![RenewAire® Energy Recovery Ventilation]

— INTEGRATED PROGRAMMABLE —
CONTROLS

— RENEWAIRE EVERYWHERE —

EVERY GEOGRAPHY, EVERY CLIMATE, EVERY HOME, EVERY BUILDING AND EVERY APPLICATION

INTEGRATED PROGRAMMABLE CONTROLS

RenewAire's **INTEGRATED PROGRAMMABLE CONTROLS** optimize the usability and performance of our commercial ERVs by improving functionality, enabling intelligent controls, streamlining operations and boosting efficiencies. This is accomplished via sophisticated factory-installed microprocessor controls and sensors that provide stand-alone ERVs with Direct Digital Control (DDC) and/or Building Management System (BMS) control interface.

KEY BENEFITS

Optimize usability:
- Maximize ERV functionality and intelligent control via remote Ethernet accessibility and BMS connectivity without third-party interface.
- Streamline operations by easily managing and changing ERV control parameters via an advanced user interface.
- Increase uptime reliability through constant system monitoring.
- Achieve cleaner and healthier indoor air via IAQ-based ERV control.

Improve performance:
- Support effective and efficient ERV performance with real-time data trending and logging capabilities.
- Enhance ERV control via access to real-time airflow rates, airstream temperature and airstream humidity.
- Facilitate fast and easy ERV upkeep and maintenance with real-time fan, filter and bypass status.

Increase capabilities:
- Expand ERV connectivity via access to a wide range of open standard protocols, including BACnet and Modbus.
- Broaden ERV interoperability by connecting to third-party equipment and receiving third-party signals for unit control.
- Expand ERV-application scope by meeting new code requirements and the needs of institutional customers requiring DDC controls in mechanical equipment.

Simplify operations:
- Achieve easier ERV setup, commissioning and balancing via simple-to-install controls.
- Improve operational efficiencies by easily communicating ERV status, airflows, temperatures and humidity.
- Allow for more flexible installations by enabling ERVs to be interconnected with a BMS, operated independently or run in concert with other ERVs.

APPLICATIONS

The controller is available as an option for all commercial ERVs and RD Series units, and can be applied to all RenewAire applications.

MODELS

Standard Controls
via dry contact and relays

Our ERV units are provided with a dry contact that can be used to control the unit with a variety of low-voltage (24VAC) control devices such as remote switches or relays. In addition, third-party analog output can be used to operate the ERV.

Enhanced Controls
Carel [c.pCOMini] with or without BACnet

Enhanced controls offer automated control, including temperature and humidity control with data trending via microprocessor controls and sensors that enable BMS connectivity.

Premium Controls
Carel [c.pCOMini] with expansion module with or without BACnet

Premium controls include all functionality of enhanced-controls capabilities, as well as airflow and IAQ monitoring, demand control, electric or gas heating options and RD Series cooling and heating control.

ERV WITH INTEGRATED PROGRAMMABLE CONTROLS

EXHAUST FAN OPERATION OPTIONS

- ◆ Exhaust fan ON/OFF status
- ◆ Fixed fan speed
- ◆ Variable fan speed
- ◆ Supply fan tracking control

- ◆ Exhaust airflow control
- ◆ Room pressure control
- ◆ Duct static pressure control

HE2XINH
Interior shown

EA AIRFLOW

FA AIRFLOW

TERMINAL BLOCKS

VFD AUTO/MANUAL CONTROL

SUPPLY FAN OPERATION OPTIONS

- ◆ Supply fan ON/OFF status
- ◆ Fixed fan speed
- ◆ Variable fan speed
- ◆ Supply duct static pressure control

- ◆ Room pressure control
- ◆ CO2 or VOC demand control
- ◆ Supply airflow control

TEMPERATURE SENSORS
(FA and EA)

MICROPROCESSOR

FILTER STATUS
(all filters)

TEMPERATURE & HUMIDITY SENSORS
(OA and RA)

CONTROL CAPABILITIES

HEATING/COOLING COIL CONTROL
(PREMIUM CONTROLS ONLY)

REMOTE DISPLAY

ISOLATION DAMPER CONTROLS

ECONOMIZER BYPASS CONTROLS

CO₂ SENSORS

IAQ SENSORS

OCCUPANCY SENSORS

SMOKE DETECTOR

HEATING/COOLING COIL CONTROL
(RD SERIES ONLY)

In conjunction with unit monitoring and controls, RD heating and cooling functions can now also be monitored and controlled via our onboard premium control package.

FEATURE COMPARISON

	STANDARD CONTROLS	ENHANCED CONTROLS	PREMIUM CONTROLS
Ability to automatically enable and disable unit	◆	◆	◆
Enable the exhaust fan only	◆[1]	◆	◆
Filter alarm for both sets of filters	◆[2]	◆	◆
Bypass controls†	◆[3]	◆[3]	◆[3]
Control isolation dampers†	◆[4]	◆	◆
Supply fan only modulation for VFD/ECM units†	◆[5,6]	◆[5]	◆[5]
Exhaust fan only modulation for VFD/ECM units†	◆[5,6]	◆[5]	◆[5]
Internal time clock	◆[7]	◆	◆
Defrost controls - Canada only	◆	◆	◆
Smoke detection - sensor required	◆[8]	◆[8]	◆[8]
Demand control ventilation using CO2 - sensor required	◆[9]	◆[9]	◆
Occupancy-based ventilation - sensor required	◆	◆	◆
IAQ control ventilation using VOC - sensor required	◆[9]	◆[9]	◆
Microprocessor controller		◆	◆
Provide supply and exhaust air temperatures		◆	◆
Provide outside and return air temperature and humidity		◆	◆
Fan status on both fans††		◆	◆
Enable the supply fan only†	◆	◆	◆
Enable the exhaust fan only†	◆	◆	◆
Micro USB port		◆	◆
BACnet MS/TP or BACnet TCP/IP - activation required		◆	◆
Modbus		◆	◆
Data trending		◆	◆
Outside airflow rate			◆
Exhaust airflow rate			◆
Space pressure control			◆
Duct pressure control			◆
Unit supply air temperature			◆
Heating enable			◆
Heating modulation - staged or modulating			◆
Cooling modulation* - staged or modulating			◆

*RD Series units only   †Not available on EV450   †† EF fan status not available on EV450

NOTES

1. Relays and terminal block (option).
2. Differential pressure sensing tube and pressure switch with manual trip point adjustment (option), wiring to switch and alarm indication provided by others.
3. Option on HE Series (IN) and standard on RD Series.
4. 24V transformer contactors and relays (option).
5. VFD (option). Factory installed and wired.
6. ECM (option). Potentiometer control factory wired.
7. Independent time clock (option).
8. External smoke detector (option), field installed in series to shut off unit in adverse conditions.
9. On/off control only.

☑ Communication interface via BMS

☑ Modbus TCP/IP, Bacnet MSTP/IP

☑ DIN-rail mounted controller with display

☑ Integrated Ethernet interface

☑ Battery-powered internal programmable time clock

☑ Temperature, humidity and airflows

☑ Monitoring and logging capabilities for alarm conditions

☑ Handheld/remote user terminal

☑ Easy to use

☑ Factory preprogrammed sequences of operation

☑ Data-trending capabilities

☑ IAQ-based ERV control

ACCESSORIES

	STANDARD CONTROLS	ENHANCED CONTROLS	PREMIUM CONTROLS
CO2 sensor (wall or duct mount)*	◆1	◆2	◆1
IAQ sensor (wall or duct mount)*	◆1	◆2	◆1
Occupancy sensor (ceiling or wall mount)	◆	◆	◆
Smoke detector (duct mount)	◆	◆	◆
BACnet factory activation (MS/TP or TCP/IP)		◆	◆
Remote display (handheld or wall mount)		◆	◆
Room Pressure Sensor (with or without display)			◆
Duct Static Pressure Sensor (with or without display)			◆

NOTES

* Sensor output is 0-10 VDC, for use as on/off or modulating control

1 Modulating control with VFD or ECM, on/off control otherwise

2 On/off control only

CO2 SENSORS

Wall Mount

Duct Mount

IAQ SENSORS

Wall Mount

Duct Mount

PRESSURE SENSORS
(ROOM PRESSURE/DUCT STATIC PRESSURE)

Wall/Duct Mount without Display

Wall/Duct Mount with Display

OCCUPANCY SENSORS

Ceiling Mount

Wall Mount

TEMPERATURE SENSOR

Duct Mount (for nonintegrated heating)

SMOKE DETECTOR

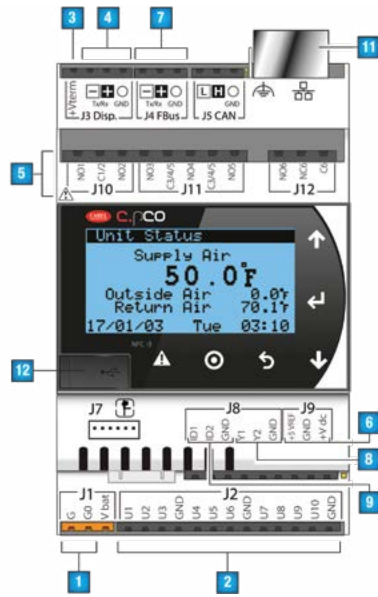**Duct Mount**

BACNET FACTORY ACTIVATION
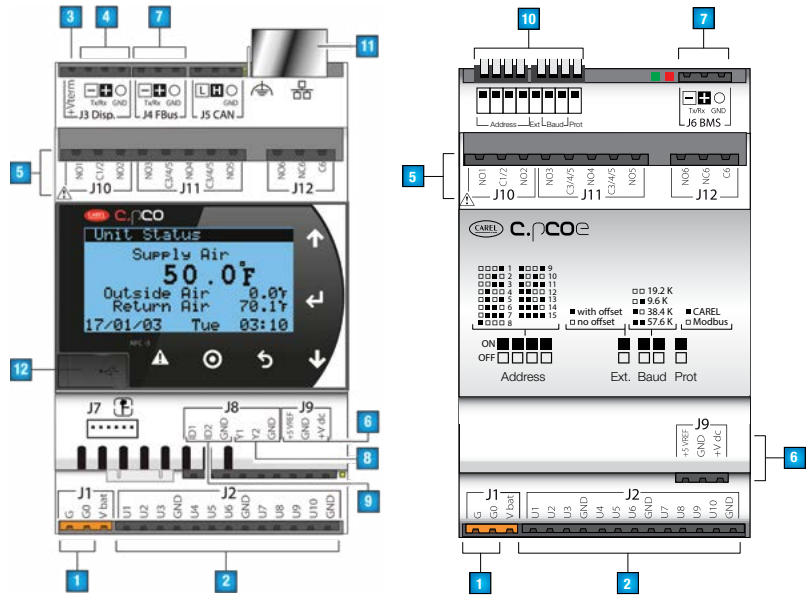

REMOTE DISPLAY

Handheld or Wall Mount

CONTROL CONNECTIONS

ENHANCED CONTROLS

PREMIUM CONTROLS - INCLUDES EXPANSION MODULE

KEY

1	Power connector	**7**	Serial port
2	Universal inputs/outputs	**8**	Analog outputs
3	+Vterm: terminal power supply	**9**	Digital inputs
4	Terminal connector/serial connection	**10**	DIP switches
5	Relay digital outputs	**11**	Ethernet port
6	+5VREF: power supply for ratiometric probes	**12**	Micro USB port
	+VDC: power supply for active probes		

To learn more about our controls, visit: renewaire.com

RenewAire®
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