

## **EFCB-OE1 Series**

EFCB10T-OE1 (24Vac / 0 relays) EFCB12T-OE1 (240Vac / 0 relays) EFCB10TU2-OE1 (24Vac / 2 relays) EFCB10TU4-OE1 (24Vac / 4 relays) EFCB12TU2-OE1 (240Vac / 2 relays) EFCB12TU4-OE1 (240Vac / 4 relays)

## **TFL54 Series Digital Room Sensor**

**TFL54** (With temperature sensor)

TFLH54 (With temperature and humidity sensor)

## **TDF Series Digital Room Sensor**

TDF00	(Vertical Grey LCD, white enclosure)
TDF30	(Vertical Black LCD, black enclosure)
TDF60	(Vertical Black LCD, white enclosure)

TDF10 (Horizontal Grey LCD, white enclosure)
TDF40 (Horizontal Black LCD, black enclosure)
TDF70 (Horizontal Black LCD, white enclosure)

#### **Networkable Fan Coil Controller**

Specification and Installation Instructions







**EFCB-OE1 Series** 

TFL54 or TFLH54





TDF00 / TDF30 / TDF60 Series

TDF10 / TDF40 / TDF70 Series

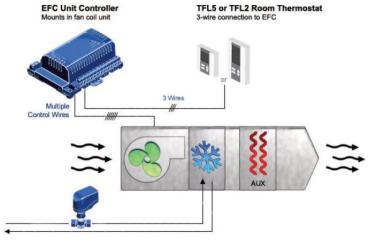
## **Description**

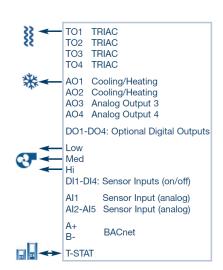
The EFCB-OE1 Series Networkable Fan Coil Controller and TFL54 and TDF Series Digital Room Sensors are designed for simple and accurate control of any fan coil application. The Networkable Fan Coil Controller is mounted inside the fan coil cabinet and incorporates a configurable fan coil algorithm, variable three speed fan control and either modulating or digital heating and cooling outputs. All inputs and high/low voltage outputs are centralized at the control module in the fan coil cabinet.

## **Applications**

- Compatible with 2 or 4 pipe systems
- Fan coil unit (up to 3 speeds and/or analog 0-10 Vdc)
- Cooling signal (on/off, floating or modulating 0-10 Vdc)
- Heating signal (on/off, floating, pulse or modulating 0-10 Vdc)
- Cool, Heat, Reheat, Reheat with fan, Changeover, Fan, Humidify and Dehumidify by cooling.

## **Typical Application**





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#### **Features**

- Built-in configurable fan coil algorithms
- Up to 10 inputs and 15 outputs (configurable)
- Select direction on digital inputs and all outputs
- Selectable proportional control band and dead band
- Selectable fan speed contacts
- Independent cool/heat setpoint for NSB/OCC mode
- Independent fan speed for NSB or OCC mode
- No occupancy and NSB override
- Selectable internal or external temperature sensor (10ΚΩ)
- Change over by contact or  $10K\Omega$  temperature sensor
- Internal and external temperature sensor calibration
- Freeze protection
- Multi level lockable access menu and setpoint
- Removable, raising clamp, non-strip terminals

#### **Digital Room Sensors Features**

- Backlit LCD with simple icon and text driven menus
- Select thermostat's default display
- BACnet service port via on-board mini USB connector
- Selectable Fahrenheit or Celsius scale
- 3-wire connection to controller and 4 push buttons

## **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 thermostat menu or via BACnet to other controllers
- BACnet scheduler
- Firmware upgradeable via BACnet
- Support 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	EFCB10T-OE1	EFCB12T-OE1	EFCB10TU2- OE1	EFCB10TU4- OE1	EFCB12TU2- OE1	EFCB12TU4- OE1		
Inputs	4 analog inputs (0-3 configurable digital)	2 fixed analog inputs (external temp. and changeover sensors); $10K\Omega$ or contact 4 analog inputs (0-10 Vdc or 10 K $\Omega$ via DIP switches) 3 configurable digital inputs 1 night setback or occupancy sensor input						
Outputs	4 configurable TRIA 3 speed fan (Motor Resistive ratings: 7	4 analog, 0-10 Vdc configurable outputs (changeover/cooling/heating, fan, humidity) 4 configurable TRIAC outputs (changeover/cooling/heating) 3 speed fan (Motor and/or compressor inductive ratings: ¼ Hp/10 LRA/2.5 FLA 240 Vac Maximum Resistive ratings: 7 Amp/1680 W at 240 Vac Maximum); configurable up to 3 speeds 0, 2 or 4 configurable digital outputs (changeover/cooling/heating, humidity, 3A dry contact)						
Power supply	24 Vac	240 Vac	24	Vac	240	Vac		
Power consumption	8 VA max. 24 Vac t	hermal fused.						
BACnet	BACnet® MS/TP @	9600, 19200, 38400	or 76800 bps (BAS	5-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 Connections	24 AWG twisted-shield cable (Belden 9841 or equivalent)							
Electrical Connections	0.8 mm <sup>2</sup> [18 AWG]	minimum						
Operating temperature	0°C to 50°C [32°F to	0°C to 50°C [32°F to 122°F]						
Storage temperature	-30°C to 50°C [-22°	F to 122°F]						
Relative Humidity	5 to 95% non conde	ensing						
Enclosure protection	IP 30 (EN 60529)							
Weight	635 g. [1.4 lb]							
Dimensions: A = 6.30"   160mm B = 5.00"   126mm C = 2.25"   57mm								



Specification and Installation Instructions

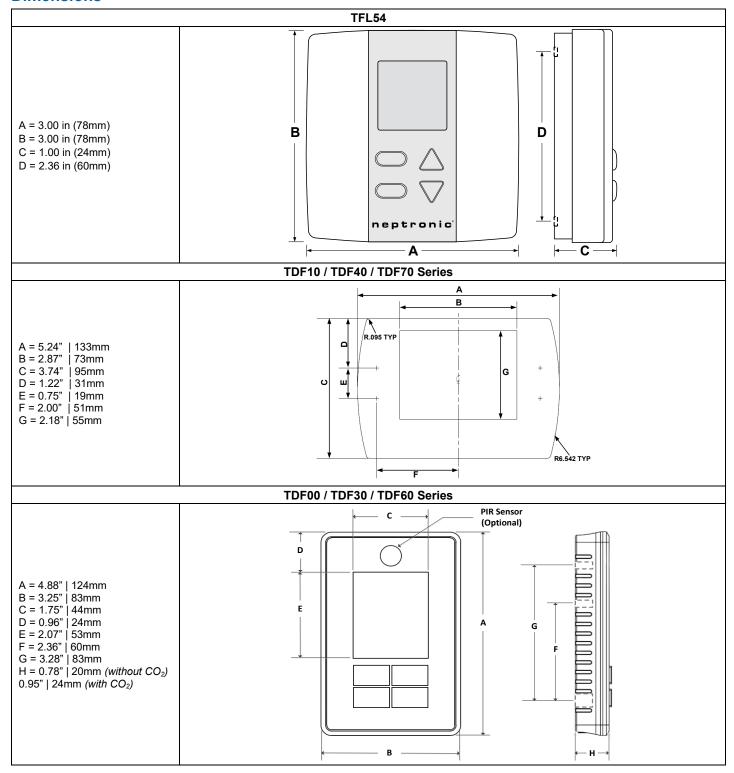
## **Digital Room Sensor Specifications**

Description	TFL24 and TDF Series
Temperature Sensor (TF	L54 and TFLH54)
Setpoint Range	10°C to 40°C [50°F to 104°F]
Control Accuracy	±0.5°C [0.9°F] @ 22°C [71.6°F] typical calibrated
Display Resolution	±0.1°C [0.2°F]
Humidity Sensor (TFLH	54, and TDF models with Humidity Sensor)
Setpoint Range	10 to 65%RH
Control Accuracy	±3.5% RH
Display Resolution	0.1%
CO <sub>2</sub> Sensor (TDF models	s with CO <sub>2</sub> Sensor)
Operating Principle	Self-calibrating, Non-Dispersive Infrared (NDIR)
Sensor Range	400 to 2000 ppm
Accuracy	±30 ppm ±3% of reading (Accuracy is defined after minimum 3 weeks of continuous operation)
Response Time	2 minutes by 90%
PIR Motion Sensor (TDF	00 / TDF30 / TDF60 models with PIR Sensor)
Operating Principle	Passive Infrared (PIR)
Detection Angle	100°
Detection Distance	4m [13ft]
Detection Area	4m (13ft) 100°
VOC Sensor (TDF00 / TD	PF30 / TDF60 Series 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 mintues
Other	
Electrical connection	3 wires to EFCB controller and 2 wires (optional) to BACnet network service port 0.8 mm² [18 AWG] minimum
BACnet service port	Mini USB connector
Power supply	24Vac or 24Vdc
Power consumption	1VA
Operating temperature	0°C to 50°C [32°F to 122°F]
Storage temperature	-30°C to 50°C [-22°F to 122°F]
Relative humidity	5 to 95 % non condensing
Enclosure protection	IP 30 (EN 60529)
Weight	80 g. [0.18 lb]
	ital room sensor functions only with the EFCB controller. All the inputs/outputs are located on the EFCB except for the I CO <sub>2</sub> sensors built-in the TFL54/TDF and PIR and VOC sensors built in the TDF00 / TDF30 / TDF60 models.



Specification and Installation Instructions

#### **Dimensions**





Specification and Installation Instructions

## **TDF Models**

Horizontal Model #	Temp	RH	CO <sub>2</sub>
TDF10-100 TDF40-100 TDF70-100	•		
TDF10-101 TDF40-101 TDF70-101	•	•	
TDF10-102 TDF40-102 TDF70-102	•	•	•
TDF10-103 TDF40-103 TDF70-103	•		•

Vertical Model #	Temp	RH	CO <sub>2</sub>	PIR	voc
TDF00-100 TDF30-100 TDF60-100	•				
TDF00-101 TDF30-101 TDF60-101	•	•			
TDF00-102 TDF30-102 TDF60-102	•	•	•		
TDF00-103 TDF30-103 TDF60-103	•		•		
TDF00-104 TDF30-104 TDF60-104	•			•	
TDF00-105 TDF30-105 TDF60-105	•	•		•	
TDF00-106 TDF30-106 TDF60-106	•	•	•		•
TDF00-107 TDF30-107 TDF60-107	•	•	•	•	•
TDF00-108 TDF30-108 TDF60-108	•	•	•	•	







**TDF10 Series** 

**TDF40 Series** 

**TDF70 Series** 







**TDF00 Series** 

**TDF30 Series** 

**TDF60 Series** 



Specification and Installation Instructions

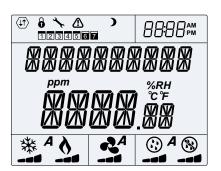
## **Interface**

#### TFL54



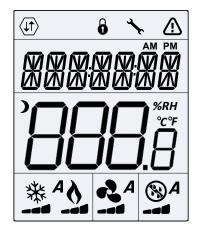
<b>₹</b>	Cooling ON A: Automatic	*	Programming mode (Technician setting)	$\triangle$	Alarm status
IOA	Heating ON A: Automatic	6	Menu set-up Lock	)	Energy saving mode
[5 <sub>A</sub> ]	Fan ON 3rd speed activated A: Automatic	MIN MAX	Minimum/Maximum	°C <sub>or</sub> °F	°C: Celsius scale °F: Fahrenheit scale

#### TDF10 / TDF40 / TDF70 Series



$\langle \downarrow \downarrow \rangle$	Network Communication	8	User Lock	4		amming Mode nician Setting)
$\triangle$	Alarm Status	)	Energy Saving Mode (NSB/OCC)	1234	<b>5</b>	Schedule
88:88 <sup>§</sup> M	Time	ррт	Parts Per Million	°C °F %RH	°F: Fa	elsius Scale hrenheit Scale Humidity
А	Automatic Mode	劵	Cooling	7	Heat	ing
2	Fan	<b>③</b>	Humidify	(8)	De-h	umidify

#### TDF00 / TDF30 / TDF60 Series



<u>(11)</u>	Network Communication	8	User Lock	*	Programming Mode (Technician Setting)	
	Alarm Status	)	Energy Saving Mode (NSB/OCC)	АМ РМ	Time	
°C °F %RH	°C: Celsius Scale °F: Fahrenheit Scale %RH: Humidity	А	Automatic Mode	**	Cooling	
7	Heating	3	Fan	8	Humidify/ De-humidify	



Specification and Installation Instructions

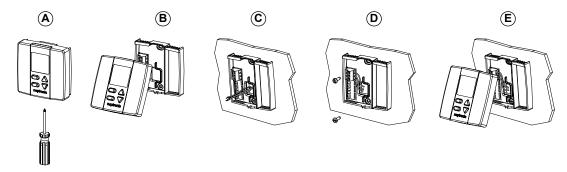
## **Mounting Instructions**

#### TFL54



#### 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.

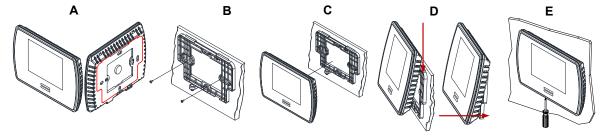


#### TDF10 / TDF40 / TDF70 Series



CAUTION: Remove power to avoid a risk of malfunction.

- A. Remove the wall mounting plate (highlighted) from the back of the digital room sensor.
- B. Install the mounting plate on the gang box.
- C. Pull the wires through the base hole and make the appropriate connections.
- D. Mount the digital room sensor onto the wall plate. To mount it correctly, place the top of the digital room sensor on the mounting plate first and push it into the grooves to snap it into place.
- E. Secure the digital room sensor using the screw (supplied).

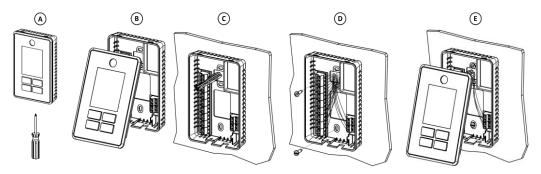


#### TDF00 / TDF30 / TDF60 Series



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.





Specification and Installation Instructions

## **BACnet or Modbus Address DIP Switch (DS2)**

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

<sup>\*</sup> Slave addresses available by setting DS.8 to ON

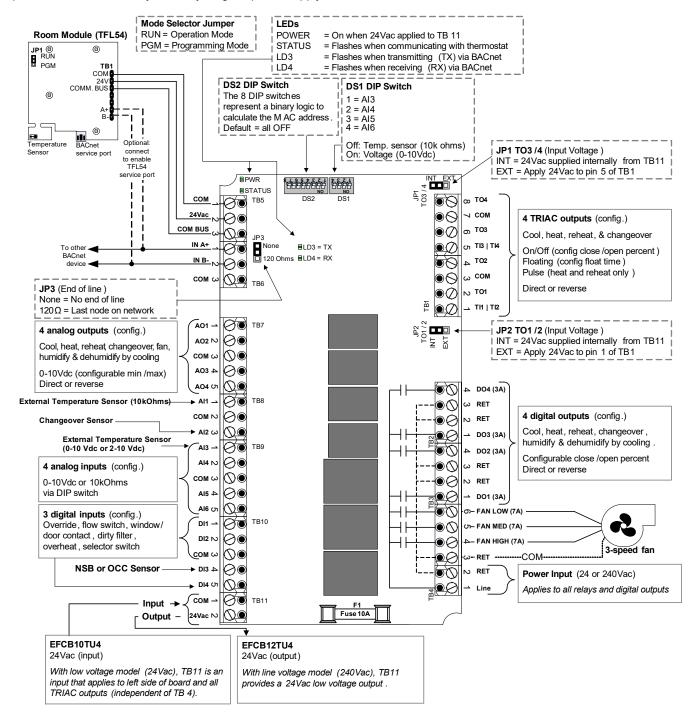


Specification and Installation Instructions

## 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.

For 120/240Vac models, it is recommended to have separate power sources for the EFCB controller and the Fan Coil Unit, in order to protect the device circuitry from any surge in power supply.





Specification and Installation Instructions

## **PCB Drawings**

#### **TFL54 Digital Room Sensor**

3 wire cable (TB1 #1, 2 & 3)

Connect TB1 #6 (A+) & #7 (B-) to EFCB to enable the BACnet service port.

(23) Ġ Connecting strip PGM TB1 СОМ Mode selector 24V N COMM. ω BUS ω 4 1IA (🕄) DI1 o Temperature В- -**BACnet** sensor service port (23)(83) m [A]

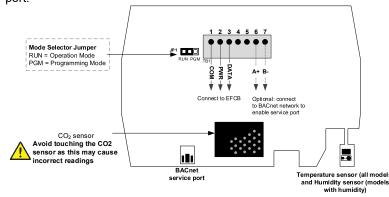
## Mode Selection (JP1)

meas solostion (st. i)						
JP1 RUN	RUN: Digital Room Sensor is in Operation Mode. Digital Room Sensor must be set in this mode to operate properly. If not locked, setpoint, fan speed 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					

#### TDF10 / TDF40 / TDF70 Series

3 wire cable (TB1 #1, 2 & 3)

Connect TB1 #6 (A+) & #7 (B-) to EFCB to enable the BACnet service port.



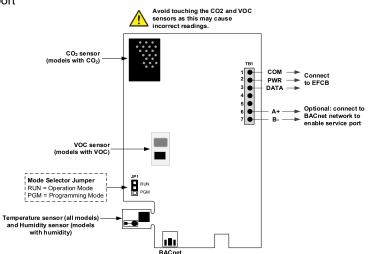
#### **Mode Selection (JP1)**

inouc o	
JP1 RUN	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.

#### TDF00 / TDF30 / TDF60 Series

3 wire cable (TB1 #1, 2 & 3)

Connect TB1 #6 (A+) & #7 (B-) to EFCB to enable the BACnet service port



#### Mode Selection (JP1)

	ac ociconon (or 1)
JP1	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	PGM: Digital Room Sensor is set in Programming Mode. Refer to the following sections for more details.



Specification and Installation Instructions

#### **Access to Menus**

The menu overviews and options are the same for both TFL54 and TDF 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	
TFL54	TDF	TDU*	lask	
•	•2	D	Press to access the programming menus and save any changes.	
*/8	*\\$	<b>→</b>	Press to return to the previous step without saving.	

<sup>\*</sup> If the EFCB controller is being configured using a TDU digital room sensor, use the corresponding buttons shown in the table above to navigate through the menu.

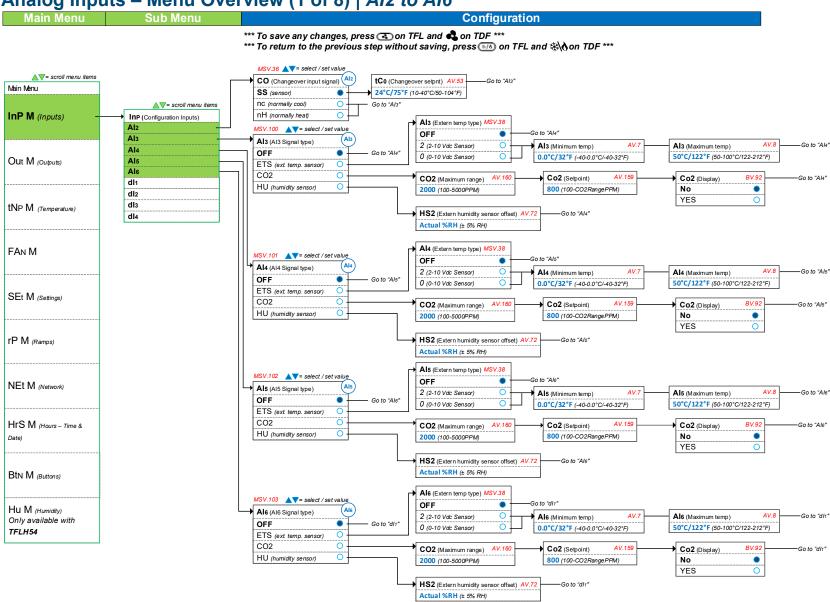


Note: Prior to going into Programming Mode, remove the connection cable between the EFCB and the TFL/TDF/TDU and set the Mode Selection jumper (JP1) to PGM on the digital room sensor. Reestablish the connection in order to access the programming menus and to make any changes. Once all menu changes have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



Specification and Installation Instructions

## Analog Inputs - Menu Overview (1 of 8) | Al2 to Al6



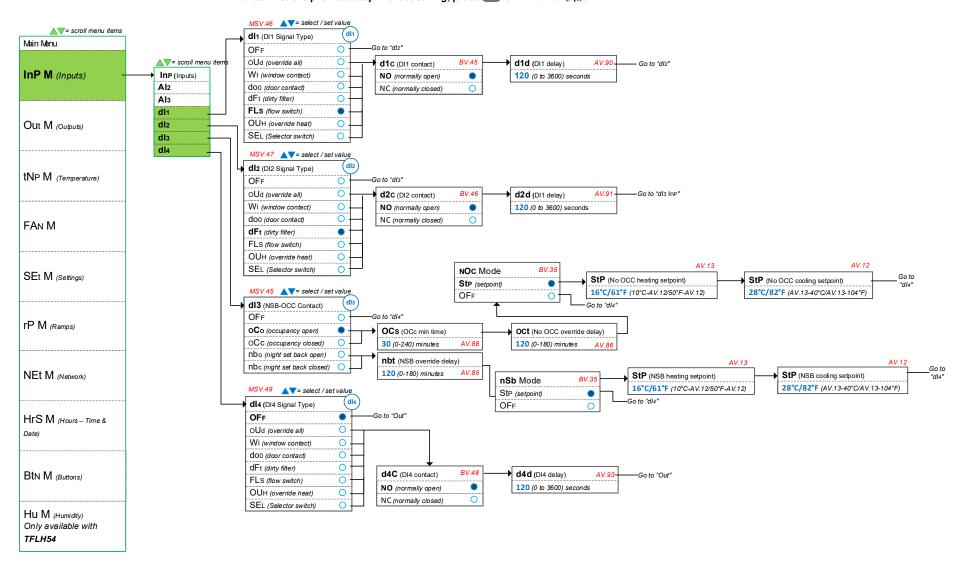


Specification and Installation Instructions

## Digital Inputs - Menu Overview (2 of 8) | DI1 to DI4

Main Menu Sub Menu Configuration

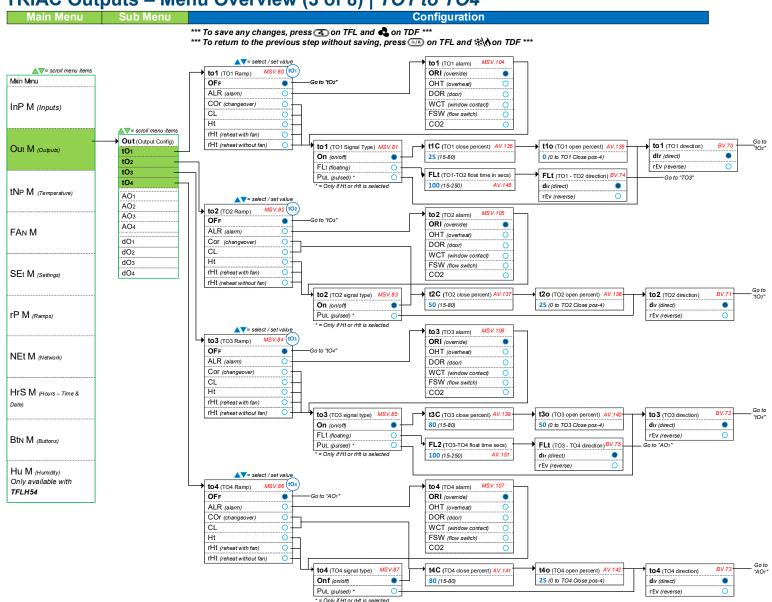
- \*\*\* To save any changes, press 🖪 on TFL and 🞝 on TDF \*\*\*
- \*\*\* To return to the previous step without saving, press (1) on TFL and (2) on TDF \*\*\*





Specification and Installation Instructions

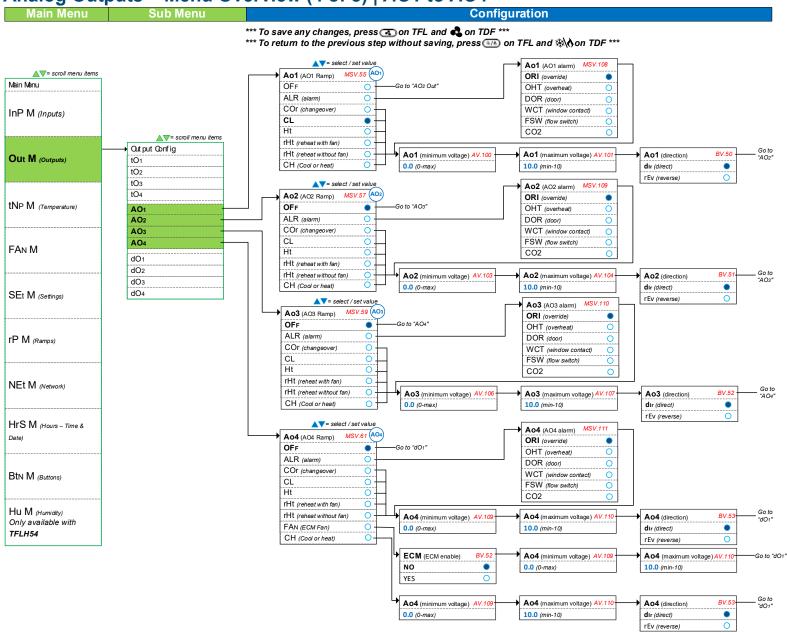
## TRIAC Outputs - Menu Overview (3 of 8) | TO1 to TO4





Specification and Installation Instructions

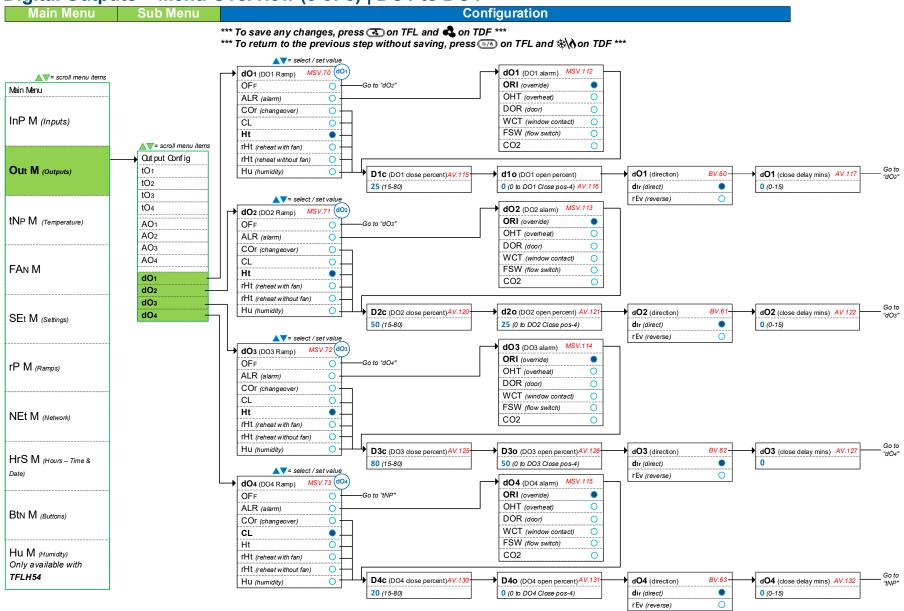
## Analog Outputs - Menu Overview (4 of 8) | AO1 to AO4





Specification and Installation Instructions

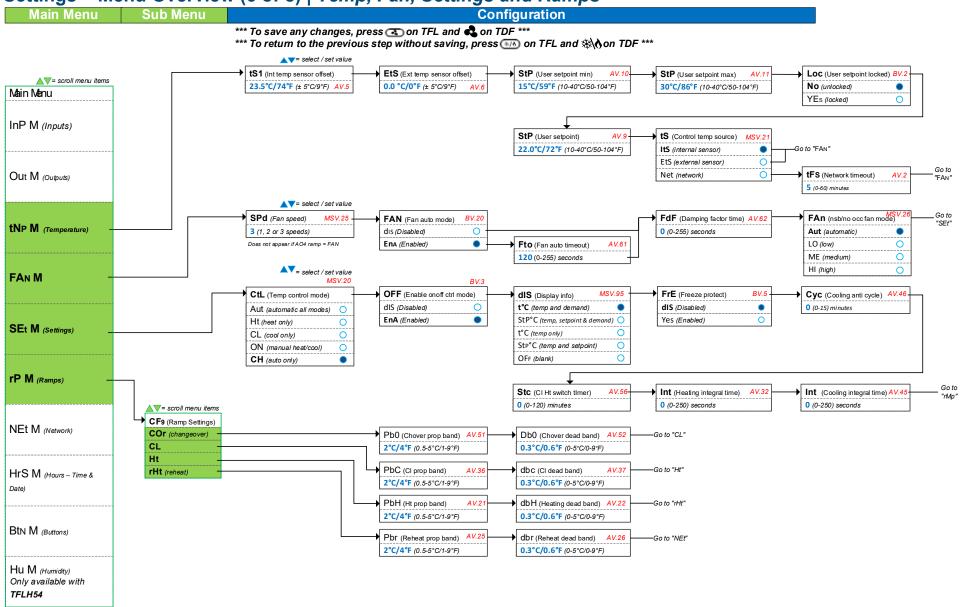
## Digital Outputs - Menu Overview (5 of 8) | DO1 to DO4





Specification and Installation Instructions

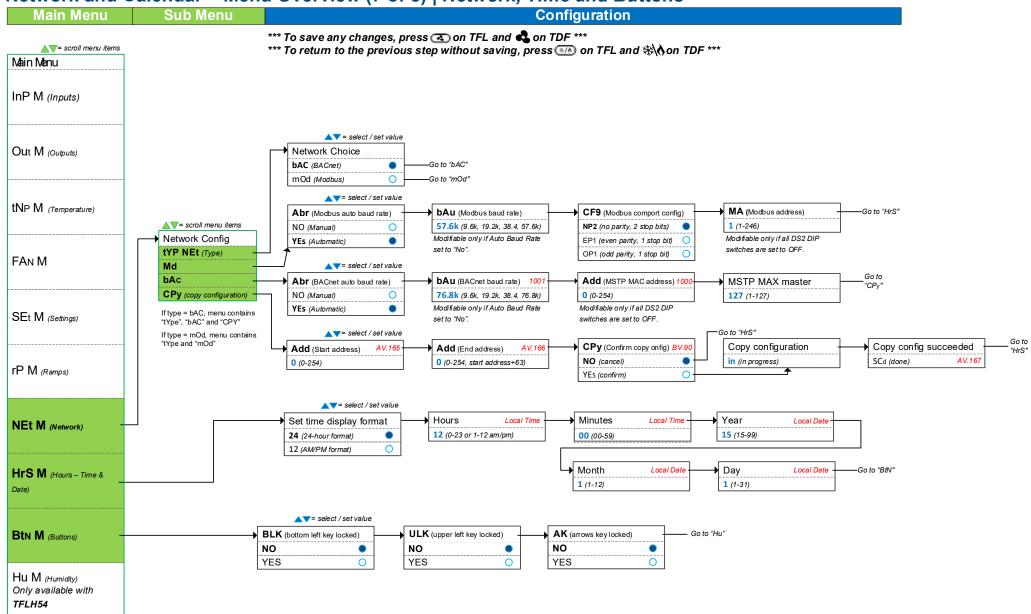
## Settings - Menu Overview (6 of 8) | Temp, Fan, Settings and Ramps





Specification and Installation Instructions

## Network and Calendar - Menu Overview (7 of 8) | Network, Time and Buttons

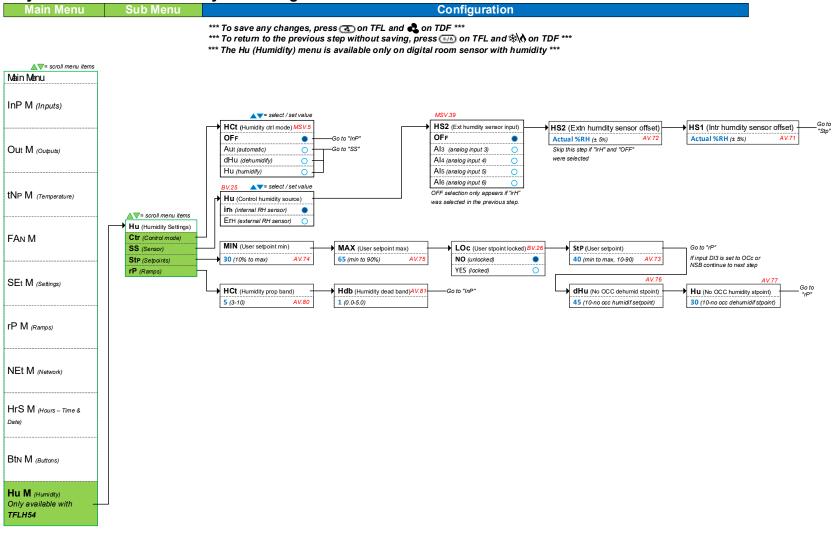




Specification and Installation Instructions

## **Humidity – Menu Overview (8 of 8) | Humidity**

Only available when a humidity sensor digital room sensor is connected to the controller.



# **Auto Fan/Auto Speed Sequence** (for analog, 2-speed or 3-speed) Refer to MainMenu > Fan M> for related options.

Auto Fan (Fan Auto Mode configuration)	Mode button	Fan button	If control demand > 0	If control demand = 0
	Heat	Auto Speed*	Fan speed = heat demand	Fan = Off
		Low	Fan speed = Low	Fan speed = Low
	пеаі	Medium	Fan speed = Medium	Fan speed = Medium
		High	Fan speed = High	Fan speed = High
	Cool	Auto Speed*	Fan speed = cool demand	Fan = Off
		Low	Fan speed = Low	Fan speed = Low
		Medium	Fan speed = Medium	Fan speed = Medium
Enable		High	Fan speed = High	Fan speed = High
Lilable		Auto Speed*	Fan speed = heat/cool demand	Fan = Off
	Auto (H/C)	Low	Fan speed = Low	Fan speed = Low
	Auto (H/C)	Medium	Fan speed = Medium	Fan speed = Medium
		High	Fan speed = High	Fan speed = High
		Low	Fan speed = Low	Fan speed = Low
	Fan	Medium	Fan speed = Medium	Fan speed = Medium
		High	Fan speed = High	Fan speed = High
	Off	Off	Off	Off
		Auto Speed*	Fan speed = heat demand	Fan speed = Low
	Heat	Low	Fan speed = Low	Fan speed = Low
		Medium	Fan speed = Medium	Fan speed = Medium
		High	Fan speed = High	Fan speed = High
		Auto Speed*	Fan speed = cool demand	Fan speed = Low
	Cool	Low	Fan speed = Low	Fan speed = Low
		Medium	Fan speed = Medium	Fan speed = Medium
Disable		High	Fan speed = High	Fan speed = High
Disable	Auto (H/C)	Auto Speed*	Fan speed = heat/cool demand	Fan speed = Low
		Low	Fan speed = Low	Fan speed = Low
		Medium	Fan speed = Medium	Fan speed = Medium
		High	Fan speed = High	Fan speed = High
	Fan	Low	Fan speed = Low	Fan speed = Low
		Medium	Fan speed = Medium	Fan speed = Medium
		High	Fan speed = High	Fan speed = High
	Off	Off	Off	Off

Auto Fan/Auto Speed Sequence (for 1-speed)

Auto Fan (Fan Auto Mode configuration)	Mode button	Fan button	If control demand > 0	If control demand = 0
	Heat	Auto Speed*	Fan speed = On on heat demand	Fan = Off
		On	Fan = On	Fan = On
	Cool	Auto Speed*	Fan speed = On on cool demand	Fan = Off
Enable		On	Fan = On	Fan = On
Ellable	Auto (H/C)	Auto Speed*	Fan speed = On on heat/cool demand	Fan = Off
		On	Fan = On	Fan = On
	Fan	On	Fan = On	Fan = On
	Off	Off	Off	Off
	Heat	On	Fan = On	Fan = On
	Cool	On	Fan = On	Fan = On
Disable	Auto (H/C)	On	Fan = On	Fan = On
	Fan	On	Fan = On	Fan = On
	Off	Off	Off	Off

<sup>\*</sup>When fan button is set in **Auto Speed**, the symbol 🔌 will be apparent.





Specification and Installation Instructions

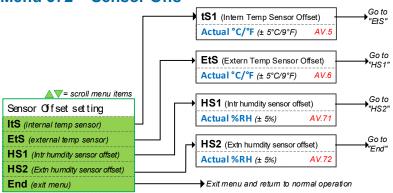
## **Operation Menus**

This menu is accessible through normal operation mode.

**Note**: Since the action buttons are different on the TFL24 and TDF digital room sensor series, both buttons have been included in the instructions. Refer to the Action Buttons on section to know and use the button as available on your digital room sensor.

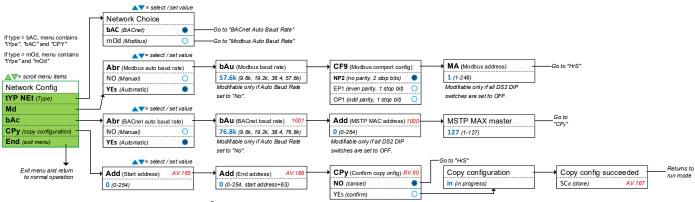
- 1. The Mode Selector jumper (JP1) of the digital room sensor must be set to the "RUN" position (Operation Mode). Refer to Wiring on page 9.
- 2. Press the [ 📤 / 📤 ] and [ 🤲 / 🗱 ] buttons simultaneously for 5 seconds. The "Enter Password" screen appears.
- 3. Enter the password within 1 minute by using the arrow keys to increase or decrease the value and the [ 📤 / 🔩 ] and [ 🐠 / 🗱 ] buttons to toggle between the digits.
  - a. Password 372 = Sensor Offset Menu
  - b. Password 637 = Network Settings Menu
- 4. 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 - Sensor Offs



- \*\*\* To save any changes, press 🖪 on TFL and 🞝 on TDF \*\*\*
- \*\*\* To return to the previous step without saving, press (1/4) on TFL and (1/4) on TDF \*\*\*

#### Menu 637 - Network Settings



\*\*\* To save any changes, press 🕙 on TFL and 뤅 on TDF \*\*\*

## **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 9.
- 2. During the power up sequence of the controller and digital room sensor, press and hold both the [♣�� / ♣�� ] and ▼ buttons.
- 4. Use the arrow buttons to select YES and then press [ 🖎 / 🕰 ].

<sup>\*\*\*</sup> To return to the previous step without saving, press 🚮 on TFL and 💥 on TDF \*\*\*

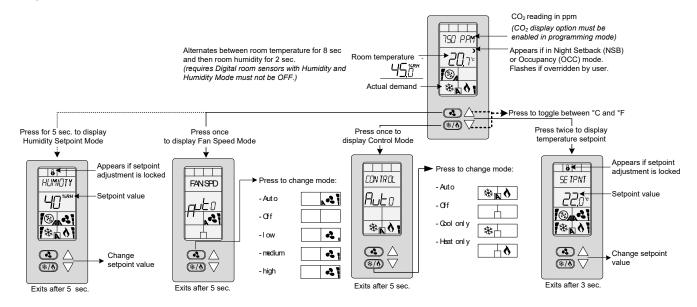


Specification and Installation Instructions

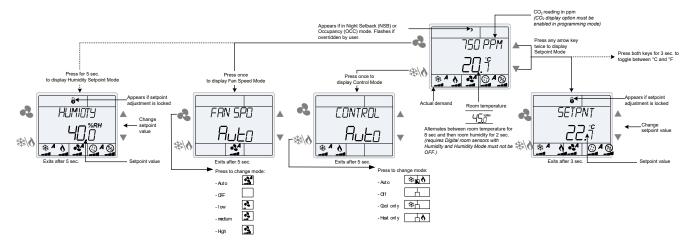
## **Operation Mode**

The Mode Selector Jumper of the thermostat must be set to the "RUN" position (Operation Mode). Refer to Wiring on page 9.

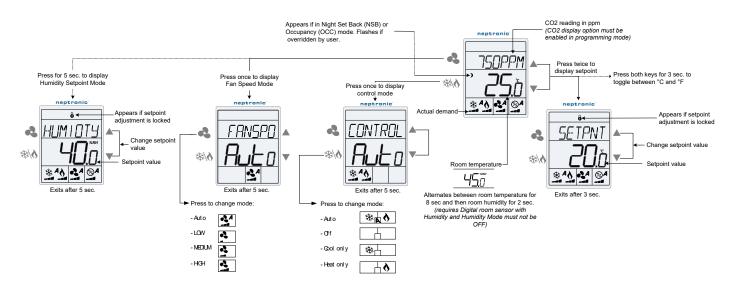
#### TFL54



#### TDF10 / TDF40 / TDF70 Series



#### TDF00 / TDF30 / TDF60 Series





Specification and Installation Instructions

#### **Power Up**

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

#### **Temperature Display and Setpoint**

The thermostat displays the temperature reading. If the sensor is disconnected or short circuited, the unit displays the sensor's limits. To toggle the temperature scale between °C and °F, press both the  $\triangle$  and  $\nabla$  keys for 3 seconds. To display the setpoint, press the  $\triangle$  and  $\nabla$  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, the lock  $\delta$  symbol appears.

#### Temperature and Humidity (TFLH54 thermostats only)

The thermostat displays the temperature reading for 8 seconds and then displays the humidity reading for 2 seconds. If the sensor is disconnected or short circuited, the unit displays the sensor's limits. To toggle the temperature scale between °C and °F, press both the  $\triangle$  and  $\nabla$  keys for 3 seconds.

#### **Control Mode**

To access the Control Mode, press the [ \*\dot \beta \in \dot \text{ key}. The Control Mode appears for 5 seconds. Press the [ \*\dot \beta \in \dot \text{ key} \text{ to scroll through the following control modes. These options can vary depending on the options selected.

- 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)
- Fan only

#### **Fan Speed Selection Mode**

- Automatic speed. Available only if enabled in program mode.
- Low speed
- Medium speed
- · High speed
- Off. Off is not selectable by the user, it appears only if the "Control Mode" is "Off" and it indicates that the user can not change the speed of the fan.

#### Night Setback (NSB)

This function is only available if you've set DI3 to **nSb** (Night setback contact) If the DI3 contact is triggered, the thermostat enters NSB Mode (the ) symbol appears) and uses the NSB setpoints defined in program mode. Press any key to override NSB for the delay defined in program mode (default: 120 minutes). The ) symbol flashes to indicate that the NSB mode is overridden (during this time the standard setpoints are used).

If the NSB Mode was set to OFF, all outputs will be off for the duration of the period and cannot be overridden.

#### **Occupancy Mode**

This function is only available if you've set DI3 to **Occ** (occupancy mode). If the DI3 contact is triggered, the digital room sensor enters Occupancy Mode (the **)** symbol appears) and uses the NoOcc setpoints defined in Programming Mode.

If not locked, no occupancy mode can be overridden for a period by pressing the [  $\bigcirc$  /  $\bigcirc$  ] button. Each time you press the [  $\bigcirc$  /  $\bigcirc$  ] button, 15 minutes are added to the override (up to a maximum defined in program mode).

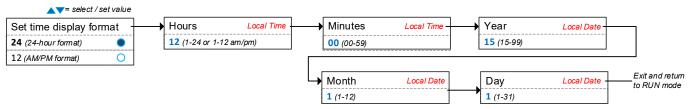
Press the fan [  $\bigcirc$  /  $\bigcirc$  ] button until "0" is displayed to disable the override. The  $\bigcirc$  icon will flash and the remaining override time will be displayed in minutes.



Specification and Installation Instructions

#### **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 [ 4] button to save and go to the next step. Press the [ 1/4] button to go to the previous step without saving.



- \*\*\* To save any changes, press 🕙 on TFL and 🞝 on TDF \*\*\*
- \*\*\* To return to the previous step without saving, press (10) on TFL and (14) on TDF \*\*\*

Note: The time and date will only be displayed after activating the BACnet schedule through the binary object BV.70 set to 1.



Recycling at end of life: please return this product to your Neptronic local distributor for recycling. If you need to find the nearest Neptronic authorized distributor, please consult **www.neptronic.com**.



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