

Installation Instructions | Installationsanleitung | Notice d'installation |
Instrucciones de instalación | Manuale d'installazione | Instrukcja montażu |
Instruções de Instalação

PMA.Evolution

EV01Y1

Paint-mixing Scales for Potentially Explosive Areas Zone 2 |

Farbmischwaagen für den Einsatz in explosionsgefährdeten Bereichen der Zone 2 |

Balances pour peintures pour atmosphères explosibles de la zone 2 |

Balanças para la mezcla de pinturas en áreas potencialmente explosivas de la zona 2 |

Bilance per la miscelazione di vernici per l'utilizzo in aree a rischio di esplosione della zona 2 |

Wagi do mieszania farb do stosowania w obszarach zagrożonych wybuchem strefy 2 |

Balanças de Mistura de Tintas para Áreas Potencialmente Explosivas da Zona 2



Contents of DVD:

- Operating instructions as a pdf file in various international languages
- Adobe Reader
- Software drivers for configuration of USB interfaces

Download online: www.sartorius.com/paintmixing

System Requirements:

- Windows, MacOS X
- Browser with JavaScript enabled
- PDF-Reader

Use start.html to run the application

English – page 3

In cases involving questions of interpretation, the German-language version shall prevail.

Deutsch – Seite 14

Im Auslegungsfall ist die deutsche Sprache maßgeblich.

Français – page 25

En cas de questions concernant l'interprétation, la version en langue allemande fera autorité.

Español – página 36

En caso de interpretación, la versión en lengua alemana será determinante.

Italiano – pagina 47

Nei casi di interpretazione dubbia fa testo l'originale in lingua tedesca.

Polski – strona 58

W kwestiach budzących wątpliwości znaczenie nadrzędne ma wersja w języku niemieckim.

Português – página 69

Em casos envolvendo questões de interpretação, a versão da língua alemã deve prevalecer.

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1. User Information

1.1 Warning/Danger Symbols



These notes identify hazards which have a high probability of resulting in death or serious physical injury if not avoided.



These notes identify hazards that can result in moderate or mild injuries if not avoided.



These notes identify hazards associated with the risk of material damage.

1.2 Symbols and Signs



This symbol identifies useful information and tips.

The following symbols are used in these instructions:

- indicates required steps
- ▷ describes what happens after you have performed a particular step
- Texts that use this mark are lists

Conventions for these Instructions:

The figures in these instructions are based on "standard" scales. On scales verified for use in legal metrology, some displays and reports may deviate slightly from the figures. Where this is significant for operation, the differences will be explained in the text.

1.3 About These Instructions

- Please read these instructions carefully and completely before putting the equipment into operation for the first time. Observe the safety instructions.
- These instructions are an important part of the product. Keep these instructions in a safe place. If you give the device to others to use, give them these instructions too.
- If these instructions are lost, please contact Sartorius for a replacement or download the latest manual from our website: www.sartorius.com/paintmixing

2. Safety Information

2.1 Guidelines and General Information

- The scale meets the relevant EU Directives and applicable harmonized standards (see "EC Type Examination Certificate" in the Appendix).
- Improper use or handling, however, can result in damage and/or injury. Any use or scale operation that does not conform to the instructions will result in forfeiture of all claims under the manufacturer's warranty.
- Personnel need to have read and understood these installation instructions, including the safety instructions.
- In the event of use in systems and ambient conditions which have greater safety requirements, you must observe the requirements and provisions applicable in your country.
- Always keep the equipment and scale freely accessible.



Make sure that the voltage rating printed on the AC adapter is identical to your local mains voltage.



The IP protection rating of the scale is IP 40 in accordance with EN 60529. The device must be handled carefully according to the IP protection rating. The environment must be suitably secured.

Ex Zone 2 (Category 3 Equipment)

- In accordance with Directive 94/9/EC, the EVO1Y1 model is a category 3 device, suitable for use in Zone 2 potentially explosive areas.
EC Type Examination Certificates: FM15ATEX0008X
identification: II 3G Ex ic nA IIB T4 Gc

IMPORTANT	If the device is used in Zone 2 potentially explosive areas outside the Federal Republic of Germany, the relevant national electrical codes and safety regulations must be observed. Ask your dealer or Sartorius Service Center about the guidelines that apply in their country.
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2.2 Installation Information

WARNING	Do not operate the scale if its housing or AC adapter including all connections are damaged. Immediately disconnect the damaged device from the power.
IMPORTANT	Do not expose the scale, its AC adapter or the accessories supplied by Sartorius to extreme temperatures, aggressive chemical vapors, moisture, shocks, vibrations or strong electromagnetic fields. Observe the conditions of operation described in the Specifications. The casing on all connection cables as well as the casing on the wires inside the equipment housing are made of PVC. Chemicals that corrode this material must be kept away from these cables.
IMPORTANT	The operator shall be solely responsible for any modifications to the equipment and for connecting any cables or equipment not supplied by Sartorius! Information on operational quality is available upon request from Sartorius. You should only use accessories supplied by Sartorius.
WARNING	Note the IP protection class of the scale and its AC adapter. Do not allow liquid penetration. The protection rating specifies the suitability of equipment for various environmental conditions (moisture, foreign bodies).
WARNING	Before cleaning the AC adapter or the scale: Disconnect all devices from the power.
IMPORTANT	The scale should only be opened by Sartorius-trained personnel with the power disconnected. Do not open the AC adapter.
WARNING	Avoid generating static electricity on the glass panel of the touch screen and plastic casing. The equipotential bonding conductor of the devices must be connected properly, according to commonly accepted technical standards. Only clean the device as stipulated in the cleaning instructions.



Take care that the glass panel of the touch screen is not damaged (e.g. by falling objects, impact, or extreme pressure).
If the glass panel is damaged, disconnect the device from the power supply immediately.



The surface of the touch screen should not be touched with pointed, sharp, hard, or rough objects. You should only use the touch pen provided or your fingertip. Do not use parts of clothing (e.g. sleeves) or sponges for cleaning because these can scratch the surface (e.g. due to rivets, buttons in the sleeve or sand in the sponge).
The device must be protected from unnecessarily extreme temperatures, aggressive chemical vapors, moisture, shocks, and vibrations. Note the connection data (see EC Type Examination Certificates for the device and/or the safety instructions, drawing no. 2021460).

Warnings Concerning Installation and Operation:



The equipment must only be used indoors. Avoid generating static electricity on glass and plastic parts. Connect the scale to the equipotential bonding conductor using a suitable low resistance method. All electrical circuits are grounded and electrically connected to the metal parts of the device.

- The installation must be checked for correct function and safety by trained and qualified personnel at appropriate intervals (e.g. checking the cable for damage).
- Operating personnel must be trained to recognize faulty operating states and be able to initiate the necessary safety measures.



Lay the cables where they pose no risk of causing someone to trip.



Never close a paint can using a hammer while it is still on the weighing pan.
When closing, place the paint can on a firm, stable surface.

Observe the additional safety and danger information in the following chapters.

2.3 Intended Use

This scale is only intended for mixing colors and paints. The scale is used in Zone 2 potentially explosive areas. Appropriate containers must be used for each type of material.

The scale can be operated via the keypad as a stand-alone device or using application software (e.g. a paint-mixing program from a paint manufacturer) installed on a connected PC. The scale is connected to the PC/notebook installed outside of the potentially explosive area via a USB cable.

3. Getting Started



The scale must be disconnected from the power supply for all assembly work.

3.1 Unpacking and Equipment Supplied

- Open the packaging, making sure to remove all parts carefully.
 - After unpacking the device, check it immediately for any external damage.
 - If you detect any damage, proceed as directed in Chapter "4. Care and Maintenance," page 7.
 - Save the box and all parts of the packaging for any future transport.
- All cables should be unplugged when transporting.

The following parts are included in the equipment supplied:

Model	Evolution
Large weighing pan: Ø 233 mm	x
USB cable	x
AC adapter with country-specific mains adapter	Optional
Installation instructions	x

3.2 Selecting a Setup Location

Select the right setup location:

- Set up the device on a stable, even surface that is not exposed to vibrations.
- Maintain free access to the device at all times.

Choose a location that is not subject to the following negative influences:

- Heat (heater or direct sunlight)
- Drafts from open windows, A/C systems, and doors
- Extreme vibrations during weighing
- Heavy "traffic areas" (personnel)
- Extremely high humidity
- Electromagnetic fields
- Extremely dry air

Acclimatization

Condensation from humidity can form on the surfaces of a cold device when it is brought into a substantially warmer area. You should therefore let a device that has been disconnected from its power source acclimatize for approximately 2 hours before reconnecting it to the supply voltage.

3.3 Installing the Scale



Inserting the Weighing Pan

- Place the weighing pan onto the scale from above.

3.4 Power Supply



The scale is connected to the power supply via a PC/notebook or using the optional AC adapter YPS06-USB (see Chapter "6. Accessories," page 8), which is supplied with mains adapters for use in various countries. The AC adapter is only required for the power supply if the PC or notebook is switched off.

AC adapter assembly is described in the following.

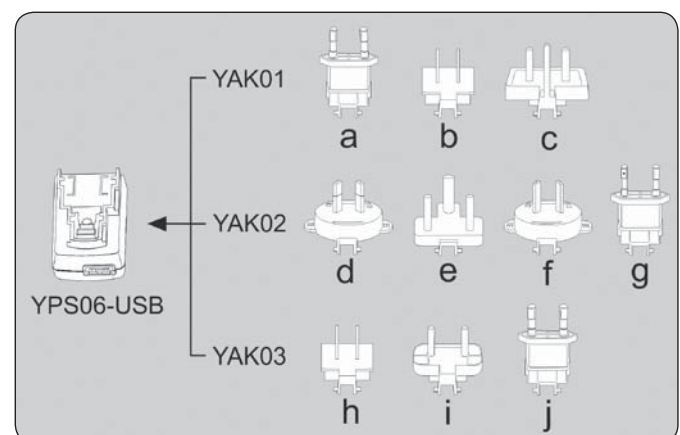
3.4.1 AC Adapter Assembly



Using the wrong mains adapter may cause a fatal electric shock and damage the equipment.

Never plug the mains adapter into the socket when it is disconnected from the AC adapter (danger of electrical shock).

- Use the right mains adapter for your mains power supply:



Mains adapter set YAK01

Bag	Region/Country
a) transparent	Europe/EU (except United Kingdom)
b) blue	USA
c) yellow	United Kingdom

Mains adapter set YAK02

d) red	Australia
e) turquoise	South Africa
f) white	Argentina
g) pink	Brazil

Mains adapter set YAK03

h) light brown	China
i) black	India
j) green	Korea



- Push (1) and slide (2) to insert the mains adapter required for your power supply into the opening of the AC adapter. When doing this, the mains adapter needs to lock into position.



Removing / Replacing the Mains Adapter

- Unlock (1) and then remove the mains adapter (2).

Power Connection/Safety Precautions

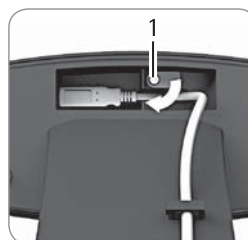
- Only use original Sartorius AC adapters. The AC adapter has an IP rating of IP40 in accordance with EN 60529/IEC 60529.
- Make sure that the voltage rating printed on this unit matches the voltage at the place of installation.
- If the stated supply voltage or the plug design of the AC adapter does not comply with your country's standard, please inform your nearest Sartorius representative.
- The power must be connected in accordance with the regulations applicable in your country.

3.4.2 Connecting the Scale



Connecting the Scale

- Insert the USB cable into the socket on the back of the display.



- Loosen the screw (1) on the lock.
- Swivel the lock over the USB cable.
- Re-tighten the lock screw.



Laying the USB Cable

- Lay the USB cable through the cable holders on the back of the scale.

Connecting the Grounding Cable

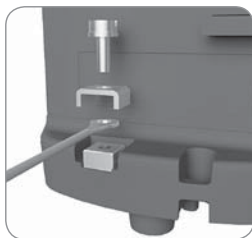
This explosion-protected system should be set up according to commonly accepted technical standards. The applicable national electrical code and safety regulations for your particular country must be observed.

Before commissioning the scale, a check must be carried out by or under the supervision of a qualified electrician to ensure that the system is in good working order.

Check whether or not the competent authorities (e.g. industrial supervisory board) need to be informed. It is also necessary to carry out inspections of the system during operation.

Inspection intervals should be such that any significant defects that may occur can be identified in good time. Inspections should be carried out at least once every three years. The applicable requirements and guidelines should also be observed during operation.

Establish a low resistance connection from the scale to a customer-supplied equipotential bonding conductor connection via the equipotential bonding conductor connection on the device using a suitable grounding cable with a gauge of at least 4 mm² (not included). Installation must be carried out properly by trained personnel and according to commonly accepted technical standards. The system should only be operated for the first time when it is certain that the area is not potentially explosive. If deviations are evident during startup due to transport damage (e.g. no display, no backlighting), disconnect the scale from the power supply and contact the Sartorius Service Center.

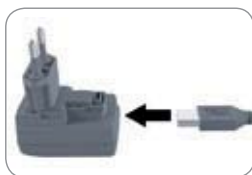


Connect the scale to the equipotential bonding conductor using an equipotential bonding cable with a gauge of at least 4 mm².

- ▶ Connect the cable lug of the equipotential bonding cable to the grounding terminal of the scale.
- ▶ Connect the equipotential bonding cable to the customer-supplied equipotential bonding conductor.

Connecting a PC/Notebook

- ▶ Insert the USB cable into a USB socket of a PC or laptop.



Connecting an AC Adapter (Optional)

- ▶ Insert the USB cable into the AC adapter.
- ▶ Plug the AC adapter into the wall outlet (supply voltage).

3.5 Anti-theft Locking Device



- ▶ If required, secure the scale at the back.

3.6 Warm-up Time



To ensure accurate results are delivered, the scale must warm up for at least 30 minutes after initial connection to the power supply. Only after this time will the scale have reached the required operating temperature.

4. Care and Maintenance

4.1 Cleaning



Electrical hazard from voltage or current!

Disconnect the AC adapter (if connected) from the mains. Never open the scale or the AC adapter.

The parts contained in these cannot be cleaned, repaired, or replaced by the operator.

- Make sure that no liquid or dust gets into the scale or the AC adapter.
- Only use soft brushes and cloths for cleaning.
- Never use cleaning agents that contain solvents or abrasive ingredients (e.g. scouring cream, steel wool). This can ultimately damage the equipment.



Do not clean the following parts with acetone or aggressive cleaning agents: mains socket, data interface, labels, and all other plastic parts.

Cleaning the Control Panel

- ▶ Turn off the device before cleaning the control panel since touching the screen could trigger unwanted inputs.

Cleaning the Scale Housing

- ▶ Clean the device using a mild cleaning agent.
- ▶ Use a soft cloth to dry the device.

4.2 Maintenance



Electrical hazard from voltage or current!

Repair work on the (optional) AC adapter must only be carried out by trained service technicians. Contact the Sartorius Service Center or a Sartorius dealer for proper repairs.

To ensure the continued accuracy of your scale, we recommend scheduling regular servicing at least once a year. The Sartorius Service Center offers different service contracts with maintenance intervals that are tailored to your needs. A calibration certificate should always be issued as part of every maintenance session. Safety inspections of the AC adapter and its connections must be performed at appropriate intervals by a qualified electrician (e.g. every 2 years).

5. Disposal

Packaging

The packaging is made of environmentally friendly materials that can be used as secondary raw materials. If the packaging is no longer needed, it can be disposed of by local waste disposal authorities.



Device

The equipment, including accessories and empty non-rechargeable and rechargeable batteries, does not belong in your regular household waste; this equipment is manufactured from high-grade materials which can be recycled and reused. European Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE) requires that electrical and electronic equipment be collected and disposed of separately from other unsorted municipal waste, with the aim of recycling it. The crossed-out waste bin symbol indicates that separate collection is required.

In Germany and several other countries, Sartorius itself assumes responsibility for the return and legally compliant disposal of its electronic and electrical products. These products may not be placed with household waste or brought to collection centers run by local public disposal operations – not even by small commercial operators. Please contact the Sartorius Service Center.

In countries that are not members of the European Economic Area (EEA) or where no Sartorius subsidiaries or dealerships are located, please contact your local authorities or a commercial disposal operator.

Prior to disposal and/or scrapping of the equipment, any batteries should be removed and disposed of at local collection points.



Sartorius will not take back equipment contaminated with hazardous materials (ABC contamination) – either for repair or disposal.

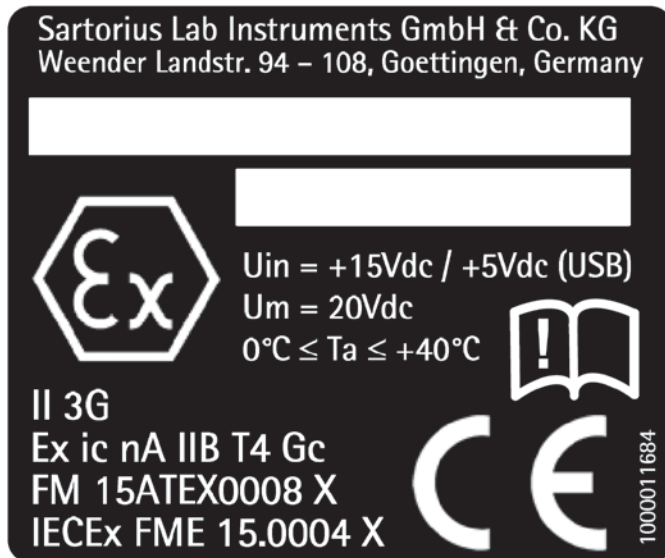
Addresses for Disposal

Detailed information with service addresses for the disposal of your device can be found on our website (www.sartorius.com).

6. Accessories

Accessories	Order Number
USB connection cable	YCC01-0040M5
AC adapter (5 V/900 mA)	YPS06-USB
AC plug adapter set for YPS06-USB	YAK01
– USA and Japan	
– Europe/EU	
– United Kingdom	
AC plug adapter set for YPS06-USB	YAK02
– Australia	
– South Africa	
– Argentina	
– Brazil	
AC plug adapter set for YPS06-USB	YAK03
– India	
– Korea	
– China	
Equipotential bonding cable, 2 m	YCC01-X046M2
In-use cover for the control panel, pack of 10	YDC03PMA10
In-use cover for the support arm, pack of 10	YDC03PMA-C010
In-use cover for weighing pan, pack of 10	YDC03PMA-WP10
CAL weight	
– 5 kg, accuracy class F2	YCW654-AC-00
– 2 kg, accuracy class F2	YCW624-AC-00
– 1 kg, accuracy class F2	YCW614-AC-00

7. Serial Number Coding



The manufacture date of this device is encoded in the serial number. The format is as follows:

YMM x x x x x

Y Year

3 2014-2020

4 2021-2027

5 2028-2034, etc.

The Y column indicates the year group, which covers a period of 7 years. Within each year group, the months (M M) are counted up from 13.

Year: 2015 2016 2017 2018 2019 ...

MM: 25-36 37-48 49-60 61-72 73-84 ...

Example:

328xxxxx (April 2015). "xxxxx" is a consecutive number, increasing by one every month.

8. Specifications

8.1 General Data

Specification	Unit	Value
ID code (explosion protection)		II 3G Ex ic nA IIB T4 Gc as per EC Type Examination Certificate no. FM15ATEX0008X
Power supply		Only via USB interface or Sartorius AC adapter YPS06-USB
Input supply voltage	V_{DC}	+5.0
Power consumption	W	2.0
Other data		IP40 in accordance with EN 60529/IEC 60529
Ambient Conditions		
The specifications apply under the following ambient conditions:		
Environment		For indoor use only
Operational capability	°C	Guaranteed between +5 and +45
Storage and shipping	°C	-10 to +60
Relative humidity	%	15% to 80% for temperatures up to 30°C non-condensing, decreasing linearly to 50% relative humidity at 40°C
Electromagnetic Compatibility		As per EN 61326-1/IEC 61326-1 Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements
Interference resistance		Basic requirements
Transient emissions		Class B Suitable for use in residential areas and areas that are connected to a low voltage network that also supplies residential buildings.
Available Application Programs		Recalculation, factor calculation, formula
AC Adapter YPS06-USB		
USB power plug (5 V/900 mA)		Type FW7712 (manufacturer's certificate)
Primary		100–240 V~, -10%/+10%, 50–60 Hz, 0.125 A
Secondary		5 V_{DC} , ±5%, 900 mA (max.)
Other data		Protection class II IP40 in accordance with EN 60529/IEC 60529

8.2 Model-specific Data

Model

Specification	Unit	Value
		PMA.Evolution
		EV01Y1
Weighing capacity	g	7500 999.95
Readability	g	0.1 0.05
Tare range (subtractive)	g	-7500
External adjustment weight/ accuracy class	kg	1, 2, 5 / F2 or better
Size of weighing pan	Ø mm	233
Net weight	kg	2.4

Non-hazardous area

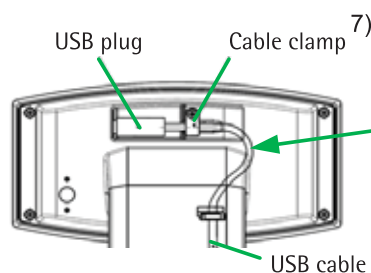
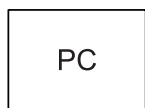
Hazardous area Zone 2

Gas group IIB, temperature class T4
Ambient temperature: 0°C to +40°C

Power Supply
e.g. Sartorius
YPS06-USB



PC



Alternative
connections

USB cable

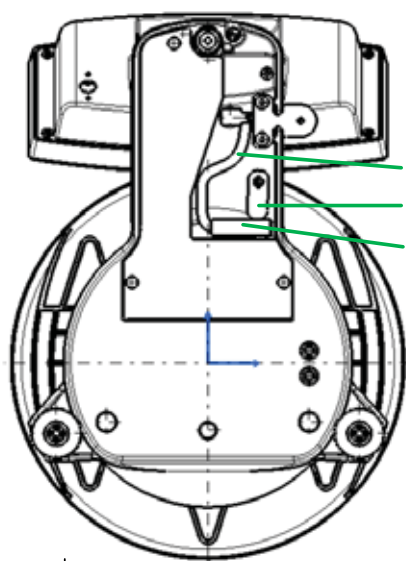
Display unit

EVO1Y.....
LAB1Y.....

9)

Equipotential bonding conductor

Weighing cell

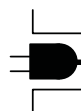


DC cable
Clamping block 7)
DC cable plug

Power
Supply
Sartorius
YPS04-Y..

Alternative
connections

Plug provided
with standard
equipment



Secure plug (standard equipment supplied)
so that it cannot become accidentally
disconnected. Ensure that an emergency
off switch is available.



Use EX plug



2014-08-08

Dr. D. Klausgrete



sartorius

Safety Instructions

EVO1Y..... / LAB1Y.....



2021460

Revision 00

Sheet 1 of 2

These safety instructions apply to the installation, operation, maintenance and repair of the equipment

- 1) Install the equipment in compliance with applicable laws, rules and regulations, ordinances and standards. In particular, be sure to conform to the European Standards EN 60079-14 (Explosive atmospheres – Part 14: Electrical installations design, selection and erection).
- 2) Be sure to follow the installation, operating, maintenance and servicing instructions given in the manuals supplied.
- 3) The equipment shall be installed in such a way that it is protected against the entry of solid foreign objects or water capable of impairing the safety of the apparatus. Reduce the risk of mechanical damage to a minimum.
- 4) Exposure to UV radiation is not allowed!
- 5) The connecting cable of the display unit must be prevented against damage and stress caused by strain.
- 6) Prior to opening the equipment, disconnect the power supply or make sure that there is no potentially explosive atmosphere or any other explosion hazard in the surrounding area!
- 7) The data cable connected to the scale (weighing unit) is considered as non intrinsically safe circuit. The connection is secured against accidental disconnection and may only be plugged in or disconnected when the power is switched completely off. Check the correct function of the data transfer before you use the equipment in a hazardous location. Lock the USB plug of the USB cable by the cable clamp and in case of the option „additional power supply board“ lock the plug of the DC cable by the clamping block.
- 8) If the equipment does not operate properly, unplug it immediately from line power (mains supply)!
- 9) All metal parts must be electrically connected to the terminal for the equipotential bonding conductor (PA). The equipment operator is obligated to connect a lead with a gauge of at least 4 mm² (cross section) to the PA terminal located on the housing of the scale. The low resistance of this connection to the PA bus bar must be checked when the system is installed at the intended place of use. The shielding of the connecting cables may only be used for grounding when no impermissible difference in voltage is generated and, if necessary, the shielding is able to conduct the equipotential current.
- 10) Avoid generating static electricity. Use only a damp cloth to wipe down the equipment. The equipment operator shall be responsible for preventing any risks caused by static electricity.
- 11) Keep chemicals and other agents, which can corrode the housing seals and cable sheaths, away from the equipment. These agents include oil, grease, benzene, acetone and ozone. If you are not sure about the safety of a certain substance, please contact the manufacturer.
- 12) Use equipment only in the temperature ranges indicated. Avoid exposing the equipment to heat.
- 13) The equipment operator is responsible for any non-Sartorius cables used.
- 14) At reasonable intervals, have your equipment installation checked for proper functioning and safety by a trained and certified technician.
- 15) If your equipment needs to be repaired, use only original spare parts supplied by the manufacturer!
- 16) Any tampering with the equipment by anyone, other than repair work done by authorized Sartorius service technicians, will result in the loss of EX conformity and in the forfeiture of all claims under the manufacturer's warranty. Only authorized specialists may open the equipment.
- 17) Modifications, including those to be carried out by Sartorius employees, may be permitted only after the express written authorization has been obtained from Sartorius.

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	Dr. D. Klausgrete		2021460	Revision 00	Sheet 2 of 2