

N2 Dialer Module

The N2 Dialer Module (NDM) provides a low-cost method of connecting your facility management system to application specific digital controllers located in remote buildings. The NDM's two-way telephone dial-up connection provides for alarm notification, manual command changes, controller uploads/downloads, and remote system servicing. The NDM is ideal for locations that are difficult to travel to and have basic monitor and control requirements, such as boiler failure detection and temperature monitoring. The NDM provides for improved operator response to alarm/trouble conditions in remote buildings. And since communication can be established easily through the public telephone system, service response time is improved and service costs reduced for these types of facilities.



Figure 1: N2 Dialer Module

Features and Benefits	
☐ Efficient Alarm Notification	Polls devices on a remote network continuously and dials out to the local facility management system or printer on alarm.
☐ Easy Installation	Mounts directly to a wall or within Johnson Controls Universal Packaging Module along with other equipment. It may also be used unmounted by placing it on a desk or tabletop.
☐ Economical	Operator can be notified of a remote alarm from an inexpensive printer; no headend system is required.
☐ Uses Public Telephone Lines	With a Hayes® compatible modem, plugs directly into the jack of a standard dedicated telephone line. No special wiring is needed.
☐ LED Indicator Lights	Monitors power-up diagnostics and allows user to visually observe N2 communications.

The N2 Dialer Module provides access to the Johnson Controls N2 Communication Bus via public telephone lines. The NDM connects a standard Hayes compatible modem to the

N2 network, allowing transparent communication over the telephone lines using the standard N2 protocol.

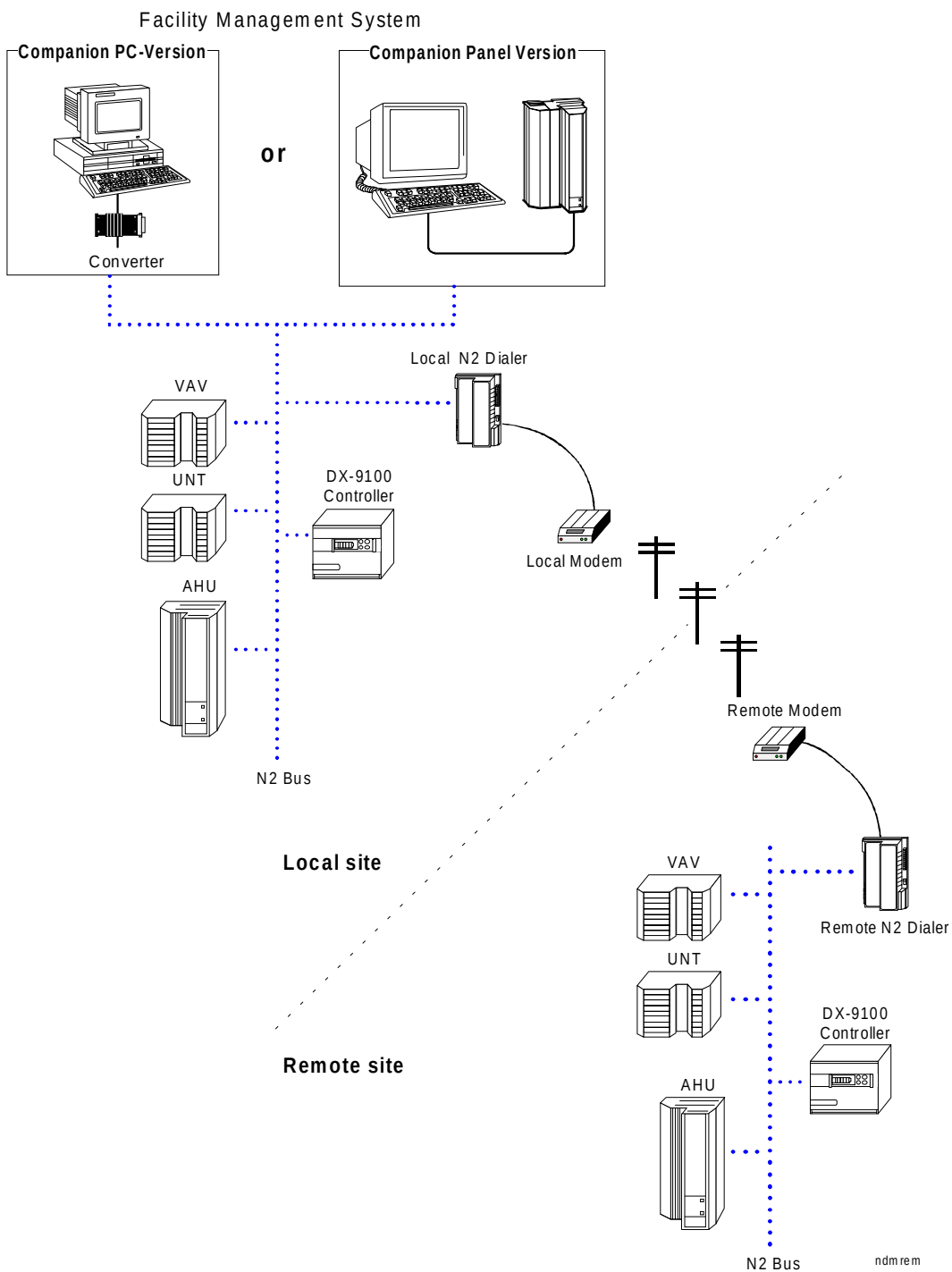


Figure 2: Typical Remote N2 Dialer Module Application

Local Printer Application

You can also use the N2 Dialer Module for a local printer application (Figure 3). With this application, the local serial printer can print a message when a remote controller reports an alarm condition. The remote N2 Dialer calls the

local modem and sends the message for output to the local serial printer. For example, the printer could be located in the supervisor's home or office to ensure that serious alarms are documented and given immediate attention.

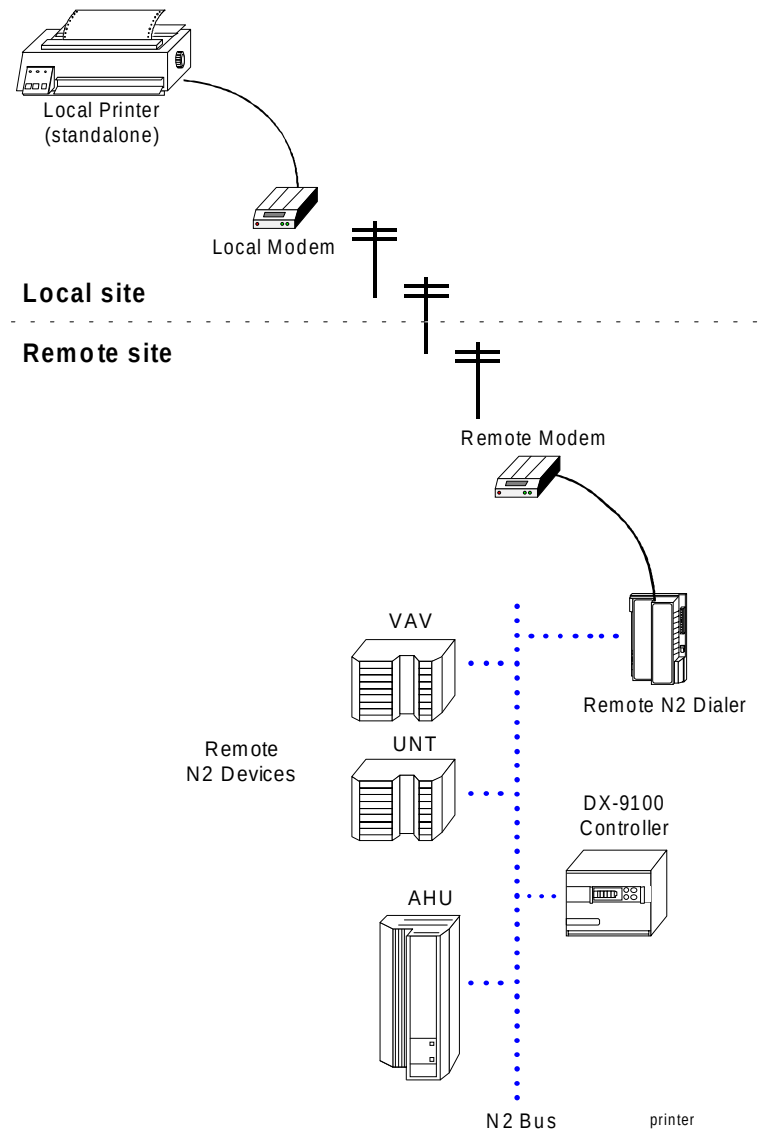


Figure 3: Local Printer Application with Remote Controllers

Remote Upload/Download

One of the most convenient functions that the N2 Dialer Module provides is remote commissioning, uploading, and downloading of application specific controllers. In this configuration (Figure 4), a technician at the local

site can commission, upload, and download any number of controllers located at remote sites. These functions require HVAC PRO for Windows™ and the hardware components shown below.

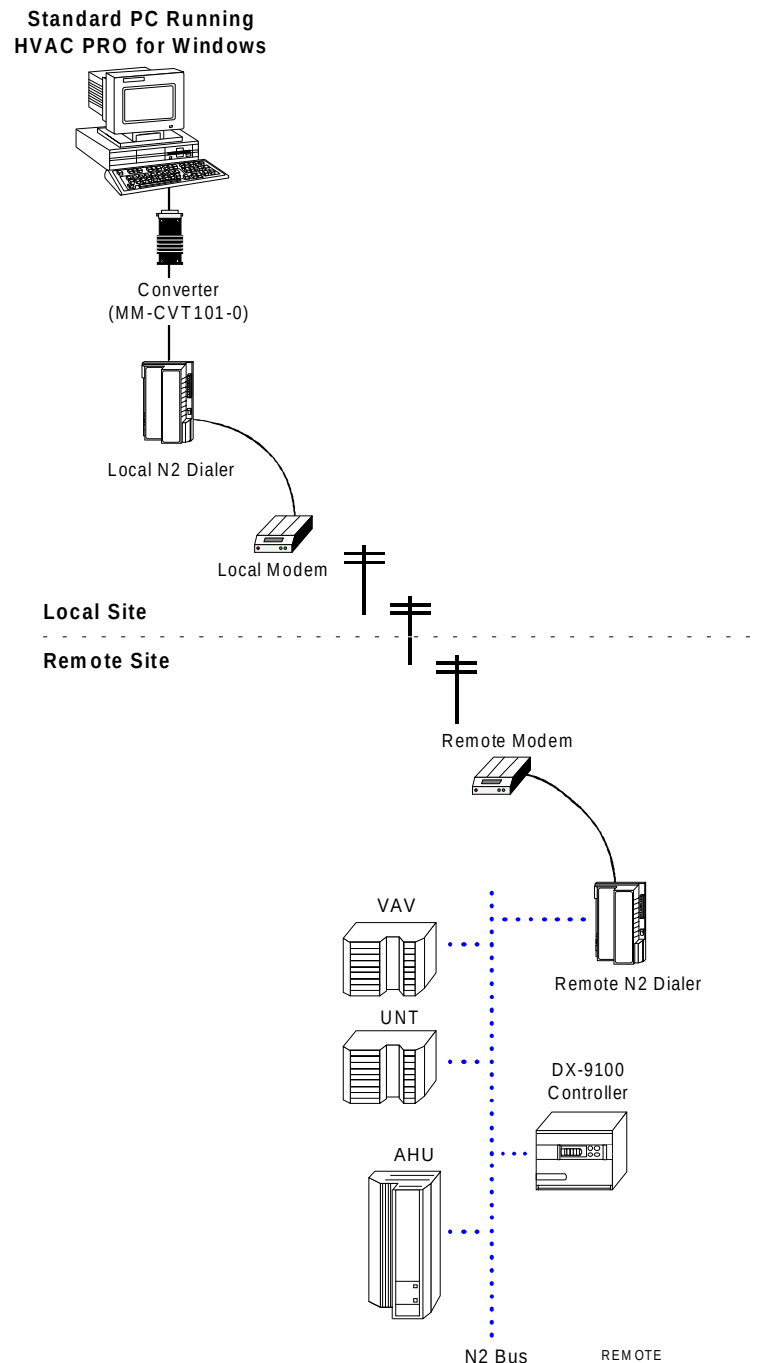


Figure 4: Uploading and Downloading Remote Controllers

Economical Installation

The N2 Dialer Module (NDM) can be easily mounted right out of the box. You can mount it directly on a wall or, for added security and convenience, you can use the Johnson Controls Universal Packaging Module to locate the NDM inside an enclosure with other control equipment. Otherwise, you can simply place the NDM on a desk or tabletop. With any installation, servicing can be accomplished easily.

Convenient Remote Operation

The NDM provides convenient monitoring and commanding of controllers installed at remote locations. By connecting to the remote location via standard telephone lines, the operator can quickly obtain point status information or make adjustments if necessary.

For a remote site to be monitored and controlled, two NDMs and two modems are required—one set for the local site and one set for the remote site. For each additional remote site, another NDM and modem set is required. A local NDM can communicate to as many as 50 remote NDMs.

Dial-in

The remote NDM monitors the remote N2 Bus for alarms. If a controller reports an alarm, the remote NDM dials the local NDM. This is called dial-in. The alarm is then displayed at the facility management system. Or, the remote site ID can be sent to the local serial printer, alerting personnel of a problem at the remote facility. If the system does not answer, and additional numbers have been defined, the NDM can dial as many as three alternate phone numbers in sequence until a connection is established.

Dial-out

The local NDM may initiate a connection with a remote NDM. This is called dial-out. The operator can select which remote NDM to connect to from the available remote sites. (For details, refer to the *N2 Dialer Module Technical Bulletin*.)

Supervisory Connections

Once a connection is established, the operator at the central location can monitor and command remote N2 devices just as if they were directly connected.

Note, however, that the NDM is not designed to replace a facility management system. If you require scheduling, trending, totalization, demand limiting, load rolling, or point history at the remote site, you will need a facility management system at that remote location.

Configuration

The NDM is downloaded over the N2 Bus with HVAC PRO for Windows using a laptop PC and a MM-CVT101 connected to the N2 Bus. After the local NDM is downloaded, you can download a remote NDM over telephone lines. You may also upload local and remote NDMs as well.

With HVAC PRO for Windows, you may:

- modify local and remote telephone numbers
- modify local or remote modem setup parameters
- commission, upload, and download remote controllers

Notes

Notes

Specifications

Product	N2 Dialer Module (NU-NDM101-0)
Power Requirements	9-12 VAC at 50/60 Hz or 9-12 VDC, 500 mA (120 VAC to 9 VDC supply is included with the unit.)
Ambient Operating Conditions	32 to 122°F (0 to 50°C) 10 to 90% RH
Ambient Storage Conditions	-40 to 158°F (-40 to 70°C) 5 to 95% RH
Dimensions (H x W x D)	6 in. x 4 in. x 2.0 in. (152 x 102 x 51 mm)
Shipping Weight	2 lb (0.9 kg)
Agency Compliance	FCC Part 15, Subpart B Class A Meets requirements for EMC directive 89/336/EEC.
Required Accessories (Order Separately)	HVAC PRO for Windows Rel. 5.1 or later (WS-WINPRO-0) Two Hayes Smartmodem™ Optima 96 or Optima 144, Practical Peripherals 144 V.32bis MiniTower II, US Robotics Sportster 14,400, or compatible modems (must be 100% Hayes compatible and support V.32 communications at 9600 baud or greater.) MM-CVT101-0 (RS-232-to-N2 Bus Converter) N2 Communications Bus Wire Dedicated Dial-up Telephone Line
Optional Accessories (Order Separately)	For Local Printer Application: Printer with serial interface adapter Facility Management System: Metasys® Companion™ Rel. 6.0 or later (used to monitor and command controllers) EN-EWC12-0 Universal Packaging Module (used to enclose NDM and modem) RS-232 Extender Cable, straight through male-to-female (used to extend 24 inch RS-232 cable that comes standard with NDM)

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.



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