TAC MICROZONE II®
Direct Digital Controllers

- Complete user creation of custom control strategies through block programming structure adapts MZII to virtually any HVAC control sequence or mechanical system.

- Models with battery backed-up time clock provide true stand-alone direct digital control with optimum start stop, scheduling functions, and battery backed-up random access memory (RAM).

- Input/output auto trending with adjustable sample rates continually accumulate and time stamp last 48 analog values and last 10 digital changes of state.

- Satellite point command capability from global controllers eliminates "waste" of unused points.

- "Fast" half (0.5) second input to output response times make MZII directly applicable to static pressure, fume hood and laboratory pressurization applications.

The TAC NETWORK 8000 MICROZONE II (MZII) is a fully programmable controller that enhances the TAC NETWORK 8000 Facility Management System family offering. The MZII has the ability to employ custom block programs and run them in a stand-alone mode. The MZII block programming language provides the system operator with 100% flexibility for creation of new and unique control strategies.

TAC MICROZONE II is easily applied to a wide variety of mechanical equipment including those that are application specific. Through the Personal System Interface (PSI™) and Xtended Personal System Interface (XPSI™), control programs can be downloaded to all devices requiring the sequence of operation. With the MZII, the TAC NETWORK 8000 provides the best of both worlds; full programmability for easy creation and modification of custom control strategies, and easy duplication of controller databases for mechanical equipment containing similar or identical control strategies.

The MZII utilizes state-of-the-art, surface mount technology which helps reduce the size and cost of the product while providing powerful product features. Modularity of hardware along with the networking capabilities allow easy expandability as the needs of the facility change in the future. As with all other programmable TAC NETWORK 8000 controllers, the MZII utilizes non-volatile EEPROM memory to store application control programs. EEPROM memory allows an owner to modify existing control sequences or create new ones through the Personal System Interface (PSI).

Communications

Ports
RS-485 asynchronous at 19,200 baud (adjustable) to global controller. Modular jack provided for local connection of the Personal System Interface.

Local Terminal (PSI)
PSI can monitor all device parameters and has access to all program blocks and attributes for complete program editing and creation. Provides up/download capability for system maintenance.

Network Device Access
PSI connected at one device has access to all network-wide devices on an ASD communication bus. Connection of PSI will not disrupt the network communications between the MZII controller and other devices on the bus.

TAC NETWORK 8000
Up to 128 MZIIs per Global Control Module. Shared network data includes all physical input/output points plus capability of WINDO and EMS blocks which are program definable.

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Table-1   Model Chart.

Model	Description	Battery Backed-up Time Clock
MZ2A-101	Controller card only	No
MZ2A-102		Yes

SOFTWARE SPECIFICATIONS

Control Functions
Refer to Table-2.
Table-2 TAC MICROZONE II Block Library.

Type	Description
• AO	Analog Output
• DO	Digital Output
• EMS	GCM™ Input
• HOLI	Holiday Schedule
• LOOP	Complex PID Loops
• OSS	Optimum Start/Stop
• RESET	Setpoint Reset
• RGRP	Receive Global Group Data
• SCHED	Weekly/Daily Schedule
• SEQ	Linear/Binary Sequencer
• UI	Universal Input
• UTIL	Utility: Counter, Drive, Flow Detect, Limit, Logic, Math, Stop/Start, Process Alarm, Switch, High/Low, Pulse Width Modulation, Thermostat, Status, Timer
• WINDO	Window Output to GCM

Accessories

|	
AD-8969-101	10 k ohm shunt resistor kit for high speed count input
AD-8969-202	250 ohm shunt resistor kit for 4 to 20 mA analog input
AD-8969-206	11 k ohm shunt resistor kit for 10 k thermistor sensor (non-850 series)
AD-8961-220	Voltage divider (converts 1 to 11 Vdc signal to 0.5 to 5 Vdc signal)
AE-690	Accessory outboard gear panel 10-7/8 H x 8-1/2 W x 4-1/4 D in. (276 x 216 x 108 mm) for direct nipple connection to MZ2-1E and MZ2-1CE
ENCL-MZ800-PAN	Enclosure, panel mount 10-5/8 H x 8-1/2 W x 4-1/8 D in. (270 x 216 x 105)
ENCL-MZ800-WAL	Enclosure, wall mount 10-7/8 H x 8-1/2 W x 4-1/4 D in. (276 x 216 x 108 mm)
LAPT-80800-PSI	TAC Personal System Interface software (see F-24317)
LAPT-80800-EPS-I	Xtended TAC Personal System Interface software (see F-24317)
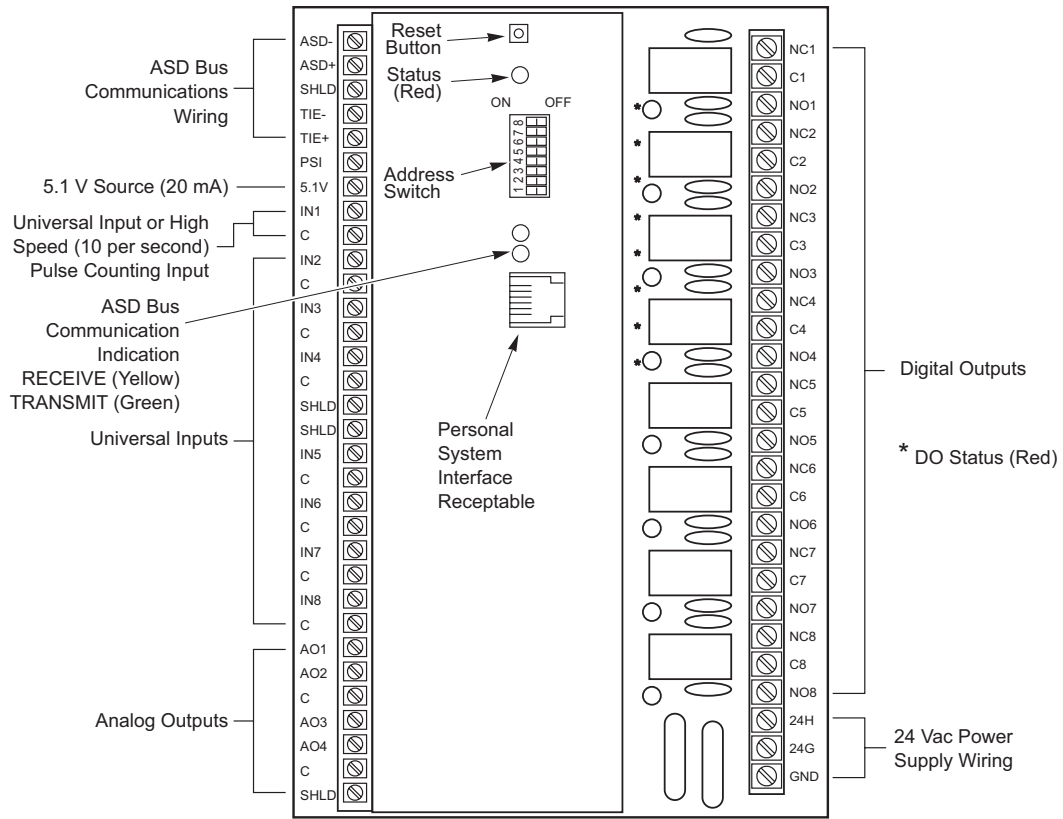
Figure-1 Terminal Connections and LED Indicators.
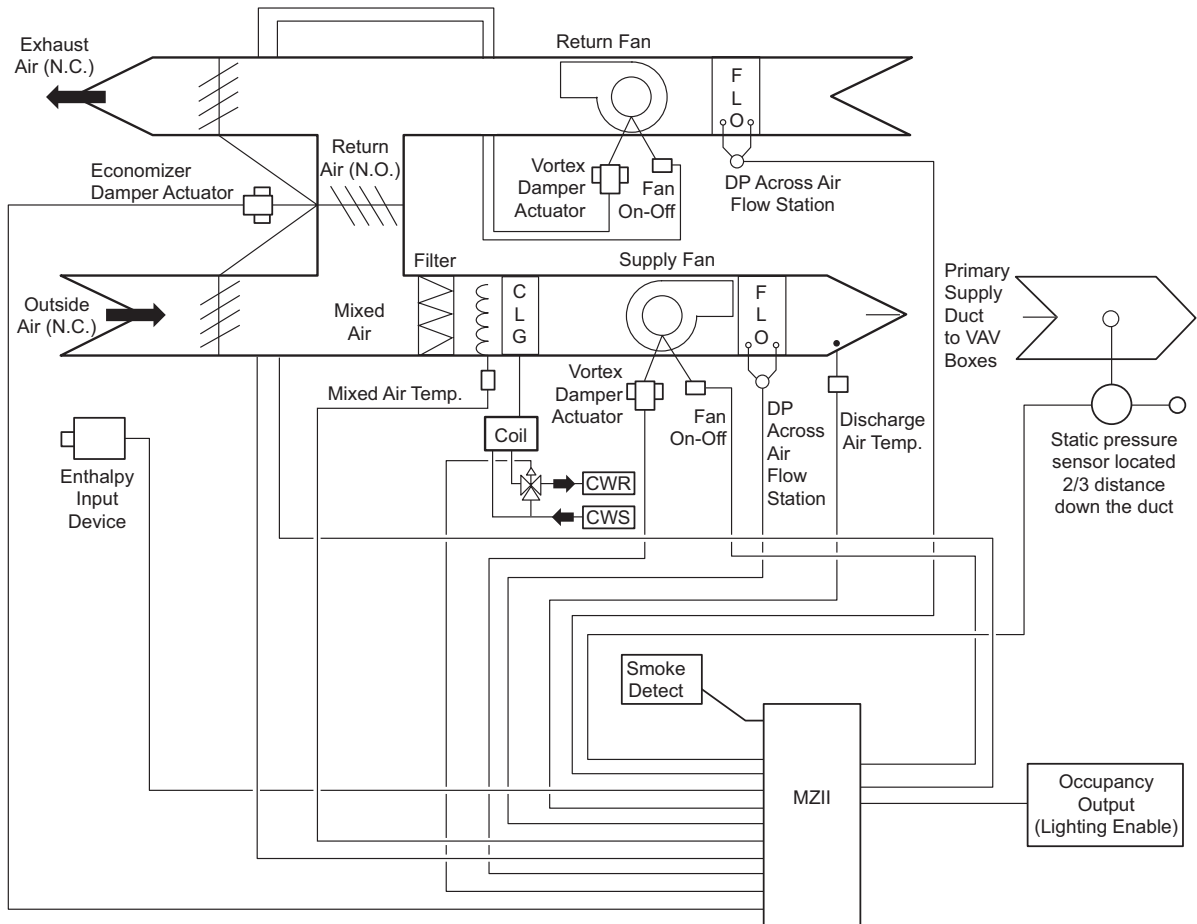
Note: All field wiring shall be twisted, shielded pairs.

Figure-2 MZII Control Schematic of a Typical Fan Tracking VAV Air Handling System.

SPECIFICATIONS

MF2 SERIES

HARDWARE SPECIFICATIONS

Enclosure
Conforms to NEMA-1. UL-916 rated.

Power Supply Input
20.4 to 30.0 Vac, 50/60 Hz.

Maximum Power Consumption
20 VA at 50/60 Hz.

Transient Compliance Tests
ANSI C62.41 (IEEE 587), Categories A and B.

Electrostatic Discharge Test
±15 kV to case, ±5 kV to field wiring terminals.

AMBIENT LIMITS

Operating Temperature
UUKL Smoke Control
77 °F (25 °C) nominal.

PAZX Energy Management
-40 to 140 °F (-40 to 60 °C).

Shipping and Storage Temperature
-40 to 140 °F (-40 to 60 °C).

Humidity
5 to 95% RH, non-condensing.

Microprocessor
80C198, 7 MHz clock speed, 16-bit word size.

Memory
64 KB of EPROM, 2 KB of EEPROM, 8 KB of RAM.

Wiring Terminals
See Figure-1.

Battery Backup - Clock and RAM
30 days (replaceable lithium battery).

Battery Backed-up Time Clock
Accuracy ±150 sec./mo at 77 °F (25 °C).

Analog To Digital Conversion Resolution
10 bit.

Digital To Analog Conversion Resolution
10 bit.

Input to Output Response Time
0.5 seconds maximum.

UNIVERSAL INPUTS

Quantity
8.

Thermistor Input
20 to 140 °F (-6.67 to 60 °C) range. TAC Barber-Colman TS-5700-850 series or equivalent.

Balco Input
-40 to 250 °F (-40 to 121 °C) range. TAC Barber-Colman TS-8000 series or equivalent.

Copper Input
-31 to 240 °F (-35 to 116 °C) range. TAC Barber-Colman TS-5600 series or equivalent.

Platinum Input
-40 to 240 °F (-40 to 116 °C) range. TAC Barber-Colman TS-5800 series or equivalent.

Potentiometers
1000 to 20,000 ohm resistance.

Voltage
0 to 5 Vdc.

Current
4 to 20 mAdc with 250 ohm shunt resistor.

Contact Input
Dry.

Maximum Pulse Count Rate
10 per second (50 msec. minimum On or Off time per pulse) to 1 per 4 minutes (1 input per MZII).

1 per second (0.5 sec. minimum On or Off time per pulse) to 1 per minute (up to 7 inputs per MZII).

ANALOG OUTPUTS

Quantity:
4.

Type
0 to 20 mA range programmable source into 500 ohm maximum load, momentary short circuit protection.

DIGITAL OUTPUTS

Quantity:
8.

Contact Ratings
30 VA at 24 Vac, pilot duty.

120 VA at 120 Vac, pilot duty.

Contact Type
Form C (SPDT) isolated.

Status Indication
Light emitting diode.

Voltage Reference
5.1 Vdc, 20 mA maximum.

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