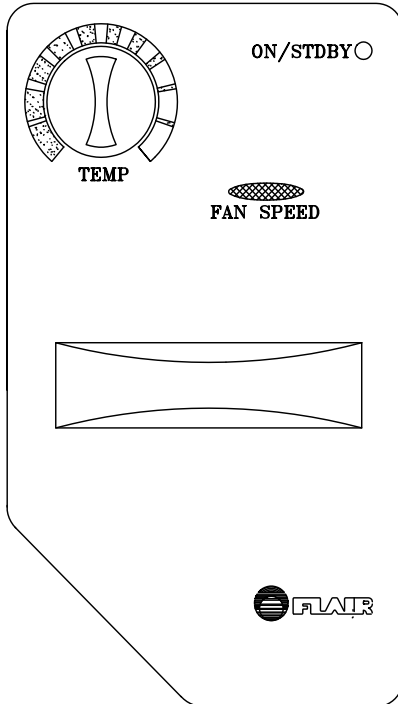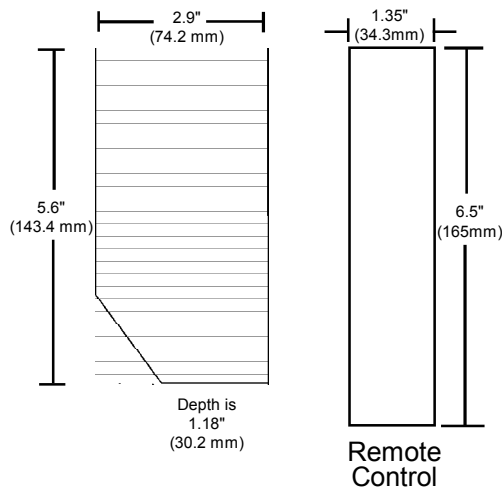ELECTRONIC OCCUPANCY SENSING
THERMOSTAT *series TO23*

For automatic control of fan coils and Packaged Terminal Air Conditioners (PTACs) based on occupancy. For heating and cooling.

BENEFITS & SPECIAL FEATURES

- Automatic setback (heating) and setup (cooling) when area is unoccupied.
- Adjustable recovery time.
- No door switch required.
- 4 minute time delay for compressor protection (may be bypassed).
- Logic circuits accurately read occupancy. (No miscalculations—constant movement is unnecessary!)
- Easy setting.
- Five year lithium battery.
- Remote temperature sensor (optional).
- Return air temperature sensor (optional).
- Manual on/off override.
- Electronic locking and limiting.
- Temperature limit alarm can optionally switch external contact.
- Three speed automatic fan control with manual override.
- System status LED indicators: Power is on, standby mode, fan speed.
- Learned response feature.
- System status LCD indicators: mode, fan speed, temperature.
- Models to accomodate 24/120/208/220/240/277 VAC.
- Low and high limit temperature alarms can activate a dry contact to switch an external control.
- Auto-changeover (heating/cooling).
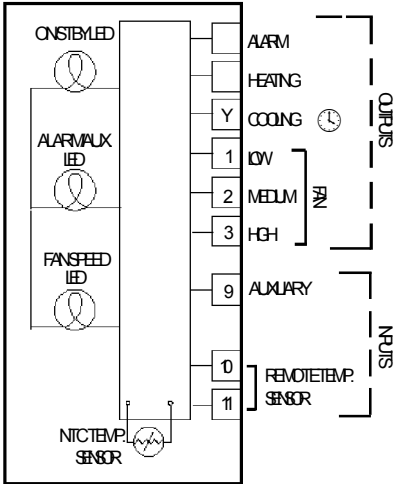- Temperature setback reduces energy costs.

DIMENSIONS

2.9"
(74.2 mm)

5.6"
(143.4 mm)

Depth is
1.18"
(30.2 mm)

1.35"
(34.3mm)

6.5"
(165mm)

Remote
Control

SPECIFICATIONS

Operating Voltage:	24/120/208/220/240/277 VAC, 50-60 Hz
Switching Current at rated voltage:	
Cooling:	10 A
Heating:	10 A
Fan:	10 A
Temperature Range:	50°F - 90°F (10°C - 32°C)
Temperature Differential:	
Heating:	approx. ±0.8°F (.4°C)
Cooling:	approx. ±0.8°F (.4°C)
Sensor System:	Negative Temperature Coefficient (NTC)
Standard:	internal
Optional:	remote temp. sensor
Optional:	return air sensor
Optional:	Remote external motion sensor
Switches:	
Push-button:	ON/OFF
Rotating:	SET TEMPERATURE
Slide:	FAN:LOW/MED/HIGH/AUTO
Indicator LED's:	ON (Steady Green) / STBY (Flashing Green)
	ALARM (Flashing Red) / AUX (Steady Red)
FAN:	LOW (Slow Flashing Yellow)
	MED (Flashing Yellow)
	HIGH (Fast Flashing Yellow)
Security:	Temperatures can be electronically locked and limited.
Dimensions:	5.6 x 2.9 x 1.18 Inches (143.4 x 74.2 x 30.2 mm)

ON STBY LED

ALARM/AUX LED

FAN SPEED LED

NTC TEMP. SENSOR

ALARM
HEATING
Y COOLING
1 LOW
2 MEDIUM
3 HIGH
9 AUXILIARY
10
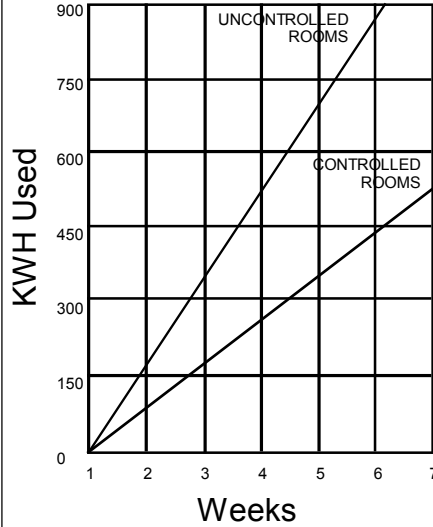11 REMOTE TEMP. SENSOR

OUTPUTS

FAN

INPUTS

Model Number: TO13102N; 24 VAC
TO13103N; 100 VAC
TO13104N; 120 VAC
TO13105N; 208 VAC
TO13106N; 220 VAC
TO13107N; 240 VAC
TO13108N; 277 VAC

Description: 1 stage heat or cool

Weight: .4 lbs. (880 g)

🕐 Indicates this output is protected by a 4 minute time delay.

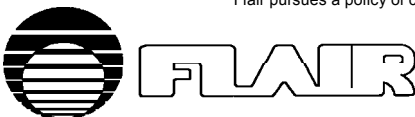## Illustration of KWH Savings Using Occupancy Sensing Thermostat in a Typical Hotel Room

UNCONTROLLED ROOMS

CONTROLLED ROOMS

KWH Used (vertical axis: 0, 150, 300, 450, 600, 750, 900)

Weeks (horizontal axis: 1, 2, 3, 4, 5, 6, 7)

Remote Temperature Sensor — TR000100
Return Air Temperature Sensor — TR000100

Auto changeover between heating and cooling can be accomplished when used with:
Heating/Cooling Changeover Switch:
For $1/2$" to $1 1/4$" pipe — AC000100
For $1 1/4$" to 3" pipe — AC000101

Remote Control:
Transmitter — TR000001
(Compatible with internal and external remote control receivers.)

Receiver (external) — TR000010
(May be located in other rooms and wired to thermostat. Receives signal from transmitter.)

REFERENCES

For More Information On:	See:
Other thermostats	This section
Zone Actuators	Star Actuator section
Zone Valves	Star Valve section
Wiring Panels	Control Panels
Suggested pricing	Price section