

VAPORIX

VAPORIX Service Dongle and VAPORIX Diagnostics

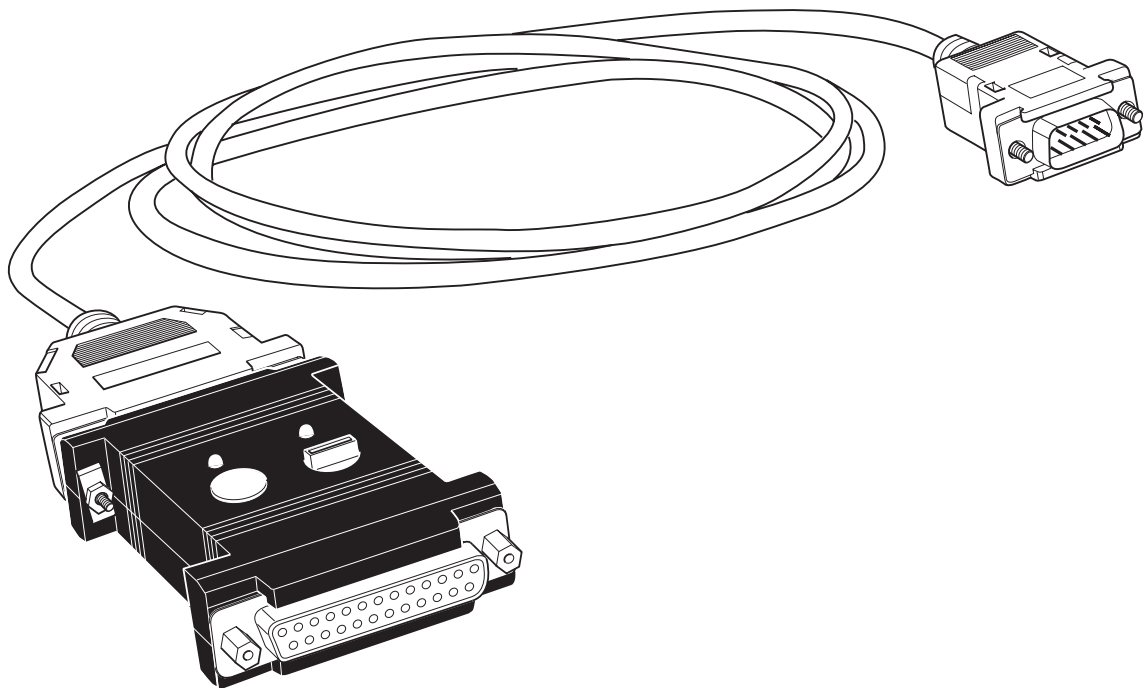




Table of contents

VAPORIX service dongle	3
1 Characteristic features of the VAPORIX service dongle	3
2 Safety instructions	4
3 Structure and function	5
4 Connection and operation	7
5 Technical data	11
6 Overview – coding switch commands	11
VAPORIX diagnostics	12
1 Description of the VAPORIX Diagnostics program	12
2 System requirements	12
3 Installation	12
4 Preparation	12
5 Program start	13
6 Representation of history data	16
7 Storing the history data	18
Annex	19
1 Licence conditions	19

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VAPORIX service dongle

1 Characteristic features of the VAPORIX service dongle

The VAPORIX service dongle is needed to carry out service work on the automatic monitoring system VAPORIX, which measures, checks and evaluates vapour recovery at the fuel dispensers of filling stations.

The VAPORIX service dongle has two main functions:

- Access protection for the VAPORIX system and its configuration
- Ability to carry out services and tests on the VAPORIX system more simply

2 Safety instructions

The VAPORIX service dongle is used for access protection and as an operating module for servicing and testing of the automatic monitoring system VAPORIX. Use the device for this purpose only. The manufacturer shall not be liable for any form of damage resulting from improper use!

The VAPORIX service dongle was developed, manufactured and inspected in accordance with state-of-the-art technology and with recognised technical safety rules and regulations. Nevertheless, hazards may arise from the use of this device. Therefore, please observe the following safety instructions:

- Never perform any modifications, attachments or conversions on the dongle without obtaining prior consent from the manufacturer.
- Connection and operation of the device may only be carried out by expert personnel. Specialized knowledge must be obtained by undergoing regular training.
- Operators, installers and service personnel must observe all applicable safety regulations. This also applies to the local safety regulations and accident prevention regulations not mentioned in these operating instructions.
- The VAPORIX service dongle is not suitable for use in areas endangered by explosions and is only intended for use within the VAPORIX system.
- These instructions refer to the connection and operation of the service dongle only. For details of how to configure and operate the measurement analysis unit of the system VAPORIX-Control, please refer to the separate instructions for VAPORIX-Control and VAPORIX-Master.

The safety instructions in this manual are identified as follows:



If you do not observe these safety instructions, there is a risk of accident or the VAPORIX system could be damaged.



Useful information that will guarantee proper function of the system or facilitate your work.

3 Structure and function

The VAPORIX service dongle is already linked via its 25-pole Sub-D plug (2) to the connecting cable (1) when it is delivered. The connecting cable is used to connect the dongle to the measurement analysis unit VAPORIX-Control installed in the dispenser computer. Configuration of the VAPORIX system via the VAPORIX-Master is only possible with the dongle fitted. It is therefore not possible to e.g. alter the configuration of the VAPORIX system without authorisation.

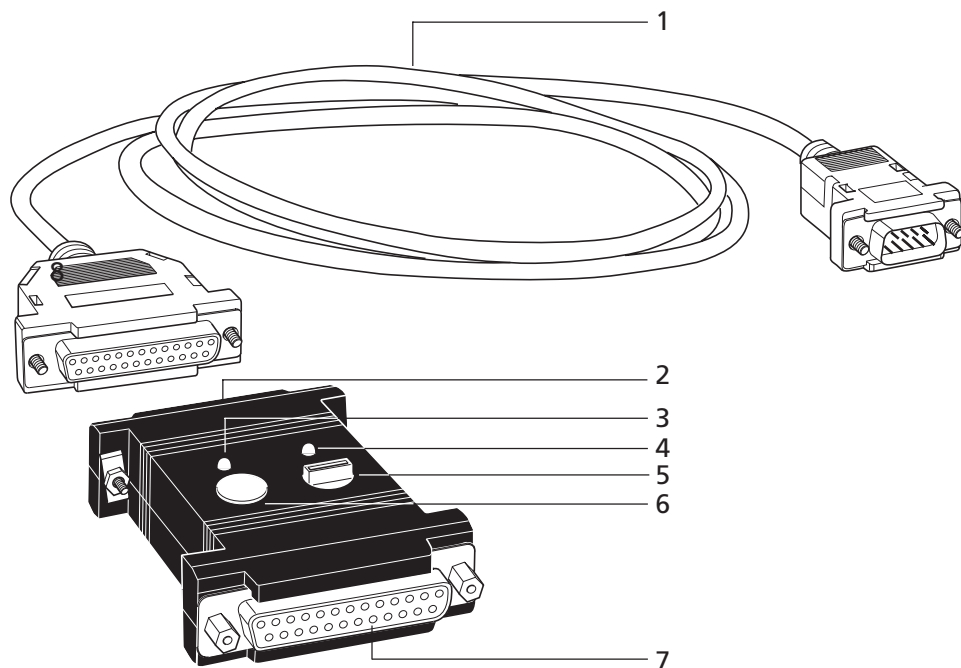


Fig. 1: VAPORIX service dongle with connecting cable

The power supply of the service dongle is guaranteed by the measurement analysis unit VAPORIX-Control. After connecting the service dongle, the green light emitting diode (LED) (4) indicates that the dongle is ready for operation. Using the button (6) and the 10-step coding switch (5), simple service and testing work can be carried out on the VAPORIX system:

- Testing the automatic shutdown of a dispenser point
- Releasing a dispenser point that is shut down, for testing
- Resetting alarm after rectifying error

With the coding switch, the desired command is selected using a numerical code (0 to 9) and is sent to the VAPORIX system by pressing the button (see Chap. 4 "Connection and operation").

All work carried out on the VAPORIX system, which is only possible with the help of the service dongle, is registered, stored in the system and can be called up again using, for example, the optional signal display VAPORIX-Master.

The yellow LED (3) lights up when communication between the service dongle and VAPORIX-Control is established.



The 25-pole SUB-D socket (7) is used to connect the dongle to a computer with an installed terminal program.

4 Connection and operation



Connection and operation of the device may only be carried out by expert personnel. Operators, installers and service personnel must observe all applicable safety regulations. This also applies to the local safety regulations and accident prevention regulations not mentioned in these operating instructions.



Do not fit the service dongle during a fuel transfer.

4.1 Connecting the service dongle to VAPORIX-Control

For the electrical connection of the service dongle, the connecting cable's plug (8) must only be connected to the VAPORIX-Control service interface (9).

The green LED (4) on the service dongle lights up. The device is ready for operation. (See Fig. 2a, page 8)



To avoid premature wearing of the contacts, the connecting cable to the VAPORIX-Control unit should always remain linked to the service dongle.



If the connecting cable has to be replaced, it can be exchanged with a standard serial interface cable (25-pole SUB-D socket on a 9-pole plug).

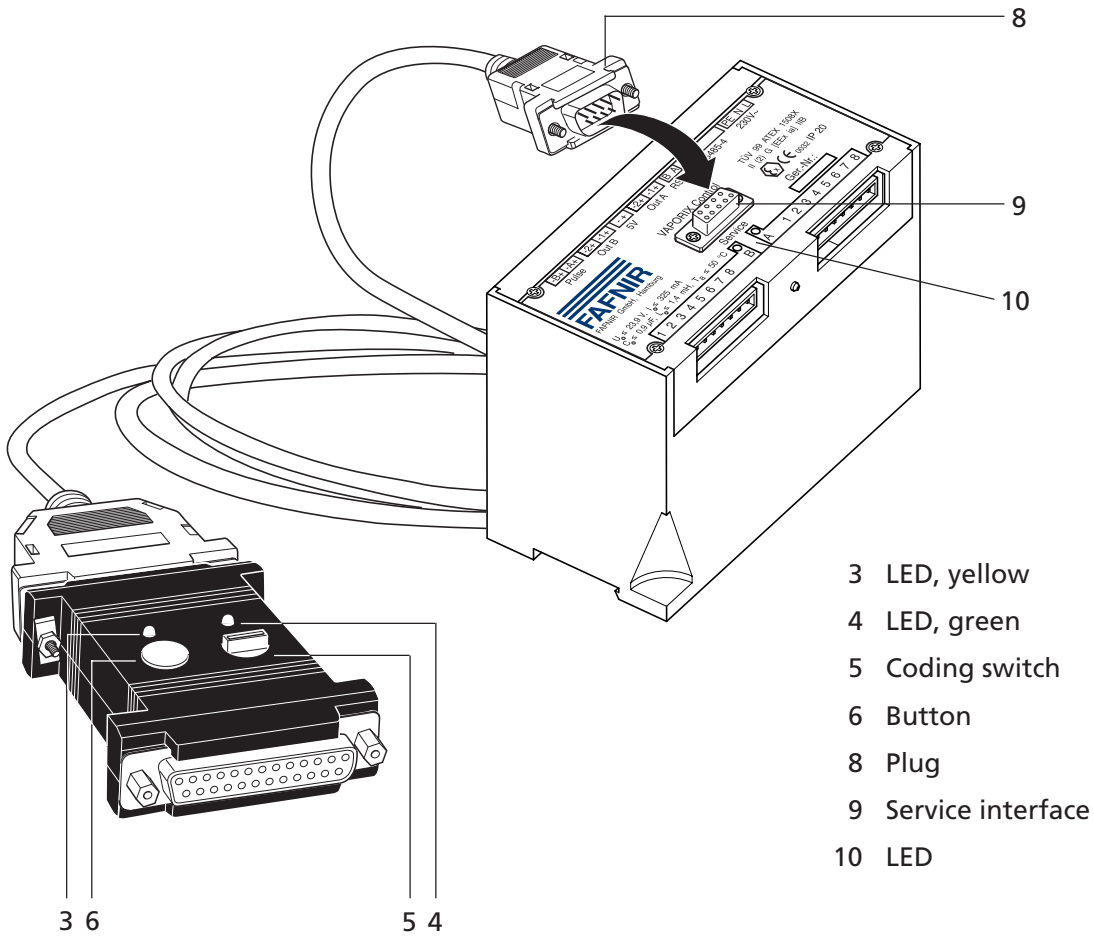


Fig. 2a: Connecting and logging in the VAPORIX service dongle

4.2 Logging in the service dongle

To ensure that the access authorisation for communication between the service dongle and VAPORIX-Control can be checked and registered, the dongle must be logged in before operation.

1. Turn coding switch to "0".

2. Press button.

The yellow LED lights up as long as the communication to VAPORIX-Control is established.

4.3 Testing the shutdown of the dispenser point

If you want to test the triggering of an alarm and the shutdown in normal operation:

1. Turn coding switch to position "1" for dispenser side A or to "2" for dispenser side B.
2. Press button.
The corresponding LED "A/B" on the VAPORIX-Control unit must now flash orange instead of green. The alarm is triggered, and the 72-hour time limit begins to run.
3. Press button again.
The LED on the VAPORIX-Control unit must now flash red instead of orange and the fuel discharge of the dispenser concerned (side A or B) must be blocked.
4. Turn coding switch to "5" for dispenser side A or to "6" for dispenser side B in order to release the dispenser point.
5. To log out, turn coding switch to "9" and press button (yellow LED goes out).



If the test shutdown is not cancelled by the service personnel within a period of 10 minutes, an automatic reset of the test shutdown is performed by the VAPORIX-Control measurement analysis unit.

4.4 Releasing a dispenser point that is shut down, for testing

If a dispenser point has been automatically shut down due to a system error, it can be temporarily released for service purposes (e.g. control measurements).

1. Turn coding switch to "3" for dispenser side A or to "4" for dispenser side B.
2. Press button.
The dispenser point is released until the dongle is logged out again.
3. To log out, turn coding switch to "9" and press button (yellow LED goes out) or perform further service activities.



After 60 minutes, a release of the dispenser point for testing and servicing purposes is reset by the VAPORIX-Control measurement analysis unit, provided that a reset operation has not already been performed by service personnel.

4.5 Resetting alarm after rectifying error

If an alarm has been triggered at a dispenser point and the cause of the error has been rectified, the alarm can be reset in the VAPORIX-Control unit.

1. Turn coding switch to "5" for dispenser side A or to "6" for dispenser side B.
2. Press button.
The alarm and the 72-hour time limit are reset.
3. To log out, turn coding switch to "9" and press button (yellow LED goes out) or perform further service activities.

4.6 Checking the vapour recovery system

To ensure that hydrocarbons are no longer present during a dry calibration of the vapour recovery system, the manually operated terminal can be used to perform a simulation of fuel transfer. In that case the service dongle must be connected, and the coding switch must be turned to switch position "7".

The switch position also ensures that any downstream corrective control modules are deactivated for the duration of the service work.

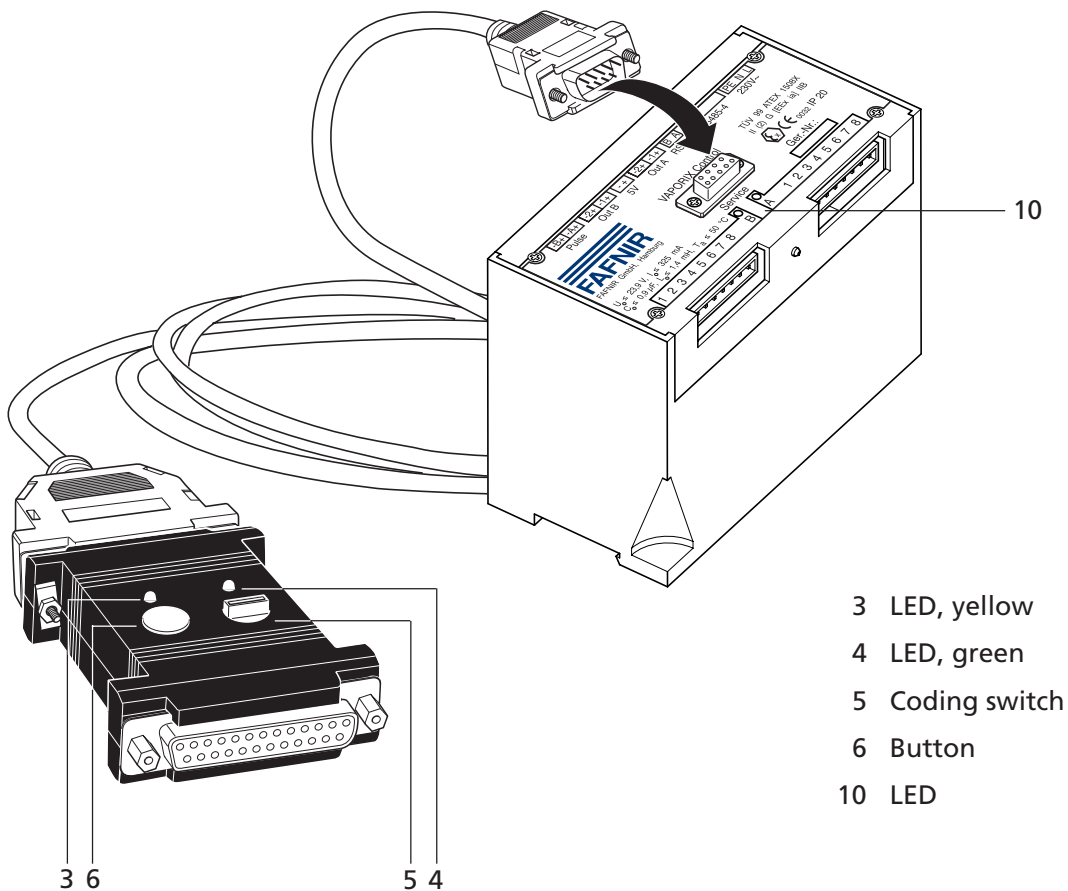


Fig. 2b: Operating the VAPORIX service dongle

5 Technical data

Dimensions: 80 x 55 x 20 [mm]

Weight(withoutcable): 60 g

Operating temperature: -10 °C to +50 °C

Pin assignment: SUB-D socket, 25-pole to PC

Pin 2: RxD

Pin 3: TxD

Pin 7: GND

all further pins: not assigned

SUB-D plug, 25-pole to VAPORIX-Control

Pin 2: TxD

Pin 3: RxD

Pin 6: +5 V supply, max. 20 mA

Pin 7: GND

all further pins: not assigned

6 Overview – coding switch commands

Function	Switch position	
	Dispenser side A	Dispenser side B
Alarm test	1	2
Service release	3	4
Alarm reset	5	6
Simulation measurement	7	
Login	0	
Log out	9	

VAPORIX diagnostics

1 Description of the VAPORIX diagnostics program

VAPORIX diagnostics is used to read out and graphically represent all the relevant history data of the filling operations for both dispenser sides. The read-out data is displayed in Microsoft Excel and can be stored as an Excel file.

This manual of operating instructions assumes that you know how to operate your computer and that you also know how to use the Windows operating system, in particular with the Microsoft Excel software program.

2 System requirements

- Operating system Windows 98, ME, NT, 2000, XP (Windows 95 is not supported)
- Microsoft Excel 97 or higher versions
- 3 $\frac{1}{2}$ " floppy disk or CD-ROM drive (for program installation)
- A free serial interface or USB interface with serial adapter for connection to the VAPORIX-Control measurement analysis unit

3 Installation

- Insert the VAPORIX diagnostics floppy disk or CD-ROM into the respective drive and start the file *VAPORIX-Diagnose.exe* by means of a double-click in Windows Explorer or by double-clicking the menu item *Execute* in the start menu.
- Follow the instructions on the screen until the installation has been successfully completed. A restart of the Windows program is not required.
- If you have installed the program under Windows NT, 2000 or XP, the first program start must be performed by the administrator because the program installs the drivers during the first start-up, which is only possible with administrator rights.

4 Preparation

Prior to the program start-up, the VAPORIX-Control measurement analysis unit must be connected via a free serial RS232 interface or USB interface with a serial adapter to a computer.

5 Program start

Use the Windows function *Start -> Programs* to start the program. If you did not specify a different program group during the installation procedure, you will find the program in the program group *FAFNIR*.

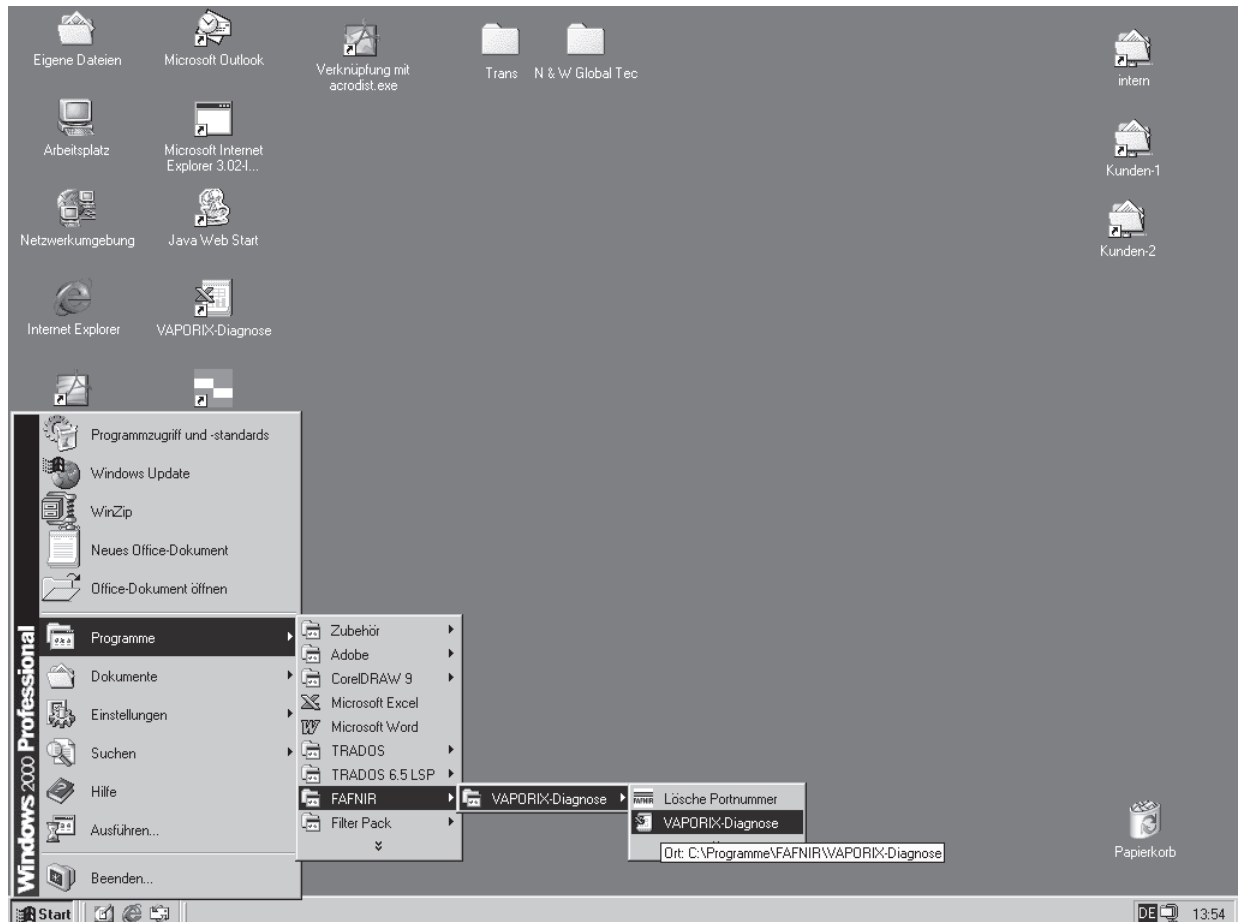


Fig. 3: Start of VAPORIX diagnostics

When the program is started for the first time, a dialog window will open up in which you must specify the COM port to be used to carry out communication with the VAPORIX-Control measurement analysis unit.

Select the COM port that is connected to the VAPORIX-Control measurement analysis unit.



Fig. 4: COM port selection



The Microsoft Excel template contains so-called macros for the purpose of preparing the diagrams. When the program is started, a window appears with appropriate warning information. Select the button "Activate macros" in order to be able to use all VAPORIX diagnostics program functions.

5.1 Reading out the history data

To read out and display the history data of the connected VAPORIX-Control measurement analysis unit in graphical form, select the button *Start*. However, you can also read in and display already available history data in graphical form by pressing the button *Open*.

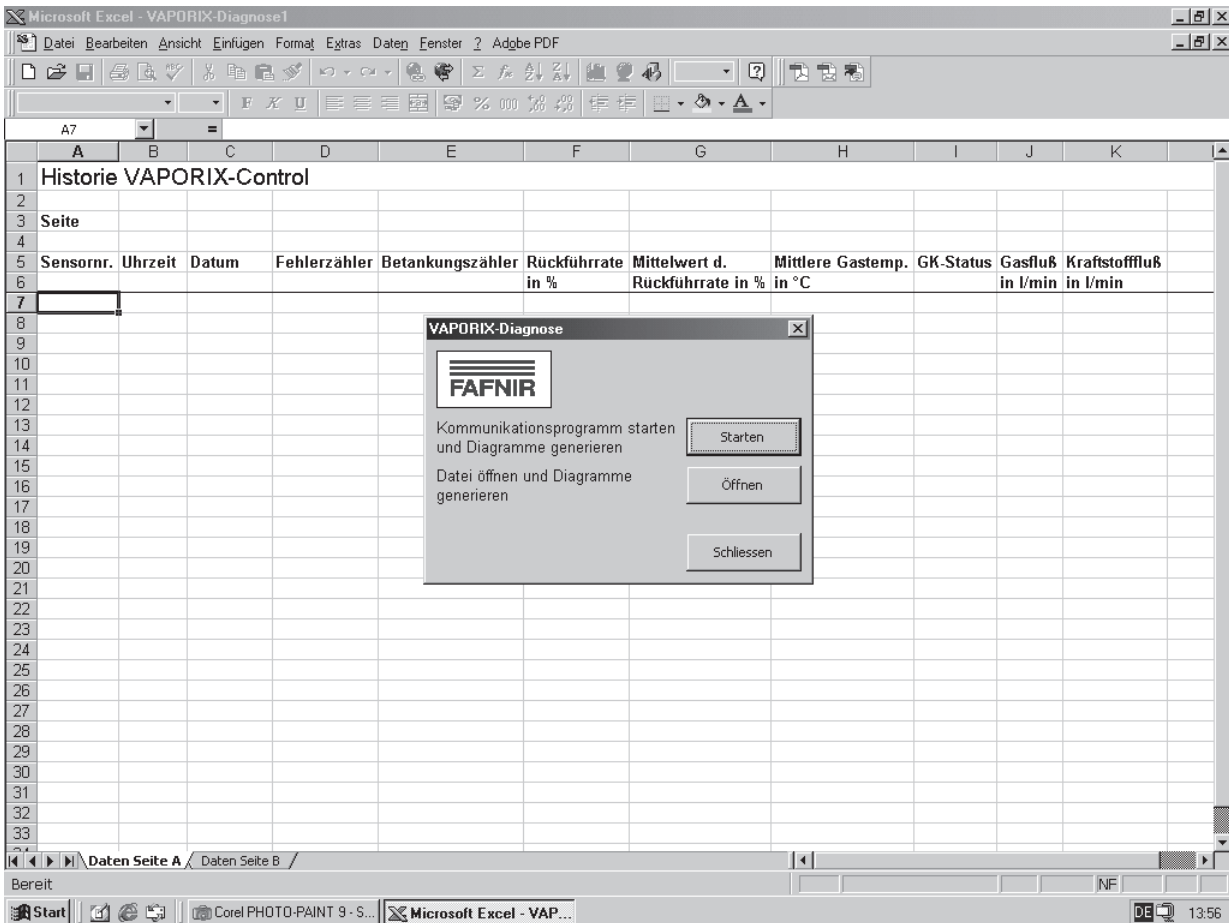


Fig. 5: Dialog window for displaying the history data

After communication with the measurement analysis unit has been established by pressing the button *Start*, the number of data records of the filling operation history to be read out is scanned. In order to obtain an informative overview, select the 2000 data records specified in the pre-setting (max. number).

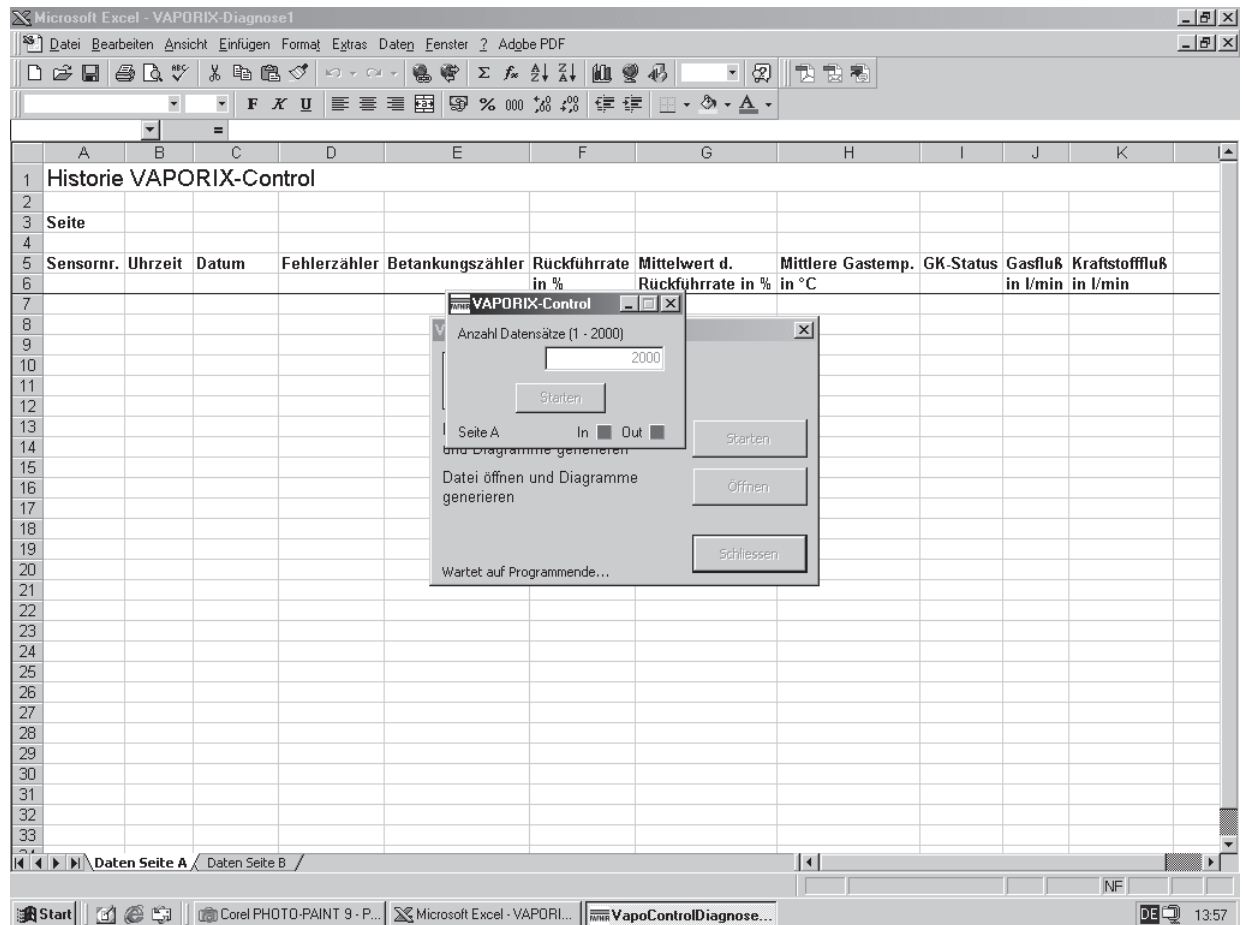


Fig. 6: Defining the number of data records

Press the button *Start* to read out the history data. In the lower section of that dialog window, you will see a status display that shows which data records are being processed.

Following the reading-out operation, the program offers the possibility of reorganizing the history memory. The data available in VAPORIX-Control is then deleted with the exception of the last 96 data entries.



Reorganization prevents identical data from being read out repeatedly.

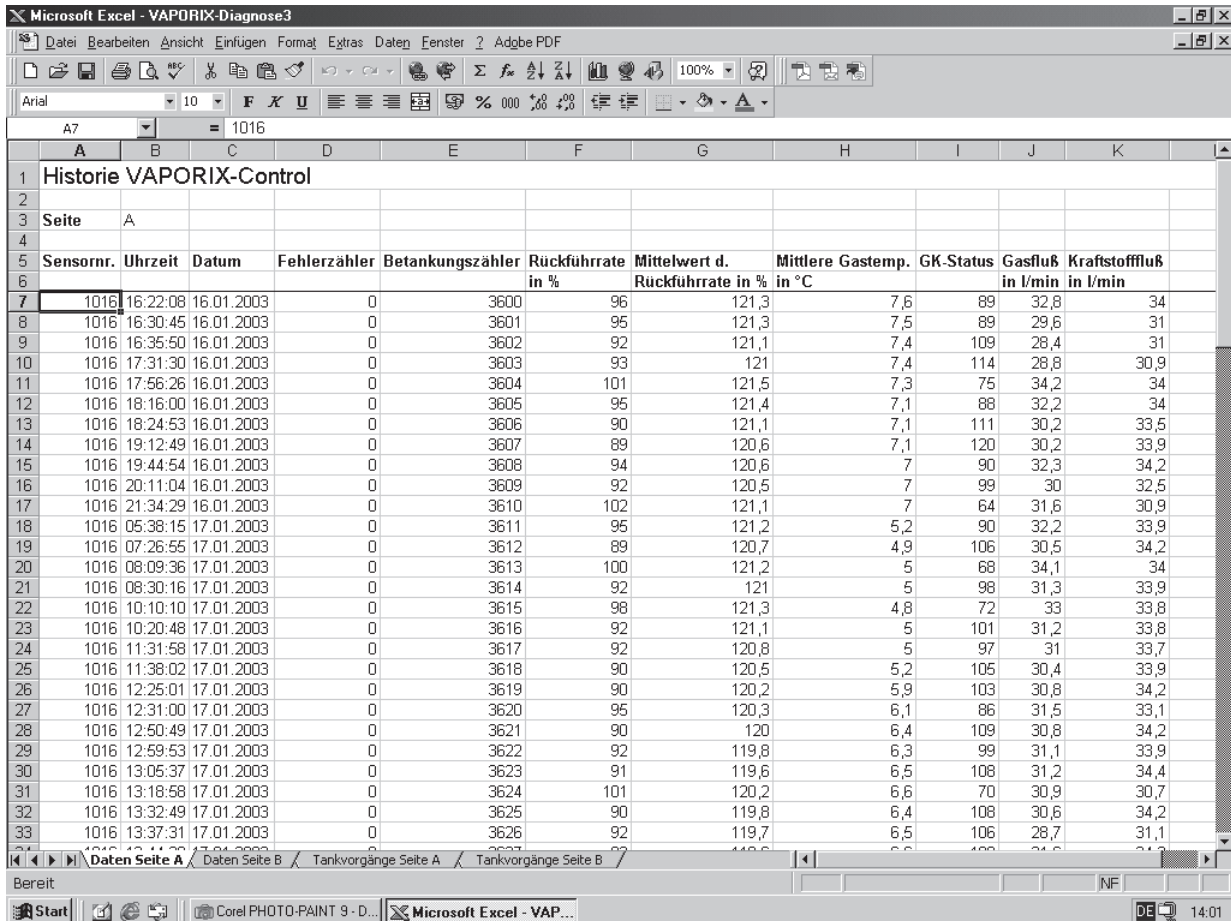
Following the reorganization process, communication to the VAPORIX-Control measurement analysis unit is automatically terminated and Microsoft Excel generates the diagrams. The process will now be terminated. Confirm with *OK*.



To read out further history data of the VAPORIX-Control measurement analysis unit, you must restart the VAPORIX diagnostics program using the Windows start menu. However, Microsoft Excel can remain open.

6 Representation of history data

The history data of both dispenser sides is displayed in each case in tabular form and as a diagram on separate worksheets. The bottom card file tabs show the dispenser side that is applicable for the data.



Historie VAPORIX-Control										
Seite A										
Sensornr.	Uhrzeit	Datum	Fehlerzähler	Betankungszähler	Rückfuhrate in %	Mittelwert d. Rückfuhrate in %	Mittlere Gastemp. in °C	GK-Status	Gasfluß in l/min	Kraftstofffluß in l/min
1016	16:22:08	16.01.2003	0	3600	96	121,3	7,6	89	32,8	34
1016	16:30:45	16.01.2003	0	3601	95	121,3	7,5	89	29,6	31
1016	16:35:50	16.01.2003	0	3602	92	121,1	7,4	109	28,4	31
1016	17:31:30	16.01.2003	0	3603	93	121	7,4	114	28,8	30,9
1016	17:56:26	16.01.2003	0	3604	101	121,5	7,3	75	34,2	34
1016	18:16:00	16.01.2003	0	3605	95	121,4	7,1	88	32,2	34
1016	18:24:53	16.01.2003	0	3606	90	121,1	7,1	111	30,2	33,5
1016	19:12:49	16.01.2003	0	3607	89	120,6	7,1	120	30,2	33,9
1016	19:44:54	16.01.2003	0	3608	94	120,6	7	90	32,3	34,2
1016	20:11:04	16.01.2003	0	3609	92	120,5	7	99	30	32,5
1016	21:34:29	16.01.2003	0	3610	102	121,1	7	64	31,6	30,9
1016	05:38:15	17.01.2003	0	3611	95	121,2	5,2	90	32,2	33,9
1016	07:26:55	17.01.2003	0	3612	89	120,7	4,9	106	30,5	34,2
1016	08:09:36	17.01.2003	0	3613	100	121,2	5	68	34,1	34
1016	08:30:16	17.01.2003	0	3614	92	121	5	98	31,3	33,9
1016	10:10:10	17.01.2003	0	3615	98	121,3	4,8	72	33	33,8
1016	10:20:48	17.01.2003	0	3616	92	121,1	5	101	31,2	33,8
1016	11:31:58	17.01.2003	0	3617	92	120,8	5	97	31	33,7
1016	11:38:02	17.01.2003	0	3618	90	120,5	5,2	105	30,4	33,9
1016	12:25:01	17.01.2003	0	3619	90	120,2	5,9	103	30,8	34,2
1016	12:31:00	17.01.2003	0	3620	95	120,3	6,1	86	31,5	33,1
1016	12:50:49	17.01.2003	0	3621	90	120	6,4	109	30,8	34,2
1016	12:59:53	17.01.2003	0	3622	92	119,8	6,3	99	31,1	33,9
1016	13:05:37	17.01.2003	0	3623	91	119,6	6,5	108	31,2	34,4
1016	13:18:58	17.01.2003	0	3624	101	120,2	6,6	70	30,9	30,7
1016	13:32:49	17.01.2003	0	3625	90	119,8	6,4	108	30,6	34,2
1016	13:37:31	17.01.2003	0	3626	92	119,7	6,5	106	28,7	31,1

Fig. 7: Representing the history data of dispenser side A in Microsoft Excel

Each line in the Microsoft Excel table corresponds to an evaluated filling operation. The meaning of the individual columns is indicated in the header.

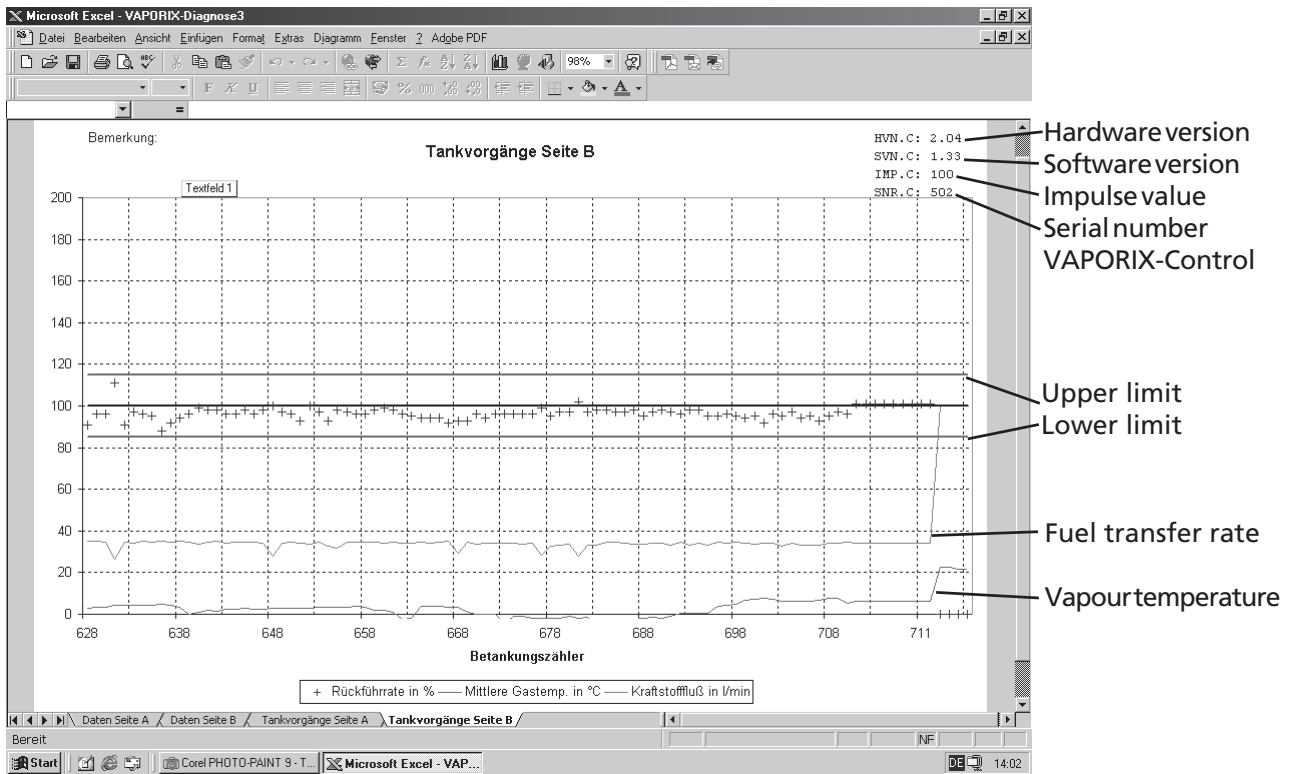


Fig. 8: Graphical representation of the history data of dispenser side B



For an analysis of the displayed history data, please refer to the FAFNIR diagnostics summary (separate manual).

7 Storing the history data

When the Microsoft Excel file is stored, further information regarding the filling station location is initially scanned and included in a separate table sheet. Enter the appropriate data in the dialog window (Fig. 9).

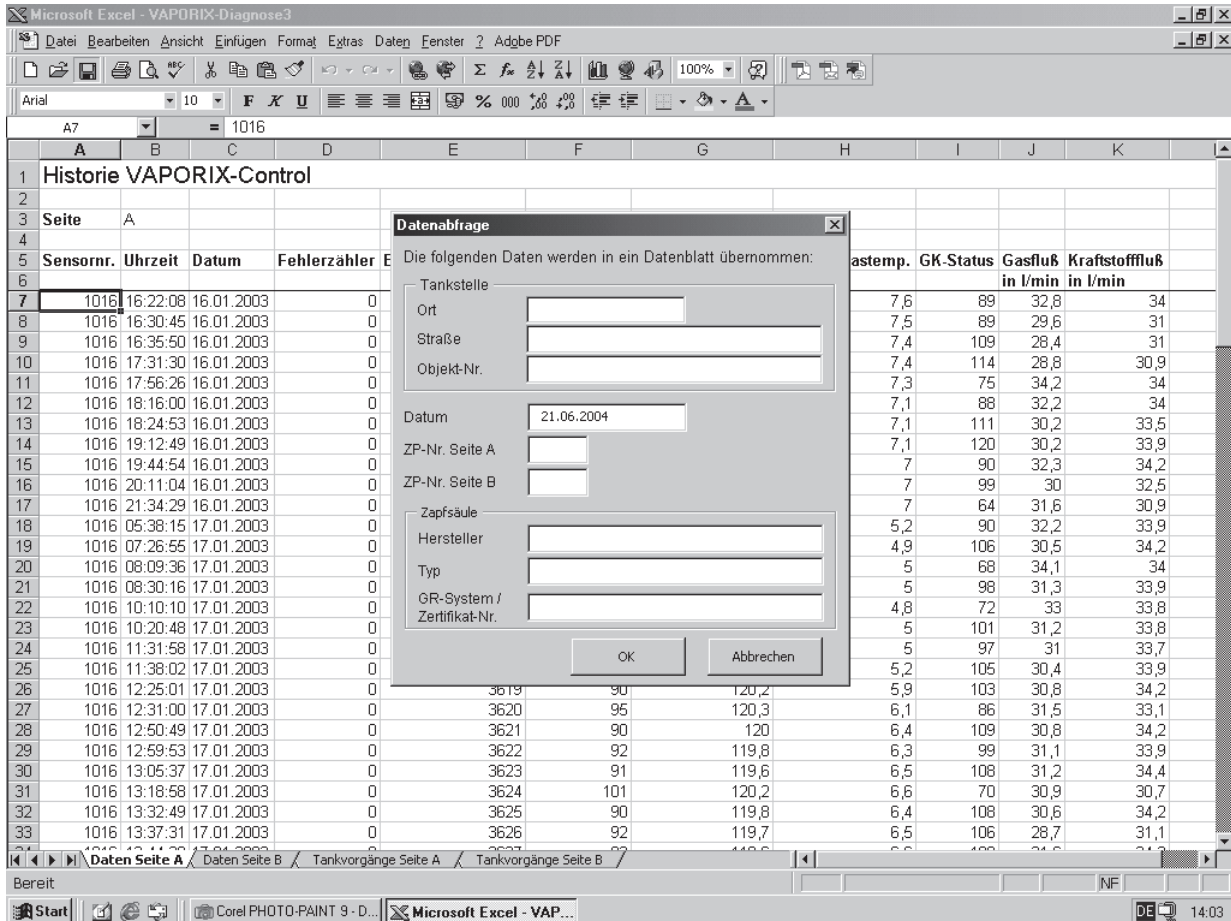


Fig. 9: Dialog window for specification of filling-station-specific data

Afterwards, store the history data as a Microsoft Excel work book with the extension *.xls.

Annex

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