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Mettler Analytical Balance AE240 Dual Range Balance

SPECIFICATIONS AE 240 Dual Range Balance

| | 40 Gram Range | 200 Gram Range |
|---|-------------------------------|--------------------|
| Readability | 0.01 mg | 0.1 mg |
| Weighing range | 0...41 g | 0...205 g |
| Tare range (subtractive) | 0...41 g | 0...205 g |
| Reproducibility | 0.02 mg | 0.1 mg |
| Linearity | ± 0.03 mg | ± 0.02 mg |
| Stabilization time | 8 sec | 5 sec |
| Integration time | 3/6/12 sec | 1.5/3/6 sec |
| Display sequence- Mettler Delta Display off | .4 sec | same |
| Display sequence- Mettler Delta Display on | 0.2/0.4 sec | same |
| Stability detector | 1/2/off | same |
| Sensitivity drift (10...30 °C) | ± 2 x 10 ⁻⁵ / °C | same |
| Calibration weight (built-in), adjusted to an apparent mass of 8.0 g/cm ³ in an air density of 1200 mg/l | 100 g adjusted to ± 0.1 mg | same |
| Dimensions | Weighing pan | 80 mm dia. |
| | Open space above weighing pan | 215 mm |
| | Balance housing (WxDxH) | 205 x 410 x 290 mm |
| | Net Weight | 10.3 kg |

| | | |
|--------------|---------------------|-------------|
| Power supply | Voltage, adjustable | 115 V/220 V |
|--------------|---------------------|-------------|

| | | |
|--|--------------------------|-------------------------|
| | Admissible voltage range | 92...132 V, 184...265 V |
| | Frequency | 50...60 Hz |
| | Power consumption | 10 VA |

Admissible ambient conditions during operation:

| | |
|-------------------|------------|
| Temperature | 10...40°C |
| Relative Humidity | 25.... 85% |

| What's wrong if? | Then.... |
|--|--|
| The entire display does not light up? | <ul style="list-style-type: none"> - no power reaching instrument - the fuse is defective |
| The OFF display appears? | - a temporary power failure has taken place (press control bar). |
| Only the upper horizontal segments light up in the display? | <ul style="list-style-type: none"> - the weighing range has been exceeded - the calibration weight has been activated. - There was weight on the pan when the instrument was switched on. |
| The weighing result is unstable? | <ul style="list-style-type: none"> - too many drafts - weighing table is unstable - the integration time setting is too low - the object being weighed is not at room temp. |
| The weighing result is obviously incorrect? | The balance must be calibrated or has been calibrated at the wrong external weight. |
| Only a portion of the display lights up? | A temporary malfunction has occurred (pull out power cable and plug back in) |
| The middle horizontal segments in the display are blinking (more than 30 sec)? | - the weighing table or the load is too unsteady (close sliding glass doors, set a |

| | |
|---|--|
| | longer integration time and/ or change the stability detection setting). |
| CAL Err appears in the display? | The weighing pan was not unloaded before calibration weight was used. Return to weighing mode by pressing and holding control bar. |
| No CAL appears in the display? | A temporary malfunction has occurred (recalibrate balance) |
| A zero display does not appear after pressing tare? | The weighing table or the load is too unsteady (close sliding glass doors, set a longer integration time and/or change the stability detection setting). |

Preliminary Steps

Checking the operating voltage:

The operating voltage setting must agree with your local power-line voltage; please check this setting and if needed, change it.

Location:

- A stable location; as free from vibration as possible.
- Make sure there are no large temperature fluctuations
- Avoid direct sunlight and drafts.
- Connect the power cable at the work station.

Installing the weighing pan and the windshield ring; leveling the balance

- Place weighing pan on balance; the conical peg centers the pan in the opening in the base of the weighing chamber
- The two leveling screws should be adjusted so that the bubble is in the middle of the circle.

Whenever the location of the balance is changed, the balance should be retrieved.

Operation

Short-form operations instructions

Short-form operating instructions can be found on a card that swings out from beneath the balance housing.

Switching the display on/off

- briefly press the single control bar; all display segments light up for several seconds;
- Afterwards, the display automatically sets itself to zero.

- Lightly lift the control bar; the display is switched off

Weighing range selection

- Press control bar until – rng- appears (rng-range)
- Releasing the control bar and pressing it again briefly, permits the alternate between the 40 g and the 200 g ranges

After the desired range has been selected wait for:

Display ----, followed by zero. Balance is now in weighing mode.

Calibration:

Make absolutely sure:

The balance must be left connected to the power supply for at least 60 minutes before “calibrating”. For calibration it is of no consequence whichever weighing range has been selected. Calibration is being performed for both weighing ranges simultaneously.

- Press and hold the single control bar until – CAL- appears in the display, then release control bar. The display changes to CAL ---- then to CAL 100 (blinks).
- Move calibration lever all the way to the rear; the display changes to CAL ---, followed by 100,000, then to CAL 0 (blinks).
- Move calibration lever all the way back towards the front of the balance: the display changes to ----, followed by zero.

Note: After selecting the weighing range, calibration, integration time or stability check can be selected by extended pressing of the control bar.

Measuring cycle/ measuring accuracy

By selecting a particular integration cycle, as well as a particular stability detection step, the balance can be configured according to your weighing location and needs

Integration time:

Step 1: Used for very stable, vibration-free weighing table (short measuring cycle).

Step 2: Normal setting.

Step 3: Used for unfavorable ambient conditions (long measuring cycle).

- Press the control bar and hold it until –int- appears in the display, then release the control bar.
- Immediately press the control bar briefly; the display will change to the next step.
- Stop at the step you wish to use and wait for the display to return to the weighing mode (zero)

Stability detector:

Step 1: Great sensitivity (long pause before data are released).

Step 2: Less sensitivity (short pause before data are released).

Normal setting.

Off The stability detector is switched off

Please note: that when this is the case, DeltaDisplay is also switched off (described in

Paragraph entitled, “weighing-in”.)

- Press the control bar and hold until –ASd- appears in the display, then release control bar.
- Immediately press control bar and hold until –Asd- appears in the display changes to the next step.
- Stop off the step you wish to use and wait for the display returns to the weighing mode (zero).

Note: After selecting the integration time, you can go directly to the selection of the stability detector setting by holding the control bar down.

TARING:

- Open the sliding glass door.
- Place a tare container on the weighing pan.
- Close the sliding glass door.
- Press the control bar briefly; the display changes to zero

Note: It is possible to carry out external taring by using the handkey or foot pedal from the “accessories, optional” (connection sockets on the rear of balance).

The weight of the container is now tared out. To weigh-in, the balance weighing range minus the weight of the tare container – is now available.

WEIGHING- IN (ASD 1 or 2)

- Open the sliding glass door.
- Fill in substance up to the desired target weight (to read the weight accurately, the door must be closed)

If different components are to be weighed, one after the other, into the same container. It is possible to tare after each weighing and start the next weighing from zero. This can be done until the tare container and all the components together reach the end of the weighing range:

The DeltaDisplay switches on automatically when weighing in substances quickly; the last two digits are blanked out and the display change sequence speeds up. This allows the increase in weight to be followed better. When weighing in slowly towards the target weight, the two digits switch back on.

The display change sequence remains rapid. Only when weight changes are very small does the balance switch back to the normal display change with the full number of decimal places.

Stability detector:

When stability is achieved (determined by the step selected for the stability detector), the

green dot in the display goes out.

The result is then stable.

Note: When the green dot lights up in the display, the data interface is blocked; when the green dot goes out (stability), the data interface is unblocked.

GD HANGER (for weighing below the balance)

- open all sliding glass doors
- remove the weighing pan.
- Place the balance on its back
- Loosen the screw on the bottom of the balance
- Swing the cover to one side
- Relighten the screw
-

A hook is visible in the opening; the object or substance can be weighed by attaching a hanger from this hook.

- Place the balance back on its feet, place the weighing pan back on and level the balance
- With the hanger attached to the hook, press tare.

Note: The weighing pan does not have to be placed back on if the hanger is at least as heavy as the pan. The hanger is not available from Mettler.

CARE AND MAINTENANCE

Cleaning:

A cloth with some soapy water is sufficient to clean the weighing pan and housing. Do not use any strong solvents. To remove residues from the weighing chamber, use the small artist's brush that is included in the balance standard equipment (do not blow air through chamber).

Replacing the Microfuse:

- Disconnect the power cable
- Turn out the fuse holder (in the power-line connection socket) with a screw driver.
- Replace the fuse (spore fuse in the fuse holder).
- Place the fuse holder back on.
- Plug the power-line cable back in.

Accessories

Optional Equipment

| | |
|--------------------|-----------|
| Optional Equipment | Order No. |
|--------------------|-----------|

| | |
|--|-------|
| -Windshield ring, can be stacked: 1 unit | 38594 |
| Tweezers, 210 mm long | 70209 |
| Density determination kit | 33340 |
| Foot pedal | 46278 |
| Handkey | 42500 |
| Microfuses, 160 mA slow-blowing | 55144 |
| Data Interface | |
| 011 Option- CL/RS232C | 38750 |
| 012 Option- CL/RS232C | 38751 |
| 013 Option- 1EEE488 | 38752 |
| 040 Data Output | 38795 |

| Standard equipment | Order No. |
|--------------------|-----------|
| Power-line cable | |
| neutral | 87576 |
| Switzerland | 87920 |
| Germany | 87925 |
| USA | 88668 |

| | |
|-------------------------|-------|
| Weighing pan, 80 mm dia | 38590 |
| Centering disk | 38609 |
| Hair-bristle brush | 70114 |
| Windshield ring | 38689 |

Operating Instructions

METTLER Analytical balance AE240 Dual Range Balance

METTLER TOLEDO



| Leveling the balance | Weighing range selection | Calibrating the balance | Integration time | Stability detector |
|----------------------|--------------------------|-------------------------|------------------|--------------------|
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