ARATRON II ELECTRONICS

AEI ESD Monitor Test Specs

The ST and DT series of continuous ESD monitors are new and improved designs over the AEI-920xD series monitors. The new circuits provide improved specifications and product quality while still providing low cost products. They also provide more trouble free operation with fewer false alarms due to operator movement and wriststrap handling.

The ST series monitors are Single Threshold units like the AEI-920xD series. They detect when the input at the wriststrap connection is below the High resistance threshold or above the Body capacitance spec. The DT series monitors also detect when the input to the wriststrap is below the Low resistance point.

Like most companies, Aratron uses a window specification for testing the operation of our monitors. We keep costs down by not making adjustments while providing the same functionality as more expensive monitors. We make Calibrator-Testers for our ESD monitors and these are the values we use for testing the monitors at the factory. See the paragraph below for ESD 20.20 info.

Specification		AEI-920xD series	AEI-ST series	AEI-DT series
Wriststrap				
High Resistance	Fail:	13.6 Megohms and above	20 Megohms and above	20 Megohms and above
	Pass:	6.8 Megohms and below	10 Megohms and below	10 Megohms down to 1 MegOhm
Low Resistance	Fail:	--	--	510Kilohms and below
Bench Mat				
Resistance	Pass:	6.8 Megohms and below	10 Megohms and below	10 Megohms and below
	Fail	13.6 Megohms and above	20 Megohms and above	20 Megohms and above
Body Capacitance		180pf in series with 1 Megohm	100pf in series with 1 Megohm	100pf in series with 1 Megohm

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ESD 20.20 describes the requirements for the ground path resistance for a wrist strap system. The 1999 standard was 10 Megohms or less and the 2007 standard is 35 Megohms. We do not test for this resistance, we provide this path to ground thru our monitors. The AEI-920xD series monitors have a resistance to ground thru the operator input of about 230 Kohms. The ST and DT series monitors measure from about 170 Kohms to 250 Kohms depending on the meter and range you use. These resistances combined with the maximum wrist strap resistance of 1.2 Megohms results in a ground path resistance of less than 1.5 Megohms which is less than either of the ESD 20.20 standards.

Our monitors put out a small AC signal which is used to detect the body capacitance of a person who is wearing the wrist strap. Because this signal will interfere with an ohmmeter reading, the operator ground path resistance thru our monitors must be measured with the power off. Connect one lead of your ohmmeter to the operator input and the other lead to the ground connection on the power supply plug.

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