

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

## PMA.Evolution | PMA.HD

EV01S1 | SP01S1

Paint-mixing Scales | Farbmischwaagen | Balances pour peintures | Balanzas para la mezcla de pinturas |  
Bilance per la miscelazione di vernici | Wagi do mieszania farb | Balanças de Mistura de tinta



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](http://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 9**

Im Auslegungsfall ist die deutsche Sprache maßgeblich.

**Français – page 15**

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

**Español – página 21**

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

**Italiano – pagina 27**

In caso di questioni relative all'interpretazione, la precedenza è data alla lingua tedesca.

**Polski – strona 33**

W kwestiach budzących wątpliwości, znaczenie nadrzędne ma niemiecka wersja językowa.

**Português – página 39**

Nos casos que envolverem questões de interpretação, prevalecerá a versão no idioma alemão.

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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 Explanation of Symbols



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](http://www.sartorius.com/paintmixing)

## 2. Safety Information

### 2.1 Guidelines and General Information

- This scale corresponds to the relevant EU Directives and standards (see page 45). Improper use or handling, however, can result in damage and/or injury. Any improper use or operation of the scale, i.e., that is not consistent with the instructions, will result in forfeiture of all claims under the manufacturer's warranty.
- Personnel need to have read and understood these 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.









#### Danger of Explosion!

Do not use this equipment in hazardous areas in which explosive materials are present.





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

## 2.2 Installation Information

|  |  |
|--|--|
| <br><b>WARNING</b>    | Do not operate the scale if its housing or AC adapter including all connections are damaged. Immediately disconnect the damaged device from the power by pulling the plug.   |
| <br><b>IMPORTANT</b>   | 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 electro-magnetic fields. Observe the conditions of operation described in the Specifications.                   |
| <br><b>IMPORTANT</b>   | 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.<br>You should only use peripherals supplied by Sartorius. |
| <br><b>WARNING</b>    | Note the IP protection class of the scale and its AC adapter. Do not allow liquid penetration. The protection class specifies the suitability of equipment for various environmental conditions (moisture, foreign bodies).  |
| <br><b>WARNING</b>   | Before cleaning the AC adapter or the scale: Unplug from the mains power.  |
| <br><b>IMPORTANT</b> | The scale may only be opened by specialized personnel trained by Sartorius. Do not open the AC adapter.  |

### Warnings Concerning Installation and Operation:

|   |   |
|---|---|
| <br><b>CAUTION</b> | 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.<br>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 outside of potentially explosive atmospheres. 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 (such as a paint-mixing program from a paint manufacturer) installed on a connected PC.

# 3. Getting Started

|   |   |
|---|---|
| <br><b>IMPORTANT</b> | 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 6.
- ▶ 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 | HD       |
|--|-----------|----------|
| Large weighing pan: Ø 233 mm                   | x         | –        |
| Small weighing pan: Ø 180 mm                   | –         | x        |
| USB connection cable                           | x         | x        |
| AC adapter with country-specific mains adapter | Optional  | Optional |
| Installation instructions                      | x         | x        |

## 3.2 Selecting a Setup Location

Select the right setup location:

- Set up 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, AC 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 normally powered via the USB connection of your PC, which also supplies data for the scale. If this USB connection is not available, you can use AC adapter YPS06-USB (see chapter "6. Accessories," page 7) for the power supply, which comes with different, country-specific mains adapters. AC adapter assembly is described in the following.

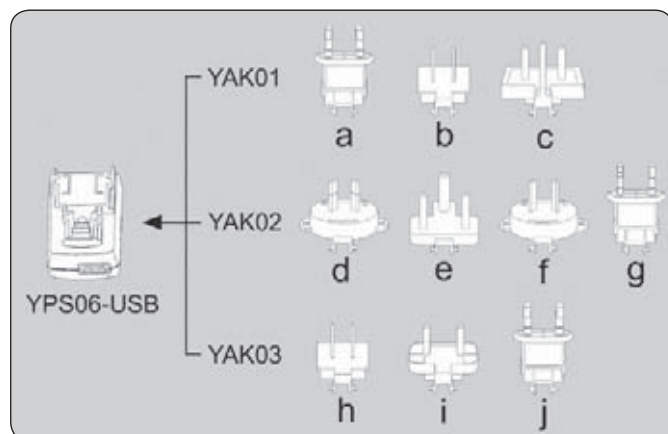
#### 3.4.1 AC Adapter Assembly (optional)



**Using the wrong mains adapter may cause 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) the mains adapter required for your power supply into the opening of the AC adapter module. When doing this, the mains adapter needs to lock into position.



#### Removing / Replacing the Mains Adapter

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

#### 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 the nearest Sartorius representative.
- The power must be connected in accordance with the regulations applicable in your country.

#### FCC Rules

##### Safety Precautions:

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver
- Consult the dealer or an experienced radio/TV technician for help.

##### Shielded Cables:

Connections between the devices and peripherals must be made using shielded cables in order to maintain compliance with FCC radio frequency emission limits.

##### Modifications:

Any modifications made to this devices that are not approved by Sartorius Weighing Technology GmbH may void the authority granted to the user by the FCC to operate this equipment.

### 3.4.2 Connecting the Scale



#### Connecting the Scale

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

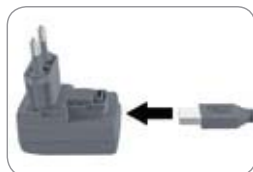


#### Laying the USB Cable

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

### Connection to the Power Supply

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



#### Connecting an AC adapter (option)

- Insert the USB cable into the YPS06-USB AC adapter.
- Plug the AC adapter into the wall outlet (supply voltage).

### 3.5 Anti-theft Locking Device



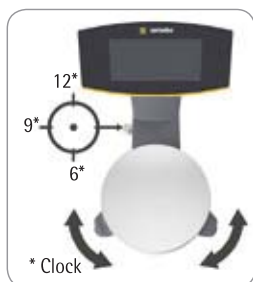
- If required, secure the scale at the back.

### 3.6 Leveling

#### Leveling the HD Model

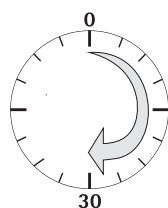


Leveling the scale compensates for slant or unevenness at the place of installation. The scale must be perfectly horizontal to ensure consistent, reproducible weighing results. The scale needs to be re-leveled and then adjusted each time its setup location is changed.



- Turn the two leveling feet as shown in the illustration until the air bubble is centered within the circle of the level indicator.
- Air bubble at "12 o'clock": turn the two feet clockwise.
- Air bubble at "3 o'clock": turn the left foot clockwise and the right foot counterclockwise.
- Air bubble at "6 o'clock": turn the two feet counterclockwise.
- Air bubble at "9 o'clock": turn the left foot counterclockwise and the right foot clockwise.

### 3.7 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 from the power supply. If necessary, disconnect the data cable if connected to the scale. 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 user interface, 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 AC adapter (optional) must only be carried out by trained service technicians. Contact Sartorius Service 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. Sartorius Service 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. The 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 conformant 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 Sartorius Service.

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 disposal of your device can be found on our website ([www.sartorius.com](http://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  |               |
| In-use cover for control panel, pack of 10               | YDC03PMA10    |
| In-use cover for support arm, PMA.Evolution, pack of 10  | YDC03PMA-CO10 |
| In-use cover for weighing pan, PMA.Evolution, pack of 10 | YDC03PMA-WP10 |
| Adjustment weight  |               |
| – for PMA.Evolution, 5 kg, accuracy class F2             | YCW654-AC-00  |
| – for PMA.Evolution   PMA.HD, 2 kg, accuracy class F2    | YCW624-AC-00  |
| – for PMA.Evolution   PMA.HD, 1 kg, accuracy class F2    | YCW614-AC-00  |

## 7. Technical Data

### 7.1 General Data

| Specification  | Unit            | Value   |
|--|-----------------|---|
| <b>Scale</b>   |                 |   |
| Power supply   |                 | only via USB interface or Sartorius AC adapter YPS06-USB  |
| Input supply voltage   | V <sub>DC</sub> | +5.0  |
| Power Consumption  | W               | 2.0   |
| Other data   |                 | IP40 in accordance with EN 60529/IEC 60529  |
| <b>Ambient Conditions</b>  |                 |   |
| The specifications apply under the following ambient conditions: |                 |   |
| Environment  |                 | For indoor use only   |
| Operational capability   | °C              | Guaranteed between +5 - +45   |
| Storage and shipping   | °C              | -10 - +60   |
| Relative humidity  | %               | 15 % to 80 % for temperatures up to 30 °C non-condensing, decreasing linearly to 50 % relative humidity at 40 °C                                  |
| <b>Interface connection</b>                                      |                 | USB, type B   |
| <b>Electromagnetic compatibility</b>                             |                 | As per EN 61326-1 / IEC61326-1 Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements |
| Interference resistance  |                 | Basic requirements  |
| Transient emissions  |                 | Class B<br>Suitable for use in residential areas and areas that are connected to a low voltage network that also supplies residential buildings.  |
| <b>Available application programs</b>                            |                 | Recalculation, formula  |
| <b>AC adapter YPS06-USB (optional)</b>                           |                 |   |
| 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 <sub>DC</sub> ± 5 %, 900 mA (max.)  |
| Other data   |                 | Protection class II<br>IP40 in accordance with EN 60529/IEC 60529   |

### 7.2 Model-specific Data

| Information                                 | Unit | Value                  | Value               |
|---|------|------------------------|---------------------|
|   |      | PMA.Evolution          | PMA.HD              |
| <b>Model</b>                                |      | <b>EVO1S1</b>          | <b>SP01S1</b>       |
| Weighing capacity                           | g    | 7500 / 999.95          | 2200                |
| Readability                                 | g    | 0.1 / 0.05             | 0.01                |
| Tare range (subtractive)                    | g    | -7500                  | -2200               |
| External adjustment weight / accuracy class | kg   | 1, 2, 5 / F2 or better | 1, 2 / F1 or better |
| Size of weighing pan                        | Ø mm | 233                    | 180                 |
| Net weight                                  | kg   | 2.4                    | 2.3                 |