T8611M
(7-Day Programming)
Chronotherm III™
Heat Pump Thermostats

The T8611M Chronotherm III Programmable Thermostat provides automatic control of multi-stage heat pump systems and offers users the highest standard of comfort and convenience available with energy savings.

■ Full seven-day program capability; different schedules may be selected for every day.

■ Can be programmed in hand (with batteries installed) or on the wall to provide up to four temperature periods per day.

■ Large digital clock (liquid crystal display) indicates continuous time-of-day, day-of-week, current period and room temperature.

■ Adaptive Intelligent Recovery™ brings room temperature to programmed temperature at programmed time, maximizing comfort and energy savings.

■ Temperature control program maintains temperature within 1° F of setpoint.

■ Temporary program override available by using—
  —WARMER and COOLER keys.
  —SKIP next period key.
  —CHANGE to last period key.

■ HOLD TEMP key provided for indefinite program override (vacation/holiday).

■ Installer self-test with time delay override saves installation time.

■ SYSTEM light-emitting diode (LED) on thermostat indicates system is energized.

■ AUX. HT., EM. HT., CHECK LEDs available on select models.

■ Automatic heat/cool changeover.

■ Batteries included provide power to maintain clock and memory during power failures.

■ Switching subbase with wiring terminals included.

■ Powered directly from control transformer.

■ Model available with separate sensor for remote temperature sensing.

CONTENTS

Specifications

TRADELINE MODELS

TRADELINE models are selected and packaged to provide ease of stocking and handling and also maximum replacement value.

TRADELINE models available are listed in Table 1.

TABLE 1—TRADELINE MODELS AVAILABLE.

| Thermostat | Stages | | Changeover Type | Switching | | Application | Program |
	Heat	Cool		System	Fan		
T8611M*	3	2	Automatic	EM. HT.-HEAT-OFF-AUTO-COOL	ON-AUTO	Heat Pump	7-Day

*Model available with separate sensor for remote temperature sensing.

LIGHT-EMITTING DIODES (LEDs):
  SYSTEM LED (yellow) on thermostat lights during thermostat heating and cooling ON cycles.
  EM.HT. LED (red) on subbase lights when system switch is in EM.HT. On some systems, light may indicate need to switch to EM.HT. because of heat pump problem.
  AUX. HT. LED (green) on subbase lights when thermostat is calling for operation of auxiliary heat.
  CHECK LED (yellow) on subbase lights when an equipment or system problem needs to be checked. Consult heat pump literature to determine meaning.
VOLTAGE RATING: 15 to 30 Vac.
CURRENT RATING: 1.6A maximum, total per stage.
OPERATING HUMIDITY RANGE: 5 to 90 percent relative humidity, noncondensing.
OPERATING AMBIENT TEMPERATURE RANGE: 40° F to 110° F [4° C to 43° C].
SET POINT RANGE: 45° F to 88° F [7° C to 31° C].
CALIBRATION: Self-calibrating thermostat and thermometer to ±1° F.
SHIPPING TEMPERATURE: -20° F to +120° F [-29° C to +49° C].
CYCLES PER HOUR ADJUSTMENT:
  Auxiliary heating—factory-set at 3 cph (adjustable to 6 cph for special systems); minimum off-time of five minutes.
  Nonauxiliary heating and cooling—factory-set (not field adjustable); minimum off-time of five minutes.
FINISH: Beige matte with decorative brushed metal faceplate.
DIMENSIONS: Thermostat (mounted on subbase)—7 in. [178 mm] long, 5-5/16 in. [135 mm] high, 1-3/4 in. [44 mm] deep. See Fig. 1 for subbase dimensions. See Fig. 2 for remote sensor dimensions.
TYPICAL KEYPAD: See Fig. 3.
REPLACEMENT PARTS:
  202905AA Remote Temperature Sensor.
  220529 Replacement Door.
  AAA alkaline batteries, available locally.
ACCESSORIES:
  193121A Cover Plate Assembly. Includes cover plate, adapter ring and screws; 6-9/10 in. x 4-3/4 in. [175 mm x 121 mm]. Covers marks left by old thermostat. Allows mounting on vertical or horizontal outlet box.
  TG512 Universal Thermostat Guards. Includes clear or opaque plastic or metal cover, ring base, opaque plastic wallplate, tumbler lock with two keys.
  TG586A Locking Cover.

Ordering Information

When purchasing replacement and modernization products from your TRADELINE® wholesaler or distributor, refer to the TRADELINE Catalog or price sheets for complete ordering number, or specify—
  1. Model number.
  2. Number of heat and cool stages desired.
  3. Remote temperature sensing, if desired.

If you have additional questions, need further information or would like to comment on our products or services, please write or phone:
  1. Your local Honeywell Home and Building Control Sales Office (check white pages of your phone directory).
  2. Home and Building Control Customer Satisfaction
     Honeywell inc., 1885 Douglas Drive North
     Minneapolis, Minnesota 55422-4386 (612) 951-1000

  In Canada—Honeywell Limited/Honeywell Limitée 740 Ellesmere Road, Scarborough, Ontario M1P 2V9. International sales and service offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.

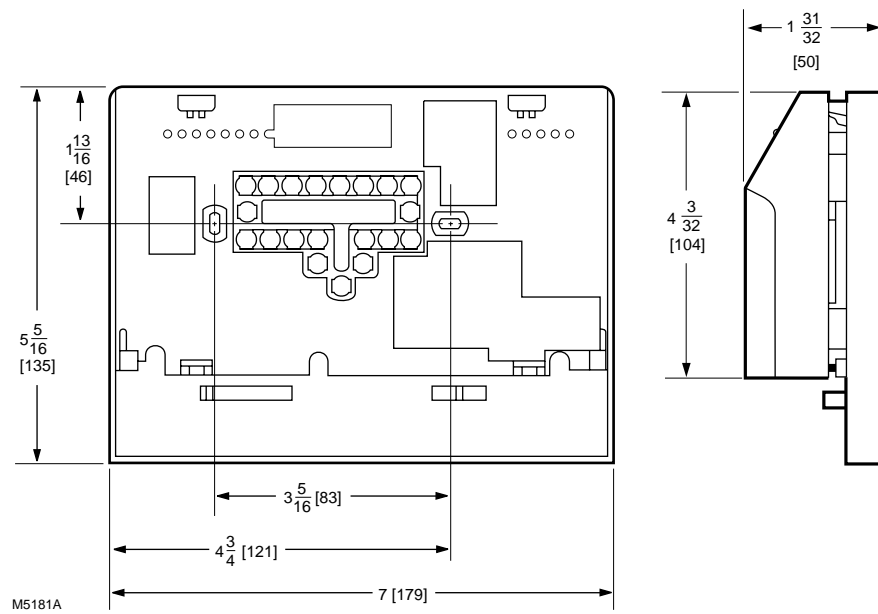**Fig. 1—T8611 Subbase mounting dimensions in in. [mm].**

Fig. 2—202905AA Remote Sensor dimensions in in. [mm].
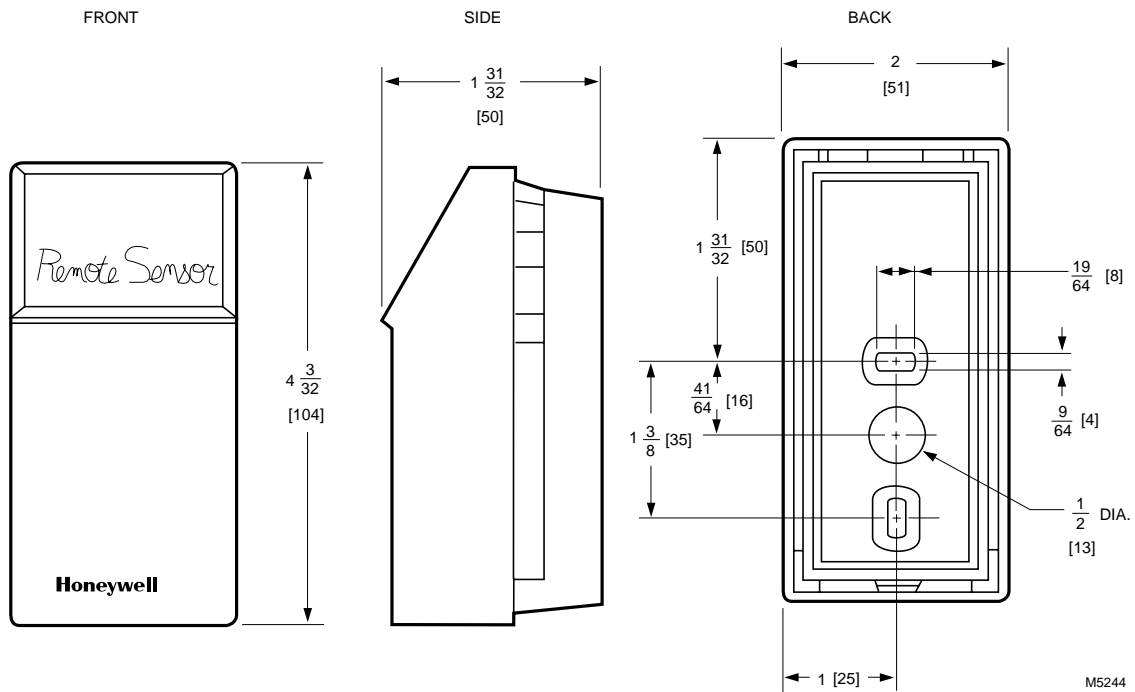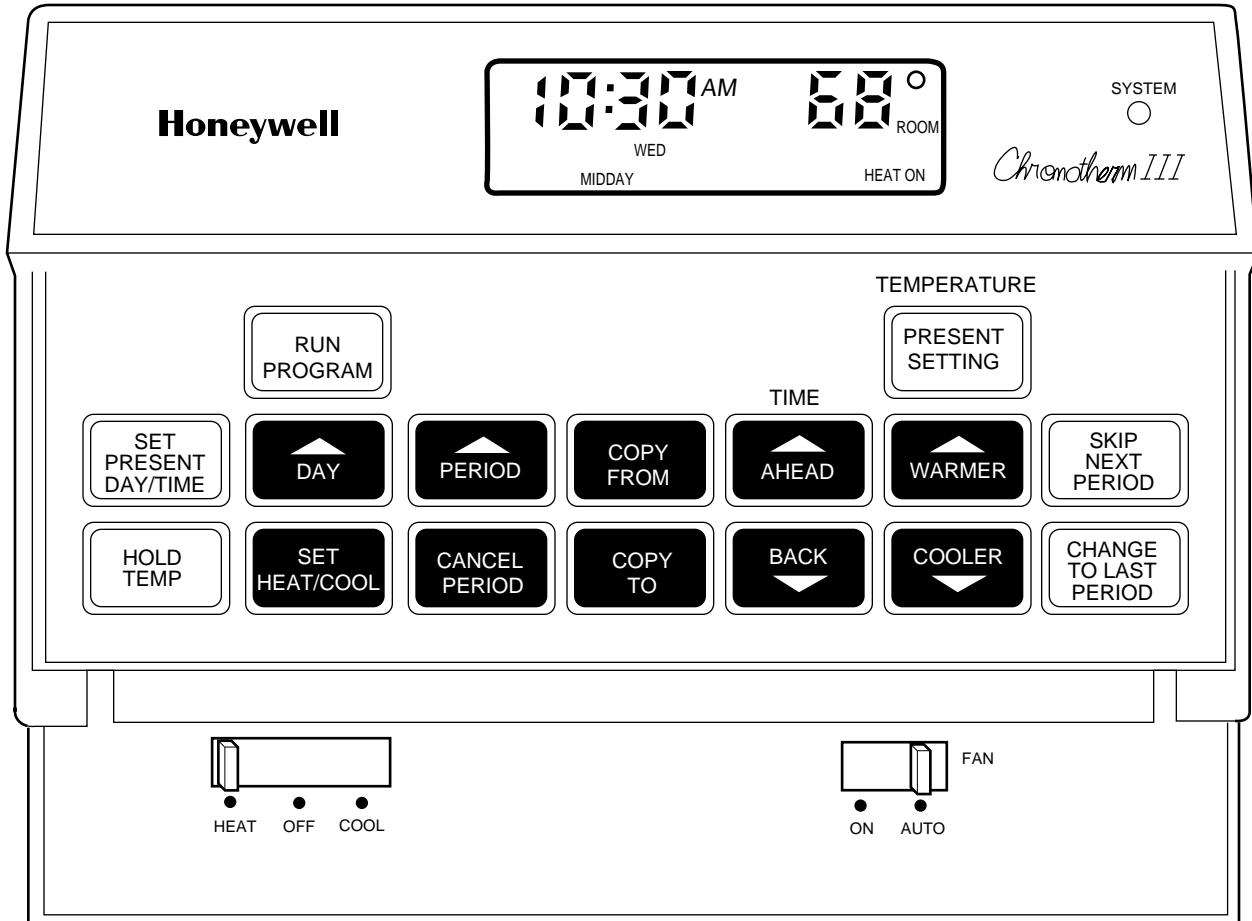
FRONT   SIDE   BACK

Fig. 3—Typical thermostat keypad.

Selection/Application

The T8611 Thermostat uses the latest microelectronic design and control technology to provide home and building owners with the highest level of comfort available and optimal energy savings in a package that is easy to use and easy to live with.

The following section is a guide to selection and application of the best thermostat to meet individual customer needs.

PROGRAMMING

Does the thermostat selected accommodate the customer's daily schedule, lifestyle or work schedule? Refer to choices below.

TRADELINE Device	Programming	Daily Temperature Selection
T8611G,R*	Weekday, Sat, Sun.	4 heat and 4 cool
T8611M	7-day (each day different)	4 heat and 4 cool

*Specifications form 68-0057 for information.

IF NEW CONSTRUCTION APPLICATION, CONSIDER
- equipment type (see manufacturer's specifications)
  — system switching required
  — status indication provided
- control wiring—number of conductors required to operate equipment and thermostat.

IMPORTANT: *The T8611 requires a conductor to transformer common to provide continuous 24V power for thermostat operation. This feature is commonly specified and provided by equipment manufacturer.*

IF RETROFIT/REPLACEMENT APPLICATION, CONSIDER
- equipment requirements
  — system switching (manual: EM. HT.-HEAT-OFF-COOL, automatic: EM. HT.-HEAT-OFF-AUTO-COOL).
  — unique heat pump functions of emergency or supplemental heat, changeover on heat or cool, and status indication.
  — Table 3 lists typical applications by manufacturer.

- existing wiring
  — Are there enough conductors to operate the equipment and the thermostat? Can a new cable be pulled?

- existing thermostat
  — Table 3 is a guide for replacing popular Honeywell standard nonprogrammable thermostats with a T8611.

SECURITY

Does the thermostat selected provide access to programming and the override features that will best suit the application? Refer to choices below.

Access	Typical Application	Device
Free access to programming and adjustment/ override.	Home or owner-occupied commercial building.	T8611
Restricted access to device.	Public building.	T8611 with TG512 Locking Cover; T8611 with remote temperature sensing.

Table 2 lists features and wiring terminal functions of the TRADELINE T8611M thermostat.

TABLE 2—T8611M FEATURES AND TERMINALS.

T8611M FEATURES				COMMENTS
Heating Stages	3			May be applied to 2-stage heat pump systems; see wiring diagrams Figs. 6 and 7.
Cooling Stages	2			
Changeover	Auto			
Programming	7-day			
SYSTEM LED	Yes			Lights on call for heat or cool.
EM. HEAT LED (red)	Yes			Lights continuously in EM. HEAT mode.
AUX. HEAT LED (green)	Yes			Lights during call for final auxiliary heat stage.
CHECK LED (yellow)	Yes			Field wired option; indicates equipment malfunction.
Remote Temperature Sensing	Yes			Available on T8611M7040 only. (202905A Remote Sensor included).
WIRING TERMINAL FUNCTION				
24 Vac Common	Ⓒ			Must be connected to control transformer to operate thermostat.
24 Vac Power	Ⓡ			
Compressor, Stage 1 heat and cool.	Ⓨ			
Compressor, Stage 2 cool	Ⓨ2			If applying T8611M to 1-stage cooling system, leave Y2 unconnected.
Second Stage Heat	Ⓦ2			If applying T8611M to 2-stage heat systems in which the second stage is compressorized, connect stage 2 to W2; leave W3 unconnected.
Auxiliary (Resistive) Third Stage Heat	Ⓦ3			If 2-stage heat system in which the second stage is auxillary (electric resistive), connect auxiliary stage to W3; leave W2 unconnected.
Fan	Ⓖ			
Changeover Heat Mode	Ⓑ			O/B changeover terminals are energized continuously following first call for cool or heat, respectively.
Changeover Cool Mode	Ⓞ			
System Monitor, continuously energized in EM. HEAT mode.	Ⓛ			Energizes EM. HEAT LED when externally powered.
Emergency Heat energized on call for stage 1 heat in EM. HEAT mode	Ⓔ			
Check LED terminals to indicate equipment malfunction	Ⓧ1		Ⓧ2	See wiring diagrams for hookup alternatives.
Remote Temperature Sensing	Ⓢ1	Ⓢ2	Ⓢ3	Available on T8611M7040 only. Must be connected to 202905A Remote Sensor for proper thermostat operation.

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TABLE 3—T8611 GUIDE FOR REPLACING POPULAR T874 AND T872 THERMOSTATS, BY EQUIPMENT MANUFACTURER.

(NOTE: Also see form 70-6627, Heat Pump Thermostat Cross Reference Guide, for wiring hookup illustrations.)

| Thermostat (Subbase Included) | | | | | | | |
Auto Changeover Weekday, Sat, Sun T8611G1004 T8611G1012 (°C) T8611G1103 (Premier White)	Manual Changeover Weekday, Sat, Sun T8611R1000 T8611R1042 (°C) T8611R1141 (Premier White)	Auto Changeover 7-day T8611M7008 T8611M7040[c] (also see form 68-0057, Specifications)	Thermostat T874	Subbase Q674	Thermostat T872	Subbase Q672	Comments
Amana							
	•		D1009	F1022	D1003	F1026	Separate first stage heat/cool terminals W1, Y1.
	•		D1017		D1011		
	•		D1165		D1300		
Arco/Comfort Maker							
•	•[a]	•	na	na	na	na	Check LED optional; X = X1, jump X2 to C.
Arco/Friedrich							
•	•[a]	•	na	na	na	na	Changeover on heat, check LED optional.
Bard							
•	•[a]	•	N1024	F1261	N1036	F1299	Changeover on heat (typical), check LED optional, equipment terminal W1 to thermostat B.
•	•	•	R1129	L1181	R1146	L1185	
Bryant, Day-Night, Payne							
•[b]	•[a,b]	•[b]	G1451	F1113[b]	G1166	F1125	Check LED optional; F = X1, jump X2 to C. Note: P terminal available on manual (T8611R) models only.
•	•[a]	•	G1261	F1253	G1174		
•	•[a]	•	J1010	L1371			
changeover							
•	•[a]	•	R1335	L1405			
Carrier							
•	•[a]	•	G1055	J1035	G1075	J1054	Check LED optional (typical)
•	•	•	G1071	L1041	G1158	L1052	
•	•	•	G1121	L1397	G1182		
•	•	•		P1005	G1273		
•	•	•			G1307		
•	•	•			G1257	L1169	
•	•	•	J1002	L1371			
•	•	•	J1028	L1074			
		•	D1074	F1059			Multistage heat pump
		•		F1030			
		•		F1063			
		•		E1114			No Supl. Ht. function
		•		E1042			No Supl. Ht. function
		•	D1264	L1116			Multistage heat pump
Command Aire							
•	•	•	H1005	C1041	H1009	C1086	No AUX. HEAT or EM. HEAT required; Y1 = 0
•	•	•	G1352	C1066			

[a] No CHECK LED.
[b] Dual transformer requires conversion to single transformer.
[c] Model includes separate sensor for remote temperature sensing.

(continued)

TABLE 3—T8611 GUIDE FOR REPLACING POPULAR T874 AND T872 THERMOSTATS,
BY EQUIPMENT MANUFACTURER *(Continued)*.
(NOTE: Also see form 70-6627, Heat Pump Thermostat Cross Reference Guide, for wiring hookup illustrations.)

Thermostat (Subbase Included)							
Auto Changeover Weekday, Sat, Sun T8611G1004 T8611G1012 (°C) T8611G1103 (Premier White)	**Manual Changeover Weekday, Sat, Sun T8611R1000 T8611R1042 (°C) T8611R1141 (Premier White)** (also see form 68-0057, Specifications)	**Auto Changeover 7-day T8611M7008 T8611M7040[c]**	**Thermostat T874**	**Subbase Q674**	**Thermostat T872**	**Subbase Q672**	**Comments**
			Coleman				
•	•[a]	•	R1368	L1421	na	na	Late models optional check LED. Z = X2, jump X1 and C, K = L.
•	•	•	na	na	na	na	Earlier T.H.E. models with reverse-acting EM. HT. require relay isolation.
			Crispaire/Marvair				
•	•	•	G1089	F1162 F1204	G1208	F1166 F1323	
•	•	•	R1111	L1215	R1156	L1094	
			Fedders/Airtemp/Climatrol				
	•[a]		C1398	L1090	C1509	L1102	Separate first stage heat/cool terminals required; check LED optional; equipment terminal K to thermostat E.
	•[a]		C1406		C1517		
	•[a]		C1414		C1541		
			Florida Heat Pump				
•	•[a]	•	na	na	na	na	Optional check LED; X = X1, jump X2 to C.
			Heatwave/Southwest Mfg.				
•	•	•	G1105	F1170	G1232	F1224	
			Heil Quaker/Whirlpool/Tempstar				
•	•	•	R1137	L1132	R1172	L1193	Equipment terminal B to thermostat C.
			Honeywell				
	•		A-D (typ.)	F1006	A-D (typ.)	F1000	Separate first stage heat/cool terminals.
	•			F1022		F1026	
	•			F1048		F1042	
	•		C1000	F1089	C1004	F1075	
•	•		C1018		C1038		
•	•		C1117		C1350		°C
•	•		C1240		C1566		°C
•	•	•	G1246	F1212	G1224	F1208	TRADELINE
•	•	•	G1444		G1000	F1018	
•	•	•			G1018		°C
•	•	•	G1212	F1238	G1083	F1158	
•	•	•	G1139				

[a] No CHECK LED.
[b] Dual transformer requires conversion to single transformer.
[c] Model includes separate sensor for remote temperature sensing.

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TABLE 3—T8611 GUIDE FOR REPLACING POPULAR T874 AND T872 THERMOSTATS, BY EQUIPMENT MANUFACTURER *(Continued)*.

(NOTE: Also see form 70-6627, Heat Pump Thermostat Cross Reference Guide, for wiring hookup illustrations.)

Thermostat (Subbase Included)							
Auto Changeover Weekday, Sat, Sun T8611G1004 T8611G1012 (°C) T8611G1103 (Premier White)	**Manual Changeover Weekday, Sat, Sun T8611R1000 T8611R1042 (°C) T8611R1141 (Premier White) (also see form 68-0057, Specifications)**	**Auto Changeover 7-day T8611M7008 T8611M7040c**	**Thermostat T874**	**Subbase Q674**	**Thermostat T872**	**Subbase Q672**	**Comments**
			Honeywell *(continued)*				
•	•	•	N1016	F1220	N1002	F1133	Changeover on heat; equipment terminal C to thermostat Y, W1 to B, K to E.
•	•	•	N1040	F1261	N1028	F1216	
•	•	•	R1004	B1042	R1008	B1046	
•	•	•		B1109	R1057	L1037	
•	•	•	R1152	L1207	R1198	L1227	
•	•	•	R1285	L1157			
•	•	•	R1350	L1181			
			Janitrol/Tappan				
•	•	•	G1147	F1139	G1109	F1117	Equipment terminal C to thermostat C.
VA			Lennox				NOTE: Rewire for single 75 transformer if two-transformer system.
•	•	•	G1014	F1113	G1026	F1067	°C
•	•	•	G1022	E1148	G1125	E1019	DoD specs—use guard.
•	•	•	G1162		G1091		
•	•	•	G1154	F1105	G1323	L1201	
•	•	•	R1024	B1160			
•	•	•	R1040	B1202			
•	•	•	R1178	L1355			
•	•	•		L1165			
•	•	•	C1148	L1165			
	•	•	D1207	L1199			Two-speed unit; optional check LED; thermistor A not used.
		•		L1389			

Ter-Guide:

minal Conversion

	Lennox	Standard
Transformer Common	X	C
Transformer Power	VR (in) V (out)	R
Compressor	M M2	Y Y2
Aux. Heating	Y	W2
Fan	F	G
Changeover	R	O
System Monitor	L	L,X1,X2
Em.Heat (cycling)	E	E
Thermistor	A	T (not required)

(continued)

[a] No CHECK LED.

[b] Dual transformer requires conversion to single transformer.

[c] Model includes separate sensor for remote temperature sensing.

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TABLE 3—T8611 GUIDE FOR REPLACING POPULAR T874 AND T872 THERMOSTATS,
BY EQUIPMENT MANUFACTURER *(Continued)*.

(NOTE: Also see form 70-6627, Heat Pump Thermostat Cross Reference Guide, for wiring hookup illustrations.)

Thermostat (Subbase Included)							
Auto Changeover Weekday, Sat, Sun T8611G1004 T8611G1012 (° C) T8611G1103 (Premier White)	**Manual Changeover Weekday, Sat, Sun T8611R1000 T8611R1042 (° C) T8611R1141 (Premier White)**	**Auto Changeover 7-day T8611M7008 T8611M7040[c]**					
		(also see form 68-0057, Specifications)	**Thermostat T874**	**Subbase Q674**	**Thermostat T872**	**Subbase Q672**	**Comments**
			Luxaire				
•	•	•	G (Borg Warner)	F1188	G1315	F1281	
			Magic Chef				
	•		na	na	na	na	Earlier PB series, separate first stage heat/cool.
•	•[a]	•	na	na	na	na	Late PE series, optional check LED; X1 = X1, jump X2 to R.
			Rheem/Ruud				
•	•	•	G1097	F1238	G1133	F1158	
•	•	•	G1238		G1141	L1157	
•	•	•			R1081	L1045	
•	•	•	G1220		R1107	L1136	
•	•	•	R1079				
•	•	•	R1095				
			Square D/Sun Dial				
	•[a]		C1224	F1071	C1525	F1182	Separate first stage heat/cool required; optional check LED; X = X1, jump X2 to R.
			Trane/General Electric				
•	•[a]	•	G1204	J1043	G1059	J1039	Optional check LED; F = X1, jump X2 to C; T not used; equipment terminal B to thermostat C, R to R, Y to Y (Y1 + W1), W to W2, G to G, 0 to 0, X2 to E.
			Weather King				
•	•	•	na	na	G1265	F1265	Optional check LED; X = X1, jump X2 to R; equipment terminal C to thermostat C, W1 to Y (W1 + Y1), E to W2, Y1 to 0.

[a] No CHECK LED.
[b] Dual transformer requires conversion to single transformer.
[c] Model includes separate sensor for remote temperature sensing.

(continued)

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TABLE 3—T8611 GUIDE FOR REPLACING POPULAR T874 AND T872 THERMOSTATS, BY EQUIPMENT MANUFACTURER *(Continued)*.
(NOTE: Also see form 70-6627, Heat Pump Thermostat Cross Reference Guide, for wiring hookup illustrations.)

| Thermostat (Subbase Included) | | | | | | | |
Auto Changeover Weekday, Sat, Sun T8611G1004 T8611G1012 (°C) T8611G1103 (Premier White)	Manual Changeover Weekday, Sat, Sun T8611R1000 T8611R1042 (°C) T8611R1141 (Premier White)	Auto Changeover 7-day T8611M7008 T8611M7040[c]	Thermostat T874	Subbase Q674	Thermostat T872	Subbase Q672	Comments
	(also see form 68-0057, Specifications)						
			Wesco/Addison				
•	•	•	G1287	F1253			Equipment terminal C1 to thermostat C, W1 to Y (W1 + Y1), Y1 to 0. Common to thermostat direct from control transformer.
•	•	•	R1012	B1109	R1016	B1103	
•	•	•			G1265	F1265	
•	•	•			G1281		
			Westinghouse				
•	•	•	G1048	F1121	G1034	F1141	
•	•	•		F1246		F1091	
•	•	•		F1279		F1257	
•	•	•		J1019		J1013	
•	•	•		J1050		J1062	
•	•	•	R1103	L1108	R1149	L1110	
•	•	•		L1173		L1128	
•	•	•				L1151	
	•		na	na	na	na	Separate first stage heat/cool terminals required.
		•	D1108	L1223	G1356	L1219	2-speed heat pump; optional check LED; L = X1, jump X2 to C.
			White Rodgers				
•	•	•	na	na	na	na	1F58-910/S28 series.
			Williamson				
•	•	•	R1236	L1348	na	na	
•	•	•	N1008	F1196	na	na	Changeover on heat; W1 = B.
			York/Borg Warner				
•	•[a]	•	G1170	J1027	G1042	J1021	Optional check LED; X = X1, jump X2 to C; equipment terminal B to thermostat C, W to W2, H to B, T not required.
•	•	•	G1295	F1311	G1299	L1177	
•	•	•	G1345	L1363	G1331	D1077	
•	•	•	G1402	D1032	G1364		
•	•	•	G1410		G1398		
•	•	•	G1428				
•	•	•	G1436				
•	•	•	R1046	L1017	R1032	L1011	
•	•	•	R1169	L1330			
•	•	•	R1251	L1272			
			Zone Aire				
•	•	•	N1040	F1261			Changeover on heat; W1 = B.
•	•	•	R1350	L1181			

[a] No CHECK LED.
[b] Dual transformer requires conversion to single transformer.
[c] Model includes separate sensor for remote temperature sensing.

Installation

COMPATIBILITY

The T8611 Thermostats will replace most heat pump system thermostats. As long as ac power is continuously available to the thermostat, the thermostat will be compatible with almost any low-volt control system.

WHEN INSTALLING THIS PRODUCT…

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.

2. Check the ratings given on the product to make sure the product is suitable for your application.

3. Installer must be a trained, experienced service technician.

4. Allow thermostat to warm to room temperature before operating.

5. After installation is complete, check out product operation as provided in these instructions.

⚠ *CAUTION*

Disconnect power supply to prevent electrical shock or equipment damage.

LOCATION

Thermostat with Integral Sensor

Install thermostat and subbase about 5 ft. [1.5 m] above the floor in an area with good air circulation at room temperature.

Do not install the thermostat where it may be affected by—
— drafts or dead spots behind doors, in corners or under cabinets.
— hot or cold air from ducts.
— radiant heat from sun or appliances.
— concealed pipes and chimneys.
— unheated (uncooled) areas behind the thermostat, such as an outside wall.

Thermostat with Remote-Mounted Sensor

Install thermostat in an area that is accessible for setting and adjusting the temperature and settings.

Install remote temperature sensor in an area with good air circulation at average temperature.

Do not install the sensor where it may be affected by—
— drafts or dead spots behind doors, in corners, or under cabinets.
— hot or cold air from ducts.
— radiant heat from sun or appliances.
— concealed pipes and chimneys.
— unheated (uncooled) areas behind the sensor, such as an outside wall.

IF REPLACING AN EXISTING THERMOSTAT

Turn thermostat power off at furnace or heat pump.

This thermostat requires a single transformer. A two-transformer system may require turning off two switches or disconnects, and rewiring to run the thermostat from a single transformer. Make sure the transformer has adequate power (VA) for the heating/cooling control system. Add current ratings of the system components (such as auxiliary heat relay, changeover relay, fan relay). Multiply this total by 24V to determine transformer VA required.

Remove any existing wallplate or subbase from wall. Label or write down each wire color with the letter or number on the wiring terminal as the wire is removed to avoid miswiring later.

IF NEW INSTALLATION

Run cable to a hole at the selected wall location for thermostat and remote sensor, and pull about 3 in. [76 mm] of wire through the opening. Color-coded, 18-gauge thermostat cable with at least one conductor for each wiring terminal is recommended. Good service practice recommends selecting cable with one or two more conductors than the immediate application requires.

If using thermostat model with remote temperature sensing, run 3-wire, 18-gauge thermostat cable from the thermostat location to the sensor location (200 ft. [61 m] maximum). Route cable away from sources of electrical noise.

MOUNTING SUBBASE

IMPORTANT: *Set the subbase system switch in the OFF position before mounting.*

The subbase does not require leveling for operation, but for appearance only.

Remove thermostat from subbase (Fig. 4).

Fig. 4—Removing thermostat from subbase.

The subbase mounts directly onto the wall with the screws and anchors included. Instead, the subbase can be mounted on a vertical or horizontal outlet box. If you must mount the subbase on a vertical outlet box, order 193121A Adapter Assembly. The assembly includes an adapter ring, two screws and a cover plate to cover marks on the wall. Install the ring and cover plate on the vertical outlet box as instructed.

Use the subbase as a template, and with a pencil, mark the two mounting screw positions (Fig. 5).

If drywall construction, plastic anchors must be used; use 3/16 in. bit to drill holes for anchors. Gently tap anchors into holes until they are flush with the wall surface.

Thread wires through the center opening of the subbase.

Use a 3/16 in. bit to drill the required holes. Gently tap anchors into holes until they are flush with the wall
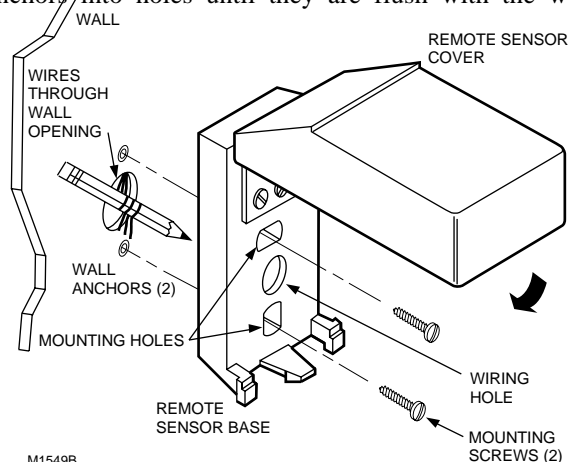
M1549B

surface. Thread wires through the opening in the base. Mount remote sensor base using the screws provided. See Fig. 6. Make sure base looks level before tightening screws.

Fig. 6—Mounting remote sensor base on wall.

WIRING

All wiring must comply with local electrical codes and ordinances.

Disconnect power before wiring to prevent electrical shock or equipment damage.

The shape of the terminal barrier permits insertion of straight or conventional wraparound wiring connections. Either method is acceptable.

Push excess wire back into the hole, and plug hole with nonhardening caulk, putty or insulation to prevent drafts from affecting operation of thermostat and remote sensor, if applicable.

Refer to Figs. 8-10 for typical hookups of subbase and thermostat.

After wiring remote sensor, replace cover.

NOTE: Restrict all wiring to recessed area surrounding

Mount the subbase using two screws provided. Gently tighten screws, level top surface of subbase, and securely tighten screws.

Fig. 5—Mounting subbase on wall.

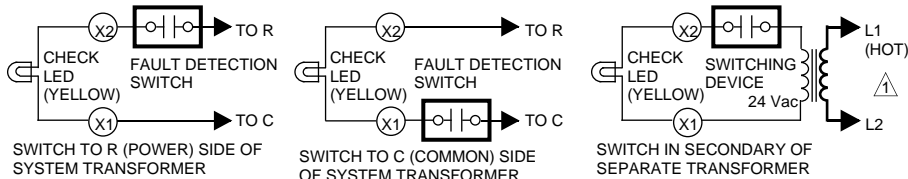**MOUNTING REMOTE TEMPERATURE SENSOR (IF APPLICABLE)**

The remote sensor mounts directly on the wall with screws and anchors included. Remove cover from remote sensor (Fig. 6). Use the remote sensor base as a template, and with a pencil, mark holes for mounting screws.

terminals (Fig. 7) to assure thermostat/subbase contact.
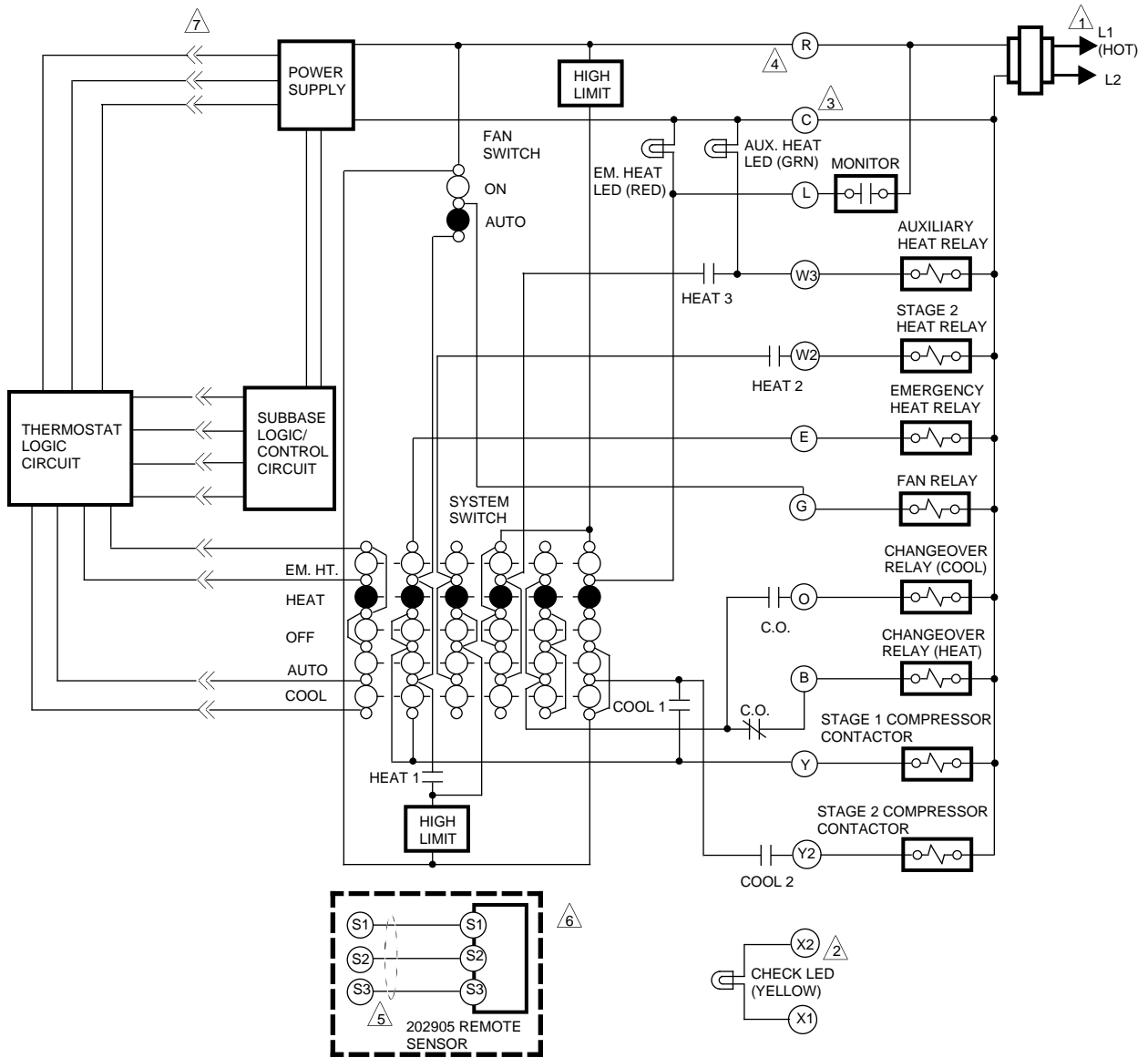
1. POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

2. POSSIBLE CHECK LED CIRCUITS:

SWITCH TO R (POWER) SIDE OF SYSTEM TRANSFORMER

SWITCH TO C (COMMON) SIDE OF SYSTEM TRANSFORMER

SWITCH IN SECONDARY OF SEPARATE TRANSFORMER

3. SOME OLDER HEAT PUMP THERMOSTATS USE X FOR COMMON TERMINAL.

4. NOMINAL 24 Vac POWER MUST BE PRESENT BETWEEN R AND C TERMINALS FOR THERMOSTAT OPERATION.

5. RECOMMENDED INTERCONNECT CABLE: 18-GAUGE THERMOSTAT CABLE, 200 ft. [61 m] MAXIMUM LENGTH. ROUTE INTERCONNECT CABLE AWAY FROM SOURCES OF ELECTRICAL NOISE.
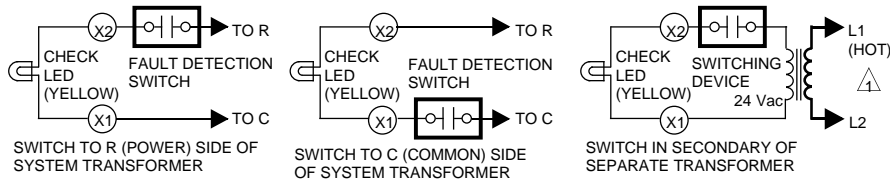
6. APPLICABLE ONLY ON MODEL WITH REMOTE SENSOR.

7. —«— DENOTES THERMOSTAT TO SUBBASE INTERCONNECT.

M1017D

14

Fig. 7—Restrict wiring to recessed area surrounding terminals.
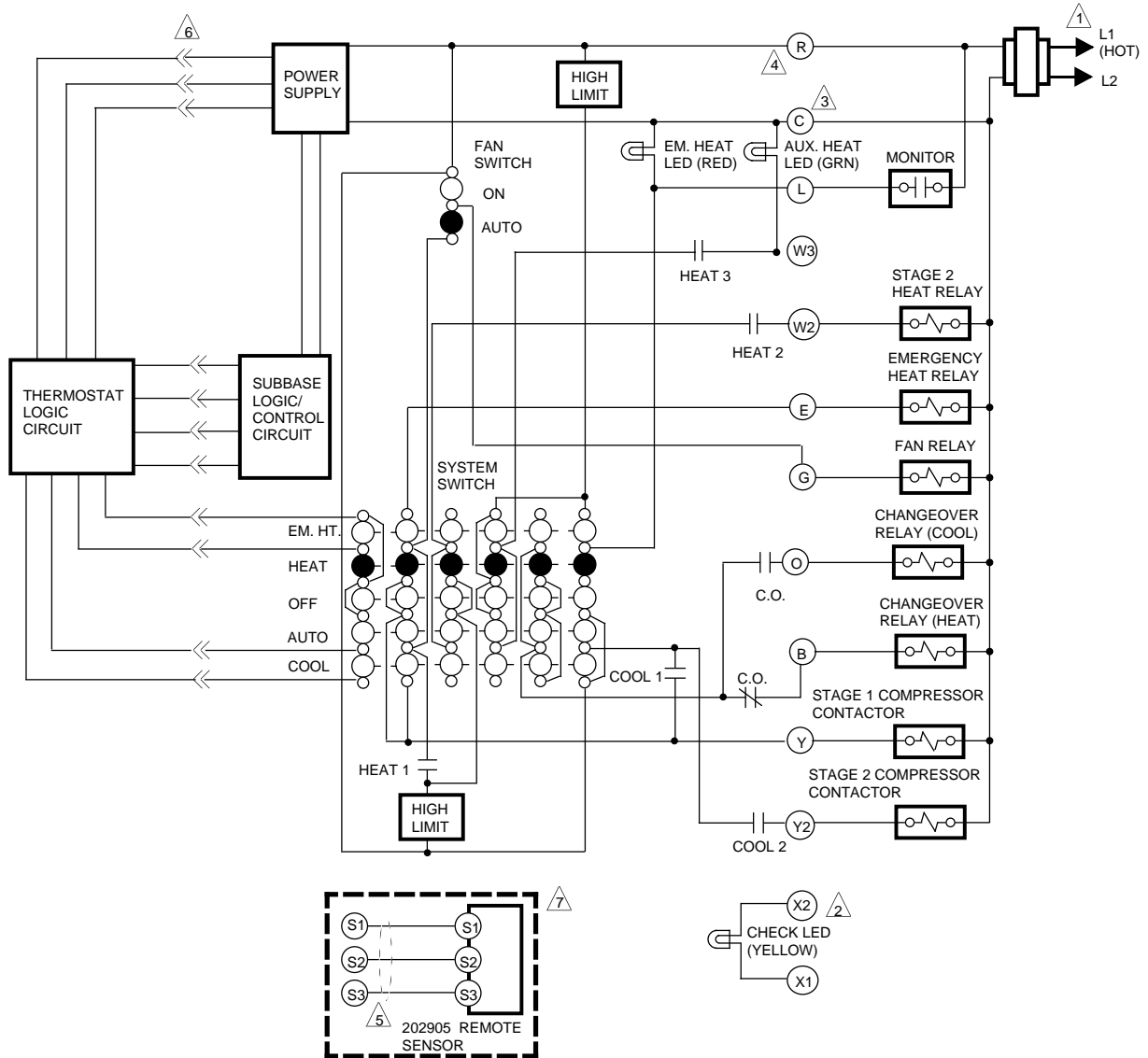
△1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

△2 POSSIBLE CHECK LED CIRCUITS:

SWITCH TO R (POWER) SIDE OF SYSTEM TRANSFORMER

SWITCH TO C (COMMON) SIDE OF SYSTEM TRANSFORMER

SWITCH IN SECONDARY OF SEPARATE TRANSFORMER

△3 SOME OLDER HEAT PUMP THERMOSTATS USE X FOR COMMON TERMINAL.

△4 NOMINAL 24 Vac POWER MUST BE PRESENT BETWEEN R AND C TERMINALS FOR THERMOSTAT OPERATION.
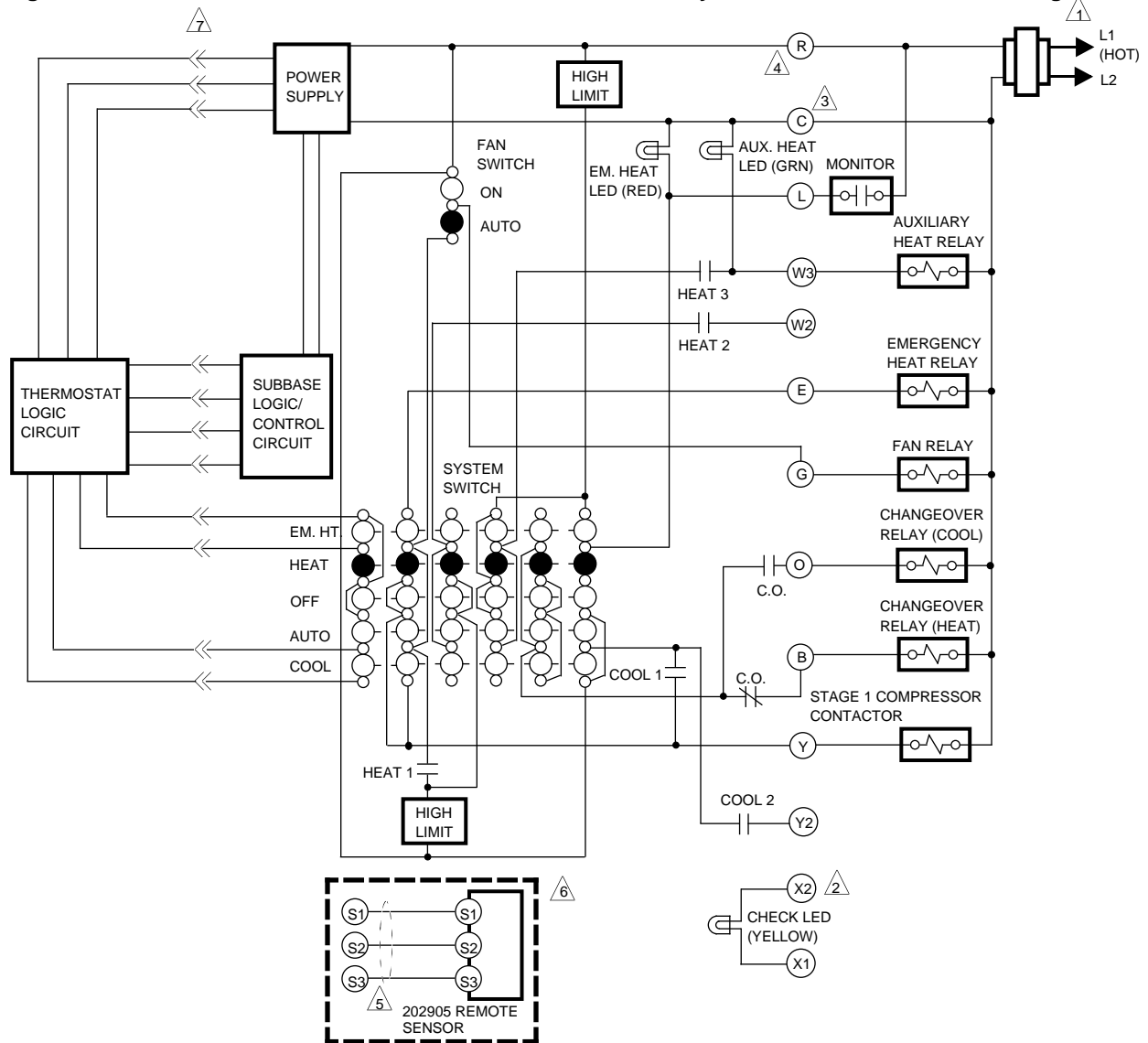
△5 RECOMMENDED INTERCONNECT CABLE: 18-GAUGE THERMOSTAT CABLE, 200 ft. [61 m] MAXIMUM LENGTH. ROUTE INTERCONNECT CABLE AWAY FROM SOURCES OF ELECTRICAL NOISE.

△6 ——⟨⟨ DENOTES THERMOSTAT TO SUBBASE INTERCONNECT.

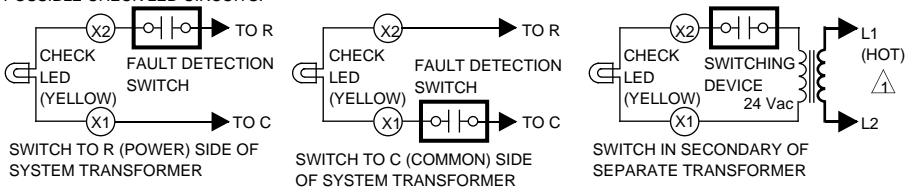△7 APPLICABLE ONLY ON MODEL WITH REMOTE SENSOR.

M1018D

Fig. 8—T8611M Thermostat with EM.HT.-HEAT-OFF-AUTO-COOL system and ON-AUTO fan switching; EM.HT., CHECK, and AUX. HT. LEDS. Applied to 3-stage heat/2-stage cool system.
Fig. 9—T8611M Thermostat with EM.HT.-HEAT-OFF-AUTO-COOL system and ON-AUTO fan switching,

△1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

△2 POSSIBLE CHECK LED CIRCUITS:

SWITCH TO R (POWER) SIDE OF SYSTEM TRANSFORMER

SWITCH TO C (COMMON) SIDE OF SYSTEM TRANSFORMER

SWITCH IN SECONDARY OF SEPARATE TRANSFORMER

△3 SOME OLDER HEAT PUMP THERMOSTATS USE X FOR COMMON TERMINAL.

△4 NOMINAL 24 Vac POWER MUST BE PRESENT BETWEEN R AND C TERMINALS FOR THERMOSTAT OPERATION.

△5 RECOMMENDED INTERCONNECT CABLE: 18-GAUGE THERMOSTAT CABLE, 200 ft. [61 m] MAXIMUM LENGTH. ROUTE INTERCONNECT CABLE AWAY FROM SOURCES OF ELECTRICAL NOISE.

△6 APPLICABLE ONLY ON MODEL WITH REMOTE SENSOR.

△7 ——◁—— DENOTES THERMOSTAT TO SUBBASE INTERCONNECT.

M1019D

EM.HT. and CHECK LEDs. Applies to 2-stage heat/2-stage cool system in which both heating stages are compressorized.
Fig.10—T8611M Thermostat with EM.HT.-HEAT-OFF-AUTO-COOL system and ON-AUTO fan switching; EM.HT., CHECK, and AUX. HT. LEDs. Applied to 2-stage heat/1-stage cool system.

ADJUSTING CYCLE RATE

To customize the thermostat last heating stage cycling performance to various types of auxiliary heating equipment, a cycle rate adjustment screw is provided on the back of the thermostat to provide optimum savings and occupant comfort.

NOTE: MOST APPLICATIONS WILL *NOT* REQUIRE A CHANGE IN CYCLE RATE.

The room air temperature normally will vary slightly from the comfort temperature setting with the cycling of the heat pump or auxiliary heater.

Fig. 11—Cycle rate adjustment.

Fig. 12—Battery placement.

The Stage 1 cycle rate of this thermostat is factory-set for heat pumps and cannot be adjusted. The auxiliary heat cycle rate can be adjusted by turning the cycle rate adjustment screw on the back of the thermostat. See Fig. 11. Increasing the cycle rate will reduce room temperature swings when auxiliary heat is being used.

INSTALLING BATTERIES

Three AAA alkaline batteries are included to provide backup to prevent program loss in case of power outage. Install batteries in back of thermostat as shown in Fig. 12.

Without battery backup, the program will remain about 20 seconds in event of power loss.

IMPORTANT: *When batteries are first installed, the display will flash 1:00 PM and 32°. After a brief delay, the display will flash 1:00 PM and room temperature.*

When the batteries are low, the display will flash REPL BAT. Homeowner will have 20-30 seconds to install new batteries after removing old batteries from back of thermostat. After 20-30 seconds, it will be necessary to reprogram. REPL BAT indication will disappear within 5-10 minutes when thermostat is remounted on the powered subbase.

IMPORTANT: *For proper thermostat operation, always replace dead batteries with new alkaline batteries.*

If batteries are completely dead, the display will go blank when the thermostat is removed from subbase. After replacing the batteries, reprogramming will be necessary.

POWER OUTAGES

Backup batteries will hold the programming and keep the display on during most power outages. Once the power is restored, the system will resume normal operation.

If the display goes off when power is lost, either the backup batteries need to be replaced or are not installed. When power is restored, the display will flash 1:00 PM to remind you to reprogram.

MOUNTING THE THERMOSTAT

With system switch set to OFF, hang the thermostat on the tabs at the top of the subbase (Fig. 13A). Swing down and press on lower edge until thermostat snaps in place (Fig. 13B). Open cover and tighten the captive mounting screws (Fig. 13C).

SETTING DAY AND TIME

Restore 24V power to the thermostat. Set present day and time.

Press .

Press to set the current day. (Each press of the DAY key advances the display one day.)

Press TIME or to set the current time.

If the display will not come on—
— check mounting of thermostat to subbase. If loose or misaligned, remove thermostat and reinstall on the subbase, making sure it is firmly attached.
— check to see that batteries are installed properly.

Fig. 13—Mounting thermostat on subbase.

Checkout

⚠ *CAUTION*

During cold weather, some heat pumps will require that crankcase heater be energized several hours before operating heat pump. Refer to manufacturer's recommendations.

HEATING

NOTE: When heating setting is changed, thermostat will wait up to 5 minutes before turning on the heating equipment. This delay protects the compressor.

Move the system switch to HEAT and the fan switch to AUTO. Press WARMER key until the setting is about 10° F [6° C] above room temperature. Heating should start and the fan should run (there may be a delay of 5-10 minutes before heat turns on). Press COOLER key until the setting is about 10° F [6° C] below room temperature. The heating equipment should shut off, followed by the fan.

NOTE: On an AUTO changeover thermostat, the cooling temperature must be set at least 3° F [2° C] above the heating temperature, or display will flash.

COOLING

⚠ *CAUTION*

Do not operate cooling if outdoor temperature is below 50° F [10° C]. Refer to manufacturer's recommendations.

NOTE: When cooling setting is changed, thermostat will wait up to five minutes before turning on the cooling equipment. This delay protects the compressor.

Move the system switch to COOL and the fan switch to AUTO. Press COOLER key until the setting is about 10° F [6° C] below room temperature. The cooling equipment and fan should start. Press WARMER key until the setting is about 10° F [6° C] above room temperature. The cooling equipment and fan should stop.

NOTE: On an AUTO changeover thermostat, the heating temperature must be set at least 3° F [2° C] below the cooling temperature, or display will flash.

FAN

Move the system switch to OFF, and the fan switch to ON. The fan should run continuously. When the fan switch is in the AUTO position, fan cycles with the heating or cooling system.

INSTALLER SELF-TEST (OPTIONAL)

IMPORTANT:
- *Thermostat must have ac power to perform self-test.*
- *Five-minute time delay on compressor does not function during self-test.*

Perform the following test as a check of all thermostat functions. If thermostat does not respond as indicated, thermostat and subbase must be replaced.

1. Press AHEAD and BACK keys at the same time. While holding keys down, all segments of the display should be on (see Fig. 14).

Fig. 14—All segments on display.

M 525A

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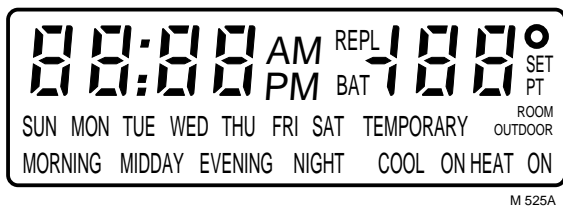
2. Set system switch to OFF. Press and release AHEAD, BACK, and PRESENT SETTING keys at the same time to enter self-test.

3. Press each key as listed below, and look for responses listed as key is held down and released. Keys may be pressed in any order except RUN PROGRAM should be pressed last because it ends self-test.

System Switch Position	Press This Key	Look For This Response	
		Key Down	**Key Released**
OFF	CHANGE TO LAST PERIOD	03	Blank
	SKIP NEXT PERIOD	07	Blank
	PRESENT SETTING	15	Blank
COOL or	PRESENT SETTING	15	1st stage cooling, fan and SYSTEM LED on.
(with fan in AUTO)	PRESENT SETTING	15	2nd stage cooling also on.
	PRESENT SETTING	15	2nd stage cooling off.
	PRESENT SETTING	15	1st stage cooling, fan and SYSTEM LED on.
OFF	WARMER	06	Blank
	COOLER	02	Blank
	AHEAD	05	Blank
	BACK	04	Blank
	COPY FROM	01	Control microprocessor mask no. and revision no.
	COPY TO	00	Blank
(CHECK EACH POSITION)	PERIOD	12	See note Ⓐ.
OFF	CANCEL PERIOD	08	Blank
	DAY	13	Interface microprocessor mask no. and revision no.
	SET HEAT/COOL	09	Blank
	SET PRESENT DAY/TIME	14	Blank
HEAT or AUTO (with fan in auto)	SET PRESENT DAY/TIME	14	1st stage heating, fan and SYSTEM LED on.
	SET PRESENT DAY/TIME	14	2nd stage heating also on.
	SET PRESENT DAY/TIME	14	3rd stage heating and AUX. HT. LED also on.
	SET PRESENT DAY/TIME	14	3rd stage heating and AUX. HT. LED off.
	SET PRESENT DAY/TIME	14	2nd stage heating also off.
	SET PRESENT DAY/TIME	14	1st stage heating, fan and SYSTEM LED also off.
OFF	HOLD TEMP	10	Blank
	RUN PROGRAM	11	Normal operating display

Ⓐ HEAT displayed when system switch is in HEAT, COOL when in COOL, HEAT and COOL when in AUTO, neither when in OFF. Also, a four-digit code is displayed. Explanation for each digit is following.

First Digit	Degrees	Clock (Hrs.)
0	F	12
1	F	24
2	C	12
3	C	24

Third Digit	System Switch Position	Sensor Location
0	COOL, AUTO or OFF	Local
1	HEAT or EM.HT.	Local
4	COOL, AUTO or COOL	Remote
5	HEAT or EM. HT.	Remote

```
0 1 1 5
```
M5346

Second Digit	System Switch Position
0	EM. HT., HEAT or OFF
1	AUTO
2	COOL

Fourth Digit	Nominal Cycle Rate (cph at 50% load for 3rd stage heat)
4	6
5	3

Programming The Thermostat

STEP 1
SETTING THE CURRENT DAY AND TIME
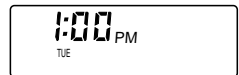
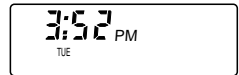This thermostat can be programmed either on the wall or in the hand. *See page 12 to remove the thermostat from the subbase.*

Always press the keys with fingertip or similar blunt tool. Sharp instruments like a pen or pencil point can damage the keyboard.

NOTE: Check the glossary, page 30, for definitions of unfamiliar words.

| SET PRESENT DAY/TIME | Press and release. The display shows 1:00 PM Mon. | `1:00 PM` MON — M2701 |

| DAY (up) | Press and hold until the current day appears in the display. | `1:00 PM` TUE — M2702 |

| TIME AHEAD (up) / BACK (down) | Press and hold until the current time appears in the display. Be sure AM or PM appears as desired. | `3:52 PM` TUE — M2703 |

This completes setting the current day and time. Go on to Step 2.

STEP 2
SETTING THE PROGRAM TIMES AND TEMPERATURES FOR ONE DAY

Choose a day to program first. Monday is used in the examples. Start by programming the MORNING time and temperatures. The thermostat requires a MORNING program every day. Set additional programs as desired.

| PERIOD (up) | Press and release. Note that the display shows MORNING and the preprogrammed time and temperature. | `6:00 AM 70°` MON MORNING / SET PT / HEAT — M2704 |

| SET HEAT/COOL | If the display reads COOL, press and release to switch to HEAT. | `6:00 AM 70°` MON MORNING / SET PT / HEAT — M2704 |

| DAY (up) | Press and hold until MONDAY (or the desired day) appears in the display. | `6:00 AM 70°` MON MORNING / SET PT / HEAT — M2704 |

AHEAD / BACK — Press and hold until the display shows the time that the temperature should be at the comfort setting.

`7:00 AM  70° SET PT`
MON
MORNING   HEAT
M2705

WARMER / COOLER — Press and hold until the display shows the desired heating temperature.

`7:00 AM  72° SET PT`
MON
MORNING   HEAT
M2706
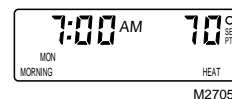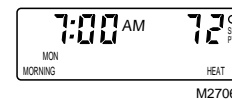
If the display flashes while holding down TEMPERATURE WARMER or COOLER, the setting limit has been reached. If thermostat is an auto changeover model, the heating temperature must be at least 3 degrees below the air conditioning temperature. For example, if the cooling setting is 75° F, the maximum heating setting is 72° F. To set a higher heating temperature, first raise the cooling setting.
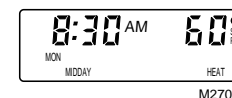
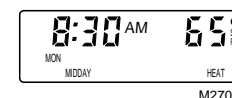Program the MIDDAY time and heating temperature if desired.

PERIOD — Press and release. The display shows MIDDAY, but no time or temperature.

`:  ° SET PT`
MON
     MIDDAY   HEAT

AHEAD / BACK — Press and hold until the display shows the time to start the energy saving period.

`8:30 AM  60° SET PT`
MON
     MIDDAY   HEAT
M2708

WARMER / COOLER — Press and hold until the display shows the desired temperature.

`8:30 AM  65° SET PT`
MON
     MIDDAY   HEAT
M2709

NOTE: It is possible to *cancel* any period showing on the display except MORNING by pushing the CANCEL PERIOD key. To move to the next period while programming, simply press the PERIOD key again.
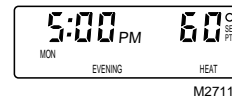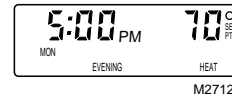
Program the EVENING time and temperature, if desired.

PERIOD — Press and release. The display shows EVENING, but no time or temperature.

`:  ° SET PT`
MON
     EVENING   HEAT

AHEAD / BACK — Press and hold until the display shows the time the temperature should be at the comfort setting.

`5:00 PM  60° SET PT`
MON
     EVENING   HEAT
M2711

WARMER / COOLER — Press and hold until the display shows the desired heating temperature.

`5:00 PM  70° SET PT`
MON
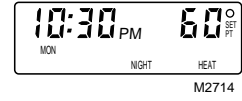   EVENING   HEAT
M2712

Program the NIGHT time and temperature, if desired.

PERIOD ▲

Press and release. The display shows NIGHT and the preprogrammed time and temp-erature.
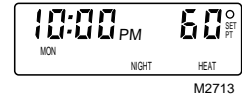
`10:00 PM    60° SET PT`
`MON         NIGHT      HEAT`
M2713

AHEAD ▲
BACK ▼

Press and hold until the display shows the time to start the energy saving period.

`10:30 PM    60° SET PT`
`MON         NIGHT      HEAT`
M2714

WARMER ▲
COOLER ▼

Press and hold until the display shows the desired heating temperature.

`10:30 PM    64° SET PT`
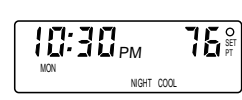`MON         NIGHT      HEAT`
M2715
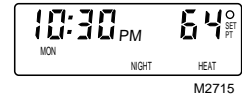
Set the cooling temperatures for all the periods programmed. The program times are the same for both heating and cooling. Only the cooling temperatures need to be programmed if programming has been completed for heating. If you change program times for cooling, you are also changing the times for

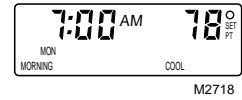**SET HEAT/COOL**

heating.
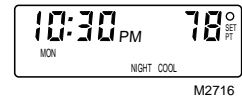
Press and release. The display shows COOL, the preprogrammed cooling temperature and the programmed start time for NIGHT.

`10:30 PM    78° SET PT`
`MON       NIGHT COOL`
M2716

WARMER ▲

`10:30 PM    76° SET PT`
`MON       NIGHT COOL`
M2717

COOLER ▼

Press and hold until the display shows the desired cooling temperature for NIGHT.

If the display blinks while holding down TEMPERATURE WARMER or COOLER, the setting limit has been reached. If thermostat can switch automatically between heating and cooling, the heating temperature must be at least 3 degrees F below the air conditioning temperature. For example, if the heating setting is 72° F, the minimum cooling setting is 75° F. To set the cooling temperature lower, first lower the heating setting.
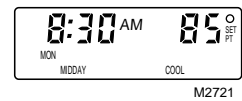
PERIOD ▲

`7:00 AM     78° SET PT`
`MON`
`MORNING        COOL`
M2718

WARMER ▲
COOLER ▼

Press and release. The display shows the preprogrammed cooling temperature and the programmed start time for MORNING.

`7:00 AM     76° SET PT`
`MON`
`MORNING        COOL`
M2719
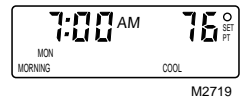
Press and hold until the display shows the desired cooling temperature for MORN-ING.
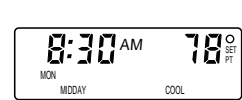
PERIOD ▲

`8:30 AM     78° SET PT`
`MON       MIDDAY   COOL`
M2720

WARMER ▲
COOLER ▼

Press and release. The display shows the preprogrammed cooling temperature and the programmed start time for MIDDAY.

`8:30 AM     85° SET PT`
`MON       MIDDAY   COOL`
M2721

Press and hold until the display shows the desired cooling temperature for MIDDAY.

PERIOD ▲

`5:00 PM     78° SET PT ROOM`
`MON       EVENING  COOL`
M2722

WARMER ▲
COOLER ▼

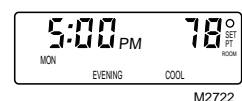Press and release. The display shows the preprogrammed cooling temperature and the programmed start time for EVENING.

`5:00 PM     76° SET PT ROOM`
`MON       EVENING  COOL`
M2723

Press and hold until the display shows the desired cooling temperature for EVENING.

This completes the program schedule for one day. Go to Step 3 to copy this program

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**STEP 3
COPYING THE PROGRAM TO
THE DESIRED DAYS**

It is possible to copy the program for one day to any other day or combination of days. The new program will replace any program already set in the day selected.

**PERIOD** — If necessary, press and release to enter the programming mode.

`10:30 PM   64° SET PT`
`MON        NIGHT    HEAT`
M2724

DAY — Press and hold until the day containing the program to be copied shows in the display.

`10:30 PM   64° SET PT`
`MON        NIGHT    HEAT`
M2724
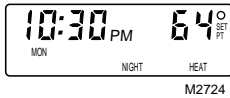
COPY FROM — Press and release. The day to be copied will show, and the next day will flash, in the display.

`MON TUE`
M2725

COPY TO — Press and release to copy the program into the day that is flashing in the display. Note that the next day now starts to flash.

`MON TUE WED`
M2726
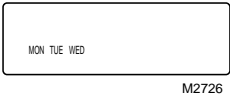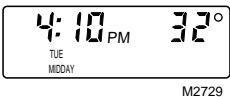
DAY — Press and release if it is not desired to copy into the day that is flashing. Note that the next day now starts to flash.

`MON   WED`
M2727

COPY TO — Press and release the COPY TO key again to select the day that is flashing, or the DAY key to bypass it.

`MON   WED THU`
M2728

Continue until all desired days are showing in the display and a*re not flashing*.

`4:10 PM   32°`
`TUE`
`MIDDAY`
M2729

If an error is made in copying, start over by pressing COPY TO key repeatedly until all days are shown (*not* flashing); press COPY TO key once more.

RUN PROGRAM — Press and release to copy the program into all the days selected.

**STEP 4
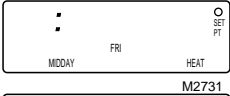SETTING THE SCHEDULES
AND TEMPERATURES FOR
THE REMAINING DAYS**

Use the procedures described in Steps 2 and 3 and summarized in this step to program the remaining days.

PERIOD — Press and release to enter the programming mode.

`8:30 AM   65° SET PT`
`TUE`
`MIDDAY     HEAT`
M2730

DAY — Press and hold until the day desired to program shows on the display.

`:         ° SET PT`
`FRI`
`MIDDAY     HEAT`
M2731

SET HEAT/COOL — If COOL shows on the display, press and release to switch to HEAT.

`:         ° SET PT`
`FRI`
`MIDDAY     HEAT`
M2731

AHEAD / BACK — Use the AHEAD/BACK keys to set the time and the WARMER/COOLER keys to set the heating temperature.

WARMER
COOLER

PERIOD — Press and release the PERIOD key to step through the remaining time periods. Use the AHEAD/BACK keys to set the time and the WARMER/COOLER keys to set the heating temperature for each time period.

AHEAD   **WARMER**
BACK   **COOLER**

SET HEAT/COOL
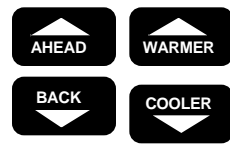
Press and release so COOL shows on the display.

```
7:00 AM        78°SET PT
        FRI
MORNING         COOL
```
M2732

PERIOD

Press and release the PERIOD key to step through the time periods, and use the WARMER/COOLER keys to set the cooling temperature for each period.

WARMER

COOLER

This completes the time and temperature program for another day. Copy it into additional days if desired.

COPY FROM

Press and release COPY FROM to enter the copy mode. The next day flashes on the display.

```
        FRI  SAT
```
M2733

COPY TO

DAY

Press and release the COPY TO key to select the day that is flashing, or the DAY key to bypass it.

```
SUN          FRI
```
M2734

COPY TO

Continue, using the COPY TO key to bring up the next day, followed by COPY TO to select, or DAY to bypass the DAY, until all desired days are selected.

COPY TO

DAY

RUN PROGRAM

Press and release RUN PROGRAM to complete the copy.

```
4:32 PM        32°
        TUE
      MIDDAY
```
M2735

Repeat Step 4 as needed until all days are programmed.

**STEP 5
SETTING THE SYSTEM AND FAN SWITCHES ON THE SUBBASE.**

Depending on thermostat model, some of the switch positions shown may not be available. Note the positions provided on subbase, then set the switch(es) as desired.

First set the fan switch.

Then set the system switch.

FAN ON: The fan runs continuously. Use for improved air circulation during special occasions or for more efficient electronic air cleaning.
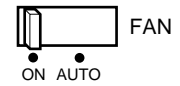
```
FAN
ON  AUTO
```
M2757

FAN AUTO: Normal setting for most homes and businesses. The fan starts and stops with the compressor in heat pump systems when the system switch is set to HEAT, AUTO or COOL. When system switch is set to EM. HT., the fan operates with the auxiliary heat (on some models).
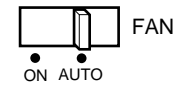
```
FAN
ON  AUTO
```
M2758

EM. HT: The thermostat controls only the backup heat. The heat pump is off.

```
EM. HT.  HEAT  OFF  AUTO  COOL
```
M2752

HEAT: The thermostat controls the heating system.
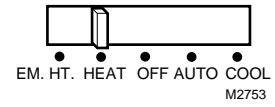
```
EM. HT.  HEAT  OFF  AUTO  COOL
```
M2753

OFF: Both the heating and cooling systems are off.

```
EM. HT.  HEAT  OFF  AUTO  COOL
```
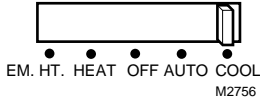M2754
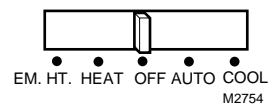
24

Then set the system switch. *(continued)*

AUTO (select models only): The thermostat controls either the heating or cooling system, depending on room temperature.

EM. HT. HEAT OFF AUTO COOL

M2755
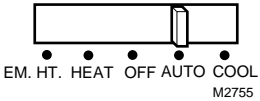
COOL: The thermostat controls the cooling system.

EM. HT. HEAT OFF AUTO COOL

M2756

Now, read on to learn about the operating flexibility that makes this thermostat THE SMART CHOICE.

This completes the programming of the thermostat.

If thermostat was removed from the wall to program, replace it following the procedure on page 20.

# Operating The Thermostat

TEMPORARILY CHANGING THE PROGRAM

These features allow customizing the program for those times when someone comes home early, is working late or planning to be out for the evening.

Changes made with these keys are active for one program period and then are canceled.

To keep the current temperature through the next program period:

SKIP NEXT PERIOD

Press and release. The name of the period to be skipped will flash in the display until the start time of the skipped period. During the skipped period, the display will flash "temporary" to show that the programmed temperature for this period is not being used.

2:42 PM   70°
SET PT
TUE
MIDDAY EVENING
M2736
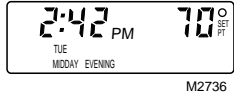
To go back to the temperature of the previous program period:

CHANGE TO LAST PERIOD

Press and release. The display will show the name of the previous period and flash "temporary" until the next regularly scheduled period starts.

2:42 PM   70°
SET PT
TUE
MORNING   TEMPORARY
M2737
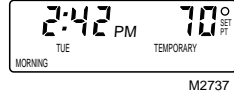
IMPORTANT: *The CHANGE feature will be operable the day after the thermostat has been programmed and operating. The thermostat requires this time to learn the programmed schedule.*

To temporarily raise or lower the temperature for the current period only:

WARMER

COOLER

Press and hold until the desired temperature is reached. The display will flash "tem-porary" until the next programmed time period starts.

72°
SET PT
TEMPORARY
HEAT
M2738

To change back:

RUN PROGRAM
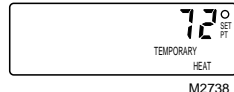
Press and release to cancel any of the temporary settings.

2:43 PM   70°
TUE
MIDDAY
M2739

REPROGRAMMING THE THERMOSTAT

If schedule changes or a different temperature is desired, update any setting without affecting the rest of the program.

▲ PERIOD — Press and hold until the desired time period shows on the display.

▲ DAY — Press and hold until the desired schedule day shows on the display.

▲ AHEAD / ▼ BACK — Press and hold the Time or Temperature keys until the display shows the desired new program.
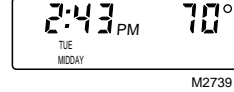
▲ WARMER / ▼ COOLER

Copy the new program into other days, if desired. When copying a program, all the times and temperatures for that day are copied.

COPY FROM / COPY TO / ▲ DAY — Press and release. The next day will flash on the display. Press COPY TO to copy into, or DAY to bypass, the day. Continue until the program has been copied into all desired days.

RUN PROGRAM — Press and release to return to normal operation.

HOLDING A TEMPERATURE FOR EXTENDED ABSENCE

This feature is particularly useful when going on vacation or other extended absence. It does not cancel the program.

HOLD TEMP — Press and release.

Ho ld   70° SET PT HEAT
M2740

▲ WARMER / ▼ COOLER — Press and hold to change the temperature setting. After a few seconds, the display will show the current temperature.

Ho ld   60° SET PT HEAT
M2741

PRESENT SETTING — Press and release to check the temperature setting.

60° SET PT HEAT
M2742

RUN PROGRAM

2:45 PM   70° TUE MIDDAY
M2743

Press and release to cancel manual control.

CANCELING PROGRAM SETTINGS

The thermostat requires time and temperature settings in the MORNING time period for each day, but any of the others can be canceled. Each time period for each day must be canceled separately.

▲ PERIOD — Press and hold until the desired time period shows on the display.

10:30 PM   64° SET PT MON NIGHT HEAT
M2744

▲ DAY — Press and hold until the desired day shows on the display.

10:30 PM   64° SET PT WED NIGHT HEAT
M2745

CANCEL PERIOD — Press and release to cancel the time and temperature settings for that time period.

:   ° SET PT WED NIGHT HEAT
M2746

Both the heating and cooling temperatures will be canceled.

Use the copy function to cancel the program from other days, but remember: *all* the programs will be copied, not just the cancellation.

RUN PROGRAM

5:10 PM   70° WED EVENING HEAT
M2747

26

Press and release to return to normal operation.

CHECKING THE PROGRAM TIMES AND TEMPERATURES

If desired, check all the stored settings

▲
PERIOD

▲
DAY

RUN PROGRAM

tion.

CHECKING THE CURRENT TEMPERATURE SETTING

Press a single key to compare actual room temperature to the setting at any

PRESENT SETTING
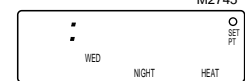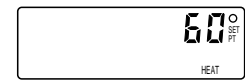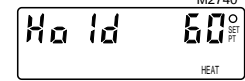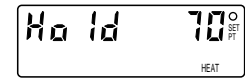
without affecting the permanent program.

Press and hold until the desired period shows on the display. The start time and temperature setting will appear on the display.

Press and release to display the next day time and temperature for that period.
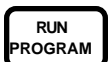
Press and release to return to normal operation.

time.

Press and release. The display will show the current temperature setting for several seconds, then revert to the room temperature.

During recovery from energy savings, the setting displayed will not match the programmed setting. This is because the thermostat gradually changes the temperature setting during recovery to provide maximum comfort combined with most efficient use of the heating or cooling equipment.

10:30 PM	65° SET PT
FRI	
NIGHT	HEAT

M2748

11:00 PM	65° SET PT
SAT	
NIGHT	HEAT

M2749

5:16 PM	68° SET PT
FRI	
EVENING	

M2750

	68° SET PT
	HEAT

M2751

Operation

The T8611M Thermostat provides automatic control of multistage heat pump systems with up to three stages of heat and up to two stages of cool. The first heat stage is the heat pump and the last stage is electric, gas, or oil auxiliary heat. T8611M provides automatic changeover from heat to cool or cool to heat.

ADAPTIVE INTELLIGENT RECOVERY™ OPERATION

Adaptive Intelligent Recovery™ is the Honeywell trademark for the way the T8611 controls the heating and cooling equipment during recovery from an energy savings setting to a comfort setting. During recovery, the control point changes gradually rather than jumping from the energy savings setting to the comfort setting all at once. This provides additional energy savings.

When Adaptive Intelligent Recovery™ is used in the heating mode, the control point raises gradually, maximizing the use of the more economical heat pump to bring the sensed temperature to the desired comfort setpoint. This minimizes the use of the typically more expensive auxiliary heat.

In both heating and cooling, the thermostat monitors recovery each day and adjusts the next day recovery start time. This ensures that the building is at the desired temperature at the programmed time, regardless of the outdoor temperature. Recovery time varies depending on the weather conditions and the building heating/cooling system.

The advantages are:

• The comfort setting is achieved at the programmed time and maintained regardless of weather conditions; occupants come home and wake up to comfort.

• Drafts from low temperature discharge air are minimized during occupied periods.

• The thermostat automatically uses the more economical heat pump as the primary heat source during heat mode recovery, avoiding the use of the expensive auxiliary heat.

• Comfort and energy savings can be achieved in both heating and cooling.

• Reduces heat pump compressor cycling, extending equipment life.

Use of Outdoor Thermostats

Because Adaptive Intelligent Recovery™ calls for auxiliary heat only when it is truly needed, it eliminates the need for outdoor thermostat(s). If an outdoor thermostat is used with T8611 and it is set close to the balance point, the recovery time from energy savings will be prolonged because the outdoor thermostat will prevent operation of

the auxiliary heat even when the T8611 is calling for it. (Balance point is the outdoor temperature below which the heat pump must call on auxiliary heat to help handle the load.) The resulting unnecessarily long recovery times reduce building energy savings.

When Adaptive Intelligent Recovery™ Is Used

Adaptive Intelligent Recovery™ is used during recovery from energy savings. It is bypassed when the setpoint is changed, and when the CHANGE TO LAST PERIOD, SKIP NEXT PERIOD or HOLD TEMP key is pressed. If Adaptive Intelligent Recovery™ is bypassed, the system operates the stages of equipment like a conventional thermostat.

WHAT TO EXPECT DURING RECOVERY FROM ENERGY SAVINGS IN HEATING

The T8611 controls the heating equipment based on the indoor sensed temperature, which is a combination of air temperature and wall temperature.

In Mild Weather

When the outdoor temperature is mild, say 50°F [10° C], the recovery from energy savings will be handled completely by the heat pump, without using the more costly auxiliary heat. The heat pump starts only after the control point has risen above the sensed temperature and is locked on until the comfort setpoint is reached. During the comfort period, the heat pump will cycle on and off as needed to maintain the sensed temperature within +/-1° F of the setpoint. During energy savings periods, the T8611 will call the heat pump on only if the sensed temperature falls below the control point.

In Moderate Weather

When outdoor temperature is below the balance point of the heat pump, the heat pump will run continuously during the recovery period and the auxiliary heat will cycle as necessary. During the comfort period, the heat pump runs continuously and auxiliary heat cycles until the next energy savings period begins. During energy savings, the heat pump cycles on only when the sensed temperature falls below the control point. Under these conditions, auxiliary heat is typically not needed during the energy savings period.

In Severe Weather

When the outdoor temperature is severe, say 0° F [-18° C], the heat pump is on continuously and auxiliary heat

cycles even during the energy savings period. When recovery from energy savings begins, the heat pump will stay on and auxiliary heat will cycle. During recovery, the auxiliary heat ON times will be long, and the OFF times will be short. The ON times will shorten as the control point approaches the comfort setpoint. During the comfort period, the heat pump is on continuously and auxiliary heat cycles until the next energy savings period. When energy saving begins, the heat pump cycles off until the sensed temperature falls below the control point. Although the heat pump comes on when the sensed temperature falls below the control point, the sensed temperature may lag 2° or 3°F below the control point because of the time required to warm up the walls and furniture. Auxiliary heat will cycle as necessary during the energy savings period.

THERMAL PERFORMANCE WITH T8611

During severe weather, the T8611 actually controls closer to the setpoint than a conventional thermostat. This is because the heat anticipator is replaced by two electronic control strategies—cycling by heat anticipation and proportional plus integral control.

Electronic cycling by heat anticipation acts like a traditional heat anticipator, except that never needs adjustment for various control circuit load currents. It cycles the heat pump off slightly before the room temperature reaches the setpoint to keep heat remaining in the ductwork from overheating the room.

In severe weather, a conventional thermostat with a heat anticipator tends to turn off the thermostat too soon, so the effective control point is somewhat below the setpoint. In very cold weather, the difference between setpoint and effective control point may be 5° or 6° F [2° or 3°C] with a conventional thermostat. This phenomenon is called *droop*.

Proportional plus integral action eliminates droop by adjusting the on-time of the stage that is cycling longer or shorter until the control point matches the setpoint. The T8611 controls space temperature within one degree of setpoint, when the temperature has stabilized after an energy savings period.

This *zero droop* performance of the T8611 provides improved occupant comfort and energy savings. Occupants do not need to continually adjust thermostat setting to maintain desired temperature, even during severe weather.

MINIMUM-OFF TIMING

A minimum-off timer in the T8611 ensures that the compressor will not come on again for at least five minutes after it turns off. The minimum-off timer is triggered when the compressor goes off, or when the system switch is moved. If the compressor turns off when the setpoint is changed or the CHANGE TO LAST PERIOD key is pressed, then the minimum-off timer is triggered. The minimum-off timer operates during the first stage of both heating and cooling.

Troubleshooting

Start the system by setting the thermostat and observing system response. If problem occurs, establish symptom and use the following troubleshooting chart to check for possible cause and action.

SYMPTOM	POSSIBLE CAUSE	ACTION

HEAT PUMP OR AUXILIARY HEAT WON'T OPERATE	NO ac POWER TO THERMOSTAT	CHECK POWER TO HEAT PUMP OR AUXILIARY HEATING SYSTEM
		  –ON-OFF SWITCH
		  –FUSE OR CIRCUIT BREAKER
		  –LOOSE 24 V CONNECTION
		    -AT THERMOSTAT
		    -AT HEAT PUMP OR AUXILIARY HEATING SYSTEM
		  –INCORRECT WIRING
		    -CHECK WIRING DIAGRAM

	THERMOSTAT INOPERATIVE	CONDUCT SELF-TEST; SEE CHECKOUT.
	PRESENT SETTING TOO LOW/HIGH	ADJUST TEMPERATURE BY PUSHING WARMER/COOLER KEYS.
	SYSTEM SWITCH ON THERMOSTAT IN WRONG POSITION	RESET THERMOSTAT SYSTEM SWITCH.
	MINIMUM-OFF TIMES IN THERMOSTAT IN OPERATION ON COOLING OR HEATING	WAIT 5-10 MIN. OR USE SELF-TEST IN THERMOSTAT. SEE CHECKOUT.
	INCORRECT WIRING	CHECK CIRCUIT DIAGRAM.
	HEAT PUMP OR AUXILIARY HEAT SYSTEM INOPERATIVE	CONSULT HEAT PUMP/AUXILIARY HEAT SYSTEM INSTRUCTIONS.
PARTIAL DISPLAY	INOPERATIVE THERMOSTAT	REPLACE THERMOSTAT.
NO DISPLAY	NO POWER TO THERMOSTAT	CHECK THAT HEAT OR COOL SYSTEM POWER IS ON.
	THERMOSTAT IN SELF-TEST MODE	PRESS RUN PROGRAM KEY TWICE.
	THERMOSTAT MOUNTED INCORRECTLY ON BASE	SEE INSTALLATION INSTRUCTIONS FOR CORRECT MOUNTING.
PRESENT SETTING APPEARS INACCURATE	THERMOSTAT IS IN RECOVERY MODE	• NORMAL OPERATION THERMOSTAT TURNS ON HEATING/COOLING EARLY TO MEET TEMPERATURE SETTING AT PROGRAMMED TIMES. • RECOVERY CAN BE ENDED BY PUSHING WARMER/COOLER KEYS.
ROOM TEMPERATURE DISPLAY APPEARS INACCURATE	THERMOSTAT HAS SEPARATE REMOTE-MOUNTED SENSOR	• THERMOSTAT IS CONTROLLED BY TEMPERATURE SENSED AT REMOTE SENSOR LOCATION. • CHECK TEMPERATURE AT REMOTE SENSOR LOCATION. • MAKE SURE WIRING FROM THERMOSTAT LOCATION TO REMOTE SENSOR LOCATION IS IN GOOD CONDITION.
ROOM TEMPERATURE IS NOT WHAT IS EXPECTED ON WEEKENDS	THERMOSTAT NOT PROGRAMMED FOR WEEKENDS	REPROGRAM FOR WEEKENDS PER INSTRUCTIONS.
THERMOSTAT TEMPERATURE NEEDS TO BE ADJUSTED ON A REGULAR BASIS	WARMER/COOLER KEYS BEING USED TO ADJUST TEMPERATURE	REPROGRAM THERMOSTAT TO MAKE PERMANENT CHANGE IN PROGRAM. WARMER/ COOLER KEYS ARE TEMPORARY UNLESS PERIOD KEY IS PRESSED FIRST.
PROGRAM IS LOST DUE TO POWER OUTAGE OR DISPLAY GOES BLANK WHEN POWER IS TURNED OFF	BATTERIES ARE INCORRECTLY INSTALLED	REMOVE AND REPLACE PER MARKINGS ON THERMOSTAT.
	BATTERIES ARE DEAD	REPLACE BATTERIES.
DISPLAY FLASHES WHILE PROGRAMMING	IMPROPER PROGRAM SEQUENCE	CHECK HOMEOWNERS MANUAL FOR CORRECT PROGRAM SEQUENCE.
	AUTOMATIC CHANGEOVER THERMOSTAT HEATING OR COOLING TEMPERATURES CAN NOT BE SET CLOSER THAN 3°F	SET HEATING AND COOLING TEMPERATURES 3°F OR MORE APART.
DISPLAY FLASHES DURING OPERATION	PROGRAMMING HAS BEEN LOST BECAUSE OF A POWER OUTAGE	REPROGRAM ACCORDING TO PROGRAMMING INSTRUCTIONS (MAKE SURE BATTERIES ARE INSTALLED).

M1020A

Glossary

AUX. HT. light (green)
This light glows whenever the thermostat is calling for operation of the backup heater. Backup (auxiliary) heat is more expensive to operate than the heat pump, and typically is used only when the heat pump is unable to handle the load (located on subbase).

CHECK light (yellow)
Consult heat pump literature to determine its meaning (located on subbase).

Comfort temperature
The temperature desired when active and occupying the building.

EM. HT. light (red)
This light glows whenever the thermostat system switch is in the EM. HT. position (located on subbase). On some systems, it may also indicate the need to switch to EM. HT. because of a heat pump problem.

Energy-saving temperature
The lower (heating) or higher (cooling) temperature that allows savings on heating and cooling costs when asleep or away. Also called the setback (heating) or setup (cooling) temperature.

Preprogrammed schedule
This is the schedule programmed into the thermostat at the factory. It sets a night program that provides energy savings if owner does not set his/her own program, or if personal program is lost for any reason. The program, which is the same for all days of the week, is:

Period	Start Time	Temperature	
		Heating	Cooling
MORNING	6:00 AM	70° F	78° F
MIDDAY	- - - - - -No	program - - - - - - - - - -	
EVENING	- - - - - -No	program - - - - - - - - - -	
NIGHT	10:00 PM	60° F	78° F

Program
The times and temperatures the owner sets to define the comfort and energy saving periods for each day's schedule.

Recovery
The time when the thermostat operates the heating or air conditioning equipment to return the building from the energy saving temperature to the comfort temperature. The thermostat starts the recovery period early so the building will be at the comfort setting by the time the owner has chosen.

Setback
Reducing the temperature in the building for a set period in heating for energy savings. The lower temperature is the energy savings temperature.

Setup
Raising the temperature in the building for a set period in cooling for energy savings. The higher temperature is the energy savings temperature.

Setpoint
The thermostat temperature setting the owner selects. The thermostat turns the heating or cooling equipment on and off to maintain this temperature at the thermostat location until another temperature setting (setpoint) goes into effect.

SYSTEM light (yellow)
This light glows whenever the thermostat is calling for heating or cooling (located on thermostat).

Time period
One of four program periods: MORNING, MIDDAY, EVENING, and NIGHT; available with the Chronotherm III™ Thermostat. One period begins when the previous program period ends.

MORNING—The time period when the owner brings the building to a comfortable temperature to begin the day. This is the only period that must contain a time and temperature for every day.

MIDDAY—The time period when the owner can set back (heating) or set up (cooling) the temperature for daytime energy savings if the building is unoccupied.

EVENING—The time period when the owner wants the building at a comfortable temperature for evening activities after daytime energy savings.

NIGHT—The time period when the owner can set back (heating) or set up (cooling) the temperature for energy savings because family members are asleep or the building is unoccupied. Often a NIGHT energy savings temperature is set only for the heating season so family members can sleep cool in summer.

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