1U Configuration with 1X Expansion Card Slot

2U Configuration with 4X Expansion Card Slots

RLE Technologies

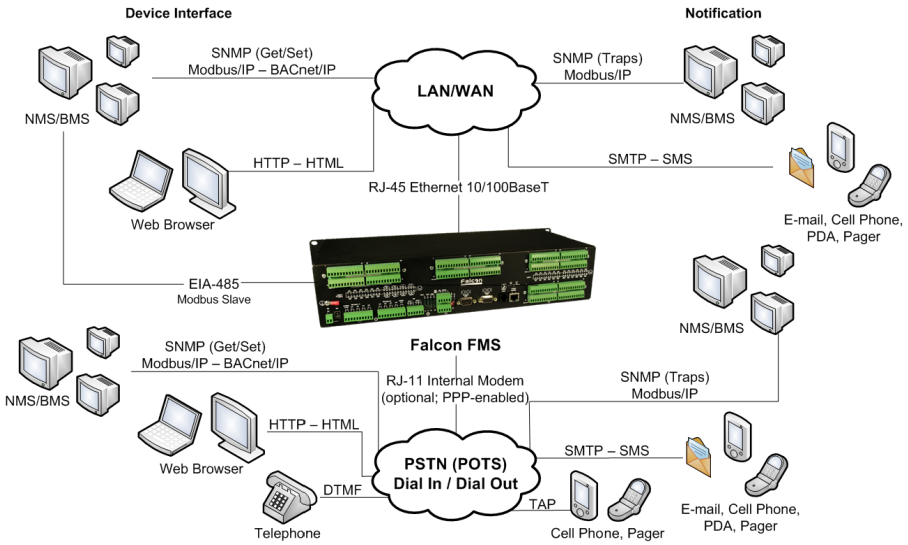
iCE MONITOR CONTROL

Falcon FMS

Looking for maximum versatility and expandability? The Falcon Facilities Monitoring System (FMS) delivers. The FMS is a comprehensive monitoring system with extreme versatility that simplifies and consolidates monitoring of numerous types of signals and equipment. The FMS is commonly used to monitor equipment status and summary alarms as well as sensors for current, voltage, temperature, humidity, pressure, flow level, security, hydrogen, and more.

As a Web appliance, the FMS can be accessed, all points viewed, and relay outputs activated with a secure login from any Web browser or, with the optional modem, by dialing directly into the unit.

Inherent scalability and reliability make the FMS a proven monitoring appliance in organizations across many industries, including IT, healthcare, telecommunications, government, and education. Constant supervision of critical infrastructure and equipment helps to safeguard against damage and work stoppage.



FMS Communications Interface

Features

- Stand-alone, Web-enabled appliance
- Highly scalable
- Accommodates digital, analog, and Modbus inputs
- Modbus, BACnet, and SNMP output
- Alarm notification via email, SNMP traps, pager, SMS/PDA
- Trending and extended logging
- Third-party sensor friendly, vendor neutral
- URL links enable web access to other locations and devices
- Support for SNMP V1, V2, and optional V3

Benefits

- Eliminates need for special software or hardware
- Optimizes investment and expands as facility grows
- Provides multiple paths for notification
- Allows for visibility over time without external software
- Integrates to existing site without additional equipment or software
- Provides one integrated view of all facility equipment
- Ensures additional security for Internet communication

FMS WEB INTERFACE

The FMS Web interface provides a user friendly and convenient way to check and monitor the FMS status via the Web. No additional software is required or purchased.

FMS Mapping Feature

The FMS allows users to upload a map of their facility and populate it with FMS data. This provides users with a real-time view of their facility, and the physical location and status of all their digital, analogue, and Modbus/SNMP slave inputs.

Through the FMS mapping process, the Falcon creates an overlay for an uploaded map image. It superimposes the locations of your inputs - based on coordinates you designate - over the top of your map image. Once uploaded and populated, the map is accessible through the Floor Map link on the FMS home page.

Facility Power Monitoring

PUE and DCiE calculations are valuable metrics used by data centers to track their energy efficiency. PUE measures the efficiency of the computing equipment, while DCiE measures the efficiency of the data center's infrastructure. Maximizing the energy efficiency of computing equipment and the data center infrastructure helps reduce energy costs and can minimize data center down time.

The FMS provides a set of tools that help track real-time PUE and DCiE information, as well as logging long-term PUE/DCiE trending information.

Multiple-Site Nest View

The "Nest Tab" allows a single; on-screen interface to view the status of all your sites and FMS controllers. Any alarms or alerts are updated on-screen in real time and relevant notifications (email, SMS, Trap, screen) sent.

FMS Specifications

Power	1U FMS: 24VDC Model: 24VDC (±10%), 1A max., power supply included; 48VDC Model: 36-72VDC, 0.5A max. 2U FMS: 24VDC Model: 24VDC (±10%), 2.5A max., power supply included; 48VDC Model: 36-72VDC, 1.25A max.
Inputs	
Analog/Digital	8 Configurable as 4-20mA (12-bit A/D conversion) or Dry Contact NO/NC (<25mA)
Internal Temperature/Humidity	±0.5ºF (@ 25ºC), ±4ºF (@ -40º to 185ºF); ±3%RH (@ 20% to 80%RH); (Internal Temperature/Humidity optional)
Keypad	Standard 3x4; 3000VAC RMS optically isolated; 20 User Access Codes (also accessible via phone/DTMF through modem)
Outputs	
Relay	2 Dry Contact, Form C, 1A @ 24VDC, 0.5A resistive @ 120VAC (controllable via user programmable logic)
Sensor/Accessory Power	24VDC (±10%) @ 300mA max. (power for external sensors and/or devices)
Expansion Cards	1U accommodates 1 expansion card; 2U accommodates up to 4 expansion cards 24V Falcon requires EXP-x-24 option cards; 48V Falcon requires EXP-x-48 option cards
EXP-A-24 or EXP-A-48	12 analog inputs (jumper selectable for 4-20mA, 0-5VDC or 0-10VDC) and digital inputs (non-isolated, individual ground only); 8 Form C Relay Outputs, 1A @ 24VDC, 0.5A resistive @ 120VAC. *48V FMS can accept only 1 EXP-A card.*
EXP-C-24 or EXP-C-48	24 Digital Inputs, 3000VAC RMS optically isolated (common ground or individual ground)
Communication Ports	
Ethernet	10/100BaseT, RJ45 connector; 500VAC RMS isolation
RS-232	DB9 female connector; 9600 baud; 3000VAC RMS optically isolated; 15kV ESD protection
EIA-485 (selectable as RS-232)	Two-wire half duplex; terminal block (selecting RS-232 switches to DB9 male connector); 1200, 2400, or 9600 baud configurable; 3000VAC RMS optically isolated
Modem (RJ11 Telco; optional)	V.34bis/33.6 kbps; DTMF capable; PPP-enabled; FCC Part 68 approved; 1500VAC RMS isolation barrier; 2100V peak surge protection)
Protocols	
TCP/IP; UDP/IP; ICMP/IP; FTP; NTP; HTTP/HTML; SNPP; Telnet	IPv4 1.1/4.0; up to 10 URL links to other IP addressable cameras/devices; webpages comply with Rehabilitation Act of 1973, sections 504 and 508, US Dept. of Education (website accessibility for computer users with disabilities)
SNMP	V1: MIB-2 compliant; NMS Manageable with Get, Set, and Traps; V2c: Traps or Informs
SMTP (email)	Supports Client Authentication (plain and login); compatible with ESMTP Servers
Modbus	RTU transmission protocol; function codes: slave - 03; master - 01,02,03,04
Modbus/IP	Modbus Slave; TCP/IP transmission protocol; Reads up to 628 registers and converts to SNMP and BACnet
BACnet/IP	Reads up to 106 instances and converts to SNMP and Modbus
Terminal Emulation	VT100 compatible
TAP (Pager)	Telocator Alphanumeric Protocol v1.8
Alarm Notification	
Pager (Modem) – Optional	15 text, numeric, or alphanumeric pager numbers; each digital and analog alarm (HighLimit and LowLimit) can notify any 5 of the 15 pagers
Email (Ethernet, Modem PPP)	8 email recipients; email sent on Alarm and Return To Normal; each alarm can notify any or all of the 8 email recipients
SNMP Traps (Ethernet)	V1 and V2c: 8 Community Strings; V3 (optional): 4 users, 4 Trap Destinations
Escalation	Additional notification to 1 of the 15 pager numbers when the initial page results in a Failure To Acknowledge status
Health Check/Self-Monitoring	Self resetting; captured in Event Log
Internal Hardware	
Real Time Clock	Battery backed; ±1.53 min/month accuracy
Memory	16MB RAM; 128K NVRAM; 16MB Flash
Logging Capabilities	
Alarm Log	Last 256 Alarms
Event Log	Last 100 Events (e.g., Acknowledgement By Code, System Boot, Page Successful, etc.)
Web User Access Log	Last 100 HTML Accesses (User, Date, and Time)
Digital Status Log	Last 100 Digital Status entries
Trending of Analog Inputs	244 entries per time frame, per channel. High, low, and average values logged over specific minutes, hours, and days.
Extended Trending (Analog Inputs)	3,840 entries over 32 inputs, physical or over Modbus. Logging at defined, user-selectable intervals.
Login Security	
Web Browser Access (Ethernet, Modem PPP)	1 Administrator plus 7 users individually selectable for Read Only, Read/Write or Administrator
Terminal Emulation Access (Modem)	1 Administrator (password for Modem access)
Front Panel Interface	1 on/off power switch. Red and green LEDs indicate status, network link, network activity, and modem activity
Operating/Storage Environment	Operating temperature: 32° to 158°F (0° to 70°C). Humidity: 5% to 95% RH, non-condensing. Altitude: 15,000ft (4,572m) max. Storage temperature: -40º to 185ºF (-40º to 85ºC)
Dimensions and Weight	1U FMS: 16.8"W x 1.8"H x 7.9"D (427mmW x 46mmH x 201mmD); 6 lbs. (2.72kg) 2U FMS: 16.8"W x 3.5"H x 7.9"D (427mmW x 89mmH x 201mmD); 10 lbs. (4.54kg)
Mounting	Rack mount or wall mount (brackets required for wall mount): WMB wall mount brackets (not included)
Certifications	CE; ETL listed: conforms to UL STD 61010A-1, EN STD 61010; certified to CAN/CSA C22.2 STD NO. 1010.1; RoHS compliant

Falcon

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iCE MONITOR CONTROL

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