

# WS Aware®

## The Safest Dual Workstation Monitor

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### DSP-based monitor keeps track of operators, tool and bench grounding and EMI

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

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

For equipment, WS Aware® CTC061 provides continuous monitoring for two metal grounds (such as tools) and for two "soft" grounds (such as dissipative mats, surfaces and parts made of dissipative plastics), or four metal grounds (CTC062)

WS Aware® 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 WS Aware® will help assure proper operation of your equipment.



### Applications

- Disk Drive Assembly
- GMR Head Handling
- Semiconductor Fabrication
- Reticle Handling
- Flat Panel Fabrication
- Laser Diodes/Fiberoptics
- Electronic Assembly
- Industrial Robotics
- Medical
- Military
- Wherever ESD is an Issue

### Features

- Dual wrist strap monitor
- Big Brother™ operator detection
- Extremely low voltage on person
- Body voltage monitoring
- Metal ground monitoring
- EMI on metal ground
- Dissipative ground monitoring
- Programmable thresholds
- Industrial Network Interface
- Comprehensive information to FMS
- Miniature
- Individually Calibrated

### Key Advantages

#### Highly Integrated

This miniature monitor with the footprint of a credit card, packs inside a combination of features that cannot be found in any monitor several times its size.

#### Assurance of Operator Grounding

WS Aware® utilizes patent-pending Big Brother™ terminals that detect 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

WS Aware® 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 any comparable monitor. WS Aware® is completely safe to use in any environment utilizing the most sensitive components -- now or for years to come.

#### Safety

WS Aware® has built-in safety 1M resistors in ground path for each half of the wriststrap. This assures operator's safety and quick charge dissipation.

### Workstation Monitor

Models CTC061  
CTC062



Credence  
Technologies

# Big Brother® Terminals

Big Brother® operator's terminals provide assurance that the operator is always grounded by sensing operator's presence within reach of the workbench. If an operator is within reach of components but is not plugged in, WS Aware equipped with Big Brother™ terminals will raise an alarm. This patent-pending method prevents non-grounded operators from damaging sensitive parts.

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

## Specification

Wrist strap Monitor		Ground Monitor	
Wrist Strap Type	Dual, 3.5mm plug	Parameters Monitored	CTC061
Connection to Ground	1 MOhms for each side	Metal Ground (Tools)	2 connections
Number of Wrist Straps	2	Dissipative Surfaces	2 connections
Imposed Voltage on Body	0.025V (25mV) max.	CTC062	
Remote Terminals	2, one for each operator	Metal Ground (Tools)	4 connections
Remote Terminal Cables	Mini-DIN 6-pin	Ground Connector	No-Screw Terminal
Visitor Jack on Remote	Available	Connection Activation	Dip-Switch (no jumpers)
Body Resistance Alarm Level*	10MOhms default	Metal Ground Alarm*	10 Ohms default
Body Voltage Alarm Level*	+/-2.5V default	Dissipative Ground Alarm*	1GOhms default
Local Indication	LED, Buzzer	Imposed Voltage	
Indicated Parameters	Availability Continuity Body Voltage	Metal Ground	< 0.075V open circuit
		Dissipative Surfaces	< 0.4V open circuit
Output Parameters for Each Operator	Availability Continuity Body Voltage	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 field either locally or via facility monitoring system. Default values are used when no other specification is provided			
Connectivity		General	
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" 81mm x 57mm x 33mm
Data Connector	RJ45 jack	Weight (approx.)	4.25 oz (120g)

## Replaceable Jacks Protect Your Investment

WS Aware® terminals utilize special jacks custom made for high reliability allowing for a long period between service.

Should jacks ever become damaged, replacement of them in WS Aware® terminals does not require replacement of the entire terminal. Patent-pending modular construction of WS Aware® terminals allows replacement of only an inexpensive internal board with the jacks using a simple screwdriver instead of buying the entire new terminal. This greatly simplifies maintenance and significantly reduces cost of ownership.



## Ordering Information

The following is included when you order WS Aware:

WS Aware® CTC061/2	1ea.
Remote Terminal	2ea.
10' (3m) Cable	2ea.
User's Guide	1ea.
Grounding hardware	1ea.

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

## CTC-06X-YY-Z

<b>Model</b>	
2 metal and 2 dissipative grounds	1
4 metal grounds	2
<b>Terminals</b>	
Regular	-
Big Brother™	BB
<b>Interface</b>	
Current Loop 4..20mA	3
MODBUS	5
Logic Level (0..20mA)	RT

Accessories

AC/DC Power Adapter (U.S.)	<b>CTA216</b>
AC/DC Power Adapter (Universal)	<b>CTA217</b>
Ground Cord for Dissipative Surfaces (1 ea.)	<b>AWD006</b>
Ground Cord for Metal Surfaces (2 ea.)	<b>ATD018</b>
Replacement Terminal Board w/Jacks	<b>CTA245</b>
Remote Terminal Cable (10' -- 3m)	<b>NCA001</b>
Professional dual wriststrap w/10' (3m) cord	<b>CTA472-10</b>



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