



# *Delta I/O Field Modules: 2 & 4 Input*

## BACNET PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT

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**Date:** November 7, 2001  
**Vendor Name:** Delta Controls Inc.  
**Product Name:** Input Field Module  
**Product Model Number:** DFM-200, DFM-400  
**Product Version:** Release 1 Firmware  
**BACnet Protocol Revision:** 1

### **Product Description**

The *Delta I/O Field Modules* are small expansion I/O boards that provide remotely expandable I/O to Delta's BACnet Controllers. The DFM-200 and DFM-400 Field Modules provide two and four universal inputs respectively, and is capable of communicating on Delta's proprietary LINKnet network or directly on an RS-485 MS/TP network. When connected to an Application Controller on a LINKnet network they provide remote input capabilities to the controller. When connected on the MS/TP network they function as an independent BACnet device with inputs that can be accessed over the MS/TP network.

### **BACnet Standardized Device Profile (Annex L):**

- BACnet Operator Workstation (B-OWS)
- BACnet Building Controller (B-BC)
- BACnet Advanced Application Controller (B-AAC)
- BACnet Application Specific Controller (B-ASC)
- BACnet Smart Sensor (B-SS)
- BACnet Smart Actuator (B-SA)



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## BACNET PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT

### BACnet Interoperability Building Blocks Supported (Annex K):

BACnet Interoperability Building Block	Supported
<b>Data Sharing</b>	
Data Sharing-ReadProperty-A (DS-RP-A)	<input type="checkbox"/>
Data Sharing-ReadProperty-B (DS-RP-B)	<input checked="" type="checkbox"/>
Data Sharing-ReadPropertyMultiple-A (DS-RPM-A)	<input type="checkbox"/>
Data Sharing-ReadPropertyMultiple-B (DS-RPM-B)	<input checked="" type="checkbox"/>
Data Sharing-ReadPropertyConditional-A (DS-RPC-A)	<input type="checkbox"/>
Data Sharing-ReadPropertyConditional-B (DS-RPC-B)	<input type="checkbox"/>
Data Sharing-WriteProperty-A (DS-WP-A)	<input type="checkbox"/>
Data Sharing-WriteProperty-B (DS-WP-B)	<input checked="" type="checkbox"/>
Data Sharing-WritePropertyMultiple-A (DS-WPM-A)	<input type="checkbox"/>
Data Sharing-WritePropertyMultiple-B (DS-WPM-B)	<input type="checkbox"/>
Data Sharing-COV-A (DS-COV-A)	<input type="checkbox"/>
Data Sharing-COV-B (DS-COV-B)	<input checked="" type="checkbox"/>
Data Sharing-COVP-A (DS-COVP-A)	<input type="checkbox"/>
Data Sharing-COVP-B (DS-COVP-B)	<input type="checkbox"/>
Data Sharing-COV-Unsolicited-A (DS-COVU-A)	<input type="checkbox"/>
Data Sharing-COV-Unsolicited-B (DS-COVU-B)	<input type="checkbox"/>
<b>Scheduling</b>	
Scheduling-A (SCHED-A)	<input type="checkbox"/>
Scheduling-Internal-B (SCHED-I-B)	<input type="checkbox"/>
Scheduling-External-A (SCHED-E-B)	<input type="checkbox"/>
<b>Trending</b>	
Trending-Viewing and Modifying Trends-A (T-VMT-A)	<input type="checkbox"/>
Trending-Viewing and Modifying Trends-Internal-B (T-VMT-I-B)	<input type="checkbox"/>
Trending-Viewing and Modifying Trends-External-B (T-VMT-E-B)	<input type="checkbox"/>
Trending-Automated Trend Retrieval-A (T-ATR-A)	<input type="checkbox"/>
Trending-Automated Trend Retrieval-B (T-ATR-B)	<input type="checkbox"/>
<b>Network Management</b>	
Network Management-Connection Establishment-A (NM-CE-A)	<input type="checkbox"/>
Network Management-Connection Establishment-B (NM-CE-B)	<input type="checkbox"/>
Network Management-Router Configuration-A (NM-RC-A)	<input type="checkbox"/>
Network Management-Router Configuration-B (NM-RC-B)	<input type="checkbox"/>
<b>Alarm and Event Management</b>	
Alarm and Event-Notification-A (AE-N-A)	<input type="checkbox"/>
Alarm and Event-Notification Internal-B (AE-N-I-B)	<input type="checkbox"/>
Alarm and Event-Notification External-A (AE-N-E-B)	<input type="checkbox"/>
Alarm and Event-ACK-A (AE-ACK-A)	<input type="checkbox"/>
Alarm and Event-ACK-B (AE-ACK-B)	<input type="checkbox"/>
Alarm and Event-Alarm Summary-A (AE-ASUM-A)	<input type="checkbox"/>
Alarm and Event-Alarm Summary-B (AE-ASUM-B)	<input type="checkbox"/>
Alarm and Event-Enrollment Summary-A (AE-ESUM-A)	<input type="checkbox"/>
Alarm and Event-Enrollment Summary-B (AE-ESUM-B)	<input type="checkbox"/>
Alarm and Event-Information-A (AE-INFO-A)	<input type="checkbox"/>
Alarm and Event-Information-B (AE-INFO-B)	<input type="checkbox"/>
Alarm and Event-LifeSafety-A (AE-LS-A)	<input type="checkbox"/>
Alarm and Event-LifeSafety-B (AE-LS-B)	<input type="checkbox"/>
<b>Device Management</b>	
Device Management-Dynamic Device Binding-A (DM-DDB-A)	<input type="checkbox"/>
Device Management-Dynamic Device Binding-B (DM-DDB-B)	<input checked="" type="checkbox"/>
Device Management-Dynamic Object Binding-A (DM-DOB-A)	<input type="checkbox"/>
Device Management-Dynamic Object Binding-B (DM-DOB-B)	<input checked="" type="checkbox"/>
Device Management-DeviceCommunicationControl-A (DM-DCC-A)	<input type="checkbox"/>



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BACnet Interoperability Building Block	Supported
Device Management-DeviceCommunicationControl-B (DM-DCC-B)	<input checked="" type="checkbox"/>
Device Management-Private Transfer-A (DM-PT-A)	<input checked="" type="checkbox"/>
Device Management-Private Transfer-B (DM-PT-B)	<input checked="" type="checkbox"/>
Device Management-Text Message-A (DM-TM-A)	<input type="checkbox"/>
Device Management-Text Message-B (DM-TM-B)	<input type="checkbox"/>
Device Management-TimeSynchronization-A (DM-TS-A)	<input type="checkbox"/>
Device Management-TimeSynchronization-B (DM-TS-B)	<input type="checkbox"/>
Device Management-UTCTimeSynchronization-A (DM-UTC-A)	<input type="checkbox"/>
Device Management-UTCTimeSynchronization-B (DM-UTC-B)	<input type="checkbox"/>
Device Management-ReinitializeDevice-A (DM-RD-A)	<input type="checkbox"/>
Device Management-ReinitializeDevice-B (DM-RD-B)	<input checked="" type="checkbox"/>
Device Management-Backup and Restore-A (DM-BR-A)	<input type="checkbox"/>
Device Management-Backup and Restore-B (DM-BR-B)	<input type="checkbox"/>
Device Management-List Manipulation-A (DM-LM-A)	<input type="checkbox"/>
Device Management-List Manipulation-B (DM-LM-B)	<input type="checkbox"/>
Device Management-Object Creation and Deletion-A (DM-OCD-A)	<input type="checkbox"/>
Device Management-Object Creation and Deletion-B (DM-OCD-B)	<input type="checkbox"/>
Device Management-Virtual Terminal-A (DM-VT-A)	<input type="checkbox"/>
Device Management-Virtual Terminal-B (DM-VT-B)	<input type="checkbox"/>

### Segmentation Capability:

Segmented Requests Supported  Window Size: N/A  
 Segmented Responses Supported  Window Size: N/A

### Standard Object Types Supported:

Object-Type	Supported	Dynamically Creatable	Dynamically Deletable	Optional Properties Supported	Writable Properties
Analog Input	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reliability, COV Increment	Object Name, COV Increment, Out of Service, Units
Analog Output	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reliability	Object Name, Out of Service, Units, Priority Array, Relinquish Default
Analog Value	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reliability, COV Increment	Object Name, Present Value, Out of Service, Units
Binary Output	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reliability	Object Name, Out of Service, Priority Array, Relinquish Default, Polarity
Device	YES	N/A	N/A	Max Master, Max Info Frames	Object Name



**Data Link Layer Options:**

- BACnet IP, (Annex J)
- BACnet IP, (Annex J), Foreign Device
- ISO 8802-3, Ethernet (Clause 7) (10Base2, 10Base5, 10BaseT, Fiber)
- ANSI/ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
- ANSI/ATA 878.1, RS-485 ARCNET (Clause 8), baud rate(s):
- MS/TP master (Clause 9), baud rate(s): 9600, 19200, 38400, 76800
- MS/TP slave (Clause 9), baud rate(s):
- Point-To-Point, EIA 232 (Clause 10), baud rate(s):
- Point-To-Point, modem, (Clause 10), baud rate(s):
- LonTalk, (Clause 11), medium:
- Other:

**Device Address Binding:**

Is static device binding supported?       Yes    No  
(Necessary for two-way communication with MS/TP slaves and certain other devices.)

**Networking Options:**

- Router
- Annex H, BACnet Tunnelling
- BACnet/IP Broadcast Management Device (BBMD)
- Does the BBMD support registrations by Foreign Devices?

**Character Sets Supported:**

Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

- ANSI X3.4                               IBM/Microsoft DBCS                               JIS C 6226
- ISO 10646 (ICS-4)                               ISO 10646 (UCS2)                               ISO 8859-1

**If this product is a communication gateway, describe the types of non-BACnet equipment/networks(s) that the gateway supports:**

Not applicable.



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### BACnet Standard Application Services Supported:

Note that the BACnet PICS no longer includes a section that describes the supported services. This section is provided solely for historical reasons.

Application Service	Initiates Requests	Executes Requests
Acknowledge Alarm	<input type="checkbox"/>	<input type="checkbox"/>
Confirmed COV Notification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Confirmed Event Notification	<input type="checkbox"/>	<input type="checkbox"/>
Get Alarm Summary	<input type="checkbox"/>	<input type="checkbox"/>
Get Enrollment Summary	<input type="checkbox"/>	<input type="checkbox"/>
Life Safety Operation	<input type="checkbox"/>	<input type="checkbox"/>
Subscribe COV	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Subscribe COV Property	<input type="checkbox"/>	<input type="checkbox"/>
Unconfirmed COV Notification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Unconfirmed Event Notification	<input type="checkbox"/>	<input type="checkbox"/>
Atomic Read File	<input type="checkbox"/>	<input type="checkbox"/>
Atomic Write File	<input type="checkbox"/>	<input type="checkbox"/>
Add List Element	<input type="checkbox"/>	<input type="checkbox"/>
Remove List Element	<input type="checkbox"/>	<input type="checkbox"/>
Create Object	<input type="checkbox"/>	<input type="checkbox"/>
Delete Object	<input type="checkbox"/>	<input type="checkbox"/>
Read Property	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Read Property Conditional	<input type="checkbox"/>	<input type="checkbox"/>
Read Property Multiple	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Read Range	<input type="checkbox"/>	<input type="checkbox"/>
Write Property	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Write Property Multiple	<input type="checkbox"/>	<input type="checkbox"/>
Device Communication Control	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Confirmed Private Transfer	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Unconfirmed Private Transfer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Reinitialize Device	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Confirmed Text Message	<input type="checkbox"/>	<input type="checkbox"/>
Unconfirmed Text Message	<input type="checkbox"/>	<input type="checkbox"/>
Time Synchronization	<input type="checkbox"/>	<input type="checkbox"/>
UTC Time Synchronization	<input type="checkbox"/>	<input type="checkbox"/>
Who-Has	<input type="checkbox"/>	<input checked="" type="checkbox"/>
I-Have	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Who-Is	<input type="checkbox"/>	<input checked="" type="checkbox"/>
I-Am	<input checked="" type="checkbox"/>	<input type="checkbox"/>
VT-Open	<input type="checkbox"/>	<input type="checkbox"/>
VT-Close	<input type="checkbox"/>	<input type="checkbox"/>
VT-Data	<input type="checkbox"/>	<input type="checkbox"/>
Authenticate	<input type="checkbox"/>	<input type="checkbox"/>
Request Key	<input type="checkbox"/>	<input type="checkbox"/>



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### BACnet Conformance Class Supported

Note that BACnet devices are no longer described using Conformance Classes. This section is provided solely for historical reasons.

Class 1 <input type="checkbox"/>	Class 4 <input type="checkbox"/>
Class 2 <input checked="" type="checkbox"/>	Class 5 <input type="checkbox"/>
Class 3 <input type="checkbox"/>	Class 6 <input type="checkbox"/>

### BACnet Functional Groups Supported

Note that BACnet devices are no longer described using Functional Groups. This section is provided solely for historical reasons.

Clock	<input type="checkbox"/>	Files	<input type="checkbox"/>
HHWS	<input type="checkbox"/>	Reinitialize	<input type="checkbox"/>
PCWS	<input type="checkbox"/>	Virtual Operator Interface	<input type="checkbox"/>
Event Initiation	<input type="checkbox"/>	Virtual Terminal	<input type="checkbox"/>
Event Response	<input type="checkbox"/>	Device Communications	<input type="checkbox"/>
COV Event Initiation	<input checked="" type="checkbox"/>	Time Master	<input type="checkbox"/>
COV Event Response	<input type="checkbox"/>		