PIC
PRICE INTELLIGENT CONTROLLER

PRICE | CONTROLS

PIC
Price Intelligent Controller

Typical System Configuration

The PIC is an advanced and configurable full DDC proportional integral (PI) zone controller that allows for exceptional user comfort and energy efficiency. Installation of the controller and thermostat is simple and error proof with RJ-45 (Ethernet) connections to the thermostat. All Price thermostats, except the wireless model, have a RJ-12 service port allowing setup and configuration without requiring access to the plenum.

FEATURES

+ Fast and error proof RJ-45 thermostat connections

+ Integrated actuator

+ Five 24 VAC binary outputs field selectable between hot and common switching

+ Four fully configurable 0-10 VDC analog outputs for heating, cooling, fan and auxiliary

+ Pluggable terminal blocks for easy field wiring

+ Diagnostic LEDs for BACnet and controller status

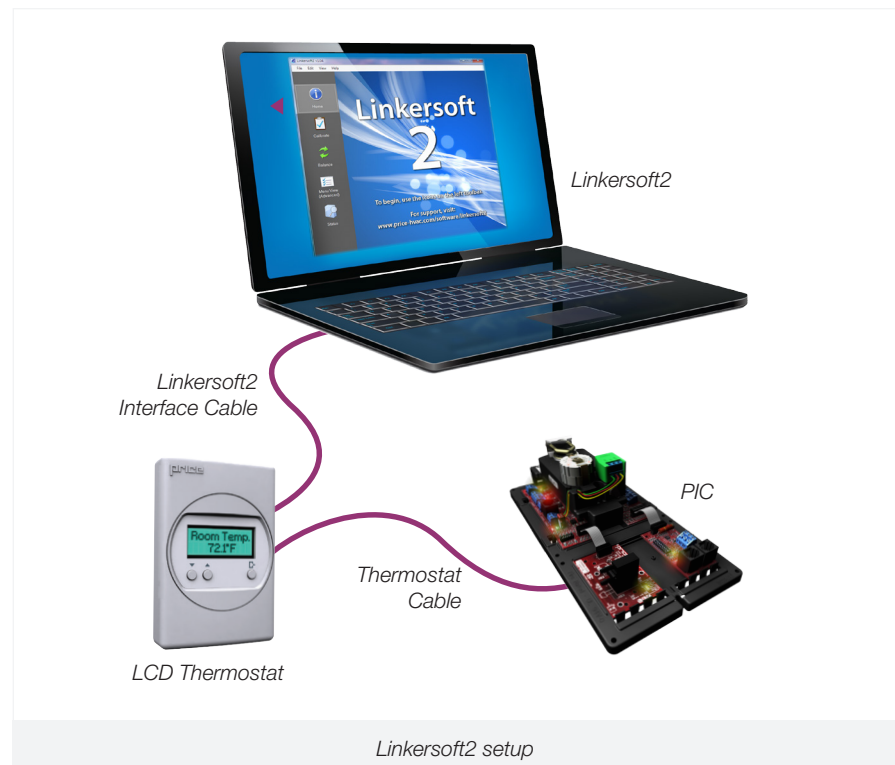+ Optional BACnet MS/TP and VAV flow sensing

A PIC mounted on a single duct VAV assembly with an LCD thermostat

Product Highlights

PIC Configuration

The PIC zone controller arrives on site fully programmed and configured for a specific VAV box – sequence, inlet size, airflows and K factor have already been entered at the factory. If any changes are needed, you can use the Linkersoft2 interface cable and software to make changes easily after installation. The interface cable plugs into any thermostat model's service port, allowing the installer to adjust virtually any setting in the PIC controller. This gives the installer the ability to access all these functions without having to climb into the ceiling plenum.

All of the steps above can also be completed using an LCD thermostat.

Linkersoft2

Linkersoft2 Interface Cable

PIC

Thermostat Cable

LCD Thermostat

Linkersoft2 setup

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Advantages of the PIC

Features	Benefits
Precision Control	
Advanced optional temperature compensated ultra-low flow through transducer	Measures airflow for precise and accurate space control – no drift, no recalibration
Accuracy of +/- 4.5% of reading – not maximum range	Provides extremely accurate control throughout the full operating range as opposed to just the upper control range
Resolves pressures down to 0.004 in. with operating range up to 2 in.	Takes advantage of energy savings at low flow; optimizes space comfort by delivering high flows during demanding periods
System Flexibility	
Full range of thermostats available	Supports the PIC with a wide range of options from the most cost-effective to full-feature selection
All data saved in the controller and not the thermostat	Enables one LCD thermostat to act as a service tool for an entire facility with dial or blank face thermostats; also allows for easy field upgrades
Fully configurable analog and binary ouputs – four analog, five binary	Controls electric heat, cooling/heating valves or auxiliary/fan applications
Controller carries BTL certification	Guarantees interoperability – no connection issues
Efficient Installation and Maintenance	
All wiring connections made by removable/pluggable terminal blocks	Saves time through fast and easy connections
Complete factory calibration – inlet size, K factors, CFMs already set	Saves valuable time on the job site – no need for service technician to program in variables
Use of LCD thermostat or Linkersoft2 for balancing, any on-site reconfiguring of factory set airflows and setting BACnet parameters	Eliminates need for expensive software and specialized training
Outputs configurable with just an LCD thermostat or Linkersoft2 software	Saves valuable time on the job site – no time spent by service technician programming each VAV
Diagnostic "receive" and "transmit" LED lights	Assists with network troubleshooting
Optional BACnet MS/TP with three-position pluggable terminal block for +, - and Net Com and plug-and-play capabilities	No gateways required – communicates directly with other BACnet devices, saving on cost and complexity

Interoperability with BACnet

If the BACnet option is selected, the PIC can connect to the latest building automation systems (BAS). Our BTL certified BACnet controller ensures no issues with communication onsite, reducing expensive troubleshooting and delays. Pluggable terminal blocks and receive-and-transmit LEDs all assist the installers in getting the job site up quickly. Setting BACnet addresses is simple using our LCD thermostat or Linkersoft2 commissioning software.

Wiring and Commissioning

Control Sequence

All PIC controllers come factory programmed for their sequence of operations. More detailed information on the control sequence and wiring can be found in the PIC operation and maintenance (O&M) manual.

Power

The PIC requires low voltage 24 VAC connection to operate. Price can supply a Price Power Module (PPM) or a factory-mounted transformer in a variety of line voltages or the installer can use an alternate 24 VAC power source.

Thermostat

All PIC thermostats use an RJ-45 connection. Price can supply this cable (standard model is 35 feet and can be doubled to 70 feet with a cable coupler), or the installer can provide his or her own. To save time and cost onsite, Price recommends purchasing our 35 foot cable with the PIC.

BACnet

The BACnet connection requires a low capacitance twisted pair and network ground wire. Price recommends using a plenum-rated CAT5 cable (using the orange and orange complement pair for Net – and Net +, and the brown and brown complement together for Net ground). Price recommends not exceeding 30 devices and 1,000 feet per MS/TP segment. This ensures a fast and reliable BACnet network.

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Simplified Ordering Guide – PIC

Sample Linestring:

250000-115/__/115-24V/2800/8/CLG MIN/50HZ/F/VAV-LF/
①   ②   ③   ④ ⑤   ⑥   ⑦ ⑧   ⑨

PRB/IOEXPANDER/__/LINKER2/BAC/PICMANUAL
⑩   ⑪   ⑫   ⑬   ⑭   ⑮

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1. APPLICATION

250000-115 = Single Inlet Terminal
250000-225 = PIC-HP Hydronic
250000-310 = Pressure Controller
250000-510 = Dual Duct Terminal

2. CONTROLS ENCLOSURE*

Blank = None Required
CE = Controls Enclosure for Circuit Board and Transformer
CEFM = Factory Mounted Controls, Enclosure for Circuit Board and Transformer

3. TRANSFORMER

Blank = None Required
24-24V = Isolation for DDC
115-24V = Step Down
208-24V = Step Down
240-24V = Step Down
277-24V = Step Down

4. SEQUENCE

Refer to Control Binder for Seq No.

5. INLET SIZE

4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 24x16, 9LP, 10LP, 12LP, 14LP, 16LP
(250000-115 ONLY)

6. AIR VOLUMES

Clg Min, Clg Max, Htg Min, Htg Max, Mix
See Air Volume Rules

7. SPECIAL CALIBRATION

Blank = No Special Calibration Required
50HZ = Calibrate Controls for 50HZ Power (International)
REVDPR = Calibrate for Reverse Damper Direction use for LGB
CSTM = Special Custom Calibration

8. T'STAT (N/A WITH 250000-310)

Blank = None Required
SENS = T'Stat with Blank Face
DIAL = T'Stat with Dial Setpoint Adjust
F = T'Stat with LCD Screen Units F (Fahrenheit)
C = T'Stat with LCD Screen Units C (Celsius)
MOT-F = T'Stat with LCD Screen and Motion Sensor Units F (Fahrenheit)
MOT-C = T'Stat with LCD Screen and Motion Sensor Units C (Celsius)
CO2H-F = LCD T'Stat with integrated CO_2 and Humidity Sensors Units F (Fahrenheit)
CO2H-C = LCD T'Stat with integrated CO_2 and Humidity Sensors Units C (Celsius)
WIRELESSD = Wireless T'Stat with Dial Setpoint Adjust

9. CONTROL TYPE

Blank = None Required
VAV-LF = Pressure Independent - Low Flow
VVT = Pressure Dependent

10. TEMP PROBE

Blank = None Required
PRB = Duct Temperature Probe Installed (Req'd for Heat/Cool Changeover)
PRB-PIPE = Loose Temperature Probe (Typically for Water Pipe Mtg)

11. CONTROL ACCESSORIES

DDModule = Dual Duct Expansion Module (-510 only/required)
IOExpander = Expansion Module (-115 only)
SPRB = Static Pressure Probe (-310 only)
CS = Condensate Sensor by Price (-225 only)
WSO = Window Switch by Others (-225 only)
CSO = Condensate Sensor by Others (-225 only)

12. CXY

Blank = None Required
Note: DDC Control Diagrams are produced by Price Application Engineering and issued as CXY diagram numbers. Complete information consisting of DDC Contract Form and "job specific" control wiring diagrams must be provided before an order is accepted and acknowledged. Controls must be received at Price factory two (2) weeks prior to expected ship date.

13. TOOLS

Blank = None Required
LINKER2 = Controls Interface Tool
LCD-Setup = Standalone Setup Tool

14. NETWORK INTERFACE

Blank = No On-Board Network Interface
BAC = Native BACnet MS/TP Interface

15. MANUAL

PIC-Manual = PIC Manual

*Note: Controls Enclosure selection is required for PIC-HP (-225)

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