# **Application Guide**

# Honeywell



**TB7600, TB7300, TB7200 Series Communicating Thermostats** 



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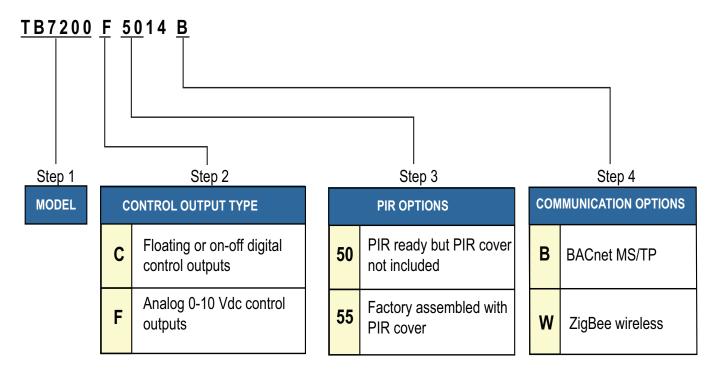
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# **TB7200 SERIES ZONING THERMOSTAT SELECTION**

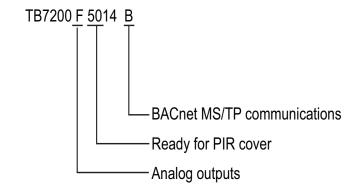






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Example

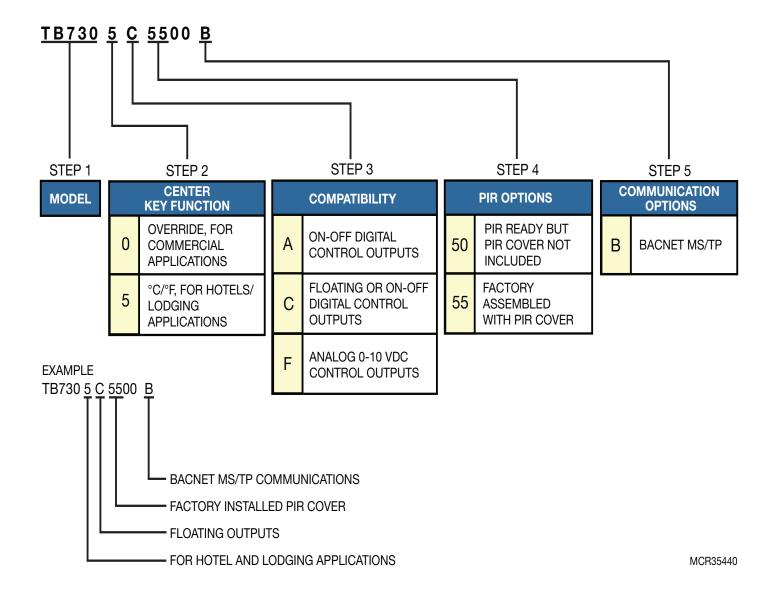


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# TB7300 SERIES FAN COIL UNIT THERMOSTAT SELECTION



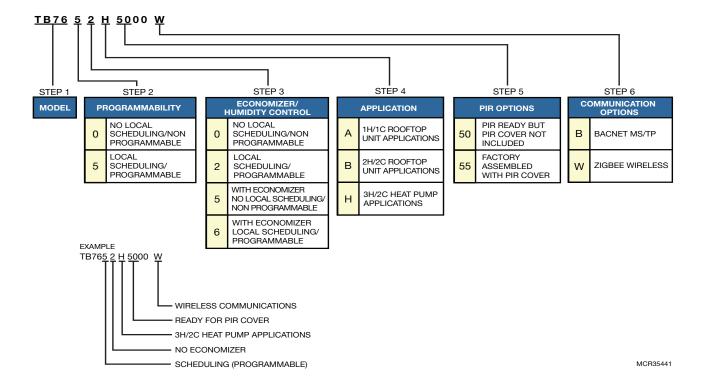




# **TB7600 SERIES RTU AND HEATPUMP THERMOSTAT SELECTION**

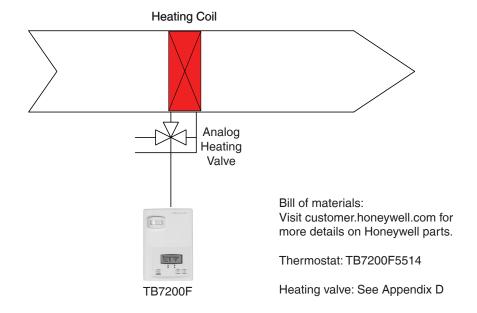






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# TB7200F5514: HEATING ONLY: ANALOG VALVE ACTUATOR



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7200 Series Installation Instructions (Form No. 62-2019).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	None
MenuScro	On or Off if scrolling of thermostat status is desired
Lockout	0 = occupied setpoints and unoccupied override access
Out1Conf	2.0 = access all sequences of operation from 0 to 3
SeqOpera	1 = Heating Only
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	62 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	80 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
heat max	90 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	54 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permnent: (permanent) or Temporar: (temporary) setpoints
TOccTime	2 hours is factory set, range is 0 to 24 hours
deadband	2 °F is factory set, range is: 2 to 5 °F
cal RS	Factory set
aux cont	0, None
RA/DA	Reverse Acting (RA) or Direct Acting (DA), depends on actuator
Reheat	0. Not used in this application.
UI3 dis	Displays supply air temperature if installed

## **Occupied Mode:**

During occupied periods, the occupied heating and cooling setpoints are used.

## PIR activated stand-by and unoccupied modes:

When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room. During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used:

- During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

# **Unoccupied Mode:**

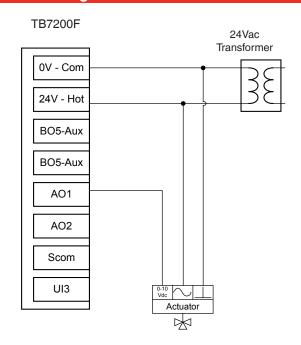
During unoccupied periods, the unoccupied heating and cooling setpoints are used.

# **Occupied Override Mode:**

The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

# On a call for heating:

The heating valve will modulate from closed to open according to the demand.



### **Options**

BACnet and Wireless models are available. See appendix B for more details.

Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

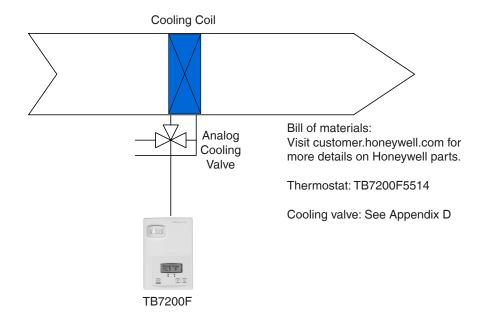
On-Off control or 3 point floating control operation can be accomplished by using other models.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

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Auxiliary electric reheat can be added if required by the application.

# TB7200F5514: COOLING ONLY: ANALOG VALVE ACTUATOR



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7200 Series Installation Instructions (Form No. 62-2019).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	None
MenuScro	On or Off if scrolling of thermostat status is desired
Lockout	0 = occupied setpoints and unoccupied override access
Out1Conf	2.0 = access all sequences of operation from 0 to 3
SeqOpera	0 = Cooling Only
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	62 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	80 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
heat max	90 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	54 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permnent: (permanent) or Temporar: (temporary) setpoints
TOccTime	2 hours is factory set, range is 0 to 24 hours
deadband	2 °F is factory set, range is: 2 to 5 °F
cal RS	Factory set
aux cont	0, used for reheat
RA/DA	Reverse Acting (RA) or Direct Acting (DA), depends on actuator
Reheat	0. Not used in this application.
UI3 dis	Displays supply air temperature if installed

# Occupied Mode:

During occupied periods, the occupied heating and cooling setpoints are used.

# PIR activated stand-by and unoccupied modes:

When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room. During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used:

- During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupiedby heating and cooling setpoints are used.

## **Unoccupied Mode:**

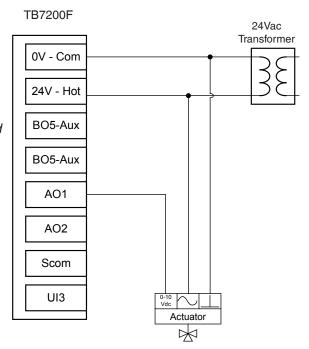
During unoccupied periods, the unoccupied heating and cooling setpoints are used.

# **Occupied Override Mode:**

The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

### On a call for cooling:

The cooling valve will modulate from closed to open according to the demand.



# **Options**

BACnet and Wireless models are available. See appendix B for more details.

Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

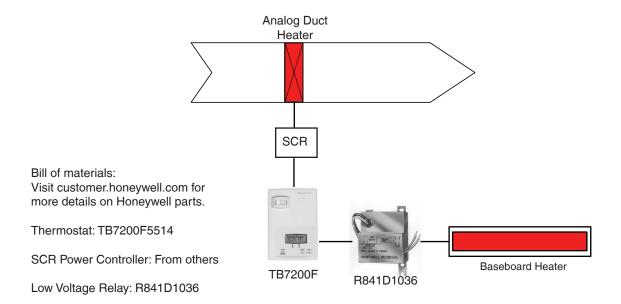
On-Off control or 3 point floating control operation can be accomplished by using other models.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

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Auxiliary electric reheat can be added if required by the application.

# TB7200F5514: HEATING WITH REHEAT: ANALOG DUCT HEATER AND ELECTRIC BASEBOARD



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7200 Series Installation Instructions (Form No. 62-2019).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	None
MenuScro	On or Off if scrolling of thermostat status is desired
Lockout	0 = occupied setpoints and unoccupied override access
Out1Conf	2.0 = access all sequences of operation from 0 to 3
SeqOpera	3 = Heating with reheat
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	62 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	80 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
heat max	90 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	54 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permnent: (permanent) or Temporar: (temporary) setpoints
TOccTime	2 hours is factory set, range is 0 to 24 hours
deadband	2 °F is factory set, range is: 2 to 5 °F
cal RS	Factory set
aux cont	0, reheat
RA/DA	Reverse Acting (RA) or Direct Acting (DA), depends on actuator
Reheat	0 = 15 minutes
UI3 dis	Displays supply air temperature if installed

## **Occupied Mode:**

During occupied periods, the occupied heating and cooling setpoints are used.

# PIR activated stand-by and unoccupied modes:

When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room. During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used:

- During PIR activated stand-by periods, the standby heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

# **Unoccupied Mode:**

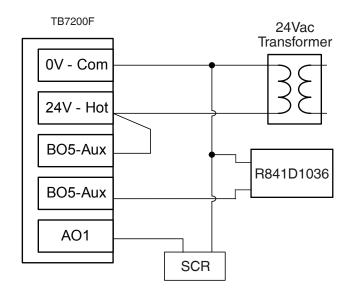
During unoccupied periods, the unoccupied heating and cooling setpoints are used.

#### **Occupied Override Mode:**

The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

# On a call for heating:

The proportional device will act as a first step and modulate from 0 to 100% capacity. The perimeter heater will operate as a second step.



# **Options**

BACnet and Wireless models are available. See appendix B for more details.

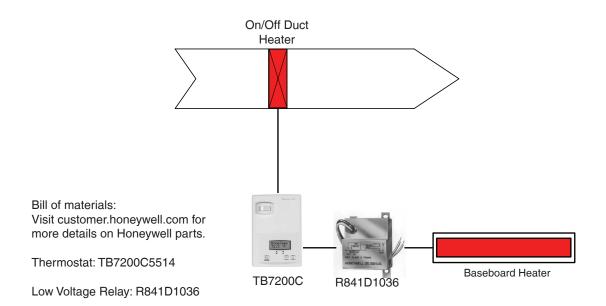
Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

On-Off control or 3 point floating control operation can be accomplished by using other models.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

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# TB7200C5514: HEATING WITH REHEAT: ONE STAGE DUCT HEATER, ELECTRIC BASEBOARD



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7200 Series Installation Instructions (Form No. 62-2019).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	None
MenuScro	On or Off if scrolling of thermostat status is desired
C or F	°F or °C default value at thermostat power up
Lockout	0 = occupied setpoints and unoccupied override access
Out1Conf	2.0 = access all sequences of operation from 0 to 3
CntrlTyp	ON/OFF
SeqOpera	3 = Heating with Reheat
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	62 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	80 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
heat max	90 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	54 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permnent: (permanent) or Temporar: (temporary) setpoints
TOccTime	2 hours is factory set, range is 0 to 24 hours
deadband	2 °F is factory set, range is: 2 to 5 °F
cal RS	Factory set
aux cont	0, used for reheat
FL time	1.5 minutes is factory set, range is 0.5 to 9 minutes
cph	3, 4, 5, 6, 7, or 8 CPH
Reheat	0 = 15 minutes for low voltage relays (0 = 4 CPH ON/OFF)
UI3 dis	Displays supply air temperature if installed

# Occupied Mode:

During occupied periods, the occupied heating and cooling setpoints are used.

# PIR activated stand-by and unoccupied modes:

When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room. During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used:

- During PIR activated stand-by periods, the standby heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

# BO5-Aux BO2 Duct Heater Contact

# **Unoccupied Mode:**

During unoccupied periods, the unoccupied heating and cooling setpoints are used.

# **Occupied Override Mode:**

The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

# On a call for heating:

The proportional device will act as a first step and modulate from 0 to 100% capacity. The perimeter heater will operate as a second step.

# **Options**

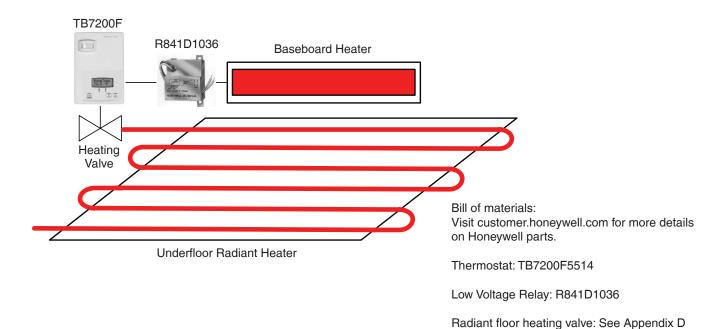
BACnet and Wireless models are available. See appendix B for more details.

Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

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# TB7200F5514: HEATING WITH REHEAT: ANALOG FLOOR RADIANT HEATING AND ELECTRIC BASEBOARD



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7200 Series Installation Instructions (Form No. 62-2019).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	None
MenuScro	On or Off if scrolling of thermostat status is desired
Lockout	0 = occupied setpoints and unoccupied override access
Out1Conf	2.0 = access all sequences of operation from 0 to 3
SeqOpera	3 = Heating with reheat
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	62 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	80 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
heat max	90 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	54 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permnent: (permanent) or Temporar: (temporary) setpoints
TOccTime	2 hours is factory set, range is 0 to 24 hours
deadband	2 °F is factory set, range is: 2 to 5 °F
cal RS	Factory set
aux cont	0, reheat
RA/DA	Reverse Acting (RA) or Direct Acting (DA), depends on actuator
Reheat	0 = 15 minutes for low voltage relays (0 = 4 CPH ON/OFF)
UI3 dis	Displays supply air temperature if installed

# **Occupied Mode:**

During occupied periods, the occupied heating and cooling setpoints are used.

# PIR activated stand-by and unoccupied modes:

When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room. During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used:

- During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

# TB7200F 24Vac Transformer 0V - Com 24V - Hot BO5-Aux R841D1036 Reheat AO1 Heating

## **Unoccupied Mode:**

During unoccupied periods, the unoccupied heating and cooling setpoints are used.

### **Occupied Override Mode:**

The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

#### On a call for heating:

The proportional device will act as a first step and modulate from 0 to 100% capacity. The perimeter heater will operate as a second step.

# **Options**

BACnet and Wireless models are available. See appendix B for more details.

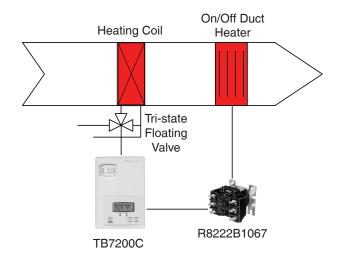
Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

On-Off control or 3 point floating control operation can be accomplished by using other models.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

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# TB7200C5514: HEATING WITH REHEAT: TRI-STATE FLOATING VALVE, ON/OFF DUCT HEATER.



Bill of materials:

Visit customer.honeywell.com for more details on Honeywell parts.

Thermostat: TB7200C5514

Low Voltage Relay: R8222B1067

Heating valve: See Appendix D

To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7200 Series Installation Instructions (Form No. 62-2019).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	None
MenuScro	On or Off if scrolling of thermostat status is desired
C or F	°F or °C default value at thermostat power up
Lockout	0 = occupied setpoints and unoccupied override access
Out1Conf	2.0 = access all sequences of operation from 0 to 3
CntrlTyp	Floating
SeqOpera	3 = Heating with Reheat
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	62 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	80 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
heat max	90 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	54 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permnent: (permanent) or Temporar: (temporary) setpoints
TOccTime	2 hours is factory set, range is 0 to 24 hours
deadband	2 °F is factory set, range is: 2 to 5 °F
cal RS	Factory set
aux cont	0, used for reheat
FL time	1.5 minutes is factory set, range is 0.5 to 9 minutes
cph	3, 4, 5, 6, 7, or 8 CPH
Reheat	0 = 15 minutes for low voltage relays (0 = 4 CPH ON/OFF)
UI3 dis	Displays supply air temperature if installed

## Occupied Mode:

During occupied periods, the occupied heating and cooling setpoints are used.

# PIR activated stand-by and unoccupied modes:

When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room. During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used:

- During PIR activated stand-by periods, the standby heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

# **Unoccupied Mode:**

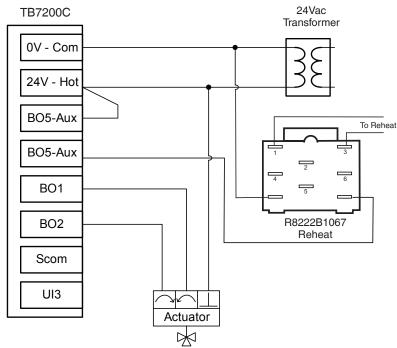
During unoccupied periods, the unoccupied heating and cooling setpoints are used.

# **Occupied Override Mode:**

The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

# On a call for heating:

The proportional device will act as a first step and modulate from 0 to 100% capacity. The duct heater will operate as a second step.



Note: Actuator Common wires to 24V - Hot terminal.

# **Options**

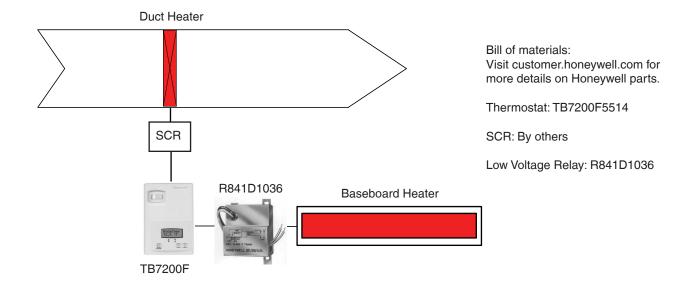
BACnet and Wireless models are available. See appendix B for more details.

Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

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# TB7200F5514: HEATING WITH REHEAT: ANALOG DUCT HEATER, ELECTRIC BASEBOARD



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7200 Series Installation Instructions (Form No. 62-2019).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	None
MenuScro	On or Off if scrolling of thermostat status is desired
CorF	°F or °C default value at thermostat power up
Lockout	0 = occupied setpoints and unoccupied override access
Out1Conf	2.0 = access all sequences of operation from 0 to 3
SeqOpera	3 = Heating with Reheat
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	62 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	80 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
heat max	90 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	54 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permnent: (permanent) or Temporar: (temporary) setpoints
TOccTime	2 hours is factory set, range is 0 to 24 hours
deadband	2 °F is factory set, range is: 2 to 5 °F
cal RS	Factory set
aux cont	0, used for reheat
RA/DA	RA = reverse acting, DA = direct acting
Reheat	0 = 15 minutes for low voltage relays (0 = 4 CPH ON/OFF)
UI3 dis	Displays supply air temperature if installed

# **Occupied Mode:**

During occupied periods, the occupied heating and cooling setpoints are used.

# PIR activated stand-by and unoccupied modes:

When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room. During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used:

- During PIR activated stand-by periods, the standby heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

## **Unoccupied Mode:**

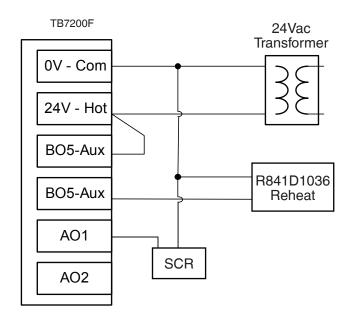
During unoccupied periods, the unoccupied heating and cooling setpoints are used.

#### **Occupied Override Mode:**

The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

#### On a call for heating:

The proportional device will act as a first step and modulate from 0 to 100% capacity. The perimeter heater will operate as a second step.



# **Options**

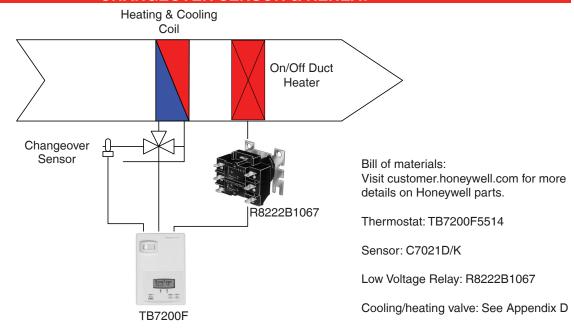
BACnet and Wireless models are available. See appendix B for more details.

Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

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# TB7200F5514: ANALOG HEATING & COOLING WITH CHANGEOVER SENSOR & REHEAT



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7200 Series Installation Instructions (Form No. 62-2019).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	COS
MenuScro	On or Off if scrolling of thermostat status is desired
C or F	°F or °C default value at thermostat power up
Lockout	0 = occupied setpoints and unoccupied override access
Out1Conf	2.0 = access all sequences of operation from 0 to 3
SeqOpera	2 = Cooling with Reheat
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	62 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	80 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
heat max	90 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	54 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permnent: (permanent) or Temporar: (temporary) setpoints
TOccTime	2 hours is factory set, range is 0 to 24 hours
deadband	2 °F is factory set, range is: 2 to 5 °F
cal RS	Factory set
aux cont	0, used for reheat
RA/DA	Reverse Acting (RA) or Direct Acting (DA), depends on actuator
Reheat	0 = 15 minutes for low voltage relays (0 = 4 CPH ON/OFF)
UI3 dis	Displays supply air temperature if installed

## **Occupied Mode:**

During occupied periods, the occupied heating and cooling setpoints are used.

# PIR activated stand-by and unoccupied modes:

When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room. During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used:

- During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

# **Unoccupied Mode:**

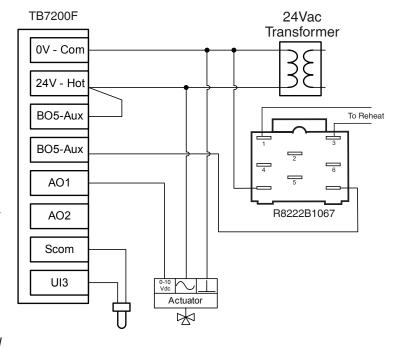
During unoccupied periods, the unoccupied heating and cooling setpoints are used.

# **Occupied Override Mode:**

The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for cooling: If the supply water temperature is less than 75F, the valve will modulate from closed to open according to demand. If the water supply temperature is greater than 77F, the valve will remain closed.

On a call for heating: If the supply water temperature is higher than 77F, the valve will modulate from closed to open according to demand. If the water supply temperature is less than 75F, the valve will remain closed. The duct heater will operate as a second step.



### **Options**

BACnet and Wireless models are available. See appendix B for more details.

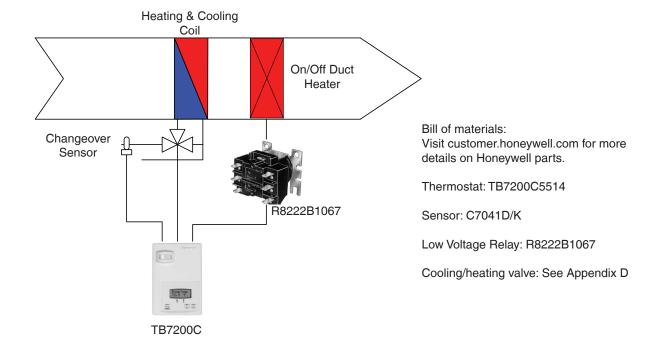
Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

On-Off control or 3 point floating control operation can be accomplished by using other models.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

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# TB7200C5514: HEATING & COOLING, CHANGEOVER SENSOR & REHEAT: TRI-STATE FLOATING VALVE, ON & OFF DUCT HEATER, WATER SENSOR FOR CHANGEOVER



To enter configuration menu press and hold the override key for 8 seconds. For full explanation of parameters refer to the TB7200 Series Installation Instructions (Form No. 62-2019).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	COS
MenuScro	On or Off if scrolling of thermostat status is desired
C or F	°F or °C default value at thermostat power up
Lockout	0 = occupied setpoints and unoccupied override access
Out1Conf	2.0 = access all sequences of operation from 0 to 3
CntrlTyp	Floating
SeqOpera	2 = Cooling with Reheat
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	62 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	80 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
heat max	90 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	54 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permnent: (permanent) or Temporar: (temporary) setpoints
TOccTime	2 hours is factory set, range is 0 to 24 hours
deadband	2 °F is factory set, range is: 2 to 5 °F
cal RS	Factory set
aux cont	0, used for reheat
FL time	1.5 minutes is factory set, range is 0.5 to 9 minutes
cph	N/A
Reheat	0 = 15 minutes for low voltage relays (0 = 4 CPH ON/OFF)
UI3 dis	Displays supply air temperature if installed

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used.

PIR activated stand-by and unoccupied modes: When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room:

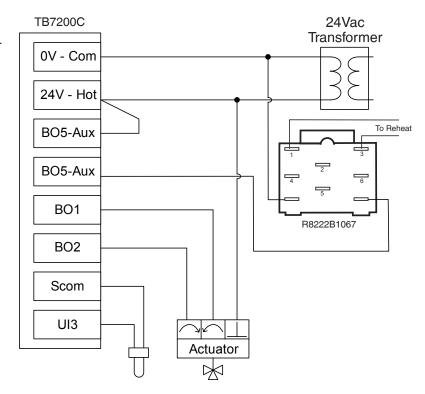
- During PIR activated stand-by periods, the stand-by heating and cooling setpoints are
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used.

**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for cooling: If the supply water temperature is less than 75F, the valve will modulate from closed to open according to demand. If the water supply temperature is greater than 77F, the valve will remain closed.

On a call for heating: If the supply water temperature is higher than 77F, the valve will modulate from closed to open according to demand. If the water supply temperature is less than 75F, the valve will remain closed. The duct heater will operate as a second step.



Note: Actuator Common wires to 24V - Hot terminal.

#### **Options**

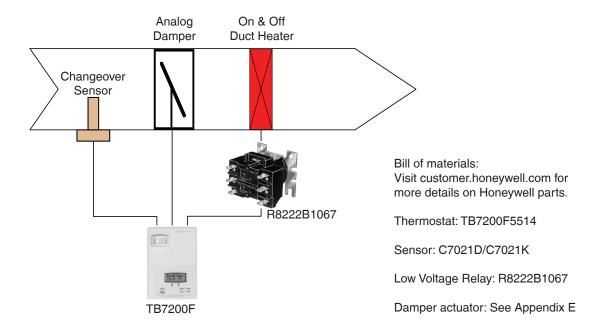
BACnet and Wireless models are available. See appendix B for more details.

Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

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# TB7200F5514: HEATING & COOLING, CHANGEOVER SENSOR & REHEAT: ANALOG 0-10VDC AIR DAMPER ACTUATOR, ON & OFF DUCT HEATER AND SUPPLY AIR SENSOR FOR CHANGEOVER



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7200 Series Installation Instructions (Form No. 62-2019).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	COS
MenuScro	On or Off if scrolling of thermostat status is desired
Lockout	0 = occupied setpoints and unoccupied override access
Out1Conf	2.0 = access all sequences of operation from 0 to 3
SeqOpera	2 = Cooling with Reheat
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	62 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	80 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
heat max	90 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	54 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permnent: (permanent) or Temporar: (temporary) setpoints
TOccTime	2 hours is factory set, range is 0 to 24 hours
deadband	2 °F is factory set, range is: 2 to 5 °F
cal RS	Factory set
aux cont	0, used for reheat
RA/DA	Reverse Acting (RA) or Direct Acting (DA), depends on actuator
Reheat	0 = 15 minutes for low voltage relays (0 = 4 CPH ON/OFF)
UI3 dis	Displays supply air temperature if installed

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used.

PIR activated stand-by and unoccupied modes: When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room:

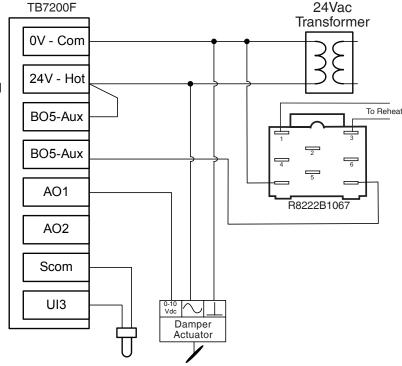
- During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used.

**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for heating: If the supply water temperature is higher than 77F, the valve will modulate from closed to open according to demand. If the air supply temperature is less than 75F, the valve will remain closed. The duct heater will operate as a second step.

On a call for cooling: If the supply air temperature is less than 75F, the damper will modulate from closed to open according to demand. If the water supply temperature is greater than 77F, the damper will remain closed.



# **Options**

BACnet and Wireless models are available. See appendix B for more details.

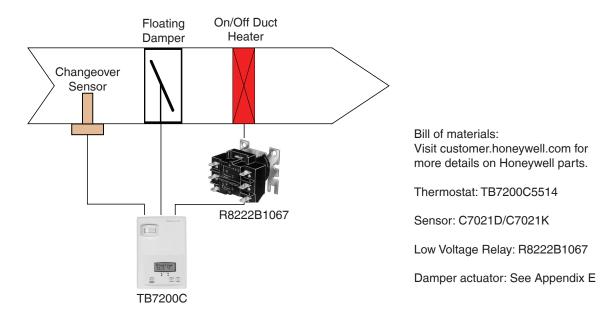
Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

On-Off control or 3 point floating control operation can be accomplished by using other models.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

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# TB7200C5514: HEATING,COOLING WITH CHANGEOVER SENSOR & REHEAT: FLOATING AIR DAMPER ACTUATOR, ON & OFF DUCT HEATER AND SUPPLY AIR SENSOR FOR CHANGEOVER



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7200 Series Installation Instructions (Form No. 62-2019).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	COS
MenuScro	On or Off if scrolling of thermostat status is desired
C or F	°F or °C default value at thermostat power up
Lockout	0 = occupied setpoints and unoccupied override access
Out1Conf	2.0 = access all sequences of operation from 0 to 3
CntrlTyp	Floating
SeqOpera	2 = Cooling with Reheat
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	62 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	80 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
heat max	90 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	54 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permnent: (permanent) or Temporar: (temporary) setpoints
TOccTime	2 hours is factory set, range is 0 to 24 hours
deadband	2 °F is factory set, range is: 2 to 5 °F
cal RS	Factory set
aux cont	0, used for reheat
FL time	1.5 minutes is factory set, range is 0.5 to 9 minutes
cph	N/A
Reheat	0 = 15 minutes for low voltage relays (0 = 4 CPH ON/OFF)
UI3 dis	Displays supply air temperature if installed

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used.

PIR activated stand-by and unoccupied modes. When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room:

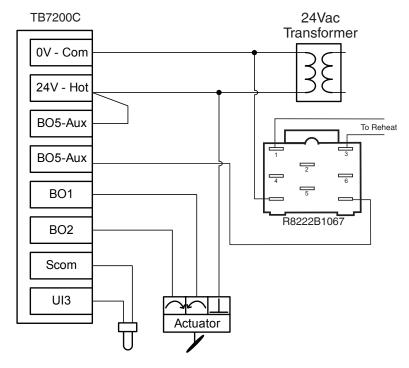
- During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used.

**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for cooling: If the supply air temperature is less than 75F, the damper will modulate from closed to open according to demand. If the air supply temperature is greater than 77F, the damper will remain closed.

On a call for heating: If the supply air temperature is greater than 77F, the damper will modulate from closed to open according to demand. If the air supply temperature is less than 75F, the damper will remain closed. The duct heater will operate as a second step.



Note: Actuator Common wires to 24V - Hot terminal.

#### **Options**

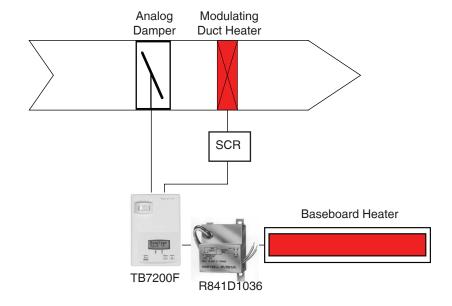
BACnet and Wireless models are available. See appendix B for more details.

Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

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# TB7200F5514: HEATING AND COOLING WITH REHEAT: ANALOG 0-10VDC AIR DAMPER ACTUATOR, ANALOG DUCT HEATER AND ELECTRIC BASEBOARD



Bill of materials:

Visit customer.honeywell.com for more details on Honeywell parts.

Thermostat: TB7200F5514

Low Voltage Relay: R841D1036

Damper actuator: See Appendix E

To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7200 Series Installation Instructions (Form No. 62-2019).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	COS
MenuScro	On or Off if scrolling of thermostat status is desired
Lockout	0 = occupied setpoints and unoccupied override access
Out1Conf	4.0 = access all sequences of operation from 0 to 3
SeqOpera	5 = Cooling and heating with Reheat
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	62 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	80 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
heat max	90 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	54 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permnent: (permanent) or Temporar: (temporary) setpoints
TOccTime	2 hours is factory set, range is 0 to 24 hours
deadband	2 °F is factory set, range is: 2 to 5 °F
cal RS	Factory set
aux cont	0, used for reheat
RA/DA	Reverse Acting (RA) or Direct Acting (DA), depends on actuator
Reheat	0 = 15 minutes for low voltage relays (0 = 4 CPH ON/OFF)
UI3 dis	Displays supply air temperature if installed

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used.

## PIR activated stand-by and unoccupied modes:

When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room:

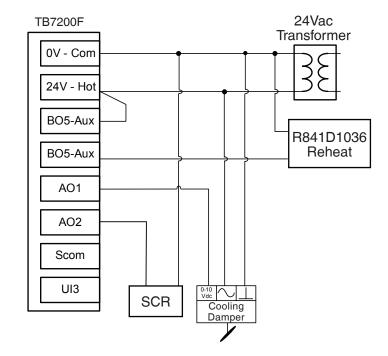
- During PIR activated stand-by periods, the standby heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used.

**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for cooling: The damper will modulate from closed to open according to demand.

On a call for heating: The damper will remain closed. The proportional heater will act as a first step and modulate from 0 to 100% capacity. The perimeter heater will operate as a second step.



## **Options**

BACnet and Wireless models are available. See appendix B for more details.

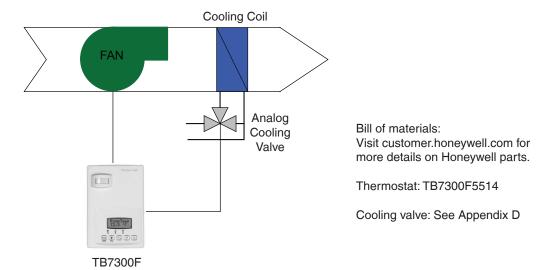
Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

On-Off control or 3 point floating control operation can be accomplished by using other models.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

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# TB7300F5514: COOLING ONLY: 2-PIPE FANCOIL UNIT WITH SINGLE SPEED FAN AND AN ANALOG COOLING VALVE



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7300 Series Installation Instructions (Form No. 62-2018).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	COS
MenuScro	ON
AutoMode	ON
C or F	As per user. Default value = °F
Lockout	As per user. Default value = 0 No lock
Pipe No	2.0
SeqOpera	0 = Cooling Only
Fan Menu	4
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	As per user. Default value = 62 °F ( 17 °C ). Range = 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	As per user. Default value = 80 °F ( 27 °C ). Range = 54 to 100 °F ( 12 to 37.5 °C )
heat max	As per user. Default value = 90 °F ( 32 °C ). Range = 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	As per user. Default value = $54 ^{\circ}\text{F}$ ( $12 ^{\circ}\text{C}$ ). Range = $54 ^{\circ}\text{F}$ ( $12 ^{\circ}\text{C}$ )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permanent
SptFunc	Dual Stp or AttchStp
TOccTime	As per user. Default value 2 hours. Range = 0 to 24 hours
deadband	As per user. Default value 2.0 °F ( 1.0 °C ). Range = 2, 3, 4 or 5 °F, 1.0 °F increments ( 1.0 to 2.5 °C, 0.5 °C increments )
cal RS	0 °F or °C
cal RH	0 °F or °C
aux cont	0
Auto Fan	AS or AS AD
cph	N/A
RA/DA	As per Valve
Reheat	0. Not used in this application.
UI3 dis	Displays supply air temperature if installed

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used.

# PIR activated stand-by and unoccupied modes:

When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room:

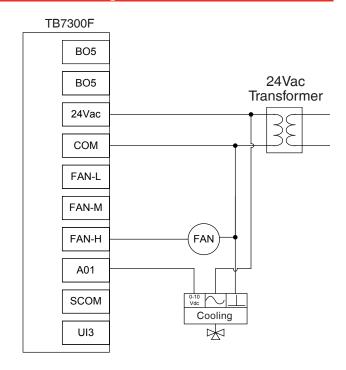
- During PIR activated stand-by periods, the standby heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used.

**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for cooling: The cooling valve will modulate from closed to open according to the demand.

**Fan mode operation:** The single speed fan can be set to either automatic on demand or always on.



### **Options**

BACnet and Wireless models are available. See appendix B for more details.

Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

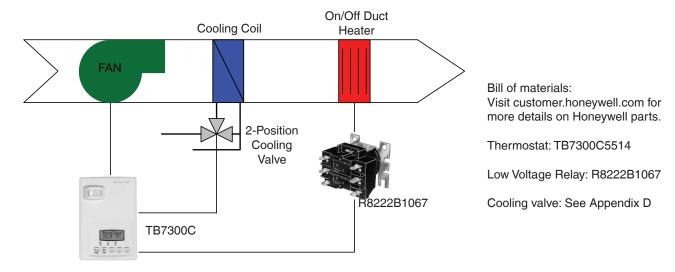
On-Off control or 3 point floating control operation can be accomplished by using other models.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

33

Other fan mode configurations can be set for either single speed, dual speed or 3 speed fan mode operation.

# TB7300C5514: COOLING WITH REHEAT: 2-PIPE FANCOIL UNIT WITH 3-SPEED FAN, 2-POSITION VALVE AND ELECTRIC REHEAT



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7300 Series Installation Instructions (Form No. 62-2018).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	None
MenuScro	ON
AutoMode	ON
C or F	As per user. Default value = °F
Lockout	As per user. Default value = 0 No lock
Pipe No	2.0
CntrlTyp	On/Off
SeqOpera	2 = Cooling with Reheat
Fan Menu	2
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	As per user. Default value = 62 °F ( 17 °C ). Range = 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	As per user. Default value = 80 °F ( 27 °C ). Range = 54 to 100 °F ( 12 to 37.5 °C )
heat max	As per user. Default value = 90 °F ( 32 °C ). Range = 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	As per user. Default value = $54  ^{\circ}F$ ( $12  ^{\circ}C$ ). Range = $54  ^{\circ}F$ ( $12  ^{\circ}C$ )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permanent
SptFunc	Dual Stp or AttchStp
TOccTime	As per user. Default value 2 hours. Range = 0 to 24 hours
deadband	As per user. Default value 2.0 °F ( $1.0$ °C ). Range = 2, 3, 4 or 5 °F, $1.0$ °F increments ( $1.0$ to $2.5$ °C, $0.5$ °C increments )
cal RS	0 °F or °C
cal RH	0 °F or °C
aux cont	0
Auto Fan	AS or AS AD
FL time	As per user. Default value = 1.5 minutes. Range 0.5 to 9.0 in 0.5 minutes increments
cph	N/A
Reheat	0 = 15 minutes for low voltage relays (0 = 4 CPH ON/OFF)
UI3 dis	Displays supply air temperature if installed

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used.

PIR activated stand-by and unoccupied modes: When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room:

- During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

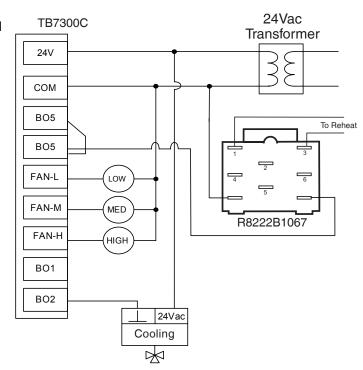
**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used.

**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for cooling: The cooling valve will open according to demand.

On a call for heating: The duct heater will operate according to demand.

Fan mode operation: The 3 speed fan can be set to automatic speed on demand, or manually to low, medium or high speed.



# **Options**

BACnet and Wireless models are available. See appendix B for more details.

Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

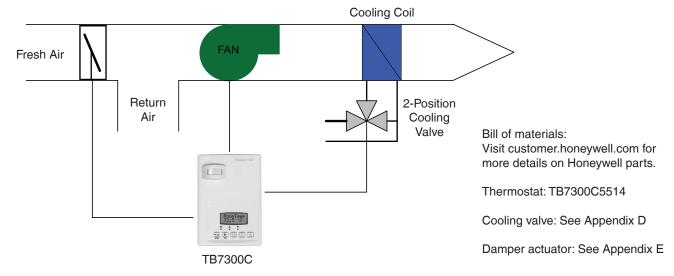
On-Off control or 3 point floating control operation can be accomplished by using other models.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

35

Other fan mode configurations can be set for either single speed, dual speed or 3 speed fan mode operation.

# TB7300C5514: COOLING ONLY: 2-PIPE FANCOIL UNIT WITH SINGLE SPEED FAN, 2-POSITION COOLING VALVE AND MINIMUM FRESH AIR DAMPER



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7300 Series Installation Instructions (Form No. 62-2018).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	None
MenuScro	ON
AutoMode	ON
C or F	As per user. Default value = °F
Lockout	As per user. Default value = 0 No lock
Pipe No	2.0
CntrlTyp	On/Off
SeqOpera	0 = Cooling only
Fan Menu	4
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	As per user. Default value = 62 °F ( 17 °C ). Range = 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	As per user. Default value = 80 °F ( 27 °C ). Range = 54 to 100 °F ( 12 to 37.5 °C )
heat max	As per user. Default value = 90 °F ( 32 °C ). Range = 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	As per user. Default value = 54 °F ( 12 °C ). Range = 54 to 100 °F ( 12 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permanent
SptFunc	Dual Stp or AttchStp
TOccTime	As per user. Default value 2 hours. Range = 0 to 24 hours
deadband	As per user. Default value 2.0 °F ( $1.0$ °C ). Range = 2, 3, 4 or 5 °F, 1.0 °F increments ( $1.0$ to $2.5$ °C, $0.5$ °C increments )
cal RS	0 °F or °C
cal RH	0 °F or °C
aux cont	1 (occupied=contact closed, unoccupied=contact open)
Auto Fan	AS or AS AD
FL time	As per user. Default value = 1.5 minutes. Range 0.5 to 9.0 in 0.5 minutes increments
cph	N/A
Reheat	0. Not used in this application.
UI3 dis	Displays supply air temperature if installed

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used. The auxiliary contact will activate to open the minimum fresh air damper.

### PIR activated stand-by and unoccupied modes:

When equipped with a PIR (Passive Infrared) accessory cover a thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from Occupied to Stand-By and then to unoccupied when no motion is detected in the area. The auxiliary contact will activate to open the minimum fresh air damper:

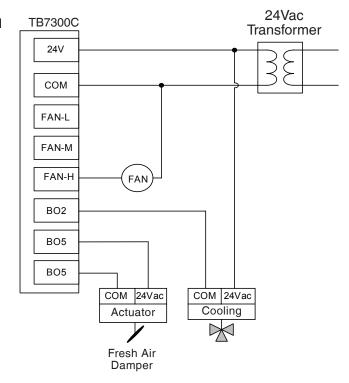
- During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used. The auxiliary contact will de-activate to close the minimum fresh air damper.

**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is performed at the thermostat. The auxiliary contract will activate to open the minimum fresh air damper.

On a call for cooling: The cooling valve will open according to demand.

**Fan mode operation:** The single speed fan can be set to either automatic on demand or always on.



### **Options**

BACnet and Wireless models are available. See appendix B for more details.

Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

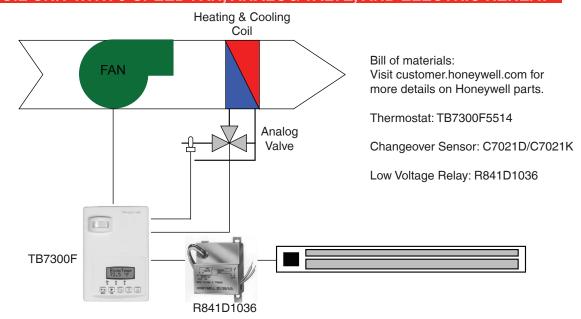
On-Off control or 3 point floating control operation can be accomplished by using other models.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

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Other fan mode configurations can be set for either single speed, dual speed or 3 speed fan mode operation.

# TB7300F5514: COOLING & HEATING WITH CHANGEOVER SENSOR AND REHEAT: 2-PIPE FANCOIL UNIT WITH 3-SPEED FAN, ANALOG VALVE, AND ELECTRIC REHEAT



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7300 Series Installation Instructions (Form No. 62-2018).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	COS
MenuScro	ON
AutoMode	ON
C or F	As per user. Default value = °F
Lockout	As per user. Default value = 0 No lock
Pipe No	2.0
SeqOpera	2 = Cooling with Reheat
Fan Menu	2
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	As per user. Default value = 62 °F ( 17 °C ). Range = 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	As per user. Default value = 80 °F ( 27 °C ). Range = 54 to 100 °F ( 12 to 37.5 °C )
heat max	As per user. Default value = 90 °F ( 32 °C ). Range = 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	As per user. Default value = 54 °F ( 12 °C ). Range = 54 to 100 °F ( 12 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permanent
SptFunc	Dual Stp or AttchStp
TOccTime	As per user. Default value 2 hours. Range = 0 to 24 hours
deadband	As per user. Default value 2.0 °F ( 1.0 °C ). Range = 2, 3, 4 or 5 °F, 1.0 °F increments ( 1.0 to 2.5 °C, 0.5 °C increments )
cal RS	0 °F or °C
cal RH	0 °F or °C
aux cont	0
Auto Fan	AS or AS AD
RA/DA	As per Valve
Reheat	0 = 15 minutes for low voltage relays (0 = 4 CPH ON/OFF)
UI3 dis	Displays supply air temperature if installed

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used.

### PIR activated stand-by and unoccupied modes:

When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room:

- During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

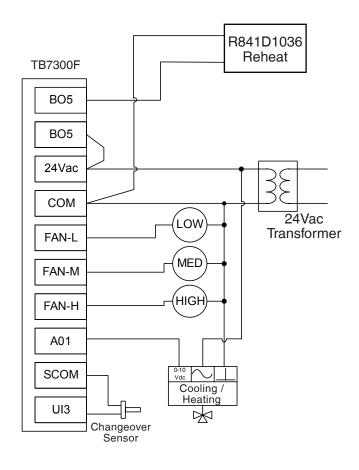
**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used.

**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for cooling: If the supply water temperature is less than 75F, the valve will modulate from closed to open according to demand. If the water supply temperature is greater than 77F, the valve will remain closed.

On a call for heating: If the supply water temperature is greater than 77F, the valve will modulate from closed to open according to demand. If the water supply temperature is less than 75F, the valve will remain closed. The perimeter heater will operate as a second step.

Fan mode operation: The 3 speed fan can be set to automatic speed on demand, or manually to low, medium or high speed.



### **Options**

BACnet and Wireless models are available. See appendix B for more details.

Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

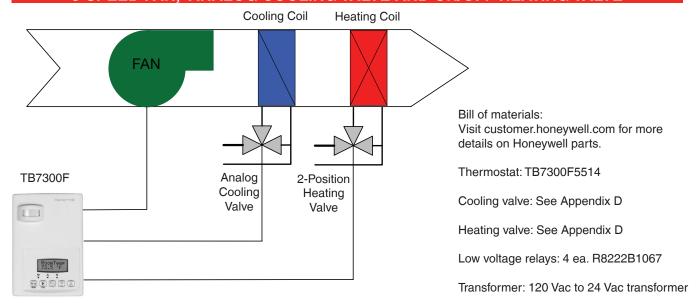
On-Off control or 3 point floating control operation can be accomplished by using other models.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

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Other fan mode configurations can be set for either single speed, dual speed or 3 speed fan mode operation.

# TB7300F5514: COOLING WITH REHEAT: LINE VOLTAGE 4-PIPE FANCOIL UNIT WITH 3-SPEED FAN, ANALOG COOLING VALVE AND ON/OFF HEATING VALVE



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7300 Series Installation Instructions (Form No. 62-2018).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	None
MenuScro	ON
AutoMode	ON
C or F	As per user. Default value = °F
Lockout	As per user. Default value = 0 No lock
Pipe No	4.0
SeqOpera	2 = Cooling with Reheat
Fan Menu	2
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	As per user. Default value = 62 °F ( 17 °C ). Range = 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	As per user. Default value = 80 °F ( 27 °C ). Range = 54 to 100 °F ( 12 to 37.5 °C )
heat max	As per user. Default value = 90 °F ( 32 °C ). Range = 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	As per user. Default value = 54 °F ( 12 °C ). Range = 54 to 100 °F ( 12 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permanent
SptFunc	Dual Stp or AttchStp
TOccTime	As per user. Default value 2 hours. Range = 0 to 24 hours
deadband	As per user. Default value 2.0 °F ( 1.0 °C ). Range = 2, 3, 4 or 5 °F, 1.0 °F increments
	( 1.0 to 2.5 °C, 0.5 °C increments )
cal RS	0 °F or °C
cal RH	0 °F or °C
aux cont	0
Auto Fan	AS or AS AD
RA/DA	As per Valve
Reheat	0 = 15 minutes for low voltage relays (0 = 4 CPH ON/OFF)
UI3 dis	Displays supply air temperature if installed

Occupied mode: During occupied periods, the occupied heating and cooling setpoints are used.

**PIR activated stand-by and unoccupied modes:** When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room.

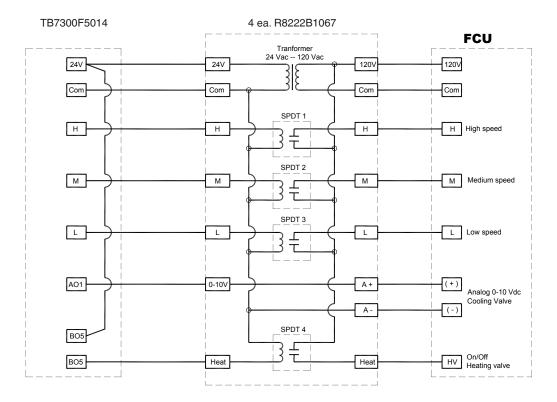
- During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

Unoccupied mode: During unoccupied periods, the unoccupied heating and cooling setpoints are used.

**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for cooling: The cooling valve will modulate from closed to open according to the demand.

On a call for heating: The heating valve will open according to demand.



### **Options**

BACnet and Wireless models are available. See appendix B for more details.

Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

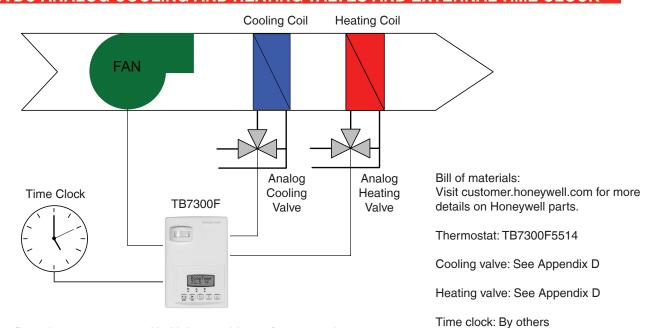
On-Off control or 3 point floating control operation can be accomplished by using other models.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

Other fan mode configurations can be set for either single speed, dual speed or 3 speed fan mode operation.

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# TB7300F5514: COOLING & HEATING: 4-PIPE FANCOIL UNIT WITH SINGLE SPEED FAN, 0-10VDC ANALOG COOLING AND HEATING VALVES AND EXTERNAL TIME CLOCK



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7300 Series Installation Instructions (Form No. 62-2018).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	Rem NSB
BI2	None
UI3	None
MenuScro	ON
AutoMode	ON
C or F	As per user. Default value = °F
Lockout	As per user. Default value = 0 No lock
Pipe No	4.0
SeqOpera	4 = Cooling and heating
Fan Menu	4 = On-Auto
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	As per user. Default value = 62 °F ( 17 °C ). Range = 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	As per user. Default value = 80 °F ( 27 °C ). Range = 54 to 100 °F ( 12 to 37.5 °C )
heat max	As per user. Default value = 90 °F ( 32 °C ). Range = 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	As per user. Default value = 54 °F ( 12 °C ). Range = 54 to 100 °F ( 12 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permanent
SptFunc	Dual Stp or AttchStp
TOccTime	As per user. Default value 2 hours. Range = 0 to 24 hours
deadband	As per user. Default value 2.0 °F ( $1.0$ °C ). Range = 2, 3, 4 or 5 °F, $1.0$ °F increments ( $1.0$ to $2.5$ °C, $0.5$ °C increments )
cal RS	0 °F or °C
cal RH	0 °F or °C
aux cont	0
Auto Fan	AS or AS AD
RA/DA	As per Valve
Reheat	0. Not used in this application.
UI3 dis	Displays supply air temperature if installed

Occupancy command from an external time clock: The occupancy is controlled by an external 24 Vac time clock:

- When the contact of the time clock closes on binary input #1 (BI1), the thermostat will be in occupied mode.
- When the contact of the time clock opens on binary input #1 (BI1), the thermostat will be in unoccupied mode.

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used.

PIR activated stand-by and unoccupied modes: When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room:

- During PIR activated stand-by periods, the standby heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used.

**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for heating: The heating valve will modulate from closed to open according to the demand.

On a call for cooling: The cooling valve will modulate from closed to open according to the demand.

Fan mode operation: The single speed fan can be set to either automatic on demand or always on.

# TB7300F 24V COM BI1 External Time Clock Contact FAN-H AO1 AO2 O-10 Vdd: Heating Cooling

### **Options**

BACnet and Wireless models are available. See appendix B for more details.

Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

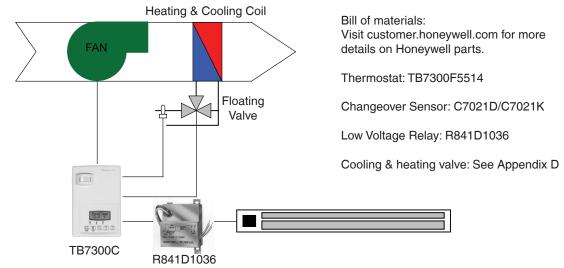
On-Off control or 3 point floating control operation can be accomplished by using other models.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

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Other fan mode configurations can be set for either single speed, dual speed or 3 speed fan mode operation.

# TB7300C5514: COOLING & HEATING WITH CHANGEOVER AND REHEAT: 2-PIPE FANCOIL WITH 3-SPEED FAN, TRI-STATE FLOATING VALVE AND ELECTRIC REHEAT.



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7300 Series Installation Instructions (Form No. 62-2018).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	COS
MenuScro	ON
AutoMode	ON
C or F	As per user. Default value = °F
Lockout	As per user. Default value = 0 No lock
Pipe No	2.0
CntrlTyp	Floating
SeqOpera	2 = Cooling with Reheat
Fan Menu	2
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	As per user. Default value = 62 °F ( 17 °C ). Range = 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	As per user. Default value = 80 °F ( 27 °C ). Range = 54 to 100 °F ( 12 to 37.5 °C )
heat max	As per user. Default value = 90 °F ( 32 °C ). Range = 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	As per user. Default value = 54 $^{\circ}$ F ( 12 $^{\circ}$ C ). Range = 54 to 100 $^{\circ}$ F ( 12 to 37.5 $^{\circ}$ C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permanent
SptFunc	Dual Stp or AttchStp
TOccTime	As per user. Default value 2 hours. Range = 0 to 24 hours
deadband	As per user. Default value 2.0 °F ( $1.0$ °C ). Range = 2, 3, 4 or 5 °F, 1.0 °F increments ( $1.0$ to $2.5$ °C, $0.5$ °C increments )
cal RS	0 °F or °C
cal RH	0 °F or °C
aux cont	0
Auto Fan	AS or AS AD
FL time	As per user. Default value = 1.5 minutes. Range 0.5 to 9.0 in 0.5 minutes increments
cph	N/A
Reheat	0 = 15 minutes for low voltage relays (0 = 4 CPH ON/OFF)
UI3 dis	Displays supply air temperature if installed

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used.

PIR activated stand-by and unoccupied modes: When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room:

- During PIR activated stand-by periods, the standby heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

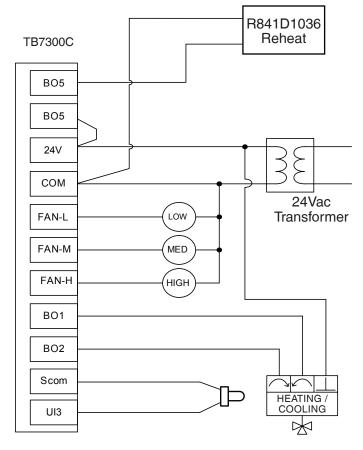
**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used.

**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for cooling: If the supply water temperature is less than 75F, the valve will modulate from closed to open according to demand. If the water supply temperature is greater than 77F, the valve will remain closed.

On a call for heating: If the supply water temperature is greater than 77F, the valve will modulate from closed to open according to demand. If the water supply temperature is less than 75F, the valve will remain closed. The perimeter heater will operate as a second step.

**Fan mode operation:** The 3 speed fan can be set to automatic speed on demand, or manually to low, medium or high speed.



Note: Actuator Common wires to 24V - Hot terminal.

### **Options**

BACnet and Wireless models are available. See appendix B for more details.

Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

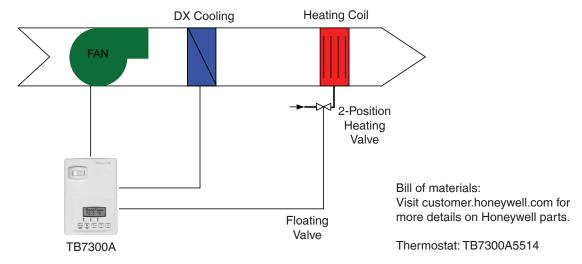
On-Off control or 3 point floating control operation can be accomplished by using other models.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

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Other fan mode configurations can be set for either single speed, dual speed or 3 speed fan mode operation.

# TB7300A5514: HEATING & COOLING: FANCOIL UNIT WITH 2-SPEED FAN, DX COOLING AND 2-POSITION VALVE FOR HEATING COIL



Heating valve: See Appendix D

To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7300 Series Installation Instructions (Form No. 62-2018).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	None
MenuScro	ON
AutoMode	ON
C or F	As per user. Default value = °F
Lockout	As per user. Default value = 0 No lock
Pipe No	4.0
SeqOpera	4 = Cooling / Heating 4 pipes
Fan Menu	1 = Low-High
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	As per user. Default value = 62 °F ( 17 °C ). Range = 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	As per user. Default value = 80 °F ( 27 °C ). Range = 54 to 100 °F ( 12 to 37.5 °C )
heat max	As per user. Default value = 90 °F ( 32 °C ). Range = 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	As per user. Default value = 54 °F ( 12 °C ). Range = 54 to 100 °F ( 12 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permanent
SptFunc	Dual Stp or AttchStp
TOccTime	As per user. Default value 2 hours. Range = 0 to 24 hours
deadband	As per user. Default value 2.0 °F ( $1.0$ °C ). Range = 2, 3, 4 or 5 °F, 1.0 °F increments ( $1.0$ to $2.5$ °C, $0.5$ °C increments )
cal RS	0 °F or °C
aux cont	0
Auto Fan	AS or AS AD
FL time	As per user. Default value = 1.5 minutes. Range 0.5 to 9.0 in 0.5 minutes increments
cph	N/A
Reheat	0. Not used in this application.
UI3 dis	Displays supply air temperature if installed

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used.

### PIR activated stand-by and unoccupied modes:

When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room:

- During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

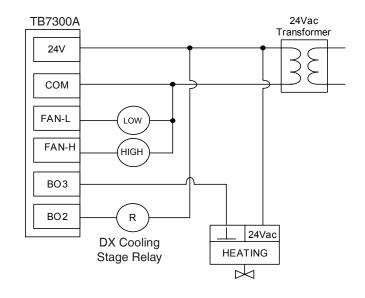
**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used.

**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for cooling: The cooling relay will operate the DX cooling stage according to demand.

On a call for heating: The heating valve will open according to demand.

**Fan mode operation:** The 2 speed fan can be set either to automatic speed on demand or manually to either low or medium speed.



### **Options**

BACnet and Wireless models are available. See appendix B for more details.

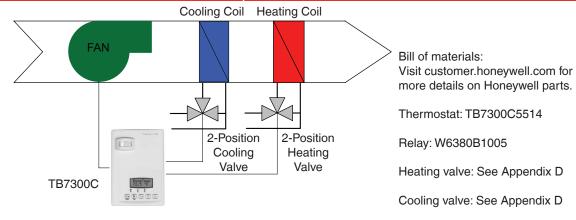
On-Off control or 3 point floating control operation can be accomplished by using other models.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

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Other fan mode configurations can be set for either single speed, dual speed or 3 speed fan mode operation.

# TB7300C5514: 4-PIPE FANCOIL UNIT LINE VOLTAGE TO LOW VOLTAGE WITH 3-SPEED FAN, 2-POSITION VALVES



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7300 Series Installation Instructions (Form No. 62-2018).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
BI1	None
BI2	None
UI3	None
MenuScro	ON
AutoMode	ON
C or F	As per user. Default value = °F
Lockout	As per user. Default value = 0 No lock
Pipe No	4.0
CntrlTyp	On/Off
SeqOpera	4 = Cooling / Heating 4 pipes
Fan Menu	2
St-By TM	0.5 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
Unocc TM	0.0 hours is factory set, range is: 0.0 to 24.0 hours in 0.5hr increments
St-By HT	69 °F is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
St-By CL	78 °F is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Unocc HT	As per user. Default value = 62 °F ( 17 °C ). Range = 40 to 90 °F ( 4.5 to 32.0 °C )
Unocc CL	As per user. Default value = 80 °F ( 27 °C ). Range = 54 to 100 °F ( 12 to 37.5 °C )
heat max	As per user. Default value = 90 °F ( 32 °C ). Range = 40 to 90 °F ( 4.5 to 32.0 °C )
cool min	As per user. Default value = 54 °F ( 12 °C ). Range = 54 to 100 °F ( 12 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Set Type	Permanent
SptFunc	Dual Stp or AttchStp
TOccTime	As per user. Default value 2 hours. Range = 0 to 24 hours
deadband	As per user. Default value 2.0 °F ( $1.0$ °C ). Range = 2, 3, 4 or 5 °F, $1.0$ °F increments ( $1.0$ to $2.5$ °C, $0.5$ °C increments )
aux cont	0
Auto Fan	AS or AS AD
FL time	As per user. Default value = 1.5 minutes. Range 0.5 to 9.0 in 0.5 minutes increments
cph	As per user. 4 to 8 CPH
Reheat	0. Not used in this application.
UI3 dis	Displays supply air temperature if installed

Occupied mode: During occupied periods, the occupied heating and cooling setpoints are used.

**PIR** activated stand-by and unoccupied modes: When equipped with a PIR (Passive Infrared) accessory cover the thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to stand-by to unoccupied when no motion is detected in the room:

- During PIR activated stand-by periods, the stand-by heating and cooling setpoints are used.
- During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

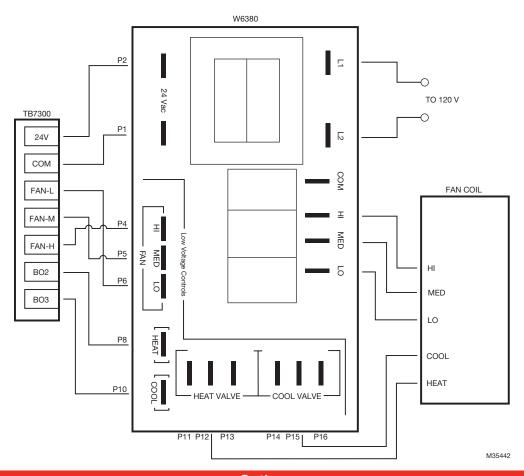
**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used.

**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for heating: The heating valve will open according to demand.

On a call for cooling: The cooling valve will modulate from closed to open according to demand.

Fan mode operation: The 3 speed fan can be set to automatic speed on demand, or manually to low, medium or high speed.



### **Options**

BACnet and Wireless models are available. See appendix B for more details.

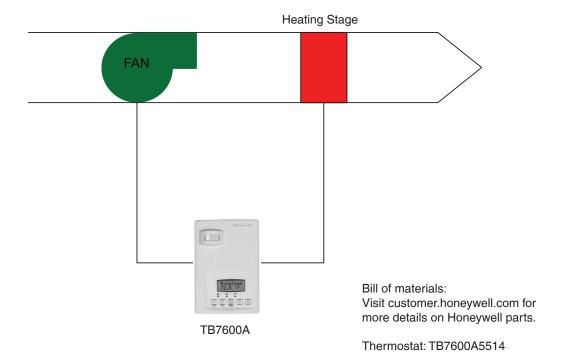
Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

2 binary inputs and one universal input can be used and configured for advanced functionality as required by the application. E.g. discharge air sensor, door or window contact input, filter and service alarms, etc.

Other fan mode configurations can be set for either single speed, dual speed or 3 speed fan mode operation.

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### TB7600A5514: 1H UNIT: 1 UNIT HEATER WITH SINGLE SPEED FAN



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7600 Series Installation Instructions (Form No. 62-2016).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
DI1	None
DI2	None
Lockout	As per user: (see manual for details) set to "0" for full access
pwr del	10 seconds is factory set, range is: 10 to 120 seconds
Frost pr	ON
Heat max	90 °F ( 32 °C ) is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Cool min	54 °F ( 12 °C ) is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
anticycle	2 minutes is factory set range is: 0,1,2,3,4 & 5 minutes
Heat cph	4 C.P.H is factory set, range is: 3, 4, 5, 6,7 & 8 CPH
Cool cph	4 CPH is factory set, range is: 3 or 4 CPH
deadband	2.0 °F ( 1.1 °C ) is factory set, range is: 2, 3 or 4 °F ( 1.0 to 2.0 °C )
fan cont	ON, Auto or Smart (see manual for details)
Fan del	OFF
ToccTime	3 hours is factory default, range is: 0 to 12 in one hour increments
cal RS	0.0 °F or °C
cal OS	0.0 °F or °C
H lock	120 °F ( 49 °C ) is factory default, range is: -15 °F up to 120 °F (-26 °C up to 49 °C)
C lock	-40 °F ( -40 °C) is factory default, range is: From -40 °F up to 95 °F (-40 °C up to 35 °C)
Unocc TM	0.5 hours is factory set, range is: 0.5 to 24.0 hours in 0.5hr increments
2/4event	2 events is factory default, can also be set to 4 events (for non-networked thermostat only)
Aux cont	N.O. or N.C.
Prog rec	ON

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used.

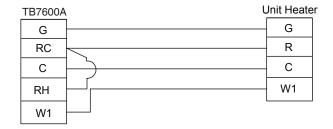
PIR activated unoccupied mode: When equipped with a PIR (Passive Infrared) accessory cover a thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to unoccupied when no motion is detected in the room. During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used.

**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for heating: The heating stage will operate according to demand.

Fan mode operation: The single speed fan can be set to either automatic on demand or always on mode.



### **Options**

BACnet and Wireless models are available. See appendix B for more details.

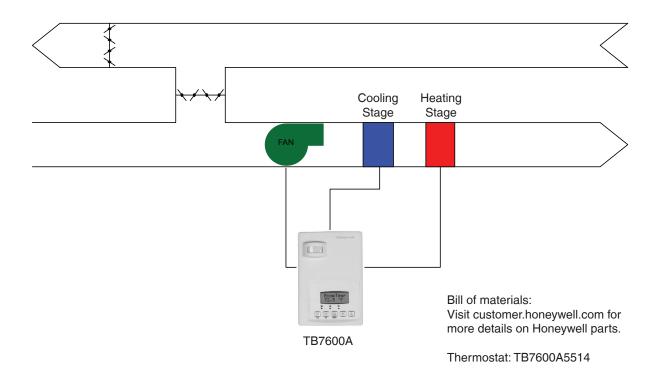
Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

One monitoring supply air temperature input and 2 digital inputs can be used and configured for advanced functionality if required by the application. E.g. Remote night setback, remote override, filter and service alarms, etc.

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An outdoor temperature input can be used and configured for the lockout of heating and cooling operation.

# TB7600A5514: 1H & 1C ROOFTOP UNIT: 1 HEATING STAGE, 1 COOLING STAGE WITH SINGLE SPEED FAN



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7600 Series Installation Instructions (Form No. 62-2016).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
DI1	None
DI2	None
Lockout	As per user: (see manual for details) set to "0" for full access
pwr del	10 seconds is factory set, range is: 10 to 120 seconds
Frost pr	ON
Heat max	90 °F ( 32 °C ) is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
Cool min	54 °F ( 12 °C ) is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
anticycle	2 minutes is factory set range is: 0,1,2,3,4 & 5 minutes
Heat cph	4 C.P.H is factory set, range is: 3, 4, 5, 6,7 & 8 CPH
Cool cph	4 CPH is factory set, range is: 3 or 4 CPH
deadband	2.0 °F ( 1.1 °C ) is factory set, range is: 2, 3 or 4 °F ( 1.0 to 2.0 °C )
fan cont	ON, Auto or Smart (see manual for details)
Fan del	OFF
ToccTime	3 hours is factory default, range is: 0 to 12 in one hour increments
cal RS	0.0 °F or °C
cal OS	0.0 °F or °C
H lock	120 °F ( 49 °C ) is factory default, range is: -15 °F up to 120 °F ( -26 °C up to 49 °C )
C lock	-40 °F ( -40 °C ) is factory default, range is: From -40 °F up to 95 °F (-40 °C up to 35 °C)
Unocc TM	0.5 hours is factory set, range is: 0.5 to 24.0 hours in 0.5hr increments
2/4event	2 events is factory default, can also be set to 4 events (for non-networked thermostat only)
Aux cont	N.O. or N.C.
Prog rec	ON

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used.

PIR activated unoccupied mode: When equipped with a PIR (Passive Infrared) accessory cover a thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to unoccupied when no motion is detected in the room. During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

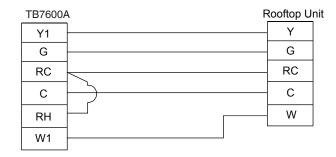
**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used.

**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for heating: The heating stage will operate according to demand.

On a call for cooling: The cooling stage will operate according to demand.

Fan mode operation: The single speed fan can be set to either automatic on demand or always on.



### **Options**

BACnet and Wireless models are available. See appendix B for more details.

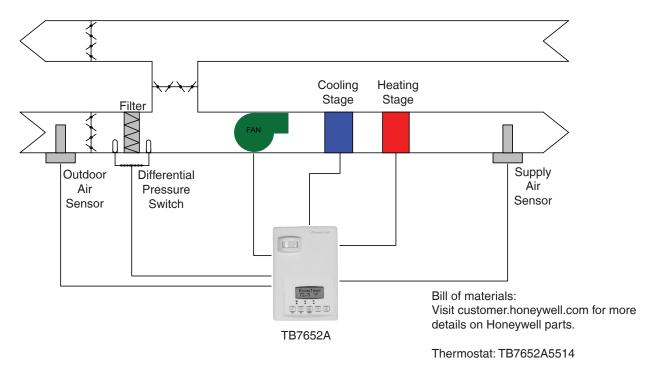
Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

One monitoring supply air temperature input and 2 digital inputs can be used and configured for advanced functionality if required by the application. E.g. Remote night setback, remote override, filter and service alarms, etc.

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An outdoor temperature input can be used and configured for the lockout of heating and cooling operation.

# TB7652A5514: 1H & 1C ROOFTOP UNIT: 1 HEATING STAGE, 1 COOLING STAGE WITH DIFFERENTIAL PRESSURE SWITCH FOR FILTER ALARM



Outdoor air sensor: C7021F

Supply air sensor: C7021B/C7021C

To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7600 Series Installation Instructions (Form No. 62-2016).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
DI1	Filter
DI2	None
Lockout	As per user: (see manual for details) set to "0" for full access
pwr del	10 seconds is factory set, range is: 10 to 120 seconds
Frost pr	ON
Heat max	90 °F ( 32 °C ) is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Cool min	54 °F ( 12 °C ) is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
anticycle	2 minutes is factory set range is: 0,1,2,3,4 & 5 minutes
Heat cph	4 C.P.H is factory set, range is: 3, 4, 5, 6,7 & 8 CPH
Cool cph	4 CPH is factory set, range is: 3 or 4 CPH
deadband	2.0 °F ( 1.1 °C ) is factory set, range is: 2, 3 or 4 °F ( 1.0 to 2.0 °C )
fan cont	ON, Auto or Smart (see manual for details)
Fan del	OFF
ToccTime	3 hours is factory default, range is: 0 to 12 in one hour increments
cal RS	0.0 °F or °C
cal OS	0.0 °F or °C
H lock	120 °F ( 49 °C ) is factory default, range is: -15 °F up to 120 °F ( -26 °C up to 49 °C )
C lock	-40 °F ( -40 °C ) is factory default, range is: From -40 °F up to 95 °F (-40 °C up to 35 °C)
Unocc TM	0.5 hours is factory set, range is: 0.5 to 24.0 hours in 0.5hr increments
2/4event	2 events is factory default, can also be set to 4 events (for non-networked thermostat only)
Aux cont	N.O. or N.C.
Prog rec	ON

**Local schedule:** A local schedule ( 7 days, 2 or 4 events ) internal to the thermostat is used to trigger the different occupancy levels of the thermostat. Use only if thermostat is not networked. For networked thermostat, use WEBs-AX Workbench scheduling.

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used.

PIR activated unoccupied mode: When equipped with a PIR (Passive Infrared) accessory cover a thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to unoccupied when no motion is detected in the room. During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used.

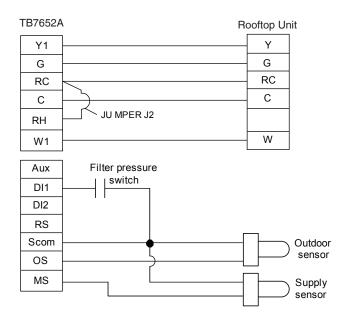
**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for heating: The heating stage will operate according to demand.

On a call for cooling: The cooling stage will operate according to demand.

**Fan mode operation:** The single speed fan can be set to either automatic on demand or always on.

**Filter Alarm:** When the filter has to be cleaned, the differential pressure switch will close the contact on DI1 input and a local alarm will be displayed.



### **Options**

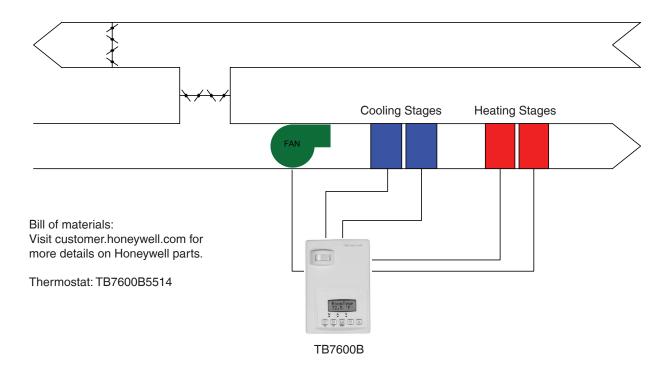
BACnet and Wireless models are available. See appendix B for more details.

Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

One monitoring supply air temperature input and 2 digital inputs can be used and configured for advanced functionality if required by the application. E.g. Remote night setback, remote override, filter and service alarms, etc.

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# TB7600B5514: 2H & 2C ROOFTOP UNIT: 2 HEATING STAGES, 2 COOLING STAGES WITH SINGLE SPEED FAN



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7600 Series Installation Instructions (Form No. 62-2016).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
DI1	None
DI2	None
Lockout	As per user: (see manual for details) set to "0" for full access
pwr del	10 seconds is factory set, range is: 10 to 120 seconds
Frost pr	ON
Heat max	90 °F ( 32 °C ) is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Cool min	54 °F ( 12 °C ) is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
anticycle	2 minutes is factory set range is: 0,1,2,3,4 & 5 minutes
Heat cph	4 C.P.H is factory set, range is: 3, 4, 5, 6,7 & 8 CPH
Cool cph	4 CPH is factory set, range is: 3 or 4 CPH
deadband	2.0 °F ( 1.1 °C ) is factory set, range is: 2, 3 or 4 °F ( 1.0 to 2.0 °C )
fan cont	ON, Auto or Smart (see manual for details)
Fan del	OFF
ToccTime	3 hours is factory default, range is: 0 to 12 in one hour increments
cal RS	0.0 °F or °C
cal OS	0.0 °F or °C
H stage	2
C stage	2
H lock	120 °F ( 49 °C ) is factory default, range is: -15 °F up to 120 °F ( -26 °C up to 49 °C )
C lock	-40 °F ( -40 °C) is factory default, range is: From -40 °F up to 95 °F (-40 °C up to 35 °C)
Unocc TM	0.5 hours is factory set, range is: 0.5 to 24.0 hours in 0.5hr increments
2/4event	2 events is factory default, can also be set to 4 events (for non-networked thermostat only)
Aux cont	N.O. or N.C.
Prog rec	ON

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used.

PIR activated unoccupied mode: When equipped with a PIR (Passive Infrared) accessory cover a thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to unoccupied when no motion is detected in the room. During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used.

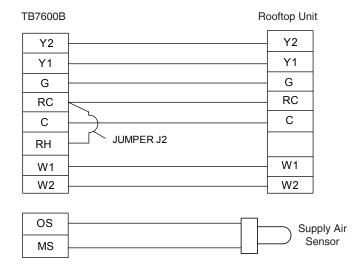
**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for heating: The heating stages will operate according to demand.

On a call for cooling: The cooling stages will operate according to demand.

**Local schedule:** A local schedule (7 days 2 or 4 events) internal to the thermostat is used to trigger the different occupancy levels of the thermostat. Use only if thermostat is not networked. For networked thermostat, use WEBs-AX Workbench scheduling.

Fan mode operation: The single speed fan can be set to either automatic on demand or always on.



### **Options**

BACnet and Wireless models are available. See appendix B for more details.

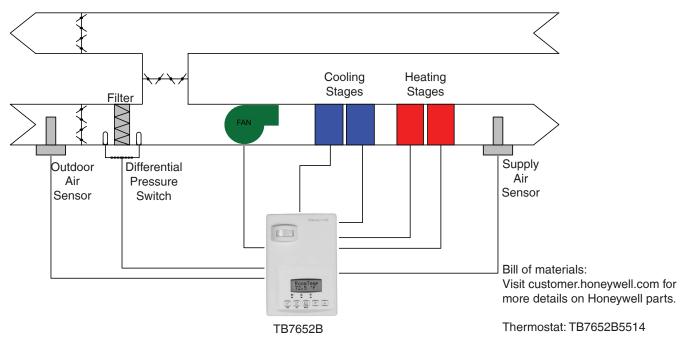
Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

One monitoring supply air temperature input and 2 digital inputs can be used and configured for advanced functionality if required by the application. E.g. Remote night setback, remote override, filter and service alarms, etc.

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An outdoor temperature input can be used and configured for the lockout of heating and cooling operation.

# TB7652B5514: 2H & 2C ROOFTOP UNIT: 2 HEATING STAGES, 2 COOLING STAGES WITH DIFFERENTIAL PRESSURE SWITCH FOR FILTER ALARM



Outdoor air sensor: C7021F

Supply air sensor: C7021B/C7021C

To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7600 Series Installation Instructions (Form No. 62-2016).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
DI1	Filter
DI2	None
Lockout	As per user: (see manual for details) set to "0" for full access
pwr del	10 seconds is factory set, range is: 10 to 120 seconds
Frost pr	ON
Heat max	90 °F ( 32 °C ) is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Cool min	54 °F ( 12 °C ) is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
anticycle	2 minutes is factory set range is: 0,1,2,3,4 & 5 minutes
Heat cph	4 C.P.H is factory set, range is: 3, 4, 5, 6,7 & 8 CPH
Cool cph	4 CPH is factory set, range is: 3 or 4 CPH
deadband	2.0 °F ( 1.1 °C ) is factory set, range is: 2, 3 or 4 °F ( 1.0 to 2.0 °C )
fan cont	ON, Auto or Smart (see manual for details)
Fan del	OFF
ToccTime	3 hours is factory default, range is: 0 to 12 in one hour increments
cal RS	0.0 °F or °C
cal OS	0.0 °F or °C
H stage	2 stages is factory default, range is: 1 or 2 stages
C stage	2 stages is factory default, range is: 1 or 2 stages
H lock	120 °F ( 49 °C ) is factory default, range is: -15 °F up to 120 °F ( -26 °C up to 49 °C )
C lock	-40 °F ( -40 °C) is factory default, range is: From -40 °F up to 95 °F (-40 °C up to 35 °C)
Unocc TM	0.5 hours is factory set, range is: 0.5 to 24.0 hours in 0.5hr increments
2/4event	2 events is factory default, can also be set to 4 events (for non-networked thermostat only)
Aux cont	N.O. or N.C.
Prog rec	ON

**Supply air sensing:** A supply air sensor is used for remote monitoring or the discharge air temperature of the HVAC equipment.

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used.

PIR activated unoccupied mode: When equipped with a PIR (Passive Infrared) accessory cover a thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to unoccupied when no motion is detected in the room. During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used.

**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

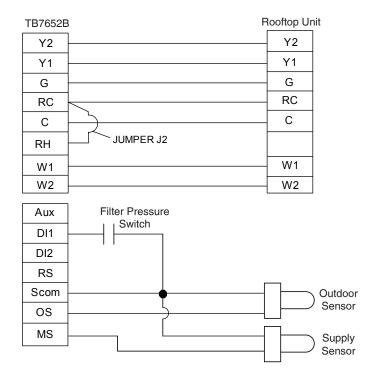
On a call for heating: The heating stages will operate according to demand.

On a call for cooling: The cooling stages will operate according to demand.

**Local schedule:** A local schedule (7 days, 2 or 4 events) internal to the thermostat is used to trigger the different occupancy levels of the thermostat. Use only if thermostat is not networked. For networked thermostat, use WEBs-AX Workbench scheduling.

**Fan mode operation:** The single speed fan can be set to either automatic on demand or always on.

**Filter Alarm:** When the filter has to be cleaned, the differential pressure switch will close the contact on DI1 input and a local alarm will be displayed.



### **Options**

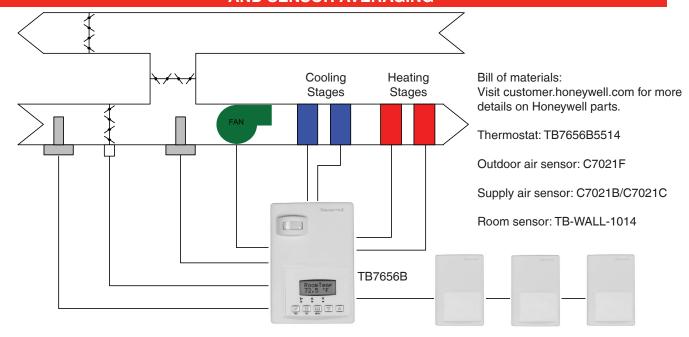
BACnet and Wireless models are available. See appendix B for more details.

Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

One monitoring supply air temperature input and 2 digital inputs can be used and configured for advanced functionality if required by the application. E.g. Remote night setback, remote override, filter and service alarms, etc.

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# TB7656B5514: 2H & 2C ROOFTOP UNIT WITH ECONOMIZER: 2 HEATING STAGES, 2 COOLING STAGES, ANALOG 0-10VDC FRESH AIR DAMPER ACTUATOR AND SENSOR AVERAGING



To enter configuration menu press and hold the override key for 8 seconds.

For parameters details refer to the TB7600 Series Installation Instructions (Form No. 62-2016).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
DI1	Filter
DI2	None
Lockout	As per user: (see manual for details) set to "0" for full access
pwr del	10 seconds is factory set, range is: 10 to 120 seconds
Frost pr	ON
Heat max	90 °F ( 32 °C ) is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Cool min	54 °F ( 12 °C ) is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
anticycle	2 minutes is factory set range is: 0,1,2,3,4 & 5 minutes
Heat cph	4 C.P.H is factory set, range is: 3, 4, 5, 6,7 & 8 CPH
Cool cph	4 CPH is factory set, range is: 3 or 4 CPH
deadband	2.0 °F ( 1.1 °C ) is factory set, range is: 2, 3 or 4 °F ( 1.0 to 2.0 °C )
fan cont	ON, Auto or Smart (see manual for details)
Fan del	OFF
ToccTime	3 hours is factory default, range is: 0 to 12 in one hour increments
cal RS	0.0 °F or °C
cal OS	0.0 °F or °C
H stage	2 stages
C stage	2 stages
H lock	120 °F ( 49 °C ) is factory default, range is: -15 °F up to 120 °F ( -26 °C up to 49 °C )
C lock	-40 °F ( -40 °C ) is factory default, range is: From -40 °F up to 95 °F (-40 °C up to 35 °C)
Unocc TM	0.5 hours is factory set, range is: 0.5 to 24.0 hours in 0.5hr increments
2/4event	2 events is factory default, can also be set to 4 events (for non-networked thermostat only)
Aux cont	N.O. normally open
Prog rec	ON
chngst pt	55 °F ( 13.0 °C ) is default value, range is:14 to 70 °F ( -10.0 to 21.0 °C)
Min pos	0% is factory default, range is: 0 to 100%
C mech	ON
mix stpt	55 °F (13.0 °C) is factory default, range is: 50 to 90 °F ( 10.0 to 32.0 °C)

**Supply air sensing:** A supply air sensor is used for remote monitoring or the discharge air temperature of the HVAC equipment.

PIR activated unoccupied mode: When equipped with a PIR (Passive Infrared) accessory cover a thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to unoccupied when no motion is detected in the area. During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used. The minimum position of the economizer fresh air damper is disabled.

**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used. The minimum position of the economizer fresh air damper is disabled.

On a call for heating: Heating stages will operate according to demand.

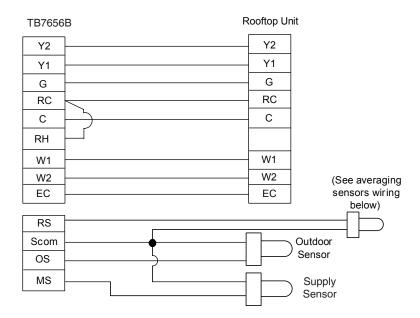
### On a call for cooling:

If the outdoor air temperature allows for economizer free cooling operation:

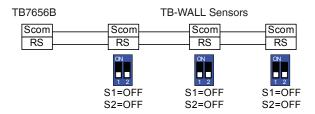
- The first stage of cooling is outdoor air free cooling and will maintain a low limit mixed air setpoint.
- The mechanical cooling stages will operate as a second and third cooling stages based on demand.

If the outdoor air temperature does not allow for economizer free cooling operation:

• The cooling stages will operate according to demand.



Averaging Sensor Wiring & Dip Switch Settings



**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used. The minimum position of the economizer fresh air damper is enabled.

**Fan mode operation:** The single speed fan can be set to either automatic on demand or always on.

### **Options**

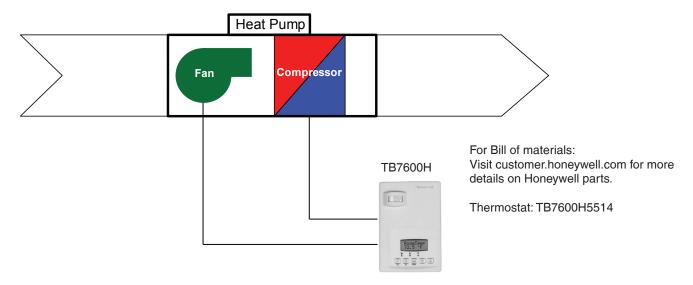
BACnet and Wireless models are available. See appendix B for more details.

Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

One monitoring supply air temperature input and 2 digital inputs can be used and configured for advanced functionality if required by the application. E.g. Remote night setback, remote override, filter and service alarms, etc.

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### TB7600H5514: 1H & 1C HEATPUMP: 1 COMPRESSOR FOR HEAT & COOL



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7600 Series Installation Instructions (Form No. 62-2016).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
DI1	None
DI2	None
Lockout	As per user: (see manual for details) set to "0" for full access
pwr del	10 seconds is factory set, range is: 10 to 120 seconds
Frost pr	ON
Heat max	90 °F ( 32 °C ) is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Cool min	54 °F ( 12 °C ) is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
anticycle	2 minutes is factory set range is: 0,1,2,3,4 & 5 minutes
Heat cph	4 C.P.H is factory set, range is: 3, 4, 5, 6,7 & 8 CPH
Cool cph	4 CPH is factory set, range is: 3 or 4 CPH
deadband	2.0 °F ( 1.1 °C ) is factory set, range is: 2, 3 or 4 °F ( 1.0 to 2.0 °C )
fan cont	ON, Auto or Smart (see manual for details)
Fan del	OFF
ToccTime	3 hours is factory default, range is: 0 to 12 in one hour increments
cal RS	0.0 °F or °C
cal OS	0.0 °F or °C
HP stage	1 stage
H lock	120 °F ( 49 °C ) is factory default, range is: -15 °F up to 120 °F ( -26 °C up to 49 °C )
C lock	-40 °F ( -40 °C ) is factory default, range is: From -40 °F up to 95 °F ( -40 °C up to 35 °C )
Unocc TM	0.5 hours is factory set, range is: 0.5 to 24.0 hours in 0.5hr increments
2/4event	2 events is factory default, can also be set to 4 events (for non-networked thermostat only)
Aux cont	N.O. normally open
Prog rec	OFF
high bp	90 °F ( 32.0 °C ) is default value, range is: 34 to 90 °F ( 1.0 to 32.0 °C)
low bp	-12 °F (-24.0 °C ) is default value, range is: -40 to 30 °F (-40.0 to -1.0 °C)
comf/eco	Comfort mode or Economy mode
re valve	O when reversing valve energized in cooling or B when energized in heating
Comp/aux	OFF

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used.

PIR activated unoccupied mode: When equipped with a PIR (Passive Infrared) accessory cover a thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to unoccupied when no motion is detected in the room. During PIR activated unoccupied periods, the unoccupied-by heating and cooling setpoints are used.

**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used.

**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for cooling: The compressor output will operate the heatpump compressor and energize the reversing valve according to demand.

On a call for heating: The compressor output will operate the heatpump compressor stages and de-energize the reversing valve according to demand. The duct heater will operate as a third step.

**Fan mode operation:** The single speed fan can be set to either automatic on demand or always on.

TB7600H	l H	leatpump
Y1		Y
G		G
RC		RC
С		С
		O/B
RH		
W1		
O/B		

### **Options**

BACnet and Wireless models are available. See appendix B for more details.

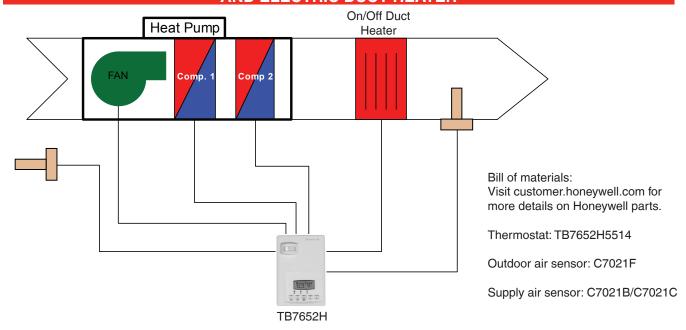
Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

One monitoring supply air temperature input and 2 digital inputs can be used and configured for advanced functionality if required by the application. E.g. Remote night setback, remote override, filter and service alarms, etc.

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An outdoor temperature input can be used and configured for the lockout of heating and cooling operation.

# TB7652H5514: 3H & 2C HEATPUMP: 2 COMPRESSORS FOR HEAT, COOL AND ELECTRIC DUCT HEATER



To enter configuration menu press and hold the override key for 8 seconds.

For full explanation of parameters refer to the TB7600 Series Installation Instructions (Form No. 62-2016).

Configuration parameter name	Configuration settings
PswrdSet	0 is factory set, range is: 0-1000
DI1	Filter
DI2	None
Lockout	As per user: (see manual for details) set to "0" for full access
pwr del	10 seconds is factory set, range is: 10 to 120 seconds
Frost pr	ON
Heat max	90 °F ( 32 °C ) is factory set, range is: 40 to 90 °F ( 4.5 to 32.0 °C )
Cool min	54 °F ( 12 °C ) is factory set, range is: 54 to 100 °F ( 12.0 to 37.5 °C )
Pband	2 °F is factory set, range is: 2 to 10 °F ( 0.6 to 5.6 °C )
anticycle	2 minutes is factory set range is: 0,1,2,3,4 & 5 minutes
Heat cph	4 C.P.H is factory set, range is: 3, 4, 5, 6,7 & 8 CPH
Cool cph	4 CPH is factory set, range is: 3 or 4 CPH
deadband	2.0 °F ( 1.1 °C ) is factory set, range is: 2, 3 or 4 °F ( 1.0 to 2.0 °C )
fan cont	ON, Auto or Smart (see manual for details)
Fan del	OFF
Com Addr	Found on BACnet models only
ToccTime	3 hours is factory default, range is: 0 to 12 in one hour increments
cal RS	0.0 °F or °C
cal OS	0.0 °F or °C
H stage	2 stages
HP stage	2 stages
H lock	120 °F ( 49 °C ) is factory default, range is: -15 °F up to 120 °F ( -26 °C up to 49 °C )
C lock	-40 °F ( -40 °C ) is factory default, range is: From -40 °F up to 95 °F (-40 °C up to 35 °C)
Unocc TM	0.5 hours is factory set, range is: 0.5 to 24.0 hours in 0.5hr increments
2/4event	2 events is factory default, can also be set to 4 events (for non-networked thermostat only)
Aux cont	N.O. normally open
Prog rec	ON
high bp	90 °F ( 32.0 °C ) is default value, range is:34 to 90 °F ( 1.0 to 32.0 °C)
low bp	-12 °F (-24.0 °C ) is default value, range is:-40 to 30 °F (-40.0 to -1.0 °C)
comf/eco	Comfort mode or Economy mode
re valve	O when reversing valve energized in cooling or B when energized in heating
Comp/aux	OFF

**Supply air sensing:** A supply air sensor is used for remote monitoring or the discharge air temperature of the HVAC equipment.

**Occupied mode:** During occupied periods, the occupied heating and cooling setpoints are used.

PIR activated unoccupied mode: When equipped with a PIR (Passive Infrared) accessory cover a thermostat provides advanced active occupancy logic, which will automatically switch occupancy levels from occupied to unoccupied when no motion is detected in the room. During PIR activated unoccupied periods, the unoccupied by heating and cooling setpoints are used.

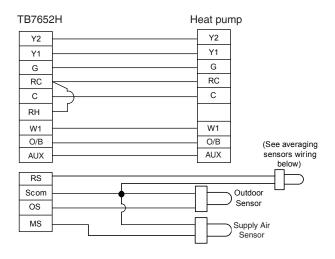
**Unoccupied mode:** During unoccupied periods, the unoccupied heating and cooling setpoints are used.

**Local override:** The thermostat will revert back to the occupied mode as specified by a configuration timer when a local override is requested at the thermostat.

On a call for cooling: The compressor output will operate the heatpump compressor stages and energize the reversing valve according to demand.

On a call for heating: The compressor output will operate the heatpump compressor stages and de-energize the reversing valve according to demand. The duct heater will operate as a third step.

**Fan mode operation:** The single speed fan can be set to either automatic on demand or always on.



### **Options**

BACnet and Wireless models are available. See appendix B for more details.

Remote wall mounted sensor or a return air temperature sensor can be used instead of the internal temperature sensor of the thermostat. See appendix F for more details on available 10K ohm NTC Type II sensors.

One monitoring supply air temperature input and 2 digital inputs can be used and configured for advanced functionality if required by the application. E.g. Remote night setback, remote override, filter and service alarms, etc.

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An outdoor temperature input can be used and configured for the lockout of heating and cooling operation.

## APPENDIX A: PASSIVE INFRARED (PIR) OCCUPANCY SENSOR COVERS TECHNICAL SPECIFICATIONS

### PIR Cover Sequence Of Operation

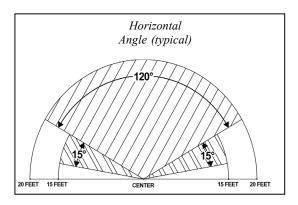
Initially, the thermostat is in Stand-by mode. Stand-by setpoints are used at the thermostat. As soon as the PIR detects a movement or motion, the Occupancy status switches to Occupied and the Stand-By Time timer is reset. The Occupied setpoints are used. If no motion is detected in the room for the entire Stand-By Time duration (adjustable parameter), the room then switches to Stand-by mode and stand-by setpoints are used. While in Stand-by mode, if no motion is detected for the entire Unoccupied Time period (adjustable parameter), the room switches to Unoccupied mode and uses its Unoccupied setpoints. While in Stand-By or Unoccupied mode, any motion will switch the room back to Occupied mode.

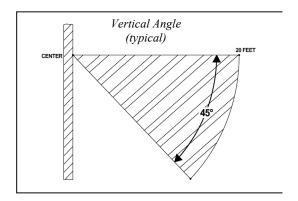
### Thermostat Model Selection Based On PIR Cover

PIR Cover Ready Thermostats	Thermostats With Factory Assembled PIR Cover
TB7200X5014	TB7200X5514
TB73xxX5014	TB73xxX5514
TB76xxX5014	TB76xxX5514

At the end of the model number add B for BACnet models or W for ZigBee wireless models. Ex: TB76xxX5014B, TB76xxX5014W.

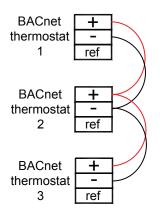
### Typical Detection Pattern for PIR Lens





### **APPENDIX B: NETWORK WIRING**

# BACnet communication wiring



### Wireless communication



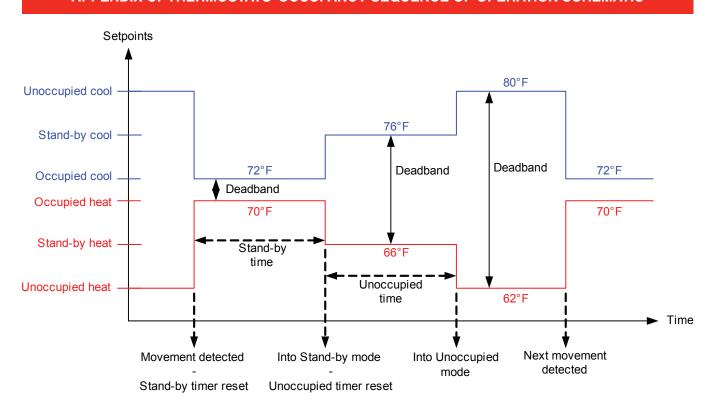
### Notes:

- No communication wires needed

### Note:

- Wiring should be daisy chained.
- Respect polarity.
- If using 2 conductors shielded wires, connect the shield of each feed together on the back of the thermostat. ONLY ground the shield at one location. DO NOT connect the shield to the ref terminal.
- If using 2 conductors shielded wires, same connections as above but you can wire the 3rd conductor to the ref therminal for troubleshooting purposes.

### APPENDIX C: THERMOSTATS' OCCUPANCY SEQUENCE OF OPERATION SCHEMATIC



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### **APPENDIX D: CONTROL VALVE APPLICATIONS & SELECTION CRITERIA**

				Cont	trol Valve A	pplications							
			Pipe Size, inches (DN)										
		1/2" 3/4 DN15 DN2		1-1/4" DN32	1-1/2" DN40	2" DN50	2-1/2" DN65	3" DN80	4" DN100	5" DN125	6" DN150	8~20" >DN200	
	Fan Coil Units	Fan coil/zone va Cartridge cage v Pressure regula	alves										
	Unit Heaters	Fan coil/zone va Cartridge cage v Pressure regular	alves										
	Convectors	Fan coil/zone va Cartridge cage v Cartridge globe Pressure regular	ves alves valves										
uipment	Radiant Panels	Fan coil/zone va Cartridge cage v Cartridge globe Pressure regular	alves valves										
Unitary Equipment	Unit Ventilators	Cartridge cage v Cartridge globe Control ball valv Pressure regular	valves es										
	Reheat Coils	Cartridge cage v Cartridge globe Control ball valv Pressure regula	valves es										
	Water Source Heat Pump	Cartridge cage v Control ball valve Pressure regular	es										
	Blower Coil	Control ball valve Pressure regula	es	ves e globe valv	/es								
		Threaded globe											
y,	Heating & Cooling	Threaded contro	l ball valves				Flanged	globe valve					
Ē	Coils		1.				i langea ç	Jiobe vaive	Flanged I	all valve			
alling			Pressure regulated valves  Threaded globe valve										
Air Handling Units	Chilled Ceiling	Threaded control Pressure regula	Threaded control ball valves Pressure regulated valves										
	Humidifiers	Threaded globe	valve				Flanged g	globe valve					
		Threaded globe											
	Outdoor reset	Threaded contro	I ball valves				Flanged o	globe valve	Flanged I	oall valve			
		Threaded globe Threaded contro											
	Boiler Bypass							globe valve	Flanged I	all valve			
		The state of the s				Resilient	seat butterf	ly valves	<u> </u>				
	Heat reclaim	Threaded globe Threaded contro											
	Steam Heat	Threaded globe	valve				- Floring '	ulahat					
	Exchangers	Threaded globe	valve				Flanged	globe valve	 I	 I	T T		
ant		Threaded contro		Ţ		1							
Central Plant	Greenhouse						Flanged	globe valve	Flanged I	pall valve			
entr						Resilient	seat butterf	ly valves					
	Thormal Otage	Threaded globe Threaded control											
	Thermal Storage					Resilient	Flanged g	globe valve					
		Threaded globe	valve	<u> </u>	<u>'</u>	Ticomerit	Cour Dutter	., •					
		Threaded contro					Florand	aloho voluc					
	Chillers							globe valve	Flanged I	all valve			
		Pressure regula	ed valves			Resilient	seat butterf	ly valves					
		Threaded globe											
	Cooling Towers	Threaded globe				Resilient	seat butterf	ly valves					
	Isolation valves	Threaded contro	l ball valves				seat butterf						

### APPENDIX D: 2-WAY CONTROL VALVE SELECTION CRITERIA

	İ		Uni	tarv				Glo	be		
	Unitary Glob  Fan Coil Cartridge Cartridge Globe Threaded						Flanged				
Attributo	Cassification					VE011N		VE0110	VEO11A		VCE2+C
Attribute	Specification 1/2" [DN15]	VU52	VU53	VCzA/B	V58x2	V5011N	V5011F	V5011G	V5011A	V5011B	VGF2xS
	3/4" [DN20]	•	•	•	•	•					
	1" [DN25]	•									
	1-1/4" [DN32]			•		•					
	1-1/2" [DN40]										
	2" [DN50]					•					
Pipe Size	2-1/2" [DN65]						•	•	•		•
	3" [DN80]						•	•	•		•
	4" [DN100]								•	•	•
	5" [DN125]								•	•	•
	6" [DN150]								•	•	•
	Other (maximum size)										
	Sweat	•	•	•	•						
Pipe Fittings	NPT Internal Thread	•	•	•	•	•	•	•			
1 ipe i ittiligs	Inverted Flare	•	•	•							
	ANSI Flange								•	•	•
	ANSI 125/150					•	•	•	•	•	•
Static Pressure	ANSI 250/300										•
	Other		) psi	300 psi	230 psi						
	Chilled Water	•	•	•	•	•	•	•	•	•	•
Media	Hot Water	•	•	•	•	•	•	•	•	•	•
	Low Pressure Steam					N1, N3	•	•	•	•	•
	High Pressure Steam					N2		٠			•
Flow Capacity, Cv	Multiple ratings per pipe size	•	•	•	•	•	•	•			
1 3	One rating/size above 1/2"					•	•	•	•	•	•
	Direct Acting ****					N1, N2	•	•	•		•
Valve Action	Reverse Acting *****			•	•	N3				•	
	Rotary N.O.	•									
	Rotary N.C.		•								
	Equal Percentage				•	•	•		•	•	•
Flow Characteristic	Modified Equal Percentage Linear			•		•		•			•
	Quick Open	•				•		•			•
	High** (100 psid minimum)	•		•	•						
Close-off	Medium (40 psid minimum)										
pressure***	Varies with actuator	•	•			•	•		•	•	•
	ANSI Class III (0.10% Cv max.)	-			0.02%	0.05%	-		-		•
Maximum Coat	ANSI Class IV (0.01% Cv max.)				0.02 /0	0.0070					-
Maximum Seat Leakage	Bubble-tight design										
	Other (see product data literature)	33 r	nL/m				0.5%	0.5%			
	High (50:1 minimum)	001					•	•			
Rangeability	Medium* (15~50:1)	N	I/A	•							
	Low (under 15:1)	.,									
	Brass, plated brass, bronze					N3	•		•	•	
	Brass plug /Stainless seat					N1					
Trim	Stainless Steel					N2		•			•
	Resilient materials	•	•	•	•						
	Cartridge	•	•	•	•						
In-line Serviceability	Packing					•	•	•	•	•	•
Corviocability	Rebuild					•	•	•	•	•	
	Electronic Modulating			•	•	•	•	•	•	•	•
	Tri-state floating			•	•	•	•	•	•	•	•
	Pulse Width Modulation			•							
	2-position low voltage	•	•	•	0	•	•	•	•	•	•
Actuation Ontion	2-position line voltage	•	•	•		•	•	•	•	•	•
Actuation Options	Electric Spring Return	•	•		•	•	•	•	•	•	•
	Electronic Fail Safe			•							
	Pneumatic, low pressure				•	•	•	•	•	•	•
	Pneumatic bidirectional (Hi-Pr)										
	Pneumatic spring return (Hi-Pr)										

- \* Best used with supply water reset from outdoor air temperature.

  \*\* Can dead-head pumps. Use with VFD-controlled pumps with maximum pressure cut-out

  \*\*\* Maximum operating differential pressure. Static close-off pressure may be higher. Maximum pressure for quiet service may be less.

  \*\*\*\* Stem down to close

  \*\*\*\*\* Stem up to close

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### APPENDIX D: 2-WAY CONTROL VALVE SELECTION CRITERIA (CONTINUED)

		Glo	be	Contro	ol Ball	Pressure-	Regulated	Butt	erfly
		Pressure-	Balanced	Threaded	Flanged	Threaded	Wafer Flanged	Resilie	nt Seat
Attribute	Specification	V5862A3	VGF2xP	VBN2	VBF2	VRN2	VRW2	VFF1	VFF2
	1/2" [DN15]			•		•			
	3/4" [DN20]			•		•			
	1" [DN25]	•		•		•			
	1-1/4" [DN32]	•		•		•			
	1-1/2" [DN40]	•				•			
Pipe Size	2" [DN50]			•		•		•	•
·	2-1/2" [DN65]		•	•		•	•	•	•
	3" [DN80] 4" [DN100]		•	•		•	•	•	•
	4" [DN100] 5" [DN125]		•		•		•	•	•
	6" [DN150]		•				•	•	
	Other (maximum size)		-				-	20" [[	
	Sweat							20 [	14000]
	NPT Internal Thread	•							
Pipe Fittings	Inverted Flare								
	ANSI Flange		•		•		•	•	•
	ANSI 125/150		•		•		•		
Static Pressure	ANSI 250/300						•		
	Other	230	psi	360	) psi	360 psi		250	) psi
	Chilled Water	•	•	•	•	•	•	•	•
NA - 11	Hot Water	•	•	•	•	•	•	•	•
Media	Low Pressure Steam		•						
	High Pressure Steam		•						
Flaw Canasity Cy	Multiple ratings per pipe size	•		•	•	x (gpm)	x (gpm)		
Flow Capacity, Cv	One rating/size above 1/2"		•					•	•
	Direct Acting ****	•	•			Ì			
Valve Action	Reverse Acting *****								
valve Action	Rotary N.O.			0	0	0	0	•	0
	Rotary N.C.			•	•	•	•		•
	Equal Percentage		•			•	•		
Flow Characteristic	Modified Equal Percentage			•	•			•	•
THOM CHARACTERS	Linear	•	•			•			
	Quick Open					ļ			
Close-off	High** (100 psid minimum)	•	•	•	•	•	•	•	•
pressure***	Medium (40 psid minimum)							•	•
	Varies with actuator								
	ANSI Class III (0.10% Cv max.)					•			
Maximum Seat Leakage	ANSI Class IV (0.01% Cv max.)	•	•	•	•			•	•
-	Bubble-tight design						0.00/	•	•
	Other (see product data literature)						< 0.2%		
Dangashilitu	High (50:1 minimum)  Medium* (15~50:1)	•	•	•	•	. 10 anm	•		
Rangeability	Medium* (15~50:1) Low (under 15:1)			0		< 10 gpm		•	
	Brass, plated brass, bronze			•		•		•	•
	Brass plug /Stainless seat								
Trim	Stainless Steel	•	•	•	•		•		
	Resilient materials					•	•	•	•
	Cartridge					•	•		
In-line Serviceability	Packing	•	•	•	•	•	•		
Serviceability	Rebuild				•	Regulator			
	Electronic Modulating	•	•		•	•	•	•	•
	Tri-state floating	•	•	•	•	•	•	•	•
	Pulse Width Modulation								
	2-position low voltage		•	•	•	0	0	Lim	ited
Antonial' C. II	2-position line voltage		•	0	0	0	0	•	•
Actuation Options	Electric Spring Return	•	•	•	•	•		Lim	ited
	Electronic Fail Safe						•		
	Electronic ran care								
	Pneumatic, low pressure		•					Lim	iited
			•					Lim •	e ited

Notes

<sup>\*</sup> Best used with supply water reset from outdoor air temperature.

\*\* Can dead-head pumps. Use with VFD-controlled pumps with maximum pressure cut-out

\*\*\* Maximum operating differential pressure. Static close-off pressure may be higher. Maximum pressure for quiet service may be less.

\*\*\*\* Stem down to close

\*\*\*\* Stem up to close

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### APPENDIX D: 3-WAY CONTROL VALVE SELECTION CRITERIA

						Globe						
	Fan Coil	Unit Cartridge		je Globe	Threaded			nged				
Attribute	Specification	VU54	Cage VCzM/N	V58x3	V5863A3	V5013N	V5013B	V5013C	VGF3xLD	VGF3xEM		
Attribute	1/2" [DN15]	•	• •	•	¥3003A3	•	V3013B	V30130	VULOVED	VUFSKEIVI		
	3/4" [DN20]	•	•	•		•						
	1" [DN25]	•	•		•	•						
	1-1/4" [DN32]		•		•	•						
_	1-1/2" [DN40]				•	•						
Pipe Size —	2" [DN50]					•						
	2-1/2" [DN65]						•		•	•		
	3" [DN80] 4" [DN100]						•		•	•		
	5" [DN125]						•	•	•	•		
	6" [DN150]						•	•	•	•		
	Other (maximum size)											
	Sweat	•	•	•								
Dina Fittinga	NPT Internal Thread	•	•	•	•	•						
Pipe Fittings —	Inverted Flare	•	•									
	ANSI Flange						•	•	•	•		
	ANSI 125/150					•	•	•	•	•		
Static Pressure	ANSI 250/300	200 - '	200 - 1	000	000 - 1				•	•		
	Other	300 psi	300 psi	230 psi	230 psi			-	-	-		
Media —	Chilled Water Hot Water	•	•	•	•	•	•	•	•	•		
	Multiple ratings per pipe size	•	•	•	•	•	·	•	•	,		
Flow Capacity, Cv	One rating/size above 1/2"					•	•	•	•	•		
	Mixing A-B-AB porting			•	•	•	•			•		
Value Astion	Mixing A-AB-B porting	•	•									
Valve Action —	Diverting AB-B-A porting							•	•			
	Diverting A-AB-B porting		•									
	Equal Percentage			•		•				•		
A-port Flow	Modified Equal Percentage		•									
Characteristic	Linear		•		•		•	•	•			
	Quick Open  Modified Equal Percentage	•	•									
	Linear		•				•	•	•	•		
B-port Flow	Linear, Reduced Cv			•	•							
Characteristic	Total Constant Flow			•		•	•	•	•			
	Quick Open	•										
	High (60 psid minimum)		•	•	•							
Close-off pressure***	Medium (30 psid minimum)			•								
	Varies with actuator	•				•	•	•	•	•		
l —	ANSI Class III (0.10% Cv max.)			•	•	•			•			
Seat —	ANSI Class IV (0.01% Cv max.)						•	•				
Leakage**	Bubble-tight design ther (see product data literature)	33 mL/m	•							A = 0.5%		
Ut	High (50:1 minimum)	JJ IIIL/III		•	•	•	•	•	•	A = 0.5%		
Rangeability I	Medium* (15~50:1)	N/A	•					-	-	-		
July	Low (under 15:1)	,										
	Brass, plated brass, bronze				•	•	•	•				
Trim	Stainless Steel					0			•	•		
	Resilient materials	•	•	•								
In-line	Cartridge	•	•	•								
In-line Serviceability	Packing				•	•	•	•	•	•		
	Rebuild					•	•	•				
	Electronic Modulating		•	•	•	•	•	•	•	•		
-	Tri-state floating Pulse Width Modulation		•	•	•	•	•	•	•	•		
	2-position low voltage	•	•	0	0	•	•	•	•	•		
	2-position line voltage	•	•	3		•	•	•	•	•		
Actuation Options —	Electric Spring Return	•		•	•	•	•	•	•	•		
	Electronic Fail Safe		•									
	Pneumatic, low pressure			•		•	•	•	•	•		
_	Pneumatic bidirectional (Hi-Pr)											
F	Pneumatic spring return (Hi-Pr)											

Notes

less.

<sup>\*</sup> Best used with supply water reset from outdoor air temperature.

\*\* A port specification

\*\*\* A-port maximum operating differential pressure. Static close-off pressure may be higher. Maximum pressure for quiet service may be

### APPENDIX D: 3-WAY CONTROL VALVE SELECTION CRITERIA (CONTINUED)

		Contro	ol Ball	Butt	erfly
		Threaded	Flanged		nt Seat
Attribute	Specification	VBN3	VBF3	VFF3	VFF6
11(111111111111111111111111111111111111	1/2" [DN15]	•	12.0		
	3/4" [DN20]	•			
	1" [DN25]	•			
	1-1/4" [DN32]	•			
	1-1/2" [DN40]	•			•
Pipe Size	2" [DN50] 2-1/2" [DN65]	•		•	•
	3" [DN80]	-		•	•
	4" [DN100]		•	•	•
	5" [DN125]		•	•	•
	6" [DN150]		•	•	•
	Other (maximum size)			20" [D	N500]
	Sweat				
Pipe Fittings	NPT Internal Thread	•			
	Inverted Flare ANSI Flange				
	ANSI 125/150		•		
Static Pressure	ANSI 250/300				
	Other	360 psi		250	psi
Media	Chilled Water	•	•	•	•
IVICUIA	Hot Water	•	•	•	•
Flow Capacity, Cv	Multiple ratings per pipe size	•	•		
	One rating/size above 1/2"			•	٠
	Mixing A-B-AB porting  Mixing A-AB-B porting	•	•	•	•
Valve Action	Diverting AB-B-A porting	•	0	•	•
	Diverting A-AB-B porting		0	-	•
	Equal Percentage				
A-port Flow	Modified Equal Percentage	•	•	•	•
Characteristic	Linear				
	Quick Open				
	Modified Equal Percentage			•	•
B-port Flow	Linear Dadwood Cv		•		
Characteristic	Linear, Reduced Cv Total Constant Flow	•	•		
	Quick Open				
	High (60 psid minimum)		•	•	•
Close-off pressure***	Medium (30 psid minimum)	•		•	•
pressure	Varies with actuator				
	ANSI Class III (0.10% Cv max.)				
Maximum Seat	ANSI Class IV (0.01% Cv max.)	•	A-port	•	•
Leakage**	Bubble-tight design		D '	•	•
	Other (see product data literature) High (50:1 minimum)	•	B-port		
Rangeability	Medium* (15~50:1)	0	•		
Hangeability	Low (under 15:1)	J		•	•
	Brass, plated brass, bronze	•			
Trim	Stainless Steel		•		
	Resilient materials			•	•
In-line	Cartridge				
Serviceability	Packing	•	•		
	Rebuild	•	•	•	•
	Electronic Modulating Tri-state floating	•	•	•	•
	Pulse Width Modulation		-	-	-
	2-position low voltage	•	•	Lim	ited
Actuation Ontin	2-position line voltage	0	0	•	•
Actuation Options	Electric Spring Return	•	•	Lim	ited
	Electronic Fail Safe				
	Pneumatic, low pressure				ited
	Pneumatic bidirectional (Hi-Pr)			•	•
	Pneumatic spring return (Hi-Pr)	t from outdoor		•	•

Notes

less.

<sup>\*</sup> Best used with supply water reset from outdoor air temperature.

\*\* A port specification

\*\*\* A-port maximum operating differential pressure. Static close-off pressure may be higher. Maximum pressure for quiet service may be

<sup>\*\*\*\*</sup> Stem down to close
\*\*\*\*\* Stem up to close
"Limited" = not available in large sizes

### APPENDIX E: DIRECT COUPLED ACTUATORS



Spring Return, Low Torque



Spring Return, High Torque

### DIRECT COUPLED ACTUATORS QUICK SELECTION GUIDE

Precise, reliable performance. Lasting value. Ease of installation. Everything you look for in direct-coupled actuators hinges on quality. And quality engineering is what makes Honeywell's complete line of actuators the top performers in the industry. Our global engineering team designs and tests our direct-coupled actuators to exceed rigorous global standards — and to meet Honeywell's own demanding life testing.

But we don't stop there. Thanks to our continuous improvement process, Honeywell actuators are now easier than ever to install. You'll also benefit from consistent wiring regardless of signal type, common accessories and a simplified selection process.

Honeywell's complete line of building control products, including valves and actuators, are already proven in more than three million buildings worldwide. So when you need spring or nonspring return actuators for your damper and valve applications, specify Honeywell. We make precision easy.

### Improve Installation Time

- Self-centering shaft adapter provides mounting flexibility and greater clamping force.
- Common wiring among families for every signal saves installation time.

### **Decrease Material Cost**

 Detachable access cover allows direct wiring without a junction box.

### Reduce Inventory

 Signal mode switch adapts models to twoposition, floating (tri-state), or modulating (proportional) applications.

### Increase Control and Accuracy

 More than 200 reposition steps for modulating models provide precise control.

### Increased Flexibility

 Select models are available with or without three foot actuator whips cable.

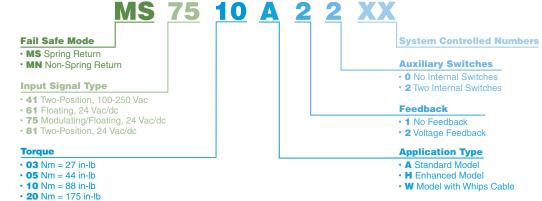


### **EASY-TO-SELECT MODEL NUMBERS**

### MS and MN Families



Non-Spring Return, Low Torque

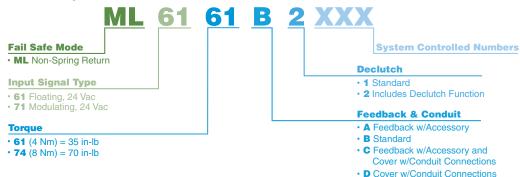




Non-Spring Return, High Torque

### ML Family

• **34** Nm = 300 in-lb



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### APPENDIX E: DIRECT COUPLED ACTUATORS (CONTINUED)

### **SPRING RETURN**

				Runni	ing Time Power Supply				Co	ntrol Input/O	utput		Auxiliary	Knob	
	Order Specification Number (without whips)	Order Specification Number (with whips)	Damper Area (4.5 lb-in/ sq. ft.)	Drive (sec)	Spring Return (sec)	24 Vac/dc	120-230 Vac	VA Rating (Running)	On/Off	0/2-10 Vdc, Floating	3 kOhm NTC, 3-Position	Feedback (0/2-10 Vdc)	Adj. Zero and Span	SPDT Auxiliary Switches	IMPP*
	S03 Series (3 Nm, 27	lb-in)													
	MS8103A1030		6	45	<25	•		7	•					0	
( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	MS8103A1130		6	45	<25	•		7	•					1	
	MS4103A1030		6	45	<25		•	10	•					0	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	MS4103A1130		6	45	<25		•	10	•					1	
工艺 生	MS7503A2030		6	90	<25	•		7		•		•		0	
The same of the sa	MS7503A2130		6	90	<25	•		7		•		•		1	
	MS7403A2030		6	90	<25	•		7		•	•	•		0	•
63	S05 Series (5 Nm, 44	lb-in)												•	
	MS8105A1030	MS8105W1030	10	45	<25	•		8	•					0	
	MS8105A1130	MS8105W1130	10	45	<25	•		8	•					1	
***	MS4105A1030		10	45	<25		•	11	•					0	
(0)	MS4105A1130		10	45	<25		•	11	•					1	
7	MS7505A2030	MS7505W2030	10	90	<25	•		8		•		•		0	
	MS7505A2130	MS7505W2130	10	90	<25	•		8		•		•		1	
) 10	MS7405A2030		10	90	<25	•		8		•	•	•		0	•
	\$10 Series (10 Nm, 88											,			
do.	MS8110A1008	MS8110W1008	20	45	<25	•		30	•					0	
20	MS8110A1206	MS8110W1206	20	45	<25	•		30	•					2	
3	MS4110A1002		20	45	<25		•	45	•					0	
4.6.5	MS4110A1200		20	45	<25		•	45	•					2	
THE PERSON	MS7510A2008	MS7510W2008	20	90	<25	•		14		•		•		0	
1	MS7510A2206	MS7510W2206	20	90	<25	•		14		•		•		2	
	MS7510H2209		20	90	<25	•		14		•		•	•	2	
Acres 1	S20 Series (20 Nm, 17	75 lb-in)													
6	MS8120A1007	MS8120W1007	39	45	<25	•		40	•					0	
Tools,	MS8120A1205	MS8120W1205	39	45	<25	•		40	•					2	
	MS4120A1001		39	45	<25		•	60	•					0	
An III	MS4120A1209		39	45	<25		•	60	•					2	
	MS7520A2007	MS7520W2007	39	90	<25	•		16		•		•		0	
	MS7520A2205	MS7520W2205	39	90	<25	•		16		•		•		2	
J	MS7520H2208		39	90	<25	•		16		•		•	•	2	

### **NON-SPRING RETURN**

11011	or runvarie	101111			Power S	vlagu			Control	Input/Outpu	t	1
			_									
	Order	Order	Damper									
	Specification	Specification	Area									
	Number	Number	(4.5 lb-in/	Running			VA Rating	On/Off,			Feedback	SPDT Auxiliary
	(without whips)	(with whips)	sq. ft.)	Time	24 Vac/dc	24 Vac	(Running)	Floating	0/2-10 Vdc	2-10 Vdc	(0/2-10 Vdc)	Switches
al se	NO5 Series (5 Nm, 44 lb											
	MN6105A1011	MN6105W1011	10	90	•		5	•				0
color.	MN6105A1201		10	90	•		5	•				2
	MN7505A2001	MN7505W2001	10	90	•		5	•	•		•	0
G III	MN7505A2209		10	90	•		5	•	•		•	2
U and	N10 Series (10 Nm, 88 I	b-in)										
	MN6110A1003		20	90	•		5	•				0
7	MN6110A1201		20	90	•		5	•				2
	MN7510A2001		20	90	•		5	•	•		•	0
	MN7510A2209		20	90	•		5	•	•		•	2
	N20 Series (20 Nm, 175	lb-in)										
	MN6120A1002		39	90	•		6	•				0
2	MN6120A1200		39	90	•		6	•				2
	MN7220A2007		39	90	•		6		•		•	0
	MN7220A2205		39	90	•		6		•		•	2
	N34 Series (34 Nm, 300	lb-in)										
()= 1	MN6134A1003		67	90	•		9	•				0
	MN7234A2008		67	90	•		8		•		•	0
	ML6161/7161 (4 Nm, 35	D ID-IN)					1.0				,	
	ML6161A2009		8	90		•	1.8	•			w/ accessory	0
	ML6161A2017		8	420		•	1.8	•			w/ accessory	0
	ML6161A2025		8	180		-	1.8	•			w/ accessory	0
	ML6161B2024		8	90		•	1.8	•				0
	MS6161B2032		8	420 180		•	1.8 1.8	•				0
	ML6161B2073 ML6161C2007		8	90		•	1.8	•			/	0
	ML6161D2006		8	90		•	1.8	•			w/ accessory	0
	ML7161A2008		8	90		•	5.4	•		•		0
	ML6174/7174 (8 Nm, 70	) lh in\	0	90			5.4			•		0
	ML6174A2002	וווי-ווון	16	90		•	2.4	•			w/ accessory	0
	ML6174A2002 ML6174A2010		16	180		•	2.4	•			w/ accessory	0
	ML6174B2019		16	90		•	2.4	-:-			w accessory	0
	ML6174B2035		16	420		•	2.4	•				0
	ML6174D2009		16	90		•	2.4	•				0
	ML6174E2008		16	90		•	2.4	•				0
0	ML7174A2001		16	90		•	5.4	•				0
Andrew Color	ML7174A2001 ML7174E2007		16	90		•	5.4	•				0
	WIL/ 1/4L200/		10	30			J. <del>4</del>					U

### APPENDIX F: 10K NTC TYPE II SENSORS

	OS No.	Туре	Description
Boncywell	C7021B2005	Duct Mount	6" duct w/ wiring enclosure
The state of the s	C7021B2013	Duct Mount	12" duct w/ wiring enclosure
	C7021C2003	Duct Mount	18" duct w/ wiring enclosure
And the second s	C7021J2007	Duct Mount	12' duct averaging w/ wiring enclosure
	C7021R2000	Duct Mount	12' duct averaging flexible copper
	C7021R2018	Duct Mount	24' duct averaging flexible copper
-	C7776A1006	Duct Mount	6" duct probe with flange, 8.5 in stranded wire
	C7776A1040	Duct Mount	6" duct probe with flange, 6 ft plenum cable
	C7021P2004	Wall Mount	Small metal button sensor

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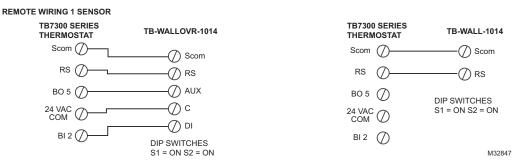
### APPENDIX F: 10K NTC TYPE II SENSORS (CONTINUED)

	OS No.	Туре	Description
Honeywell	C7021D2001	Water	Pipe sensor with wiring enclosure, use well 50001774-001
Hooeywell	C7021K2005	Water	Strap-on pipe sensor with wiring enclosure
	C7021F2009	Outdoor	Outdoor weatherproof, connects to 1/2" conduit, 10K Ohms NTC Type II
	C7021N2001	Water / Air	Probe Sensor with 6' Lead
Honeywoll	C7772F1004	Wall Mount	Wall Flush Mount Temperature Sensor, without logo
	C7772F1012	Wall Mount	Wall Flush Mount Temperature Sensor, with logo
identical transit	TB-WALL-1014	Wall Mount	Wall sensor
	TB-WALLOVR-1014	Wall Mount	Wall sensor with override

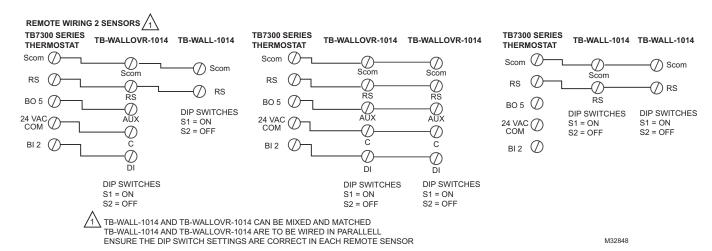
# APPENDIX G: TB-WALL SENSOR WIRING & DIP SWITCH SETTINGS FOR TB7200 AND TB7300 SERIES THERMOSTATS

If LED indicator is desired at the TB-WALLOVR-1014:

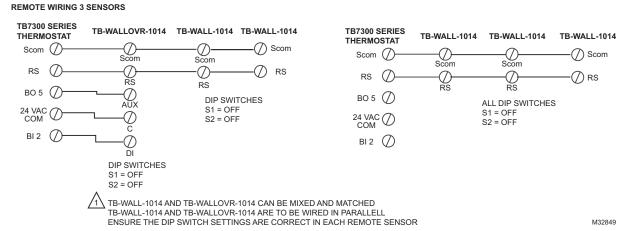
- Set the Aux Cont installer parameter (which controls BO5) to option 2, Auxiliary NC.
- 2. Install a jumper across the BO5 terminal and 24 Vac Hot.



Wiring example of single remote wall mounted room sensor.



Wiring examples of two remote wall mounted room sensors for averaging applications.



Wiring examples of three remote wall mounted room sensors for averaging applications.

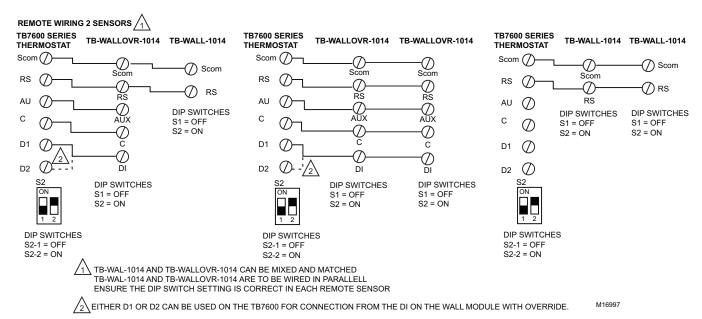
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# APPENDIX G: TB-WALL SENSOR WIRING & DIP SWITCH SETTINGS FOR TB7600 SERIES THERMOSTATS

### **REMOTE WIRING 1 SENSOR** TB7600 SERIES **TB7600 SERIES** TB-WALLOVR-1014 TB-WALL-1014 THERMOSTAT **THERMOSTAT** Scom (/ Scom Scom (7) (/) Scom RS (7)RS RS (/) RS $\bigcirc$ AUX ΑU ΑU $\bigcirc$ С С С **DIP SWITCHES** $\bigcirc$ DI S1 = ON S2 = ON D1 DIP SWITCHES S1 = ON S2 = ON D2 **DIP SWITCHES** DIP SWITCHES S2-1 = ON S2-2 = ON S2-1 = ON S2-2 = ON

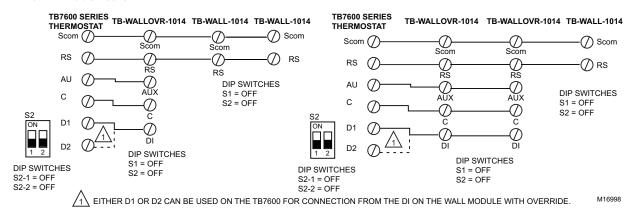
1 EITHER D1 OR D2 CAN BE USED ON THE TB7600 FOR CONNECTION FROM THE DI ON THE WALL MODULE WITH OVERRIDE. M16996

Wiring example of single remote wall mounted room sensor.



Wiring examples of two remote wall mounted room sensors for averaging applications.

### **REMOTE WIRING 3 SENSORS**



Wiring examples of three remote wall mounted room sensors for averaging applications.

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