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ENGINEERING TOMORROW

Fact Sheet

VLT® BACnet/IP MCA 125



ASHRAE BACnet™

The VLT® BACnet/IP MCA 125 option is a plug-and-play solution that optimizes the use of VLT® HVAC Drive together with building management systems using the BACnet/IP protocol or running BACnet on Ethernet.

Lowest cost of ownership

The modular concept of the VLT® HVAC Drive allows you to pay only for features you need, customize your solutions and minimize system costs. The option makes it easy to control or monitor points required in typical HVAC applications.

Two Ethernet connectors

The embedded three-port managed switch of the VLT® BACnet/IP MCA 125 option comprises two external and one internal Ethernet port. This switch allows the use of line structure for the Ethernet cabling. In modern installation this is becoming increasingly attractive as it removes networking components from the installation, thus decreasing costs and limiting faults.

Optimized communication

Besides standard functionality, the option features six additional functions:

- COV, Change Of Value
- Read/WritePropertyMultiple
- Alarm/Warning notifications
- PID Loop objects
- Segmented data transfer
- Trending

These six features lower the traffic on the BACnet network significantly, and improve the overall performance of the BACnet. This means that by installing the VLT® HVAC Drive with a VLT® BACnet/IP MCA 125 option, system operation is faster and the BMS controller is better utilized.

up to 50% lower network load

Feature	Benefit
The built-in clock of the VLT® HVAC Drive synchronizes with the system master clock via BACnet	No need for a battery that eventually will need to be replaced
Two Ethernet connectors	Daisy-chain Ethernet cables - no need for external switches
BACnet/IP and BACnet over Ethernet	Flexibility in communications protocol, to suit your system
All VLT® HVAC Drive FC 102 native BACnet objects supported	Easy to migrate from BACnet MS/TP to BACnet/IP
Device name, location and description can be changed	Save time during service, since the drive is clearly identified
COV (Change Of Value) supported for a number of objects	The option sends data when they are changed. Reduces the number of messages and improves the system performance
Read or write multiple properties in one telegram (Read/WritePropertyMultiple)	– Transfer a list of properties of the VLT® HVAC Drive in one telegram – Improved system performance
BACnet PID Loop objects	Easy adjustment of integrated PID loop
Powerful range of BACnet services implemented	Less load on the network, faster response
All I/Os of the drive and selected MCB options are accessible via BACnet objects	– Reduced need for additional I/O devices – Reduced physical space needed – Lower installation cost
Accepts three separate feedbacks transmitted over BACnet	Reduced cabling cost
Segmented telegram	Efficient use of the BMS controller

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Improve system performance
Via the BACnet/IP option it is possible to read all analog and digital inputs and control all analog and digital outputs of the VLT® HVAC Drive. All inputs and outputs operate independently of the VLT® HVAC Drive functions, and therefore work as remote I/Os.

This means that when integrating a VLT® HVAC Drive into the control system it is possible to save physical I/O points, which typically would demand a remote I/O block.

The VLT® BACnet/IP MCA 125 adheres to the BACnet standard, and represents digital inputs and outputs in the correct format. This eases the work for operators and programmers, since it shows the I/O of the drive, with the corresponding objects.

Flexible choice
The VLT® HVAC Drive offers two alternative BACnet solutions:
The built-in (native) BACnet MS/TP features basic functionality that makes it very well suited for small installations, whereas the VLT® BACnet/IP MCA125 is well suited for larger installations that demand fast access to the network, or installations where the BMS controller would be heavily loaded by using BACnet MS/TP.

Detailed information about warnings and alarms
VLT® HVAC Drive provides detailed information about alarms and warnings. BMS controllers can monitor these or let the drive send the alarm or warning when they occur, and afterwards get detailed information from the drive.

Examples:
Earth fault, short circuit, over current, motor phase loss, motor thermal condition (thermistor or ETR), mains phase loss, live zero, broken belt, no flow, dry pump, end of curve.

Listed by BTL

The VLT® BACnet/IP MCA 125 solution is listed by BTL Testing Laboratory.

BACnet Interoperability Building Blocks Supported

Data Sharing-ReadProperty-B	(DS-RP-B)
Data Sharing-ReadPropertyMultiple-B	(DS-RPM-B)
Data Sharing-WriteProperty-B	(DS-WP-B)
Data Sharing-WritePropertyMultiple-B	(DS-WPM-B)
Data Sharing-Change of Value-B	(DS-COV-B)
Alarm and Event-ACK-B	(AE-ACK-B)
Alarm and Event-Notification Internal-B	(AE-N-I-B)
Alarm and Event-Information-B	(AE-INFO-B)
Alarm and Event-Event Log-Internal-B	(AE-EL-I-B)
Scheduling-Internal-B	(SCHED-I-B)
Viewing and Modifying Trends Internal-B	(T-VMT-I-B)
Automated Trend Retrieval-B	(T-ATR-B)
Device Management-Dynamic Device Binding-A	(DM-DDB-A)
Device Management-Dynamic Device Binding-B	(DM-DDB-B)
Device Management-Dynamic Object Binding-B	(DM-DOB-B)
Device Management-DeviceCommunicationControl-B	(DM-DCC-B)
Device Management-TimeSynchronization-B	(DM-TS-B)
Device Management-ReinitializeDevice-B	(DM-RD-B)
Restart-B	(DM-R-B)
Device Management-List Manipulation	(DM-LM-B)
UTCTimeSynchronization-B	(DM-UTC-B)

Simultaneous synchronization of built-in clocks
VLT® HVAC Drive has a built-in clock that synchronizes to the BMS network clock via BACnet. This eliminates the need for a battery in the drive. Batteries must be manually exchanged at a given time, which is costly in large installations.

Built-in and tested from factory
The VLT® BACnet/IP MCA 125 option is available factory installed and tested, or can be added to the VLT® HVAC Drive as a field installed upgrade in existing installations.

Standard object types supported
- Analog input
- Analog output
- Analog value
- Binary input
- Binary output
- Binary value
- Device
- Notification class
- Event log
- Event enrollment
- Loop
- Calendar
- Schedule
- Trend log

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