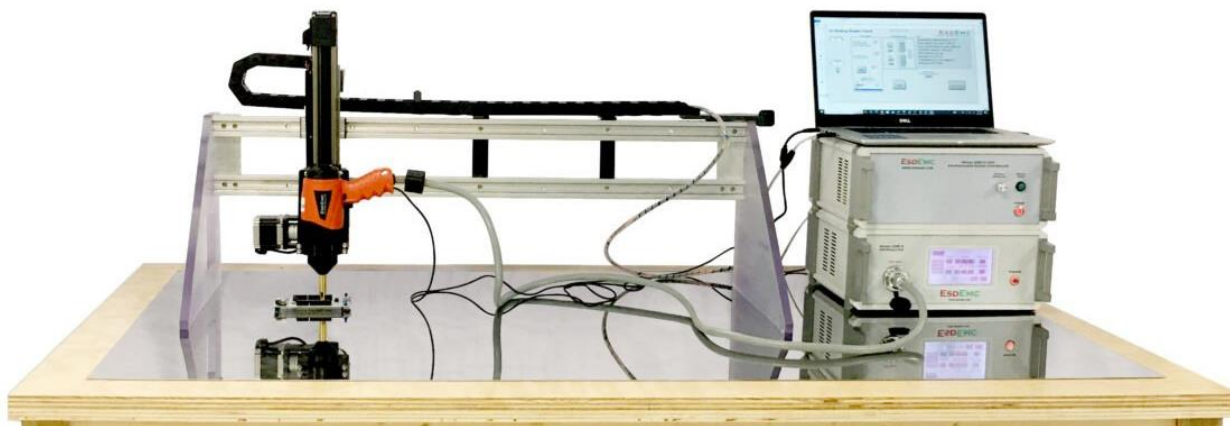


ES614 Series ESD Air Discharge Workstation



(Note: the ES613 ESD simulator is not included)

1. Description

Air discharge ESD test and measurement has been an inconsistent task due to the difficulty of holding the ESD simulator gun and zapping the same spot. The inconsistency of the ESD discharge lies in the waveforms generated by different ESD gun designs. The loosely controlled IEC and ISO standard did not specify air discharge waveform parameters. However, the air discharge waveform is a function of many parameters such as the ESD simulator physical structure, the ESD gun tip shape, the approaching speed, angle and path, the test environment temperature, and humidity and pressure. All these parameters vary the arch length and ESD zap location of the device under test.

ES614 Series ESD Simulator Air Discharge Workstation has a digitally controlled linear guide way system developed to control the ESD simulator approaching speed and travel path for air discharge tests and calibration. This instrument greatly improves air discharge test consistency in terms of the approaching speed and travel path. It also integrates high precision environmental sensors including temperature, relative humidity, and pressure to record the ESD test related environmental parameters.

2. Features

- Numerical Controlled ESD Air Discharge Approaching Speed
- Precision Humidity, Temperature, Pressure Sensors Integrated
- LabVIEW Controlled Test and Report Software

- Angle adjustable (optional)
- Spring Loaded Air Discharge Tip
- Customizable Holder for different ESD Simulators Available

3. Applications

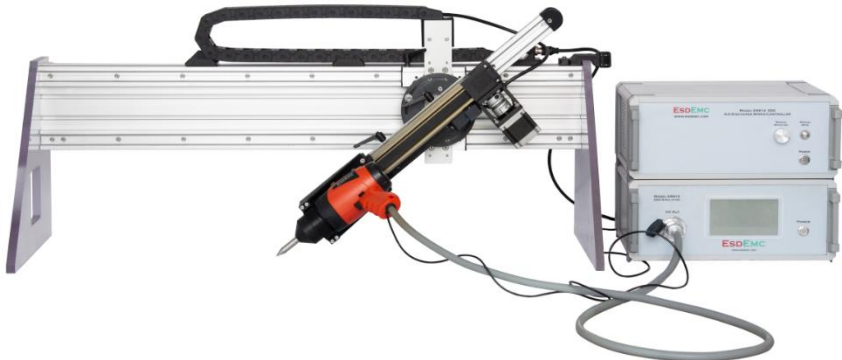
- ESD Simulator Air Discharge Approaching Speed Control
- Automated ESD Simulator Air Discharge by Remote Control Software
- ESD Simulator Air Discharge Waveform Calibration

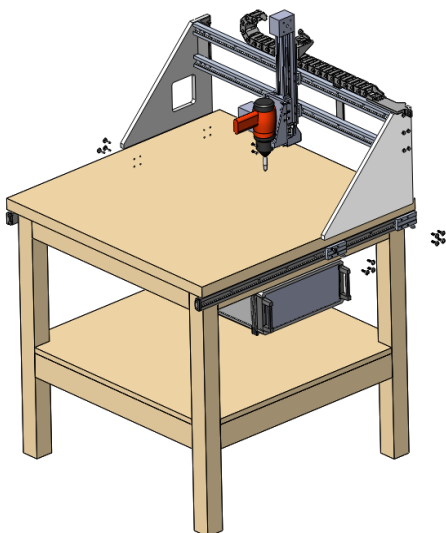
4. Specifications

ES614-500 ESD Air Discharge Motion Controller

Parameters	ES614-500
Maximum ESD Gun Weight	1.5 kg (ES613-G20 is 0.8 kg)
Maximum Travel Length	500 mm
Moving Speed Control	1 – 500 mm/s ($\pm 5\%$)
Moving Resolution	0.037 mm step
PC Control Port	USB
Front Panel Control	1 turn knob speed control Push button moving start
Controller Dimension	36 X 34 X 16 cm
Controller Weight	About 5 kg (11 lb)
Integrated Precision Temperature Sensor	
Full Accuracy Range	From -0 to 65 °C
Absolute Accuracy	± 1 °C
RMS noise	0.005 °C
Integrated Precision Humidity Sensor	
Response time ($\tau_{63\%}$)	1s
Humidity Range	From 0 to 100 %
Humidity Accuracy	± 3 % relative humidity
Humidity Hysteresis	< 2 % relative humidity
Integrated Precision Pressure Sensor	
Operating range	From 300 to 1100 hPa
RMS Noise	0.2 Pa (equiv. to 1.7 cm)
Sensitivity Error	± 0.25 % (equiv. to 1 m at 400 m height change)
Temperature Coefficient	± 11.5 Pa/K (equiv. to ± 12.6 cm at 1°C temperature change)

ES614 ESD Air Discharge Workstation

ES614-L01 ES614 ESD Air Discharge Workstation Type L01	
WorkStation Dimension	104 X 38 X 60 cm
Workstation Weight	About 23 Kg (50 lb)
Guide Rail & Discharge angle	Vertical direction only
Structure Diagram	
Note	Bench and ES613 ESD simulator are not included in ES614-L01
ES614-L02 ES614 ESD Air Discharge Workstation Type L02	
WorkStation Dimension	104 X 38 X 60 cm
Workstation Weight	About 23 Kg (50 lb)
Guide Rail & Discharge angle	Angle manually adjustable, adjustment range: Vertical to left side: $\angle 30$, vertical to right side: $\angle 75$.
Structure Diagram	
Note	Bench and ES613 ESD simulator are not included in ES614-L02
ES614-L11 ES614 ESD Air Discharge Workstation Type L11	
WorkStation Dimension	100 X 94X 140 cm
Workstation Weight	About 68 Kg (150 lb)
Guide Rail & Discharge angle	Vertical direction only

Structure Diagram

Note

Bench mounted, two sliders;
ES613 ESD simulator is not included

5. Ordering Information

Line	Part # or Option #	Description	Status
1	ES614-500	ES614 ESD Air Discharge Motion Controller up to 500 mm/s	Active
2	ES614-WSA	ES614 ESD Air Discharge Workstation Type A	Obsoleted
3	ES614-L01	ES614 ESD Air Discharge Workstation Type L01	Active
4	ES614-L02	ES614 ESD Air Discharge Workstation Type L02	Active
5	ES614-L11	ES614 ESD Air Discharge Workstation Type L11	Active
6	ES614-LS	Laptop with LabVIEW RTE and Complied ES614 Software	Active
7	ES613-SAT	Spring Loaded Air Discharge Gun Tip for ES613 ESD Simulator	Active
8	ES613-SCT	Spring Loaded Contact Discharge Gun Tip for ES613 ESD Simulator	Active

Customized ESD Gun Holder and Spring-Loaded Tip available upon request.