EVCB

VAV Unit Controller

The EVCB VAV Controller is designed for simple and accurate control of any variable air volume box in a number of zone control configurations. Its field configurable algorithms enable versatile implementation of required control sequences.

APPLICATIONS

- Single duct, cooling only
- Single duct cooling and/or heating
- Up to 4 stage reheat and/or cool
- Up to 4 On/Off heat and/or cool
- Up to 4 time proportioned (TPM) heat or reheat
- Up to 2 analog (0-10Vdc) reheat and/or cool
- Up to 2 floating heat and/or cool
- Pressure dependent or pressure independent
- With or without auto changeover
- Supply/exhaust (requires an additional EVC)

MODELS

Model	TRIACS	Pressure Type	Feedback	Fan Powered Box
EVCB14NIT0S	0	Indep.		
EVCB14NIT2S	2	Indep.		
EVCB14NIT4S	4	Indep.		•
EVCB14NDT4S	4	Dep.		•
EVCB14NIT0SF	0	Indep.	•	
EVCB14NIT4SF	4	Indep.	•	•

Model (External Motor)	TRIACS	Pressure Type	Motor
EVCB14NIT4X	4	Indep.	External
EVCB14NDT4X	4	Dep.	External

Model (Dual Duct)	TRIACS	Pressure Type	Type
EVCBM14NIT2S	2	Indep.	Master Controller
EVCS14N	-	-	Slave Controller

neptronic

FEATURES

- 24Vac operation
- Up to 4 inputs and 6 outputs
- Field configured VAV algorithm
- Built-in actuator 70in.lb [8Nm] (select models)
- On board differential pressure sensor (pressure independent models)
- Manual or automatic pressure mode selection (pressure independent models)
- Configurable PI (Proportional-Integral) function
- Simple air balancing and commissioning via digital room sensor
- Independent, configurable proportional control band and dead band per ramp
- Selectable internal or external temperature sensor (10KΩ)
- Activate output with CO_2 from digital room sensor or external CO_2 sensor
- Change over by contact or external temperature sensor
- Removable, raising clamp, non-strip terminals
- Potentiometer feedback for increased precision of actuator position (select models)

INPUTS/OUTPUTS

Inputs:

- 2 analog inputs
- 2 digital inputs

Outputs:

- 2 analog outputs
- Up to 4 TRIAC outputs

NETWORK COMMUNICATION

- BACnet MS/TP or Modbus RTU communication (selectable via menu)
- Select MAC address via DIP switch or via network
- Automatic baud rate detection

BACnet MS/TP

- BACnet scheduler (up to 6 events)
- Firmware upgradeable via network
- COV (change of value)
- Copy and broadcast configuration to other EVCB modules via menu or network
- Automatic device instance configuration

Modbus RTU

- Modbus RTU @ 9600, 19200, 38400 or 57600 bps
- RTU Slave, 8 bits (configurable parity and stop bits)
- Connects to any Modbus RTU master

TDU - Universal Digital Room Sensors

● TDU10

● TDU40

○ TDU70

● TDU00

● TDU30

○ TDU60

Horizontal Models	Temp.	RH	CO_2
● TDU10-100 ● TDU40-100 ○ TDU70-100	•		
● TDU10-101 ● TDU40-101 ○ TDU70-101	•	•	
● TDU10-102 ● TDU40-102 ○ TDU70-102	•	•	•
● TDU10-103 ● TDU40-103 ○ TDU70-103	•		•

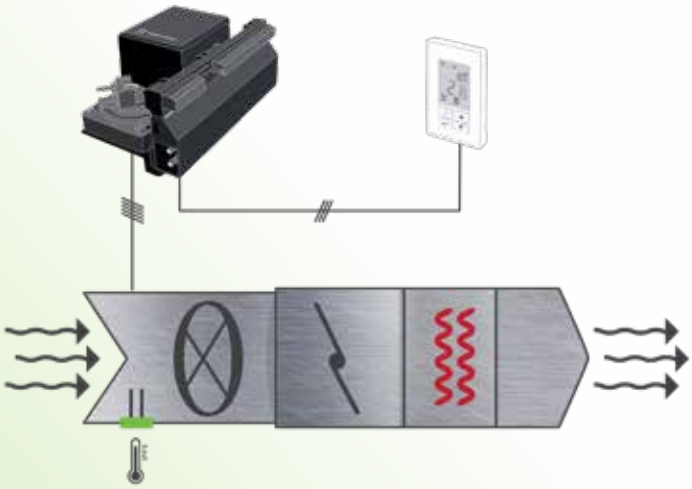
Vertical Models	Temp.	RH	CO_2	PIR	VOC
● TDU00-100 ● TDU30-100 ○ TDU60-100	•				
● TDU00-101 ● TDU30-101 ○ TDU60-101	•	•			
● TDU00-102 ● TDU30-102 ○ TDU60-102	•	•	•		
● TDU00-104 ● TDU30-104 ○ TDU60-104	•			•	
● TDU00-105 ● TDU30-105 ○ TDU60-105	•	•		•	
● TDU00-106 ● TDU30-106 ○ TDU60-106	•	•	•		•
● TDU00-107 ● TDU30-107 ○ TDU60-107	•	•	•	•	•

TDU FEATURES

- Built-in temperature sensor and optional humidity, CO_2, VOC and occupancy sensors
- Elegant design
- Universal wall-mount design
- Used to configure and operate the EVCB VAV controllers
- Three wire connection between digital room sensor and controller
- Selectable Fahrenheit or Celsius scale
- BACnet service port via on-board mini USB connector
- Horizontal or vertical configuration

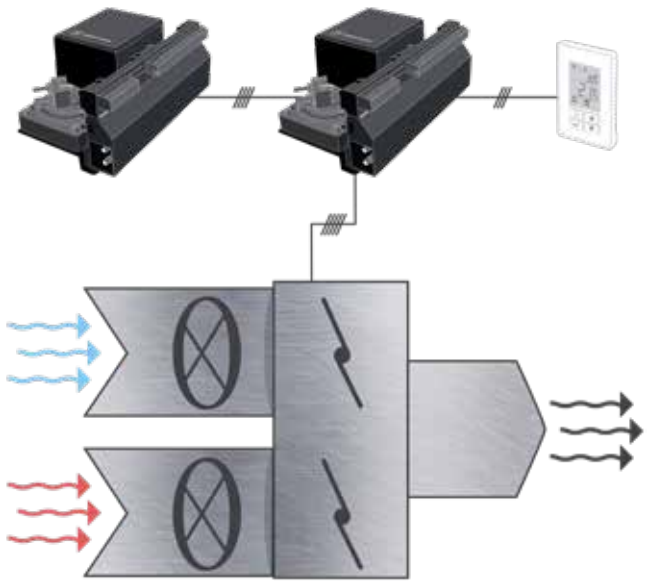
TYPICAL APPLICATIONS

Single duct



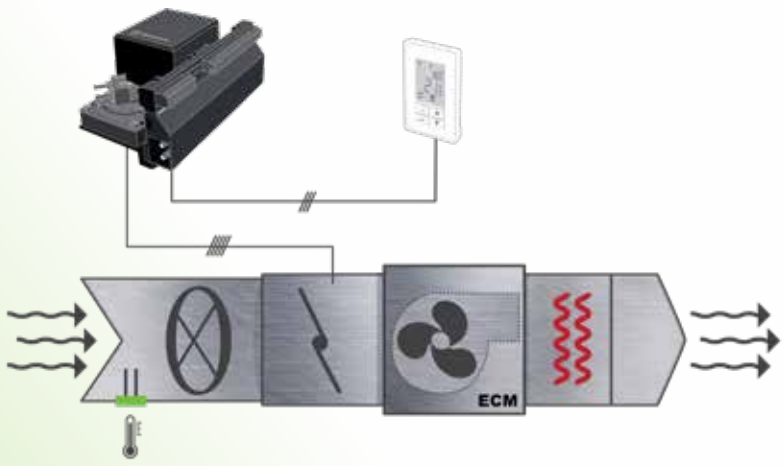
EVCB CONTROLLER	
TO1	Optional TRIAC
TO2	Optional TRIAC
TO3	Optional TRIAC
TO4	Optional TRIAC
AO1	Cooling / Heating
AO2	Cooling / Heating
DI1	Sensor input (on/off)
DI2	Sensor input (on/off)
AI1	Sensor input (analog)
AI2	Sensor input (analog)
A+ / B-	BACnet
DIGITAL ROOM SENSOR	
LO / HI	Optional differential pressure sensor

Dual duct



EVCB CONTROLLER (SLAVE)	
AO2	Pressure sensor output
AI1	Motor Signal input
LO / HI	Differential pressure sensor
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+ / B-	BACnet
DIGITAL ROOM SENSOR	
LO / HI	Optional differential pressure sensor

Fan powered box



EVCB 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+ / B-	BACnet
DIGITAL ROOM SENSOR	
LO / HI	Optional differential pressure sensor