

SERVER ENVIRONMENT MONITORING SYSTEM

SNMP and Web monitoring/management of server room environments

Monitors Threats:

- **Temperature**
- **Humidity**
- **Intrusion**
- **Water Leakage**
- **Vibration**
- **Smoke**



ENVIROMUX-SEMS-16 (Front and Back)

Features & Applications

The ENVIROMUX® Server Environment Monitoring System monitors critical environmental conditions, such as temperature, humidity, liquid water presence, motion, intrusion, and vibration. When a sensor goes out of range of a configurable threshold, the system will notify you via email, LEDs, alarm beacon, siren, web page, network management (SNMP), voice phone calls (via Automatic Voice Dialer System), and SMS messages (via external GSM modem).

The system includes three internal sensors: temperature, humidity and power. It also supports 16 external configurable sensors and eight digital input sensors.

- Monitor and manage server room environmental and security conditions over IP.
- Create alarm signals with customized input parameters.
- Four output relays for control of external devices.
 - Relays activate upon alarm or via the user interface.
- Supports up to eight IP network video cameras.
 - Live view of a facility from anywhere, anytime.
 - One integrated view - see different Web cameras side-by-side with physical and environmental parameters.
- Monitor (ping) up to 64 IP network devices.
 - Alerts are sent if devices are not responding.
- Provides power supply for all sensors.
- Internal battery backup.
 - Alerts are sent when there is a power outage and when power returns.
- Available sensors include: temperature, humidity, smoke, water, glass break, motion, vibration, 4-20mA converter, voltage detector, and more.
- Available with optional dual power for connection to two separate power sources.
- Up to four units can be used together to increase the number of sensors connected.
 - Connect the units using CAT5 expansion cables.
 - Uses a single Web interface for all systems connected.
- 1RU rack mount case is standard.
- Use in data centers, co-lo sites, web hosting facilities, telecom switching sites, POP sites, server closets, or any unmanned area that needs to be monitored.

Specifications

Protocols

- HTTP/HTTPS, SNMP V1/V2c, SMTP, TCP/IP, Syslog, SNMP
- Supports local authentication, SSL.
- Operates and configures via HTTP/HTTPS web page, Telnet or RS232 interface.
- Alerts are sent using email, SMS messages and/or SNMP traps when any monitored environmental condition exceeds a user-specified range.
 - Alerts are posted in message log, which is accessible through Web user interface. The log can be downloaded as a tab delimited plain text file.
 - Sends notifications of alerts to a maximum of 17 email addresses, SNMP addresses and/or cell phone numbers.

Internal Temperature Sensor

- Applications from 32°F to 104°F (0°C to 40°C).
- Accurate to within $\pm 1.35^\circ\text{F}$ ($\pm 0.75^\circ\text{C}$).

Internal Humidity Sensor

- Applications from 20% to 80% relative humidity at temperatures between 32°F to 104°F (0°C to 40°C).
- Accurate to within $\pm 5\%$ relative humidity.

Internal Power Sensor

- Measures mains voltage: 0 to 255 VAC.
- Measures battery voltage: 0 to 20 VDC
- Alerts are sent when there is a power outage and when power returns.

Back-up Battery

- Rechargeable sealed lead-acid battery.
- Provides back-up for one hour.

Dimensions

- WxDxH (in.): 19x9.5x1.75

Environmental

- Operating temperature: 32°F to 100°F (0°C to 38°C).
- Storage temperature: -20°F to 140°F (-30°C to 60°C).
- Operating and Storage Relative Humidity: 17 to 90% non-condensing RH.

Regulatory Approvals

- CE, RoHS

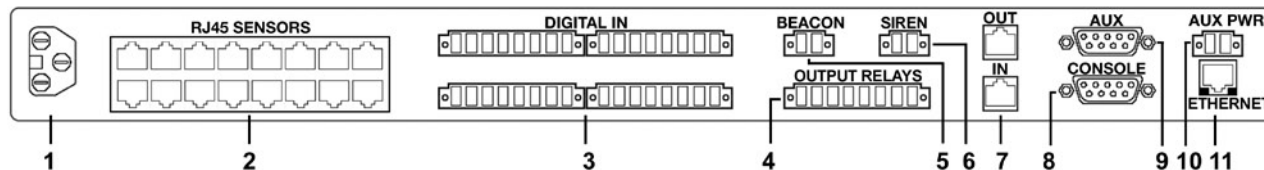
Warranty

- Two years.

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Specifications (Continued)



1. Power Port

- 110 or 230 VAC at 50 or 60 Hz via IEC connector.
- Power consumption: 65W
- Connection for Earth Ground.
- Fuse protection.
- Optional dual power (not shown)
 - ♦ 110 or 230 VAC at 50 or 60 Hz via IEC connector.
 - ♦ Power consumption: 75W max
 - ♦ If the first power source fails, the unit will automatically, without interruption, switch to the second power source before switching to the battery backup.
 - ♦ Add "DP" to the end of the part number to specify this option.

2. RJ45 Sensor Ports

- Sixteen RJ45 modular jacks for connecting NTI temperature, humidity, temperature/humidity, liquid detection, smoke detection, glassbreak, vibration and motion sensors.

3. Digital Inputs

- Screw terminals.
- Input voltage: 0VDC to +25VDC.
- Provides +12VDC, 50mA.
- Fuse protection.

4. Output Relays

- Screw terminals.
- Potential-free relay switch contacts.
- Maximum switching load: 0.5A at 100VAC, 1A at 30VDC

5. Beacon Port

- Screw terminals.
- Provides +12VDC, 180mA to supply an alarm beacon.
- Fuse protection.

6. Siren Port

- Screw terminals.
- Provides +12 VDC, 130 mA to supply a siren.
- Fuse protection

7. Expansion Ports

- RJ45 connectors.
- A maximum of 4 systems can be cascaded to increase the number of sensor ports.
- Uses a single Web interface for all systems connected.

8. Console Port

- One female DB9 RS232 serial port for terminal access.

9. AUX Port

- One male DB9 RS232 serial port for controlling and monitoring external equipment, such as a GSM modem.
 - ♦ GSM modems supported: Enfora GSM1218, MultiTech MTCBA-G-F2, Wavecom Fastrack M1306

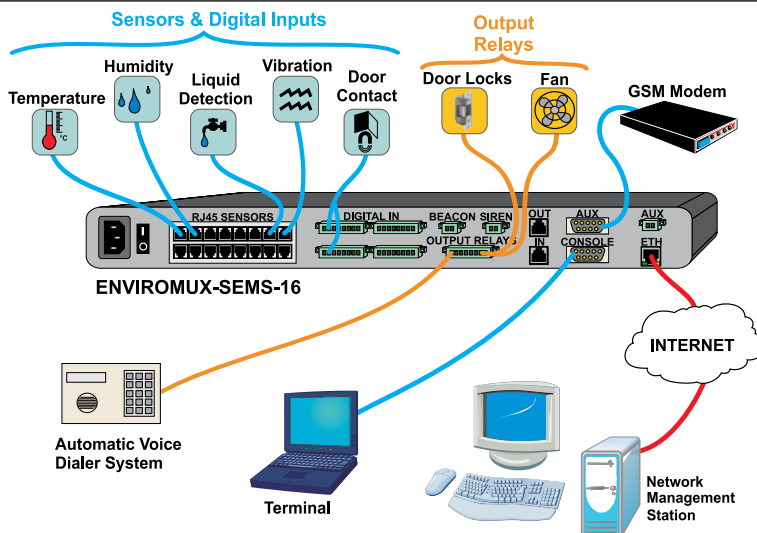
10. AUX Power Port

- Provides +12VDC, 150mA.
- Fuse protection

11. Ethernet Port

- One 10/100 Base-T Ethernet port with RJ45 Ethernet connector.

Configuration and Cable Illustration



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Control Methods

Web Interface

- Full configuration via Web-page
- Configure sensor thresholds and timing, alarm methods, alert formats and system data log.
- View current sensor values and alert status.
 - All sensors connected to the ENVIROMUX-SEMS-16 can be viewed on one summary page.
- View entries stored in the system data log.
 - The log can be downloaded as a tab-delimited plain text file.
- Configure IP information (address, subnet mask, default gateway, DNS, etc.) and user administrative settings.
- Administrate up to 16 users plus a root administrator.
- Permissions, schedule and alert methods are configurable for each user.
- Up to 8 users can access the web page at one time.

Telnet

- Similar functions as RS232 Control.
- Security is ensured by password.

Network Operation

- SNMP support; allows integration into network management platforms.
- Update system firmware.

RS232 Control

- Display and configure network settings (IP address, subnet mask, default gateway, DNS, SMTP, etc.), Enterprise settings, and time settings.
- View current values and alert statuses for sensors/digital inputs/IP devices.
- Configure SNMP
- Serial baud rate: 9,600 to 115,200bps.
- Data format: 1 start bit, 8 data bits, no parity, 1 stop bit.

Front Panel LED Indicators

- “INT ALERT” – internal sensor goes out of range of a configurable threshold.
- “EXT ALERT” – external sensor goes out of range of a configurable threshold.
- “LOW BAT” – backup battery is low.
- “CHECK LOG” – message is posted to the log.
- “PWR” – indicates device is powered.



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Environmental Sensors

Temperature, Humidity & Combination Sensor



ENVIROMUX-STS
ENVIROMUX-SHS
ENVIROMUX-STHS
ENVIROMUX-STHS-99

- Temperature Sensor (ENVIROMUX-STS)
 - Applications from 32°F to 122°F (0° to 50°C).
 - Accurate to within $\pm 2^\circ\text{F}$ ($\pm 1^\circ\text{C}$).
- Humidity Sensor (ENVIROMUX-SHS)
 - 20% to 80% relative humidity, $\pm 5\%$
 - ◆ For applications at temperatures between 32°F to 104°F (0°C to 40°C)
- Temperature/Humidity Sensor (ENVIROMUX-STHS)
 - Applications from 32°F to 122°F
 - Accurate to within $\pm 2^\circ\text{F}$ (0°C to 50°C, $\pm 1^\circ\text{C}$)
 - ◆ 20% to 80% relative humidity, $\pm 5\%$
- Temperature/Wide Range Humidity Sensor (ENVIROMUX-STHS-99)
 - Applications from 32°F to 122°F (0° to 50°C)
 - Accurate to within $\pm 2^\circ\text{F}$ (0°C to 50°C, $\pm 1^\circ\text{C}$)
 - ◆ 20% to 80% relative humidity, $\pm 3\%$
 - ◆ 10% to 90% relative humidity, $\pm 4\%$
 - ◆ 0% to 99% relative humidity, $\pm 5\%$
- Re-calibration is not necessary after initial set-up.
- Includes mounting hardware.
- RJ45 connector.
- Supports CAT5/5e/6 cable up to 1,000 ft (not included).
- Regulatory approvals: CE, RoHS

Liquid Detection Sensor



ENVIROMUX-LDS-xx

- For warning of flooding.
- Detects liquid depth $>0.1"$.
- Minimum puddle: 0.6" diameter.
- 100% waterproof electronics.
- Detects any liquid, except deionized water.
- RJ45 connector.
- Supports CAT5/5e/6 cable up to 1,000 ft. (not included)
- Available sensor cable lengths: 3/7/10/25 feet.
- Regulatory approvals: CE, RoHS

Precision Humidity & Temp/Humidity Sensors



ENVIROMUX-SHS-PLT
ENVIROMUX-STHS-PLT-xxx

- Precision Humidity Sensor (ENVIROMUX-SHS-PLT)
 - NIST certified accurate to within $\pm 1\%$ from 10% to 80% relative humidity at 77°F to 95°F (25°C to 35°C).
 - Two-point field calibration.
 - Output: 4-20mA DC = 0% to 100% RH.
- Precision Temperature/Humidity Sensor (ENVIROMUX-STHS-PLT-xxx)
 - Available temperature ranges:
 - ◆ ENVIROMUX-STHS-PLT-140 -20°F to 140°F (-28°C to 60°C).
 - ◆ ENVIROMUX-STHS-PLT-120 20°F to 120°F (-6°C to 48°C).
 - ◆ ENVIROMUX-STHS-PLT-180 30°F to 180°F (-1°C to 82°C).
 - Temperature accurate to within $\pm 1.50\%$.
 - NIST certified accurate to within $\pm 1\%$ from 10% to 80% relative humidity at 77°F to 95°F (25°C to 35°C).
 - Uses a platinum RTD for precision temperature compensation.
 - Sensing element: 1000W platinum; 2 lead resistance thermometer, .00385 TCR
 - Two-point field calibration.
 - Output: 4-20mA DC = 0% to 100% RH.
- All units require the ENVIROMUX-S420MA to operate.

Smoke Detection Sensor



ENVIROMUX-SDS

- For warning of smoke.
- Built-in 135° F (57° C) thermal heat sensor.
- Includes mounting hardware.
- Connect to RJ45 or digital input sensor ports.
- Photoelectric smoke detector.
- Screw terminal
- Maximum cable length: 1,000 ft
- Regulatory approvals: UL



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Environmental Sensors (Continued)

Air Flow Sensor



ENVIROMUX-AFM

- Reliable mechanical solution for monitoring air flow.
- Reacts to any condition causing insufficient flow of air such as malfunctioning cooling fan, increased friction, or physical blockage.
- Can be used for direct monitoring of a cooling fan.
- Dimensions WxDxH (in): 1.34x.7x.3
- Switch contact is closed when air flow is >8.2 ft/s.
- Connection: 2x single strand AWG26, length 18 in.
- Regulatory approvals: RoHS

Carbon Monoxide Detector

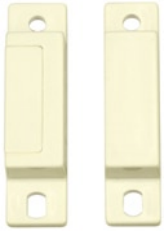


ENVIROMUX-CMD

- Continuous air monitoring.
- Pre-set alarm points alert at:
 - 70 ppm after 60 to 240 minutes
 - 150 ppm after 10 to 50 minutes
 - 400 ppm after 4 to 15 minutes
- Flush or surface mount.
- LED indicators for operation status and system test.

Motion/Intrusion/Vibration Sensors

Door Contact Sensor



ENVIROMUX-M-DCS

- Monitors access with a magnetic bridge sensor, which responds to any magnetic material (no special inserts necessary).
- Includes mounting hardware.
- For normally closed circuit connection.
- 2-wire interface, screw terminal
- Maximum cable length: 1,000 ft
- Wide actuating gap, about 1".
- Dimensions WxDxH (in): 0.5x0.5x2 (Switch), 0.5x0.5x2 (Magnet).
- Regulatory approvals: RoHS

Vibration Sensor



ENVIROMUX-VSS

- For registering movement / shocks.
- Adjustable sensitivity.
- Includes mounting hardware.
- Connect to RJ45 or digital input sensor ports.
- Screw terminal
- Maximum cable length: 1,000 ft
- Regulatory approvals: RoHS

Glass Break Detection Sensor



ENVIROMUX-GBS

- Acoustically detects the cracking of glass.
- Adjustable sensitivity.
- Includes mounting hardware.
- Connect to RJ45 or digital input sensor ports.
- Screw terminal
- Maximum cable length: 1,000 ft

Infrared Motion Detector



ENVIROMUX-IMD

- Registers movement in the area covered.
- Condition display via LED.
- Provides immunity from common-mode signals such as the effect of strong hot or cold air currents, variation in ambient temperature, background radiation and acoustic noise.
- 24 dual-element detection zones for long, mid and short range protections.
- Pulse count or single shot triggering.
- Good RFI protection.
- Screw terminal
- Maximum cable length: 1,000 ft
- Regulatory approvals: CE, RoHS

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Motion/Intrusion/Vibration Sensors (Continued)

Access Control Digital Keypad



ENVIROMUX-ACK

- Two relay outputs controlled by two groups of independent user codes.
- Normally closed and normally open dry contacts for both output relays.
- Terminal block for external connections.
- Single lock or inter-lock operation.
- Operate with fail-safe or fail-secure locking device.
- Non-volatile memory
- Duress output.
- Regulatory approvals: CE, RoHS

Mini Infrared Motion Detector



ENVIROMUX-IMD-MW

- Detects movement across the detection field.
- Provides substantial immunity to false alarms caused by environmental disturbances.
- Pulse count or single shot triggering.
- Good RFI protection.
- Dimensions WxDxH (in): 2.2x1.2x2.9
- Screw terminal
 - To connect to the RJ45 inputs use CAT5/5e/6 cable terminated at one end with RJ45 connector. Connect the un-terminated end to the sensor screw terminal.
- Maximum cable length: 330 meters
- Regulatory approvals: CE, RoHS

Emergency / Panic Button



ENVIROMUX-EBS

- Sends activation signal when button is pressed.
- For normally closed or normally open circuit connections.
- 2-wire interface.
- Screw terminal.
- Dimensions WxDxH (in): 0.4x0.9x3
- Regulatory approvals: RoHS

Mounting Bracket for Infrared Motion Detector



ENVIROMUX-MB-IMD

- Mounting bracket for installing the infrared motion sensors to a ceiling or wall.
- 360° Angle Adjustment
- For use with the ENVIROMUX-IMD, ENVIROMUX-IMD-CM, and ENVIROMUX-IMD-MW motion detectors.

Infrared Motion Detector, Ceiling Mount



ENVIROMUX-IMD-CM

- Detects movement across the detection field.
- 360° detection pattern.
- 113° conical detection angle from ceiling.
- 36' diameter protection when mounted 12' high.
- Provides substantial immunity to false alarms caused by environmental disturbances.
- Pulse count or single shot triggering.
- Good RFI protection
- Screw terminal
- Maximum cable length: 1,000 ft
- Regulatory approvals: CE, RoHS

Electric Strike



ENVIROMUX-EDR-SCR
ENVIROMUX-EDR-SF

- Fail-Safe Electric Strike (ENVIROMUX-EDR-SF)
 - The door is locked with power ON, and unlocked with power OFF.
 - For Fire/Emergency door or Escape door installations.
- Fail-Secure Electric Strike (ENVIROMUX-EDR-SCR)
 - The door is locked with power OFF, and unlocked with power ON.
 - For Entrance door installation.
- Regulatory approvals: CE

Key Station



ENVIROMUX-RKS

- Remote key station designed for security system ON-OFF control applications.
- Built with universal connection terminals; can be used freely with most security systems.
- Provides momentary contact with spring return.
- Standard single gang mounting box.
- Built-in tamper switch.
- Built-in connection terminals.
- For security system and door strike applications.
- Dimensions WxDxH (in): 1.7x 2.9x4.6
- Regulatory approvals: RoHS



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Alert/Communications Accessories

Alarm Beacon



ENVIROMUX-BCN-R

- Emits flashing red light when activated.
- Flash Rate: 90 per minute.
- Screw terminal.
- 2-wire interface.
- Maximum cable length: 100 ft
- Regulatory approvals: RoHS

Siren



ENVIROMUX-SRN-M

- Emits ear-piercing sound to deter intruders.
- Output Level: 108 dB
- Dimensions WxDxH (in): 1.5x1.7x2.4
- Screw terminal.
- 2-wire interface.
- Maximum cable length: 100 ft.
- Regulatory approvals: RoHS

Automatic Voice/Pager Dialer System



ENVIROMUX-AVDS

- Calls up to 8 telephones, pagers, or cell phones when a sensor goes out of range of a configurable threshold.
- Stores up to 4 outgoing voice messages. Create a message for 4 different types of alarms.
- For normally closed or normally open circuit connections.
- Interfaces with the ENVIROMUX-SEMS-16 via the Output Relay connections.
- Dimensions WxDxH (in): 6x4x1.5
- Regulatory approvals: FCC

GSM Modem



ENVIROMUX-GSM

- Sends SMS text messages to a pager or cell phone when a sensor goes out of range of a configurable threshold.
 - SIM card required (not included)
- Interfaces with the ENVIROMUX-SEMS-16 via a female DB9 RS232 connector.
- Frequency (MHz): 850/900/1800/1900
- Protocols: AT commands, UDP/API, PPP, UDP/PAD, CMUX, TCP/PAD, TCP/API
- Includes serial cable, power supply, and antenna.
- Dimensions WxDxH (in): 2.5x2.5x0.9
- Regulatory Approvals: CE, FCC, RoHS

Power Relays & Sensors

Voltage Detector



ENVIROMUX-S60VDC

- Monitors up to two DC voltages: -60VDC ~ 0VDC or 0VDC ~ 60VDC
- Connector: Screw Terminal, 5-position
- Supports CAT5/5e/6 cable up to 1,000 ft. (not included)
- Includes mounting hardware
- Regulatory approvals: RoHS

Remote Controlled Power Relay



ENVIROMUX-PWR-RLY-15A • ENVIROMUX-PWR-RLY-20A

- Use with ENVIROMUX-SEMS-16 to remotely turn off the power of an AC powered device.
 - Remotely reboot non-responsive computer systems.
- Two AC power receptacles.
- Load capacity:
 - ENVIROMUX-PWR-RLY-15A: 15A at 120VAC.
 - ENVIROMUX-PWR-RLY-20A: 20A at 120VAC.
- Dimensions WxDxH (in): 3.8x2.0x5.5
 - The baseplate is 5.25" square.
 - Regulatory approvals: TÜV



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Sensor Accessories

4-20mA Sensor Converter



ENVIROMUX-S420MA

- External RJ45 device monitors up to two 4-20mA analog sensors.
- Supports ISA Type 2, ISA Type 3, and ISA Type 4 sensors.
- Provides 18VDC, 25mA for each sensor.
- Connector: Screw Terminal, 8-position.
- Supports CAT5/5e/6 cable up to 1,000 ft. (not included)
- Includes mounting hardware.
- Regulatory approvals: RoHS

Sensor Cables



ENVIROMUX-2W-xx

- 2-wire sensor cable.
- Use to connect dry contact sensors to the ENVIROMUX-SEMS-16.
- Available lengths (ft): 3/6/10/25/50/100
- Regulatory approvals: RoHS, UL



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