



Installation, Start-Up and Configuration Instructions

Part Number 33CSPREMLK

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SAFETY CONSIDERATIONS

SAFETY NOTE

Air-handling equipment will provide safe and reliable service when operated within design specifications. The equipment should be operated and serviced only by authorized personnel who have a thorough knowledge of system operation, safety devices and emergency procedures.

Good judgement should be used in applying any manufacturer's instructions to avoid injury to personnel or damage to equipment and property.

⚠ WARNING

Disconnect all power to the unit before performing maintenance or service. Unit may automatically start if power is not disconnected. Electrical shock and personal injury could result.

⚠ CAUTION

Damage to equipment may result. An individual field-supplied 24-vac power transformer is required for each PremierLink controller. The transformer must be less than 100 va to meet UL (Underwriters' Laboratories) Class 2.

GENERAL

The PremierLink Controller is a field retrofit split system control compatible with the Carrier Comfort Network (CCN). This control is designed to allow users the access and ability to change factory-defined settings thus expanding the function of the standard unit control board. The complete PremierLink package (part number 33CSPREMLK) consists of a control circuit board with plastic cover and label, wire harnesses, spade connectors, wire nuts and 4 mounting screws.

IMPORTANT: PremierLink™ part number 33CSPREMLK should only be used in applications where the integrity of the Underwriters Laboratories rating will be maintained.

Carrier's diagnostic standard tier display tools such as Navigator or Scrolling Marquee can be used with the PremierLink controller. Access is available via an RJ-11 connection or a 3-wire connection to the communication bus. User interfaces available for use with the CCN system are PC's equipped with Carrier user interface software such as Service Tool, ComfortVIEW™, or ComfortWORKS® software. When used as part of the CCN, other devices such as the CCN data transfer, Linkage Thermostat, or Comfort Controller can read data from or write data to the PremierLink retrofit controller.

INSTALLATION

Inspection — Inspect package contents for visual defects that may have occurred during shipping. If there is any damage, contact your local representative before proceeding.

PremierLink Controller Hardware — The PremierLink package consists of the following hardware:

- control module (with plastic cover and label)
- 7 wire harnesses
- 10 spade connectors
- wire nuts
- 4 no. 6x1-in. self-drilling Phillips pan head mounting screws

Field-Supplied Hardware — PremierLink controller is configurable with the following field-supplied sensors:

- space temperature sensor (33ZCT55SPT, 33ZCT56SPT, or 33ZCT58SPT) in sensor mode or thermostat mode for economizer control
- supply air temperature sensor (33ZCSENSAT) required for all applications
- indoor air quality sensor (33ZCSENCO2, 33ZCT55CO2, 33ZCT56CO2) required only for demand control ventilation
- outdoor air quality sensor (33ZCTSENCO2) required only for demand control ventilation
- outdoor air temperature sensor (HH79NZ017)
- outdoor air enthalpy switch (33CSENTHSW)
- return air enthalpy sensor (33CSENTSEN)

For specific details about sensors, refer to the literature supplied with the sensor.

SPACE TEMPERATURE (SPT) SENSOR — A field-supplied Carrier space temperature sensor is required to maintain space temperature in sensor mode. There are three sensors available for this application:

- 33ZCT55SPT, Space Temperature Sensor with Override Button
- 33ZCT56SPT, Space Temperature Sensor with Override Button and Set Point Adjustment
- 33ZCT58SPT, T58 Communicating Room Sensor with Override Button, Set Point Adjustment, and Manual Fan control

If controlling an economizer in the thermostat mode, a duct sensor must be mounted in the return air duct and wired to SPT input.

SUPPLY AIR TEMPERATURE (SAT) SENSOR — The PremierLink controller must be connected to a field-supplied supply air temperature (SAT) sensor (part number 33ZCSENSAT) to monitor the temperature of the air delivered.

The SAT consists of a thermistor encased within a stainless steel probe. The probe is 6 in. nominal length. The SAT sensor has 114 in. of unshielded, plenum-rated cable (2 conductors, 22 AWG [American Wire Gage]). The sensor range is -40 to 185 F with a nominal resistance of 10,000 ohms at 77 F. The sensor measures temperature with an accuracy of ± 0.36 F.

Ideally, the SAT sensor should be located in the supply air duct downstream from unit heat source to control.

INDOOR AIR QUALITY CO₂ SENSOR — An indoor air quality sensor is required for CO₂ level monitoring. Three different CO₂ sensors are available for this application:

- 33ZCSENCO2 sensor is an indoor, wall-mounted sensor with an LED (light-emitting diode) display
- 33ZCT55CO2 sensor is an indoor, wall-mounted sensor without display. The CO₂ sensor also includes a space temperature sensor with override button
- 33ZCT56CO2 sensor is an indoor, wall-mounted sensor without display. The CO₂ sensor also includes a space temperature sensor with override button and temperature offset

OUTDOOR AIR QUALITY CO₂ SENSOR — The outdoor air CO₂ sensor (33ZCTSENCO2) is designed to monitor carbon dioxide (CO₂) levels found in diesel exhaust and control ventilation systems. It comes with an outdoor enclosure. This sensor provides an outdoor baseline for differential DCV (Demand Control Ventilation) control.

OUTDOOR AIR TEMPERATURE SENSOR — The outdoor air temperature sensor (HH79NZ017) monitors the temperature outside of the outside air entering the equipment.

OUTDOOR AIR ENTHALPY SWITCH — The outdoor air enthalpy switch (33CSENTHSW) monitors outdoor air enthalpy and dry bulb temperature to determine when free cooling can be used.

RETURN AIR ENTHALPY SENSOR — The return air enthalpy sensor (33CSENTSEN), when used in conjunction with the outdoor air enthalpy switch, compares the outdoor air and return air to determine when free cooling can be used.

Mount PremierLink Control

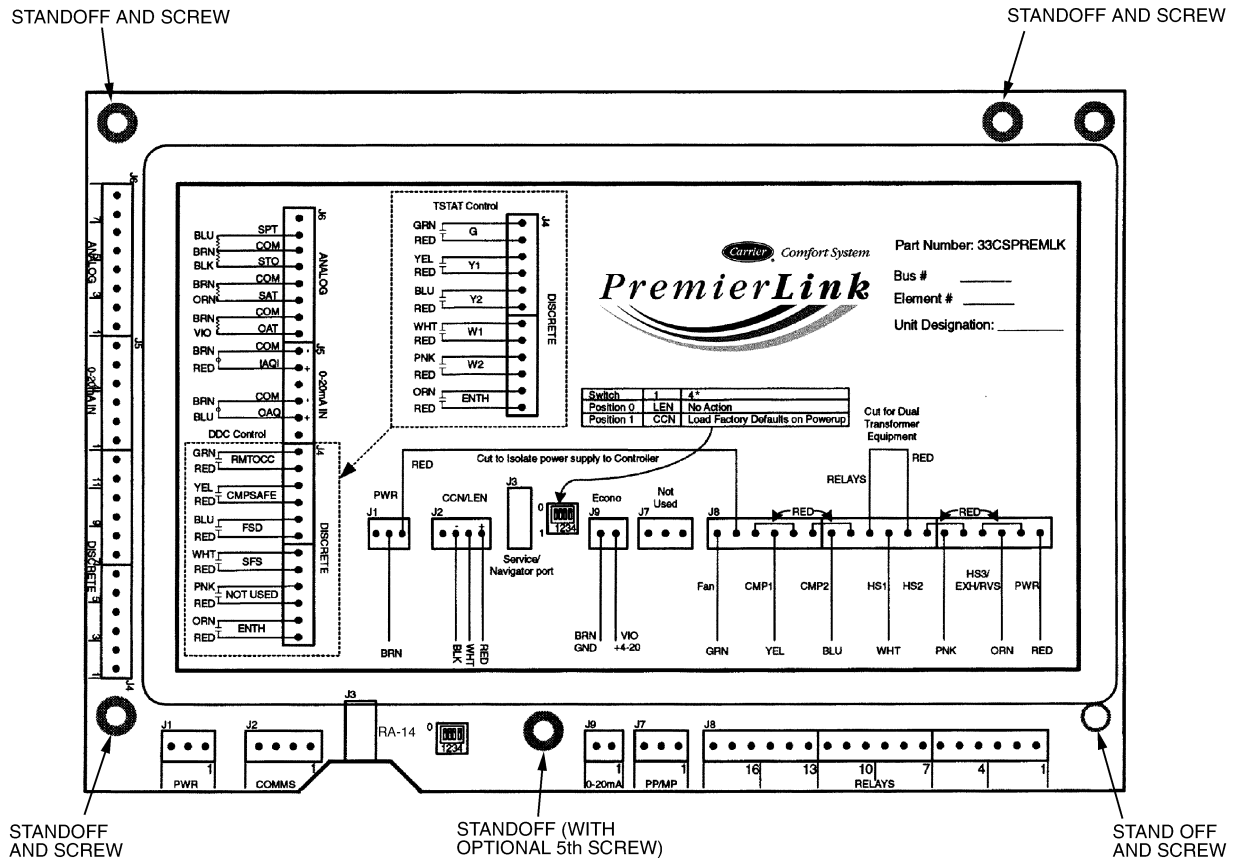
LOCATION — The PremierLink controller should be located inside one of the available service access panels of the indoor unit. Be sure the location selected prevents moisture and rain from coming into contact with the circuit board.

Select a location which will be safe from water damage and allow sufficient access for service and wiring. For service access, there should be at least 6 in. of clearance between the front of the PremierLink controller and adjacent surfaces. Be sure to leave 1/2-in. clearance in front of RJ-14 connector for attaching RJ-14 cable from CCN or Navigator™ display module. A field-supplied right angle 6-pin RJ-14 connector can be attached if necessary.

NOTE: If the PremierLink controller must be installed in a location where there is not easy access to CCN connectors, a remote connection kit (part number 33CSREMCCN) can be ordered.

MOUNTING — Refer to Mounting Sheet included with controller for additional detailed mounting instructions.

1. Ensure all power to unit is removed.
2. Locate a space in the unit control panel or a space inside the equipment that is free from dirt and dust.
3. Remove plastic cover by gently squeezing the middle of longer sides of the cover and pull away from the board. This will release the locking tabs inside.
4. Mount the PremierLink controller to the desired location by holding the controller firmly in place. Be sure all standoffs are in contact with mounting surface and board DOES NOT flex! Attach controller to unit using 4 screws provided ensuring a secure grip to unit surface. See Fig. 1.
5. Provide 24 v power to the circuit board from the unit transformer or an isolated power transformer. Use the appropriate conductors for voltage per base unit nameplate. See Fig. 2A-2I. Board will require 10 va at 24 vac.
6. Replace plastic cover to protect circuit board.
7. Restore power to unit.



*To restore factory default settings, the unit must be in the unpowered state. Move Switch 4 to Position 1 and then restore unit power.

Fig. 1 — PremierLink™ Control Module

PremierLink Controller Inputs and Outputs —
The PremierLink controller inputs and outputs are shown in Table 1.

⚠ WARNING

Disconnect electrical power before wiring the PremierLink controller. Electrical shock, personal injury, or damage to the PremierLink controller can result.

Control Wiring — The PremierLink controller can be connected to either a Carrier-approved thermostat or CCN compatible temperature sensor.

1. Turn off power to the control box.
2. Strip the ends of the red, white, and black conductors of the communication bus cable.

NOTE: When connecting the communication bus cable, a color code system for the entire network is recommended to simplify installation and checkout. See Table 2 for the recommended color code.

3. Use 4-conductor Molex with red, white and black wires to connect the communication wires. Verify the color codes in Table 2 to ensure the Red (+) wire connects to Terminal 1. Connect the White (ground) wire to Terminal 2. Connect the Black (-) wire to Terminal 3.
4. Secure all connections in Step 3 with wire nuts.
5. Insert the plug into the existing 4-pin mating connector on the base module in the main control box (Terminal J-2).
6. Restore power.

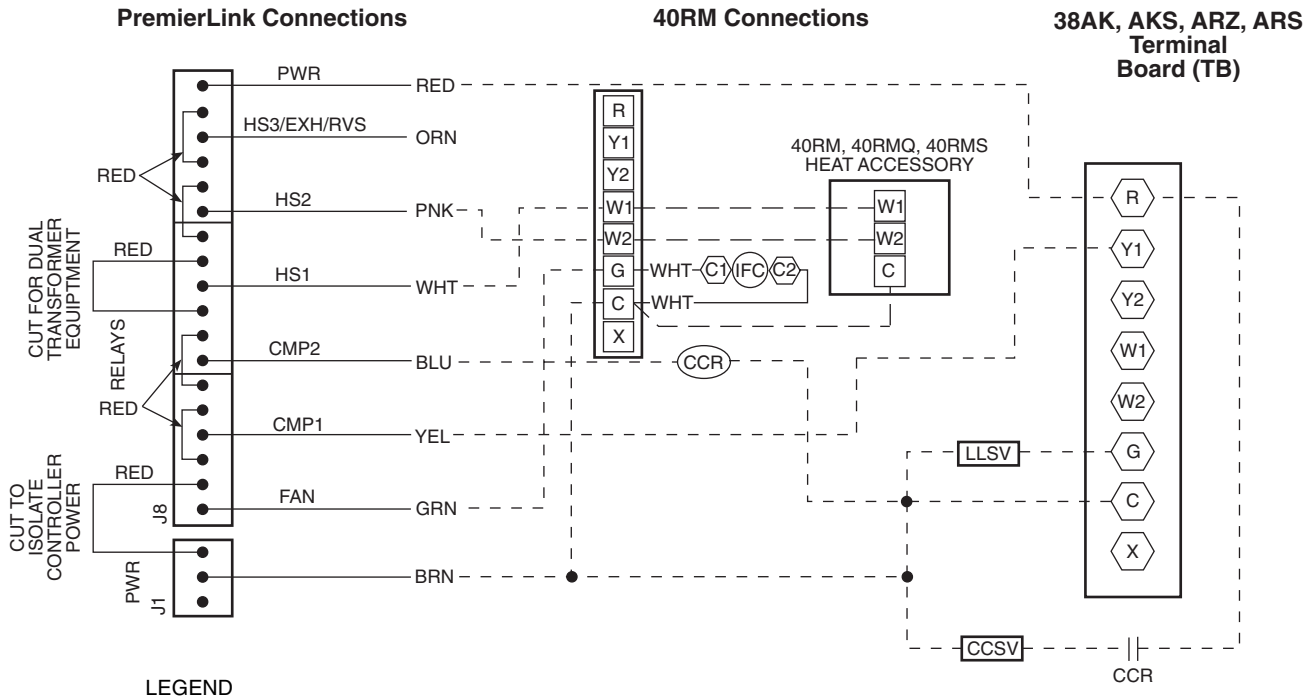


Fig. 2A — Typical PremierLink™ Control Wiring — 38AK,AKS,ARZ,ARS007-012 Units

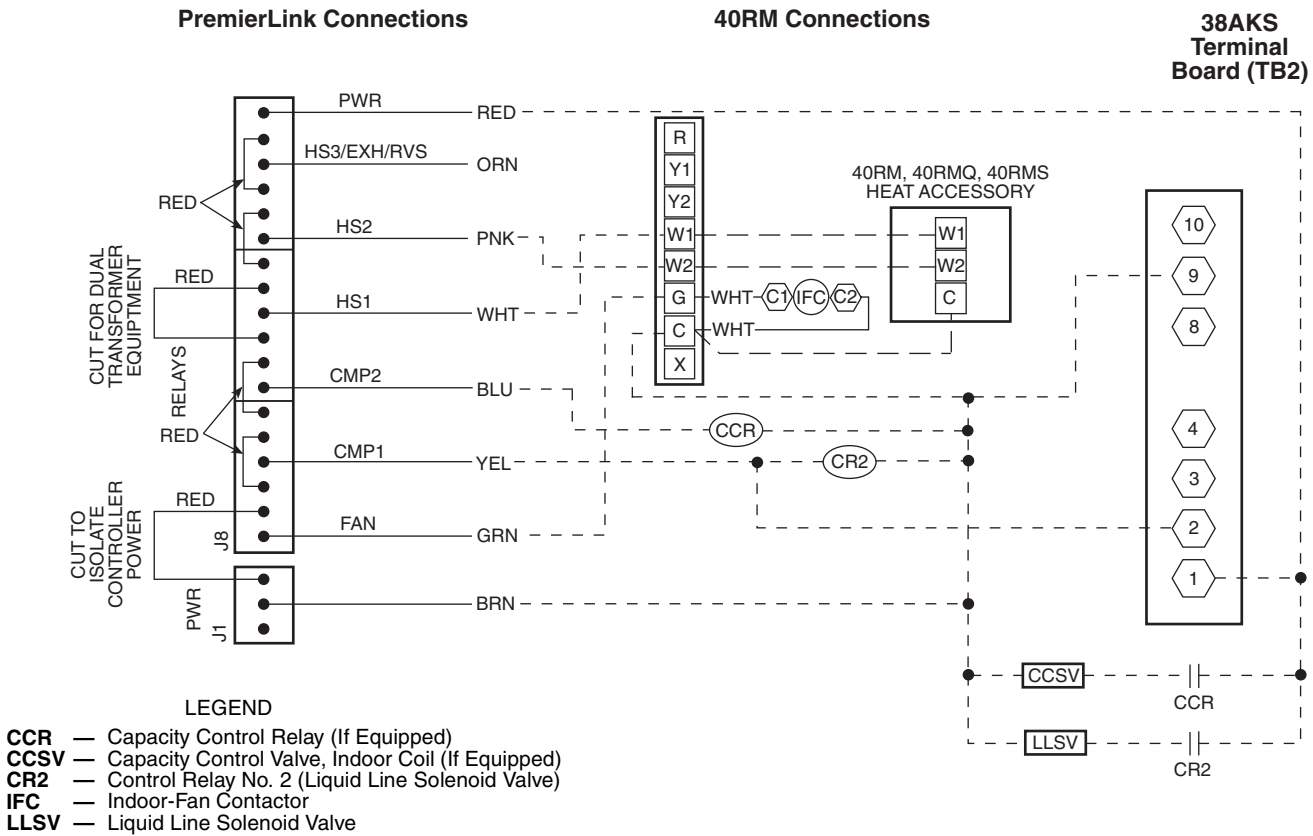


Fig. 2B — Typical PremierLink Control Wiring — 38AKS013-024 Units

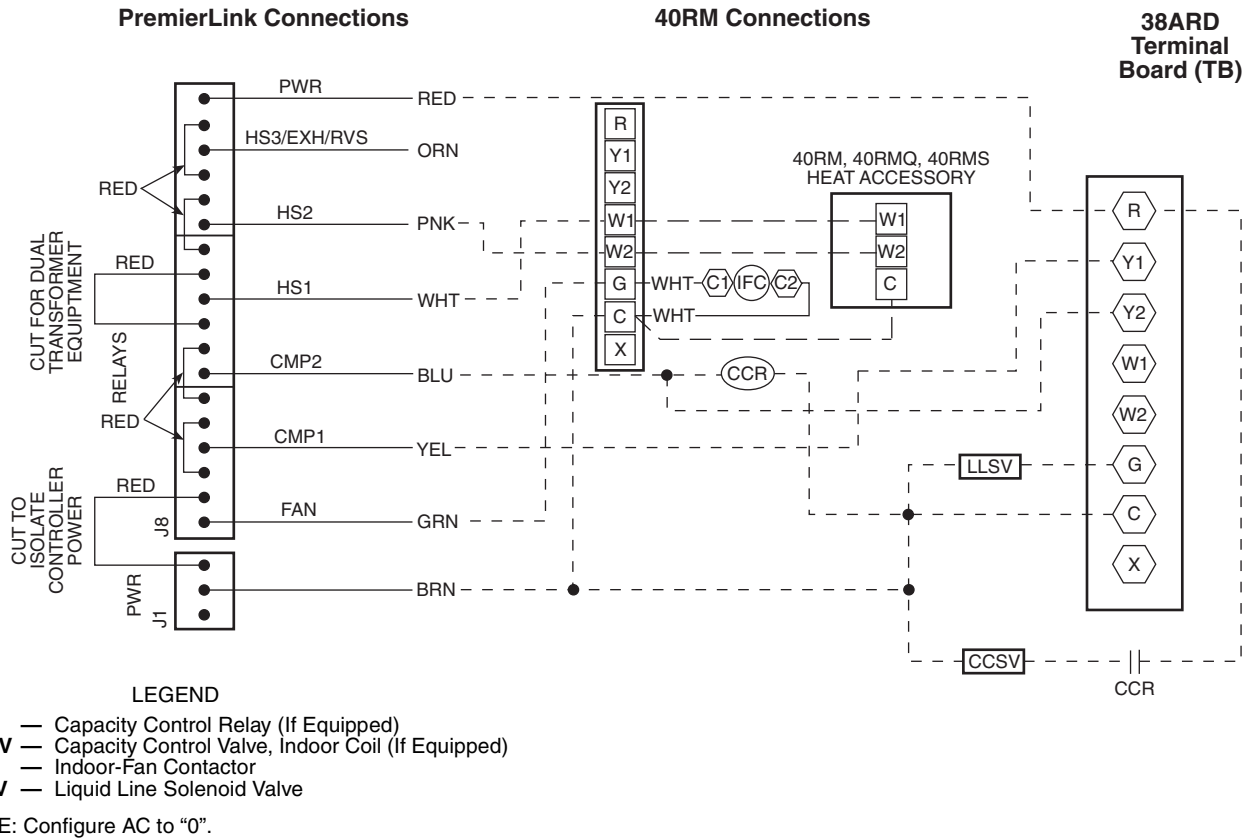


Fig. 2C — Typical PremierLink™ Control Wiring — 38ARD012 Units

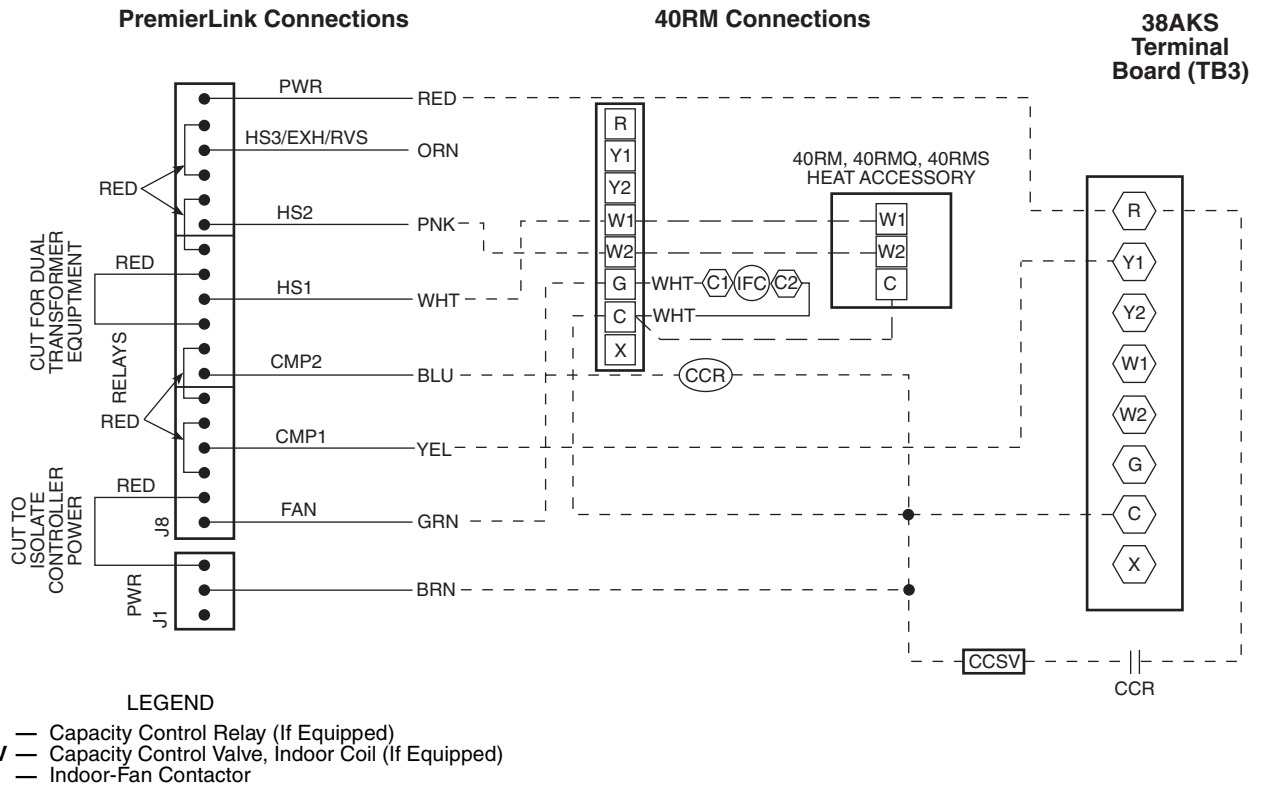
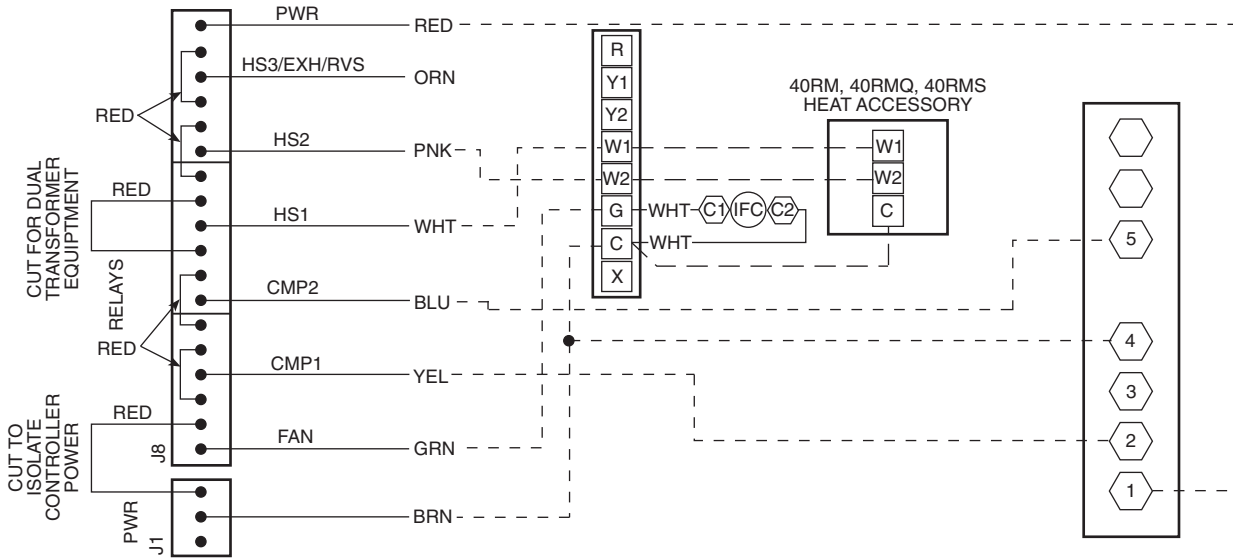


Fig. 2D — Typical PremierLink Control Wiring — 38AKS028-044 Units

PremierLink Connections

40RM Connections

38AH Terminal Board (TB2)



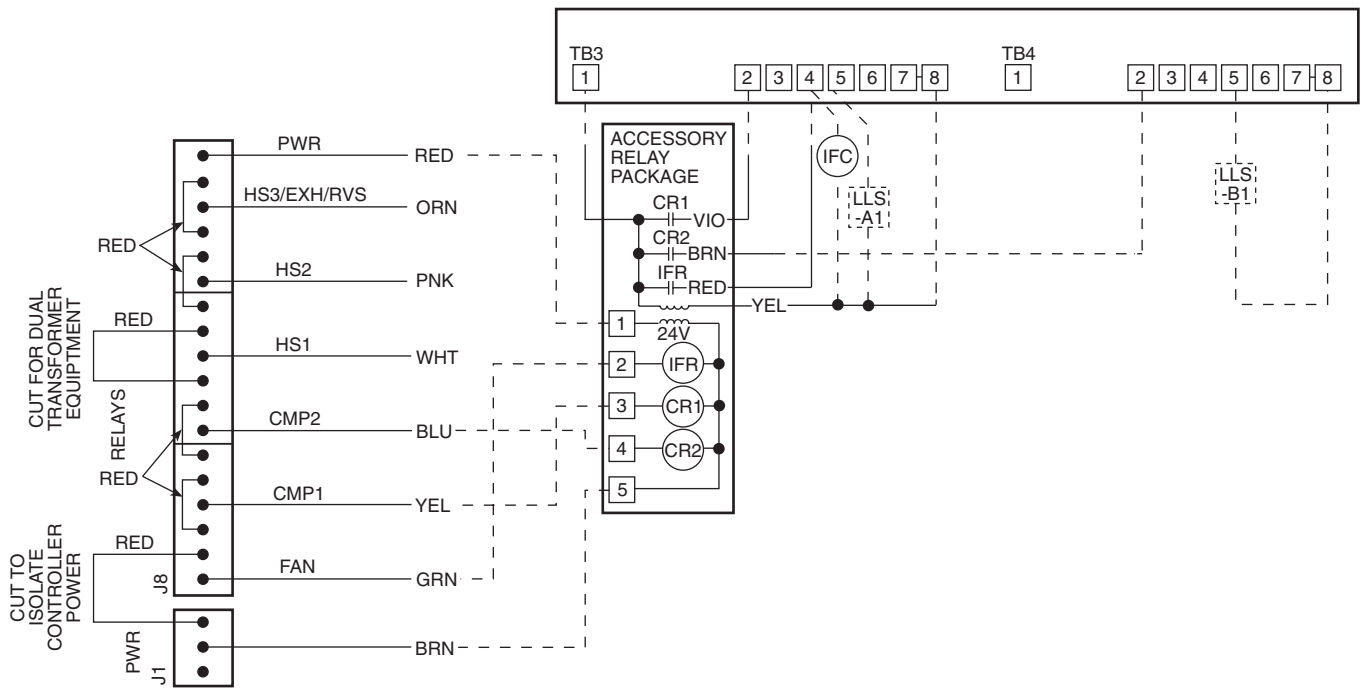
LEGEND

IFC — Indoor-Fan Contactor

Fig. 2E — Typical PremierLink™ Control Wiring — 38AH024-034 Units

PremierLink Connections

38AH Connections



LEGEND

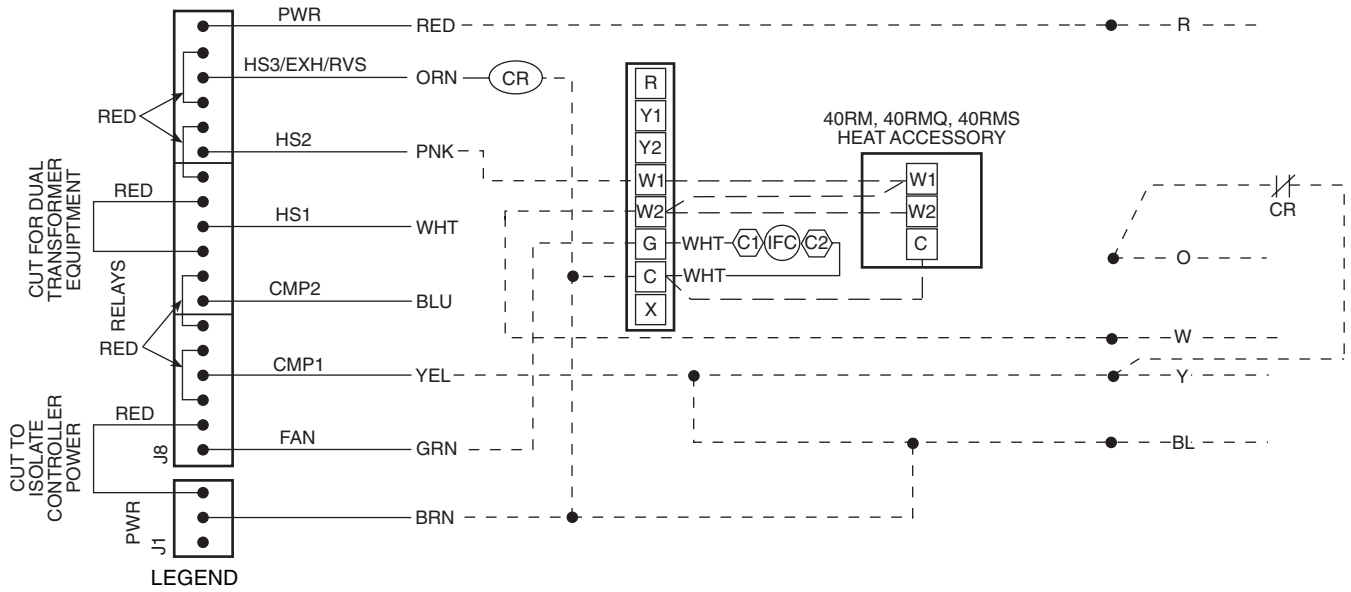
CR — Control Relay
IFC — Indoor-Fan Contactor
IFR — Indoor-Fan Relay
LLS — Liquid Line Solenoid
TB — Terminal Block

Fig. 2F — Typical PremierLink Control Wiring — 38AH004-104 Units

PremierLink Connections

40RMQ Connections

**38AQ007
Control
Connections**



CR — Control Relay (Field-Supplied)
IAQ — Indoor-Air Quality
IFC — Indoor-Fan Contactor

NOTES:

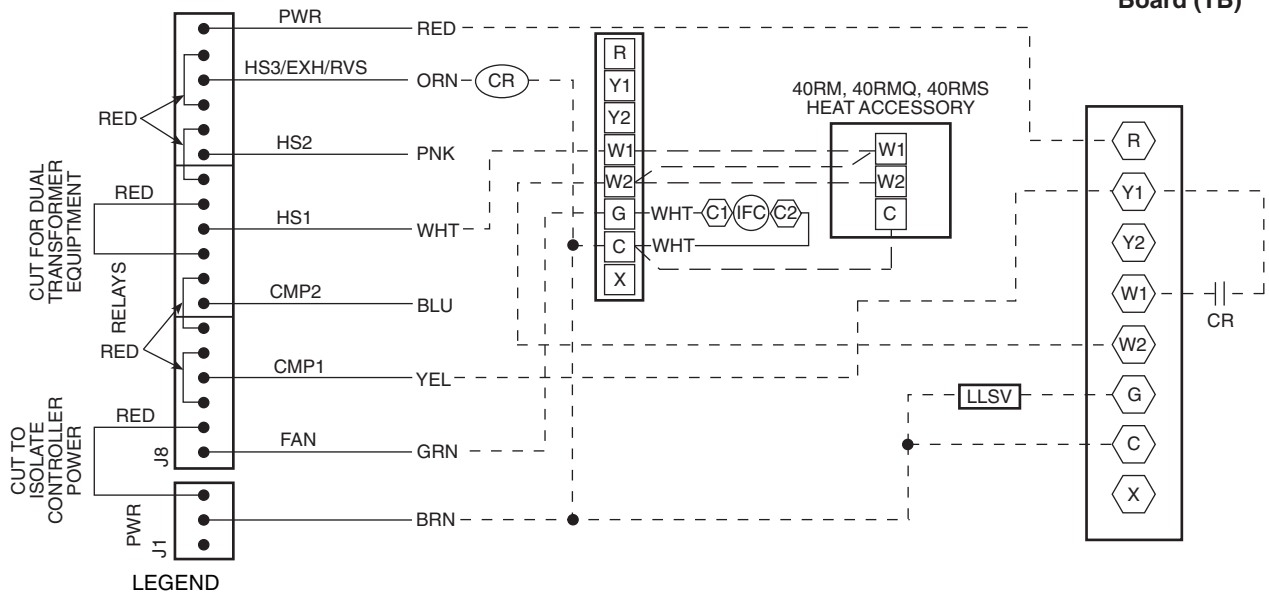
1. Configure AC to "1" for heat pump units.
2. Configure AUXOUT to "3" for reversing valve.
3. Configure PremierLink control for 2-stage heat and single-stage cool.
4. If IAQ is high priority, wire HS2 to W1. If not, wire HS1 to W1.

Fig. 2G — Typical PremierLink™ Control Wiring — 38AQ007 Units

PremierLink Connections

40RM Connections

**38AQS008
Terminal
Board (TB)**

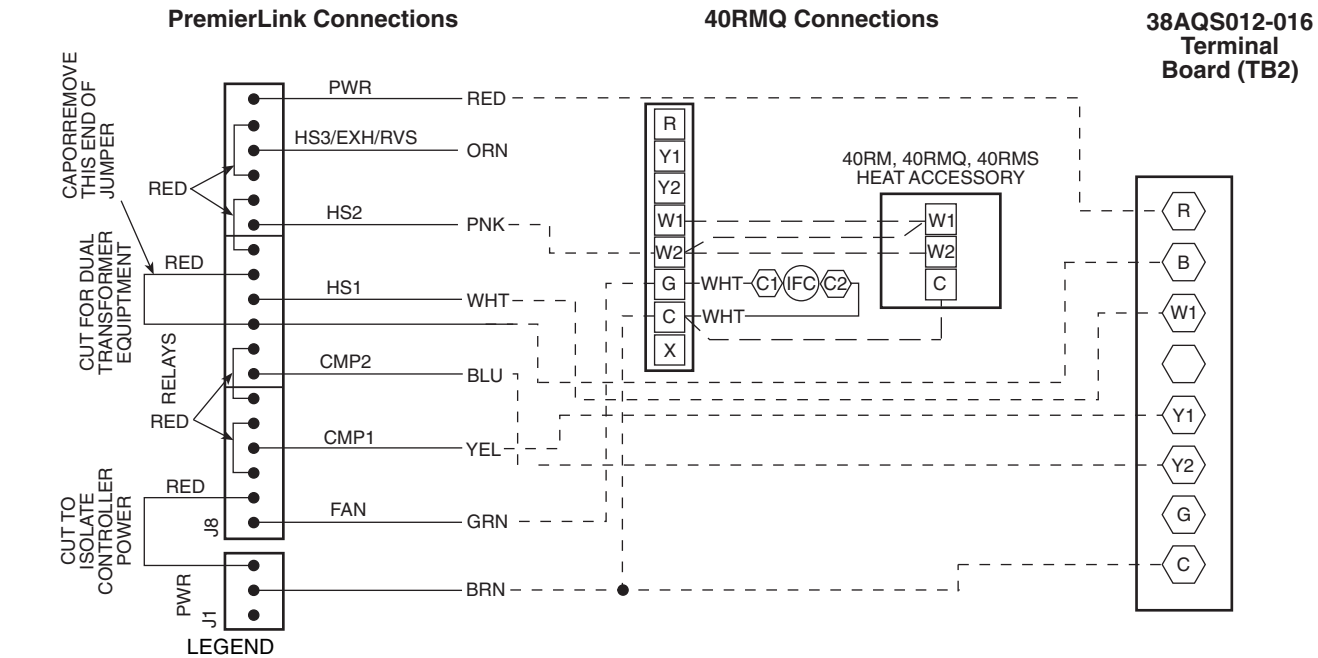


CR — Control Relay (Field-Supplied)
IFC — Indoor-Fan Contactor
IAQ — Indoor-Air Quality
LLSV — Liquid Line Solenoid Valve

NOTES:

1. Configure AC to "1" for heat pump units.
2. Configure AUXOUT to "3" for reversing valve.
3. Configure PremierLink control for 2-stage heat and single-stage cool.
4. When using controller for DCV, if IAQ priority is set to HIGH, the controller will use a stage of heat for temperature tempering. If priority is set to LOW, no tempering will occur. If IAQ is high priority, wire HS2 to W1. If not, wire HS1 to W1.

Fig. 2H — Typical PremierLink Control Wiring — 38AQS008 and 38ARQ008,012 Units



IAQ — Indoor-Air Quality
IFC — Indoor-Fan Contactor

NOTES:

1. Configure AC to "1" for heat pump or "0" for air conditioner.
2. When using controller for DCV, if IAQ priority is set to HIGH, the controller will use a stage of heat for temperature tempering. If priority is set to LOW, no tempering will occur.
3. For air conditioners, use HS1 for IAQ tempering.
4. For heat pumps, use HS2 for IAQ tempering.

Fig. 21 — Typical PremierLink™ Control Wiring — 38AQS012-016 Units

Table 1 — PremierLink Controller Inputs and Outputs

INPUTS	POWER	TERMINAL(S)
SPACE TEMPERATURE (SPT)	AI (10K Thermistor)	J6-7, J6-6
SET POINT ADJUSTMENT (STO)	AI (10K Thermistor)	J6-5, J6-6
SUPPLY AIR TEMPERATURE (SAT)	AI (10K Thermistor)	J6-3, J6-4
OUTDOOR AIR TEMPERATURE (OAT)	AI (10K Thermistor)	J6-1, J6-2
IAQ SENSOR (IAQI)	(4-20 mA)	J5-5, J5-6
OUTDOOR AQ SENSOR (OAQ)	(4-20 mA)	J5-2, J5-3
REMOTE TIME CLOCK (RMTCC)	DI (24 VAC)	J4-11, J4-12
COMPRESSOR LOCKOUT (CMPSAFE)	DI (24 VAC)	J4-9, J4-10
FIRE SHUTDOWN (FSD)	DI (24 VAC)	J4-7, J4-8
SUPPLY FAN STATUS (SFS)	DI (24 VAC)	J4-5, J4-6
NOT USED		
ENTHALPY STATUS (ENTH)	DI (24 VAC)	J4-1, J4-2
OUTPUTS	POWER	TERMINAL(S)
ECONOMIZER (ECONPOS)	4-20 mA	J9-1, J9-2
FAN (SF)	DO Relay (24 VAC, 1A)	J8-18
COOL STAGE 1 (CMP1)	DO Relay (24 VAC, 1A)	J8-15
COOL STAGE 2 (CMP2)	DO Relay (24 VAC, 1A)	J8-12
HEAT STAGE 1 (HS1)	DO Relay (24 VAC, 1A)	J8-9
HEAT STAGE 2 (HS2)	DO Relay (24 VAC, 1A)	J8-6
HEAT 3/EXHAUST/REVERSING VALVE (HS3/EXH/RVS)	DO Relay (24 VAC, 1A)	J8-3

LEGEND

AI — Analog Input
DI — Digital Input
DO — Digital Output

Table 2 — Color Code Recommendations

SIGNAL TYPE	CCN BUS WIRE COLOR	CCN PLUG PIN NUMBER
+	Red	1
Ground	White	2
-	Black	3

Install Sensors (See Fig. 3-10) — The PremierLink™ controller can be used with either the T58 Communicating sensor or any combination of CO₂ and space temperature sensors. Refer to the instructions supplied with each sensor for electrical requirements.

NOTE: All sensors are field-installed accessories.

SPACE TEMPERATURE (SPT) SENSOR INSTALLATION — There are three types of SPT sensors available from Carrier: The 33ZCT55SPT space temperature sensor with timed override button, the 33ZCT56SPT space temperature sensor with timed override button and set point adjustment, and the 33ZCT58SPT T58 communicating room sensor with timed override button, set point adjustment, and manual fan control.

The space temperature sensors are used to measure the building interior temperature. The T58 communicating room sensors measure and maintain room temperature by communicating with the controller. Sensors should be located on an interior building wall. The sensor wall plate accommodates the NEMA (National Electrical Manufacturers Association) standard 2 x 4 junction box. The sensor can be mounted directly on the wall surface if acceptable by local codes.

Do not mount the sensor in drafty locations such as near air conditioning or heating ducts, over heat sources such as baseboard heaters, radiators, or directly above wall-mounted lighting dimmers. Do not mount the sensor near a window which may be opened, near a wall corner, or a door. Sensors mounted in these areas will have inaccurate and erratic sensor readings.

The sensor should be mounted approximately 5 ft from the floor, in an area representing the average temperature in the space. Allow at least 4 ft between the sensor and any corner and mount the sensor at least 2 ft from an open doorway. The SPT sensor wires are to be connected to terminals in the unit main control board.

Install the sensor as follows:

1. Locate the two Allen type screws at the bottom of the sensor.
2. Turn the two screws clockwise to release the cover from the sensor wall mounting plate.
3. Lift the cover from the bottom and then release it from the top fasteners.
4. Feed the wires from the electrical box through the opening in the center of the sensor mounting plate.
5. Using two no. 6-32 x 1 mounting screws (provided with the sensor), secure the sensor to the electrical box.

NOTE: Sensor may also be mounted directly on the wall using 2 plastic anchors and 2 sheet metal screws (field-supplied).

6. Use 20 gage wire to connect the sensor to the controller. The wire is suitable for distances of up to 500 ft. Use a three-conductor shielded cable for the sensor and set point adjustment connections. The standard CCN communication cable may be used. If the set point adjustment (slidebar) is not required, then an unshielded, 18 or 20 gage, two-conductor, twisted pair cable may be used.

The CCN network service jack requires a separate, shielded CCN communication cable. Always use separate cables for CCN communication and sensor wiring. (Refer to Fig. 5 for wire terminations.)

7. Replace the cover by inserting the cover at the top of the mounting plate first, then swing the cover down over the lower portion. Rotate the two Allen head screws counter-clockwise until the cover is secured to the mounting plate and locked in position.

NOTE: See Table 3 for thermistor resistance vs temperature values.

Wiring the Space Temperature Sensor — To wire the sensor, perform the following (see Fig. 3-5):

1. Identify which cable is for the sensor wiring.
2. Strip back the jacket from the cables for at least 3 inches. Strip 1/4-in. of insulation from each conductor. Cut the shield and drain wire from the sensor end of the cable.
3. Connect the sensor cable as follows:
 - a. Connect one wire from the cable to (BLU) wire on J6-7 analog connector on the controller. Connect the other end of the wire to the left terminal on the SEN terminal block of the sensor.
 - b. Connect another wire from the cable to (BRN) J6-6 analog connector on the controller. Connect the other end of the wire to the remaining open terminal on the SEN terminal block.
 - c. On 33ZCT56SPT thermostats, connect the remaining wire to the (BLK) STO on J6-5 connector on the controller. Connect the other end of the wire to the SET terminal on the sensor.
 - d. In the control box, install a no. 10 ring type crimp lug on the shield drain wire. Install this lug under the mounting screw of the PremierLink controller.
 - e. On 33ZCT56SPT thermostats install a jumper between the two center terminals (right SEN and left SET). See Fig. 4.
 - f. Refer to Fig. 5 for 33ZCT58SPT thermostat wiring. Once the T58 sensor is powered up, all of the graphic icons on the LCD (liquid crystal display) display will be energized for a few seconds. The graphical icons will then turn off and the T58 sensor will energize the three-digit numeric display. The value "58" will be displayed for two seconds. After 2 seconds, the LCD will display the default space temperature value.

NOTE: See Fig. 6 for space temperature sensor averaging.

Table 3 — Thermistor Resistance vs Temperature Values for Space Temperature Sensor, Supply Air Temperature Sensor, and Outdoor Air Temperature Sensor

TEMP (C)	TEMP (F)	RESISTANCE (Ohms)
-40	-40	335,651
-35	-31	242,195
-30	-22	176,683
-25	-13	130,243
-20	-4	96,974
-15	5	72,895
-10	14	55,298
-5	23	42,315
0	32	32,651
5	41	25,395
10	50	19,903
15	59	15,714
20	68	12,494
25	77	10,000
30	86	8,056
35	95	6,530
40	104	5,325
45	113	4,367
50	122	3,601
55	131	2,985
60	140	2,487
65	149	2,082
70	158	1,752

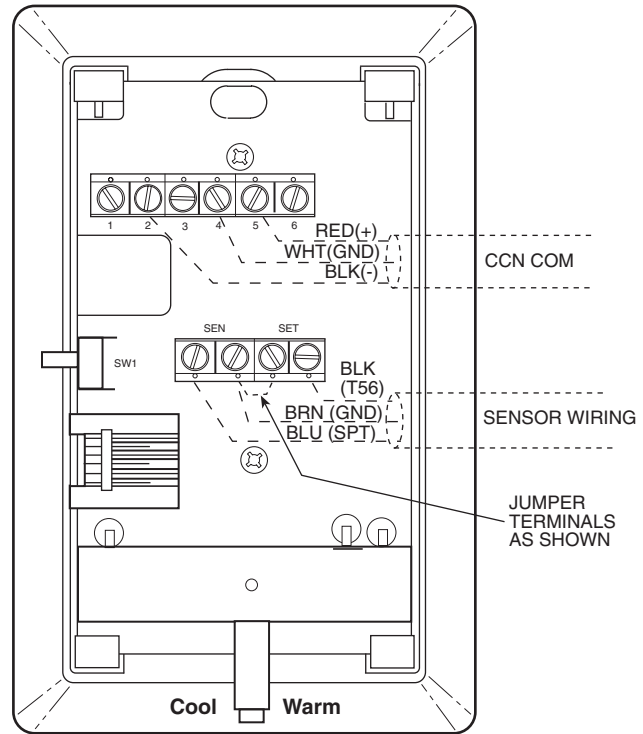


Fig. 4 — Space Temperature Sensor Typical Wiring (33ZCT56SPT)

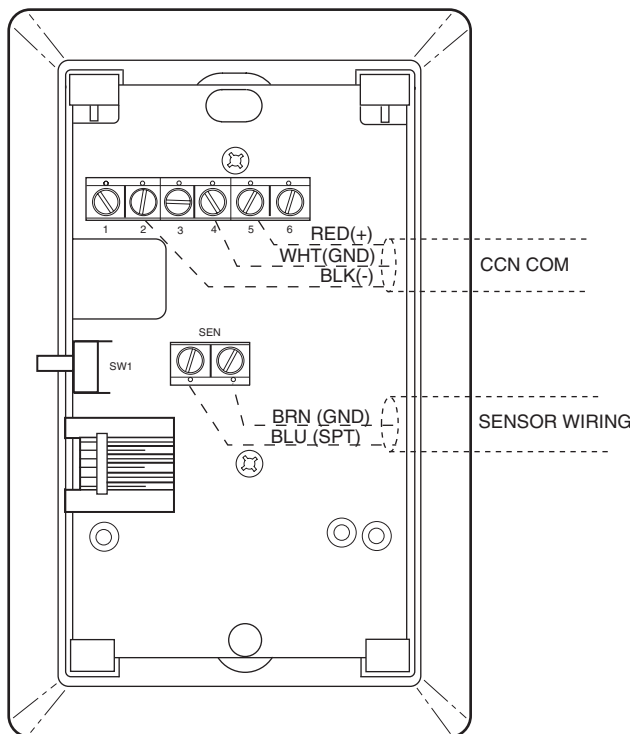


Fig. 3 — Space Temperature Sensor Typical Wiring (33ZCT55SPT)

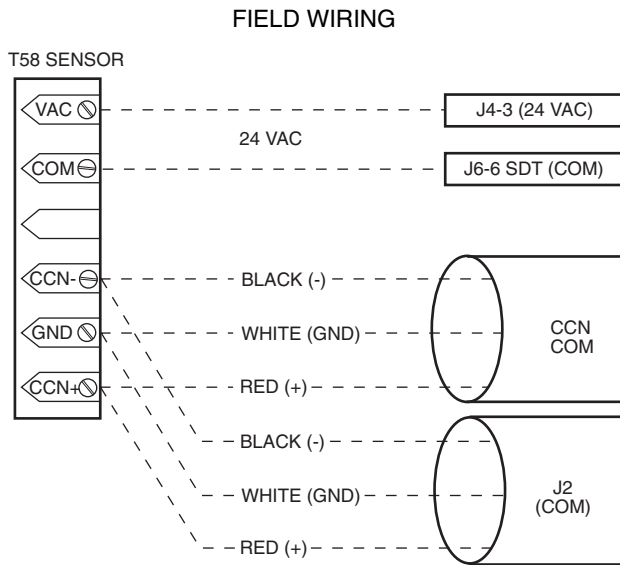
SUPPLY AIR TEMPERATURE (SAT) SENSOR INSTALLATION — The 33ZCSENSAT supply air temperature sensor is required for controller operation. The sensor consists of a thermistor encased within a stainless steel probe. The SAT sensor probe is 6-in. nominal length with 114 in. of unshielded, 2-conductor 18 AWG twisted-pair cables. The sensor temperature range is -40 to 245 F with a nominal resistance of 10,000 ohms at 77 F. The sensor measures accuracy of ± 0.36 F. The SAT sensor is supplied with a gasket and 2 self-drilling mounting screws.

NOTE: The sensor must be mounted in the discharge of the unit, downstream of the cooling coil and heat exchanger. Be sure the probe tip does not come in contact with any of the unit surfaces. See Fig. 11 for mounting location.

Do not run sensor or relay wires in the same conduit or raceway with Class 1 AC service wiring. Do not abrade, cut, or nick the outer jacket of the cable. Do not pull or draw cable with a force that may harm the physical or electrical properties. Avoid splices in any control wiring.

Perform the following steps to connect the SAT sensor to the PremierLink™ controller:

1. Locate the opening in the control box. Pass the sensor probe through the hole.
2. Drill or punch a 1/2-in. hole in the supply air duct.
3. Use two field-supplied, self-drilling screws to secure the sensor probe to the duct.
4. Connect the sensor leads to the PremierLink controller's wiring harness J6-3,4 board at the terminals labeled SAT (ORN) and GND (BRN).



**Fig. 5 — T58 Communicating Sensor
Typical Wiring (33ZCT58SPT)**

Perform the following steps if state or local code requires the use of conduit, or if your installation requires a cable length of more than 8 ft:

1. Secure the probe to the duct with two field-supplied self-drilling screws.
2. If you are extending cable length beyond 8 ft, use plenum rated, 20 AWG, twisted pair wire.
3. Connect the sensor leads to the PremierLink™ controller's wiring harness terminal board at the terminals labeled SAT (ORN) and GND (BRN).
4. Neatly bundle and secure excess wire.

INDOOR AIR QUALITY CO₂ SENSOR INSTALLATION (IAQ) — The indoor air quality sensor accessory monitors carbon dioxide (CO₂) levels. This information is used to monitor IAQ levels. Three types of sensors are provided. The wall sensor can be used to monitor the conditioned air space. Sensors use infrared technology to measure the levels of CO₂ present in the air. The wall sensor is available with or without an LCD readout to display the CO₂ level in ppm.

The CO₂ sensors are all factory set for a range of 0 to 2000 ppm and a linear mA output of 4 to 20. Refer to the instructions supplied with the CO₂ sensor for electrical requirements and terminal locations.

To accurately monitor the quality of the air in the conditioned air space, locate the sensor near a return air grille (if present) so it senses the concentration of CO₂ leaving the space. The sensor should be mounted in a location to avoid direct breath contact.

Do not mount the IAQ sensor in drafty areas such as near supply ducts, open windows, fans, or over heat sources. Allow at least 3 ft between the sensor and any corner. Avoid mounting the sensor where it is influenced by the supply air; the sensor gives inaccurate readings if the supply air is blown directly onto the sensor or if the supply air does not have a chance to mix with the room air before it is drawn into the return airstream.

Wiring the Indoor Air Quality Sensor — To wire the sensors after they are mounted in the conditioned air space or outdoor location, see Fig. 7 and 8 and the instructions shipped with the sensors. For each sensor, use two 2-conductor 18 AWG

(American Wire Gage) twisted-pair cables (unshielded) to connect the separate isolated 24 vac power source to the sensor and to connect the sensor to the control board terminals. To connect the sensor to the control, identify the positive (4 to 20 mA) and ground (SIG COM) terminals on the sensor. Connect the 4-20 mA terminal to terminal IAQ (RED) and connect the SIG COM terminal to terminal GND (BRN).

OUTDOOR AIR QUALITY CO₂ SENSOR INSTALLATION (OAQ) — The Outdoor Air CO₂ sensor is designed to monitor carbon dioxide (CO₂) levels in the air and interface with the ventilation damper in an HVAC system. The OAQ sensor is packaged with an outdoor cover. See Fig. 12 and 13.

The outdoor air CO₂ sensor must be placed in an area that is representative of the entire conditioned space. A mounting height of 6 feet is recommended. For installation where it is not necessary to reach the control, it may be mounted higher on the wall or on the ceiling, provided the location represents a good sampling of air.

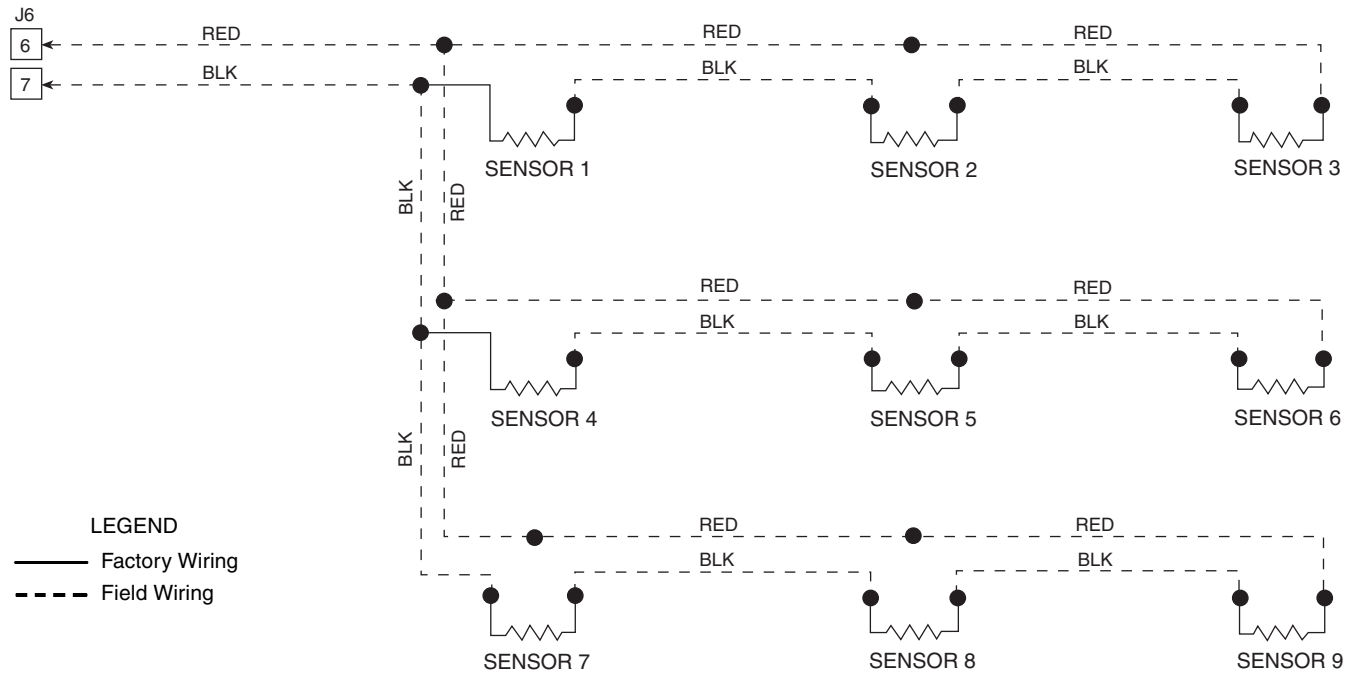
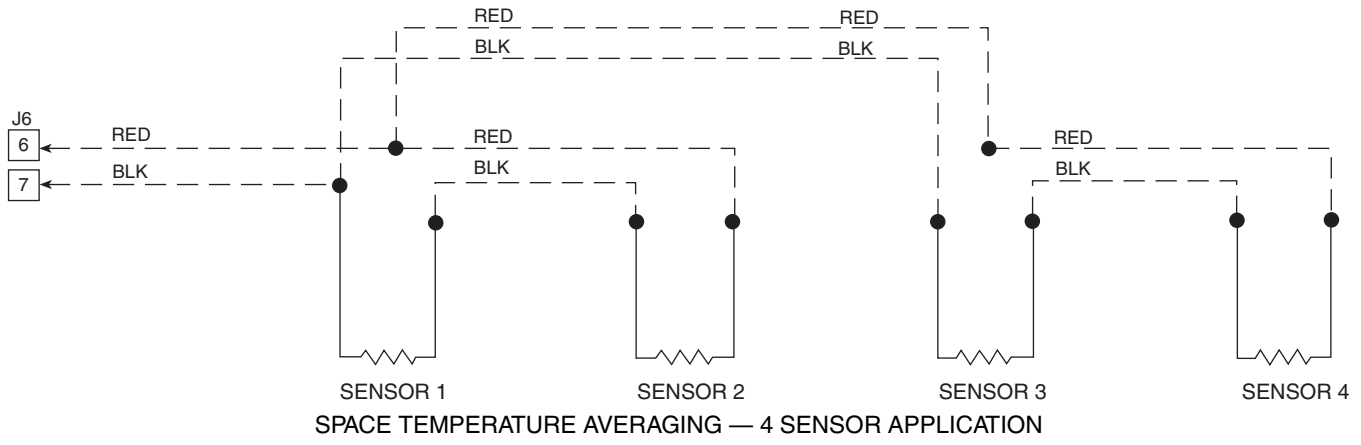
Wiring the Outdoor Air CO₂ Sensor — Power requirements are 18 to 36 vac RMS 50/60 Hz; 18 to 42 vdc polarity protected/dependent; and 70 mA average, 100 mA peak at 24 vdc. All system wiring must be in compliance with all applicable local and national codes. A dedicated power supply is required for this sensor. A two-wire cable is required to wire the dedicated power supply for the sensor. The two wires should be connected to the power supply and terminals 1 and 2. To connect the sensor to the control, identify the positive (4 to 20 mA) and ground (SIG COM) terminals on the sensor. Connect the 4 to 20 mA terminal OAQ (BLU) terminal J5-2. Connect the SIG COM terminal to terminal GND (BRN) terminal J5-3. See Fig. 12.

OUTDOOR AIR TEMPERATURE SENSOR (Fig. 14-17) — The OAT sensor must be located properly. The sensor must be installed immediately upstream from outdoor air damper where it will accurately sense the temperature of the outdoor air entering the mixing box. See Fig. 14 and 15. For applications without economizer, the sensor may be located in the outdoor air duct near the outdoor air intake (Fig. 15) or on the exterior of the building. The thermistor has a range of -40 to 245 F and a resistance of 10,000 ohms at 77 F.

Do not mount the sensor in direct sunlight. Inaccurate readings may result. Do not mount the sensor near the exhaust from air-handling units or compressors, near leakage drafts of indoor air, or near shrubbery or trees, or under direct water runoff.

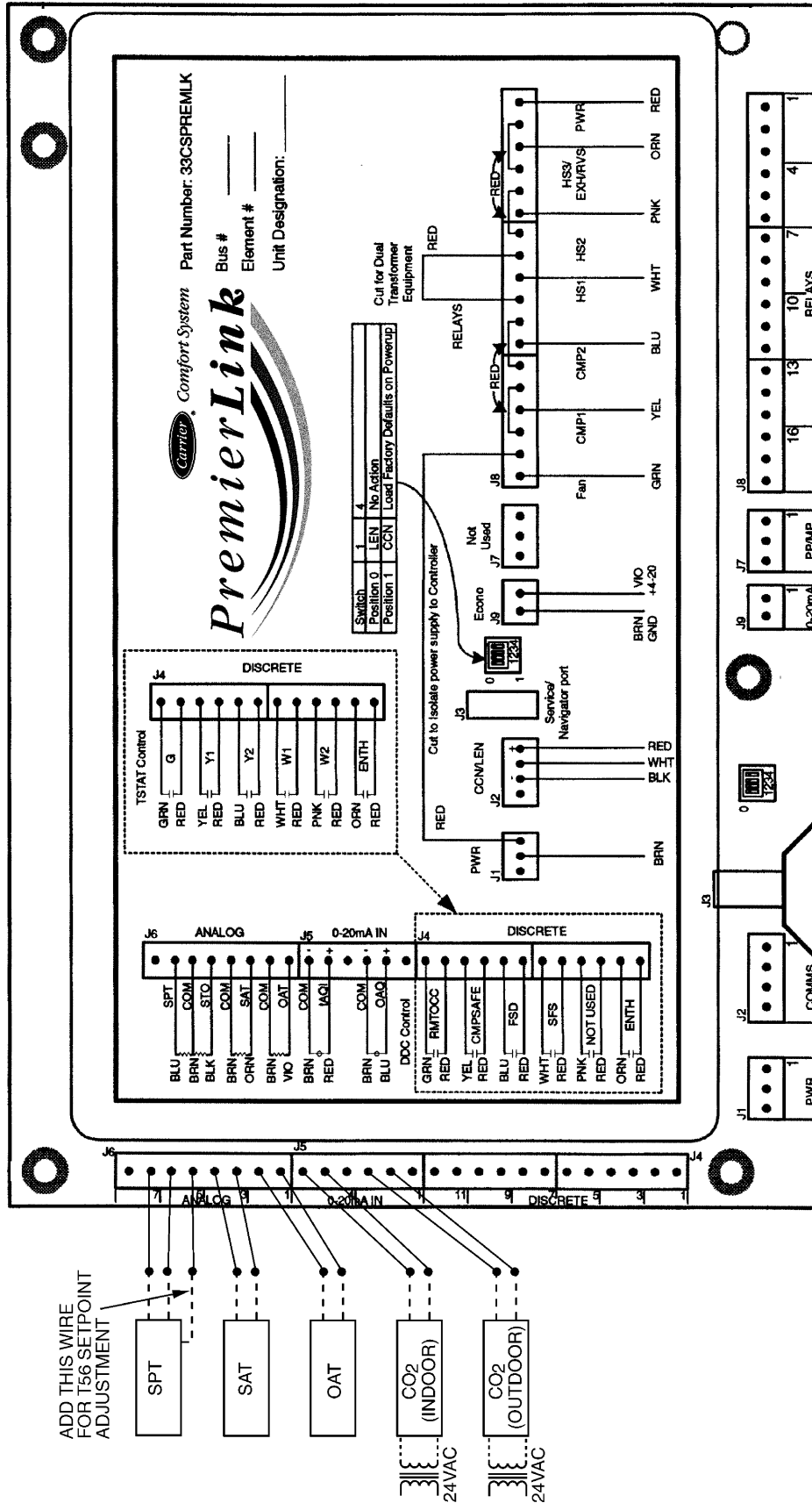
If the sensor is to be mounted in the outdoor air duct, a field-supplied 2 x 4-in. by 1½-in. deep electrical box is required. Remove the cover and enter the knockout from the rear of the box. Install the sensor through the opening so that the sensor leads are inside the electrical box. Secure the sensor to the electrical box using a field-supplied ½-in. conduit nut. Drill a 13/16-in. hole in the outdoor air duct about a foot upstream of the outdoor air damper. Apply a ¼-in. bead of silicone type sealer around the opening and install the sensor through the hole. Secure the electrical box to the duct using 2 field-supplied, No. 10 sheet metal screws. See Fig. 17.

If the sensor is installed outdoors, a field-supplied ½-in. LB type conduit body, gasket, cover, and ½-in. EMT compression connector are required. Install the OAT sensor into the opening at the end of the LB conduit body. Install the ½-in. EMT connector into the rear opening. Tighten each securely to prevent water leakage into the assembly. Mount the assembly onto the ½-in. EMT conduit and secure by tightening the compression connector nut. After the sensor wiring is completed, secure the gasket and cover in place using the screws provided with the cover. See Fig. 16.

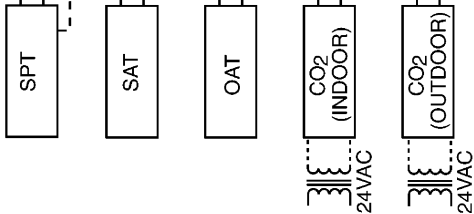


LEGEND
 ——— Factory Wiring
 - - - Field Wiring

Fig. 6 — Space Temperature Averaging



ADD THIS WIRE FOR T56 SETPOINT ADJUSTMENT

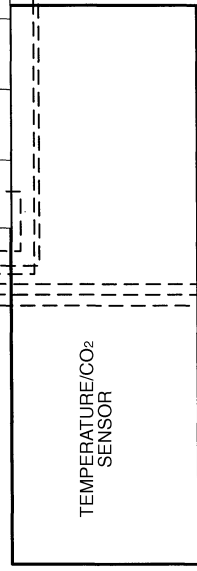
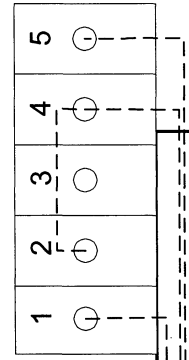
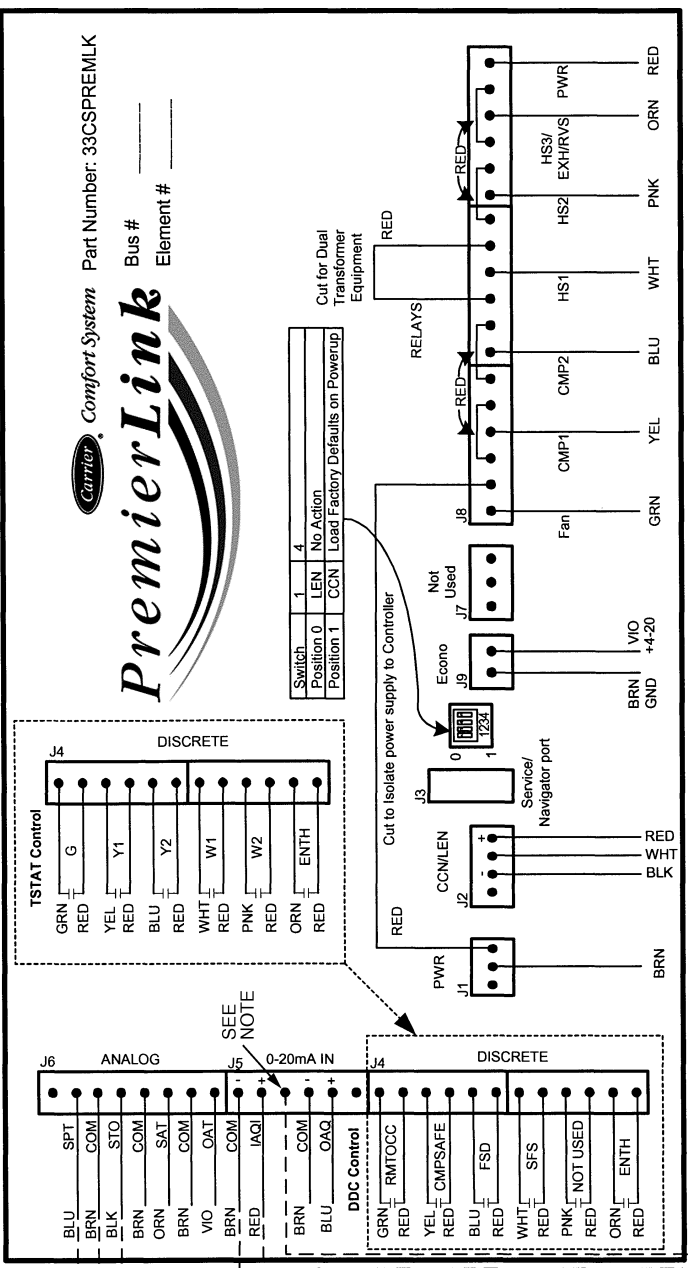


LEGEND

- Outdoor Air Temperature Sensor
- Supply Air Temperature Sensor
- Space Temperature Sensor

Fig. 7 — PremierLink™ Controller and Sensor Wiring — 33ZCT55SPT, 33ZCT56SPT, 33ZCT58SPT
 Space Temperature Sensors; 33ZCSENSAT Supply Air Temperature Sensor;
 33ZCSENCO2 (Outdoor), and 33ZCT55CO2, 33ZCT56CO2 (Indoor) Air Quality Sensors

Switch Position 1	1	4
No Action	LEN	CCN
Load Factory Defaults on Powerup	CCN	LEN



NOTE: No wire is connected to connector J-5 pin 4. You must relocate a wire from an unused terminal. Typically one of the red wires from connector J-4 may be used for this purpose. This pin on J-5 provided 24 VDC power to the combo sensor.

Fig. 8 — PremierLink™ Controller Wiring — Combination Temperature and CO₂ Sensor — 33ZCT55CO₂, 33ZCT56CO₂

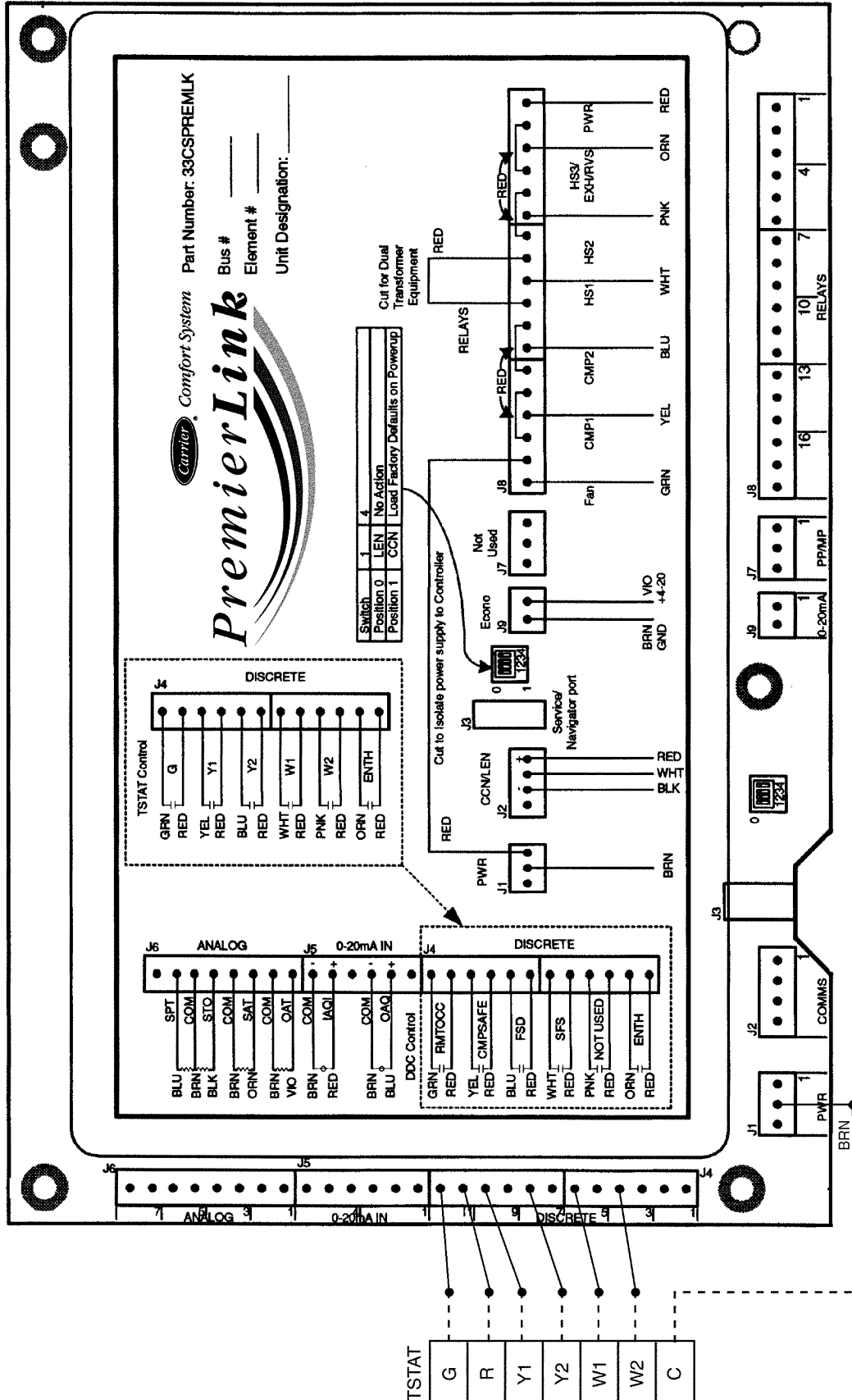
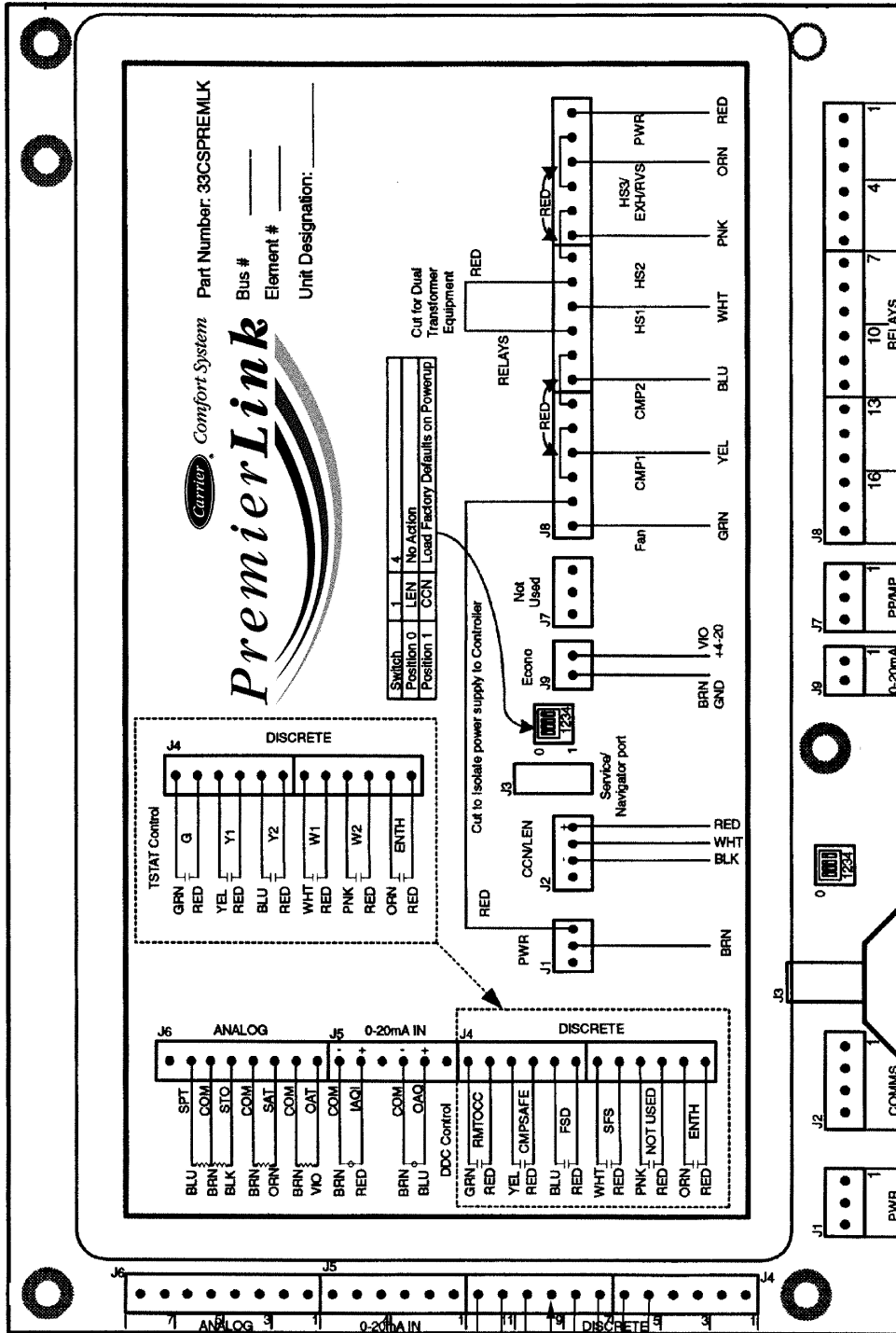


Fig. 9 — PremierLink™ Controller Sensor Wiring — With Programmable or Non-Programmable Thermostat



DRY CONTACTS

COMPRESSOR SAFETY

SEE NOTE

DRY CONTACTS

SUPPLY FAN STATUS

NOTE: Remove red wire from J4-9 to prevent 24 vac shorting out other components or ground. Inputs on J4 are 24 vac. Red leads are voltage source.

Fig. 10 — PremierLink™ Field-Installed Controller Sensor Wiring — Discrete Input

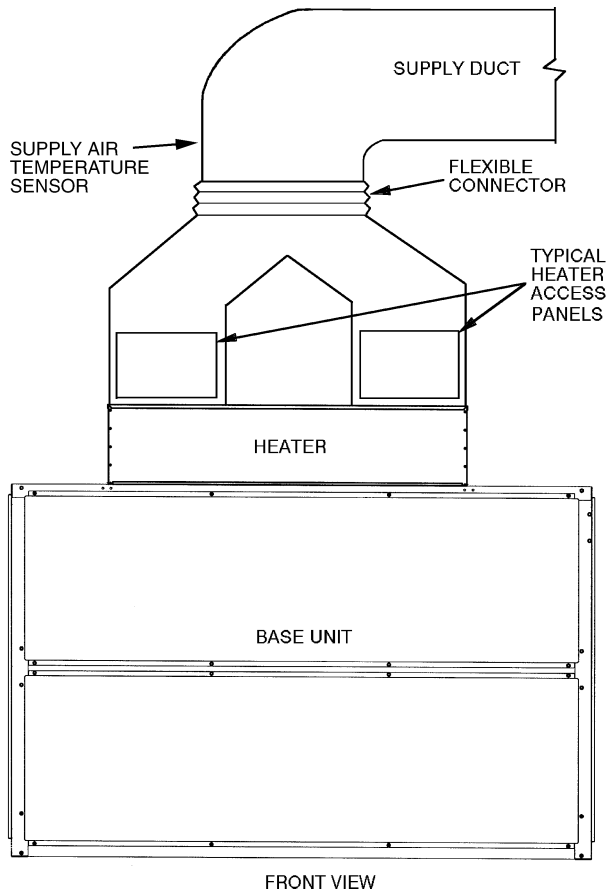


Fig. 11 — Typical Mounting Location for Supply Air Temperature (SAT) Sensor On Split System Units

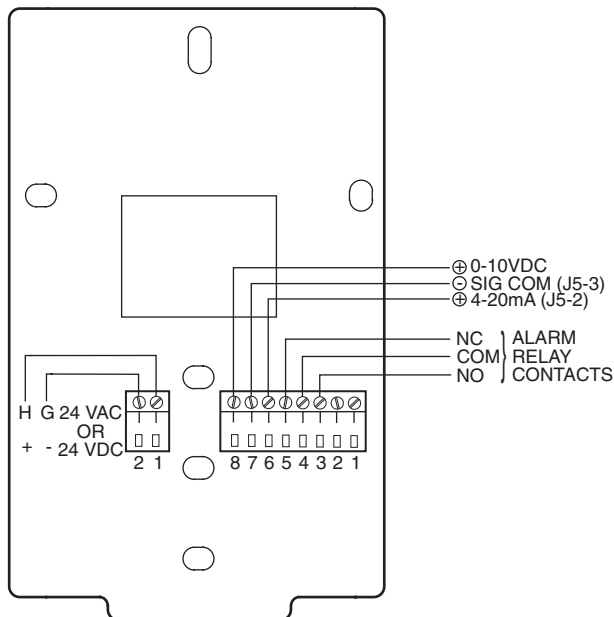


Fig. 12 — Outdoor Air Quality (CO₂) Sensor (33ZCSENC02) — Typical Wiring Diagram

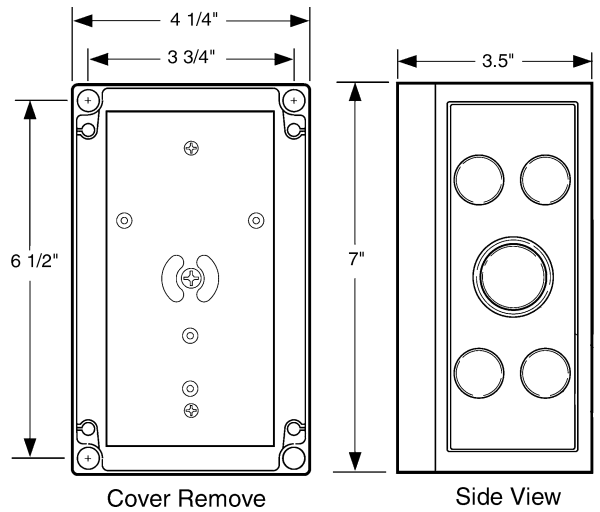


Fig. 13 — Outdoor Air Quality Sensor Cover

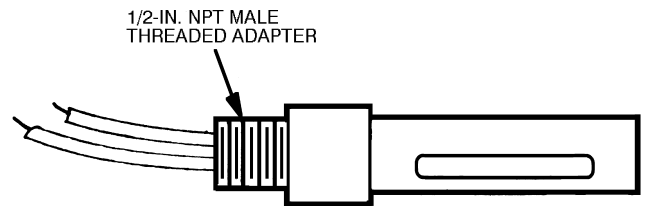


Fig. 14 — Outdoor Air Temperature Sensor (P/N HH79NZ017)

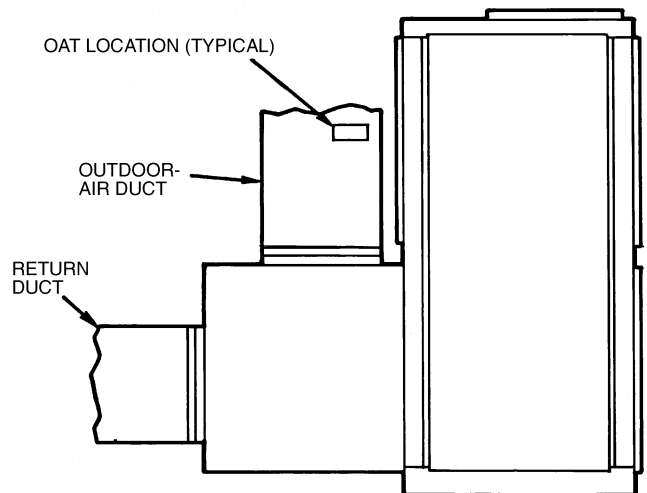


Fig. 15 — OAT Sensor Location in Outside Air Duct

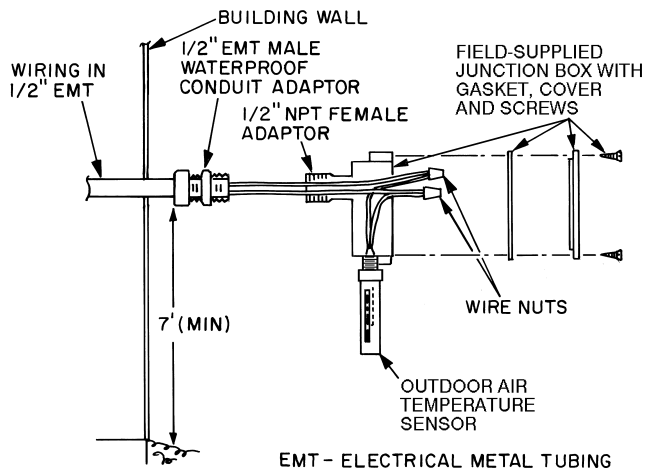
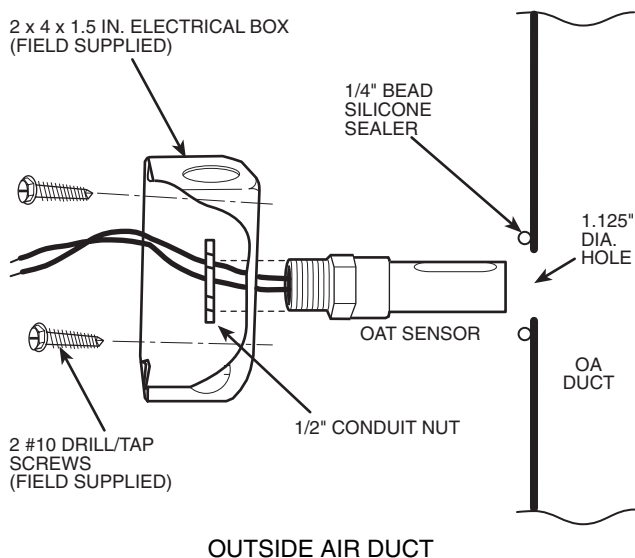
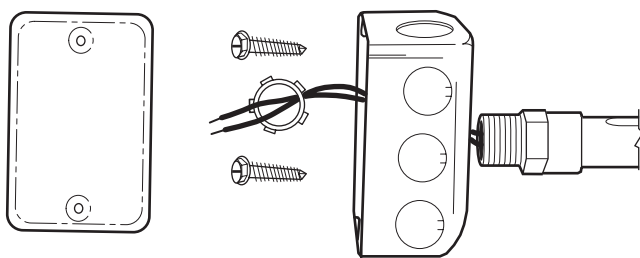


Fig. 16 — Outdoor Air Temperature Sensor Installation — Located in Building Wall



OUTSIDE AIR DUCT



DUCT MOUNTED (EXPLODED VIEW)

LEGEND

- OA** — Outdoor Air
- OAT** — Outdoor Air Temperature

Fig. 17 — Outdoor Air Temperature Sensor Installation — Located in Outdoor Air Duct

Connect to CCN Communication Bus — The PremierLink™ controller connects to the bus in a daisy chain arrangement. Negative pins on each component must be connected to respective negative pins and likewise positive pins on each component must be connected to respective positive pins. The controller signal pins must be wired to the signal ground pins. Wiring connections for CCN must be made at the 3-pin plug.

At any baud (9600, 19200, 38400 baud), the number of controllers is limited to 239 devices maximum. Bus length may not exceed 4000 ft, with no more than 60 total devices on any 1000-ft section. Optically isolated RS-485 repeaters are required every 1000 ft.

NOTE: Carrier device default is 9600 baud.

COMMUNICATION BUS WIRE SPECIFICATIONS — The CCN Communication Bus wiring is field-supplied and field-installed. It consists of shielded three-conductor cable with drain (ground) wire. The cable selected must be identical to the CCN Communication Bus wire used for the entire network. See Table 4 for recommended cable.

Table 4 — Recommended Cables

MANUFACTURER	CABLE PART NO.
Alpha	2413 or 5463
American	A22503
Belden	8772
Columbia	02525

NOTE: Conductors and drain wire must be at least 20 AWG (American Wire Gage), stranded, and tinned copper. Individual conductors must be insulated with PVC, PVC/nylon, vinyl, Teflon, or polyethylene. An aluminum/polyester 100% foil shield and an outer jacket of PVC, PVC/nylon, chrome vinyl, or Teflon with a minimum operating temperature range of -20 C to 60 C is required.

The communication bus shields must be tied together at each system element. If the communication bus is entirely within one building, the resulting continuous shield must be connected to ground at only one single point. If the communication bus cable exits from one building and enters another building, the shields must be connected to the grounds at a lightning suppressor in each building (one point only).

Enthalpy and Differential Enthalpy Control (Fig. 18-23) — There are two options for field-supplied enthalpy and differential enthalpy control: the enthalpy switch/receiver option, and the outdoor and return air sensor option. Either option can be used to indicate when the outdoor air is suitable for free cooling.

ENTHALPY SWITCH/RECEIVER — The accessory enthalpy switch/receiver (33CSENTHSW) senses temperature and humidity of the air surrounding the device and calculates the enthalpy when used without an enthalpy sensor. The relay is energized when enthalpy is high and deenergized when enthalpy is low (based on ASHRAE 90.1 criteria). If an accessory enthalpy sensor (33CSENTSEN) is attached to the return air sensor input, then differential enthalpy is calculated. The relay is energized when the enthalpy detected by the return air enthalpy sensor is less than the enthalpy at the enthalpy switch/receiver. The relay is deenergized when the enthalpy detected by the return air enthalpy sensor is greater than the enthalpy at the enthalpy switch/receiver (differential enthalpy control). See Fig. 18 and 19.

Outdoor Enthalpy Control Installation (Fig. 20) — Outdoor enthalpy control requires only an enthalpy switch/receiver (33CSENTHSW). The enthalpy switch/receiver is mounted in the outdoor air inlet and calculates outdoor air enthalpy. The enthalpy switch/receiver energizes the relay output when the outdoor enthalpy is above 28 BTU/lb **OR** dry bulb temperature is above 75 F and is deenergized when the outdoor enthalpy is below 27 BTU/lb **AND** dry bulb temperature is below 74.5 F. The relay output is wired to the unit economizer which will open or close depending on the output of the switch.

NOTE: The enthalpy calculation is done using an average altitude of 1000 ft above sea level.

Mounting — Mount the enthalpy switch/receiver in a location where the outdoor air can be sampled (such as the outdoor air intake). The enthalpy switch/receiver is not a NEMA 4 enclosure and should be mounted in a location that is not exposed to outdoor elements such as rain or snow. Use two field-supplied no. 8 x 3/4-in. TEK screws. Insert the screws through the holes in the sides of the enthalpy switch/receiver.

Wiring — Carrier recommends the use of 18 to 22 AWG twisted pair or shielded cable for all wiring. All connections must be made with 1/4-in. female spade connectors.

A 24 vac transformer is required to power the enthalpy switch/receiver; as shown in Fig. 20, the PremierLink™ board provides 24 vac. Connect the GND and 24 VAC terminals on the enthalpy switch/receiver to the terminals on the transformer. On some applications, the power from the economizer harness can be used to power the enthalpy switch/receiver. To power the enthalpy switch/receiver from the economizer harness, connect power of the enthalpy switch/receiver to the red and brown wires (1 and 4) on the economizer harness.

For connection to split systems units with PremierLink control, connect the LOW Enthalpy terminal on the enthalpy switch/receiver to J4 — pin 2 of the PremierLink control on the unit. The switch can be powered through the PremierLink control board if desired. Wire the 24 VAC terminal on the enthalpy switch/receiver to J4 — pin 1 on the PremierLink control. Wire the GND terminal on the enthalpy switch/receiver to J1 — pin 2 on the PremierLink control. The HI Enthalpy terminal is not used. See Fig. 20.

Differential Enthalpy Control Installation (Fig. 21) — Differential enthalpy control requires both an enthalpy switch/receiver (33CSENTHSW) and an enthalpy sensor (33CSENSEN). The enthalpy switch/receiver is mounted in the outdoor air inlet and calculates outdoor air enthalpy. The enthalpy sensor is mounted in the return airstream and calculates the enthalpy of the indoor air.

The enthalpy switch/receiver energizes the HI Enthalpy relay output when the outdoor enthalpy is greater than the indoor enthalpy. The LOW Enthalpy terminal is energized when the outdoor enthalpy is lower than the indoor enthalpy. The relay output is wired to the unit economizer which will open or close depending on the output of the switch.

NOTE: The enthalpy calculation is done using an average altitude of 1000 ft above sea level.

Mounting — Mount the enthalpy switch/receiver in a location where the outdoor air can be sampled (such as the outdoor air intake). The enthalpy switch/receiver is not a NEMA 4 enclosure and should be mounted in a location that is not exposed to outdoor elements such as rain, snow, or direct sunlight. Use two field-supplied no. 8 x 3/4-in. TEK screws. Insert the screws through the holes in the sides of the enthalpy switch/receiver.

Mount the enthalpy sensor in a location where the indoor air can be sampled (such as the return air duct). The enthalpy sensor is not a NEMA 4 enclosure and should be mounted in a location that is not exposed to outdoor elements such as rain or snow. Use two field-supplied no. 8 x 3/4-in. TEK screws. Insert the screws through the holes in the sides of the enthalpy sensor.

Wiring — Carrier recommends the use of 18 to 22 AWG twisted pair or shielded cable for all wiring. All connections must be made with 1/4-in. female spade connectors.

The PremierLink board provides 24 vac to power the enthalpy switch/receiver. Connect the GND and 24 VAC terminals on the enthalpy switch/receiver to the terminals on the transformer. On some applications, the power from the economizer harness can be used to power the enthalpy switch/receiver. To power the enthalpy switch/receiver from the economizer harness, connect power of the enthalpy switch/receiver to the red and brown wires (1 and 4) on the economizer harness.

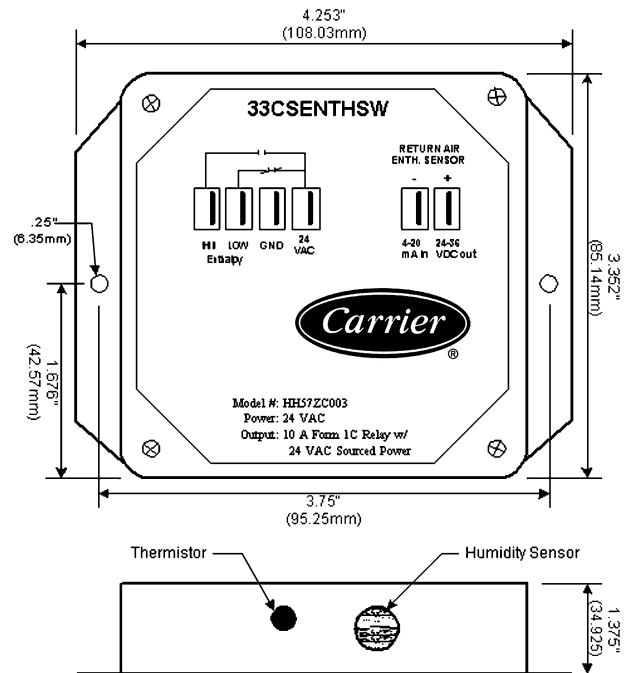


Fig. 18 — Enthalpy Switch/Receiver Dimensions (33CSENTHSW)

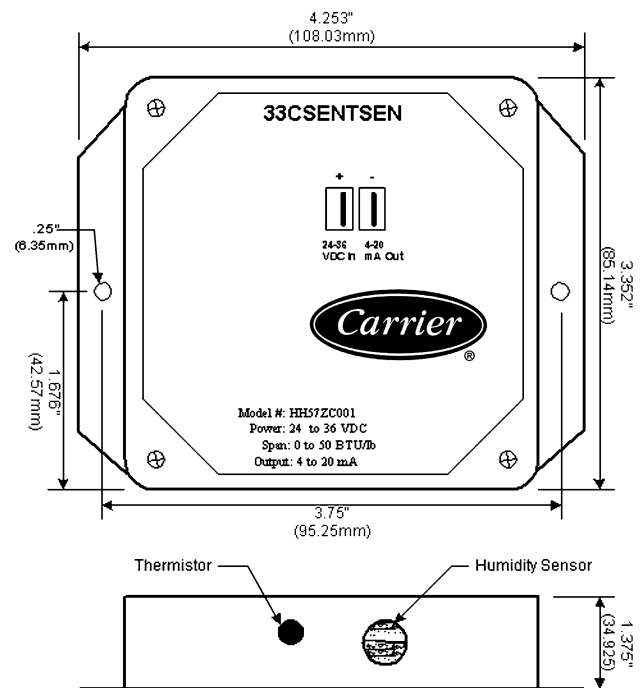
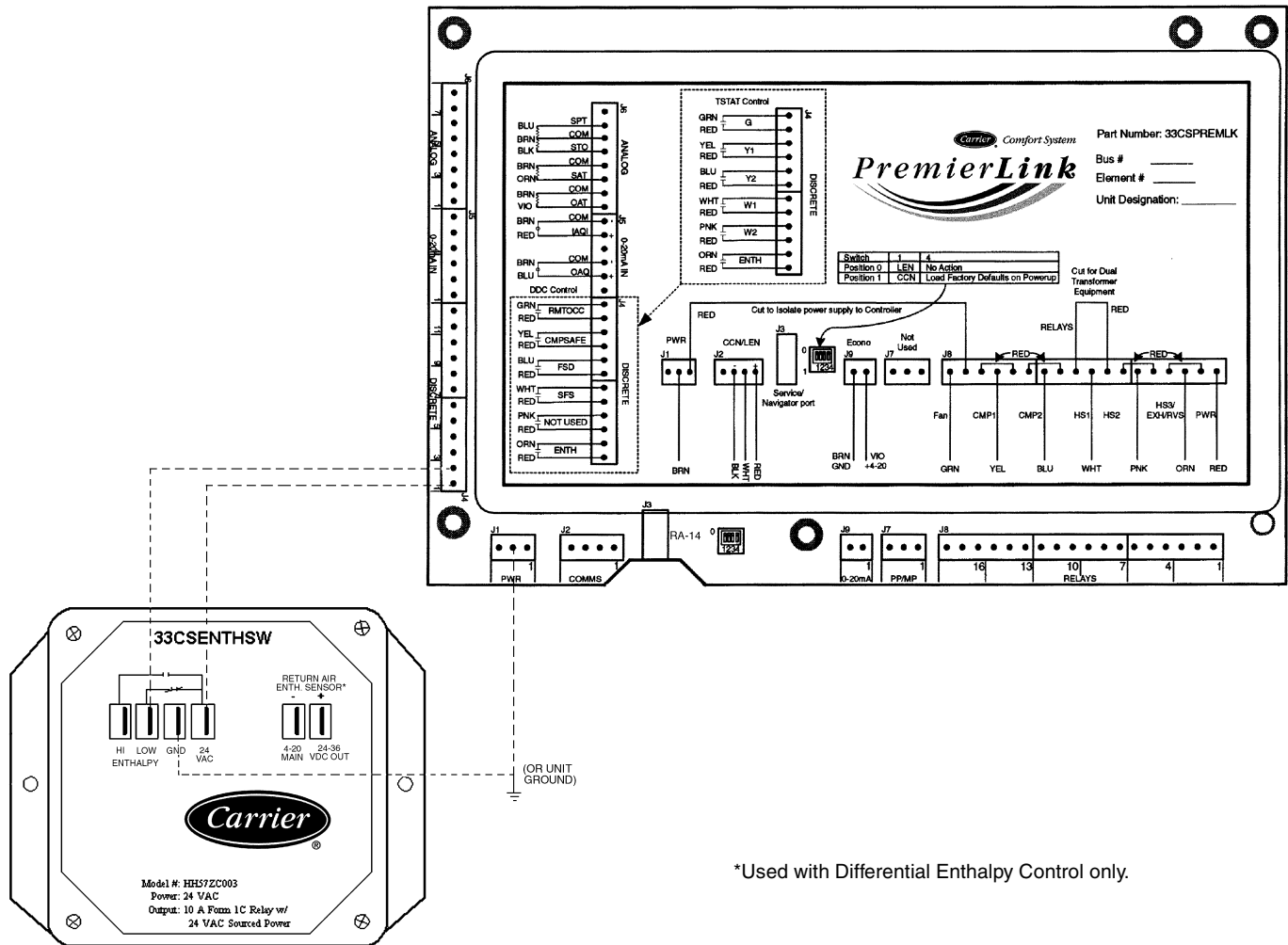


Fig. 19 — Enthalpy Sensor Dimensions (33CSENSEN)

Connect the LOW Enthalpy terminal on the enthalpy switch/receiver to J4 — pin 2 of the PremierLink control on the unit. The switch can be powered through the PremierLink control board if desired. Wire the 24 VAC terminal on the enthalpy switch/receiver to J4 — pin 1 on the PremierLink control. Wire the GND terminal on the enthalpy switch/receiver to J1 — pin 2 on the PremierLink control. The HI Enthalpy terminal is not used. See Fig. 20.



*Used with Differential Enthalpy Control only.

Fig. 20 — Typical Wiring Schematic — Carrier Rooftop Unit with PremierLink™ Controls

Connect the 4-20 mA In terminal on the enthalpy switch/receiver to the 4-20 mA Out terminal on the return air enthalpy sensor. Connect the 24-36 VDC Out terminal on the enthalpy switch/receiver to the 24-36 VDC In terminal on the return air enthalpy sensor. See Fig. 21.

Enthalpy Switch/Receiver Jumper Settings — There are two jumpers. One jumper determines the mode of the enthalpy switch/receiver. The other jumper is not used. To access the jumpers, remove the 4 screws holding the cover on the enthalpy switch/receiver and then remove the cover. The factory settings for the jumpers are M1 and OFF.

The mode jumper should be set to M2 for differential enthalpy control. The factory test jumper should remain on OFF or the enthalpy switch/receiver will not calculate enthalpy.

Enthalpy Sensor Jumper Settings — There are two jumpers. One jumper determines the mode of the enthalpy sensor. The other jumper is not used. To access the jumpers, remove the 4 screws holding the cover on the enthalpy sensor and then remove the cover. The factory settings for the jumpers are M3 and OFF.

The mode jumper should be set to M3 for 4 to 20 mA output. The factory test jumper should remain on OFF or the enthalpy sensor will not calculate enthalpy.

OUTDOOR AND RETURN AIR ENTHALPY SENSORS — The differential enthalpy control is supplied as a field-installed accessory to be used with the Economizer damper control option. The differential enthalpy control provides two enthalpy sensors for sensing the outdoor air and return air conditions, and a differential enthalpy controller.

NOTE: The differential enthalpy control must be set to the “D” setting for differential enthalpy control to work properly.

The differential enthalpy control senses the outdoor and return air sensors and provides a dry contact switch input to the PremierLink Controller. Locate the controller in place of an existing economizer controller or near the actuator. The mounting plate may not be needed if existing bracket is used.

A closed contact indicates that outside air is preferred to the return air. An open contact indicates that the economizer should remain at minimum position.

The solid-state return air enthalpy sensor senses and combines the temperature and humidity levels of outdoor and return air. The sensors provide information for comparison of outdoor temperature and humidity to return air temperature and humidity in order to determine the most economical mixture of air.

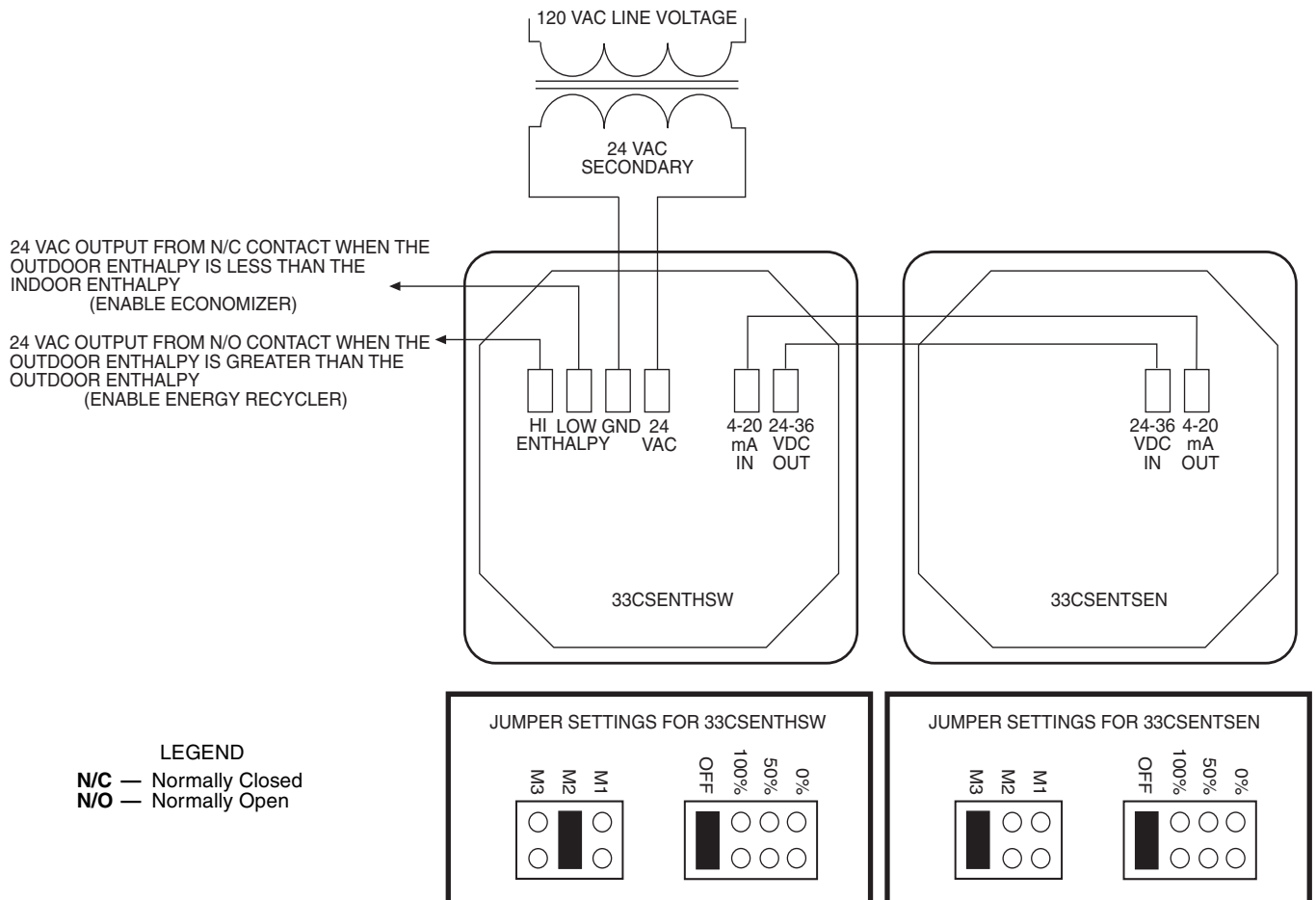


Fig. 21 — Differential Enthalpy Control Wiring

Wiring Enthalpy Sensors — To wire the enthalpy sensor, perform the following (see Fig. 24 and 25):

NOTE: To mount outdoor air sensor remotely, remove it from back of enthalpy control and follow steps 3 and 6.

1. Use a 2-conductor, 18 or 20 AWG, twisted pair cable to connect the return air enthalpy sensor to the differential enthalpy control. Use a 4-conductor, 18 or 20 AWG cable to connect the enthalpy control to the PremierLink controller and power transformer.
2. At the differential enthalpy control remove the factory-installed resistor from the SR and (+) terminals.
3. Connect the RED wire from the 2-conductor cable which originates from the return air enthalpy sensor to the SR (+) terminal. Connect the BLK wire to the SR (-) terminal.
4. Connect the following 4 wires from the 4-wire conductive cable to the differential enthalpy controller:
 - a. Connect the RED wire to the 24 vac terminal (TR1) on enthalpy control and to pin 1 on 12-pin harness.
 - b. Connect the BRN wire to the 24 vac GND terminal (TR) on enthalpy sensor and to pin 4 on 12-pin harness.
 - c. Connect the ORN wire to J4-2 on PremierLink controller and to terminal 3 on enthalpy sensor.
 - d. Connect the RED wire to J4-1 on PremierLink controller and to terminal 2 on enthalpy sensor.

5. At the return air enthalpy sensor, strip 3 in. of jacket from the cable and remove 1/2 in. of insulation from each conductor.
6. Connect the RED wire to (+) spade connector on the sensor. Connect the BLK wire to (S) spade connector on the sensor. Use wire nuts or closed-end crimp-type connectors to fasten the connections securely. See Fig. 22.

Economizer — The PremierLink™ controller will interface with the 40RM economizer. Economizers will contain a Honeywell actuator (Honeywell part number M7415).

An adapter (Honeywell part number Q769B or Q769C is preferred) must be used to enable the 4 to 20 mA signal from the PremierLink controller to control the position of the economizer. Refer to Honeywell Q769B and Q769C accessory installation instructions for wiring details.

⚠ CAUTION

Disconnect power supply before making wiring connections to prevent electrical shock and equipment damage.

⚠ CAUTION

To avoid permanent damage to the PremierLink 4 to 20 mA connection, a signal loop isolator must be installed when using the Q769B adapter.

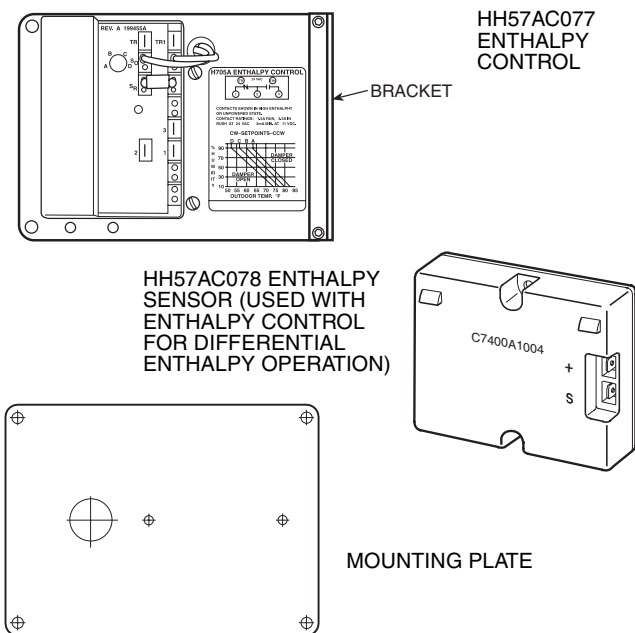


Fig. 22 — Differential Enthalpy Control, Sensor and Mounting Plate (33AMKITENT006)

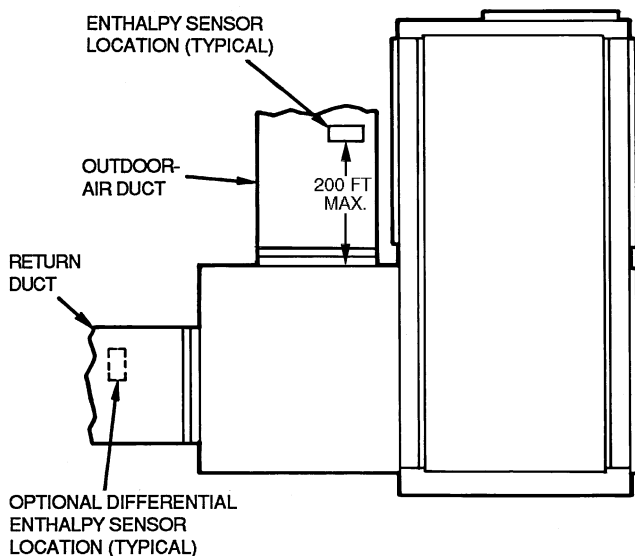
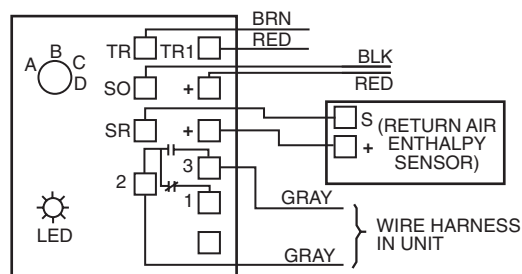


Fig. 23 — Location of Differential Enthalpy Controller and Return Air Enthalpy Sensor (40RM Unit Shown)



NOTES:

1. Remove factory-installed jumper across SR and + before connecting wires from return air sensor.
2. Switches shown in high outdoor air enthalpy state. Terminals 2 and 3 close on low outdoor air enthalpy relative to indoor air enthalpy.
3. Remove sensor mounted on back of control and locate in outside airstream.

Fig. 24 — Outside and Return Air Sensor Wiring Connections for Differential Enthalpy Control

Q769B — Because the Honeywell adapter is designed for a negative 4 to 20 mA input instead of a positive signal, the Q769B adapter requires a separate transformer and a current loop isolator to perform properly. **Connecting the adapter directly to the PremierLink controller could cause the 4 to 20 mA output on the controller to be permanently damaged.** This condition is followed by a constant 36 vdc output from the PremierLink™ economizer output (J-9).

The Q769B adapter is supplied with female quick-connect terminal that fits over the male quick-connect P1 and P on the actuator.

To connect the Q769B adapter to the actuator, follow these steps and refer to Fig. 26:

1. Remove power from unit.
2. Remove the logic module from the actuator and discard.
3. Mount the adapter on the actuator by gently pushing the adapter onto the P1 and P terminals on actuator.

NOTE: Be sure the plus (+) terminal on the adapter connects to P1 on the actuator and the minus (-) terminal on the adapter connects to P terminal on the actuator. See Fig. 26.

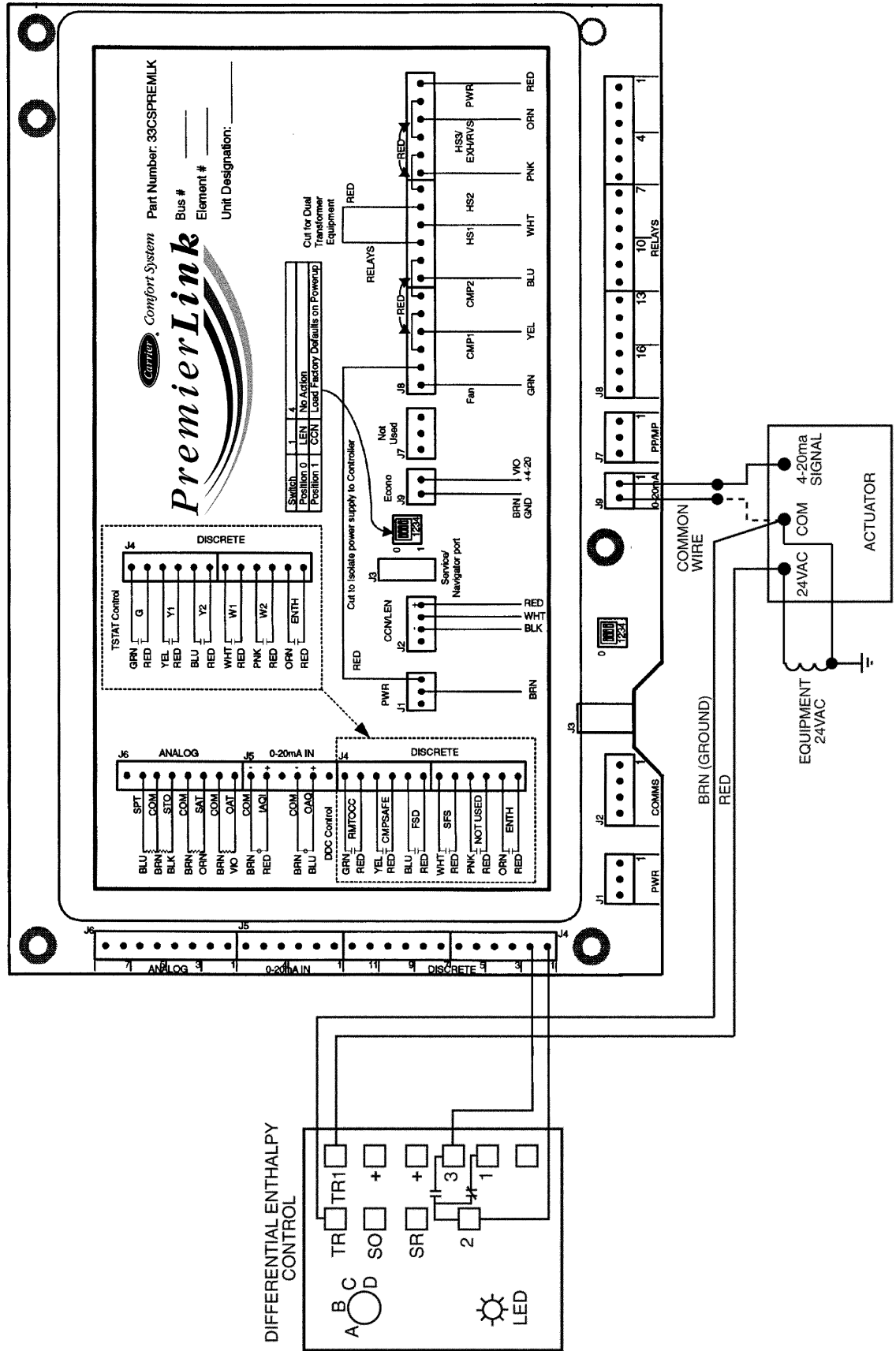
4. Using field-supplied wire, connect the plus (+) terminal on the adapter to the plus (+) terminal on the loop isolator. Connect the minus (-) terminal on the adapter to the minus (-) terminal on the loop isolator.
5. Using the transformer supplied with the 40RM economizer, connect 24 vac to actuator terminals TR and TR1.
6. Connect the plus (+) terminal from the loop isolator to J9-1 terminal on the PremierLink Controller. Connect the minus (-) terminal from the loop isolator to J9-2 terminal on the PremierLink Controller.
7. Restore power to unit.

Q769C — The Q769C adapter incorporates a female quick-connect terminal that attaches to P1 and P male quick-connects on the actuator.

IMPORTANT: It is recommended that the Q769C adapter be used with a field-supplied 500-ohm resistor across the terminals. Using the Q769C with actuator requires a separate, field-supplied transformer because the actuator with Q769C is a positive ground device. The PremierLink control is a negative ground device. The positive P1 terminal on the Q769C goes to ground. See Fig. 27.

To connect the Q769C adapter to the actuator, follow the steps below and refer to Fig. 27:

1. Remove power from unit.
2. Remove the logic module from the actuator and discard.
3. Mount the adapter onto the actuator by gently pushing the adapter onto terminals P1 and P of actuator.
4. **NOTE:** Be sure the plus (+) terminal on the adapter connects to P1 on the actuator and the minus (-) terminal on the adapter connects to P terminal on the actuator. See Fig. 27.
5. Using the transformer supplied with the 40RM economizer, connect 24 vac to actuator terminals TR and TR1.
6. Connect 500-ohm resistor (field supplied) to the plus (+) and minus (-) terminals on adapter.
7. Connect the plus (+) terminal from the adapter to J9-1 terminal on the PremierLink Controller. Connect the minus (-) terminal from the adapter to J9-2 terminal on the PremierLink Controller.
8. Restore power to unit.



NOTE: If PremierLink™ Controller is grounded and actuator is grounded on common side, then common wire from PremierLink controller J9-2 is not needed.

Fig. 25 — PremierLink Controller Wiring — Differential Enthalpy Control (33AMKITENT000)

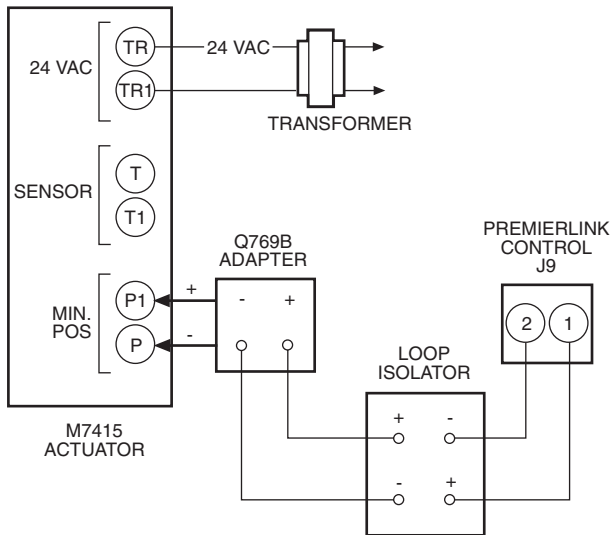


Fig. 26 — PremierLink™ Control Wiring to Q769B Adapter and Actuator

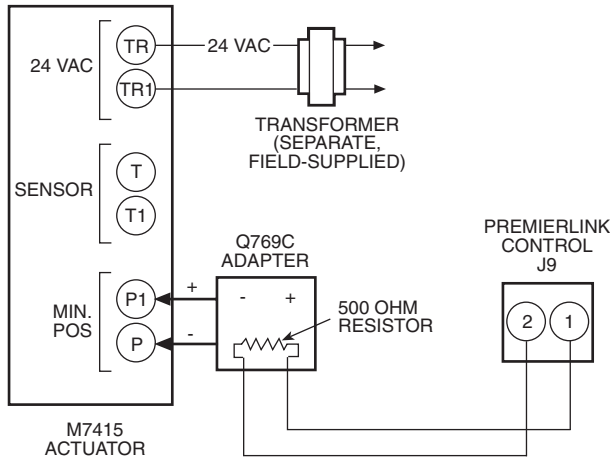


Fig. 27 — PremierLink Control Wiring to Q769C Adapter and Actuator

NOTE: To change the factory setting, use a 1/8-in. (3-mm) flat-blade screwdriver to position the mode switch to the alternate setting.

Table 5 — Actuator Drive Direction Settings

POSITION OF SWITCH 3 AND THE DIRECTION OF SPRING RETURN DRIVE	DRIVE DIRECTION WITH A MINIMUM INPUT SIGNAL	DRIVE DIRECTION WITH A MAXIMUM INPUT SIGNAL
DA/CCW	CCW	CW
RA/CCW	CW	CCW
DA/CW	CW	CCW
RA/CW	CCW	CW

LEGEND

- CCW — Counterclockwise
- CW — Clockwise
- DA — Direct Action
- RA — Reverse Action

Table 6 — Mode Selection Information

MODE SWITCHES	SWITCH FUNCTIONS	FACTORY SETTINGS
5	VDC or mA	VDC
4	0 to 10 VDC (0 to 20 mA or 2 to 10 VDC (4 to 20 mA))	0 to 10
3	Direct Acting (DA) or Reverse Acting (RA)	DA
2	FIXED or AUTO	FIXED
1	— or 6 to 9 VDC	—

NOTE: The 6 to 9 VDC setting of Switch 1 overrides switch 4.

WIRING (See Fig. 29-30B) — The wires for power and signal transmission from PremierLink to economizer are field-supplied. To connect the Economizer Johnson Actuator to PremierLink controller, connect the pink wire on actuator to purple wire on PremierLink J9-1. See Fig. 30A.

For the Belimo Actuator, connect the white wire on the actuator to J9-1 on the PremierLink controller. See Fig. 30B.

NOTE: To retrofit PremierLink Controller to older 4 to 20 mA actuator, connect the red wire on the actuator wire harness to the purple wire on the PremierLink J9-1. Connect the yellow and white wires from the actuator wire harness to the 24-volt AC transformer on equipment. See Fig. 29.

IMPORTANT: Make sure the common side is grounded for both the PremierLink power and the actuator power. This is especially important if separate transformers are used.

Economizer with Johnson 4 to 20 mA Actuator — The PremierLink Controller can be connected to an economizer that uses a Johnson 4 to 20 mA actuator.

DRIVE DIRECTION — The actuator drive direction is dependent upon the position of Switch 3 and the spring return direction. See Table 5. The actuator is factory set for Direct Acting (DA) operation with Switch 3 in the DA position. An increasing control signal drives the actuator away from the spring return position in DA mode. The actuator should be installed in the DA mode so damper will close automatically on power shut down.

If Reverse Acting (RA) operation is desired, move Switch 3 to the RA position. An increasing control signal drives the actuator toward the spring return position in RA mode.

SWITCH SELECTION — The type of input control signal is determined by the position of Switch 5. With Switch 5 in the VDC position (factory setting), the signal is DC voltage. With Switch 5 in the mA position, the input signal changes to current input. See Fig. 28 and Table 6. The switch should be set to mA for use with PremierLink controller.

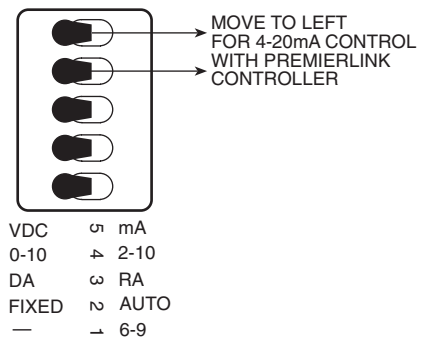


Fig. 28 — Position of Actuator Mode Switches (Factory Default)

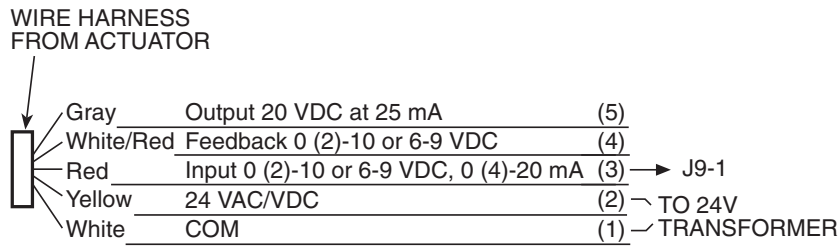


Fig. 29 — PremierLink™ Controller Wiring to Johnson Actuator With Wire Harness (M9206-GGC-2)

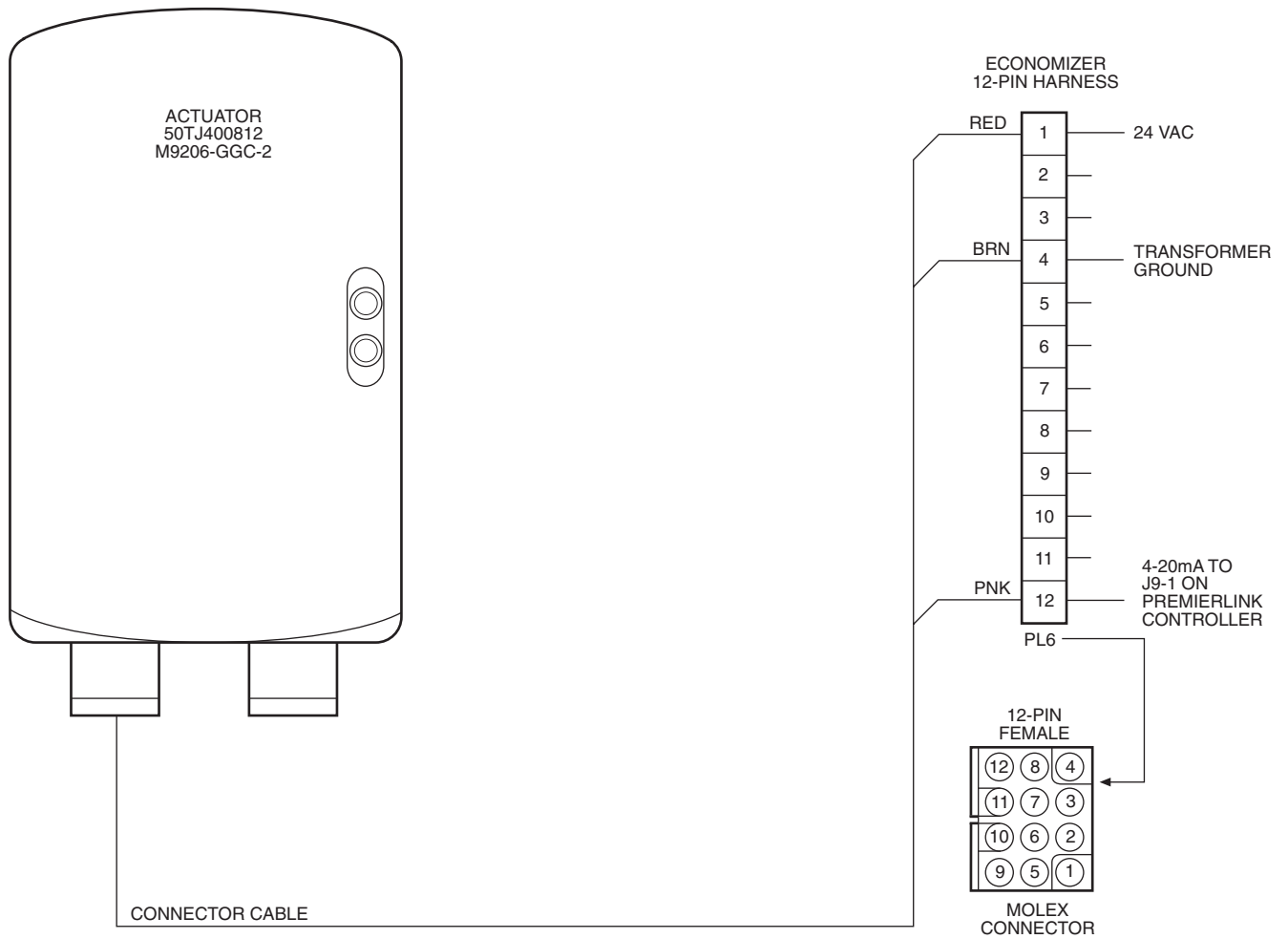
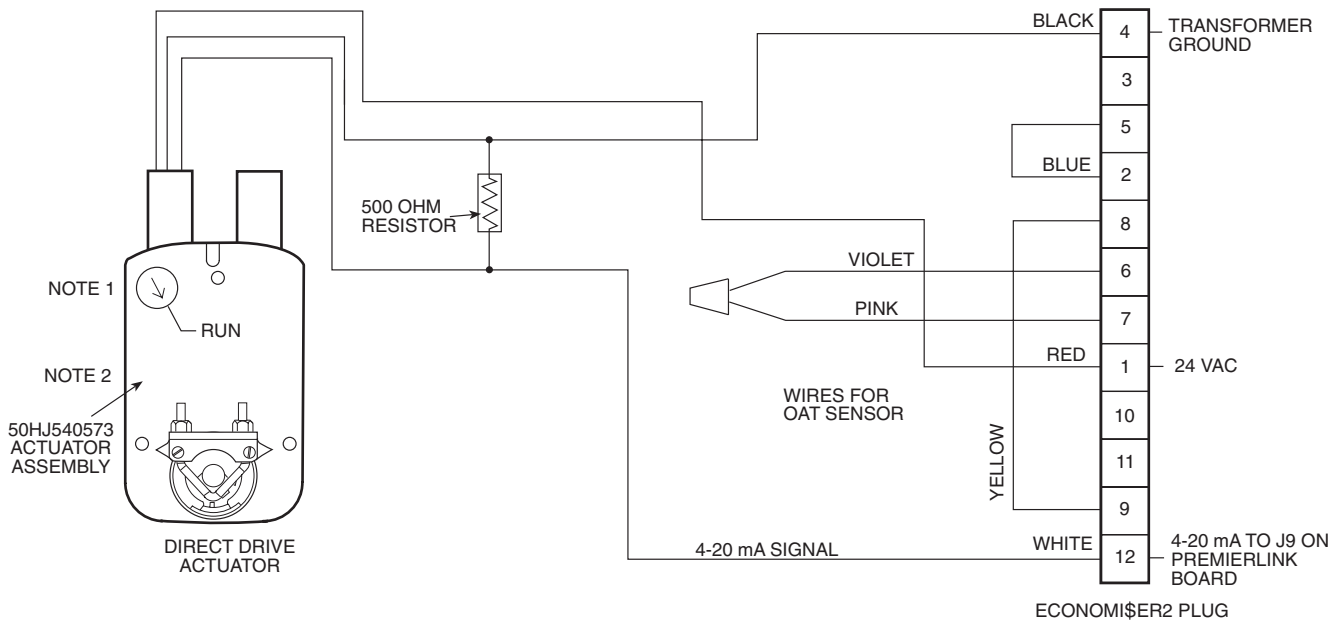


Fig. 30A — PremierLink Control Wiring to Johnson Actuator Economizer Harness



NOTES:

1. Switch on actuator must be in run position for economizer to operate.
2. 50HJ540573 actuator consists of the 50HJ540567 actuator and a harness with 500-ohm resistor.

Fig. 30B — PremierLink™ Control Wiring to Belimo-Style Actuator EconoMi\$er2 Harness

START-UP

⚠ WARNING

The unit must be electrically grounded in accordance with local codes and NEC ANSI/NFPA 70 (American National Standards Institute/National Fire Protection Association).

Use the Carrier network communication software to start up and configure the PremierLink™ controller.

Changes can be made using the ComfortWORKS® software, ComfortVIEW™ software, or Network Service Tool. The Network Service Tool is a portable interface device that allows the user to change system set-up and set points from a zone sensor or terminal control module. During start-up, the Carrier software can also be used to verify communication with PremierLink controller.

NOTE: All set-up and set point configurations are factory-set and field-adjustable.

For specific operating instructions, refer to the literature provided with user interface software.

Perform System Check-Out

1. Check correctness and tightness of all power and communication connections.
2. At the unit, check fan and system controls for proper operation.
3. At the unit, check electrical system and connections of any optional electric heat.

NOTE: If optional electric heat is installed, Heat Type must be changed to "1" (electric heat) from default of "0" (gas heat).

4. Check to be sure the area around the unit is clear of construction dirt and debris.
5. Check that final filters are installed in the unit. Dust and debris can adversely affect system operation.
6. Verify that the PremierLink controls are properly connected to the CCN bus.

Initial Operation and Test — Perform the following procedure:

1. Apply 24 vac power to the control.
2. Connect the Service Tool to the phone jack service port of the controller.
3. Using the Service Tool, upload the controller from address 0, 31 at 9600 baud rate. The address may be set at this time. Make sure that Service Tool is connected to only one unit when changing the address.

MEMORY RESET — DIP switch 4 causes a non-volatile (E-squared) memory reset to factory defaults after the switch has been moved from position 0 to position 1 and the power has been restored. To enable the feature again, the switch must be put back to the 0 position and power must be restored; this prevents subsequent resets to factory defaults if the switch is left at position 1.

To cause a reset of the non-volatile memory (to factory defaults), turn the controller power off if it is on, move the switch from position 1 to position 0, and then apply power to the controller for a minimum of 5 seconds. At this point, no action occurs, but the controller is now ready for the memory to reset. Remove power to the controller again and move the switch from position 0 to position 1. This time, when power is applied, the memory will reset to factory defaults. The controller address will return to bus 0 element 31, indicating that memory reset occurred.

Install Navigator™ Display Module — The Navigator is a portable display module that conforms to NEMA 4 specifications for outdoor use in temperatures ranging from -22 F (-30 C) to 158 F (70 C). The Navigator can be used to configure and perform service diagnostics on machines equipped with the PremierLink Controller. See Fig. 31.

The Navigator keypad contains eleven menu LEDs and one Alarm Status LED, all of which are red. The Navigator is capable of displaying four 24-character lines of information on a backlit liquid crystal display. The Navigator has four functional

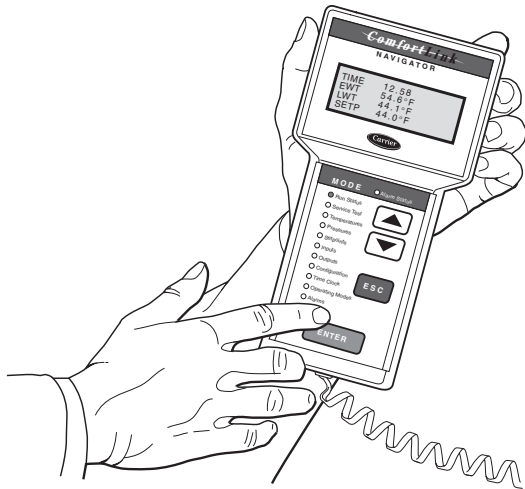


Fig. 31 — Navigator™ Module in Display Mode

keys which are the up arrow (▲), down arrow (▼), **ENTER** and **ESCAPE** keys.

INSTALLATION — The Navigator display module is intended to be a mobile device, so there are no holes in the device for permanent mounting. The module has a magnetic mount that is strong enough to hold the device in place on any clean, dry metal surface.

To enter LEN (local equipment network) mode:

1. Remove power by removing connection to J1.
2. Remove connection to J2 (to avoid communication problems with equipment).
3. Position DIP switch to 0 (ON) position.
4. Restore power by reconnecting J1.
5. Plug in Navigator.

Controller is now in LEN mode and will support the Navigator device.

To return CCN mode:

1. Remove power to controller by removing connection to J1.
2. Remove connection to J2 (to avoid communication problems with equipment).
3. Position DIP switch to 1 (OFF) position.
4. Reconnect J2.
5. Restore power by reconnecting J1.

Controller is now in CCN mode at the previously configured address and baud rate.

The Navigator module is powered through the PremierLink controller. The Navigator has a modular telephone style (RJ14) connector and should be connected to terminal block TB3 in the control box. This device is intended for use on the LEN communications bus only. Do NOT connect to the Navigator while in CCN mode. Communication problems may occur.

OPERATION — To use the Navigator, plug the RJ14 connector into the RJ14 port. On power up, the Navigator displays:

**PremierLink
Navigator
By
Carrier**

The Navigator will upload the appropriate display tables from PremierLink™ controller. A 'Communication failure' message will be displayed if any errors are encountered. Check the wiring at the connector. After successful upload of information, the Navigator begins its default display. All items in the Run Status menu are displayed one at a time in this mode. An example of the display in the default mode is:

**SAT 54.2 °F
SUPPLY AIR TEMPERATURE**

The different levels of modes can be accessed with the Navigator. See the base unit controls and troubleshooting guide for more information.

Pressing any key while in the default display mode will cause the Navigator to enter its manual mode. In this mode, all sub-modes and items within the eleven top level configuration modes, denoted on the display screen, can be accessed. The Navigator automatically returns to the default display mode after 60 minutes of no keypad activity. Pressing the **ENTER** and **ESCAPE** keys simultaneously while the unit displays "Select a menu item" will also log the device out and return it to its default display mode.

NAVIGATING THROUGH MENU STRUCTURES — The arrow keys are used to scroll up and down to select sub-modes within a mode or items within a sub-mode. See the base unit troubleshooting guide for menu structure. The **ENTER** key is used to select a menu item or to accept data entry. The **ESCAPE** key is used to exit to the next highest mode or to cancel data entry. The sub-mode and item displays will wrap around with the last and first items separated by a line of dashes on the display. The '>' symbol is the pointer and is located at the left side of the display.

Press the **ESCAPE** key to display "Select a menu item" on the screen. This is the top level and the arrow keys are used to move the red LED to the one of the 11 desired modes. Pressing **ENTER** will display the sub-modes within a top level mode. Once in a sub-mode, use the arrow keys to move the pointer ('>') to the desired sub-mode. Up to four sub-modes will be displayed on the Navigator at one time. Continue pressing the arrow keys as needed to find the desired sub-mode.

As an example, Press the **ESCAPE** key to display "Select a menu item" on the screen. Press the down arrow until the red LED is lit for the Setpoints menu. Press the **ENTER** key to display the first four sub-modes in the Setpoints menu:

**>SETP
OATL
NTLO
UHDB**

To access the sub-mode to change the Unoccupied OAT Lockout Setpoint, press the down arrow to scroll down until the Navigator™ module display reads:

SETP
OATL
>NTLO
UHDB

To view an expansion of the sub-mode, press the **ENTER** and **ESCAPE** keys simultaneously and the Navigator will display:

>NTLO
UNOCC. OAT LOCKOUT
TEMP

The Navigator will remain in the expanded display mode until the **ESCAPE** key is pressed. Use the arrow keys to view expansions for any of the other sub-modes within the Setpoint mode.

Password Protection — If an area is entered that is password protected or an item is selected for change that is password protected, the Navigator will display:

Enter Password
1111 (default password)

The first digit of the password will be flashing. Hold either of the arrow keys down to change the value of the first digit (if necessary) and press **ENTER** to accept. Repeat the process for the remaining three digits.

The message “Invalid Password” is displayed if the password is not correct. The password can not be disabled from the Navigator, nor can it be changed.

Forcing Values and Configuring Items — Certain items are allowed to be forced and other items are user-configurable. Both of these changes can be made using the Navigator.

CONFIGURATION

The following sections describe the computer configuration screens which are used to configure the PremierLink™ controller. The screens shown may be displayed differently when using different Carrier software.

Points Display Screen — The Points Display screen is used to monitor and change the PremierLink controller set points. See Table 7.

SPACE TEMPERATURE — This point displays the space temperature from the 10K thermistor (Type III) located in the space.

Space
Temperature: Display Units: Degrees F (Degrees C)
 Default Value: -40.0
 Display Range: -40.0 to 245.0
 Network Access: Read/Write

SUPPLY AIR TEMPERATURE — The Supply Air Temperature point displays the temperature of the air leaving the unit, downstream of any cool or heat sources. Temperature is measured by a 10K thermistor (Type III). This sensor is required for proper function of the heating, cooling, and the economizer.

Supply Air
Temperature: Display Units: Degrees F (Degrees C)
 Default Value: 0.0
 Display Range: -40.0 to 245.0
 Network Access: Read/Write

OUTDOOR AIR TEMPERATURE — Temperature of the air leaving the unit downstream of any cool or heat sources, measured by a 10K thermistor (Type III). This sensor is required for proper function of the heating, cooling, and the economizer.

Outdoor Air
Temperature: Display Units: Degrees F (Degrees C)
 Default Value: 0.0
 Display Range: -40.0 to 245.0
 Network Access: Read/Write

CONTROL SET POINT — This point displays the current controlling set point when a heat or cool mode is active. If there is not an active heat or cool set point, the set point of the last mode is displayed. Upon reset or start-up, the proper cooling set point is displayed, depending on occupancy. In the thermostat mode, this point is not used for equipment control.

Control Set Point: Display Units: Degrees F (Degrees C)
 Default Value: Unoccupied Cool
 Setpoint
 Display Range: 35 to 110
 Network Access: Read Only

COOLING PERCENT TOTAL CAPACITY — The Cooling Percent Total Capacity point is used to display the current Cooling Capacity. When cooling is enabled, the percent of cooling being delivered is determined by the following formula for the number of compressor stages confirmed:

$$\% \text{ Output Capacity} = (\# \text{ of active stages} / \text{Total stages}) * 100.$$

Cooling Percent
Total Capacity: Display Units: % output capacity
 Default Value: 0
 Display Range: 0 to 100
 Network Access: Read Only

HEATING PERCENT TOTAL CAPACITY — The Heating Percent Total Capacity point is used to display the current Heating Capacity.

When heat is enabled, the percent of heat being delivered is determined by the following formula for electric heat:

$$\% \text{ Output Capacity} = (\# \text{ of active stages} / \text{Total stages}) * 100$$

Heating Percent
Total Capacity: Display Units: % output capacity
 Default Value: 0
 Display Range: 0 to 100
 Network Access: Read Only

ECONOMIZER ACTIVE — The Economizer Active point displays the status of the economizer for free cooling. When the outdoor conditions match the desired indoor conditions, the economizer will be enabled for outdoor air assisted cooling.

Economizer
Active: Display Units: Discrete ASCII
 Default Value: No
 Display Range: No/Yes
 Network Access: Read Only

SUPPLY FAN RELAY — This point displays the commanded state of the Supply Fan Relay.

Supply Fan
Relay: Display Units: Discrete ASCII
 Default Value: Off
 Display Range: Off/On
 Network Access: Read/Write

Table 7 — Points Display

DESCRIPTION	VALUE	UNITS	STATUS	FORCE	NAME
Space Temperature	72.2	dF			SPT
Supply Air Temperature	67.1	dF			SAT
Outdoor Air Temperature	48.8	dF			OAT
Control Setpoint	0.0	dF			CLSP
Cooling % Total Capacity	0	%			CCAP
Heating % Total Capacity	0	%			HCAP
Economizer Active	Yes				ECOS
Supply Fan Relay	On				SF
Supply Fan Status	On				SFS
Economizer Position	26.2	%			ECONPOS
Current Min Damper Pos	20	%			IQMP
Filter Status	Clean				FLTS
Remote Occupied Mode	Off				RMTOCC
Heat Stage 1	Off				HS1
Heat Stage 2	Off				HS2
Heat 3/Exhaust/Rev Valve	Off				H3_EX_RV
Enthalpy	Low				ENTH
Indoor Air Quality	367.9				IAQI
Indoor Air Quality Setpt	1050.0				IAQS
Outdoor Air Quality	0.0		Sensor failure		OAQ
Fire Shutdown	Normal				FSD
SPT Offset	0.0	^F			STO
Compressor 1	Off				CMP1
Compressor 2	Off				CMP2
Compressor Safety	Off				CMPSAFE

NOTE: **Bold** values indicate points that can be forced through communications.

SUPPLY FAN STATUS — This point displays the Supply Fan status if controller is configured to receive input from the Supply Fan. Otherwise this point will display the output state of the Supply Fan Relay. This mode can only be used when the controller is in sensor control mode.

Supply Fan Status: Display Units: Discrete ASCII
 Default Value: Off
 Display Range: Off/On
 Network Access: Read Only

ECONOMIZER DAMPER POSITION — This point displays the current commanded damper position of the economizer 4 to 20 mA on the J-9 connector. The 4 to 20 mA signal is scaled linearly over the range of 0 to 100% of the Supply Fan Relay.

Economizer Position: Display Units: % Open
 Default Value: 0
 Display Range: 0 to 100
 Network Access: Read/Write

CURRENT MINIMUM DAMPER POSITION — This point displays the current minimum damper position if an Indoor Air Quality routine is not active. If an Indoor Air Quality sensor is installed and the differential air quality set point has been exceeded, this point will display the current calculated minimum position deemed necessary to maintain the air quality in the space.

Current Minimum Damper Position: Display Units: % Open
 Default Value: 0
 Display Range: 0 to 100
 Network Access: Read Only

FILTER STATUS — The filter status point will be shown as “CLEAN” until the run time of the fan exceeds the configured Filter Timer Hours. When the user-configured Filter Timer Hours has been exceeded, the Filter Status will display “DIRTY” and a CCN alarm will be generated. Forcing the point to “CLEAN” will clear the alarm condition and will reset the timer. (Setting the configured filter timer value to zero will provide the same function.) The value of the timer is stored in EEPROM to protect it in the event of a power failure. This is done periodically every 24 hours. The filter timer function only operates if the configured filter timer value (FLTTMR) is a non-zero number.

Filter Status: Display Units: Discrete ASCII
 Default Value: Clean
 Display Range: Clean/Dirty
 Network Access: Read/Write

REMOTE OCCUPIED MODE — This point displays the status of the remote time clock input. This input is only available when the controller is being used in sensor control mode. When the Remote Start point is on, and the zone controller is not controlled by a Linkage Thermostat, the controller will function in an occupied mode. When the Remote Start point is off, the controller will revert to its own occupancy schedule.

Remote Occupied Mode: Display Units: Discrete ASCII
 Default Value: Off
 Display Range: Off/On
 Network Access: Read/Write

HEAT STAGE 1 — The Heat Stage 1 point provides the state of the Heating 1 output.

Heating Stage 1: Display Units: Discrete ASCII
 Default Value: Off
 Display Range: Off/On
 Network Access: Read Only

HEAT STAGE 2 — The Heat Stage 2 point provides the state of the Heating 2 output.

Heating Stage 2: Display Units: Discrete ASCII
Default Value: Off
Display Range: Off/On
Network Access: Read Only

HEAT STAGE 3, EXHAUST FAN, OR REVERSING VALVE — This point displays the commanded state of auxiliary output. This output can be configured to control a third stage of heat, an exhaust fan or a reversing valve on some heat pump units.

In the exhaust fan mode with continuous exhaust configured, this point may control a bank of lights or another indicator that should remain ON whenever the controller is in the occupied mode.

Heat 3, Exhaust, Rev Valve: Display Units: Discrete ASCII
Default Value: Off
Display Range: Off/On
Network Access: Read Only

ENTHALPY — This point displays the current status of an outdoor air or differential enthalpy input. This point may be broadcast to other controllers or received from a controller which supports global broadcast of the ENTH variable.

Enthalpy: Display Units: Discrete ASCII
Default Value: High
Display Range: High/Low
Network Access: Read/Write

INDOOR AIR QUALITY (IAQ) — The Air Quality point displays the indoor air quality reading from a CO₂ sensor installed in the space. The CO₂ sensor maintains differential indoor air quality for demand control ventilation per ASHRAE Standard 62-1999. The controller can be configured to generate an alarm when the control is in occupied mode and the CO₂ level exceeds the high or low limit set.

Indoor Air Quality (ppm): Display Units: None shown (parts per million implied)
Default Value: 0
Display Range: 0 to 5000
Network Access: Read/Write

INDOOR AIR QUALITY SET POINT — This point displays the current Indoor Air Quality set point. The set point is determined by the configured Indoor Air Quality differential and the current outdoor air quality value. If an outdoor air quality value is not received, the controller will assume a default outdoor level of 400 ppm and calculate the set point using that value.

Indoor Air Quality Set Point: Display Units: None shown (parts per million implied)
Default Value: 0
Display Range: 0 to 5000
Network Access: Read Only

OUTDOOR AIR QUALITY — This point displays the reading from an outdoor air quality sensor. This point supports global broadcast of outdoor air quality on a network.

Outdoor Air Quality Set Point: Display Units: None shown (parts per million implied)
Default Value: 0
Display Range: 0 to 5000
Network Access: Read/Write

FIRE SHUTDOWN — While in sensor control mode, this point can be used to receive a signal from a smoke detector or fire panel to shut down the Supply Fan, all heating and cooling stages, and to close the economizer.

Fire Shutdown: Display Units: Discrete ASCII
Default Value: Normal
Display Range: Normal/Alarm
Network Access: Read/Write

SPT OFFSET — This point displays the value of the Space Temperature offset calculated from the input of a T56 sensor slide bar.

SPT Offset: Display Units: Delta Degrees F (Delta Degrees C)
Default Value: 0.0
Display Range: -15 to 15
Network Access: Read/Write

COMPRESSOR 1 — This point displays the commanded state of the compressor 1 output.

Compressor 1: Display Units: Discrete ASCII
Default Value: Off
Display Range: Off/On
Network Access: Read Only

COMPRESSOR 2 — This point displays the commanded state of the compressor 2 output.

Compressor 2: Display Units: Discrete ASCII
Range: Off/On
Default Value: Off
Network Access: Read Only

COMPRESSOR SAFETY — When the controller is in sensor mode, this point can be used to monitor the status of the compressor trouble output supplied with some equipment. When the input is detected, the controller will energize all available stages to satisfy the demand and issue a compressor trouble alert on the communications network.

Compressor Safety: Display Units: Discrete ASCII
Display Range: Off/On
Default Value: Off
Network Access: Read Only

Thermostat Control Input Screen — The Thermostat Control Input Display is used to display the input status of equipment requests from the thermostat (TSTAT). See Table 8.

Alarm Service Configuration Screen — The Alarm Service Configuration is used to configure the alarms used on the PremierLink™ controller. See Table 9.

ALARM ROUTING CONTROL — The Alarm Routing Control indicates which CCN system software or devices will receive and process alarms sent by the PremierLink controller. This decision consists of eight digits which can be set to zero or one. A setting of one indicates alarms should be sent to this device. A setting of zero disables alarm processing for that device. Currently the corresponding digits are configured for the following devices: first digit is for user interface software (ComfortWORKS®, ComfortVIEW™, etc.); second digit is for Autodial Gateway or Telink; fourth digit is for Alarm Printer Interface Module, DataLINK™ module; digits 3 and 5 through 8 are unused.

Alarm Routing Control: Range: 00000000 to 11111111
Default Value: 00000000

Table 8 — Thermostat Control Input Display

DESCRIPTION	VALUE	UNITS	STATUS	FORCE	NAME
Y1 - Call for Cool 1	On				Y1
Y2 - Call for Cool 2	On				Y2
W1 - Call for Heat 1	Off				W1
W2 - Call for Heat 2	Off				W2
G - Call for Fan	On				G

ALARM RE-ALARM TIME — This decision is used to configure the number of minutes that will elapse between re-alarms. A re-alarm occurs when the condition that caused the initial alarm continues to persist for the number of minutes specified. Re-alarms continue to occur at the specified interval until the alarm condition no longer exists.

Re-Alarm Time: Display Units: Minutes
 Display Range: 0 to 1440
 Default Value: 0 (Disabled)

CONTROL TEMPERATURE HYSTERESIS — This configuration defines the range above the high set point and below the low set point the space temperature must exceed for an alarm condition to exist during occupied hours.

For example, if the current setpoint is 75 F and the hysteresis value is 5° F, an alarm will be generated if space temperature exceeds the low limit of 70 F or the high limit of 80 F.

Control Temperature Hysteresis:

Display Units: Delta Degrees F (Delta Degrees C)
 Range: 1.0 to 100.0
 Default Value: 5.0

SUPPLY AIR TEMPERATURE — HIGH LIMIT — The Supply Air Temperature High Limit alarm is used to monitor the value of the supply air temperature within a specified range. If the supply air temperature becomes too high, an alarm condition will exist.

Supply Air Temperature High Limit:

Display Units: Degrees F (Degrees C)
 Display Range: -40.0 to 245.0
 Default Value: 150.0

SUPPLY AIR TEMPERATURE — LOW LIMIT — The Supply Air Temperature Low Limit alarm is used to monitor the value of the supply air temperature within a specified range. If the supply air temperature becomes too low, an alarm condition will exist.

Supply Air Temperature Low Limit:

Display Units: Degrees F (Degrees C)
 Display Range: -40.0 to 245.0
 Default Value: 45.0

INDOOR AIR QUALITY ALERT LIMIT — The Indoor-Air Quality Alert Limit alarm defines the allowable CO₂ levels during occupied periods. If the CO₂ levels become too low or too high during occupied periods, an alarm condition will exist.

Indoor Air Quality Low Limit:

Display Units: PPM (implied)
 Display Range: 0.0 to 5000.0
 Default Value: 0.0

Indoor Air Quality High Limit:

Display Units: PPM (implied)
 Display Range: 0.0 to 5000.0
 Default Value: 1200.0

Table 9 — Alarm Service Configuration

DESCRIPTION	VALUE	UNITS	NAME
Alarm Control			
Alarm Routing Control	00000000		ALRMCNT
Realarm Time	0	min	REALARM
Control Temp Hysteresis	5.0	^F	SPTHYS
Supply Air Temperature			
Low Limit	45.0	dF	LOWLIM
High Limit	150.0	dF	HIGHLIM
IAQ High Alert Limit			
Low Limit	0.0		LOWLIM
High Limit	1200.0		HIGHLIM

Controller Identification Screen — The controller identification screen contains reference information used to identify the PremierLink™ controller. See Table 10.

DESCRIPTION — The Description point displays the type of device.

LOCATION — The Location point shows the location of the device.

SOFTWARE PART NUMBER — The Software Part Number indicates the part number of the software being used.

MODEL NUMBER — The Model Number indicates the model number of the device being used.

SERIAL NUMBER — The Serial Number indicates the serial number of the device being used.

REFERENCE NUMBER — The Reference Number indicates the version of the software being used.

Table 10 — Controller Identification

DESCRIPTION	VALUE	UNITS	NAME
Description:	Rooftop Control		DevDesc
Location:			Location
Software Part Number:	CESR131269-04*		PartNum
Model Number:			ModelNum
Serial Number:			SerialNo
Reference Number:	Version 1.3		RefNum

*Software part number CESR131269-03 is version 1.2.

Holiday Configuration Screen — The Holiday Configuration screen is used by the PremierLink controller to store configuration fields for up to twelve holidays. See Table 11.

START MONTH — The Start Month field is used to configure the month that the holiday will start. The numbers 1 through 12 are used to indicate which month is specified.

Start Month: Range: 1 to 12
 Default Value: 1 (January)

START DAY — The Start Day field is used to determine which day the holiday will start.

Start Day: Range: 1 to 31
 Default Value: 1

DURATION — The Duration field indicates how long the holiday will last (in days).

Duration: Range: 0 to 365
 Default Value: 0

As an example, if a Holiday is configured for Month 2, Day 5, Duration 2, then the Holiday will start February 5 and end February 7.

Table 11 — Holiday Configuration

DESCRIPTION	VALUE	UNITS	NAME
Start Month	1		MONTH
Start Day	1		DAY
Duration	0		DURATION

Occupancy Configuration Screen — The Occupancy Configuration Screen is used to configure the occupancy schedule for the PremierLink™ controller. See Table 12.

MANUAL OVERRIDE HOURS — The Manual Override Hours point is used to command a timed override by entering the number of hours the override will be in effect. If the occupancy schedule is occupied when this number is downloaded, the current occupancy period will be extended by the number of hours downloaded.

If the current occupancy period is unoccupied when the occupancy override is initiated, the mode will change to occupied for the duration of the number of hours downloaded. If the occupancy override is due to end after the start of the next occupancy period, the mode will transition from occupancy override to occupied without becoming unoccupied and the occupancy override timer will be reset.

An active occupancy override or a pending occupancy override may be canceled by downloading a zero to this configuration. Once a number other than zero has been downloaded to this configuration, any subsequent downloads of any value other than zero will be ignored by the controller.

Manual Override

Hours: Units: Hours
 Range: 0 to 4
 Default Value: 0

OCCUPANCY SCHEDULE — For flexibility of scheduling, the occupancy programming is broken into eight separate periods. For each period the schedule contains the following fields: Day of Week, Occupied From, and Occupied To.

DAY OF WEEK — The Day of Week configuration consists of eight fields corresponding to the seven days of the week and a holiday field in the following order: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday, Holiday.

It is displayed as:

M T W Th Fr Sa Su Hol
 0 0 0 0 0 0 0 0

If a 1 is configured in the corresponding place for a certain day of the week, the related “Occupied from” and “Occupied to” times for that period will take effect on that day of the week. If a 1 is placed in the holiday field, the related times will take effect on a day configured as a holiday. A zero means the schedule period will not apply to that day.

Day of week: Range: 0 or 1
 Default Values: 11111111 for period 1, 00000000 for the rest of the periods

OCCUPIED FROM — This field is used to configure the hour and minute, in military time, that the mode for the PremierLink controller will switch to occupied.

Occupied From: Units: Hours:Minutes
 Range: 00:00 to 24:00
 (Minutes 00 to 59)
 Default Value: 00:00

OCCUPIED TO — This field is used to configure the hour and minute, in military time, that the mode for the PremierLink controller switches from occupied to unoccupied.

Occupied To: Units: Hours:Minutes
 Range: 00:00 to 24:00
 (Minutes 00 to 59)
 Default Value: 24:00

Table 12 — Occupancy Configuration

DESCRIPTION	VALUE	UNITS	NAME
Manual Override Hours	0	hours	OVRD
Period 1: Day of Week	11111111		DOW1
Period 1: Occupied from	00:00		OCC1
Period 1: Occupied to	24:00		UNOCC1
Period 2: Day of Week	00000000		DOW2
Period 2: Occupied from	00:00		OCC2
Period 2: Occupied to	24:00		UNOCC2
Period 3: Day of Week	00000000		DOW3
Period 3: Occupied from	00:00		OCC3
Period 3: Occupied to	24:00		UNOCC3
Period 4: Day of Week	00000000		DOW4
Period 4: Occupied from	00:00		OCC4
Period 4: Occupied to	24:00		UNOCC4
Period 5: Day of Week	00000000		DOW5
Period 5: Occupied from	00:00		OCC5
Period 5: Occupied to	24:00		UNOCC5
Period 6: Day of Week	00000000		DOW6
Period 6: Occupied from	00:00		OCC6
Period 6: Occupied to	24:00		UNOCC6
Period 7: Day of Week	00000000		DOW7
Period 7: Occupied from	00:00		OCC7
Period 7: Occupied to	24:00		UNOCC7
Period 8: Day of Week	00000000		DOW8
Period 8: Occupied from	00:00		OCC8
Period 8: Occupied to	24:00		UNOCC8

Set Point Screen — The Set Point screen is used to configure the occupied and unoccupied set points. See Table 13.

OCCUPIED LOW — The Occupied Low set point describes the low temperature limit of the space during Occupied mode.

Occupied Low: Units: Degrees F (Degrees C)
 Range: 40.0 to 90.0
 Default Value: 70.0

OCCUPIED HIGH — The Occupied High set point describes the high temperature limit of the space during Occupied mode.

Occupied High: Units: Degrees F (Degrees C)
 Range: 45.0 to 99.9
 Default Value: 74.0

UNOCCUPIED LOW — The Unoccupied Low set point describes the low temperature limit of the space during Unoccupied mode.

Unoccupied Low: Units: Degrees F (Degrees C)
 Range: 40.0 to 90.0
 Default Value: 75.0

UNOCCUPIED HIGH — The Unoccupied High set point describes the high temperature limit of the space during Unoccupied mode.

Unoccupied High: Units: Degrees F (Degrees C)
 Range: 45.0 to 99.9
 Default Value: 90.0

HIGH OAT LIMIT FOR IAQ PRE-OCCUPANCY PURGE — The High OAT unit for IAQ Pre-Occupancy Purge function determines the Economizer Damper position used for IAQ Pre-Occupancy Purge.

High OAT Limit: Units: Degrees F (Degrees C)
 Range: 55.0 to 75.0
 Default Value: 65.0

UNOCCUPIED OAT LOCKOUT TEMPERATURE — The Unoccupied OAT Lockout Temperature describes the lowest Outdoor Air Temperature allowed for Unoccupied Free Cooling operation. This function is also used by IAQ Pre-Occupancy Purge control to determine the minimum damper position for IAQ Purge.

Unoccupied OAT Lockout: Units: Degrees F (Degrees C)
 Range: 40.0 to 70.0
 Default Value: 50.0

UNOCCUPIED HEATING DEADBAND — The Unoccupied Heating Deadband describes the space temperature value which has to be achieved while unoccupied Heating before the unoccupied Heating mode will turn off.

Unoccupied Heating Deadband: Units: Degrees F (Degrees C)
 Range: 0.0 to 10.0
 Default Value: 1.0

UNOCCUPIED COOLING DEADBAND — The Unoccupied Cooling Deadband describes the space temperature value which has to be achieved while unoccupied Cooling before the unoccupied Cooling mode will turn off.

Unoccupied Cooling Deadband: Units: Delta Degrees F (Delta Degrees C)
 Range: 0.0 to 10.0
 Default Value: 1.0

LOW TEMPERATURE MINIMUM POSITION — The Low Temperature Minimum Position describes the low temperature limit for Low Outdoor Air Temperature conditions.

IAQ Pre-Occupancy Purge Algorithm will use this value whenever Outdoor Air Temperature is below Unoccupied OAT Lockout Temperature.

Low Temperature Minimum Position: Units: Percent
 Range: 0 to 100
 Default Value: 10.0

HIGH TEMPERATURE MINIMUM POSITION — The High Temperature Minimum Position specifies the value for Purge Minimum Damper Position for High Outdoor Air temperature conditions.

IAQ Pre-Occupancy Purge Algorithm shall use this value whenever Outdoor Air Temperature is above or at Unoccupied OAT Lockout Temperature, and also OAT is above Occupied Cool Set Point or Enthalpy is High. Whenever $OAT \geq NTLO$ and $OAT \leq OCSP$ and Enthalpy is Low, the Purge algorithm will set Purge Minimum Damper Position to 100%.

High Temperature Minimum Position: Units: Percent
 Range: 0 to 100
 Default Value: 35.0

POWER EXHAUST SET POINT — The Power Exhaust Set Point describes the minimum damper position that the Economizer Damper must be before the power exhaust fan will be energized.

Power Exhaust Set Point: Units: Percent
 Range: 0 to 100
 Default Value: 50.0

Table 13 — Set Point Configuration

DESCRIPTION	VALUE	UNITS	NAME
Setpoints			
Occupied Low Setpoint	70.0	dF	OHSP
Occupied High Setpoint	74.0	dF	OCSP
Unoccupied Low Setpoint	69.0	dF	UHSP
Unoccupied High Setpoint	75.0	dF	UCSP
Hi OAT Limit for IAQ Pre-Occ Purge	65.0	dF	OATL
Unocc. OAT Lockout TEMP	50.0	dF	NTLO
Unocc. Heating Deadband	1.0	^F	UHDB
Unocc. Cooling Deadband	1.0	^F	UCDB
Low Temp. Min. Position	10	%	LTMP
Hi Temp. Min. Position	35	%	HTMP
Power Exhaust Setpoint	50	%	PES

Service Configuration Selection Screen — The Service Configuration Selection screen is used to configure the service set points of the PremierLink™ controller. See Table 14.

COOLING PID — The PremierLink controller reads the space temperature sensor and compares the temperature to the current high set point. If it exceeds the set point, and cooling is configured and available, the controller then calculates the required supply air temperature to satisfy the given conditions.

The Cooling PID (Proportional/Integral/Derivative) includes the following set points: Proportional Gain, Integral Gain, Derivative Gain, and Starting Value.

Proportional Gain: Range: 0.0 to 40.0
 Default Value: 6.0
 Integral Gain: Range: 0.0 to 10.0
 Default Value: 3.0
 Derivative Gain: Range: 0.0 to 20.0
 Default Value: 5.0
 Starting Value: Units: Degrees F
 Range: 40.0 to 90.0
 Default Value: 70.0

Table 14 — Service Configuration Selection

DESCRIPTION	VALUE	UNITS	NAME
Cooling PID			
Proportional Gain	6.0		KP
Integral Gain	3.0		KI
Derivative Gain	5.0		KD
Starting Value	70.0	dF	STARTVAL
Staged Cooling			
Total Number of Stages	2		STAGES
Stage 1 Time Guard	Enable		TG1
Stage 2 Time Guard	Enable		TG2
Stage 3 Time Guard	Disable		TG3
Heating PID			
Proportional Gain	6.0		KP
Integral Gain	3.0		KI
Derivative Gain	5.0		KD
Starting Value	75.0	dF	STARTVAL
Staged Heating			
Total Number of Stages	2		STAGES
Stage 1 Time Guard	Enable		TG1
Stage 2 Time Guard	Enable		TG2
Stage 3 Time Guard	Enable		TG3
IAQ PID			
Proportional Gain	0.1		KP
Integral Gain	0.0		KI
Derivative Gain	0.0		KD
Starting Value	0.0	%	STARTVAL
Economizer PID			
Proportional Gain	-4.0		KP
Integral Gain	-2.0		KI
Derivative Gain	-3.0		KD
Starting Value	70.0	dF	STARTVAL
Submaster Gain Limit	-5.5		ESG
Submaster Center Value	60	%	CTRVAL
Damper Movement Band	0	%	ECONBAND
OAT Temp Band	25	^F	TEMPBAND
Minimum Damper Position	20	%	MDP
Low Temp MDP Override	100	%	LOWMDP
DX Cooling Lockout	On		DXCTLO
DX Cooling Lockout Temp	45.0	dF	DXLOCK
SAT CMP1 Lockout Temp	55.0	dF	SATL01
SAT CMP2 Lockout Temp	50.0	dF	SATL02
Time Guard Override	Off		TGO
Continuous Power Exhaust	Disable		MODPE
Supply Fan Status Enable	Disable		SFSENA
Max Offset Adjustment	2.0	^F	LIMIT
Space Temp Trim	0.0	^F	RATTRIM
Supply Air Temp Trim	0.0	^F	SATTRIM

STAGED COOLING — The staging function is used for DX cooling (1 or 2 stages). The staging function uses the cooling submaster reference from the PID and compares the value to the supply air temperature to calculate the required number of output stages to energize.

Time Guard delays are provided to allow for up to 2 stages of compression. Also, a DX Lockout will prevent operation of the DX cooling if the outdoor air temperature is below this value.

The cooling algorithm controls the valve or stages of DX cooling to prevent the space temperature from exceeding the current cooling set point (which includes any calculated offset value from a T56 sensor slide bar during occupied periods).

Also, the cooling is controlled so that the supply air temperature does not fall below 50 F when cooling is active.

If number of stages is set to 1, then the SAT CMP2 LOCK-OUT TEMP will be used as the low supply air set point.

Number of Stages: Range: 1 to 3
Default Value: 2

The Time Guards must be set to Enable for output to a compressor, and set to Disable for output to a valve or compressor unloader.

Stage 1
Time Guard: Range: Disable/Enable
Default Value: Enable

Stage 2
Time Guard: Range: Disable/Enable
Default Value: Enable

Stage 3
Time Guard: Range: Disable/Enable
Default Value: Disable

HEATING PID — The PremierLink™ controller determines if a heating demand exists in the space. The controller reads the space temperature sensor and compares the temperature to the current low set point (including any calculated offset value from a T56 or T57 sensor) during occupied periods. If it is below the set point, and heating is configured and available, it then calculates the required supply air temperature to satisfy the given conditions. The calculated value (heating submaster reference) is compared to the actual supply-air temperature and the output is then adjusted to satisfy conditions by using a Proportional/Integral/Derivative (PID) loop.

The Heating PID includes the following set points: Proportional Gain, Integral Gain, Derivative Gain, and Starting Value.

Proportional Gain: Range: -100.0 to 100.0
Default Value: 6.0

Integral Gain: Range: -5.0 to 5.0
Default Value: 3.0

Derivative Gain: Range: -20.0 to 20.0
Default Value: 5.0

Starting Value: Units: Degrees F
Range: 40.0 to 120.0
Default Value: 75.0

STAGED HEATING — The Staged Heating function is used for two-position valves or for electric heat (1 or 2 stages). The staging function uses the heating submaster reference value from the PID and compares it to the supply air temperature to calculate the required number of output stages to energize.

Number of Stages: Range: 1 to 3
Default Value: 2

Stage 1
Time Guard: Range: Disable/Enable
Default Value: Enable

Stage 2
Time Guard: Range: Disable/Enable
Default Value: Enable

Stage 3
Time Guard: Range: Disable/Enable
Default Value: Enable

IAQ PID — The proportional gain affects the response of PID calculations for staged control. The gain is also used for two-position control to establish the hysteresis between on and off. A larger gain speeds response time or reduces the hysteresis, while a smaller gain requires a larger error to generate the same response to changes in Indoor Air Quality. Enter the desired proportional gain for the Indoor Air Quality control algorithm.

The integral gain affects the PID calculation; an increase will make the IAQ submaster reference change greater as the error in indoor air quality increases. The integral gain should be selected to eliminate proportional droop without overshoot. Enter the desired integral gain for the Indoor Air Quality control algorithm.

The Derivative Gain is typically not required for Indoor Air Quality operation and should be left at the default value.

The Starting Value is used to establish the starting value for the IAQ PID calculation.

The IAQ PID includes the following set points: Proportional Gain, Integral Gain, Derivative Gain, and Starting Value.

Proportional Gain:	Range:	-100.0 to 40.0
	Default Value:	1.0
Integral Gain:	Range:	-5.0 to 5.0
	Default Value:	0.5
Derivative Gain:	Range:	-20.0 to 20.0
	Default Value:	0.0
Starting Value:	Units:	Percent
	Range:	0.0 to 100.0
	Default Value:	0.0

ECONOMIZER PID — The proportional gain determines the response of the PID temperature control loop; a larger gain increases the amount of damper movement while a smaller gain requires a larger error to achieve the same results.

The integral gain affects the response of a PID calculation; an increase in gain will compensate more quickly for proportional control droop. Too large of an integral gain will cause excessive damper positioning and instability. Enter the desired integral gain for the damper control algorithm.

The economizer derivative gain has been tested for ideal operation in sensor mode and should be left at the default value.

NOTE: In thermostat mode, the modulation may appear to regularly change. However, it will precisely control leaving-air temperature.

The economizer Starting Value is used to establish the starting value for the damper PID calculation. The value entered is determined by the mass of the zone. Typically a value of 10%, the default, will be adequate for most applications. For higher mass areas, such as a stone lobby, the value may be increased to 20 to 25%.

The Economizer PID includes the following set points: Proportional Gain, Integral Gain, Derivative Gain, and Starting Value.

Proportional Gain:	Range:	-100.0 to 100.0
	Default Value:	-4.0
Integral Gain:	Range:	-5.0 to 5.0
	Default Value:	-2.0
Derivative Gain:	Range:	-20.0 to 20.0
	Default Value:	-3.0
Starting Value:	Units:	Degrees F (Degrees C)
	Range:	48.0 to 120.0
	Default Value:	70.0

SUBMASTER GAIN LIMIT — The Submaster Gain Limit is used to define the submaster gain limit that is multiplied by the Submaster Error and added to the Submaster Center Value to produce the output value that will be sent to the device. The sign of the submaster gain limit determines the direction in which the output will be driven in response to a given error.

The gain is expressed in percent change in output per degree of error.

Submaster Gain		
Limit Reference:	Range:	-20.0 to 20.0
	Default Value:	-5.5

SUBMASTER CENTER VALUE — The Submaster Center Value is used to define the submaster loop center value which defines the starting point of the loop. This value typically represents the midpoint of the range of the device being controlled.

Submaster Center		
Value Reference:	Units:	Percent
	Range:	0 to 100
	Default Value:	60

DAMPER MOVEMENT BAND — The Damper Movement Band is used to define what the minimum desired range of change in economizer damper position that is required before the controller will attempt to open/close the economizer.

Damper Movement		
Reference:	Units:	Percent
	Range:	0 to 5
	Default Value:	0

OAT TEMP BAND — The OAT Temp Band is used to slow the response of the economizer damper based on the value of OAT. In other words, the colder OAT gets the slower the rate of change in the economizer.

OAT Temp		
Reference:	Range:	0 to 40 Delta Degrees F (Delta Degrees C)
	Default Value:	25.0

MINIMUM DAMPER POSITION — The minimum damper position (MDP) specifies user configured occupied minimum economizer damper position. The control selects the greatest value between MDP and IAQ calculated Minimum Position. The resulting value is the Final Minimum Damper Position IQMP for Occupied mode.

Economizer Damper is limited to IQMP in Occupied mode, or whenever Supply Fan is ON in units with Thermostat control.

Minimum Damper		
Position:	Units:	Percent
	Range:	0 to 100
	Default Value:	20.0

LOW TEMP MINIMUM DAMPER POSITION OVERRIDE — The Low Temperature Minimum Damper Position (MDP) specifies the value for purge minimum damper position for low outdoor air temperature conditions.

The IAQ Pre-Occupancy Purge Algorithm shall use this value for the minimum damper position whenever Outdoor Air Temperature is below Unoccupied OAT Lockout Temperature.

The Low Temperature MDP must be lower than the configured Minimum Damper Position.

Low Temperature		
MDP Override:	Units:	Percent
	Range:	0 to 100
	Default Value:	100

DX COOLING LOCKOUT — The DX (Direct Expansion) Cooling Lockout function Enables/Disables Low Ambient DX Cooling Lockout option.

For Version 1.2 — When DX Cooling Lockout is enabled, Cooling control will compare OAT against the DX Cooling Lockout Temperature. Whenever OAT <= the DX Cooling Lockout Temperature and current DX stages are 0, the control will set Cooling Submaster Reference (CCSR) to 150 F. That will prevent the unit from staging up.

If the OAT sensor is not installed (OAT point reads -40 F and "Sensor Failure"), the cooling stages ARE locked out if DXCTLO is On.

The DXCTLO should be turned OFF (to ignore the DXLOCK setpoint) in applications where there is either no OAT sensor (local or broadcast) or the OAT sensor has failed.

For Version 1.3 — If there is a valid OAT sensor reading and DXCTLO is set to “OFF”, compressor cooling will **NOT** be allowed. Please note that this functionality was **NOT** by design, and was an unintended consequence of the update to 1.3. This will be changed in a future version of PremierLink™ control. Users that do **NOT** require the cooling lockout function have instinctively set DXCTLO to Off; unfortunately, this will disable cooling if a valid OAT reading is present. If a valid OAT sensor reading is present, **DXCTLO must be set to On**, or compressor cooling will **NOT** be allowed.

If the OAT sensor is not installed (OAT point reads -40 F and “Sensor Failure”), the cooling stages are **NOT** locked out regardless of the setting of DXCTLO.

If there is a valid OAT sensor reading, and DXCTLO is “ON”, cooling will be allowed when the OAT value is above the DXLOCK setpoint.

Cooling will **NOT** be allowed when the OAT value is below the DXLOCK setpoint and DXCTLO is “ON”.

To ensure that cooling will occur when there is no OAT sensor installed, be sure to short the OAT sensor leads together.

DX Cooling Lockout:	Range:	On/Off
	Default Value:	On

DX COOLING LOCKOUT TEMPERATURE — The DX Cooling Lockout Temperature specifies Low Ambient DX Cooling Lockout Temperature that is compared against OAT to determine if the unit can stage up or not.

DX Cooling Lockout Temp:	Units:	Degrees F (Degrees C)
	Range:	40.0 to 60.0
	Default Value:	45.0

SAT CMP1 LOCKOUT TEMP — The SAT CMP1 Lockout Temperature displays the low supply temperature set point for compressor no. 1 supply air during cooling. If compressor no. 1 is on during Cooling mode, the economizer will assist the cooling and work to maintain a discharge air temperature slightly above lockout temperature set point. If the economizer is at minimum and the supply air temperature goes below Lockout Temperature set point, the compressor will cycle to maintain the supply air set point. The minimum on and off times will still be in effect.

SAT CMP1 Lockout Temp:	Units:	Degrees F (Degrees C)
	Range:	50.0 to 65.0
	Default Value:	55.0

SAT CMP2 LOCKOUT TEMP — The SAT CMP2 Lockout Temperature displays the low supply temperature set point for compressor no. 2 supply air during cooling. If compressor no. 2 is on during Cooling mode, the economizer will assist the cooling and work to maintain a discharge air temperature slightly above lockout temperature set point. If the economizer is at minimum and the supply air temperature goes below Lockout Temperature set point, the compressor will cycle to maintain the supply air set point. The minimum on and off times and stage-up and down timers will still be in effect.

NOTE: If the staged cooling number of stages value is configured to 1, then the SAT CMP2 is used for the low supply air set point.

SAT CMP2 Lockout Temp:	Units:	Degrees F (Degrees C)
	Range:	45.0 to 55.0
	Default Value:	50.0

TIME GUARD OVERRIDE — The Time Guard Override function will reset the Time Guard. Whenever this option is changed from OFF to ON, the control will evaluate the amount of time left in Compressor Time Guards.

If the time in a Time Guard is more than 30 seconds, it will be replaced with 30 seconds.

NOTE: Changing this decision from OFF to ON will only result in one-time Time Guards override.

To perform the override again, the override must be changed from OFF to ON again.

Time Guard Override:	Range:	On/Off
	Default Value:	Off

CONTINUOUS POWER EXHAUST — The Continuous Power Exhaust function defines the operation of the Power Exhaust Fan.

If disabled, the Power Exhaust Fan will operate during economizer purge cycles when the economizer damper position is above the configured minimum value. If enabled, the Power Exhaust Fan will follow the supply fan's operation.

Continuous Power Exhaust:	Range:	Disable/Enable
	Default Value:	Disable

SUPPLY FAN STATUS ENABLE — The Supply Fan Status Enable function is enabled when an actual sensor input is used to determine that the supply fan is on. This will prevent certain algorithms to run if the controller does not see that the supply fan is functioning properly.

If this decision is disabled, the Supply Fan Status will follow the state of the Supply Fan Relay in order to allow the algorithms to run that depend on the Supply Fan Status to be ON before executing.

Supply Fan Status Enable:	Range:	Disable/Enable
	Default Value:	Disable

MAXIMUM OFFSET ADJUSTMENT — Maximum Offset Adjustment value determines the degree in which the occupied heating and cooling set points can be adjusted by the setpoint adjustment slide bar on the space temperature sensor.

Max Offset Adjustment:	Units:	Delta Degrees F (Delta Degrees C)
	Range:	0.0 to 15.0
	Default Value:	2.0

SPACE TEMPERATURE TRIM — The Space Temperature Trim configuration is used to calibrate the temperature display for a sensor that does not appear to be reading correctly.

Space Temperature Trim:	Units:	Delta Degrees F (Delta Degrees C)
	Range:	-9.9 to 9.9
	Default Value:	0.0

SUPPLY AIR TEMPERATURE TRIM — The Supply Air Temperature Trim configuration is used to calibrate the temperature display for a sensor that does not appear to be reading correctly.

Supply Air Temperature Trim:	Units:	Delta Degrees F (Delta Degrees C)
	Range:	-9.9 to 9.9
	Default Value:	0.0

PremierLink™ Configuration Screen — The PremierLink Configuration screen allows the user to configure all functions. See Table 15.

OPERATING MODE — The Operating Mode function determines the operating mode of the PremierLink controller. There are two operating modes from which to choose: TSTAT and CCN Sensor.

The TSTAT mode allows PremierLink controller to operate as a stand-alone thermostat control by monitoring Y1 (cooling stage 1), Y2 (cooling stage 2), W1 (heating stage 1), W2 (heating stage 2), and G (indoor fan) inputs.

The CCN mode allows the controller to integrate into a Carrier Comfort Network.

Operating Mode: Range: 0 for TSTAT
1 for CCN
Default Value: 1 (CCN Sensor*)
*Default value for Version 1.1 and 1.2 is 0 (TSTAT).

HEAT TYPE — The Heat Type mode determines the type of heat equipment the controller uses. There are two choices: gas or electric.

Heat Type: Range: 0 for Gas (not used)
1 for Electric Heat
Default Value: 0 (Gas)

IMPORTANT: When used with split system units, Heat Type must be set to 1 (electric heat).

UNIT TYPE — The Unit Type mode determines the type of heating/cooling equipment the controller is attached to. There are two choices: AC or Heat Pump.

The AC mode is primarily used for units using the compressors for cooling only.

The Heat Pump mode is primarily used for units using a heat pump (for example, compressors for heating and cooling).

Unit Type: Range: 0 for AC
1 for Heat Pump
Default Value: 0 (AC)

AUXILIARY OUTPUT — The Auxiliary Output function is used to define the specific use of the Auxiliary Output on the controller board.

The output will be energized or deenergized by the appropriate algorithm that uses that specific output.

Auxiliary Output is displayed as one of the following:
0 = None 2 = Heat Stage
1 = Exhaust Fan 3 = Reversing Valve

Auxiliary Output: Range: 0 to 3
Default Value: 0

UNOCCUPIED FREE COOL — The Unoccupied Free Cool function is used during unoccupied periods to pre-cool the space using outside air when outside conditions are suitable.

Unoccupied
Free Cool: Range: Disable/Enable
Default Value: Disable

DEMAND LIMITING — The Demand Limiting function is used to limit operating capacity of the unit to prevent system overloads. Both Heating and Cooling capacity is limited.

When Demand Limit option is enabled, the control will respond to the Loadshed Controller commands, such as Redline Alert, Shed, Unshed, and Redline Cancel.

Demand
Limiting: Range: Disable/Enable
Default Value: Disable

Table 15 — PremierLink Control Configuration

DESCRIPTION	VALUE	UNITS	NAME
Operating Mode: 0=TSTAT, 1=CCN Sensor	1		TSTATCFG
Heat Type: 0=Gas, 1=Electric Heat	0		HEATTYPE
Unit Type: 0=AC Unit, 1=Heat Pump	0		AC
Auxiliary Output	0		AUXOUT
0=None			
1=Exhaust Fan			
2=Heat Stage			
3=Reversing Valve			
Unoccupied Free Cool	Disable		NTEN
Demand Limiting	Disable		DLEN
Loadshed Group Number	1		LSGP
CCN Broadcast OAT, ENTH,OAQ	0		OATBC
Global Schedule Broadcast	No		GSBC
Broadcast Acknowledge	No		BCACK
Schedule Number	64		SCHEDNUM
Timed Override Hours	0	hours	TIMOVRID
Linkage Thermostat			
Cool Strt Bias(min/deg)	10	min	KCOOL
Heat Strt Bias(min/deg)	10	min	KHEAT
Filter Timer hrs* 100	15		FIL_TIMR
IAQ Priority Level	Low		IAQP
IAQ Pre-Occupancy Purge	Disable		IAQPURGE
IAQ Purge Duration	5	min	IQPD
IAQ Delta Setpoint	650		IAQD
IAQ Maximum Damper Pos.	50	%	IAQMAXP
Indoor AQ Low Ref.	0.0		IIAQREFL
Indoor AQ High Ref.	2000.0		IIAQREFH
Outdoor AQ Low Ref.	0.0		OIAQREFL
Outdoor AQ High Ref.	2000.0		OIAQREFH
Outdoor AQ Lockout Point	0		OIAQLOCK
Service Password	1111		PASSWORD
Password Enable	Disable		PASS_EBL
Metric Display	Off		DISPUNIT

LOADSHED GROUP NUMBER — The Loadshed Group Number function defines the Loadshed table number (LDSDH-DxxS, where xx is the configured loadshed group number) that the controller will respond to when a broadcast for Redline/Loadshed has been detected on the CCN bus.

Unoccupied
Free Cool: Range: 1 to 16
Default Value: 1

CCN, BROADCAST OAT, ENTHALPY, OAQ — Configures the controller to CCN broadcast any or all of the point values for Outside Air Temperature (OAT), Enthalpy (ENTH), and Outdoor Air Quality (OAQ).

Example: To broadcast OAQ and ENTH but not OAT, the corresponding bitmap is 110; the binary equivalent of the decimal number 6. The configuration decision would then be set to a 6.

CCN Broadcast, OAT, Enthalpy,
OAQ Allowable Entries:

0 — None 5 — OAT and OAQ
1 — OAT Only 6 — ENTH and OAQ
2 — ENTH Only 7 — OAT, ENTH and OAQ
3 — OAT and ENTH
4 — OAQ Only
Default Value: 0 (disabled, no broadcasts performed)

GLOBAL SCHEDULE BROADCAST — The Global Schedule Broadcast setting configures the controller to broadcast or receive a global schedule. If set to Yes, the controller will act as a global schedule master and its schedule will be broadcast to the CCN. If set to No, the controller will not broadcast a global schedule and it will receive the configured schedule number.

Global Schedule

Master: Range: No/Yes
 Default Value: No

BROADCAST ACKNOWLEDGER — The Broadcast Acknowledger setting configures the controller to recognize broadcast messages that appear on its CCN bus.

NOTE: For proper CCN bus operation, there should be only one device per CCN bus that is configured as the Broadcast Acknowledger.

Acknowledger: Range: No/Yes
 Default Value: No

SCHEDULE NUMBER — The Schedule Number determines which Global Occupancy Schedule that the controller will follow. A value of 64 disables global occupancy from CCN and will decide Occupancy from its local schedule. A value between 65 and 99 will allow the controller to follow the global occupancy schedule of the number broadcast over CCN.

Occupancy Schedule

Number Range: 64 to 99
 Default Value: 64

TIMED OVERRIDE HOURS — The Timed Override Hours function is used to configure a timed override duration by entering the number of hours the override will be in effect. Pressing the override button on a space temperature sensor will cause an override.

Timed Override

Hours: Range: 0 to 4
 Default Value: 0

LINKAGE THERMOSTAT — The Linkage Thermostat start time biases allow the installer to configure the time per degree the space should take to recover in the Heat and Cool modes for optimum start with a Linkage Thermostat. These numbers will be used to calculate the Start Bias time.

Cool Start Bias: Units: Minutes/Degree
 Range: 0 to 60
 Default Value: 10

Heat Start Bias Units: Minutes/Degree
 Range: 0 to 60
 Default Value: 10

FILTER TIMER HOURS — The Filter Timer Hours configuration determines when the filter status will display a “Dirty” alarm. When the Filter Timer Hours is configured to a value other than zero and fan run time exceeds the value configured, the filter status will display “Dirty” and a CCN alarm will be generated. Setting the configured Filter Timer Hours value to zero will disable the alarm condition. The value of the timer is stored in EEPROM to protect it in the event of a power failure. The value is stored every 24 hours.

Filter Timer

Hours: Range: 0 to 99
 Default Value: 15 (where 15*100=1500)

INDOOR AIR QUALITY PRIORITY LEVEL — The Indoor Air Quality Priority Level, when set to Low, ensures that comfort is not being compromised by bringing in too much outdoor air to maintain IAQ set point. When an override condition takes place, IAQ control is disabled, and Economizer Minimum Position is set to the user configured value MDP. When set to High, IAQ control is always active regardless of indoor

comfort conditions. The controller will temper cold air OAT <55 F to prevent cold blow.

Indoor Air Quality

Priority Level: Range: High/Low
 Default Value: Low

INDOOR AIR QUALITY PREOCCUPANCY PURGE —

The Indoor Air Quality Preoccupancy Purge brings in fresh outdoor air before the Occupied mode begins. The IAQ Pre-Occupancy Purge is used to lower carbon dioxide levels below the IAQ set point before Occupied mode starts.

The Purge is started two hours before the occupied time and lasts for the specified duration.

Indoor Air Quality

Preoccupancy

Purge: Range: Disable/Enable
 Default Value: Disable

INDOOR AIR QUALITY PURGE DURATION — The

Indoor Air Quality Purge Duration specifies the duration of IAQ Pre-Occupancy purge. The Purge is started two hours before the occupied time and lasts for the specified duration.

Indoor Air Quality

Purge Duration: Display Units: Minutes
 Display Range: 0 to 60
 Default Value: 5

INDOOR AIR QUALITY DELTA SET POINT — The

Indoor Air Quality Delta Set Point specifies the highest Indoor Air Quality level (measured in ppm) allowed within the space whenever unit is in Occupied mode (or Supply Fan On for units with Thermostat control) and Indoor Air Quality sensor is installed.

Indoor Air Quality

Delta Set Point: Display Units: PPM (parts per million)
 Display Range: 1 to 5000
 Default Value: 650

INDOOR AIR QUALITY MAXIMUM DAMPER POSITION — This point displays upper limit of the Indoor Air

Quality minimum damper position calculated by the IAQ control.

For example, IAQ is calculating 100% Minimum Damper Position, but this decision is set to 50%, IAQ Minimum Damper Position will be clamped to 50%.

NOTE: When IAQ priority is set to HIGH, this value must reflect the maximum outdoor air percent that the equipment can heat or cool at worst conditions.

Indoor Air Quality

Maximum Damper

Position: Display Units: % Open
 Display Range: 0 to 100
 Default Value: 50

INDOOR AIR QUALITY SENSOR — The Indoor Air Quality

sensor defines the value in parts per million (ppm) which correlate to the low and high voltage readings from the sensor.

Low Reference specifies Low Point of the Indoor IAQ Sensor Range in ppm.

Low Reference: Units: PPM (parts per million)
 Range: 0 to 5000
 Default Value: 0

High Reference specifies High Point of the Indoor IAQ Sensor Range in ppm.

High Reference: Units: PPM (parts per million)
 Range: 0 to 5000
 Default Value: 2000

OUTDOOR AIR QUALITY SENSOR — The Outdoor Air

Quality sensor defines the value in parts per million (ppm) which correlate to the low and high voltage readings from the sensor.

Low Reference specifies Low Point of the Outdoor IAQ Sensor Range in ppm.

Low Reference: Units: PPM (parts per million)
Range: 0 to 5000
Default Value: 0

High Reference specifies High Point of the Outdoor IAQ Sensor Range in ppm.

High Reference: Units: PPM (parts per million)
Range: 0 to 5000
Default Value: 2000

OUTDOOR AIR QUALITY LOCKOUT POINT — When set to non-zero value, the IAQ algorithm will compare Outdoor IAQ reading against this decision and disable IAQ control whenever the value of OAQ exceeds this configured value.

Outdoor Air

Quality Lockout

Point: Range: 0 to 5000
Default Value: 0

SERVICE PASSWORD — The Service Password function defines the password needed to access the controller via the Navigator interface.

Service Password: Range: 0000 to 9999
Default Value: 1111

PASSWORD ENABLE — The Password Enable function is used to require a password to be entered when attempting to access the controller via the Navigator™ display module interface.

Password

Enable: Range: Enable/Disable
Default Value: Disable

METRIC DISPLAY — The Metric Display function is used to toggle the display for the Navigator between US and Metric units.

Metric Display: Range: On/Off
Default Value: Off

Occupancy Maintenance Screen — The Occupancy Maintenance screen is used to check the occupied schedule. Information concerning the current occupied period is displayed. See Table 16.

MODE — The Mode point displays the current occupied mode for the controller. If the controller is following its own local schedule this is the result of the local schedule status. If the controller is configured to follow a global schedule, this point displays the mode last received from a global schedule broadcast.

Mode: Display Range: 0 to 1
Default Value: 0
Network Access: None

CURRENT OCCUPIED PERIOD — If the controller is configured to determine occupancy locally, the Current Occupied Period point is used to display the current period determining occupancy.

Current Occupied

Period: Display Range: 1 to 8
Default Value: 0
Network Access: None

OVERRIDE IN PROGRESS — The Override in Progress point is used to display if an occupancy override is in progress. The point will display “Yes” if an override is in progress, or “No” if there is no override.

Override In

Progress: Display Range: Yes/No
Default Value: No
Network Access: None

OVERRIDE DURATION — The Override Duration point displays the number of minutes remaining for an occupancy override which is in effect. If the override duration value downloaded is in hours, the value will be converted to minutes. If the occupancy schedule is occupied when override is initiated, the current occupancy period will be extended by the number of hours/minutes requested.

If the current occupancy period is unoccupied when the occupancy override is initiated, the mode will change to occupied for the duration of the number of hours/minutes downloaded. If the occupancy override is due to end after the start of the next occupancy period, the mode will transition from occupancy override to occupied without becoming unoccupied, and the occupancy override timer will be reset.

Override

Duration: Display Units: Minutes
Display Range: 0 to 240
Default Value: 0
Network Access: None

OCCUPIED START TIME — The Occupied Start Time point shows the time that the current occupied mode began. If the current mode is unoccupied or the controller is following a global schedule, the value displayed by this point will remain at default.

Occupied

Start Time: Display Range: 00:00 to 24:00
Default Value: 00:00
Network Access: None

UNOCCUPIED START TIME — The Unoccupied Start Time point shows the time that the current occupied mode will end. This will also be the beginning of the next unoccupied mode. If the current mode is unoccupied or the controller is following a global schedule, the value displayed by this point will remain at default.

Unoccupied

Start Time: Display Range: 00:00 to 24:00
Default Value: 00:00
Network Access: None

NEXT OCCUPIED DAY — The Next Occupied Day point displays the day of week when the next occupied period will begin. This point is used with the Next Occupied Time so the user will know when the next occupied period will occur. If the controller is following a global schedule this point will remain at default.

Next Occupied

Day: Display Range: MON, TUE, WED,
THU, FRI, SAT, SUN
Default Value: No display (Blank)
Network Access: None

NEXT OCCUPIED TIME — The Next Occupied Time point displays the time day when the next occupied period will begin. This point is used with the Next Occupied Day so the user will know when the next occupied period will occur. If the PremierLink™ controller is following a global schedule this point will remain at default.

Next Occupied

Time: Display Range: 00:00 to 24:00
Default Value: 00:00
Network Access: None

NEXT UNOCCUPIED DAY — The Next Unoccupied Day point displays the day of week when the next unoccupied period will begin. This point is used with the Next Unoccupied Time so the user will know when the next unoccupied period will occur. If the controller is following a global schedule this point will remain at default.

Next Unoccupied Day: Display Range: MON, TUE, WED, THU, FRI, SAT, SUN
 Default Value: No display (Blank)
 Network Access: None

NEXT UNOCCUPIED TIME — The Next Unoccupied Time point displays the time day when the next unoccupied period will begin. This point is used with the Next Unoccupied Day so the user will know when the next unoccupied period will occur. If the controller is following a global schedule this point will remain at default.

Next Unoccupied Time: Display Range: 00:00 to 24:00
 Default Value: 00:00
 Network Access: None

LAST UNOCCUPIED DAY — The Last Unoccupied Day point displays the day of week when the controller last changed from occupied to the Unoccupied mode. This point is used in conjunction with the Last Unoccupied Time to know the last time and day when the controller became unoccupied. If the controller is following a global schedule this point will remain at default.

Last Unoccupied Day: Display Range: MON, TUE, WED, THU, FRI, SAT, SUN
 Default Value: No display (Blank)
 Network Access: None

LAST UNOCCUPIED TIME — The Last Unoccupied Time point displays the time of day when the controller last changed from occupied to the Unoccupied mode. This point is read in conjunction with the Last Unoccupied Day to know the last time and day when the controller became unoccupied. If the controller is following a global schedule this point will remain at default.

Last Unoccupied Time: Display Range: 00:00 to 24:00
 Default Value: 00:00
 Network Access: None

Table 16 — Occupancy Maintenance

DESCRIPTION	VALUE	UNITS	NAME
Mode	0		MODE
Current Occupied Period	0		PERIOD
Override in Progress	No		OVERLAST
Override Duration	0	min	OVERDURA
Occupied Start Time	00:00		OCCSTART
Unoccupied Start Time	00:00		UNSTART
Next Occupied Day			NXTOCCD
Next Occupied Time	00:00		NXTOCCT
Next Unoccupied Day			NXTUNOD
Next Unoccupied Time	00:00		NXTUNOT
Last Unoccupied Day			PRVUNOD
Last Unoccupied Time	00:00		PRVUNOT

Maintenance Screen — The Maintenance Screen is used to service the PremierLink™ controller. See Table 17.

THERMOSTAT CONTROL — Indicates the result of the configuration decision to control in the thermostat or sensor mode.

Thermostat Control: Display Range: No/Yes
 Default Value: Yes
 Network Access: Read Only

OCCUPIED — The Occupied point indicates whether or not the controller is operating in the Occupied mode.

Occupied: Display Range: No/Yes
 Default Value: No
 Network Access: Read/Write

TIMED OVERRIDE IN EFFECT — The Timed Override In Effect point shows if a timed override is currently in effect.

Timed Override in Effect: Display Range: No/Yes
 Default Value: No
 Network Access: Read Only

START BIAS TIME — The Start Bias Time, in minutes, is calculated during the unoccupied period by the controller as needed to bring the temperature up or down to the set point under the optimum start routine. The start time bias for heat and cool are configurable. This value will be reported to the Linkage Thermostat if it is used. It cannot be used with Global Scheduling.

Start Bias Time: Display Units: minutes
 Display Range: 0 to 180
 Default Value: 0
 Network Access: Read only

HEAT — The Heat point shows if there is a demand for heat in the space. The space temperature must be below the Occupied Low or Unoccupied Low set point.

NOTE: When a control mode ends, “NO” mode must be completed before opposite mode can begin.

Heat: Display Range: No/Yes
 Default Value: No
 Network Access: None

COOL — The Cool point shows if there is a demand for cooling in the space. The space temperature must be above the Occupied High or Unoccupied High set point.

NOTE: When a control mode ends, “NO” mode must be completed before opposite mode can begin.

Cool: Display Range: No/Yes
 Default Value: No
 Network Access: None

IAQ CONTROL — Indicates weather or not IAQ control is active in the controller. IAQ control of the minimum damper position is active whenever the configured parameters for the IAQ PID calculate a minimum position greater than the configured economizer minimum position.

IAQ Control: Display Range: No/Yes
 Default Value: No
 Network Access: Read Only

DEMAND LIMIT — Indicates that a command has been received to limit capacity or reduce capacity of the heating or cooling.

Demand Limit: Display Range: No/Yes
 Default value: No
 Network Access: Read Only

TEMP COMPENSATED START — Indicates that the controller has started the equipment prior to occupancy in order to be at the occupied set points at the start of occupancy.

Temp Compensated Start: Display Range: No/Yes
 Default Value: No
 Network Access: Read Only

IAQ PRE-OCCUPANCY PURGE — Indicates that the pre-occupancy purge mode is currently active.

IAQ

Pre-occupancy

Purge: Display Range: No/Yes
 Default Value: No
 Network Access: Read Only

UNOCCUPIED FREE COOLING — Indicates that unoccupied free cooling is in effect.

Unoccupied Free

Cooling: Display Range: No/Yes
 Default Value: No
 Network Access: Read Only

FIRE SHUTDOWN — Indicates in a sensor mode that the Fire shutdown input has been sensed. This will cause the supply fan and heating and cooling to be turned off also.

Fire Shutdown: Display Range: No/Yes
 Default Value: No
 Network Access: Read/Write

LINKAGE CONTROL — Indicates if the controller is receiving linkage communication.

Linkage Control: Display Range: No/Yes
 Default Value: No
 Network Access: Read/Write

FIELD/STARTUP TEST — This point is used to enable field test of the controller. When forced to Yes, the controller will perform a test of all outputs and reset to “NO” at end of test. The test may be aborted at any time by forcing value to NO.

Field/Startup

Test: Display Range: No/Yes
 Default Value: No
 Network Access: Read/Write

HEAT SUBMASTER REFERENCE — When in sensor mode, the Heat Submaster Reference point displays the supply air temperature calculated by the heating PID loop. This value is compared to the actual supply air temperature to determine the number of required stages. When in the thermostat mode, the value displayed is zero.

Heat Submaster

Reference: Display Units: Degrees F (Degrees C)
 Display Range: 40.0 to 150.0
 Default Value: 40
 Network Access: Read Only

COOL SUBMASTER REFERENCE — The Cool Submaster Reference point displays the supply air temperature calculated by the cooling PID loop when in sensor mode. This value is compared to the actual supply air temperature to determine the number of required stages. When in the thermostat mode, the value displayed is zero.

Cool Submaster

Reference: Display Units: Degrees F (Degrees C)
 Display Range: 40.0 to 150.0
 Default Value: 150
 Network Access: Read Only

ECONOMIZER SUBMASTER REFERENCE — This point displays the supply air temperature determined by the Economizer PID calculation.

Economizer Submaster

Reference: Display Units: Degrees F (Degrees C)
 Display Range: 48 to 120
 Default Value: 120
 Network Access: Read Only

ECONOMIZER SUBMASTER GAIN — Displays the current Submaster gain multiplier in use to calculate the economizer damper position. At temperatures below 45 F this number will decrease to slow the rate of movement of the economizer damper.

Economizer

Submaster Gain: Display Range: -20 to 20
 Default Value: -5.5
 Network Access: Read Only

COMPRESSOR STARTS — Displays the total number of compressor starts.

Compressor

Starts: Default Value: 0
 Network Access: Read Only

COMPRESSOR 1 RUN TIME — Displays the number of run hours of compressor no. 1.

NOTE: The clock must be set for run times to accumulate.

Compressor 1

Run Time: Display Units: Hours
 Default Value: 0
 Network Access: Read Only

COMPRESSOR 2 RUN TIME — Displays the number of run hours of compressor 2.

NOTE: The clock must be set for run times to accumulate.

Compressor 2

Run Time: Display Units: Hours
 Default Value: 0
 Network Access: Read Only

SUPPLY FAN RUN TIME — Displays the number of run hours of the supply fan.

NOTE: The clock must be set for run times to accumulate.

This is not the same timer used for the filter status. A separate timer is used to keep track of the run hours since the last filter change.

Supply Fan

Run Time: Display Units: Hours
 Default Value: 0
 Network Access: Read Only

LINKAGE THERMOSTAT — The following Linkage Thermostat points display the standard values received from a Linkage Thermostat (if one is being used to provide space temperature, set point and occupancy information).

Linkage

Status: Display Range: 0 to 3
 Default Value: 2
 Network Access: None

The Supervisory Element displays the address of the device sending the linkage supervisory table to the PremierLink™ controller.

Supervisory

Element: Default Value: 0
 Network Access: Read Only

The Supervisory Bus displays the bus number of the device sending the linkage supervisory table to the PremierLink controller.

Supervisory Bus: Default Value: 0
 Network Access: Read Only

The Supervisory Block displays the block or table number of the linkage table occurrence in the supervisory device. Some linkage supervisory devices may contain more than one linkage table for different air sources.

Supervisory

Block: Default Value: 0
 Network Access: Read Only

The Average Occupied Heat Set Point displays the Occupied Heat set point from the Linkage Thermostat.

Average Occupied Heat Set Point: Display Units: Degrees F (Degrees C)
 Display Range: 0.0 to 99.9
 Default Value: 0.0
 Network Access: None

The Average Occupied Cool Set Point displays the Occupied Cool set point from the Linkage Thermostat.

Average Occupied Cool Set Point: Display Units: Degrees F (Degrees C)
 Display Range: 0.0 to 99.9
 Default Value: 0.0
 Network Access: None

The Average Unoccupied Heat Set Point displays the Unoccupied heat set point from the Linkage Thermostat.

Average Unoccupied Heat Set Point: Display Units: Degrees F (Degrees C)
 Display Range: 0.0 to 99.9
 Default Value: 0.0
 Network Access: None

The Average Unoccupied Cool Set Point displays the Unoccupied cool set point from the Linkage Thermostat.

Average Unoccupied Cool Set Point: Display Units: Degrees F (Degrees C)
 Display Range: 0.0 to 99.9
 Default Value: 0.0
 Network Access: None

The Average Zone Temperature displays the space temperature from the Linkage Thermostat.

Average Zone Temperature: Display Units: Degrees F (Degrees C)
 Display Range: 0.0 to 99.9
 Default Value: 0.0
 Network Access: None

The Average Occupied Zone Temperature displays the space temperature from the Linkage Thermostat during occupied periods.

Average Occupied Zone Temperature: Display Units: Degrees F (Degrees C)
 Display Range: 0.0 to 99.9
 Default Value: 0.0
 Network Access: None

The Occupancy Status point displays a 1 if occupancy is reported by the Linkage Thermostat. The Occupancy Status point displays a 0 if occupancy is not reported by the Linkage Thermostat.

Occupancy Status: Display Range: 0, 1
 Default Value: 0
 Network Access: None

Table 17 — Maintenance

DESCRIPTION	VALUE	UNITS	STATUS	FORCE	NAME
Thermostat Control	No				TSTAT
Occupied	Yes				OCCUP
Timed Override in Effect	No				TIMOV
Start Bias Time	0	min			STRTBIAS
Heat	No				HEAT
Cool	No				COOL
IAQ Control	No				IAQCL
Demand Limit	No				DEMLT
Temp Compensated Start	No				TCSTR
IAQ Pre-Occupancy Purge	No				IQPRG
Unoccupied Free Cool	No				NTFCL
Fire Shutdown	No				FIRES
Linkage Control	No				DAVCL
Field/Startup Test	No				FIELD
Heat Submaster Ref	40.0	dF			SHSR
Cool Submaster Ref	150.0	dF			CCSR
Economizer Submaster Ref	120.0	dF			ECONSR
Economizer Submastr Gain	0.00				ECONGN
Compressor Starts	0.00				CMPST
Compressor 1 Runtime	0.00	HOURS			CM1RT
Compressor 2 Runtime	0.00	HOURS			CM2RT
Supply Fan Runtime	17.00	HOURS			FANRT
Linkage Thermostat					
Linkage Status	2				LINKSTAT
Supervisory Element	0				SUPE-ADR
Supervisory Bus	0				SUPE-BUS
Supervisory Block	0				BLOCKNUM
Average Occ Heat Setpt	0.0	dF			OCLOSTPT
Average Occ Cool Setpt	0.0	dF			OCHISTPT
Average Unoc Heat Setpt	0.0	dF			UNLOSTPT
Average Unoc Cool Setpt	0.0	dF			UNHISTPT
Average Zone Temp	0.0	dF			AZT
Average Occ Zone Temp	0.0	dF			AOZT
Occupancy Status(1=occ)	1				OCCSTAT

NOTE: **Bold** values indicate points that can be forced through communications.

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