FMS-2000M

Critical Environment Monitor

Product Bulletin

LIT-12013564
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Description

The FMS-2000M Critical Environment Monitor is a BACnet® MS/TP differential pressure monitoring solution that displays and measures differential pressure as low as 0.0001 in. W.C. or 0.0249 Pa. The monitor also displays temperature, humidity, air flow, air changes and CO_2 from the Building Automation System (BAS) for up to four spaces.

The FMS-2000M provides maximum room status awareness with color-coded visual alarms both on screen and with the 360° Safety Halo illuminated edge, which enables staff to easily monitor spaces on long corridors. You can put the audible alarm into snooze mode with one tap to the screen. There are two password-protected access levels, one for administrators and one for restricted level users, such as nurses.

Features

Table 1: Features and benefits

Features	Benefits
Parameters	Monitors pressure, temperature, humidity, air flow, air changes, and CO_2 levels across four rooms
Communication protocols	BACnet MS/TP
Lighting	360˚ Safety Halo illuminated edge helps staff monitor spaces on long corridors
Design	Intuitive user interface for fast and easy setup
Display	5 in. (127 mm) diagonal, high definition, 720 pixels by 1280 pixels touch screen display that works with rubber, nitrile, and latex gloves
Non-volatile memory	Saves user settings in case of a power outage
Password protection	Two access levels to prevent unauthorized access
Global release	Offers a user interface that is translated to 17 languages
Alarms	Visual and audible pressure alarm

Applications

- Airborne infection isolation (AII) rooms - negative pressure
- Protective environment (PE) isolation rooms - positive pressure
- AII and PE rooms with an anteroom
- Operating rooms (ORs)
- Compounding pharmacies
- Pandemic preparedness rooms
- Intensive care units
- Laboratories and vivariums
- Burn units
- Bronchoscopy suites
- Mortuary preparation rooms or autopsy rooms
- Data centers
- Laundry areas
- Food preparation areas

Table 2: FMS-2000C controller and FMS-2000M monitor comparison:
The following table compares the features of the FMS-2000C and FMS-2000M controllers.

Features and capabilities	FMS-2000C	FMS-2000M
Differential pressure control	Yes	No
Differential pressure monitoring	Yes	Yes
Volumetric air flow	Yes	Yes[1]
Volumetric offset control	Yes	No
Temperature control	Yes	No
Temperature monitoring	Yes	Yes[1]
External thermostat integration	Yes	No
Relative humidity	Yes	Yes[1]
Air change rate	Yes	Yes[1]
CO_2 concentration	Yes	Yes[1]
BACnet MS/TP communications	Yes	Yes
Metasys N2 communications	No	No
Lon communications	No	No
Door switch support	Yes	Yes
Occupancy switch support	Yes	No
Override switch support	Yes	No
Analog input override	Yes	No
Analog output override	Yes	No
Universal analog inputs	4	0
Universal analog outputs	4	0
Digital inputs	4	4[2]
Relay outputs	4	0
Thermistor inputs	2	0
Works with CMS-1655 Central Monitoring Station	Yes	No

[1] Shared through BACnet by writing to the appropriate AV.
[2] Up to four digital inputs. One input on each pressure sensor. For door switch use only.

Technical specifications

Table 3: Technical specifications

Intended use		Indoor use
Overvoltage category		II
Altitude		Up to 2000 m (6562 ft)
Pressure range		± 0.2500 in. W.C. (± 62.27 Pa)
Alarm range		± 0.2500 in. W.C. (± 62.27 Pa)
Display range		± 0.2500 in. W.C. (± 62.27 Pa)
Accuracy		± 0.5% full scale
Air flow sensor type		Digital differential pressure sensor features no offset, zero drift and is hysteresis free
Displayed pressure resolution		± 0.0001 in. W.C (± 0.0249 Pa)
Monitoring capability		Up to 4 independent spaces
I/O Resources		One digital input for a door switch on each remote pressure sensor Remote monitoring output for each remote pressure sensor, VDC or mA
Operating temperature		32°F to 104°F (0°C to 40°C)
Operating humidity		10% to 95% relative humidity, non-condensing
Mounting		Thin mount for shallow wall cavities
Alarm indication		Safety Halo color coded visual, audible alarm
Alarm silence		Touchscreen, auto-reset
Password protection		Up to 50 user passwords with 2 access levels (administrator and restricted)
Communications protocol		BACnet MS/TP (to BAS) 76.8k, 38.4k, 19.2k, 9600 baud
Power requirement		24 VAC (nominal, 21.6 VAC minimum/26.4 VAC maximum), 50/60 Hz 30 VA power supply, Class 2, Limited Energy, LPS isolated power supply, or minimum power 30 VA transformer.
Power consumption		30 VA maximum
Pollution degree		2
Display resolution		720 pixels x 1280 pixels
Pluggable screw terminal blocks		18 AWG to 22 AWG (1 mm to 0.6 mm diameter)
Display dimensions (height x width x depth)		5.3 in. x 3.5 in. x 1.17 in. (134.62 mm x 88.9 mm x 29.72 mm)
Mounted depth		Thin mount: 0.58 in (14.73 mm)
Compliance	**United States**	UL Listed (E515759) to UL 61010-1; FCC 47CFR Part 15; BTL Listed (BTL-30774)
c UL us LISTED	**Canada**	cUL Listed (E515759) to CAN/CSA C22.2 NO. 61010-1; ICES-003
CE	**Europe (CE)**	Low Voltage Directive [2014/35/EU] per EN 61010-1 EMC Directive [2014/30/EU] per EN 61326-1 + EN 55011
UK CA	**United Kingdom (UKCA)**	Electrical Equipment (Safety) Regulations per EN 61010-1 EMC Regulations per EN 61326-1 + EN 55011
	International Standards	Product fulfils the requirements of IEC 61010-1 as recognized by national or regional authorities.
	BACnet International (BTL)	BACnet Testing Laboratories (BTL) 135-2021 Listed BACnet Application Specific Controller (B-ASC)

Ordering information

Table 4: Ordering information

Feature	Code letter or number and description	Product code number example: FMS2M–BT40
Unit	FMS = Flow Monitor Station (FMS)	FMS
Series	2 = 2000 M = Monitor	2M
Communication protocol	B = BACnet MS/TP	B
Mounting style	T = Thin mount for shallow wall cavities	T
Remote sensors	1 = One remote sensor 2 = Two remote sensors 3 = Three remote sensors 4 = Four remote sensors	4
ISO power supply	0 = 24 V power supply not included	0

Mounting hardware

All FMS-2000 Thin mount displays require one of the following mounting options for installation:

Table 5: Mounting hardware

Ordering code	Description	Dimensions (H X W X D)
RFINMT-2	Rough-in Box for new construction where walls are not installed	4.84 in. x 3.18 in. x 1.5 in. (122.94 mm x 80.77 mm x 38.1 mm)
RTROMT-2	Retrofit Ring where walls are already installed	6.06 in x 4.311 in. x 0.548 in. (153.924 mm x 109.499 mm x 13.919 mm)

Available transformers

The following table lists the transformers that meet the requirements for the FMS-2000M Critical Environment Monitor.

Table 6: Y65T and Y63T transformers

Ordering code	Primary voltage	Secondary voltage	Primary connection	Secondary Connection	Mounting	Agency requirement
Y65T31-0	120/208/240	24	Male fitting 8 in. primary leads	Three screw terminals (one is blind)	Foot 4 in. x 4 in. plate	cULus Class 2
Y65T31-0G (Buy American while supplies last)	120/208/240	24	Male fitting 8 in. primary leads	Three screw terminals (one is blind)	Foot 4 in. x 4 in. plate	cULus Class 2
Y65T42-0	120/208/240	24	Common male fitting 8 in. primary leads	Common male fitting 8 in. secondary leads	Hub 4 in. x 4 in. plate	cULus Class 2
Y65T54-0	120/208/240	24	8 in. primary leads	8 in. secondary leads	Foot-skeleton	cULus Class 2
Y63T22-0	120/208/240	24	End bell hole 8 in. primary leads	End bell hole 8 in. secondary leads	4 in. x 4 in.	cULus Class 2

Note: Some applications may require a plenum rated box. Do not power more than one device with a single transformer.

North American Emissions Compliance

United States

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case users will be required to correct the interference at their own expense.

Canada

This Class (A) digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe (A) respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Repair information

If you purchased a service agreement, contact your Triatek® representative for a replacement unit. If you do not have a service agreement, contact service@triatek.com.

Patents

Patents: https://jcipat.com

Software terms

Use of the software that is in (or constitutes) this product, or access to the cloud, or hosted services applicable to this product, if any, is subject to applicable end-user license, open-source software information and other terms set forth at www.johnsoncontrols.com/techterms. Your use of this product constitutes an agreement to such terms.

Product warranty

This product is covered by a limited warranty. Contact your representative/branch for more details.

Contact information

Contact your local branch office: www.johnsoncontrols.com/locations

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