



R-Series Option Descriptions

Construction and Model Options

Cabinet and Frame

R300 Style

The cabinet casing is 16 gauge aluminized steel, welded to the structural steel framing for strength and long life. Included are fan, bearing, and motor structural steel supports. Both interior and exterior structural steel is mill primed with grey oxide enamel, and all exterior casing seams are 100% weather-tight. The exterior is painted using a high-quality catalyzed primer coat and a finish coat of machine enamel with rust inhibitors. The finish coat color may be chosen by the owner. All models contain large hinged access doors with positive latching and watertight handles. All access doors are painted on the interior and exterior, and include braces that lock the doors open during servicing. All units are prepiped, prewired, and 100% tested prior to shipment.

R400 Style

The cabinet casing is 18 gauge aluminized steel standing seam construction, attached with zip screws to a structural steel frame comprised of 2" deep ASTM A500 Grade tubular structural steel. Both interior and exterior structural steel of single wall constructed units is mill primed with grey oxide enamel. Double wall constructed units are not primed. *All* exterior casing seams are 100% weather-tight. The exterior is painted using a high-quality catalyzed primer coat and a finish coat of machine enamel with rust inhibitors. The finish coat color may be chosen by the owner. All models contain large hinged double wall access doors with full-length stainless steel piano hinges and aluminum extruded frames. All access doors are painted on the interior and exterior, and include braces that lock the doors open during servicing. All R400 style units also come standard with double wall floors, providing strength and durability in service areas for operating components, such as the burner, motor, and fan. All units are prepiped, prewired, and 100% tested prior to shipment.

The R-Series is available in horizontal and upright configurations. Horizontal units are capable of down, end, up, or side discharge. The construction of the upright, outdoor unit is modified so that it will stand vertically on legs or a stand, with a screened outdoor air inlet located on the underside of the unit. A rain skirt is also included on three sides on outdoor units to divert water away from the air inlet. Support legs are 11 gauge aluminized steel, painted to match the color of the unit. (4) legs are required to support the unit. The angle iron support stand is fabricated with ASTM grade A36 structural steel, and provides the most effective free area opening for inlet air. Upright indoor units can be mounted on an inlet plenum base. This base provides a solid mounting option and provides for simplified OA duct connections. The base is insulated with either neoprene or foil faced fiberglass insulation.

Cabinets are also available in stainless steel construction.

The R-Series is ETL certified and complies with ANSI Z83.4 and Z83.18, the national standards for direct fired heating equipment.

Direct-Fired Burner

The direct-fired burner is either a Maxon model NP1LE or NP2LE. The burner is specifically designed to burn natural or propane gas below the maximum non-contaminating levels required by OSHA and the ACGIH. Each burner has non-clogging, stainless steel baffles attached to a corrosion resistant cast aluminum gas supply section with non-moving parts. Burners are capable of 30:1 turndown ratio and are designed for 100% thermal efficiency for the life of the equipment. The outdoor air velocity across the burner will be constant and at an air velocity necessary for ANSI certification.

The burner pilot system is Interrupted Piloted Ignition. This system consists of a high voltage ignition transformer, spark igniter, and UV scanner. This proves the pilot is lit before allowing the gas valve to fully open. The system contains a pilot line gas regulator, gas valve, and 3/8" OD tin-lined copper tubing.

Supply Fan

The supply fan is backward-inclined, built-in, single-width, single-inlet, centrifugal type, airfoil-design, plenum-type, non-overloading, and belt-driven for the required air capacity. A precision-formed inlet cone is provided to streamline airflow into the fan wheel to ensure full and even loading of the fan blades. All system air shall pass through only one fan inlet. The fan motor is 1750 rpm, has a standard NEMA frame, and is either Open Drip Proof (ODP) or Totally Enclosed Fan Cooled (TEFC). All fans have ball bearings and/or spherical roller bearings with locking collars and are designed for a minimum of L10 life of 100,000. Fan bearings have extended lube lines, which terminate at the unit exterior wall so that all lubrication can be performed without shutting down the system. Fan wheel and bearings are supported using reinforced structural steel framework. Explosion proof and corroduty motors are also available. All motors are premium efficiency motors, mounted on an adjustable slide base with a single or double adjustment screw. The motor has a 1.15 service factor, suitable for continuous service at 120 degrees F ambient temperature, and will be factory wired for the specified voltage. The blower, motor, and drive set are factory tested to ensure the specified air delivery at the design total static pressure.

The fan shaft is connected to the motor by a V-belt drive, designed for a capacity 50% above the motor nameplate horsepower. The shaft is a turned, ground, and polished solid shaft, and contains a protective coating to minimize oxidation.

Variable Volume: "V" Option

The variable volume option is available for units supplying 100% OA. The "V" option allows for precise air control, as it controls the fan speed and can reduce the supply air volume from 100% to a minimum of 35%. This air volume control is achieved using a variety of methods, which include two-speed motors, variable frequency drives (VFD), or motorized dampers. "V" option units can be controlled via a manual potentiometer, or a building pressure switch. The manual potentiometer, as the name implies, manually positions the VFD or opposed blade discharge damper to reduce the unit airflow down to a pre-set minimum volume, not going below 35%. The unit will either operate at this volume, or at 100% full volume. This option, as well as the building pressure control switch, includes an opposed blade burner profile damper that is controlled by a differential pressure switch to ensure that proper air velocity is maintained across the burner profile.

The building pressure switch allows for automatic control of the volume control discharge and profile dampers. A diaphragm pressure switch, mounted on the heater housing, is used to sense a positive space pressure, in either the room or the ductwork. The unit modulates between the lower limit and 100% full volume based on building pressure requirements. Included with this option is a .01-0.2" W.C. pressure setting range (factory set at .01") with a .02-.03" null. Variable amounts of outdoor air are brought into the space to satisfy the pressure set point. 10 feet of pressure sensing tubing is provided for field installation by others.

Spray/Bake Option

The spray/bake option allows for high/low air volume, and is designed for spray booth applications requiring an elevated temperature for curing paint. This option includes a master remote control panel with a programmable digital temperature control, LED indicator lights, and control switches. The control can be pre-programmed for specific temperatures and times for the spray, purge, bake, and cool-down modes. Airflow will automatically adjust when switching from the spray to bake mode. When in the spray mode, the controls provide a constant high-volume, low-temperature operation. This mode meets ANS Z83.4a-2001. When the “Start Bake” button on the remote is activated, the controls shift to low-volume, high-temperature operation for a user-selected period. This mode meets UL 795. When in cool-down mode, the controls shift back to high-volume, low-temperature operation until the “bake mode” is selected again.

Return Air: “M” Option

The “M” return air option is designed to operate with a minimum of 15% outside air. This helps to conserve energy by reheating warmer building air. The “M” option is capable of modulating between 15% and 100% OA, and 85% to 0% RA. It is commonly used for space heating and ventilating when building doors are opened and closed, or exhaust fans are cycling on and off throughout the day. “M” option units are controlled via a Maxitrol Series DFM digital, programmable space temperature control. The OA/RA dampers are automatically controlled by either a building pressure control switch mounted in the main control panel, a manual potentiometer mounted on the remote control panel, interlocking relays (i.e. to the exhaust fan(s)), a Hi Lo return air volume switch at the remote panel, or DDC controls provided by AbsolutAire or by others. The OA damper for burner air is a two-position damper and is open only when the unit is on. All (3) dampers are 16-gauge parallel blade and work as an outside air inlet damper, closing when the unit shuts down.

Return Air: “B” Option

“B” option units are two-position units that are either in the 100% OA or 15% OA/85% RA modes (different ratios are also available). A Maxitrol Series DFM space temperature control system is used, and the option is controlled with either a switch, or a time clock located at the remote control panel. The dampers are 16-gauge parallel blade and work as an outside air inlet damper, closing when the unit shuts down. “B” option units are commonly used when total make-up air is needed during certain periods and minimal outside air during the remaining times (i.e. unoccupied or process off periods).

Return Air: “F” Option

The “F” option is designed for fulltime air-rotation and is usually 15% OA and 85% RA, though other ratios are available. A two-position damper is used on the outside air inlet only; the return air opening is fixed and is not equipped with a damper. The two-position OA damper is 16-gauge parallel blade and closes when the unit shuts down. A Maxitrol Series 44 space temperature control system is standard for “F” option units.

Mechanical Options and Accessories

Evaporative Cooling

The evaporative cooling option is available with water recirculation (EVR) and without (EVN). EVR models provide maximum cooling and humidity utilizing a pump and closed-loop, water recirculating system. EVN models provide similar cooling, but without water recirculation, reducing up-front costs, offering a simplified design, and lower maintenance. All evaporative coolers feature fully welded construction with heavy gauge stainless steel water reservoirs, and 6" thick Munters CELdek® evaporative media sized for 600 FPM maximum face velocity. 12" or 18" thick CELdek® and GLASdek® is also available. A thermostat controlled automatic fill and drain kit is a recommended option. All coolers are pre-piped, pre-wired, and fully factory tested prior to shipment. When used in conjunction with a direct fired heater, control is accomplished through two switches on the remote control panel. A fan on/off switch controls fan operation, while a heat/vent/cool switch allows for heating, ventilation with untempered air, or ventilation with cooled air. A variety of options are available for evaporative cooling; consult the factory for application assistance.

Mechanical Cooling

Direct expansion (DX) evaporator coils offer single, dual, or quad circuits to ensure precise control of cooling capacity on AbsolutAire units. Interlaced circuiting as well as face or run control options ensure uniform refrigerant distribution over the face of the coil. Wide fin spacing is available to reduce frost buildup on low-temperature applications.

There are many options available with DX coils. These include special coil coatings, such as heresite, phenolic, or electrofin; special coil construction, such as copper fins, stainless steel, thicker fins or tubes; and many other features to meet requirements. The standard DX coil consists of a minimum 0.0060" thick aluminum fin and 0.02" copper tube.

Chilled water (CW) cooling coils use refrigeration equipment to provide cold water, which is then pumped through coils in the unit to cool and dehumidify the air stream. These coils are usually available in a range of sizes and circulating selections to optimize heat-transfer capacities. The design and selection process ensures easy cleaning for lasting performance. Glycol is often used as a component in the cooling fluid.

Both DX and CW coil sections and options include 1" thermafiber insulation, an aluminized steel interior floor liner on horizontal models, and a 14-gauge stainless steel drain pan. All coil controls, condensers, and valves are either field provided and installed by others, or by AbsolutAire as a packaged system.

Heating Coils

Steam, hot water (HW), or electric resistance coils can be used to preheat the air for the direct gas fired burner, or sized to replace it. They can also be supplied as a "reheat" feature on a heating, cooling, and humidity control packaged system.

Insulation

Insulation may be added to any part of the unit, including the base cabinet, filter section, options section, or curb. Insulation helps with sound attenuation and reduces condensation on indoor units, return air models, and those with coil sections. Standard insulation consists of 1" thick, 1.5 pound density, neoprene coated fiberglass, glued and pin welded to the interior walls of the unit. Foil faced fiberglass insulation is also available, as is 1" or 2" thick double wall construction. The insulation complies to UL standard 181 for erosion and NFPA 90A for fire resistance. All exposed edges will be coated to eliminate erosion. The fiberglass is held in place using both adhesive and welded pins, per SMACNA standards.

Paint Options

All R-Series models are provided as standard with an *exterior* paint finish. However, AbsolutAire can also paint the *interior* of the unit. All interior walls, the roof, and floor of the base unit cabinet are cleaned, primed, and painted. Our standard paint is Sherwin Williams KEM 400 industrial enamel.

Epoxy paint is another option for interior and exterior paint. This optional paint upgrade involves a primer and two-part epoxy to coat the entire interior, exterior, or both.

Heresite and *phenolic* paint coatings are also available.

Motorized Inlet and Discharge Dampers

A damper will minimize the amount of air going through the unit when it is turned off. These optional 16-gauge galvanized parallel blade dampers are available on 100% OA units and are located on the inlet or discharge side of the unit. They are opened and closed using a two-position direct shaft coupled Electric Actuator. An end switch will prevent fan and burner operation before the damper is fully opened. Spring return and low-leak damper options with blade and jam seals, are available. Aluminum or stainless steel construction is also available.

Inlet Hood

The inlet hood minimizes the ingestion of moisture into the unit, and is therefore highly recommended on all outdoor units. A framed wall mount inlet hood can be used in lieu of wall louvers for indoor, wall-mounted units. All hoods are welded, sealed, and weather-resistant, and can be equipped with a rain shield, birdscreen, and/or filters. A rain shield is a hood extension that is added to the hood to reduce moisture ingestion from wind-driven snow or rain. Birdscreen is $\frac{1}{2}$ " x $\frac{1}{2}$ " spaced 16-gauge wire that is added to the hood to aid in the reduction of ingestion of leaves, cottonwood, seeds, etc. Inlet hoods can be equipped with 1" or 2" cleanable, removable aluminum filters. The filters are accessible from either the face of the hood, or in a v-bank configuration inside the hood (depending on unit size). This latter option is often used in conjunction with a birdscreen.

Side Access Filter Section

This filter section is accessed from the control side of the unit, and is usually mounted on the outdoor air inlet end. Filter options include 1" or 2" aluminum filters, or a variety of disposable filter options. MERV 7 or 8 filters are standard. Up to MERV 17 (HEPA) filters are available, for application on the unit inlet or discharge, or both locations. Filters are arranged in a v-bank configuration with rigid slide rails.

Filtered Mix Box

This mixing box is used in conjunction with recirculating air models to filter both outside and return air. The mix box section includes the burner outdoor air shut-off damper, the OA/RA modulating damper and motors, and the filter section. The mix box includes filter rails arranged in a v-bank configuration. A side return option is also available, allowing the return air to enter the mix box from the side on horizontal units.

External Vibration Isolation

Indoor, suspended units hang from building support steel. Rubber in-shear or spring *suspension isolators*, sized for the weight of the unit, can be provided mounted in a rectangular steel housing. Hangar rod and/or unit support rails are normally field provided by others.

Platform isolators are rubber in-shear or spring isolators that are field attached to the unit curb angle with support clips on the base of the unit. *Curb-mounted vibration isolators* consist of a rubber and/or woven composition pad located between the unit curb angle and the roof curb.

These options are only available on horizontal configuration units. All isolators above are shipped loose, and all support rods, hangers, and installation are by others.

Internal Vibration Isolation

This option minimizes vibrations to the heater cabinet. Four rubber in-shear or spring isolators are mounted inside the unit between the base of the unit and the fan and motor assembly. The fan and motor are mounted on a welded structural steel framework. A flexible duct connection is also included between the fan housing and the discharge opening on the unit.

3-Way Single or Double Deflection Discharge Diffusers

A 3-way discharge diffuser is a rigid, welded discharge head which provides 180-degree air distribution. A single deflection diffuser is equipped with horizontal blades only, while a double deflection diffuser has horizontal and vertical adjustment blades. These discharge heads are commonly used on upright and indoor, suspended models.

4-Way Single or Double Deflection Discharge Diffusers

Like the 3-way discharge diffuser, but provides 360-degree air distribution and includes an insulated floor for sound absorption. These discharge heads are commonly used on rooftop, down discharge models or indoor, upright (up discharge) models.

1-Way Double Deflection Discharge Diffuser

Like the above discharge diffusers, but only has one discharge direction. This diffuser is also only available with horizontal and vertical blades. This discharge diffuser is commonly used on upright models with horizontal discharge.

Discharge Plenum

This discharge plenum box has expanded metal screens on all openings, and is often used for upright units mounted indoors.

Internal Bypass Plenum

This option will allow 0% to 85% of the supply air to be bypassed within the unit cabinet. Only outdoor air passes over the burner. A selected amount of outdoor air, 15% to 100%, enters the building. This additional internal bypass chamber extends the full length under the fan and burner sections. It incorporates an additional motorized control damper directly below the standard bottom discharge opening. Standard control is a manual potentiometer, but pressure control options are also available.

Splash Plate

A splash plate is a reinforced, flat, aluminized steel metal plate that is field installed below the discharge opening of horizontal models to prevent the supply air from blasting straight down on individuals inside the facility being served. The air is blown down, but then deflected horizontally in all directions (not adjustable). Threaded rod hangers are used to secure the plate to the roof structure, and are field provided by others.

48” Duct for Supply or Return Air

This 48” long duct is constructed of 18-gauge aluminized steel. The duct has flanges for field connection to the unit supply or return air opening. Insulation, either 1” thermafiber or 1” foil faced, is an available option.

Safety Screen

This is an expanded metal screen with a frame that is installed over the supply, return, or discharge opening of the unit. This is standard on all upright and indoor suspended models. Field installation by others may be required.

External Fan Motor

For units ordered with high discharge air temperature requirements, the motor is mounted in an external weatherproof housing to protect it from extreme temperatures.

Belt Guard

A belt guard, painted OSHA yellow, protects service personnel from moving belts while inside the fan cabinet. Provision is made for RPM readings without needing to remove the guard assembly.

Flat Roof Curbs

Flat roof curbs are reinforced, 20” high supports for roof-mounted units. Flat, full roof curbs support the entire perimeter of the unit and ship either knocked down or fully assembled. They can be equipped with optional insulation and wood nailers.

Pitched Roof Curbs

Pitched roof curbs are designed to keep units flat when mounted on a pitched roof. They are 20” high and are built based on the pitch of the roof and location of the unit on the roof. The curb can support a unit installed either parallel or perpendicular to the roof ridgeline. They are shipped fully assembled and include two adjustable legs and feet to support the inlet end of the unit. Optional insulation and wood nailers can also be provided.

The construction of *all* roof curbs is based on the size and/or options of the unit it supports. Consult the factory to determine if the curb is 14, 16, 18, or 20-gauge, and if it is aluminized or galvanized.

Service Platform

A service platform with a ladder can be provided for horizontal and upright units. The service platforms are built to OSHA requirements, and run the full length or width of the base cabinet. A 42" high railing, 4" high toe kick plate, and heavy-duty galvanized chain access with spring clasps are included. The platform is field installed on the control side of the unit. The ladder meets ANSI A14.3, OSHA 1910.27, and OSHA 1926.1053 standards. It is painted OSHA yellow with walk-through style handrails. Climbing rungs are 3/4" corrugated steel on 12" centers.

Service Corridor

This is a walk-in weather enclosure for horizontal units that provides protection from the elements when servicing an outdoor unit. It is constructed of 16 gauge aluminized steel and has a multi-grip floor plate. It allows for easy access to the heater controls and components, and all piping and mechanical system apparatus is installed to allow for maximum clearance through the walkway. A full-size door with a window and locking hardware is also included. Also provided is a factory-wired ground fault circuit with transformer, prior to the main disconnect switch, and a GFI convenience outlet. All factory wiring is 600-volt rated type MTW/THWN-stranded copper, enclosed in EMT or liquid-tight (maximum of 3 feet) conduit in accordance with NEC. The corridor also has a vapor-proof incandescent overhead light. All junction boxes are UL/CSA approved.

Electrical Controls, Options, and Accessories

Remote Control Panel

This NEMA 5, NEMA 4X Polycarbonate, or NEMA 7 Explosion Proof enclosure includes a hinged cover with a key-lock, a manual three position summer-off-winter switch (keyed switch also available), and circuit analyzer indicating lights that allow the user to easily identify unit failures and faults at the remote panel. The panel is (24/120v) and is to be interconnected to the unit in the field by others.

Maxitrol Series 14 Discharge Temperature Control

Discharge temperatures are monitored and controlled by a thermistor located in the discharge of the unit. The thermistor will modulate the gas valve to maintain the selected discharge air temperature. An adjustable temperature dial is located at the remote control panel. This is standard on all 100% OA models.

Maxitrol Series 44 Space Temperature Control

This is a temperature control system with a sensing thermistor at the remote control panel, located in the heated space. The thermistor senses and controls the room temperature by modulating the gas valve to maintain the desired space temperature. A thermistor is also mounted in the discharge air stream of the unit to control the minimum and maximum discharge air temperature. This is standard on “F” return air models.

Maxitrol DFM Temperature Control

This control monitors space temperatures, along with outside, return, and discharge air temperatures. Damper position is also tracked to ensure unit operation per ANSI Z83.13. These controls include a digital display and built-in programmable time clock for night temperature setback control. Additional sensors are located in the outside and return air (if applicable) to control the maximum discharge air temperature. This control system is standard on “M” and “B” return air models.

Remote Flame Reset

If a loss of flame occurs or if the pilot cannot be verified at an initial startup, this flame relay will lock out and must be manually reset at the unit control panel. This is included as standard and adds a flame relay reset button on the remote control panel for reset convenience.

Low Temperature Limit

This solid-state sensor is installed on all R-Series units and is used to sense the discharge air temperature. If the temperature falls below the low set point (field adjusted) for five minutes, the unit will shut down, and if applicable, the outside air dampers will close. This switch is located in the main control panel, but can be reset by turning the remote panel summer/off/winter switch to the off position and then turning it back on. An automatic by-pass timer is provided for start-up purposes.

Mild Weather Stat

This optional thermostat will disable the burner if the entering outdoor air temperature rises above the mild weather thermostat set point. The burner will re-ignite when the outdoor air temperature falls below the set point, plus a differential temperature (user adjustable). The thermostat is located in the main electrical enclosure.

Clogged Filter Indicator/Alarm

This differential pressure switch is installed to sense the pressure drop across the filters. Pressure drop adjustment range is 0.2" W.C. to 1.0" W.C. When the pressure set point is exceeded, the indicator light on the remote control panel is illuminated and/or the alarm will sound.

Magnehelic Gauge

This Dwyer device will monitor building pressure or differential pressure across the filter bank. The gauge is 4" in diameter and can be located on the remote control panel, at the unit, or shipped loose in a separate panel for installation in the field.

Photohelic Switch and Gauge

This Dwyer photohelic air pressure gauge with relay outputs is used to monitor as well as control building pressure. It can also monitor filter loading and can be used in place of a clogged filter switch and light. The gauge is approximately 4" in diameter and can be installed on the remote control panel, on the unit, or shipped loose in a separate panel for field installation.

Smoke Detector (shipped loose)

This is an ionization smoke detector shipped loose, to be installed by others. Electrical interlocks are provided at the main electrical panel terminal strip. If smoke is detected, the device will shut down the heater and close the damper(s).

Smoke Detector (installed by AbsolutAire)

This smoke detector is the same as above, but is installed on the heater. Outdoor units include a separate heated enclosure for the smoke detector electronics. Return air models can have the smoke detector located in the RA mixing chamber.

Burner Alarm Horn

This audible alarm horn is mounted on the exterior of the remote panel. If the burner locks out, the alarm will sound. A silence alarm button is located at the remote panel to quiet the alarm and illuminate the burner lockout light until the flame relay can be reset at the remote or main control panel.

Programmable and Mechanical Time Clocks

The *programmable time clock* is an electronic 7-day, 24-hour digital display electronic timer, installed in the remote panel, with battery backup. This option allows automatic on/off control, as well as other time-specific functions throughout the day.

The *mechanical time clock* is an electronic timer installed in the remote panel. It allows the unit to be turned on or off at different times throughout the day. Unlike the programmable time clock, this option does not allow the selection of different sequences for different days of the week.

Both time clocks require the inclusion of the deluxe remote control panel.

Deluxe Remote Control Panel

The deluxe remote panel includes a locking cover, a summer/off/winter switch, and indicator lights for power, fan, burner, and burner lock out. Additional indicator lights are available at an added cost.

Room Override Control

This separate thermostat is located on the remote control panel to override the set discharge temperature on the dial. This allows the discharge air to be delivered to the space at a higher temperature in the event that the space temperature is below the desired set point. The maximum discharge temperature is normally 130 degrees. The room override function is field adjustable and can only be used with the Maxitrol 14 temperature controls located at the remote control panel.

Cycled Night Set Back

This thermostat will turn the unit on when the room temperature falls below the room thermostat set point plus a selected differential (adjustable from 3 degrees F to 12 degrees F). The heater will then turn off when the room thermostat reaches the set point. The adjustable cycle stat is located in the remote control panel. This option cannot be used on units above 15 HP without the inclusion of an added cost timing circuit to protect the supply fan motor. This option also requires the inclusion of the deluxe remote control panel.

Continuous Night Setback

This is used with Maxitrol 44 space temperature controls. This option includes an additional selector for a second temperature (i.e. unoccupied) to be selected as an alternate to the primary temperature (i.e. occupied). Selection between the two temperature selectors is accomplished with either an occupied/unoccupied toggle switch or a time clock. The toggle switch and time clock are located at the remote panel, and require the inclusion of the deluxe remote control panel.

Pre-Purge Timer

This timer is standard with an ETL, FM, and IRI gas manifold. The control delays ignition of the burner in order to purge the unit cabinet of possible residual gas. All units have as standard a pre-purge timer of ten seconds, but this timer is adjustable up to sixty seconds.

UV Flame Detection

This electronic sensor is standard on all piloted ignition systems to ensure that the pilot and main burner have been proven, and to monitor the flame during normal burner operation.

CO, CO₂, NO₂, & NO_x Detectors

These detectors have dual relay outputs and are installed on the remote panel to monitor the space being heated. If any of these gas concentrations exceed the set point, an alarm condition is created that allows for control of unit functions and/or other ventilation equipment such as damper positioning, unit shut down, exhaust mode enabling, etc. This option requires the deluxe remote panel option.

Three Phase Power Monitor

This monitor interrupts the main power to the unit when it detects any loss of phase, phase reversal, or low voltage on any or all power legs. Power is automatically restored when the problem is corrected.

120V GFI Outlet

This option provides a 120-volt ground fault convenience outlet on the main control panel. If the ground fault is tripped, it must be manually reset. If this outlet is powered by others, a separate 120-volt power source must be brought to the unit. Power for the outlet can also be supplied by AAI in the form of a factory installed transformer. This transformer is powered from the line side of the main disconnect switch.

Fused Disconnect Switch

A fused disconnect switch of proper amperage is standard on all R-Series models. The fused disconnect switch is NEMA 3R rated and is located next to the main electrical control panel. Fusing is factory installed and tested prior to shipment.

Interlocking Relay

Allows the unit to energize a control for an outside device, or allows an outside device to control a specific unit function. This relay also allows for remote status indication or exhaust fan interlocking.

Exhaust Fan Motor Starter

This magnetic exhaust fan motor starter is factory wired with overload and short circuit protection as required by NEC. Advise quantity, horsepower, voltage, and phase at the time of order.

Exhaust Fan Motor Contactor

This is an auxiliary contactor that is provided for exhaust fans. Short circuit and overload protection is provided by others. Advise quantity, horsepower, voltage, and phase at the time of order.

Exhaust Fan VFD

A variable frequency drive (VFD) is mounted in the remote or main control panel to adjust the speed of the exhaust fan (provided by others). This option can be used in conjunction with a pressure differential switch, manual potentiometer, or 2-speed operation (high/low). Outdoor units include an electro-statically controlled heater for the VFD. The exhaust fan horsepower and voltage must be provided at the time of order.

Exhaust Cycle

This control feature can be added to any “B” or “F” return air R-Series unit. This option allows the facility manager to manually or automatically change the heater operation from an air supply unit to an exhaust unit. This will purge the building of contaminants or smoke. This can be tied electronically into our optional smoke detectors, CO or other gas sensors, a time clock, etc.

UVC Section with UVC Lights

UVC lights and light fixtures are installed in an area or section downstream of cooling coils or filters. The UVC lights will minimize the growth and distribution of algae and other airborne microorganisms into the occupied space. The UVC lights are powered with a provided control transformer and include access door interlock switches that turn the UVC lights off when the access door(s) are open.

DDC Control System

The standard LX-1 DDC system comes with a programmable logic controller and sufficient I/O capabilities to allow for complete control of the unit. Single or multiple units can be controlled by a personal computer when the units are wired into a network or connected together via a twisted pair. A single programmable control station (smart stat) is also an available option for user interface with the unit(s). The system can be upgraded to allow for complete web access or to have Bacnet and/or Lon protocols resident on the controller. All software and programming are provided by AbsolutAire and include all windows style graphic interfaces when for use with a PC or the web access option.

Gas Control Options and Accessories

FMG or IRI Gas Manifold

In addition to our standard gas manifolds, R-Series units have the option of upgrading to FMG or IRI insurance requirements.

An *FMG* gas manifold is built in accordance with the requirements of Factory Mutual Global Insurance.

An *IRI* gas manifold is built in accordance with the requirements of Industrial Risk Insurers.

High Gas Pressure Regulator

When the inlet gas pressure is in excess of the maximum allowable pressure shown on the unit rating plate (14" W.C. up to 1,100 MBH and 5 PSI over 1,100 MBH), the pressure must be reduced. This full lock-up regulator, with internal relief, is provided to adjust the gas pressure so that it falls below the maximum for the unit. The regulator is normally shipped loose, for field installation by others.

High and Low Gas Pressure Switches

These manual reset safety switches are provided to disable power to the flame relay if gas pressures above or below the user-selected set points are detected. This option is standard with all IRI gas manifolds, and with all FM manifolds with burners rated 2,500 MBH and higher.

Natural/LP Changeover Switch

This switch allows for changeover from either natural gas to propane, or vice versa, without needing to change the burner high-fire gas pressure settings. Both gas pressure settings must be adjusted at the time of initial field start up. The switch is located on the main control panel of the unit and requires Maxitrol Series 14 or 44 electronic temperature controls.