Montgomery County Community College 340 DeKalb Pike Blue Bell, PA 19422 Document Number: MET 7 Revision Number: 0

Effective Date: 10JAN14

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SOP: Denver Instrument SI 4002 Balance Operation

Approvals:

Preparer: Jason McMillan Date: 09JAN14
Reviewer: Dr. Maggie Bryans Date: 10JAN14

1. Purpose:

1.1. Operation of Denver Instrument SI 4002 Balance.

2. Scope:

2.1. Applies to the weight measurement of laboratory materials.

3. Responsibilities:

- 3.1. It is the responsibility of the course instructor /lab assistant to ensure that this SOP is performed as directed and to update the procedure when necessary.
- 3.2. It is the responsibility of the students/technicians to follow the SOP as described and to inform the instructor about any deviations or problems that may occur while performing the procedure.

4. References:

4.1. Denver Instrument SI 4002 Balance Instruction Manual.

5. Definitions: N/A6. Precautions: N/A

7. Materials:

7.1. Appropriate weighing container(s) such as a weigh boat, weigh paper, beaker, flask, bottle, etc.

8. Procedure:

8.1. Simple Weighing

- 8.1.1. Turn the scale on using the "ON/OFF" button.
- 8.1.2. Place weighing container on the balance weighing pan. Press the "TARE" button to zero the weight display.
- 8.1.3. Remove the weighing container. Load weighing container with material to be weighed. Place loaded weighing container on the weighing pan. Read off the weight indicated on the display when **g** appears on the right side of the weight.
- 8.1.4. Remove the loaded weighing container.
- 8.1.5. To turn balance off, press and hold the "ON/OFF" button.
- 8.1.6. Clean off the top of the balance using the balance cleaning brush being sure to apply minimal pressure.

9. Troubleshooting

9.1. See Table 1

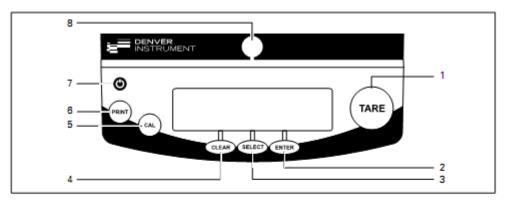
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10. Attachments:



Designation Pos.

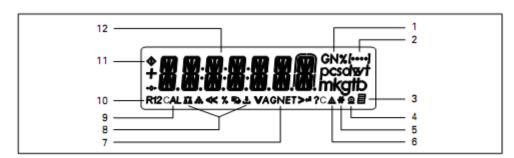
- Taring
- Start an application program
- Select an application program | Open the operating menu
- Clear
 - This key is generally used to cancel functions:
 - Quit application program
 - Cancel calibration/adjustment routine | Exit the operating menu

Pos. Designation

- Start calibration/adjustment routine
- 6 Data output:
 - Press this key to send readout values to the built-in data interface.
- On/off
- Level indicator

Figure 1: Denver Instrument SI 4002

Denver Instrument SI 4002 Manual



Designation Pos.

- Weight unit
- Menu level indicator
- 3
- Symbol: "GLP printing mode active" Symbol: "Printing mode active" Symbol: "Application program active"
- Calculated-value indicator 6 (i.e., not a weight value)
- Symbol: Gross or net value
- 8 Symbols for active application (878, A., %, 😂, ±, A, C)
- Symbol: Calibration/adjustment function
- 10 Symbols for zero range

Pos. Designation

- Busy symbol: command is being processed (for example, "Wait for stability icon); after you turn on the power, @ will be displayed until you press a key
- 12 Weight value displayed in selected weight unit

Symbols:

- Save settings and exit the operating menu
- One menu level higher
- Scroll through menu items
- Next item on current menu level
- Select a parameter setting

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Figure 2: Denver Instrument SI 4002 Display

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Troubleshooting Guide

Error codes are shown on the main display for approx. 2 seconds. The program then returns automatically to the previous mode.

Display	Cause	Check the AC power supply Plug in the power supply	
No segments appear on the display	•		
	The power supply is not plugged in		
The load exceeds the balance capacity		Unload the balance	
LOW or ERR 54	Something is touching the weighing pan	Move the object that is touching the weighing pan	
ERR 54, typical Weighing system defect		Contact Denver Service Center	
APP.ERR.	Cannot store data: Increase load Load on weighing pan too light or no sample on pan while application is active		
DISERR.	Data output not compatible with output format	Change the configuration in the operating menu	
PRT.ERR.	Interface port for printer output is blocked	Reset the menu factory settings, or Contact your local Denver Service Center	
ERR DE	Calibration parameter not met; e.g.: – balance not tared – load on weighing pan	Calibrate only when zero is displayed - Press (AB) to tare the balance - Unload the balance	
ERR ID	The TARE key is blocked when there is data in the second tare memory (net-total); only 1 tare function can be used at a time	Press (148) to clear the tare memory and release the tare key	
ERR 11	Tare memory not allowed	Press (ARE)	
The weight readout changes constantly	Unstable ambient conditions (excessive vibration or draft) at the place of installation	Set up the balance in another area	
	A foreign object is caught between weighing pan and balance housing	Remove the foreign object	
The weight readout is obviously wrong	The balance was not cali brated/adjusted Balance not tared	Calibrate/adjust the balance	
	before weighing	Tare or zero the balance before weighing	

Table 1: Troubleshooting GuideDenver Instrument SI 4002 Manual

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11. History:

Revision	Effective		
Number	Date	Preparer	Description of Change
0	09JAN14	Jason McMillan	Initial release