

# MicroNet 2000 Direct Digital Controllers



## MicroNet 2000 MN-HPFC

As a member of the MicroNet 2000™ family of Direct Digital Controls, the MicroNet Heat Pump/Fan Coil Controller offers the advantages of Direct Digital Control for single stage heat pump and two-pipe/four-pipe fan coil applications. Operating as a stand-alone controller, the MicroNet Heat Pump/Fan Coil (HPFC) Controller can be integrated into the NETWORK 8000 Building Automation System (BAS) to deliver enterprise level system monitoring, control, and supervision. Ideal for the retrofit of existing pneumatic and electric/electronic systems, the MicroNet HPFC Controller offers digital wall sensor technology and reliable DDC operation to meet today's demanding environmental and energy code requirements.

Designed for new or existing system installations, the MicroNet HPFC Controller provides control for any of the following unitary systems within your facility:

- Single Stage Heat Pump
- Wall sensor (any MN-S series)
- Discharge sensor with auxiliary DI (MN-SDT)
- Single speed fan
- Single stage compressor
- Changeover valve

*Continued on next page.*

## SPECIFICATIONS

### HARDWARE

#### Dimensions

4-1/2 H x 5 W x 1-5/8 D (114 x 127 x 41 mm).

#### Enclosure

Conforms to NEMA-1 requirements. Meets UL94-5V flammability for plenum application use.

#### Conduit Knockouts

Not applicable. Order optional MicroNet Enclosure, MNA-FLO-1, if wiring to conduit is desired.

#### Power Supply Input

20.4 to 30 Vac, 50/60 Hz.

#### Maximum Power Consumption

5 VA plus DO loads (47 VA max. at 24 Vac).

#### Surge Immunity Compliance

IEC 801.5 and ANSI C62.41 (IEEE-587, Category A and B).

#### Transient Compliance

IEC 801.4.

#### Electrostatic Discharge Compliance

IEC 801.2.

### AGENCY LISTINGS

#### UL-916

File # E71385 Category PAZX.

#### CSA

File #LR 3728.

#### FCC

Class A.

#### UL-864

File #S5381 Category UUKL.

### AMBIENT LIMITS

#### Operating Temperature

32 to 131 °F (0 to 55 °C).

#### Shipping and Storage Temperature

-40 to 160 °F (-40 to 71 °C).

#### Humidity

5 to 95% RH, non-condensing.

### WIRING TERMINALS

#### Screw terminals.

#### Power

AWG #14 to #24.

#### DOs

AWG #14 to #24.

#### Communication

AWG #18 to #24.

*Continued on next page.*

Continued from first page.

**Sensor**

AWG #18 to #24.

**INPUTS (FROM MICRONET SENSORS)**

**Wall Space Temperature**

32 to 122 °F (0 to 50 °C).

**Setpoints**

40 to 95 °F (4.4 to 35 °C), user adjustable.

**Override Pushbutton (optional)**

For stand-alone occupancy control or remote status monitoring of local status condition. Field programmable override timing (60 minute default).

**Duct**

**Auxiliary Temperature**

-40 to 250 °F (-40 to 121 °C).

**Digital Input**

Dry contact (device being monitored must be rated for switching 50 microamps; gold flashed contacts recommended).

**DIGITAL OUTPUTS**

**Quantity**

3.

**Current Ratings**

DO1 and DO2: 30 VA total\* (DO1 + DO2) load at 24 Vac, 50/60 Hz.

\* If DO1 and DO2 are not energized concurrently, such as with a floating actuator, each can switch 30 VA.

DO3: 12 VA at 24 Vac, 50/60 Hz.

**FEATURES**

- Lowest total installed cost for facility retrofits.
- Long-term Direct Digital Control performance reliability.
- Stand-alone control with BAS networking optional.
- Digital wall sensor displays room and network shared values.
- Fully digital sensor bus technology offers superior noise immunity.
- Simple and efficient control sequence configuration.
- Advanced “energy wise” control strategies.
- Easy retrofit installation through two-wire communications and sensor wiring.
- Open topology wiring with polarity insensitivity.
- Plenum rated enclosure allows direct mounting in plenum.

Continued from first page.

Two-pipe Fan Coil — Two-position or Proportional

- Wall sensor (any MN-S series)
- Discharge sensor with auxiliary DI (MN-SDT)
- Single speed fan
- Two-position heating/cooling valve with two-position outdoor air damper or
- Floating heating/cooling valve (drive open/drive closed)

Four-pipe Fan Coil — Two-position

- Wall sensor (any MN-S series)
- Discharge sensor with auxiliary DI (MN-SDT)
- Single speed fan
- Two-position heating valve
- Two-position cooling valve

Satellite

- All I/O under control of BAS

Communication is optimized throughout the system to provide immediate feedback for the facility operator. The MicroNet 2000 offers the advantages of stand-alone control combined with enterprise-level automation advantages through full compatibility with the NETWORK 8000 BAS.

Using the digital wall sensor, the operator can monitor the performance of the equipment, edit operational values, and even reprogram the controller. Through the wall sensor access jack, the MicroNet Controller Interface software may also be utilized to set up and monitor the heat pump or fan coil unit or any other MicroNet Controller on the communications bus.

## MODEL

Part Number	Digital Outputs	Description
MN-HPFC	3	Single stage heat pump Two-pipe fan coil Four-pipe fan coil Satellite

## ACCESSORIES

Part Number	Description
MN-CI	MicroNet Controller Interface software for commissioning, monitoring, trending, and editing of MicroNet Controllers
MN-CIM	MicroNet Controller Interface Module for use with the MicroNet Controller Interface. Connects the PC to the jack on the MicroNet Sensor which allows communication with MicroNet Controllers.
MN-S Series	MicroNet Digital Wall Sensors
MN-SDT	MicroNet Duct/Immersion Sensor
MN-STAT-4	Digital Input Connector for MN-SDT
MNA-FLO-1	MicroNet Enclosure for conduit applications

## COMMUNICATIONS

### NETWORK 8000 BAS

Via the MN-ASDI MicroNet Integrator for the ASD Bus.

### MicroNet U-Bus™

1,000 ft (305 m) between MicroNet Integrator and most distant MicroNet Controller. 3,000 ft (914 m) total distance, including all wire segments. Multiple U-Bus cable end of lines are allowable and termination resistors are not required.

### MicroNet U-Link™

200 ft (61 m) between controller and the controlled devices or peripherals. 400 ft (122 m) total distance including all wire segments.

### MicroNet Controller Interface (CI)

The MicroNet Controller Interface software is installed on a DOS-based personal computer (PC) which allows communication with all MN-FLO, MN-FLO3T, and MN-HPFC Controllers and the MicroNet Integrator on a common U-Bus. Permits reconfiguration, monitoring, editing, and database backup of all MicroNet Controller configuration data via the MicroNet Controller Interface Module (MN-CIM), which interfaces between the RS-232 port of a PC and the MicroNet Sensor's communication interface jack.

## CONTROLLER INTERFACE PLATFORM

### PERSONAL COMPUTER CONFIGURATION REQUIREMENTS

#### Type

IBM® compatible, desktop or portable.

#### Processor

80286 or higher.

#### RAM

512K.

#### Disk Drives

3-1/2 in. high density floppy. Hard disk recommended, but not required.

#### Operating System

MS-DOS® 3.3 or higher.

#### Ports

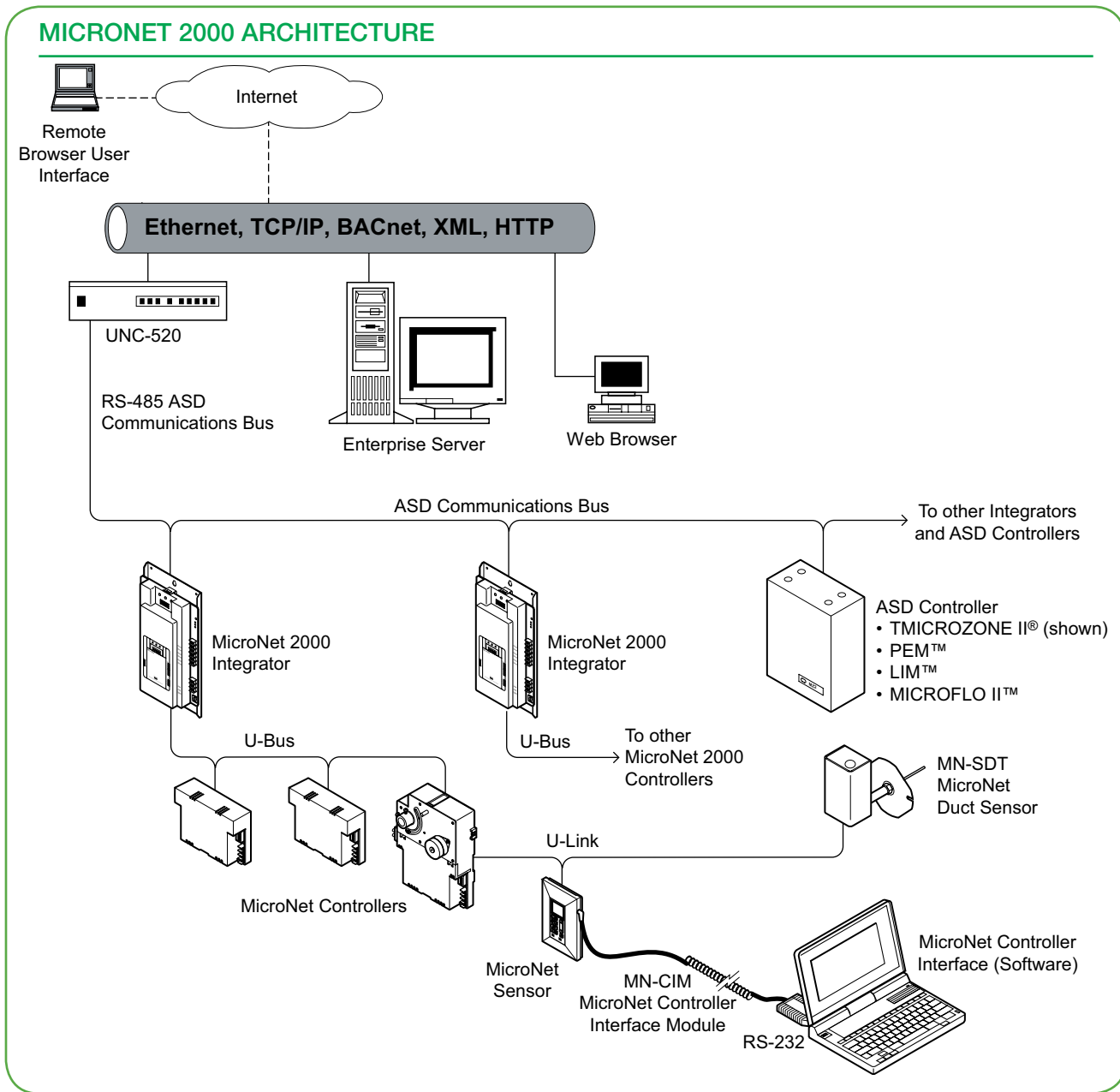
RS-232 serial port (COM 1 or COM 2).

#### Monitor

CGA, EGA, MCGA, and VGA monochrome or color.

#### Port Adapter

MicroNet Controller Interface Module (MN-CIM).



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.