

# HumaPure

| User Manual



Cat No. 15140/1

---

## REVISION

---

<b>Revision History</b>	
<b>Rev./DATE</b>	<b>REVISION DESCRIPTION</b>
01/2018-07	First edition
02/2020-03	Optimized installation procedure instructions
03/2021-02	Specification update

### **Copyright**

Copyright 2021, Human GmbH, Wiesbaden, Germany. All rights reserved.

No part of this documentation may be reproduced in any form, nor processed, copied or distributed by means of electronic systems, without prior permission of Human GmbH in writing. Since all precautionary measures were taken into account in producing these operating instructions, the manufacturer accepts no responsibility for any errors or omissions. This includes any liability for damage that could arise from possible incorrect operation based on this information. Subject to changes without notice as result of technical development.

### **Service and Support**

--

---

# CONTENTS

---

## TABLE OF CONTENTS

<b>1</b>	<b>SAFETY INSTRUCTIONS</b>	<b>9</b>
1.1	INTRODUCTION	9
1.2	USER WARRANTY	9
1.3	INTENDED USE OF THE INSTRUMENT	10
1.4	GENERAL SAFETY WARNINGS	10
1.5	DISPOSAL MANAGEMENT CONCEPT	11
1.6	INSTRUMENT DISINFECTION	12
1.7	NOTICE	13
1.8	BIOHAZARD WARNING	13
1.9	SERVICING NOTE	14
<b>2</b>	<b>GENERAL DESCRIPTION</b>	<b>15</b>
2.1	INTENDED USE OF HUMAPURE	15
2.2	FEATURES	15
<b>3</b>	<b>TECHNICAL SPECIFICATIONS</b>	<b>17</b>
<b>4</b>	<b>PREPARATIONS</b>	<b>19</b>
4.1	TRANSPORT AND STORAGE CONDITIONS	19
4.2	NORMAL WORKING CONDITIONS	19
<b>5</b>	<b>INSTRUMENT INSTALLATION</b>	<b>21</b>
5.1	UNPACKING HUMAPURE	21
5.2	GENERAL INSTRUCTIONS	21
5.3	POWER CORD CONNECTION	22
<b>6</b>	<b>INSTRUMENT DESCRIPTION</b>	<b>23</b>

---

<b>7</b>	<b>INSTALLATION</b>	<b>25</b>
<b>8</b>	<b>REPLACING CARTRIDGE</b>	<b>27</b>
	<b>8.1 DISPOSAL</b>	<b>27</b>
<b>9</b>	<b>ANALYSIS</b>	<b>29</b>
<b>10</b>	<b>APPENDIX</b>	<b>31</b>
	<b>10.1 PACKING LIST</b>	<b>31</b>

## CONTENTS

---





## 1 SAFETY INSTRUCTIONS

### 1.1 Introduction

This manual is considered part of the instrument and must be available to the operator and the maintenance personnel. For accurate installation, use and maintenance, please read the following instructions carefully. In order to avoid damage to the instrument or personal injury, carefully read the "GENERAL SAFETY WARNINGS" describing the appropriate operating procedures. Please contact the technical Service in the event of instrument failure or other difficulties with the instrument.

### 1.2 User Warranty

HUMAN warrants that instruments sold by one of its authorised representatives shall be free of any defect in material or workmanship, provided that this warranty shall apply only to defects which become apparent within one year from the date of delivery of the new instrument to the purchaser.

The HUMAN representative shall replace or repair any defective item at no charge, except for transportation expenses to the point of repair.

This warranty excludes the HUMAN representative from liability to replace any item considered as expendable in the course of normal usage, e.g.: lamps, valves, syringes, glassware, fuses, diskettes, tubing etc.

The HUMAN representative shall be relieved of any liability under this warranty if the product is not used in accordance with the manufacturer's instructions, altered in any way not

specified by HUMAN, not regularly maintained, used with equipment not approved by HUMAN or used for purposes for which it was not designed.

HUMAN shall be relieved of any obligation under this warranty, unless a completed installation / warranty registration form is received by HUMAN within 15 days of installation of this product.

This warranty does not apply to damages incurred in shipment of goods. Any damage so incurred shall be reported to the freight carrier for settlement or claim.

### **1.3 Intended Use of the Instrument**

The instrument must be used for its intended purpose. It must be operated in perfect technical conditions by qualified personnel in such working conditions and maintained as described in this manual in the GENERAL SAFETY WARNINGS. This manual contains instructions for qualified professional operators.

### **1.4 General Safety Warnings**

Use only chemical reagents and accessories specified and supplied by HUMAN and/or mentioned in this manual.

Place the product so that it has proper ventilation.

The instrument should be installed on a flat, stationary working surface that is free of vibrations.

Do not operate in area with excessive dust.

Operate at room temperature and at a humidity level in accordance with the specifications listed in this manual.

Do not operate this instrument with covers and panels removed.

Use only the power cord specified for this product, with the grounding conductor of the power cord connected to earth ground.

Use only the fuse type and rating specified by the manufacturer for this instrument. The use of fuses with improper ratings may pose electrical and fire hazards.

To avoid fire or shock hazard, observe all ratings and markings on the instrument.

Do not power the instrument in environments that are potentially explosive or at risk of fire.

Prior to cleaning and/or performing maintenance on the instrument, switch off the instrument and remove the power cord.

Only cleaning materials described in this manual may be used, as other materials may damage parts.

It is recommended to always wear protective apparel and eye protection while using this instrument.

All warning symbols that appear in this manual must be carefully observed.

### **1.5 Disposal Management Concept**

The applicable local regulations governing disposal must be observed. It is the user's responsibility to arrange for the proper disposal of the individual components.

All parts which may contain potentially infectious materials must be disinfected by suitable, validated procedures (auto-

claving, chemical treatment) prior to disposal. Applicable local regulations for disposal must be carefully observed.

The instruments and electronic accessories (without batteries, power packs etc.) must be disposed of according to the regulations for the disposal of electronic components.

Batteries, power packs and similar power sources must be removed from electric/electronic parts and disposed of in accordance with applicable local regulations.

### **1.6 Instrument Disinfection**

Instruments or parts which may come in contact with biological samples (patient specimens, controls etc.) should be considered at least potentially infectious.

Before performing any service work on the instrument, it is very important to thoroughly disinfect all possibly contaminated parts. Before the instrument is removed from the laboratory for disposal or servicing, it must be decontaminated/disinfected. Decontamination/disinfection must be performed by authorised, well trained personnel and in observance of all necessary safety precautions. Instruments to be returned must be accompanied by a disinfection certificate completed by the responsible laboratory manager. If a disinfection certificate is not supplied, the returning laboratory will be responsible for charges resulting from non-acceptance of the instrument by the servicing centre or from intervention by governmental authorities.

### 1.7 Notice

Every effort has been made to avoid errors in text and diagrams. HUMAN, however, assumes no responsibility for any errors which may appear in this publication. It is the policy of HUMAN to improve products as new techniques and components become available. HUMAN therefore reserves the right to change specifications if necessary in the course of such improvements.

### 1.8 Biohazard Warning

Analytical instruments for use in the clinical laboratory environment may come into contact with human samples and controls which should be considered at least potentially infectious. Therefore every part and accessory of the respective instrument which may have come into contact with such samples must equally be considered as potentially infectious. For safety reasons, we recommend to label such instruments with the “BIOHAZARD” warning label below.



**FIGURE 1**

Biological Hazard  
Symbol

### **1.9 Servicing Note**

Before doing any servicing on the instrument it is very important to thoroughly clean all possibly contaminated parts. If the instrument has come into contact with potentially infectious materials, it must be decontaminated before the instrument is removed from the laboratory for disposal or servicing. Decontamination should be performed by authorised well-trained personnel only, observing all necessary safety precautions. Instruments to be returned have to be accompanied by a decontamination certificate completed by the responsible laboratory manager. If a decontamination certificate is not supplied, the returning laboratory will be responsible for charges resulting from non-acceptance of the instrument by the servicing centre, or from authority's interventions.

## 2 GENERAL DESCRIPTION

This chapter describes the intended use, application areas and features of HumaPure.

### 2.1 Intended Use of HumaPure

HumaPure is an unpressurised wall-mounted ion exchange system with a handy disposable cartridge and an integrated LED measuring device.

### 2.2 Features

- Constant water quality
- Capacity: 450 l (at 10° total salinity and a conductivity limit of 20  $\mu\text{S}/\text{cm}$ )
- Flow rate: 65 l/h
- Measuring range: 0 - 30  $\mu\text{S}/\text{cm}$
- LED conductivity measuring device





### 3 TECHNICAL SPECIFICATIONS

#### HUMAPURE

TABLE 1

Cat. No.		15140
Flow rate max.	l/h	65
Capacity at 10° TDS *	Litre	450 litres
Pure water quality	Conductivity	0 - 30 $\mu$ S/cm
Water Temperature max.	°C	35
Allowed cartridge pressure max.	bar	4
Electrical connection	V / Hz	110/230 V 50 Hz
Power consumption:	mW	< 500
Height x diameter	mm	266 x 119
Weight	kg	3,2
Cartridge		
Cat. No.		15140/10
Height x diameter	mm	266 x 119

**! Caution: Before using the instrument, please make sure  
● the working conditions meet the above requirements.**



## 4 PREPARATIONS

This chapter describes the transport and storage conditions, instrument installation and preparations before using HumaPure.

### 4.1 Transport and Storage Conditions

Environmental temperature: 4°C...35°C

### 4.2 Normal Working Conditions

Environmental temperature: > 4°C

**!** **Note:** Before using the instrument, please make sure the working conditions meet the requirements mentioned above.

**!** **Note:** Ensure to protect the entire system from vibration, impact, direct sunlight and water leakage.



## 5 INSTRUMENT INSTALLATION

### 5.1 Unpacking HumaPure

Remove all the parts from their package. Before unpacking the instrument, please make sure that all items which are listed in the packing list are included in the shipping box (please, see chapter 10.1, Packing list). In case of damage or missing items, please contact your local the supplier immediately!

### 5.2 General Instructions

Before installing and using the instrument:

Note the installation and operating instructions in this manual.

- The ion exchanger should not be used in combination with a pressure reducer.
- No tools are required to operate and service the equipment. Do not use a screwdriver or pliers. Always loosen plugs by hand.
- Please note: The manufacturer shall not be liable for improper use or operation of the equipment.
- The room temperature must be at least 4°C.
- Observe the general rules and regulations at the equipment assembly site and the relevant health and safety regulations.
- The assembly site must be designed to prevent the water damage from occurring (e.g. from a floor drain). The manufacturer shall not be liable for water damage.

- The infed water must comply with the Drinking Water Ordinance.
- Parts that come into contact with water after water treatment must be made of a pure water resistant material such as PE, PP or V2A/V4A.

### 5.3 Power Cord Connection

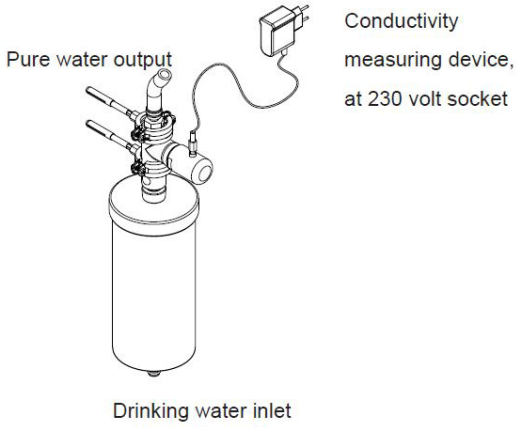
**!** **Note:** If the supplied power cord connection comes loose, it should be replaced with one of the same type and specification.

The conductivity measurement must be connected via the main unit to a socket.

Only the power cord supplied with HumaPure should be used. After the connection, the power cord should be in tight contact with the instrument socket; otherwise it should be replaced.

**!** **Caution:** The measuring device operates under electrical voltage. Proceed therefore with caution. Be careful with open housings. There may be hazardous live components. Permanent shorting of the electrodes on the measuring device can damage the electronics.

## 6 INSTRUMENT DESCRIPTION



**FIGURE 2**  
Parts of HumaPure





## 7 INSTALLATION

**! Caution: Please note that no shut-off valve or shut-off may be present after the exit of the cartridge. This increases the pressure in the cartridge and can cause leakage of it.**

- > Plot the bore holes vertically above each other on the assembly wall (A) (distance 55mm).
- > Attach the retaining clamps correctly using hangar bolts (B).
- > Fit the T piece (1) with the quick release coupling (2) facing down
- > Attach the one-way cartridges (3) to the quick release coupling
- > Connect the drinking water hose (4) at the bottom

**! Caution: Loosen water hoses can cause water damage or slipping. Connections should only be hand-tight. Rectify any leaks immediately.**

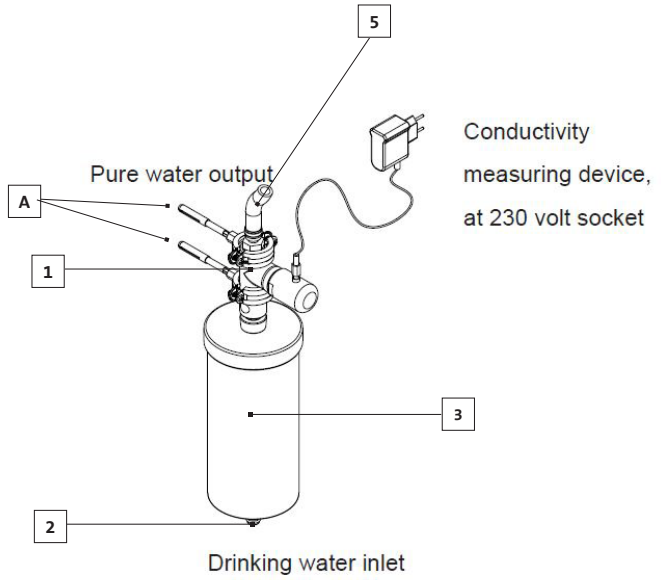
- > Attach the pure water outlet (5) to the pure water line
- > Open the drinking water supply (6) to start the equipment

**! Caution: This is not drinking water. Treated water can damage your health.**

**! Note: It needs some time to fill up the cartridge when using the ion exchanger for the first time or activating a new cartridge.**

FIGURE 3

- A Assembly wall
- 1 T piece
- 2 Quick release coupling
- 3 One-way cartridge
- 4 Drinking water hose
- 5 Water outlet



## 8 REPLACING CARTRIDGE

- > Stop the water supply
- > Remove the hose coupling from the bottom of the cartridge
- > Remove the cartridge from the top section (device head)
- > Insert a new cartridge
- > Attach the drinking water hose
- > Start the water supply

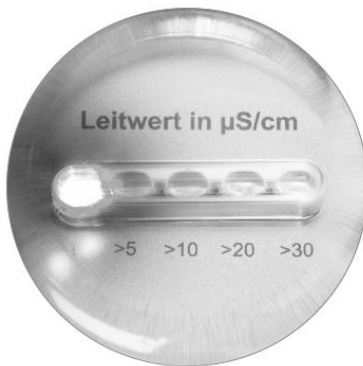
### 8.1 Disposal

- > Used cartridges are not considered hazardous substance
- > Used cartridges have to be disposed according to EWC 19 09 05 (European Waste Code, 2000/532/EC)



## 9 ANALYSIS

- The cartridge loading is measured via conductivity
- The device shows the quality through a colour system
- If the indicator is red (or after six months) the cartridge has to be replaced



**FIGURE 4**

Indicator

(Leitwert=conductance)

Display	Reading	
1st LED: green	< 5 $\mu\text{S}/\text{cm}$	Excellent water quality
2nd LED: green	> 5 $\mu\text{S}/\text{cm}$	Very good water quality
3rd LED: green	> 10 $\mu\text{S}/\text{cm}$	Good water quality
4th LED: yellow	> 20 $\mu\text{S}/\text{cm}$	Order new cartridge
5th LED: red	> 30 $\mu\text{S}/\text{cm}$	Do not use the equipment. Replace cartridge

**TABLE 2**

**!** Note: The device shows the exact conductivity after approximately one minute of operation. Direct the water to the drain in the first minute, if necessary.



## 10 APPENDIX

### 10.1 Packing List

TABLE 3

No.	Item	Unit	Amount
1	HumaPure (Filter cartridge + conductivity meter)	Piece	1
2	Bracket for wall mounting	Piece	1
3	Tubing Set	Piece	1
4	User Manual	Copy	1

## Changing the filter in the filter housing

### Preparations

#### **IMPORTANT!**

Ensuring hygiene is important when changing the filter in order to prevent the device from becoming contaminated. Make sure your hands are clean (use disposable gloves), ensuring that the device is clean and placed on a clean surface.

1. Lay down the replacement filter, the installation tool (i.e. the filter wrench) and the assembly materials on a clean surface.
2. Place the filter system in a basin or in the sink, or lay down a dry cloth underneath it. Some water will escape from the device while you are changing the filter.
3. Turn off the cold water connection (at the faucet).

### Replacing the prefilter

In the case of this type of filter, all you need to replace are the filter cartridges - the filter housing is re-used.

1. Twist off the housing for the prefilter using the ring filter wrench. The housing may be quite stiff if the last filter change was done some time ago.
2. Remove the filter cartridge and clean the filter housing if necessary using water. You can dispose of the filter inserts in standard household garbage.



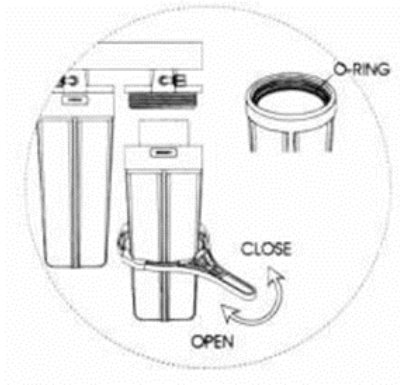


FIGURE 5

**IMPORTANT!**

**Observe any individual rules on waste disposal in force in your region.**

3. Insert the new filter cartridge into the centre of the space reserved for it.
4. Check that the seal on the housing is sitting correctly.
5. Tip: Lubricate the surfaces of the casing seals with a little vaseline to make it easier to release the next time you change filters.
6. Then twist the filter housing back onto the filter housing cover by hand. Be careful that the filter cartridges are sitting in a central position in the housing.
7. Then use the filter wrench to tighten up the housing by another quarter rotation.





**HUMAN**

Gesellschaft für Biochemica und Diagnostica mbH  
Max-Planck-Ring 21 • 65205 Wiesbaden • Germany  
Tel.: +49 6122/9988 0 • Fax: +49 6122/9988 100  
eMail: [human@human.de](mailto:human@human.de) • [www.human.de](http://www.human.de)

The logo graphic consists of a stylized red and white shape resembling a folded ribbon or a stylized 'H' that is part of the Human brand identity.

**Human**

Diagnostics Worldwide