Systeme für die Elektronik-Fertigung

DPV Elektronik-Service GmbH
Herrengrundstraße 1
75031 Eppingen, Germany

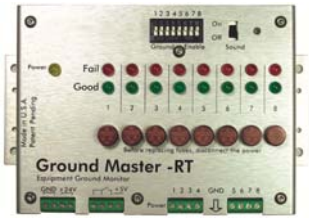
Telefon: +49 (0) 7262-9163-0
Telefax: +49 (0) 7262-9163-90
E-Mail: info@dpv-elektronik.eu

DPV ELEKTRONIK

www.dpv-elektronik.eu

Innovative measuring equipment for 3M ESD management

Raise the quality – reduce the costs!



3M

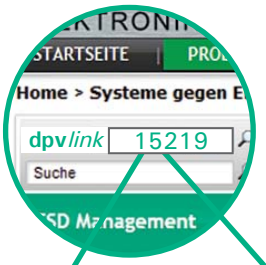
DPV ELEKTRONIK

www.dpv-elektronik.eu

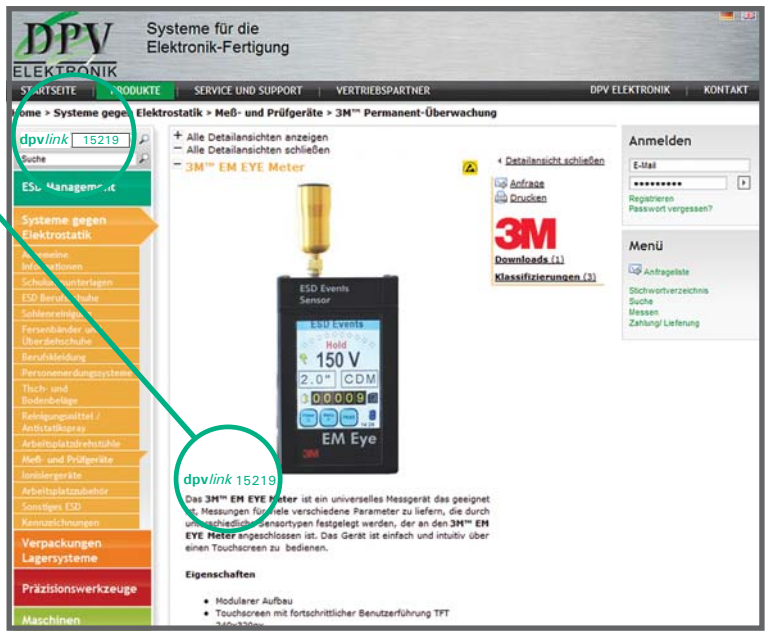
Inhalt

dpv*link*

for a quick article research please indicate the **dpv*link*** in the search field on the Internet.



Print catalog

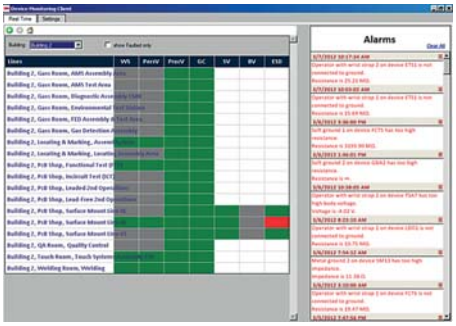


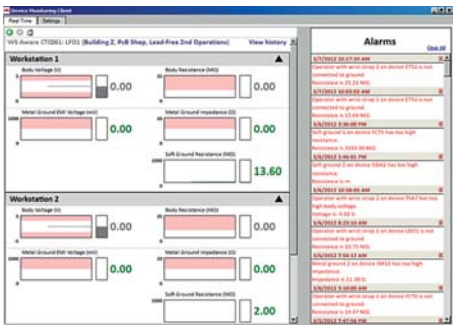
3M

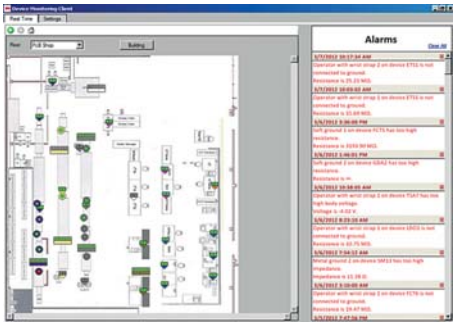
3M™ Static Management Program (SMP)

Cost and quality improvement by innovations – 3M ESD protection you can trust.

Innovations in the protection against electrostatics



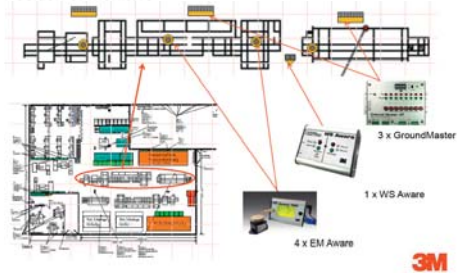


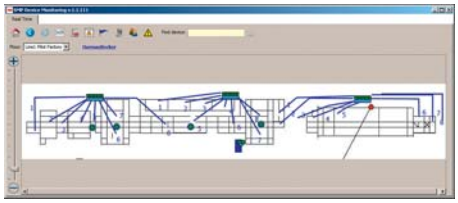


Progressing miniaturization and the further development of technologies increase the components' sensitivity to ESD. In addition, progressively automated manufacturing processes raise the risks of damage caused by ESD. At the same time the customers of electronics manufacturers require high reliability of electronic devices. 3M™ Static Management Program offers the possibility to control the measures for protecting against EOS (Electrical Overstress) and ESD (Electrostatic Discharge) in electronics manufacturing.

3M SMP comprises ideally matched product, software and service solutions and thus offers possibilities to save process costs along with an increase of the manufacturing quality. The specially developed 3M™ Static Monitoring Software allows permanent monitoring of the ESD protection and logging in all manufacturing processes. This ensures that you and your customers will have a process reliability and manufacturing quality in EOS/ESD protection that so far has been unachieved.

Position of Monitors





Are you sure that ESD protection in your facility works and is sufficient?

With continuous monitoring by 3M SMP, you can. 3M professionals are available to offer you remote or on-site technical and diagnostic support.

We also offer calibration and repair services to help you to ensure that your static control system is working properly.

Order information

Article no.:
3M-SMP
Version:
3M™ Static Management Program

dpv*link* 16796

The 3M SMP has four concerted components:

1. Facility assessment

Preparatory discussion:
Prior to performing this assessment, 3M professionals meet with you to conduct a situation analysis and to identify appropriate goals and relevant industry standards for your facility.
Risk evaluation:
3M-certfied professionals conduct a thorough evaluation of your manufacturing facility in order to determine where static events are occurring or may occur.

A detailed risk assessment consists of five relevant measuring parameters:

- Impedance to ground and EMI voltage on ground
- ESD events at machines, tools and benches
- EMF at machines, tools and benches
- EOS voltage on boards
- Working surfaces, benches, wrist straps and cables, flooring and other items are tested for correct function and connection

A formal report will be provided and contains the following information:

- List of equipment used during the assessment as well as numeric finding of tested parameters
- Detailed list and analysis of findings per bench and machine
- Recommended solutions for the mentioned problems for being able to conserve the determined ESD specifications

2. Solution implementation and test

3M ensures a proper installation / implementing of all equipment and software you chose.

3. Training

3M offers training tailored to your business and personnel. Detailed, technical training is conducted in-person for engineers and supervisor-level personnel. Online training is available for operators and manufacturing personnel. The training comprises essential ESD/EOS prevention measures.

4. Permanent monitoring and support

A key component of the 3M SMP is the proprietary 3M Static Monitoring Software, which enables real-time monitoring of your facility for critical parameters like voltage and bleeder resistance, as well as actual ESD events and occurring static fields. When determined thresholds are exceeded your personnel is immediately alerted so that they can investigate and take quick action to prevent or mitigate any damage.

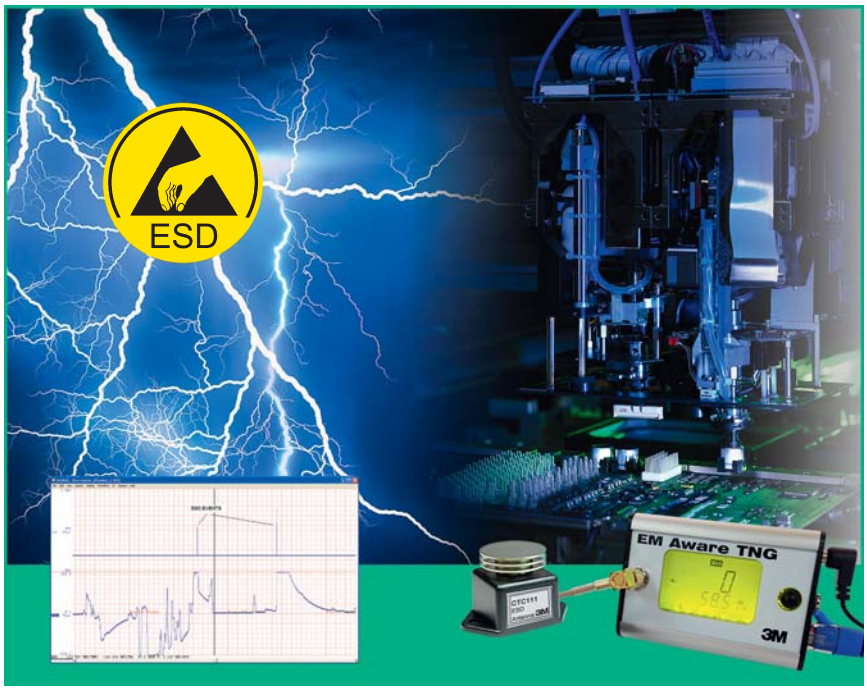
DPV ELEKTRONIK

www.dpv-elektronik.eu

3M™ EM Aware TNG

ESD Event Monitor Starter-Kit

The 3M™ EM Aware TNG Starter kit is an indispensable instrument for the ESD management. It is ideal for the monitoring, analysis and evaluation of ESD protective measures for workstations and facilities.



ESD protective measures are supposed to reduce or to prevent electrostatic charge and "hard discharge" (ESD events) on components and devices or wafers.

Base your ESD protection on measurements.

The measurement of electrostatic fields and the detection of ESD events with 3M™ EM Aware TNG monitors allow for identifying ESD risks and evaluating ESD protective measures.

Measure and document the efficiency of your ESD protective measures.

Regardless of whether you want to monitor workstations, facilities or machines or to evaluate a very critical process, the recorded measured data provide you the basis for a reliable analysis of the existing ESD risks. This data can be used to verify and document the efficiency of the taken measures.

Applications

- Semiconductor production
- Disk drive assembly
- Flat panel fabrication
- Electronic assembly
- Industrial robotics
- Medical engineering
- Military engineering
- Aerospace
- Electronics manufacturing and assembly

Features

- ESD events: magnitude and counting
- Static voltage
- Ionization balance
- Closed-loop ionizer feedback
- Ionizer decay
- EMI
- CDM mode
- LCD display
- Wide sensitivity range
- Adjustable sensitivity
- Audio and visual indication
- Stand-alone or networked
- Output to FMS and DAQ
- Individual alarm settings
- Local or remote antenna
- Joystick control

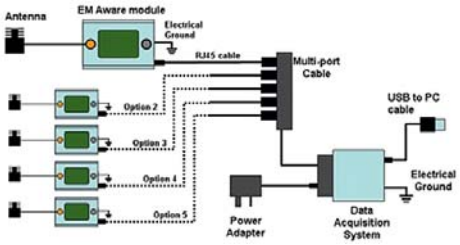
3M

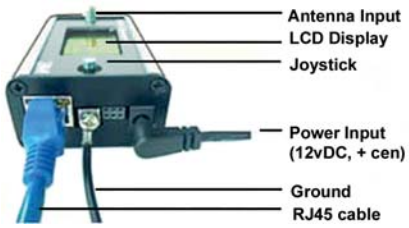
Properties

Starter Kits are available in different versions. Each starter kit includes a number of selected **3M™ EM Aware TNG monitors**, remote antennas, DAQ module for the connection of up to six **3M™ EM Aware TNG monitors**, a Window-based software, universal power supply unit and the necessary cable and adapters. The DAQ module can be connected to a PC with a USB 2.0 interface.

For further information see:
www.dpv-elektronik.de/starterkit

Modular construction





Order information

Article no.:
3M-3A3-C-TNG
Version:
3M™ EM Aware TNG ESD Event Monitor Starter-Kit

dpv*link* 17754

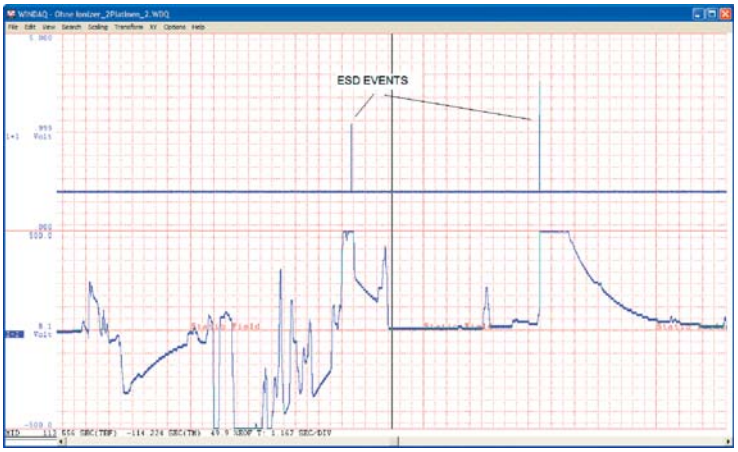
Real-time measurement during running production in facilities and machines.

Using the 3M™ EM Aware TNG Starter Kit gives you the possibility to record in real time measured data even in automated processes. The remote antennas are small-sized and can be installed easily inside the machines and facilities or at workstations. It is also possible to record measured data in inaccessible facility parts. The measurement reveals present ESD risks in a process or in a facility. Taking measurements during running production process or mounting allows to identify process-related electrostatic charges and to detect occurring ESD events.

The 3M™ EM Aware TNG Starter Kit includes all components that are needed for the connection of several EM Aware TNG monitors to a PC for the recording and display of data. The measured data can be displayed as graphics with data acquisition software (DAQ) and recorded for evaluation.

Visualize ESD risks!

Similar to an oscilloscope, the display of ESD risks is made nearly in real time. The starter kit allows for a simultaneous recording and display of up to 24 data channels. The software provides numerous display and evaluation functions. A function to export the recorded measured data into Office programs is available.



Application

- Analysis of ESD risks in machines, facilities and at workstations
- Possibility to analyze ESD risks of individual process steps
- Verification of the existing ESD protective measures
- Allows for a permanent monitoring and logging of the existing ESD protection
- Monitoring of critical processes
- Monitoring of the efficiency of ionizers
- Optimization of the ionizer's adjustments
- Comprehensive diagnostics and troubleshooting tool for ESD problems
- Measuring device for auditing

3M™ EM Aware TNG

ESD Event Monitor

An indispensable instrument for the ESD management

The newly developed **3M™ EM Aware TNG ESD Event Monitor** allows to detect and count occurring ESD events as well as to measure static fields at workstations and in machines. It is also optionally possible to monitor the functionality of DC ionizers. The measurements are permanently made. The exceeding of thresholds is indicated by signals. With the present software digital interfaces enable to display and log measured data on a PC or notebook.

The new **3M™ EM Aware TNG ESD Event Monitor** consists of a metal case module with integrated LCD display, joystick control, CDM mode to reject non-ESD/EMI events, local or remote antenna, power supply unit, communication interface for PC and data storage software. Several EM Aware monitors can be connected to a PC for a comprehensive analysis of your manufacturing process.

Key parameters

The 3M™ EM Aware TNG ESD Event monitor is designed to monitor the following parameters that help you to ensure the efficiency of your ESD protection:

- ESD events – detects ESD events and measures their magnitude in a wide range of sensitivity while counting the number of events
- Static voltage – real-time measurements of static voltage are done in a wide range
- Ionization balance – allows for a high sensitivity of the ionizer balance while enabling the measurement of static voltage
- Ionizer decay – provides continuous measurement of ionizer decay where sensitive components are handled
- Connectivity – provides outputs for all parameters to every important facility monitoring systems (FMS)

The thresholds for these parameters are completely adjustable.

Application

- Assessment the present ESD environment by collecting factual data and provision of information to make an informed decision about the level of ESD protection needed
- Real-time verification of the efficiency of the taken ESD protective measures
- Monitoring of manufacturing machines and equipment as well as workstations
- Continuous monitoring and logging of the present ESD protection in your facility
- Comprehensive diagnostics and troubleshooting tool for ESD and EMI problems

Applications

- Semiconductor production
- Disk drive assembly
- Flat panel fabrication
- Electronic assembly
- Industrial robotics
- Medical engineering
- Military engineering
- Aerospace
- Electronics manufacturing and assembly

Features

- ESD events: magnitude and counting
- Static voltage
- Ionization balance
- Closed-loop ionizer feedback
- Ionizer decay
- EMI
- CDM mode
- LCD Display
- Wide sensitivity range
- Adjustable sensitivity
- Audio and visual indication
- Stand-alone or networked
- Output to FMS and DAQ
- Individual alarm settings
- Local or remote antenna
- Joystick control

DPV ELEKTRONIK

www.dpv-elektronik.eu

3M™ Static Management Program

The **EM Aware TNG ESD Event Monitor** is a measuring device also used in the 3M™ Static Management Program (SMP). The measuring equipment used in the 3M™ SMP have a digital interface and can be interconnected to a company-wide measuring network via standard Ethernet interfaces. This allows controlling all measuring devices from a central point and with a software from any workstation. A server records the measured data centrally. Clientsoftware enables to present and to evaluate the data using reports and diagrams.
(for further information see 3M™ Static Management Program • dpv*link* 16796)

Order information

Article no.:
3M-034-3-TNG
Version:
3M™ EM Aware TNG ESD Event Monitor with power supply unit

dpv*link* 17000

Technical data

Properties	Typical values
ESD event threshold range	60 – 140 dBμV (default setting: 80 dBμV)
RAW Input Signal	60 dBμV (1mV), Uout = 1.25 V, Iout = 5 mA 136.7 dBμV (6.8 μV), Uout = 5 V, Iout = 20 mA, the dependence is linear
Static voltage range	12.5, 100, 250, 500, 1000 Volts
Signals	Uout = 1 V (4 mA for 250 ohm) ohm for high negative static voltage value range Uout = 5 V (20 mA for 250 ohm) ohm for high positive static voltage value range
Ionization Balance Range	+/- 5 Volts max.
Charge Decay Limit	5 Volts max. (10 seconds)
Load Resistance	250 ohm
Decay	00.0, U = 1 V 16.0, U = 2 V The dependence is linear Decay which is > 15.0 does not show on display
Alarm Indicators	Buzzer (with disable switch)
Operating Environmental Range	Temperature: 5°C to 40°C Humidity: 80% R.H. Maximum for temperatures up to 31°C, decreasing linearly to 50% relative humidity at 40°C
Dimensions	80 mm x 40 mm x 56 mm (WxHxL) (antenna not included)
Grounding cable	20AWG, multi-strand: 2.5 mm, black, #6 ring terminal
Input	SMA Connector for Bell antenna or Remote antenna
Output	RJ45 connector, 4 – 20 mA analog output RJ45 connector, output at pin7-gnd (PC is not included)
Color	silver/turquoise
Display	LCD segment
Power supply	Adapter, 12 V dc, center positive, 0.3A

3M™ WS Aware®

Workstation Monitor

The 3M™ WS Aware® Workstation Monitor enables permanent monitoring of two workstations

The measuring device is equipped with a DSP (digital signal processor) and monitors the proper grounding of operators, tools and work surfaces. Furthermore, EMI events at the ground connections are logged and displayed. 3M™ WS Aware monitors detect all grounding parameters of the working environment according to ANSI 6.1 and ANSI/ESDA S.20.20.

3M™ WS Aware allows for a continuous monitoring and logging of all detected events by a Facility Monitoring System (FMS) with a power data outlet or optionally with a digital MODBUS interface for a network via Ethernet (see 3M™ Static Management Program SMP).

The 3M™ WS Aware CTC061 is designed to monitor the impedance of two low-resistance grounding connections (e.g. for tools, soldering irons, machines) and two high-resistance connections (e.g. for table mats). Model CTC062 is designed to monitor the impedance of four low-resistance ground connections.

In addition, EMI voltage occurring at the low-resistance ground connections is monitored and indicated by a flashing yellow LED when the thresholds have been exceeded. Thresholds are adjustable. Exceeding the adjusted thresholds will be visually indicated by LEDs (OK green, alarm red, EMI voltage flashing yellow). Additionally, an acoustic alarm will sound, a function that can be switched off. Not used inputs are disabled by DIP switches and indicated by a dark LED.

Remote Terminal CTA242

Remote Terminal Big Brother CTA243

Properties

- Integrated, approximately credit-card sized monitor with versatile functions
- „Big Brother“ monitoring function identifies operators who are not properly grounded
- Extremely low test voltage (approx. 25mV) for continuous monitoring of the double-conductor wrist straps concerning voltage and resistance
- Monitoring of grounding parameters according to ANSI 6.1 and ANSI/ESDA S.20.20
- EMI monitoring of the ground connections
- RJ45 connection for data transfer to PC
- 2..20mA output / optionally MODBUS

Remote Terminals

Two double conductor wrist straps (operator and visitor) are monitored each by two remote terminals that are connected to the **3M™ WS Aware** with a connecting cable and that can be mounted e.g. on the bottom of table. Bleeder resistance and body voltage are continuously monitored.

In case of the terminals with Big Brother function, a photo sensor sounds alarm when there is somebody at the workstation who is not grounded via the remote terminal. This prevents that persons work at the workstation without being grounded by wrist strap.

3M™ Static Management Program (SMP)

The **3M™ WS Aware Workstation Monitor** is a measuring device also used in the 3M™ Static Management Program (SMP). The measuring equipment used in the 3M™ SMP have a digital interface and can be interconnected to a company-wide measuring network via standard Ethernet interfaces. This allows controlling all measuring devices from a central point and with a software from any workstation. A server records the measured data centrally. Clientsoftware enables to present and to evaluate the data using reports and diagrams. (for further information see 3M™ Static Management Program • dpv*link* 16796)

Order information

Article no.:
3M-CTC061-3-242
Model:
3M™ WS Aware CTC061
Workstation Monitor incl. power supply unit
2 x Remote Terminal CTA242

Article no.:
3M-CTC061-3-243
Model:
3M™ WS Aware CTC061 Big Brother
Workstation Monitor incl. power supply unit
2 x Remote Terminal Big Brother CTA243

Article no.:
3M-CTC062-3-242
Model:
3M™ WS Aware CTC062
Workstation Monitor incl. power supply unit
2 x Remote Terminal CTA242

Article no.:
3M-CTC062-3-243
Model:
3M™ WS Aware CTC062 Big Brother
Workstation Monitor incl. power supply unit
2 x Remote Terminal Big Brother CTA243

dpv*link* 14088

Technical data

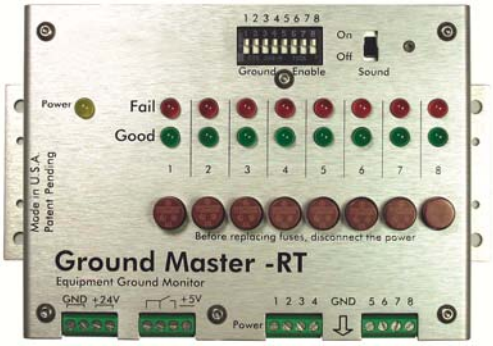
Wrist strap monitoring	
Ground connection	1 MOhm each wrist strap connector
Wrist strap connections	2 x remote terminals (1 operator, 1 visitor)
Test voltage to body	0,025 V (25 mV)
Body bleeder resistance alarm level	10 MOhm preset*
Charge on body alarm level	+/- 2,5 V preset*
Ground connection monitoring	
Model CTC061:	
Low-resistance ground connection (tools, machines, soldering irons)	2 connections
High-resistance ground connections (table mat)	2 connections
Model CTC062:	
Low-resistance ground connection (tools, machines, soldering irons)	4 connections
Alarm for low-resistance grounding*	10 Ohm preset
Alarm for high-resistance grounding*	1 GOhm preset
Measurement voltage	
Low-resistance connection	< 0,075 V open circuit
High-resistance connection	< 0,4 V open circuit
General information	
Power consumption	< 150 mA
Dimensions	81 x 57 x 33 mm
Weight (approx.)	120 g

* These parameters are adjustable either locally in the control panel or by a facility monitoring system. Preset values are used when there are no other specifications..

3M™ Ground Master®

Ground Monitors

Ensure a proper grounding of your equipment at all times



Proper grounding is crucial for safe and uninterrupted operation of equipment. In critical environments broken ground connection may result in personnel exposure to dangerous voltage, equipment lockup or malfunction and damage to sensitive components. Proper grounding is absolutely necessary for a safe handling with sensitive components and devices.
The **3M™ Ground Master** offers continuous monitoring of proper ground connection of up to 8 tools and up to 16 tools in tandem with another Ground Master. With individual status indication, 3M™ Ground Master shows which ground connection is being monitored, which one is OK (green LED) and which one has failed (red LED). Enabling switches for each ground connection allow for accurate and safe indication. In order to protect the equipment in case of faulty wiring of neutral leads, power and ground, every ground connection is protected by its individual easily replaceable fuse.

In addition to ground connection, **3M™ Ground Master** offers monitoring of EMI on each ground. Measuring the EMI voltage helps to voltage which presents a danger for persons, machines or devices.
The **3M™ Ground Master** provides information to a facility monitoring system (FMS) with detailed status on each ground connection. 3M™ Ground Master RT provides relay closure and logic signal to the tool so that monitored machines or devices can be shut down in case of failed grounding.

Key advantages

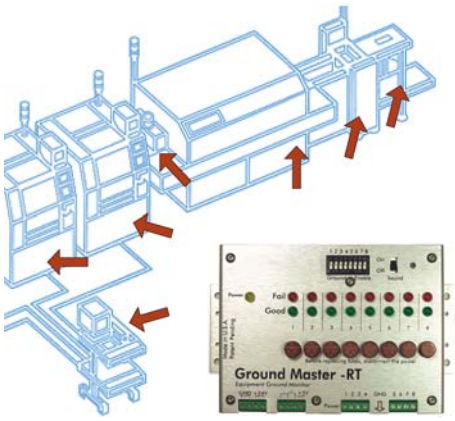
- **ANSI/ESDA S.20.20 compliant**
  Ground Master measures ground impedance in accordance with requirements of ANSI/ESDA S.20.20 standard
- **Adjustable alarm threshold**
  The alarm threshold can be easily adjusted at any time in a range of 1 to 20 ohm
- **Safety**
  Each ground connection is protected by individual fuses to protect equipment in case of faulty wiring of neutral leads, power and ground.
- **EMI**
  Ground Master monitors EMI on each ground connection and indicates EMI status
- **Output to data acquisition or facility monitoring system**
  Ground Master monitors provide intelligent output to a data acquisition or facility monitoring system. Power can be supplied via the same cable from FMS as well
- **Output to the tool**
  Ground Master RT provides relay closure and 5V logic signal to the tool to shut e.g. a machine down when any of the grounds fail

Applications

- Pick-and-place machines, machines
- PCB handling equipment
- Screen printer
- Conveyor belts
- Tester
- Photolithography equipment
- Wafer handlers
- GMR head testers
- Any sensitive equipment locality
- Industrial robotics
- Tool cluster
- Medical environment
- Military
- Wherever ESD and EMI are an issue

Features

- Continuous ground monitoring
- ANSI-ESDA S.20.20 compliant
- Adjustable alarm threshold
- EMI monitoring on each ground
- Safety protection for each ground
- Enabling switches for each ground
- Industrial network interface
- Connection to a facility monitoring system
- With model RT relay and logic control output



3M™ Static Management Program (SMP)

The **3M™ Ground Master®** is a measuring device also used in the 3M™ Static Management Program (SMP). The measuring equipment used in the 3M™ SMP have a digital interface and can be interconnected to a company-wide measuring network via standard Ethernet interfaces. This allows controlling all measuring devices from a central point and with a software from any workstation. A server records the measured data centrally. Clientsoftware enables to present and to evaluate the data using reports and diagrams. (for further information see 3M™ Static Management Program • dpv*link* 16796)

Order information

Ground Master is delivered with:
- Four replacement fuses
- Grounding hardware
- Universal power supply unit
- User manual

Please contact us for further options and accessories.

Article no.:
3M-CTC065-RT-WW
Model:
3M™ Ground Master®RT
Interface: Relay output / logic output

Article no.:
3M-CTC065-3-WW
Model:
3M™ Ground Master®
Interface: Current loop 4..20 mA

dpv*link* 16954

Example of use:
Monitoring of assembling tools

Many assembly tools consist of several parts which are not always grounded. Their ground connection may also be broken during maintenance, modifications and even in normal use. The **3M™ Ground Master®** can monitor ground connection of every single part of the entire tool to assure its compliance with the standards and uninterrupted operation of the tool.
The **3M™ Ground Master®RT** can provide relay closure or logic level signal to the tool to stop in case of ground failure.

Technical data

Ground impedance	
Alarm threshold	1...20 ohm (adjustably by operator)
EMI on ground	0dBm broadband
Display	
Visual	LEDs for each channel
Audio	Buzzer
Others	
Enabling switches	Each channel
Connections	
Relay output with RT models	N/C relay contacts, logic output by plug connector
The 3M™ Ground Master is available with two different interface versions:	
1. Power interface for FMS, DAQ	4...20 mA, RJ45 socket
2. MODBUS interface (for SMP)	MODBUS compliant, RJ45 socket
General information	
Power supply (local or network)	
Voltage	24V DC
Power consumption	< 250 mA
Dimensions (without mounting bracket)	114 x 92 x 28 mm

3M™ EM EYE Meter

Mobile Detector

Mobile detector for measuring ESD events, electromagnetic fields and HF signals

The new **3M™ EM Eye Meter** is an all-purpose test and measuring devices with modular structure which can be used for different applications. It provides data acquisition, display and storage of all parameters that can be detect by different sensors. A touch screen enables easy and intuitional operation. The basic model can be completed with favorable sensors as requested.

Properties

- Modular structure
- Records amount and values of ESD events
- Touch screen with modern user guidance TFT 240 x 320 px
- Output for loudspeaker and headphone
- Selection of remote and local antenna
- Time display and hold function
- Event-driven data recording or at adjustable intervals
- Data acquisition on standard Mini-SD™ cards format FAT32
- Display of table with measured data also on screen of device
- Frequency range 1 MHz to 2.5 GHz
- Lithium-ion battery with charger or mains operation
- Automatic switch-off function for saving energy
- Single sensors and remote sensors available

ESD Events Detection:

The **3M™ EM EYE Meter** is capable of detecting ESD events according to the majority of discharge models; with particular focus on the CMD model. The meter is easy to operate and can be used by almost anyone who is involved with ESD. It provides information on estimated discharge voltages at a specific location, what time it occurred, and how many discharges have occurred.
The meter's small size allows it to be used in tight locations inside the tools or in a wider area of interest. For extended temperature environments, the **3M™ EM Eye Meter** uses an optional remote antenna which will work under most conditions. All information is recorded on an SD™ card for easy review and retrieval of data.

Specifications

- Dimensions:
  W 65 x H 32 x L 105 mm
- Data recording interval:
  Peak values: 1 – 360 seconds
  Averages: 0,1 – 360 seconds
- Operating temperature:
  10 – 40 °C
- Headphone socket:
  3,5 mm (1/8 in.)
- Antenna / cable connection:
  Reversible SMA

DPV ELEKTRONIK

www.dpv-elektronik.eu

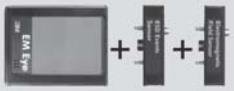
Order information

Article no.:
3M-CTM048-21
Model:
3M™ EM EYE Meter
with ESD sensor

Article no.:
3M-CTM048-28
Model:
3M™ EM EYE Meter
with EMI sensor

Article no.:
3M-CTM048-29
Model:
3M™ EM EYE Meter
with RF sensor

Article no.:
3M-CTM048-2128
Model:
3M™ EM EYE Meter
with ESD and EMI sensors



Article no.:
3M-CTM048-212829
Model:
3M™ EM EYE Meter
with ESD, EMI and RF sensors

dpv*link* 15219

Electromagnetic field measurement (EMF):

By simply placing the EMF sensor head into the 3M™ EM Eye Meter basic unit, the EM Eye Meter transforms into a dedicated EMF meter, a power density meter and an EIRP meter. The **3M™ EM Eye Meter** detects and measures high frequency electric fields that may be present in equipment, tools, printed circuit boards or on any process in a manufacturing area. The **3M™ EM Eye Meter** also measures high frequency electric fields from mobile phones, over-the-air TV signals, wireless LANs and any other source generating fields within its specification.
The **3M™ EM Eye Meter** is delivered with a miniature directional antenna that measures just one parameter. The meter then can calculate several parameters from that original one. The directional antenna reduces the influence of ambient electromagnetic fields when measuring emission coming from the specific source. So whether you are in the fields of product design, mobile phones, TV signals or wireless LAN, the portable **3M™ EM Eye Meter** is a helpful and important part of your toolbox.

RF signal sensor:

The **3M™ EM Eye Meter**, with the replacement RF sensor head, is capable of measuring RF signals. Usually used by radio communications designers and engineers, the 3M™ EM Eye Meter will be able to provide a readout of RF signal voltages. The **3M™ EM Eye Meter** offers exceptional sensitivity and linearity.

Sensor types

- **ESD sensor sodul**
  The 3M™ EM Eye Meter is able to detect ESD events according to the discharge models CMD, MM, HBM or Raw Input.
  Measurements of:
  - Maximal voltage
  - Average values
  - Threshold adjustment
  - Voltage of individual ESD events
  - Event counter
  - Raw input mode to record and evaluate the measured voltage for later analysis

- **EMI Electromagnetic field meter**
  Used as EMI field strength, power density or EIRP meter. The 3M™ EM Eye Meter detects and measures high-frequency electric fields with a miniaturized directional antenna. For measuring and recording of individual and average values.

- **RF signal detector**
  The 3M™ EM Eye Meter with RF module is a handy tool for the development engineer in the RF communication technology.

- further information on request -

3M™ ESD Pro

ESD Event Detector

Locates and identifies ESD events in your manufacturing process

The **3M™ ESD Pro** is a portable ESD event detector that shows the relative strength of ESD events as well as counts the number of discharge that exceed the thresholds.

ESD events can damage sensitive components. The ultimate goal of an ESD program is to avoid ESD events or at least to reduce their strength and frequency of occurrence. The only way to verify that your ESD protection works is by knowing whether you have ESD events in the environment, how strong they are and how many of them occur. If any ESD events are detected, it is recommended to discontinue your work until the problem is resolved.

Therefore, instruments like **3M™ ESD Pro** are the final measure to ensure the efficiency of your ESD protection. **3M™ ESD Pro** detects ESD events by their specific electromagnetic signature. The detector is capable to reject non-ESD related EMI events. This patent-pending mode allows assessment of the ESD environment in places where EMI events resulting from stepper motors, solenoids, relays and sources abound.

3M™ ESD Pro is a display and no calibration device. It shows the relative strength of ESD events and not their absolute values. If you need more accurate measurement, we provide the devices 3M™ EM Aware and 3M™ EM Eye.

Applications

ESD events are ultimate signs whether it is safe to handle sensitive components in your working environment. If strong ESD events are detected, it is recommended to discontinue your work until the problem is resolved. It is less important if dissipative mats, floor coverings, wrist straps or air ionizers are already on hand –handling sensitive components in this environment can still be unsafe.

You can use 3M™ ESD Pro for different applications:
- ESD auditing
- ESD diagnostics and troubleshooting
- ESD tool qualification
- EMI diagnostics
- ...etc.

DPV Elektronik-Service GmbH
Herrengrundstraße 1
75031 Eppingen, Germany
Telefon: +49 (0) 7262-9163-0
Telefax: +49 (0) 7262-9163-90
E-Mail: info@dpv-elektronik.eu

www.dpv-elektronik.eu

The **3M™ ESD Pro** detects ESD events by their specific electromagnetic signature. For this reason, you have to observe the functionality of **3M™ ESD Pro** with regard to the diffusion of electromagnetic waves. Like sound of a microphone, the strength of the received signal decreases with increasing distance from the source. When searching ESD events it is recommended to be as close to the suspected source as possible, while observing the required safety precautions.

In a typical tool, like e.g. an IC handler or a SMT pick-and-place machine, sources of such ESD events may include the IC intake and deposition on each conductive or even dissipative surface. When working with automatic devices, you are supposed to observe the safety precautions recommended by the producer and your company.

Order information

Article no.:
3M-CTM082
Model
ESD pro CTM082

dpv*link* 15209

Technical data

Functional	
Sensitivity	1...1000 V
Threshold	Adjustable
Discharge polarity	Both
Event counter	4-digit counter
vent magnitude	LED bar
ESD event indicator	LED bar, buzzer
EMI event rejection	Select CDM mode; select all events
Energy	9 V alkaline battery
General information	
Dimensions (approx.) without antenna	120 x 65 x 23 mm
Dimensions (approx.) with antenna	173 x 65 x 23 mm

Ausgabe: 007/2014 DPV EN