Digital Indicator
Operator Manual

Disclaimer

The distributor reserves the right to make changes
to the products contained in this manual in order
to improve design, performance or reliability.

The information in this manual is believed to be accurate in all respects at the time of publication, but is subject to change without notice. The distributor assumes no responsibility for any errors or omissions and disclaims responsibility for any consequences resulting from the use of the information provided herein.

Table of Contents

1.Introduction

This instrument is a precision digital indicator using the latest Sigma-Delta A/D technology to ensure fast and accurate weight readings.

1.1. Approvals (for trade versions only)

- NSC approval (4000 divisions at 0.8μV/division).
- NMI approval (4000 divisions at 0.8μV/division).
- C-tick approved and CE approved.

1.2. Features

- Zero and Tare functionality.

1.3. Manuals

For more information on this instrument refer to the **Reference Manual** or **Quick Start Manual**.

003R-616-110

2. Safety

2.1. Operating Environment
- Operating Temperature: –10 to 50°C
- Humidity: <90% non-condensing
- Operating Voltage: Shown on Rear Label

2.2. Electrical Safety
- For your protection all mains electrical hardware must be rated to the environmental conditions of use.
- Pluggable equipment must be installed near an easily accessible power socket outlet.
- To avoid the possibility of electric shock or damage to the instrument, always switch off or isolate the instrument from the power supply before maintenance is carried out.

2.3. Cleaning
- To maintain the instrument, never use harsh abrasive cleaners or solvents. Wipe the instrument with a soft cloth **slightly** dampened with warm soapy water.

3. Basic Operation

3.1. User Interface Display and Controls

3.2. Operation Keys

Key	Description
	POWER: The **<POWER>** key is used to turn the instrument on and off. • **To initially turn the instrument ON:** Press and hold the **<POWER>** key until the display starts up. • **To turn the instrument OFF:** Press and hold the **<POWER>** key for three seconds. The instrument will display **OFF** followed by the three-second countdown. **Note:** If the **<POWER>** key has been locked, the instrument cannot be turned off from the front keypad. • **Battery Operation:** When using batteries the backlight will automatically turn off to conserve power after a short period of inactivity. A short press of the **<POWER>** key will turn the backlight on again. • **Automatic Operation:** The **<POWER>** key has a memory function associated with it. This means that the state of the power setting is remembered even if external power is interrupted. It is therefore possible to turn the instrument on in the safe knowledge that it will operate whenever external power is available and will not need to be manually turned on again if the power is interrupted.
ZERO	**ZERO:** The **<ZERO>** key is used to perform a Zero adjustment on the scale display when an empty scale has drifted away from a true zero reading. • **Long Press:** When the indicator is set to Industrial mode a long press of the **<ZERO>** key will remove any stored zero adjustment.
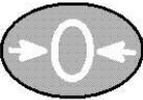
Key	Description
TARE	**TARE:** The **<TARE>** key is used to temporarily set the scale to zero (such as cancelling the weight of a carton before performing a filling operation). The display will show the Net weight and the **Net** annunciator will be lit. • The **<TARE>** key can operate in all modes (ie. Industrial, OMIL and NTEP). • The weight tared is deducted from the allowable range of the scale, reducing the maximum weight that can be displayed.
GROSS/NET	**GROSS/NET:** The **<GROSS/NET>** key toggles the weight display between the Gross weight and the Net weight (provided that a Tare has previously been acquired using the **<TARE>** key).
TEST	**TEST:** The **<TEST>** key is used to initiate a display test. • Once pressed the display is shown with all segments clear, then all segments lit and then all segments clear again before returning to normal operation.

3.3. Stability Considerations

Once a **<ZERO>** or **<TARE>** key is pressed the unit waits for a stable valid reading before performing the associated operation. If the weight readings remain unstable or invalid due to some diagnostic error for longer than 10 seconds, the operation is cancelled and the **STABLE ERROR** message is displayed.

3.4. Annunciators

Symbol	Name	Description
➡0⬅	**ZERO**	Visible when the gross reading is within $\pm$ ¼ of a division of true zero.
NET	**NET**	Visible when the displayed reading represents Net weight.
～	**MOTION**	Visible when the displayed reading is not stable.
⌞ ⌟	**ZERO BAND**	Visible when the displayed weight is within the zero 'dead' band setting. (The zero band symbol shows near the top right corner of the display.)
🔋	**LOW BATTERY**	Visible when battery voltage is too low and batteries need replacing or recharging. (The low battery symbol shows in the top right corner of the display.)
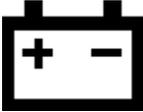
4. Basic Weighing

4.1. Normal Weighing

- Ensure instrument is On and **Zero** annunciator is lit.
- Place your item on the weigh platform.
- Read the weight display.

4.2. Using Tare

• The indicator displays zero with **Zero** annunciator lit.	
• Place the container on the weigh platform.	
• Press the **<TARE>** key.	**TARE**
• The indicator will show the displayed zero weight and the **Net** annunciator will be lit.	
• Fill the container to the required weight.	
• Press the **<GROSS/NET>** key to toggle between the Net weight and the Gross (total) weight.	**GROSS/NET**
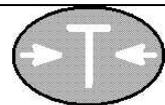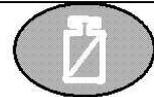
5. Error Messages

5.1. Weighing Errors

- Check Setup = This item can be checked on site by service personnel

Error	Description	Resolution
(U - - - - -)	The weight is below the minimum allowable weight reading.	Increase the weight or decrease the minimum allowable weight reading.
(O - - - - -)	The weight is above the maximum allowable weight reading. Warning - overloading may damage mechanical scale elements.	Check the condition of load cell connections. Check for damaged load cell.
(ZERO) (ERROR)	The weight reading is beyond the limit set for Zero operation. The operation of the **<ZERO>** key is limited in the setup during installation. The indicator cannot be Zeroed at this weight.	Increase the Zero Range (Z.RANGE) or use the **<TARE>** key instead.
(STABLE) (ERROR)	Scale motion has prevented a **<ZERO>** or **<TARE>** operation from occurring on command.	Try the operation again once the scale is stable.

5.2. Setup and Calibration Errors

Error	Description	Resolution
(ENTRY) (DENIED)	The instrument may be in Safe Setup and an item that needs Full Setup has been selected for editing.	Access Full Setup to edit the item.
	When accessing setup, more than three attempts have been made with the incorrect passcode.	Turn the instrument off. When the instrument is turned back on, enter the correct passcode to access setup.
(RES) (LO)	The scale build is configured for less than 100 graduations.	Check the resolution (count-by) and capacity settings.
(RES) (HIGH)	The scale build is configured for more than 30,000 graduations.	Check the resolution (count-by) and capacity settings.
(SPAN) (LO)	The load cell signal range (span) is too small for these settings.	Incorrect span weight entered (must be between zero and full scale). Scale wiring incorrect. Wrong load cell capacity (too large). Wrong or no calibration weight added to scale.
(SPAN) (HI)	The load cell signal range (span) is too large for these settings.	Incorrect span weight entered (must be between zero and full scale). Scale wiring incorrect. Load cell capacity too small for application.
(ZERO) (LO)	An attempt has been made to calibrate zero below -2mV/V.	Scale wiring incorrect.
(ZERO) (HI)	An attempt has been made to calibrate zero above +2mV/V.	Remove all weight from scale. Scale wiring incorrect.

5.3.   Diagnostic Errors

- Check: This item can be checked on site by service personnel.
- Return for Service: The instrument must be returned to the manufacturer for factory service.

Error	Description	Resolution
(E0001)	The power supply voltage is too low.	Check supply
(E0002)	The power supply voltage is too high.	Check scale / cables
(E0010)	The temperature is outside of allowable limits.	Check location
(E0020)	Scale build is incorrect. The number of graduations has been set too low or too high.	Fix up scale build
(E0100)	The digital setup information has been lost.	Re-enter setup
(E0200)	The calibration information has been lost.	Re-calibrate
(E0300)	All setup information has been lost	Enter setup and calibrate
(E0400)	The factory information has been lost.	Return for Service
(E0800)	The EEPROM memory storage chip has failed	Return for Service
(E2000)	ADC Out of Range Error. This may be caused from a broken load cell cable.	Check BUILD:CABLE setting. Check load cell cable, wiring, etc.
(E4000)	Not Used	
(E8000)	The FLASH program memory is incorrect	Return for Service

The **E** type error messages are additive. For example if instrument is running off batteries and the temperature drops, the battery voltage may be too low. The resulting error messages will be **E0011** (0001 + 0010). The numbers add in hexadecimal as follows:

1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - A - B - C - D - E - F

(For example, 2 + 4 = 6, or 4 + 8 = C)

Notes:

Notes: