



790 Static Monitor



In our ever-changing high tech world, a company's reputation for providing dependable products of excellent quality is the one constant. Attention to fine detail is the key to ensuring that a high tech company here today will be enjoying the rewards of tomorrow. Among the many details of meeting these demanding specifications is the control of electrostatic discharge (ESD).

The High Cost of Static Discharge

Static is generated all around us through simple movements, such as walking from one workstation to another, or pulling tape from a dispenser. A static charge builds up, causing a discharge, often called a static shock. Even a small discharge can measure several hundred volts and damage microelectronic components, which can cause these components to fail when installed in computers, cell phones and other devices. Semi-conductor devices damaged by static electricity can impact yield rates and product reliability if not properly handled. However, more costly than the damaged goods a company distributes is the damaged reputation it suffers with its customer base. The fact is most ESD damage can be prevented through a static control program which emphasizes constant monitoring to assure peak performance. To help achieve that goal of constant vigilance, 3M is pleased to announce the development of the 3M™ Model 790 Static Monitor.

Cost-effective Static Monitor

3M recognizes that while high tech companies have to act quickly and wisely in their endeavor to establish a plan for constant monitoring, they must do so with an eye toward the bottom line. The 790 Monitor is a cost efficient unit that is small, compact and versatile in its usage, and may be mounted directly onto device handling equipment, testers, and auto insertion equipment. An operator simply inserts a dual conductor ground cord into one of the input jacks located on the monitor while working on an integrated circuit device handler. The 790 may also be mounted at individual workstations, and at auto insertion equipment used in contract manufacturing facilities.

Housed in static dissipative plastic, the 790 works by measuring the voltage potential on a person referenced to earth ground. The 790 uses a slide switch allowing the user to select the voltage level necessary for the specific job function being performed. For example, the 1V and 3V levels are used for highly critical applications in disk drive and wafer fabrication manufacturing, while the 6V and 9V levels can be used for less sensitive work areas such as PCB assembly. Included with the 790 is a mounting plate that allows it to be permanently mounted at an ESD workstation or directly to a device handler, tester, or auto insertion equipment. Power is supplied to the 790 through an AC adapter.

The 790 has two wrist strap input jacks located on its front, which allows two operators to use one 790 monitor unit at a workstation simultaneously. A green light indicates that the unit is "on" and that all monitored connections are within set limits. Two red lights and an audible alarm flash and beep at different rates to indicate 3 separate alarm conditions:

- Exceeding voltage level set limit
- Loss of contact between arm and wristband
- 790 disconnected from ground

These distinct alarms make it easy to identify which operator and the type of fault condition. The audible alarm can be adjusted to a low or high level to overcome background noise from other equipment that may be in use in the area. Ring terminals on the end of the 790's ground and chassis cords provide a permanent connection.

Product Features

- Audible and visible alarms
- Compact system
- Pre-select test voltages 1V, 3V, 6V, & 9V
- Static-dissipative plastic housing
- Mounts easily to ESD worksurface
- Regulatory Compliance: UL & CE

The 3M 790 Static Monitor system includes a mounting plate with adhesive, an AC adapter, and two ground cords with a two-wire connector.

3M™ 790 Static Monitor

Required accessories and optional parts for 3M 790 Static Monitor

Model No.	Description	Size
2368VM	Dual Conductor Fabric Wrist Band	Adjustable
2381VM	Dual Conductor Metal Wrist Strap*	Small
2382 VM	Dual Conductor Metal Wrist Strap*	Medium
2383 VM	Dual Conductor Metal Wrist Strap*	Large
2384VM	Dual Conductor Metal Wrist Band	Small
2385VM	Dual Conductor Metal Wrist Band	Medium
2386VM	Dual Conductor Metal Wrist Band	Large
2360	Dual Conductor Coil Cord	5 ft.
2370	Dual Conductor Coil Cord	10 ft.
2371	Dual Conductor Coil Cord	20 ft.
3057	Stand-By Jack	_____

*Includes Band & Cord

Quality in Action

ISO requirements state the need for verification of performance of all test equipment. A 3M™ 790VK Verification Kit allows you to meet these requirements. The kit includes hardware items for connection to the 790 Monitor.

Ordering Information:

For ordering information, technical information and product information, you can reach us at:

Phone: 1-800-328-1368

Fax: 1-800-828-9329

790 Properties

Item	Typical Properties
Monitor Size	3.5" x 4.0" x 1.25" (88,9mm x 101,6mm x 31,8mm), approximate
Power Supply Requirements:	
Input	120 Vac $\pm 10\%$ (North America)
Outside North America	(As required)
Output	25 Vdc @ 50 mA rated load
Output Plug Polarization	Center negative
Output Plug Dimensions	5,5mm O.D. x 2,1mm I.D. x 9,5mm length
Accuracy: (The following parameters are valid for altitudes up to 2000 m. Pollution degree 2, Class 3, Equipment)	
Voltage Detection Levels	(1V $\pm 15\%$) (3V,6V, & 9V $\pm 10\%$)
Ground Disconnect	10 ohms $\pm 20\%$
Environmental Operating Conditions:	
Temperature	Maximum 104°F (40°C); minimum 50°F (10°C)
Humidity	Maximum 75% relative humidity

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