


- Press ON/OFF  to measure and display the value. This is the length from the bottom to the top of the rod.
- Press and hold ON/OFF for two seconds to turn SmartRod off.

### 3. Troubleshooting

#### If there's no LCD read-out, check this on the SmartRod

- The rod should be turned so the reception window is towards the laser.
- Raise or lower a section of the SmartRod to ensure that the reception window is capturing the beam.
- Check if either set of batteries (top compartment or LCD) is depleted.
- The reception window has to be clean.

#### If there's no LCD read-out or it's intermittent, check this on the laser

- The rotation speed of the laser must be 300 rpm or faster; if not, the SmartRod will beep but will not indicate a height value.
- Are you within the laser operating range?
- If there is a glass housing around the rotating head, is it clean?
- If you cannot pick up the beam, check how you are lined up with the laser. One of the head protection supports on the laser may be blocking the beam; move to the left or right to receive the beam. Or, remove the head protection.

#### If the readings are inconsistent

- The SmartRod measurement is temperature compensated, however a thermal shock can temporarily affect the precision of your measurement. When a high accuracy is needed and the unit is exposed to a quick temperature change, it is recommended that you completely extend and collapse it once or twice to reach uniform temperature before taking measurements.

#### If the laser receiver batteries (top compartment) don't last long enough

- Don't push the red button to go into measurement mode until the moment you're ready to extend the rod to capture the beam. As soon as you push the button, the laser receiver starts working

for 30 seconds and needlessly depletes the batteries unless you're ready to follow through and take a measurement. Once you get a read-out, the receiver batteries stop working until your next measurement.

### 4. Care and Handling

- Always store and transport the SmartRod in the protective carrying bag. It can also hold extra batteries, user manual, and other items.
- Do not wipe dust or dirt off the detector reception window or LCD display with a dry cloth or other abrasive material as scratching could occur, reducing visibility through these windows. A soft cloth and mild soap and water are effective.

### Technical Tips

#### To attain the highest precision

This product is designed to compensate for temperature differences. However, when high precision is desired (+/- 3/32" or +/- 2,5 mm) avoid thermal shock during operation.

For instance, if you take the SmartRod from air-conditioned storage and want to use it immediately outside on a hot day, completely extend and collapse it once or twice to reach uniform temperature.

### 5. Safety Directions

#### PRECAUTIONS

The product must not be disposed with household waste. Dispose of the product appropriately in accordance with the national regulations in force in your country.

### ELECTROMAGNETIC COMPATIBILITY (EMC)

#### Description

The term Electromagnetic Compatibility is taken to mean the capability of the product to function smoothly in an environment where electromagnetic radiation and electrostatic discharges are present, and without causing electromagnetic disturbances to other equipment.

#### ⚠ WARNING

Electromagnetic radiation can cause disturbances in other equipment. Although the product meets the strict regulations and standards which are in force in this respect, the manufacturer cannot completely exclude the possibility that other equipment may be disturbed.

#### ⚠ CAUTION

There is a risk that disturbances may be caused in other equipment if the product is used in conjunction with accessories from other manufacturers, for example field computers, personal computers, two-way radios, nonstandard cables or external batteries.

#### Precautions:

Use only the equipment and accessories recommended by the manufacturer. When combined with the product, they meet the strict requirements stipulated by the guidelines and standards. When using computers and two-way radios, pay attention to the information about electromagnetic compatibility provided by the manufacturer.

#### ⚠ CAUTION

Disturbances caused by electromagnetic radiation can result in erroneous measurements. Although the product meets the strict regulations and standards within this respect, the manufacturer cannot completely exclude the possibility product may be disturbed by very intense electromagnetic radiation, near radio transmitters, two-way radios or diesel generators.

#### Precautions:

Check the plausibility of results obtained under these conditions.

#### ⚠ WARNING

If the product is operated with connecting cables attached at one of their two ends, for example, external supply cables, interface cables, the permitted level of electromagnetic radiation may be exceeded and the correct functioning of other products may be impaired.

#### Precautions:

While the product is in use, connecting cables, for example product to external battery, product to computer, must be connected at both ends.

#### ⚠ DANGER

Because of the risk of electrocution, it is very dangerous to use grade rods and staffs in the vicinity of electrical installations such as power cables or electrical railways.

#### Precautions:

Keep at a safe distance from electrical installations. If it is essential to work in this environment, first contact the safety authorities responsible for the electrical installations and follow their instructions.



#### ⚠ WARNING

If the product is used with accessories, for example masts, staffs, poles, you may increase the risk of being struck by lightning.

#### Precautions:

Do not use the product in a thunderstorm.

### Warranty

The SmartRod comes with a one-year warranty from Agatec. More information can be found at: [www.agatec.com](http://www.agatec.com)



# YORK Survey Supply

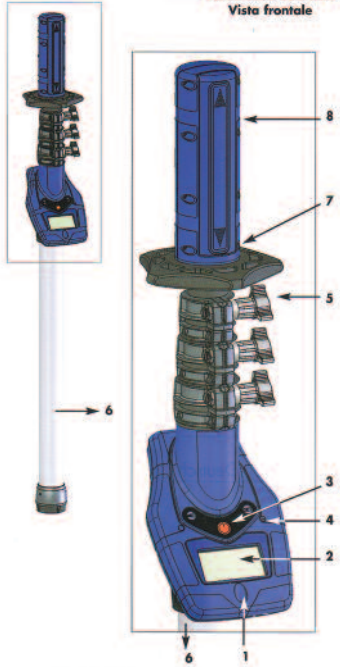
## AgaTec SmartRod



Code: 778415

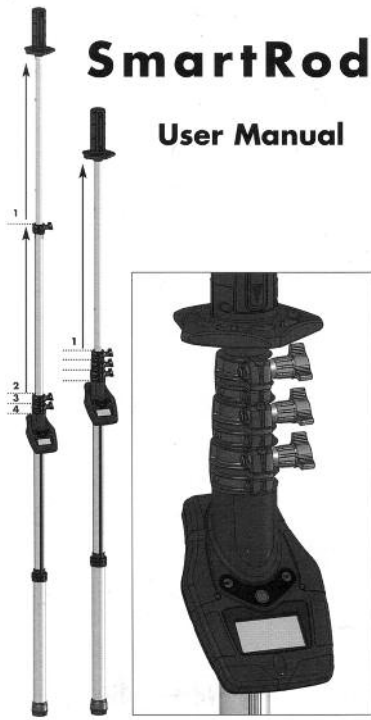
## Operating Instructions

Front view  
Face avant  
Vista frontal  
Vorderseite Übersicht  
Vista frontale



# SmartRod

## User Manual



### Table of contents

- General information and start-up
  - Specifications
  - Overview with battery installation
- Operation
  - Elevation reading
  - Cut and fill mode
  - Tape measure mode
- Troubleshooting
- Care and handling, technical tips
- Safety and warranty

Although the SmartRod is easy to use, we recommend that you read this manual before use, as it functions differently than a standard laser receiver.

### 1. General Description

The SmartRod is a laser receiver built into a telescoping rod, with unique features that eliminate the usual calculations required when using a receiver on a grade rod. It provides a digital readout in three modes: basic elevation readings, cut-and-fill calculations, and height and width measurements (tape measuring mode, not requiring a laser). It can receive reference elevation information from all rotating lasers.

The SmartRod has these advanced features:

- LCD showing elevation, measurements, settings, and status of functions
- Cut-and-fill mode that indicates how far a measurement is from a previous reference reading
- Choice of units: metric; ft/10ths/100ths; and ft/inches/16ths
- Uses linear receiving technology and has a wide 6.5" (165mm) reception range for capturing the beam quickly.

Specifications	
Working radius*	> 9' 10" (3 m) to working range of laser
Detection accuracy	±3/32" (±2.5 mm)
Range of reading	Elevations from 3.2' (.99m) to 13.2' (4.02 m)
Choice of units	<ul style="list-style-type: none"> <li>• Metric</li> <li>• Feet/10ths/100ths</li> <li>• Feet/inches/16ths</li> </ul>
Beam capture angle	120° minimum
Beam capture height	6.5" (165 mm), dependent on laser and distance
Detectable laser beam	Visible and infrared (610 nm to 780 nm)
Power supply/battery life	<b>Control panel:</b> (3) AA batteries for min. 60 hrs. <b>Laser receiver:</b> (3) AA batteries for min. 3000 measurements
Standby of capture mode	After 30 seconds (no use)
Automatic shut-off	After 5 minutes (no use)
Operating temperature	14°F to 122°F (-10°C to +50°C)
Storage temperature	-40°F to 158°F (-40°C to +70°C)
Environmental	IP54 for water and dust resistance
Weight	8 lbs. (3.6 kg)
Dimensions	Total extended height: 13.4 ft (4.07 m); closes to 3.8 ft. (1.15m)

Specifications subject to change without notice.  
\* At short range, below 9' 10" (3 m), high output lasers can cause inconsistent readings. Please restrict use of SmartRod in short range.

### Overview

Inside front cover has photos corresponding to these callouts.

#### • Front View

- Bubble vial:** To plumb SmartRod for accurate readings.
- LCD:** Measurements, mode, settings, status.
- Control panel:** Power, units, mode, and volume buttons.
- Beeper output:** First short beep indicates reception. Second double-beep indicates measurement.
- Screws:** To loosen or tighten each extendable element.
- Lower telescoping element:** Extend first to control panel is at eye level. Twist left to unlock, extend, and twist right to lock.
- Rubber bumper:** Protects reception window if dropped.
- Receiver battery compartment:** To insert 3 AA batteries, open door and follow polarity indications inside.

#### • Rear View

- Reception window:** Must be directed toward laser.
- Control panel battery compartment:** To insert 3 AA batteries, slide cover up and note the polarity indications inside.
- Serial number / ID label**

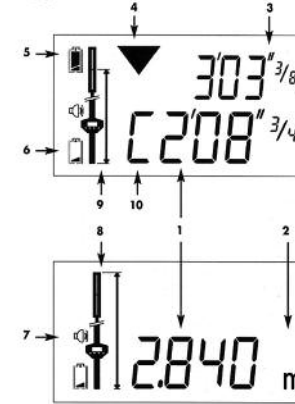
#### • Keypad Functions

- Power**
  - Press to turn power ON. Press and hold for 2 seconds to turn power OFF.
  - Press to take a measurement.
- Beeper volume**
  - Press to cycle through: High, Normal and Off. One beep is emitted at the selected volume when changed.
  - Note: When sound is Off, no single beep will signal that a laser beam has been detected.**
- SET**
  - Press once for the Cut & Fill Mode. The last measurement taken (reference point) will move to the top. On the next measurement, the difference to the reference measurement is displayed as the Cut or Fill value.
  - Press and hold for Measuring Tape Mode (not using the laser beam).

### 15. Units of Measure

Press **⊕** & **⊖** simultaneously to change the current settings on the LCD. The units selected are shown in the bottom right corner (m, ft, or inches). Continue pressing to scroll through the choices: meters, cm, mm / foot, 10ths, 100ths / feet, inches, 16ths.

#### • LCD



- Elevation or measurement
- Units of measurement
- Elevation in fractions of an inch
- Up or down arrows: cut or fill indicators
- Battery status for laser receiver (shows full)
- Battery status for control panel (shows nearly depleted)
- Beeper volume control
- Tape measure mode indication
- Elevation mode indication
- C or F: Cut or Fill indicator (with ft. unit settings)

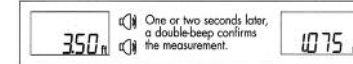
### 2. Operation

#### • Elevation Reading

If you are working in feet/inches/16ths, the procedure is the same as the example below.

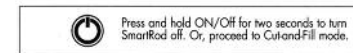


- For your convenience you may extend the bottom section so the control panel is eye level; twist left to unlock, then raise, and twist right to lock. Extend the other rod elements until the reception window is at the correct height to catch the laser beam. The beam only has to touch some part of the window; it does not need to be in the center.
- As soon as a short beep indicates that the receiver sees the laser beam, immediately stop raising or lowering the reception window.



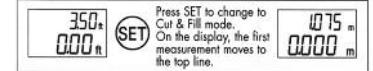
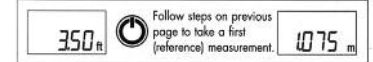
If the rotating laser doesn't hit the SmartRod reception field within 30 seconds, the reception field will switch off, and a blank screen will appear where you had been seeing the 4 lines.

Press **⊕** another time to try again to catch the beam.



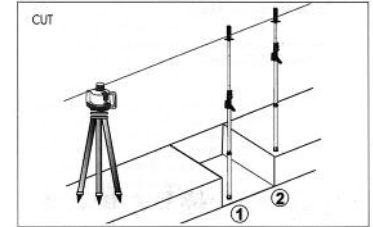
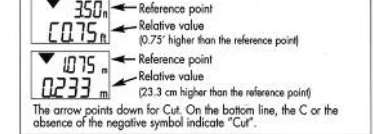
#### • Cut & Fill

If you are working in feet/inches/16ths, the procedure is the same as the example below.

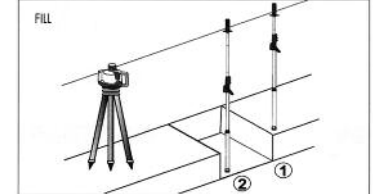
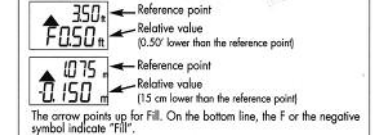


Press **SET** to change to Cut & Fill mode. On the display, the first measurement moves to the top line.

Move to your 2nd point and take another measurement. The difference between it and the first reference point (top line) will be shown on the bottom line.



Fill: If the 2nd point is lower than the reference point

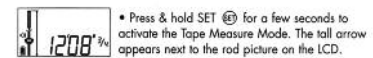


Note: The C or F won't be displayed if the relative value is  $\geq 10$  ft (3 m).

Press **SET** to leave Cut and Fill mode and return to standard measurement mode. Or, press **ON/OFF** for two seconds to turn SmartRod off.

#### • Tape Measure Mode

This function enables you to use the SmartRod as a measuring stick to measure lengths, widths, or heights (eg: inside a building). You do not need a rotating laser to do this.



Press & hold **SET** for a few seconds to activate the Tape Measure Mode. The tall arrow appears next to the rod picture on the LCD.

