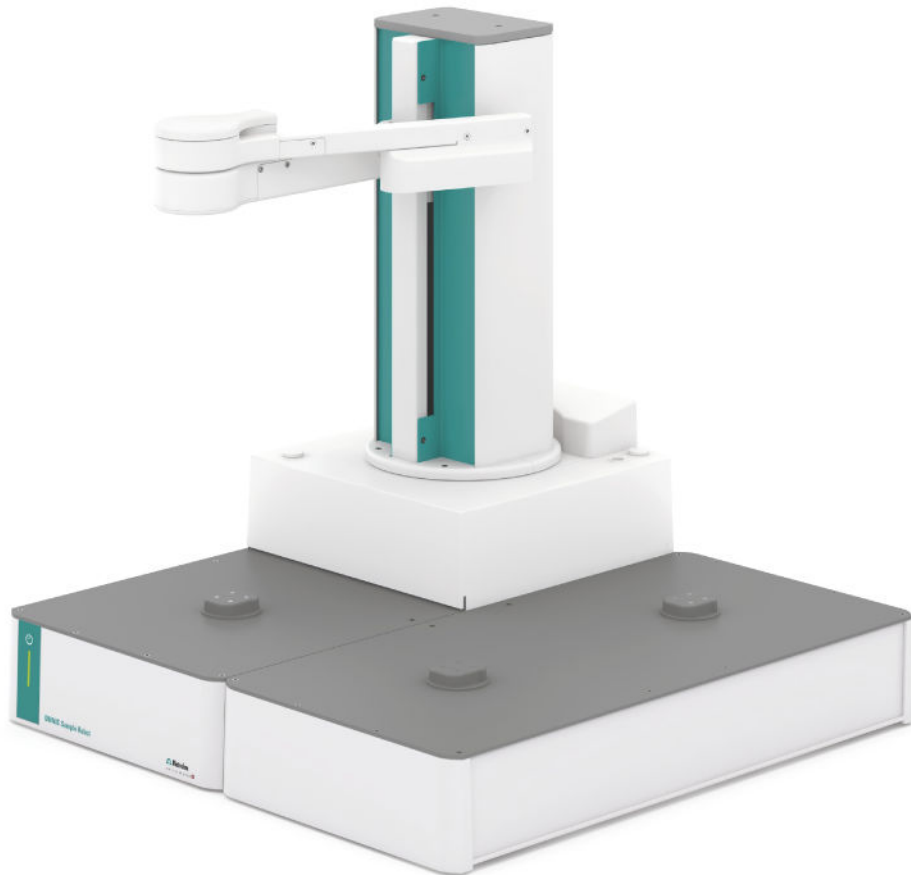


# Main module Pick&Place



2.101X.0010

Product information

8.1010.8001EN / 2021-07-23





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Technical Communication  
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CH-9100 Herisau

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# 1 Overview

## 1.1 Main module Pick&Place – Product description

The main module supplies all of the attached modules in the OMNIS sample robot system with electricity. The main lift with the robot arm of the sample robot is located on the main module. The gripper arm of the robot arm transports the sample beakers to the workstations and back to the sample rack. The control hardware is integrated in the interior of the main module.

## 1.2 Main module Pick&Place – Product versions

The product is available in the following versions:

*Table 1 Product versions*

Article number	Designation	Version feature
2.1010.0010	Main module Pick&Place S	Main module Pick&Place, S version
2.1011.0010	Main module Pick&Place M	Main module Pick&Place, M version
2.1012.0010	Main module Pick&Place L	Main module Pick&Place, L version

## 1.3 Main module Pick&Place – Overview

### Part names

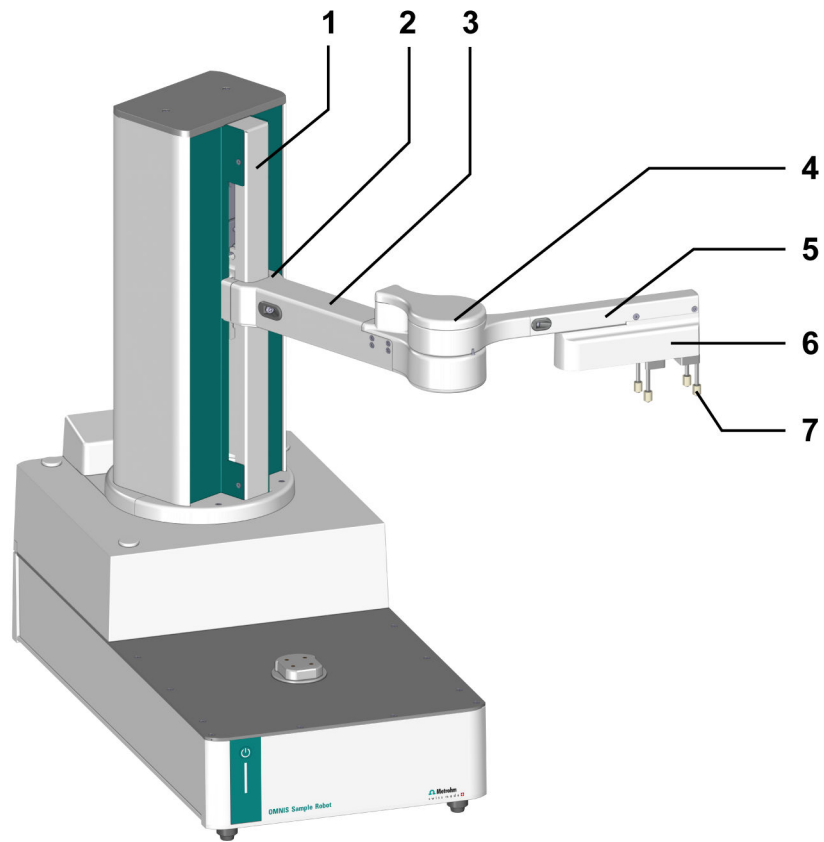


Figure 1 Main module Pick&Place – General overview

<b>1</b>	<b>Main lift</b>	<b>2</b>	<b>Arm holder</b>
<b>3</b>	<b>Lift arm</b>	<b>4</b>	<b>Arm joint</b>
<b>5</b>	<b>Gripper arm</b>	<b>3 - 5</b>	<b>Robot arm</b>
<b>6</b>	<b>Gripper</b>	<b>7</b>	<b>Gripper fingers only a sketch</b>

The main lift (1-1) is located on the main module Pick&Place.

The robot arm on the main lift is moved with the arm holder (1-2).

The robot arm consists of the lift arm (1-3), the arm joint (1-4) and the gripper arm (1-5).

The gripper fingers (1-7) are mounted on the gripper (1-6).

## 1.4 Symbols and conventions

The following formatting may appear in the documentation:

(5-12)	Cross-reference to figure legend The first number refers to the figure number. The second number refers to the product part in the figure.
1	Instruction step Numbers indicate the order of the instructions steps.
Method	Names of parameters, menu items, tabs and dialog windows
File ► New	Menu path
[Continue]	Button or key

## 1.5 Further information

The Metrohm Knowledge Base <https://guide.metrohm.com> always provides the current version of this document. Further instructions, leaflets, release notes etc. may be available, depending on the product. You can directly access the required information or the associated PDF document using the full-text search function and filters.

## 1.6 Accessories


Up-to-date information on the scope of delivery and on optional accessories can be found on the Metrohm website. Download this information as follows:

### Downloading the accessories list

- 1 Go to <https://www.metrohm.com>.
- 2 Enter the article number of the product (e.g. **2.1001.0010**) into the search field.  
The search result is displayed.
- 3 Click on the product.  
Detailed information regarding the product is shown on various tabs.



**4** On the **Included parts** tab, click the link to download the PDF.  
The PDF file with the accessories data is loaded.

 Metrohm recommends downloading the accessories list from the Internet and keeping it for reference purposes.

## 2 Safety

### 2.1 Intended use

Metrohm products are used for the analysis and handling of chemicals.

Usage therefore requires the user to have basic knowledge and experience in handling chemicals. Knowledge regarding the application of fire prevention measures prescribed for laboratories is also mandatory.

Adherence to this technical documentation and compliance with the maintenance specifications make up an important part of intended use.

Any utilization in excess of or deviating from the intended use is regarded as misuse.

Specifications regarding the operating values and limit values of individual products are contained in the "Technical specifications" section, if relevant.

Exceeding and/or not observing the mentioned limit values during operation puts people and components at risk. The manufacturer assumes no liability for damage due to non-observance of these limit values.

The EU declaration of conformity loses its validity as soon as modifications are carried out on the products and/or the components.

### 2.2 Responsibility of the operator

The operator must ensure that basic regulations on occupational safety and accident prevention in chemical laboratories are observed. The operator has the following responsibilities:

- Instruct personnel in the safe handling of the product.
- Train personnel in the use of the product according to the user documentation (e.g. install, operate, clean, eliminate faults).
- Train staff on basic occupational safety and accident prevention regulations.
- Provide personal protective equipment (e.g. protective glasses, gloves).
- Provide suitable tools and equipment to carry out the work safely.

The product may be used only when it is in perfect condition. The following measures are required to ensure the safe operation of the product:

- Check the condition of the product before use.
- Remedy defects and malfunctions immediately.
- Maintain and clean the product regularly.



- Label the product according to regulations if it is used for substances that have a potential for chemical hazards and are generally subject to the Hazardous Substances Ordinance.
- Wear personal protective equipment (e.g. protective glasses, gloves).
- Use exhaust equipment when working with vaporizing hazardous substances.
- Dispose of hazardous substances in accordance with regulations.
- Clean and disinfect contaminated surfaces.
- Only use detergents that do not cause any unwanted side reactions with the materials to be cleaned.
- Dispose of chemically contaminated materials (e.g. cleaning material) in accordance with regulations.
- Proceed as follows in case of a return shipment to Metrohm AG or a regional Metrohm representative:
  - Decontaminate the product or product component.
  - Remove the labeling for hazardous substances.
  - Create a declaration of decontamination and enclose it with the product.

### **2.4.3 Danger from highly flammable substances**

Using highly flammable substances or gases may cause fires or explosions. To avoid danger from highly flammable substances, observe the following:

- Avoid ignition sources.
- Use protective grounding.
- Use exhaust equipment.

### **2.4.4 Danger from leaking liquids**

Leaking liquids may cause injuries and may damage the product. To avoid danger from leaking liquids, observe the following:

- Check the product and its accessories for leakages and loose connections.
- Replace leaking parts and connecting elements without delay.
- Tighten loose connecting elements.
- Do not loosen tubing connections under pressure.
- Do not remove aspiration tubing under pressure.
- Carefully pull the ends of the tubing out of the containers.
- Carefully let liquids from tubing drain into suitable containers.
- Insert the buret tips completely into the containers.
- Remove and dispose of leaked liquids in accordance with regulations.
- If you suspect that liquid has penetrated the instrument, disconnect the instrument from the energy supply. Then have the instrument checked by a regional Metrohm service representative.



## **WARNING**

### Type or source of danger

Consequences when not observing the notice: A serious injury that may result in death is probable.

- Measures to avoid the danger

## **CAUTION**

### Type or source of danger










Consequences when not observing the notice: A minor to moderate injury is probable.

- Measures to avoid the danger



## 2.6 Meaning of warning signs

This documentation uses the following warning signs:

Table 2 Warning sign according to ISO 7010

Warning sign	Meaning
	General warning sign
	Warning of electrical voltage
	Warning of hand injuries
	Warning of sharp object
	Warning of hot surface
	Warning of biological hazard
	Warning of toxic materials
	Warning of flammable materials
	Warning of corrosive substances



Warning sign	Meaning
	Warning of optical radiation
	Warning of laser beams

Depending on the intended use of the product, the corresponding warning sign stickers must be placed on the product.

### 3 Technical specifications

#### 3.1 Ambient conditions

<b>Nominal function range</b>	+5 to +45 °C	at max. 80% relative humidity, non-condensing
<b>Storage</b>	+5 to +45 °C	

#### 3.2 Main module – Energy supply

<b>Nominal voltage range</b>	100–240 VAC	
<b>Nominal frequency range</b>	50–60 Hz	
<b>Power consumption</b>	max. 200 W	
<b>Protection</b>		
<i>Internal fuse</i>	4 ATH	cannot be replaced by the user

#### 3.3 Main module Pick&Place – Dimensions

##### Measurements

##### *Width*

Main module S	558 mm
Main module M	1,161 mm
Main module L	1,441 mm

##### *Height*

Main module S, M, L	
Without workstation	585 mm
Main module S, M, L	
With workstation	758 mm

*Depth*

Main module S	
Without workstation	564 mm
With workstation	604 mm
Main module M, L	564 mm

**Weight**

Main module S	
Without workstation	21.0 kg
Main module M	
Without workstation	21.5 kg
Main module L	
Without workstation	22.7 kg

**3.4 Main module Pick&Place – Housing****Materials**

<i>Lid</i>	PBT	poly(butylene terephthalate)
<i>Back panel</i>	AW-5754 H12 / H22	aluminum, coated
<i>Base</i>	AlSi12Cu1	aluminum, coated
<i>Enclosure</i>	PBT	poly(butylene terephthalate)
	PP	polypropylene
<i>Front foils</i>	PET	poly(ethylene terephthalate), mat

<b>IP degree of protection</b>	IP 20
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### 3.5 Main module – Connectors specifications

<b>Energy supply</b>		via power connection
<i>Socket</i>		IEC 60320, type C14, 10 A
Power cord		
Length	max. 2 m	
Number of conductors	3	with protective ground
Conductor cross-section	min. 0.75 mm <sup>2</sup> / 18 AWG	
Plug		
Instrument side		IEC 60320, type C13, 10 A
Building side		country-specific
 <b>MDL</b>	 Metrohm Device Link	 4 connectors
 <b>HID</b>	 Human Interactive Device	
 <b>LAN</b>	 Local Area Network	
<i>Type</i>	Ethernet CAT 6	
<i>Socket</i>	RJ45	shielded
<i>Cable type</i>	(min. FFTP)	shielded
<i>Cable length</i>	max. 10 m	from Metrohm accessories
 <b>Contacts</b>	 4	 Contact surfaces for OMNIS sample rack

