



## VLT® BACnet MCA 109



The VLT® HVAC Drive integrates and communicates seamlessly with all HVAC devices, mastered by Building Management Systems via the BACnet protocol. HVAC specific features make it economical, flexible and user friendly and makes HVAC operation child's play.

### Lowest cost of ownership

The modular concept allows you to pay only for features you need and to customise your solutions and minimise system costs. The HVAC Drive is maintenance free and still compact although everything is built in. The IP20 version can be mounted in an HVAC unit or panel. The high protected IP 66 version for harsh environments can be mounted anywhere.

The VLT® BACnet option is a plug-and-play solution that optimises the use of VLT® HVAC Drive together with building management systems using the BACnet® fieldbus.

The option makes it easy to control or monitor points required in typical HVAC applications.

### Improve system performance

VLT® HVAC Drive uses limited network bandwidth, and it requires less resources in the DDC controller due to the support of alarm and event notification. This can reduce traffic by more than 50% compared to other drives.

For VLT® HVAC Drive it is possible to read all analogue inputs and control all the analogue outputs on I/O options.



This means that when integrating a VLT® HVAC Drive into the control system it is possible to save more physical I/O points.

VLT® HVAC Drive has objects defined to accept 3 separate feedbacks transmitted over BACnet.

### Detailed information about warnings and alarms

VLT® HVAC Drive has points giving detailed information about alarms and warnings. DDC controllers can monitor these and see when an alarm or warning occurs and see why it occurred.

Features	Benefits
<ul style="list-style-type: none"> <li>The real time clock may be synchronised with the system master via BACnet</li> </ul>	<ul style="list-style-type: none"> <li>No need for a battery that needs eventual replacement</li> </ul>
<ul style="list-style-type: none"> <li>HVAC devices named by location</li> </ul>	<ul style="list-style-type: none"> <li>Time saved at servicing</li> </ul>
<ul style="list-style-type: none"> <li>Warnings and alarms come with explanatory text</li> </ul>	<ul style="list-style-type: none"> <li>No need to translate a number into a text via a manual</li> </ul>
<ul style="list-style-type: none"> <li>Broad range of services implemented</li> </ul>	<ul style="list-style-type: none"> <li>Less load on the network, faster response</li> </ul>
<ul style="list-style-type: none"> <li>Reads all analogue inputs</li> <li>Controls all the analogue outputs on I/O options</li> </ul>	<ul style="list-style-type: none"> <li>Reduces the need for additional I/O devices</li> <li>Reduces the physical space needed</li> <li>Less installation cost</li> </ul>
<ul style="list-style-type: none"> <li>Accepts 3 separate feedbacks transmitted over BACnet</li> </ul>	<ul style="list-style-type: none"> <li>Reduces cabling cost</li> </ul>
<ul style="list-style-type: none"> <li>Special HVAC functions built in the VLT® HVAC Drive</li> </ul>	<ul style="list-style-type: none"> <li>Saves capacity on the BACnet, smaller BMS controller can be used</li> </ul>
<ul style="list-style-type: none"> <li>Read or write multiple points in one telegram</li> </ul>	<ul style="list-style-type: none"> <li>Can transfer required points of the VLT® HVAC Drive in one telegram.</li> <li>Improves system performance</li> </ul>



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 etc.

**Read multiple points in a telegram**

With the BACnet option DDC controllers can read or write multiple points in one telegram. This helps to reduce network traffic which improves network bandwidth and the effectiveness of the BACnet network.

It provides the ability to transfer all required points of the VLT® HVAC Drive in one request. This is especially useful if the BMS regularly creates a “back-up” of the system.

**Simultaneous synchronisation of built-in clocks**

VLT® HVAC Drives have a built-in clock that can be synchronized with the BMS network clock via BACnet. This eliminates a major problem on drives with battery backed-up stand alone real-time clocks which must be manually updated.

**Built in and tested from factory**

The Danfoss BACnet option is available factory installed and tested or can be added to the VLT® HVAC Drive as a field installed upgrade in existing installations.

Number of objects supported	
Digital inputs	16
Digital outputs	32
Digital Values	200
Analogue inputs	7
Analogue outputs	7
Analogue values	46
Multistate output	1
Multistate input	1
Total	310

**Listed by BTL**

The VLT® BACnet 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)
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)
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)

**Standard object types supported:**

- Analogue input**
- Analogue output**
- Analogue value**
- Binary input**
- Binary output**
- Binary value**
- Device**
- File**
- Multi-state output**
- Notification class**

To study the Danfoss compliance, look under:

<http://bacnetassociation.org/BMAProductCatalog/Danfoss/>