

Accurate

TECHNOLOGY INC.

Linear Digital Measuring Systems

ProScale® Models 150 & 190



Model 150



Model 190

Quick Start Installation Guide

WARRANTY

Accurate Technology, Inc. warrants the ProScale Systems against defective parts and workmanship for 3 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 or e-mail. A Returned Merchandise Authorization (RMA) number is required before returning a product for repair.

READOUT SETTINGS FOR BEST OPERATION:

Programming control	Value
Linear Correction Value	
ProScale Technology Type	Inductive/Incremental

Specifications

Measuring Range:¹

0-10 inches (250mm)
0-18 inches (450mm)
0-120 inches (custom sizes)

Accuracy:²

± .002 inches (0.05mm) – most models
These products can also be ordered with an Enhanced Readout that adds non-linear compensation ability (can be calibrated after installation), and temperature compensation.

Operating Temp:

0 to 50°C; 32 to 120°F

Maximum Velocity:

Model 150: 12 inches/second (300mm/sec), standard encoder
18 inches/second (450mm/sec), hi-speed version
Model 190: 80 inches/second (2000mm/sec)

Encoder connection:

Six-conductor cable terminated by RJ12 connector.
Cable lengths are available up to 30 feet (10m).
RF transmitters for up to 300 feet range.

Dimensions:

Available at www.proscale.com

¹ Measuring range is approximately 4.25 inches *shorter* than the physical length of the aluminum scale extrusion.

² Maximum error over entire measuring range as shown on a matched ProScale readout.

Multiple encoders connected to individual digital readouts can be used on the same scale simultaneously.

IMPORTANT: Model 150 Systems used in applications where they are:

- Powered by 12-24VDC or,
- Used with a wired data converter

MUST have part numbers ending with 'G'

Model 150 Scales

Model 150 scales use capacitive absolute technology.

All absolute scales have a "zigzag" pattern on a green laminate. There is a "SPLICE or JOINT" approximately every 430mm (17in).



To shorten Model 150 scales, see:

<http://www.proscale.com/other/absscalecut.htm>

Model 190 Scales

Model 190 scales use Series 2 Inductive Incremental technology. These scales have a repeating "bar" pattern on a black colored laminate. There is a "SPLICE or JOINT" approximately every 570mm (22.4in).



To shorten Model 190 Scales, simply cut to desired length.

Model 150 Encoders

Model 150 encoders have "BLACK END OF SCALE" labels on the housing cover. (Each Model 150 Scale has one end painted black).

This relationship is very important since the encoder may work, but produce erratic results if installed backwards. To ensure proper operation, be sure the arrow on the encoder is pointing toward the **BLACK** end of the Scale. Model 150 encoder part numbers are: 701-1500-xxx-(optional "G" for 12-24VDC systems), where xxx represents the cable length in inches.



Model 190 Encoders

The orientation for Model 190 encoders on the scale is not critical. (The reading direction can be reversed using programming options in the digital readout). Model 190 encoder part numbers are: 701-1900-xxx (where xxx represents the cable length in inches).



NOTE:

ENCODERS and SCALES of different technologies are not interchangeable.

Installation

ProScale Models 150 & 190 can be used in many different measurement applications, and with numerous types and brands of equipment. Therefore, all installations will be a little different, and it is the responsibility of the user to choose the bolts, screws, or other mounting hardware that guarantee proper installation for optimum operation in their application.

1. For Model 150, ensure the arrow on the encoder points towards the **“BLACK end of the Scale”**.



This orientation is critical for proper operation. Be sure the mounting location for the encoder and scale will allow this orientation.

For Model 190, the encoder orientation on the scale is not critical.

2. Determine an appropriate mounting location. Most applications will mount the encoder to a fixed part of the machine while the scale passes through it (scale is attached to moving part of the machine). When the encoder is mounted stationary, the scale should be attached to the moving part of the machine using the Connector Link. Attach the encoder to machine using two or three screws. Attach one end of the connector link to the scale using the included screw, and the other end to the moving part on your machine. Check that the scale is properly aligned with the direction of machine's motion.



NOTE: The connector link compensates for small misalignments in the installation and acts as a *shear pin*. If this link breaks, be sure to adjust alignment of the scale before replacing the link.

3. If your application is better suited to the scale being installed in a fixed position, with the encoder moving along it, you should use the Guide Clip to move the encoder along the scale. Mount the scale to fixed part of your machine. Be sure it is properly aligned with the direction of machine motion. Slide the encoder onto the scale. Mount the guide clip to moving part of the machine. The guide clip is designed to compensate for slight misalignments.



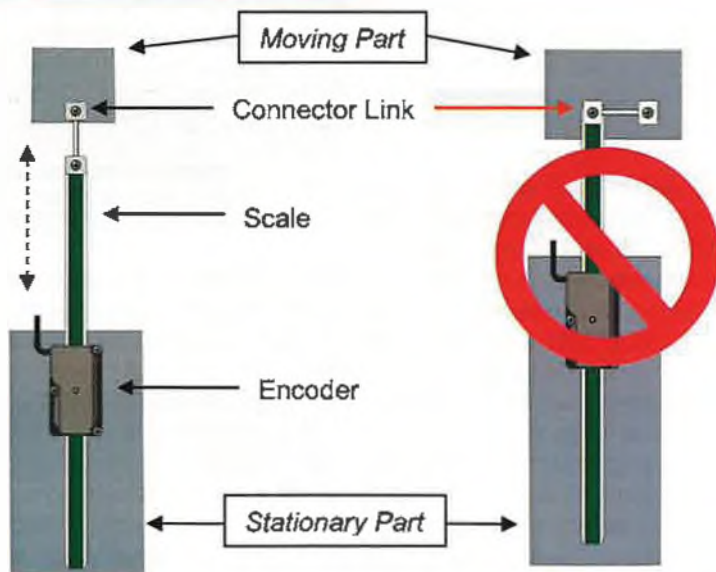
NOTE: The guide clip must be mounted perpendicular to the direction of travel of the Encoder. When properly installed, the guide clip will exert some pressure onto the encoder over the full range of travel.

4. Plug the encoder into the readout and refer to the Operation manual that accompanied your digital readout for information about set-up, installation and operation.

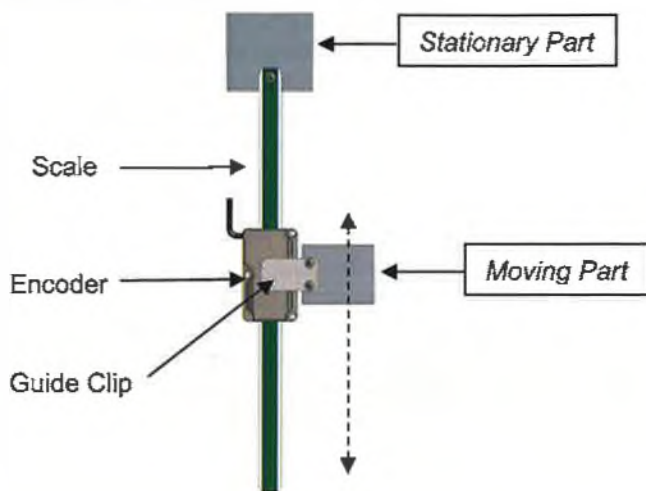
NOTE: Do not drill through the colored portion of the scale at any point over which the encoder will travel.

Model 150/190 Installation

Note orientation of the connector link:



Encoder stationary, scale moves



Scale stationary, encoder moves

Frequently Asked Questions

Can I mount the scale/encoder without the connector link or guide clip?

The connector link and guide clip provide an accurate and reliable method of transferring the movement of the machine to the electronics, while also absorbing any stresses due to slight misalignments. If the guide clip or connector link are not used, premature encoder or scale wear may occur and **the warranty is voided.**

What does 'No Enc' mean?

If the encoder is off the scale, or the encoder cable is unplugged from the readout, **No Enc** will appear on the readout. To clear:

1. Be sure the encoder is on the scale and properly oriented.
2. Unplug the encoder from the readout for five seconds.
3. Connect the encoder to the readout.

The readout numbers appear to be random. (Model 150 only)

Be sure the arrow next to **BLACK END OF THE SCALE** is pointing to the black paint on one end of the scale.

The readout does not change, or changes very little, as the scale or encoder moves.

1. The readout is in the HOLD mode.
2. The encoder is on the scale backwards.
3. One of the scaling factors in the digital readout is set to a very small value.

Thank you for choosing a ProScale Product

IT WAS PROUDLY MADE IN THE USA



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