

# MPI-C-Raport

## version 1.41



# MPI-C-Raport

## USER MANUAL

Version: 190319EN

**metronic**

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**!** Before using the software, refer to the instruction manual.

■ All functions of the software are subject to modifications for the benefit of technical progress.

## 1 Hardware requirements

minimum:	screen resolution, mode DPI settings operating system RAM	1024 x 768, colour 96 dpi (normal size) WINDOWS 98 256 MB
optimal:	screen resolution, mode DPI settings operating system RAM	1280 x 1024, colour 96 dpi (normal size) WINDOWS XP / Vista / 7 / 8 512 MB or more

## 2 Log



Fig. 2.1 Login window (username: ADMIN, password: metronic)

Login: ADMIN

Password: metronic

## 3 Program registration

Program in the demo version have all the functionality of the full version, but turn off automatically after approx. 10 min. In addition there is displayed writing "SOFTWARE DEMO VERSION (program needs registration)".

Menu → Program → Program settings...

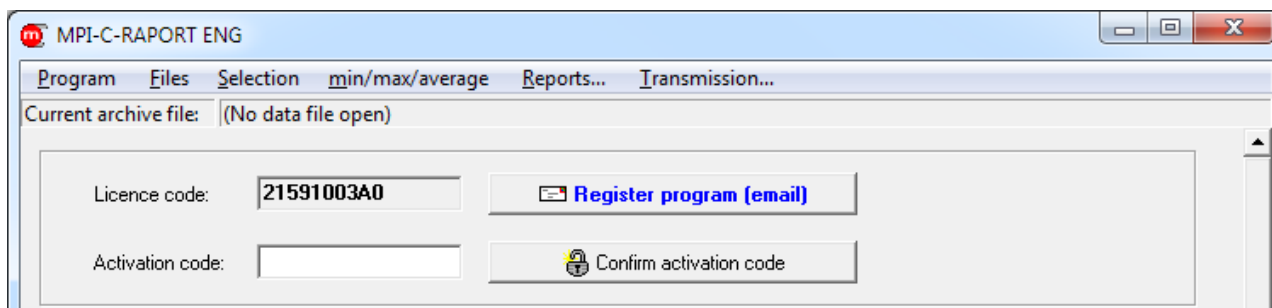


Fig. 3.1 Program registration

## 4 Adding/delete user, changing the administrator password

Menu → Program → Program settings...

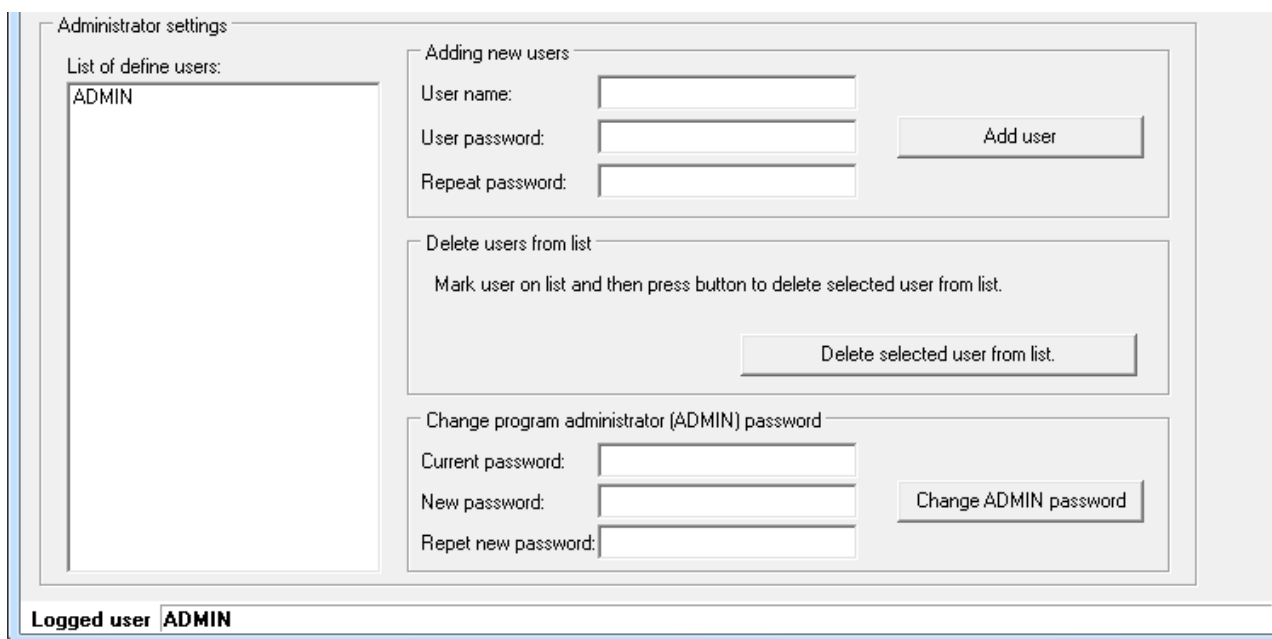


Fig. 4.1 Program settings

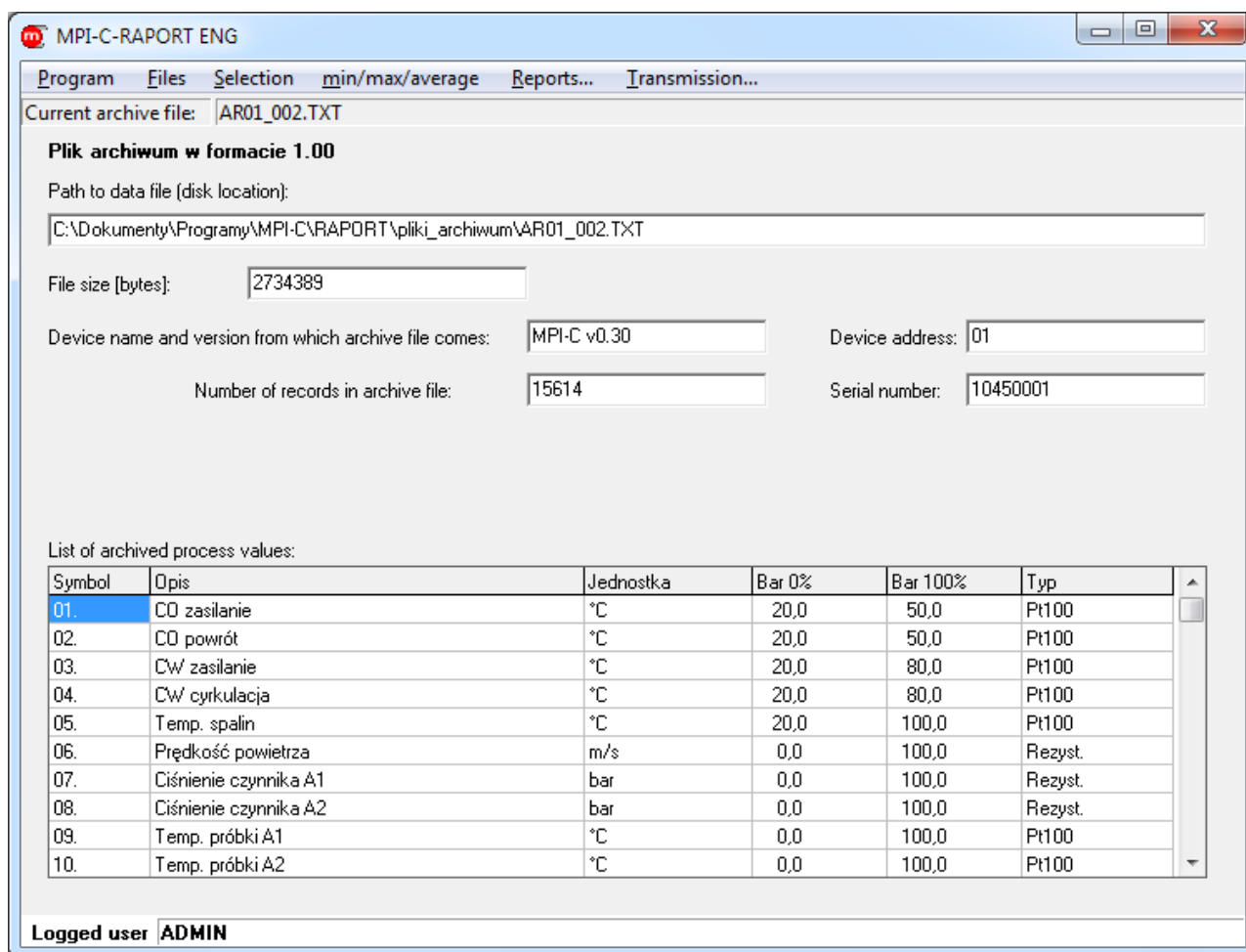
## 5 Analysis and visualization data from computer hard disc

### 5.1 Information about file

Menu → Files →

- Open main archive file...
- Open totalisers archive file...
- Open event log file...
- Open authorization log file...

Menu → Files → Information about file...



**MPI-C-RAPORT ENG**

Program Files Selection min/max/average Reports... Transmission...

Current archive file: AR01\_002.TXT

**Plik archiwum w formacie 1.00**

Path to data file (disk location):  
C:\Dokumenty\Programy\MPI-C\RAPORT\pliki\_archiwum\AR01\_002.TXT

File size [bytes]: 2734389

Device name and version from which archive file comes: MPI-C v0.30 Device address: 01

Number of records in archive file: 15614 Serial number: 10450001

List of archived process values:

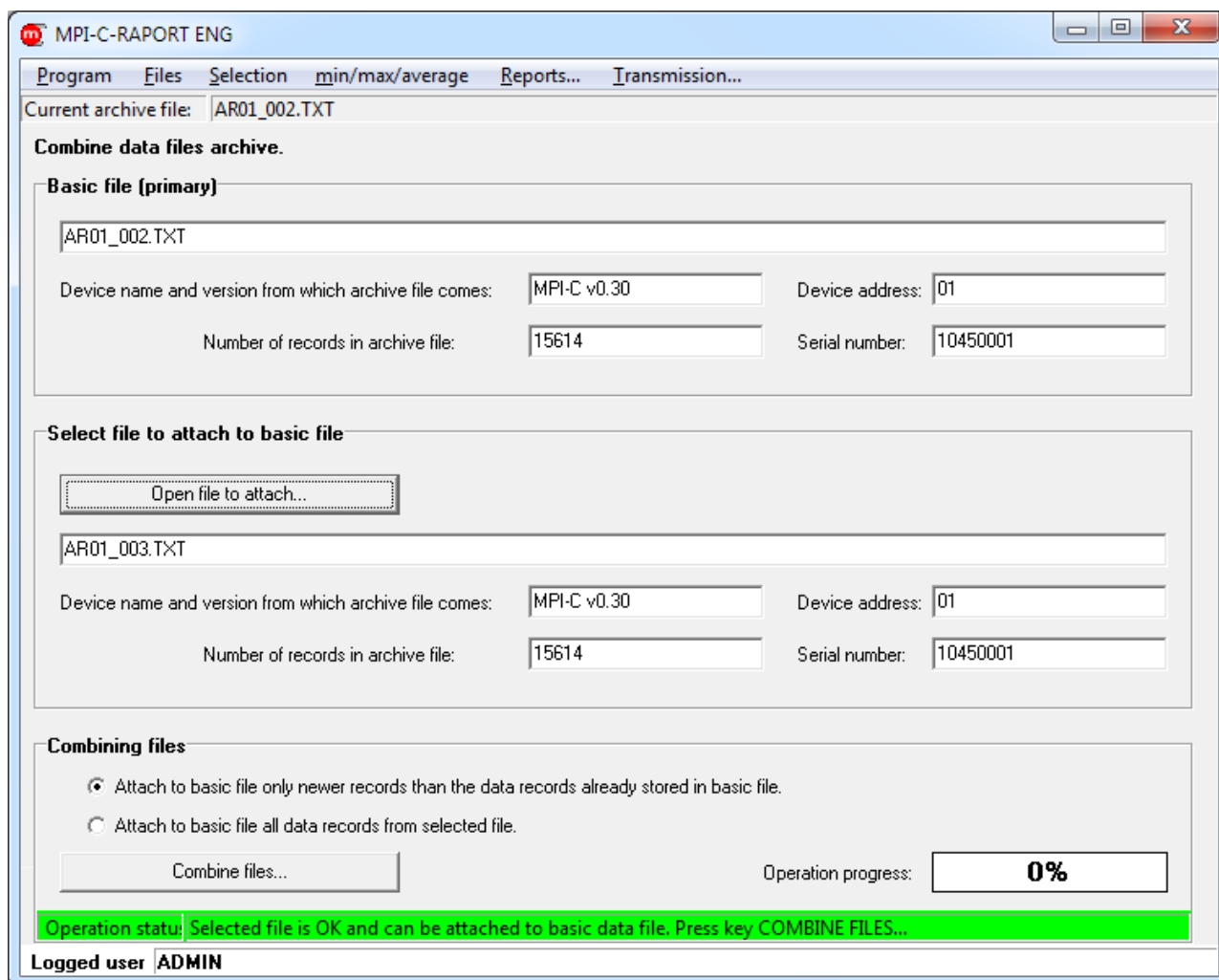
Symbol	Opis	Jednostka	Bar 0%	Bar 100%	Typ
01.	CO zasilanie	°C	20,0	50,0	Pt100
02.	CO powrót	°C	20,0	50,0	Pt100
03.	CW zasilanie	°C	20,0	80,0	Pt100
04.	CW cyrkulacja	°C	20,0	80,0	Pt100
05.	Temp. spalin	°C	20,0	100,0	Pt100
06.	Prędkość powietrza	m/s	0,0	100,0	Rezyst.
07.	Ciśnienie czynnika A1	bar	0,0	100,0	Rezyst.
08.	Ciśnienie czynnika A2	bar	0,0	100,0	Rezyst.
09.	Temp. próbki A1	°C	0,0	100,0	Pt100
10.	Temp. próbki A2	°C	0,0	100,0	Pt100

Logged user ADMIN

Fig. 5.1 Window with information about the currently open data file

## 5.2 Combine data files

Menu → Files → Combine data files...



The screenshot shows the 'MPI-C-RAPORT ENG' application window. The 'Files' menu is active, and the 'Combine data files archive' option is selected. The interface is divided into several sections:

- Current archive file:** AR01\_002.TXT
- Combine data files archive.**
  - Basic file (primary)**
    - File name: AR01\_002.TXT
    - Device name and version from which archive file comes: MPI-C v0.30
    - Device address: 01
    - Number of records in archive file: 15614
    - Serial number: 10450001
  - Select file to attach to basic file**
    - Open file to attach... button
    - File name: AR01\_003.TXT
    - Device name and version from which archive file comes: MPI-C v0.30
    - Device address: 01
    - Number of records in archive file: 15614
    - Serial number: 10450001
  - Combining files**
    - ☒ Attach to basic file only newer records than the data records already stored in basic file.
    - ☐ Attach to basic file all data records from selected file.
    - Combine files... button
    - Operation progress: 0%
- Operation status:** Selected file is OK and can be attached to basic data file. Press key COMBINE FILES...
- Logged user:** ADMIN

Fig. 5.2 Combine data files

## 5.3 File control

Menu → Files → Check data in file...

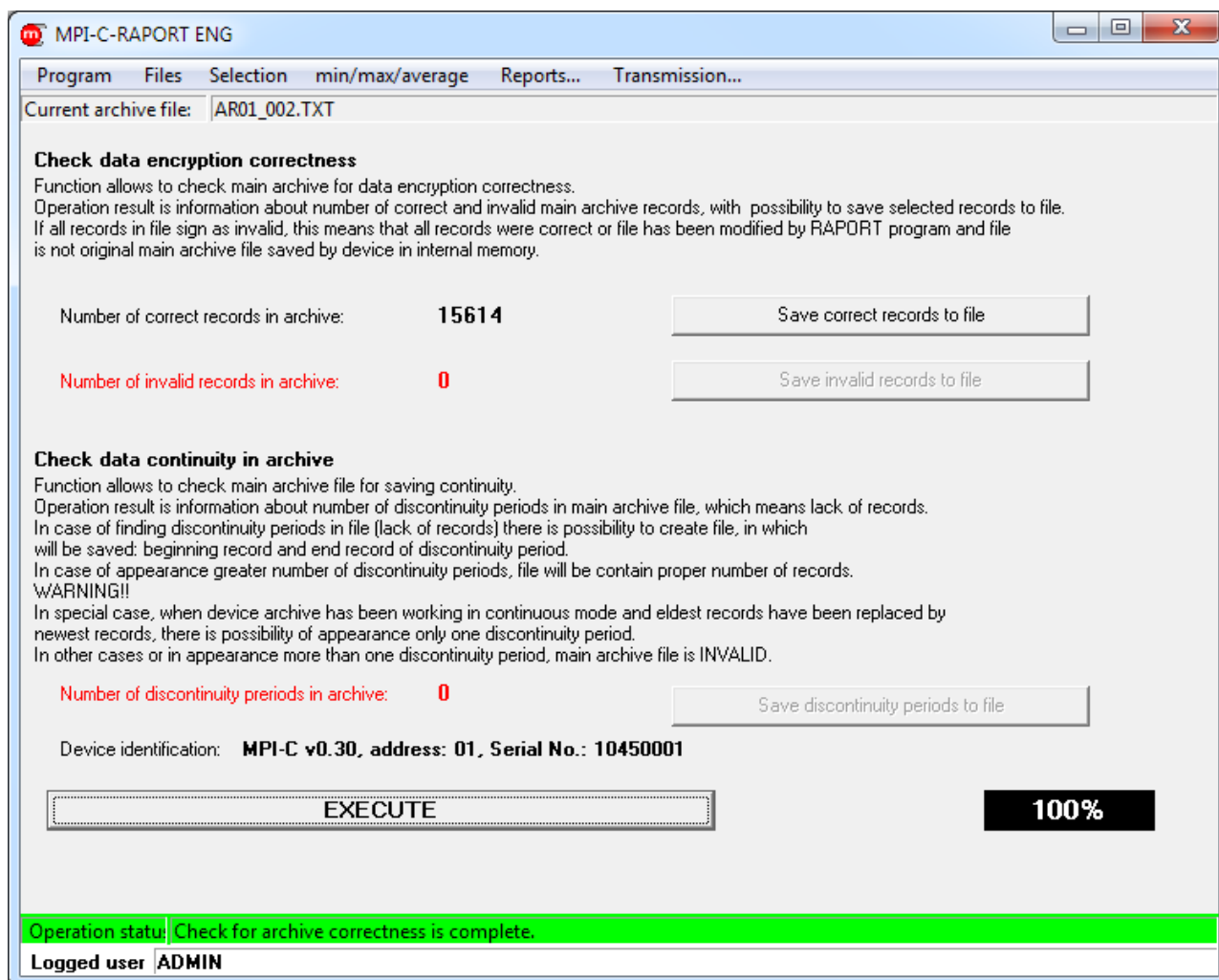
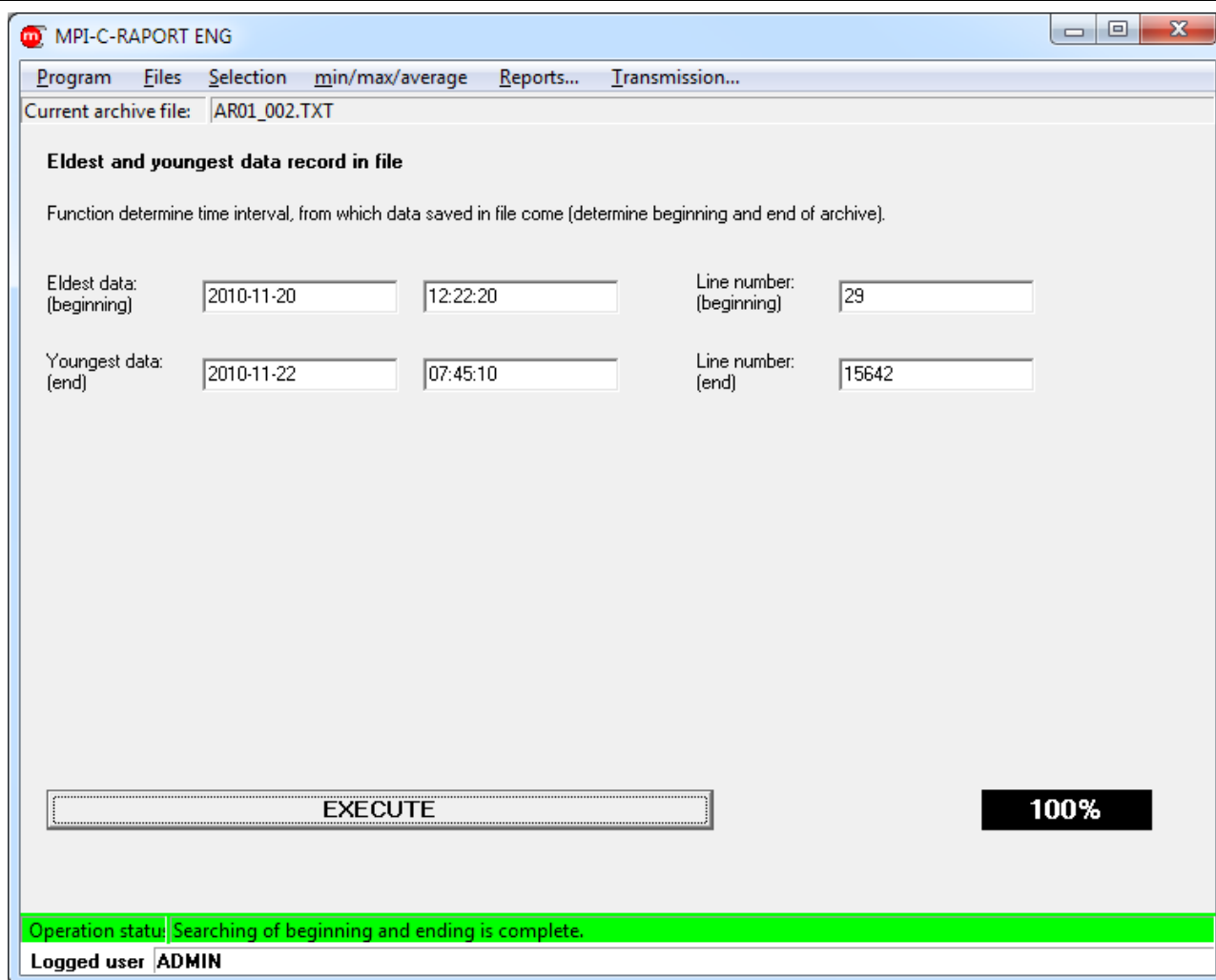


Fig. 5.3 Check data in file window

## 5.4 Data selection

Menu → Selection

- Find the eldest and the youngest...
- Sort by time...
- Find from date to date...
- Find less than...
- Find from range...
- Find outside range...
- Find greater than...



**MPI-C-RAPORT ENG**

Program Files Selection min/max/average Reports... Transmission...

Current archive file: AR01\_002.TXT

**Eldest and youngest data record in file**

Function determine time interval, from which data saved in file come (determine beginning and end of archive).

Eldest data: (beginning) 2010-11-20 12:22:20 Line number: (beginning) 29

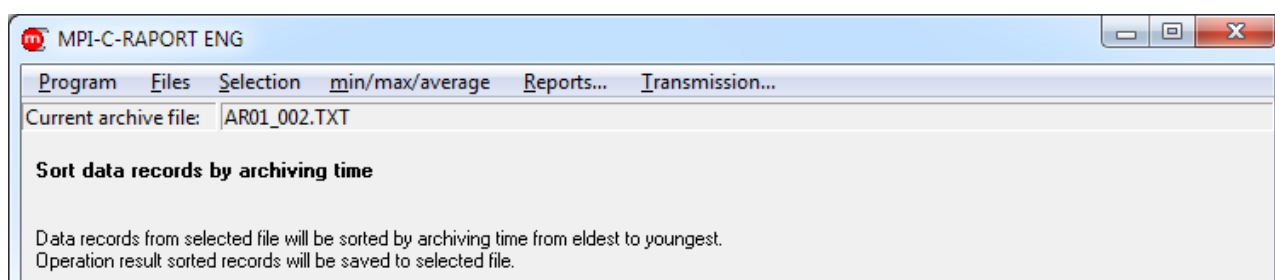
Youngest data: (end) 2010-11-22 07:45:10 Line number: (end) 15642

EXECUTE 100%

Operation status: Searching of beginning and ending is complete.

Logged user: ADMIN

Fig. 5.4 Search the oldest and youngest data record



**MPI-C-RAPORT ENG**

Program Files Selection min/max/average Reports... Transmission...


Current archive file: AR01\_002.TXT

**Sort data records by archiving time**

Data records from selected file will be sorted by archiving time from eldest to youngest.  
Operation result sorted records will be saved to selected file.

Fig. 5.5 Saving sorted by time archive into new file




MPI-C-RAPORT ENG

Program
Files
Selection
min/max/average
Reports...
Transmission...

Current archive file: AR01\_002.TXT

**Select data / from date (earlier) to date (later)**

Choose DATE and TIME of starting and ending data record. Data records from chosen range will be selected and saved to file.

**BEGINNING:**

2010-11-20

12:22:20

**END:**

2010-11-22

07:45:10

Number of found records: 0

EXECUTE

0%

Operation status

Logged user ADMIN

Fig. 5.6 Saving selected time into new file

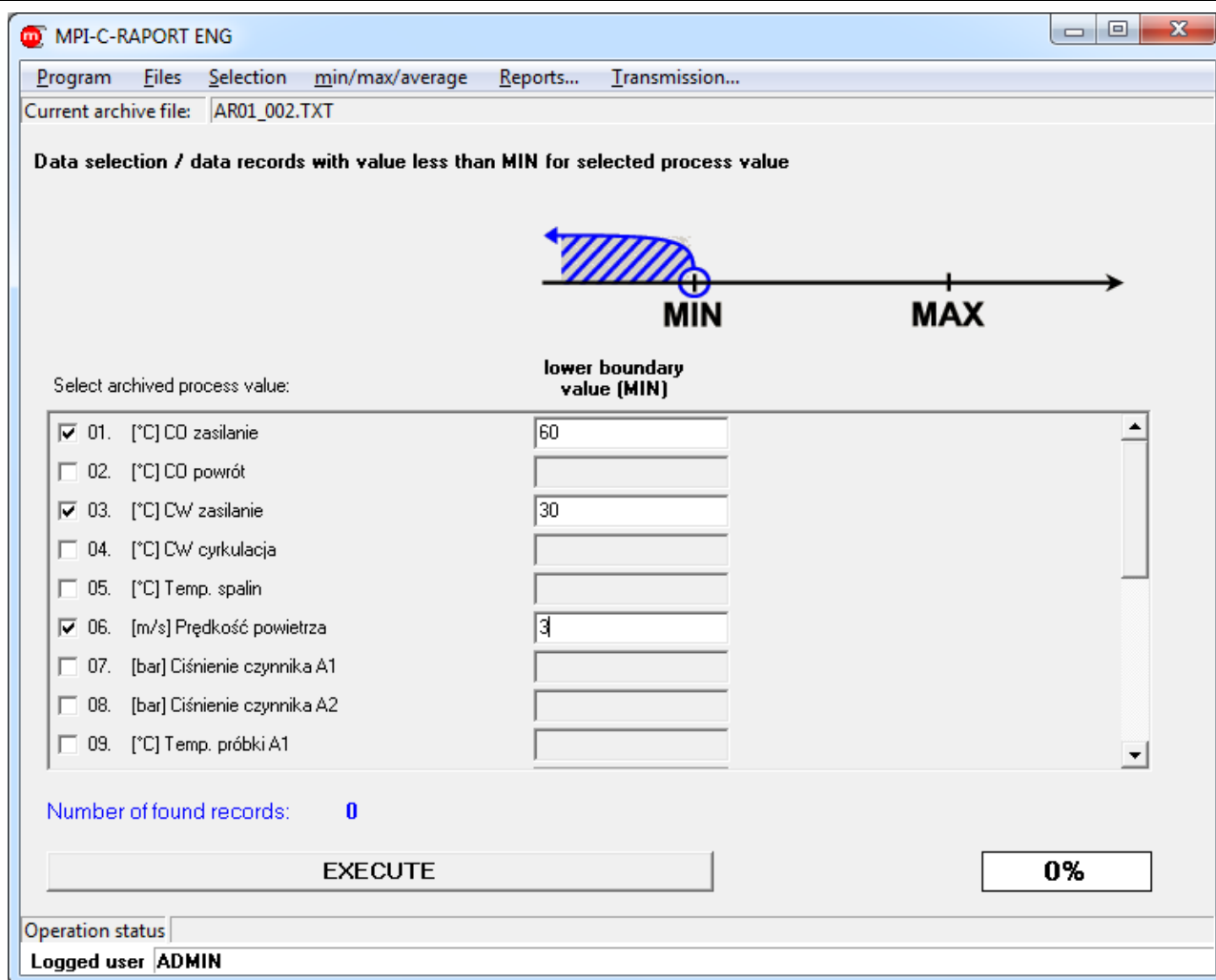


Fig. 5.7 Saving values less than specified boundary values into new file

## 5.5 Determination of extremes

Menu → min/max/average

- Minutely minimums...
- Hourly minimums...
- Daily minimums...
- Monthly minimums...
- Minutely maximums...
- Hourly maximums...
- Daily maximums...
- Monthly maximums...
- Minutely averages...
- Hourly averages...
- Daily averages...
- Monthly averages...

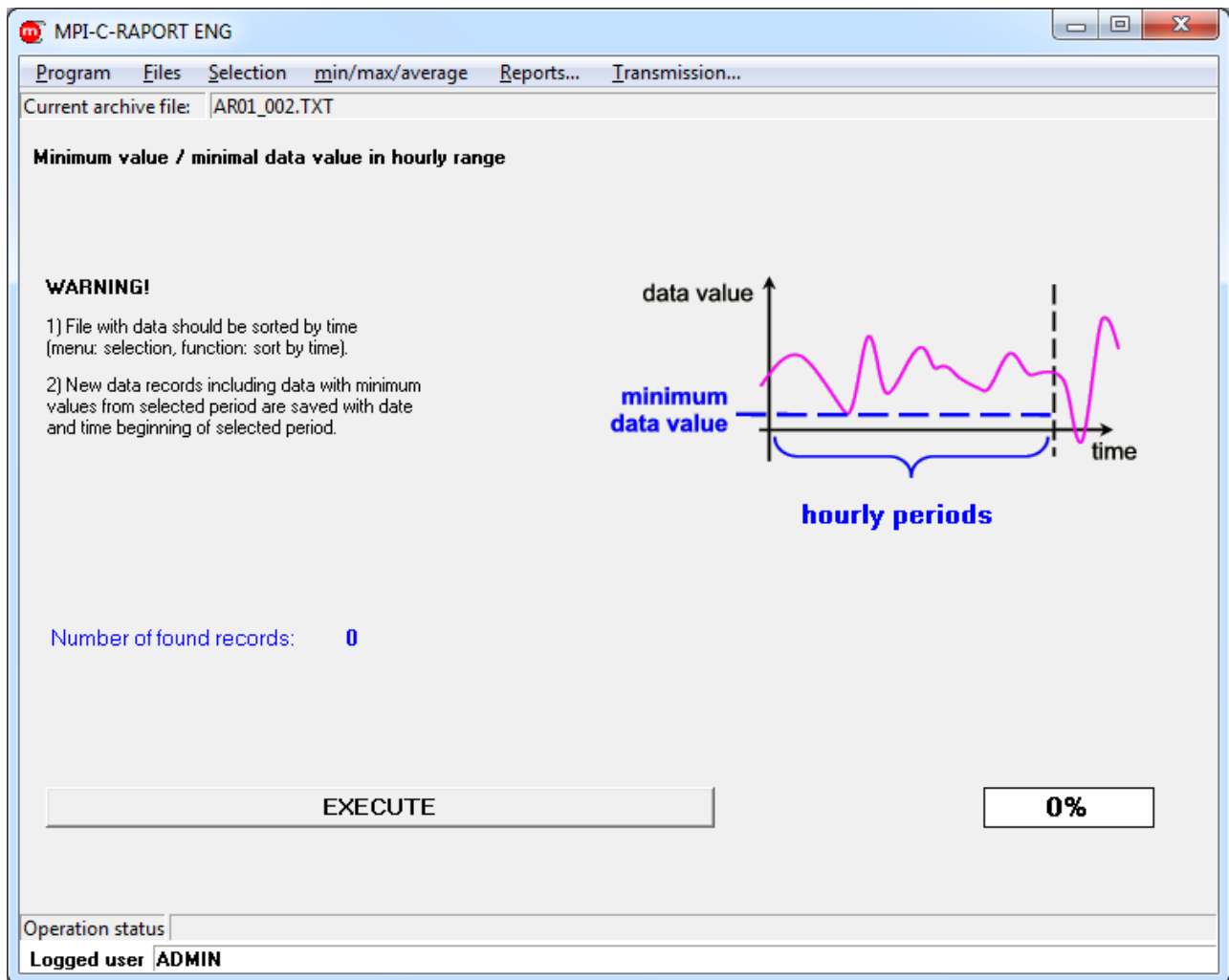


Fig. 5.8 Saving records with minimum values from consecutive hourly periods into new file

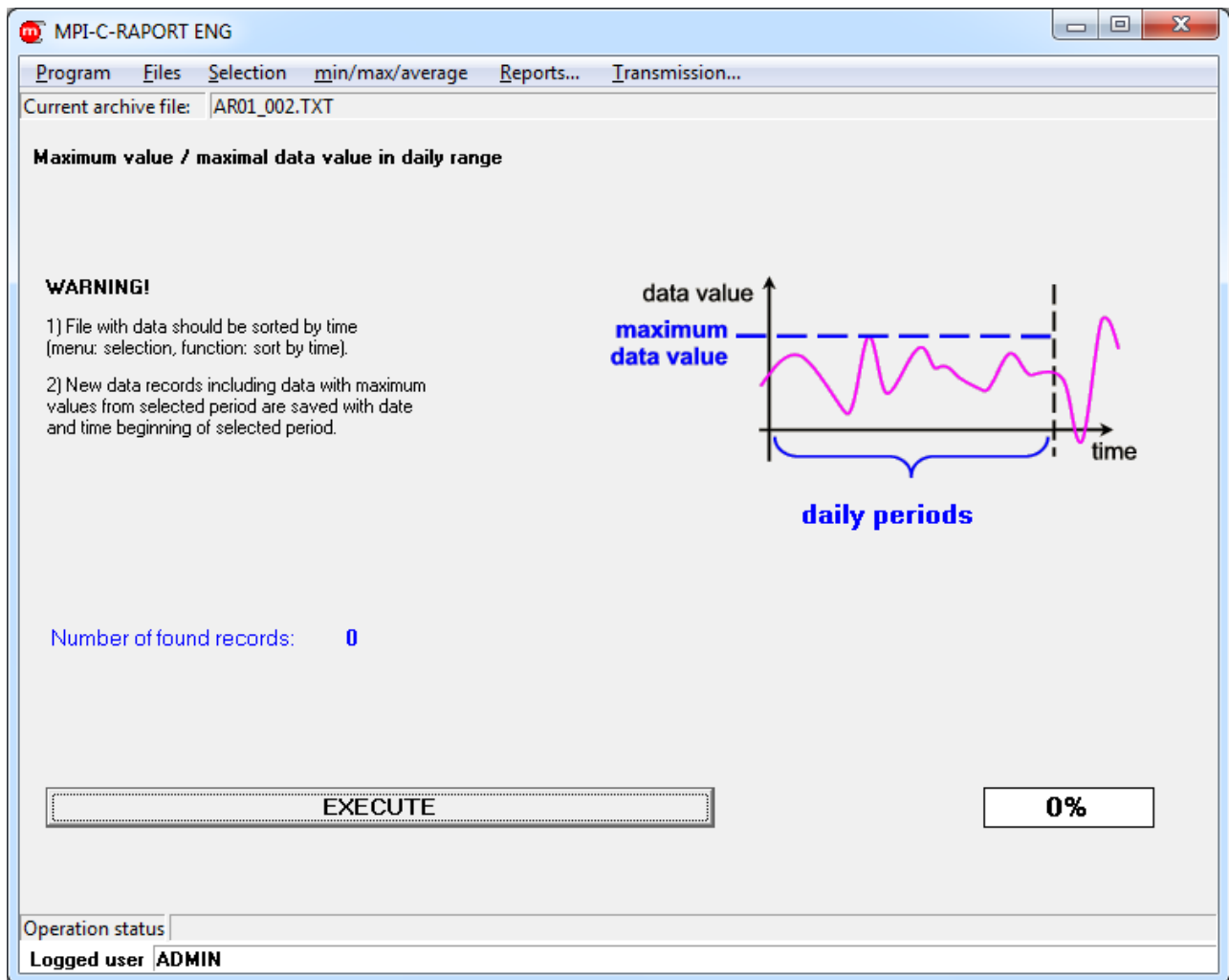


Fig. 5.9 Saving records with maximum values from consecutive daily periods into new file

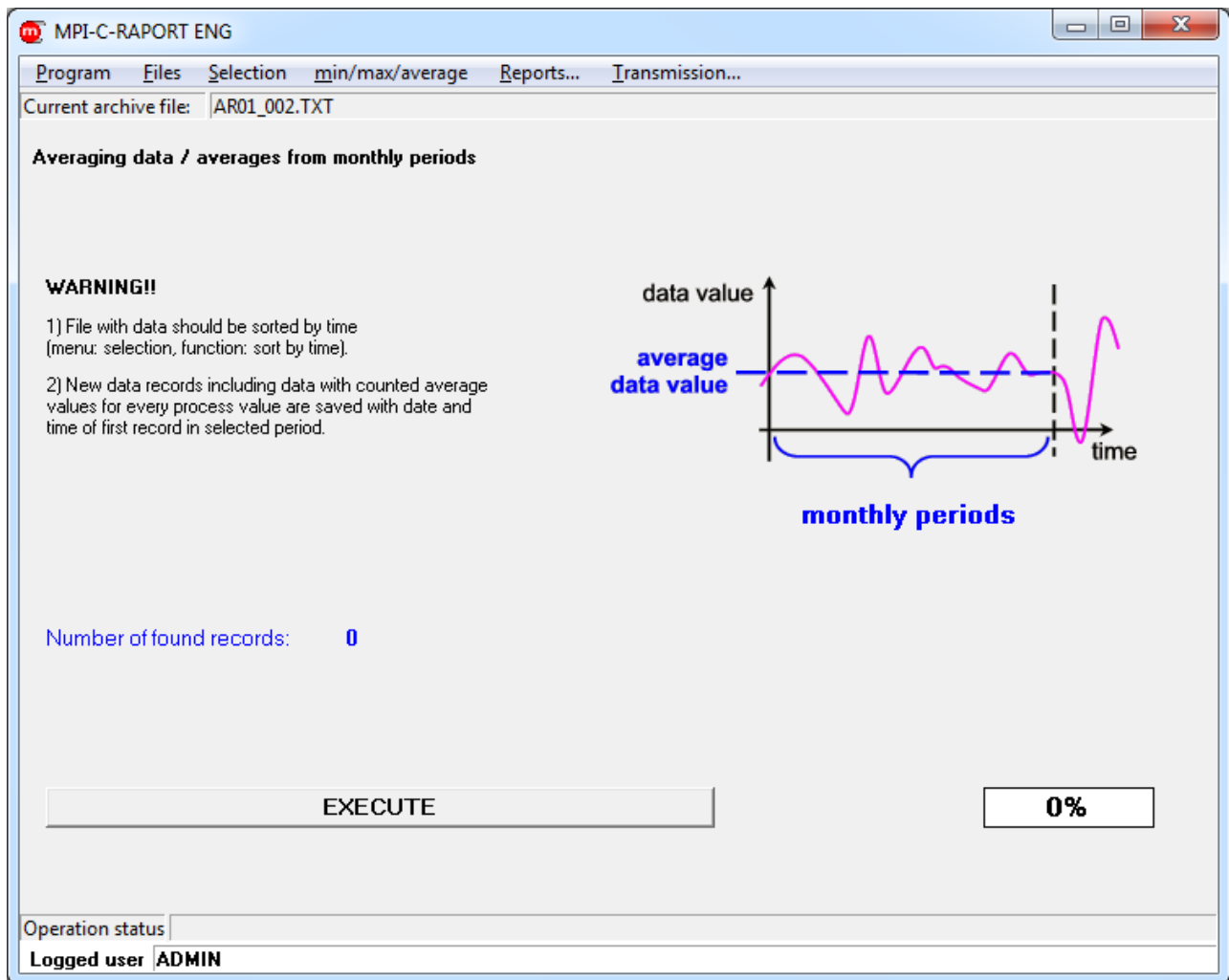


Fig. 5.10 Saving records with average values from consecutive monthly periods into new file

## 5.6 Preparation of reports: graphs

Menu → Reports...

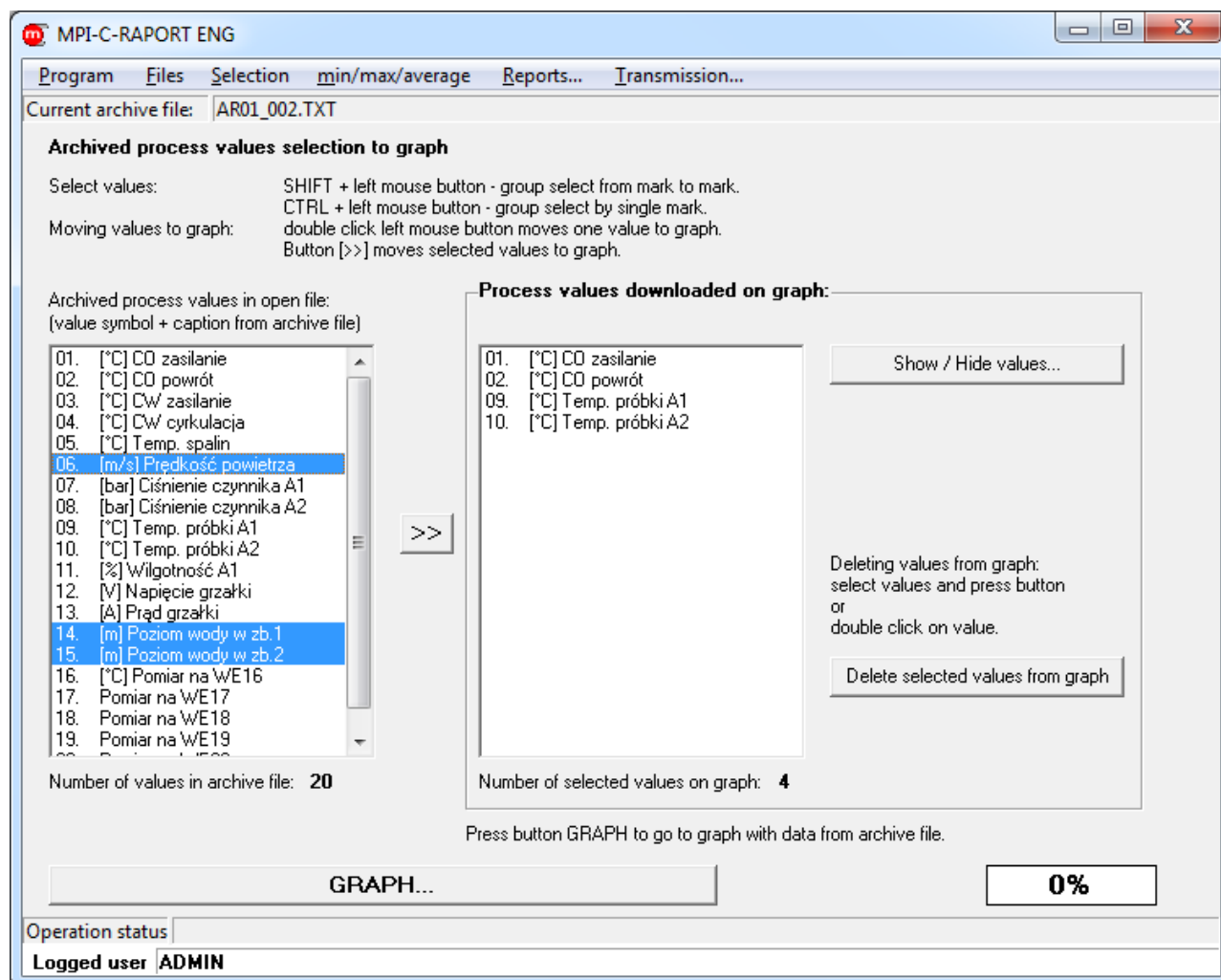


Fig. 5.11 Selection of channel to present on the graph

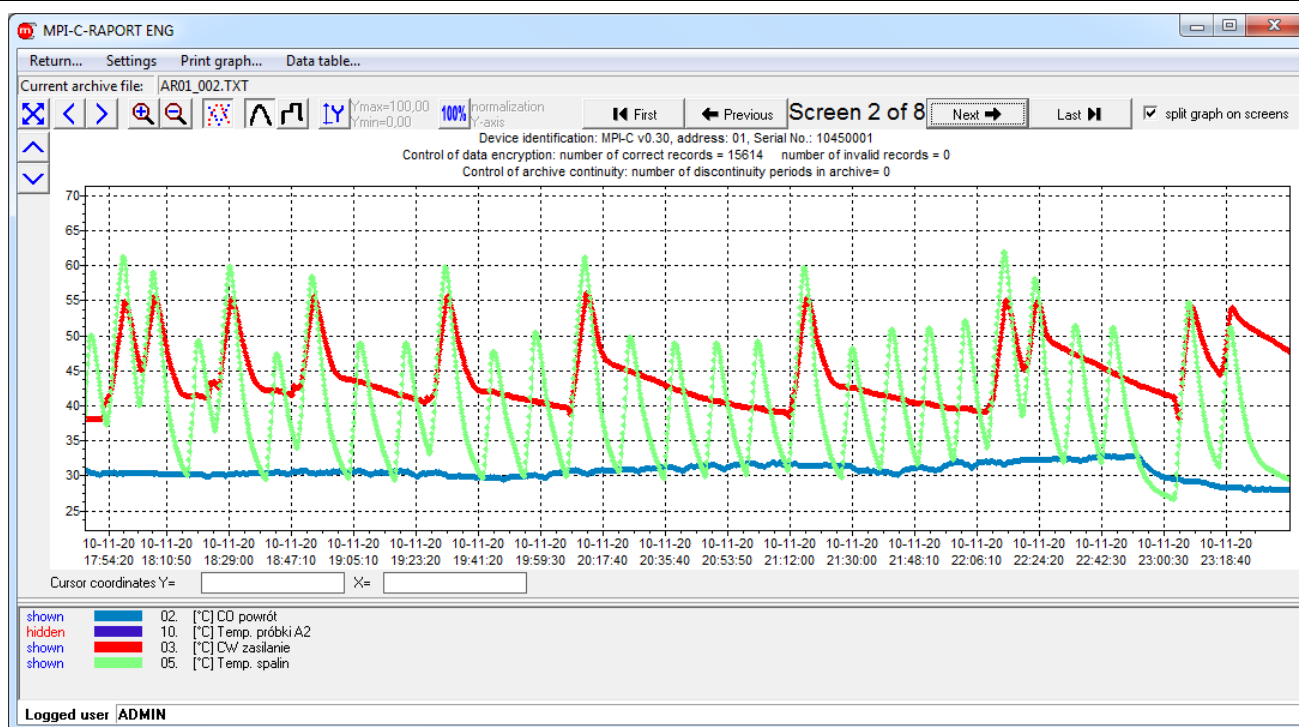

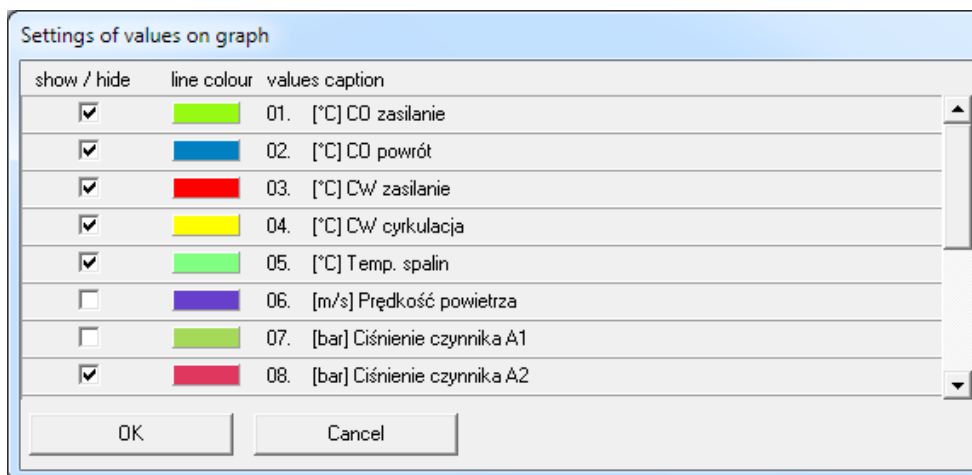










Fig. 5.12 Graph window

- Menu → Settings → Show / Hide values...
- Right-click in the graph area → Show / Hide values

- Okno Fig. 5.11 



Settings of values on graph

show / hide	line colour	values caption
<input checked="" type="checkbox"/>		01. [°C] CO zasilanie
<input checked="" type="checkbox"/>		02. [°C] CO powrót
<input checked="" type="checkbox"/>		03. [°C] CW zasilanie
<input checked="" type="checkbox"/>		04. [°C] CW cyrkulacja
<input checked="" type="checkbox"/>		05. [°C] Temp. spalin
<input type="checkbox"/>		06. [m/s] Prędkość powietrza
<input type="checkbox"/>		07. [bar] Ciśnienie czynnika A1
<input checked="" type="checkbox"/>		08. [bar] Ciśnienie czynnika A2

OK Cancel

Fig. 5.13 Settings of values on graph

- Menu → Settings → Graph settings...
- Right-click in the graph area → Graph settings...

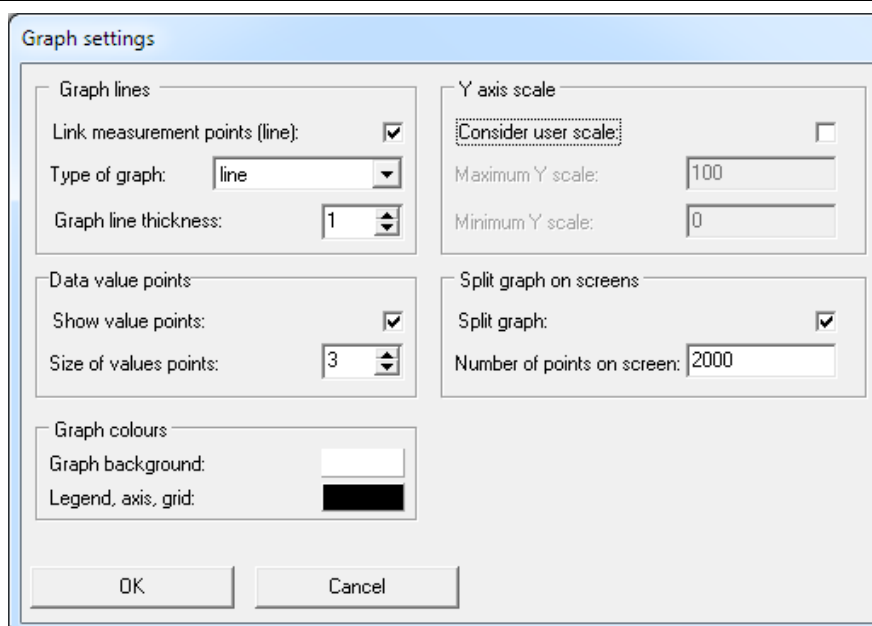


Fig. 5.14 Graph settings

Window Fig. 5.12 Menu → Print graph...

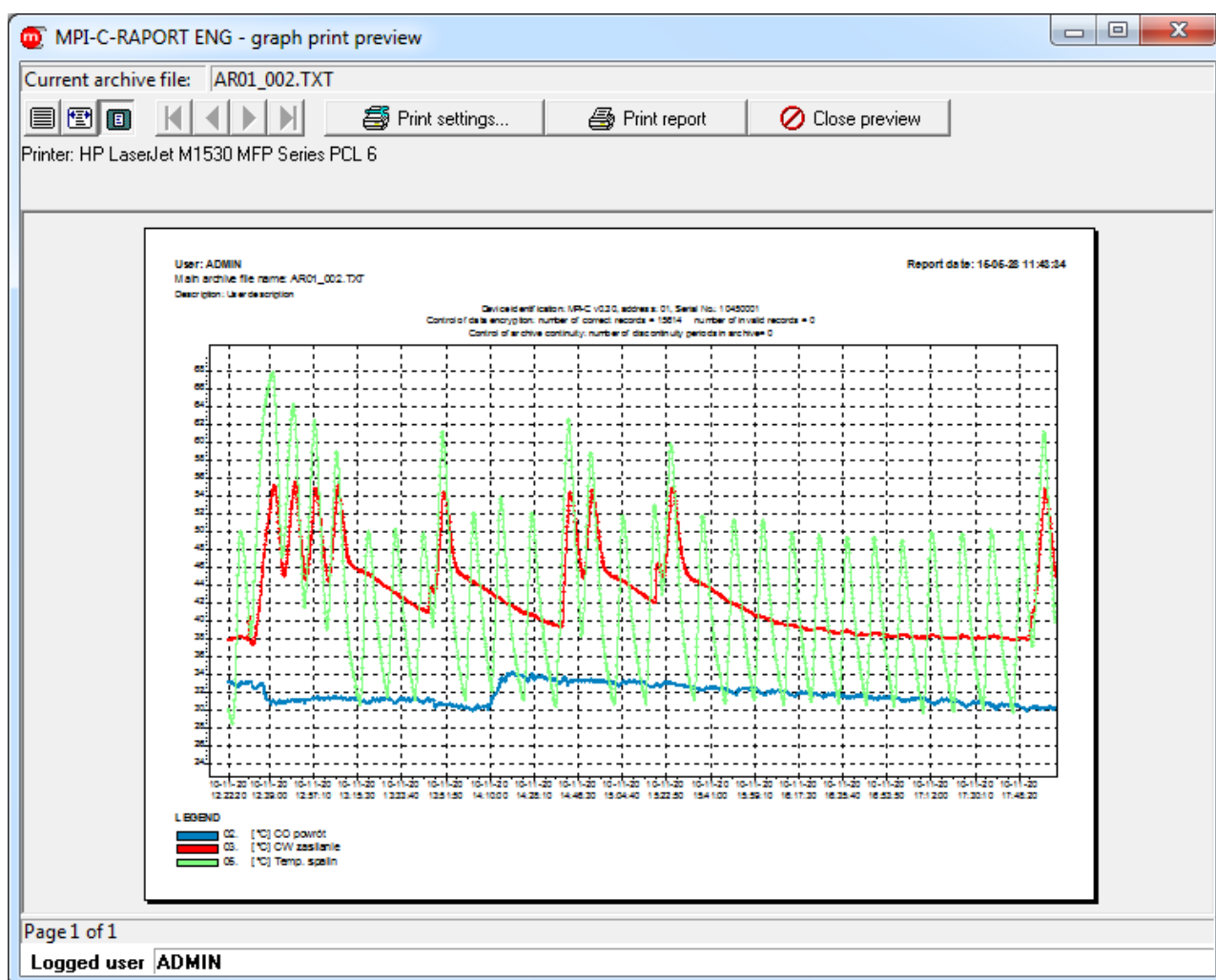
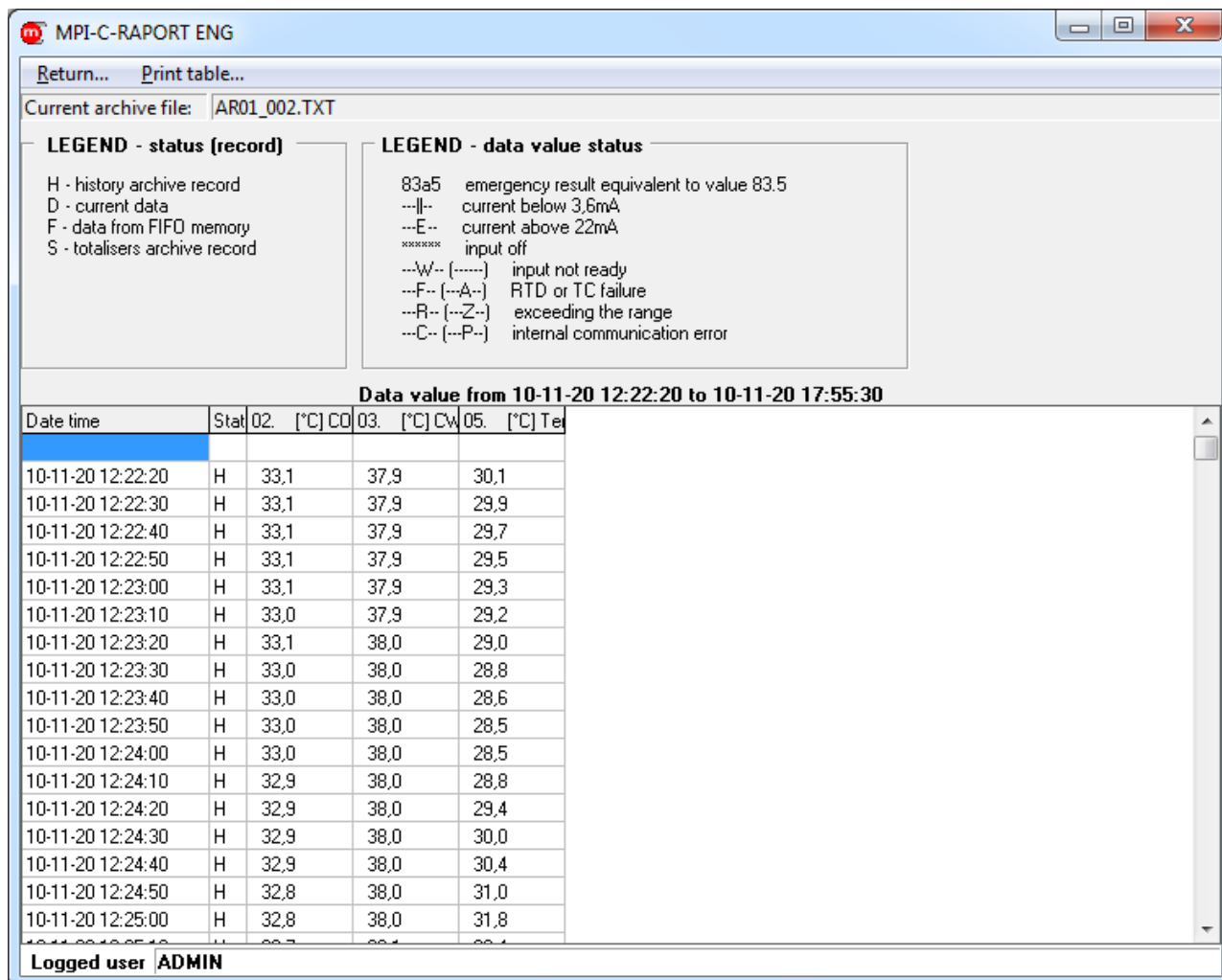


Fig. 5.15 Graph print preview



## 5.7 Preparation of reports: tables

Window Fig. 5.12: Menu → Data table ...



**MPI-C-RAPORT ENG**

Return... Print table...

Current archive file: AR01\_002.TXT

**LEGEND - status (record)**

- H - history archive record
- D - current data
- F - data from FIFO memory
- S - totalisers archive record

**LEGEND - data value status**

- 83a5 emergency result equivalent to value 83.5
- ||--- current below 3.6mA
- E--- current above 22mA
- xxxxxx input off
- W-- (---) input not ready
- F-- (---A---) RTD or TC failure
- R-- (---Z---) exceeding the range
- C-- (---P---) internal communication error

**Data value from 10-11-20 12:22:20 to 10-11-20 17:55:30**

Date time	Stat	02. [°C] CO	03. [°C] CW	05. [°C] Te
10-11-20 12:22:20	H	33,1	37,9	30,1
10-11-20 12:22:30	H	33,1	37,9	29,9
10-11-20 12:22:40	H	33,1	37,9	29,7
10-11-20 12:22:50	H	33,1	37,9	29,5
10-11-20 12:23:00	H	33,1	37,9	29,3
10-11-20 12:23:10	H	33,0	37,9	29,2
10-11-20 12:23:20	H	33,1	38,0	29,0
10-11-20 12:23:30	H	33,0	38,0	28,8
10-11-20 12:23:40	H	33,0	38,0	28,6
10-11-20 12:23:50	H	33,0	38,0	28,5
10-11-20 12:24:00	H	33,0	38,0	28,5
10-11-20 12:24:10	H	32,9	38,0	28,8
10-11-20 12:24:20	H	32,9	38,0	29,4
10-11-20 12:24:30	H	32,9	38,0	30,0
10-11-20 12:24:40	H	32,9	38,0	30,4
10-11-20 12:24:50	H	32,8	38,0	31,0
10-11-20 12:25:00	H	32,8	38,0	31,8

Logged user ADMIN

Fig. 5.16 Data table window

[illegible]

*Fig. 5.17 Print data table preview*

## 6 Remote reading of measurement data

Menu → Transmission...

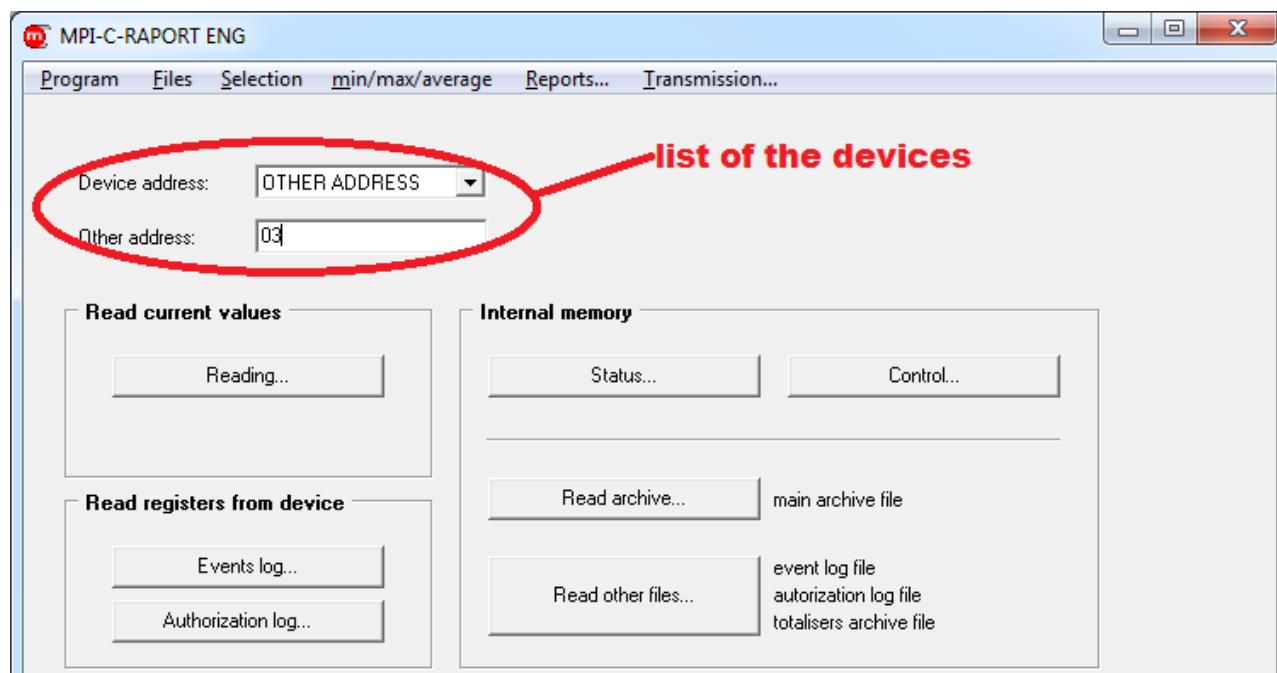


Fig. 6.1 "Transmission..." window

For each device from the list program separately saves settings of transmission, graphs etc.

### 6.1 Transmission settings

Windows Fig. 6.7 ... Fig. 6.15: Menu → Transmission settings...

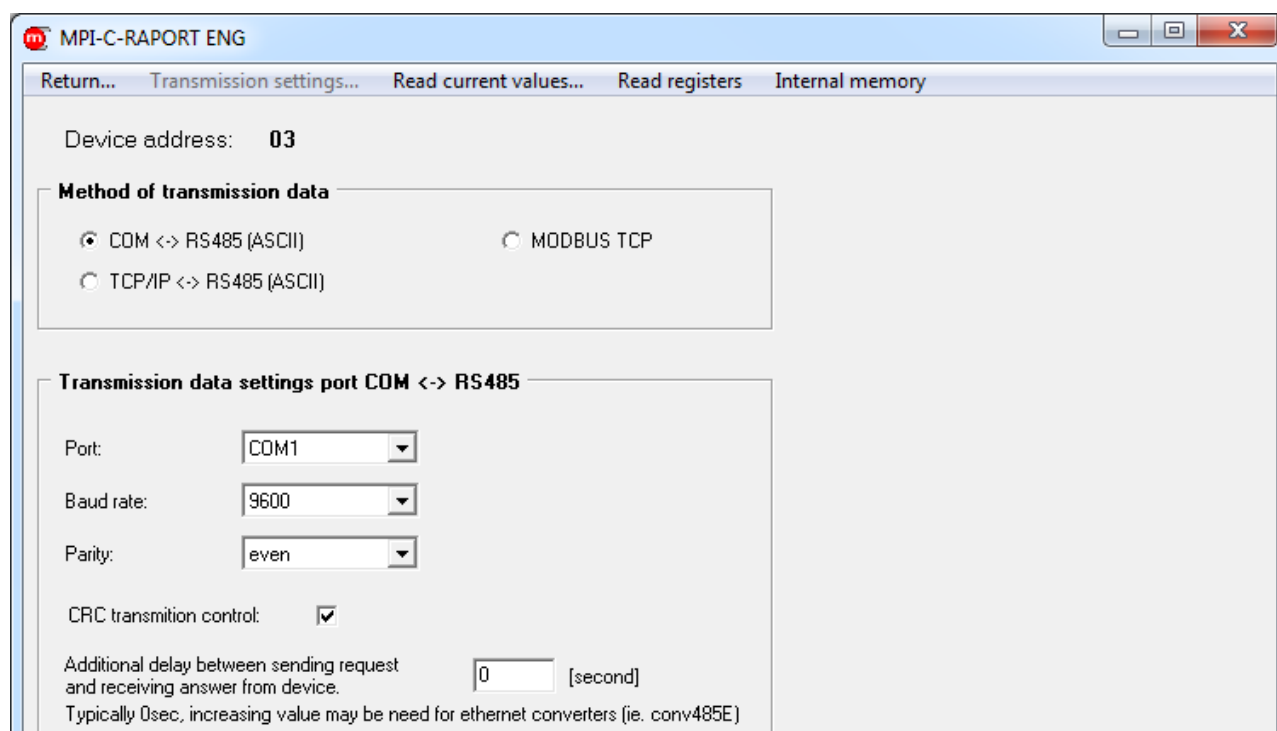
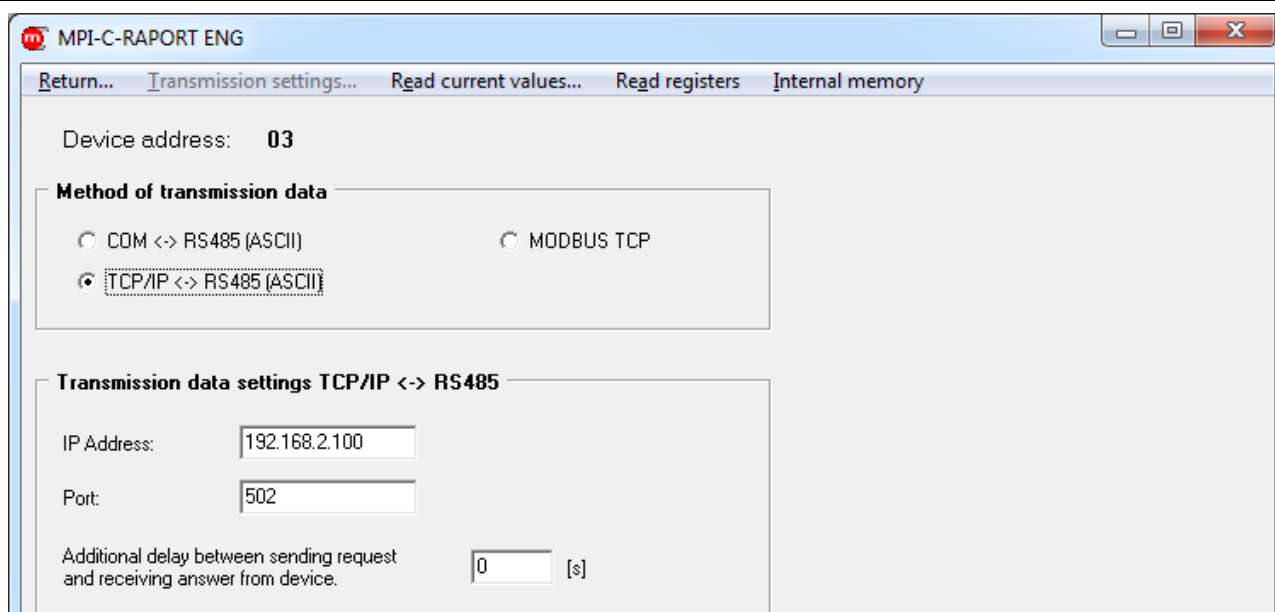
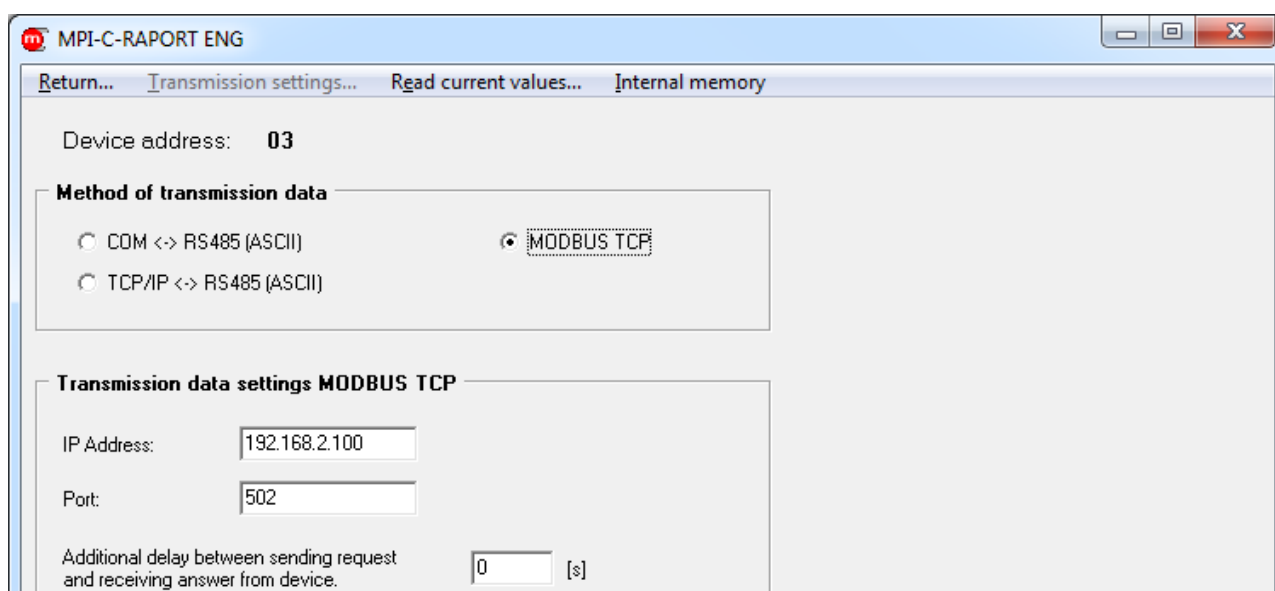


Fig. 6.2 RS485 transmission settings, ASCII protocol



The screenshot shows the 'MPI-C-RAPORT ENG' window with the 'Transmission settings...' tab selected. The 'Device address' is set to '03'. Under 'Method of transmission data', the radio button for 'TCP/IP <-> RS485 (ASCII)' is selected. The 'Transmission data settings TCP/IP <-> RS485' section shows 'IP Address' as '192.168.2.100' and 'Port' as '502'. The 'Additional delay between sending request and receiving answer from device' is set to '0' seconds.


*Fig. 6.3 RS485 with RS485 / Ethernet converter transmission settings, ASCII protocol*

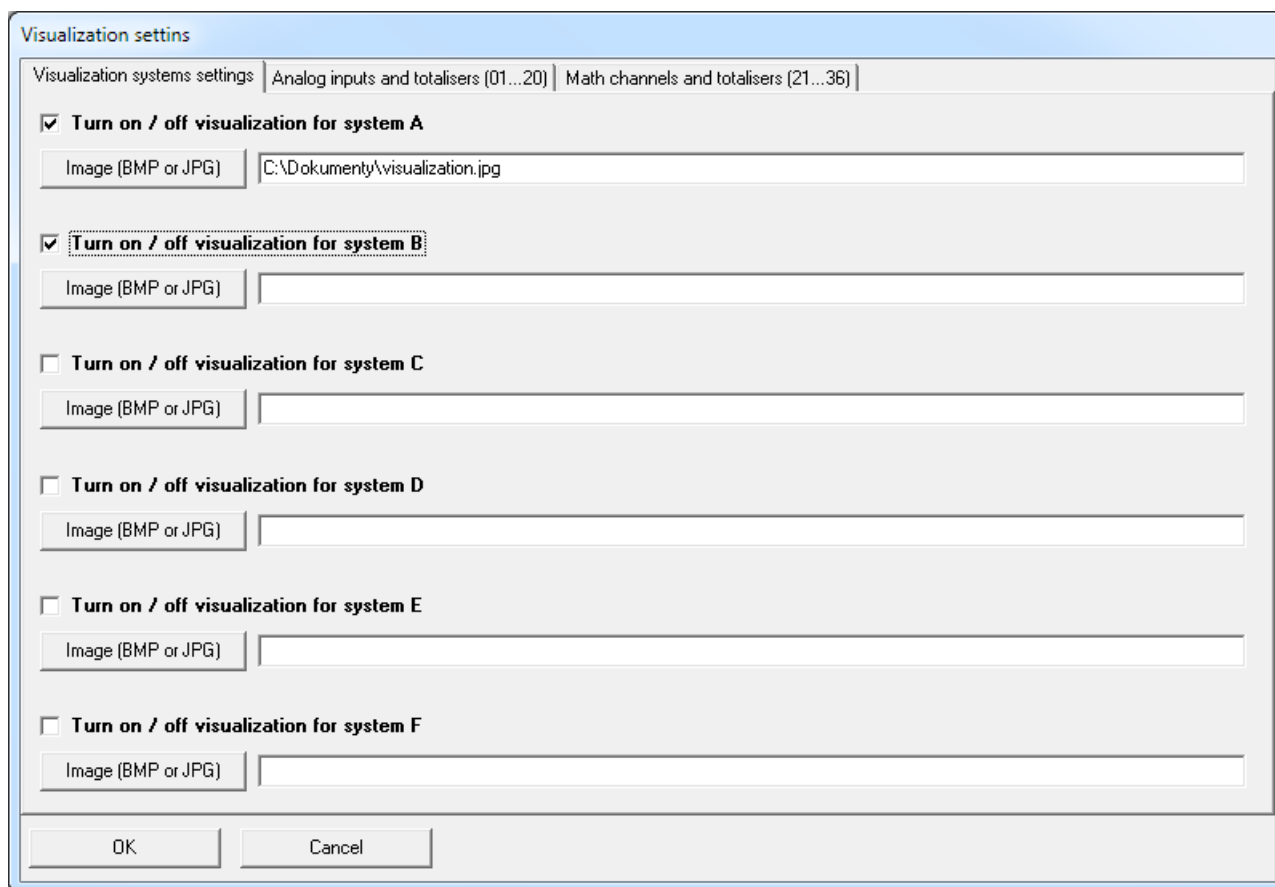


The screenshot shows the 'MPI-C-RAPORT ENG' window with the 'Transmission settings...' tab selected. The 'Device address' is set to '03'. Under 'Method of transmission data', the radio button for 'MODBUS TCP' is selected. The 'Transmission data settings MODBUS TCP' section shows 'IP Address' as '192.168.2.100' and 'Port' as '502'. The 'Additional delay between sending request and receiving answer from device' is set to '0' seconds.

*Fig. 6.4 Ethernet transmission settings, Modbus TCP protocol*

## 6.2 Visualisation settings

Windows Fig. 6.9 button  (available only for admin; function requires initial reading data from the device).



**Visualization settings**

Visualization systems settings | Analog inputs and totalisers (01...20) | Math channels and totalisers (21...36)

☒ **Turn on / off visualization for system A**

Image (BMP or JPG) | C:\Dokumenty\visualization.jpg

☒ **Turn on / off visualization for system B**

Image (BMP or JPG) |

☐ **Turn on / off visualization for system C**

Image (BMP or JPG) |

☐ **Turn on / off visualization for system D**

Image (BMP or JPG) |

☐ **Turn on / off visualization for system E**

Image (BMP or JPG) |

☐ **Turn on / off visualization for system F**

Image (BMP or JPG) |

OK Cancel

Fig. 6.5 Selection of graphic used in visualization

Visualization settings

Visualization systems settings
Analog inputs and totalisers (01...20)
Math channels and totalisers (21...36)


1. Turn on or turn off analog inputs or totalisers from selected visualization system.  
2. Type input caption (up to 20 characters, do not use semicolon in caption).

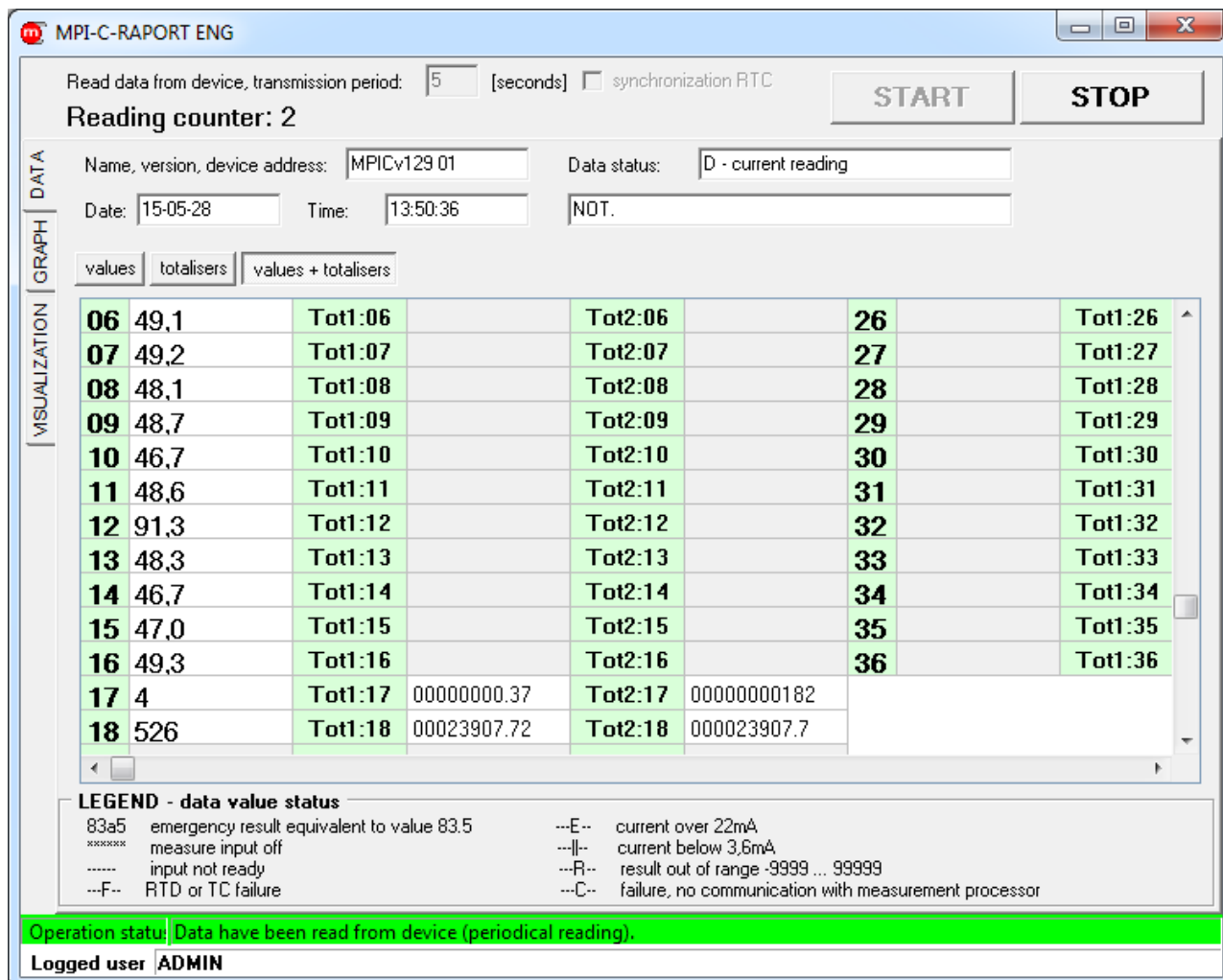
	A	B	C	D	E	F	Caption
<b>08</b>	OFF	ON	OFF	OFF	OFF	OFF	08. analog input value
<b>Tot1:08</b>	OFF	ON	OFF	OFF	OFF	OFF	Tot1:08. totaliser
<b>Tot2:08</b>	OFF	ON	OFF	OFF	OFF	OFF	Tot2:08. totaliser
<b>09</b>	OFF	OFF	OFF	ON	OFF	OFF	09. analog input value
<b>Tot1:09</b>	OFF	OFF	OFF	ON	OFF	OFF	Tot1:09. totaliser
<b>Tot2:09</b>	OFF	OFF	OFF	ON	OFF	OFF	Tot2:09. totaliser
<b>10</b>	OFF	OFF	OFF	OFF	OFF	OFF	10. analog input value
<b>Tot1:10</b>	OFF	OFF	OFF	ON	OFF	OFF	Tot1:10. totaliser
<b>Tot2:10</b>	OFF	OFF	OFF	ON	OFF	OFF	Tot2:10. totaliser
<b>11</b>	ON	OFF	OFF	OFF	OFF	OFF	boiler A [°C]
<b>Tot1:11</b>	OFF	OFF	OFF	OFF	OFF	OFF	Tot1:11. totaliser
<b>Tot2:11</b>	OFF	OFF	OFF	OFF	OFF	OFF	Tot2:11. totaliser
<b>12</b>	OFF	OFF	OFF	OFF	OFF	OFF	12. analog input value
<b>Tot1:12</b>	ON	OFF	OFF	OFF	OFF	OFF	boiler B [°C]
<b>Tot2:12</b>	OFF	OFF	OFF	OFF	OFF	OFF	Tot2:12. totaliser
<b>13</b>	OFF	OFF	OFF	OFF	OFF	OFF	13. analog input value

OK
Cancel

Fig. 6.6 Selection of channels displayed in particular visualization systems (A, B ... F)

## 6.3 Odczyt wyników bieżących

- Window Fig. 6.1 button 
- Windows Fig. 6.10...Fig. 6.15: Read current values...



**MPI-C-RAPORT ENG**

Read data from device, transmission period:  [seconds] ☐ synchronization RTC

**Reading counter: 2** START STOP

Name, version, device address:  Data status:

Date:  Time:

06	49,1	Tot1:06		Tot2:06		26		Tot1:26
07	49,2	Tot1:07		Tot2:07		27		Tot1:27
08	48,1	Tot1:08		Tot2:08		28		Tot1:28
09	48,7	Tot1:09		Tot2:09		29		Tot1:29
10	46,7	Tot1:10		Tot2:10		30		Tot1:30
11	48,6	Tot1:11		Tot2:11		31		Tot1:31
12	91,3	Tot1:12		Tot2:12		32		Tot1:32
13	48,3	Tot1:13		Tot2:13		33		Tot1:33
14	46,7	Tot1:14		Tot2:14		34		Tot1:34
15	47,0	Tot1:15		Tot2:15		35		Tot1:35
16	49,3	Tot1:16		Tot2:16		36		Tot1:36
17	4	Tot1:17	00000000.37	Tot2:17	00000000182			
18	526	Tot1:18	00023907.72	Tot2:18	000023907.7			

**LEGEND - data value status**

83a5	emergency result equivalent to value 83.5	--E--	current over 22mA
xxxxxxx	measure input off	--I--	current below 3,6mA
-----	input not ready	--R--	result out of range -9999 ... 99999
--F--	RTD or TC failure	--C--	failure, no communication with measurement processor

**Operation statu:** Data have been read from device (periodical reading).

**Logged user:** ADMIN

Fig. 6.7 Reading current value – table

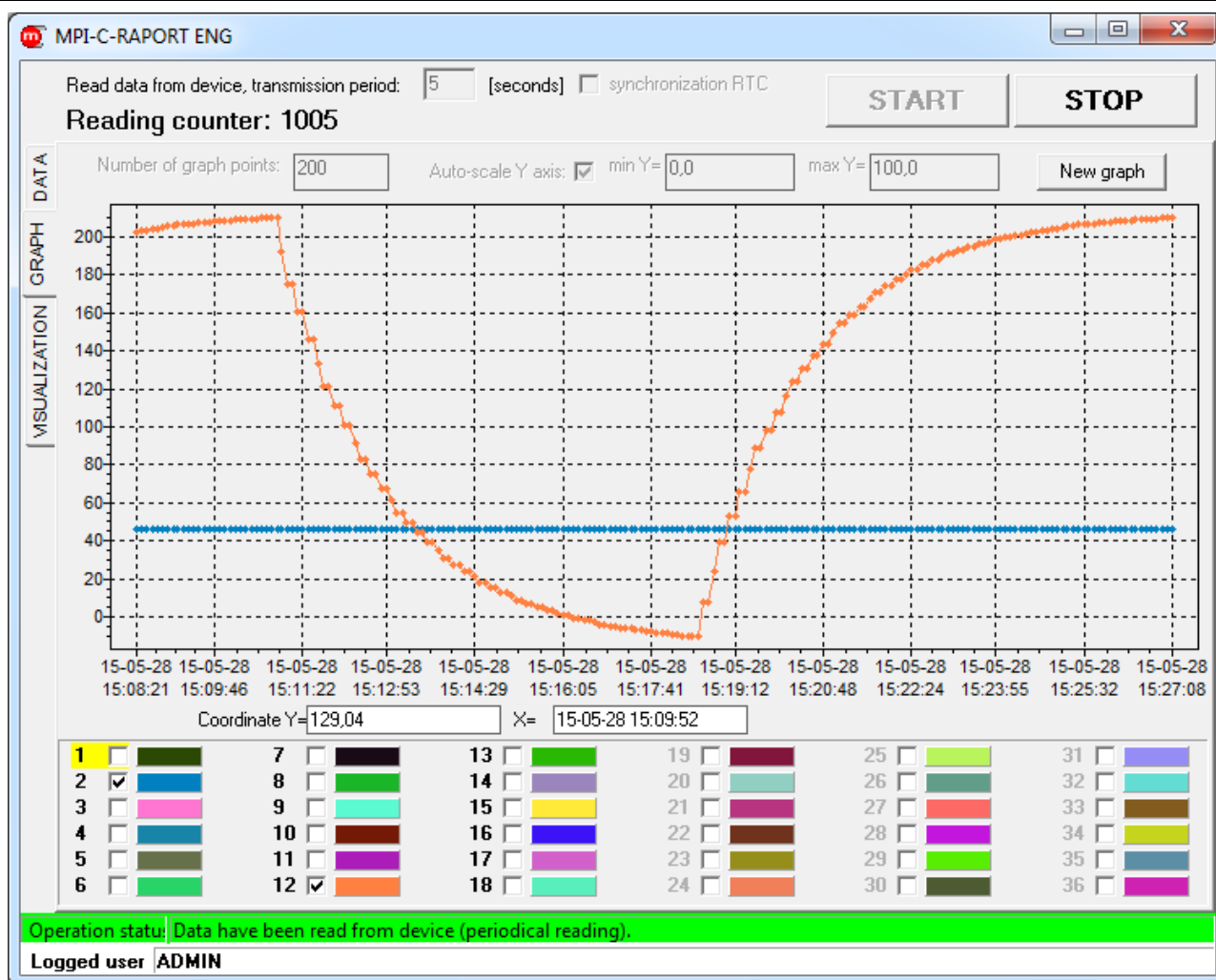


Fig. 6.8 Reading current value – graph



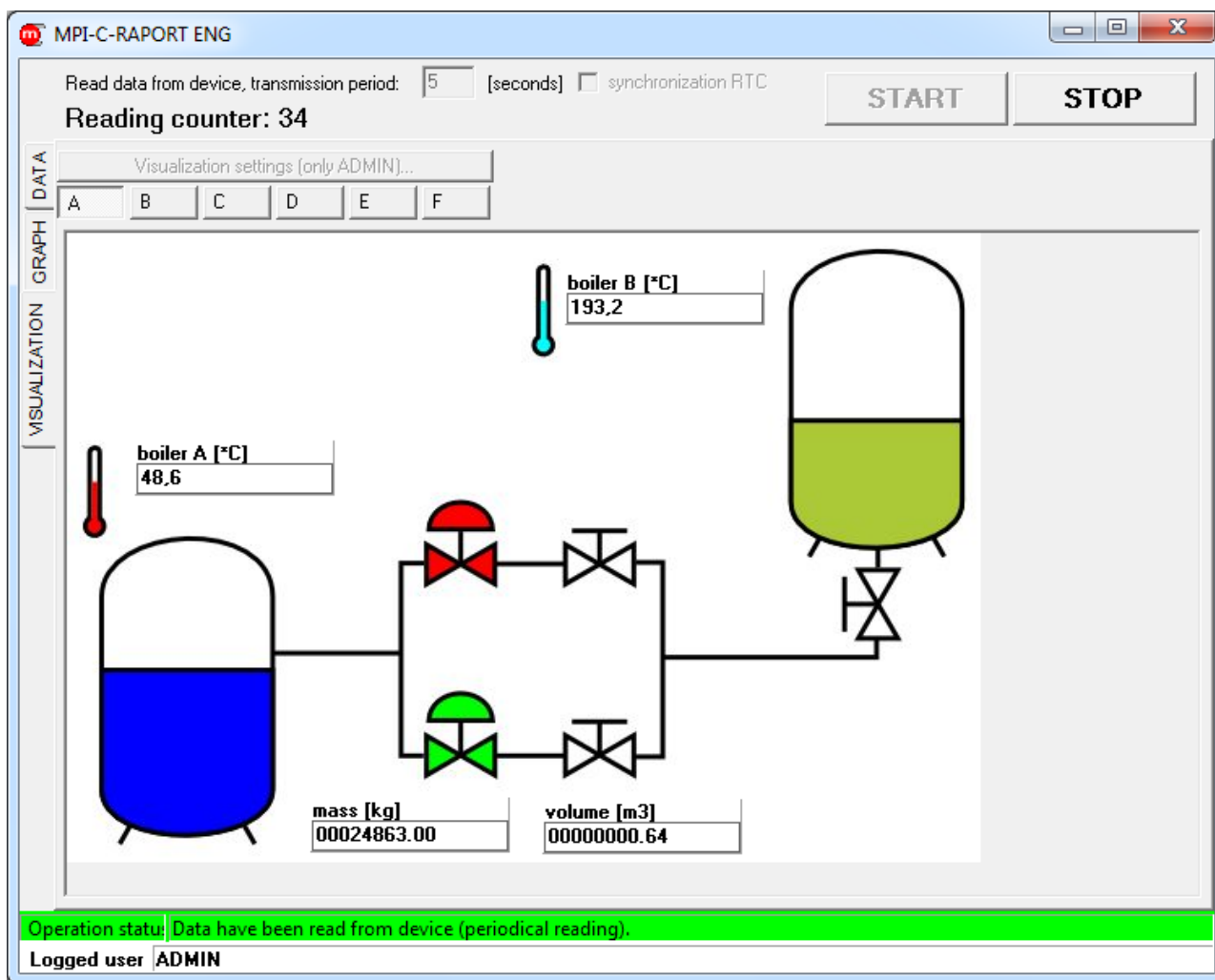



Fig. 6.9 Reading current values – visualization

## 6.4 Reading from device registers

- Window Fig. 6.1 button 
- Windows Fig. 6.7 ... Fig. 6.9 and Fig. 6.11...Fig. 6.15: Menu → Read registers → Events log...

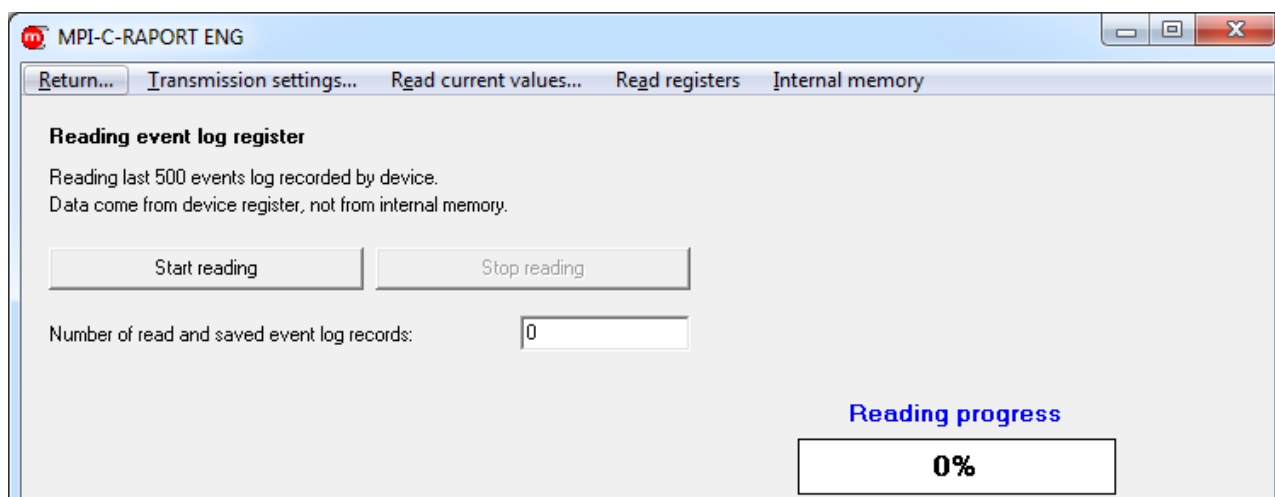

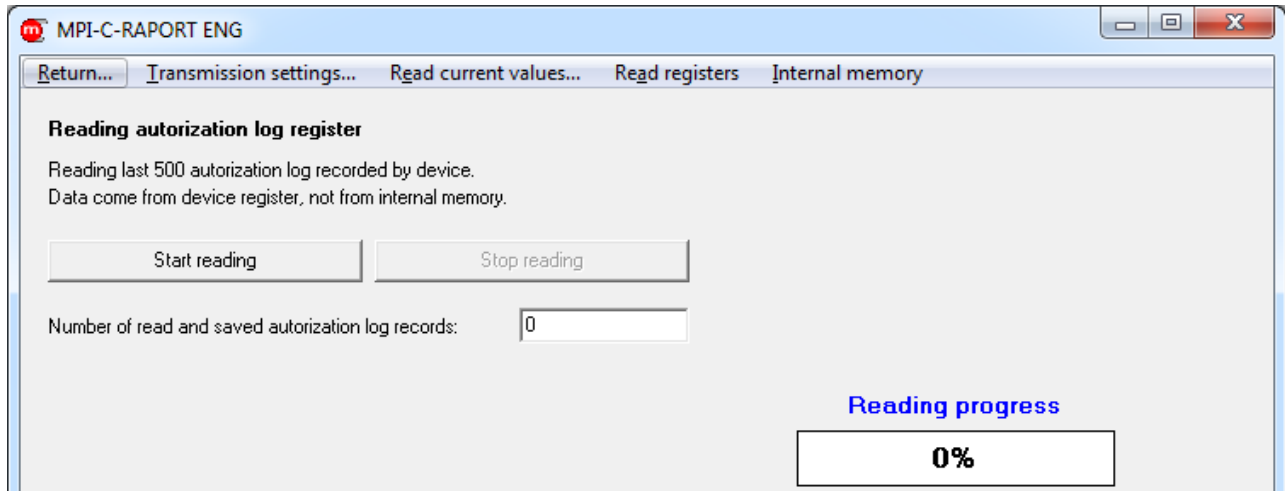


Fig. 6.10 Saving last 500 events logs recorded by device into file (unavailable in case of Ethernet/Modbus TCP transmission)

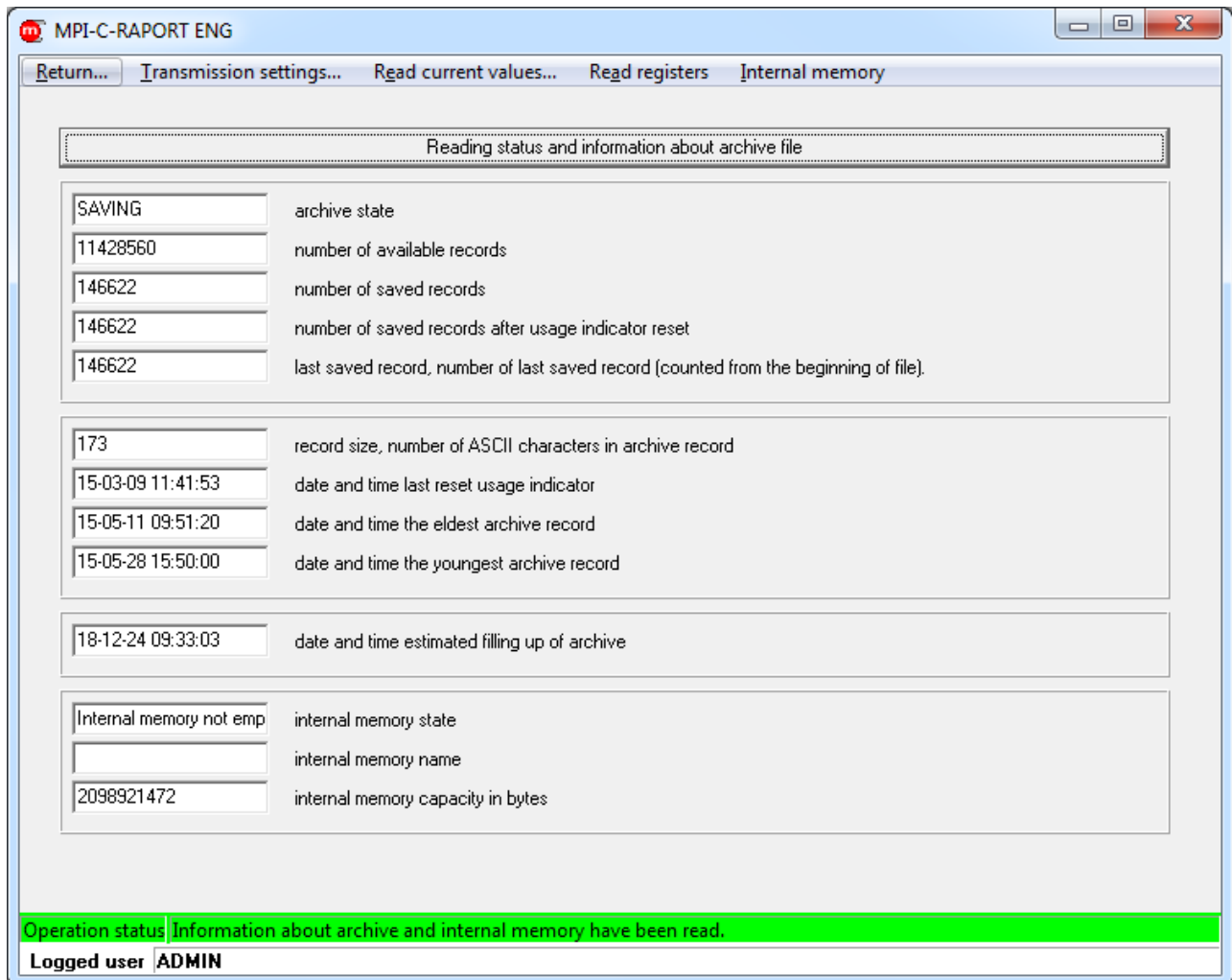
- Window Fig. 6.1 button 
- Windows Fig. 6.7 ... Fig. 6.10 and Fig. 6.12...Fig. 6.15: Menu → Read registers → Authorization log...



*Fig. 6.11 Saving last 500 authorization logs recorded by device into file (unavailable in case of Ethernet/Modbus TCP transmission)*

## 6.5 Reading data from internal memory

- Window Fig. 6.1 button Status...
- Windows Fig. 6.7... Fig. 6.11 and Fig. 6.13...Fig. 6.15: Menu → Internal memory → Status...



**MPI-C-RAPORT ENG**

Return... Transmission settings... Read current values... Read registers Internal memory


Reading status and information about archive file

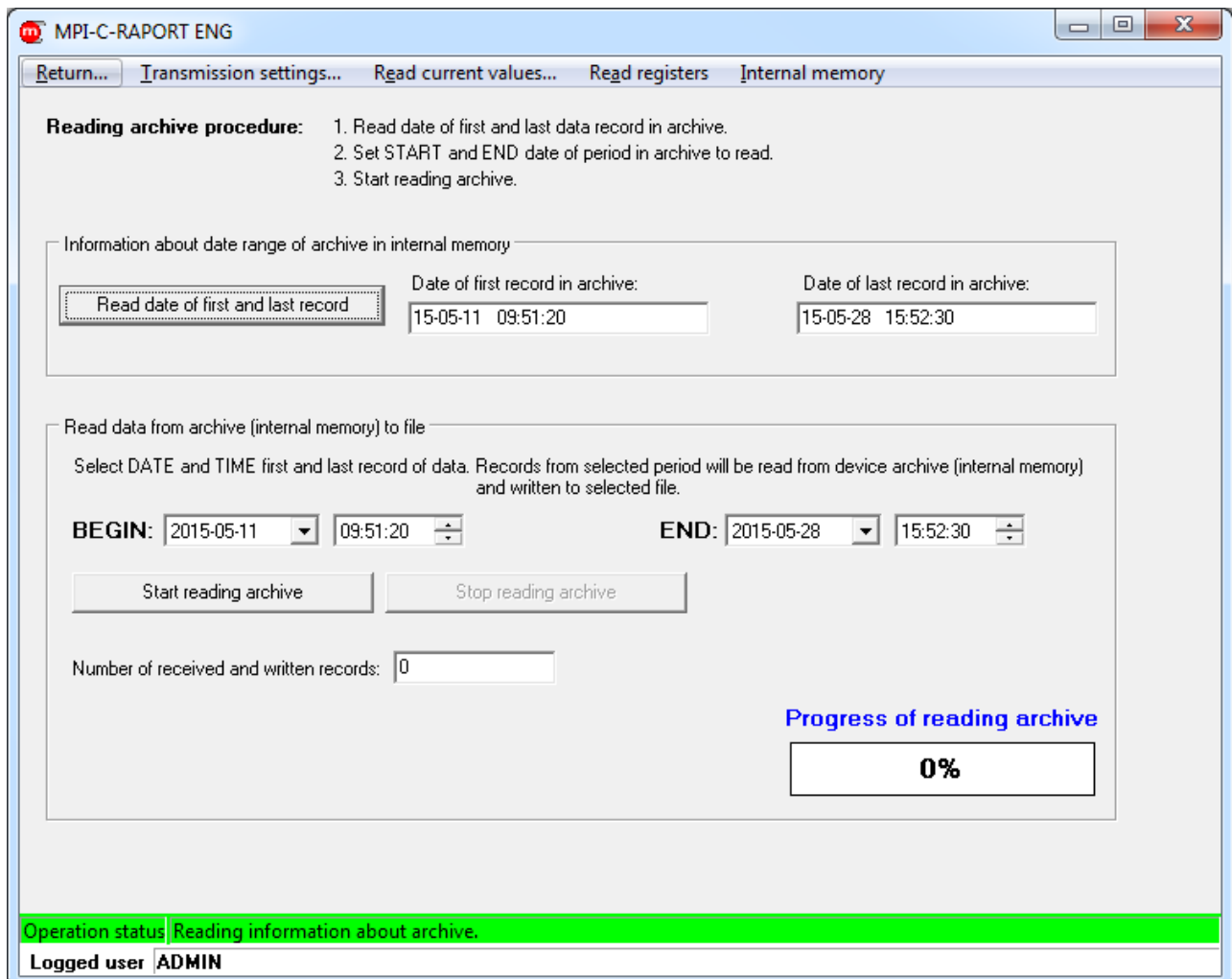
SAVING	archive state
11428560	number of available records
146622	number of saved records
146622	number of saved records after usage indicator reset
146622	last saved record, number of last saved record (counted from the beginning of file).
173	record size, number of ASCII characters in archive record
15-03-09 11:41:53	date and time last reset usage indicator
15-05-11 09:51:20	date and time the eldest archive record
15-05-28 15:50:00	date and time the youngest archive record
18-12-24 09:33:03	date and time estimated filling up of archive
Internal memory not emp	internal memory state
	internal memory name
2098921472	internal memory capacity in bytes

**Operation status** Information about archive and internal memory have been read.

**Logged user** ADMIN

Fig. 6.12 Reading status and information about memory and archive file

- Window Fig. 6.1 button 
- Windows Fig. 6.7 ... Fig. 6.12 and Fig. 6.14... Fig. 6.15: Menu → Internal memory → Read archive...




**MPI-C-RAPORT ENG**

Return... Transmission settings... Read current values... Read registers Internal memory

**Reading archive procedure:**

1. Read date of first and last data record in archive.
2. Set START and END date of period in archive to read.
3. Start reading archive.

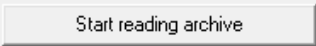

Information about date range of archive in internal memory

 Date of first record in archive: 15-05-11 09:51:20 Date of last record in archive: 15-05-28 15:52:30

Read data from archive (internal memory) to file

Select DATE and TIME first and last record of data. Records from selected period will be read from device archive (internal memory) and written to selected file.

**BEGIN:** 2015-05-11 09:51:20 **END:** 2015-05-28 15:52:30

Number of received and written records: 0

**Progress of reading archive**

0%

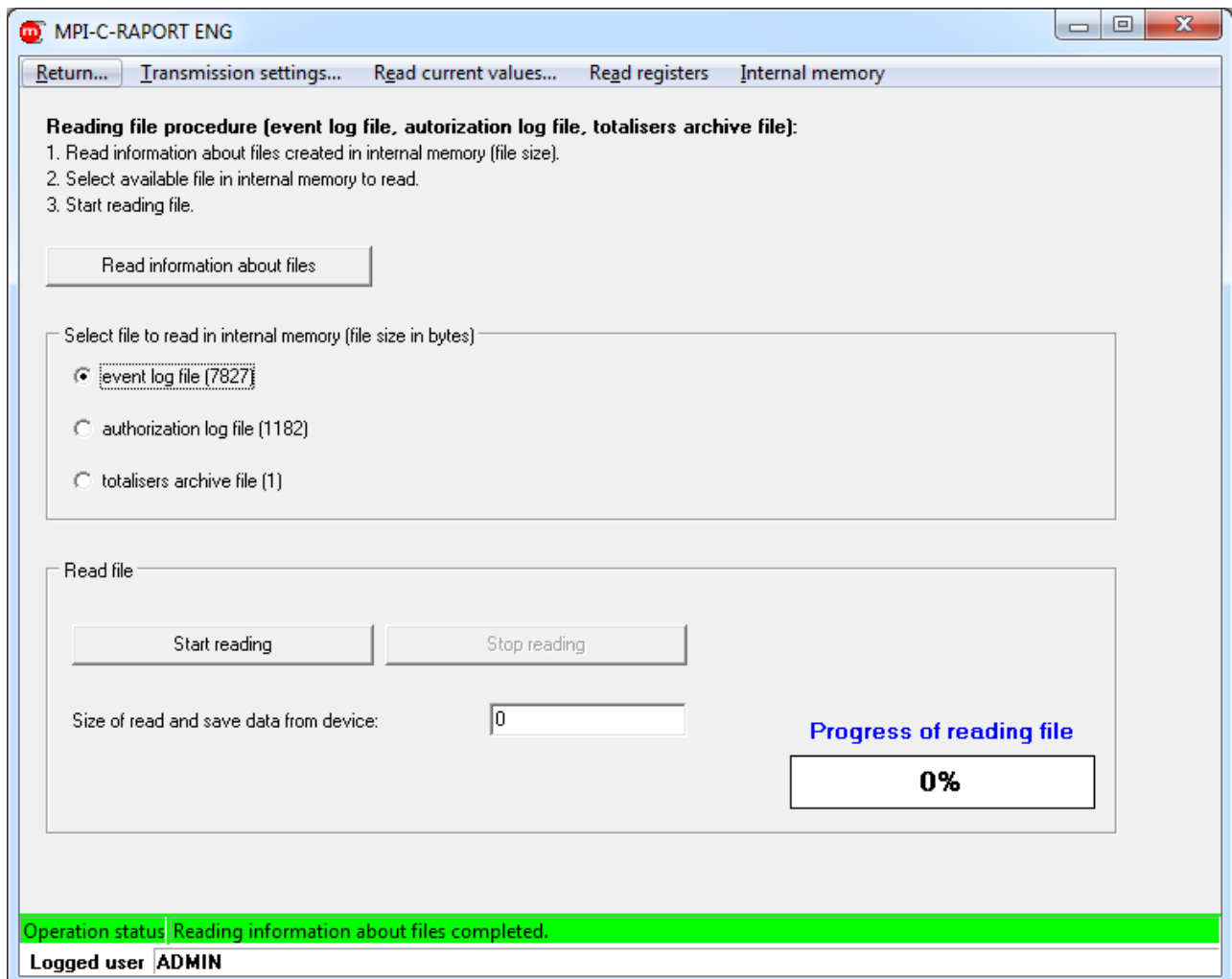
Operation status: Reading information about archive.

Logged user: ADMIN

Fig. 6.13 Reading data from Main archive

Read other files...

- Window Fig. 6.1 button
- Windows Fig. 6.7 ... Fig. 6.13 and Fig. 6.15: Menu → Internal memory → Read other files...



**MPI-C-RAPORT ENG**

Return... Transmission settings... Read current values... Read registers Internal memory

**Reading file procedure (event log file, authorization log file, totalisers archive file):**

1. Read information about files created in internal memory (file size).
2. Select available file in internal memory to read.
3. Start reading file.

Read information about files

Select file to read in internal memory (file size in bytes)

☒ event log file (7827)

☐ authorization log file (1182)

☐ totalisers archive file (1)

Read file

Start reading Stop reading

Size of read and save data from device: 0

Progress of reading file


0%

Operation status: Reading information about files completed.

Logged user: ADMIN

Fig. 6.14 Read files (unavailable in case of Ethernet/Modbus TCP transmission)

## 6.6 Archive commands

- Window Fig. 6.1 button 
- Windows Fig. 6.7 ... Fig. 6.14: Menu → Internal memory → Control...

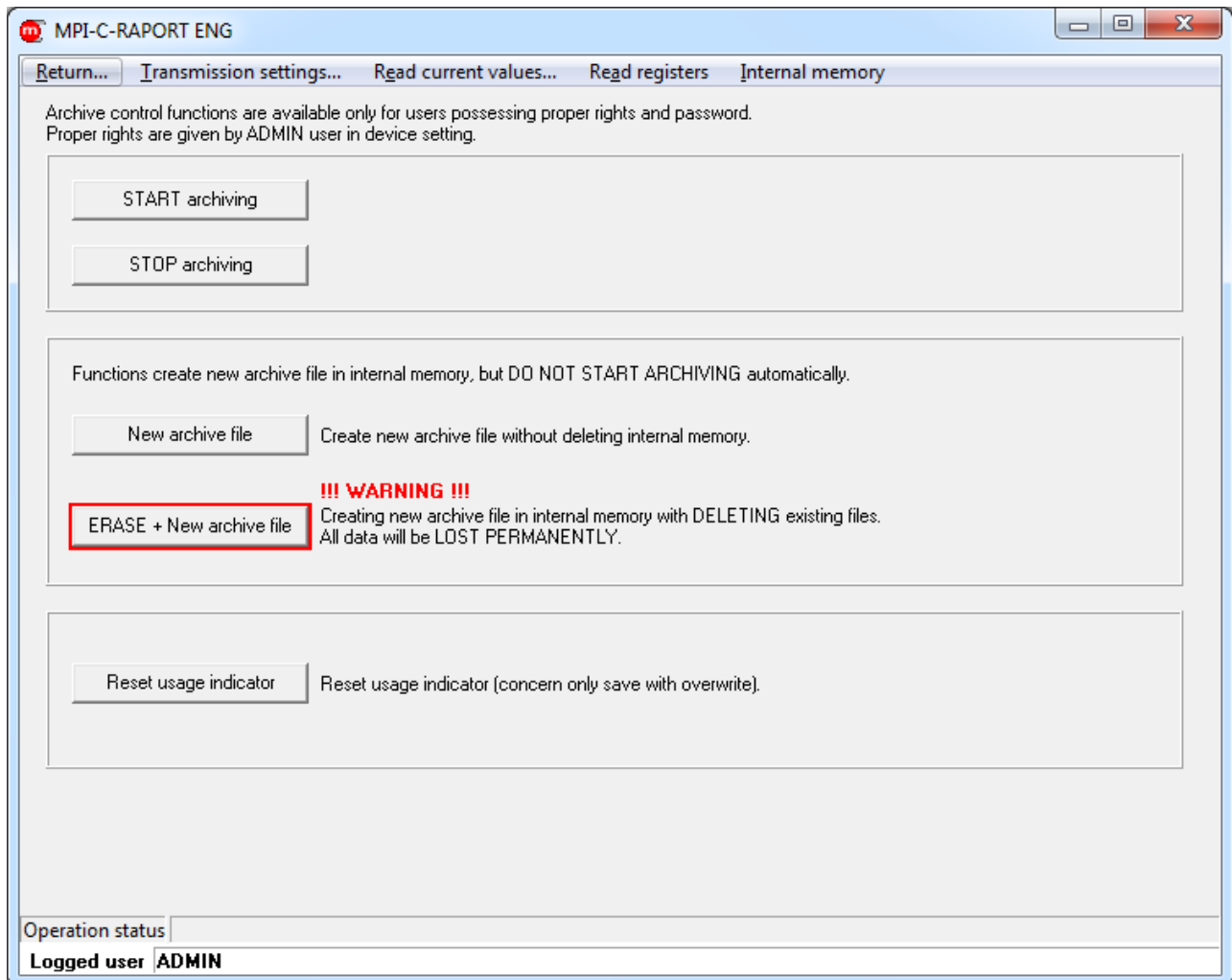


Fig. 6.15 Archive commands (unavailable in case of Ethernet/Modbus TCP transmission)

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## 7 Entity launching the product on European Union market

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