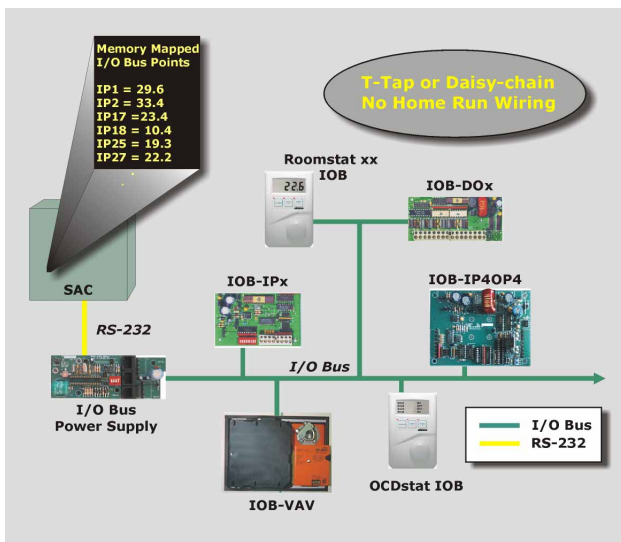


I/O Bus SAC Expansion

Lower cost and greater flexibility

Overview

I/O Bus expansion modules reduce engineering, installation, and cabling costs providing a new range of control strategies. Designed with system expansion in mind, I/O Bus modules provide a low cost method of extending SAC I/O. I/O Bus expansion panels can be T-Tapped or daisy chained off of any point along a single bus with a maximum distance of 1000ft. All I/O Bus expansion panels are powered either from a single I/O Bus power supply module or from an external 24 VAC transformer. UL Listed and incorporating over-current protection circuitry, I/O Bus expansion modules have been constructed to withstand continuous duty in industrial environments.



Expansion Modules

I/O Bus modules come in various configurations designed to fulfill every requirement. The I/O design permits up to a maximum of 24 modules, or 196 points connected to a single SAC panel. I/O Bus Expansion modules do not load down the host SAC panel. Powered by a dedicated PIC microcontroller, I/O Bus expansion modules perform all I/O and communications processing locally offloading processor requirements of the host SAC panel. Expansion module point data is mapped to SAC memory and is accessible via the familiar GCL (General Control Language).

Benefits

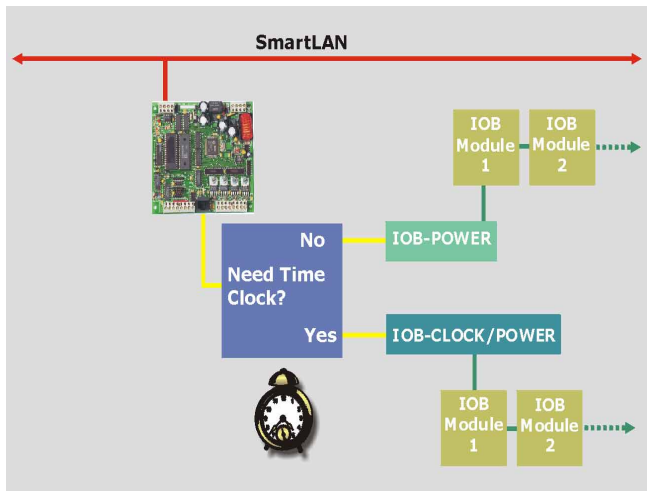
- Increases the power and point capacity of all SACs
- Seamless information transfer between I/O Bus expansion modules and all network SACs
- Both power and communications supplied over a single shielded twisted pair cable
- Devices can be daisy-chained or T-tapped from the I/O Bus line, rather than "home-run" wired from the controlling SAC panel
- Dedicated microcontroller offloads processing from controlling SAC
- I/O Bus modules can be located up to 1000m from controlling SAC
- Onboard signal processing makes unitary control applications possible
- New I/O Bus modules automatically self configure when added to an existing system (Plug and Play)
- I/O Bus lends itself to rapid development for custom application

IOB-OPx and IOB-DOx series panels provide either variable 0-12 VDC or triac switched 24 VAC outputs while the IOB-IPx series of devices provide DC current (0-20mA) or voltage (0-10v) sampling from 0-10V or 0-20mA respectively. 'Plug and play' design allows additional I/O Bus expansion modules to be placed anywhere along an existing bus without the need for additional hardware.

Product	Inputs	Outputs	IUL Rating
IOB-OP1	No	1 Universal	2
IOB-OP4	No	4 Universal	10
IOB-IP1	1 Universal	No	1
IOB-IP4	4 Universal	No	2
IOB-IP8	8 Universal	No	4
IOB-DO1	No	1 Digital	2
IOB-DO4	No	4 Digital	4
IOB-DO8	No	8 Digital	8
IOB-IP4OP4	4 Universal	4 Universal	14
IOB-IP8DO8	8 Universal	8 Digital	16

I/O Bus Power Supplies

I/O Bus Power is supplied by an I/O Bus Power supply module. Up to 20 I/O Bus expansion modules can be connected to a single supply. Since a system may lack a real time keeper, two types of power supply modules have been designed. The IOB-POWER module is used for systems having at least one of either a WS1500, WS1600 or WS1616. Systems composed of one or more MicroSAC panels require the IOB-CLOCK/POWER module to supply regular time signals. Each of the two I/O Bus power modules can supply 200 mA of current to the I/O Bus system. I/O Bus expansion modules are rated depending on the amount of power they demand ('I/O Bus Unit of Load' or IUL). Power requirements for a specific I/O Bus system is calculated as the sum of IUL ratings for all devices. Both types of I/O Bus power supply modules provide up to 20 IUL. Should the combined IUL demand of all modules exceed 20 IUL, provisions for connecting an external 24 VAC supply to any I/O modules have been included in the design.

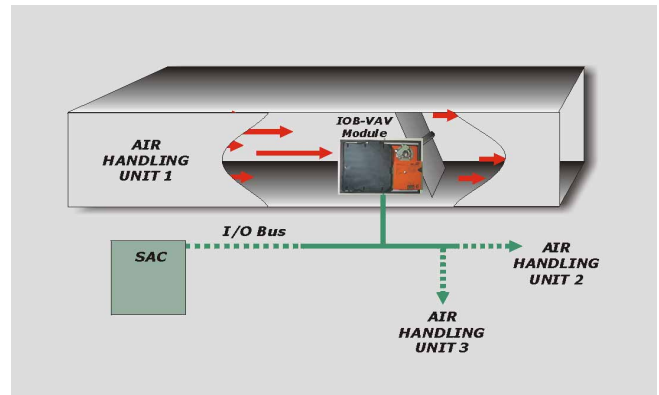


I/O Bus VAV Unitary Controller

The IOB-VAV module provides unitary VAV control from a single SAC. This module comes factory assembled in a variety of configurations designed for compatibility with all airflow handling situations. Each IOB-VAV module comes equipped with a Belimo damper motor and is housed in a durable polyethylene enclosure. A Kavlico airflow sensor combined with 8 bit A/D conversion provides highly accurate flow sampling.

IOB-VAV Features

- Flash memory
- Watchdog timer
- Isolated power supply ensuring continued service under the most severe operating conditions.



I/O Bus Roomstat 30 Series

I/O Bus Roomstat module 30 series combine high accuracy temperature sensors with global system access available to any operator with a portable computer. The four I/O Bus compatible Roomstat 30 series devices offer varied combinations of setpoint adjust, temperature sensing, LED override indication and 7 segment, 4 digit LCD time of day display. All I/O Bus 30 series Roomstats are powered directly from the I/O Bus and may be positioned anywhere within 1000ft from the controller.

