

XDGX-P116-H12-D1-5

Unit Performance

| Design Conditions | | | | | | |
|-------------------|---------|---------|-------------|--------------|-------------------|--------------------------|
| Elevation (ft) | Summer | | Winter (°F) | Supply (CFM) | Outdoor Air (CFM) | Min Supply Airflow (CFM) |
| | DB (°F) | WB (°F) | | | | |
| 630 | 98.5 | 78.5 | 25.0 | 2,664 | 2,664 | 1,332 |

| Unit Specifications | | | | | |
|---------------------|----------------|--------------|------------------|-------------------|----------------------|
| Qty | Weight (lb) | Cooling Type | Heating Type | Unit Installation | Unit ETL Listing |
| 1 | 1,322 (+/- 5%) | Packaged DX | Direct Gas-Fired | Outdoor/Indoor | ANSI Z83.4 / CSA 3.7 |

| Configuration | | | | |
|------------------|--------------------|--------------------|-------------------|----------------------|
| Unit Orientation | Unit Configuration | Outdoor Air Intake | Return Air Intake | Supply Air Discharge |
| Horizontal | Variable Volume | End | - | Bottom |

| Cooling Specifications | | | | | | | | |
|------------------------|-------------|----------------|----------|----------------------|--------------------|------------------|---------------------|-------------|
| Type | Refrigerant | Capacity (MBH) | | Lead Compressor Type | EER | | Performance (DB/WB) | |
| | | Total | Sensible | | Condensing Section | Design Condition | EAT (°F) | LAT (°F) |
| Packaged DX | R-454b | 66.4 | 63.7 | Standard Scroll | 14.6 | 13.2 | 98.5 / 78.5 | 74.3 / 72.2 |

| Heating Specifications | | | | | | | | |
|------------------------|----------|--------------|-----------|----------------|--------|-----------------------|-------------|----------|
| Type | Gas Type | Gas Pressure | | Capacity (MBH) | | Temperature Rise (°F) | Performance | |
| | | Min (in. wg) | Max (Psi) | Input | Output | | EAT (°F) | LAT (°F) |
| Direct Gas | Natural | 7 | 0.5 | 140.7 | 129.5 | 45.0 | 25.0 | 70.0 |

| Air Performance | | | | | | | | | |
|-----------------|--------------------|----------------------|-------------------|------|----------------------|-----|--------|------------|--------------|
| Type | Total Volume (CFM) | External SP (in. wg) | Total SP (in. wg) | RPM | Operating Power (hp) | Fan | | | |
| | | | | | | Qty | Type | Size (in.) | Drive-Type |
| Supply | 2,664 | 0.5 | 1.477 | 1739 | 1.05 | 1 | Plenum | 16 | Direct-Drive |

| Motor Specifications | | | | | |
|----------------------|-----|-----------|-----------|--------------|------|
| Motor | Qty | Size (HP) | Enclosure | Efficiency | RPM |
| Supply Fan Motor | 1 | 1-1/2 | ODP | NEMA Premium | 1800 |

| Electrical Specifications | | | | |
|---------------------------|----------------|---------|---------|------|
| Power Supply | Rating (V/C/P) | MCA (A) | MOP (A) | SCCR |
| Unit | 208/60/1 | 45.2 | 70 | 5kA |

Unit Details
 Unit will be sent from factory with a turndown capability of 50% of the design cfm. Please consult factory if further turndown is required.



CONSTRUCTION FEATURES AND ACCESSORIES

| Unit | |
|--|-----|
| Unit Installation - Outdoor | Std |
| Unit Construction - Double Wall | X |
| Wall Insulation - 1in. fiberglass - Tempering on | X |
| Base Insulation - 1in. fiberglass - entire unit base pan | Std |
| Paneled Bottom - Sheet metal liner for base insulation | |
| Corrosion Resistant Fasteners | Std |
| Access and Connections - Right side when facing intake | X |
| Service Access - Hinged access doors | X |
| Unit Finish - G90 Galvanized | X |
| Finish Color | |
| Supply Fan - Direct-drive, backward-curved plenum | X |
| Supply Fan and Motor Vibration isolation - Neoprene | X |
| Controls | |
| Unit Controls - Microprocessor | X |
| Remote Panel | |
| BMS Communication - Monitoring and control | X |
| BMS Protocol - BACnet MSTP | X |
| Temperature Control - Discharge control | X |
| Supply Fan VFD - VFD by factory | X |
| Supply Fan Control - External 0-10 VDC signal | X |
| Unoccupied Mode (Night Setback) | |
| Recirculation Control | |
| Control Accessories | |
| Touchscreen Mounting | |
| Heating Inlet Air Sensor | X |
| Cooling Inlet Air Sensor | X |
| Dirty Filter Switch | |
| Fire Stat Type III (Ships loose) | |
| 120V/24V Smoke Detector (Ships loose) | |
| Inlet Damper End Switch | |
| External Cooling Lockout Relay | |
| Freeze Protection (Supply Air Low Limit) | X |
| Auxiliary Supply Starter Contacts | |
| Auxiliary Exhaust Starter Contacts | |
| Airflow Proving Monitoring Contact | |

| Accessories | |
|---|-----|
| Factory Installed, Lockable, NEMA 3R Disconnect | Std |
| Weatherhood - Aluminum Mesh filtered | X |
| Supply Air Filters | |
| Outdoor Air Inlet Damper - Low leakage | X |
| Supply Air Outlet Damper | |
| Return Air Damper | |
| Diffuser | |
| Roof Curb - GPI | X |
| Combination Curb | |
| Electrofin Coil Coating | |
| Fan Bearing Extended Lube Lines | |
| Inlet Damper Module | |
| Spare Belts | |
| Spare Filters | |
| Motor with Shaft Grounding | |
| Service Outlet | |
| Service Lights | |
| Gas Heating Accessories | |
| Pilot Ignition | Std |
| Flame Sensing - Flame rod | X |
| Flame Safeguard Display | |
| Agency Approval - ETL | Std |
| FM Compliant | X |
| High Gas Pressure Switch | |
| Low Gas Pressure Switch | |
| Visual Indication Valves | |
| Proof of Closure Valve | |
| External Gas Pressure Regulator (Ships loose) | |
| Carbon Dioxide Sensor (Ships loose) | |
| Warranty Options | |
| Unit Warranty - 18 months (std.) | X |
| 5 Year Compressor Warranty | |
| 5 Year Burner Warranty | |
| 10 Year Burner Warranty | |

| | |
|-----------------|-----|
| Standard Option | Std |
| Not Included | |
| Included | X |

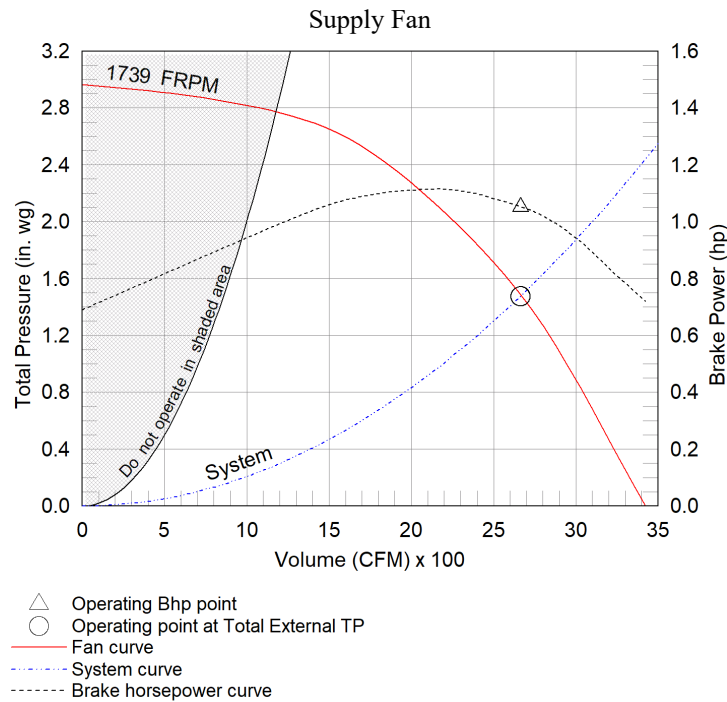
| Notes |
|--|
| Damper(s) supplied are low leakage, motorized VCD-23 (leakage rate of 3 CFM/ft ² @ 1 in.wg), Class 1A |
| Verify that the correct BMS Protocol has been selected before ordering. |

Fan Charts And Performance

| Supply Fan Performance | | | | | | | | | |
|------------------------|----------------------|-------------------|------|----------------------|-------|-----------|-----|--------|------------|
| Total Volume (CFM) | External SP (in. wg) | Total SP (in. wg) | RPM | Operating Power (hp) | Motor | | Fan | | |
| | | | | | Qty | Size (HP) | Qty | Type | Drive-Type |
| 2,664 | 0.5 | 1.477 | 1739 | 1.05 | 1 | 1-1/2 | 1 | Plenum | Direct |

| Pressure Drop (in. wg) | | | | | | | |
|------------------------|-------------|--------|--------|---------|---------|----------|-------|
| Diffuser | Weatherhood | Filter | Damper | Cooling | Heating | External | Total |
| - | 0.088 | - | 0.059 | 0.206 | 0.625 | 0.5 | 1.477 |

| Sound Performance in Accordance with AMCA | | | | | | | | | | |
|---|-----|-----|-----|------|------|------|------|-----|-----|-------|
| Sound Power by Octave Band | | | | | | | | Lwa | dBA | Sones |
| 62.5 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | | | |
| 74 | 72 | 75 | 74 | 76 | 71 | 67 | 62 | 79 | 68 | 15.8 |



Cooling Specifications

| Cooling Performance | | | | | | | | |
|---------------------|-------------|----------------|----------|----------------------|--------------------|------------------|---------------------|-------------|
| Type | Refrigerant | Capacity (MBH) | | Lead Compressor Type | EER | | Performance (DB/WB) | |
| | | Total | Sensible | | Condensing Section | Design Condition | EAT (°F) | LAT (°F) |
| Packaged DX | R-454b | 66.4 | 63.7 | Standard Scroll | 14.6 | 13.2 | 98.5 / 78.5 | 74.3 / 72.2 |

| Coil Information | | | | | | |
|------------------|---------------|-----------|--------------------|------------------------|-------------------------------|--|
| PDX Coil Model | Fins Per Inch | Rows Deep | Suction Temp. (°F) | Face Velocity (ft/min) | Refrigerant Velocity (ft/min) | |
| DX38S02S10-30x30 | 10 | 2 | 57.0 | 426 | 1,372 | |

| A2L Installation Requirement - UL 60335-2-40 | | |
|--|-----------------------------|-------------------------------------|
| Largest Circuit Charge | Minimum Circulation Airflow | Minimum Total Conditioned Room Area |
| 0lb / 0kg | 0 CFM | 0 ft ² |

Local codes and standards may have requirements regarding the installation of A2L refrigerants in addition to manufacturing instructions provided for listed and labeled equipment.

| Unit Details |
|--|
| Refrigerant charges provided by the factory are approximate and may require field adjustment |
| Refrigeration components servicable without affecting airflow |
| Hermetic scroll type compressor(s) |
| Compressor(s) mounted on neoprene vibration isolation |
| Crankcase heater on compressor(s) |
| Liquid-line filter drier |
| Moisture-indicating sight glass |
| Hot gas bypass |

| |
|---|
| Thermal expansion valve |
| Refrigerant low pressure switch (auto reset) |
| Refrigerant high pressure switch (manual reset) |
| Service/charging valves |
| Low sound, direct drive condensing fans |
| Insulated, double sloped, stainless steel drain pan |
| Copper tube, aluminum fin coil construction |

Heating Specifications

| Heating Performance | | | | | | | | |
|---------------------|----------|--------------|-----------|----------------|--------|-----------------------|-------------|----------|
| Type | Gas Type | Gas Pressure | | Capacity (MBH) | | Temperature Rise (°F) | Performance | |
| | | Min (in. wg) | Max (Psi) | Input | Output | | EAT (°F) | LAT (°F) |
| Direct Gas | Natural | 7 | 0.5 | 140.7 | 129.5 | 45.0 | 25.0 | 70.0 |

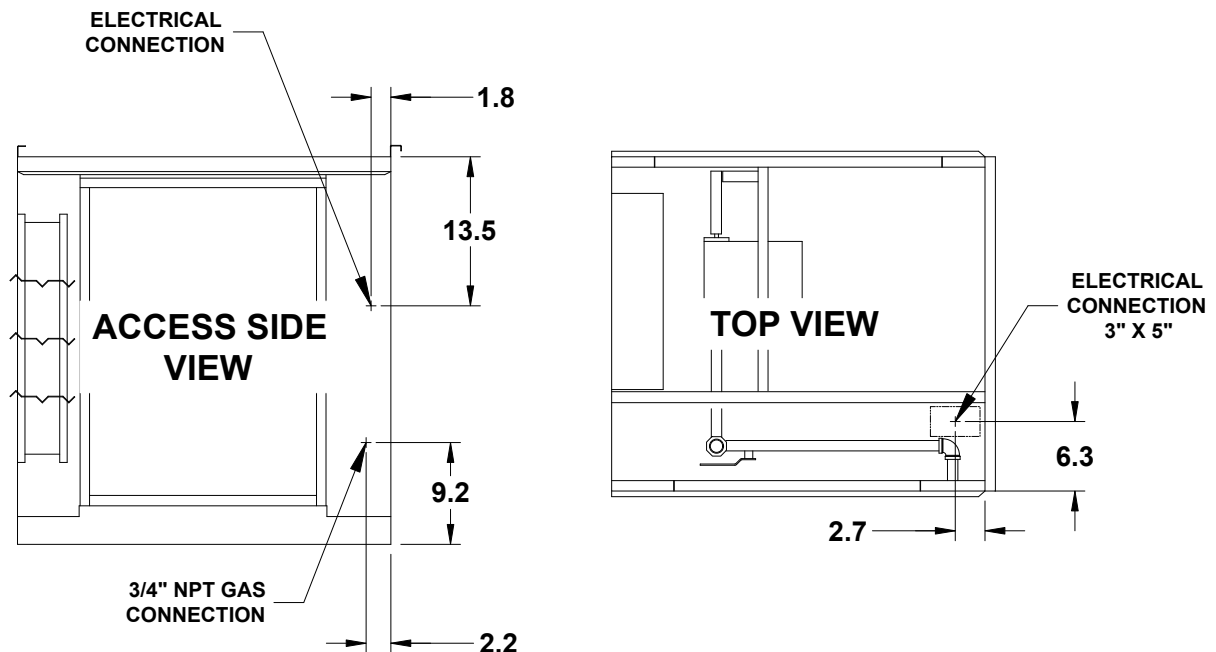
| Gas Train Details | | | | | | | |
|-----------------------|-----------------------------|-------------|--------------------|-------------------------|------------------------|-------------------------|--------------------|
| Redundant Main Valves | Electronic Modulating Valve | Pilot Valve | Internal Regulator | Visual Indication Valve | Proof of Closure Valve | Gas Pressure Switch(es) | External Regulator |
| Std | Std | Std | Std | - | - | - | - |

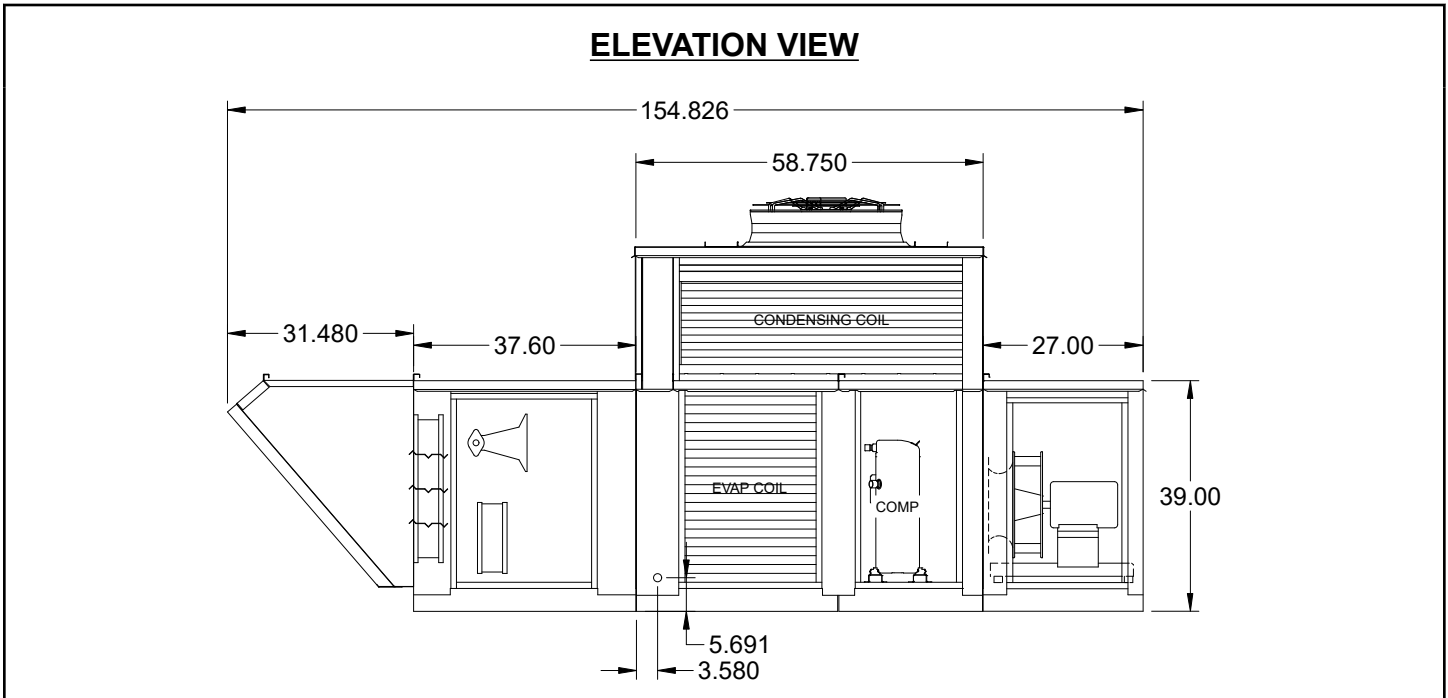
| Additional Heating Information | | | | | | |
|--------------------------------|--------------|---------------------|---------------|------------------|------------|-------------------------|
| ETL Approved | FM Compliant | Temperature Control | Flame Sensing | Ignition Control | CO2 Sensor | Flame Safeguard Display |
| Std | Yes | Discharge | Flame Rod | Economy Pilot | - | - |

| Unit Details |
|--|
| 92% thermal efficiency |
| Cast aluminum burner manifold with stainless steel mixing plates |
| Electronic modulation burner control |

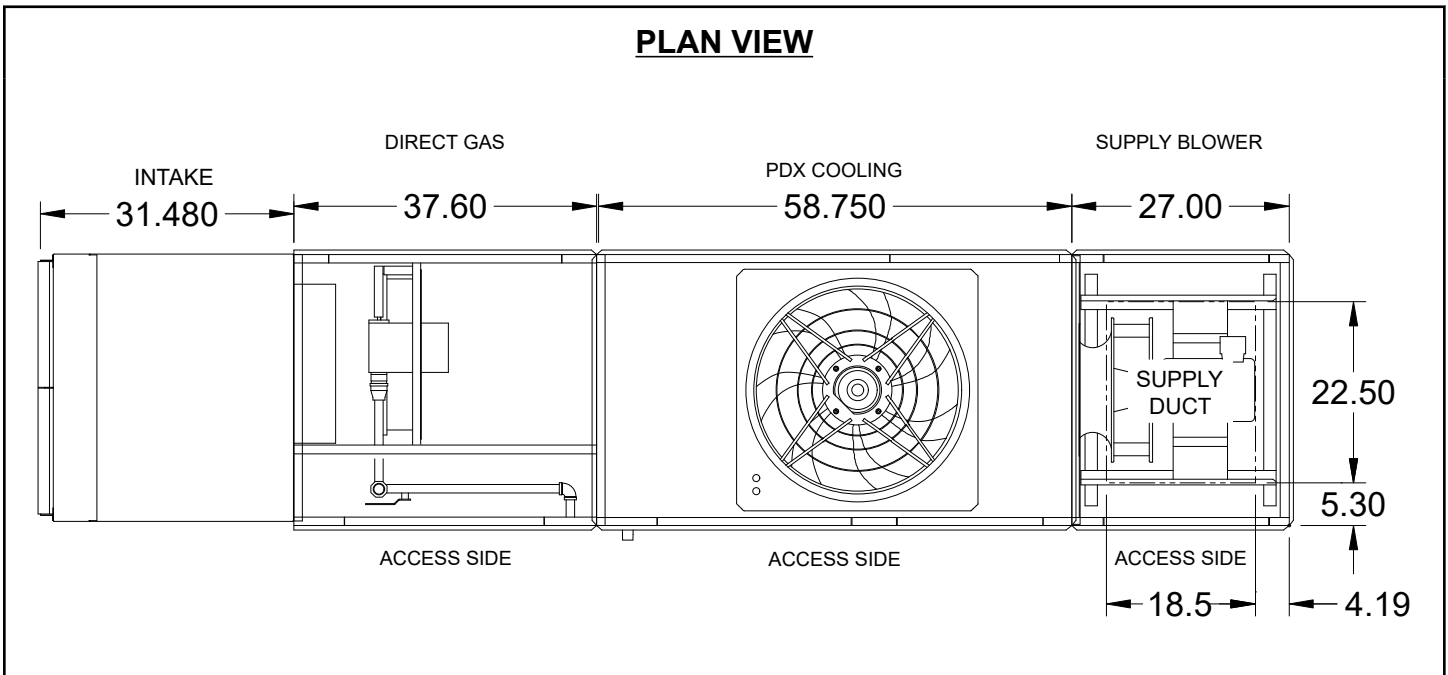
| |
|------------------------------|
| 10 second pre-purge sequence |
| Low fire start |

Gas and Electrical Connections



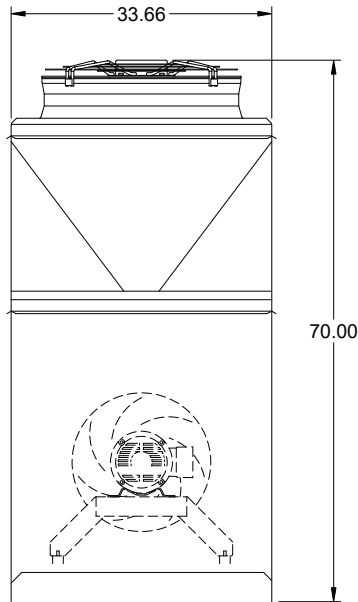


Notes - Elevation View
 Standard configuration for unit access is on the right-hand side, when looking into the unit intake in the direction of airflow.
 Order of unit sections is from intake of unit to discharge of unit.
 Sections included on this unit: Weatherhood Section, Heating Section, Cooling Section, Blower Section
 Insulation: Double Wall, from Burner Section through end of unit.



Notes - Plan View
 Standard configuration for unit access is on the right-hand side, when looking into the unit intake in the direction of airflow.

END VIEW

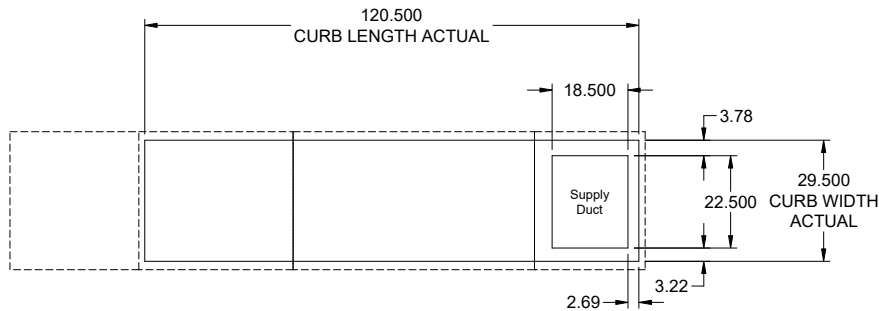


FOOTPRINT VIEW

NOTE: Roof Opening Requirements:

Minimum Roof Opening: The minimum roof opening size is the illustrated duct diameter plus 0.25 in. on all sides.
 For example: If the duct size is 14 x 14 in. square, the minimum roof opening size is 14.5 x 14.5 in. square.

Maximum Roof Opening: There must be a minimum perimeter of 1.75 in. between the roof opening and the roof curb.
 For example: If the roof curb is 75 x 30 in. square, the maximum roof opening is 71.5 x 26.5 in. inches square.



NOTE: The weatherhood and filter sections of the make-up air unit extend beyond the curb. This is by design, to prevent water infiltration.

Clearance Specifications

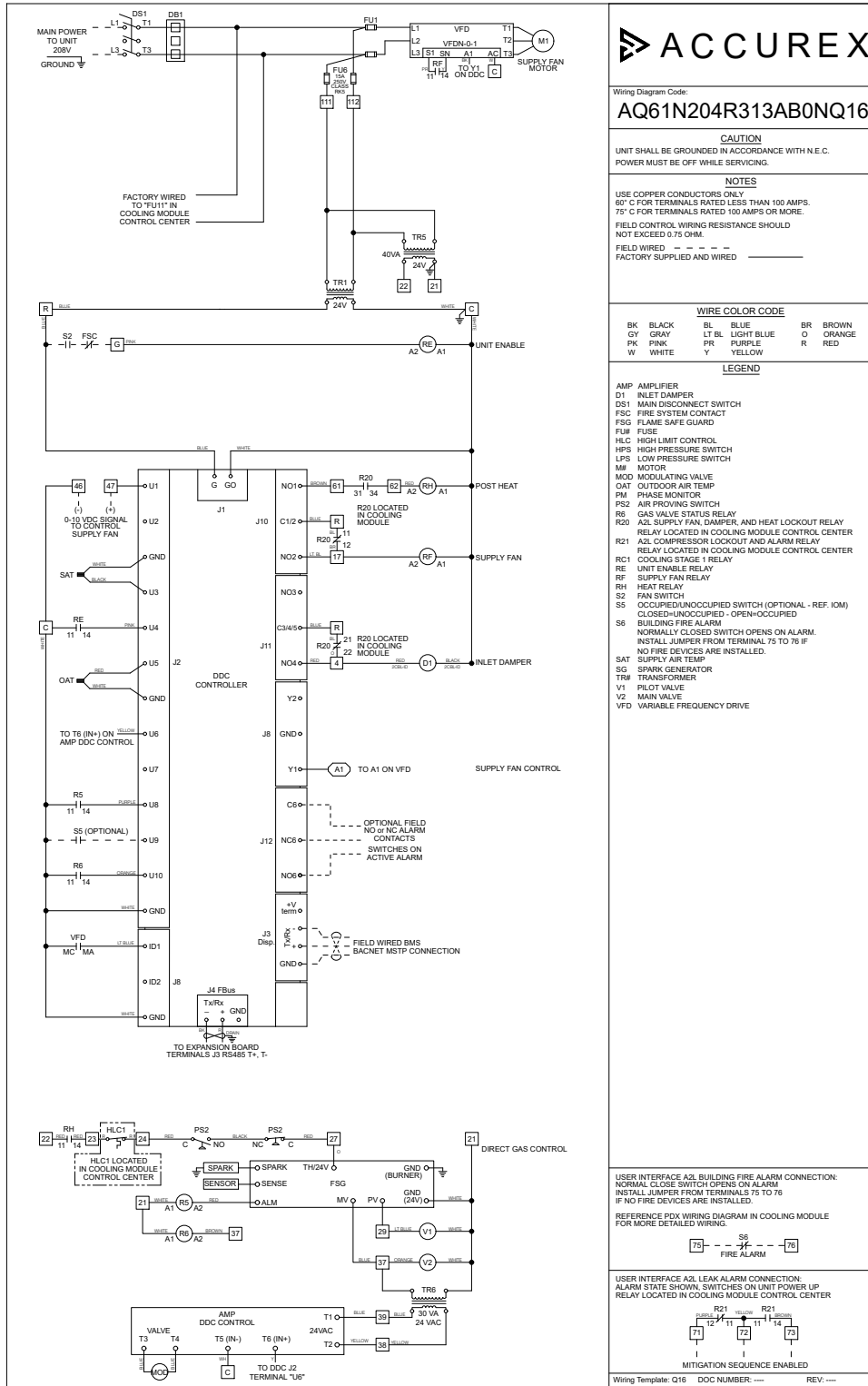
| Recommended Minimum Combustible Clearances | | | | |
|--|-------------|-----------|-------------|------------|
| | Floor (in.) | Top (in.) | Sides (in.) | Ends (in.) |
| Insulated Units | 0 | 0 | 0 | 0 |
| Non-Insulated Units | 0 | 6 | 6 | 6 |

Notes - Combustible Clearances
 Clearance to combustibles is defined as the minimum distance required between the heating source and the adjacent combustible surfaces to ensure the adjacent surface's temperature does not exceed 90 F above the ambient temperature.

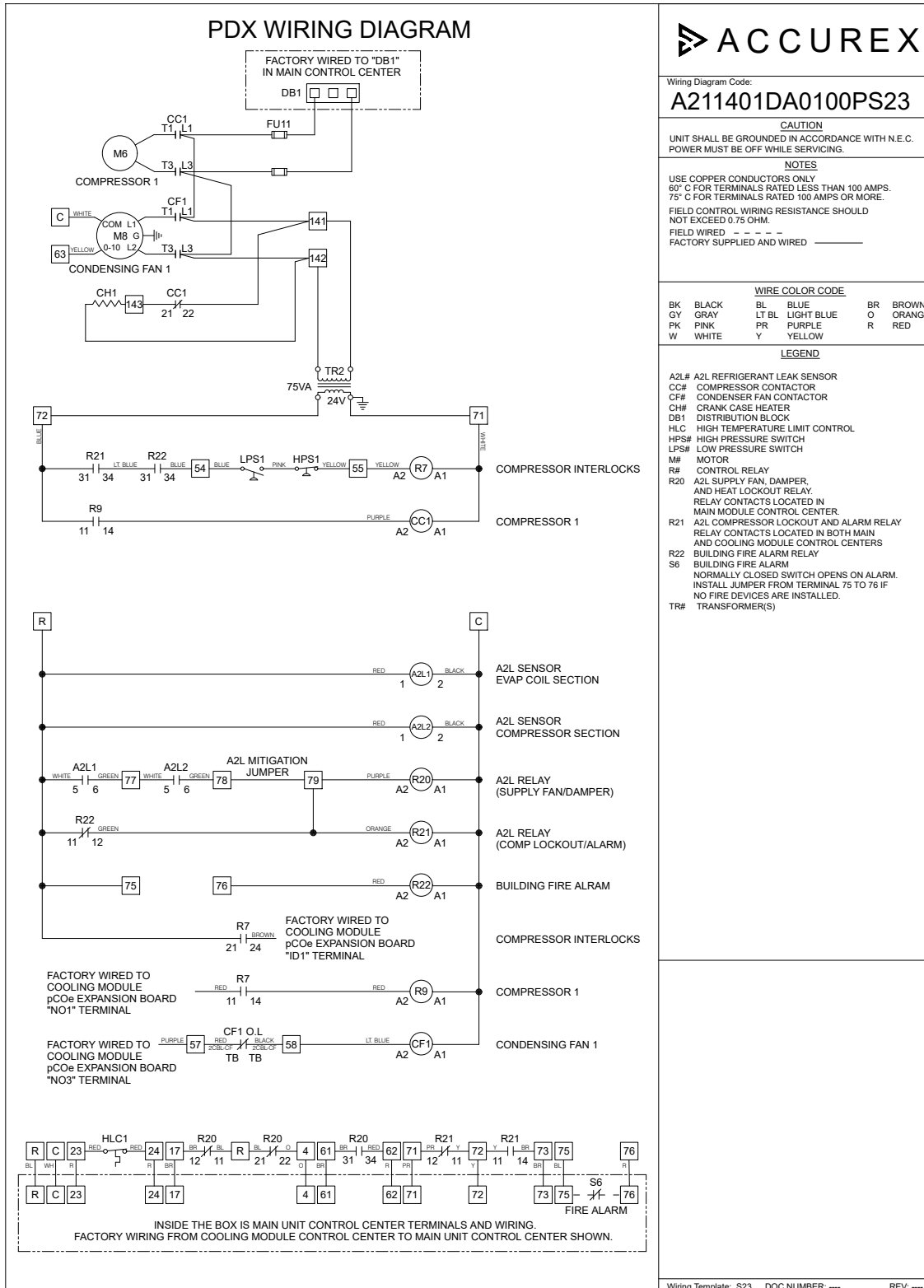
| Recommended Minimum Service Clearances | |
|--|-------------------------------------|
| Housing 32 and less (in.) | Housing 35 and higher (in.) |
| 42 on the controls side of the unit | 48 on the controls side of the unit |

Notes - Service Clearances
 To ensure ample space for component removal (evaporative cooling media, coils, filters, etc.), service clearances should be 6 in. wider than the width of the module itself.
 Reference the PDX Service Clearance guidelines (PDX IOM)

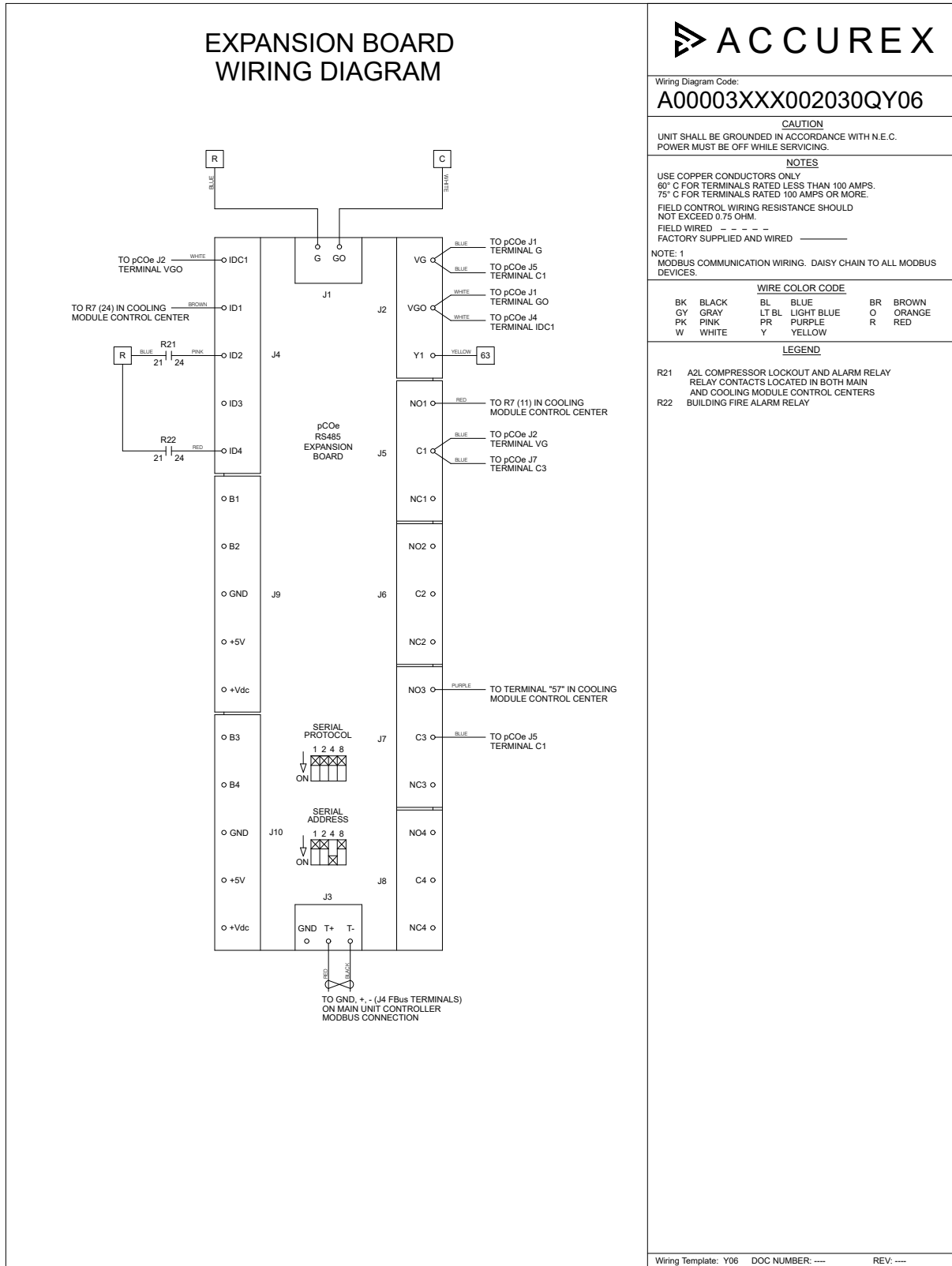
Wiring Diagram



Manufacturer reserves the right to change, modify, or improve this product at anytime



Manufacturer reserves right to change, alter, or improve this product at any time.



Manufacturer reserves right to change, alter, or improve this product at any time.

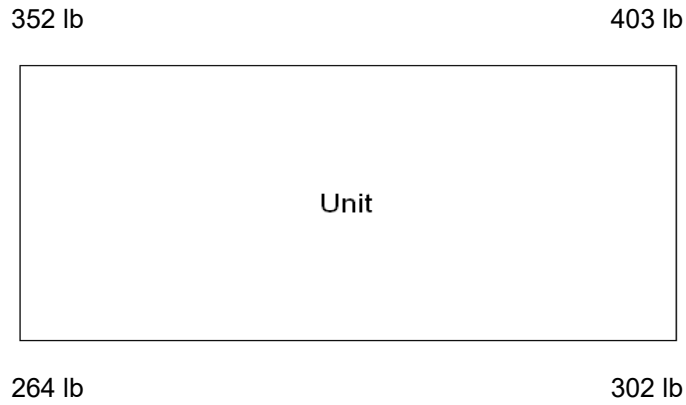
BMS Protocol Points List

| Greenheck Monitoring Interface v2.6 Modbus/BACnet Points List | | | | | | | |
|---|---|---------------|-----------------|---------------|-------------------|--------------------------------|----------|
| Variable | Description | BACnet Object | Modbus Register | Read or Write | Text or Unit of M | | Included |
| | | | | | Active | Inactive | |
| Space_Temp_Analog_Input | Space Temperature | AI-1 | 30002 | R | | °F | |
| Supply_Temp_Analog_Input | Supply Temperature | AI-2 | 30004 | R | | °F | X |
| Outside_Air_Temp_Analog_Input | Outside Air Temperature | AI-3 | 30006 | R | | °F | X |
| Space_Static_Pressure_Analog_Input | Space Static Pressure | AI-9 | 30018 | R | | "wc | |
| Supply_Duct_Static_Pressure_Analog_Input | Supply Duct Static Pressure | AI-10 | 30020 | R | | "wc | |
| Space_CO2_1_Analog_Input | Space CO2 ppm | AI-11 | 30022 | R | | ppm | |
| Return_CO2_Analog_Input | Return CO2 ppm | AI-12 | 30024 | R | | ppm | |
| Aux_In_Customer_1 | Customer defined auxiliary input | AI-22 | 30044 | R | | selectable | |
| Aux_In_Customer_2 | Customer defined auxiliary input | AI-23 | 30046 | R | | selectable | |
| Aux_In_Customer_3 | Customer defined auxiliary input | AI-24 | 30048 | R | | selectable | |
| Aux_In_Customer_4 | Customer defined auxiliary input | AI-25 | 30050 | R | | selectable | |
| Aux_In_Customer_5 | Customer defined auxiliary input | AI-26 | 30052 | R | | selectable | |
| Aux_In_Customer_6 | Customer defined auxiliary input | AI-27 | 30054 | R | | selectable | |
| Aux_In_Customer_7 | Customer defined auxiliary input | AI-28 | 30056 | R | | selectable | |
| Aux_In_Customer_8 | Customer defined auxiliary input | AI-29 | 30058 | R | | selectable | |
| Aux_In_Customer_9 | Customer defined auxiliary input | AI-30 | 30060 | R | | selectable | |
| Aux_In_Customer_10 | Customer defined auxiliary input | AI-31 | 30062 | R | | selectable | |
| Temperature_Setpoint | Occupied Temperature Setpoint | AV-1 | 40002 | R/W | | °F | X |
| Temperature_Heat_Cool_Deadband | Occupied Spt Deadband - Space/Return Reset | AV-2 | 40004 | R/W | | °F (div 2 add/sub Setpoint) | |
| Temperature_Setpoint_Unoccupied | Unoccupied Temperature Setpoint | AV-3 | 40006 | R/W | | °F | |
| Temperature_Heat_Cool_Deadband_Unoccupied | Unoccupied Spt Deadband - Space/Return Reset | AV-4 | 40008 | R/W | | °F (div 2 add/sub Setpoint) | |
| Supply_Temperature_Minimum_Cooling_Setpoint | Minimum supply air temperature - Cooling | AV-5 | 40010 | R/W | | °F | X |
| Supply_Temperature_Maximum_Cooling_Setpoint | Maximum supply air temperature - Cooling | AV-6 | 40012 | R/W | | °F | X |
| Supply_Temperature_Minimum_Heating_Setpoint | Minimum supply air temperature - Heating | AV-7 | 40014 | R/W | | °F | X |
| Supply_Temperature_Maximum_Heating_Setpoint | Maximum supply air temperature - Heating | AV-8 | 40016 | R/W | | °F | X |
| Economizer_Temp_Enable_Setpoint | Economizer Ambient Temp Enable Setpoint | AV-9 | 40018 | R/W | | °F | |
| Cooling_Lockout_Setpoint | Cooling Ambient Lockout Setpoint | AV-13 | 40026 | R/W | | °F | X |
| Heating_Lockout_Setpoint | Heating Ambient Lockout Setpoint | AV-14 | 40028 | R/W | | °F | X |
| Economizer_Lockout_Setpoint | Economizer Lockout Setpoint | AV-15 | 40030 | R/W | | °F | |
| Space_Static_Pressure_Setpoint | Space Static Pressure Setpoint | AV-16 | 40032 | R/W | | "wc | |
| Supply_Duct_Static_Pressure_Setpoint | Supply Duct Static Pressure Setpoint | AV-17 | 40034 | R/W | | "wc | |
| Space_CO2_Setpoint | Space CO2 Setpoint | AV-18 | 40036 | R/W | | ppm | |
| Outside_Air_Damper_Minimum_Setpoint_Occ | Occupied Outside Air Damper Min Setpoint | AV-19 | 40038 | R/W | | % | |
| Outside_Air_Damper_Minimum_Setpoint_Unocc | Unoccupied Outside Air Damper Min Setpoint | AV-20 | 40040 | R/W | | % | |
| Heat_Vent_Changeover_Temp | Heat Vent Changeover Setpoint | AV-21 | 40042 | R/W | | °F | |
| Heat_Vent_Changeover_Hysteresis | Heat Vent Changeover Hysteresis (Summer Only) | AV-22 | 40044 | R/W | | °F | |
| HV_Summer_Damper_Setpoint_Occ | Occupied OAD Setpoint when in Summer Mode | AV-23 | 40046 | R/W | | % | |
| HV_Summer_Damper_Setpoint_Unocc | Unoccupied OAD Setpoint when in Summer Mode | AV-24 | 40048 | R/W | | % | |
| HV_Summer_Lockout | Summer Mode Ambient Lockout Setpoint | AV-25 | 40050 | R/W | | °F | |
| HV_Winter_Damper_Setpoint_Occ | Occupied OAD Setpoint when in Winter Mode | AV-26 | 40052 | R/W | | % | |
| HV_Winter_Damper_Setpoint_Unocc | Unoccupied OAD Setpoint when in Winter Mode | AV-27 | 40054 | R/W | | % | |
| Supply_Air_Low_Limit_Setpoint | Low Supply Temp resulting in unit shutdown | AV-28 | 40056 | R/W | | °F | X |
| Outside_Temp_from_BMS | Outside Temp from BMS. (Source set to BMS) | AV-30 | 40060 | R/W | | °F (Source set to BMS) | X |
| Space_1_CO2_from_BMS | Space CO2 from BMS. (Source set to BMS) | AV-33 | 40066 | R/W | | ppm (Source set to BMS) | |
| Return_CO2_from_BMS | Return CO2 from BMS. (Source set to BMS) | AV-34 | 40068 | R/W | | ppm (Source set to BMS) | |
| Space_Static_from_BMS | Space Static from BMS. | AV-36 | 40072 | R/W | | "wc (Source set to BMS) | |
| Space_Temp_from_BMS | Space Temp from BMS | AV-37 | 40074 | R/W | | °F (Source set to BMS) | |
| SF_Control_Signal_BMS | BMS to control signal for supply fan speed | AV-38 | 40076 | R/W | | % (Source set to BMS) | |
| OAD_Control_Signal_BMS | Allows the BMS to control OAD position | AV-39 | 40078 | R/W | | % (Source set to BMS) | |
| Aux_BMS_Analog_Output_1 | BMS Commanded auxiliary analog output | AV-40 | 40080 | R/W | | selectable | |
| Unit_Status_Mode | Unit Status Word | AV-41 | 30064 | R | | See Unit Status Table | X |

| | | | | | | | |
|---|--|-------|-------|-----|--|------------|---|
| Supply_Temperature_Calculated_Setpoint | Active Supply Temperature Setpoint | AV-42 | 30066 | R | °F | | X |
| Cooling_1_Ramp_Capacity | Cooling Ramp 1 Status Value | AV-43 | 30068 | R | % | | X |
| Economizer_Ramp | Economizer Ramp | AV-44 | 30070 | R | % | | |
| Heating_Capacity | Heating Ramp | AV-46 | 30074 | R | % | | X |
| OAD_CFM_BMS | OAD CFM | AV-56 | 30094 | R | cfm | | |
| Active_Temperature_Setpoint | Active Temperature Set point | AV-57 | 30096 | R | °F | | X |
| Chilled_Water_1_Valve_Analog_Output | Chilled Water 1 Valve Analog Output | AV-58 | 30098 | R | % | | |
| Electric_Heater_1_Analog_Output | Electric Heater 1 Analog Output | AV-59 | 30100 | R | % | | |
| Hot_Water_Valve_1_Analog_Output | Hot Water Valve 1 Analog Output | AV-60 | 30102 | R | % | | |
| Mod_Gas_Furnace_1_Analog_Output | Mod Gas Furnace 1 Analog Output | AV-61 | 30104 | R | % | | |
| Outside_Air_Damper_Analog_Output | Outside Air Damper Analog Output | AV-62 | 30106 | R | % | | |
| Supply_Fan_Speed_Analog_Output | Supply Fan Speed Analog Output | AV-63 | 30108 | R | % | | X |
| Modulating_Compressor_Analog_Output_BMS | Modulating Compressor Analog Output | AV-64 | 30110 | R | % | | |
| Active_Cooling_Setpoint | Active Cooling Setpoint - Unoccupied | AV-69 | 30120 | R | °F | | |
| Active_Heating_Setpoint | Active Heating Setpoint - Unoccupied | AV-70 | 30122 | R | °F | | |
| Exhaust_Fan_1_Status_Digital_Input | Exhaust Fan Status | BI-1 | 10005 | R | Active | Inactive | |
| Supply_Fan_1_Status_Digital_Input | Supply Fan Status | BI-2 | 10006 | R | Active | Inactive | X |
| BMS_Watchdog | BMS Watchdog command - BMS communications | BV-1 | 1 | R/W | Active | Inactive | X |
| System_Enable | Master system enable/disable point. | BV-2 | 2 | R/W | Active | Inactive | X |
| BMS_Occupancy_Command | Occupancy Command | BV-3 | 3 | R/W | Unoccupied | Occupied | X |
| Reset_All_Alarms | Alarm Reset Command. | BV-4 | 4 | R/W | Reset | Normal | X |
| Outside_Temp_Source_BMS | Outside Temp Source Selection | BV-6 | 6 | R/W | BMS | Local | X |
| Space_1_CO2_Source_BMS | Space CO2 Source Selection | BV-9 | 9 | R/W | BMS | Local | |
| Return_CO2_Source_BMS | Return CO2 Source Selection | BV-10 | 10 | R/W | BMS | Local | |
| Space_Static_Source_BMS | Space Static Source Selection | BV-12 | 12 | R/W | BMS | Local | |
| Space_Temp_Source_BMS | Space Temp Source Selection | BV-13 | 13 | R/W | BMS | Local | |
| SF_Control_Source_BMS | Allows the BMS to control supply fan speed | BV-14 | 14 | R/W | BMS | Local | |
| OAD_Control_Source_BMS | Allows the BMS to control OAD position | BV-15 | 15 | R/W | BMS | Local | |
| Aux_BMS_Digital_Output_1 | BMS Commanded auxiliary digital output | BV-16 | 16 | R/W | Active | Inactive | |
| Aux_BMS_Digital_Output_2 | BMS Commanded auxiliary digital output | BV-17 | 17 | R/W | Active | Inactive | |
| Occupied | Occupancy | BV-18 | 10001 | R | Occupied | Unoccupied | X |
| Global_Alarm | Alarm Output - Any or Shutdown Selectable | BV-19 | 10002 | R | Alarm | Normal | X |
| BMS_Watchdog_Active | Status of the BMS Watchdog Ping | BV-20 | 10003 | R | Active | Inactive | X |
| Temperature_Reset_Mode | Occupied Reset Mode | IV-1 | 40082 | R | 1-Supply Temp Control;2-Space;3-Return;4-Outside | | X |
| Temperature_Reset_Mode_Unoccupied | Unoccupied Reset Mode | IV-2 | 40084 | R | | | |
| HV_Summer_Operation_Occ | Heat Vent Summer Operation Occupied | IV-3 | 40086 | R | 1-Off; 2-Continuous; | | |
| HV_Summer_Operation_Unocc | Heat Vent Summer Operation Unoccupied | IV-4 | 40088 | R | | | |
| HV_Winter_Operation_Occ | Heat Vent Winter Operation Occupied | IV-5 | 40090 | R | 1-Off; 2-Continuous; 3-Cycle | | |
| HV_Winter_Operation_Unocc | Heat Vent Winter Operation Unoccupied | IV-6 | 40092 | R | | | |
| Active_Temperature_Reset_Mode | Active Occupied Reset Type Setpoint | IV-7 | 30124 | R | 1-Supply Temp Control;2-Space;3-Return;4-Outside | | X |
| Active_Temperature_Reset_Mode_Unocc | Active Unoccupied Reset Type Setpoint | IV-8 | 30126 | R | | | |
| LatestAlm | Most recent alarm | IV-9 | 30128 | R | See Alarm Table | | X |
| Digital_Output_Word | Digital Output Enables | IV-10 | 30132 | R | Bitstring - See Table | | X |
| Cooling_Alarm_Word | Cooling Device Alarms | IV-11 | 30136 | R | Bitstring - See Table | | X |
| Device_Offline_Word | Device Communication Alarms | IV-12 | 30140 | R | Bitstring - See Table | | X |
| Device_Alarm_Word | Device Alarms | IV-13 | 30144 | R | Bitstring - See Table | | X |
| Heating_Alarm_Word | Heating Device Alarms | IV-14 | 30148 | R | Bitstring - See Table | | X |
| Unit_Status_Word | Unit Status Word | IV-15 | 30152 | R | Bitstring - See Table | | X |

| Unit Status Index | | | | | | | | | | | |
|-------------------|----------------------|---|---------------------|----|-----------------------|----|-------------------------|----|------------------------|----|------------|
| 0 | System Off | 4 | Supply Fan Starting | 8 | Sys On-Heating | 12 | Sys On-Dehumid & Reheat | 16 | Unocc-Cooling | 20 | Remote Off |
| 1 | Initial Delay | 5 | System On | 9 | Sys On-Cooling | 13 | Unocc-Unit Off | 17 | Unocc-Dehumid | 21 | Alarm |
| 2 | Opening Dampers | 6 | Defrost Mode Active | 10 | Sys On-Econ & Cooling | 14 | Unocc-Unit On | 18 | Unocc-Dehumid & Reheat | | |
| 3 | Exhaust Fan Starting | 7 | Sys On-Economizer | 11 | Sys On-Dehumidifying | 15 | Unocc-Heating | 19 | Manual Override | | |

Corner Weights



SEQUENCE OF OPERATIONS

Unit Controls

The unit shall be provided from the factory with:

- 24VAC Transformer
- Terminal Strip
- Supply Fan VFD
- Factory mounted and wired outdoor air inlet damper with actuator
- Phase Monitor

Microprocessor Controller

The microprocessor control shall be factory programmed, mounted, wired and tested. Controller shall have a lighted LCD display and keypad for changing set points and monitoring unit operation. The controller shall be equipped with the following sensors:

- Outdoor air temperature sensor
- Supply discharge temperature sensor

Building Management System (BMS) Communication

The microprocessor controller shall be capable of integrating into a Building Management System (BMS) to allow the BMS to remotely adjust set points, view unit status points and alarms. The microprocessor shall include the ability to communicate over the following protocol:

- BACnet® MSTP

Unit Start Command

A contact closure or jumper wire must be field wired between terminals R and G to enable the unit. When terminal G is energized the unit shall operate as described below. When terminal G is de-energized the unit is disabled.

Internal Time Clock (Schedule)

The microprocessor controller is equipped with an internal 7-day programmable time clock, allowing the user to add up to seven different occupancy schedules.

Occupied/Unoccupied Modes

The microprocessor controller offers the following modes for determining occupancy:

- The internal time clock
- A remote contact (see wiring diagram for details)
- The Building Management System (BMS)

The unit can be temporarily overridden to the occupied mode via a dry contact or the keypad display. After the override time has expired (1 hr, adj) the unit will return to the scheduled occupied/unoccupied mode.

Occupied Mode Unit Start-Up Sequence

- Unit enable input must be closed (contact closure between R and G).
- Initial delay, microprocessor controller initialization sequence.
- Factory mounted and wired outdoor air inlet damper actuator is powered open.
- Supply fan starts after adj. delay.
- Tempering operation begins (see modes below).

Supply Fan Sequence (Occupied)

The unit has been provided with a factory mounted variable frequency drive (VFD). The variable frequency drive shall control the supply fan speed as indicated by the following sequence:

External 0-10 VDC Signal By Others:

The supply fan speed is modulated by an external 0-10 VDC signal (field provided and wired) landed to the microprocessor controller. This signal shall modulate fan speed between the minimum and maximum fan speeds set in the controller.

Heating Control

The heating will be locked out when the outside air is above the heating lockout set point (65 F adj.). When enabled heating will be controlled as follows:

Direct Gas Fired Heating

The microprocessor controller will modulate the direct gas burner to maintain the active supply temperature set point.

Cooling Control

The cooling will be locked out when the outside air is below the cooling lockout set point (75 F adj.). When enabled cooling will be controlled as follows

Packaged DX Cooling (Standard Scroll)

The controller will enable cooling to maintain the active supply temperature set point.

- The packaged DX system contains a single stage of cooling.

Hot Gas Bypass

The hot gas bypass valve opens injecting hot refrigerant from the leaving side of the compressor into the liquid line. This assists in preventing frost from forming on the coil during part load conditions or low airflows. Hot gas bypass is used for system protection only and not for capacity control

A2L Refrigerant Leak Detection and Mitigation

The make-up air unit is equipped with two leak detection sensors—one in the airstream and the other in the compressor cabinet. In the event of a leak detected, the unit will go into ventilation mode. The damper will open and the fan will override to minimum speed. If the unit is equipped with direct gas heat, the heat will be disabled. This ventilation mode will run for at least 5 minutes or until the leak is cleared. The controller will ignore high and low supply air leaving temperature alarms as well as send a notification to the BMS via BACnet or Modbus.

- The make-up air unit is also equipped with a Fire Shutdown Alarm input. This is a requirement for use with R-454B refrigerant per UL 60335-2-40. If the Fire Shutdown Alarm is triggered, it will prevent the override of the damper and supply fan from the A2L Leak Sensors. The controller will send a notification alarm to the BMA via BACnet or Modbus.

Supply Temperature Set Point Control (Occupied)

The active supply temperature set point shall be adjusted (field selectable):

- Locally at the controller.
- Remotely by the BMS.

Unoccupied Mode (Disabled)

- Supply Fan Is OFF
- Factory mounted and wired outdoor air inlet damper actuator is de-energized and spring returns to the closed position.

Supply Air Low Limit

If the supply air temperature drops below 35 F (adj.) for 300 seconds (adj.), the controller will de-energize the unit and generate an alarm.

Alarm Management

The microprocessor controller will monitor the unit status for alarm conditions. Upon detecting an alarm, the controller will record the alarm description, time, date, available temperatures, and unit status for user review. A digital output is reserved for remote alarm indication.

Alarms are also communicated to the Building Management System (BMS).

Possible Alarms Include:

- **Global Alarm**
Indication that one or more alarms are present.
- **Outdoor Air Inlet Temperature Sensor Alarm**
Outdoor Air Inlet Temperature Sensor Alarm: Failure of the outdoor air inlet temperature sensor.
- **Supply Air Discharge Temperature Sensor Alarm**
Failure of the supply air discharge temperature sensor. Unit is shut down.
- **Supply Air Low Limit Alarm**
Supply air has fallen below 35 F (adj.) for 300 seconds (adj.). Unit is shut down.
- **Direct Gas Burner Alarm**
Indicates an ignition controller flame failure alarm. Requires manual reset at the unit.
- **Refrigerant Pressure Alarm**
Indicates a high or low refrigerant pressure switch in the packaged DX system has tripped.
- **Supply Fan Alarm**
Indicates the supply fan failed to prove for a 30 second (adj.) period.

Warranty Statement for Make-Up Air

Unit Warranty

Accurex warrants the equipment to be free from defects in material and workmanship for a period of 18 months from the date of shipment. Initial startup must be completed within six months of the shipment date, and a startup report must be submitted to Accurex.

DG Burner Extended Warranty

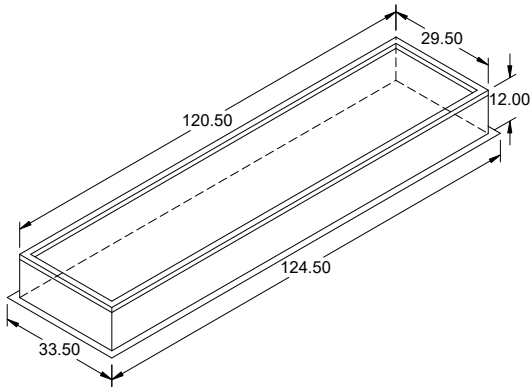
The warranty does not include items deemed as consumable components, including, but not limited to: Igniters, Spark rods, Spark generator, Flame rods, Flame wires, UV eye components, and associated components.

Note: Rust, discoloration of the burner material and cracks or holes smaller than .75 in. is not qualification for a defective burner.

Warranty Notes

Any component which proves defective during the warranty period will be repaired or replaced at Accurex's sole option when returned to our factory, transportation prepaid. All warranties do not include labor costs associated with troubleshooting, removal, or installation. Accurex will not be liable for any consequential, punitive, or incidental damages resulting from use, repair, or operation of any Accurex product. These warranties are exclusive and are in lieu of all other warranties, whether written, oral, or implied, including the warranty of merchantability and the warranty of fitness for a particular purpose. No person (including any agent or salesperson) has authority to expand Seller's obligation beyond the terms of this warranty, or to state that the performance of the product is other than that published by Seller.

As a result of our commitment to continuous improvement, Accurex reserves the right to change specifications without notice.



Model: GPI

Roof Curb

Standard Construction Features:

- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of either 18 ga galvanized steel or 0.064 in. aluminum - Straight Sided without a cant - 2 in. mounting flange - 3 lb density insulation - Height - Available from 12 in. to 42 in. as specified in 0.5 in. increments. Notes: - The maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. - The minimum roof opening dimension should be at least 2.5 in. more than the damper dimension or recommended duct size. - The Roof Opening Dimension may or may not be the same as the Structural Opening Dimension. - Damper Tray is optional and must be specified. Tray size is same as damper size. - Security bars are optional and must be specified. Frames and gridwork are all 12 ga steel.

General

| Tag | Qty | Model | Sizing Method | Undersizing (in.) | Weight (lb) | Shipped Assembled | Union Label |
|-----|-----|--------------|---------------|-------------------|-------------|-------------------|---------------|
| | 1 | GPI-31 x 122 | Nominal | 1.5 | 86 | No | No Preference |

Dimensions

| Curb Height (in.) | Nominal Outside Width (in.) | Nominal Outside Length (in.) | Actual Outside Width (in.) | Actual Outside Length (in.) | Flange Width (in.) | Flange Length (in.) |
|-------------------|-----------------------------|------------------------------|----------------------------|-----------------------------|--------------------|---------------------|
| 12 | 31 | 122 | 29.5 | 120.5 | 33.5 | 124.5 |

Accessories

| Material | Security Bars | Liner | Insulation (in.) | Insulation R Value |
|------------|---------------|-------|------------------|--------------------|
| Galvanized | No | No | 1 | R4.3 |