



Controls by Monodraught

HTM F - Optional BACnet Module

General Description

The Hybrid Thermal Mixing (HTM) system from Monodraught is designed to provide natural ventilation, hybrid ventilation (incorporating mixed tempered air for winter periods), secure night time cooling and boosted levels of ventilation during summer. The HTM F systems are designed to work in conjunction with natural ventilation and can be used in single sided and cross flow ventilation strategies.

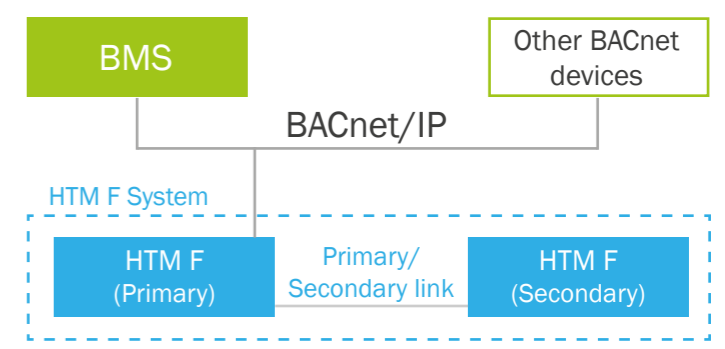
The BACnet module allows a HTM F system to be installed on to a BACnet/IP network and make visible a number of system variables.

Technical Details

The BACnet module for HTM F is a Cimetrics EasyBAC module based on a Lantronix XPort device. This module plugs into the Control Board and interfaces with the on-board microcontroller to provide BACnet visibility of the HTM F system.

Each HTM F system has its own unique IP address on the BACnet/IP network. Where multiple HTM F units are located in one room, the HTM F units may be linked in a Primary/Secondary configuration to form one system. In this instance the Primary unit will collate the information from the Secondary units and present the collated information on BACnet.

The BACnet module requires an RJ45 Ethernet connection (by others) from the BACnet/IP network to the Primary HTM F unit.



Wiring Requirements

10/100BaseT Ethernet connection (RJ45 Terminated, Cat5 or better rated cable)

BACnet Details

Device Objects

Object Name	Value
Vendor Name	Cimetrics
Vendor ID	14
Model Name	Monodraught HTM F
Instance Number	<serial number of unit*>
Firmware Revision	<various>
Application Software Version	<various>
Database Revision	<various>

*Unless otherwise explicitly requested when providing IP details

Binary Inputs

Object Name	Instance #	Description
FAULT	1	Fault found
LOUVRE_OVERRIDE	2	Manual VENTSAIR wall louvre position override

Information Required – Static IP Address

We require a fixed IP address to pre-programme into the BACnet module prior to delivery, specifically the IP address, sub-net mask and default gateway of each system in IPv4 format.

This must be provided to Monodraught two weeks prior to delivery.

If an IP address is not provided by the client, the default range of 192.168.0.100 – 192.168.0.200 will be used, with a subnet mask of 255.255.255.0. The default gateway will also be set to 192.168.0.1.

Analogue Inputs

Object Name	Instance #	Description	Units
HTMF_ID	1	Serial number	N/A
YEAR	2	Year	Years
MONTH	3	Month	Months
DAY	4	Day	Days
HOURS	5	Hours	Hours
MINUTES	6	Minutes	Minutes
OPERATING_MODE	7	Operating mode	N/A (See #)
FAN_SPEED	8	Fan speed	%
EXTERNAL_DAMPER	9	External air intake damper	%
RECIRC_DAMPER	10	Recirculated air intake damper	%
EXHAUST_DAMPER	11	Exhaust air Damper	%
ROOM_TMP	12	Room temperature	°C
ROOM_CO2	13	Room CO2	ppm
EXTERNAL_AIR_TMP	14	External Air temperature	°C
RECIRC_AIR_TMP	15	Recirculated Air temperature	°C
MIXED_AIR_TMP	16	Mixed Air temperature	°C
FAULT_CODE	17	System code indicating specific faults present	N/A (See †)
OPEN_WINDOWS	18	Open Manual Windows	N/A (See †)
ADDITIONAL_DAMPER_A	19	Additional Damper A	%
ADDITIONAL_DAMPER_B	20	Additional Damper B	%

(#) OPERATING_MODE Object Values Description

Number	Mode
0	Unknown
1	Off
2	Idle
3	Natural Ventilation Mode
4	Natural Ventilation + Windows Mode
5	Boost Mode
6	Mixed Mode
7	Seasonal Night Cooling Mode
8	Secondary Mode
9	Acoustic Test Mode
10	Self-Test Mode
11	Control Mode
12	Workshop Exhaust Mode


(+) HTMF_OPEN_WINDOWS Object Values Description


Number	Mode
0	Unknown
1	No
2	Maybe
3	Yes


(†) FAULT_CODE Object Values Description

The FAULT_CODE object is a numeric value that indicates any fault present on the system. Each fault has a unique code allocated to it (2⁽ⁿ⁻¹⁾ where n is the fault number) which are added together to form the FAULT_CODE. So if there was a fault with the SD card, UI and Heater, the fault code would be 4101 (1 + 4 + 4096).

Fault Number	Hex Code	Decimal Code	Fault
1	0x0001	1	SD card
2	0x0002	2	Header file
3	0x0004	4	UI
4	0x0008	8	Fan
5	0x0010	16	T5 (External air temperature sensor)
6	0x0020	32	T6 (Recirculated air temperature sensor)
7	0x0040	64	T7 (Mixed air temperature sensor)
8	0x0080	128	Servo 1 (External Air Intake Damper)
9	0x0100	256	Servo 2 (Recirculated Air Intake Damper)
10	0x0200	512	Servo 3 (Additional damper A)
11	0x0400	1024	Servo 4 (Additional Damper B)
12	0x0800	2048	Servo 5 (Exhaust air damper)
13	0x1000	4096	Heater
14	0x2000	8192	Airflow
15	0x4000	16384	Primary/Secondary error

 Halifax House, High Wycombe
Buckinghamshire, HP12 3SE


 +44 01494 897700

 +44 01494 532465

 www.monodraught.com

 info@monodraught.com

 Monodraught Ltd

 @MonodraughtLtd

 Monodraught Ltd