



# 3M™ WS Aware Dual Workstation Monitor

## Models CTC061 and CTC062

Assurance of continuous good grounding is the cornerstone of an ESD-safe environment. Utilizing the latest advances in digital signal processing, the 3M WS Aware Workstation Monitor provides continuous, uninterrupted monitoring of most grounding parameters on a workbench or in a tool, in compliance with ANSI 6.1 and ANSI/ESDA S.20.20 requirements, as well as high-frequency noise (EMI) on ground.

For operators, the WS Aware monitor utilizes dual wrist straps for a continuous resistivity check of human body connection and advanced DSP technology for reliable monitoring utilizing ultra-low control voltage. Each operator's body voltage is also continuously monitored.

For equipment, the WS Aware Monitor, Model CTC061 provides continuous monitoring for two metal grounds (i.e. tools) and for two "soft" grounds (i.e. dissipative mats, surfaces and parts made of dissipative plastics). The WS Aware Monitor, Model CTC062 provides continuous monitoring for four metal grounds.

The WS Aware Monitor provides monitoring of EMI on metal grounds with programmable alarm thresholds. As electromagnetic interference (EMI) is rapidly becoming a significant factor in equipment failures, this patent-pending unique feature of the WS Aware monitor will help provide for the proper operation of your equipment.

Applications	Features
Disk drive assembly	Dual wrist strap monitor
GMR head handling	3M™ Big Brother Operator Sensor Detector
Semiconductor fabrication	Extremely low voltage on person
Reticle handling	Body voltage monitoring
Flat panel fabrication	Metal ground monitoring
Laser diodes/fiberoptics	EMI on metal ground
Electronic assembly	Dissipative ground monitoring
Industrial robotics	Programmable thresholds
Medical	Industrial network interface
Military	Comprehensive information to FMS
Wherever ESD is an issue	Miniature
	Individually calibrated



### Key Advantages

#### Highly Integrated

This miniature monitor, with the footprint of a credit card, packs a combination of features that may not be found in other monitors several times its size.

#### Assurance of Operator Grounding

The WS Aware monitor utilizes 3M Big Brother Operator Sensor Detector that detects the presence of an operator and raises an alarm if an operator is within reach of sensitive components but is not plugged in.

#### Ultra-low Voltage

The WS Aware Monitor provides only 25 millivolts of signal to any part of the wrist strap at any time, even when it is open—many times less than most comparable monitors.

The WS Aware Monitor is completely safe to use in most environments utilizing the most sensitive components.

#### Safety

The WS Aware Monitor has built-in safety 1M resistors in the ground path for each half of the wrist strap, providing for the operator's safety and quick charge dissipation.



## 3M™ Big Brother Operator Sensor Detector

The Big Brother Detectors are designed to detect whether the operator is grounded by sensing the operator's presence within reach of the workbench. If an operator is within reach of components but is not plugged in, the 3M™ WS Aware Workstation Monitor equipped with the Big Brother Detector will raise an alarm. This method prevents non-grounded operators from damaging sensitive parts.



3M™ Big Brother Operator Sensor Detector

As a true dual workstation monitor, the WS Aware Monitor uses two terminals for two operators' connection to allow their placement at different workbenches for the convenience of operators. A visitor/supervisor jack is of the same type as for operators harmonizing the type of the wriststraps throughout the factory.

## Replaceable Jacks Protect Your Investment

The WS Aware Monitor utilizes special jacks that are custom-made for high reliability, allowing for long periods between service.

Should jacks ever become damaged, repair is simple and does not require replacement of the entire terminal. The modular construction of the WS Aware Monitor allows replacement of only an inexpensive internal board using a simple screwdriver instead of replacing the entire unit. This greatly simplifies maintenance and is cost effective.

Specifications	
<b>Wrist Strap Monitor</b>	
Wrist Strap Type	Dual, 3.5 mm plug
Connection to Ground	1 megohm for each side
Number of Wrist Straps	2
Imposed Voltage on Body	0.025V (25mV) max.
Remote Terminals	2, one for each operator
Remote Terminal Cables	Mini-DIN 6-pin
Visitor Jack on Remote	Available
Body Resistance Alarm Level*	10 megohm default
Body Voltage Alarm Level*	+/-2.5V default
Local Indication	LED, Buzzer
Indicated Parameters	Availability Continuity Body Voltage
Specifications	
<b>Ground Monitor</b>	
Parameters Monitored	
CTC061	Metal Ground (Tools)
	Dissipative Surfaces
2 connections	2 connections
CTC062	Metal Ground (Tools)
	Ground Connector
4 connections	No-screw terminal
Connection Activation	Dip-switch (no jumpers)
Metal Ground Alarm*	10 Ohm default
Dissipative Ground Alarm*	1 gigohm default
Imposed Voltage	< 0.075V open circuit
Metal Ground	< 0.4V open circuit
Dissipative Surfaces	
EMI on Metal Ground	
Sensitivity*	0dBm default
Local Indication	Good/Alarm/Off LED, Buzzer
Indicated Parameters	Resistance to Ground EMI on Metal Ground
Output Parameters for Each Connection	Availability Resistance to Ground EMI (Metal Ground)

\*These parameters are programmable in the field either locally or via a facility monitoring system. Default values are used when no other specification is provided.

Specifications		Specifications	
<b>Connectivity</b>		<b>General</b>	
Interface		Power (local or network)	
Current Loop	4-20mA	Voltage	12-24v DC
Logic Level	0/20mA	Current Consumption	<150mA
MODBUS	MODBUS Std. Compliant	Dimension (approx.)	3.2" x 2.25" x 1.30" 81 mm x 57 mm x 33 mm
Data Connector	RJ45 jack	Weight (approx.)	4.25 oz (120 g)

## Ordering Information

The following is included when you order  
3M™ WS Aware Dual Workstation Monitor:

- WS Aware CTC061/2 1 each
- Remote terminal 2 each
- 10' (3m) cable 2 each
- User's guide 1 each
- Grounding hardware 1 each
- Calibration Certificate 1 each

Don't forget to order the proper power adapter unless FMS  
or data acquisition system provides power to WS Aware.

## Accessories

AC/DC Power Adapter (Universal)	CTA212
Ground Cord for Dissipative Surfaces (1 ea.)	AWD006
Ground Cord for Metal Surfaces (2 ea.)	AWD018
Replacement Terminal Board w/Jacks	CTA245
Remote Terminal Cable (10' – 3m)	NCA001

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