

# Field Commander™

## Serial I/O Expansion UUC-8S

### Overview

The Field Commander (FC) Universal Unitary Controller (UUC) is a universal unitary controller compatible with the Field Commander Multi-level LAN Building Management System. The UUC is a complete, self-contained control subsystem including microprocessor, control program, database definitions and specific application software. The UUC provides distributed direct digital control (DDC) of all types of systems from air handlers to central chiller plants.



### Application

The UUC comes in several input/output configurations. Occasionally, there is a need for additional input and output points for a specific application. For example, a fully instrumented chiller may need more than eight analog inputs. The UUC-8S controller includes a serial expansion bus to provide additional inputs and outputs. The expansion bus allows up to seven additional input/output modules to be controlled by the UUC-8S. A variety of control modules can be attached to the serial expansion bus. Some simply provide additional dumb inputs and outputs for the UUC-8S. Others may have some limited intelligence like a VVT or Multi-zone I/O board. In all cases the UUC-8S controller provides all logic control of expansion bus I/O points. Some expansion modules are designed to be located near and powered by the UUC-8S board. Others may be designed to be located up to 200 feet from the UUC-8S and are locally powered.

The UUC-8S microprocessor has all of the control capability of a UUC controller and appears on the Field Commander U-LAN as a single controller. In the logical addressing space of the controller, expansion bus points are addressed as groups of points within the single UUC-8S controller. Physical points connected to the UUC-8S board are in group one. Points physically connected to the expansion boards are in groups 2 through 8. For example, 1:1A would be the first analog input on the UUC-8S board, 2:3A would be the third analog input point on the first expansion board and 5:2A would be the second analog point in the fourth expansion board. The UUC-8S controller handles all network and logical control functions such as global broadcasts, alarm messages, trends, monitors, schedules, point names, and conversions to engineering units.

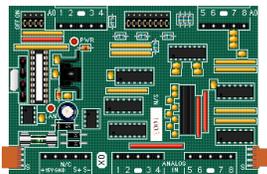
### Technical Specifications

UUC-8S		016-4098
Digital Outputs	8 - Digital outputs are relay or triac outputs rated at 50VAC, 1Amp. Triac outputs are opto-isolated with zero-cross switching. Outputs can be paired for pulse-on/pulse-off control.	
Digital Inputs	8 - Digital inputs are opto-isolated with over-voltage protection. Inputs may be specified as latched alarm inputs with either open or closed circuit indicating alarm condition. Two inputs can be counter inputs for metering applications	
Universal Inputs	8 - Universal inputs can be configured as either digital or analog inputs. Analog inputs are 0-5VDC, 4-20MA, or direct 10k thermistor signals. The A/D conversion is 10-bits.	
Analog Outputs	3 - Analog outputs provide 4-20MA or 0-10VDC with 10-bit D/A conversion, scaling and PID software control.	
Additional I/O	SLAN devices, Supports two wall-mount thermostats with 10K-ohm thermistor, override switch, set-point adjustment, and LED display. Also supports the smart thermostat with application defined buttons, lights and numeric display	
Dimensions	3.25" x 9.8"	
Power Requirements	Input power is 24 VAC/DC using unit power source or transformer. Circuit protection is automatic fuse and surge protection. Provides 15VDC for external sensors or expansion boards.	
Communications	Peer-to-peer network with RS-485 Unitary LAN, 9600 Baud, 1-pair cable.	
Mounting	The UUC-8S is designed for track mounting inside existing enclosures or in optional wall mount or back plane mount boxes. It is slightly longer than the UUC-8 board. Interconnections are via quick disconnect connectors	



**Analog I/O Expansion Board**

**016-4091**



Provides an additional 8 universal inputs and 8 analog outputs.

- Dimensions: 3.25 x 5.0 inches, track mount
- Power Requirements: 15VDC , 250 mA
- Inputs: 0-5VDC, 4-20 mA, digital switch (dry contact)  
8 bit A/D conversion
- Outputs: 0-20mA or 0-5V

**VVT Expansion Board**

**016-4097**

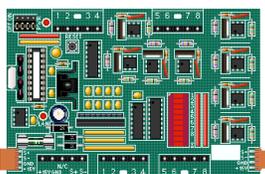


Provides control for 4 VVT zones. Each zone has a thermostat with 10k thermistor, adjustable setpoint, and override button. (Does not support thermostat LED or LAN connection.) Each zone has an actuator with feedback status. The application-specific intelligence built into the VVT board is designed to operate with a UUC-8S that controls the roof top unit and bypass damper. All VVT zones and the UUC-8S are scheduled and function together as a single system.

- Dimensions: 3.25 x 6.0 inches, track mount.
- Power Requirements: 24VAC, 10 VA

**Digital I/O Expansion Board**

**016-4118**



Provides an additional 8 digital outputs and 8 universal inputs.

- Dimensions: 3.25 x 5.0 inches, track mount.
- Inputs: 0-5VDC, 4-20 mA, digital switch (dry contact)  
8 bit A/D conversion
- Digital Outputs: Triac outputs (zero-cross switching) rated at  
50VAC, 1A.
- Power Requirements: 15VDC, 250mA

**Multizone Expansion Board**

**016-4097M**



Provides control for 4 zones in a multi-zone system. Each zone has a thermostat with 10k thermistor, adjustable setpoint, and override switch. (Does not support thermostat LED or LAN connection.) Each zone also has an actuator with feedback status and a sensor indicating mixed supply air temperature. The application-specific intelligence built into the Multi-zone board is designed to operate with a UUC-8S that controls the Multi-zone air handler.

- Dimensions: 3.25 x 6.0 inches, track mount
- Power Requirements: 24VAC, 10VA

**About H I Solutions**

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