neptronic®

EVC Series
Networkable VAV Controller

The VAV package consists of 2 parts, the thermostat and the EVC which is a combination of an actuator and a controller.

The EVC controller is designed with many features to fit any application, and to make installation and commissioning fast and simple.

- Built-in actuator and optional air pressure sensor
- Mounts on jackshaft or damper
- Connects to room thermostat via 3 wires
- BACnet MS/TP or Modbus communication

Single Duct   **Dual Duct**   **Fan Powered Box**

The Next Generation Is Here

NEW

- BACnet scheduler
- Firmware upgradeable via BACnet
- Copy and paste configuration via BACnet
- Support COV (change of value)
- BACnet or Modbus communication protocol selectable via thermostat menu
- Automatically sets operation mode between pressure dependent and pressure independent based on presence of air flow
- Select direction on analog outputs
- Select thermostat's default display
- And more...

Control Features

- Field configured VAV algorithms
- Built-in actuator
- On board differential pressure sensor (select models)
- Configurable Inputs: 2 analog and 2 digital
- Configurable Outputs: 2 analog and up to 4 TRIACs
- 2 in 1 (BACnet or Modbus): select protocol via thermostat menu
- Real Time Clock (RTC) with 24 hour backup
- Configurable PI (Proportional-Integral) function
- Simple air balancing and commissioning via thermostat
- Independent, configurable proportional control band and dead band per ramp
- Selectable internal or external temperature sensor (10KΩ)
- External CO_2 sensor input with integrated logic
- Change over by contact or external temperature sensor
- Anti-freeze protection

Models

Model	TRIACS	Pressure Type	Feedback	Fan Powered Box options	BACnet or Modbus
EVCB14NIT0S	0	Indep.	-	-	Yes
EVCB14NIT2S	2	Indep.	-	-	Yes
EVCB14NIT4S	4	Indep.	-	Yes	Yes
EVCB14NDT4S	4	Dep.	-	Yes	Yes
EVCB14NIT0SF	0	Indep.	Yes	-	Yes
EVCB14NIT4SF	4	Indep.	Yes	Yes	Yes

Dual Duct

Model	Type	Pressure	TRIACS
EVCBM14NIT2S	Master Controller	Indep.	2
EVCS14N	Slave Controller	-	-

Thermostats

- 24 Vac operation
- Backlit LCD with simple icon and text driven menus
- Selectable Fahrenheit or Celsius scale
- "Night Set Back" or "No Occupancy" modes with manual override
- Multi level lockable access menu
- Lockable setpoint

TRL24   **TRL54**

Product	Model	Type	Sensor
Thermostat	TRL54	3x3	temperature
	TRL24	2x4	temperature

BACnet Application Specific Controllers

BACnet Scheduler
Configure a weekly schedule with up to 6 events per day.

Firmware Upgradeable
Upgrade the controller version via BACnet to access new features and/or updates.

Copy and Paste Configuration
Copy the controller's entire configuration and broadcast it to other controllers of the same type on the same network. This can be done via menu or via BACnet.

COV (change of value)
Increase precision and reduce traffic by defining certain objects to communicate as soon as the value is changed.

Select Analog Output Direction
You can now select direct or reverse acting analog outputs

Configurable Thermostat Display
Define the thermostat's display to meet your needs:
- Temperature and demand
- Setpoint and demand
- Temperature only
- Setpoint only
- No display

Two MAC Address Configuration Methods
Set MAC address via user friendly menu on thermostat or locally on unit via DIP switches.

Auto Device Instance Configuration
The controller automatically configures its device instance to a default value + MAC address.

Auto Baud Rate Detection
The controller automatically configures its baud rate by detecting the network speed upon connection.
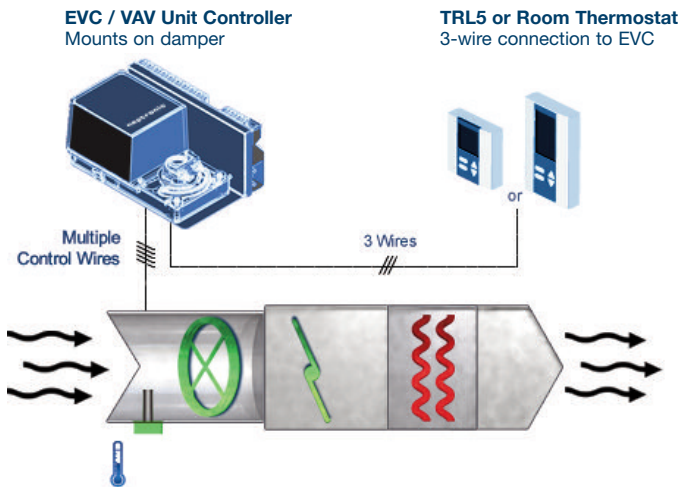
Over 150 BACnet Objects
Thanks to this open protocol, we provide over 150 BACnet Objects per controller so you can read, write information as you monitor and trend status of operation, alarms and schedules.

Service Display
If you are searching for a specific device, enabling the service mode will flash the device to easily locate the device.
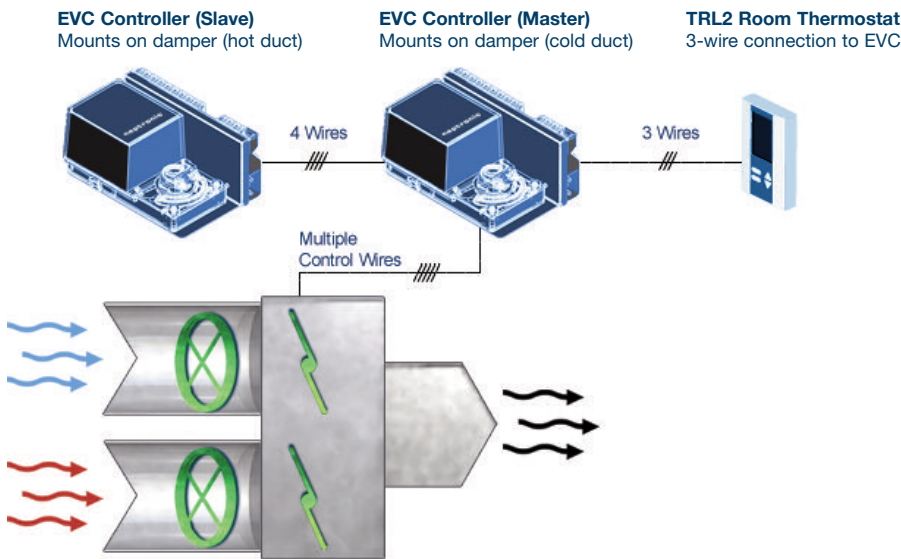
Single Duct

EVC / VAV Unit Controller
Mounts on damper

TRL5 or Room Thermostat
3-wire connection to EVC

Multiple Control Wires

3 Wires

or

EVC Unit Controller

TO1	Optional TRIAC
TO2	Optional TRIAC
TO3	Optional TRIAC
TO4	Optional TRIAC
AO1	Cooling/Heating
AO2	Cooling/Heating
DI1	Sensor Input (on/off)
DI2	Sensor Input (on/off)
AI1	Sensor Input (analog)
AI2	Sensor Input (analog)
A+	BACnet
B-	
	T-STAT
LO	Optional differentiel
HI	Pressure Sensor

Dual Duct

EVC Controller (Slave)
Mounts on damper (hot duct)

EVC Controller (Master)
Mounts on damper (cold duct)

TRL2 Room Thermostat
3-wire connection to EVC

4 Wires

3 Wires

Multiple Control Wires

EVC Controller (Slave)

AO2	Pressure Sensor Output
AI1	Motor Signal Input
LO	Differential Pressure Sensor
HI	

EVC Controller (Master)

TO1	Cooling/Heating TRIAC
TO2	Cooling/Heating TRIAC
AO1	Motor Signal Output
AO2	Cooling/Heating (analog)
DI1	Sensor Input (on/off)
DI2	Sensor Input (on/off)
AI1	Pressure Sensor Input
AI2	Sensor Input (analog)
A+	BACnet
B-	
	T-STAT
LO	
HI	Differentiel Pressure Sensor

Fan Powered Box
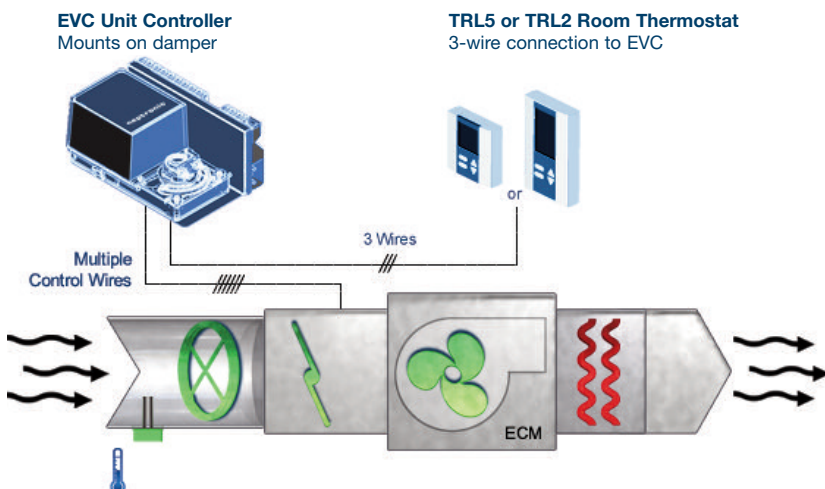
EVC Unit Controller
Mounts on damper

TRL5 or TRL2 Room Thermostat
3-wire connection to EVC

Multiple Control Wires

3 Wires

or

ECM

EVC Unit Controller

|	
TO1	Optional TRIAC
TO2	Optional TRIAC
TO3	Optional TRIAC
TO4	Optional TRIAC
AO1	Cooling/Heating
AO2	Fan
DI1	Sensor Input (on/off)
DI2	Sensor Input (on/off)
AI1	Sensor Input (analog)
AI2	Sensor Input (analog)
A+	BACnet
B-	
	T-STAT
LO	Optional differentiel
HI	Pressure Sensor

NEPTRONIC FAMILY OF CONTROLS

Fan Coil

- Mounted in fan coil unit
- Connects to room thermostat via 3 wires
- BACnet MS/TP or Modbus communication
- 24, 120 or 240Vac
- Up to 11 inputs and 15 outputs

Temperature/Humidity
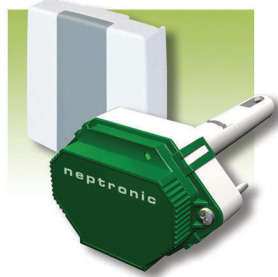
- Economical solutions for your sensing needs
- Wall, duct or water-pipe mounting
- Wireless, BACnet, temperature, humidity and more

Wall Mount Controller

- Combined controller and thermostat
- Run all wires directly to controller
- Stand-alone or BACnet
- 24Vac operation
- Fan coil, VAV, Heat pump, RTU
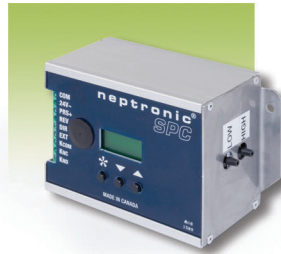
Dual Pro I/O Board

- 10 inputs and 10 outputs
- BACnet® MS/TP or Modbus RTU communication port (selectable)
- LED status for each input and output

Relay Card

- 240/120 Vac
- 3, 4 or 5 contacts, (7A)
- Metal box with secure 4-point mounting
- LED indication of relay status
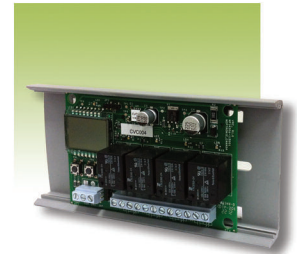- Fused 240/120 Vac & 24 Vac circuits

Static Pressure

- Control bypass damper actuators, a VFD, or Vortex for VAV systems
- Simple installation
- Adjust setpoint and deadband
- Fully calibrated

SCR

- Multi-fin, black anodized heat sink
- High heat dissipation rate
- UL & CSA approved
- Pulse status LED

Transducer

- 24Vac or 24 Vdc supply
- 2 or 4 SPDT relays (staged or sequenced operation)
- Voltage or current input
- Adjustable relay setpoint, hysteresis and activation delay

neptronic®

Manufacturer of actuators, actuated valves, controls, humidifiers and electric heaters.

www.neptronic.com

100022_GB
EVCB14N-EBL-150622