Operational Qualification for OEM

TWO DIMENSIONAL INSTRUMENTS, LLC

This Operational Qualification documents is for use with the

TV2 Clean Room Monitor

Two Dimensional Instruments, LLC
P O Box 159
Crestwood, KY 40014
(502) 243-0042
www.e2di.com
info@e2di.com

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Safety Tests

This instrument conforms to the following standards and is supplied fully tested by the manufacturer. The installer should test to verify that it is installed in an approved manner as specified by the IQ supplied.

I.T.E Power supply 100-240AC 50/60hz .35a	UL Marked E304160 for all applicable standards	Full test results available on request from Two Dimensional Instruments, LLC
TV2-202 monitor for wired sensors. Low power electronic device.	Verified and certified to comply with all FCC, CE AUS/NZ and IC applicable standards.	
DDI digital wired sensor for TV2		
TCTC thermocouple for TV2		
TSTRH wired sensor for TV2		
TV2-201 monitor for wireless sensors and battery operated WS4TX transmitter module. FCCID: YVGS4TX	Complies with FCC 47 CFG Part 15-2009 using ANSI C63.4.2003 with 30 dBuV/m - 26.58 dBuV/m = 3.42dB margin for Radiated Emissions, and ICES-003:2004 Class B for Canada using CAN/SCA-CEI/IEC CISPR 22.02 with 30 dBuV/m - 26.58 dBuV/m = 3.42dB margin for Radiated Emissions	
WS4HETM, TC, IHM and IHMRH wireless sensors		

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Pre-Run Checks

Pre-Run Check	Refer to	OK	Discrepancy	N/A
Monitor mounted	*UG p4			
Pressure sensor positioned	UG p6			
Pressure sensor inputs (clear plastic tubes) positioned in two different areas	UG p6			
Temperature/RH sensor positioned in clean room	UG p6			
Sensor wires run to monitor (3.5mm 4 conductor wire)	UG p6			
External alarm connected to monitor N/O dry contact relay (2 conductor wire)	UG pg8			
Comments:				

*
UG = Users Guide (Download from web)
QS = Quick start guide (Packaged with Clean Room Monitor)

Initial Startup Procedure

Initial Startup Procedure		Refer to	OK	Discrepancy	N/A
Supply power to monitor		QS p2			
System Parameter Menu Displayed		QS p2			
Set Date and Time		QS p2			
Press 'Escape' to see Status Display		QS p1			
Verify backup battery icon is displayed		UG p12			
Set Pressure Sensor parameters when sensor setup screen appears	1. Set sample data time 2. Set averaging to medium 3. Set values of graph display 4. Set alarm 5. Auto Calibrate	QS p4-5			
Set temp/RH sensor parameters when sensor setup screen appears	1. Set sample data time 2. Set averaging to medium 3. Set values of graph display 4. Set alarm	QS p4-5			
Press 'Escape' until Status Display appears		QS p5			
All displayed items on the System Status Display are Green		QS p5			
Comments:					

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Functional Tests

Functional Test	Refer to	Acceptance Criteria	Pass	Fail
Powers up	QS p2	Display illuminates		
Pressure sensor operational	QS p3	Differential pressure is accurate		
Temperature/RH sensors operational	QS p3	Temp/RH is accurate		
Touch pressure reading	UG p12 & UG p18	Pressure sensor chart displays		
Touch Temp/RH reading	UG 18	Temp/RH chart displays		
Disable pressure alarm	UG p7 & QS p4	Alarm Disabled displays in red on status display		
Disable temp/RH alarm	UG p7 & QS p4	Alarm Disabled displays in red on Status display		
Set pressure alarm greater than to –5"wG	UG p7	Pressure reading and min value on Status Display turns red.		
Set temp/RH greater than alarm to 65°F and 20%	UG p7	Temp and RH reading and min value turn red		
Comments:				

Note: After each test correct the test setting and return to System Status display

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Calibration

This instrument with its sensors is supplied calibrated by the manufacturer, using equipment traceable to national standards. Calibration by the user following installation is not usually required.			
Calibration Step	**Refer to**	**OK**	**Not Done**
Single Point Calibration	UG p22		
Two Point Calibration	UG p22		
Traceable Reference instruments used for Calibration			
Comments:			

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Training

Date Instrument Released for Use:			
Trained Operators	**Read Operator Manual**	**Practical Training**	**Authorizing Signature**
Comment:			

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Summary Report

Instrument: Clean Room Monitor	Manufacturer: Two Dimensional Instruments, LLC	
Assessment of Complete Operational Qualification:		
No Deviations	Deviations (List below)	
Deviation	**Impact on Operation**	**Justification for Acceptance**
Successful completion of the preceding activities and checks indicates that this instrument is operating satisfactorily. The instrument has passed the Operational Qualification procedure and may now be released for use.		
IQ Completed By:		**Date:**
Deviations Approved by:		**Date:**
IQ Approved by:		**Date:**