



CALIFORNIA HEAT PUMP COMPANY

## NIGHT SETBACK CONTROL SYSTEM DESCRIPTION

Consists of a central night setback control panel and individual night setback relays located at each heat pump. The purpose of the night setback control panel is to interrupt the operation of the heat pump in order to conserve energy during periods when they would normally not be in use.

**Standard Night Setback Control Panel.** The night control panel contains a clock-operated switch which will energize the night setback relays located at each heat pump during night time or other unoccupied periods of time. When the relays are energized, they interrupt the operation of the heat pump they serve. The clock will also de-energize the relays when it is time for the units to resume normal operation. Skip-a-day feature can prevent weekend operation.

The time clock can be manually overridden by positioning the switch on the central panel to "lock in" with day operation, night operation, or automatic operation through the use of the clock, or it is possible to switch the entire system off.

**Night Setback Control Panel with Spring Carry-over Option.** This panel is identical to the one described above except it has a spring-operated clock which will keep running in the event of a power failure so that when power resumes the clock is still keeping time.

**Low Limit Night Thermostat Option** An option to the night setback control panel would be a low limit night thermostat. This thermostat establishes the lower temperature limit that the building could fall to. If it gets too cold, it will turn on the heat pumps so that they continue to operate and keep the building from getting below the lower limit during winter time to prevent conditions that would damage equipment and pipes.

**Remote Night Setback Relays.** The remote night setback relays are controlled by the central panel. They merely turn the heat pumps on or off and are wired in accordance with the diagram on page 2.

**Override Timer Option.** An optional override timer may be provided adjacent to the thermostat serving each unit. This will allow the occupant to override the night setback should it be in the "off" position for a period of up to five hours, thus restoring the operation of the unit. This would be particularly advantageous to the occupant who comes to his office at night when everything has been turned off by the central control panel. By turning the override timer, he can activate his particular unit to provide heating or cooling.

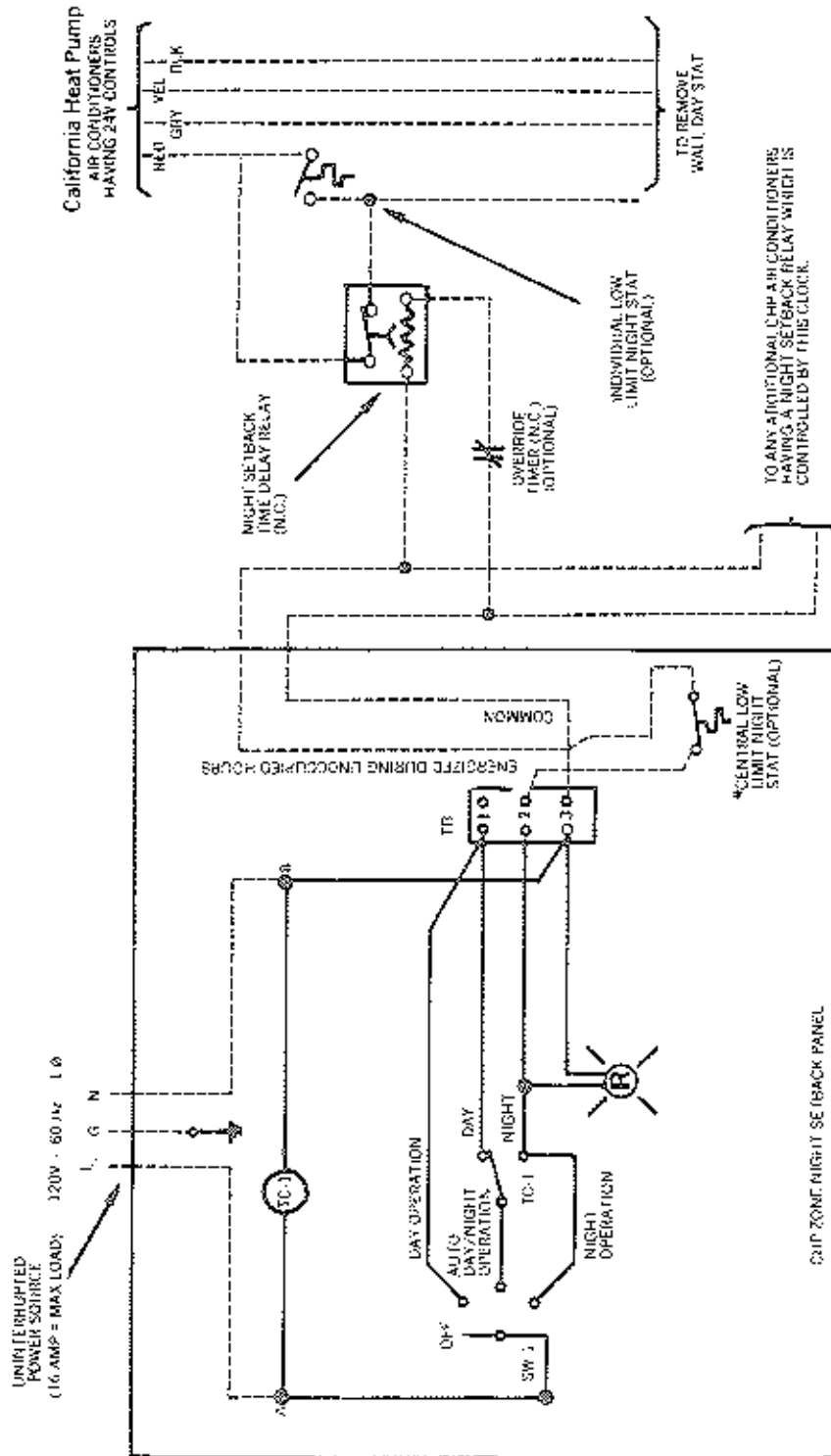
**Individual Low Limit Night Stats.** Instead of having a central low limit stat at the central control panel, it is possible to have individual low limit stats at each heat pump. Although it is more costly, it may be more desirable in some cases.

The diagram indicates a maximum of 140 units to be controlled from a single, centrally-controlled night setback control panel. Normal field wiring practice would be to run the wires from the central control panel in the same conduit feeding power to the individual heat pumps in order to minimize the cost of wiring.

# NIGHT SETBACK CONTROL WITH 24V WALL MOUNTED THERMOSTAT



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### FIELD WIRING NOTES

- TIME DELAY RELAY, OVERRIDE TIMER & LOW LIMIT NIGHT STAT ARE FURNISHED BY C-HP BUT MOUNTING AND WIRING MUST BE COMPLETED IN THE FIELD.
- SIGNAL WIRE SIZING ALLOW 1.5VA PER CONNECTED UNIT
- THE MAXIMUM NUMBER OF UNITS PER CENTRAL CONTROL PANEL IS 100
- ALL FIELD WIRING MUST BE CLASS I.

- ⊗ — PILOT LIGHT: NIGHT OPERATION
- — — — — FACTORY WIRING
- — — — — FIELD WIRING

- SW-1 — 24V-DAY AUTO-NIGHT SWITCH
- LR — LOW LIMIT RELAY
- TC-2 — TIME CLOCK
- TB — TERMINAL BLOCK - 3.000

\*Central low limit night thermostat contact must be suitable for 120 volts, 15 amps.

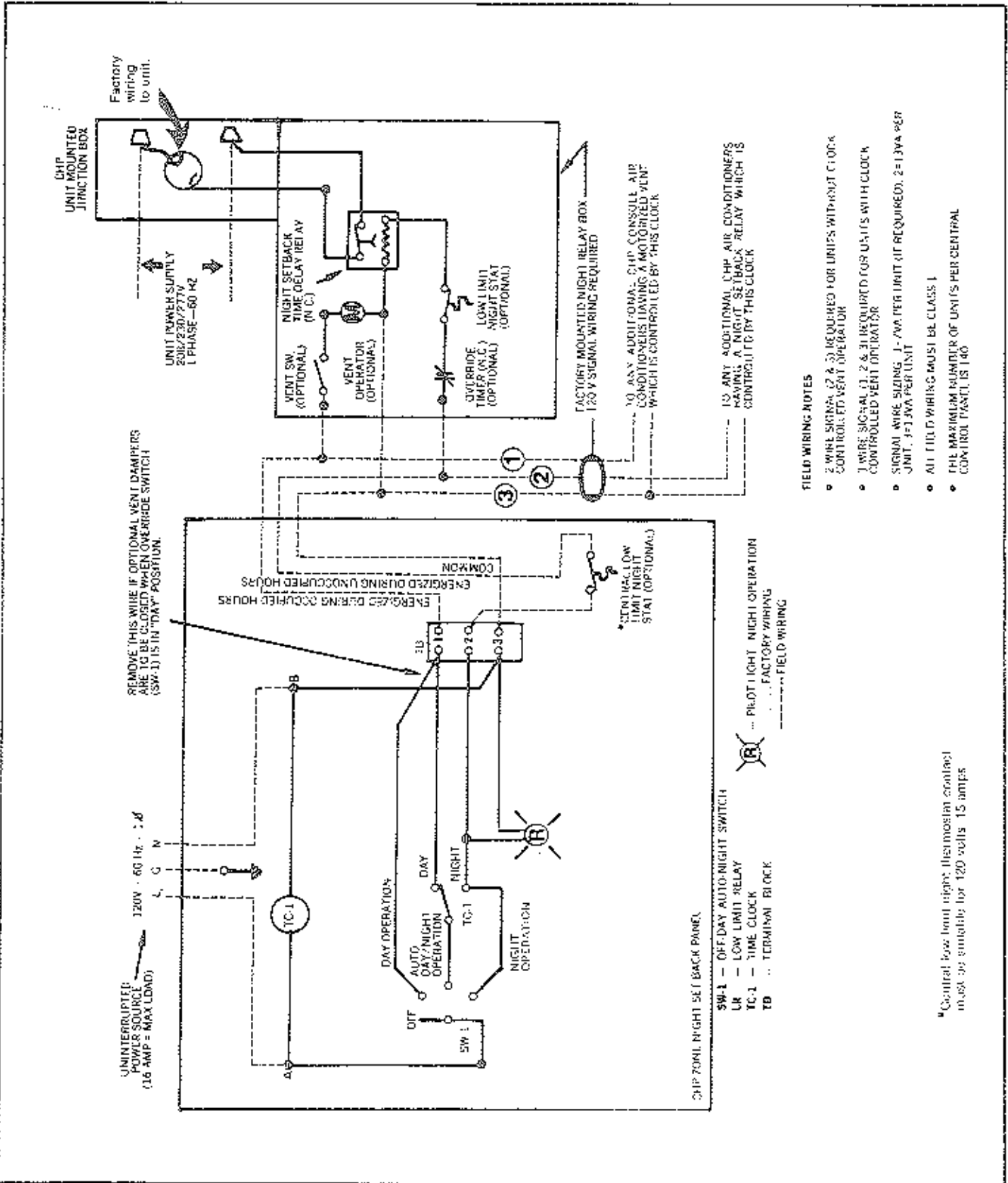


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# NIGHT SETBACK CONTROL WITH UNIT MOUNTED THERMOSTAT

120/208/249/277V - 60 Hz

— FOR CONSOLE UNITS ONLY —

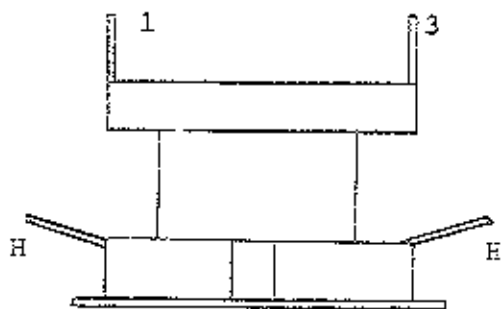


120 VOLT  
 NIGHT CONTROL RELAY  
 Remote Time Delay Relay  
 For Night Setback

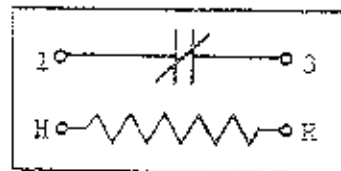
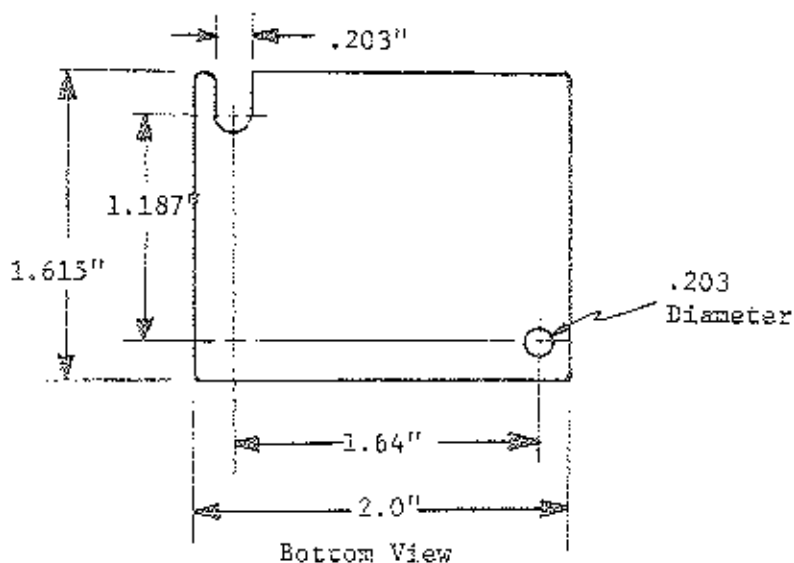


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for water source heat pumps  
 having 24V controls.



REMOTE TIME DELAY RELAY, 120 VOLTS  
 PART NUMBER B4-05064-H11



Electrical Symbol

NOTES:

- (1) Heat time 20 to 70 sec @ 120V and 75° F ambient
- (2) Cool time 20 to 80 sec after soak time of 6 min @ 75° F ambient
- (3) Terminals are 1/4" quick-connect
- (4) Heater voltage is 120V, and draws 13 VA starting, 4 VA holding
- (5) Electrical Contact Rating:
 

Volts	Amps Res.	FLA	I <sub>RA</sub>	Pilot VA
120	30	23	88	480
140	30	23	88	480
277	23	23	88	480
24	--	--	--	480

CHP-41-022-84

Form #18845