



Practical solutions...at every level!

# SiloPatrol® SMU

## FEATURES & ADVANTAGES

- ▼ **Weight and cable-based “Smart” level sensor** provides continuous or on-demand level measurement and is unaffected by material characteristics such as dielectric constant, conductivity, dust and humidity.
- ▼ **Innovative Hall-effect sensor array** helps to eliminate the plumb bob from getting stuck in material by providing data to the microprocessor which in turn controls the amount of power to the robust direct-drive gear motor so it can pull the plumb bob harder if needed.
- ▼ **Wireless Bluetooth® set-up** allows operator to utilize a free configuration app on an Android-based device with Bluetooth® capability to easily access and configure the SMU set-up. (App available from Monitor’s Web site or Google Play...Search for “SiloPatrol” or “ConfigureSensor”)
- ▼ **Modbus™ connectivity** lets the RS-485 version of SMU communicate with existing control systems.
- ▼ **Widened array of programmable features** including cable cycle limit and relay output for high or low distance threshold setting, error indication or cycle operate.
- ▼ **Split-compartment enclosure** isolates all electrical and electronic components from the process environment to ensure long-term reliable operation.
- ▼ **Uniquely designed wiper seal compartment** for fast, easy servicing or replacement if necessary.
- ▼ **Easy to install** means that the user-friendly design and technology does not require the services of an instrumentation technician.
- ▼ **Measuring range up to 150 feet (46m)** in storage vessels.

Ordinary Loc. Unit Shown



Now with Wireless Bluetooth® Set-Up App





-OR- download free Android™-based app from Monitor Web site at [www.monitortech.com/apps](http://www.monitortech.com/apps) or scan QR-Code



**Practical Tip**  
SiloPatrol provides reliable long-range measurement of materials with low dielectric constants such as plastics.

## PRINCIPLE OF OPERATION

The heart of the **SiloPatrol® ** Inventory Management System is an industry-leading cable-based “Smart” sensor called the Silo Monitoring Unit (SMU) that is designed to perform in some of the harshest and most dynamic level measurement conditions. The SMU with its state-of-the-art sensors including Hall-effect technology can be combined with a variety of operator interface and auxiliary output options to provide a practical vendor / remote managed inventory system designed for your specific requirements.

When a measurement cycle is initiated, either manually or automatically, the **SiloPatrol® ** sensor (SMU) motor control system deploys a plumb bob, that is attached to a heavy-duty stainless steel cable, for descent into the vessel. The motor control circuitry regulates an optimal speed of descent that helps to eliminate cable slack, maximizes motor life and ensures that the plumb bob will stop when it contacts the material surface. In addition, the motor control system has a “Descend-Assist” feature that can be used to prevent the plumb bob from “clinging” to the socket that might occur in extreme applications. The SMU measures the amount of cable deployed during descent via its unique optical sensing system. Once the optical encoder determines that the plumb bob has reached the material surface, the microcontroller reverses the direction of the motor and transmits the distance value. During the ascent of the plumb bob, the SMU measures the amount of cable retrieved in order to reconfirm the distance measurement.


## PRACTICAL APPLICATIONS

- ▼ Use when target material characteristics may change thereby eliminating need for re-calibration.
- ▼ Great economical choice when accuracy is important and periodic measurements are sufficient.
- ▼ Measuring technique provides peace-of-mind without concern of spurious reflections associated with other technologies.
- ▼ Typical applications include, but are not limited to: Grains, Feeds, Powders, Coal, Bulk Chemicals, Cement, Rocks, Sand, Limestone, Plastic Pellets, Plastic Regrind, Slurries, Liquids and Oils.
- ▼ Measure many liquids or slurries with optional ball float plumb bob or detect some settled solids covered in water with optional solid/water interface plumb bob.

For more detailed information, please contact a Monitor representative or visit Monitor’s website at [http://www.monitortech.com/product\\_c\\_c\\_sp.shtml](http://www.monitortech.com/product_c_c_sp.shtml)



## OPTIONS

- ▼ Models to choose from:
  - ▼ Smart RS-485 version with Bluetooth® set-up for use with **HMI2** local operator interface or **SiloTrack™** inventory management software. Also includes Modbus connectivity to communicate with other operator interfaces or control systems being used at facilities that utilize Modbus. (Units are backwards compatible.)
  - ▼ Analog output version with Bluetooth® set-up for use as a standalone transmitter that provides an updated analog signal each time a new measurement is made. (Units are backwards compatible.)
- ▼ Choice of 0°, 5° or 10° freeze-resistant mounting flange.
- ▼ Selection of plumb bobs to fit specific application needs.
- ▼ Available options: ordinary location, CSA<sub>US/C</sub> hazardous location, ATEX  hazardous location, IECEx hazardous. (Hazardous location models do not include a view lens on cover.)
- ▼ **WirelessEZ** communication interface is available.
- ▼ Optional independent analog & relay outputs are offered for RS-485 systems using an Auxiliary Output Enclosure (AOE).

