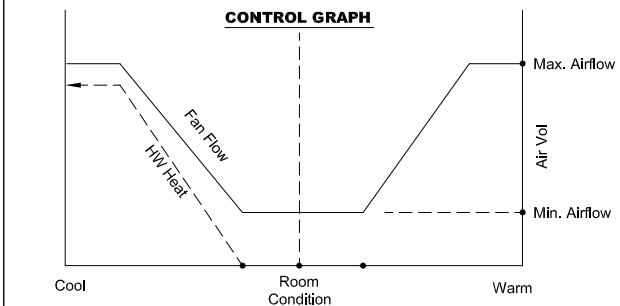


LEGEND

- PRICE NETC35 (RJ-45) - PLENUM CABLE - FIELD WIRED
- FACTORY ELECTRICAL WIRING
- - - FIELD ELECTRICAL WIRING



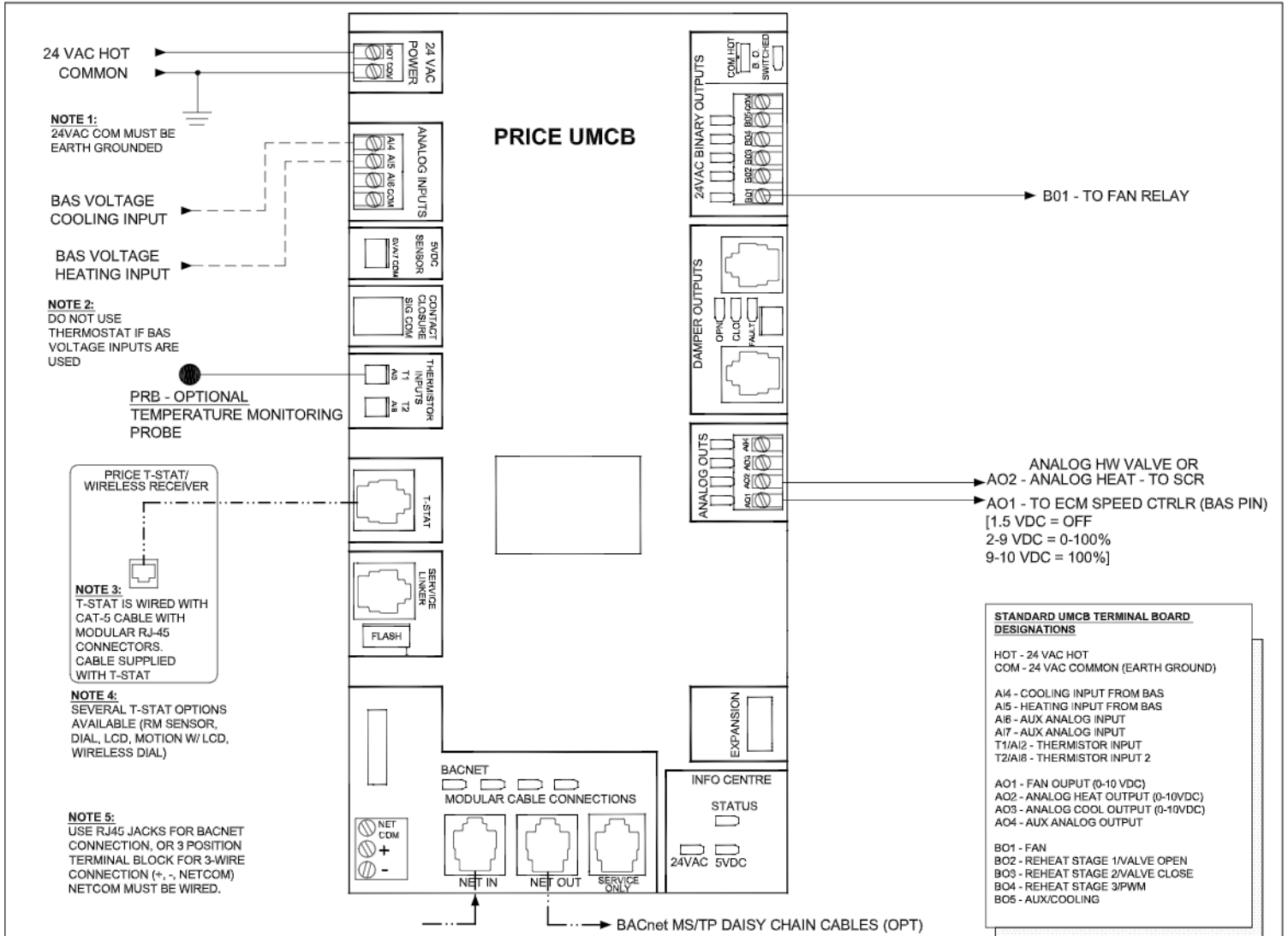
Sequence of Operation – Cooling with Modulating Fan; Tristate Heat with Modulating Fan.

Cooling: On an increase in space temperature the controller modulates the fan speed to increase the flow of cool air. On an increase in space temperature greater than the cooling proportional band the fan speed is maintained at its pre-selected maximum setting.

Heating: On a decrease in space temperature the controller modulates the heating valve to increase the heat proportionally to the room demand. The fan speed is modulated to increase the flow of warm air. On an increase in space temperature greater than the heating proportional band the fan speed is maintained at its pre-selected maximum setting.

Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

PROJECT:		<p>UNDERFLOOR UMCB CONTROLS MODULATING FAN CLG & HTG TRI-STATE REHEAT ECM MOTOR</p>
ENGINEER:	BE MB	
CUSTOMER:	249560	
SUBMITTAL DATE:	2017/08/18	
SPEC. SYMBOL:		

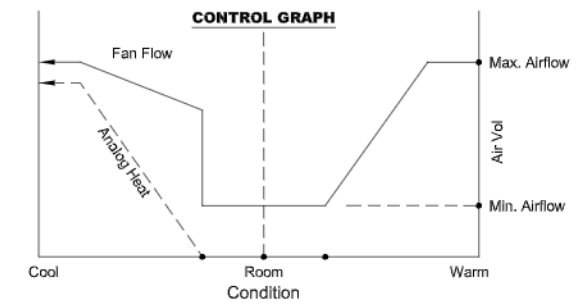


LEGEND

--- PRICE NETC35 (RJ-45) - PLENUM CABLE - FIELD WIRED

— FACTORY ELECTRICAL WIRING

- - - FIELD ELECTRICAL WIRING



Sequence of Operation -- Cooling with Modulating Fan; Analog Heat with Modulating Fan.

Cooling: On an increase in space temperature the controller modulates the fan speed to increase the flow of cool air. On an increase in space temperature greater than the cooling proportional band the fan speed is maintained at its pre-selected maximum setting.

Heating: On a decrease in space temperature the controller modulates the fan speed to the minimum heating flow. The analog heat output is modulated to increase the heat proportionally to the room demand while the fan speed is modulated to increase the flow of warm air. On an increase in space temperature greater than the heating proportional band the fan speed and analog heat output are maintained at their pre-selected maximum settings.

Note: B01 Fan output will energize prior to the heating outputs, allowing the fan to engage before the heat is enabled.

Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

PROJECT:	
ENGINEER:	
CUSTOMER:	
SUBMITTAL DATE:	SPEC. SYMBOL:

PRICE[®]

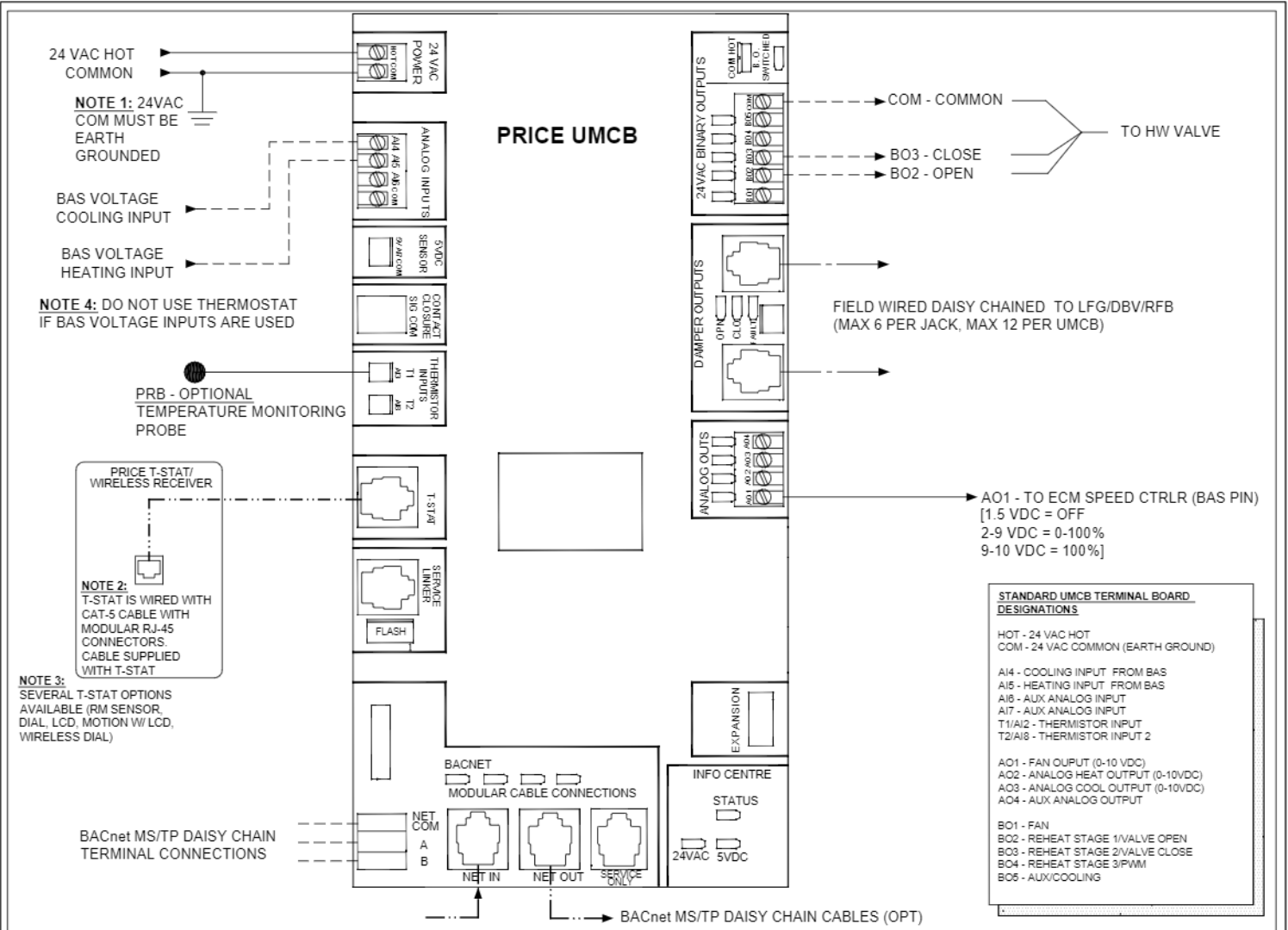
BE MB

**UNDERFLOOR
UMCB CONTROLS**

MODULATING FAN CLG & HTG
ANALOG REHEAT
ECM MOTOR

249561

2018/03/01



LEGEND

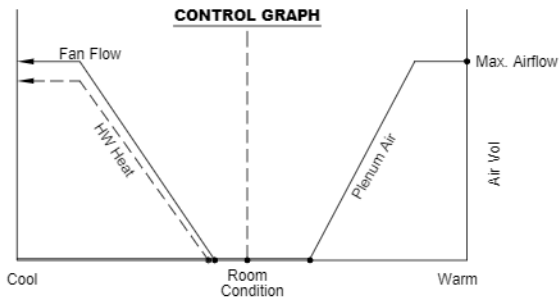
- PRICE SUPPLIED C25 (RJ-12) - PLENUM CABLE - FIELD WIRED
- PRICE NETC35 (RJ-45) - PLENUM CABLE - FIELD WIRED
- FACTORY ELECTRICAL WIRING
- FIELD ELECTRICAL WIRING

Sequence of Operation -- Plenum Cooling; Tristate Heat with Modulating Fan.
On power up the damper will calibrate open to the plenum for 2 minutes.

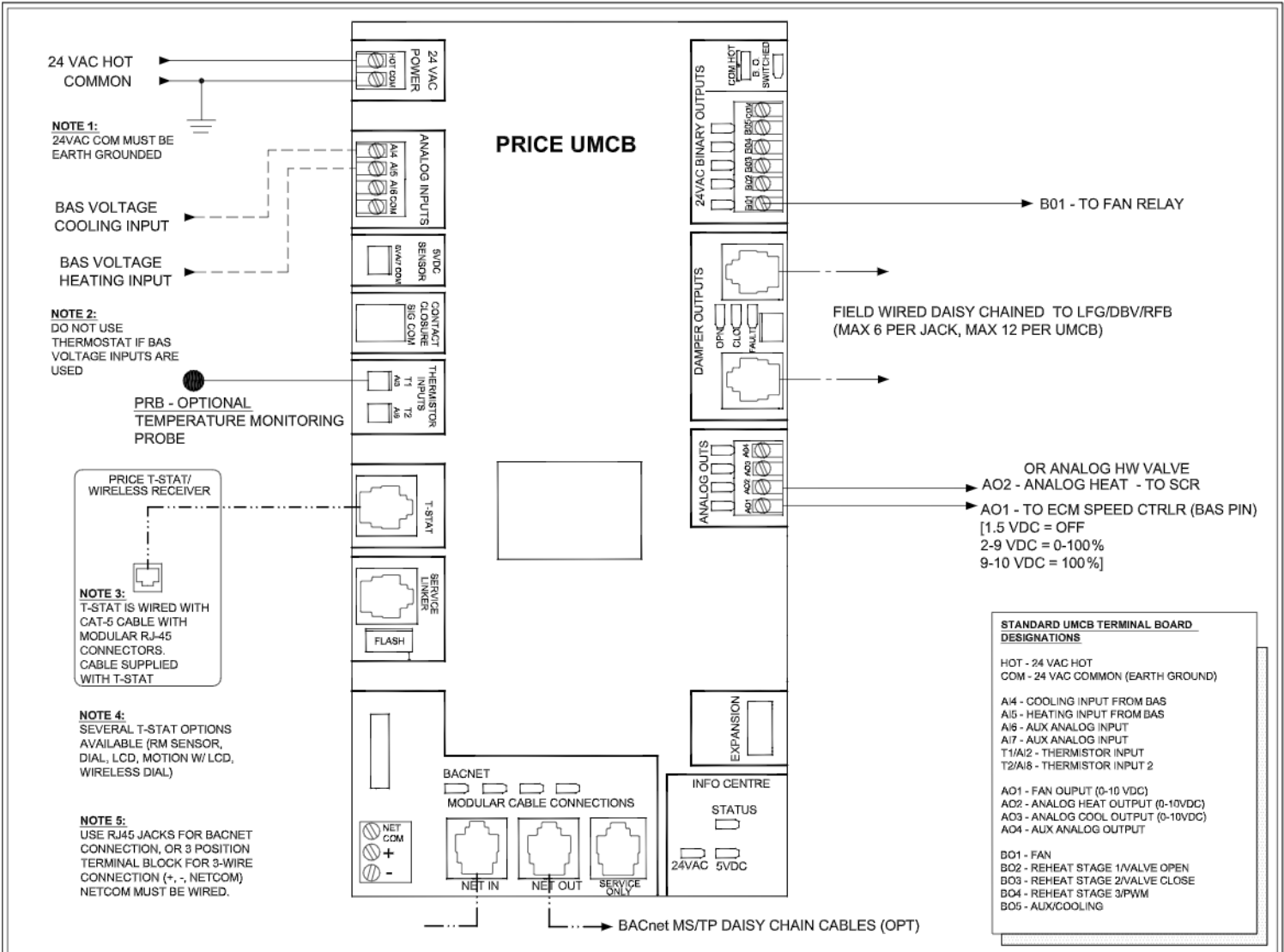
Cooling: On an increase in space temperature, the controller regulates the VAV floor diffuser actuators to increase the flow of cool plenum air. On an increase of space temperature greater than the cooling proportional band, the floor diffusers are maintained at their pre-selected maximum setting.

Heating: On a decrease in space temperature, the controller regulates the VAV floor diffuser actuators closed to the plenum. The controller modulates the heating valve to increase the heat proportionally to the room demand while the fan is modulated to increase the flow of warm air. On an increase in space temperature greater than the heating proportional band, the fan speed is maintained at its pre-selected maximum setting.

Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

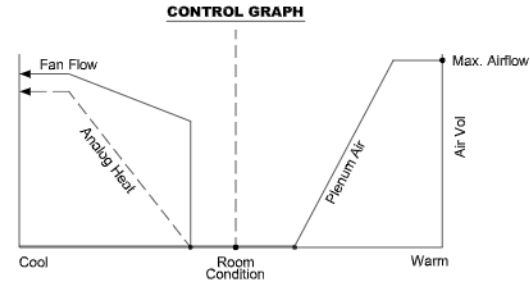


PROJECT:		 UNDER FLOOR UMCB CONTROLS VAV Plenum CLG Modulating Fan on Reheat Tristate Reheat ECM Motor
ENGINEER:		
CUSTOMER:		
SUBMITTAL DATE:	SPEC. SYMBOL:	



LEGEND

- PRICE SUPPLIED C25 (RJ-12) - PLENUM CABLE - FIELD WIRED
- - - PRICE NETC35 (RJ-45) - PLENUM CABLE - FIELD WIRED
- _____ FACTORY ELECTRICAL WIRING
- - - - - FIELD ELECTRICAL WIRING



Sequence of Operation -- Plenum Cooling; Analog Heat with Modulating Fan
 On power up the damper will calibrate open to the plenum for 2 minutes.

Cooling: On an increase in space temperature, the controller regulates the VAV floor diffuser actuators to increase the flow of cool plenum air. On an increase of space temperature greater than the cooling proportional band, the floor diffusers are maintained at their pre-selected maximum setting.

Heating: On a decrease in space temperature, the controller regulates the VAV floor diffuser actuators closed to the plenum, and the fan speed to the minimum heating flow. The analog heat output is modulated to increase the heat proportionally to the room demand while the fan speed is modulated to increase the flow of warm air. On an increase in space temperature greater than the heating proportional band, the fan speed and the analog heat output are maintained at their pre-selected maximum settings.

Note: B01 Fan output will energize prior to the heating outputs, allowing the fan to engage before the heat is enabled.

Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

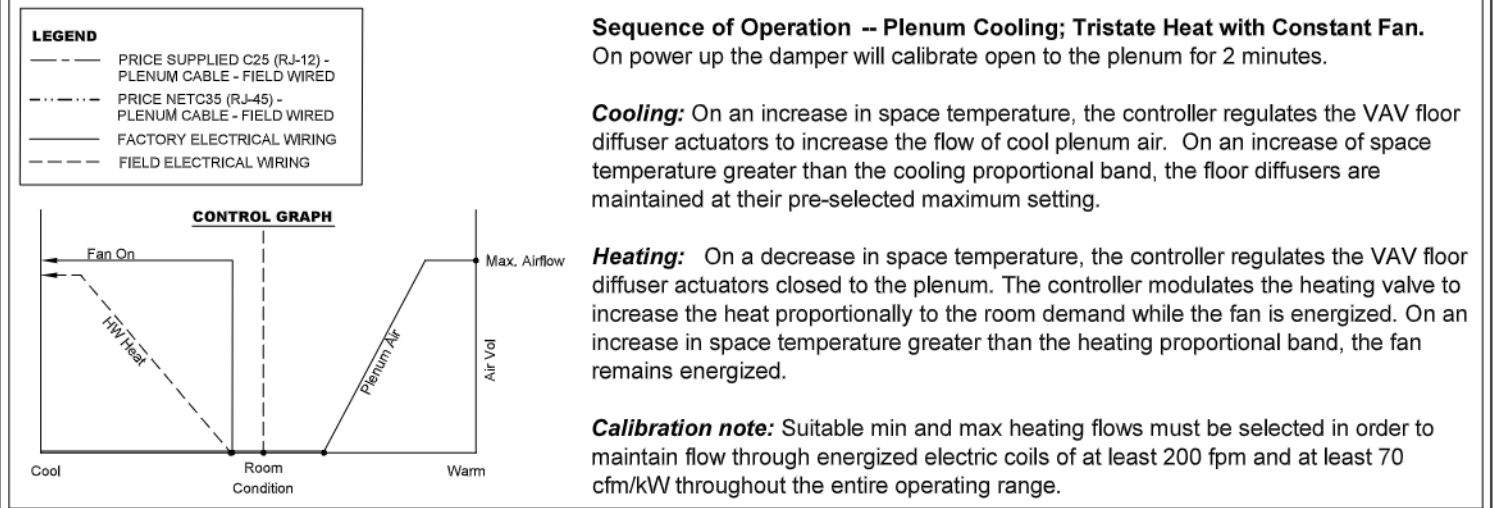
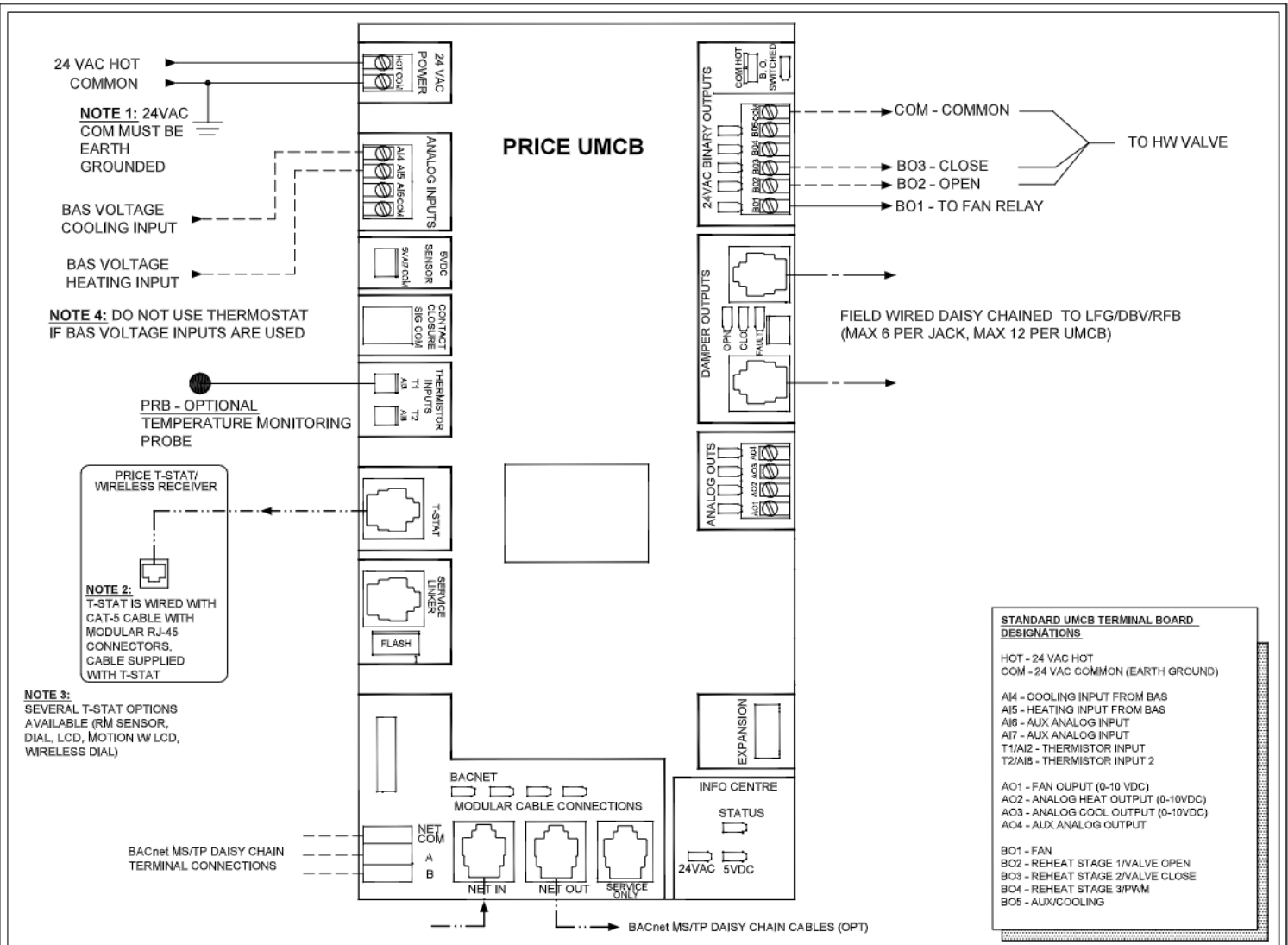
SPEC. SYMBOL:

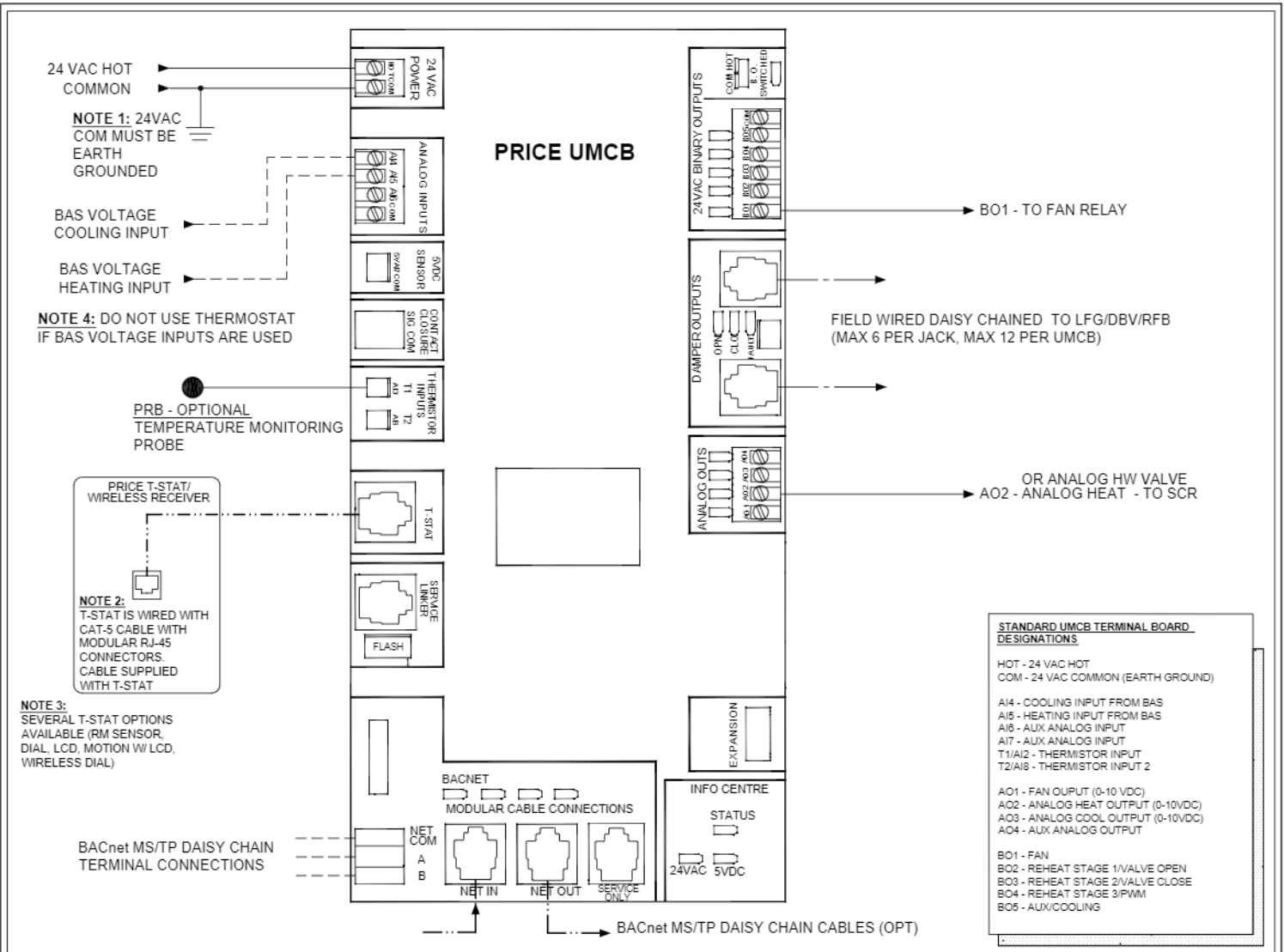
PRICE[®]

**UNDERFLOOR
UMCB CONTROLS**
 VAV PLENUM CLG
 MODULATING FAN ON REHEAT
 ANALOG REHEAT
 ECM Motors

249564

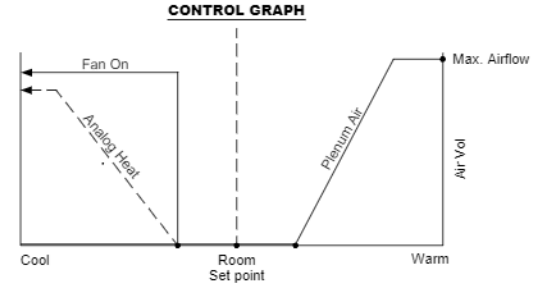
2017/08/18





LEGEND

- PRICE SUPPLIED C25 (RJ-12) - PLENUM CABLE - FIELD WIRED
- - - - PRICE NETC35 (RJ-45) - PLENUM CABLE - FIELD WIRED
- _____ FACTORY ELECTRICAL WIRING
- FIELD ELECTRICAL WIRING



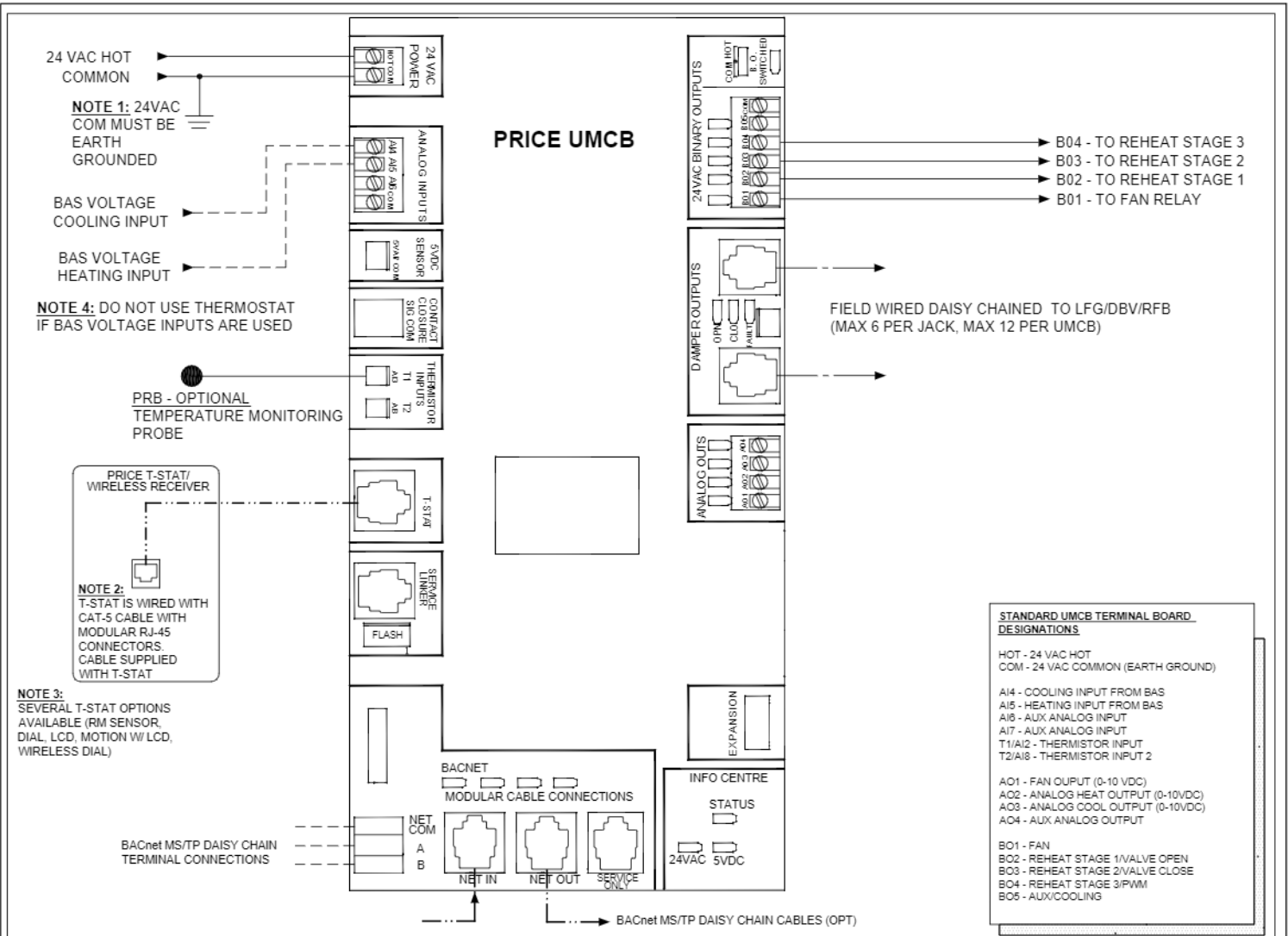
Sequence of Operation -- Plenum Cooling; Analog Heat with Constant Fan
On power up the damper will calibrate open to the plenum for 2 minutes.

Cooling: On an increase in space temperature, the controller regulates the VAV floor diffuser actuators to increase the flow of cool plenum air. On an increase of space temperature greater than the cooling proportional band, the floor diffusers are maintained at their pre-selected maximum setting.

Heating: On a decrease in space temperature, the controller regulates the VAV floor diffuser actuators closed to the plenum, and the fan is energized. The analog heat output is modulated to increase the heat proportionally to the room demand. On an increase in space temperature greater than the heating proportional band, the fan remains energized and the analog heat output is maintained at its pre-selected maximum setting.

Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

PROJECT:		<p>UNDER FLOOR UMCB CONTROLS</p> <p>VAV Plenum CLG Constant Fan on Reheat Analog Reheat PSC Motor</p>
ENGINEER:		
CUSTOMER:		
SUBMITTAL DATE:	SPEC. SYMBOL:	
		<p>249567</p> <p>2009/02/25</p>



PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

PRICE[®]

UNDER FLOOR UMCB CONTROLS

VAV Plenum CLG

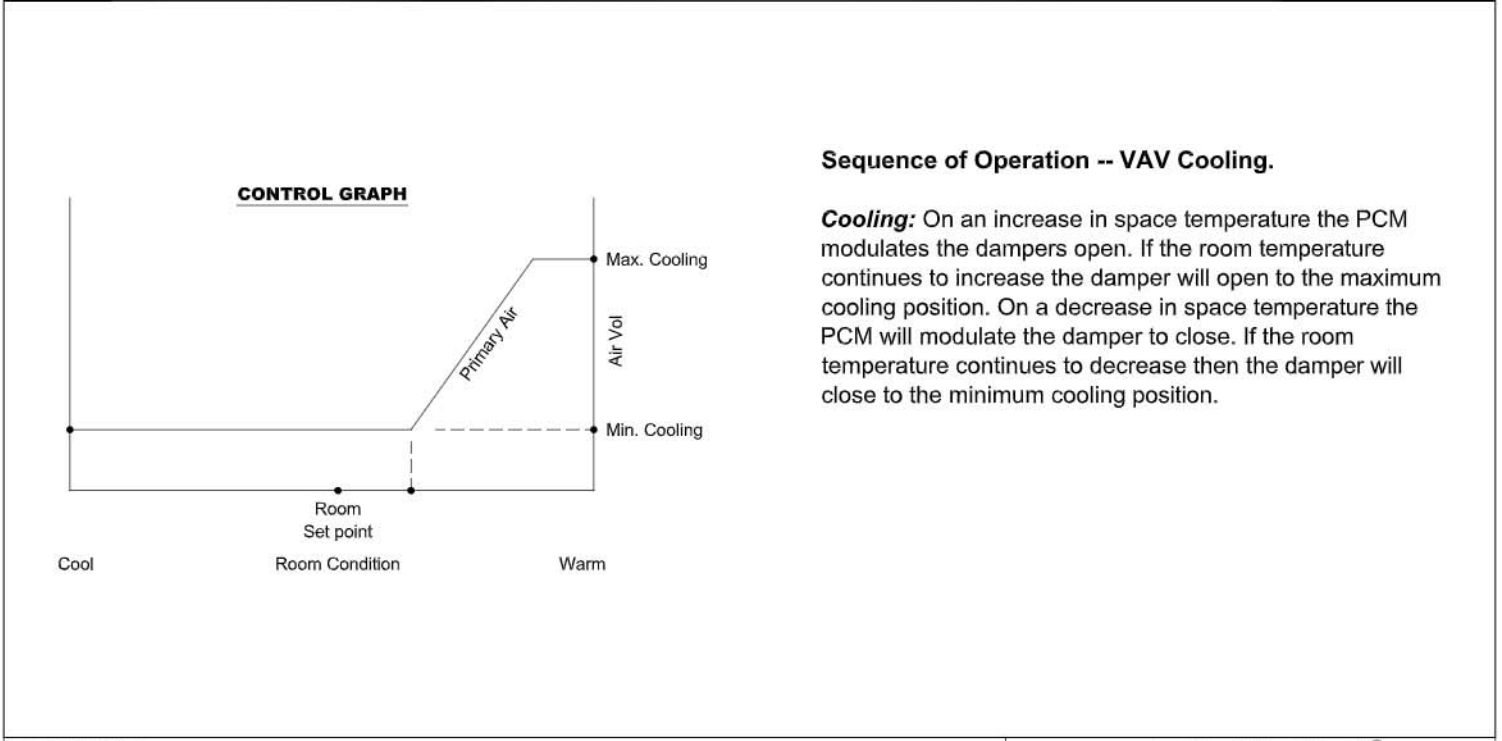
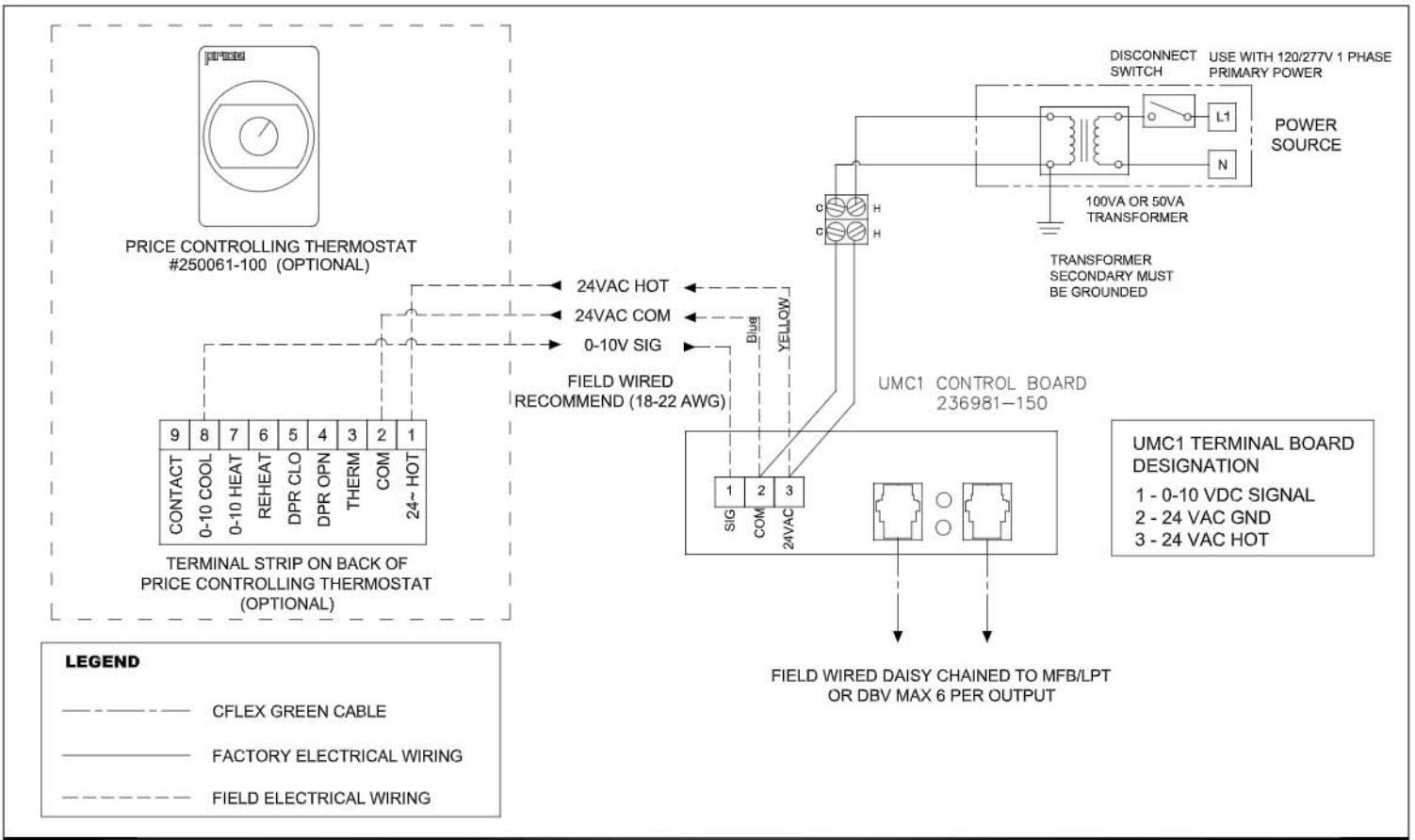
Constant Fan on Reheat

1-3 Stages of Binary Reheat

PSC Motor

249568

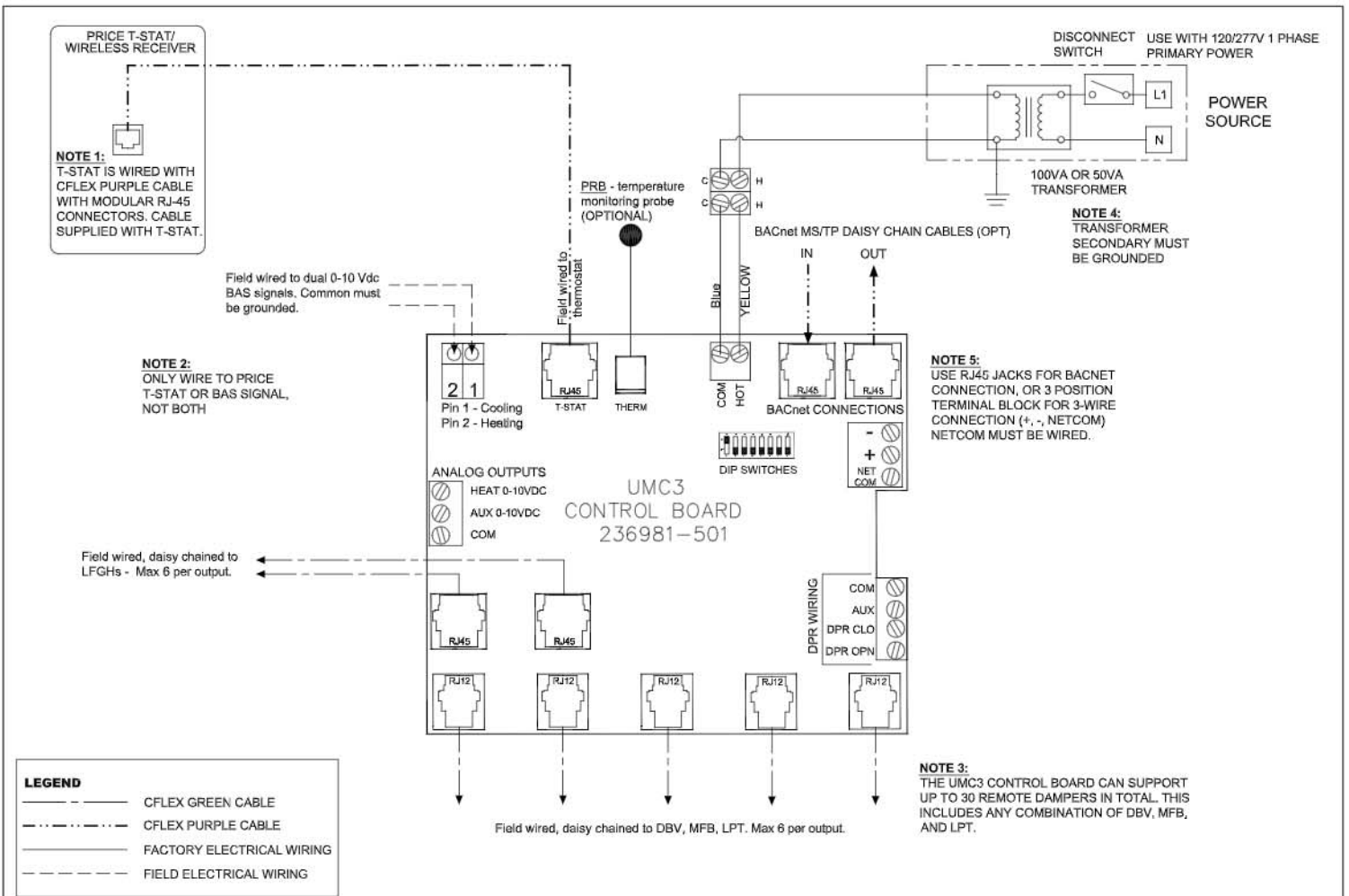
2009/02/25



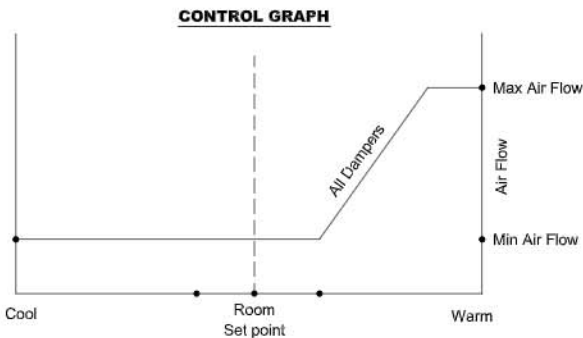
Sequence of Operation -- VAV Cooling.

Cooling: On an increase in space temperature the PCM modulates the dampers open. If the room temperature continues to increase the damper will open to the maximum cooling position. On a decrease in space temperature the PCM will modulate the damper to close. If the room temperature continues to decrease then the damper will close to the minimum cooling position.

PROJECT:		PRICE [®]
ENGINEER:		
CUSTOMER:		255520
SUBMITTAL DATE:	SPEC. SYMBOL:	2019/01/03



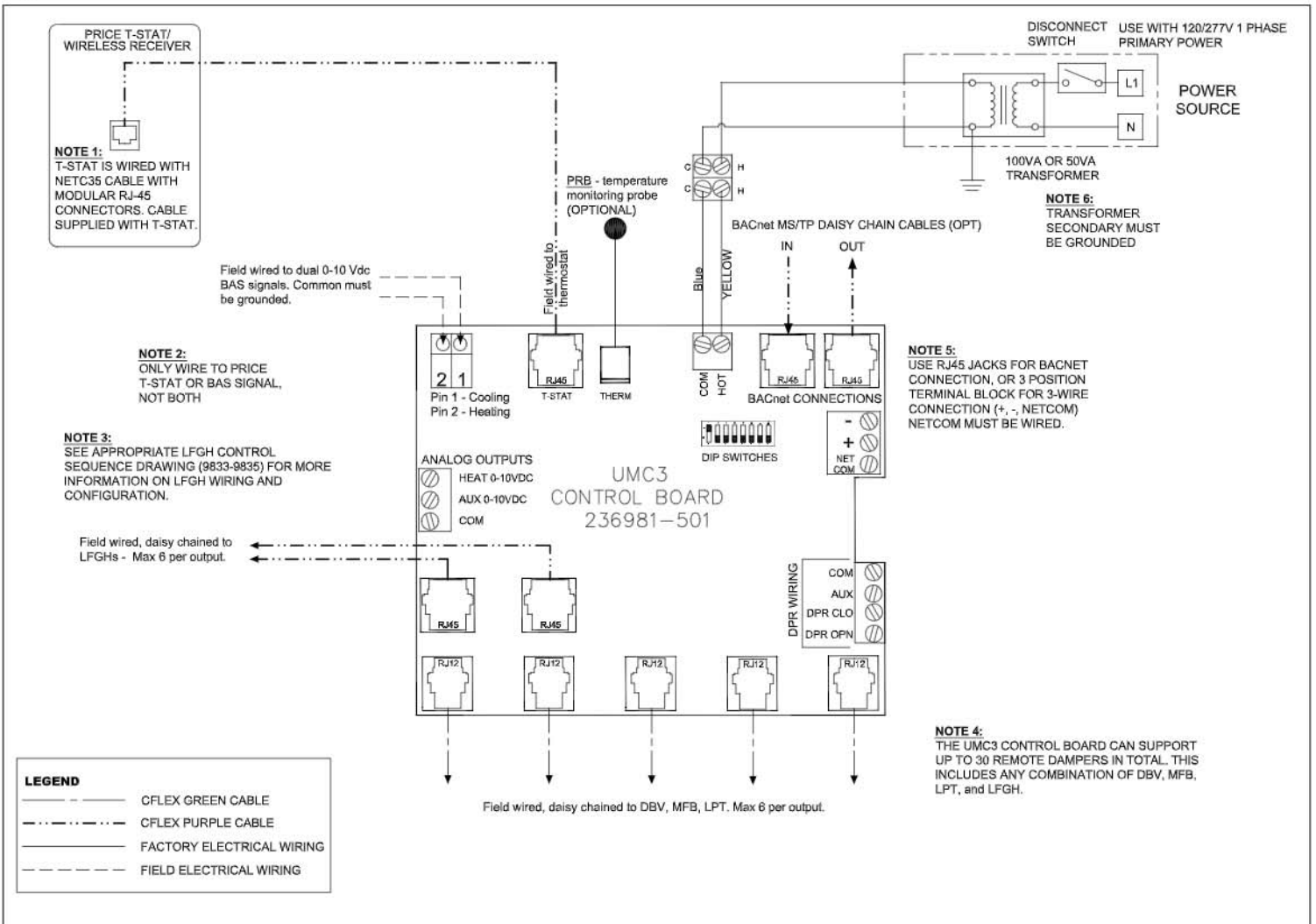
Sequence of Operation -- Interior Zone (DBV, MFB, LPT)



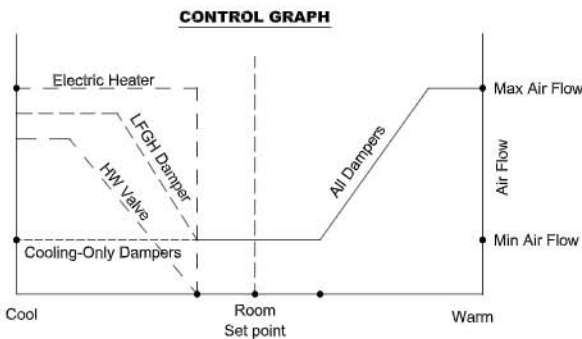
Cooling: When the room temperature increases above the room set point, all floor diffuser dampers modulate between the preselected minimum and maximum positions to meet room demand.

Heating: When the room temperature decreases below the room set point, all floor diffuser dampers remain at the preselected minimum position to prevent overcooling of the room.

PROJECT:		PRICE [®]
ENGINEER:		
CUSTOMER:		249575
SUBMITTAL DATE:	SPEC. SYMBOL:	2019/01/03



Sequence of Operation -- Variable Cooling (DBV, MFB, LPT); Variable Heating (LFGH)



Cooling: When the room temperature increases above the room set point, all floor diffuser dampers modulate between the preselected minimum and maximum positions to meet room demand.

Heating: When the room temperature decreases below the room set point, the cooling-only diffuser dampers (DBV, MFB, LPT) remain at the preselected minimum position. The LFGH dampers modulate between preselected minimum and maximum positions to allow air to flow across the heating coil. The LFGH either activates the electric heater or modulates the hot water valve to provide warm air to the space.

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

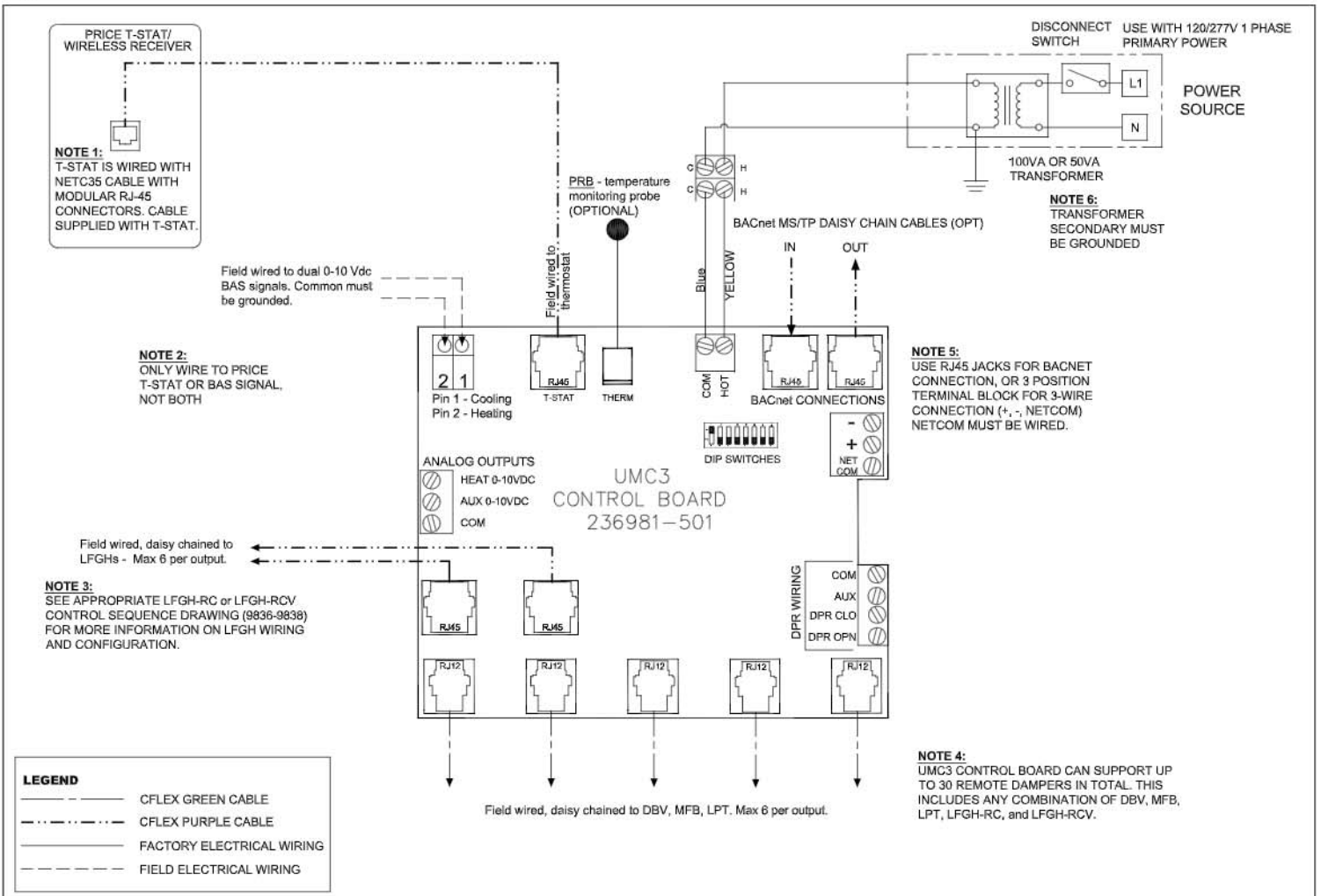
SPEC. SYMBOL:

PRICE[®]

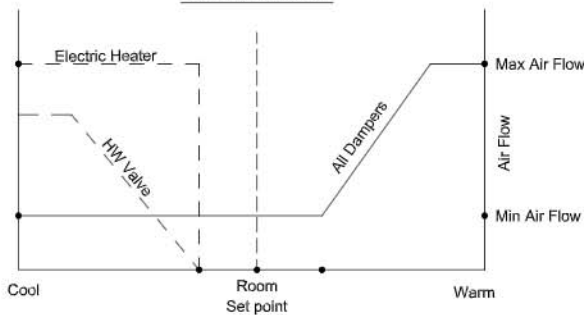
**UNDERFLOOR
PCM CONTROLLER**
PERIMETER ZONE (PZ1)
LFGH HEATING

263975

2019/01/04



CONTROL GRAPH



Sequence of Operation -- Variable Cooling (DBV, MFB, LPT); Convective Heating (LFGH-RC or LFGH-RCV)

Cooling: When the room temperature increases above the room set point, all floor diffuser dampers modulate between the preselected minimum and maximum positions to meet room demand.

Heating: When the room temperature decreases below the room set point, all floor diffuser dampers (DBV, MFB, LPT, LFGH-RCV) remain at the preselected minimum position. The LFGH-RC or LFGH-RCV either activates the electric heater or modulates the hot water valve to provide warm air to the space. There is no airflow across the heating coil other than natural convection.

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

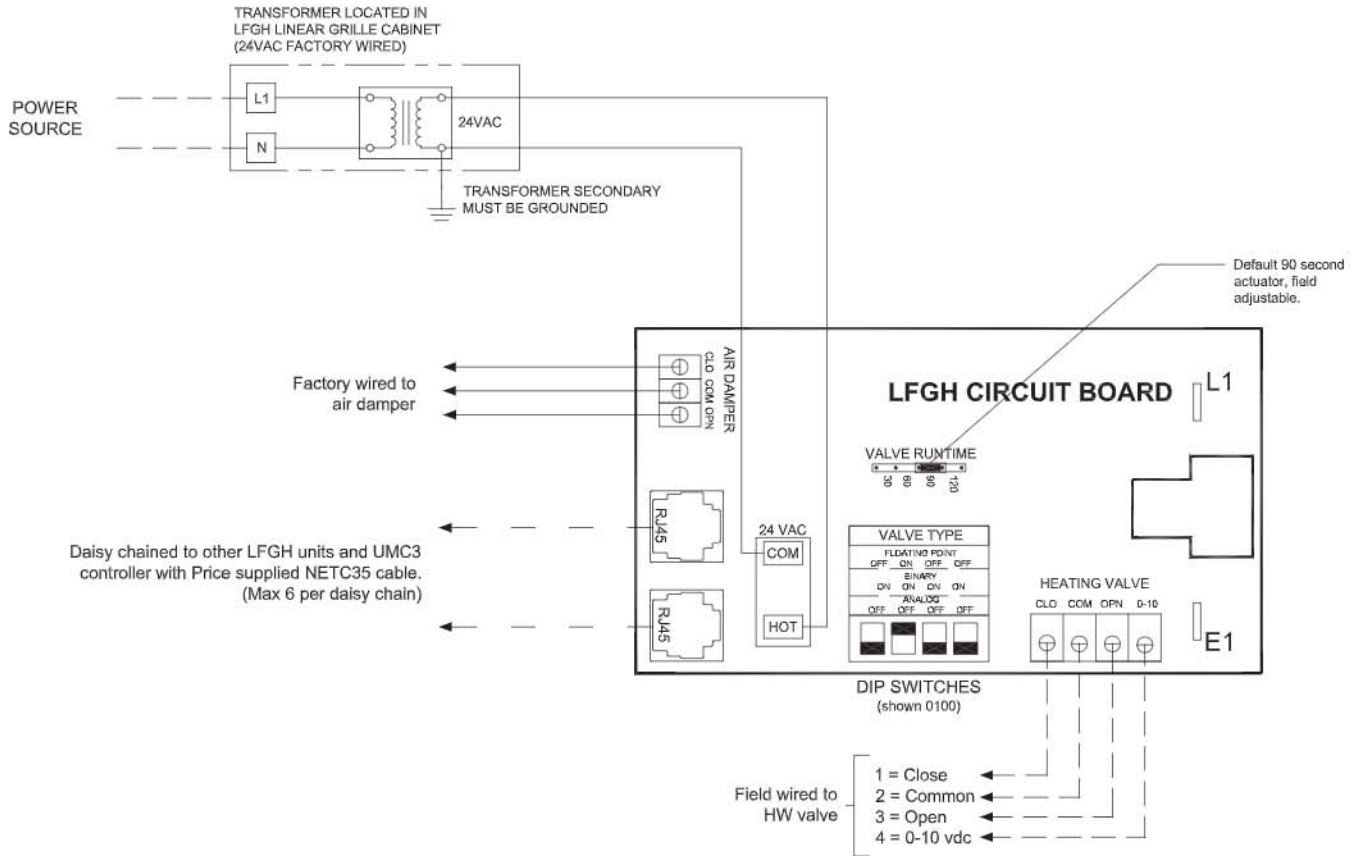
PRICE[®]

BC MB

**UNDERFLOOR
PCM CONTROLLER**
PERIMETER ZONE (PZ1)
LFGH-RC-RCV HEATING

263976

2019/01/04

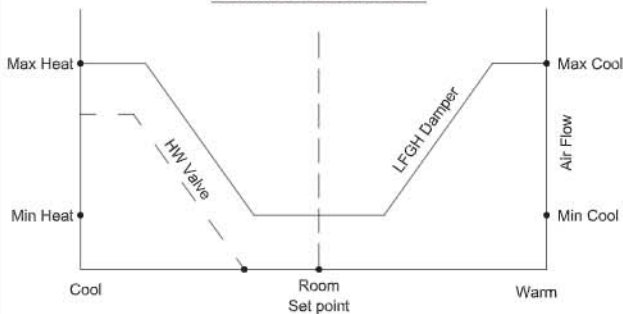


LEGEND

—	NETC35 PLENUM CABLE
—	FACTORY ELECTRICAL WIRING
- - -	FIELD ELECTRICAL WIRING

Note 1:
DIP switches must be field set to match the HW valve at the time of installation:
0000 = Analog Valve
0100 = Floating Point Valve (shown above)
1111 = Binary Valve or Electric Coil

CONTROL GRAPH - LFGH



Sequence of Operation: LFGH, Variable Cooling & Heating with HW Valve

Cooling: When the room temperature increases above the room set point the damper on the LFGH modulates between a preselected minimum position and a preselected maximum position to meet room demand. The HW valve remains closed.

Heating: When the room temperature decreases below the room set point the damper on the LFGH modulates between a preselected heating minimum position and a preselected heating maximum position to meet room demand. The LFGH will modulate the hot water valve to enable heat and provide warm air to the space.

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

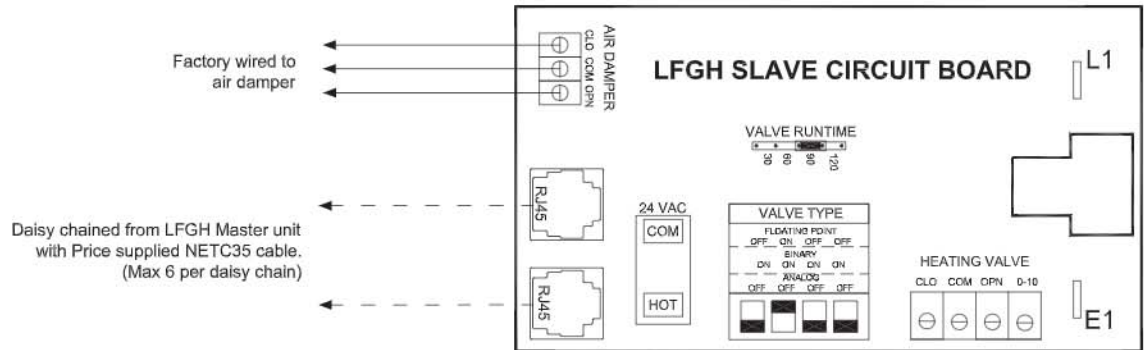


BM
mn

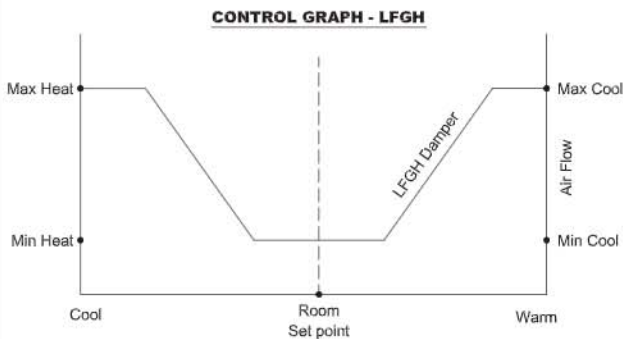
**UNDERFLOOR CONTROLS
LFGH CIRCUIT BOARD
MASTER CONTROLLER
HOT WATER VALVE
SEQUENCE**

263968

2013/11/28



LEGEND	
---	NETC35 PLENUM CABLE
—	FACTORY ELECTRICAL WIRING
- - - -	FIELD ELECTRICAL WIRING



Sequence of Operation: LFGH Slave Unit, Variable Cooling & Heating

Cooling: When the room temperature increases above the room set point the damper on the LFGH modulates between a preselected minimum position and a preselected maximum position to meet room demand.

Heating: When the room temperature decreases below the room set point the damper on the LFGH modulates between a preselected heating minimum position and a preselected heating maximum position to meet room demand.

HW Valve: The LFGH slave unit does not control the amount of water flow through the coil; the HW water valve is controlled by the LFGH master unit.

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

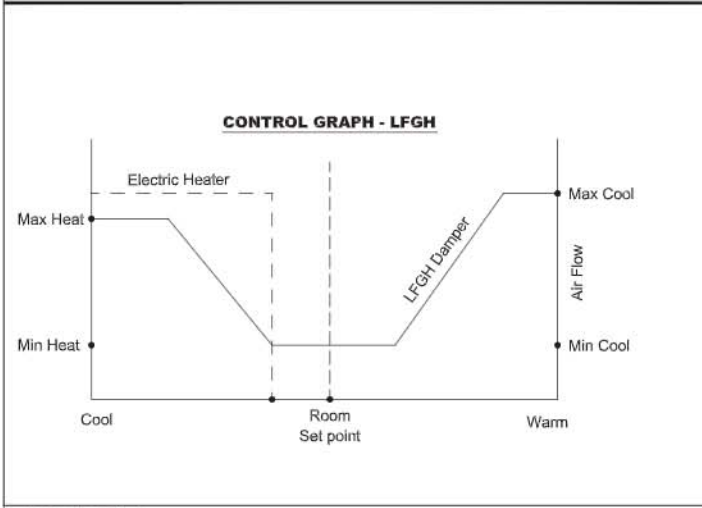
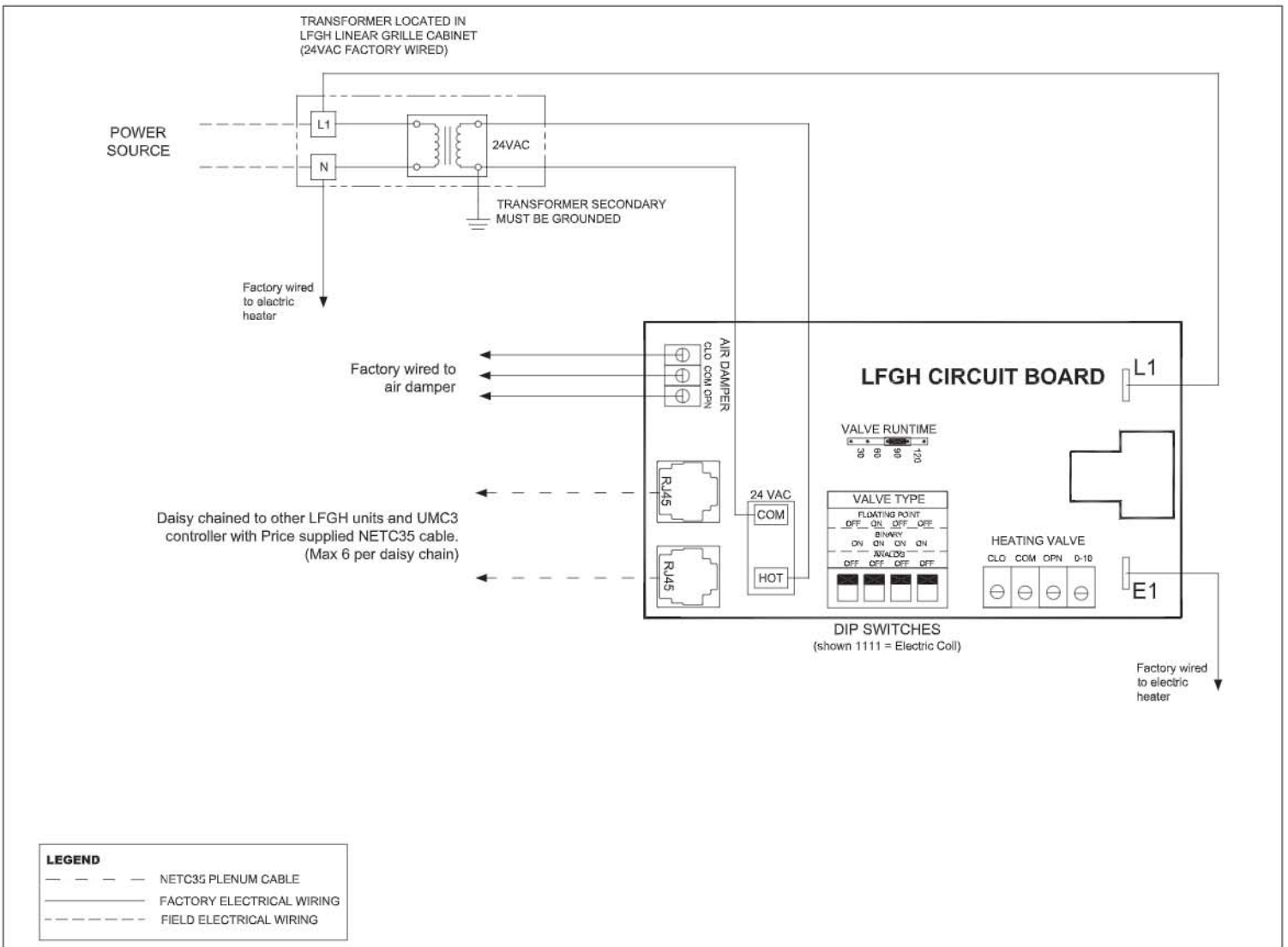


BM
mn

**UNDERFLOOR CONTROLS
LFGH CIRCUIT BOARD
HOT WATER
SLAVE CONTROLLER
SEQUENCE**

263969

2013/11/28

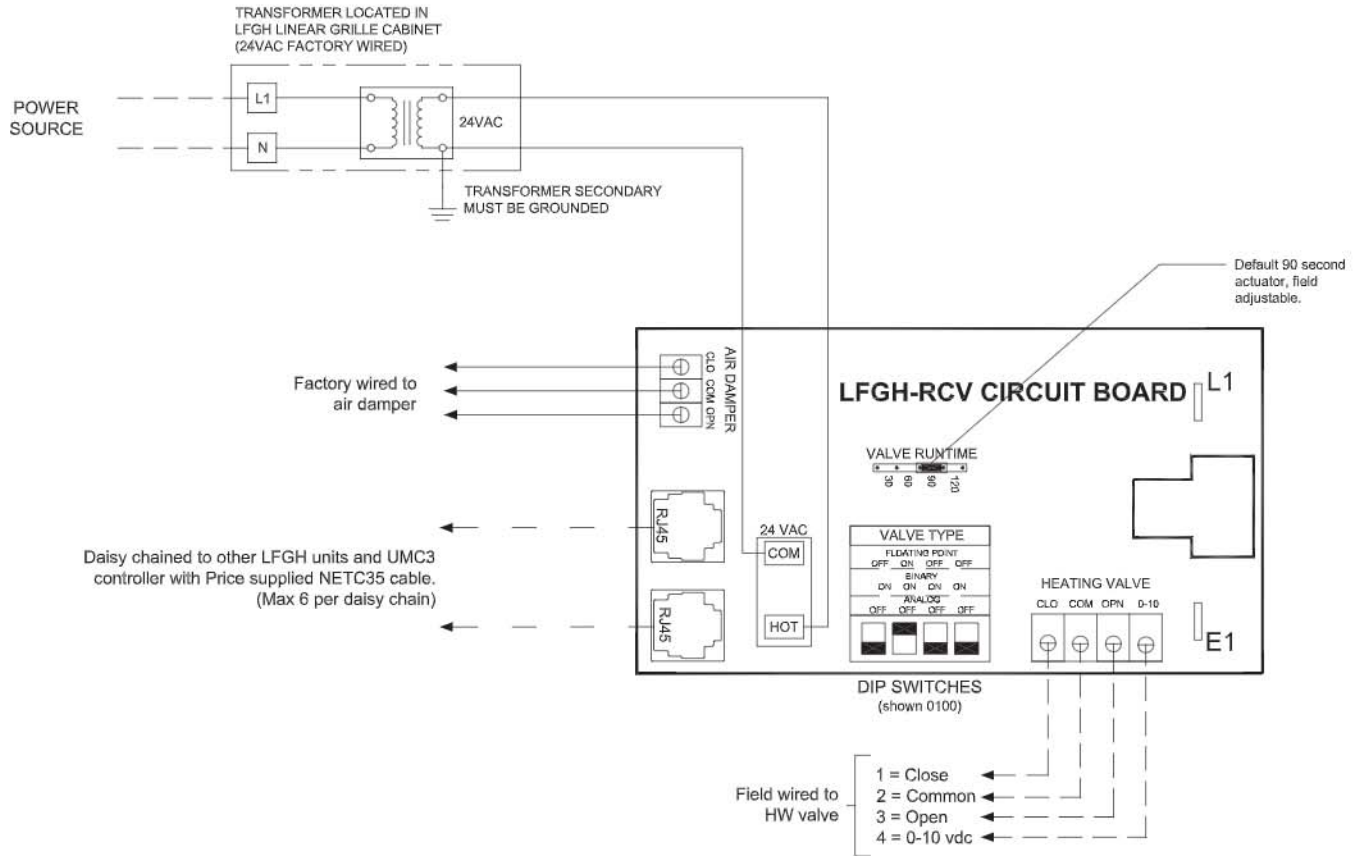


Sequence of Operation: LFGH Electric, Variable Cooling & Heating with Electric Coil

Cooling: When the room temperature increases above the room set point the damper on the LFGH modulates between a preselected minimum position and a preselected maximum position to meet room demand. The electric coil remains off.

Heating: When the room temperature decreases below the room set point the damper on the LFGH modulates between a preselected heating minimum position and a preselected heating maximum position to meet room demand. The LFGH activates an electric heater to provide warm air to the space.

PROJECT:		PRICE [®]
ENGINEER:		
CUSTOMER:		BM/mn
SUBMITTAL DATE:		263970
SPEC. SYMBOL:		2013/11/28

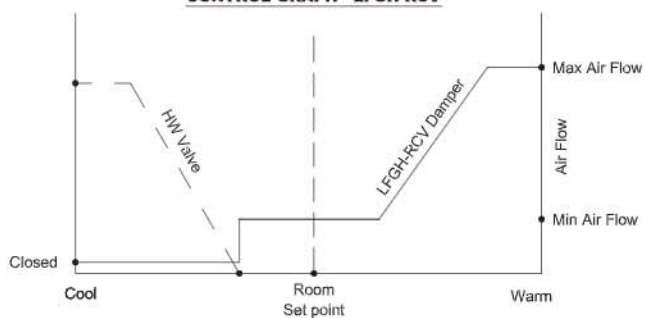


LEGEND

	NETC35 PLENUM CABLE
	FACTORY ELECTRICAL WIRING
	FIELD ELECTRICAL WIRING

Note 1:
 DIP switches must be field set to match the HW valve at the time of installation:
 0000 = Analog Valve
 0100 = Floating Point Valve (shown above)
 1111 = Binary Valve or Electric Coil

CONTROL GRAPH - LFGH-RCV



**Sequence of Operation:
LFGH-RCV, Variable Cooling & Heating - Master LFGH Board**

Cooling: When the room temperature increases above the room set point the damper on the LFGH-RCV modulates between a preselected minimum position and a preselected maximum position to meet the room demand.

Heating: When the room temperature decreases below the room set point the damper on the LFGH-RCV will remain closed. The LFGH-RCV will modulate the hot water valve to enable heat and provide warm air to the space.

PROJECT:

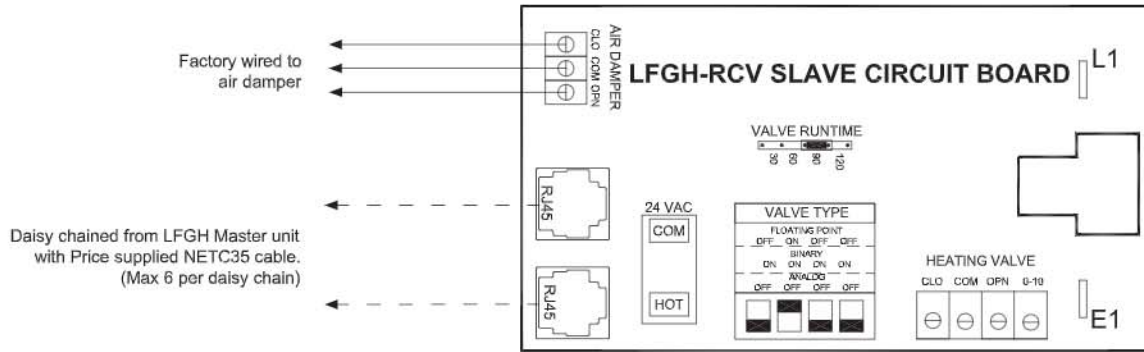
ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

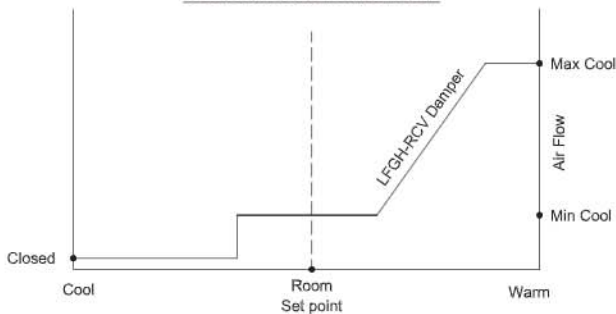
PRICE [®]	
	UNDERFLOOR CONTROLS LFGH-RCV CIRCUIT BOARD
263971	MASTER CONTROLLER HOT WATER VALVE SEQUENCE
2013/11/28	REV 0



LEGEND

---	NETC35 PLENUM CABLE
—	FACTORY ELECTRICAL WIRING
---	FIELD ELECTRICAL WIRING

CONTROL GRAPH - LFGH-RCV



Sequence of Operation: LFGH-RCV Slave Unit, Variable Cooling & Heating

Cooling: When the room temperature increases above the room set point the damper on the LFGH-RCV modulates between a preselected minimum position and a preselected maximum position to meet room demand.

Heating: When the room temperature decreases below the room set point the damper on the LFGH-RCV will remain closed.

HW Valve: The LFGH-RCV slave unit does not control the amount of water flow through the coil; the HW water valve is controlled by the LFGH-RCV master unit.

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

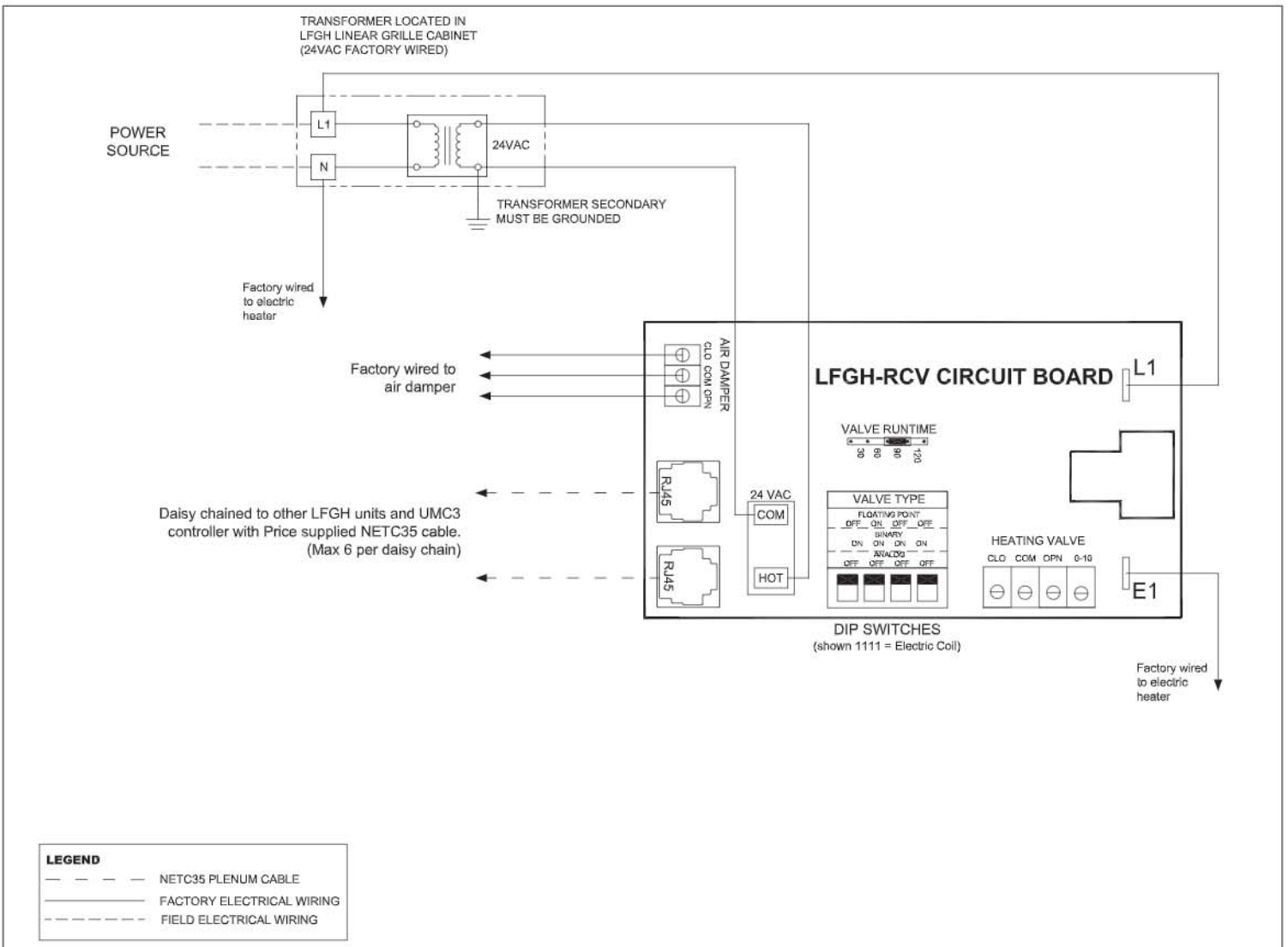


BM
mn

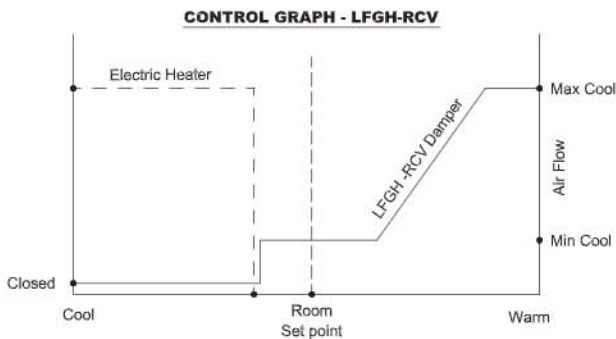
**UNDERFLOOR CONTROLS
LFGH-RCV CIRCUIT BOARD**
HOT WATER
SLAVE CONTROLLER
SEQUENCE

263972

2013/11/28



Sequence of Operation: LFGH-RCV Electric, Variable Cooling & Heating with Electric Coil



Cooling: When the room temperature increases above the room set point the damper on the LFGH-RCV modulates between a preselected minimum position and a preselected maximum position to meet room demand. The electric coil remains off.

Heating: When the room temperature decreases below the room set point the damper on the LFGH-RCV will remain closed. The LFGH-RCV activates an electric heater to provide warm air to the space.

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

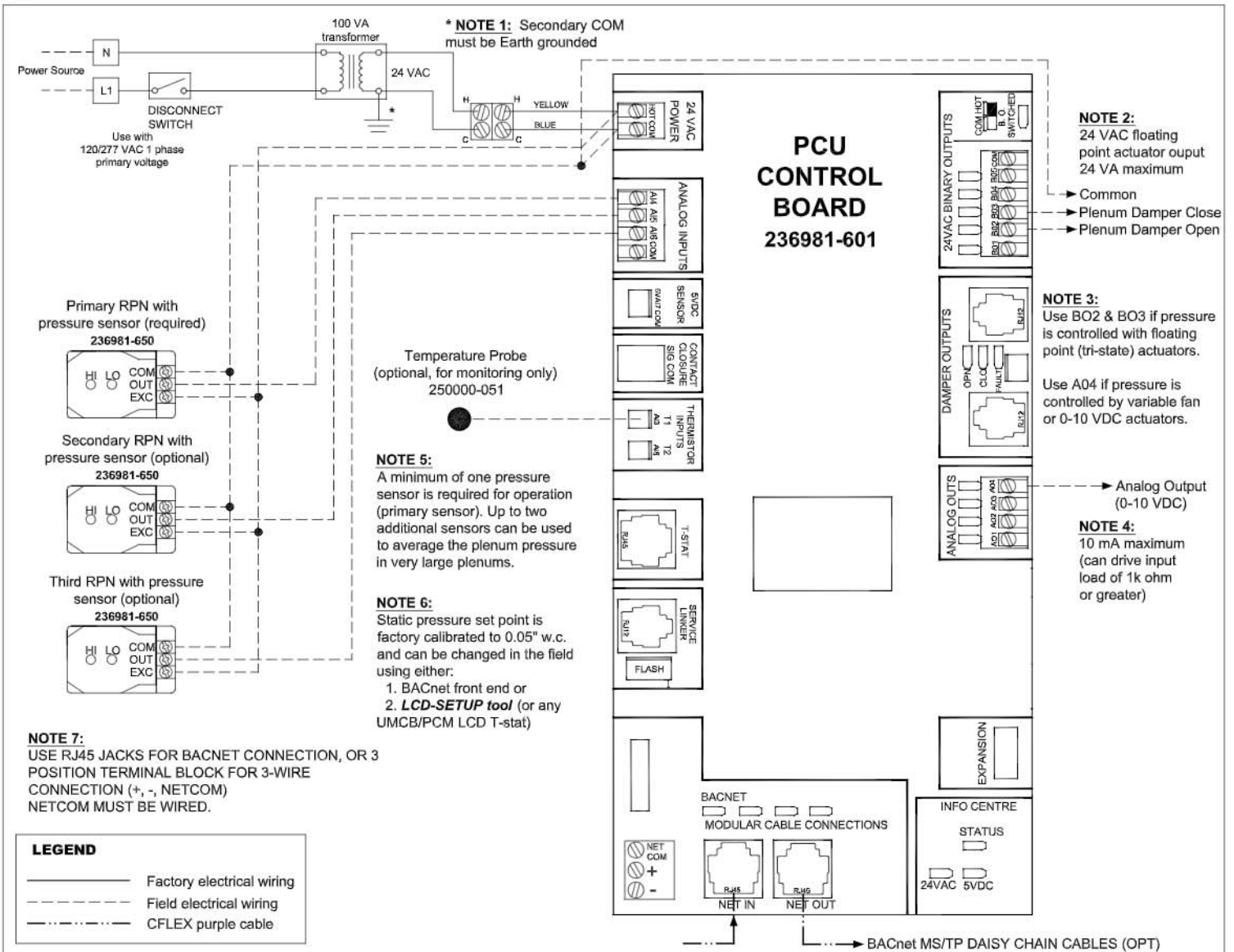


BM
mn

**UNDERFLOOR
LFGH-RCV CIRCUIT BOARD
LFGH-RCV ELECTRIC**

263973

2013/11/28



Sequence of Operation -- Constant Pressure

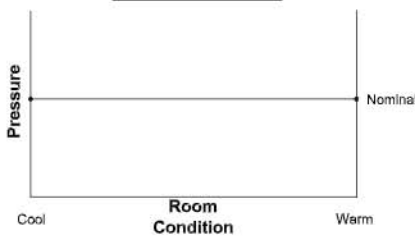
On startup, the controller will calibrate all dampers to the fully-closed position for 2 minutes.

Regardless of room condition, the pressure controller will maintain plenum pressure at the pre-selected pressure set point (default: 0.05 "w.c.).

On an increase in plenum static pressure the controller will command the actuators to close the supply dampers (B03), or command the fan to reduce speed (A04), in order to decrease the amount of air delivered into the underfloor plenum. On an decrease in plenum static pressure the controller will command the actuators to open the supply dampers (B02), or command the fan to increase speed (A04), in order to increase the amount of air delivered into the underfloor plenum.

Upon detection of air handler shutdown (zero plenum pressure with supply dampers fully open or fan at full speed), the controller will command the dampers and fan to the pre-selected setback target (default: 50 %).

CONTROL GRAPH



PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

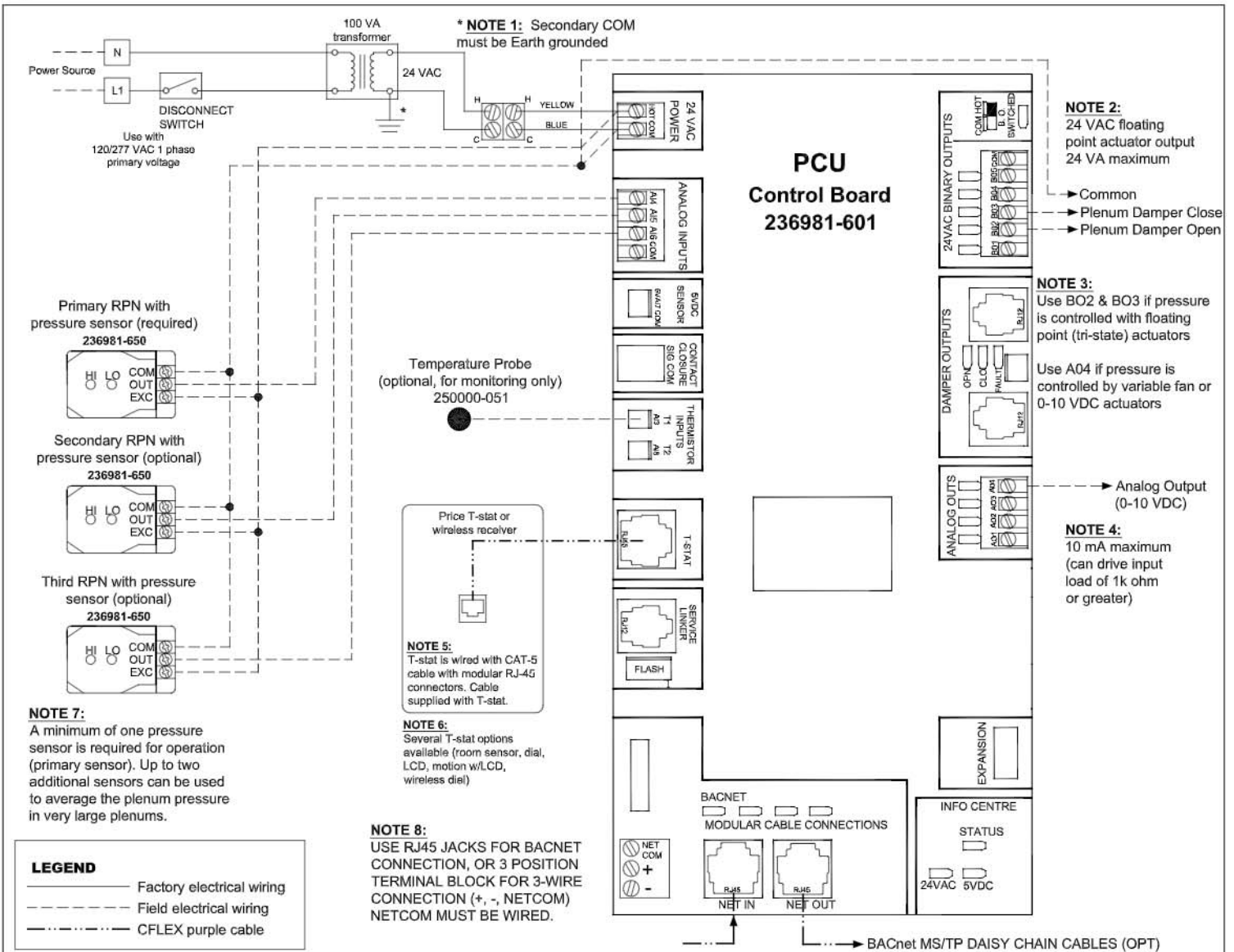


PC MB

**UNDERFLOOR
PCM CONTROLLER**
 PLENUM PRESSURIZATION (PP1)
 CONSTANT PRESSURE

259512

2019/01/04

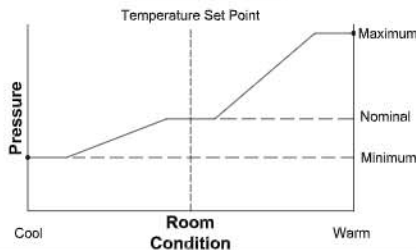


Sequence of Operation – Variable Pressure Based on Room Temperature

On startup, the controller will calibrate all dampers to the fully-closed position for 2 minutes.

While the room temperature is satisfied, the controller will maintain plenum pressure at the pre-selected pressure set point (default: 0.05" w.c.).

CONTROL GRAPH



On a decrease in room temperature the controller will decrease the plenum static pressure towards the minimum pressure by commanding the actuators to close the supply dampers (B03), or commanding the fan to reduce speed (A04), in order to decrease the amount of air delivered into the underfloor plenum. On an increase in room temperature the controller will increase the plenum static pressure towards the maximum pressure by commanding the actuators to open the supply dampers (B02), or commanding the fan to increase speed (A04), in order to increase the amount of air delivered into the underfloor plenum.

Upon detection of air handler shutdown (zero plenum pressure with supply dampers fully open or fan at full speed), the controller will command the dampers and fan to the pre-selected setback target (default: 50%).

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

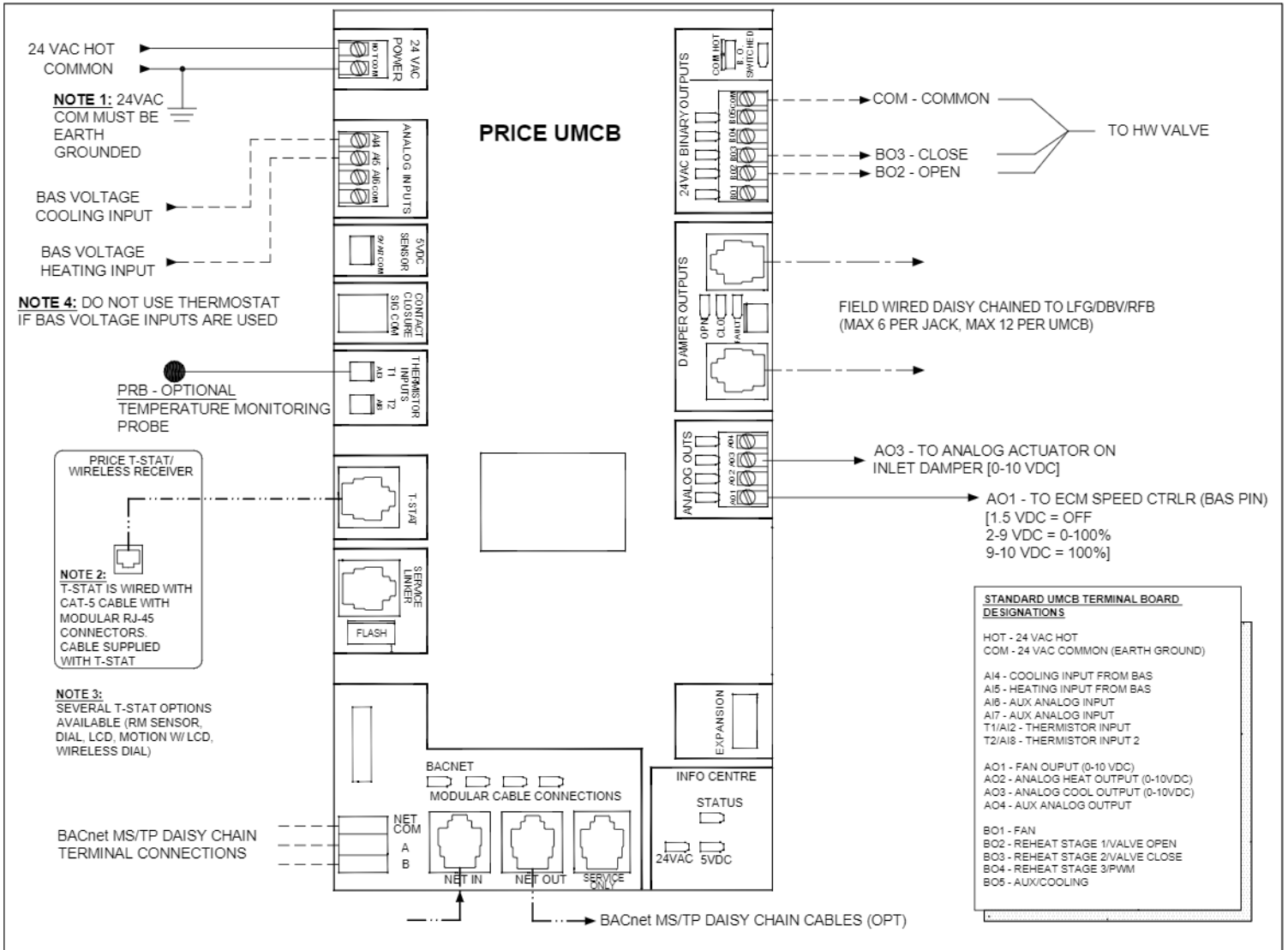


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**UNDERFLOOR
PCM CONTROLLER**
PLENUM PRESSURIZATION (PP1)
VARIABLE PRESSURE

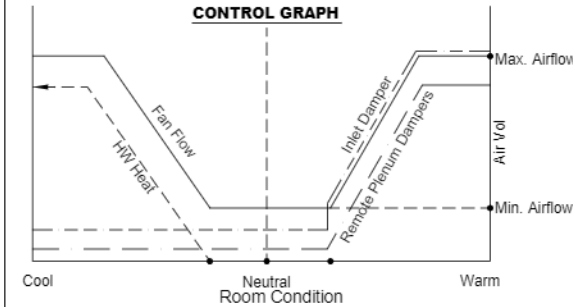
259513

2019/01/04



LEGEND

- PRICE SUPPLIED C25 (RJ-12) PLENUM CABLE - FIELD WIRED
- - - PRICE NETC35 (RJ-45) - PLENUM CABLE - FIELD WIRED
- FACTORY ELECTRICAL WIRING
- - - FIELD ELECTRICAL WIRING



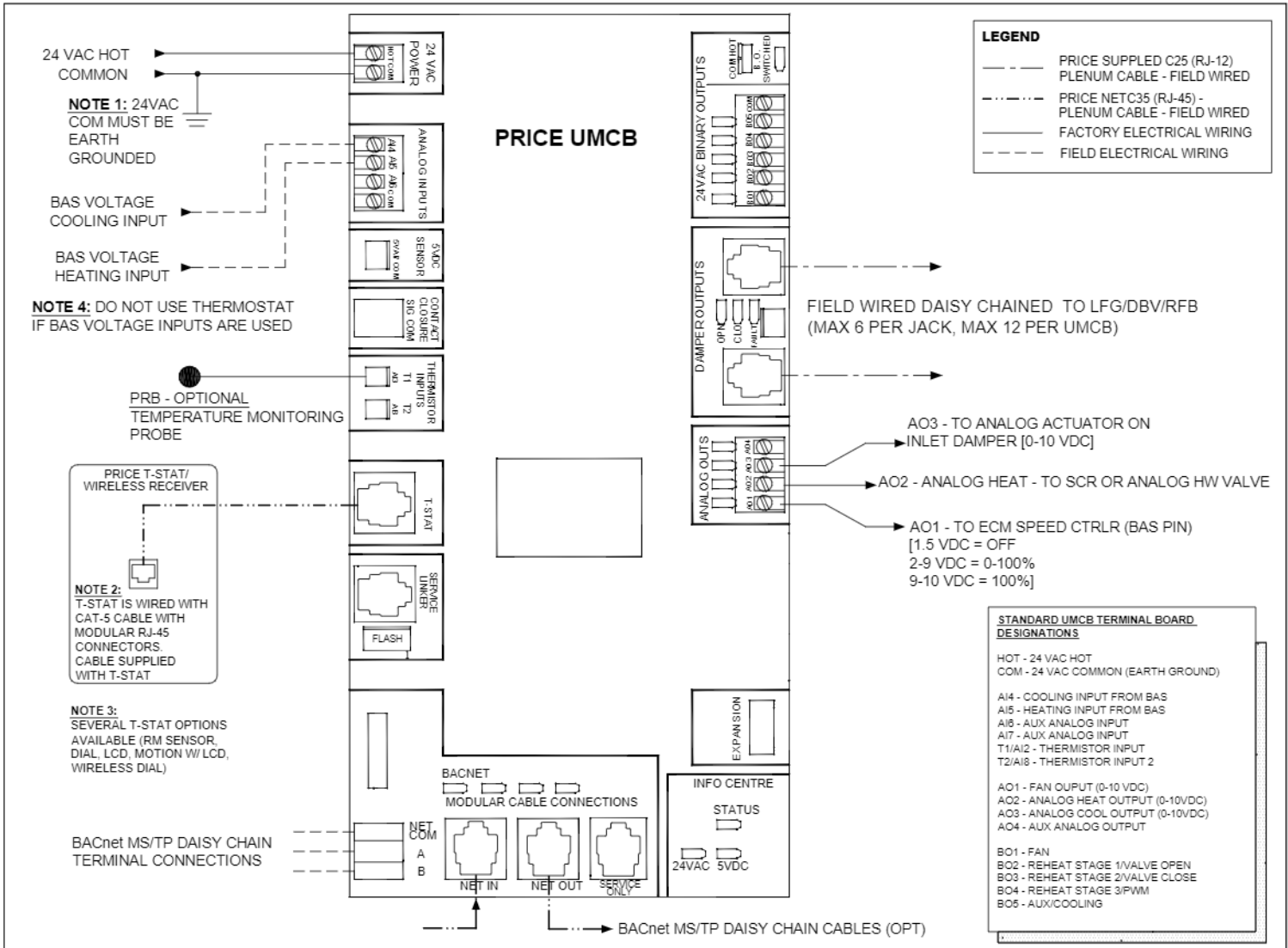
Sequence of Operation: Modulating Fan; Modulating Plenum Dampers; Modulating Analog Actuator on Inlet Damper; Hot Water Heat

Cooling: On an increase in space temperature above the set point the controller modulates the fan speed between the cooling fan min and cooling fan max. The inlet damper is modulated between analog cool min and analog cool max to allow cold underfloor plenum air to be drawn through the primary inlet. The remote plenum dampers (LFG/DBV/RFB) are modulated between damper cool min and damper cool max to allow plenum air to cool the space.

Dead Band: The fan speed is maintained at the dead band fan speed. The inlet damper is maintained at the analog cool idle position to allow minimum fresh air ventilation to the space, if required. The remote plenum dampers (LFG/DBV/RFB) are maintained at the damper cool min position.

Heating: On a decrease in space temperature below the set point the controller modulates the fan speed between the heating fan min and heating fan max. The inlet damper is maintained at the analog cool idle position to allow minimum fresh air ventilation to the space, if required. The remote plenum dampers (LFG/DBV/RFB) are maintained at the damper heat min position to block the flow of cool air into the space. LFG-HC and RFB-HC plenum dampers allow return air to be drawn from the occupied space (if desired). The hot water valve is modulated between 0 % and 100%.

PROJECT:		PRICE®
ENGINEER:		
CUSTOMER:		UNDER FLOOR UMCB CONTROLS
SUBMITTAL DATE:	SPEC. SYMBOL:	Modulating Fan CLG and HTG TriState Reheat ECM Motor
		254754
		2010/05/27



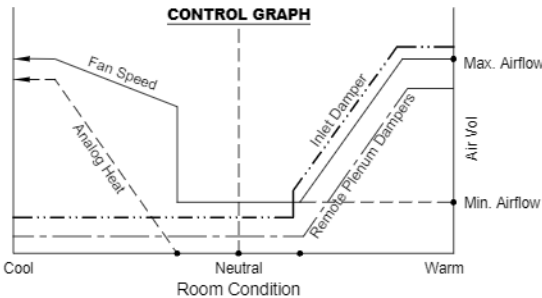
Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

Sequence of Operation: Modulating Fan; Modulating Plenum Dampers; Modulating Analog Actuator on Inlet Damper; Analog (0-10VDC) Heat

Cooling: On an increase in space temperature above the set point the controller modulates the fan speed between the cooling fan min and cooling fan max. The inlet damper is modulated between analog cool min and analog cool max to allow cold underfloor plenum air to be drawn through the primary inlet. The remote plenum dampers (LFG/DBV/RFB) are modulated between damper cool min and damper cool max to allow plenum air to cool the space.

Dead Band: The fan speed is maintained at the dead band fan speed. The inlet damper is maintained at the analog cool idle position to allow minimum fresh air ventilation to the space, if required. The remote plenum dampers (LFG/DBV/RFB) are maintained at the damper cool min position.

Heating: On a decrease in space temperature below the set point the controller modulates the fan speed between the heating fan min and heating fan max. The inlet damper is maintained at the analog cool idle position to allow minimum fresh air ventilation to the space, if required. The remote plenum dampers (LFG/DBV/RFB) are maintained at the damper heat min position to block the flow of cool air into the space. LFG-HC and RFB-HC plenum dampers allow return air to be drawn from the occupied space (if desired). The analog heat output is modulated between analog heat min and analog heat max.



PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

PRICE[®]

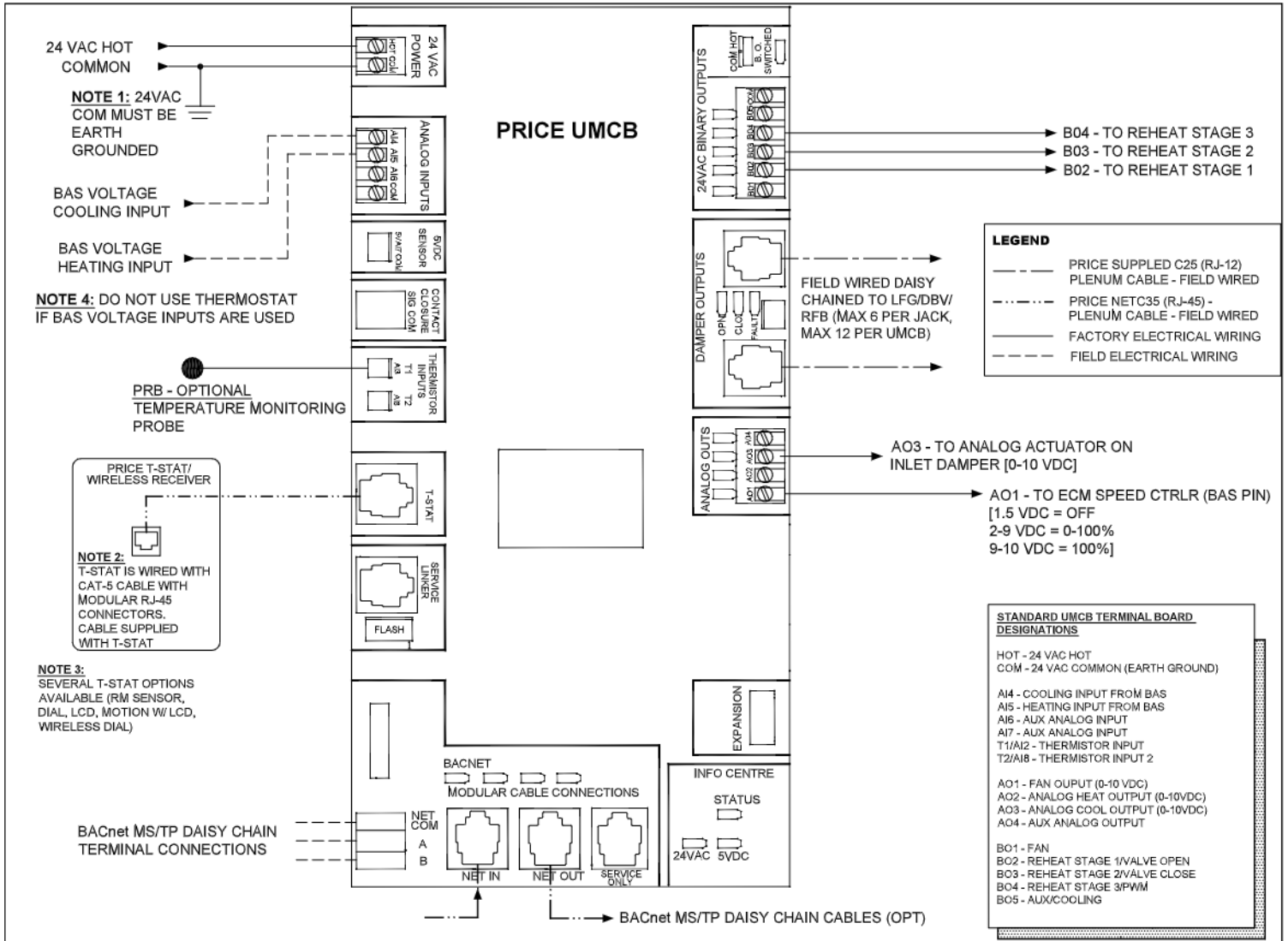
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**UNDER FLOOR
UMCB CONTROLS**

Modulating Fan CLG and HTG
Analog Reheat
ECM Motor

254755

2010/05/28



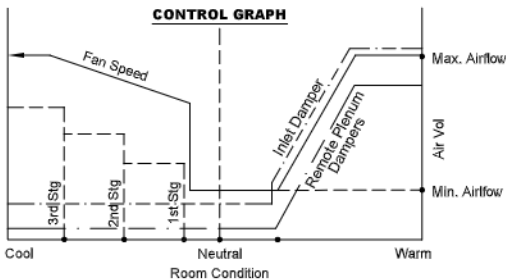
Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

Sequence of Operation: Modulating Fan; Modulating Plenum Dampers; Modulating Analog Actuator on Inlet Damper; Up to 3 Stages of Binary Heat

Cooling: On an increase in space temperature above the set point the controller modulates the fan speed between the cooling fan min and cooling fan max. The inlet damper is modulated between analog cool min and analog cool max to allow cold underfloor plenum air to be drawn through the primary inlet. The remote plenum dampers (LFG/DBV/RFB) are modulated between damper cool min and damper cool max to allow plenum air to cool the space.

Dead Band: The fan speed is maintained at the dead band fan speed. The inlet damper is maintained at the analog cool idle position to allow minimum fresh air ventilation to the space, if required. The remote plenum dampers (LFG/DBV/RFB) are maintained at the damper cool min position.

Heating: On a decrease in space temperature below the set point the controller modulates the fan speed between the heating fan min and heating fan max. The inlet damper is maintained at the analog idle position to allow minimum fresh air ventilation to the space, if required. The remote plenum dampers (LFG/DBV/RFB) are maintained at the damper heat min position to block the flow of cool air into the space. LFG-HC and RFB-HC plenum dampers allow return air to be drawn from the occupied space (if desired). The stages of binary heat are sequentially turned on in accordance with room load.



PROJECT:

ENGINEER:

CUSTOMER:

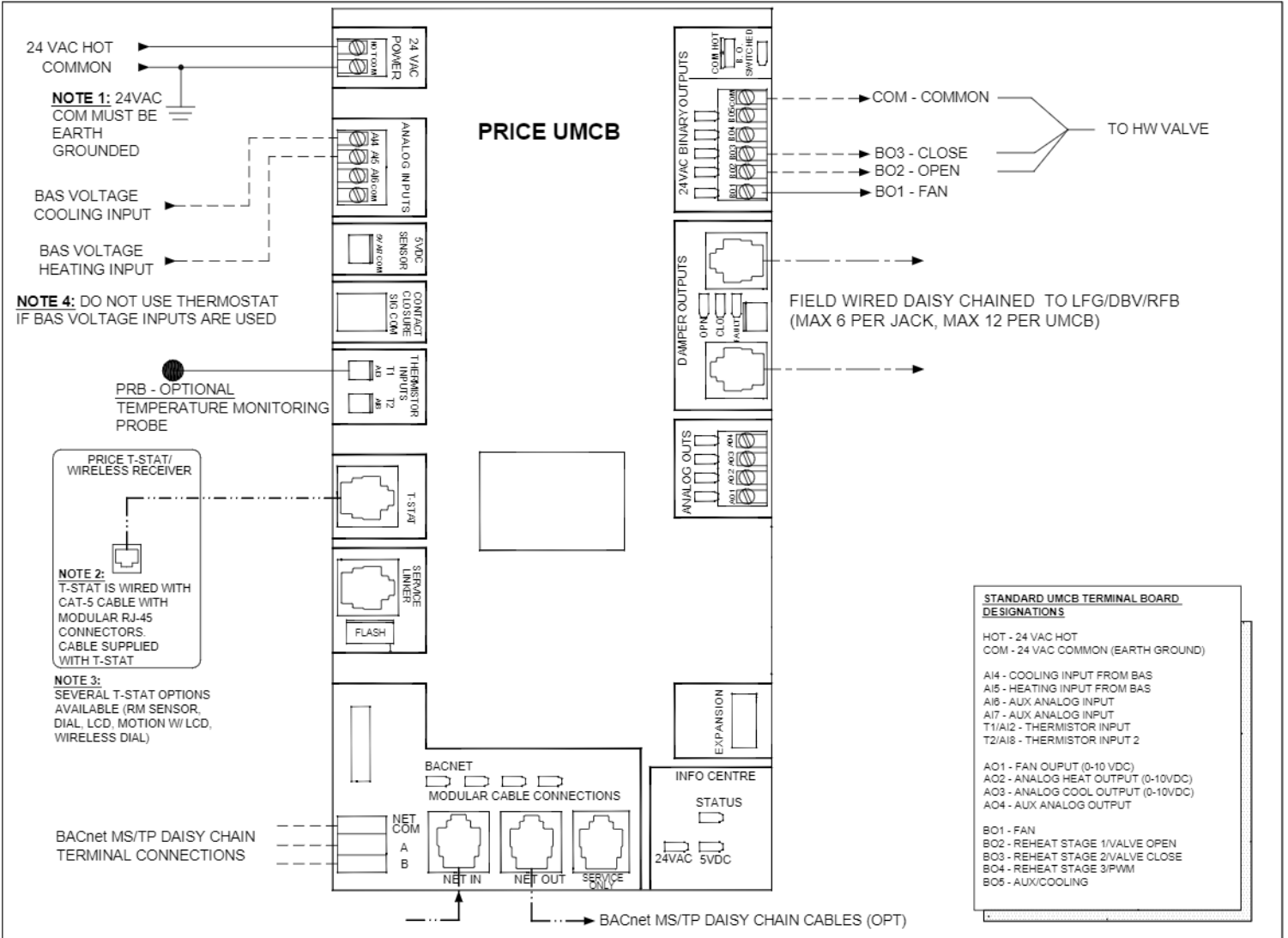
SUBMITTAL DATE:

SPEC. SYMBOL:

PRICE[®]

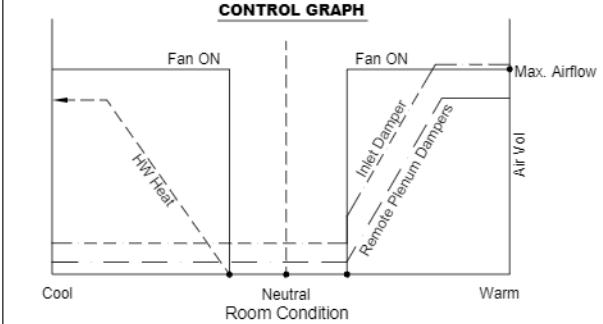
**UNDER FLOOR
UMCB CONTROLS**
 Modulating Fan Clg. and Htg.
 1-3 Stages Binary Reheat
 ECM Motor

254756
 2010/05/28



LEGEND

- PRICE SUPPLIED C25 (RJ-12) PLENUM CABLE - FIELD WIRED
- PRICE NETC35 (RJ-45) - PLENUM CABLE - FIELD WIRED
- FACTORY ELECTRICAL WIRING
- FIELD ELECTRICAL WIRING



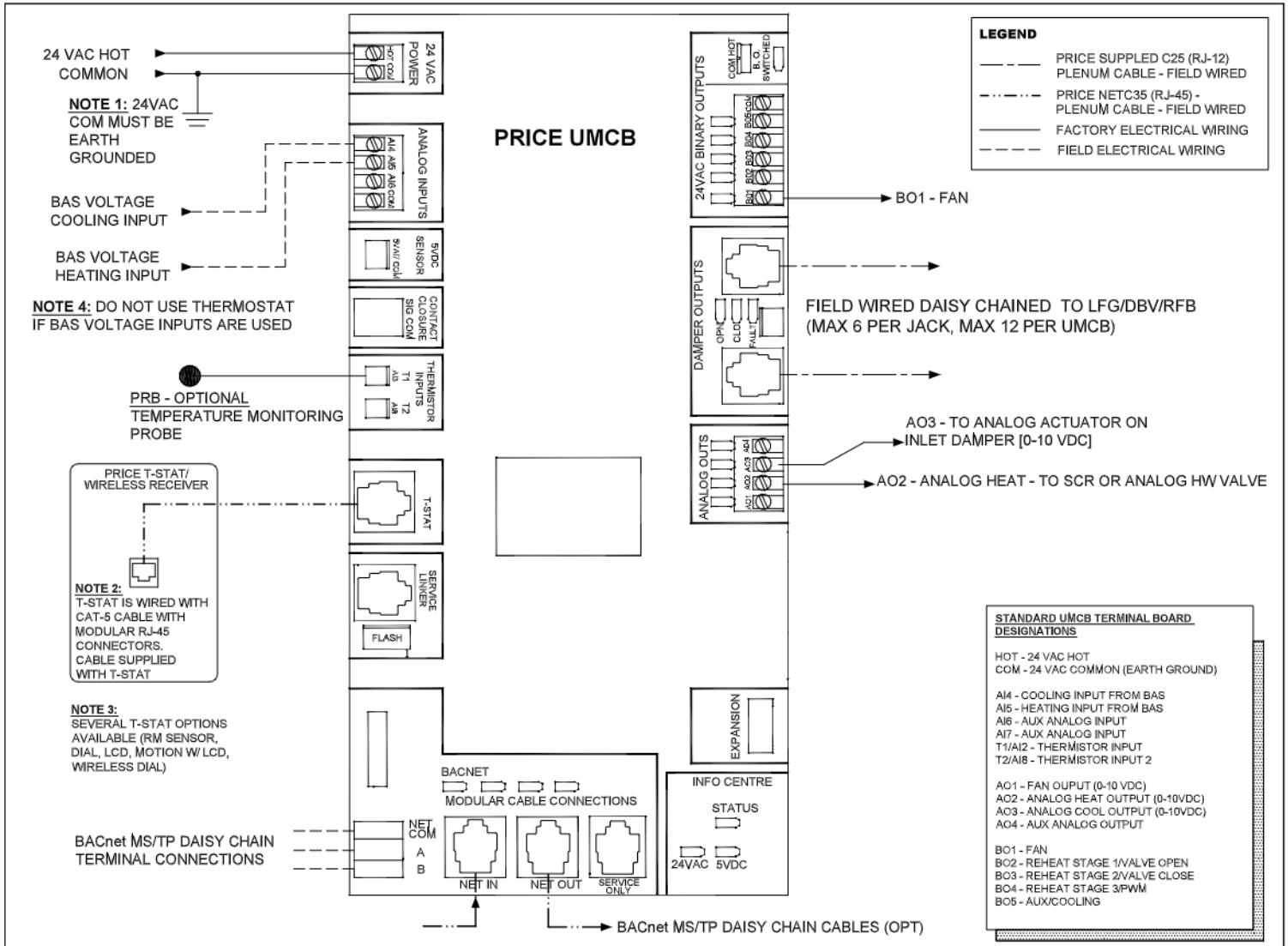
Sequence of Operation: Binary Fan; Modulating Plenum Dampers; Modulating Analog Actuator on Inlet Damper; Hot Water Heat

Cooling: On an increase in space temperature above the set point the fan turns on. The inlet damper is modulated between analog cool min and analog cool max to allow cold underfloor plenum air to be drawn through the primary inlet. The remote plenum dampers (LFG/DBV/RFB) are modulated between damper cool min and damper cool max to allow plenum air to cool the space.

Dead Band: The fan turns off. The inlet damper is maintained at the analog cool idle position to allow minimum fresh air ventilation to the space, if required. The remote plenum dampers (LFG/DBV/RFB) are maintained at the damper cool min position.

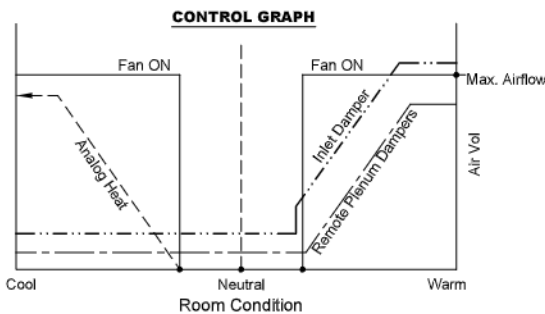
Heating: On a decrease in space temperature below the set point the fan turns on. The inlet damper is maintained at the analog cool idle position to allow minimum fresh air ventilation to the space, if required. The remote plenum dampers (LFG/DBV/RFB) are maintained at the damper heat min position to block the flow of cool air into the space. LFG-HC and RFB-HC plenum dampers allow return air to be drawn from the occupied space (if desired). The hot water valve is modulated between 0 % and 100%.

PROJECT:		PRICE [®]
ENGINEER:	<i>BC CR</i>	
CUSTOMER:		UNDER FLOOR UMCB CONTROLS
SUBMITTAL DATE:	SPEC. SYMBOL:	Binary Fan CLG and HTG TriState Reheat PSC Motor
		254783
		2010/06/01



Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

Sequence of Operation: Binary Fan; Modulating Plenum Dampers; Modulating Analog Actuator on Inlet Damper; Analog (0-10VDC) Heat

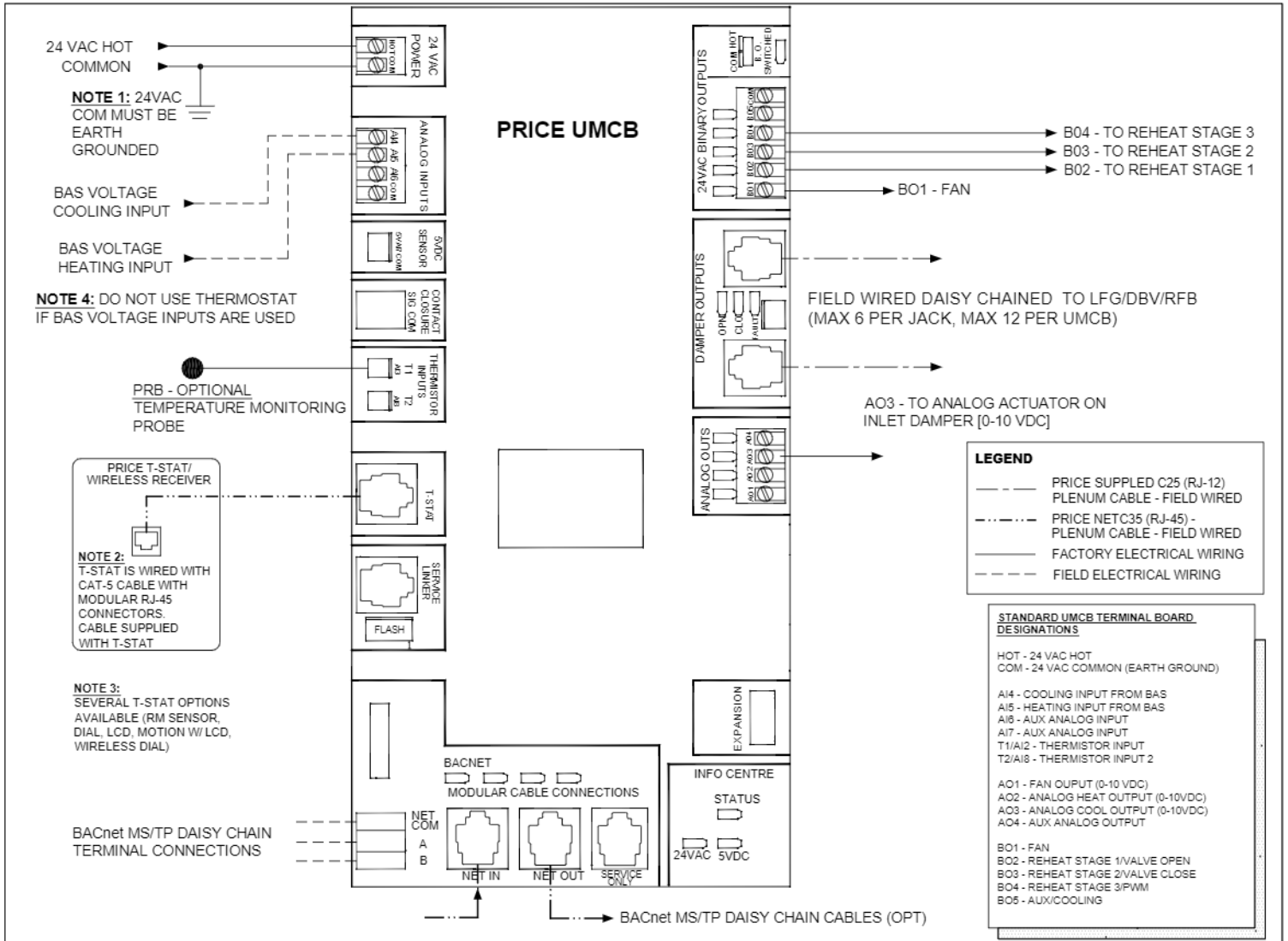


Cooling: On an increase in space temperature above the set point the fan turns on. The inlet damper is modulated between analog cool min and analog cool max to allow cold underfloor plenum air to be drawn through the primary inlet. The remote plenum dampers (LFG/DBV/RFB) are modulated between damper cool min and damper cool max to allow plenum air to cool the space.

Dead Band: The fan turns off. The inlet damper is maintained at the analog cool idle position to allow minimum fresh air ventilation to the space, if required. The remote plenum dampers (LFG/DBV/RFB) are maintained at the damper cool min position.

Heating: On a decrease in space temperature below the set point the fan turns on. The inlet damper is maintained at the analog cool idle position to allow minimum fresh air ventilation to the space, if required. The remote plenum dampers (LFG/DBV/RFB) are maintained at the damper heat min position to block the flow of cool air into the space. LFG-HC and RFB-HC plenum dampers allow return air to be drawn from the occupied space (if desired). The analog heat output is modulated between analog heat min and analog heat max.

PROJECT:		<p>UNDER FLOOR UMCB CONTROLS Binary Fan CLG and HTG Analog Reheat PSC Motor</p>
ENGINEER:	<i>BC</i>	
CUSTOMER:	254784	
SUBMITTAL DATE:	2010/06/01	
SPEC. SYMBOL:		



Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

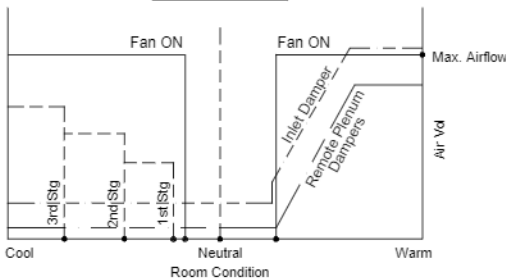
Sequence of Operation: Modulating Fan; Modulating Plenum Dampers; Modulating Analog Actuator on Inlet Damper; Up to 3 Stages of Binary Heat

Cooling: On an increase in space temperature above the set point the fan turns on. The inlet damper is modulated between analog cool min and analog cool max to allow cold underfloor plenum air to be drawn through the primary inlet. The remote plenum dampers (LFG/DBV/RFB) are modulated between damper cool min and damper cool max to allow plenum air to cool the space.

Dead Band: The fan turns off. The inlet damper is maintained at the analog cool idle position to allow minimum fresh air ventilation to the space, if required. The remote plenum dampers (LFG/DBV/RFB) are maintained at the damper cool min position.

Heating: On a decrease in space temperature below the set point the fan turns on. The inlet damper is maintained at the analog cool idle position to allow minimum fresh air ventilation to the space, if required. The remote plenum dampers (LFG/DBV/RFB) are maintained at the damper heat min position to block the flow of cool air into the space. LFG-HC and RFB-HC plenum dampers allow return air to be drawn from the occupied space (if desired). The stages of binary heat are sequentially turned on in accordance with room load.

CONTROL GRAPH



PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

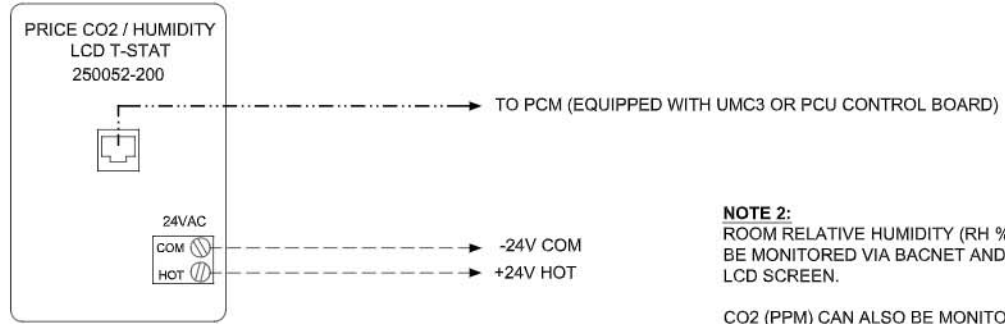


BC *CR*

**UNDER FLOOR
UMCB CONTROLS**
Binary Fan Clg. and Htg.
1-3 Stages Binary Reheat
PSC Motor

254785

2010/06/01



NOTE 1:
CO₂ / HUMIDITY T-STAT IS WIRED WITH CAT-5 CABLE AND REQUIRES 2 CONDUCTOR CABLE FOR 24 VAC HOT AND COMMON POWER (DUE TO CO₂ MODULE). BOTH CABLES SUPPLIED WITH T-STAT.

PLEASE OBSERVE 24VAC HOT & COM POLARITY - IF POWERED UP WITH INCORRECT POLARITY, CO₂ SENSOR WILL BE PERMANENTLY DAMAGED!

NOTE 2:
ROOM RELATIVE HUMIDITY (RH %) CAN BE MONITORED VIA BACNET AND/OR LCD SCREEN.

CO₂ (PPM) CAN ALSO BE MONITORED VIA BACNET AND/OR LCD SCREEN.

LEGEND

- CFLEX PURPLE CABLE
- FIELD ELECTRICAL WIRING

Sequence of Operation -- CO₂ Tracking, Variable Volume

On power up the damper will calibrate closed for 2 minutes.

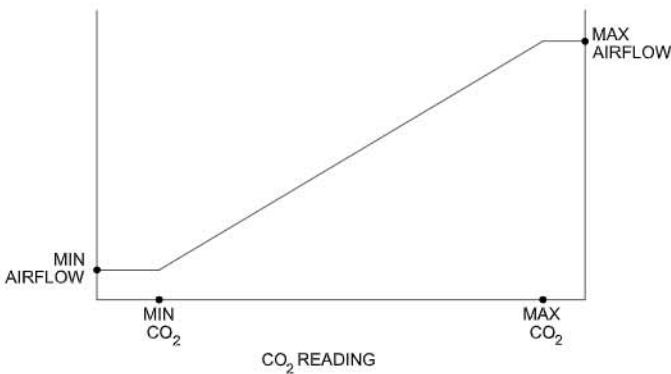
The PCM (Equipped with UMC3 control board) shall maintain an airflow through the dampers that is directly proportional to either the CO₂ level in the occupied space (described below), or the temperature control sequence for that space - the dampers will default to whichever sequence which requires the most airflow. CO₂ and temperature are both measured at the Price CO₂ thermostat.

As the CO₂ reading increases from the minimum level to the maximum level (adjustable), the airflow is increased proportionally between the adjustable minimum and maximum airflow setting. If the temperature control sequence requires a more airflow at anytime throughout the CO₂ proportional band, then the damper or fan will default to that setting.

As the CO₂ reading decreases from the maximum level to the minimum level (adjustable), the airflow is decreased proportionally from the adjustable maximum airflow setting to the minimum airflow setting, or until the temperature control airflow setting is reached.

NOTE: For PCMs equipped with the PCU control board, CO₂/Humidity thermostat is for *monitoring only*. The above CO₂ control sequence does not apply to PCMs equipped with the PCU control board.

CONTROL GRAPH



PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:



Handwritten initials/signature

**UNDERFLOOR
PCM CONTROLLER
CO₂ CONTROL**

270689

2019/01/07