# DATASHEET

RLE Leak Detection

# MONITORING CONTROL UNIT (MCU)

## 01

The Monitoring Control Unit (MCU) is the central management hub of the Parameter XD system, bringing distributed leak detection into a single operational view. It supervises up to 64 Monitoring Distribution Units (MDUs) and 2,048 Monitoring Sensor Units (MSUs), consolidating Warning, Leak Alarm and Fault events so operators can identify the affected device and sensing channel across their monitored areas.

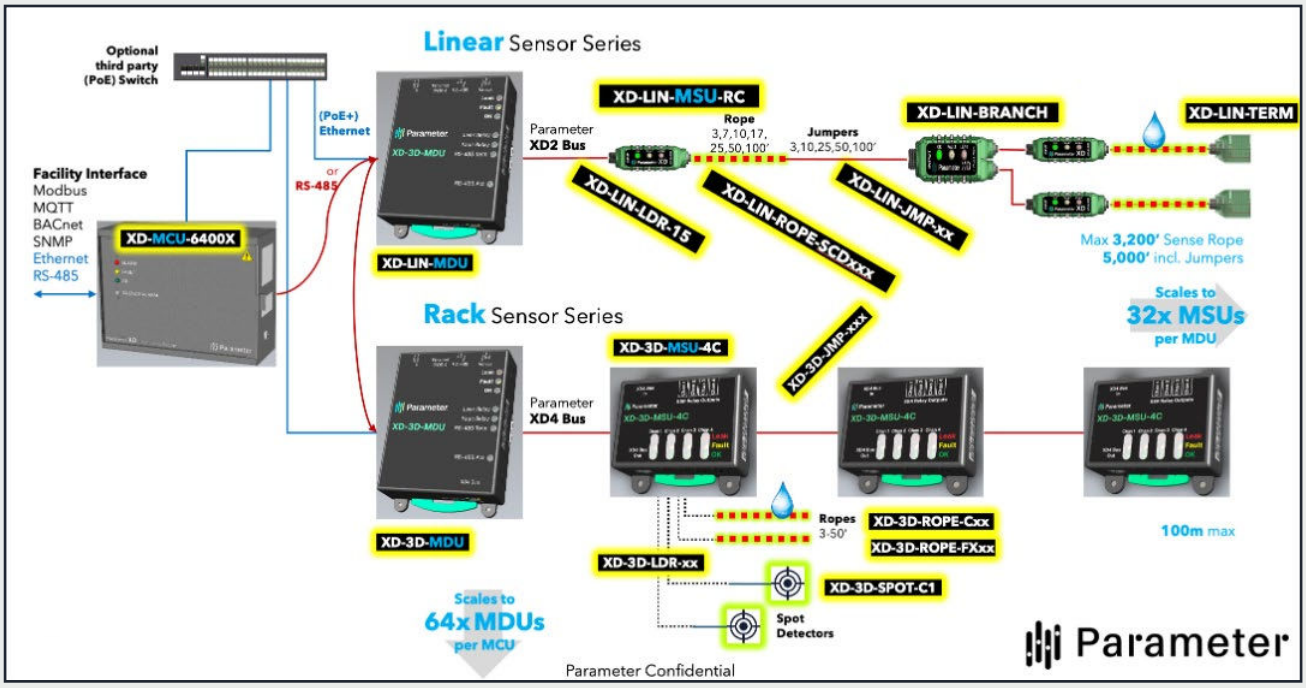
Through the integrated web interface, users can monitor system health, review live sensor readings, configure thresholds and apply settings to multiple compatible devices. The MCU connects leak monitoring to facility operations through BACnet, Modbus, MQTT and SNMP. Separate facility and MDU networks each have two Ethernet ports to support redundancy, with RS-485 available as an alternative link. Relay outputs and configurable audible and email notifications support site response procedures. User management, audit logging and HTTPS/MQTT certificate management support controlled access and traceability.

Both MCU models provide the full browser-based monitoring and configuration interface. The XD-MCU-6400TX adds an integrated 11.6-inch touchscreen displaying the same information for local operation; the XD-MCU-6400X provides front-panel status LEDs. This gives facilities a choice of local display options within the same management platform.

See the solution diagram below.

## 02

### XD SOLUTION DIAGRAM:



## 03 KEY FEATURES:

- Scalable Digital Monitoring Hub
- Easily scales from one leak zone to multiple data halls with a consolidated alert ecosystem that integrates with BMS/CMS.
- Supports up to 64 MDUs, up to 2,048 MSUs, via either Ethernet or RS-485.
- Massive Scaling -- up to 8,192 spots/ropes or 204,800 feet of sense rope.
- Integrated web interface
- MQTT native publisher
- Seamless integration with BMS via: MQTT, Modbus, BACnet, SNMP
- Dual Ethernet port bonding support to facility and to MDUs for redundancy (802.3ad LACP, LAG, MLAG)
- RS-485 connectivity to facility and MDUs
- Integrated Relay outputs for Leak and Fault

## 04 MONITORING CONTROL UNIT: System-wide controller for XD Series leak detection.




**XD-MCU-6400TX: LCD Touchscreen**




**XD-MCU-6400X: LED**

| Product Codes | Description | Usage |
|---|---|---|
| **XD-MCU-6400TX** | Parameter XD MCU Monitoring Control Unit, supports 64 MDUs, with 11.6" LCD Touchscreen Display. | Secure central hub. One per XD system. Adds 11.6" touchscreen. |
| **XD-MCU-6400X** | Parameter XD MCU Monitoring Control Unit, supports 64 MDUs, LED indicators. | Secure central hub. One per XD system. |

# 05

| Technical Specifications | |
|---|---|
| **Facility Communication Ports**<br>Dual Ethernet Ports<br>EIA-485 port | <br>2x 1000BaseT Ethernet port, RJ45 (see Link Aggregation Modes below)<br>9600/19200/38400/57600/76800 baud; No parit[BJ1.1][LM1.2]y, 8 data bits, 1 stop bi |
| **MDU Interfaces**<br>MDU scaling<br>Dual Ethernet Ports<br>EIA-485 port | <br>MCU supports up to 64 Monitoring Distribution Units (MDUs)<br>2x 1000BaseT Ethernet port, RJ45 (see Link Aggregation Modes below)<br>9600/19200/38400/57600/76800 baud; No parity, 8 data bits, 1 stop bit |
| **Link Aggregation on both Facility Ethernet ports and MDU Interface Ethernet prots**<br>Link Aggregation<br>Modes | <br><br><br>IEEE 802.3ad Link Aggregation Control Protocol (LACP), LAG, MLAG<br>Active-Backup (Default)<br>LACP with Standby<br>LACP with Dual-Active |
| **Facility Communication Protocols**<br>Modbus<br>MQTT<br>BACnet<br>SNMP | <br><br>Modbus/TCP, Modbus RTU (RS-485)<br>Message Queuing Telemetry Transport, pub/sub interface, certificate-based security<br>BACnet/IP, BACnet MS/TP (RS-485)<br>SNMP V1, V2, V3 |
| **Integrated Webserver**<br>Security<br>Functions<br>UI Form Factors | <br>Integrated webserver interface with certificate-based TLS encryption<br>Overview, Sensors, Circuit Diagram, Alerts, Maps, Settings<br>Desktop, Mobile |
| **Audible Alarm**<br>Audible Alarm | <br>Integrated buzzer, 85dBA @ 2ft (0.6m) |
| **Front Panel Human Interface**<br><br>**6400TX**<br>Touchscreen<br><br>**6400TX**<br>LEDs<br>Alarm Silence | <br><br><br>Integrated 11.6” FHD 1920x1060 LCD display touchscreen.<br><br><br>3 LEDs: Red (Alarm), Yellow (Fault) and Green (Ok)<br>Pushbutton to silence alarm |
| **Relay Outputs**<br>Relays | <br>2x Form C Relays,1 for Alarm, 1 for Fault; 5A @ 30VDC or 10A @ 250 VAC<br>Configurable for supervised or non-supervised modes. |
| **Security**<br>Security Features | <br>Comprehensive enterprise-class security features spanning security event logging, password complexity requirements, cryptographic algorithms, SBOM management, common vulnerability evaluation, binary analysis, malformed input resistance, boot process authenticity, authentication bypass difficulty. Device qualification prior to acceptance into the network, rotating security certificates, etc. |
| **Operating Environment**<br>Temperature<br>Humidity<br>Altitude<br>Storage Temperature | <br>32° to 122°F (0° to 50°C)<br>20% to 80% RH, non-condensing .<br>10,000ft (3048m) max<br>-4° to 158°F (-20° to 70°C) |

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| **Operating Environment**<br>Temperature<br>Humidity<br>Altitude<br>Storage Temperature | <br>32° to 122°F (0° to 50°C)<br>20% to 80% RH, non-condensing .<br>10,000ft (3048m) max<br>-4° to 158°F (-20° to 70°C) |
| **Power**<br>Input Power | <br>100-240 VAC, 60 W max, 1 A 2-pole circuit breaker, direct wired. |
| **Enclosure, Weight, Dimensions**<br>Enclosure<br>Dimensions<br>Weight<br>Mounting | <br>NEMA Type 1<br>13.8”W x 10.1”H x 8.9”D (350mmW x 257mmH x 227mmD)<br><Dat> 6400TX: 15.2lbs. (6.9kg), 6400X: 11.9lbs (5.4kg)<br>Wall mount with 4 screws |
| **Certifications**<br>Certifications | <br>cTUVus: conforms to UL 61010-1, EN 61010-1; certified to CSA C22.2 NO. 61010-1; CE, UKCA<br>RoHS compliant |

## 06 SWITCH FOR MCU TO MDU INTERFACE

The MCU can communicate with the MDUs either over Ethernet or RS-485 . MCU to MDU communication via Ethernet requires ports on a switch. If the switch has PoE+ ports, then the MDUs can be powered from the PoE+ switch. Use approved external 48VDC power supply for non-POE+ network or RS-485, or if power redundancy is desired if POE+ network is overloaded.

Specs for Switch for MCU/MDU interface:

- 1000BT ports for Ethernet connection of MDUs to the MCU
- One port on the switch is required for each MDU
- Additionally, the MCU will require 1 or 2 ports depending on the Bonding mode in use (see the Bonding modes description above).
- If you plan to power the MDUs from the switch, then the ports for the MDUs need to

## 07 THIRD-PARTY SWITCH RECOMMENDED PRODUCTS LIST

See table below for recommended third party PoE+ switches. Requirements for PoE switch for powering the XD-3D-MDU and the XD-LIN-MDU:

- Must support PoE+ power level the Bonding modes description above).
- Determine how many ports on the switch can deliver the full PoE+ power level and don’t exceed that number of ports for MDU powering.

07

| Vendor | Vendor P/N | Description | Total PoE Power (W) | Ports | # of Ports with 30W available | Link |
|---|---|---|---|---|---|---|
| **Arista** | Arista CCS-720XP-24Y6-F | Arista CCS-720XP-24Y6-F 24x 10M-1GbE RJ45 @ 30W + 6x 25G switch | 473 | 24 | 15 | Datasheet |
| **Arista** | Arista CCS-720XP-24Y6-2F | Arista CCS-720XP-24Y6-F 24x 10M-1GbE RJ45 @ 30W + 6x 25G switch | 1123 | 24 | 24 | Datasheet |
| **Cisco** | Cisco Catalyst C1200-8FP-2G | Cisco Catalyst C1200-8FP-2G 8-port PoE+ switch | 120 | 8 | 4 | Datasheet |
| **Cisco** | Cisco Catalyst C1200-24FP-4X | Cisco Catalyst C1200-24FP-4X 24-port PoE+ switch | 375 | 24 | 12 | Datasheet |
| **Dell** | Dell PowerSwitch N3208PX-ON | Dell PowerSwitch N3208PX-ON 8-port PoE+ switch | 193 | 8 | 6 | Datasheet |
| **Dell** | Dell PowerSwitch N3208PX-ON Add Dell ADP-320 | Dell PowerSwitch N3208PX-ON 8-port PoE+ switch | 493 | 8 | 8 | Datasheet |
| **Dell** | Dell PowerSwitch E3248P-ON | Dell PowerSwitch E3248P-ON 48-port PoE+ switch | 813 | 48 | 27 | Datasheet |
| **Dell** | Dell PowerSwitch E3248P-ON Add Dell APD code 282-BBBL | Dell PowerSwitch E3248P-ON 48-port PoE+ switch | 1440 | 48 | 48 | Datasheet |
| **Dell** | Dell PowerSwitch E3248PXE-ON | Dell PowerSwitch E3248PXE-ON 48-port PoE+ switch | 756 | 48 | 25 | Datasheet |
| **Dell** | Dell PowerSwitch E3248PXE-ON Add Dell ADP code 282-BBBE | Dell PowerSwitch E3248PXE-ON 48-port PoE+ switch | 2880 | 48 | 48 | Datasheet |
| **Ubiquiti** | Ubiquiti Pro Max 16 PoE | Ubiquiti Pro Max 16 PoE 16-port switch | 180 | 16 | 6 | Datasheet |
| **Ubiquiti** | Ubiquiti Pro Max 24 PoE | Ubiquiti Pro Max 24 PoE 24-port switch | 400 | 24 | 13 | Datasheet |
| **Ubiquiti** | Ubiquiti Pro HD 24 PoE | Ubiquiti Pro HD 24 PoE 24-port switch | 600 | 24 | 20 | Datasheet |
| **Netgear** | Netgear GS305EPP | Netgear GS305EPP POE 4-Port Switch | 120 | 4 | 4 | Datasheet |