

Accurate

TECHNOLOGY INC.

Linear Digital Measuring Systems

DigiFence



Operation Manual

For Models with Readout Firmware version 4.030 & Higher

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SAFETY WARNING

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

SAFETY WARNING

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Introduction

This is a custom engineered system that adds a digital readout to an existing table saw fence. This kit is supplied with a ProScale measuring system, and all the components needed for a quick and easy retrofit to your existing fence. The readout has easy-to-use front panel keys for power, units, and for calibration.

Fractions can be displayed in 16ths, 32nds, or 64ths (the 16th and 32nd modes also have bars to indicate how heavy/long a dimension actually is).

Decimal inches can be displayed with 1, 2, 3, or 4 places after the decimal.

Decimal millimeters can be displayed with 1 or 2 decimal places.

Decimal centimeters can be displayed with 1, 2, or 3 decimal places.

The system is powered by one CR123 lithium battery, has programming auto-off timer, automatic power-on with motion, and user controllable contrast on the display.

The electronics are immune to dirt, sawdust, and other non-conductive contaminants, making it the ideal choice for shops and other dusty environments.

DigiFence Specifications

Measuring Range	36, 52, or 60 inches (standard kits)
Accuracy	\pm .005 inch with factory matched readout
Resolution	User selectable, varies with units that are used
Repeatability	.005 inch (0.13 mm)
Readout Range	Up to \pm 393 inches (9999mm)
Operating Temp	32 to 110°F
Max. Slew Rate	80 inches per second
Encoder:	6-wire cable with an RJ11 connector.
Warranty:	3 years from date of delivery

DigiFence Parts

Pictured below are parts that will be referred to throughout this manual.

<p>Digital Readout, P/N 700-1600-240</p>	 A purple plastic digital readout (DRO) unit. It features a monochrome LCD screen displaying "0.259 IN" and the word "ProScale" below it. The screen also shows "ABS" and a small bar graph. Below the screen are five buttons labeled "ON/OFF", "UNITS", "+", "DATUM", and "-". A black cable is plugged into the left side of the unit.
<p>Encoder/sensor, P/N 701-1900-0xx (xx represents cable length in inches; this varies).</p>	 A black rectangular encoder/sensor unit. It has a label with the following information: "Accurate PART# 701-1900-018", "1-828-654-7920", "SN # ET2004236", and "MADE IN USA". A black cable is attached to the top of the unit.
<p>Guide Clip, P/N 100-1026-005</p>	 A small, black, L-shaped plastic guide clip. It has two circular holes on the top edge and a rectangular slot on the bottom edge.
<p>Electronic scale, P/N 700-2900-0xx (xx represents measuring range in inches; this varies).</p>	 A long, thin, black electronic scale. It has a label with the text "Inductive Series II", "www.proscale.com", and "+1 828 654 7920".
<p>Assorted brackets, tools, installation hardware</p>	<p><i>These vary for each kit offered.</i></p>

Each DigiFence system is also shipped with an Installation Manual (or guide/drawing) that is specific to the fence it will be installed onto. Reference that manual to complete the product installation.

Calibration

There are two ways to set a zero reference (calibration).

Quick Method:

Move the fence until it just touches the blade.
Press and release the DATUM key.

Best Method:

Move the fence within a few inches of the blade.
Lock the fence in place.
Cut a small board.
Measure the finished cut size with a caliper.
Use the + and - keys on the keypad to program the readout with the same measurement.

When the correct reading is set, you can lock the keypad, if desired. (This prevents accidentally re-zeroing of the readout.)
See **page 8** for more information.

Note: The Best Method accounts for any variance in width of teeth, wobble, or vibrations in the saw, plus any deflections in your fence. This equates to a higher degree of accuracy in the system's calibration.

Operation

After calibration, move the fence left or right, and the measurement will update accordingly.

To use other measurement units, press the UNITS key.

To customize operation of the readout, see **page 11** for available options and how to change them.

After 15 minutes of inactivity, the readout will automatically power off to save power. Simply move the fence or press ON/OFF key to wake up the readout.

Maintenance

The digital readout should be cleaned periodically with compressed air to remove any dust on the lens and keys.

All installation fasteners should be checked occasionally for tightness.

The battery in the readout should be replaced yearly. (It is a CR123 lithium battery, available nearly anywhere batteries are sold.)

Battery Replacement

When the battery in the digital readout needs to be replaced, the battery icon will only show one bar, or you will see a “B FAIL” message on the screen.

Remove the screws in the upper right and lower left corners of the readout. Pull the cover off. Remove the old battery. Install a new CR123 (or equivalent) battery, noting the proper orientation. Replace the cover and screws.

Tip: Be careful to avoid touching parts of the circuit board not related to the battery.

New for this version digital readout:



Primary key functions



What happens on a **QUICK PRESS** of each key?

Key	Action
ON/OFF	The readout turns on or off.
UNITS	The units change. <i>Note: Available units can be restricted with custom programming settings.</i>
PLUS	The displayed value is increased one unit.
DATUM	The displayed value is set to the programmed datum value. <i>Note: This value is zero by default, but it can be customized to be any value.</i>
MINUS	The displayed value is decreased one unit.

What happens if a **KEY IS HELD DOWN**?

Key	Action
ON/OFF	Nothing
UNITS	Nothing
PLUS	The displayed value increases faster each 2 seconds.
DATUM	After 4 seconds, the battery voltage is displayed. After 7 seconds, the readout's temperature is displayed.
MINUS	The displayed value decreases faster each 2 seconds.

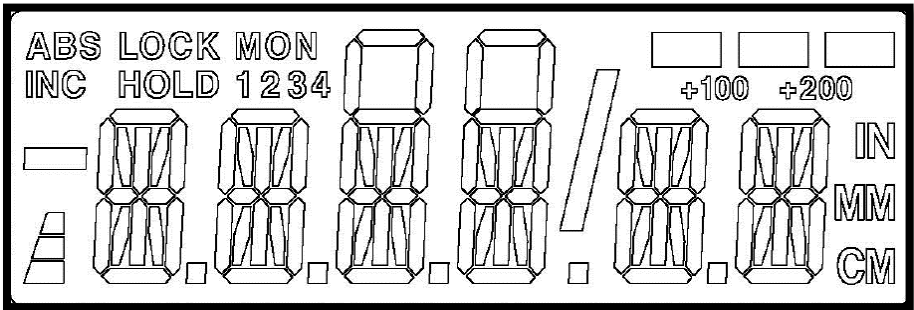
Key Combinations:


For these actions, **press and hold the first key**, then quickly **press and release** the second key. (*This action is the same as making a capital letter on a computer; the first key acts like SHIFT.*)

Press and hold	Then quickly press and release	Action
ON/OFF	UNITS	LOCK (or unlock) the keypad.
UNITS	DATUM	Enters or exits the programming menu.*


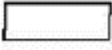



*Requires programming jumper to be in position 1; see image on **page 7**.

What do all the Symbols mean?



Symbol	Meaning
ABS	The digital readout is operating in Absolute measurement mode.
INC	<i>Not used on standard DigiFence readouts.</i>
LOCK	The keypad is locked. This prevents loss of calibration if PLUS, MINUS, or DATUM keys are accidentally pressed. See page 8 for key combination to turn this off.
HOLD	<i>Not used on standard DigiFence readouts.</i>
MON	<i>Not used on standard DigiFence readouts.</i>
1 2 3 4	<i>Not used on standard DigiFence readouts.</i>
	These are used with the 16 th and 32 nd fractional inch modes. Each bar represents an extra 1/64 th long/heavy on the displayed measurement.

Symbols (continued):

	<p>When using fractions over 99 inches, one (or both) of these will light to show a value over 100 inches. For example: If the measurement is 205 5/16, the readout will show 5 5/16 and turn on the +200 indicator.</p>
	<p>Minus sign. Turns on when a negative value is displayed.</p>
	<p>Battery level indicator. When all 3 bars are lit, the battery is good. When only bottom bar is lit, a new battery is needed soon.</p>
	<p>Vinculum – used in fractions mode to separate numerator from denominator.</p>
	<p>Units indicator. IN is for INCHES or fractions. MM for millimeters. CM for centimeters. (Press UNITS key to change.)</p>

Auto Off: To prolong battery life, the readout has a built-in timer that turns off the readout after a period of no activity. The default timer is 15 minutes.
(The timer can be changed using the programming mode, parameter Pr12.)

Auto On: Any motion of the fence greater than 0.004 inches will wake up the readout and restart the Auto Off timer.
(The amount of motion required can be changed using the programming mode, parameter Pr5.)

Programming Mode

Many features of the readout can be customized (plus additional tools can be enabled) using the programming menu. For information and videos about using the programming menu, go to www.proscale.com/700-1600-240 or consult factory for assistance.

Parameter number	What it does	Default value
Pr1	Sets the DATUM key value.	0.000
Pr2	0 = default reading direction 1 = reversed reading direction	0
Pr3	0 = +, - and DATUM keys are operative. 1 = These keys are disabled (LOCK).	0
Pr4	How many decimal places appear.	3
Pr5	Motion needed to wake up the readout.	0.004 inches
Pr6	Do fractions round up or down?	0 (round down)
Pr7	Resolution of 4 th decimal place (in inches)	1 (.0005" resolution)
Pr11	Controls available units modes.	0 (inches, fractions, and metric)
Pr12	Auto-off timer (in minutes)	15
Pr13	Linear multiplier	1.00000
Pr14	Encoder compatibility	1 (Absolute scale), Set to 0 for DigiFence
Pr15	LCD contrast adjustment	27
Pr16	Final linear multiplier	1.00000
Pr22	ABS/INC key operation (if equipped)	0 (2 seconds)
Pr23	Supplemental keys used (if equipped)	3 (All enabled)
Pr24	Monitor/hold, Go/NoGo features	0 (Disabled)
Pr25	No function for DigiFence	0 (None)
Pr26	Drift Monitor tolerance	.01 inches
Pr27	Limits modes used	0 (Not used)
Pr28	Lower limit value	0.000
Pr29	Upper limit value	5.000 inches
Pr30	Offset additions to use (if equipped)	0 (None)
Pr31	First offset value (if equipped)	0.5000 inches
Pr32	Second offset value (if equipped)	2.0000 inches
Pr33	Third offset value (if equipped)	3.0000 inches
Pr34	Fourth offset value (if equipped)	3.0000 inches
Pr35	External input operation mapping #1	0 (No function)
Pr36	External input operation mapping #2	0 (No function)
Pr37	Polarity for Output functions	0 (Normally open)
Pr38	Output Function used	0 (None)

See page 8 for key combination used to enter/exit the programming menu.
When in the programming menu:

- Press UNITS key to advance thru the parameters
- Press DATUM key to default a value to factory setting.
- Press PLUS or MINUS key to change a value.

Consult factory for more information on any of these parameters.

Error codes

The following is a list of the most common error codes and their meaning.
For additional help with any error message, consult factory.

Message	What it means
<i>no Enc</i>	There is not an encoder connected to the readout, or the connected encoder has a fault.
<i>no Pos</i>	The readout has not been calibrated yet.
<i>b fail</i>	The battery in the readout needs to be replaced immediately.
<i>f fail</i>	The readout cannot display fractional values larger than 399 63/64 inches.
<i>P fail</i>	The battery in the readout needs to be replaced immediately. Check programming values after new battery is installed.
<i>LOCK</i>	The keypad is LOCKed, but an attempt was made to change the calibration. Unlock keypad to fix, see page 8 .
<i>P LOCK</i>	The keypad is LOCKed, but an attempt was made to change the calibration. Change programming parameter Pr3 to fix. (See www.proscale.com/700-1600-240 for more details.)
<i>uL, LL</i>	Limits mode is turned on, and a limit has been exceeded.
<i>Reset</i>	The digital readout's parameters have just been defaulted.

Accessories

DigiFence is available with the following accessories:

Hinge kit:

Our hinge kit allows you to lift the fence directly up and off the machine WITHOUT loss of calibration.

When fence is re-installed, simply flip the hinge up to connect to the sensor, and DigiFence is ready to use in a few seconds.



Digital Readout Upgrade:

- Upgrade the basic readout to a more advanced model. The upgrade readout adds many functions such as: Absolute/Incremental measurements
- Multiple datum points (ideal if using left and right sides of your fence, or have a built-in router lift)
- Position monitor mode (alerts you if the fence is pushed out of position.)



Longer electronic scale:

Change your fence's range, or buy a new machine? Upgrade to a longer measuring range if needed.



Related Products:

DigiStop:

Digital Stop and fence system for your chop saw, miter saw, band saw, or drill press.
Available with ranges up to 10 feet.
Can be used on either side of your saw.



Planer-Sander kits:

Digitize your existing planer, sander, or shaper. Our Universal Installation Kit is included, making installation super easy on most machines.



Frequently Asked Questions

What F/W (Firmware) version does my readout have?

The readout displays the firmware version when you use the ON/OFF key to power it on. For example, **P4.040**.

The readings are “backwards”?

You can change reading direction by changing the value of Programming Parameter Pr 2, see **page 11**.

The keys don't seem to do what they are supposed to do.

How long a key is depressed, and the combination of the keys pressed is important. See **page 8** for more details.

What does ‘no Enc’ mean?

The fence has been moved too fast, or the sensor and the readout are not communicating. To clear this error:

1. Be sure the encoder is on the electronic scale.
2. Unplug the encoder from the readout and wait five seconds.
3. Connect the encoder to the readout.

What does ‘b FAIL’ mean?

When the readout displays this message, the battery voltage has dropped to a level where reliable operation is no longer possible. Install a new battery.

TIPS:

1. Just before changing the battery, write down the current measurement. Install new battery, then use PLUS or MINUS keys to set the readout to the same measurement you wrote down.
2. You can set the auto-off timer to 1 minute to conserve battery life.
3. Replace the guide clip every 5 years to ensure best operation.
4. Clean off readout using compress air to keep lens from scratching over time.
5. Recalibrate each time a new blade is installed, or if the blade angle has changed.

**Thank you for choosing an
AMERICAN MADE PRODUCT**



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