

Accurate

TECHNOLOGY INC.

Linear Digital Measuring Systems

Incremental Digital Display



User Manual for:

Incremental LCD Digital Display

Part Number 700-1600-025

Warranty

Accurate Technology, Inc., warrants this product against defective parts and workmanship for 2 years commencing from the date of original purchase. Upon notification of a defect, Accurate Technology, Inc., shall have the option to repair or replace any defective part. Such services shall be the customer's sole and exclusive remedy. Expenses incidental to repair, maintenance, or replacement under warranty, including those for labor and material, shall be borne by Accurate Technology, Inc. (Including freight or transportation charges during the first 30 days).

Except as expressly provided in this warranty, Accurate Technology, Inc., does not make any warranties with respect to the product, either expressed or implied, including implied warranties of merchantability or fitness for a particular purpose, except as expressly provided in this agreement.

Accurate Technology, Inc., shall not be liable for any special, incidental, or consequential damages or for loss, damage or expense directly or indirectly arising from the customer's use of or inability to use the equipment either separately or in combination with other equipment, or for personal injury or loss or destruction of other property, or from any other cause.

To request repair work (either warranty qualified parts or not), contact Accurate Technology, Inc. directly by phone, fax, or e-mail. A Returned Merchandise Authorization (RMA) number is required before returning a product for repair.

Accurate Technology, Inc.

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SAFETY WARNING

**Before installing ProScale on any machinery:
Turn off the machine and disconnect the power.**

SAFETY WARNING

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What This Manual Includes

This manual includes information for Incremental LCD Digital Displays. These are Digital Displays used for M100 or M200 ProScale systems

Model 100	Incremental Technology Measuring System (Discontinued 1999) <i>Usually measures 250mm (10") or 450mm (18")</i>
Model 200	Incremental Technology Measuring System (Discontinued 1999) <i>Standard Sizes from 1.2m (4') to 6m (20')</i>



Incremental Scale Pattern

THIS DISPLAY WILL ONLY WORK WITH A SCALE LIKE THE ONE PICTURED ABOVE

This display is a direct replacement for the following Digital Displays:

Display, Incremental	701-2000-00x
Display, Incremental	701-1495-00x

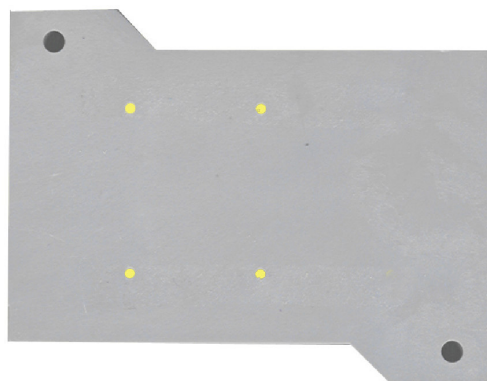
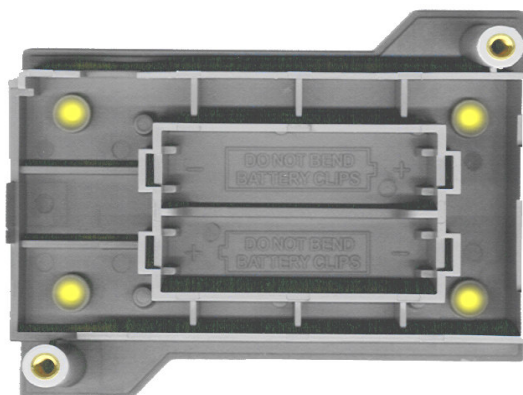
Digital Display Specifications

Resolution:	.01mm or .001in
Display Range:	± 9999.99 mm; ± 999.999 in; $\pm 99 \frac{63}{64}$ in.
Operating Temp:	0 to 51°C, 32 to 120°F
Power:	Two AA Alkaline Batteries
Battery Life:	8-12 months
Warranty:	Two years from date of purchase

Mounting the Display

The Digital Display can be mounted:

- Using Velcro or Double sided tape
- Drilling out any of the four holes from the inside of the case
- Using the holes on the back of the case which may tapped for M2 or 4-40 screws.



SECTION 2

DISPLAY OPERATION

Display Keys



Timing

The keys pictured above, found on all LCD Digital Displays, have multiple functions. Timing, that is how long a key is depressed, and the combination of the keys pressed is important. This manual uses the term “*momentarily*” to describe a key press of typically less than 1 second. Whereas “*press and hold*” is used imply a key press of typically longer than 1.5 seconds. As an example; when using a PC keyboard to type a capital letter you would “*press and hold*” the SHIFT key and “*momentarily* depress the LETTER key.

In addition, keep in mind the key(s) “*function*” is executed on the key RELEASE, not the key DEPRESS. This is important since some keys execute different functions based on how long they are depressed. These key operations, once tried, quickly become intuitive.

ON/OFF

Momentarily pressing the **ON/OFF** key will cause the display to turn on or off. The Firmware Version is displayed on power-up or when **ON/OFF** key is pressed. While on, if no key presses or positional changes occur within 15 minutes, the Digital Display will automatically turn itself off to conserve battery life. While off, if a position change is detected (.05mm or .002in) or the **ON/OFF** button is pressed, the display will automatically turn itself on with no loss of measurement information.

MODE

The digital display can show measurement information in the customary measurement system* (Imperial) or the Metric system. To change the current display mode, momentarily press the **MODE** key. With each key press the display will cycle through decimal inches (.001), fractional inches (1/16), (1/32), (1/64) and metric (.01mm).

When the display is in 1/16 or 1/32 inch fraction mode, a series of “bars” in the upper right corner of the LCD each represent an additional 1/64th of an inch measurement. ie. When in 1/16 inch mode and three bars are showing, the measurement displayed is rounded *down* to closest 1/16 inch and each illuminated bar indicates an additional 1/64 of an inch (“heavy”) measurement. For better resolution switch to 1/32 or 1/64 fraction mode. For the best resolution switch to a decimal mode.

* A measurement system that measures length in inches, feet, yards, and miles; capacity in cups, pints, quarts, and gallons; weight in ounces, pounds, and tons; and temperature in degrees Fahrenheit.

+ , 0, and – Keys

The **+** (plus), **0** (zero) and **–** (minus) keys are used to change the currently displayed position to a different value. The **0** key forces the unit to display 0. Momentarily depressing the **+** key increments the current position by one unit of measurement. Momentarily depressing the **–** key decrements the current position by one unit. Pressing and holding the **+** or **–** keys will cause the displayed position to change continuously. Holding down the key will cause the amount of change to speed up. This allows for quick adjustments over a range of large values. These keys can be “locked out” using the LOCK MODE to prevent accidental offset or zero entries.

Lock Mode

The user can “lock-out” the position offset adjustment functions (**+**, **–**, **0** keys) to prevent accidental changes of the current displayed position. To activate the lock mode, press and hold the **ON/OFF** key and then momentarily press the **MODE** key. The measurement units (*in* or *mm*) on the LCD display will blink when the display is in lock mode, and the **+**, **–** and **0** keys will not change the displayed position.

Reverse Scaling

If you set a zero point on ProScale, moving the scale in one direction will produce positive readings. Moving the scale past zero in the opposite direction will produce negative readings. Reverse scaling means changing the orientation of the readhead so that positive readings become negative and negative readings become positive. There are two methods to reverse readings:

1. Slide the readhead off the scale and re-install the readhead in the opposite direction, being careful not to damage the ground fingers inside the readhead.
2. Change the position of jumper JP1 on the display circuit board.

Changing the Batteries

A “**BAT**” indicator will appear in the upper left corner of the LCD display when new batteries are needed.

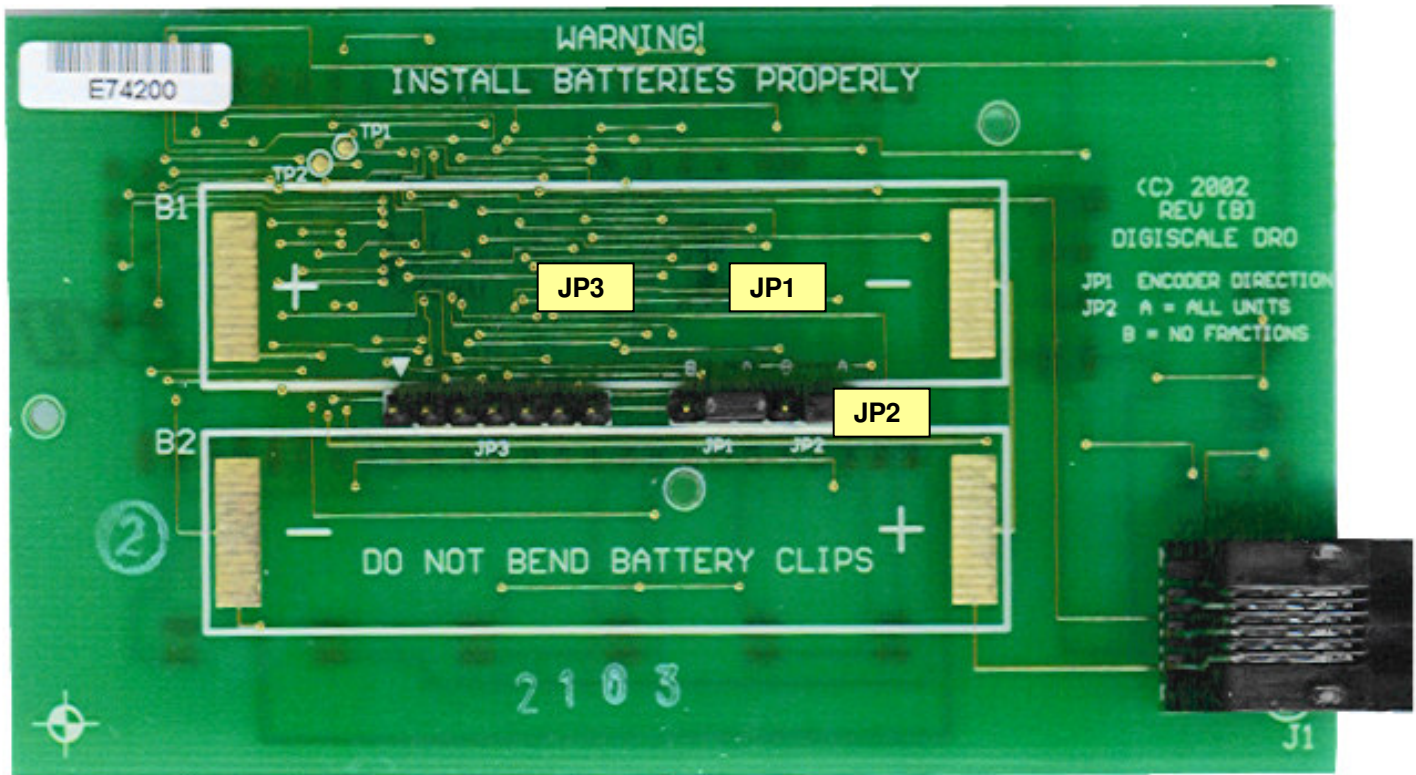
Remove the screws in the upper right and lower left corners. Pull the cover off. Remove the old batteries. Reinstall new AA Alkaline batteries, noting the proper orientation. Replace the cover and tighten the screws.

CAUTION: DO NOT BEND BATTERY CLIPS!

THESE CLIPS ARE DESIGNED TO BE LOOSE WHEN THE CASE IS OPEN AND WILL COMPRESS AND SECURE THE BATTERIES IN PLACE WHEN THE CASES ARE SCREWED TOGETHER.

Jumpers

User configurable jumpers consist of three pins and a 'shorting block'. The center of these pins is 'Common'. One end pin is labeled 'A' and the other end pin is labeled 'B'.



- JP1 Reverse Scaling**
Changes the direction of readings.
- JP2 Fractions enable/disable**
Position A: Enables Fractions to be displayed
Position B: Disables Fractions from being displayed
- JP3 FACTORY USE ONLY**

Frequently Asked Questions

What does “*Err2*” mean?

If the readhead is off the scale, or the readhead cable is unplugged from the display, ERR 2 will appear on the display. To clear error:

1. Be sure the readhead is on the scale.
2. Unplug the connector from the display for one second and reconnect..

What does “*Err4*” mean?

Attempting to display measurements over 99 inches in fractions:

This digital display will only read up to 99 63/64 in fractions mode. You must use either the decimal or metric modes when measuring over 99 63/64 inches.

The battery clips seem to be very loose. Is this normal?

Yes. DO NOT attempt to bend these clips or wedge anything between them and the case. These clips are designed to expand when the two case halves are screwed together.

Other Digital Displays

Accurate Technology makes several other digital displays for use with ProScale products. Each display has unique features that make it suitable for different applications.

The displays listed below are backward compatible with older ProScale systems.

Basic (no output)	2AA Batteries	701-1600-120
Full Programmability	2AA Batteries	701-1600-100
Full Programmability	24VDC	701-1605-100



PRODUCT REGISTRATION

Fill out for your records **and**
FAX to Accurate Technology @ +1.828.654.8824 or
Register on line at <http://www.proscale.com/registration.htm>

Name _____

E-Mail _____

Company _____

Address _____

Address _____

City _____

State/Region _____

Zip/Postal Code _____

Country _____

Purchased From: _____

Purchased When: _____

Digital Display Serial Number:

Thank you for choosing a ProScale Product



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This manual is available at www.proscale.com

*Please return your Product Registration Card
or register your system at:*

<http://www.proscale.com/registration.htm>