Constant Monitor
Installation, Operation and Maintenance

Figure 1. SCS WSMONITOR1 Constant Monitor

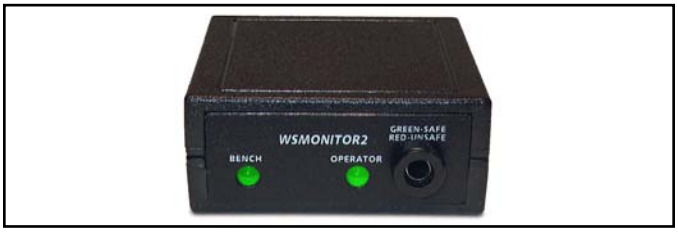

Figure 2. SCS WSMONITOR2 Constant Monitor

Figure 3. SCS WSMONITOR3 Constant Monitor

Description

SCS Constant Monitors meet the Continuous Monitor requirements of ANSI/ESD S20.20. "Typical test programs recommend that wrist straps that are used daily should be tested daily. However, if the products that are being produced are of such value that knowledge of a continuous, reliable ground is needed, and then continuous monitoring should be considered or even required." (ESD Handbook ESD TR20.20 Wrist Strap section 5.3.2.4.4 Test Frequency)

- Monitors can check up to two wrist strap systems and one worksurface, depending on the model.
- Compatible with single-wire wrist straps.
- Easy to use: Simply plug in the wrist strap.
- Easy to install: Attach the monitor boxes to the bench with included hardware, connect the mat and plug it in.

Damage to electronic devices is caused by static electricity from people. Connecting people to ground directs static electricity away from devices. Constant Monitors are designed to constantly test the connection of the person, the wristband and the coiled cord to help ensure that people remain grounded.

Constant Monitor WSMONITOR1 uses a solid state impedance design to constantly test the connection integrity of the entire ground system including the person, the wristband and the coiled cord. Constant Monitors WSMONITOR2 and WSMONITOR3 also provide worksurface monitoring. This system is fully automatic and activates when a wrist strap is plugged into the unit. A green light indicates connection and a red light indicates there is no connection. The unit is powered and grounded by the AC adapter.

The Constant Monitor is available in six models:

Item	Operator(s)	Mat(s)	Power Adapter Input
WSMONITOR1	1	0	120VAC
WSMONITOR1-230VAC	1	0	230VAC
WSMONITOR2	1	1	120VAC
WSMONITOR2-230VAC	1	1	230VAC
WSMONITOR3	2	1	120VAC
WSMONITOR3-230VAC	2	1	230VAC

Packaging

WSMONITOR1 & WSMONITOR1-230VAC
1 WSMONITOR1 Constant Monitor
1 Power Adapter
2 Screws
1 Hook and Loop Fasteners
1 Certificate of Calibration

WSMONITOR2 & WSMONITOR2-230VAC
1 WSMONITOR2 Constant Monitor
1 Mat Monitor Cord
1 Power Adapter
1 STACKJACK
1 Alligator Clip
2 Screws
2 Hook and Loop Fasteners
1 Certificate of Calibration

WSMONITOR3 & WSMONITOR3-230VAC
1 WSMONITOR3 Constant Monitor
2 Operator Remotes
1 Mat Monitor Cord
1 Power Adapter
1 STACKJACK
1 Alligator Clip
4 Screws
2 Hook and Loop Fasteners
1 Certificate of Calibration

Installation

WSMONITOR1

1. Check that you have received all parts: monitor, power ground adapter and two mounting screws.
2. Using the mounting screws, mount the monitor under the work bench. (Other suggested mounting locations include the bench top and under bench shelving.)
3. Plug the power/ground adapter into the back of the monitor and into a 3-prong 120VAC outlet.

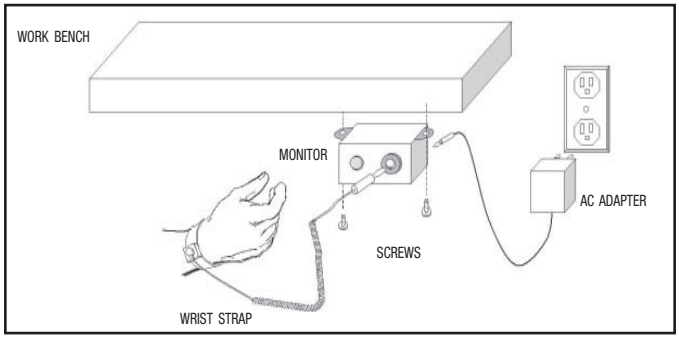

Figure 4. Installing the WSMONITOR1 Constant Monitor

WSMONITOR2

1. Check that you have received all parts: monitor, power/ground adapter and two mounting screws.
2. Using the mounting screws, mount the monitor under the work bench. (Other suggested mounting locations include the bench top and under bench shelving.)
3. Plug the power/ground adapter into the back of the monitor and into a 3-prong 120VAC outlet.

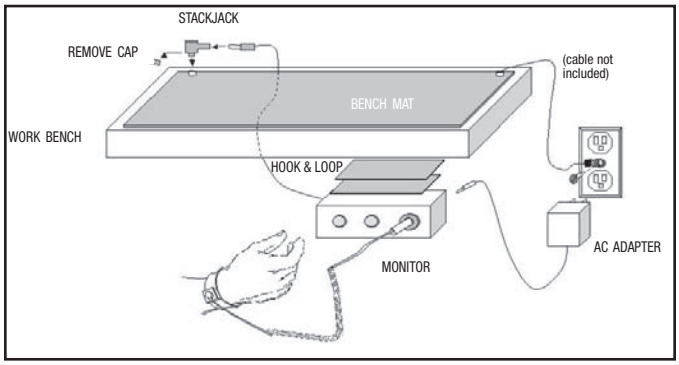

Figure 5. Installing the WSMONITOR2 Constant Monitor

WSMONITOR3

1. Check that you have received all parts: monitor, remotes, four screws, power/ground adapter, mat cord and industrial hook and loop.
2. Using the hook and loop, mount the monitor under the workbench shelf.
3. Mount the remotes to the work bench with screws.
4. Connect the monitor to the STACKJACK.
5. Remove a plastic cap from STACKJACK and snap it to the mat.
6. Connect the other mat snap to ground. (Cable not included.)
7. Plug the power/ground adapter into the back of the monitor and into a power outlet.

Note: The mat connection monitoring function can be connected to a workbench with a hard worksurface.

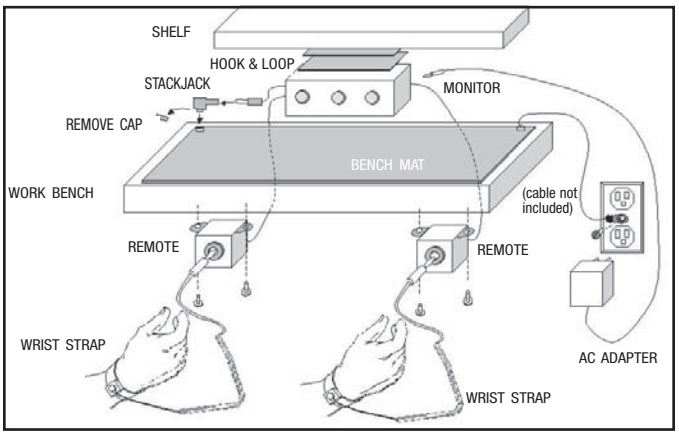

Figure 6. Installing the WSMONITOR3 Constant Monitor

Operation

- Place a wristband on your wrist and plug the coiled cord banana plug into the monitor's banana jack. The monitor will display a green light when a functional wrist strap with good skin contact is connected to the unit.
- The unit will sound an alarm and display a red light if the wrist strap becomes defective or if the person is not in contact with the wristband.
- Unplug the wrist strap coiled cord from the unit to stop the alarm.
- Monitor will alarm if the continuity from the monitor to the mat to ground is lost.

Calibration

The Constant Monitors are calibrated to standards traceable to NIST. Frequency of recalibratrion should be based on the critical nature of those ESD sensitive items handled and the risk of failure for the ESD protective equipment and materials. In general, we recommend that calibration be performed annually.

Use the SCS TMTOOL Verification Tester to perform periodic testing (once every 6-12 months) of the Constant Monitors. The Verification Tester can be used on the shop floor within a few minutes virtually eliminating downtime, verifying that the monitor is operating within tolerances.

Figure 7. SCS TMTOOL Verification Tester

Specifications

Monitor Type	Impedence - single-wire
Circuitry	Solid-state, surface mount
Alarm	Audible and visible (LED)
Alarm Threshold	8 megohms
Power	120VAC, 230VAC
Adjustments	None required
Calibration	See SCS TMTOOL

Item	Dimensions	Weight
WSMONITOR1	0.9" H x 1.8" W x 1.3" D	1.2 oz.
WSMONITOR2	1.0" H x 2.4" W x 2.3" D	1.6 oz.
WSMONITOR3	1.0" H x 4.0" W x 2.4" D	2.6 oz.

Safety Information

Read, understand, and follow all safety information contained in these instructions prior to the use of Constant Monitors WSMONITOR1, WSMONITOR 2, and WSMONITOR3. Retain these instructions for future reference.

Warning

To reduce the risks associated with fire and explosion:

- Do not use in an explosive environment - monitor is not designed to be intrinsically safe.

To reduce the risks associated with medical device malfunction:

- Persons with heart pacemaker devices should never use this monitor.

To reduce the risks associated with hazardous voltage and fire:

- Use only the power supply provided by SCS and specified for the country of use.
- Do not position the monitor accessories or other equipment where unplugging the power supply is difficult.
- Always locate the power source (socket or outlet) near the equipment. The power supply plug serves as the disconnect device.
- Do not modify or attempt to service the power supply or monitor; there are no user serviceable parts.
- Do not use the power supply if damaged;
- Replace power supply if damaged using only SCS supplied parts.
- Do not use the Constant Monitors WSMONITOR1, WSMONITOR 2, WSMONITOR3 or their power supplies outdoors in wet/humid environments.
- Do not use the Constant Monitors WSMONITOR1, WSMONITOR 2, WSMONITOR3 or their power supplies outside of the operating conditions listed in this user guide.
- Always follow instructions for installation as stated in this user guide.

Caution

To reduce the risks associated with environmental contamination:

- Dispose of this monitor in accordance with all applicable local and government regulations.

Notice

To reduce the risk of ESD damage to components or assemblies being handled:

- Monitor must be checked periodically to verify each test mode is functioning correctly.
- Ensure proper operation of monitor by performing operational verification test as required.
- Ensure tester is properly grounded.