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Member of BACnet international

HPD0460BN Multi-Function Room Units, BACnet MS/TP

FW4.02

The HPD0460BN devices may be used as BACnet networked HVAC devices or standalone; as an HMI for control and display of multiple controllers on a local network, as a controller with high flexibility for user configuration to suit a wide variety of control applications or as a network manager including multi-zone annual time scheduling. The display is programmable to indicate user specific text and dynamic data points. Data points may be adjusted directly at the LCD (parameters such as set-points, fan-speeds and manual overrides). The text and dynamic values for each of the 32 user lines may be set as small font size or large font size.

The user push-buttons, indication LED's and an audible sounder may be independently programmed to suit the user application. Physical I/O points may be used in the system independently or, subject to the version, by the internal control loops and logic blocks.

Depending on the version, logic function blocks enable easy configuration of a variety of functions including Economy Changeover (temperature or enthalpy), VAV Volume, Occupancy, Hours Run monitoring, Minutes Run monitoring, Lead/Lag changeover, instantaneous Power calculation (kW, BTU) and a wide array of hysteresis & dead-band/live-band choices (Compare function).

The time clock version features a 365 day clock/calendar with four channel time-switch, 20 holidays (one-off or annually recurring) and summer/winter time.

Common Features

- 32 line user programmable dot matrix LCD display with pop-up alarm text feature
- 1 Room temperature sensor on-board
- 1 Input programmable as DI or 10k NTC
- 2 Universal inputs (DI, 10k NTC, 100k NTC, 0-10Vdc or 4…20mA)
- 6 Digital outputs (ON/OFF, single or multi stage, 3-point floating, PWM)
- 4 User programmable operator buttons
- 4 User programmable indication LED's
- 1 User programmable audible alert beeper
- 48 Network Interface Objects (NIO's) for Peer-to-Peer communication
- 8 Virtual Digital Inputs (VDI)
- 8 Virtual Universal Inputs (VUI)

Typical Applications

- Temperature, humidity, pressure, IAQ, universal
- On/off, 3-point modulating, PWM (Pulse Width Modulation), step control, DX
- Residential, Commercial, Hotels
- Local User Interface, network interface, networked or standalone controller
- Time-clock & calendar / time-switch, networked or standalone

Versions

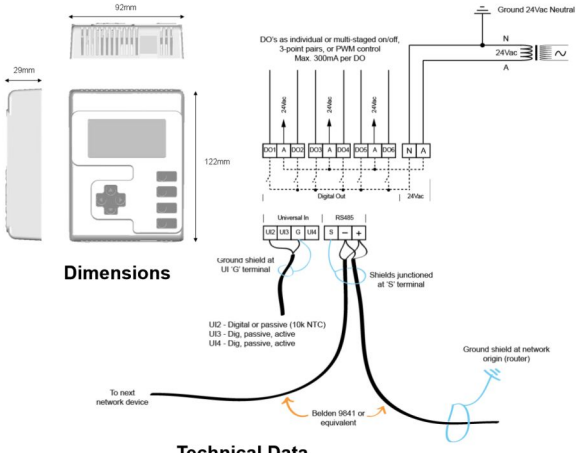
HPD0460BN	Network HMI, 10 Point, 24Vac
HPD0460BNC	Network HMI / Universal Controller, 10 Point, 24Vac
HPD0460BNCT	Network HMI / Universal Ctrl / Scheduler, 10 Point, 24Vac
HPD0460BNT	Network HMI / Scheduler, 10 Point, 24Vac

Feature Summary

- 6 Digital Outputs (DO) with power up presetting
- 1 NTC 10k temperature sensor internal (UI1)
- 1 Universal input (UI) fixed NTC 10k or DI n/o or n/c (UI2)
- 2 Universal Inputs (UI - user configurable analogue [AI] or binary [DI, n/o or n/c])
- 8 Virtual Digital Inputs (VDI)
- 8 Virtual UI's (VUI)
- 8 Digital Logic blocks (DL) © 🕒
- 8 Analogue Logic blocks (AL) © 🕒
- 8 PI Control Loop blocks (CL) ©
- 48 Network Interface Objects (NIO) for peer-to-peer connectivity
- 32 user programmable LCD lines (text and dynamic point per line)
- UI's user scalable and units user settable (C, F, rH, %, Pa, kPa, PPM, etc.)
- Connected sensors may be calibrated and filtered by way of the UI configuration
- DO change-of-state delay timer (short cycle timer)
- 365 day time clock & calendar 🕒
- 20 holidays, recurring or one-off event 🕒
- Summertime/Wintertime 🕒
- 4 Channel time switch 🕒
- 4 Push buttons, programmable to suit application (DI1, DI2, DI3, DI4)
- 4 Navigation buttons, up/down/right/left (DI5, DI6, DI7, DI8)
- 4 LED's, indication programmable to suit application (DO7, DO8, AO1, AO2)
- Audible alarm programmable to suit application (AO3)
- LCD Backlight, 60 sec after any button press
- Isolated, 256 node (1/8th load), RS485 network driver
- Communication speeds from 2400 baud up to 76800 baud
- System-wide unique device addressing
- BACnet application services; Single-Read, Multiple-Read, Single-Write, Who Is, I Am, Who Has, I Have
- BACnet priority array
- Automatic communication resumption after a power loss
- PC configuration by text file download using FUNCPROG or by direct parameter settings entry
- Upload text file data for retrieving lost application settings, for re-use in other controllers

© = Available in Controller versions 🕒 = Available in Time Clock versions

Connections



Technical Data

Inputs/Outputs	
4 DI, local user interfaces	DI1…4: User programmable buttons onboard
4 DI, navigation buttons	DI5…8: Fixed functionality, display navigation & setting buttons onboard
6 DO	DO1…DO6: 24Vac, 3A in-rush, 300mA holding max., minimum load 10mA
2 DO, local user interfaces	DO7…DO8: Fixed functionality, LED1… LED2; user programmable on, off or flashing (PWM configuration)
4 UI	UI1: Local °C (10kΩ NTC internal temperature sensor) UI2: Digital Input (DI) or 10kΩ NTC thermistor UI3 & UI4: - 10kΩ NTC thermistor (default), 20kΩ, 100kΩ - 0-5Vdc, 0-10Vdc, 0-20Vdc, 0.01 Volt resolution - 0…20mA, 4…20mA, 0.016mA resolution (requires external 18…28Vdc loop power supply)
3 AO, local user interfaces	AO1 & AO2: Fixed functionality, LED3… LED4; user programmable on, off or flashing (fixed PWM, 5 second cycle time; 100% command = on continuous / 20% command = on 1sec, off 4sec) AO3: Fixed functionality, Audible beeper; user programmable on, off or intermittent beep (fixed PWM, 5 second cycle time; 100% command = on continuous / 20% command = on 1sec, off 4sec)
Sensor/Transmitter Wiring	Shielded twisted pair (shield grounded)
Network Wiring	Belden 9841 low capacitance twisted pair for RS485 networks (braided + foil shield, shield continuous throughout the network and grounded at network origin)
Comms Speed	RS485 - 2400, 4800, 9600, 19200, 38400, 57600, 76800 baud
RS485 Driver	Isolated 1/8th load, 256 nodes over max. 1.2km without repeater
Power Supply	24Vac, 50/60 Hz, max. 5VA without DO load 50VA MAX. when DO's supplied via the device's 24Vac terminals and fully loaded @ max. 300mA / DO