

CONTROLLING ESD IN AUTOMATED EQUIPMENT BY PROPER GROUNDING • ONLINE

APRIL 20, 2010 • 10:00 A.M. EASTERN TIME

CONTROLLING ESD IN AUTOMATED EQUIPMENT BY PROPER GROUNDING

April 20, 2010 • 10:00 a.m. Eastern Time • Course length - one hour.

Instructor: Donn Bellmore, Advanced ESD Services +

Is your Automatic Handling Equipment (AHE) capable of safely processing the devices of today and future technologies with lower ESD thresholds? What is proper grounding and what should you look for and specify? What are the proper materials and designs to establish proper ground paths through the equipment? And finally, how do you measure them?

This course will focus on the grounding and material requirements of ESD Controls in AHE for prevention of CDM and MM type damage to ESD sensitive devices. Design methods and material selections that provide effective ground paths through the assembly will be introduced. Test methods used to qualify the design will be discussed. Students will also become familiar with different types of plating and practices to provide effective designs.

Topics Covered:

1. What was done before there were any AHE Standards?
 - a. What were early ESD requirements regarding AHE?
 - b. What Standards were used?
 - c. How does CDM and MM pertain to AHE?
 - d. How does CDM and MM occur in the automated equipment and how to prevent or minimize the effects?
2. Proper Grounding within AHE:
 - a. Proper grounding has to be designed into the assembly; this section will describe proper design techniques and methods.
 - I. Stationary assemblies
 - II. Bearings and other rotating assemblies
 - b. Other items such as lubricants are discussed that provide ground paths through various assemblies
3. Proper Materials for applications:
 - a. Should carbon filled Delrin be used or should carbon fiber filled ULTEM be used? Which plastic materials are shown to have better performance?
 - b. Everything has drive belts and carrier belts, which should be used?
 - c. Polycarbonates and Lexan, what can be done with these materials and what should be done at a minimum?
 - d. Platings such as Chrome, Titanium Nitride, Black Chrome
4. Verification Measurements and recommended specifications:
 - a. Examples shown of measurements completed in the machine and why they are important
 - I. Resistance measurements, point to point and point to ground, tip to tip and more
 - II. Voltage measurements

Equipment Requirements

This course uses a multi-way audio broadcast over the Internet. You will need a soundcard and speakers (a headset is recommended) installed to hear the presenter during the course.

Attendees can send questions to the presenter via text chat, other interaction is not available.

ESD Association • 7900 Turin Rd Bld 3 • Rome NY 13440
Phone 315-339-6937 • Fax 315-339-6793
info@esda.org • www.esda.org



ONLINE TRAINING

CONTROLLING ESD IN AUTOMATED EQUIPMENT BY PROPER GROUNDING • ONLINE

APRIL 20, 2010 • 10:00 A.M. EASTERN TIME

CONTROLLING ESD IN AUTOMATED EQUIPMENT BY PROPER GROUNDING

April 20, 2010 • 10:00 a.m. Eastern Time • Course length - one hour.

INSTRUCTOR - DONN BELLMORE

Donn Bellmore has worked in the ESD Field for more than 25 years. Donn recently retired from Universal Instruments Corporation after 29 years of service to pursue other interests in the ESD Industry. Before retiring, Donn was the Corporate ESD Specialist and Reliability Analyst with Quality and Reliability. He had been responsible for the Corporate ESD Control Program for the last 15 years. During that time, Donn developed the "ESD Awareness and Control" Training Course and has taught literally hundreds of Employees, Suppliers, and Customers ESD awareness and control methods.

While with Universal Instruments, Donn was also responsible for the design and integration of ESD controls in all Automated Assembly Equipment manufactured at Universal Instruments Corporation and subsidiaries, and the required process and materials research. He has developed and taught numerous courses and tutorials such as "Controlling ESD by Design", a course on design of and integration of ESD controls into automated assembly products. Since retiring from Universal Instruments Corporation and starting Advanced ESD Service +, Donn continues to work on numerous ESD Control, Design, and troubleshooting issues for Universal Instruments and numerous other customers.

Donn has been an active member of the ESD Association since 1995. He currently participates in the Automated Handlers, Garments, Ionization Committees, and is a member of the Standards Committee. Donn is currently serving as President of the ESD Association. His past duties include Automated Handlers Working Group Chair, Treasurer, Sr. Vice President, Vice President, TPC Chair and Symposium General Chair.

Donn is a member of the American Society for Quality (ASQ) and ASM International.

Donn has published numerous papers and articles on these topics and was awarded 1996 Best Technical Supplement Paper by the Electronics Division of the ASQ.

Equipment Requirements

This course uses a multi-way audio broadcast over the Internet. You will need a soundcard and speakers (a headset is recommended) installed to hear the presenter during the course.

Attendees can send questions to the presenter via text chat, other interaction is not available.

ESD Association • 7900 Turin Rd Bld 3 • Rome NY 13440
Phone 315-339-6937 • Fax 315-339-6793
info@esda.org • www.esda.org



ONLINE TRAINING

CONTROLLING ESD IN AUTOMATED EQUIPMENT BY PROPER GROUNDING • ONLINE

APRIL 20, 2010 • 10:00 A.M. EASTERN TIME

Registration Form

First Name: _____ Last Name: _____

Company Name: _____

Street: _____ City: _____

State/Province: _____ Country _____ Zip/Postal Code: _____

Is Address (please circle the one that applies) Home or Company

Phone: _____ Fax: _____ Email: _____

Cost	members	non-members
	\$95.00	\$140.00

**Registration is requested by April 6th to guarantee course scheduling
Registrations will be accepted until April 20th**

Refunds will not be given for cancellations. In the event of a cancelation, credit will be given to attend a different online class.

Payment Information

Payment is required at time of registration. Only checks drawn in U.S. currency on a U.S. bank that is a member of the Federal Reserve will be accepted; make checks payable to ESD Association. Visa®, Mastercard®, Discover® and American Express® are accepted.

Amount enclosed \$ _____ Check Credit Card

Credit card type: Visa® Mastercard® Discover® American Express®

Credit card number: _____ Expiration date: _____

Name on card: _____ Security code: _____

Cardholder's signature: _____

Mail, or fax this form with payment to:

ESD Association • 7900 Turin Rd Bld 3 • Rome NY 13440
Phone 315-339-6937 • Fax 315-339-6793
info@esda.org • www.esda.org



ONLINE TRAINING