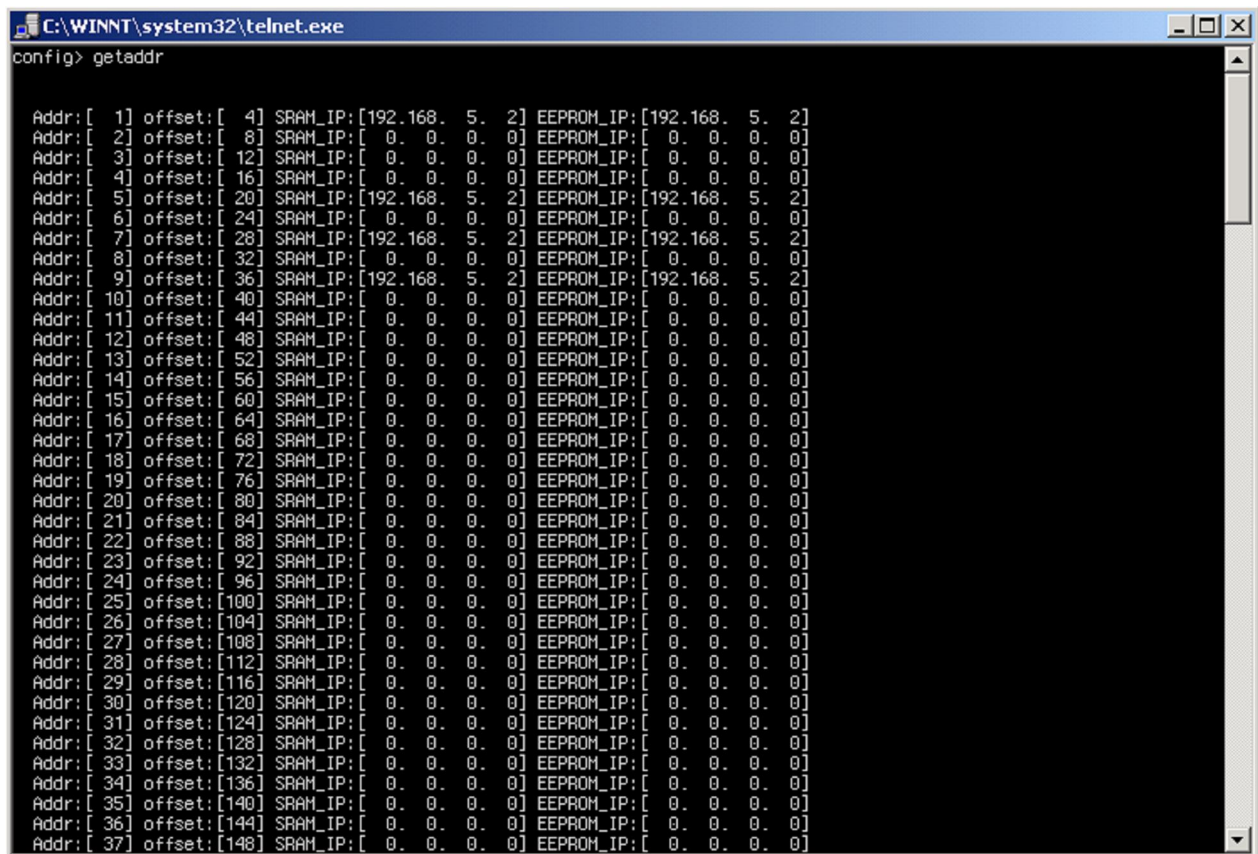
5. Setting interruption time in transmission through the serial port, considered as Modbus RTU frame end

<i>Description</i>	this command allows for setting interruption time in transmission through the serial port, considered as Modbus RTU frame end
<i>Syntax</i>	SETPAUSE [TIME]
<i>Parameters (description)</i>	[TIME] –timeout in [ms]
<i>Performed operation result</i>	Saving new timeout value in EEPROM memory
<i>Notes</i>	Restart 7188E1 devices after configuration parameters modification.
<i>Example of use</i>	setpause 13

6. Checking of configured IP address for remote device 7188E1

<i>Description</i>	this command displays in the console window the currently configured Modbus addresses and the corresponding IP addresses
<i>Syntax</i>	GETADDR
<i>Parameters (description)</i>	none
<i>Performed operation result</i>	Displaying of current addresses values on the screen
<i>Notes</i>	For the solution dedicated for Energomats of APATOR production always the last Modbus address and the corresponding IP number is taken into consideration.
<i>Example of use</i>	getaddr

Telnet console view after the getaddr command:



```

C:\WINNT\system32\telnet.exe
config> getaddr

Addr: [ 1] offset: [ 4] SRAM_IP: [192.168. 5. 2] EEPROM_IP: [192.168. 5. 2]
Addr: [ 2] offset: [ 8] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [ 3] offset: [12] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [ 4] offset: [16] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [ 5] offset: [20] SRAM_IP: [192.168. 5. 2] EEPROM_IP: [192.168. 5. 2]
Addr: [ 6] offset: [24] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [ 7] offset: [28] SRAM_IP: [192.168. 5. 2] EEPROM_IP: [192.168. 5. 2]
Addr: [ 8] offset: [32] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [ 9] offset: [36] SRAM_IP: [192.168. 5. 2] EEPROM_IP: [192.168. 5. 2]
Addr: [10] offset: [40] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [11] offset: [44] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [12] offset: [48] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [13] offset: [52] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [14] offset: [56] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [15] offset: [60] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [16] offset: [64] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [17] offset: [68] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [18] offset: [72] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [19] offset: [76] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [20] offset: [80] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [21] offset: [84] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [22] offset: [88] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [23] offset: [92] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [24] offset: [96] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [25] offset: [100] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [26] offset: [104] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [27] offset: [108] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [28] offset: [112] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [29] offset: [116] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [30] offset: [120] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [31] offset: [124] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [32] offset: [128] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [33] offset: [132] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [34] offset: [136] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [35] offset: [140] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [36] offset: [144] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
Addr: [37] offset: [148] SRAM_IP: [ 0. 0. 0. 0] EEPROM_IP: [ 0. 0. 0. 0]
    
```

Command execution results in displaying all Modbus addresses pairs.

7. Setting timeout (response time) for communication through Ethernet network

<i>Description</i>	command allows to set timeout (response time) in TCP communication session in Ethernet network
<i>Syntax</i>	SETTIMEOUTTCP [TIMEOUT]
<i>Parameters (description)</i>	[TIMEOUT] –timeout in [ms]
<i>Performed operation result</i>	Saving new timeout value in EEPROM memory
<i>Notes</i>	Restart 7188E1 devices after configuration parameters modification.
<i>Example of use</i>	settimeouttcp 1000

Recommended configuration for MASTER and SLAVE Converters

The configuration shown below is set by default in each MASTER or SLAVE Converter.

```

Serial port COM 1 :
CV: COM1_Port           =[      1] .... EEPROM: COM1_Port           =[      1]
CV: COM1_Baud           =[    9600] .... EEPROM: COM1_Baud           =[    9600]
CV: COM1_Data           =[      8] .... EEPROM: COM1_Data           =[      8]
CV: COM1_Parity         =[      0] .... EEPROM: COM1_Parity         =[      0]
CV: COM1_Stop           =[      1] .... EEPROM: COM1_Stop           =[      1]

Serial port COM 2 :
CV: COM2_Port           =[      2] .... EEPROM: COM2_Port           =[      2]
CV: COM2_Baud           =[    9600] .... EEPROM: COM2_Baud           =[    9600]
CV: COM2_Data           =[      8] .... EEPROM: COM2_Data           =[      8]
CV: COM2_Parity         =[      0] .... EEPROM: COM2_Parity         =[      0]
CV: COM2_Stop           =[      1] .... EEPROM: COM2_Stop           =[      1]

TCP/IP ports :
CV: ModbusPort          =[    502] .... EEPROM: ModbusPort          =[    502]
CV: ConfigPort          =[   10750] .... EEPROM: ConfigPort          =[   10750]
CV: DebugPort           =[   10500] .... EEPROM: DebugPort           =[   10500]
CV: SatchPort           =[   11000] .... EEPROM: SatchPort           =[   11000]

Main config settings :
CV: Pause               =[      4] .... EEPROM: Pause               =[      4]
CV: MoadbusID           =[      1] .... EEPROM: MoadbusID           =[      1]
CV: ModAtStart          =[      1] .... EEPROM: ModAtStart          =[      1]
CV: EnPassword          =[      1] .... EEPROM: EnPassword          =[      0]
CV: HostEnable          =[      0] .... EEPROM: HostEnable          =[      0]
CV: EnFirConfig         =[      0] .... EEPROM: EnFirConfig         =[      0]
CV: EnAcceptBroadcast   =[      0] .... EEPROM: EnAcceptBroadcast   =[      0]

CV: NumberConnectTrials =[      3] .... EEPROM: NumberConnectTrials =[      3]
CV: ConnectingTimeout   =[    500] .... EEPROM: ConnectingTimeout   =[    500]
CV: CloseSocketTimeout  =[    10] .... EEPROM: CloseSocketTimeout  =[    10]
CV: DisconnectModbus    =[      0] .... EEPROM: DisconnectModbus    =[      0]
CV: TimeoutRS           =[    900] .... EEPROM: TimeoutRS           =[    900]
CV: TimeoutTCP          =[   1000] .... EEPROM: TimeoutTCP          =[   1000]
CV: AlwaysFirstIp       =[      0] .... EEPROM: AlwaysFirstIp       =[      0]
CV: _CHK_CRC_           =[      0] .... EEPROM: _CHK_CRC_           =[      0]

CV: MaxTimeSocketLive   =[      0] .... EEPROM: MaxTimeSocketLive   =[      0]
CV: MaxTimeSocketIdle   =[    45] .... EEPROM: MaxTimeSocketIdle   =[    45]
CV: MaxTimeCommSocketIdle=[      0] .... EEPROM: MaxTimeCommSocketIdle=[      0]
CV: MinFreeSockets      =[      5] .... EEPROM: MinFreeSockets      =[      5]
CV: TimeoutNetExchg     =[    60] .... EEPROM: TimeoutNetExchg     =[    60]
CV: TimeoutCOMExchg     =[      0] .... EEPROM: TimeoutCOMExchg     =[      0]

TCP upload settings :
CV: RequestForUpdate    =[      0] .... EEPROM: RequestForUpdate    =[      0]
CV: StatusUpdateDone    =[      0] .... EEPROM: StatusUpdateDone    =[      0]
CV: CountUpdates        =[      0] .... EEPROM: CountUpdates        =[      0]
CV: CountReset          =[      0] .... EEPROM: CountReset          =[      0]
CV: EnTCPMod            =[      1] .... EEPROM: EnTCPMod            =[      1]
CV: MaxResetCount       =[      0] .... EEPROM: MaxResetCount       =[      0]
CV: TCPUpdateTimeout    =[    60] .... EEPROM: TCPUpdateTimeout    =[    60]
CV: TimeAutoClearReqForUpdate=[    15] .... EEPROM: TimeAutoClearReqForUpdate=[    15]

DHCP settings :
CV: EnDHCP              =[      0] .... EEPROM: EnDHCP              =[      0]
CV: TimeoutDHCP         =[    10] .... EEPROM: TimeoutDHCP         =[    10]
CV: DHCPLeaseTime       =[4294967295] .... EEPROM: DHCPLeaseTime       =[4294967295]
CV: EnAutoDisableDHCP   =[      0] .... EEPROM: EnAutoDisableDHCP   =[      0]
CV: EnDHCPAfterPWRon    =[      0] .... EEPROM: EnDHCPAfterPWRon    =[      0]
CV: EnDHCPAfterModFail  =[      0] .... EEPROM: EnDHCPAfterModFail  =[      0]
CV: EnDHCPDebug         =[      0] .... EEPROM: EnDHCPDebug         =[      0]

CV: Password1           =[1234] .... EEPROM: Password1           =[1234]
CV: Password2           =[5678] .... EEPROM: Password2           =[5678]
    
```

CV: CryptIdent

=[no crypt]

... EEPROM: CryptIdent

=[no crypt]

In most cases set configuration parameters are sufficient for correct Converters operation and should not be modified.

Technical support for these devices may be obtained directly from the producer:

TechBase Sp. z o.o.

www.a2s.pl

support@a2s.pl

tel. +48 58 345 39 22