



E-SMART THERMOSTAT W960

Controller Wiring Set Up

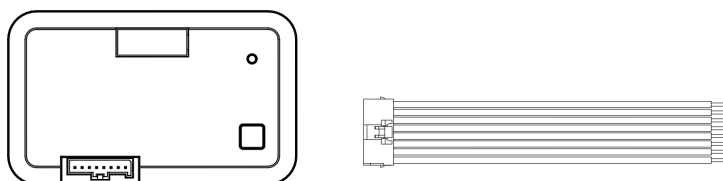


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1. Controller Wiring

Connect the controller to the PTAC board terminals with the provided wires of different colours according to the table below.



Wire Colour	Conventional System		Heat Pump System	
Black	C	24VAC Common wire / 24V(N)	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay	Y1	First stage of compressor relay
White	W1	First stage of heat relay /Aux heat relay	W1 or Y2	Aux heat/First stage of heat/Second stage of compressor relay
Orange	O/B or W2	Not used / Second stage of heat relay	O/B	Changeover valve relay
Green	GH	Fan relay, high	GH	Fan relay, high
Purple	GL	Fan relay, low	GL	Fan relay, low
Brown	AUX	Occupancy out	AUX or E	Occupancy out / Emergency Heat

Conventional Heating or Cooling Systems

1. Conventional 1 Stage Heating, 1 Fan speed
2. Conventional 1 Stage Heating, 1 Fan speed, Occupancy Out
3. Conventional 1 Stage Heating, 2 Fan Speed
4. Conventional 1 Stage Heating, 2 Fan Speed, Occupancy Out
5. Conventional 2 Stage Heating, 1 Fan speed
6. Conventional 2 Stage Heating, 1 Fan speed, Occupancy Out
7. Conventional 2 Stage Heating, 2 Fan Speed
8. Conventional 2 Stage Heating, 2 Fan Speed, Occupancy Out
9. Conventional 3 Stage Heating, 1 Fan speed,
10. Conventional 3 Stage Heating, 1 Fan speed, Occupancy Out
11. Conventional 3 Stage Heating, 2 Fan Speed
12. Conventional 3 Stage Heating, 2 Fan Speed, Occupancy Out
13. Conventional 1 Stage Heating, 1 Stage Cooling, 1 Fan speed
14. Conventional 1 Stage Heating, 1 Stage Cooling, 1 Fan speed, Occupancy Out
15. Conventional 1 Stage Heating, 1 Stage Cooling, 2 Fan Speed
16. Conventional 1 Stage Heating, 1 Stage Cooling, 2 Fan Speed, Occupancy Out
17. Conventional 2 Stage Heating, 1 Stage Cooling, 1 Fan speed
18. Conventional 2 Stage Heating, 1 Stage Cooling, 1 Fan speed, Occupancy Out
19. Conventional 2 Stage Heating, 1 Stage Cooling, 2 Fan Speed
20. Conventional 2 Stage Heating, 1 Stage Cooling, 2 Fan Speed, Occupancy Out

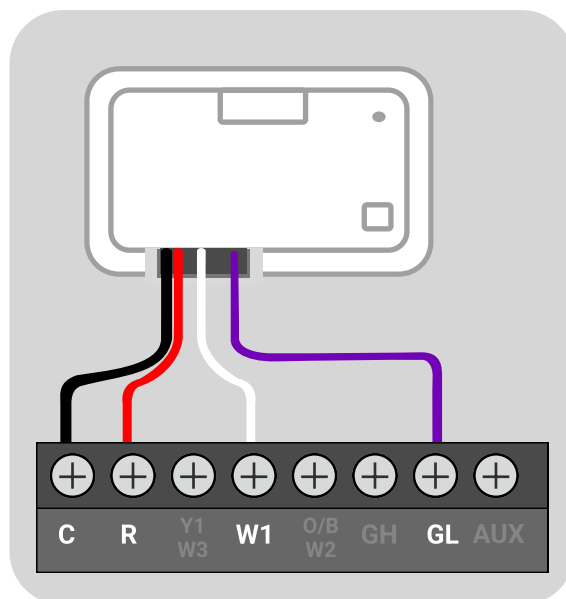
Heat Pump Systems

1. Heat Pump System—1 Stage Heat Pump, 1 Fan Speed
2. Heat Pump System—1 Stage Heat Pump, 1 Fan Speed, Occupancy Out
3. Heat Pump System—1 Stage Heat Pump, 2 Fan Speed
4. Heat Pump System—1 Stage Heat Pump, 2 Fan Speed, Occupancy Out
5. Heat Pump System—1 Stage Heat Pump With Aux Heat, 1 Fan Speed
6. Heat Pump System—1 Stage Heat Pump With Aux Heat, 1 Fan Speed, Occupancy Out
7. Heat Pump System—1 Stage Heat Pump With Aux Heat, 2 Fan Speed
8. Heat Pump System—1 Stage Heat Pump With Aux Heat, 2 Fan Speed, Occupancy Out
9. Heat Pump System—1 Stage Heat Pump With Aux Heat And Emergency Heat, 1 Fan Speed
10. Heat Pump System—1 Stage Heat Pump With Aux Heat And Emergency Heat, 2 Fan Speed
11. Heat Pump System—2 Stage Heat Pump, 1 Fan Speed
12. Heat Pump System—2 Stage Heat Pump, 1 Fan Speed, Occupancy Out
13. Heat Pump System—2 Stage Heat Pump, 2 Fan Speed
14. Heat Pump System—2 Stage Heat Pump, 2 Fan Speed, Occupancy Out

Wiring Diagrams: Conventional Heating or Cooling Systems

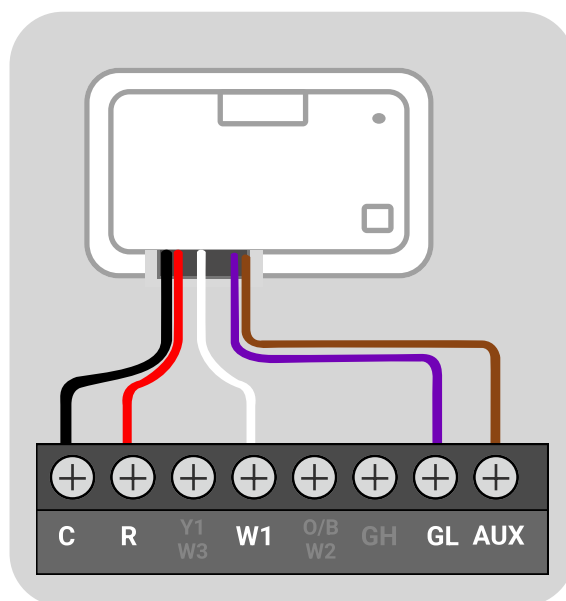
1. Conventional 1 Stage Heating, 1 Fan speed

Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay
White	W1	First stage of heat relay/Aux heat relay
Orange	O/B or W2	Not used / Second stage of heat relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



2. Conventional 1 Stage Heating, 1 Fan speed, Occupancy Out

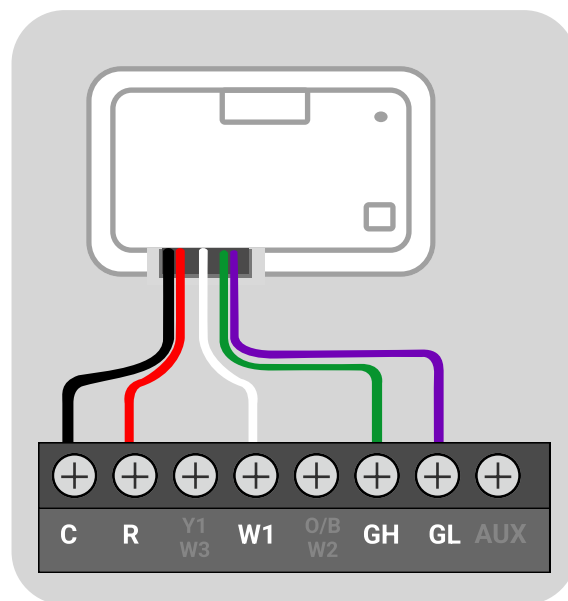
Wire Colour	Conventional System	
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Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



Wiring Diagrams: Conventional Heating or Cooling Systems

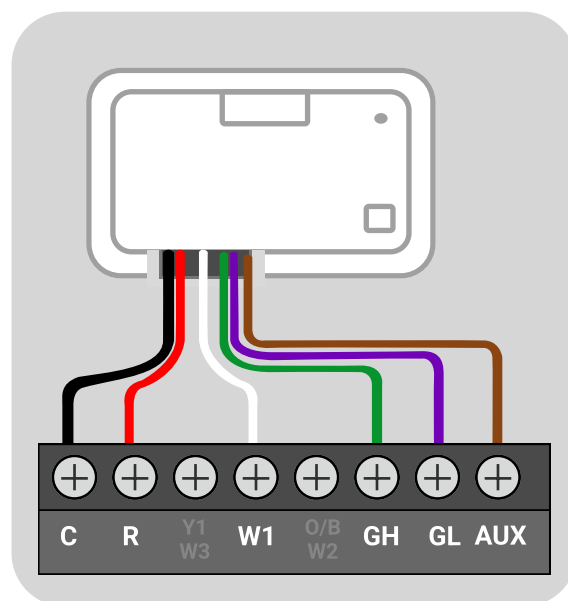
3. Conventional 1 Stage Heating, 2 Fan Speed

Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay
White	W1	First stage of heat relay/Aux heat relay
Orange	O/B or W2	Not used / Second stage of heat relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



4. Conventional 1 Stage Heating, 2 Fan Speed, with Occupancy Out

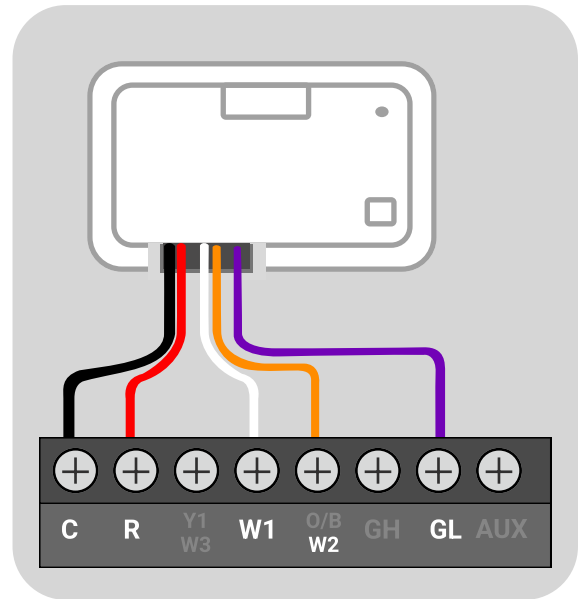
Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
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Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



Wiring Diagrams: Conventional Heating or Cooling Systems

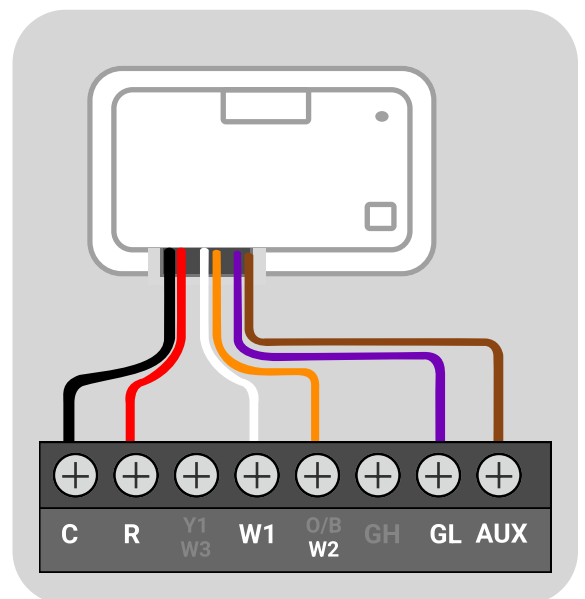
5. Conventional 2 Stage Heating, 1 Fan Speed

Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay
White	W1	First stage of heat relay/Aux heat relay
Orange	O/B or W2	Not used / Second stage of heat relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



6. Conventional 2 Stage Heating, 1 Fan Speed, with Occupancy Out

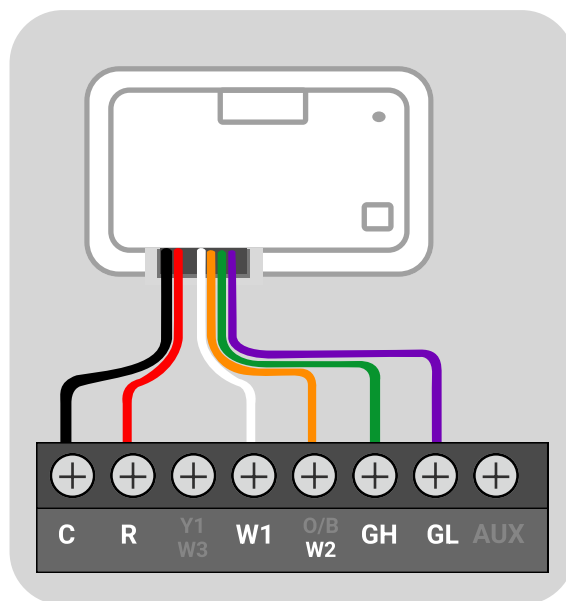
Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay
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Orange	O/B or W2	Not used / Second stage of heat relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



Wiring Diagrams: Conventional Heating or Cooling Systems

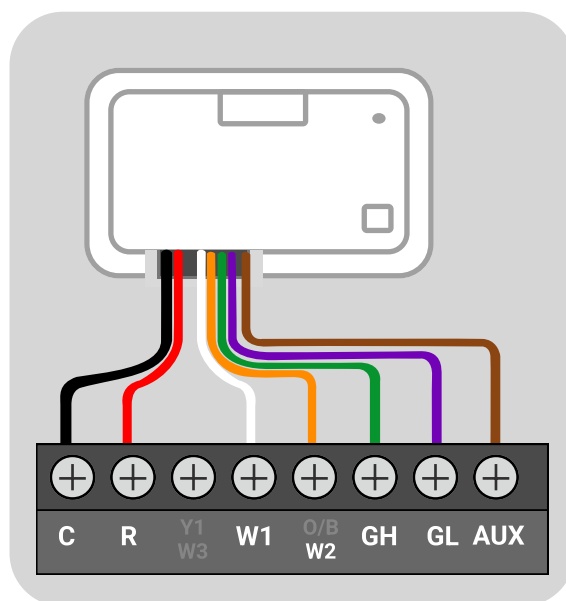
7. Conventional 2 Stage Heating, 2 Fan Speed

Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay
White	W1	First stage of heat relay/Aux heat relay
Orange	O/B or W2	Not used / Second stage of heat relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



8. Conventional 2 Stage Heating, 2 Fan Speed, with Occupancy Out

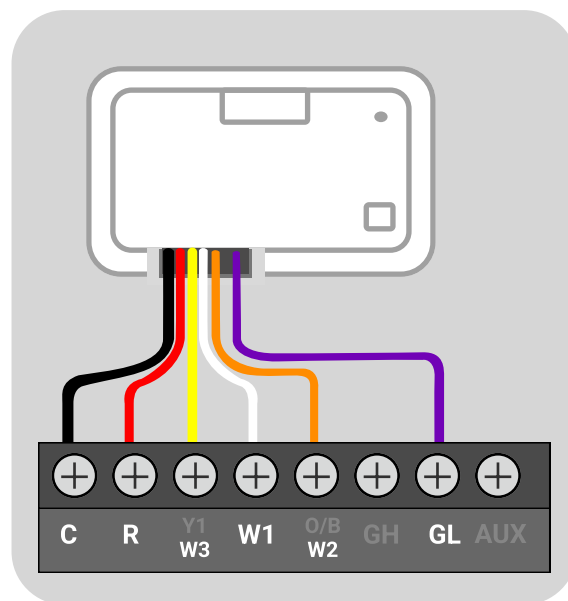
Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay
White	W1	First stage of heat relay/Aux heat relay
Orange	O/B or W2	Not used / Second stage of heat relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



Wiring Diagrams: Conventional Heating or Cooling Systems

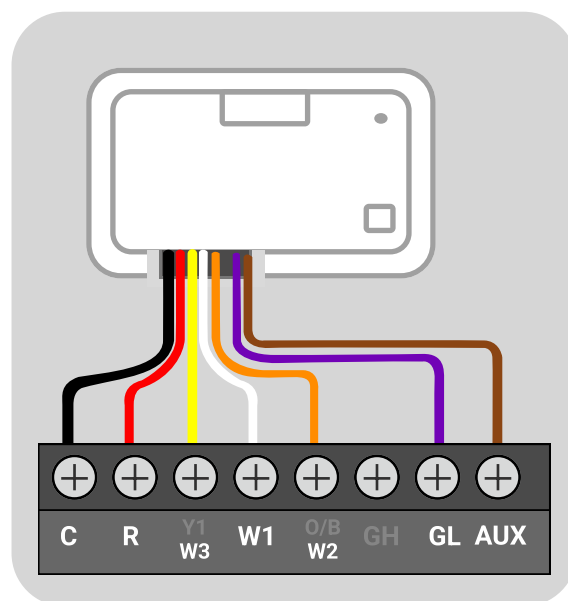
9. Conventional 3 Stage Heating, 1 Fan Speed

Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay
White	W1	First stage of heat relay/Aux heat relay
Orange	O/B or W2	Not used / Second stage of heat relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



10. Conventional 3 Stage Heating, 1 Fan Speed, with Occupancy Out

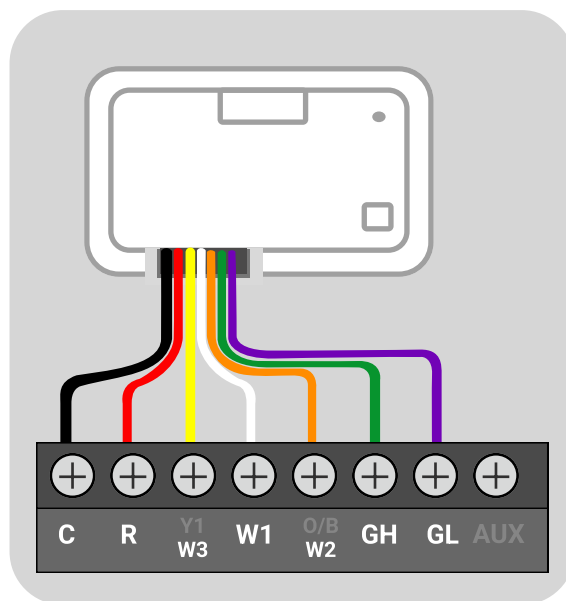
Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay
White	W1	First stage of heat relay/Aux heat relay
Orange	O/B or W2	Not used / Second stage of heat relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



Wiring Diagrams: Conventional Heating or Cooling Systems

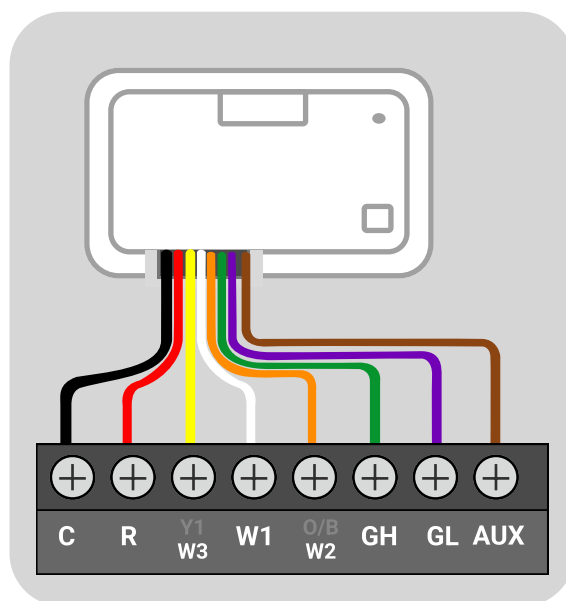
11. Conventional 3 Stage Heating, 2 Fan Speed

Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay
White	W1	First stage of heat relay/Aux heat relay
Orange	O/B or W2	Not used / Second stage of heat relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



12. Conventional 3 Stage Heating, 2 Fan Speed, with Occupancy Out

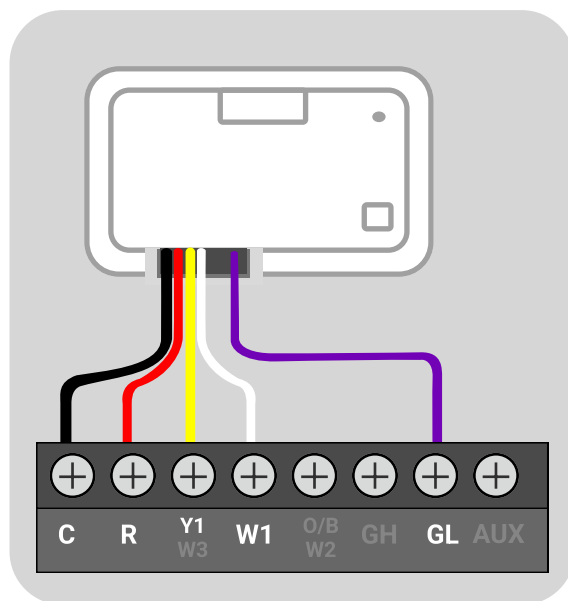
Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay
White	W1	First stage of heat relay/Aux heat relay
Orange	O/B or W2	Not used / Second stage of heat relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



Wiring Diagrams: Conventional Heating or Cooling Systems

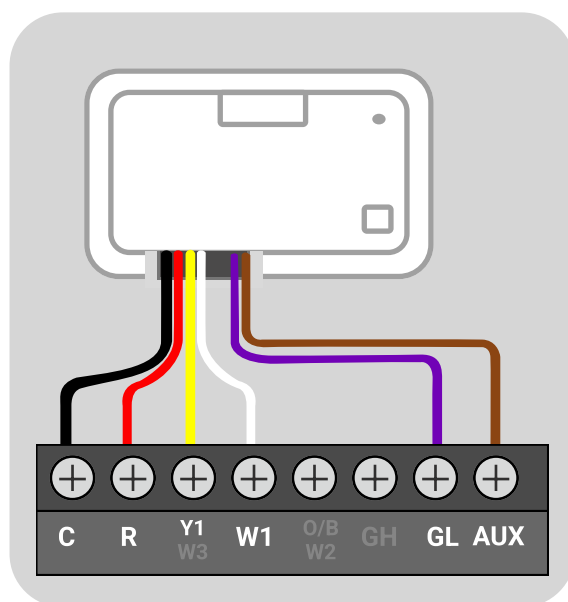
13. Conventional 1 Stage Heating, 1 Stage cooling, 1 Fan Speed

Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay
White	W1	First stage of heat relay/Aux heat relay
Orange	O/B or W2	Not used / Second stage of heat relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



14. Conventional 1 Stage Heating, 1 Stage cooling, 1 Fan Speed, with Occupancy Out

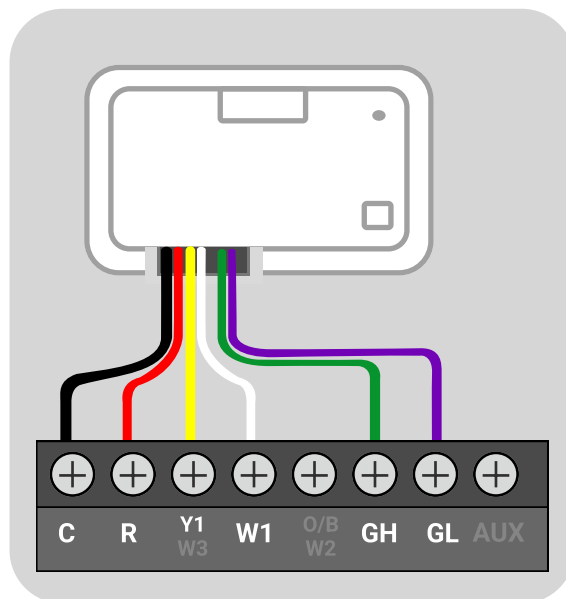
Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay
White	W1	First stage of heat relay/Aux heat relay
Orange	O/B or W2	Not used / Second stage of heat relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



Wiring Diagrams: Conventional Heating or Cooling Systems

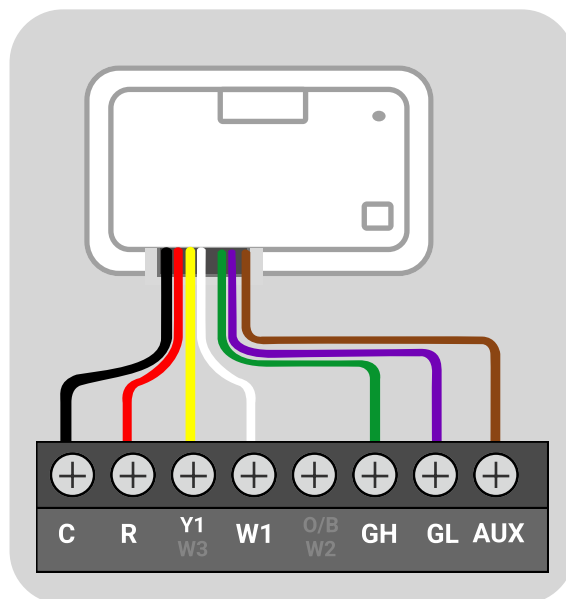
15. Conventional 1 Stage Heating, 1 Stage cooling, 2 Fan Speed

Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay
White	W1	First stage of heat relay/Aux heat relay
Orange	O/B or W2	Not used / Second stage of heat relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



16. Conventional 1 Stage Heating, 1 Stage cooling, 2 Fan Speed, with Occupancy Out

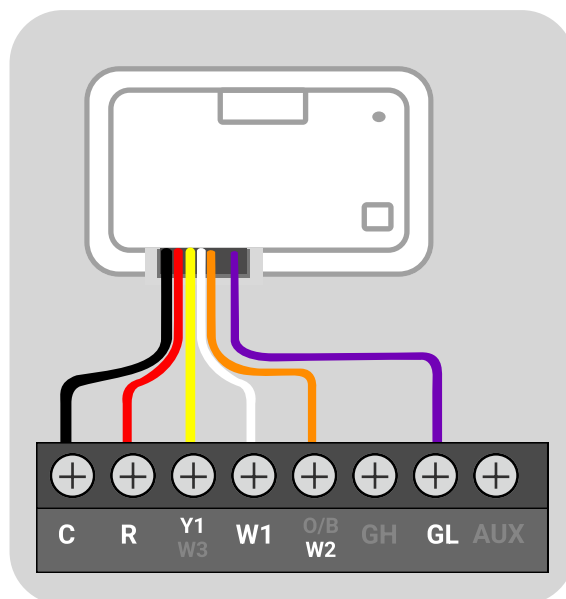
Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay
White	W1	First stage of heat relay/Aux heat relay
Orange	O/B or W2	Not used / Second stage of heat relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



Wiring Diagrams: Conventional Heating or Cooling Systems

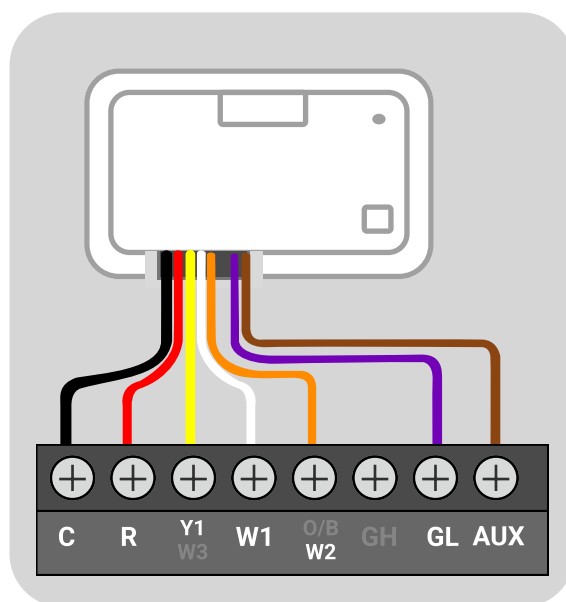
17. Conventional 2 Stage Heating, 1 stage Cooling, 1 Fan Speed

Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay
White	W1	First stage of heat relay/Aux heat relay
Orange	O/B or W2	Not used / Second stage of heat relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



18. Conventional 2 Stage Heating, 1 stage Cooling, 1 Fan Speed, with Occupancy Out

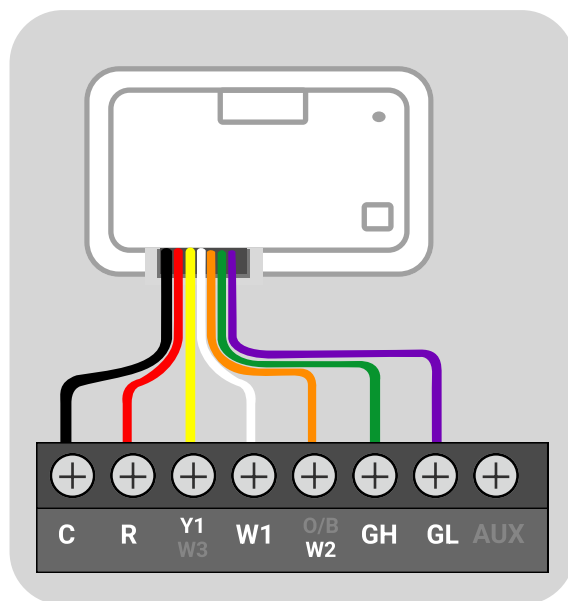
Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay
White	W1	First stage of heat relay/Aux heat relay
Orange	O/B or W2	Not used / Second stage of heat relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



Wiring Diagrams: Conventional Heating or Cooling Systems

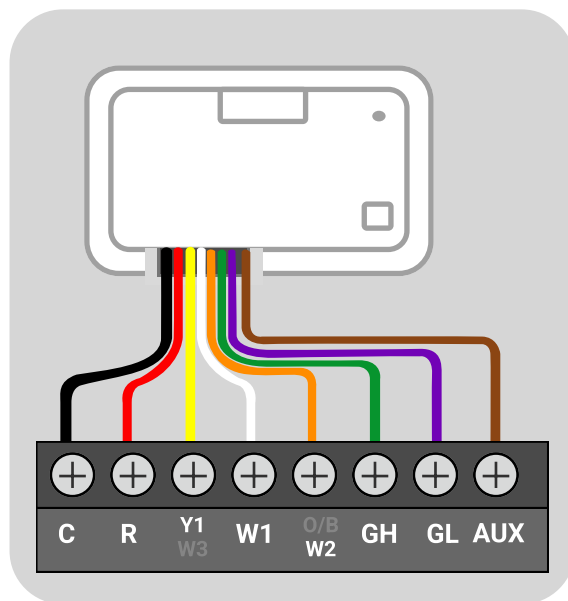
19. Conventional 2 Stage Heating, 1 stage Cooling, 2 Fan Speed

Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay
White	W1	First stage of heat relay/Aux heat relay
Orange	O/B or W2	Not used / Second stage of heat relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



20. Conventional 2 Stage Heating, 1 stage Cooling, 2 Fan Speed, with Occupancy Out

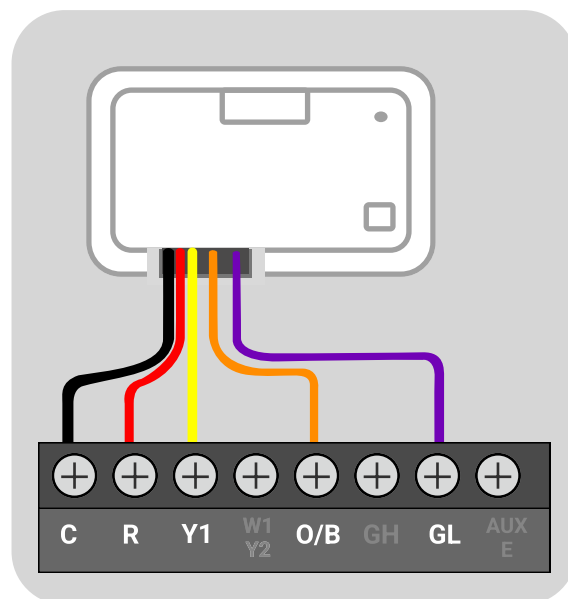
Wire Colour	Conventional System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1 or W3	First stage of compressor relay/Third stage of heat relay
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Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX	Occupancy out



Wiring Diagrams: Heat Pump Systems

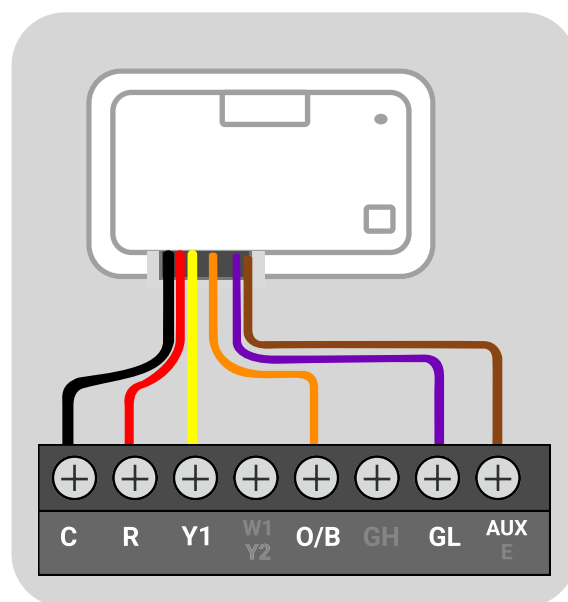
1. Heat Pump system—1 stage Heat pump, 1 Fan speed

Wire Colour	Heat Pump System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1	First stage of compressor relay
White	W1 or Y2	Aux heat/First stage of heat/Second stage of compressor relay
Orange	O/B	Changeover valve relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX or E	Occupancy out / Emergency Heat



2. Heat Pump system—1 stage Heat pump, 1 Fan speed, Occupancy Out

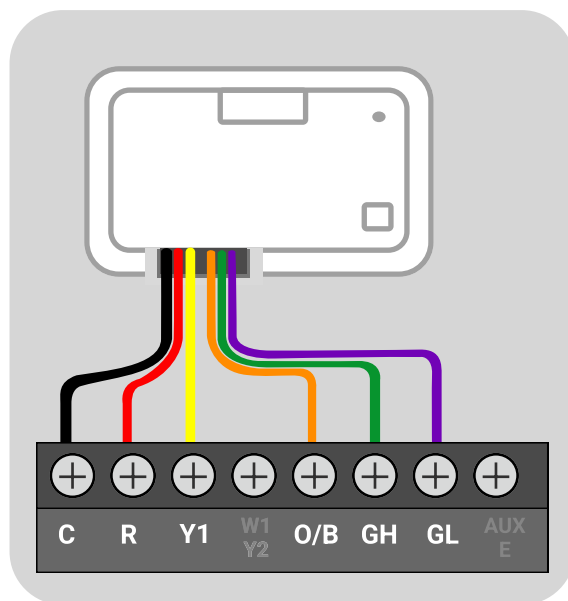
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Black	C	24VAC Common wire / 24V(N)
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Wiring Diagrams: Heat Pump Systems

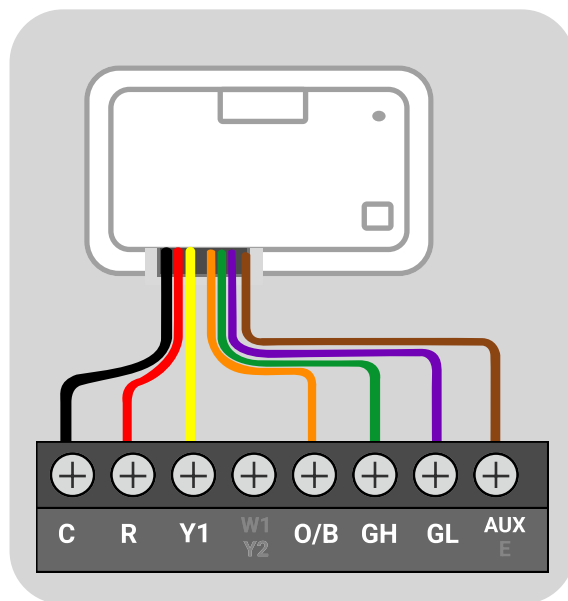
3. Heat Pump system—1 stage Heat pump, 2 Fan Speed

Wire Colour	Heat Pump System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1	First stage of compressor relay
White	W1 or Y2	Aux heat/First stage of heat/Second stage of compressor relay
Orange	O/B	Changeover valve relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX or E	Occupancy out / Emergency Heat



4. Heat Pump system—1 stage Heat pump, 2 Fan Speed, with Occupancy Out

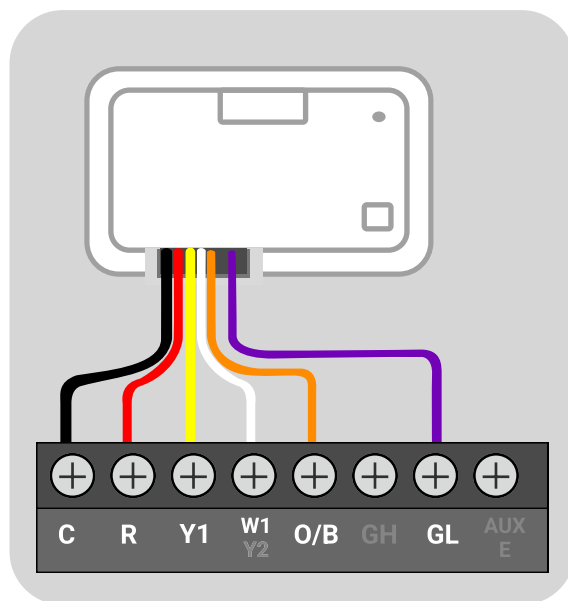
Wire Colour	Heat Pump System	
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Brown	AUX or E	Occupancy out / Emergency Heat



Wiring Diagrams: Heat Pump Systems

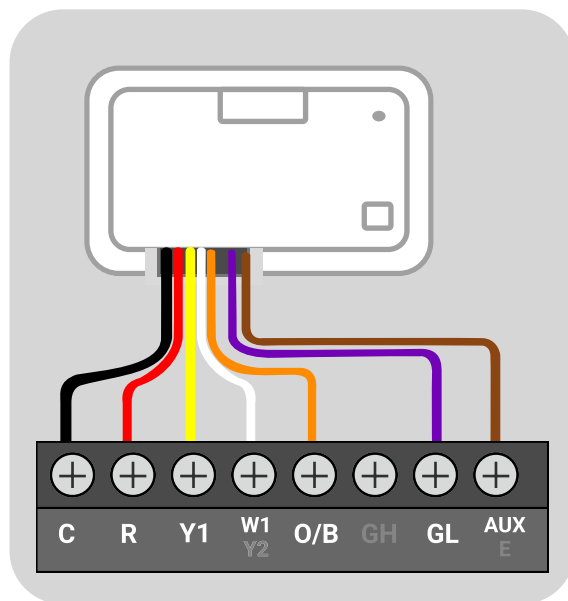
5. Heat Pump system—1 stage Heat pump with Aux Heat, 1 Fan Speed

Wire Colour	Heat Pump System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1	First stage of compressor relay
White	W1 or Y2	Aux heat/First stage of heat/Second stage of compressor relay
Orange	O/B	Changeover valve relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX or E	Occupancy out / Emergency Heat



6. Heat Pump system—1 stage Heat pump with Aux Heat, 1 Fan Speed, with Occupancy Out

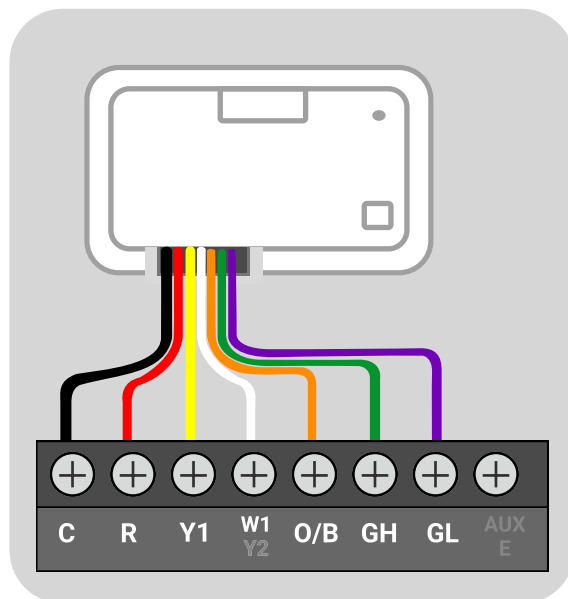
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Wiring Diagrams: Heat Pump Systems

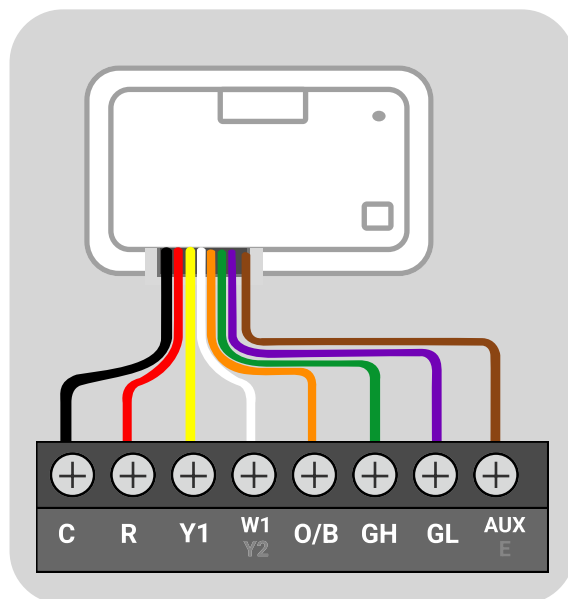
7. Heat Pump system—1 stage Heat pump with Aux Heat, 2 Fan Speed

Wire Colour	Heat Pump System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
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White	W1 or Y2	Aux heat/First stage of heat/Second stage of compressor relay
Orange	O/B	Changeover valve relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX or E	Occupancy out / Emergency Heat



8. Heat Pump system—1 stage Heat pump with Aux Heat, 2 Fan Speed, with Occupancy Out

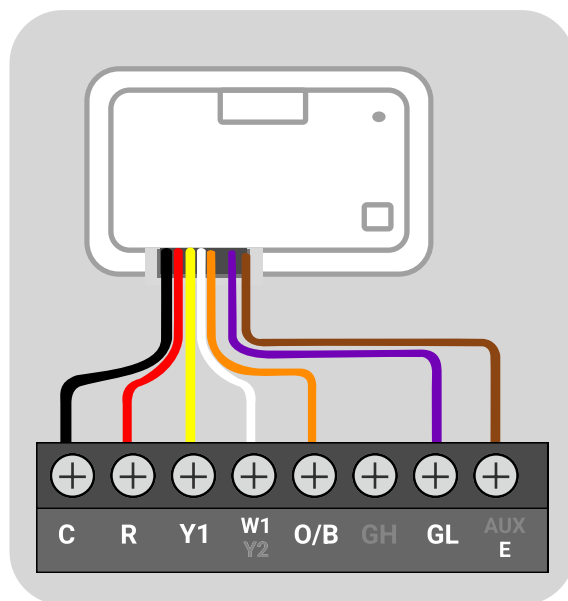
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Wiring Diagrams: Heat Pump Systems

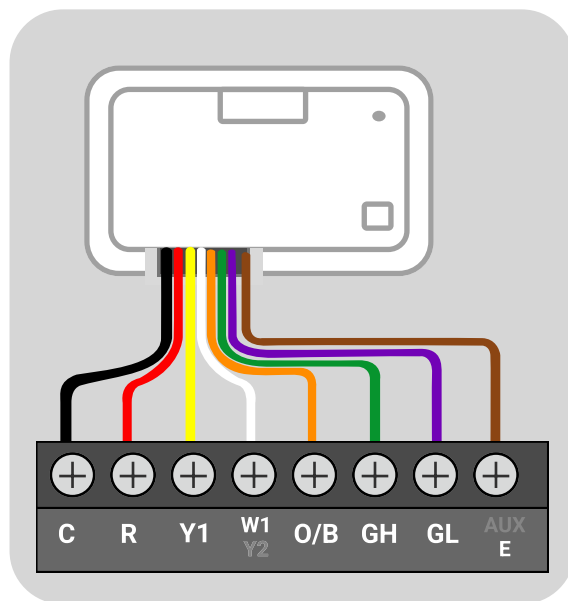
9. Heat Pump system—1 stage Heat pump with Aux Heat and Emergency Heat, 1 Fan Speed

Wire Colour	Heat Pump System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1	First stage of compressor relay
White	W1 or Y2	Aux heat/First stage of heat/Second stage of compressor relay
Orange	O/B	Changeover valve relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX or E	Occupancy out / Emergency Heat



10. Heat Pump system—1 stage Heat pump with Aux Heat and Emergency Heat, 2 Fan Speed

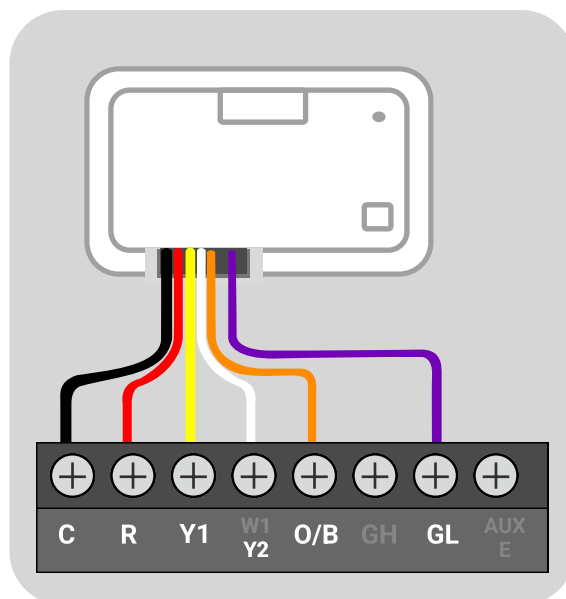
Wire Colour	Heat Pump System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1	First stage of compressor relay
White	W1 or Y2	Aux heat/First stage of heat/Second stage of compressor relay
Orange	O/B	Changeover valve relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX or E	Occupancy out / Emergency Heat



Wiring Diagrams: Heat Pump Systems

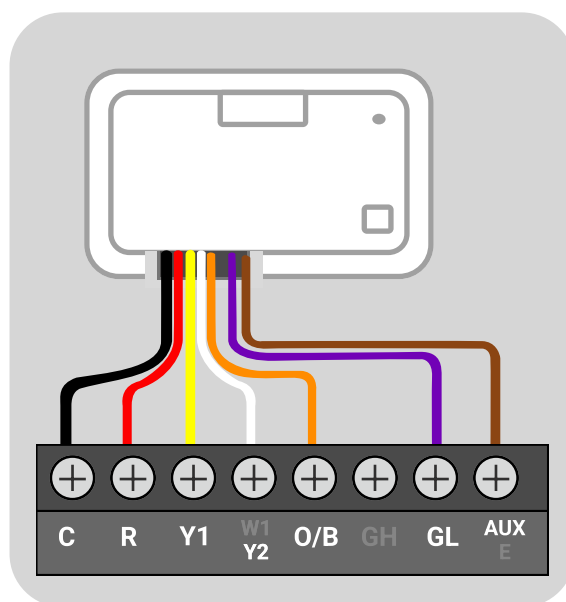
11. Heat Pump system—2 stage Heat pump, 1 Fan Speed

Wire Colour	Heat Pump System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1	First stage of compressor relay
White	W1 or Y2	Aux heat/First stage of heat/Second stage of compressor relay
Orange	O/B	Changeover valve relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX or E	Occupancy out / Emergency Heat



12. Heat Pump system—2 stage Heat pump, 1 Fan Speed, with Occupancy Out

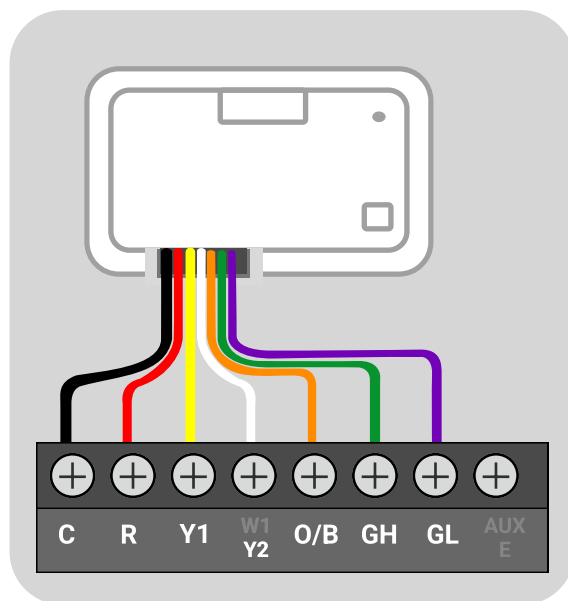
Wire Colour	Heat Pump System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1	First stage of compressor relay
White	W1 or Y2	Aux heat/First stage of heat/Second stage of compressor relay
Orange	O/B	Changeover valve relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX or E	Occupancy out / Emergency Heat



Wiring Diagrams: Heat Pump Systems

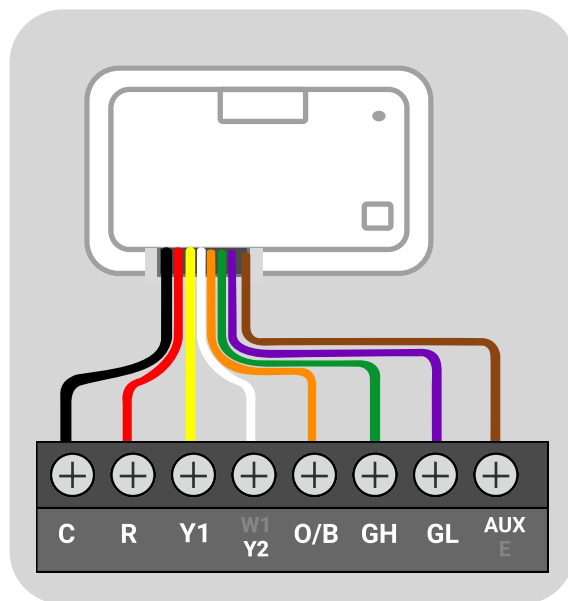
13. Heat Pump system—2 stage Heat pump, 2 Fan Speed

Wire Colour	Heat Pump System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1	First stage of compressor relay
White	W1 or Y2	Aux heat/First stage of heat/Second stage of compressor relay
Orange	O/B	Changeover valve relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX or E	Occupancy out / Emergency Heat



14. Heat Pump system—2 stage Heat pump, 2 Fan Speed, with Occupancy Out

Wire Colour	Heat Pump System	
Black	C	24VAC Common wire / 24V(N)
Red	R	24VAC Power / 24V(L)
Yellow	Y1	First stage of compressor relay
White	W1 or Y2	Aux heat/First stage of heat/Second stage of compressor relay
Orange	O/B	Changeover valve relay
Green	GH	Fan relay, high
Purple	GL	Fan relay, low
Brown	AUX or E	Occupancy out / Emergency Heat





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