MNB-300 BACnet Unitary Controller

I/A Series Micronet MNB-300

The TAC I/A Series™ MicroNet™ MNB-300 BACnet™ Unitary Controller is an interoperable controller with native BACnet MS/TP communications support. The controller features Sensor Link (S-Link) support, LED status and output indication, screw terminal blocks, as well as a panel mount sub-base with removable electronics module.

When programmed using WorkPlace Tech Tool, the Unitary controller provides a wide range of control strategies for packaged rooftop, heat pump, fan coil, unit ventilator, and similar applications.

Stand Alone or Connected

The TAC I/A Series BACnet Unitary Controller can function either in a standalone mode or as part of a BACnet building automation system (BAS) network.

SPECIFICATIONS

HARDWARE

Dimensions
7.0 in. W x 3.94 in. H x 2.19 in. D

(178 mm x 100 mm x 56 mm)

Enclosure
Optional wall-mount enclosure conforms to NEMA-1 requirements.

Cover meets UL94V-0 flammability ratings.

Mounting
Panel mount.

Wiring Terminals
I/O Points

Fixed screw terminals; up to two AWG #14 (2.08 mm^2) or smaller wire.

Power and MS/TP

Removable screw terminals; single AWG #14 (2.08 mm^2) wire or up to two AWG #18 (0.823 mm^2) or smaller wires.

ELECTRICAL

Power Supply Input
20.4 to 30 Vac, 50/60 Hz.

Maximum Power Consumption
16 VA at 24 Vac.

ENVIRONMENT

Operating Temperature
-40 to 140 °F (-40 to 60 °C)

Shipping and Storage Temperature
-40 to 160 °F (-40 to 71 °C)

Humidity
5 to 95% RH, non-condensing

AGENCY LISTINGS

US
FCC Part 15, Class A

UL 916, File #E71385 Category PAZX

UL 864, Category UUKL, File #S5381 Smoke-Control Equipment

Canadian
UL Listed to Canadian Safety Standards (CAN/CSA 22.2)

CUL Listed to Standards ULC/ORD-C100-92 (Smoke Control System Equipment) and CAN-ULC-S527 (Control Units for Fire Alarm Systems)

Australian
Meets requirements to bear the C-Tick Mark

European Community
EMC Directive 89/336/EEC, EN61326

INPUTS AND OUTPUTS

Universal Inputs (6)
Universal Input characteristics are software-configured to respond to one of the following input types:

10k ohm Thermistor w/ 11k ohm Shunt Resistor

Sensor operating range -40 to 250 °F (-40 to 121 °C) range. TSMN-57011-850, TS-5700-850 Series or equivalent.

Specifications continued on next page.

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Specifications continued from first page.

1k ohm Balco Input

-40 to 250 °F (-40 to 121 °C) range. TSMN-81011, TS-8000 Series or equivalent.

1k ohm Platinum Input

-40 to 240 °F (-40 to 116 °C) range. TSMN-58011, TS-5800 Series or equivalent.

1k ohm Resistive

0 to 1.5k ohms.

10k ohm Resistive

0 to 10.5k ohms.

Analog Voltage

0 to 5 Vdc.

Analog Current

Range 0 to 20 mA, requires an external 250 ohm shunt resistor (AD-8969-202).

Digital Input

Dry switched contact. Detection of closed switch requires less than 300 ohms. Detection of open switch requires more than 2.5k ohms.

Standard Pulse Input (UI1-UI6)

Minimum Rate

1 pulse per 4 minutes.

Maximum Rate

1 pulse per second.

Fast Pulse Input (UI1)

Minimum Rate

1 pulse per 4 minutes.

Maximum Rate

10 pulses per second.

Digital Outputs - Triac (6)

12 VA at 24 Vac, 50/60 Hz, each output individually isolated.

Universal Outputs (3)

Current

0 to 20 mA (output load from 80 to 550 ohms).

Voltage

0 to 10 V (with external 500 ohms, 1/2 W, 1% resistor).

Capability to Drive Functional Devices

RIBUI1C Relay (UO configured for 0 to 20 mAdc, no external resistor).

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COMMUNICATIONS

BACnet Networks

The TAC I/A Series MicroNet BACnet Unitary Controller incorporates an isolated EIA-485 (formerly RS-485) transceiver for BACnet MS/TP communications at 9.6 up to 76.8 kbaud using standard MS/TP wiring methods. Up to 128 TAC I/A Series MicroNet BACnet controllers can be connected to an MS/TP sub-net without repeaters.

S-Link

The Sensor Link (S-Link) communications wiring provides power and a communication interface for one MN-Sx MicroNet sensor. The various MN-Sx sensors can provide room temperature, room humidity, setpoint adjustment, and occupancy override. This connection uses two-wire, unshielded cable and is not polarity sensitive. Maximum S-Link bus length is 200 ft (61 m).

BACnet COMPLIANCE

BACnet Application Specific Controller (B-ASC).

FEATURES

- The TAC I/A Series MicroNet BACnet Unitary Controller's sequence of operation and BACnet image are fully programmable, using WorkPlace Tech Tool. The controllers can be applied to all common unitary HVAC applications.
- Capability to function in standalone mode or as part of a TAC I/A Series building automation network.
- Integral MS/TP jack for direct connection of PC with WorkPlace Tech Tool.
- Removable electronics module mates with panel-mounted subbase.
- Removable terminals for power and communications to facilitate commissioning.
- Optional rugged, NEMA 1 plenum-rated sheet metal enclosure.
- MS/TP DIP switch addressable.
- Service pin button for BACnet "I am" message broadcast.
- Isolated EIA-485 (formerly RS-485) transceiver for MS/TP communications.
- MS/TP baud rate selection from 9.6 up to 76.8 kbaud.
- LED indication of MS/TP communication activity, controller status, and UO and DO state.
- Firmware upgradeable over the network.
- Support for S-Link Sensor.

INPUTS FROM MN-SX I/A SERIES MICRONET SENSORS

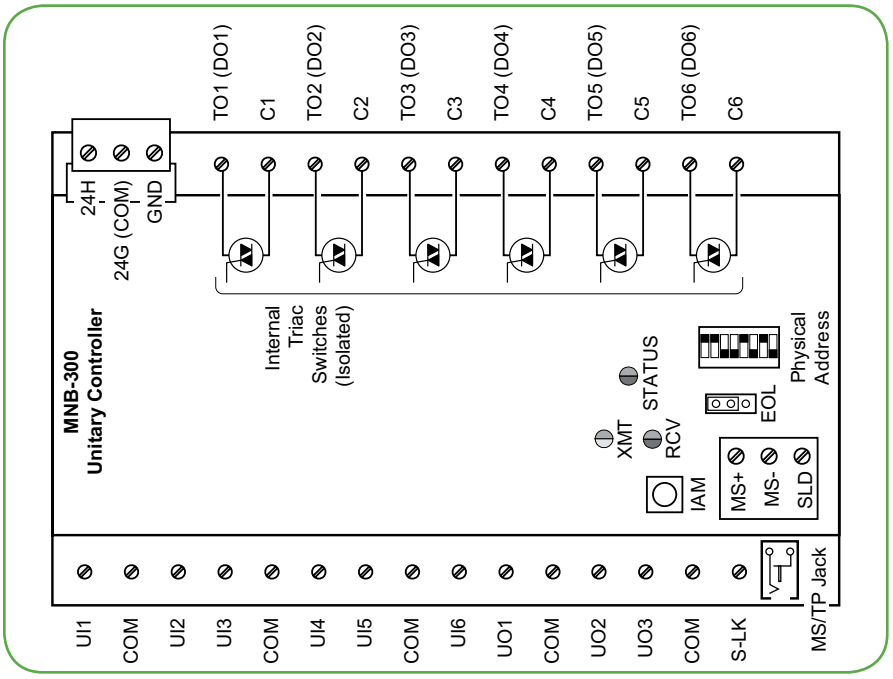
Inputs	Description	MN-Sx Sensor
Space Temperature	32 to 122 °F (0 to 50 °C)	MN-S1, MN-S1HT, MN-S2, MN-S2HT, MN-S3, MN-S3HT, MN-S4, MN-S4HT, MN-S4-FCS, MN-S4HT-FCS, MN-S5 and MN-S5HT
Space Humidity	5 to 95% RH, Non-condensing	MN-S1HT, MN-S2HT, MN-S3HT, MN-S4HT, MN-S4HT-FCS, and MN-S5HT
Adjustable Setpoint	Adjustable within limits set by application programming tool	MN-S3, MN-S3HT, MN-S4, MN-S4HT, MN-S4-FCS, MN-S4HT-FCS, MN-S5, and MN-S5HT
Override Pushbutton	For standalone occupancy control or occupancy override	MN-S2, MN-S2HT, MN-S3, MN-S3HT, MN-S4, MN-S4HT, MN-S5, and MN-S5HT
Fan Operation and Speed	Fan mode selection: On/Off, Speed (Low/ Medium/High), or Auto	MN-S4, MN-S4HT, MN-S4-FCS, MN-S4HT-FCS, MN-S5, and MN-S5HT
System Mode	System mode selection: Heat, Cool, Off, or Auto	MN-S4, MN-S4HT, MN-S5, and MN-S5HT
Emergency Heat	Emergency heat mode selection: Enable or Disable	MN-S5 and MN-S5HT

MODELS

Part Number	Description	Inputs/Outputs		
		UI	UO	DO (Triac)
MNB-300	TAC I/A Series MicroNet BACnet Unitary Controller	6	3	6

ACCESSORIES

Part Number	Description	Part Number	Description
MNB-300-ENC	Wall-mount enclosure	S-Link Sensors	Temperature and humidity wall sensors with digital communication
MNB-BASE-300	Controller base assembly only		
MNB-CNTLR-300	Controller cover assembly only	TSMN Series	Room temperature sensors



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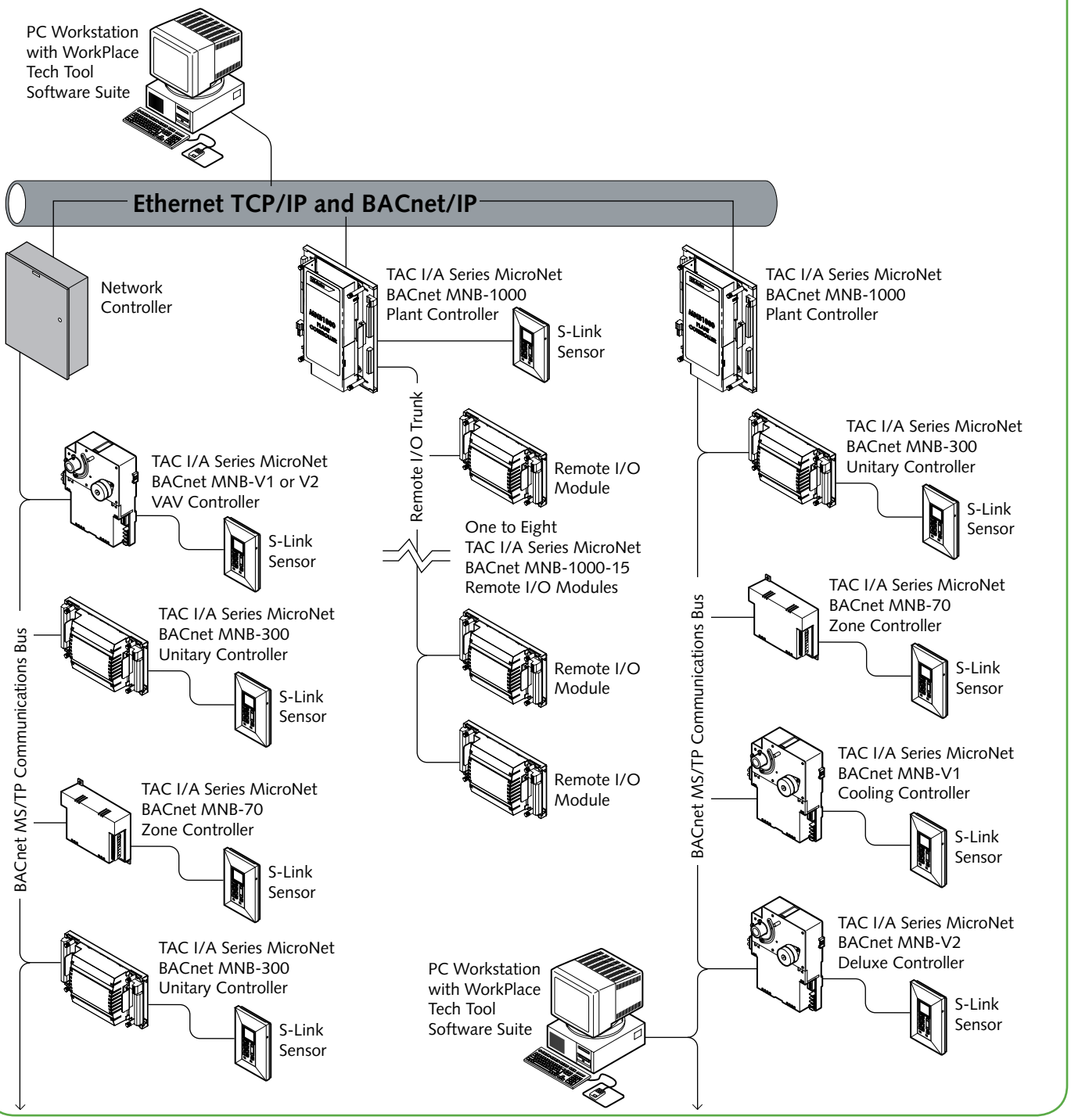
ARCHITECTURE



SIGNALING

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 remain 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.

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