sartorius

**Installation Instructions**

Sartorius PMA.Quality
PMA 7501-X│PMA 7501-X00V1│PMA 7501-X00W

Electronic Paint-mixing Scales for Zone 1

General View of the PMA 7501–X (PMA.Quality)

Electronic Paint-mixing Scales for Use in Zone 1 Hazardous Areas
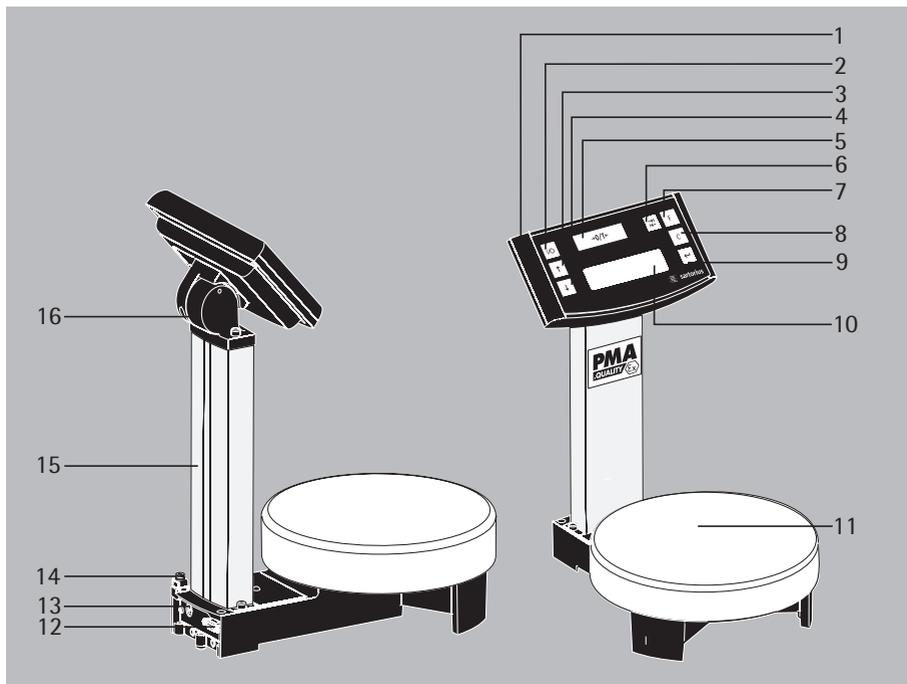
1 Display and control unit
2 key (On/Standby)
3 key: Upwards
4 key: Downwards
5 key: Zero/Tare
6 key (TOGGLE)
   With the PMA 7501-X, you can toggle
   to two decimal places – from 0.05 g to
   999.95 g – or toggle between – "**g**" and
   "**p**" – parts per pound, depending on
   the menu settings
7 F factor key (FORMULATION)
   for paint-mixing applications
8 c key (Clear) and [REC] key for
   paint-mixing applications
9 ⏎ key [ENTER] and [MEM] key for
   paint-mixing applications

10 Display
11 Weighing pan
12 Interfaces (D-Sub plug, 9-contact)
13 Connection to AC power
14 Grounding terminal
15 Column
16 Joint

**The following symbols are used in
these instructions:**
● Indicates required steps
○ Indicates steps required only under
   certain conditions
> Describes what happens after you have
   performed a particular step
– Indicates an item in a list
⚠ Indicates a hazard

Contents

Intended Use

The PMA7501-X (Quality) has been specially designed for use in the paint-mixing applications. This scale can be controlled by a computer connected to the interface port.

Note:

– Read the installation and operating instructions carefully before connecting the PMA7501-X and putting it into operation.

– The application examples and menu settings described in these installation instructions are not valid for PMA7501-X00W.

Warnings and Safety Precautions

Note:
Improper use or handling can result in property damage and/or personal injury. Only qualified personnel may install and operate the equipment. Make sure you observe the warning and safety information in its entirety during installation and operation, as well as while performing maintenance and repair work on the equipment. The standards, regulations, occupational safety requirements and environmental protection laws valid in your country must be observed. It is important that all personnel using the equipment understand this warning and safety information, and have access to the relevant documents at all times. Furthermore, the warning and safety information supplied with any electrical equipment connected, such as peripheral devices, must be observed as well. The warnings and safety precautions may have to be supplemented by the equipment operator. All operating personnel must be informed of any additions to these instructions. Make sure the equipment is accessible at all times.

General Provisions for Installing the PMA7501–X
PMA7501-X models meet the requirements defined in EC Directive 94/9/EC for equipment group II, category 2G and are marked in accordance with the KEMA05 ATEX1247X EC type-examination certificate. In addition, they are approved for hazardous (classified) location Class I, Division 1, Groups C,D, and Class I, Zone 1, Groups IIA and IIB, in the United States and in Canada, respectively. Furthermore, PMA7501-X models meet the EC Directives for electromagnetic compatibility and electrical safety (please see the Declaration of Conformity in these installation instructions.)

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- The area of use for the PMA7501-X model is defined in the type-examination certificate. All restrictions listed in the type-examination certificate must be strictly observed. Operating the PMA7501-X model beyond the restrictions indicated is not permitted, and is considered use of the equipment for other than its intended purpose. Any installation work that does not conform to the instructions in this manual will result in forfeiture of all claims under the manufacturer's warranty. If you use the equipment in a hazardous area outside Germany, you must comply with the national electrical code and safety regulations applicable in your country (e.g.: EN60079-14). Ask your supplier for information on the legal regulations applicable in your country. For the USA and Canada, please refer to Control Drawing 35958-000-07-A4.

- If the equipment housing is opened by anyone other than persons authorized by Sartorius, this will negate its conformity with regulations governing its use and result in forfeiture of all claims under the manufacturer's warranty.

- Installation of the PMA7501-X in a potentially explosive atmosphere must be performed by a certified electrician who is familiar with both the assembly, start-up and operation of both the system and the relevant guidelines and regulations, and has the required qualifications for performing the installation. If you need assistance, contact your Sartorius dealer or the Sartorius Service Center.

- Avoid static electricity. Connect an equipotential bonding conductor. Disconnecting equipotential bonding conductors is not permitted. The bore hole is marked by a "ground" symbol. If a bore hole is provided, use a stainless steel screw and nut to connect the grounding conductor. The wire used for the grounding conductor should have a cross-sectional diameter of at least 4 mm^2 and have a suitable ring lug attached. Connect all equipment, including peripheral devices, to the equipotential bonding conductor.

- Do not expose the scale to extreme temperatures, aggressive chemical vapors, moisture, shocks or vibrations. Exposure to excessive electromagnetic disturbance can cause the readout value to change. Once the disturbance has ceased, the instrument can be used again in accordance with its intended use.

- The equipment must be used indoors.

- To ensure safety, disconnect the equipment from power before connecting or disconnecting the cables or electronic peripheral devices.

- If you use cables purchased from another manufacturer, check the pin assignments in the cable against those specified by Sartorius before connecting the cable to Sartorius equipment, and disconnect any wires that are assigned differently. The operator shall be solely responsible for any damage or injuries that occur when using cables not supplied by Sartorius.

- When connecting the scale to the power supply, the laws valid in your country must be observed. If you should have any questions, please contact your supplier or Sartorius Customer Service for information on the legal regulations applicable in your country. The scale must be installed by a certified technician to avoid forfeiture of all claims under the manufacturer's warranty.

- To avoid generating static electricity (e.g., when using the in-use dust cover), connect the equipotential bonding conductor.

- The equipment is protected against penetration by solid foreign objects.

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For the User
– Always make sure the equipment is disconnected from AC power before performing any installation, cleaning, maintenance or repair work on the scale.
– If you see any indication that the scale cannot be operated safely (for example, due to damage), turn it off and lock it in a secure place or otherwise prevent use of the equipment for the time being.
– Chemicals (e.g., gases or dusts) that can corrode and damage the inside or outside of the device must be kept away from the equipment. Handle the equipment and any accessories in accordance with the IP rating (IP65 or higher) and EN 60529.

– The casing on all connecting cables, as well as the casing on wires inside the equipment housing, is made of PVC. The casing of the power cable is made of rubber.
– Do not expose the scale to aggressive chemical vapors or to extreme temperatures, moisture, shocks, or vibration. The allowable operating temperature range during operation is 0°C to +40°C +(32°F to +104F). Make sure the place of installation is adequately ventilated to prevent build-up of excessive heat.
– Use original Sartorius spare parts only.
– Never use a hammer to close the lid of a paint can while it is still on the weighing pan. Otherwise, you will damage the weighing system.

PMA7501–X Designed for Use in Zone 1 Hazardous Areas

Please refer to the drawings unter "Verification of Intrinsic Safety" for details.

Getting Started

● Remove the scale from its packaging.

● After unpacking the scale, check it immediately for any visible damage as a result of rough handling during shipment.

Equipment Supplied
– Scale
– Weighing pan
– Power supply
– 2× protective plugs (in the column)
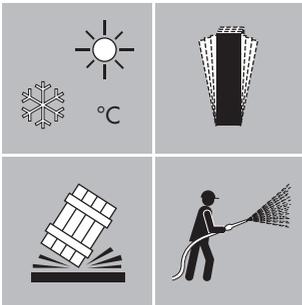
Setting Up the Scale
Choose a suitable place to set up the scale. Avoid exposure to drafts, heat, moisture and vibration. Make sure to read the instructions carefully before connecting the scale to AC power.

⚠ Observe the safety instructions and warnings in this manual.

● Place the weighing pan on the scale.

Connection to AC Power
The equipment is energized by the power supply provided. Make sure that the voltage rating printed on the power supply is identical to your local AC power rating. When connecting the scale to the power supply, the laws valid in your country must be observed. If you should have any questions, please contact your supplier or Sartorius Customer Service for information on the legal regulations applicable in your country. Use only genuine Sartorius power supplies. The use of power supplies from other manufacturers, even if these units have a registered approval rating from a national testing laboratory, requires the approval of a certified technician.
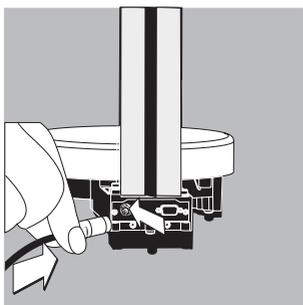
● Insert the right-angle plug into the IEC jack (13) on the scale

● Plug the power supply into an electrical AC power outlet
⚠ Observe the safety instructions and warnings in this manual
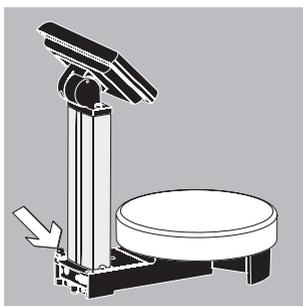
● Ground the scale.
Connect the cable to the grounding terminal (14).

Operating the Equipment
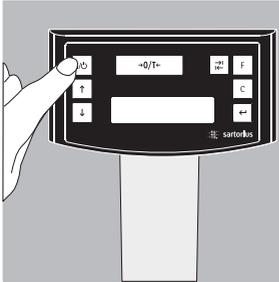
Turn on the scale using the 〔I/ᵒ〕 key (2).
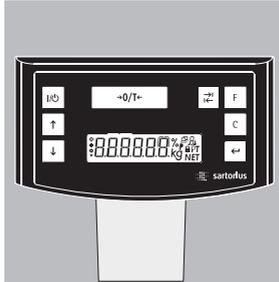
After the scale has been turned on, it will automatically run a self-test.
At the end of this test, 0.0 g is displayed.
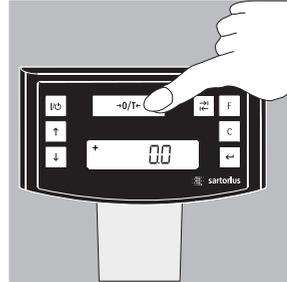
If a different readout is displayed, zero or tare the scale using the 〔→0/T←〕 key (5).
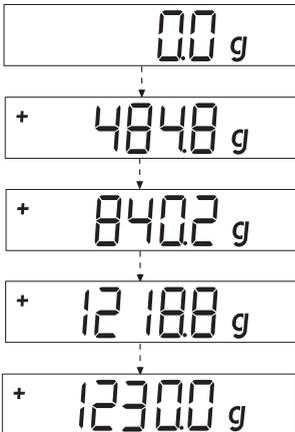
Weighing with One Decimal Place
Place an empty paint can on the weighing pan.
Press the 〔→0/T←〕 key (5). The display shows "**0.0 g**."
Pour in the first component, and read off the weight as soon as the stability symbol appears; in this case, "**g.**"
Pour in additional components until the desired weight of your formula is reached.
Remove the filled paint can from the weighing pan.

Never use a hammer to close the lid of a paint can while it is still on the weighing pan.
Otherwise, you will damage the weighing system.

Weighing with Two Decimal Places

Note:
To weigh using two decimal places, you must first adapt the settings (refer to the chapter entitled "Menu Settings")

Press the ⇄ key (6). The display shows "0.00 g."

Place an empty paint can on the weighing pan (11).

Press the →0/T← key (5). The display shows "0.00 g."

Pour in the first component: 205.50 g.
Read off the weight as soon as the stability symbol appears; in this case, "g."

Pour in additional components until the desired weight of your formula is reached.
Remove the filled paint can from the weighing pan.

Important Note:
If you zero the display by pressing the tare key, and then press the ⇄ key (6) to toggle to the second decimal place with a resolution of 0.05 g, you can continue weighing up to 999.95 g.
For weights exceeding 999.95 g, only one decimal place will be displayed.

Never use a hammer to close the lid of a paint can while it is still on the weighing pan.
Otherwise, you will damage the weighing system

Applications

Formulation Mode (Calculation by a Factor)
This mode enables you to weigh in amounts that are smaller or larger than that of your basic formula for a specific paint color (e.g., 250 ml of a 1-l formula).
You can select various factors (amounts) by pressing the F formulation key (7):
0.25 0.5 0.75 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0.

By pressing the   ↑ key (3): upwards
or   ↓ key (4): downwards,
you can alter the value – in 0.1 increments, as of factor 1.0
or   – 0.01 increments, from factor 0.25 to 1.0.

Important Note:
The flashing arrow ▼ on the display means that the weight value shown is not verified for use in legal metrology (not legal for trade).

Example:
As you pour in the components of your formula, the weight is displayed in "g."
Let's suppose you want to weigh only 250 ml of a basic formula that is for a total amount of 1 L. With the recalculation mode, you do not need to manually recalculate the individual components.
The basic formula for 1 liter is:

	250 g	green paint
+	250 g	red paint
+	500 g	blue paint
Total:	**1000 g**	
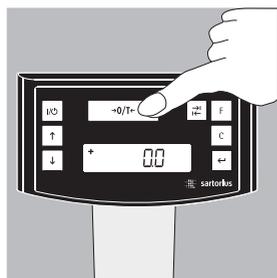
1. Place the empty paint can on the weighing pan and tare (zero the display).
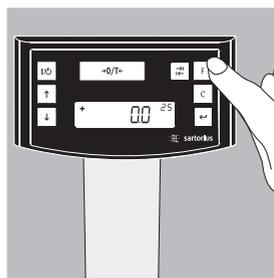
2. Press the F formulation key (7) several times to select the conversion factor ".25" used in this example.
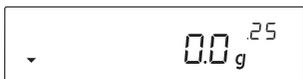
`0.0 g .25`	3. ".25" is displayed next to the weight
`250.0 g .25`	4. Slowly pour in the first component, "250 g" of green paint, until the display shows "250 g."
`500.0 g .25`	5. Pour in the second component, "**250 g**" of red paint, until the display shows "**500 g.**"
`1000.0 g .25`	6. Pour in the last component, "500 g" of blue, until "**1000 g**" is displayed.
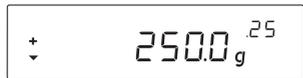
We have come to the end of our example. According to the display, exactly 1,000 g was poured in, but the paint can actually contains only 250 g by weight according to the factor you selected, .25. Follow the same procedure for any other conversion factor or to convert a 1-gallon formula into quarts.

Weighing Using the Recalculation Mode
Let's suppose that you poured in too much of one color component for a given formula (e.g., one consisting of 4 components).
In addition, let's assume that you previously poured in all of the other amounts exactly according to each of the values you entered and stored by pressing the ⏎ key [MEM] (9). Press the ↓ key (4) to start the recalculation program. "C" will begin flashing on the display. To correct the weight displayed to the same value you entered for the given formula, either scroll upwards using the ↑ key (3), or downwards using the ↓ key (4). When you then press the ⏎ key [MEM] (9), the scale will automatically calculate and display the amounts of paint in "g" to add for each of the other components that you already poured in. This mode thus ensures that the total result of your formula for these components will be correct.
After pouring in these amounts, you can continue to add the remaining components of your formula.

Important Note:
You can correct an incorrect amount any number of times. However, the total (liter) quantity in the paint can will increase each time you correct a component. Therefore, press the c key (8) to check how much the total quantity (in liters) will be. ("C" = correction factor)

The flashing arrow ▼ in the display means that the weight value shown is not verified for use in legal metrology (not legal for trade).

Example (cumulative):

+	1 18.0	g

1. Place an empty paint can on the weighing pan (11).
+ 118.0 g

	0.0	g

2. Press the `→0/T←` key (5)
0.0 g

+	50.0	g

3. Pour in the first component.
+ 50.0 g

	.STO 01	

4. Press the ⏎ key [MEM] (9).
STO 01

+	1 10.0	g

5. Pour in the 2nd component.
+ 110.0 g

	.STO 02	

6. Press the ⏎ key [MEM] (9).
STO 02

+	203.0	g

7. Pour in the 3rd component.
+ 203.0 g
Oops!
You poured in too much!
The correct weight for the formula is 200.0 g.

+	203.0	g

8. Press the ⌄ key (4) to start the recalculation mode.
A "C" (= correct).

+	200.0	g

9. Press the ⌄ key (4) several times to correct the value to:
+ 200.0 g

	.COR 01	

10. Press the ⏎ key [MEM] (9).
COR 01

–	1.7	g C1
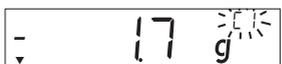
11. 1. Add the first component.
"C1" is displayed. –1.5 g

	0.0	g C1

12. Pour in paint until 0.0 g is displayed.
0.0 g

	.COR 02	

13. Press the ⏎ key [MEM] (9)
COR 02

–	2.0	g C2

14. Add the second component. "C2" is displayed.
–2.0 g

	0.0	g C2

15. Pour in paint until the value 0.0 g is obtained.
0.0 g

	.STO 02	

16. Press the ⏎ key [MEM].
The scale will automatically return to the formulation program. "C" disappears.
+ 200.0 g.

	.C 1.03	

17. To check the prospective total weight, press the `c` key (8) [REC].
"C" = Correction factor; in this example, 1.02. (Total formula weight × correction factor = total weight)

+	1000.0	g

18. Add the fourth component
+1000.0 g

We have come to the end of our example.

Calibration/Adjustment

You can calibrate/adjust the scale by pressing the ⟨→0/T←⟩ key (5).

Calibration weight: 5,000 g; accuracy: + 0.075 g.
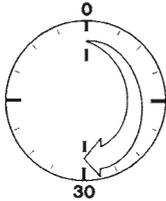
After connection to AC power and before each calibration/adjustment, allow the scale to warm up for approx. 30 min.
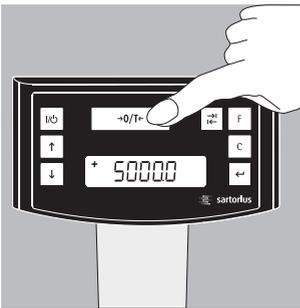
Hold down the ⟨→0/T←⟩ key (5) for 2 sec.
When 5000 is displayed, release the key.
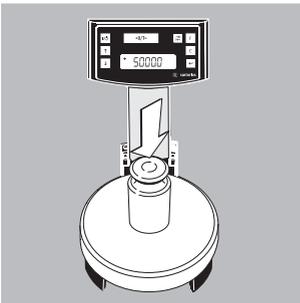
Center the calibration weight on the weighing pan (11).
Calibration/adjustment is performed automatically.
After calibration and adjustment, remove the weight.

Menu Settings

Navigating the SETUP Menu
Example:
Menu Item: Adaptation to ambient conditions

```
┌─────────────────┐
│ SETUP         1 │
└─────────────────┘
        ┆
┌─────────────────┐
│ SCALE         2 │
└─────────────────┘
        ┆
┌─────────────────┐
│ AMBIENT       3 │
└─────────────────┘
        ┆
┌─────────────────┐
│•STABLE        4 │
└─────────────────┘
```
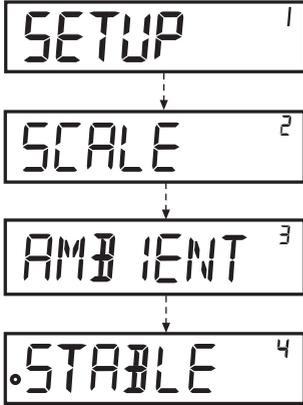
● Hold down the ⏎ key [ENTER] for approx. 2 sec.
  "SETUP" will appear on the display (Level 1).
  Use the ↑↓ keys to select the desired menu item
  in the first level.
● Press the ⏎ key [ENTER] to select the second level
  (Level 2).

● Use the ↑↓ keys to select the desired menu item
  in the second level.

● Press the ⏎ key [ENTER] to select the third level
  (Level 3).
  The menu items in the third level (Level 3) will be
  displayed
  Use the ↑↓ keys to select the desired menu item.

● Press the ⏎ key [ENTER] to select the fourth level
  (Level 4).

● Call up the menu item desired in the fourth level.
  Use the ↑↓ keys to select the desired menu item.
  (We have come to the end of our example.)

● Press the ⏎ key [ENTER]. "o" will appear.
  The new code is stored.

● Press the c key (Clear) several times to exit the
  menu.

Note:
To obtain a detailed list of the menu codes, please
ask your nearest Sartorius office.

Important Menu Settings

● Hold down the ⏎ key [ENTER] for approx. 2 sec. "SETUP" will appear on the display (Level 1).

Level 1

SETUP

Language Settings

Level 1	Level 2	Level 3	Level 4	

LANGUAGE				● ↑ key: select **"***LANGUAGE***"**
				● ⏎ key: press [ENTER]
o	*GERMAN*			● ↑↓ keys: select a language
	ENGLISH			● ⏎ key: [ENTER]: "o" will appear,
	FRENCH			the desired setting is defined.
	ITALIAN			● c key (Clear): press several times to
	etc.			exit the menu.

⇄ – Activating the Toggle Key; Configuring (Basic Setting)

After the toggle key, l, has been activated, you can individually configure it with either 1 or 2 decimal places, as well as with grams or PT./PD.

Level 1	Level 2	Level 3	Level 4	

SETUP				● Press the ⏎ key [ENTER]
	APPLICATION			● ↑↓ keys: select "APPLICATION"
				● ⏎ key: press [ENTER]
		PROGRAM		● ↑↓ keys: select "PROGRAM"
			WIEIGH.	● ⏎ key: [ENTER],
		o	*TOGGLE*	↑↓ keys: select "TOGGLE".
				● Press the ⏎ key [ENTER]; "o" appears:
				the desired setting is defined.
				● Press the c key (Clear) several times to
				exit the menu

Assigning a Function to the ⇄ Toggle Key: 0.0 g / 0.00 g, or g / PT./PD.

Level 1	Level 2	Level 3	Level 4	

SETUP				● Press the ⏎ key: [ENTER]
	APPLICATION			● ↑↓ keys: select "APPLICATION"
		UNIT		● ⏎ key [ENTER]: select the ↓ key
				"UNIT," press ⏎ key [ENTER].
			PT./PD.	● ↑↓ keys: select "GRAMS"
		o	*GRAMS*	● Press the ⏎ key [ENTER]; "o" appears:
				the desired setting is defined.
		DECIMALS		● ↑↓ keys, select "DECIMALS"
			STANDARD	● Press the ⏎ key, select setting
		o	*POLYRANGE*	● Press the ⏎ key [ENTER]; "o" appears
				Press the c key (Clear) to exit the menu

Toggling Decimal Places **(Standard = 1 decimal place**
PolyRange = 2 decimal places)
Toggling Units **(Grams or PT./PD.)**
These settings are active when the scale is switched on.

Level 1	Level 2	Level 3	Level 4	
SETUP				● Press the ↵ key [ENTER]
	SCALE			● Press the ↵ key [ENTER]
		DECIMALS		● ↑↓ keys: select "DECIMALS"
				● Press the ↵ key [ENTER]
			o STANDARD	● ↑↓ keys: select "STANDARD"
			POLYRANGE	● Press the ↵ key [ENTER]; "o" appears: the new code has been set.
		UNIT		
			o GRAMS	● Press the C key (Clear) several times
			PT./PD.	to exit the menu

Activating the "LOCK" Function "🔒"
By activating the "LOCK" function, you can protect the scale from inappropriate use. When the "LOCK" function is activated, the scale shows weight values on the readout only when communication with the PC is active. If data transmission is interrupted, the lock symbol will be displayed. The scale will automatically be locked, preventing further weighing operations. The "LOCK" function is configured in the "EXTRAS" menu.

Level 1	Level 2	Level 3	Level 4	
SETUP				● Press the ↵ key [ENTER]
	EXTRAS			● ↑↓ keys: select "EXTRAS"
				● Press the ↵ key [ENTER]
		LOCK		● ↑↓ keys: select "LOCK"
				● Press the ↵ key [ENTER]
			OFF	● Select "ON" using the ↑↓ keys
			o ON	Confirm with the ↵ key
				● Press the C key (Clear) several times to exit the menu

Entering a Password
In addition to activating the "LOCK" function, the user may also enter a password.
Should the user wish to deactivate the "LOCK" function by pressing the "OFF" key, he must first enter the valid password. The password is comprised of a 6-character numeric code.
Use the ↑↓ keys to call up numbers (0 to 9).
Six dashes (------) will appear in the display. The first dash will "blink" in the display.
Select a number (0 to 9) using the ↑↓ keys, press the ↵ key [ENTER] to save the number.
The second dash will start to "blink." Repeat the aforementioned process. Should you wish to assign a "blank space" to one of the six characters, simply press the ↵ key [ENTER] when the dash begins to blink.

Note:

Keep the numeric code in a safe place.

The scale can only be accessed by entering the correct code.

Level 1	Level 2	Level 3	Level 4	
INPUT				● ↑↓ keys: select "INPUT"
	PASSWORD			● Press the ↵ key [ENTER]
				● Press the ↵ key [ENTER]
		PW.NEW		● ↑↓ keys: select "PW.NEW"
		--------		● Enter the numeric code: press the ↵ key [ENTER].
				● Press the c key (Clear) several times to exit the menu

Changing the Password

Should you wish to change the password, you must first correctly enter the old password under "Password." "PW.OLD" will be displayed. Following the correct input, "PW.NEW" will automatically appear. You can now enter a new password, or confirm each blinking dash by pressing the ↵ key [ENTER]. Blank spaces are then displayed.

Level 1	Level 2	Level 3	Level 4	
INPUT				● ↑↓ keys: select "INPUT"
	PASSWORD			● Press the ↵ key [ENTER]
		PW.OLD		● Press the ↵ key [ENTER]
		--------		● Enter the old password "PW.OLD"
		PW.NEW		● "PW.NEW" will appear when the old password is correctly entered
		--------		● Enter the numeric code: press the ↵ key [ENTER]
				● Press the c key (Clear): reset the menu

You can now deactivate the "LOCK" function.

SETUP					● Press the ↵ key [ENTER]
	EXTRAS				● ↑↓ keys: select "EXTRAS"
					● Press the ↵ key [ENTER]
		LOCK			● ↑↓ keys: select "LOCK"
					● Press the ↵ key [ENTER]
			o	OFF	● ↑↓ keys: select "OFF", confirm with the
				ON	↵ key [ENTER]
					● Press the c key (Clear) several times to exit the menu

Setting "TEXTS" in the Display, "LONG" or "SHORT"
Either short or long display prompts for operator guidance can be shown.

Level 1	Level 2	Level 3	Level 4	
SETUP				● Press the ↵ key [ENTER]
	EXTRAS			● ↑↓ keys: select "EXTRAS"
				● Press the ↵ key [ENTER]
		TEXTS		● ↑↓ keys: select "TEXTS"
				● Press the ↵ key [ENTER]
			LONG	● ↑↓ keys: select "SHORT",
			o SHORT	confirm by pressing the ↵ key.
				● Press the c key (Clear) several times to exit the menu

Resetting the Scale: "RESET"
If necessary, you can reset the scale to factory settings.
Note:
If a password was activated, the correct password must first be entered.

Level 1	Level 2	Level 3	Level 4	
SETUP				● Press the ↵ key [ENTER]
	RESET			● ↑↓ keys: select "RESET"
				● Press the ↵ key [ENTER]
		MENU		● ↑↓ keys: select "MENU".
				● Press the ↵ key [ENTER]
			YES	● Use the ↑↓ keys to select "YES"
			o NO	● Press the ↵ key [ENTER]; "o" will appear: the new code is set
				● Press the c key (Clear) several times to exit the menu

Setting Codes
Under the setting "CODES," the menu items are displayed in code 1.1.1.1.

Level 1	Level 2	Level 3	Level 4	
LANGUAGE				● ↑ key: select "LANGUAGE"
				● Press the ↵ key [ENTER]
		GERMAN		● ↑↓ keys: select "CODES"
		etc.		● Press the ↵ key [ENTER]; "o" will appear: the new code is set
	o CODES			● Press the c key (Clear) several times to exit the menu.

Note:
To obtain a detailed list of the menu codes, please ask your nearest Sartorius office.

Troubleshooting

Problem	Cause	Solution
No segments appear on the weight display	– No AC power available	– Check the AC power supply
Weight display shows "Low"	– The weighing pan is is not in place	– Position the weighing pan
Weight display shows "High"	– The load on the pan exceeds the scale's capacity	– Unload the scale
The weight readout changes constantly	– Unstable ambient conditions – Too much vibration or the scale is exposed to draft	– Set up the scale in another area – Access the menu to select the appropriate code to adapt the scale to the particular weighing environment (refer to "Menu Settings")
The weight readout is obviously wrong	– The paint component does not have a stable weight – The scale was not tared before weighing	– Tare prior to weighing
No weight value is shown and the lock symbol is active 🔒	– Data communication between scale and PC has been interrupted and the "Lock" function is active in the scale	– Access the menu settings to deactive the "Lock" function – Check the connection

Care and Maintenance

Cleaning

⚠ Do not use any aggressive cleaning agents (solvents or similar agents), concentrated acids or pure alcohol.

○ Make sure that no liquid penetrates the scale housing

○ Clean the scale using either a paint brush or a dry, soft and lint-free cloth.

Storage and Shipping Conditions

○ To ensure safe shipment, your scale has been packaged using environmentally friendly materials. You should retain these materials in case you need to package your scale for storage or return shipment.

○ Storage temperature: –20°C to +75°C

○ Permissible moisture level for storage of the packaged scale: 90% max.

○ Read and follow the instructions given in the section entitled "Safety Inspection."

Safety Inspection

Safe operation is no longer ensured when:

– There is visible damage to the power supply

– The equipment no longer functions properly

– The equipment has been stored for a relatively long period under unfavorable conditions

– The equipment has been exposed to rough handling during shipment

● Observe the warning and safety information
In this case, notify your nearest Sartorius Service Center or the International Technical Support Unit based in Goettingen, Germany. Maintenance and repair work may only be performed by service technicians who are authorized by Sartorius and who have access to the required service and maintenance manuals and have attended the relevant service training courses.

⚠ The seals affixed to this equipment indicate that only authorized service technicians are allowed to open the equipment and perform maintenance work so that safe and trouble-free operation of the equipment is ensured and the warranty remains in effect.

Recycling

The packaging is made from environmentally-friendly materials that can be used as secondary raw materials. If you no longer need this packaging, bring it to your local recycling and waste disposal facility according to the regulations applicable in your country. In Germany, you can dispose of this material using the VfW dual system (contract number D-59101-2009-1129). The equipment, including accessories and batteries, must not be disposed of in general household waste, and must be recycled similar to electrical and electronic devices. For further information about disposal and recycling options, please contact your local service staff. The partners listed on the following website can be used for disposals within the EU:

1) Go to http://www.sartorius.com.

2) Select the summary under "Service."

3) Then select "Information on Disposal."

4) Addresses for local Sartorius disposal contacts can be found in the PDF files given on this webpage.

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

Insert heading:
"Service Address for Disposal"
Please refer to our website (www.sartorius.com) or contact the Sartorius Service Department for more detailed information regarding repair service addresses or the disposal of your device.

Specifications

Model		PMA7501–X │ –X00V1 │ –X00W
Weighing range	g	999.95/7500
Readability	g	0.05/0.1
Tare range (subtractive)	g	-999.95/-7500
Max. linearity	g	$\leq \pm 0.2$
Stability range	digit	0.25 to 4
Moisture-proof rating	F	Non-condensing
Allowable ambient operating temperature range	°C	0 to +40
Weighing pan	$\varnothing$ mm	233
Scale housing (W × D × H)	mm	233 × 329 × 391
Net weight, approx.	kg	3.3
Calibration weight	kg	5, class F2 or better
Power consumption	VA	Average: 8; maximum: 16
Interface		RS-232C
– Format		7-bit ASCII, 1 start bit,1 or 2 stop bits
– Parity		Even, odd or no parity
– Transmission rates		1200 to 38,400 bit/s
– Handshake mode		Software, hardware or none

Interface Port
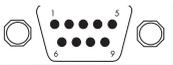
Pin Assignment
9-contact interface port
Pin 2: (RXD) Receive Data
Pin 3: (TXD) Transmit Data
       Pin 4: (DTR) Data Terminal Ready
Pin 5: (GND) Ground
Pin 6: BPI bridge
Pin 8: (CTS) Clear to Send

Note:
Only for connection to a certified intrinsically safe circuit
(see Verification of Intrinsic Safety).

Accessories

	Order no.:
In-use dust cover	**YDC01PMA**

EX power supplies	
EC	**609308–011**
UK	**609308–211**
USA/CDN	**609308–61**

Sartorius Lab Instruments GmbH & Co. KG
Weender Landstr. 94 – 108, Goettingen, Germany
CE 1725

PMA7501☐-X☐

Ex II 2G
EEx ib IIB T4
KEMA 05ATEX1247 X

0°C ≤ Ta ≤ +40°C

USA: IS CL I, Div 1, GP C,D T4
CL I, Zone 1, AEx ib IIB T4
Canada: Ex ia IS CL I, Div 1, GP C,D T4
Zone 1, Ex ib IIB T4
FM APPROVED
For installation and maintenance see control drawing
35958-001-07 in the enclosed information.

1000006131

CE

EU-Konformitätserklärung
EU Declaration of Conformity

sartorius

Hersteller	**Sartorius Lab Instruments GmbH & Co. KG**
Manufacturer	**37070 Goettingen, Germany**

erklärt in alleiniger Verantwortung, dass das Betriebsmittel
declares under sole responsibility that the equipment

Geräteart	**Farbmischwaage / Ex-Link-Box**
Device type	*Paint mixing scale / Ex-link-box*

Modell	**PMA7501-X, PMA7501-XE, PMA7501-X00G, PMA7501-X00GL, PMA7501-X00V1,**
Model	**PMA7501-X00V3, PMA7501-X00W, PMA7501H-X / YC011-Z**

in der von uns in Verkehr gebrachten Ausführung allen einschlägigen Bestimmungen der folgenden
Europäischen Richtlinien - einschließlich deren zum Zeitpunkt der Erklärung geltenden Änderungen -
entspricht und die anwendbaren Anforderungen folgender harmonisierter Europäischer Normen erfüllt:

in the form as delivered fulfils all the relevant provisions of the following European Directives –
including any amendments valid at the time this declaration was signed - and meets the applicable
requirements of the harmonized European Standards listed below:

2014/30/EU
Elektromagnetische Verträglichkeit
Electromagnetic compatibility
EN 61326-1:2013

2011/65/EU
Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten (RoHS)
Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)
EN 50581:2012

2014/34/EU
Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen
Equipment and protective systems intended for use in potentially explosive atmospheres
EN 60079-0:2012, EN 60079-11:2012, EN 61010-1:2010

Kennzeichnung	II 2 G	EEx ib IIB T4	für/for PMA7501-X...
Marking	II (2)G	[EEx ib] IIB	für/for YC011-Z

EG-Baumusterprüfbescheinigung Nummer   KEMA 05ATEX1247X
EC-Type Examination Certificate number

Anerkennung der Qualitätssicherung (Produktion)   FM13ATEXQ0092
Quality Assurance Notification (production)

Jahreszahl der CE-Kennzeichenvergabe / *Year of the CE mark assignment:* **16**

Sartorius Lab Instruments GmbH & Co. KG
Goettingen, 2016-04-20

i. V. P.B꜀ ___ /.lc   *i. V.* ꟼ.V꜀

Dr. Reinhard Baumfalk   Dr. Dieter Klausgrete
Vice President R&D   Head of International Certification Management

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten EU-Richtlinien, ist jedoch keine Zusicherung
von Eigenschaften. Bei einer mit uns nicht abgestimmten Änderung des Produktes verliert diese Erklärung ihre
Gültigkeit. Die Sicherheitshinweise der zugehörigen Produktdokumentation sind zu beachten.

This declaration certifies conformity with the above mentioned EU Directives, but does not guarantee product
attributes. Unauthorised product modifications make this declaration invalid. The safety information in the
associated product documentation must be observed.

Doc: 2014119-01	SLI14CE009-01.de,en	1 / 1	PMF: 2014118	OP-113_fo1_2015.10.12

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CE

EU-Konformitätserklärung
EU Declaration of Conformity

sartorius

Hersteller	**Sartorius Lab Instruments GmbH & Co. KG**
Manufacturer	**37070 Goettingen, Germany**

erklärt in alleiniger Verantwortung, dass das Betriebsmittel
declares under sole responsibility that the equipment

Geräteart	**Netzgerät**
Device type	*Power Supply*
Modell	**609308-011, 609308-211**
Model	

in der von uns in Verkehr gebrachten Ausführung allen einschlägigen Bestimmungen der folgenden Europäischen Richtlinien - einschließlich deren zum Zeitpunkt der Erklärung geltenden Änderungen - entspricht und die anwendbaren Anforderungen folgender harmonisierter Europäischer Normen erfüllt:

in the form as delivered fulfils all the relevant provisions of the following European Directives – including any amendments valid at the time this declaration was signed - and meets the applicable requirements of the harmonized European Standards listed below:

2014/30/EU	Elektromagnetische Verträglichkeit *Electromagnetic compatibility* EN 61326-1:2013
2011/65/EU	Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten (RoHS) *Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)* EN 50581:2012
2014/34/EU	Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen *Equipment and protective systems intended for use in potentially explosive atmospheres* EN 60079-0:2012, EN 60079-11:2012, EN 61010-1:2010

Kennzeichnung   II (2) G [EEx ib] IIC
Marking

EG-Baumusterprüfbescheinigung Nummer   KEMA 98ATEX2752X
EC-Type Examination Certificate number

Anerkennung der Qualitätssicherung (Produktion)   FM13ATEXQ0092
Quality Assurance Notification (production)

Jahreszahl der CE-Kennzeichenvergabe / *Year of the CE mark assignment:* **16**

Sartorius Lab Instruments GmbH & Co. KG
Goettingen, 2016-04-20

i.V. P. O /.16   *i.V.* /k.J

Dr. Reinhard Baumfalk   Dr. Dieter Klausgrete
Vice President R&D   Head of International Certification Management

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten EU-Richtlinien, ist jedoch keine Zusicherung von Eigenschaften. Bei einer mit uns nicht abgestimmten Änderung des Produktes verliert diese Erklärung ihre Gültigkeit. Die Sicherheitshinweise der zugehörigen Produktdokumentation sind zu beachten.

This declaration certifies conformity with the above mentioned EU Directives, but does not guarantee product attributes. Unauthorised product modifications make this declaration invalid. The safety information in the associated product documentation must be observed.

Doc: 2014172-01	SLI14CE017-01.de,en	1 / 1	PMF: 2014171	OP-113_fo1_2015.10.12

(1) # EC-TYPE EXAMINATION CERTIFICATE

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC

(3) EC-Type Examination Certificate Number: **KEMA 05ATEX1247 X**

(4) Equipment: **PMA7501.-X...... series Weighing Unit and type YCO11-Z.. Ex-Link-Box**

(5) Manufacturer: **Sartorius AG**

(6) Address: **Weender Landstraße 94-108, 37075 Göttingen, Germany**

(7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the directive.

The examination and test results are recorded in confidential test report no. 2085189.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014 : 1997 + A1, A2   EN 50020 : 2002

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

Ex **II 2 G EEx ib IIB T4   (for PMA7501.-X...... series Weighing Unit)**

II (2) G [EEx ib] IIB (for type YCO11-Z.. Ex-Link-Box)

Arnhem, 6 July 2006
KEMA Quality B.V.

C.G. van Es
Certification Manager

Page 1/4

KEMA

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 05ATEX1247 X**

(15) **Description**

The PMA7501.-X...... series Weighing Units, with or without a display, provide digital data output and are intended to be connected to the associated Power Supply or type YCO11-Z.. Ex-Link-Box.

The range of Weighing Units includes the following models
- PMA.Quality, Type PMA7501.-X...... (with display)
- PMA.Quality, Type PMA7501.-X..W... (without display)
- PMA.World, Type PMA7501.-X..G... (with display)
- PMA.Net, Type PMA7501.-X..GL.. (with display)

Electrical data

Weighing Unit model PMA.Quality, Type PMA7501.-X...... and Type PMA7501.-X..W...

Supply circuit .... in type of protection intrinsic safety EEx ib IIB,
(ST6)   only for connection to the applicable intrinsically safe
                                             circuits of the certified Power Supply Type 609308-..1.
                                             Maximum length of interconnection cable is 100 m.

Foot switch circuit .... in type of protection intrinsic safety EEx ib IIB,
(BU1/6,9)   only for connection to a passive switch.
                                             Maximum length of interconnection cable is 25 m.

RS232 circuits .... in type of protection intrinsic safety EEx ib IIB,
(BU1/1,2,3,4,5,7,8)   only for connection to the applicable intrinsically safe
                                             circuits of the certified EcoMix Control Panel Type EM01-X.
                                             Maximum length of interconnection cable is 100 m.

Or:

in type of protection intrinsic safety EEx ib IIB,
with the following maximum values:

U_o	=	12	V (*)	U_i	=	12,6	V (*)
U_o	=	24	V (**)	U_i	=	25,2	V (**)
I_o	=	125	mA	I_i	=	330	mA
P_o	=	373	mW	P_i	=	any	
C_o	=	9	µF (*)	C_i	=	1	nF
C_o	=	0,93	µF (**)	L_i	=	0	mH
L_o	=	8	mH	(*) = to earth			
				(**) = between lines			

KEMA

Weighing Unit model PMA.World, Type PMA7501.-X..G... and model PMA.Net, Type PMA7501.-X..GL..

Supply and Data circuits .... in type of protection intrinsic safety EEx ib IIB,
(ST2) only for connection to the applicable intrinsically safe circuits of the certified Type YCO11-Z.. Ex-Link-Box. Maximum length of interconnection cable is 100 m.

Or:

Supply circuit .... in type of protection intrinsic safety EEx ib IIB,
(ST2) only for connection to the applicable intrinsically safe circuits of the certified Power Supply Type YPS05-Z.P. Maximum length of interconnection cable is 100 m.

Foot switch circuit .... in type of protection intrinsic safety EEx ib IIB,
(BU1/6,9) only for connection to a passive switch. Maximum length of interconnection cable is 25 m.

RS232 circuits .... in type of protection intrinsic safety EEx ib IIB,
(BU1/1,2,3,4,5,7,8) only for connection to the applicable intrinsically safe circuits of the certified EcoMix Control Panel Type EM01-X. Maximum length of interconnection cable is 100 m.

Or:

in type of protection intrinsic safety EEx ib IIB,
with the following maximum values:

U_o	=	12	V (*)	U_i	=	12,6 V (*)
U_o	=	24	V (**)	U_i	=	25,2 V (**)
I_o	=	125	mA	I_i	=	330 mA
P_o	=	373	mW	P_i	=	any
C_o	=	9	μF (*)	C_i	=	1 nF
C_o	=	0,93	μF (**)	L_i	=	0 mH
L_o	=	8	mH	(*) = to earth		
				(**) = between lines		

Type YCO11-Z.. Ex-Link-Box

Supply (ST1)..................................... 100 ... 240 Vac, 15 VA, U_m = 250 Vac
Data circuits (BU2) .... U_m = 250 Vac

Supply and Data circuits .... in type of protection intrinsic safety EEx ib IIB,
(ST2) only for connection to the applicable circuits of Weighing Unit Type PMA7501.-X..G... or Type PMA7501.-X..GL... . Maximum length of interconnection cable is 100 m.

From the safety point of view the intrinsically safe circuits of all the above mentioned equipment shall be considered to be connected to earth.

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KEMA

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 05ATEX1247 X**

Installation instructions

For the interconnecting cable between the Supply and Data circuits of Type YCO11-Z.. Ex-Link-Box and the PMA7501.-X...... series Weighing Units, the cable delivered with the equipment shall be used or when of a different type the cable shall be installed in such a way that it is avoided that the supply and data output circuits can become connected with each other.

Unused connections shall be protected as appropriate for the environment. Without additional protection the degree of protection is IP20.

The PMA7501.-X...... series Weighing Unit and Type YCO11-Z.. Ex-Link-Box shall be connected to the potential equalization network, using the earthing terminals.

(16) **Test Report**

KEMA No. 2085189.

(17) **Special conditions for safe use**

Ambient temperature range 0 °C ... +40 °C.

(18) **Essential Health and Safety Requirements**

Assured by compliance with the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 2085189.

Hazardous (Classified) Location
**Class I, Division 1, Groups A,B,C,D** (for EB……-IX series)
Class I, Division 1, Groups C,D (for PMA35.-X series)

Hazardous (Classified) Location
USA: Class I, II, III, Division 1,
Groups A,B,C,D,E,F,G

EB......-IX*)
PMA35.-X…*)
(weighing module)

Vmax = 12.6V
Imax = 85 mA
Pmax = 0.27 W
Ci = 10 nF
Li = 0

10)
4)
Display unit

8)
Alternative

5) 9)

YPS03-XKR*)
DC
AC
2)
AC Supply

Non-Hazardous Location

609308-61*)
DC
AC
3)
AC Supply

YPE05-X*)   YTE02-X*)

10)

YPE05-X*)   YTE02-X*)

10)

6)

Hazardous or Non-Hazardous Location

Any Approved/Certified Universal Apparatus with Entity Concept parameters (see note 5). E.g. YDI05-Z...*) or YELU01-Z...*)
4)
15)
Data

Hazardous (Classified) Location
Class I, Division 1, Groups C,D
Class I, Zone 1, Groups IIA, IIB

Non-Hazardous Location

14)

7) PMA7501.-X..*)
PMA7501.-X..W*)
8)
4)

609308-61*)
DC
AC
3)
AC Supply

Any Approved / Certified Universal Apparatus with Entity Concept parameters (see note 5) e.g. TM01-X*) EM02-X*)
4)

13)

OR

7) PMA7501.-X..G.*)
8)
4)

Ex-Link-Box
YCO11-Z*)
4)
2) AC Supply
3) Data

Hazardous or Non-Hazardous Location

Any Approved/Certified Universal Apparatus with Entity Concept parameters (see note 5). E.g. YDI05-Z...*) or YELU01-Z...*)
4)
16)
Data

*: SARTORIUS Product

	12.12.2012	sartorius	Control drawing	Page **1** of **2**
⟨Ex⟩	Dr. Klausgrete		35958-001-07	Revision 02

		Uo	Io	Po	Co	Lo	
609308-61 / YPS03-XKR		8.7 V	185 mA	1.61 W	10 µF *	5 µH *	GP C,D and IIB
					8.5µF *	200µH *	GP C,D and IIB
					4.1 µF *	5 µH *	GP A,B and IIC
YCO11-Z	DC supply	12.6 V	230 mA	2.9 W	575 nF *	420 µH *	
	RS422 (combined)	6.8 V	100 mA #	127 mW	200 µF	5 mH	

PMA7501.-X../ PMA7501.-X..W

		Ui	Ii	Pi	Ci	Li
	DC Supply	8.7 V	185 mA	1.61 W	5.6 µF	0
	RS232 (combined)	12.6 V	330 mA #	any	0	0
		Uo	Io	Po	Co	Lo
	RS232 (combined)	12.0 V	125 mA	373 mW	9 µF	8 mH

PMA7501.-X..G.:

		Ui	Ii	Pi	Ci	Li
	DC Supply	12.6 V	230 mA	2.9 W	200 nF	0
	RS232 (combined)	12.6 V	330 mA #	any	0	0
	RS422 (combined)	6.8 V	100 mA #	127 mW	0	0
		Uo	Io	Po	Co	Lo
	RS232 (combined)	12.0 V	125 mA	373 mW	9 µF	8 mH

* : including 50m (164 ft) output cable to the scale   #: linear

1) <u>USA</u>: The installation must be in accordance with the National Electrical Code ®, NFPA 70, Article 504 or 505 and ANSI / ISA-RP 12.6. <u>Canada</u>: The installation must be in accordance with the Canadian Electrical Code ®, Part 1, Section 18.

2) The Apparatus must not be connected to any device that uses or generates in excess of 250Vrms or DC.

3) The Apparatus must not be connected to any device that uses or generates in excess of 132Vrms or DC.

4) <u>USA</u>: The Apparatus must be connected to a suitable ground electrode per National Electrical Code ®, NFPA 70, Article 504 or 505. <u>Canada</u>: The Apparatus must be connected to a suitable ground electrode per Canadian Electrical Code ®, Part 1. <u>USA / Canada</u>: The resistance of the ground pad must be less than 1 ohm.

5) The Entity Concept allows interconnection of intrinsically safe apparatus with associated apparatus not specifically examined in combination as a system when the approved values of Voc, Isc and Pmax resp. Uo, Io, Po of the associated apparatus are less than or equal to Vmax, Imax and Pmax resp. Ui, Ii, Pi of the intrinsically safe apparatus and the approved values of Ca and La resp. Co and Lo of the associated apparatus are greater than Ci and Li of the intrinsically safe apparatus plus all cable parameters. See above.

6) Optionally, the cable of any Approved / Certified Universal Apparatus with Entity Concept parameters (see note 5) can be connected directly to the data output of Model EB......-IX / PMA35.-X; this cable must be protected against damage.

7) Data output port (9pin female connector) connected by any cable to any approved/certified intrinsically safe circuit with entity parameters (see above).

8) This non interchangeable cable needs <u>not</u> to be protected against damage. Max length: 50m (164 ft).

9) Maximum length of cable: 935 ft.

10) The cable between Weighing Module and Display Unit and of the T-Connector Type YTE02-X must be protected against damage.

11) Ambient temperature range: If not specified on the product: **0°C .... +40°C** (+32°F .... + 104°F)

12) **WARNING:**   SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.

     AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SÉCURITÉ INTRINSÈQUE.

13) Option: Any junction box with passive internal wiring, only.

14) Option: Any (foot)switch with passive internal wiring, only.

15) See control drawing referred to on the label of this apparatus.

16) **WARNING: USE WET OR DAMP CLOTH TO CLEAN TO AVOID ELECTRIC STATIC DISCHARGE.**

⟨Ex⟩	12.12.2012	sartorius	**Control drawing**	Page **2** of **2**
	Dr. Klausgrete		35958-001-07	Revision **02**

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(100 - 240 Vac)

(230 Vac)

YCO11-Z
Ex-link box

II (2)G [EEx ib] IIB

YPS05-Z.P
Power supply

II (2)G [EEx ib] IIB / IIC

Equipotential
bonding
conductor

Alternative
connection

609308-..1
Power supply

II (2)G [EEx ib] IIC

(230 Vac)

Vo	12.6 V
Io	230 mA
Po	2.9 W
Co	575 nF
Lo	420 μH

Vo	8.7 V
Io	185 mA
Po	1.61 W
Co	10 μF (for IIB)
Lo	5 μH (for IIB)

Non-hazardous area

Hazardous area
Zone 1
Gas: IIB T4

Sartorius cable; permanently
mounted on the power supply/
Ex-link box (max. length: 100m)

Sartorius cable; permanently
mounted on the power supply
(max. length: 100m)

Vi	12.6 V
Ii	230 mA
Pi	2.9 W
Ci	365 nF
Li	0

Vi	8.7 V
Ii	185 mA
Pi	1.61 W
Ci	5.6 μF
Li	0

Equipotential
bonding
conductor

9-pin male
connector

PMA7501.-X..G.

II 2 G   EEx ib IIB T4

3-pin male
connector

PMA7501.-X..
PMA7501.-X..W

II 2 G   EEx ib IIB T4

YDI05-Z.. [1]

Vo	12.4 V [2]	Vi	12.6 V [2]
	24.8 V [3]		25.2 V [3]
Io	260 mA *	Ii	any
Po	800 mW *	Pi	any
Co	1.24 μF [2]	Ci	0
	112 nF [3]		
Lo	400 μH	Li	0
Lo/Ro	44 μH/ohm [2]		
	22 μH/ohm [3]		

Z966 [1] in **YDI02-Z..**

Vo	12 V [2]	
	24 V [3]	
Io	328 mA *	
Po	0.96 W *	
Co	1.41 μF *	
	125 nF [3]	
Lo	300 μH	
Lo/Ro	36 μH/ohm [2]	
	36 μH/ohm [3]	

YCO01-Y [1]

Vo	11.8 V [2]	Vi	12.6 V [2]
	23.6V [3]		25.2 V [3]
Io	123 mA *	Ii	131mA
Po	361 mW *	Pi	any
Co	1.5 μF [2]	Ci	0.5 nF
	129nF [3]		
Lo	2 mH	Li	0.8 μH
Lo/Ro	98 μH/ohm [2]		
	98 μH/ohm [3]		

YDI05-Z.. Interface converter

II (2) GD [EEx ib] IIC   or

Z966 Zener barrier [4]

in YDI02-Z..: II (2) G [EEx ib] IIC   or

YCO01-Y Interface converter [6]

II (2) GD [EEx ib] IIC or

II 3 (2)GD EEx nR[ib]IIC T4

6-wire **standard cable** wire diameter up to 0.5≤ (minimum 34 ohm/km) with max. 250 nF/km and max. 750μH/km, yielding max. 22 μH/ohm.

Cable length (flexible installation) is restricted, however, to **under 25 m**in accordance with the RS-232 specifications.

Non-hazardous area

Hazardous area
Zone 1
Gas: IIB T4

RS-232 Data output port [1]

Vi	12.6 V [2]	Vo	12.0 V [2]
	25.2 V [3]		24.0 V [3]
Ii	330 mA*	Io	125 mA
Pi	any	Po	373 mW
Ci	1 nF	Co	9 μF [2]
			0.93 μF [3]
Li	0	Lo	8 mH

Foot actuated switch[5]

T-connector[5]

Remarks:
1: Combined circuits
2: Measured against ground
3: Between signal lines
4: BAS01ATEX7005; II (1) GD [EEx ia] IIC; parameter(s) converted
5: Option; passive wiring only
6: Approved for Zones 2 and 22 hazardous areas with gas: IIC / IIB T4 and dust: T80°C; only when USB port is sealed and restricted breathing is maintained.
*: Ohmically limited

9-contact female connector

PMA7501.-X....
PMA7501.-X..W

II 2 G   EEx ib IIB T4

YCO11-Z
EX-link box

II (2)G [EEx ib] IIB

Ethernet or RS-232 data interface
for connecting to equipment using 250V power supply, maximum

Sartorius cable; permanently mounted on the Ex-link box (max. length: 100m)

Non-hazardous area

Hazardous area
Zone 1
Gas: IIB T4

TM01-X

II 2 G   EEx ib IIB T4

9-contact male connector

RS-232 data output port[1]

Vi	12.6 V	Vo	12.0 V
Ii	132 mA*	Io	128 mA
Pi	412 mW	Po	376 mW
Ci	2 nF	Co	9 μF
Li	0	Lo	50 mH

Differential data transmission is **only** possible with the PMA 7500.X.**GL** (in power supply cable)

RS-232 data output port[1]

Vi	12.6 V [2]	Vo	12.0 V [2]
	25.2 V [3]		24.0 V [3]
Ii	330 mA*	Io	125 mA
Pi	any	Po	373 mW
Ci	1 nF	Co	9 μF [2]
			0.93 μF [3]
Li	0	Lo	8 mH

9-contact male connector [4]

9-contact female connector

PMA7501.-X....

II 2 G   EEx ib IIB T4

Remarks:
1: Combined circuits
2: Measured against ground
3: Between signal lines
4: Only with the PMA7500.-X.**G**.
*: Ohmically limited

	Date	Name	Material **PMA7501.-X.... / Differential Data Transfer**		Maßstab / Scale
(Ex)					**---**
Erstellt Written by	10.01.06	Klausgrete	**sartorius**	Bennenung / Title **Verification of Intrinsic Safety**	
Geprüft Reviewed by	10.01.06	Klausgrete			Blatt Sheet **3**
Freigabe Released by	10.01.06	Klausgrete	Ausgabe / Revision **00**	Änderung / Alteration **---**	Zeichnungs-Nr. / Drawing number **35958-741-60-A4**	von of **3**

CERTIFICATE OF COMPLIANCE

HAZARDOUS LOCATION ELECTRICAL EQUIPMENT
PER CANADIAN REQUIREMENTS

This certificate is issued for the following equipment:

PMA7501.-X.... Scales and Weighing Platforms.
IS / I / 1 / CD / T4 - 35958-001-07; Entity
I / 1 / Ex ib IIB / T4 - 35958-001-07; Entity
Maximum Entity Parameters: See control drawing 35958-001-07

YCO11-ZKR. Ex-Link-Box.
AIS / I 1 / CD – 35958-001-07; Entity
AIS / I / 1 / [Ex ib] IIB – 35958-001-07; Entity
Maximum Entity Parameters: See control drawing 35958-001-07

Equipment Ratings:

Intrinsically safe circuits or connections for Class I, Division 1, Groups C, D T4, Class I, Zone 1,
Ex ib IIB T4 per control drawing 35958-001-07; hazardous locations.

FM Approved for:

Sartorius Lab Instruments GmbH & Co. KG
Goettingen, Germany

To verify the availability of the Approved product, please refer to www.approvalguide.com

FM Approvals

Member of the FM Global Group

This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

CAN/CSA-C22.2 No. 157-92	2006
CAN/CSA-C22.2 No. 61010-1	2009
CAN/CSA-C22.2 No. E60079-0	2007
CAN/CSA-C22.2 No. E60079-11	2002

Original Project ID: 3027168   Approval Granted: September 14, 2006

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
3042370	July 10, 2012		
3050637	January 16, 2014		

FM Approvals LLC

J.E. Marquedant

J/E. Marquedant
Group Manager, Electrical

16 January 2014
Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

FM Approvals HLC 6/07   3027168C
Page 2 of 2

The information and figures contained in these
instructions correspond to the version date
specified below.
Sartorius reserves the right to make changes
to the technology, features, specifications and
design of the equipment without notice.
Masculine or feminine forms are used to
facilitate legibility in these instructions and
always simultaneously denote the other
gender as well.

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