



ISOLATION-READY PATIENT ROOMS

Easily Change From Normal Operation to Isolation Room Mode

Traditionally hospitals are built with very few negative pressure isolation rooms as these spaces are seldom used and are more expensive to build and operate than standard patient rooms. The CARES is a critical component of the isolation-ready patient room solution from Price and Antec Controls that allows a hospital to build one room that can operate with the air distribution requirements of a standard patient room or a negative pressure isolation room. Conversion of the air distribution system to a negative pressure isolation room at the touch of a button eliminates the need for time consuming and unsightly field modifications in response to increased demand for isolation spaces.



ROOM REQUIREMENTS

ASHRAE Standard 170-2021 Ventilation of Health Care Facilities dictates the following requirements for standard patient rooms and isolation rooms. In the proposed isolation-ready layouts on the following pages "Normal Operation" aligns with the ASHRAE Standard 170 air distribution requirements for "Standard Patient Rooms" while "Isolation Mode" aligns with the operational requirements of an "Airborne Infectious Isolation Room".

Standard Patient Room

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Airflow - Fresh	2 ACH
Airflow - Total	4 ACH
Pressure Differential	No requirement.
Exhaust	Washroom exhaust.
Return	Room return grille located near door.
Recirculation	Allowed.
Supply Diffuser	Not specified.

Airborne Infectious Isolation Room

Airflow - Fresh	2 ACH
Airflow - Total	12 ACH
Pressure Differential	Negative 0.01 in. w.g. pressure monitor required.
Exhaust	Washroom Exhaust. Room exhaust located near patient head.
Return	Return not allowed.
Recirculation	Only allowed if room air is recirculated locally through a HEPA filter.
Supply Diffuser	Air moves from clean to less-clean.



RETROFIT LAYOUT

Exhaust Damper/Actuator

- · Normal Operation: Damper closed.
- · Isolation Mode: Damper open to exhaust air and create negative room pressure.

Exhaust Grille (735H)

- Normal Operation: Exhausts air out of washroom.
- Isolation Mode: Exhausts air out of washroom.

LCD Thermostat (TSTAT)

- · Normal Operation: Controls room temperature setpoint.
- Isolation Mode: Controls room temperature setpoint.

Touchscreen Room Pressure Monitor (PMT)

- · Normal Operation: No room pressure requirement.
- Isolation Mode: Measures and displays room pressure. Activates Puraflo, closes return damper, opens exhaust damper to create negative room pressure.

Return Damper/Actuator

- · Normal Operation: Damper open to allow return airflow to the
- · Isolation Mode: Damper closed

- air handler.
- to prevent return airflow to the air handler.

Return Grille (80SR)

- · Normal Operation: Room air is returned to the air handler.
- · Isolation Mode: Not in use.

Combination Exhaust and Recirculating Fan Filter Unit (PURAFLO)

E_{xhaust}

- · Normal Operation: Puraflo not in use.
- · Isolation Mode: Puraflo turns on in response to PMT control signal. HEPA filtered air is exhausted to maintain negative room pressure while the remainder is recirculated to the space.

Supply Diffuser (SMD)

- · Normal Operation: Fresh air supplied to the room.
- Isolation Mode: Fresh air supplied to the room.

Recirculation Diffuser (SMD)

- Normal Operation: Not in use.
- Isolation Mode: Recirculated, HEPA filtered air from Puraflo supplied to the room.

Single Duct Terminal Unit with Reheat (SDV)

- · Normal Operation: Modulates supply airflow to the room.
- · Isolation Mode: Modulates supply airflow to the room.



BASE LAYOUT

Exhaust >

Return

Exhaust Grille (735H)

- Normal Operation:
 Exhausts air out of washroom.
- · Isolation Mode: Exhausts air out of washroom.

Exhaust Damper/Actuator

- Normal Operation: Damper closed.
- · **Isolation Mode:** Damper open to exhaust air and create negative room pressure.

Return Damper/Actuator

- Normal Operation: Damper open to allow return airflow to the air handler.
- Isolation Mode: Damper closed to prevent return airflow to the air handler.

Return Grille (80SR)

- · Normal Operation: Room air is returned to the air handler.
- · Isolation Mode: Not in use.

LCD Thermostat (TSTAT)

Recirculate

- Normal Operation: Controls room temperature setpoint.
- · **Isolation Mode:** Controls room temperature setpoint.

Touchscreen Room Pressure Monitor (PMT)

- · Normal Operation: No room pressure requirement.
- · Isolation Mode: Measures and displays room pressure. Activates Puraflo, closes return damper, opens exhaust damper to create negative room pressure.

Single Duct Terminal Unit with Reheat (SDV)

- Normal Operation: Modulates supply airflow to the room.
- · **Isolation Mode:** Modulates supply airflow to the room.

Combination Exhaust and Recirculating Fan Filter Unit (PURAFLO)

- · Normal Operation: Not in use.
- Isolation Mode: Puraflo turns on in response to PMT control signal. HEPA filtered air is exhausted to maintain negative room pressure while the remainder is recirculated to the space.

Diffuser (SMD)

- Normal Operation: Fresh air supplied to the room.
- Isolation Mode: Fresh and recirculated, HEPA filtered air from Puraflo supplied to the room.





DELUXE LAYOUT

Exhaust Grille (735H)

- Normal Operation:
 Exhausts air out of washroom.
- Isolation Mode: Exhausts air out of washroom.

Return Damper/Actuator

- Normal Operation: Damper open to allow return airflow to the air handler.
- · Isolation Mode: Damper closed to prevent return airflow to the air handler.

Exhaust Damper/Actuator

- · Normal Operation: Damper closed.
- · **Isolation Mode:** Damper open to exhaust air and create negative room pressure.

Combination Exhaust and Recirculating Fan Filter Unit (PURAFLO)

- Normal Operation: Air is drawn out of the room through a HEPA filter, and returned to the air handler or recirculated to the room.
- Isolation Mode: Airflow through the Puraflo is increased in response to PMT control signal.
 HEPA filtered air is exhausted to maintain negative room pressure while the remainder is recirculated to the space.

LCD Thermostat (TSTAT)

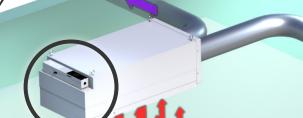
- Normal Operation: Controls room temperature setpoint.
- · **Isolation Mode:** Controls room temperature setpoint.

Touchscreen Room Pressure Monitor (PMT)

- · Normal Operation: No room pressure requirement.
- Isolation Mode: Measures and displays room pressure. Activates Puraflo, closes return damper, opens exhaust damper to create negative room pressure.



- Normal Operation: Modulates supply airflow to the room.
- **Isolation Mode:** Modulates supply airflow to the room.



Exhaust

Return





Recirculate

- Normal Operation: Fresh and recirculated, HEPA filtered air from FFU supplied to the room.
- · Isolation Mode: Fresh and recirculated, HEPA filtered air from Puraflo supplied to the room.

PREMIUM LAYOUT

Washroom Exhaust

Supply

Exhaust Grille (735H)

- Normal Operation: Exhausts air out of washroom.
- Isolation Mode: Exhausts air out of washroom.

Single Duct Terminal Unit with Reheat (SDV)

- · Normal Operation: Modulates supply airflow to the room.
- **Isolation Mode:** Modulates supply airflow to the room.

Exhaust Grille (735H)

- · Normal Operation: Room air is returned to the air handler.
- · Isolation Mode: Not in use.

Return Damper/Actuator

- · Normal Operation: Damper open to allow return airflow to the air handler.
- · Isolation Mode: Damper closed to prevent return airflow to the air handler.

LCD Thermostat (TSTAT)

- Normal Operation: Controls room temperature setpoint.
- Isolation Mode: Controls room temperature setpoint.

Touchscreen Room Pressure Monitor (PMT)

- · Normal Operation: No room pressure requirement.
- Isolation Mode: Measures and displays room pressure. Activates CARES, closes return damper, opens exhaust damper to create negative room pressure.

Exhaust Damper/Actuator

- · Normal Operation: Damper closed.
- · Isolation Mode: Damper opens to exhaust air and create negative room pressure.

The CARES is a single 48 in. x 48 in. airflow device that combines the capabilities of an exhaust flow FFU with a one-way, flush face radial flow diffuser (FRFD) and manages the airflow for the entire patient room.

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Normal Operation: Fresh air supplied to room.

Isolation Mode: In response to the PMT control signal, room air is drawn in through the face of the FFU and passed through a HEPA filter before a portion of the airflow is exhausted to maintain room pressure. The remainder of the filtered air is recirculated to the space through the integrated FRFD. The integral FRFD is also used to distribute fresh air from the airhandler.











EQUIPMENT

RETROFIT LAYOUT



Combination Exhaust and Recirculating Fan Filter Unit

PURAFLO-1-2//I/CEILING/DUAL-OUTLET/24/48/10/8/RSR/HEPA-2/FC/ ECM/115/CF/RMB/BACnet/BFC/TC// DSW-115//ASSP/M8PFE/PL-AL/F-AL/ PL-B12/F-B12



Touchscreen Room Pressure Monitor

PMT-1-4//I/I//SRPS1/BAC/



Dampers/Actuators

Return: MISCF_GRD_CE/S/I/ PURAFLO-1-X/RET/12/24V

Exhaust: MISCF GRD CE/S/I/ PURAFLO-1-X/EX/12/24V



Single Duct Terminal Unit with Reheat & LCD Thermostat



Exhaust Grille

735H//I/24.000/16.000/F/S/////#4



Return Grille

80SR//I/24/24///2///TOP/12/BN////B12



Supply Diffuser

SMD//I/18/18/36/3A/24/24/SR/12//



Recirculating Diffuser

SMD//I/18/18/36/3A/24/24/SR/12//

BASE LAYOUT



Combination Exhaust and Recirculating Fan Filter Unit

PURAFLO-1-2//I/CEILING/DUAL-OUTLET/24/48/10/8/RSR/HEPA-2/FC/ ECM/115/CF/RMB/BACnet/BFC/TC// DSW-115//ASSP/M8PFE/PL-AL/F-AL/ PL-B12/F-B12



Touchscreen Room Pressure Monitor

PMT-1-4//I/I//SRPS1/BAC/



Dampers/Actuators

Return: MISCF_GRD_CE/S/I/ PURAFLO-1-X/RET/12/24V

Exhaust: MISCF GRD CE/S/I/ PURAFLO-1-X/EX/12/24V



Single Duct Terminal Unit with Reheat & LCD Thermostat



Exhaust Grille

735H//I/24.000/16.000/F/S/////#4



Return Grille

80SR//I/24/24///2///TOP/12/BN////B12



Supply Diffuser

SMD//I/18/18/36/3A/24/24/SR/12//

RECIRCULATING DIFFUSER NOT REQUIRED

DELUXE LAYOUT



Combination Exhaust and Recirculating Fan Filter Unit

PURAFLO-1-2//I/CEILING/DUAL-OUTLET/24/48/10/8/RSR/HEPA-2/FC/ ECM/115/CF/RMB/BACnet/BFC/TC// DSW-115//ASSP/M8PFE/PL-AL/F-AL/ PL-B12/F-B12



Touchscreen Room Pressure Monitor

PMT-1-4/////SRPS1/BAC/



Dampers/Actuators

Return: MISCF_GRD_CE/S/I/ PURAFLO-1-X/RET/12/24V

Exhaust: MISCF GRD CE/S/I/ PURAFLO-1-X/EX/12/24V



Single Duct Terminal Unit with Reheat & LCD Thermostat



Exhaust Grille

735H//I/24.000/16.000/F/S/////#4



Supply Diffuser

SMD//I/18/18/36/3A/24/24/SR/12//

PREMIUM LAYOUT



Critical Area Recirculation/Exhaust System (CARES)

CARES-1-1///48/48/10/10/RSR/HEPA-2/FC/ECM/115/CF/RMB/BACnet/BFC/ NONE/TC/DSW-115//ASSP/M8PFE/ PL-AL/F-AL/PL-B12/F-B12



Touchscreen Room Pressure Monitor

PMT-1-4//I///SRPS1/BAC/



Dampers/Actuators

Return: MISCF_GRD_CE/S/I/CARES-1-X/RET/12/24V

Exhaust: MISCF_GRD_CE/S/I/CARES-1-X/EX/12/24V



Single Duct Terminal Unit with Reheat & LCD Thermostat



Exhaust Grille

735H//I/24.000/16.000/F/S/////#4



Return Grille

735H//I/24.000/16.000/F/S/////#4

RETURN GRILLE NOT REQUIRED | SUPPLY DIFFUSER NOT REQUIRED

RECIRCULATING DIFFUSER NOT REQUIRED

RECIRCULATING DIFFUSER NOT

REQUIRED

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