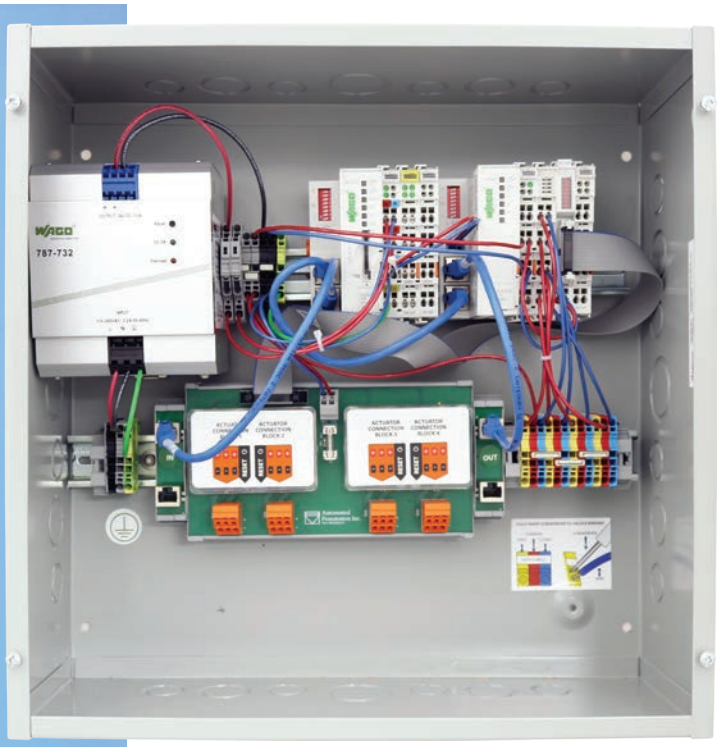
Automated Fenestration Inc.
an affiliate of Functional Fenestration Inc.

Installation Instructions

CoreControl

Powered Control Panel for 24VDC automation actuators



Building Automation

Quick Start Guide

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Purpose

This guide is for integrators who are interfacing the Automated Fenestration Inc. CoreControl System into a building automation system. Knowledge of how the control system works is important to get a properly functioning system. This document will provide the key information that the integrator needs to know.

System Overview

The CoreControl window control system is a distributed system with a central controller. The main panel houses a controller and the remote panels are simply remote I/O. Up to 9 remote panels are supported for each main panel, but multiple main panels might exist in a larger system. Communication with the building automation system is done over Ethernet.

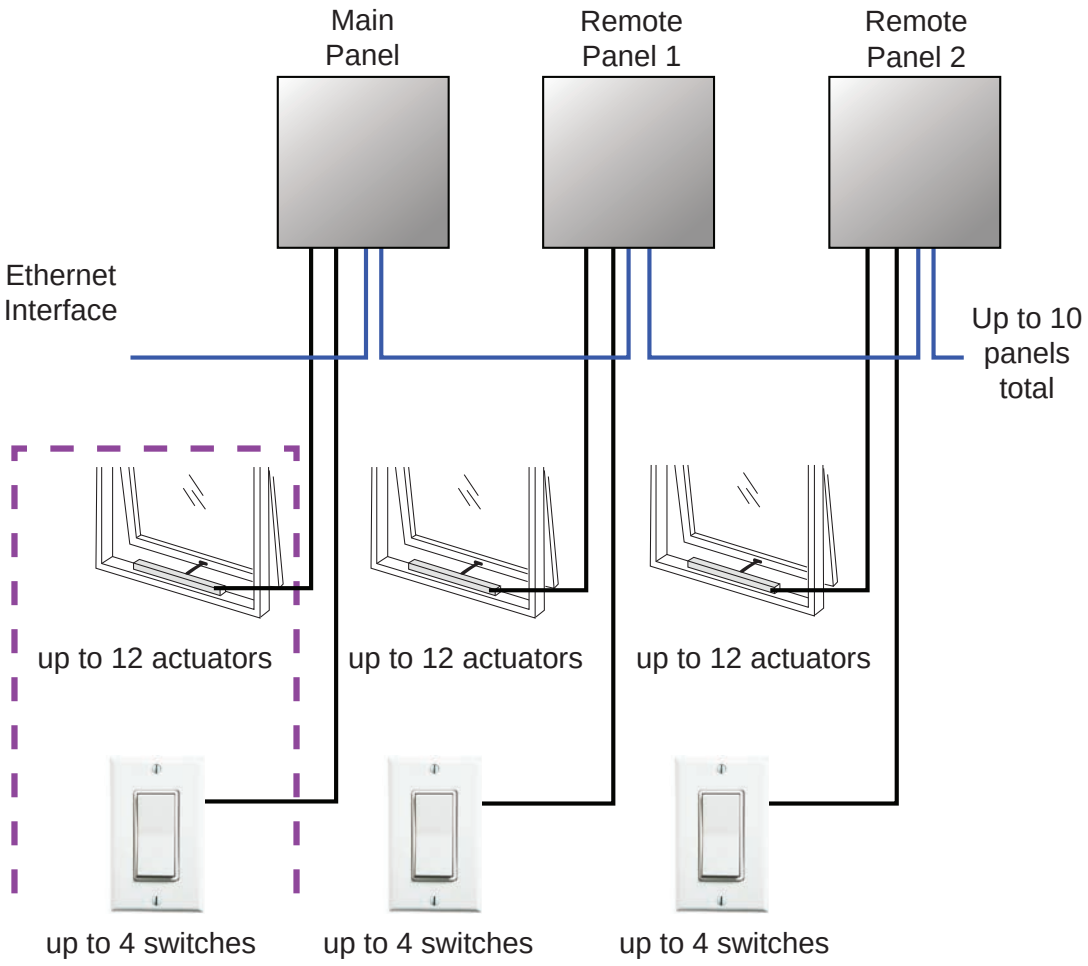

Fig. 1

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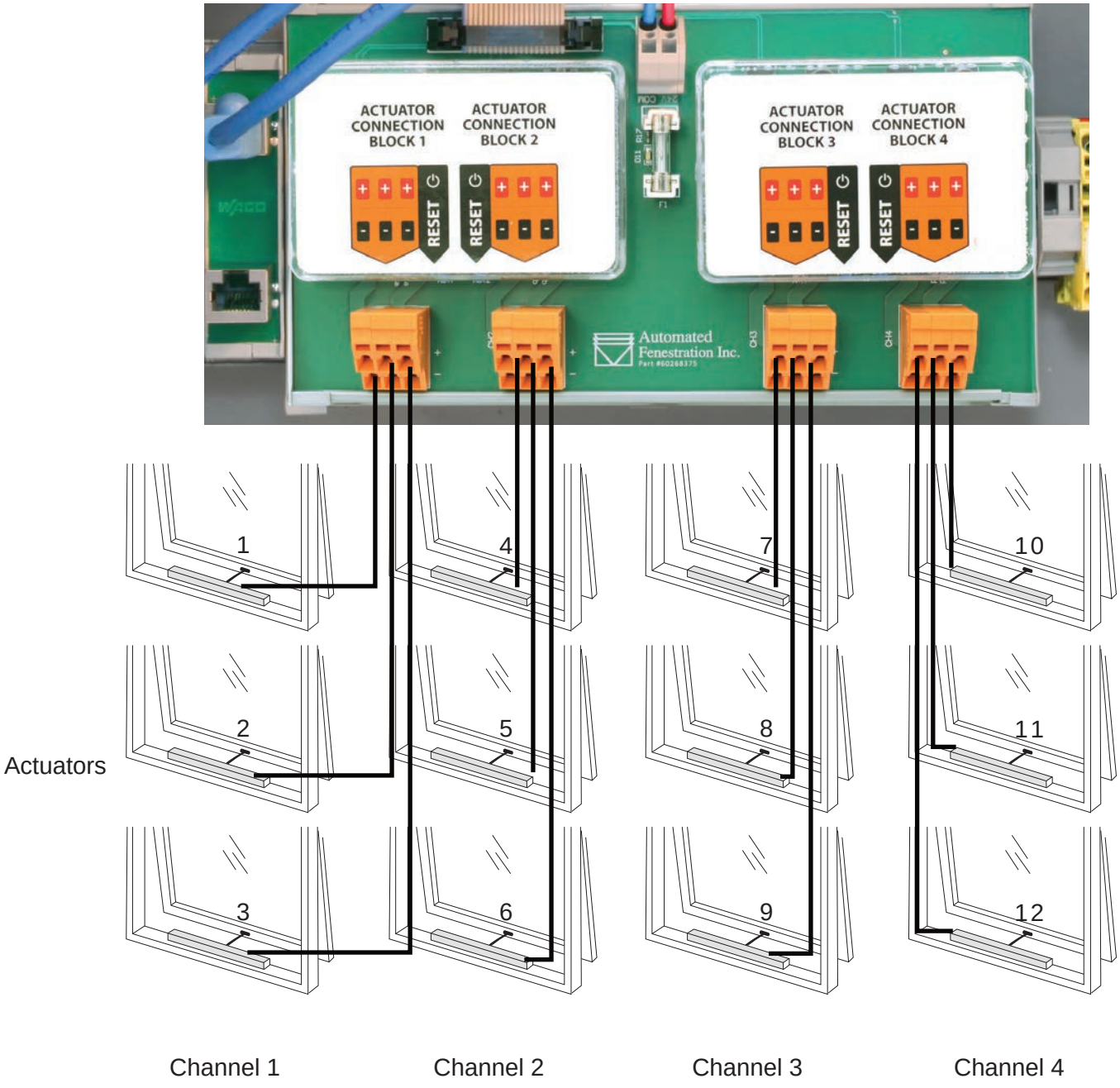
Panel Features

Each CoreControl panel is available in a standard 4-channel configuration. Each channel supports up to three actuator outputs (operated in unison from a single driver). So a 4-channel panel can drive up to 12 window actuators (channel 1 operates actuators 1-3, etc.)
The image below shows the actuator driver board. The orange connectors on that board contain the terminals for the 24V DC for the actuators.



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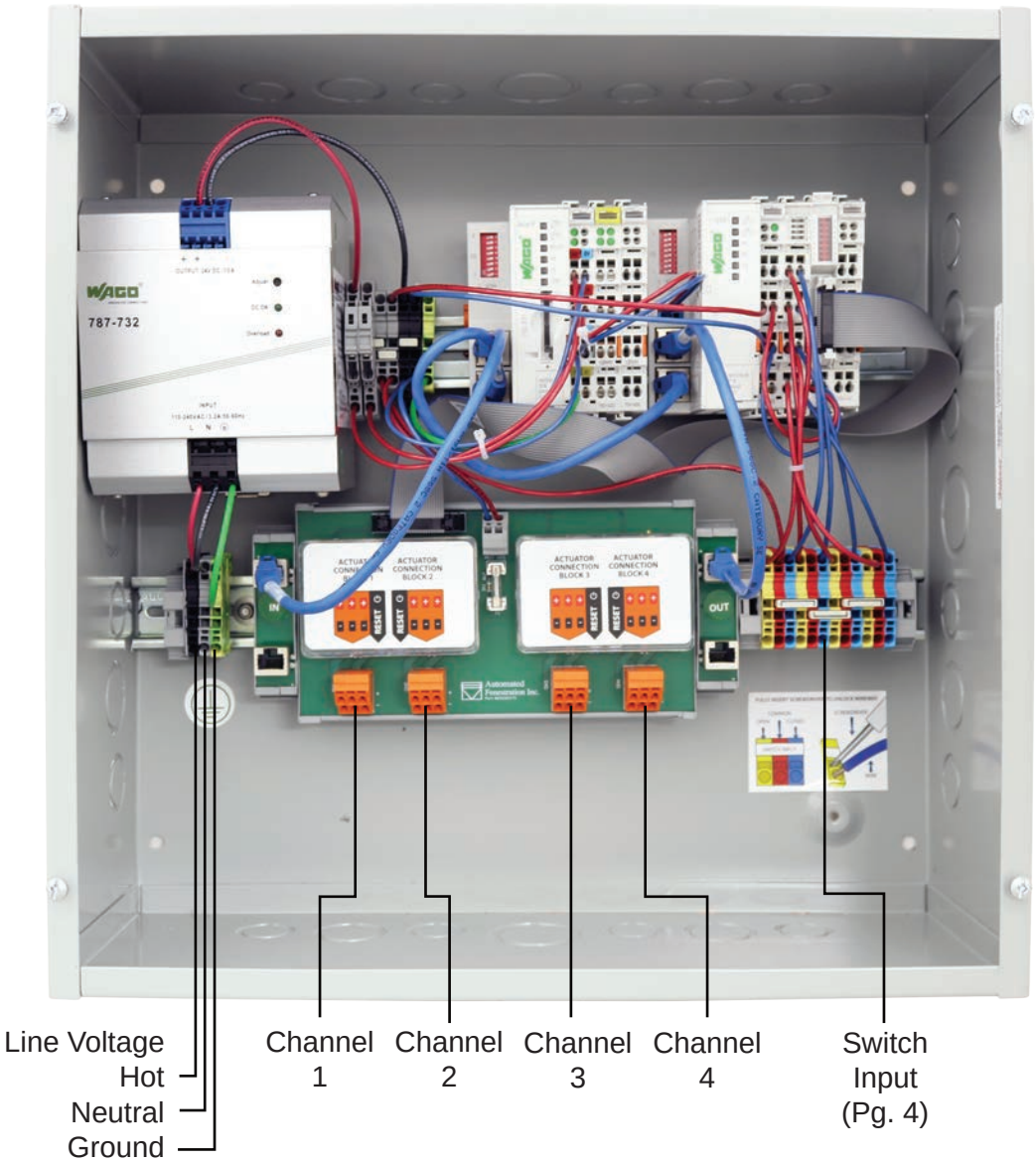
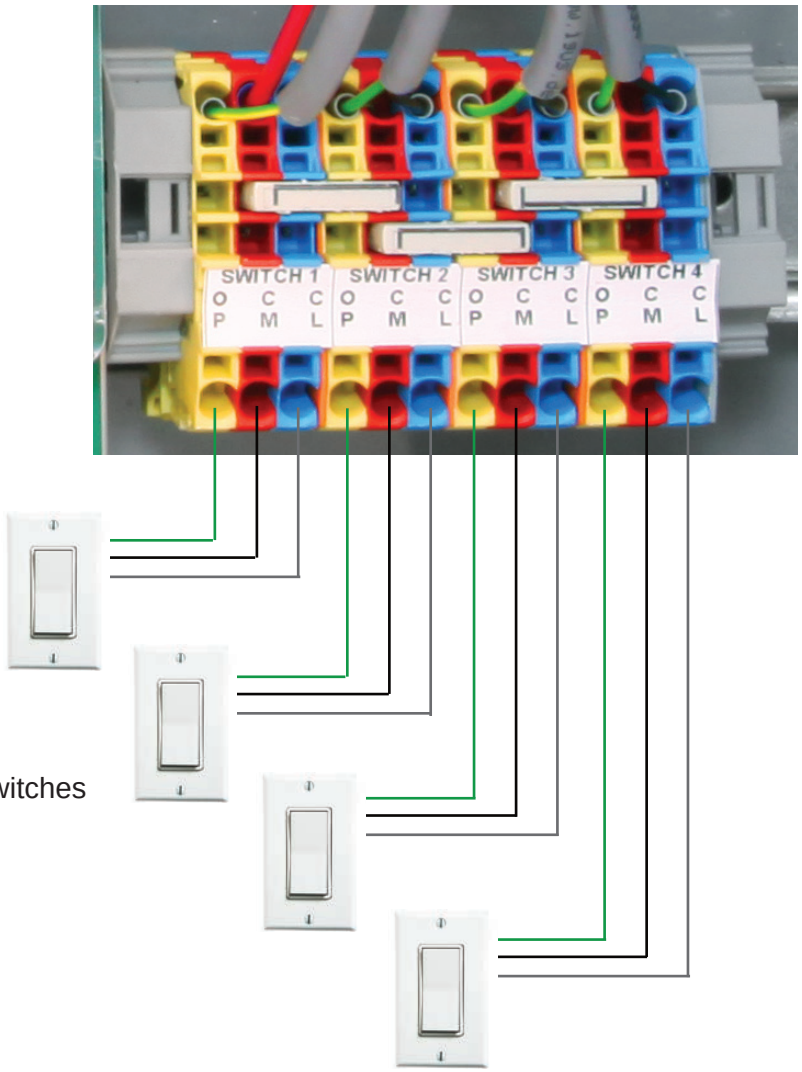
Electrical Connections

With power turned off, make required connections to the 110VAC line voltage inputs.

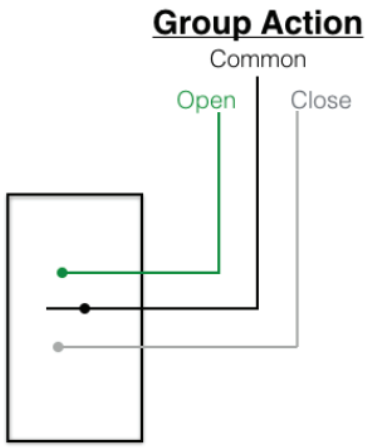


Switches

The switches are 3-position switches, which work similar to an automatic window in an automobile. (They are not 2-position switches for open/close you might be familiar with to control a light or outlet.) The 3-position switch is spring loaded to return to the middle position. Pushing [Up] or [Down] on the switch sends a command to the controller to actuate the group of actuators it is assigned to. Three position switches are necessary to be able to stop a window partial way open.



Switches



3 Positions

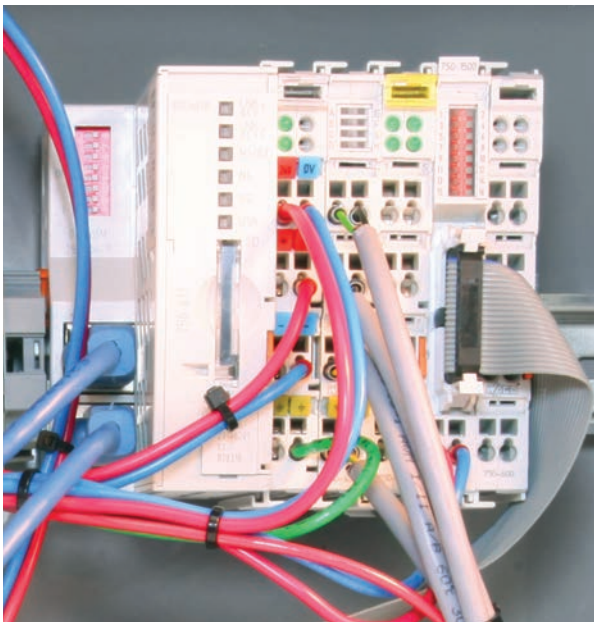
Position	Action
Up	Open
Middle	None
Down	Close

Each actuator channel (window) & switch can be assigned to groups. A group is simply a logical collection of windows that always open/close together.

It is important to understand that the BACnet objects are to control the groups, not the independent channels.

Controllers

The system uses an industrial building automation controller in the main panel, which is running a highly customized program designed for window controls. This controller is available in many versions to support the different building automation field buses available in the market. The most common is BACnet, which is supported by the controller.



The communication between the main panel and remote is Modbus/TCP, the remote panels are using bus couplers. Therefore the IP addresses for the Main & Remote panel devices need to be on the same subnet and physical network. Changing the IP address of any of these devices will cause communication and control to stop working. All the panels have web pages that show the status of the controller.

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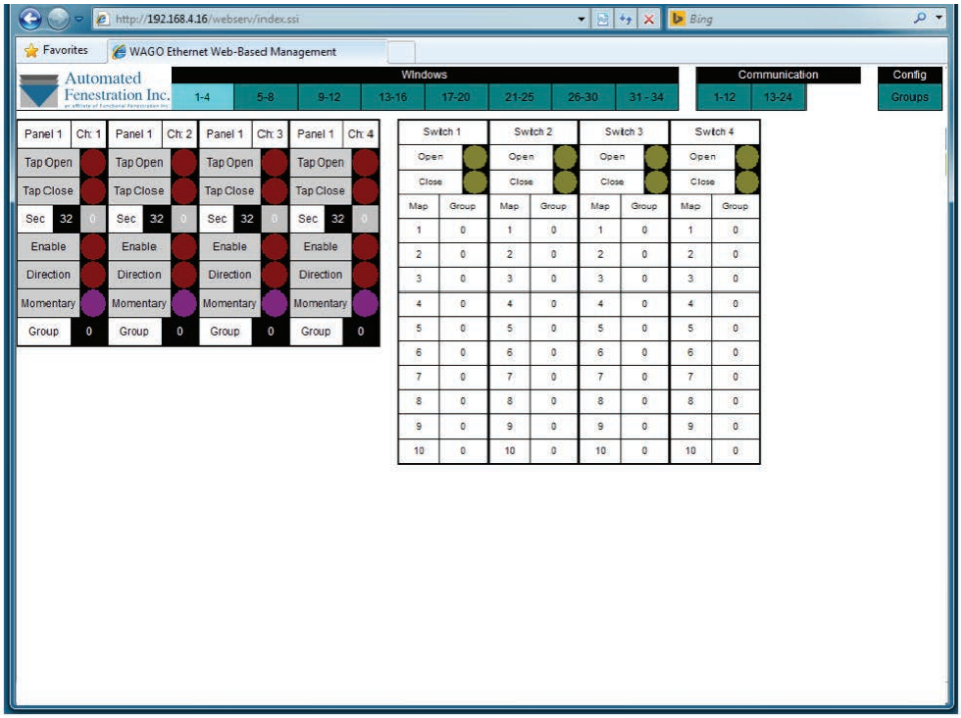
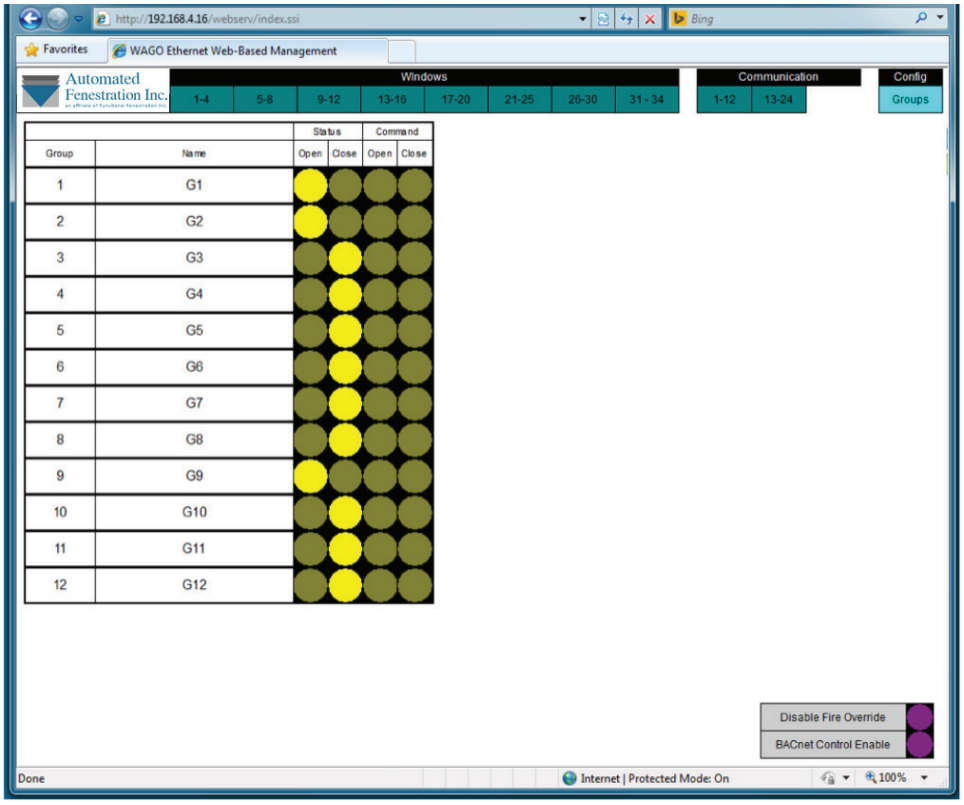
Configuration

Web Interface

The system comes factory configured, but a convenient web based interface allows changes to be made on the main controller. Below is the screen which shows how actuator channels and switches are assigned to the groups. Any change is immediate and retained in memory.

Here is how the group assignments are made, and enabling / disabling BACnet controls.

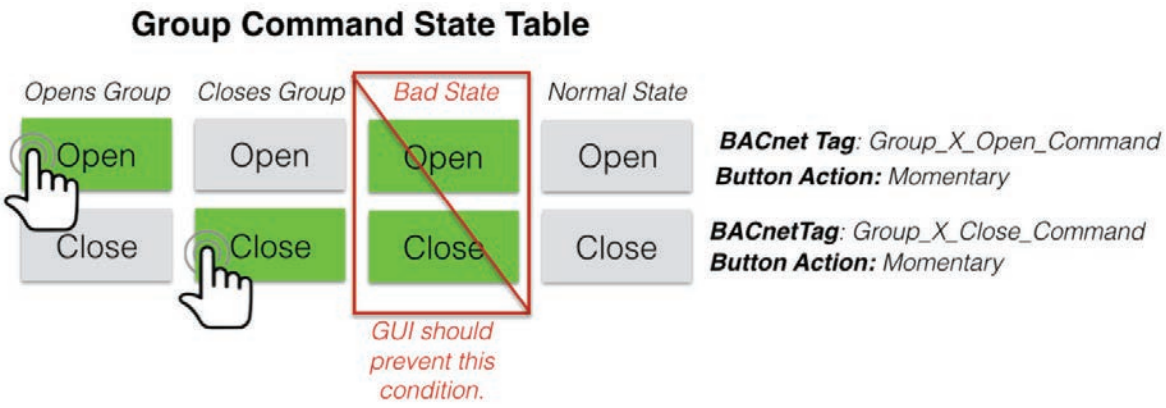




BACnet/IP

Objects

When scanning the network for BACnet objects, the controller will report Open & Close commands for each group. These should be used as momentary commands, and not set TRUE/FALSE. Doing so will remove the feature of stopping a window partially open. When setting up the controls in the Building Automation software it should look something like this:



A group should only receive a single command at a time, either Open or Close, but not both. This should be intuitive, since it is not possible to simultaneously open & close a window at the same time. Making the buttons momentary in the BA software inherently ensures this will not happen. If momentary button action is not possible in your software and only toggle action is available, then seriously consider adopting a more modern B/A software package. If this is not possible at this time, then add an inhibit to the action tied to the other state. For example, prevent the OPEN button from performing its action if the CLOSE is active (and visa versa for CLOSE button with OPEN being active). This will force the user to remove the CLOSE command before accepting the OPEN command, etc.