

MULTITERM Pro G2 and G3 - wM-Bus

USER MANUAL



Kamstrup A/S
Industrivej 28, Stilling
DK-8660 Skanderborg
TEL: +45 89 93 10 00
FAX: +45 89 93 10 01
info@kamstrup.com
www.kamstrup.com

Contents

1	MULTITERM Pro wM-Bus	1
1.1	Principle of operation.....	1
2	Introduction	3
2.1	Product overview	3
2.1.1	Hardware specifications.....	3
2.1.2	Battery charging	3
2.2	wM-Bus meters supported in MULTITERM Pro wM-Bus.....	3
2.3	Frequency.....	3
2.4	Capacity.....	4
2.5	Data security.....	4
2.6	Copyrights	4
2.7	Navigation in MULTITERM Pro wM-Bus.....	4
2.7.1	Switch on the hand-held terminal.....	5
2.7.2	Switch off the hand-held terminal.....	5
2.7.3	Starting the application.....	5
2.7.4	Symbol explanation.....	6
3	Read from route	7
3.1	Navigation under Read from route.....	7
3.2	Radio reading all routes.....	8
3.3	Detailed information about the meter.....	9
3.4	Meter reading shortcut menus	9
3.4.1	Jump to active street	9
3.4.2	Showing all meters / Showing missing meters.....	9
3.4.3	Shortcut key M	10
4	Manual reading	11
4.1	Manual reading (wM-Bus).....	12
4.2	Manual reading (optical)	12
4.3	Manual reading (manual input).....	13
4.4	Remove templates	13
4.5	Add event code.....	13
4.6	Reading of log.....	14
5	Search.....	16
6	Receive routes	17
7	Send data.....	18
7.1	Send data (route files).....	18
8	Configure	19
8.1	Configuration of meter.....	19
8.2	Meter configuration by optical eye	19
8.2.1	Changing language/region	20
8.2.2	Change user.....	20
8.2.3	Change date/time and time zone.....	21
8.2.4	Select supported meter types.....	22
8.2.5	Select display unit	22
9	Application updates and plug-ins.....	23
9.1	Program updates	23

9.2 How to install plug-ins on MT Pro wM-Bus 24
9.3 Time..... 26
9.4 Regeneration of the system 26

About this manual

This manual is based on MULTITERM Pro, product number 5098-365, version AF1.

The manual provides you with:

- Instructions on the operation of MULTITERM Pro with wM-Bus.
- Description of software features in MULTITERM Pro with wM-Bus
- Installation and update instructions for the software.

The following terms are used in the manual:

User refers to the person at the utility using the hand-held terminal MULTITERM Pro wM-Bus

Customer refers to the person who has meters installed to measure energy consumption.

1 MULTITERM Pro wM-Bus

This manual contains a detailed description of the features available with MULTITERM Pro wM-Bus (MT Pro wM-Bus).

MT Pro wM-Bus supports the newest standard for wireless reading of water, heat and cooling meters. Wireless M-Bus is a wireless variant of the wired M-Bus that is already widely used for meter reading. Wireless M-Bus is standardised under EN13757-4.

MT Pro wM-Bus also supports serial reading and reading with optical eye.

1.1 Principle of operation

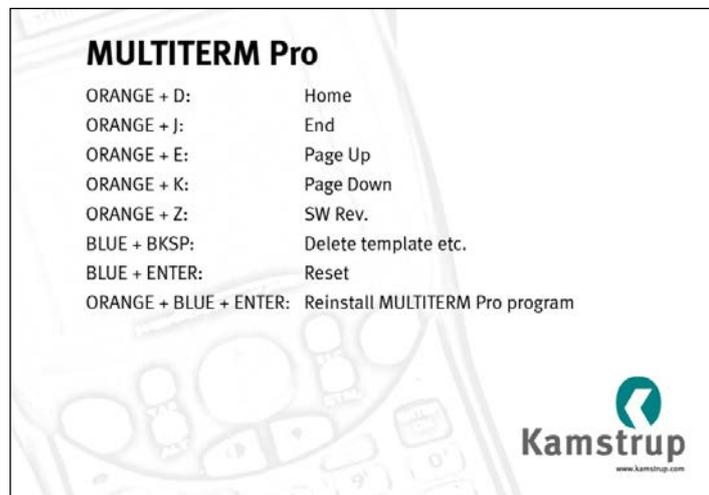
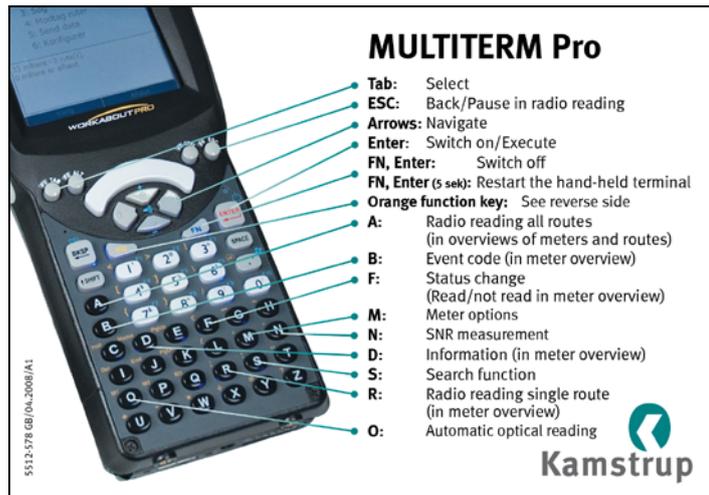
MT Pro wM-Bus is based on routes which contain the meters selected for reading. The routes are typically created in PcBase III.

When the reading has been carried out, the route file is transferred back to the PC with the respective meter data collected during the reading.

Keyboard overview:

These overviews show the keyboard shortcuts for the most often used features:

MT Pro G2:



MT Pro G3:

MULTITERM Pro



MULTITERM Pro

- ORANGE + D: Home
- ORANGE + J: End
- ORANGE + E: Page Up
- ORANGE + K: Page Down
- ORANGE + Z: Software Rev.
- BLUE + BKSP: Delete template etc.
- BLUE + ENTER: Reset
- ORANGE + BLUE + ENTER: Reinstall MULTITERM Pro application

55121217_A1_GB_10.2012



2 Introduction

2.1 Product overview

2.1.1 Hardware specifications

Description	MT Pro G2	MT Pro G3
Processor	520 MHz	624 MHz
Display	3.6"	3.7"
Memory	256 MB ROM / 128 MB RAM	1 GB ROM / 256 MB RAM

The hand-held terminal WORKABOUT PRO from Psion Teklogix has been adapted to varying working conditions and is solid and practical to use. This is confirmed by the following features:

- Complies with standard IP 54 (water and dust protection)
- Can be used at temperatures from -10° to +50°C
- Fall tested on concrete floor from 1.1 m
- Daylight readable VGA screen
- Compact Flash and SD/MMC Card
- 4400 mAh Battery
- Backup battery with 5 years' service life
- Wireless M-Bus built into the hand-held terminal (EN13757-4, Mode C).

WORKABOUT PRO is provided with a lithium battery with maximal capacity. Furthermore, a backup battery provides power in case the main battery must be replaced.

WORKABOUT PRO is installed with radio card and all necessary software by Kamstrup A/S. After this, the name of the hand-held terminal is MT Pro wM-Bus.

MT Pro wM-Bus is provided with a number of features making it even more user-friendly. However, due to the large power consumption of the hand-held terminal, it is recommended to place it in the docking station as often as possible. For users primarily working on location, it is recommended to use Car Kit to continuously supply power to the hand-held terminal.

2.1.2 Battery charging

MT Pro wM-Bus is supplied with factory fresh batteries that must be fully charged before use.

It takes approx. 24 hours to charge the batteries completely. Therefore, before using MT Pro wM-Bus for the first time, it is recommended to connect it to a charger – either a docking station or a car charger – for 24 hours.

Note A period of 10-15 minutes to charge the battery must be expected before MT Pro wM-Bus can be started and used.

2.2 wM-Bus meters supported in MULTITERM Pro wM-Bus

The number of meter types supporting wM-Bus is continuously increasing. For further information, see the data sheet for each meter.

2.3 Frequency

The wireless M-Bus system of Kamstrup A/S uses the frequency 868 Mhz.

2.4 Capacity

40 MB disc is available on MT Pro wM-Bus for applications and data.

Kamstrup recommends collecting readings in a number of route files rather than collecting all readings in one large route file:

- routes with up to 500 meters
- a total of at least 3500 meters is guaranteed.

If this recommendation is not followed, it might result in a poorer performance of MT Pro wM-Bus.

2.5 Data security

The MT Pro wM-Bus application and data are stored in Flash Memory to prevent data from being lost, e.g. when changing batteries or when losing power in another way.

2.6 Copyrights

Kamstrup A/S reserves the right solely to use our preinstalled MT Pro wM-Bus application on hand-held terminals procured by Kamstrup.

Likewise, Kamstrup can neither support third party software installed on the hand-held terminal, nor problems caused by this software.

2.7 Navigation in MULTITERM Pro wM-Bus

MT Pro G2:



MT Pro G3:

F1 corresponds to the left button at the bottom of the window

Function keys for navigation

Orange function key



F2 corresponds to the right button at the bottom of the window

Blue function key

ENTER

2.7.1 Switch on the hand-held terminal

Press the ENTER key for 2-3 seconds to start the hand-held terminal.

2.7.2 Switch off the hand-held terminal

Press the ENTER key for 2-3 seconds to switch off the hand-held terminal.

2.7.3 Starting the application

To start the application, press **Kamstrup | MULTITERM Pro** once on the touch screen.

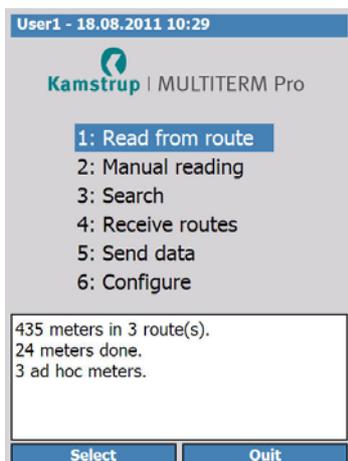


Alternatively, mark **Kamstrup | MULTITERM Pro** by scrolling down with the navigation button and pressing ENTER.

Control and set the time, and finish by pressing ENTER.

Control and set the time zone, and finish by pressing ENTER.

This opens the main menu in MT Pro wM-Bus:



2.7.4 Symbol explanation

The following status symbols are used in the hand-held terminal:

Route overview:

	Stilling 1	65
	Stilling 2	13
	Stilling 5	9

- = no meter in the route has been read
- = reading of meters in the route has started
- = all meters in the route have been read

Overview of streets in a route:

	Prins Chr.Vænget	3
	Mursejlervej	1
	MØLLEPOLD	1
	Mursejlervej	1
	Mursejlervej	0
	Nattergalevej	0
	Prins Chr.Vænget	11

- = no meter on the street has been read
- = reading of meters on the street has started
- = all meters on the street have been read

Overview of meters on a street:

	Prins Chr.Vænget 145
	Prins Chr.Vænget 147
	Prins Chr.Vænget 149
	Prins Chr.Vænget 151
	Prins Chr.Vænget 153
	Prins Chr.Vænget 153
	Prins Chr.Vænget 151

- = meter not yet read
- = meter read
- = meter read and event code registered

3 Read from route

In MT Pro wM-Bus, the meters to be read are available in so-called routes which are defined in PcBase III. The respective routes may consist of an arbitrary number of meters to be read.

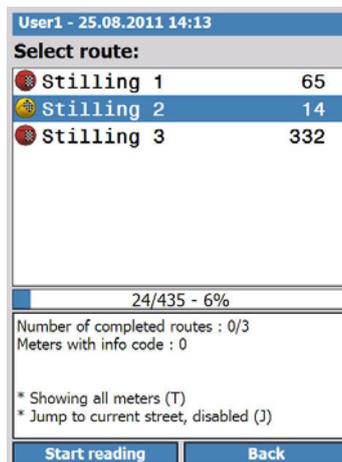
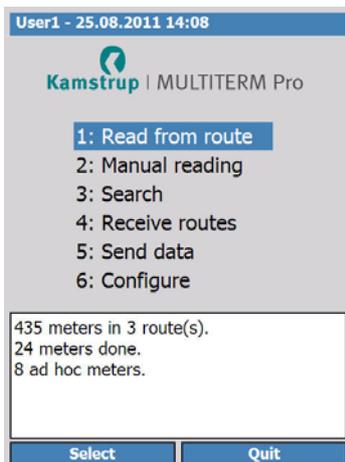
Wireless M-Bus works by one-way radio communication. About every 15 seconds, the meter sends out data packages, and MT Pro wM-Bus then listens for these packages. The data packages are encrypted, and as soon as MT Pro wM-Bus has received an understandable data package, the package is registered and saved in the memory of the hand-held terminal.

If a meter is not available in a route, it can be read as an ad hoc meter under the menu **Manual reading**. This is done by entering the serial number of the meter.

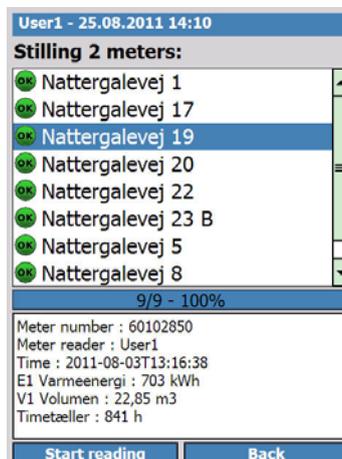
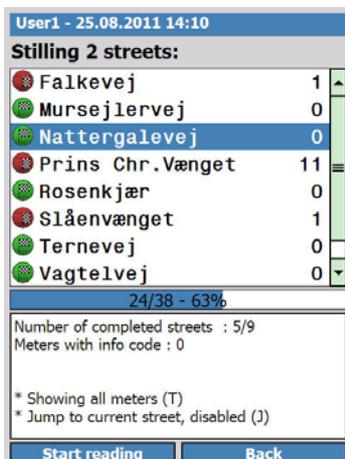
Note An encrypted and to MT Pro wM-Bus unknown meter cannot be read via radio.

If there is a problem with the radio reading of a meter, it can be read via optical eye or manual entries instead.

3.1 Navigation under Read from route



Select **Read from route**. An overview of routes available in MT Pro wM-Bus appears. By selecting a route and pressing ENTER, the street names in the route file appear.

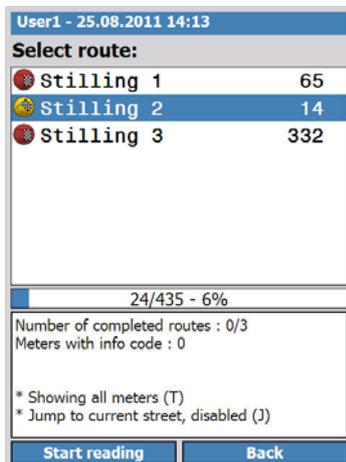


By selecting a street name and pressing ENTER, the single meters on that street appear.

3.2 Radio reading all routes

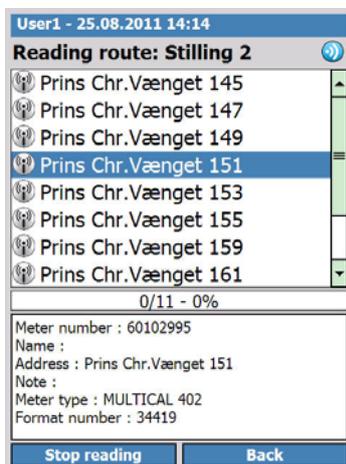
Radio reading can be started in the route overview or in the overview of the streets.

By pressing the shortcut key A in the route overview, all routes are read. By pressing **Start reading** in the route overview, only the selected route is read.



The window above to the left shows all routes where the shortcut key A can start reading all of them. The window to the right shows the streets in a selected route where only the contents of this particular route can be read. Thus, the shortcut key A has no function in this connection.

After pressing **Start reading**, the radio reading begins:



In this window, the following information appears:

- Number of read meters
- Meters not yet read
- Detailed information about the meter concerned (name, meter number, info etc.)

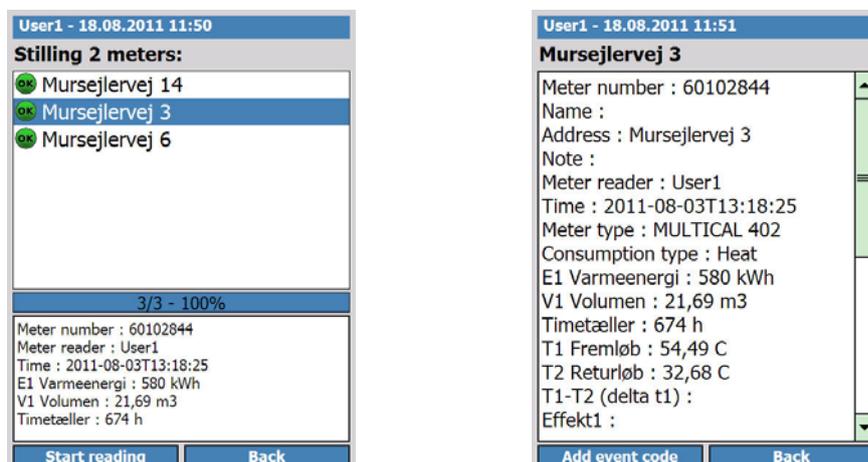
It is possible to continuously follow the number of read meters, which "new" meters have been received, and detailed information about the individual meter.

The reading can be stopped by pressing **Stop reading**.

3.3 Detailed information about the meter

In the route overview, the bottom third of the window contains primary information about the meter. If detailed information displaying all available data is required, press D.

In the window below to the left, the meter overview shows primary information, while the window to the right shows all available data when pressing D.



After the reading, the extended display (to the right) shows the registers that the reading job in question contains.

3.4 Meter reading shortcut menus

3.4.1 Jump to active street

J: Jump to active street, enabled/Jump to active street, disabled.

This feature is used during the reading of meters in routes and is enabled or disabled by the key J. When the feature is enabled, a jump is automatically made to the street in the window where most meters have been read lately.

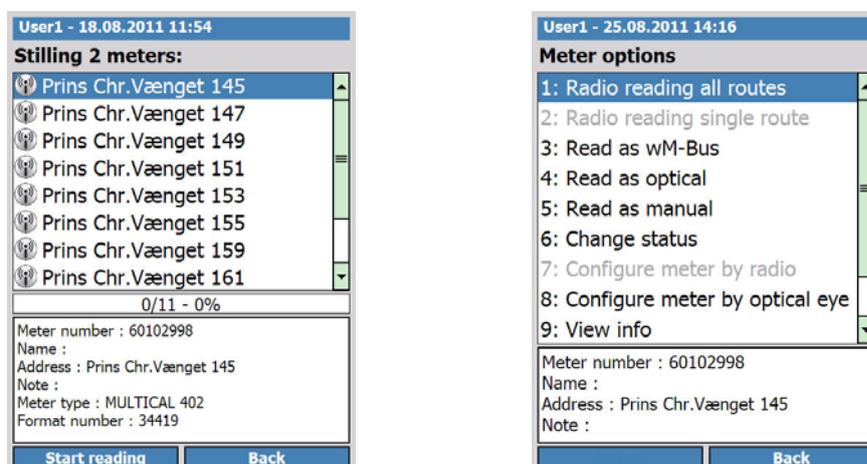
3.4.2 Showing all meters / Showing missing meters

T: Showing all meters/Showing missing meters

This feature is used during the reading of meters in routes and is enabled or disabled by the key T. When the feature is enabled, only the meters or streets where the reading is not yet finished are shown.

3.4.3 Shortcut key M

By selecting a meter and pressing M on the keyboard, access is given to a number of shortcuts.



This feature is available in connection with both ad hoc meter readings and meters in a route.

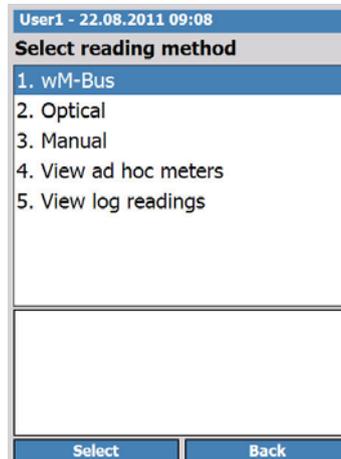
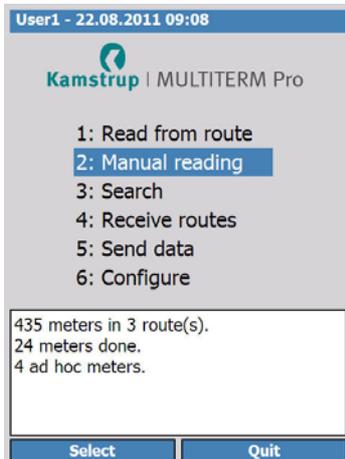
1. **Radio reading all routes:** See “Radio reading all routes”, p. 8.
2. **Radio reading single route:** Not available to wM-Bus
3. **Read as wM-Bus:** Read a meter by wM-Bus, even though it has been set to optical or manual reading in the route
4. **Read as optical:** Read a meter optically, even though it has been set to radio or manual reading in the route
5. **Read as manual:** Read a meter by manual entry, even though it has been set to optical or wM-Bus reading in the route
6. **Change status:** Change the status of the meter from read to not read
7. **Configure meter by radio:** Not available to wM-Bus
8. **Configure meter by optical eye:** It is possible to configure the meter by optical eye
9. **View info:** See all details about the selected meter
10. **Add event code:** Add one or more of the available event codes or enter manually via the keyboard of the hand-held terminal.
11. **New customer info:** New customer name, address, meter position and access info can be entered here.

Information entered in connection with meter reading is automatically transferred together with the readings.

4 Manual reading

MT Pro wM-Bus offers the possibility of manual reading. By manual reading is meant the reading of meters that are not included in available routes on the hand-held terminal.

Select **Manual reading** in the main menu, and the available reading methods appear:



wM-Bus: Use this method for reading a specific wM-Bus meter, and when you know the meter number in advance.

Optical: Here, the meter number is not necessarily known in advance.

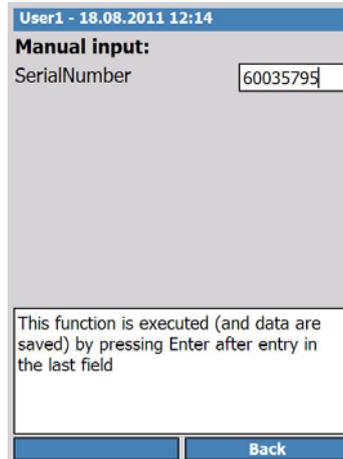
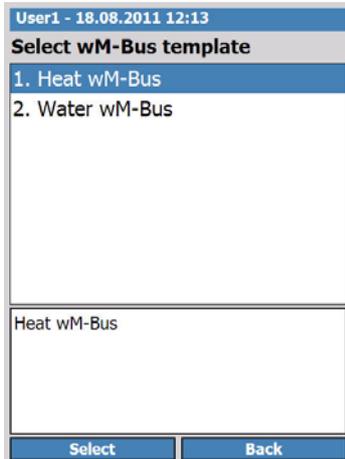
Manual: Use this method for reading a meter by manual entries on the hand-held terminal. This feature can be used e.g. to read a defective meter, where the only possibility of reading is by manually inserting the various values read on the display of the meter.

View ad hoc meters: Meters read under **wM-Bus**, **Optical** and **Manual** are shown here.

View log readings: The read log readings are shown here.

4.1 Manual reading (wM-Bus)

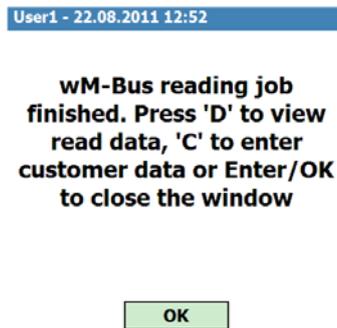
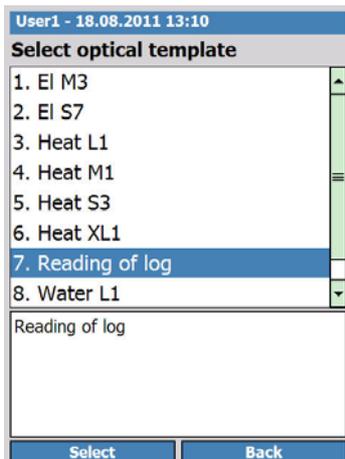
Select **wM-Bus**, and select between heat and water meters.



Enter the number of the meter that you wish to read. Press ENTER, and the reading starts.

4.2 Manual reading (optical)

Select **Optical**. Now, an overview of available optical templates appears as illustrated below.



Place the optical reading head on the meter, or connect the external plug for reading. Select the required reading job, and press ENTER. The reading starts.

4.3 Manual reading (manual input)

This feature can be used when it is not possible to execute an optical or radio reading.

When selecting **Manual** (entry), an overview of available manual templates appears:

If e.g. **Heat S3** is selected, the entry template of this job is shown. Here, the user can enter the registrations of the meter manually.

Note This feature is finished (and data are saved) by pressing ENTER after inserting registrations in the last field.

When entering data manually, do not enter separating characters or units. For a meter that e.g. shows 123,456 MWh, enter "123456". Subsequently, PcBase III makes sure to show decimals and units correctly.

4.4 Remove templates

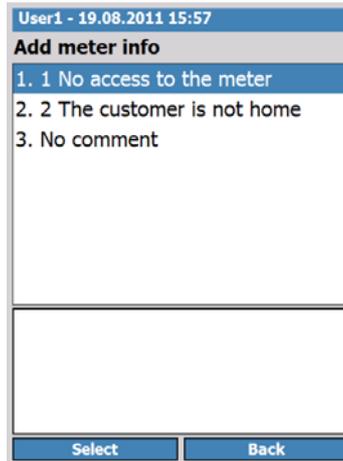
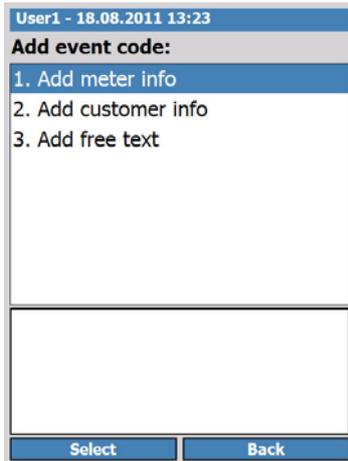
Templates can be removed from the hand-held terminal by pressing the blue function key FN followed by the BKSP key.

4.5 Add event code

It is possible to add comments about meters. Three types of event codes are available:

- Meter info
- Customer info
- Free text.

This feature is used by pressing the B key in the meter overview. An overview of the three above event codes now appears. Here, it is possible to add information about the meter, the customer, or as free text, where the user can enter his own comments.



Add meter info and **Add customer info** contain codes that can be predefined in PcTermPro III.

Note The MULTICAL® 601 hourly logger modules 67-02, 67-03, 67-05, 67-08, 67-09 and 67-0A can only read data since the last mains interruption or since the last adjustment of date and time.

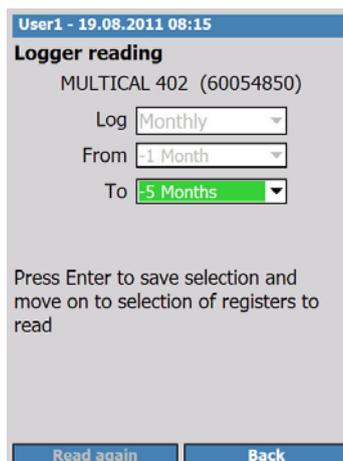
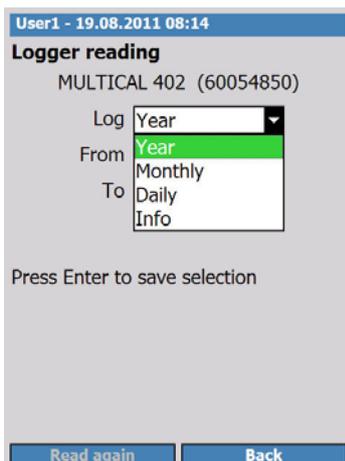
If you wish to add a comment about e.g. the meter, select **Add meter info**. Then, you can e.g. select the comment **No access to the meter**.

4.6 Reading of log

MT Pro wM-Bus can read the internal loggers in Kamstrup MULTICAL® via optical reading or external reading plug.

Establish connection, select **Manual reading** ⇒ **Optical** ⇒ **Reading of log**, and press ENTER.

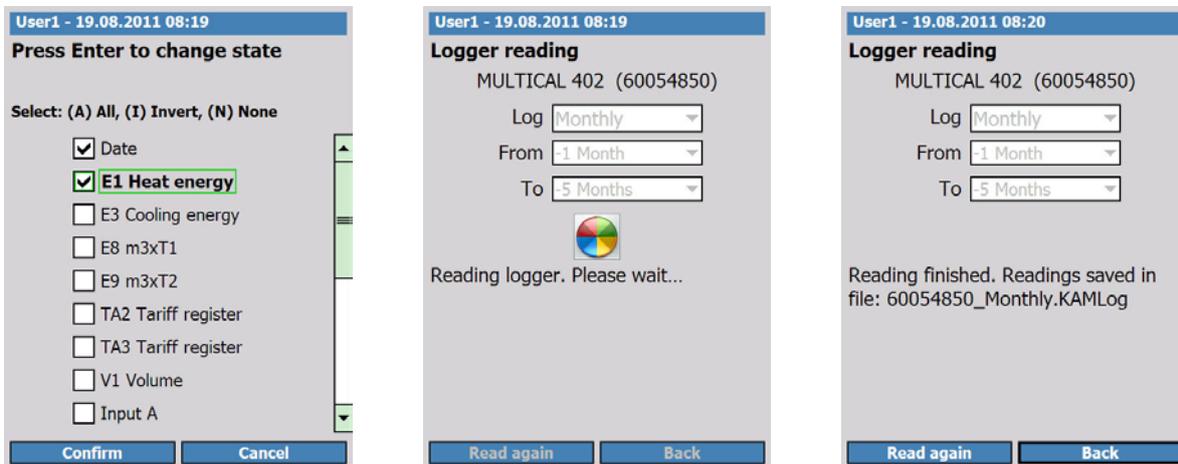
MT Pro wM-Bus detects the meter type and the meter number and shows the loggers that are available in the meter:



Select the required logger and the interval to read.

If old data should be read, it is possible to indicate the period to read directly.

Select with the navigation button the registers to read, and press ENTER:



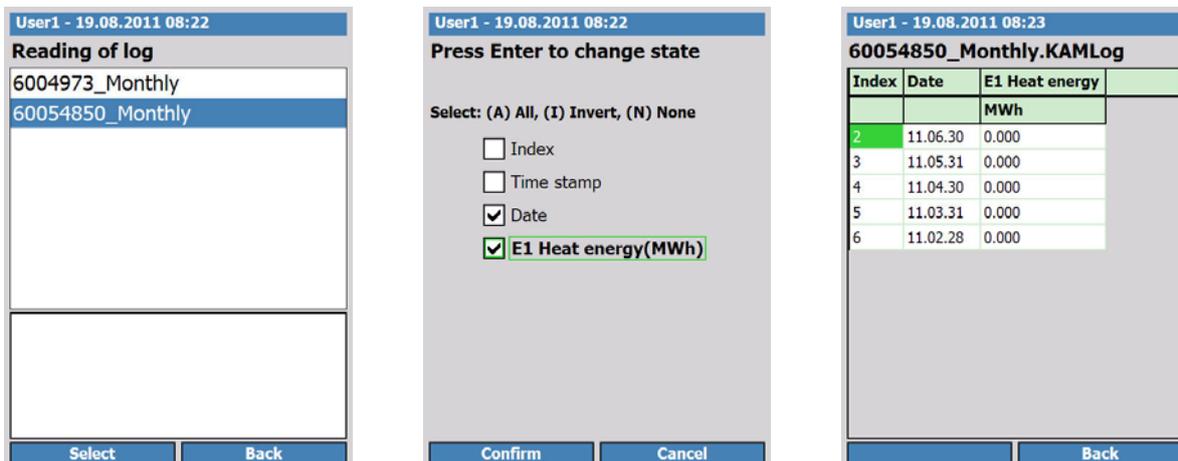
Press Confirm to start the reading.

The reading has been started.

Note It might take up to 16 minutes to read a logger if old data or all data in a logger have been selected.

When the logger reading has been executed, the reading is saved under **Manual reading** ⇒ **View log readings**. The name of the reading file consists of Meter number_Logger type.

Select the required logger:



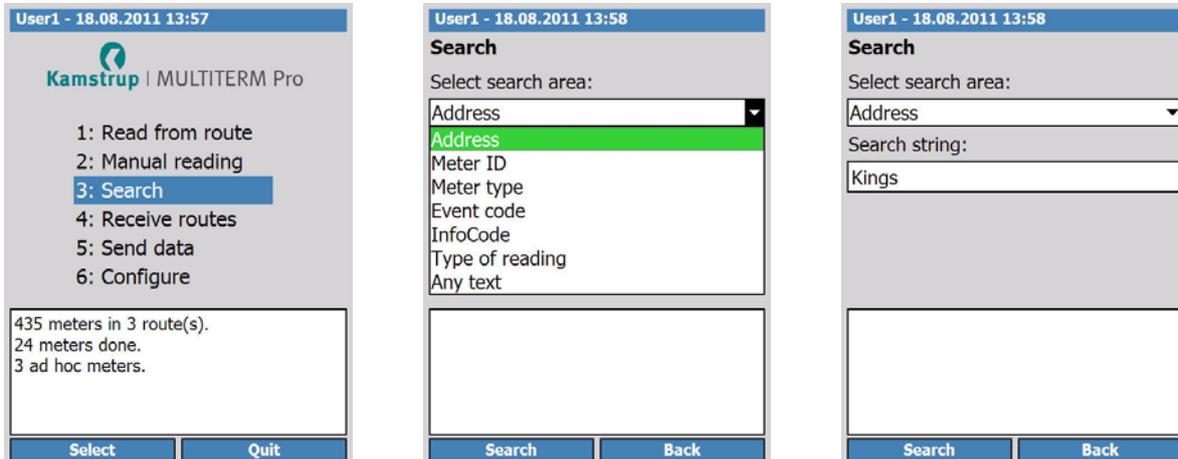
Select the registers to display on the screen, and press **Confirm**.

Now, the values of the logger are displayed with the correct units and decimal characters.

To remove a logger reading, press the blue function key FN followed by the BKSP key.

5 Search

It is possible to search for meter data available on MT Pro wM-Bus. To do this, select **Search** in the main menu:



Alternatively, press the S key, which is a universal shortcut key that works in every menu of MT Pro wM-Bus.

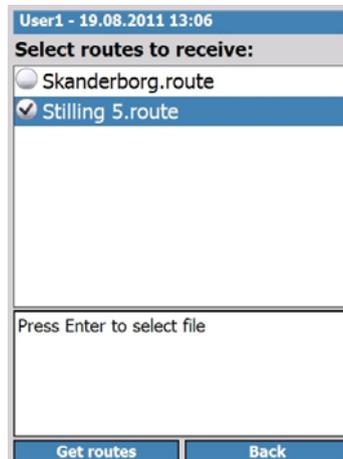
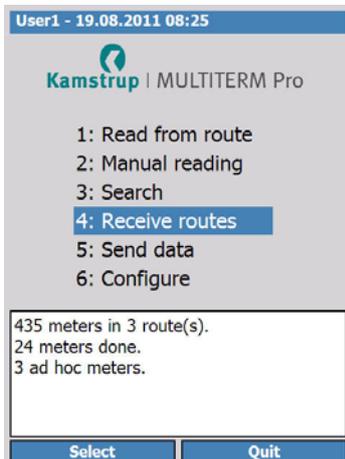
The hand-held terminal is provided with an intelligent search feature. For instance, if “Kings” is entered in the search field, results starting with “kings”, e.g. “Kings Street” or “Kings Road” appear.

Note The search includes all available routes on the hand-held terminal.

6 Receive routes

In connection with **Receive routes**, be aware of the performance limitations in MT Pro wM-Bus (see “Capacity”, p. 4).

Select **Receive routes** in the main menu:



Now, MT Pro wM-Bus will look into the route library of the connected PC to see the route files that can be collected.

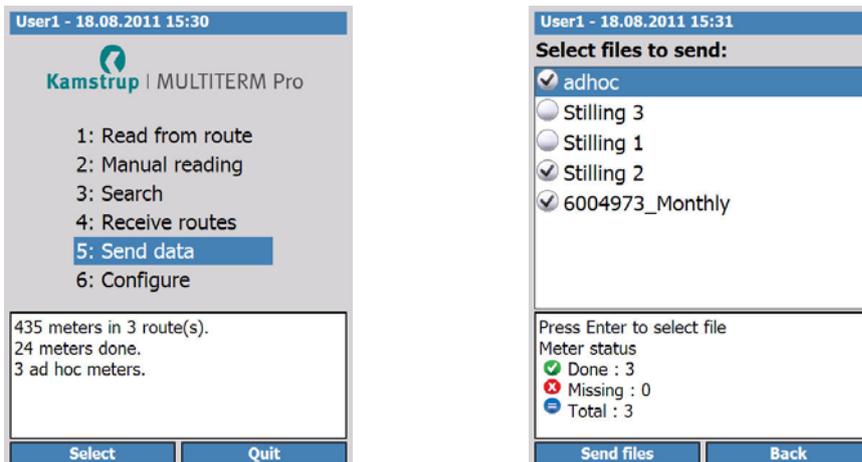
Select the route files to collect by scrolling down to and selecting the route files concerned by pressing ENTER. Press **Get routes** to collect the selected routes.

7 Send data

In connection with **Send data**, be aware of the performance limitations in MT Pro wM-Bus (see “Capacity”, p. 4).

7.1 Send data (route files)

When route files should be transferred back to the PC from MT Pro wM-Bus, select **Send data**:



Thereby an overview appears of available routes that are ready to be transferred to the PC.

Select the route files to send by scrolling down and selecting them by pressing ENTER. Press **Send files**. In this way, the selected routes are placed in the route library of the PC that must be predefined in PcBase III.

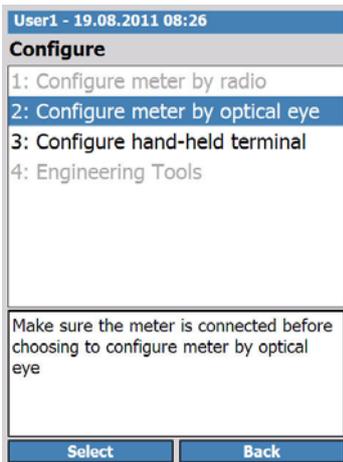
Select if the routes should be kept on or deleted from the hand-held terminal after the transfer to the PC.

8 Configure

8.1 Configuration of meter

MT Pro wM-Bus supports a number of features for the configuration of MULTICAL®. Configuration can only be carried out via the optical eye or serial communication.

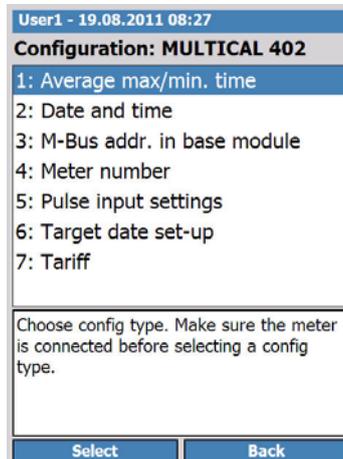
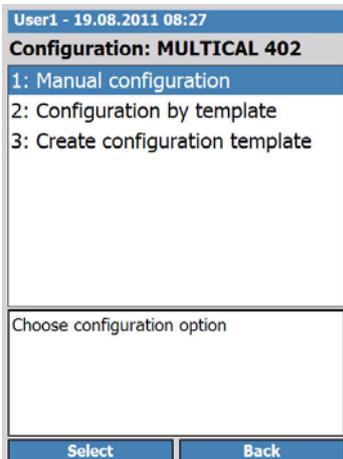
The features that are configurable depend on each meter type and its configuration.



Configure meter by radio and **Engineering Tools** are not available to MULTITERM Pro wM-Bus.

8.2 Meter configuration by optical eye

The features that are configurable depend on each meter type and its configuration.



For further information, refer to the technical description of each meter.

8.2.1 Changing language/region

All available languages have been preinstalled on MT Pro wM-Bus.

Note The application must be restarted for language selections to take effect.

Select **Configure** ⇒ **Configure hand-held terminal**.

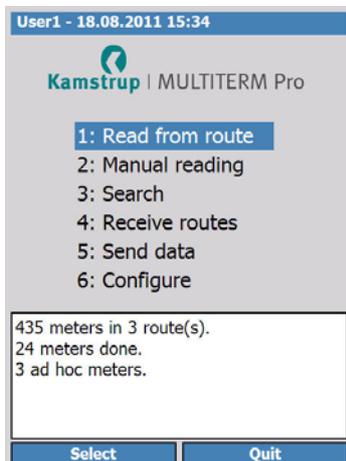
Select **Change language/region**.

Select region, and press ENTER.

Select language, and press ENTER.

Press **Yes** to restart the application.

8.2.2 Change user



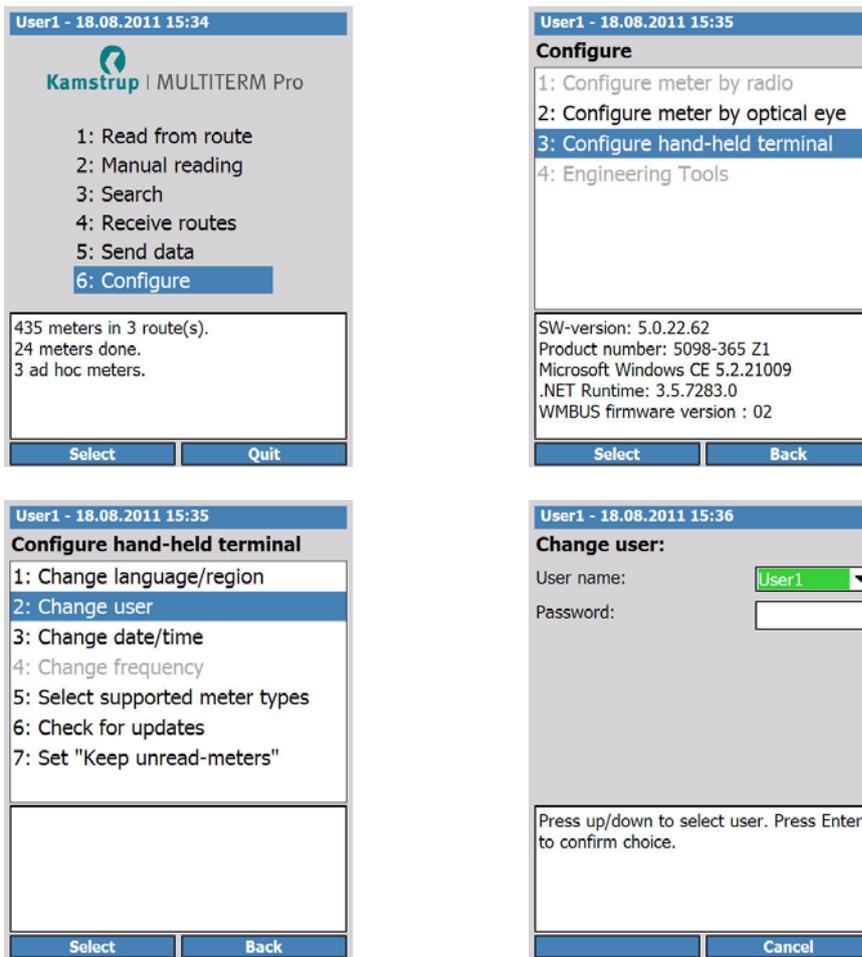
“User1” has been preinstalled as default user in MT Pro wM-Bus (see window above). New user names can be created in PcTermPro III.

It is possible to limit the access to selected features in MT Pro wM-Bus by means of three different passwords:

- **Engineer**
Has access to all features.
- **Administrator**
Has access to all features, except Engineering Tools if this feature is installed.
- **Meter reader**
Has access to all features, except meter configuration and Engineering Tools if this feature is installed.

Passwords are created and administered in the PcTermPro III application. If passwords are not created, there is access to all features.

MT Pro wM-Bus also gives access to changing the user via the configuration menu.



Select **Configure** ⇒ **Configure hand-held terminal** ⇒ **Change user**.

In this way, it is possible to change the user name for MT Pro wM-Bus. Press ENTER to confirm the change.

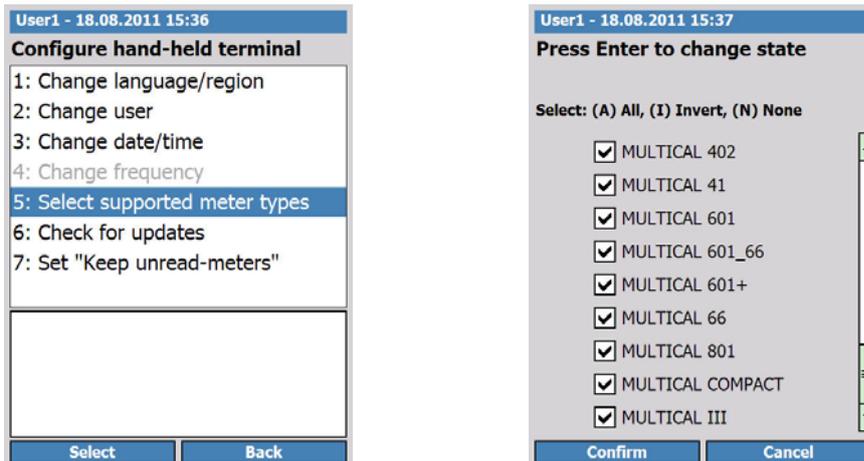
Note “Users” must be transferred from the PcTermPro III application in order to make them visible on the hand-held terminal.

8.2.3 Change date/time and time zone

As in the case with changing the user, it is also possible to change the date/time and time zone in the application.

Select **Configure** ⇒ **Configure hand-held terminal** ⇒ **Change date/time**. In this way, you have access to change the date, time and time zone.

8.2.4 Select supported meter types



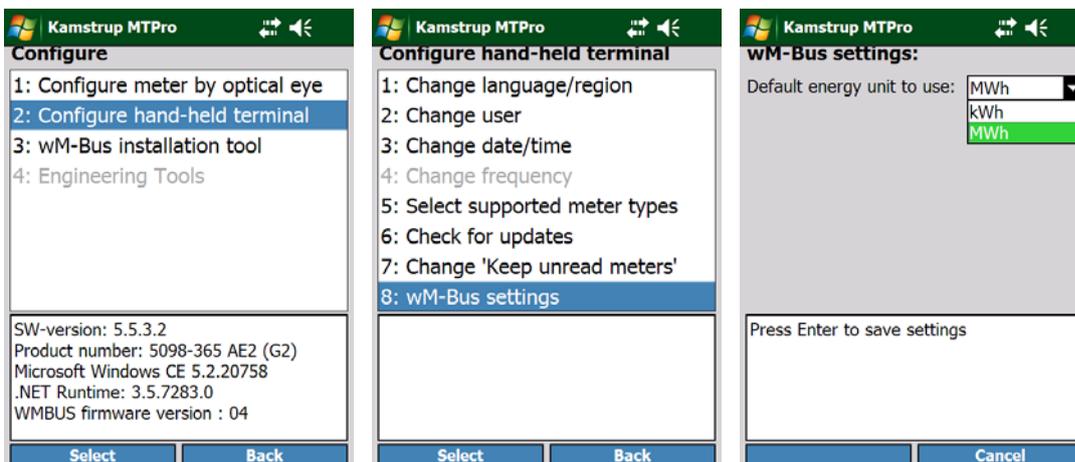
In connection with ad hoc readings carried out serially and with the optical eye, the reading time can be reduced by deselecting the meter types that are not available. In this way, the time that MT Pro wM-Bus spends on finding the right communication protocol is reduced.

When reading from a route, the necessary information comes from PcBase III.

8.2.5 Select display unit

By default, the hand-held terminal shows the same unit (kWh or MWh) as the meter. In cases where the program number, informing about the setup of the unit, is not transferred from the meter, the hand-held terminal shows the selections below.

Note This only applies to the display on the hand-held terminal and does not influence data delivered for further use.



During the configuration of the hand-held terminal, wM-Bus settings are selected, and here you can select between kWh and MWh. This applies to all relevant registers using kWh or MWh.

9 Application updates and plug-ins

Application updates and extensions are installed on MT Pro wM-Bus by means of an update application.

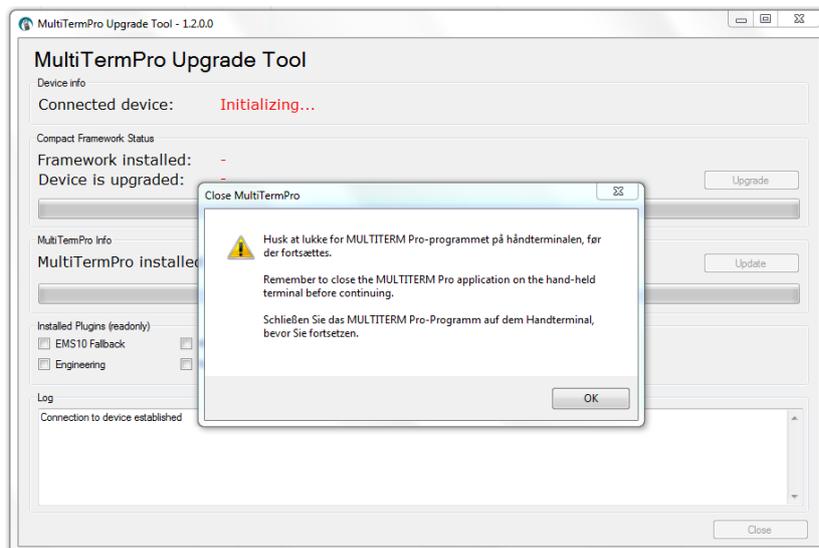
9.1 Program updates

Program updates are made available via CD or via download.

Program updates are installed on MT Pro by an update program.



Start the application, and follow the instructions:



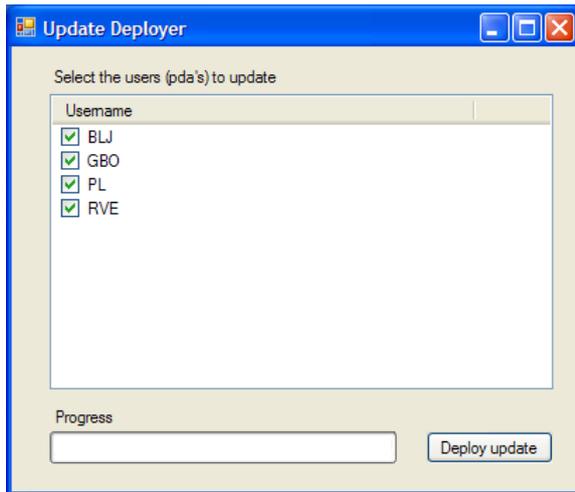
9.2 How to install plug-ins on MT Pro wM-Bus

Plug-ins are made available via CD or via download.

Start the application by double-clicking the program icon for MT Pro.

Now, all the MT Pro hand-held terminals that are connected to the PC appear.

Deselect, if required, the MT Pro hand-held terminals that you do not wish to update, and click **Deploy update**:

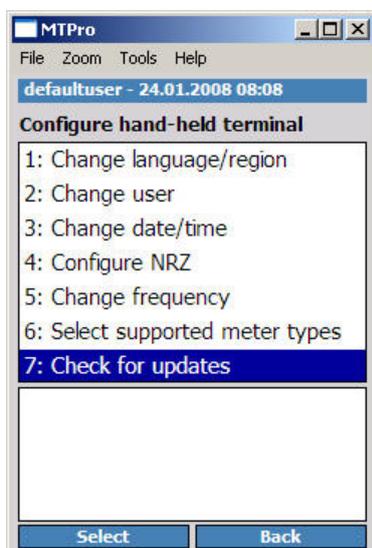


When the update has been transferred to the PC and is ready for installation on the selected MT Pro hand-held terminal, **All done** appears.

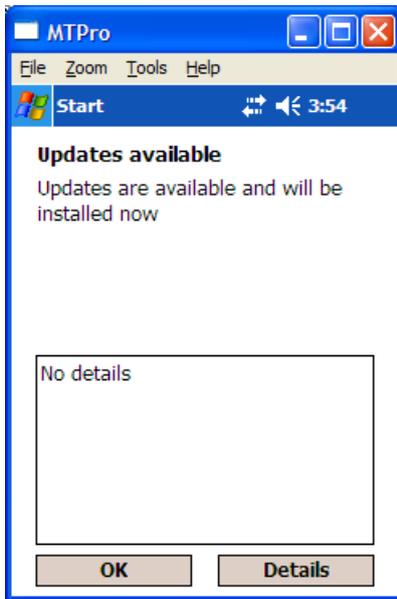
Click the red **X** in the top right corner to close the application.



On the hand-held terminal, select Configure ⇒ Configure hand-held terminal ⇒ **Check for updates**:



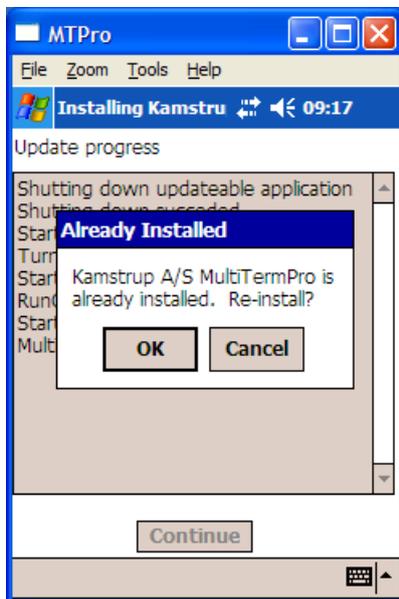
Now, MT Pro searches for updates on the PC:



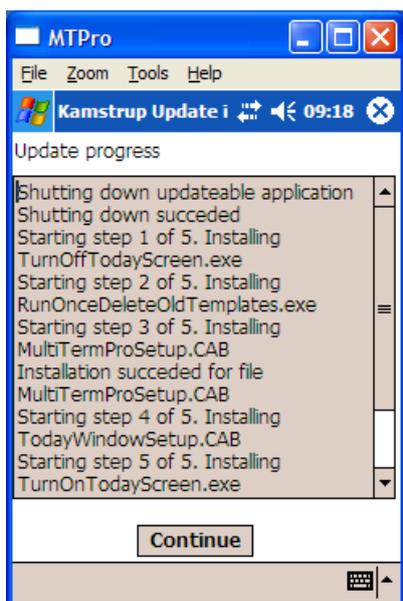
The updates have now been loaded into MT Pro.

Press **OK** to start the installation. The installation is done automatically.

Follow the instructions on the display:



Press **OK** to start the installation.



Click **Continue** to complete the installation. Now MT Pro restarts automatically.

When pressing the P key in the main menu, an overview of the installed plug-ins appears.

9.3 Time

When MT Pro wM-Bus – through Microsoft ActiveSync or Windows Mobile Device Center – is connected to the PC, the time of the hand-held terminal is automatically set according to the time on the PC. At the same time, you are asked to make time settings every time the application is started.

It is also possible to set the time under the configuration menu of MT Pro wM-Bus. For further information, see “Change date/time and time zone”, p. 21.

Note At each reading, a time stamp is created from the hand-held terminal. Therefore, it is very important that the time of MT Pro wM-Bus is always set correctly.

9.4 Regeneration of the system

MT Pro wM-Bus cannot lose data, unless routes are actively deleted by the user.

If the MT Pro wM-Bus application should get into a state where it does not respond to conventional inputs, it might be necessary to regenerate the system.

To regenerate the system, press ENTER and the blue function key FN for 6-8 seconds. This closes the application, and the application (and data) is reloaded without loss of data.

