

**Johns Hopkins Medical Institution
Department of Pathology**

EQUIPMENT: ISENSIX – Advanced Remote Monitoring System (ARMS™) <http://162.129.240.251/arms>

Prepared by	Date adopted	Supersedes procedure #
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Review date	Revision date	Signature

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All Isensix Zone Manager & Admins			
Continuous Quality Improvement Programs Office			

I. Purpose

The ISENSIX Advanced Remote Monitoring System (ARMS™) is a wireless, internet enabled monitoring system that continuously monitors, transmits and records data related to temperature, humidity, motion, levels, pressure, and door access, in real time to networked access points. Recorded data is retrievable on demand, and is electronically archived for up to 10 years. Hard copies of reports and data may be printed and filed as needed.

The system also provides real time automatic alerts when sensors record data that is outside of the units' operating range.

II. Equipment

1. The ARMS™ system consists of the following equipment:

- **Local Server** – is ARMS™ system controller, which commands and controls all other components of the ARMS™ system.
- **UPS – Uninterruptible Power Supply**, which enables a graceful shut down of the servers in the event of a power outage. The **UPS** is not necessary if the customer's facility has emergency power that provides AC within 1 minute following a loss of primary AC power.
- **Control Center ("CC")** – the Control Center is a centralized command and control center and consists of the following Isensix –provided equipment:
 - "UPS"
 - Control Center PC w/keyboard and mouse
 - Flat panel system display
 - Visual alarm alert system
 - Audible alarm alert system
 - Networked printer and reporting station

The ARMS™ system is designed to continuously monitor system parameters. Should there be a need to power off the system and power it back on, the system is designed to automatically boot up upon power restoration. If the system does not successfully boot up please **call the Help Desk at 5-2656, or follow the Control Center Boot-up Sequence procedure (4.1, 2, and 3), in the Isensix Standard Operating Procedure Manual.**

- ***Sensor or Probe** – measures the environmental parameter and provides the Collection Point (“CP”), with the raw data.
- ***Collection Point (“CP”)** – collects the raw data received from the sensor for wireless transmission to the Access Point (“AP”).
*The sensor and the “CP” are not functional as separate units. The sensor must be connected to the “CP”.
- **Access point (“AP”)** – receives the raw data from the Collection Point (“CP”) for transmission to the JHH server.
- **Customer provided equipment** – Networked PC with Web browser and Intranet / Internet access.

III. Safety Precautions

The Johns Hopkins Medical Laboratory Safety Manual, section VI (Electrical and Mechanical Safety), should be followed according to established guidelines. Inspect all electrical outlets, cords, or power strips regularly for tear or breaks. If you are using power strips please be sure to mount them off the floor.

IV. Support

1. Service and Maintenance

- To submit a request to service, replace, remove or relocate a sensor or “CP”, please **call** the **HELP DESK at 5-2656**. Please state your name, location and contact information in the event that additional information is required. The request will be logged in and forwarded to **Paul Holback**. As the sensor name is unique to the zone, location, and sensor number please give the **complete** name of the sensor when reporting the problem. Please be sure to rule out any contributing factors related to the sensor position, unit service or repair needs, or user error before contacting the **HELP DESK**.

For service or maintenance: HELP DESK – 5-2656 – (Paul Holback)

2. To Install a New Sensor

- To install a new sensor, please **call** the **HELP DESK at 5-2656** and request to have a new sensor installed on an existing or newly acquired unit. The following information is required: **Make, model, serial number or facility’s tag ID #, and the type of sensor required:**

***To request the installation of a new sensor: HELP DESK – 5-2656 – (George Wilk)**

Sensor Type	Description	Typical Application
SC	Super-cold (-90° to -25°C)	Super-cold freezer
RE	Refrigerator (-25° to 20°C)	Deep freeze Freezers Refrigerators
RM	Room Temperature (10° to 50°C)	Room temperature Incubators Heat blocks Water baths
HU	Humidity	-
LN	Liquid Nitrogen	-
MPM	Motion per Minute	-
RPM	Rotational per Minute	-

Sensor Type	Description	Typical Application
TC	Thermal Cycle	Thermal cyclers Water baths
UL	Ultra High	-
CO2	Carbon Dioxide	-
DP	Differential Pressure	-
Binary	-	Doors Levels Tissue Processors Power off alerts only

- **Sensor Extensions** – May be purchased to utilize with sensor components to allow the sensor to travel further away from the CP unit (ex. Walk in Refrigerators).

V. Sensor Calibrations

Annual calibrations are performed by Isensix as per the service contract. Please contact the system administrator to schedule annual calibrations. The system administrator will contact the Isensix service manager to schedule.

Brian Buchert
Service Manager
Isensix, Inc.
866-634-2767 x 203
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Calibrations must also be performed on newly installed or relocated sensors in accordance with the area's standard operating procedure guidelines.

VI. Downtime Policies

In the event that the monitoring system is unable to continuously monitor and/or capture all parameters, each area or zone must have as part of their SOP a downtime policy detailing their offline monitoring procedures. Included, as part of this document is the **Department of Pathology PDS / Informatics** "How-To" procedures, for reporting problems to the **Help Desk**, and the steps that are taken when problems arise related to the server.

VII. Appendix A

Temperature Monitoring Standard Operating Procedure Template

References: Isensix ARMS User's Guide, Release 1.0.1, 1.0.9; Isensix ARMS Standard Operating Procedure Manual; Isensix ARMS Customer Support.

Allen Valentine Approved by (Signed copy held by System Administrator)	1/25/2008 Date
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