neptronic EVCB14NIT0S Controller Models Description Instructions

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neptronic EVCB14NIT0S Controller Models Description

Product Specifications

- **Models:** EVCB14NIT0S, EVCB14NIT2S, EVCB14NIT4S, EVCB14NIT4X, EVCB14NDT4X, EVCB14NDT4S, EVCB14NIT0SF, EVCB14NIT4SF
- **Power Supply:** 22 to 26 Vac 50/60 Hz, 10 VA max
- **Inputs:** 2 Universal inputs, 2 digital inputs
- **Outputs:** 2 analog outputs, Up to 4 TRIAC outputs
- **Communication:** BACnet MS/TP or Modbus protocol
- **Real Time Clock:** RTC with super capacitor backup
- **Operating Temperature:** 5 to 95% non-condensing
- **Weight:** 1.26 kg [2.8 lb]

Models

- EVCB14NIT0S (0 TRIACS / pressure independent)
- EVCB14NIT2S (2 TRIACS / pressure independent)
- EVCB14NIT4S (4 TRIACS / pressure independent)
- EVCB14NIT4X (4 TRIACS / independent / external motor)
- EVCB14NDT4X (4 TRIACS / dependent / external motor)
- EVCB14NDT4S (4 TRIACS / pressure dependent)
- EVCB14NIT0SF (0 TRIACS / independent / feedback)
- EVCB14NIT4SF (4 TRIACS / independent / feedback)
- For use with either floating or modulating actuators

TRL Series Digital Room Sensor

- TRL54 (With temperature sensor)
- TDU Series Digital Room Sensor
- TDU00 (Vertical Grey LCD, white enclosure)
- TDU30 (Vertical Black LCD, black enclosure)
- TDU60 (Vertical Black LCD, white enclosure)
- TDU10 (Horizontal Grey LCD, white enclosure)
- TDU40 (Horizontal Black LCD, black enclosure)
- TDU70 (Horizontal Black LCD, white enclosure)

Description
The EVCB Series is a combination controller and digital room sensor with support for networked communications via the BACnet MS/TP or Modbus protocol. The Networkable 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.

Features

- Field configured VAV algorithms, inputs and outputs
- Built-in actuator, 70 lb-in. (select models, not available on EVCB14NIT4X and EVCB14NDT4X)
- Control external actuators using analog (0-10Vdc, adjustable) or floating signals with feedback (models EVCB14NIT4X and EVCB14NDT4X)
- On board differential pressure sensor (select models)
- Simple air balancing and commissioning via digital room sensor
- Automatically sets operation mode to pressure dependent or independent based on the presence of air flow
- Select direction on analog outputs
- Configurable PI (Proportional-Integral) function
- Independent, configurable proportional control band and dead band per ramp
- Selectable internal or external temperature sensor (10KΩ)
- External CO2 sensor input with integrated logic
- Changeover by contact or external temperature sensor
- Internal and external temperature sensor calibration
- Optional potentiometer feedback for increased precision of actuator position
- Freeze protection
- Removable, raising clamp, non-strip terminals

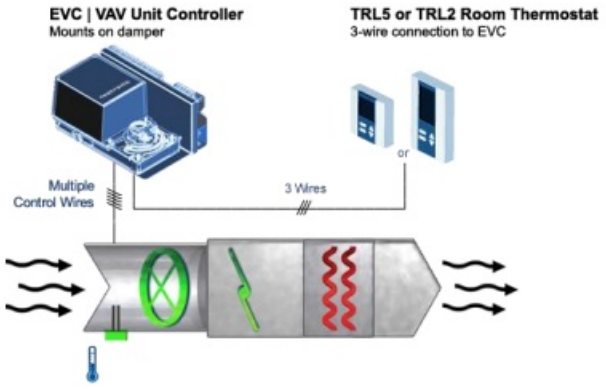
Operational Features

- Backlit LCD with simple icon and text driven menus
- Select digital room sensor’s default display
- Network service port via on-board mini USB connector
- Manual night set back or no occupancy override
- Multi level lockable access menu and setpoint
- Selectable Fahrenheit or Celsius scale
- 3-wire connection to controller and 4 push buttons

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)

Typical Application



- Network Communication
- BACnet MS/TP or Modbus communication port
- Select MAC address via DIP switch or via network
- Automatic baud rate detection

BACnet MS/TP®

- Automatic device instance configuration
- Copy & broadcast configuration via digital room sensor menu or via BACnet to other controllers
- BACnet scheduler
- Firmware upgradeable via BACnet
- Support for COV (change of value)

Modbus

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

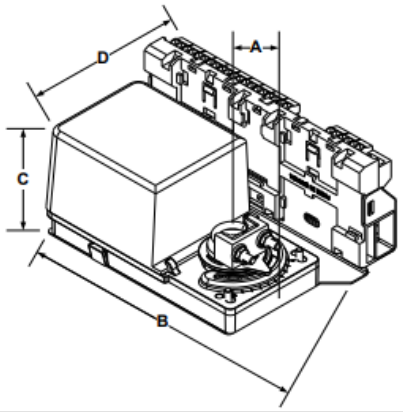
Controller Specifications

Description	EVCB Series
Torque	70 in.lb. [8 Nm] at rated voltage
Power consumption	10 VA max
Running time through 90º	90 seconds
Power supply	22 to 26 Vac 50/60 Hz
Inputs	2 Universal inputs (Thermistor 10KΩ Type 3, digital 24Vac/dry contact, or 0-10Vdc)
	2 digital inputs
Outputs	2 analog outputs (0-10 Vdc or 2-10Vdc; selectable)
	Up to 4 TRIAC outputs 24 Vac, 500mA max thermal fuse in series with each TRIAC output (on/off, pulse, or 2 floating outputs)
Real Time Clock	Real-time clock (RTC) with super capacitor backup (approximately 3 days)
BACnet	BACnet® MS/TP @ 9600, 19200, 38400 or 76800 bps (BAS-C)
Modbus	Modbus RTU slave @ 9600, 19200, 38400 or 57600. Selectable parity and stop bit configuration: No parity, 2 stop bit Even parity, 1 stop bit Odd parity, 1 stop bit
Communication connection	Low capacitance, EIA RS-485, 22 or 24 AWG shielded twisted pair multi-str and cables (Belden 9841 or equivalent).
Digital room sensor connection	Insulated 3 core multi-strand 22 or 24 AWG cable. Maximum 50ft (15m) between controller and digital room sensor.
Electrical connection	Insulated 2 core 0.8 mm2 [18 AWG] minimum power cable.
Operating temperature	0ºC to 50ºC [32ºF to 122ºF]
Storage temperature	-30ºC to 50ºC [-22ºF to 122ºF]
Relative Humidity	5 to 95% non condensing
Weight	1.26 kg. [2.8 lb]

The actuator performs an auto-stroke on power up. When changing the actuator adjustment screws, cycle power to initiate the auto-stroke. Auto-stroke is not available on EVC pressure independent without feedback.

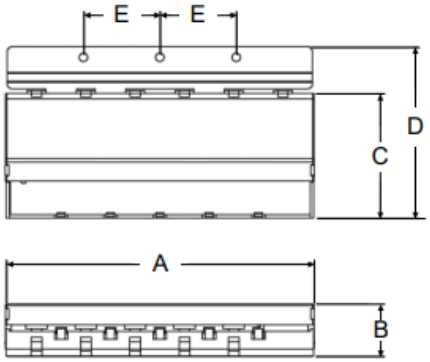
Dimensions

EVC with a built-in 70 in. lb. Actuator



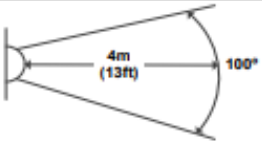
A = 1.50" | 39mm
B = 7.25" | 185mm
C = 3.25" | 83mm
D = 5.50" | 140mm

EVC with a separate 180 in. lb. Actuator

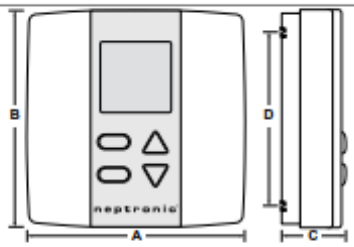
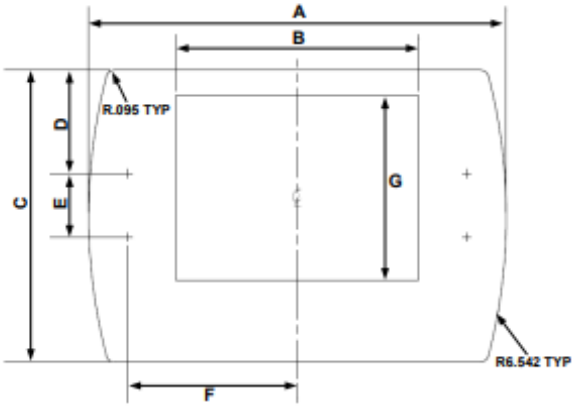
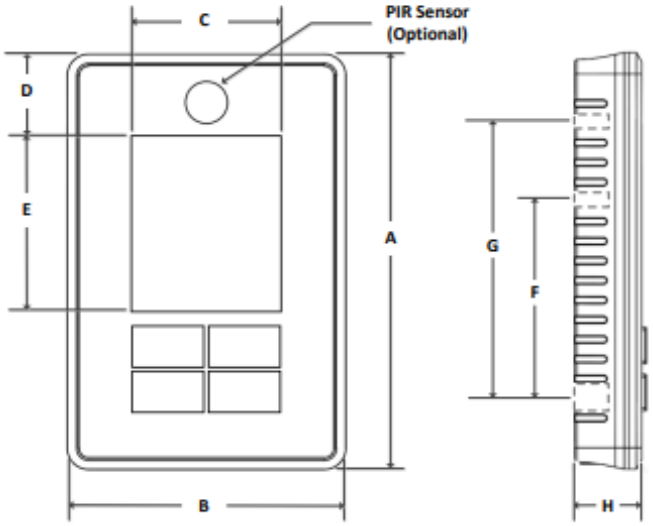


A = 7.20" | 183mm
B = 1.23" | 31mm
C = 2.93" | 74mm
D = 4.02" | 102mm
E = 1.78" | 45mm

Digital Room Sensor Specifications

Description	TRL54 and TDU Series
Temperature Sensor (TRL54 and TDU)	
Setpoint range	10ºC to 40ºC [50ºF to 104ºF]
Control accuracy	Temperature: ±0.4ºC [0.8ºF]
Display resolution	±0.1ºC [0.2ºF]
Humidity Sensor (TDU models with Humidity Sensors)	
Sensor range	5 to 95%RH
Display resolution	0.1%
CO_2 Sensor (TDU models with CO_2 Sensors)	
Operating principle	Self-calibrating, Non-Dispersive Infrared (NDIR)
Sensor Range	0 to 2000 ppm
Setpoint range	100 to 2000 ppm
Accuracy	±30 ppm ±3% of reading
Response time	2 minutes by 90%
Display resolution	1 ppm
PIR Motion Sensor (TDU00 / TDU 30 / TDU60 models with PIR Sensor)	
Operating Principle	Passive Infrared (PIR)
Detection Angle	100°
Detection Distance	4m [13ft]
Detection Area	
VOC Sensor (TDU00 / TDU30 / TDU60 models with VOC Sensor)	
Operating Principle	Self-calibrating, Non-Dispersive Infrared (NDIR)
Sensor Range	0-1000 ppb isobutylene equivalent tVOCs
Response Time	<5 seconds for tVOC
Start up Time	15 minutes
Other	
Electrical connection	3 wires to VAV controller and 2 wires to BACnet/Modbus network | 0.8 mm^2 [18 AWG] minimum
Network service port	Mini USB connector
Power supply	24Vac
Power consumption	1VA
Operating temperature	0ºC to 50ºC [32ºF to 122ºF]
Storage temperature	-30ºC to 50ºC [-22ºF to 122ºF]
Relative humidity	5 to 95 % non condensing
Enclosure protection	IP 30 (EN 60529)
Weight	120 g. [0.25 lb]

Dimensions

TRL54	
A = 3.00" | 78mm B = 3.00" | 78mm C = 1.00" | 24mm D = 2.36" | 60mm	
TDU10 / TDU40 / TDU70 Series	
A = 5.24" | 133mm B = 2.87" | 73mm C = 3.74" | 95mm D = 1.22" | 31mm E = 0.75" | 19mm F = 2.00" | 51mm G = 2.18" | 55mm	
TDU00 / TDU30 / TDU60 Series	
A = 4.88" | 124mm B = 3.25" | 83mm C = 1.75" | 44mm D = 0.96" | 24mm E = 2.07" | 53mm F = 2.36" | 60mm G = 3.28" | 83mm H = 0.78" | 20mm (without CO2) 0.95" | 24mm (with CO2)	

TDU Models

Horizontal Model #	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	•		•

TDU10 Series

TDU40 Series

TDU70 Series

Vertical Model #	Temp	RH	CO_2	PIR	VOC
TDU00-100 TDU30-100 TDU60-100	•				
TDU00-101 TDU30-101 TDU60-101	•	•			
TDU00-102 TDU30-102 TDU60-102	•	•	•		
TDU00-103 TDU30-103 TDU60-103	•		•		
TDU00-104 TDU30-104 TDU60-104	•			•	
TDU00-105 TDU30-105 TDU60-105	•	•		•	
TDU00-106 TDU30-106 TDU60-106	•	•	•		•
TDU00-107 TDU30-107 TDU60-107	•	•	•	•	•
TDU00-108 TDU30-108 TDU60-108	•	•	•	•	

TDU00 Series

TDU30 Series

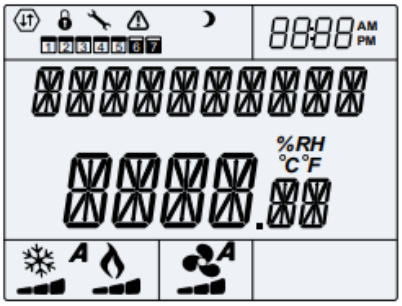
TDU60 Series

Interface

TRL54

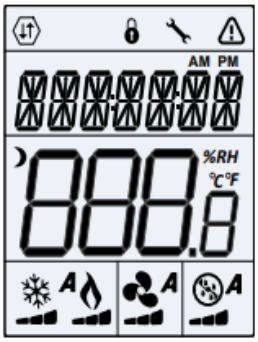
	Cooling ON *A: Automatic*		*Programming mode (Technician setting)*		*Alarm status*
	Heating ON *A: Automatic*		*Menu set-up Lock*		*Energy saving mode*
MIN MAX	*Minimum/Maximum*	°C or °F	*°C: Celsius scale* *°F: Fahrenheit scale*		

TDU10 / TDU40 / TDU70 Series



	Network Communication		User Lock		Programming Mode (Technician Setting)
	Alarm Status		Energy Saving Mode (NSB/OCC)	1 2 3 4 5 6 7	Schedule
8888 AM PM	Time	ppm	Parts Per Million	°C °F %RH	°C: Celsius Scale °F: Fahrenheit Scale %RH: Humidity
A	Automatic Mode		Cooling		Heating
					Fan

TDU00 / TDU30 / TDU60 Series

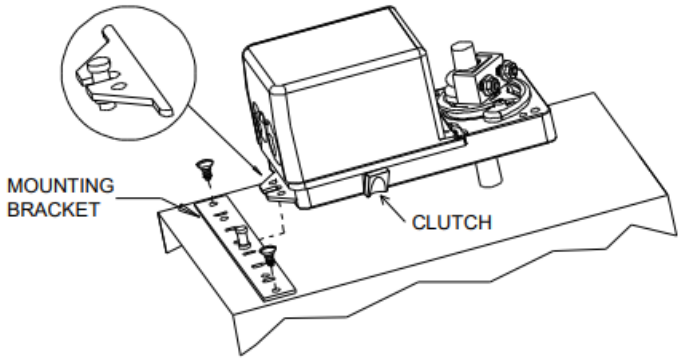


	Network Communication		User Lock		Programming Mode (Technician Setting)
	Alarm Status		Energy Saving Mode (NSB/OCC)	AM PM	Time
°C °F %RH	°C: Celsius Scale °F: Fahrenheit Scale %RH: Humidity	A	Automatic Mode		Cooling
	Heating		Fan		

Mechanical Installation

1. Manually close the damper blades and position the actuator to 0º or 90º.
2. Slide the actuator onto the shaft.
3. Tighten the nuts on the “U” bolt to the shaft with an 8mm wrench to a torque of 60 in-lb [6.7 Nm].
4. Slide the mounting bracket under the actuator. Ensure free movement of the slot at the base of the actuator. Place the bracket pin at mid distance of the slot.
5. Affix the bracket to the ductwork with #8 self-tapping screws.

EVC with a built-in 70 in. lb. Actuator

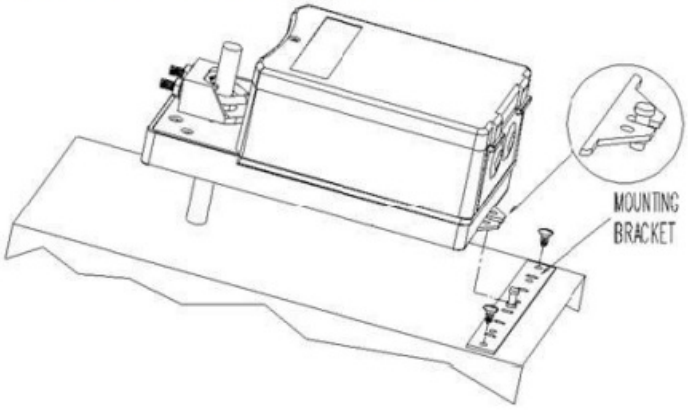


Do not press the clutch when the actuator is powered.

1. Manually close the damper blades and position the actuator to 0º or 90º.
2. Slide the actuator onto the shaft.
3. Tighten the nuts on the “U” bolt to the shaft with an 8mm wrench to a torque of 150 in.lb. [17 Nm].
4. Slide the mounting bracket under the actuator. Ensure free movement of the slot at the base of the actuator. Place the bracket pin at mid distance of the slot.
5. Affix the bracket to the ductwork with #8 self-tapping screws.

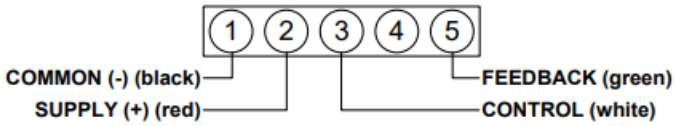
6. Connect the cable from the EVC to the terminal in the actuator as shown.

EVC with a separate 180 in. lb. Actuator



Do not press the clutch when the actuator is powered.

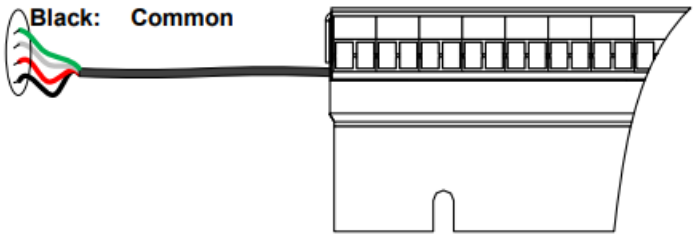
Terminals on the Actuator



Signal cable from EVC controller (models EVCB14NIT4X and EVCB14NDT4X)

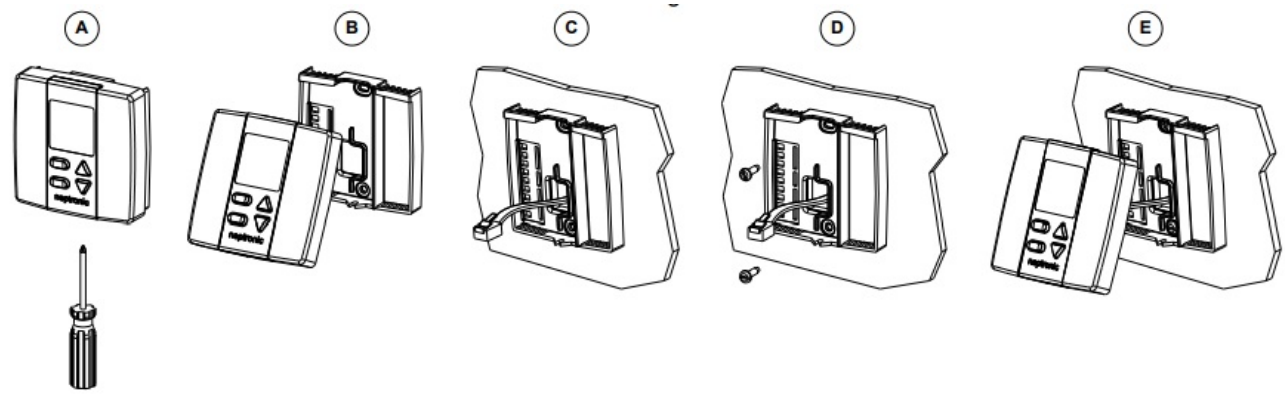
Use to connect the external motor on EVCB14NIT4X and EVCB14NDT4X.

Green: Feedback
White: Control
Red: 24Vac
Black: Common



Mounting Instructions
TRL54
CAUTION: Remove power to avoid a risk of malfunction.

- A. Remove the captive screw that's holding the base and the front cover of the unit together.
- B. Lift the front cover of the unit to separate it from the base.
- C. Pull all wires through the holes in the base.
- D. Secure the base to the wall using wall anchors and screws (supplied). Make the appropriate connections.
- E. Mount the control module on the base and secure using the screw.



Mounting Instructions
TRL54
CAUTION: Remove power to avoid a risk of malfunction.

- A. Remove the captive screw that’s holding the base and the front cover of the unit together.
- B. Lift the front cover of the unit to separate it from the base.
- C. Pull all wires through the holes in the base.
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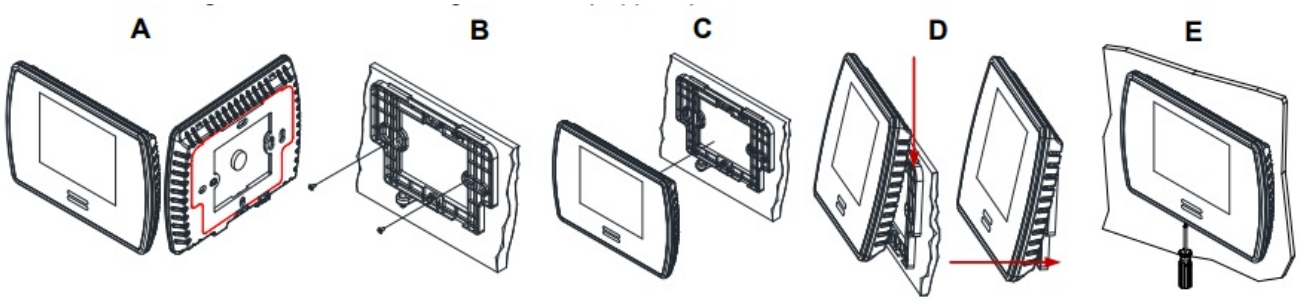
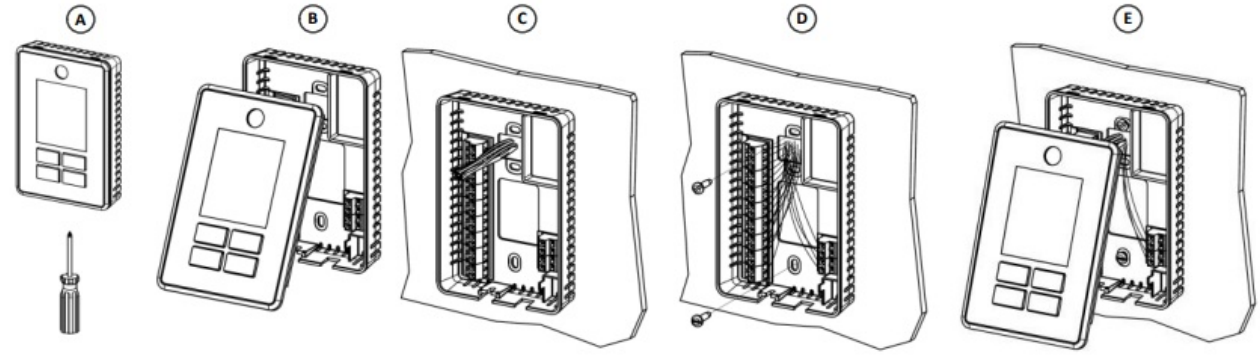


TDU00 / TDU30 / TDU60 Series
CAUTION: Remove power to avoid a risk of malfunction.

- A. Remove the captive screw that’s holding the base and the front cover of the unit together.
- B. Lift the front cover of the unit to separate it from the base.
- C. Pull all wires through the holes in the base.
- D. Secure the base to the wall using wall anchors and screws (supplied). Make the appropriate connections.
- E. Mount the control module on the base and secure using the screw.

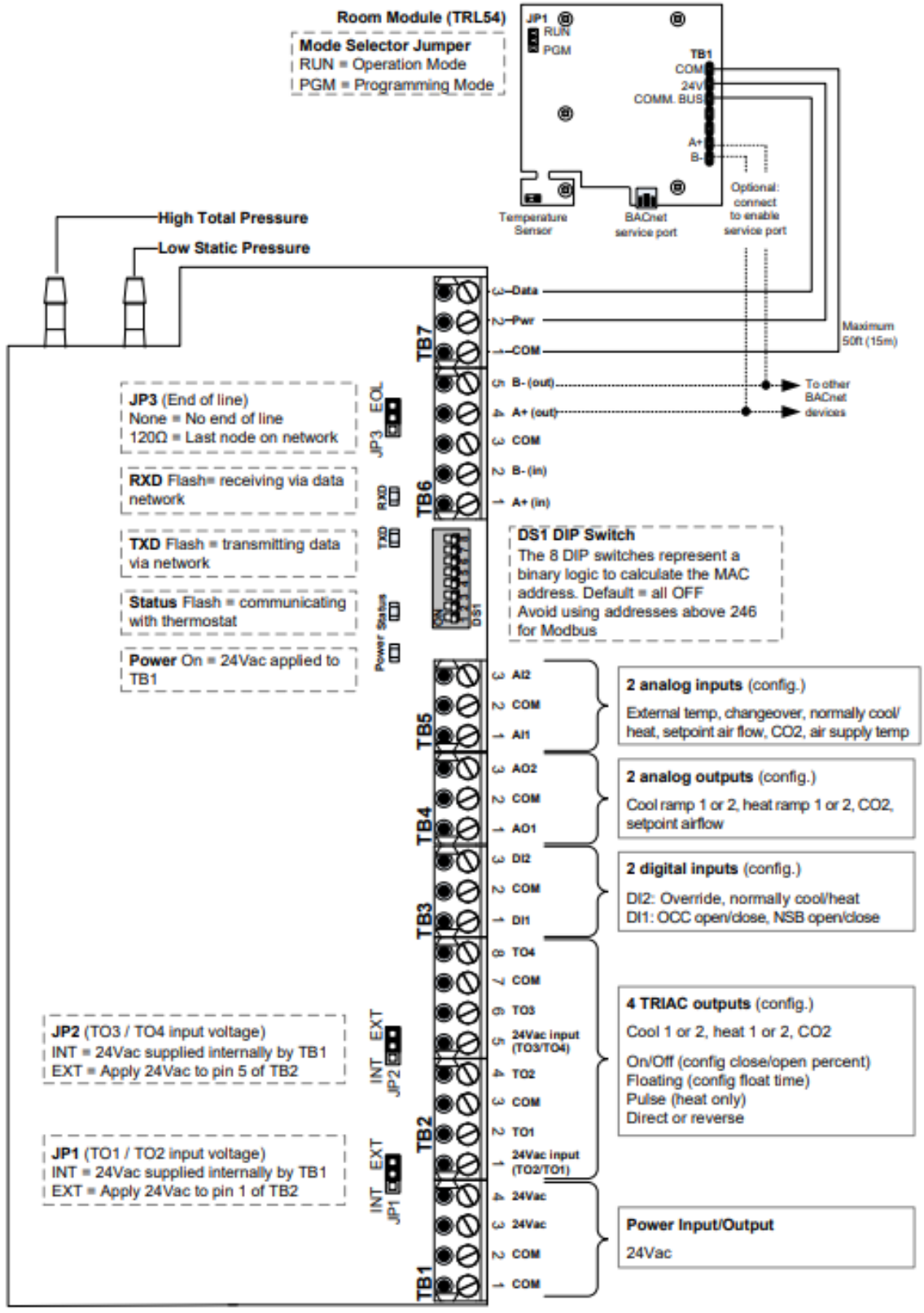


BACnet or Modbus Address DIP Switch (DS1)
MAC address for communication, are selectable by DIP switch using binary logic. If you do not change device instance in program mode, it will be automatically modified according to the MAC address.
Note: Avoid using addresses above 246 when selecting Modbus MAC address.

MAC Address	**DS.1 = 1**	**DS.2 = 2**	**DS.3 = 4**	**DS.4 = 8**	**DS.5 = 16**	**DS.6 = 32**	**DS.7 = 64**	**DS.8 = 128**	**Default Device Instance**
0	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	153000
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	153001
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	153002
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	153003
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	153004
…	…	…	…	…	…	…	…	…	…
126	OFF	ON	ON	ON	ON	ON	ON	OFF	153126
127	ON	ON	ON	ON	ON	ON	ON	OFF	153127

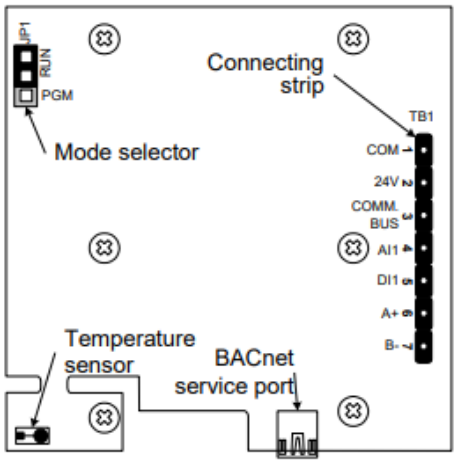
* Slave addresses available by setting DS.8 to ON

Wiring
We strongly recommend that all Neptronic products be wired to a separate grounded transformer and that transformer shall service only Neptronic products. This precaution will prevent interference with, and/or possible damage to incompatible equipment.



TRL54 Digital Room Sensor

3 wire cable (TB1 #1, 2 & 3)
Connect TB1 #6 (A+) & #7 (B-) to EVCB to enable the BACnet service port.

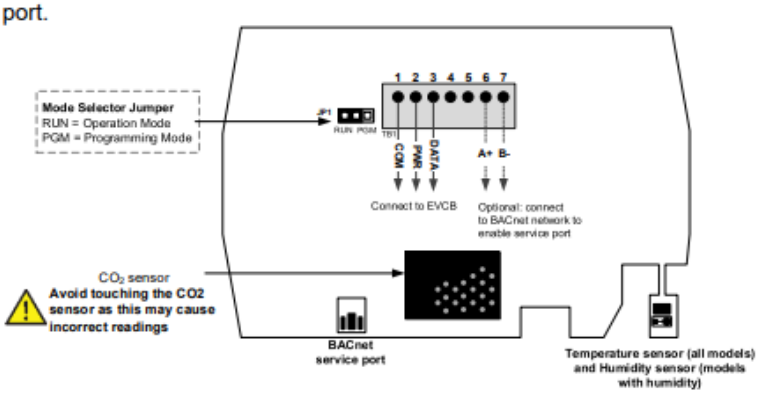


Mode Selection (JP1)

JP1 RUN PGM	**Jumper (JP1) on RUN:** Digital room sensor is in **Operation Mode**. Digital room sensor must be set in this mode to operate properly. If not locked, setpoint and control mode (Heating & Cooling ON, Cooling only ON or Heating only ON) can be modified by end user.
JP1 RUN PGM	**Jumper (JP1) on PGM:** Digital room sensor is set in **Programming Mode**. Refer to following section about all settings description

TDU10 / TDU40 / TDU70 Series Digital Room Sensor

3 wire cable (TB1 #1, 2 & 3)
Connect TB1 #6 (A+) & #7 (B-) to EVCB to enable the BACnet service port.

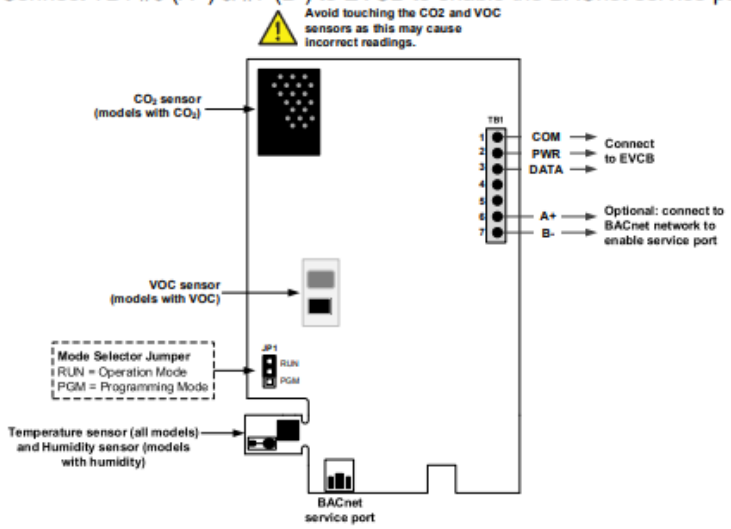


Mode Selection (JP1)

JP1 RUN PGM	**RUN:** Digital room sensor is in **Operation Mode**. Digital room sensor must be set in this mode for normal system operation. If not locked, setpoint and control mode can be changed by the end user.
JP1 RUN PGM	**PGM:** Digital room sensor is set in **Programming Mode**. Refer to the following sections for more details.

TDU00 / TDU30 / TDU60 Series Digital Room Sensor

3 wire cable (TB1 #1, 2 & 3)
Connect TB1 #6 (A+) & #7 (B-) to EVCB to enable the BACnet service port.



Mode Selection (JP1)

JP1 RUN PGM	**RUN:** Digital room sensor is in **Operation Mode**. Digital room sensor must be set in this mode for normal system operation. If not locked, setpoint and control mode can be changed by the end user.
JP1 RUN PGM	**PGM:** Digital room sensor is set in **Programming Mode**. Refer to the following sections for more details.

The menu overviews and options are the same for both TRL54 and TDU digital room sensors. However, the action button or the button used to access the menus and save changes is different in the digital room sensors. Use the following menu overviews with the appropriate action button as per your digital room sensor.

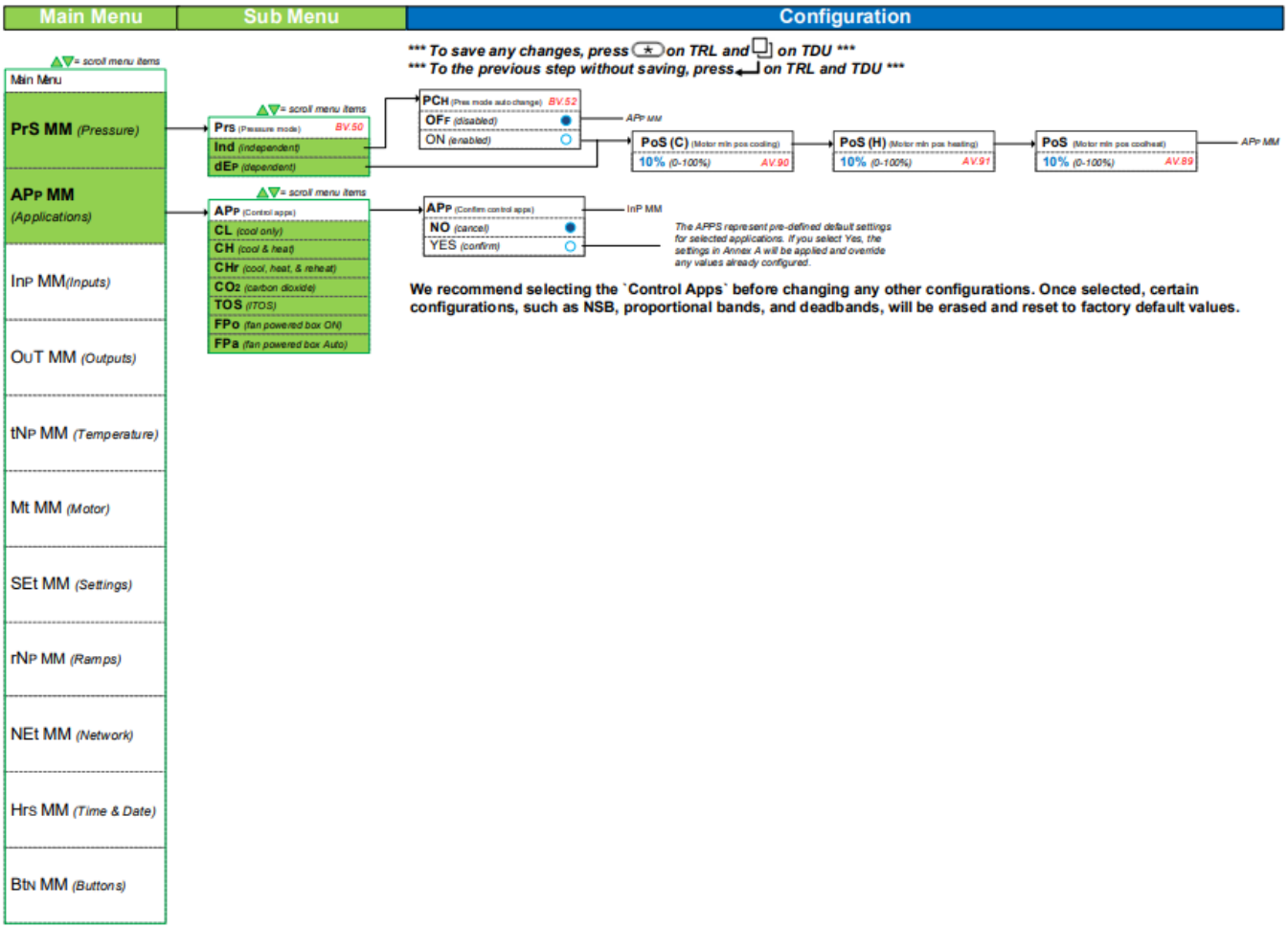
Action Buttons on Digital Room Sensor

Action Button		Task
TRL54	TDU	
★	❑	Press to access the programming menus and save any changes.
↵		Press to return to the previous step without saving.

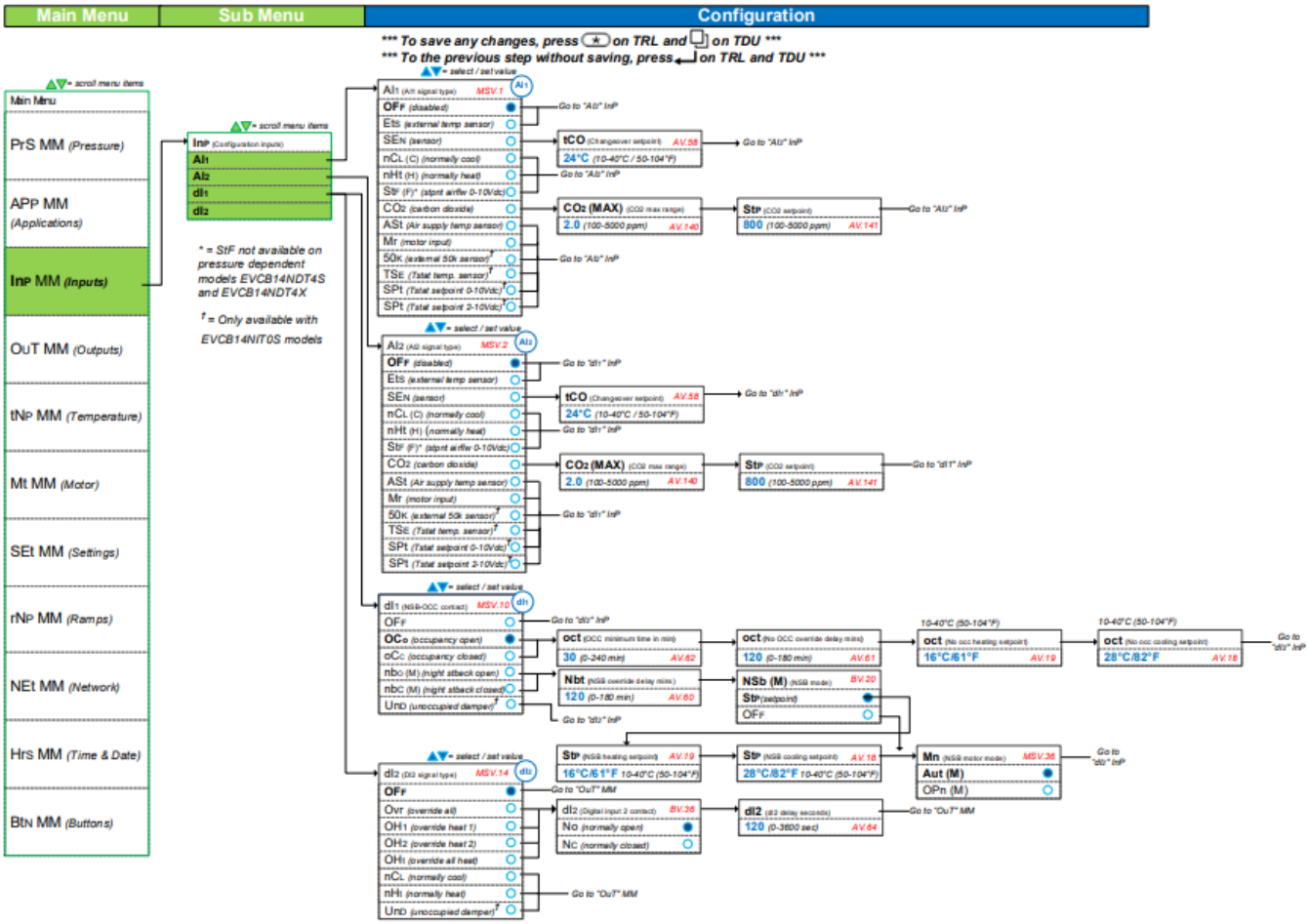
Note: Prior to going into Programming Mode, remove the connection cable between the EVCB and the TRL/TDU and set the Mode Selection jumper (JP1) to PGM on the digital room sensor. Reestablish the connection in order to access the programming menus and to make any changes. Once all menu changes have been made, remove the connection cable again before setting jumper JP1 back to RUN, and then reconnect the cable to resume normal operation.

Pressure & Applications – Menu Overview (1 of 6)

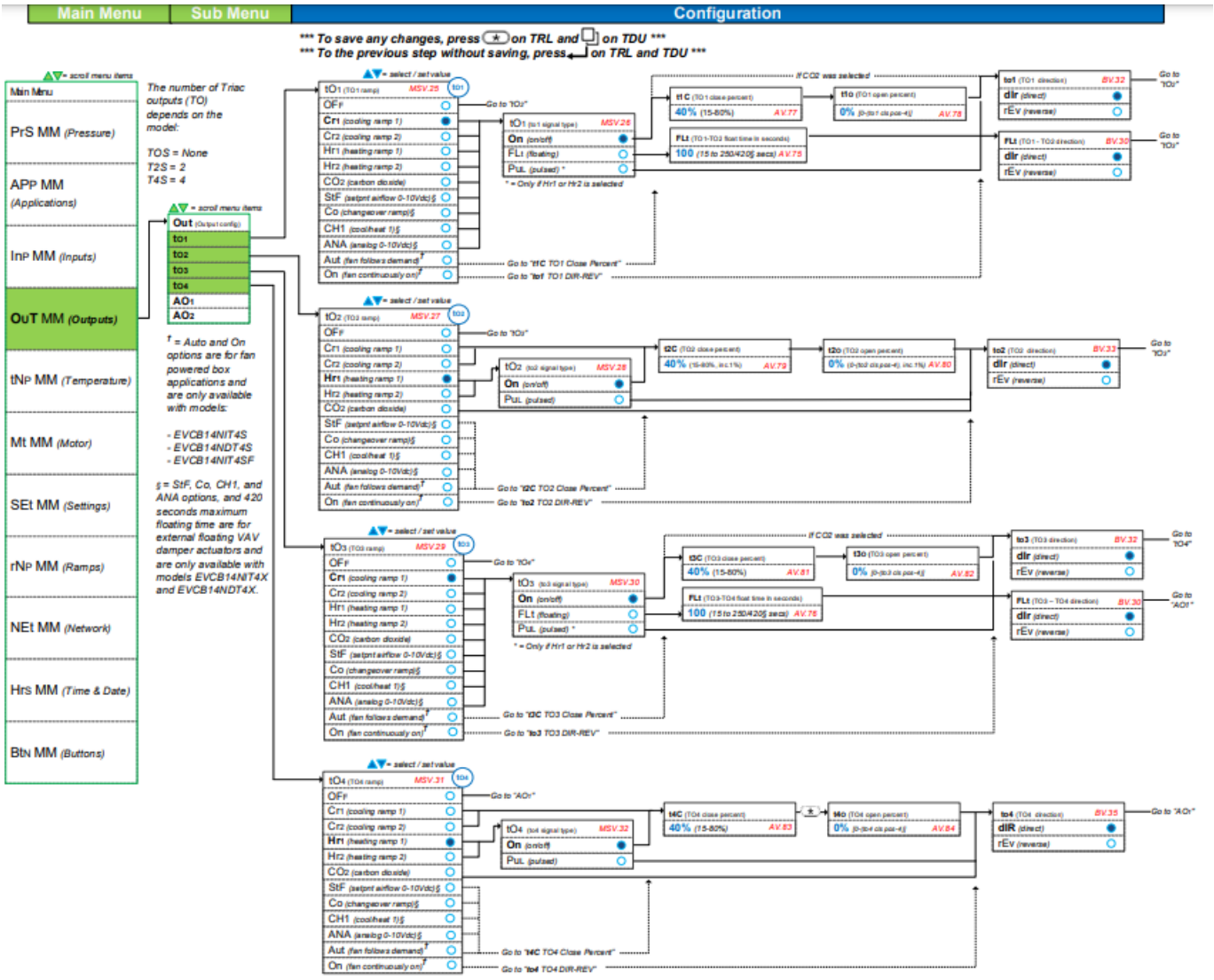
For a description of the default settings for each application refer to Annex A: Control Apps on page 23.



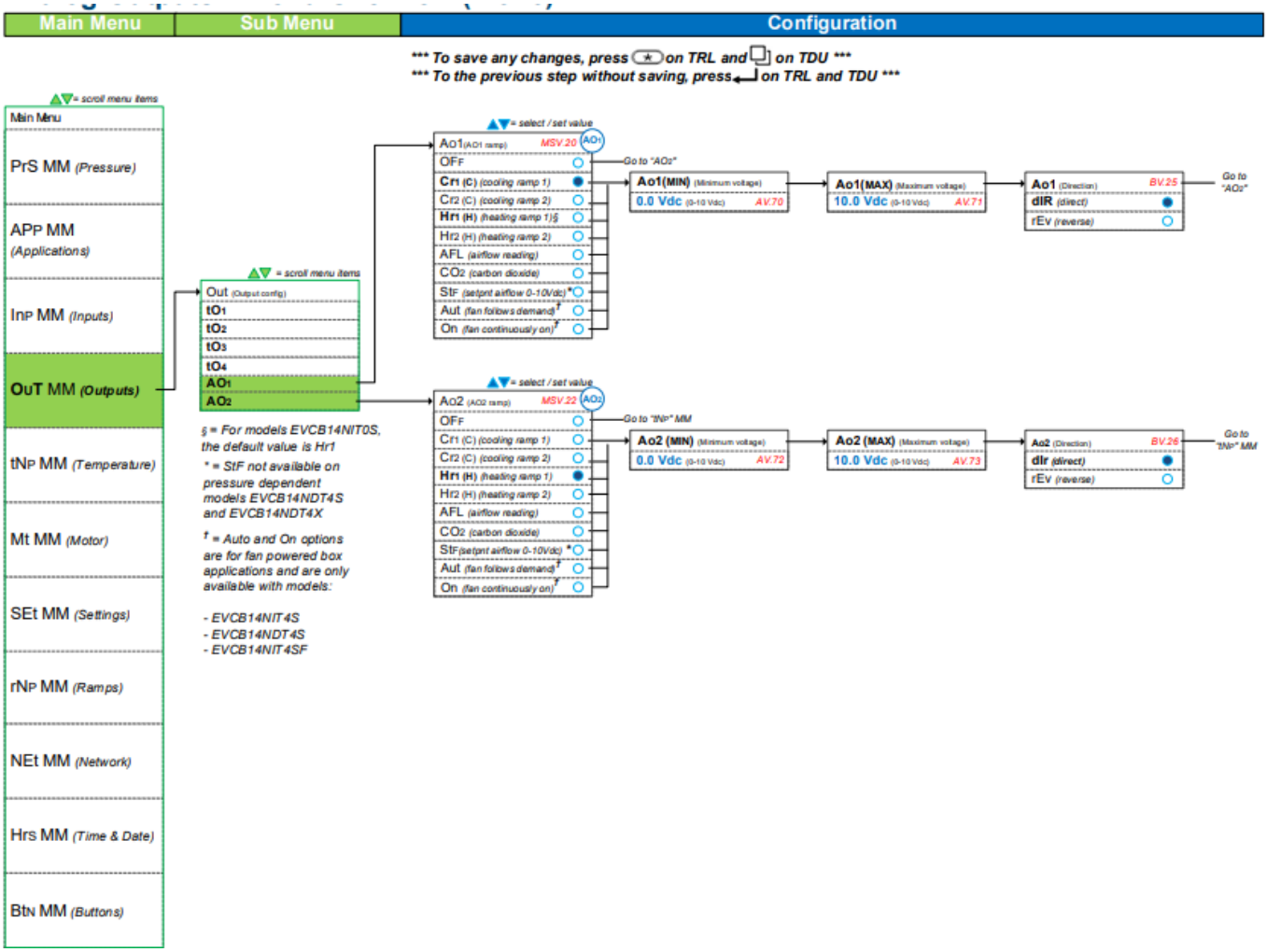
Inputs – Menu Overview (2 of 6)



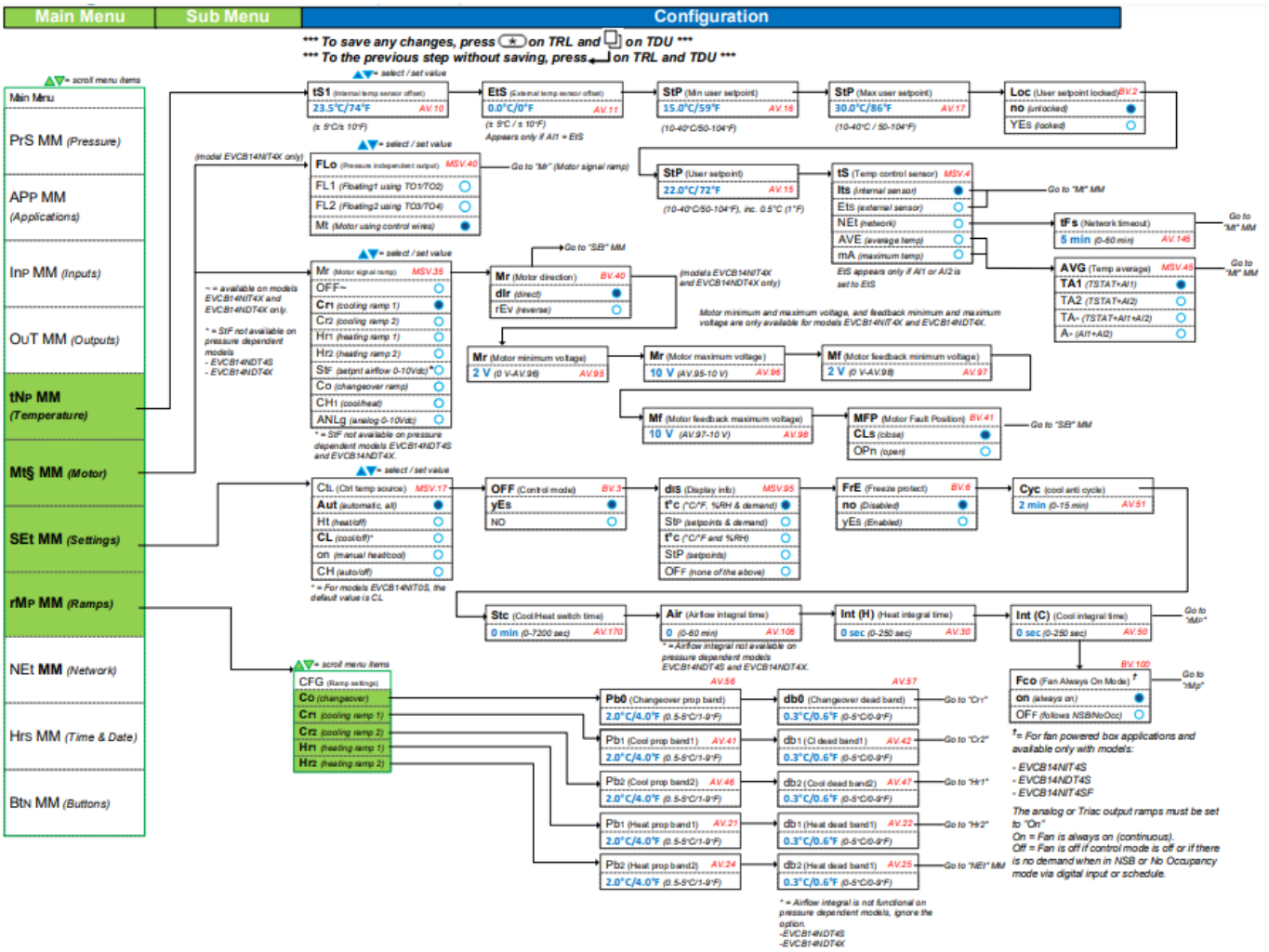
TRIAC Outputs – Menu Overview (3 of 6)



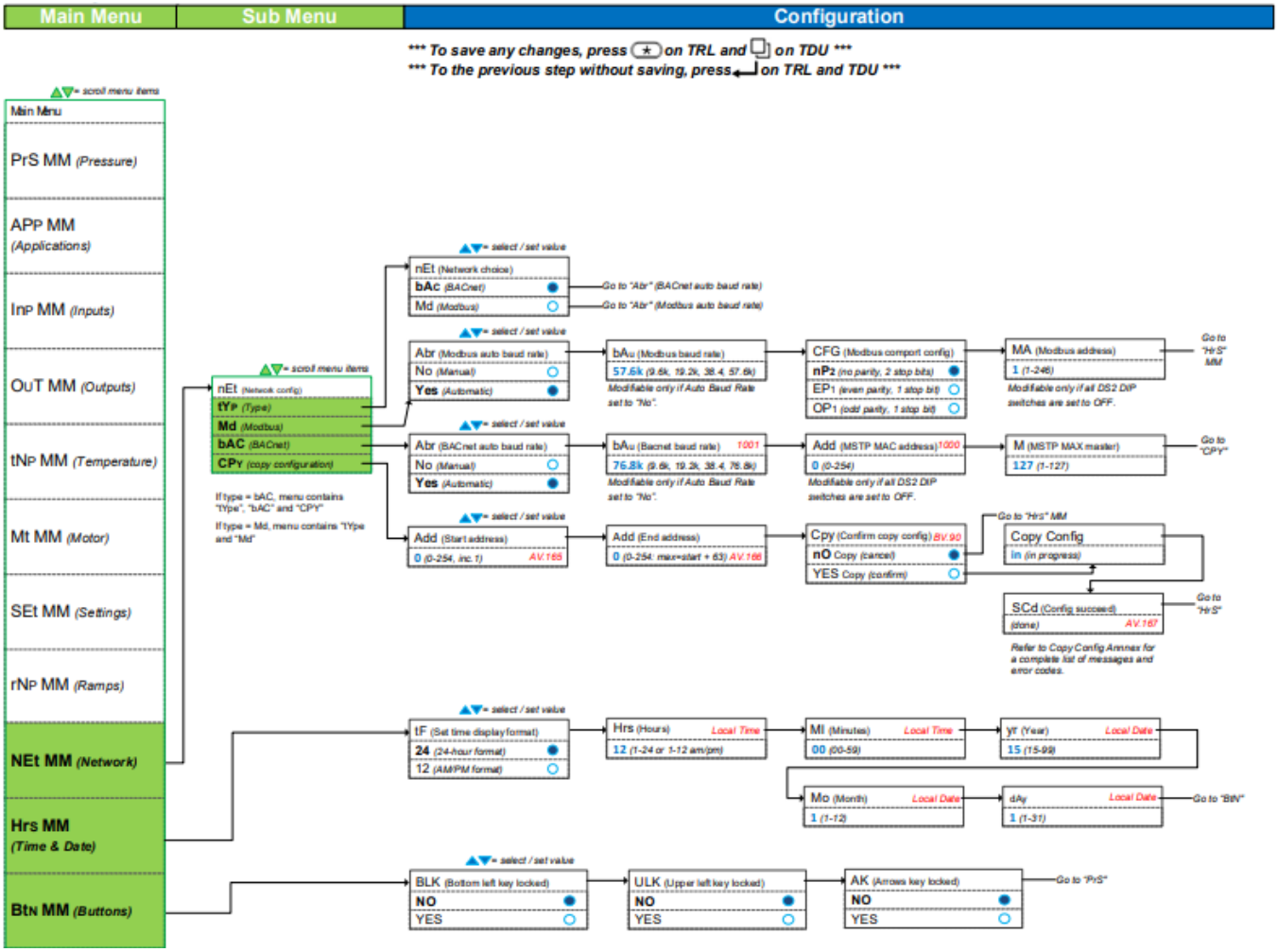
Analog Outputs – Menu Overview (4 of 6)



Settings – Menu Overview (5 of 6)



Settings – Menu Overview (6 of 6)



Operation Menus

This menu is accessible through normal operation mode. The Mode Selector jumper (JP1) of the digital room sensor must be set to the “RUN” position (Operation Mode). Refer to Wiring on page 10.
Note: Since the action buttons are different on TRL and TDU digital room sensor series, both buttons have been included in the instructions. Refer to the Action Buttons on Digital Room Sensor section to know and use the button as available on your digital room sensor.

1. Press the [[*] / [⧉]] and [[↵]]uttons simultaneously for 5 seconds. The “ ” screen appears.
2. Enter the password within 1 minute by using the arrow keys to increase or decrease the value and the [[*] / [⧉]] and [[↵]] buttons to toggle between the digits.
   - Password 372 = Temperature Offset Menu
   - Password 637 = Network Settings Menu
   - Password 757 = Airflow Balance Mode
3. If you enter the wrong password, the digital room sensor displays “Eror” and returns to Operation Mode. The digital room sensor will return to normal mode if you navigate through the entire menu and do not make any selection, or if you do not press any key for 5 minutes. The changed values will be saved automatically.

Menu 372 – Temperature Offset

1.

1. "TSt" (temperature sensor offset)

Range:	10 to 40°C	[50 to 104°F]
Offset:	Max ± 5°C	
Increment:	0.1°C	[0.2°F]

Compare the displayed temperature reading with a known value from a thermometer. To offset or calibrate the sensor, use the arrows key to set the desired temperature reading. This is useful for digital room sensors installed in areas where the temperature read is slightly different than the room's actual temperature. For example, a digital room sensor placed right under the air diffuser.

If the digital room sensor is set to use an external temperature sensor (EtS), the digital room sensor displays "OFF".

2. "EtS" (external temperature sensor offset)

Range:	0 to 50°C	[41 to 122°F]
Offset:	Max ± 5°C	
Increment:	0.1°C	[0.2°F]

2. This option appears if you've set one of the analog inputs to EtS (External temperature sensor). When the digital room sensor is connected to the appropriate analog input, the display shows the temperature read by the external temperature sensor. Adjust the offset by comparing it with a known value (e.g. thermometer). If the sensor is not connected or short circuited, then the unit displays the sensor's limit.

3. "PrS" (input 3 reading)

Range:	250 mV (0") to 4000 mV (1")

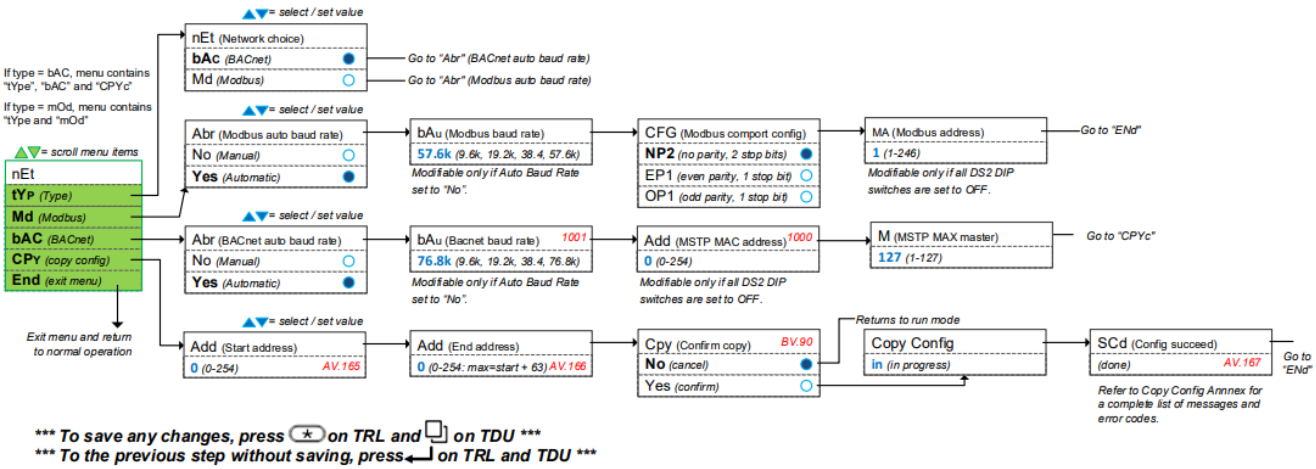
3. Displays the voltage output value in mV of the pressure sensor. Does not appear for EVCB14NDT4S and EVCB14NDT4X (pressure dependant) models.

4. "PrS Min" (input 3 minimum reading)

Range:	10 mV to 180 mV
Default:	60 mV

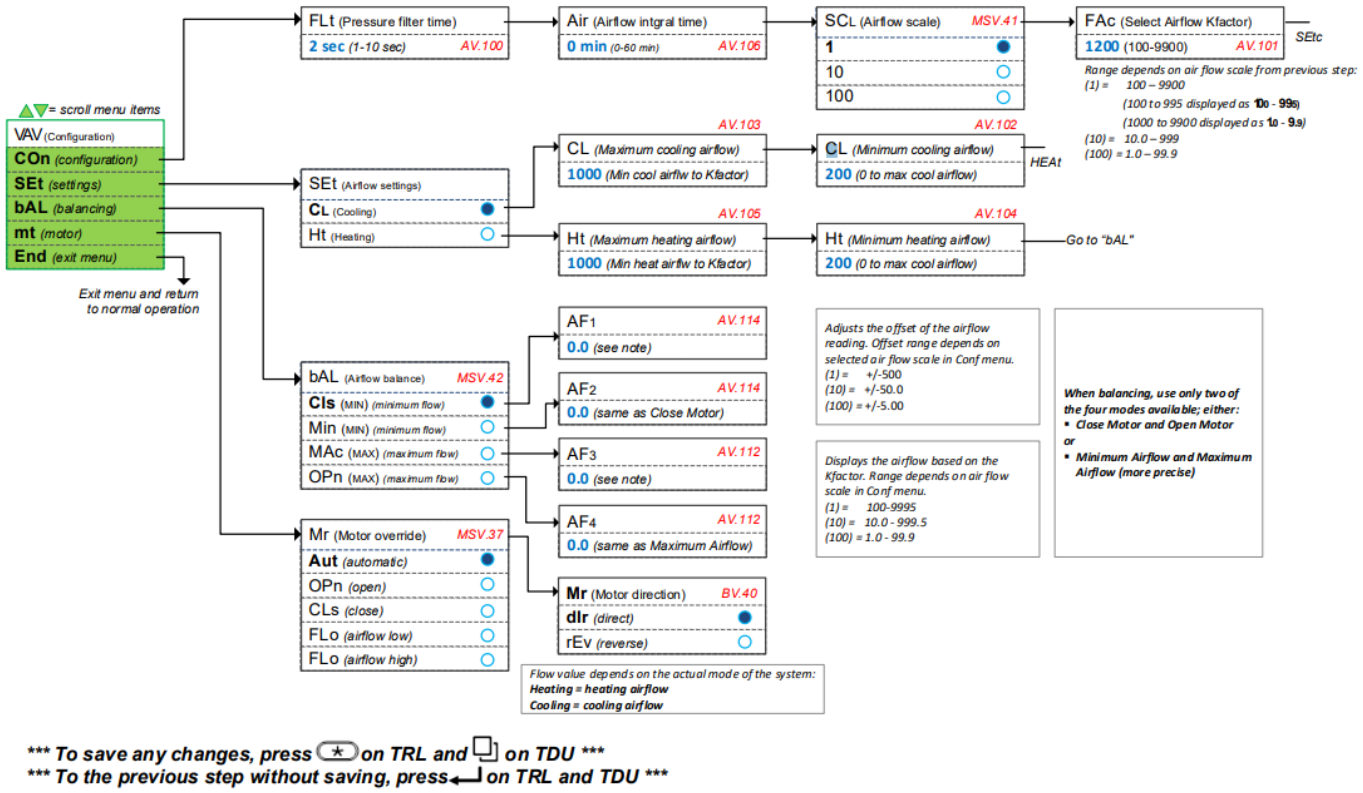
4. This setting represents the deadband of the pressure sensor in mV. For advanced users or special applications only. We recommend that you use the default setting of 60mV. Does not appear for EVCB14NDT4S and EVCB14NDT4X (pressure dependant) models.

Menu 637 – Network Settings



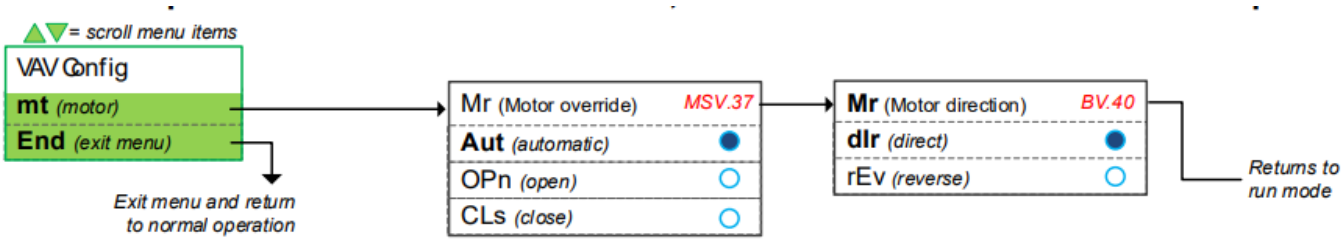
Menu 757 – Airflow Balance Mode

Pressure Independent: models EVCB14NIT0S, EVCB14NIT2S, EVCB14NIT4X and EVCB14NIT4S



Note: Refer to EVCB-Airflow Balance Instructions on Neptronic website for further information on the airflow balancing function.

Pressure Dependent: models EVCB14NDT4S, EVCB14NDT4X or other models if in pressure-dependent mode



Reset to Factory Default Settings

This will erase all actual configurations and replace them with the factory default settings.

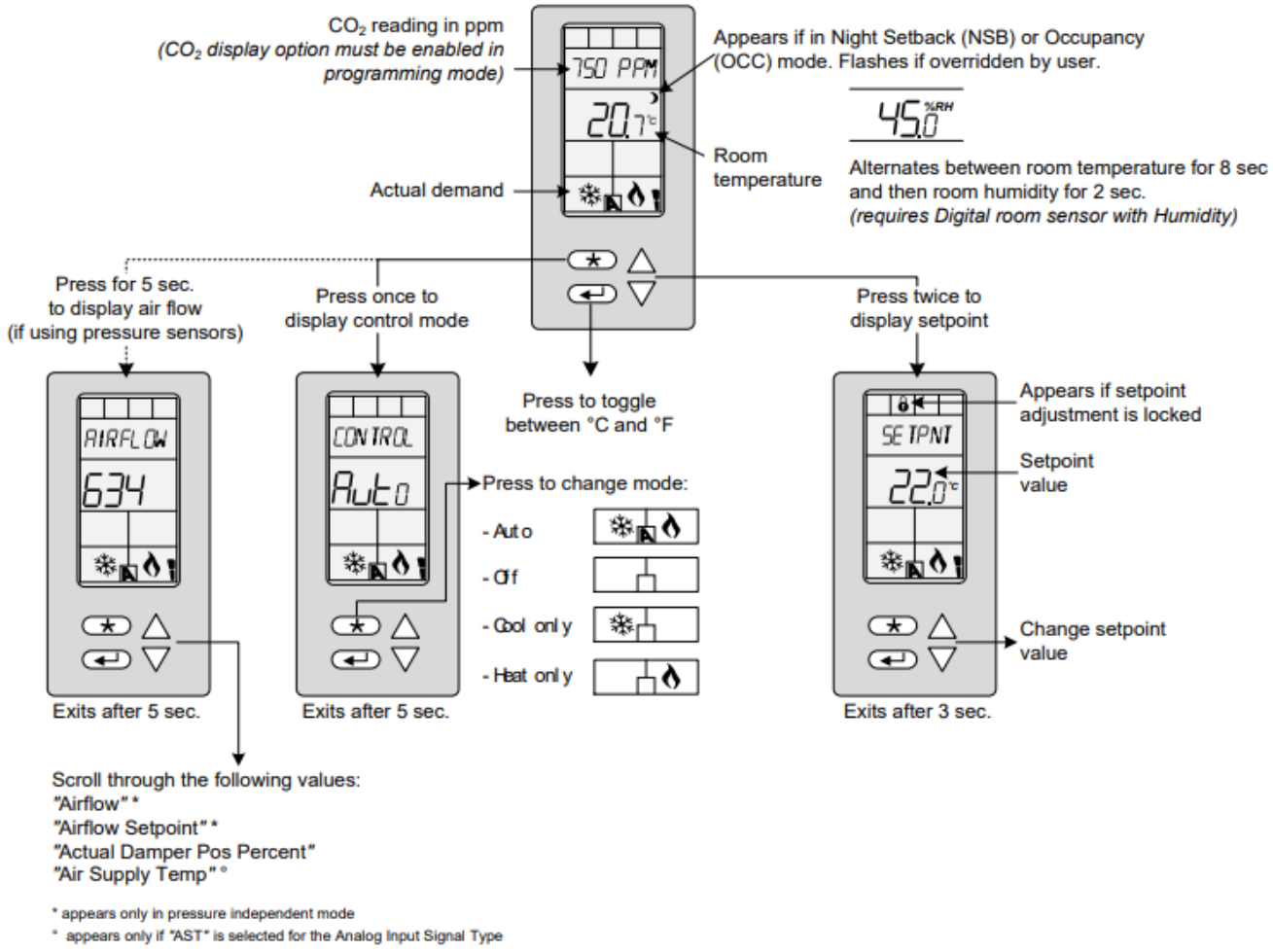
1. The Mode Selector jumper (JP1) of the digital room sensor must be set to the “RUN” position (Operation Mode). Refer to Wiring on page 10.
2. During the power up sequence of the controller and digital room sensor, press and hold ↵ | ▼b both the and buttons.
3. The “ ” screen appears. Enter 372 within 1 minute by using the arrow keys to increase or decrease the value and the [★ / ❑] and [↵] and buttons to toggle between the digits.
4. Use the arrow buttons to select YES and then press [[★ / ❑]; /].

Operation Mode

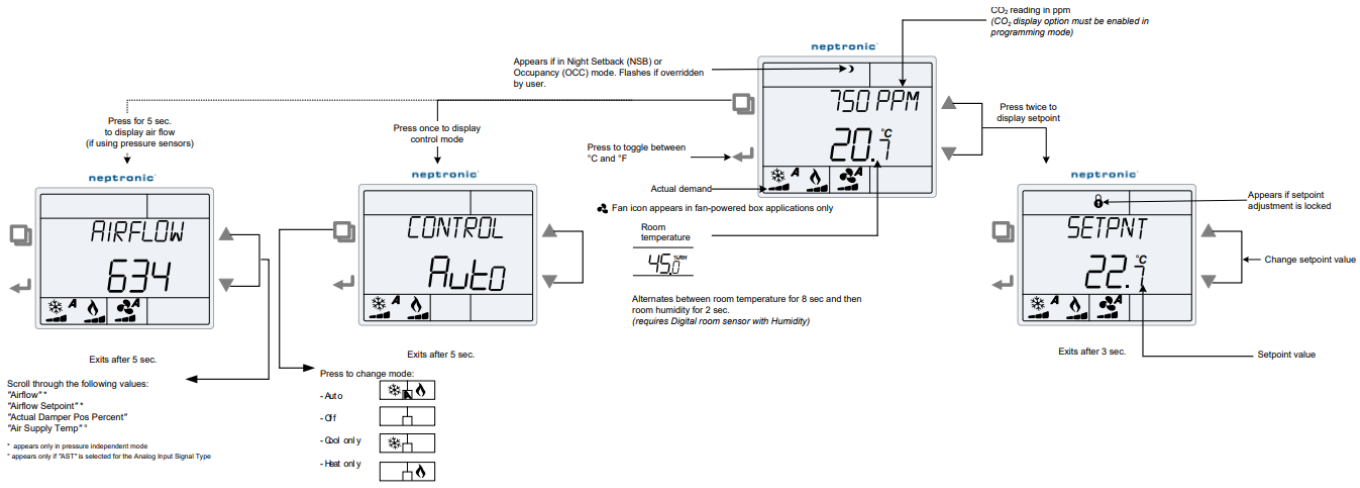
The Mode Selector Jumper (JP1) of the digital room sensor must be set to the “RUN” position (Operation Mode).

Refer to Wiring on page 10.

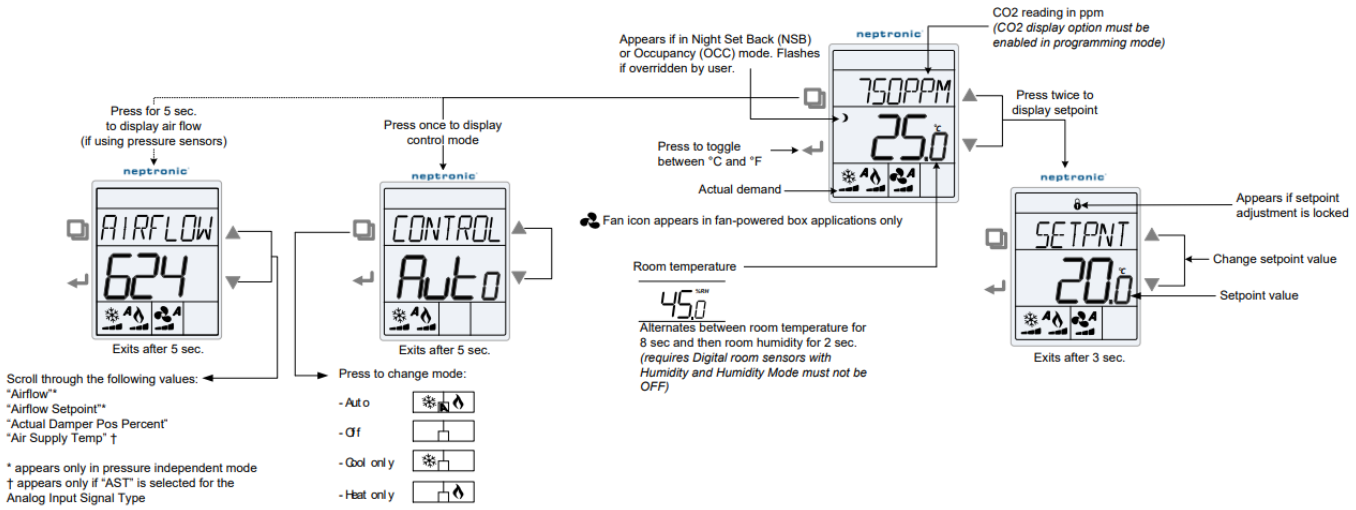
TRL54



TDU10 / TDU40 / TDU70 Series



TDU00 / TDU30 / TDU60 Series



Power Up

Upon power up, the LCD illuminates and all segments appear for 2 seconds. The digital room sensor then displays its current version of the digital room sensor for 2 seconds followed by the current version of the controller for 2 seconds. Pressing any key on the digital room sensor illuminates the LCD for 4 seconds.

CO2 (Digital Room Sensors with CO2)

If enabled via the configuration menu, the digital room sensor displays the CO2 reading on the first line above the temperature reading. If CO2 display is enabled, the time will not be displayed.

Temperature Display and Setpoint

If enabled in the "Display Info" menu (see Settings – Menu Overview (5 of 6) on page 17), the digital room sensor displays the temperature reading. If the sensor is disconnected or short circuited, then the unit displays the sensor's limit. To toggle the temperature scale between ºC and ºF, press the button. To display the setpoint, press the or key twice. The setpoint appears for 5 seconds. To adjust the setpoint, press the arrow keys while the temperature is displayed. If the setpoint adjustment
has been locked "Setpnt Locked", the lock symbol appears.

Humidity

If enabled in the "Options" menu (see Settings – Menu Overview (6 of 6) on page), the digital room sensor displays the temperature reading for 8 seconds and then displays the humidity reading for 2 seconds. If the sensor is disconnected or short circuited, then the unit displays the sensor's limit.

Air Flow and Air Supply Temperature

Press and hold the [/] button for 5 seconds and use the arrow keys to view the " and " ". After 5 seconds without any action, the digital room sensor returns to operation mode.

The air supply temperature appears only if analog input AI1 or AI2 are configured with the AST option. Not available on the following pressure dependent model EVCB14NDT4S.

Control Mode

To access the Control Mode, press the [/] button. The Control Mode appears for 5 seconds. Press the [/] button to scroll through the following control modes. These options can vary depending on the options selected in "Temp Control Mode" and "Enable OnOff Control Mode".

- Auto (Automatic Cooling or Heating)
- OFF (if it is not disabled in Programming Mode)
- Cooling only (on, with cooling symbol)

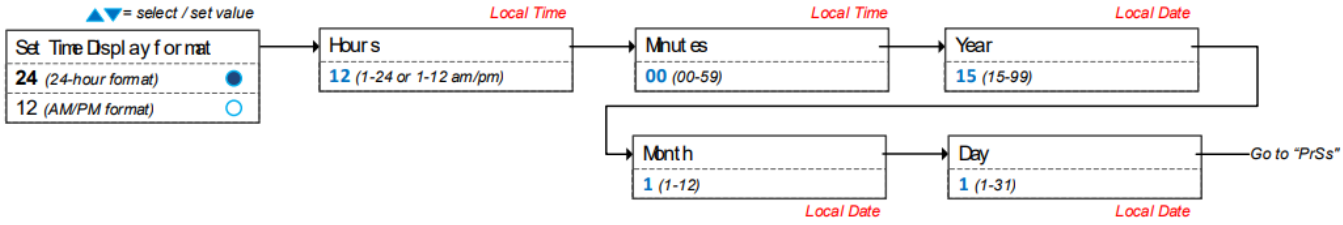
- Heating only (on, with heating symbol)

Night Set Back (NSB) or Occupancy Mode
This function is only available if you set DI1 to nSb (Night set back contact) or Occ (occupancy mode). If the DI1 contact is triggered, the digital room sensor enters NSB or No Occupancy Mode (the symbol appears) and uses the NSB or OCC heating and cooling setpoints.

If not locked, you can override the night set back or no occupancy mode for a predetermined period by pressing any of the 4 buttons. During the override period the symbol will flash. If the symbol does not flash, the override period is finished or the night set back or no occupancy override has been locked in programming mode.

Set Time and Date

1. Ensure that JP1 on the digital room sensor is set to run.
2. Press and hold the button for 5 seconds.
3. Use the arrow keys to set the desired value. Press the [/] button to save and got to the next step.
   Press the button to go to the previous step without saving.



Note: Time will only be displayed on the TDU when the Bacnet scheduler is active. In order to achieve this, set the proper BACnet Object present value to Yes (1): EVCB BV.70 – Cfg_ActiveSchedule.

Annex A: Control Apps

Refer to Pressure & Applications – Menu Overview (1 of 6) on page 13 for more information. The available Control Apps vary according to the model.

Description	**CL** (cool only)	**CLHt** (cool/heat)	**CHrH** (cool/heat/reheat)	**CO2** (CO2)	**ITOS** (ITOS)	**FPbo** (fan powered ON)	**FPbA** (fan powered Auto)
Min. Setpoint	**20°C (68°F)**	**20°C (68°F)**	**20°C (68°F)**	**20°C (68°F)**	15°C (59°F)	15°C (59°F)	15°C (59°F)
Max. Setpoint	**28°C (82°F)**	**28°C (82°F)**	**28°C (82°F)**	**28°C (82°F)**	30°C (86°F)	30°C (86°F)	30°C (86°F)
Changeover Setpnt	24°C (75°F)	**20°C (68°F)**	**20°C (68°F)**	**20°C (68°F)**	24°C (75°F)	24°C (75°F)	24°C (75°F)
TO1 Ramp	**HR1**	CR1	**HR1**	CR1	**OFF**	**HR1**	**HR1**

TO1 Signal Type	On/Off	On/Off	On/Off	On/Off	On/Off	On/Off	On/Off
TO1 Close Pos.	40%	40%	40%	40%	40%	**35%**	**35%**
TO1 Open Pos.	0%	0%	0%	0%	0%	0%	0%
TO2 Ramp	HR1	HR1	HR1	**CO2**	**OFF**	HR1	HR1
TO2 Signal Type	**Pulse**	On/Off	**Pulse**	On/Off	On/Off	On/Off	On/Off
TO2 Close Pos.	40%	40%	40%	40%	40%	**70%**	**70%**
TO2 Open Pos.	0%	0%	0%	0%	0%	**35%**	**35%**
TO3 Ramp	**HR2**	**CR2**	**HR2**	**HR1**	**OFF**	**Fan ON**	**Fan Auto**
TO3 Signal Type	On/Off	On/Off	On/Off	On/Off	On/Off	On/Off	On/Off
TO3 Close Pos.	40%	40%	40%	40%	40%	40%	40%
TO3 Open Pos.	0%	0%	0%	0%	0%	0%	0%
TO4 Ramp	**HR2**	**HR2**	**HR2**	**HR1**	**OFF**	**HR1**	**HR1**
TO4 Signal Type	**Pulse**	On/Off	**Pulse**	On/Off	On/Off	On/Off	On/Off
TO4 Close Pos.	40%	40%	40%	40%	40%	40%	40%
TO4 Open Pos.	0%	0%	0%	0%	0%	0%	0%
Motor Ramp	CR1	**COr**	**COr**	**COr**	CR1	CR1	**COr**
AO1 ramp	**HR1**	CR1	**HR1**	CR1	**HR1**	**HR1**	**HR1**
AO2 Ramp	**HR2**	HR1	**HR2**	HR1	**OFF**	**HR2**	**Fan Auto**
AI1 Input	OFF	**SENS**	**SENS**	**SENS**	OFF	OFF	**SENS**
AI2 Input	OFF	OFF	OFF	**CO2**	OFF	OFF	OFF
DI1 Input	**nSb.o**	**nSb.o**	**nSb.o**	Occ.o	Occ.o	**nSb.o**	**nSb.o**
Heat Prop Band 2	2°C (4°F)	2°C (4°F)	2°C (4°F)	2°C (4°F)	2°C (4°F)	**1°C (2°F)**	**1°C (2°F)**
Heat Deadband 2	**1.3°C (2.6°F)**	**1.3°C (2.6°F)**	**1.3°C (2.6°F)**	**1.3°C (2.6°F)**	0.3°C (0.6°F)	**1.3°C (2.6°F)**	**1.3°C (2.6°F)**
Cool Deadband 2	**1.3°C (2.6°F)**	**1.3°C (2.6°F)**	**1.3°C (2.6°F)**	**1.3°C (2.6°F)**	0.3°C (0.6°F)	0.3°C (0.6°F)	0.3°C (0.6°F)

Legend

- Grey Text = Standard default value
- Bold Text = Special default value for selected application
- HR = Heating ramp
- CR = Cooling ramp
- COr = Changeover ramp
- SENS = Changeover temperature sensor
- Fan ON = Fan powered box in continuous mode
- Fan Auto = Fan powered box in automatic mode (follows demand)
- nSb.o = Night Set Back (normally open)
- Occ.o = Occupancy mode (normally open)
- TO = TRIAC output
- AO = Analog output
- AI = Analog input
- DI = Digital input

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Documents / Resources

	neptronic EVCB14NIT0S Controller Models Description [pdf] Instructions EVCB14NIT0S, EVCB14NIT2S, EVCB14NIT4S, EVCB14NIT4X, EVCB14NDT4X, EVCB14NDT 4S, EVCB14NIT0SF, EVCB14NIT4SF, EVCB14NIT0S Controller Models Description, EVCB14N IT0S, Controller Models Description, Models Description, Description

References

- Neptronic | Home - Humidifier Distributor & HVAC Products
- User Manual