

I/A Series®

MicroNet Sensors

The I/A Series MicroNet Sensors (MN-SX series) are a family of digital wall temperature sensors for use with I/A Series MicroNet controllers. These sensors feature a Sensor Link (S-Link) communication protocol which provides a simple two-wire interface for power and exchange of sensor and subbase information. Subbase information includes selecting fan speed, operating mode, or emergency heat. Available in six models, MN-SX series sensors provide an integral analog-to-digital conversion for elimination of sensor-to-controller noise effects and wire resistance offset.



LONWORKS®

Applications

Using the digital wall sensor, the operator can monitor performance and edit operational settings.

MN-SX series sensors are suitable for direct-wall, 2 x 4 electrical box, 1/4 DIN electrical box, or surface box mounting.

Connectivity

The MN-SX series sensor measures room conditions and transmits the information to the controller via the S-Link. A single sensor can be connected directly to application specific I/A Series MicroNet controllers via low-cost, unshielded, twisted-pair cable. The connection between the sensor and controller is not polarity-sensitive.

Features —

- Contemporary, low-profile packaging.
- Digital zone temperature indication (selectable for 0.1 or 1 degree display resolution of °F or °C).
- Self-compensating temperature conversions remove the need to calibrate over time.
- Pushbutton override capabilities allow occupants to switch to timed occupied mode for after hours operation.
- Accepts virtually any wiring type including unshielded pairs without termination resistors.
- Displays selected system values such as setpoints, outdoor air temperature, and operating mode.
- Provides the ability to change operating modes.
- Directly connects to selected I/A Series MicroNet controllers via low-cost, unshielded, twisted-pair cable, which provides both power and communication.
- Separate wiring subbase and electronics.



Siebe Environmental Controls
 1354 Clifford Avenue (Zip 61111)
 P.O. Box 2940
 Loves Park, IL 61132-2940
 United States of America

An Invensys company

Model Chart.

Model	Description	Keypad	Display
MN-S1	Sensor only	None	None
MN-S2	Sensor with override	One-button	LED Override Status Indication
MN-S3 ^c	Sensor with setpoint adjustment and override	Three-button	Digital LCD ^a and LED Override Status Indication
MN-S4 ^c	Sensor with setpoint, override, and controller mode functions	Six-button	Digital LCD ^b and LED Override Status Indication
MN-S4-FCS ^c	Sensor with setpoint, On/Off and Fan speed functions	Six-button	Digital LCD ^b and LED Fan Status Indication
MN-S5 ^c	Sensor with setpoint, override, controller mode functions, and emergency heat key/indication	Seven-button	Digital LCD ^b and LED Override Status Indication

^a LCD displays value and setpoint.

^b LCD displays values, setpoints, and controller mode functions.

^c Allows viewing of alarms and diagnostics.

Hardware Specifications

Dimensions 4 21/32" high x 3" wide x 1" deep
(118.5 mm x 76.2 mm x 24 mm).

Enclosure Conforms to NEMA-1 requirements.

Surge Immunity Compliance

ANSI C62.41 (IEEE-587, Category A & B).

Agency Listings

FCC, Class B.

UL Listed

UL-916 (File # E71385 Category PAZX).

UL Listed to Canadian Safety Standards (CAN/CSA C22.2).

European Community – EMC Directive

Emissions EN50081-1

Immunity EN50082-1

Ambient Limits

Operating Temperature 32 to 122 °F (0 to 50 °C).

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

Humidity 5 to 95% RH, non-condensing.

Wiring Terminals Four (4) screw terminals. AWG #18 to #24
(1.0 mm² maximum) wire.

Display Setpoints, input spans, and units vary with the controller application.

Range -99 to 999 or -9.9 to 99.9.

Units °F, °C, or %.

Command Options (MN-S4 and MN-S5) Varies with the controller application.

System Mode Heat/Cool/Off/Auto (except MN-S4-FCS)

Fan Mode Off/On/Speed (Low, Medium, High)/Auto.

Override Occupied/Unoccupied (except MN S4-FCS).

Emergency Heat Enable/Disable (MN S5 only).

Software Specifications

Digital Display (MN-S3, MN-S4 Series and MN-S5 only)

Custom field-configurable sensor displays.

Auto-ranging of displayed values.

Occupant command capabilities.

Adjustable minimum/maximum limit setpoint values.

Controller driven, automatically configured, customized display/command values (Table-1).

Table-1 Typical MN-S3, -4, or -5 Display/Change Values.

Model	Value	Display	Change
S3,S4,S4-FCS,S5	Zone Temperature	Yes	No
S4,S4-FCS,S5	Outdoor Air Temperature	Yes	No
S3,S4,S4-FCS,S5	Percent Humidity	Yes	No
S3 ^a ,S4,S4 ^a -FCS,S5	Heating Setpoint, Cooling Setpoint, Unoccupied Heat, Unoccupied Cool	Yes	Yes
S4,S4-FCS,S5	Mode Heating/Cooling/Auto/Off	Yes	No ^b
S4,S4-FCS,S5	Fan (On/Speed (Low/Medium/High)	Yes	Yes

^a S3 and S4-FCS models have a single setpoint.

^b S4-FCS display only.

Communications

S-Link Sensor Link (S-Link) communications wiring provides power and communication interface to the I/A Series MicroNet sensor (MN-SX series). It uses two-wire, unshielded cable and is not polarity sensitive. From some sensor models, the user can view and adjust application parameters. Maximum wire length allowed between a controller and the I/A Series MicroNet Sensor is 200 ft. (61 m).

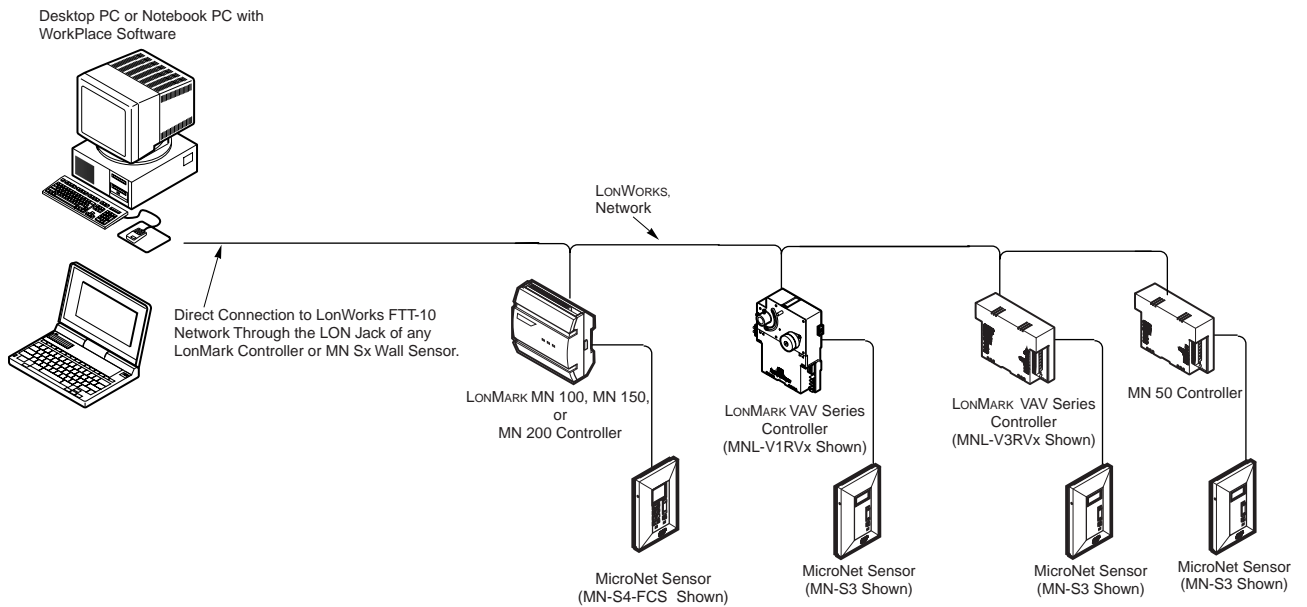


Figure-1 I/A Series MicroNet MN-SX Sensor Connectivity.

All specifications are nominal and may change as design improvements are introduced. Siebe Environmental Controls shall not be liable for damages resulting from misapplication or misuse of its products.

I/A Series is a registered trademark of an Invensys company.

LONWORKS and LONMARK are registered trademark of Echelon Corporation.