

# 900 Touch Control



## Manual – Short Instructions

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# **900 Touch Control**

## **Manual – Short Instructions**

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Melody for the BEEP command: excerpt from "En Altfrentsche", with kind permission of the Laseyer Quartett, Appenzell.

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# 1 About these short instructions

The present short instructions contain important chapters from the more detailed manual. In addition to an introduction, safety instructions and an overview of the instruments, you will also find information about the installation and operation of the 900 Touch Control in addition to documents regarding conformity and warranty. You will find the more detailed manual as a PDF file on the external storage medium included in the scope of delivery.



- **MET**  
Monotonic equivalence point titration. The reagent is added in constant volume steps.  
Measuring modes:
  - **pH** (pH measurement)
  - **U** (potentiometric voltage measurement)
  - **Ipol** (voltametric measurement with selectable polarization current)
  - **Upol** (amperometric measurement with selectable polarization voltage)
- **SET**  
Endpoint titration at one or two specified endpoints.  
Measuring modes:
  - **pH** (pH measurement)
  - **U** (potentiometric voltage measurement)
  - **Ipol** (voltametric measurement with selectable polarization current)
  - **Upol** (amperometric measurement with selectable polarization voltage)
- **STAT**  
Titration with constant maintenance of the measured value.  
Measuring modes:
  - **pH** (pH measurement)
  - **U** (potentiometric voltage measurement)
- **MAT**  
Manual titration with manual dosing and manual ending.  
Measuring modes (optional):
  - **pH** (pH measurement)
  - **U** (potentiometric voltage measurement)
- **KFT**  
Volumetric water content determination according to Karl Fischer.  
Measuring modes:
  - **Ipol** (voltametric measurement with selectable polarization current)
  - **Upol** (amperometric measurement with selectable polarization voltage)
- **KFC**  
Coulometric water content determination according to Karl Fischer.  
Measuring mode:
  - **Ipol** (voltametric measurement with selectable polarization current)

- **BRC**  
Coulometric bromine index determination. Determining the amount of double bonds in e.g. mineral oils.  
Measuring mode:
  - **Ipol** (voltametric measurement with selectable polarization current)
- **MEAS**  
Measuring modes:
  - **pH** (pH measurement)
  - **U** (potentiometric voltage measurement)
  - **Ipol** (voltametric measurement with selectable polarization current)
  - **Upol** (amperometric measurement with selectable polarization voltage)
  - **T** (temperature measurement)
  - **Conc** (concentration measurement with or without standard addition)
  - **Cond** (conductivity measurement)
- **CAL**  
Electrode calibration.  
Measuring mode:
  - **pH** (calibration of pH electrodes)
  - **Conc** (calibration of ion-selective electrodes)
  - **Cond** (calibration of conductivity measuring cells)
  - **ELT** (Electrode test for pH electrodes)

## 2.3 About the documentation



### CAUTION

Please read through this documentation carefully before putting the instrument into operation. The documentation contains information and warnings which the user must follow in order to ensure safe operation of the instrument.








### 2.3.1 Symbols and conventions

The following symbols and formatting may appear in this documentation:

(5-12)

#### Cross-reference to figure legend

The first number refers to the figure number, the second to the instrument part in the figure.

<b>1</b>	<b>Instruction step</b> Perform the steps one after the other.
<b>Method</b>	<b>Dialog text, parameter</b> in the software
<b>File ► New</b>	Menu or menu item
<b>[Continue]</b>	<b>Button</b> or <b>key</b>
	<b>WARNING</b> This symbol draws attention to a possible life-threatening hazard or risk of injury.
	<b>WARNING</b> This symbol draws attention to a possible hazard due to electrical current.
	<b>WARNING</b> This symbol draws attention to a possible hazard due to heat or hot instrument parts.
	<b>WARNING</b> This symbol draws attention to a possible biological hazard.
	<b>WARNING</b> Warning of optical radiation
	<b>CAUTION</b> This symbol draws attention to possible damage to instruments or instrument parts.
	<b>NOTICE</b> This symbol highlights additional information and tips.



### 3.3 Requirements for operating personnel

Only qualified personnel may operate the product. Qualified personnel are persons who meet the following requirements:

- Basic regulations on occupational safety and accident prevention for chemical laboratories are known and complied with.
- Knowledge of handling hazardous chemicals is present. Personnel have the ability to recognize and avoid potential dangers.
- Knowledge regarding the application of fire prevention measures for laboratories is available.
- Safety-relevant information is communicated and understood. The personnel can operate the product safely.
- The user documentation has been read and understood. The personnel operate the product according to the instructions in the user documentation.

### 3.4 Safety instructions

#### 3.4.1 General notes on safety



#### **WARNING**

---

Operate this instrument only according to the information contained in this documentation.

This instrument left the factory in a flawless state in terms of technical safety. To maintain this state and ensure non-hazardous operation of the instrument, the following instructions must be observed carefully.

#### 3.4.2 Electrical safety

The electrical safety when working with the instrument is ensured as part of the international standard IEC 61010.



#### **WARNING**

---

Only personnel qualified by Metrohm are authorized to carry out service work on electronic components.

**WARNING**

Never open the housing of the instrument. The instrument could be damaged by this. There is also a risk of serious injury if live components are touched.

There are no parts inside the housing which can be serviced or replaced by the user.

**Supply voltage****WARNING**

An incorrect supply voltage can damage the instrument.

Only operate this instrument with a supply voltage specified for it (see rear panel of the instrument).

**Protection against electrostatic charges****WARNING**

Electronic components are sensitive to electrostatic charges and can be destroyed by discharges.

Do not fail to pull the power cord out of the power socket before you set up or disconnect electrical plug connections at the rear of the instrument.

**3.4.3 Tubing and capillary connections****CAUTION**

Leaks in tubing and capillary connections are a safety risk. Tighten all connections well by hand. Avoid applying excessive force to tubing connections. Damaged tubing ends lead to leakage. Appropriate tools can be used to loosen connections.

Check the connections regularly for leakage. If the instrument is used mainly in unattended operation, then weekly inspections are mandatory.

### 3.4.4 Flammable solvents and chemicals

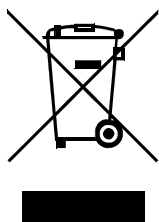


#### WARNING

All relevant safety measures are to be observed when working with flammable solvents and chemicals.

- Set up the instrument in a well-ventilated location (e.g. fume cupboard).
- Keep all sources of flame far from the workplace.
- Clean up spilled liquids and solids immediately.
- Follow the safety instructions of the chemical manufacturer.

### 3.4.5 Recycling and disposal



Properly dispose of chemicals and of the product to reduce negative effects on the environment and public health. Local authorities, waste disposal companies or dealers provide more detailed information on disposal. Observe the WEEE EU directive (WEEE = Waste Electrical and Electronic Equipment) for the proper disposal of waste electronic equipment within the European Union.

# 4 Overview of the instrument

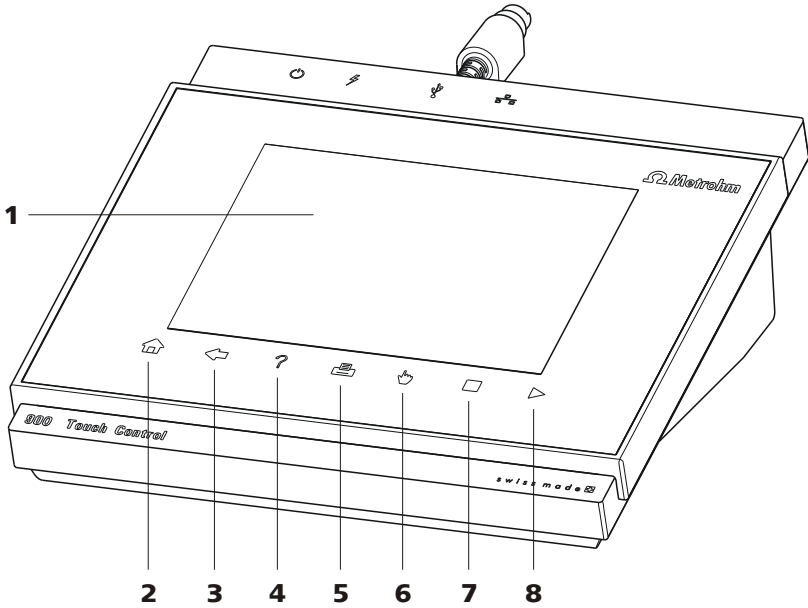


Figure 1 Front 900 Touch Control

<b>1 Display</b> Touch screen.	<b>2 Fixed key [Home]</b> Opens the main dialog.
<b>3 Fixed key [Back]</b> Opens the next-higher dialog page.	<b>4 Fixed key [Help]</b> Opens the online help for the dialog displayed.
<b>5 Fixed key [Print]</b> Opens the print dialog.	<b>6 Fixed key [Manual]</b> Opens the manual control.
<b>7 Fixed key [STOP]</b> Cancels the running determination.	<b>8 Fixed key [START]</b> Starts a determination.

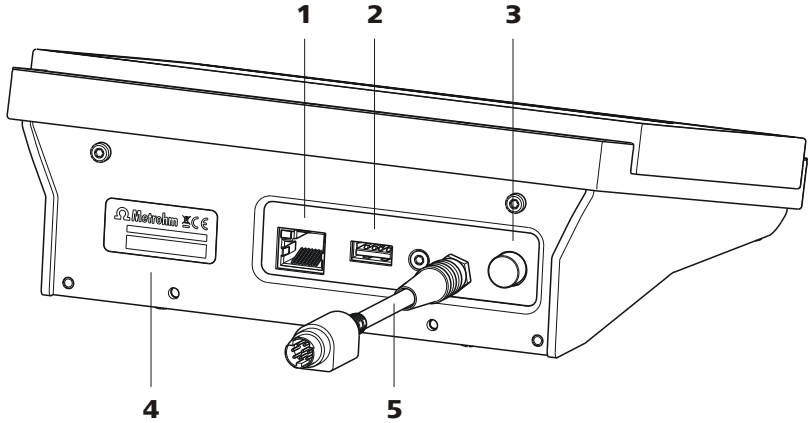


Figure 2 Rear 900 Touch Control

- |   |   |
|---|---|
| <b>1 Ethernet connector (RJ-45)</b><br>For connecting to a network.   | <b>2 USB connector (type A)</b><br>For connecting printers, USB flash drives, USB hubs, 885 Compact Oven SC, etc. |
| <b>3 Power switch</b><br>Switches the instrument on/off.  | <b>4 Type plate</b><br>Contains the serial number.  |
| <b>5 Connection cable</b><br>For the connection of the Touch Control to a control instrument (socket "Controller"). |   |



## 5 Installation

The connection between the Touch Control and the control instrument (Titrande, etc.) is described in the respective manual, as is the configuration of the titration system with its peripheral devices, e.g. stirrers and dosing devices.

### 5.1 Setting up the instrument

#### 5.1.1 Packaging

The instrument is supplied in protective packaging together with the separately packed accessories. Keep this packaging, as only this ensures safe transportation of the instrument.

#### 5.1.2 Checks

Immediately after receipt, check whether the shipment has arrived complete and without damage by comparing it with the delivery note.

#### 5.1.3 Location

The instrument has been developed for operation indoors and may not be used in explosive environments.

Place the instrument in a location of the laboratory which is suitable for operation and free of vibrations and which provides protection against corrosive atmosphere and contamination by chemicals.

The instrument should be protected against excessive temperature fluctuations and direct sunlight.

## 6 Operation

### 6.1 Switching the instrument on and off

#### Switching on the instrument



#### CAUTION

Peripheral devices (e.g., printers, 885 Compact Oven SC, etc) must be connected and switched on before you switch on the 900 Touch Control.



#### NOTE

English is set as the default dialog language when the instrument is switched on for the first time.

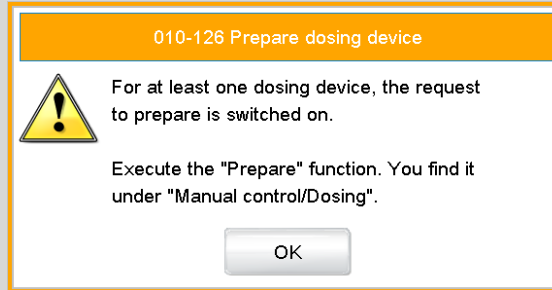
Information about changing the dialog language can be found in the chapter *Selecting the dialog language* of the detailed manual.

Proceed as follows:

- 1 ▪ Press the power switch on the left-hand side of the back panel of the 900 Touch Control.  
The 900 Touch Control and the control instrument are initialized and a system test is carried out. This process takes some time.

**NOTE**

If a buret unit is connected, then a request appears to carry out the **Prepare** function:



All tubings and the cylinder are rinsed with the **Prepare** function.

The preparing of the buret unit is described in the chapter *Manual control* of the detailed manual.

- Confirm the message with **[OK]**.

The main dialog is displayed:

New method 17:34:58

User

Identification 1

Identification 2

Sample size 1.0 g

System Load method Control Edit parameters Results

## Switching off the instrument



### CAUTION

The 900 Touch Control must be switched off by pressing the power switch on the rear of the instrument before the electricity supply is interrupted. If this is not done, then there is a danger of data loss. Because the power supply for the Touch Control is provided through the control instrument (Titrande, etc.) you must never disconnect the control instrument from the mains (e.g., by switching off with a connector strip) before you have switched off the Touch Control.


Proceed as follows:

- 1 Press the power switch on the left-hand side of the back panel of the 900 Touch Control.

The current data is saved and the system is shut down. This process takes just a short time. At the same time, all other instruments connected to the 900 Touch Control via a USB cable are also being switched off (except the 885 Compact Oven SC).

## 6.2 Fundamentals of operation

### 6.2.1 Touch-sensitive screen

The entire 900 Touch Control user interface is touch-sensitive. Simply touch a few of the buttons on the interface to learn how a touch-sensitive screen reacts. You can always return to the main dialog by touching [  ].

In order to enable an element on the 900 Touch Control user interface, just touch the screen with your fingertip, the eraser of a pencil or a stylus (special tool for operating instruments with touch-sensitive screens).

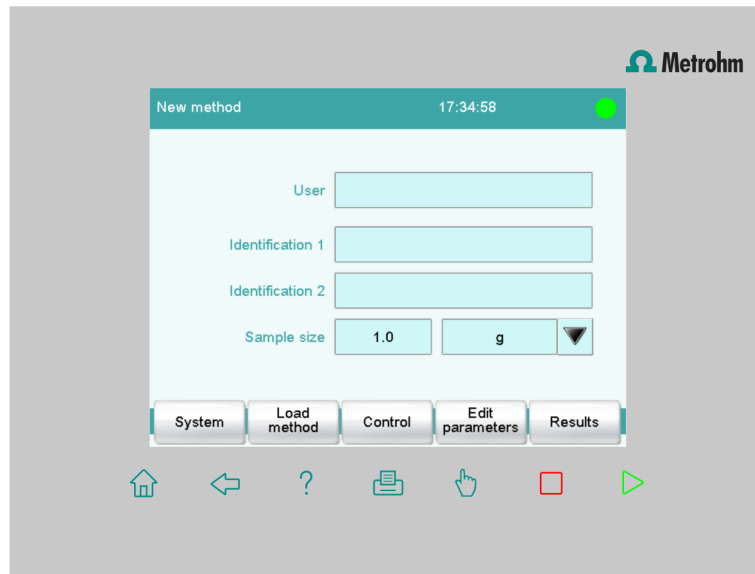


### CAUTION

Never touch the touch screen with a pointed or sharp object such as a ballpoint pen.

In the default setting, the software is configured in such a way that an acoustic signal will be generated every time an active control is touched. This setting can be deactivated in the system settings.

## 6.2.2 Display elements and controls



The following display elements and controls are available:

Table 1 Fixed keys which are always available

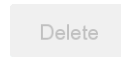
	<b>[Home]</b> always opens the main dialog.
	<b>[Back]</b> saves the entry and opens the next-higher dialog page.
	<b>[Help]</b> opens the online help for the dialog displayed.
	<b>[Print]</b> opens the printing dialog.
	<b>[Manual]</b> opens the manual control.
	<b>[Stop]</b> cancels the running determination.
	<b>[Start]</b> starts a determination.

The file name of the loaded method, the time and the system status are displayed in the main dialog in the **Title bar**.

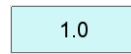
In the other dialogs, the title bar shows the headings of the next upper level and of the displayed dialog. This is an aid for orientation during navigation through the user dialog.

Table 2 Screen elements

	<b>Buttons</b> open a new dialog when they are tapped.



**Inactive buttons** with gray lettering indicate that the respective function is not available at the moment.



**Input fields** open an input dialog when tapped.



Tapping on the **selection symbol** opens a selection list.



A **check box** can also be activated or deactivated by tapping on it.

### 6.2.3 Status display

The current status of the system is displayed in the upper right-hand corner of the title bar.

Table 3 Status displays



The instrument is in normal status.



The working medium is being conditioned.



Conditioning has been paused.



The working medium is conditioned.



A method has been started.



A method has been paused.



An action has been started in manual control.

## 6.2.4 Entering text and numbers

In the editing dialog for text or numerical input, enter the individual characters by tapping in the input field. The following functions are available:

### Text editor



Table 4 Editing functions

Editing function	Description
[OK]	The modification is applied and the editing dialog is exited.
[Cancel]	The editing dialog is exited without applying the modification.
[Delete entry]	The content of the input field is deleted completely.
[□]	The character in front of the cursor is deleted.
[⇐]	The cursor within the input field is shifted to the left by one character.
[⇒]	The cursor within the input field is shifted to the right by one character.
[a...z]	The lower-case letters are displayed. The label changes to [A...Z]. The upper-case letters are displayed again by tapping.
[0-9]	Numbers and mathematical characters are displayed.
[Special characters]	Special characters are displayed. You can use the button [More] to navigate through all available characters.

## Number editor

Edit command / Stop conditions

Stop time  s

Input:  
1 ... 999999

Default value:  
off

7	8	9	off
4	5	6	R1 ▼
1	2	3	
0	+/-	.	

Cancel Delete entry OK

Table 5 Editing functions

Editing function	Description
<b>[OK]</b>	The modification is applied and the editing dialog is exited.
<b>[Cancel]</b>	The editing dialog is exited without applying the modification.
<b>[Delete entry]</b>	The content of the input field is deleted completely.
<b>[off]</b>	If not only numbers but also special values (e.g., <b>off</b> ) can be entered, then the corresponding buttons will be shown to the right of the numerical keypad.
<b>[R1]</b>	For many parameters, a result previously defined in the method can also be entered in place of a number. You will find precise information concerning this in the Appendix of the detailed manual. You can select the result variable by touching <b>[R1]</b> .



### NOTE

A commercially available USB keyboard can be connected to make text and numerical input easier.

The key assignment is described in the chapter *Device manager* of the detailed manual.

# 7 Maintenance

## Maintenance

The electronic and mechanical functional groups of Metrohm instruments can and should be checked by specialist personnel from Metrohm as part of a regular preventive maintenance schedule. Please ask your local Metrohm representative regarding the precise terms and conditions involved in concluding a corresponding maintenance agreement.

For detailed information on this topic, please visit [www.metrohm.com](http://www.metrohm.com).


## Cleaning

### Cleaning the surfaces of the instrument

#### Prerequisites


- The instrument is disconnected from the power grid.

1 Clean the surfaces with a damp cloth.

 **NOTE**

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Water or ethanol can be used as a cleaning medium.

 **NOTE**

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The connectors at the rear of the instrument must only be cleaned with a dry cloth.

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