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Honeywell

7800 SERIES
RM7824A Relay Module

SPECIFICATION DATA



APPLICATION

The Honeywell RM7824 is a 24 Vdc microprocessor-based integrated burner control for automatically fired gas, oil or combination fuel single burner applications. The RM7824 system consists of the relay module, wiring subbase and amplifier. Options include keyboard display module (KDM), personal computer interface, Data ControlBus™ Module, remote display module, first-out expanded annunciator and Combustion System Manager™ software.

The RM7824 is programmed to provide a level of safety, functional capability and features beyond the capacity of conventional controls.

Functions provided by the RM7824 include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and troubleshooting.

FEATURES

- **Safety features:**
  - **Closed loop logic test.**
  - **Dynamic Ampli-Check™.**
  - **Dynamic input check.**
  - **Dynamic safety relay test.**
  - **Dynamic self-check logic.**
  - **Expanded safe-start check.**
  - **Internal hardware status monitoring.**
  - **Tamper resistant timing and logic.**
- **Access for external electrical voltage checks.**
- **Application flexibility.**
- **Communication interface capability.**
- **Dependable, long-term operation provided by microcomputer technology.**
- **First-out annunciation and system diagnostics provided by a 2 row by 20 column vacuum fluorescent display (VFD) located on the KDM (optional).**
- **Five LED for sequence information (see Fig. 1).**
- **Interchangeable plug-in flame amplifiers.**
- **Local or remote annunciation of RM7824 operation and fault information (optional).**
- **Nonvolatile memory; RM7824 retains history files and sequencing status after loss of power.**
- **Remote reset (optional).**
- **Report generation (optional).**
- **Shutter drive output.**
- **Burner control data (optional):**
  - **Flame signal strength.**
  - **Hold status.**
  - **Lockout/alarm status.**
  - **Sequence status.**
  - **Sequence time.**
  - **Total cycles of operation.**
  - **Total hours of operation.**
  - **Fault history providing the six most recent faults:**
    - **Cycles of operation at the time of the fault.**
    - **Expanded annunciator data at the time of the fault.**
    - **Fault message and code.**
    - **Hours of operation at the time of the fault.**
    - **Sequence status at the time of the fault.**
    - **Sequence time at the time of the fault.**
  - **Diagnostic information:**

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— Device type.
— Flame amplifier type.
— Flame failure response time (FFRT).
— Manufacturing code.
— On/off status of all digital inputs and outputs.
— Software revision and version of RM7824 and optional KDM.
— Status of configuration jumper.

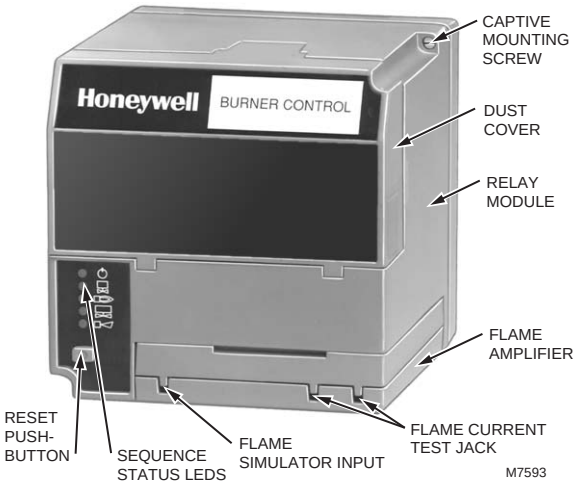


Fig. 1. Sequence status LED.

SPECIFICATIONS

Electrical Ratings (See Table 2):
Voltage: 24 Vdc (22 to 28 Vdc).
Power Dissipation: 10W maximum.
Maximum Total Connected Load: 500 VA.
Fusing (Total Connected Load):10A, type FRN or equivalent.

Environmental Ratings:
Ambient Temperatures:
Operating: -40°F to +140°F (-40°C to +60°C).
Storage: -40°F to +150°F (-40°C to +66°C).
Humidity: 85% RH continuous, noncondensing.
Vibration: 0.5G environment.

Dimensions:
See Fig. 2.

Weight:
RM7824 with Dust Cover: 1 pound, 13 ounces, unpacked.

IMPORTANT:
Flame Detection System available for use with RM7824. Select your plug-in Flame Signal Amplifier and applicable Flame Detector from Table 3.

Approvals:
Underwriters Laboratories Inc. Listed: File No. MP268, Guide No. MCCZ.
Canadian Standards Association Certified: LR9S329-3.
Factory Mutual: Approved.
IRI: Acceptable.
Federal Communications Commission: Meets Part 15, Class B—Emissions.

Mounting:
Q7800A Wiring Subbase for panel mount.
Q7800B Wiring Subbase for wall or burner mount.

Required Components:
Plug-in Flame Signal Amplifier (See Table 3).
Q7800A or Q7800B Wiring Subbase.

Table 1. Sequence Timing for Normal Operation.

Device	Initiate	Standby	Pilot Flame Establishing Period (PFEP)	Run
RM7824	10 sec.	*	4 or 10 sec.	*

* Standby and Run can be an infinite period.

Accessories:
Keyboard Display Modules (KDM):
S7800A1001 English language.
S7800A1035 French language.
S7800A1043 German language.
S7800A1050 Italian language.
S7800A1068 Spanish language.
S7800A1118 Katakana (Japanese) language.
S7800A1126 Portuguese language.

Communications:
Q7700A1014 Network Interface Unit, 120 Vac, 50/60 Hz applications, external modem required.
Q7700B1004 Network Interface Unit with universal 100 to 250 Vac, 50/60 Hz external power supply, external modem required.
QS7800A1001 ControlBus Module, standard.
QS7800B1000 ControlBus Module, multidrop.
QS7850A1006 ControlBus Module, General Purpose Interface.
ZM7850A1001 Combustion System Manager™ software.
S7810A1009 Data ControlBus™ Module (if no KDM is used).
S7810B1007 Data ControlBus™ Module, Multi-Drop Switch Module.

Miscellaneous:
S7820A1007 Remote Reset Module.
203541 Data ControlBus Connector, 5-wire.
203765 Remote Display Mounting Bracket.
221729 Dust Cover, Relay Module.
204718A Keyboard Display Module Cover, NEMA 4, clear.
204718B Keyboard Display Module Cover, NEMA 1, clear.
204718C Keyboard Display Module Cover, NEMA 4, clear with reset button.
205321B Flush Display mounting kit.
221818A Extension Cable, display, 5 ft (1524 mm).
221818C Extension Cable, display, 10 ft (3048 mm).
203968A Remote Display Power Supply, 13 Vdc, plug-in.

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Table 2. Terminal Ratings.

Terminal No.	Description	Ratings
G	Flame Sensor Ground	—
Earth G	Earth Ground	—
L2(N)	24 Vdc Common (-)	—
3	24 Vdc Supply (+)	24 Vdc Common (22 to 28 Vdc)[a]
4	Alarm	24 Vdc, 1A, 5A inrush (6000 cycles).
5	Unused	—
6	Burner Controller and Limits	24 Vdc, 2A continuous, 10A inrush.
7	Unused	—
8	Pilot Valve/Ignition	24 Vdc, 1A continuous, 5A inrush.
9	Main Fuel Valve	24 Vdc, 2A continuous or 50 VA motorized valve, 10A inrush.
10	Ignition	24 Vdc, 1A continuous, 5A inrush.
F(11)	Flame Sensor	—
12-21	Unused	—
22	Shutter	24 Vdc, 0.5A.

[a] 500 VA maximum connected load to RM7824 assembly.

Table 3. Flame Detection Systems.

Plug-in Flame Signal Amplifiers					Applicable Flame Detectors		
Type	Color	Self-Checking	Model	Flame Failure Response Time (Seconds)	Fuel	Type	Models
Rectification	Green	Dynamic Self-Check	R7824A[a]	3	Gas, oil, coal	Ultraviolet (Purple Peeper™)	C7824E,F
Infrared	Red	No	R7848A		Gas, oil, coal	Infrared (Lead Sulfide)	C7015
		Dynamic AMPLI-CHECK™	R7848B[b]				

[a] Circuitry tests all electronic components in the flame detection system (amplifier and detector) 12 times a minute during burner operation and shuts donw the burner if the detection system fails.

[b] Circuitry tests the flame signal amplifier at least 12 times a minute during burner operation and shuts down the burner if the amplifir fails.

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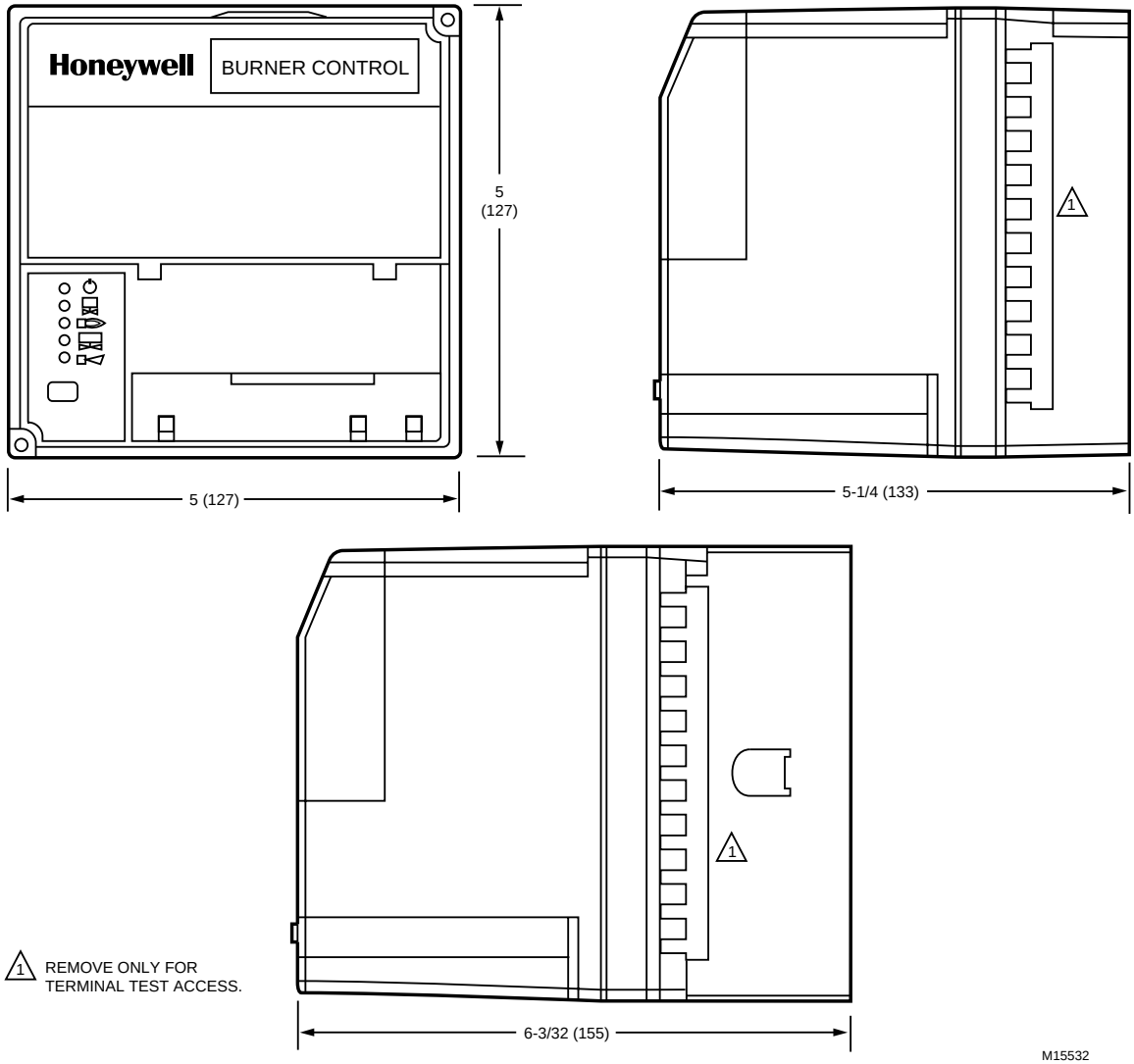


Fig. 2. Mounting dimensions of RM7824 Relay Module and Q7800A and Q7800B Wiring Subbases in in. (mm).

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