

I/A SERIES® MICRONET MN 440 CONTROLLERS

Order Type:

MNN-44-100 - Micronet NCP 440 Series Controller

I/A Series® MicroNet MN 440 Controllers are fully-programmable controllers designed for roof top, unit vent, air handling unit (AHU), and central heating and cooling applications. These controllers feature field wiring terminal blocks, six universal inputs, six digital (Triac) and three analogue outputs. MN 440 Series® Controllers use fully-programmable control sequences based on a set of control objects residing in the controller memory. The MN 440 controllers can function in standalone mode (after programming with the MicroNet Tech Tool) or as part of a LONWORKS® FTT-10 Free Topology, an NCP (Native Communications Protocol), or an ARCNET communications network. An optional Realtime Clock Card can be fitted to the MNN-44-100 on an NCP network.



FEATURES

- LonWorks, ARCNET and NCP communications options - Bus du jour® concept
- Fully programmable using graphical objects
- Intelligent multi-loop controller - upto 7 PID control loops
- Time schedules for plant and controller switching
- Proportional, integral and derivative control actions can be individually set in controller applications
- Wall or DIN rail mounting
- The 0-10 Volt inputs can be used for humidity/pressure/velocity control or as a reset input
- 15 Vdc supply output for humidity, pressure sensors, etc.
- 0 to 10 Vdc for stepped fan control
- Averaging module for analogue inputs
- Six easily configurable inputs - digital, analogue 0-10V, resistive 0-10k Ohm
- Especially suitable for terminal unit, small air handling unit and boiler control applications
- Optional Real Time Clock (RTC) available for use on an NCP network or for stand-alone operation



DS 10.102A - Installation Instructions
 DS 10.050 - Touch Screen
 DS 10.200 - MicroNet Tech Tool
 DS 10.201 - MicroNet View Software
 DS 10.210 - MicroNet Manager Interface



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SPECIFICATION

Order Type	Description	Communication Protocol	Realtime Clock Available
MNN-44-100	MicroNet NCP 440 Series Programmable Controller	NCP ^{a b}	Yes, with RTC Card ^c

a. ARCNET communications protocol available for this model with optional ARCNET plug-in card (MNA-C).

b. LonWorks communications available with optional LonWorks Plug-in card (MNL-C).

c. RTC Card cannot be fitted to controllers on an ARCNET network.

HARDWARE SPECIFICATIONS

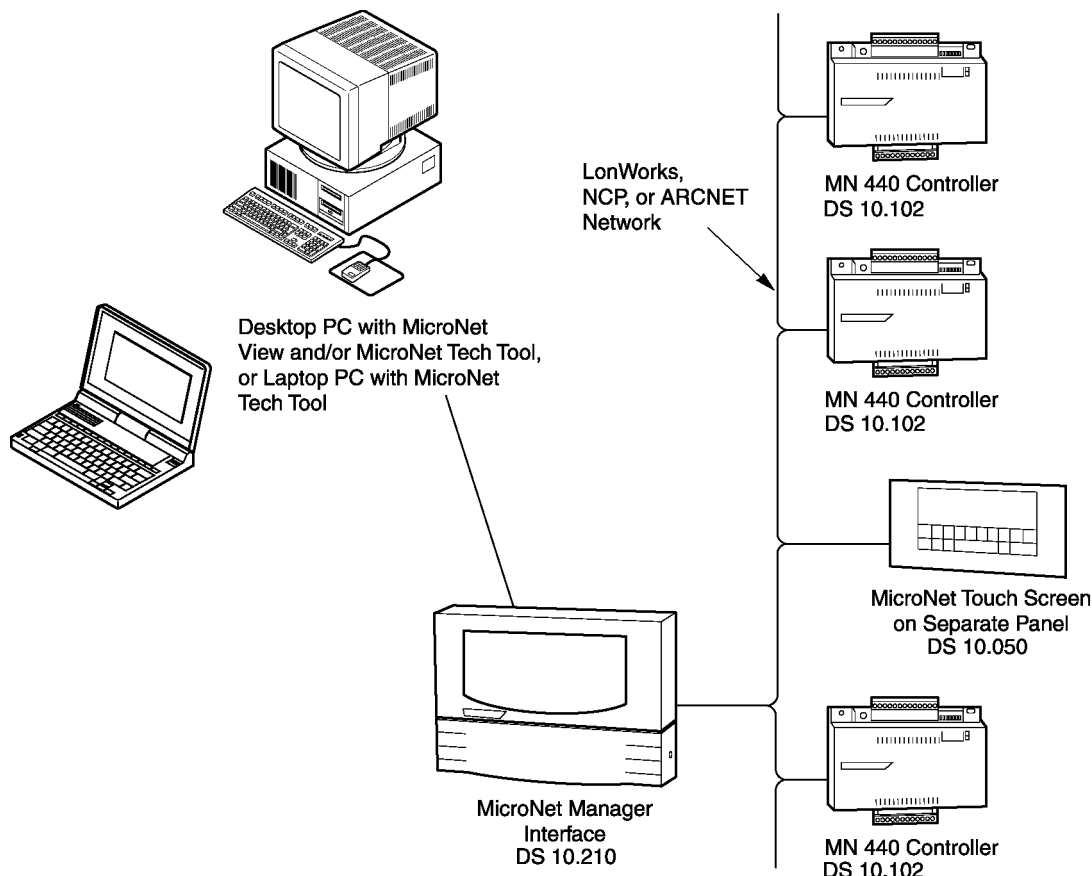
Dimensions:	107 mm Height x 154.9 mm Width x 50 mm Depth								
Enclosure:	Moulded Polycarbonate plastic case. Fire resistant to UL94 IP20								
Power Supply Input:	24 Vac, 50/60 Hz supplied from a transformer conforming to EN 60742.								
Maximum Power Consumption:	<table> <tbody> <tr> <td>MNN-44-100</td> <td>10VA</td> </tr> <tr> <td>MNN-44-100 with MNN-RTC</td> <td>11VA</td> </tr> <tr> <td>MNN-44-100 with MNA-C</td> <td>11VA</td> </tr> <tr> <td>MNN-44-100 with MNL-C</td> <td>13VA</td> </tr> </tbody> </table>	MNN-44-100	10VA	MNN-44-100 with MNN-RTC	11VA	MNN-44-100 with MNA-C	11VA	MNN-44-100 with MNL-C	13VA
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MNN-44-100 with MNN-RTC	11VA								
MNN-44-100 with MNA-C	11VA								
MNN-44-100 with MNL-C	13VA								
Fuse:	2A (anti-surge).								
Surge Immunity Compliance:	EN50082-1								
Agency Listings:	FCC, Class A Canadian Department of Communications, Class A CE Compliant UL Listed: UL916 UL Listed to Canadian Safety Standards								
European Community – EMC Directive:	EN50081-1 (Emissions) EN50082-1 (Immunity)								
Mounting:	Wall or 35 mm DIN rail.								
Ambient Limits:	Operating Temperature: 0 to 50°C Shipping and Storage Temperature: -20 to 55°C Humidity: 5 to 95% RH, non-condensing.								
Wiring Terminals:	Pluggable screw terminal blocks (low voltage only) max. conductor Ø1.5mm (16 AWG)								
Universal Inputs (6):	Number and Type 6 Universal Inputs (digital, resistive, 0 to 10Vdc) User can make any of the six inputs analogue, resistive, or dry contact by configuring jumper pins located on the controller.								
Outputs:	Number and Type 6 Digital Outputs (Triac) for switching 24 Vac 3 Analogue Outputs (0 to 10 Vdc) Current Ratings: 18 VA at 24Vac. Also has a 15 Vdc power supply output capable of sourcing 25 ma.								
Power Failure Reserve:	Controller EEPROM preserves memory for 10 years under normal conditions of use. The software clock will stop during a power failure. If the controller has an RTC card, then the time will not be lost.								

ACCESSORIES

LON-TERM1	Single LON Terminator for Free Topologies
LON-TERM2	Double LON Terminator for Bus Topologies (2 required)
MNA-C	ARCNET Communications card
MNL-C	MicroNet LonWorks Communications Card
MNN-MI	MicroNet Manager Interface
MNN-RTC	Realtime Clock Card

TYPICAL SYSTEM DIAGRAM

I/A SERIES MICRONET MN 440 CONTROLLER



COMMUNICATIONS

NCP (Native Communications Protocol) In cases where an open communications standard is not required, an NCP network can be used. An NCP network can host up to 20 sub-networks with 63 devices each communicating in a polled-response fashion. Controllers on an NCP network connect to MicroNet View and the MicroNet Tech Tool via the MicroNet Manager (MNN-MI-100). An NCP network has a communications speed of up to 9.6k baud.

ARCNET If an open communications standard is not necessary, but peer-to-peer communications is required, the high-performance ARCNET network option may be implemented. This network is created by fitting the optional ARCNET card on each controller and MicroNet Manager Interface (MNN-MI-100) on an NCP network. An ARCNET communications network can host up to 128 devices. Controllers on an ARCNET network can communicate with other controllers in a peer-to-peer fashion and connect to MicroNet View and the MicroNet Tech Tool software via the MicroNet Manager Interface (MNN-MI-100). The ARCNET communications speed is 156k baud.

LONWORKS® A communications network using an FTT-10 Free Topology configuration that can host up to 62 devices. Controllers on a LONWORKS network can communicate with other controllers in a peer-to-peer fashion and connect to MicroNet View and the MicroNet Tech Tool via the MicroNet Manager Interface. This network is created by fitting the optional LonWorks Card on each controller and MicroNet Manager on a NCP network. Applications can be configured and downloaded to the MN 440 Controller from the MicroNet Tech Tool. The MNL-MI-100 with LonWorks Card supports an ENM (Embedded Network Management) database with a complete listing of all devices on the network and the connections (bindings) between them. MicroNet View provides alarm management and dynamic and historical logging for the network. A LONWORKS network has a communications speed of up to 78.8k baud.

Note:

In the initial release the NCP and ARCNET products are configured using the MicroSat Tool.

APPLICATIONS

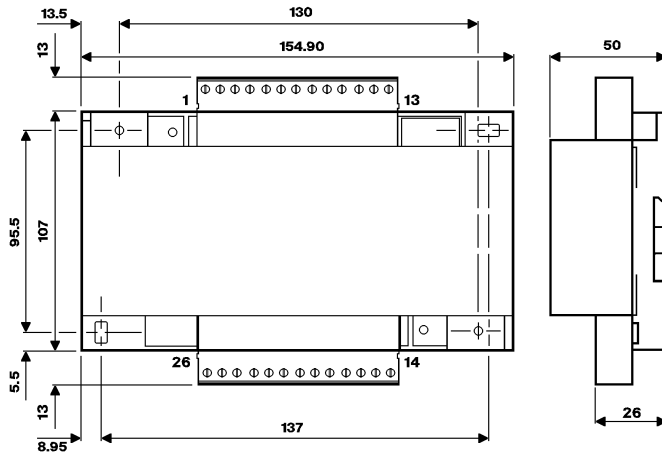
Especially suitable for new or existing system installations, MN 440 Series Controllers provide control for the following types of applications:

- Boiler Compensation with separate Hot Water Supply (HWS) system
- Boiler Sequence Control and HWS system
- Full air conditioning including fan sequence control
- Small control system applications

CONNECTIVITY

When installed on a network (LONWORKS, NCP, or ARCNET), MN 440 controllers connect to a PC running MicroNet Tech Tool and MicroNet View software via the MicroNet Manager Interface (MNN-MI-100). To use the LonWorks communications, the LonWorks Plug-in card (MNL-C) must be fitted. To use the ARCNET communications protocol, the MNN-44 controller must be fitted with an ARCNET plug-in card.

DIMENSION DRAWING



Dimensions in mm

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CAUTION

- This is a 24Vac device. Do not exceed rated Voltage. Local wiring regulations and usual safety precautions apply.
- 24Vac must be supplied by a transformer conforming to EN 60742.
- The RTC board contains a Lithium Chloride battery which is completely safe whilst in normal use. The battery must be disposed of in an authorised ground fill site.
- Do not exceed the maximum ambient temperature.
- Interference with parts under sealed covers invalidates guarantee.
- The design and performance of Satchwell equipment is subject to continual improvement and therefore liable to alteration without notice.
- Information is given for guidance only and Satchwell do not accept responsibility for the selection and installation of its products unless information has been given by the Company, in writing, relating to a specific application.
- A periodic check of the Building Management System is recommended. Please contact your local Satchwell Service Office for details.