

Huron Net Works
DeviceNet DN-X4SEM
Device Profile

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Board Revision 1.1
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1.0 Object Model**1.1 Objects Present in the DN-X4SEM**

Object	Optional/Required	# of Instances
Identity (1)	Required	1
Message Router (2)	Required	1
DeviceNet (3)	Required	1
Assembly (4)	Required	2
Connection (5)	Required	3

1.2 Objects That Effect Behavior

Object	Effect on Behavior
Identity (1)	Supports the Reset Service
Message Router (2)	No Effect
DeviceNet (3)	Configures Port Attributes
Assembly #1 (4)	Input Assembly for the DIPSWITCHES
Assembly #2 (4)	Output Assembly for the BARLED
Connection (5)	Establishes the number of connections

1.3 Object Interfaces

Object	Interface
Identity (1)	Message Router
Message Router (2)	Explicit Message Connection Instance
DeviceNet (3)	Message Router
Assembly #1 (4)	I/O Connection or Message Router
Assembly #2 (4)	I/O Connection or Message Router
Connection (5)	Message Router

1.4 Identification of I/O Assembly Instances

Instance Number	Type	Name
1	Input	DIPSWITCHES
2	Output	BARLED

1.5 Format of I/O Assembly Data Attribute**1.5.1 Assembly #1 -- Input, DIPSWITCHES**

Byte	7	6	5	4	3	2	1	0
0	DIPSWITCH S2							
1	DIPSWITCH S3							

1.5.2 Assembly #2 -- Output, BARLED

Byte	7	6	5	4	3	2	1	0
0	Bar Led Output							

The BARLED has ten(10) positions. The data from this assembly goes to the eight(8) least significant positions.

2.0 Standard Objects

2.1 Identity Object (Class ID = 1)

There is a single instance of the identity object for the DN-X4SEM. No class attributes are supported. All of the instance attributes are contained in ROM and are gettable but not settable. The table below shows the values.

Attribute ID	Access Rule	Name	Data Type	Value
1	Get	Vendor	UINT	0x0014
2	Get	Product Type	UINT	0x0000
3	Get	Product Code	UINT	0x0004
4	Get	Revision	STRUCT	01.03
5	Get	Status	WORD	0x0000
6	Get	Serial #	UDINT	0x00000001
7	Get	Product Name	STRUCT	5,"DN-X4"

2.2 Message Router Object (Class ID = 2)

There is no externally visible interface to the Message Router Object.

2.3 DeviceNet Object (Class ID = 3)

There is a single instance of the DeviceNet Object for the DN-X4SEM
No class attributes are supported.

Attribute ID	Access Rule	Name	Data Type	Value
1	Get/Set	MACID	USINT	DIP SWITCH
2	Get/Set	Baud Rate	USINT	DIP SWITCH
3	Get/Set	BOI	BOOL	0x01 Auto-Reset
4	Get/Set	Bus-Off Counter	USINT	0x00
5	Get	Allocation Information	STRUCT	Allocate Service

2.4 Connection Object (Class ID = 5)

There are two instances of the Connection Object in the DN-X4SEM. Instance #1 is assigned to the explicit messaging connection. Instance #2 is assigned to the Polled I/O connection. Instance #3 is assigned to the Bit-Strobe I/O connection. The tables below show the attributes and the predefined values where applicable.

Explicit Message Connection Object(Instance #1)

Attribute ID	Access Rule	Name	Data Type	Value
1	Get	state	USINT	0x03
2	Get	instance_type	USINT	0x00
3	Get	Xport Class trigger	USINT	0x83
4	Get	produced connection ID	UINT	0x5FB for MAC ID 63
5	Get	consumed connection ID	UINT	0x5FC for MAC ID 63
6	Get	initial comm characteristics	USINT	0x21
7	Get	produced connection size	UINT	0x0008
8	Get	consumed connection size	UINT	0x0008
9	Get/Set	expected packet rate	UINT	Application Dependent
10	N/A	N/A	N/A	Not Used
11	N/A	N/A	N/A	Not Used
12	Get	watchdog timeout action	USINT	0x01
13	Get	produced path length	UINT	0x0000
14	Get	produced path	Array of USINT	<NULL>
15	Get	consumed path length	UINT	0x0000
16	Get	consumed path	Array of USINT	<NULL>

Poll I/O Message Connection Object(Instance #2)

Attribute ID	Access Rule	Name	Data Type	Value
1	Get	state	USINT	0x03
2	Get	instance_type	USINT	0x01
3	Get	Xport Class trigger	USINT	0x82
4	Get	produced connection ID	UINT	0x3FF for MAC ID 63
5	Get	consumed connection ID	UINT	0x5FD for MAC ID 63
6	Get	initial comm characteristics	USINT	0x01
7	Get	produced connection size	UINT	0x0002
8	Get	consumed connection size	UINT	0x0001
9	Get/Set	expected packet rate	UINT	Application Dependent
10	N/A	N/A	N/A	Not Used
11	N/A	N/A	N/A	Not Used
12	Get	watchdog timeout action	USINT	0x00
13	Get	produced path length	UINT	0x0006
14	Get	produced path	Array of USINT	20.04.24.01.30.03
15	Get	consumed path length	UINT	0x0006
16	Get	consumed path	Array of USINT	20.04.24.02.30.03

Bit Strobe I/O Message Connection Object (Instance #3)

Attribute ID	Access Rule	Name	Data Type	Value
1	Get	state	USINT	0x03
2	Get	instance_type	USINT	0x01
3	Get	Xport Class trigger	USINT	0x82
4	Get	produced connection ID	UINT	0x3BF for MAC ID 63
5	Get	consumed connection ID	UINT	0x0408 From MAC ID 1
6	Get	initial comm characteristics	USINT	0x02
7	Get	produced connection size	UINT	0x0002
8	Get	consumed connection size	UINT	0x0008
9	Get/Set	expected packet rate	UINT	Application Dependent
10	N/A	N/A	N/A	Not Used
11	N/A	N/A	N/A	Not Used
12	Get	watchdog timeout action	USINT	0x00
13	Get	produced path length	UINT	0x0006
14	Get	produced path	Array of USINT	20.04.24.01.30.03
15	Get	consumed path length	UINT	0x0000
16	Get	consumed path	Array of USINT	<NULL>