Deployment Guide

IntelliFlex I/O Central Network Controller BMS Integration

August 25, 2023

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Introduction

The IntelliFlex I/O Central Network Controller provides a BACnet/IP interface that can be used by third-party systems to monitor and override shade positions as well as monitor sensor readings and wall switch actions.

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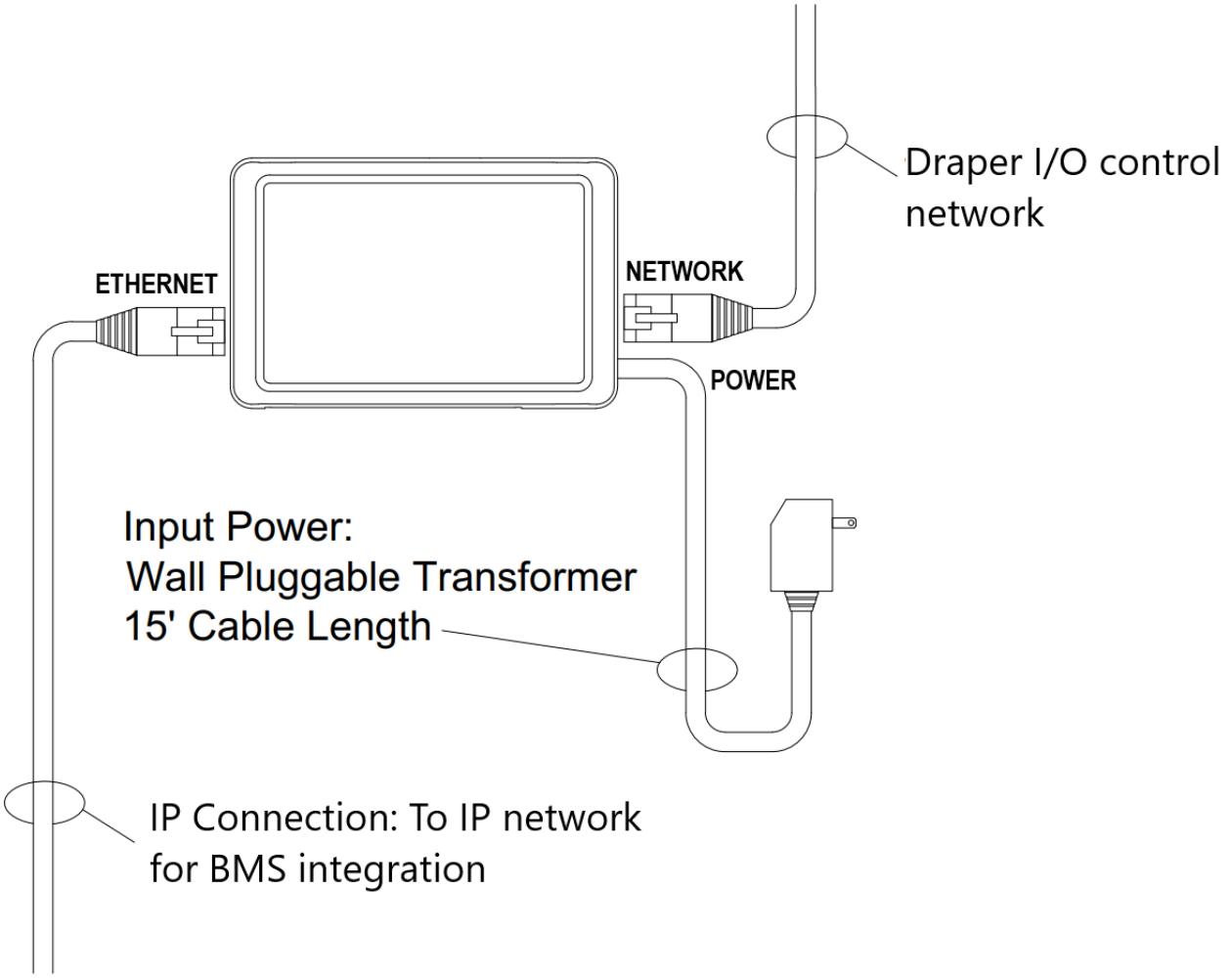
IP Connection

The CNC is capable of connecting to a wired IP network using the RJ-45 connection labelled Ethernet. This port can be configured with a static IP address, or it can use DHCP to configure a dynamic address. By default, the CNC is configured to use DHCP. The MAC address for this network adaptor is printed on a label on the back of the CNC.



The CNC can also connect to an IP network using a Wi-Fi connection if needed. This connection is configured during commissioning by a Draper commissioning agent.

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Shading Devices

Shading devices can be used control the amount of light passing through a window by changing the amount they are extended (the extent position) and/or the amount they are tilted (the tilt position). While Venetian blind type shades have both of these properties, some types of shades (e.g. roller shades) only have an extent position, and others (e.g. louvers) only have a tilt position.

Each shade in an IntelliFlex I/O network will be represented by the following objects:

Extent Position Objects

The extent position of each shade is represented by an Analog Value object. The objects will begin at Object Instance Number 1 with the number of objects determined by the number of shades in the system. The following is a description of the significant properties of these objects:

Property	Writeable	Description
Object Name	No	The name to uniquely identify the shade.
Present Value	Commandable	The extent position of the shade. Represented as a percentage from 0% (fully retracted) to 100% (fully extended). See the Priority Array property for a description of the normal usage of priorities.
Status Flags	No	The IN_ALARM and OVERRIDDEN bits are always FALSE (0). FAULT can be used to determine if the shade has a fault in conjunction with the Reliability property. OUT_OF_SERVICE represents the value of the Out of Service property.
Out of Service	Yes	If TRUE, the shade is disabled and will no longer respond to any control signal, otherwise FALSE. Note that changing this value will also change the value on the corresponding Tilt Position Object.
Reliability	No	A value of Communication Failure (12) indicates that the controller is no longer communicating with the network.

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Priority Array	No	The common usage for each priority in the IntelliFlex I/O network is: 1- Life Safety 2- Security 3- Device Safety (Wind Sensor) 4- Building Management 5- Administrator 6- User High Priority 7- User Override (Switches, Schedules) 8- User Low Priority 9- Auto Override High 10- Auto Override (Brightness Sensor) 11- Auto Override Low 12- Auto Control (Automated Glare Control)

Tilt Position Objects

The tilt position of each shade is represented by an Analog Value object. The objects will begin at Object Instance Number 10001 with the number of objects determined by the number of shades in the system. The following is a description of the significant properties of these objects:

Property	**Writeable**	**Description**
Object Name	No	The name to uniquely identify the shade.
Present Value	Commandable	The tilt position of the shade. Represented as a percentage from 0% (fully open) to 100% (fully closed). See the Priority Array property for a description of the normal usage of priorities.
Status Flags Reliability	No	Will always be the same value as the corresponding Extent Position Object.
Out of Service	Yes	If TRUE, the shade is disabled and will no longer respond to any control signal, otherwise FALSE. Note that changing this value will also change the value on the corresponding Extent Position Object.
Priority Array	No	The common usage for each priority in the IntelliFlex I/O network is the same as the Extent Position Objects.

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Shade Groups

Shade groups can be defined to command multiple shades using a single point. These groups can be used only for overrides, they will not provide feedback on shade positions.

Shade Group Extent Objects

Each shade group extent position can be commanded by an Analog Output object. The objects will begin at Object Instance Number 1 with the number of objects determined by the number of groups in the system. The following is a description of the significant properties of these objects:

Property	Writeable	Description
Object Name	No	The name to uniquely identify the shade group.
Present Value	Commandable	The extent position to command the shade group to. Represented as a percentage from 0% (fully retracted) to 100% (fully extended). See the Priority Array property for a description of the normal usage of priorities.
Priority Array	No	The common usage for each priority in the IntelliFlex I/O network is the same as the Extent Position Objects.

Shade Group Tilt Objects

Each shade group tilt position can be commanded by an Analog Output object. The objects will begin at Object Instance Number 10001 with the number of objects determined by the number of groups in the system. The following is a description of the significant properties of these objects:

Property	Writeable	Description
Object Name	No	The name to uniquely identify the shade group.
Present Value	Commandable	The tilt position to command the shade group to. Represented as a percentage from 0% (fully open) to 100% (fully closed). See the Priority Array property for a description of the normal usage of priorities.
Priority Array	No	The common usage for each priority in the IntelliFlex I/O network is the same as the Extent Position Objects.

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Switch Objects

Each switch zone is represented by an Analog Value object. The objects will begin at Object Instance Number 20001 with the number of objects determined by the number of switch zones in the system. Note that Draper IntelliFlex I/O switches come in both single and dual zone versions. The dual zone switches will be represented by two objects. The following is a description of the significant properties of these objects:

Property	Writeable	Description
Object Name	No	The name to uniquely identify the switch zone.
Present Value	No	The last tap position on the switch. The range is 0 to 100, with 0 representing a tap at the fully open position, 100 a tap at the fully closed and all other taps a value in the range representing the tap location.
Out of Service	Yes	If TRUE, the switch zone is disabled and will no longer respond to any touch, otherwise FALSE for normal operation.

Sensor Objects

Various sensors can be used as part of an IntelliFlex I/O control system. These sensors are represented as standard Analog Input objects starting at Object Instance Number 1. The number of objects is determined by the number of sensors in the system. These objects implement only the required properties for Analog Input objects and are all read only.

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