

# MICROZONE II Direct Digital Controllers



## SPECIFICATIONS

### HARDWARE

#### 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.

#### Battery Backup - Clock and RAM

30 days (replaceable lithium battery).

#### Battery Backed-up Time Clock

Accuracy ±150 sec./mo at 77 °F (25 °C).

### MICROZONE II Controllers MZ2A Series

The NETWORK 8000 MICROZONE II™ (MZII) is a fully programmable controller that enhances the 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.

MICROZONE II is easily applied to a wide variety of mechanical equipment including those that are application specific. Through the Personal System Interface (PSITM) and Xtended Personal System Interface (XPSITM), control programs can be downloaded to all devices requiring the sequence of operation. With the MZII, the 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 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).

#### 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. Barber-Colman TS-5700-850 series or equivalent.

*Continued on next page.*

Continued from first page.

**Balco Input**

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

**Platinum Input**

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

**Potentiometers**

1000 to 20,000 ohm resistance.

**Voltage**

0 to 5 Vdc.

**Current**

4 to 20 mA<sub>dc</sub> 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.

**FEATURES**

- 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.

**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.

**NETWORK 8000**

Up to 127 MZII's per Global Control Module. Shared network data includes all physical input/output points plus capability of WINDO and EMS blocks which are program definable.

**MODELS**

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

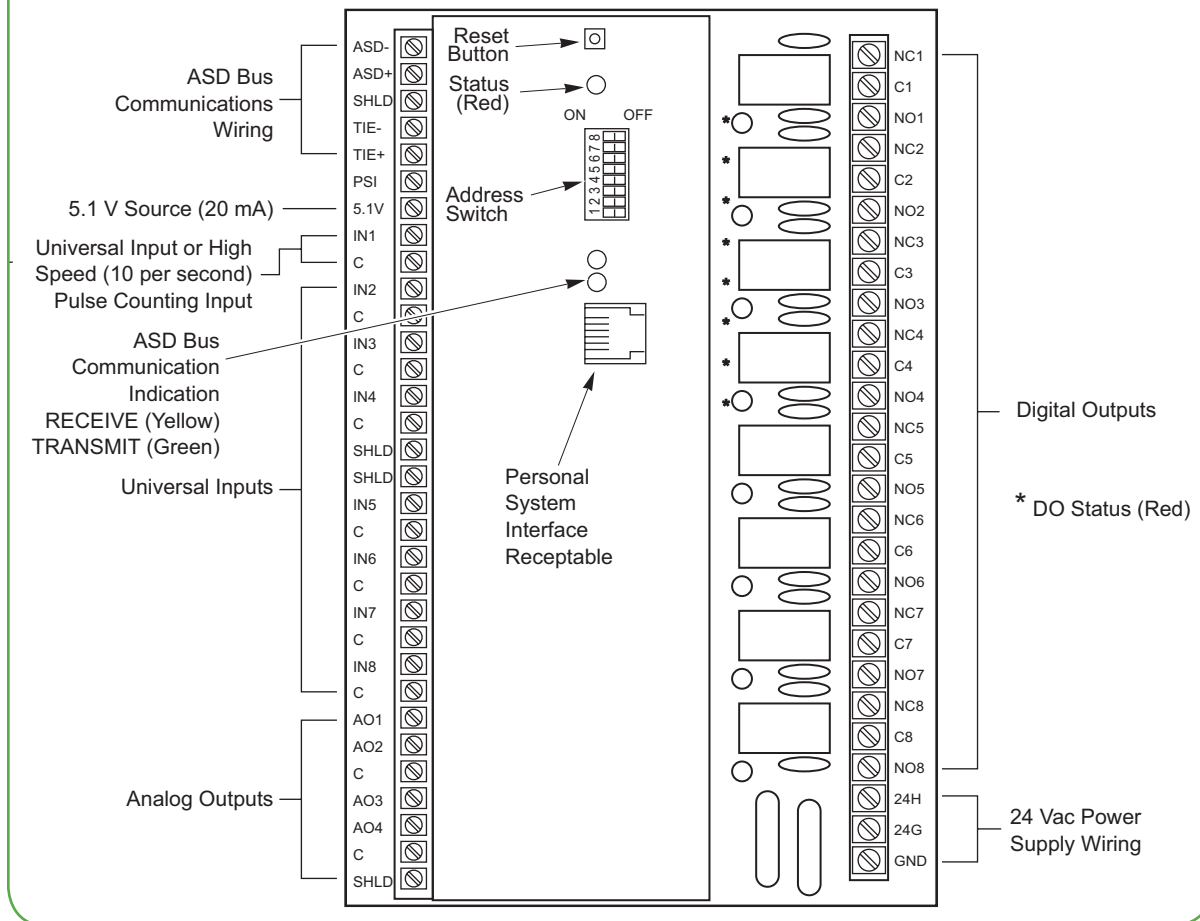
## SOFTWARE SPECIFICATIONS

### CONTROL FUNCTIONS

#### 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

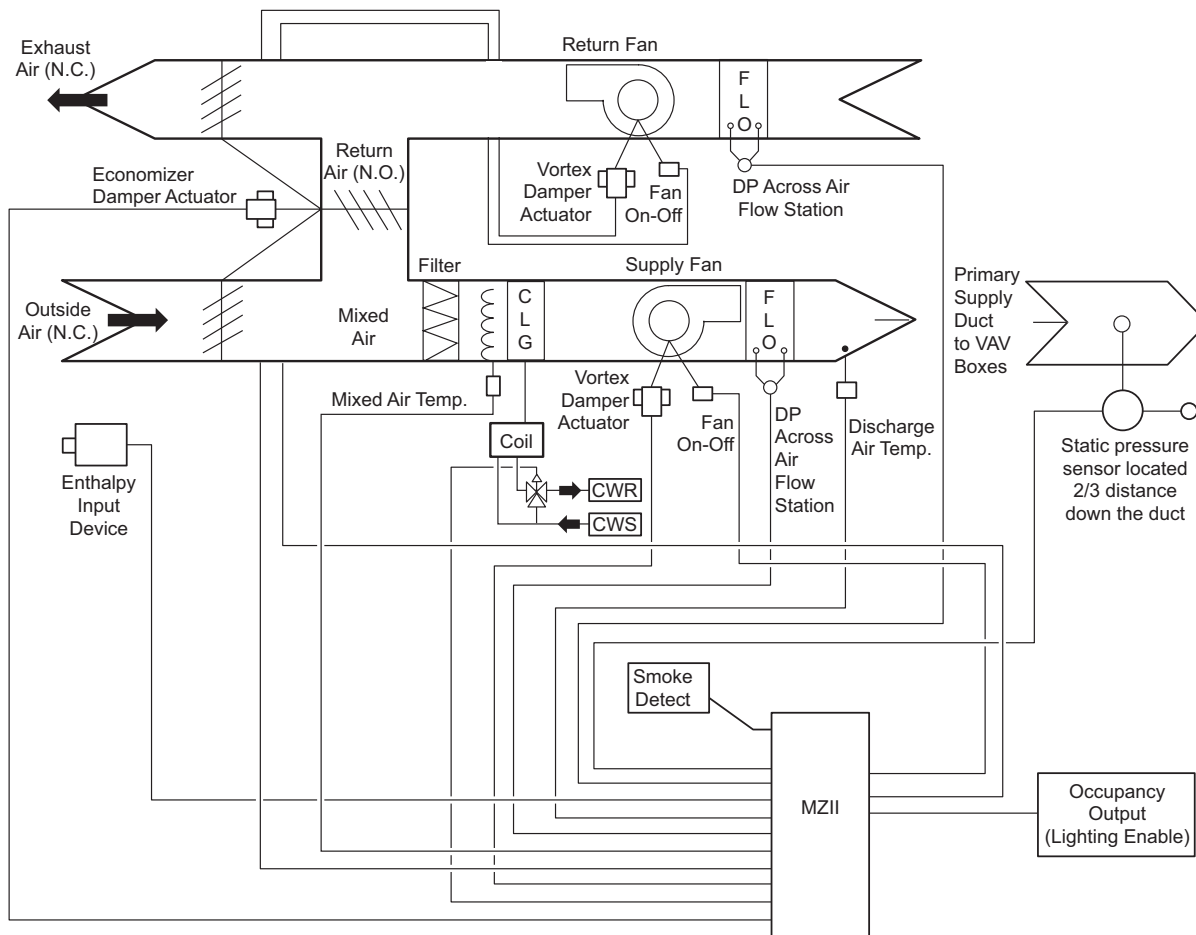
## TERMINAL CONNECTIONS AND LED INDICATORS



**ACCESSORIES**

Part Number	Description
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	Personal System Interface software (see F-24317)
LAPT-80800-EPS-I	Extended Personal System Interface software (see F-24317)

**MZII CONTROL SCHEMATIC OF A TYPICAL FAN TRACKING VAV AIR HANDLING SYSTEM**



**Note:** All field wiring shall be twisted, shielded pairs.



On October 1st, 2009, TAC became the Buildings Business of its parent company Schneider Electric. This document reflects the visual identity of Schneider Electric, however there remains references to TAC as a corporate brand in the body copy. As each document is updated, the body copy will be changed to reflect appropriate corporate brand changes. All brand names, trademarks and registered trademarks are the property of their respective owners. Information contained within this document is subject to change without notice. All rights reserved.