



Instructions

95-8277-02

Auxiliary Output Assembly
R6007A



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Auxiliary Output Assembly**R6007A****APPLICATION**

The R6007 Auxiliary Relay Output Assembly is designed to provide relay outputs for Det-Tronics microprocessor-based controllers that have solid state outputs. R6007 assemblies are available with up to 12 Form C (NO/NC) output relays. Relays are available for Fire Logic A, Fire Logic B, Alarm, Fault, and 8 individual zone outputs. A double width (100 mm) prewired terminal connector backplate included with the R6007 eliminates the need for external wiring between the controller and relay assembly.

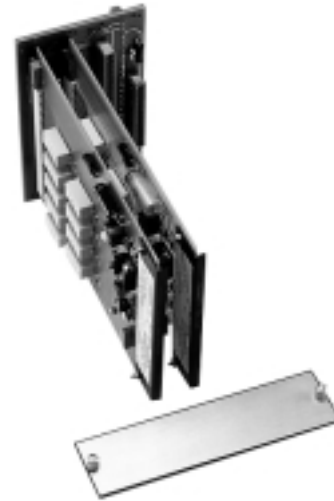
The number of relays available depends on whether the controller/R6007 is set up to operate independently, or more than one controller/R6007 pair is connected by means of a data bus in an intercontroller voting system configuration. For independent system operation, either 4, 8 or 12 relay outputs are available. For intercontroller voting system operation, either 3 or 11 relay outputs are available for each controller/R6007 pair in the system.

FEATURES

- Choice of up to 12 Form C relay outputs.
- Intercontroller voting system configuration available.
- Fault relay is de-energized if a relay board is disengaged, if power is removed, or if the controller detects a malfunction.
- Prewired double width backplate eliminates external wiring between the controller and relay output assembly.
- Backplate keying assures installation of relay boards in the correct location.
- Q4004 mounting cage compatible.
- Designed for use with R7404 UV, R7409 UV/IR, R7494 UV/IR, and R7484 IR Controllers.

DESCRIPTION

The R6007 Auxiliary Relay Output Assembly consists of two printed circuit boards, a double width prewired terminal connector backplate, and a blank faceplate. The R6007 is used with the R7404 UV Controller, the R7409 UV/IR Controller, the R7484 IR Controller, and the R7494 UV/IR Controller. Each R6007 backplate can accommodate one controller.

**PRINTED CIRCUIT BOARDS**

Three different printed circuit boards are available for use with the relay output assembly. Two relay boards are available, one containing 8 relays and the other 4 relays. The third board is a “shorting” board and contains no output relays, but provides prewired jumpers to route the solid state outputs of the controller to the common connection of the corresponding relay on the relay output assembly. This shorting board must be used if backplate access to the solid state outputs from the controller is required or if the 4-relay board or the 8-relay board are used alone. The relay assembly requires **two** circuit boards for proper operation. The combination of boards to be used for a particular application is determined by the number of controller outputs required and the system configuration.

When an intercontroller voting system configuration is used, one backplate terminal previously used for a relay output is necessary for intercontroller communication. Thus only 3 or 11 relay outputs are available instead of 4 or 12 relay outputs.

The relay boards contain a power supply to provide the required voltage for the relay coil. The relays are actuated by the solid state (open collector transistor) outputs of the controller. All controller output to relay module connections are through the backplate printed circuit board, eliminating the need for external controller to relay module wiring.

The R6007 is factory assembled in the configuration ordered (see the “Ordering Information” section).

FAULT RELAY

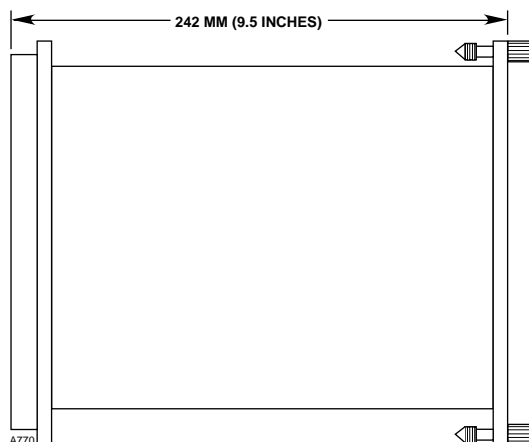
The normally energized Fault relay is wired to monitor the two printed circuit boards in the relay assembly and will become de-energized if a board is removed or if power is removed from the relay assembly. The Fault relay is also de-energized if the automatic diagnostic circuitry of the controller detects a fault in the controller or any of the detectors that are connected to it. The fault circuit does not test relay coil continuity; therefore, manual tests should be conducted periodically to ensure proper relay operation. Actuation of the Fault output results in a relay contact change only, and will not be displayed on the controller unless the controller caused the fault. Faults and system status will be identified on the front panel of the controller as described in the controller manual.

TERMINAL CONNECTOR BACKPLATE

A special 100 mm (double width) terminal connector backplate is used for each relay output assembly and corresponding controller. This prewired board eliminates the need for any external wiring between the controller and relay assembly. Screw type terminals are provided for connecting external wiring. Both the controller and relay output assembly plug into the connector backplate, allowing their removal or replacement without disconnecting wires.

Access to the the solid state output signals from the controller are available for outputs without relays at the corresponding COM relay terminal on 3, 4, and 8 relay R6007 models. The backplate does not provide access to the solid state outputs of the controller when 11 and 12 relay R6007 models are used.

The backplate is keyed to prevent installation of the wrong relay board when replacing a board or expanding the unit capabilities. See the "Board Replacement" section for additional information.



SPECIFICATIONS

INPUT VOLTAGE—

24 vdc nominal (10 vdc minimum, 38 vdc maximum) with less than 1 volt of ripple.

POWER CONSUMPTION—

4-Relay Board: 0.5 watt typical, 1.5 watts maximum.

8-Relay Board: 0.5 watt typical, 2.5 watts maximum.

RELAY CONTACT RATING—

Form C (normally open/normally closed) contacts, rated for 3 amperes at up to 30 vdc or 250 vac. Dry nitrogen gas is sealed inside the relays to eliminate arcing and corrosion.

TEMPERATURE RANGE—

Operating: -40°F to $+158^{\circ}\text{F}$ (-40°C to $+70^{\circ}\text{C}$).

Storage: -67°F to $+170^{\circ}\text{F}$ (-55°C to $+77^{\circ}\text{C}$).

DIMENSIONS—

See Figure 1 for dimensions of the relay output assembly, which is designed for mounting in the Q4004 Mounting Cage, illustrated in Figure 2. The cage, which is designed to fit into a standard 19-inch instrument rack, is recommended for ease of installation and service. See form number 95-8241 for additional information regarding the Q4004. Cages to hold two, three, and four controller/relay module pairs are also available.

SHIPPING WEIGHT—

3.5 pounds (1.6 kilograms).

INSTALLATION

R7404 CONTROLLER

When installing the system, refer to the R7404 UV System Instructions for all application, programming and other information. A few items specific to the R7404/R6007 combination are not provided in the

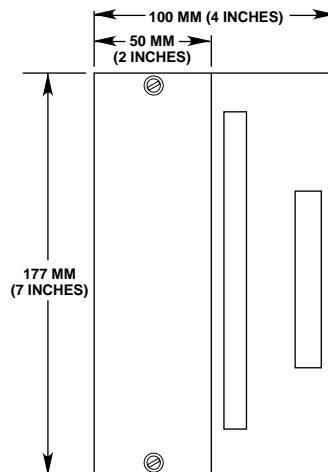


Figure 1—Relay Output Assembly Dimensions in Millimeters (Inches)

R7404 UV System Instructions and are provided here. Figure 3 illustrates the terminal configuration for the R6007 and the R7404 UV Controller. A further description of each terminal connection is provided below.

Intercontroller voting is available with the R7404 with STAR Logic Controller. If intercontroller voting is required, refer to the R7404 UV Controller with STAR Logic System Instructions for detector wiring and controller programming instructions and the “Intercontroller Voting” section for data bus wiring instructions.

R7404 Terminal Descriptions

Terminal 1 — Connect to the positive (+) side of an external 24 vdc power source (+18 to +38 vdc).

Terminal 2 — Connect to the negative (–) side of the dc power source (circuit ground). The C terminals on the detectors must also be connected to circuit ground.

Terminal 3 — Connect to the A-leads of the detectors (+290 vdc detector supply).

Terminals 4 to 11 — Connect to the B terminals of the detectors (detector output signal). Terminals 4 to 11 correspond to detectors 1 to 8, respectively.

Terminals 12 to 27 (Standard R7404) — Connect to the D terminals of the detectors. Each detector has its own individual terminal. (Note that there can be two detectors to a zone.)

Terminals 12 to 19 (R7404 with STAR Logic) — Connect to the D terminals of the detectors. Each detector has its own individual terminal.

Terminals 20 to 27 (R7404 with STAR Logic) — Data bus out for connection to the next controller when common (intercontroller) voting is chosen. Refer to the “Programming the Controller” section of the R7404/C7050 UV System Instructions. Instructions for programming intercontroller voting is provided under the heading “Fire Logic Selection”.

Terminals 28 and 29 — Used only for Remote Surveillance Controllers. Contact the Field Support Group at Detector Electronics for further information.

Terminal 31 (R7404 with STAR Logic — Data Strobe from the previous R7404/ R6007 combination (J4 – terminal 45) is connected here when common (intercontroller) voting is chosen.

Terminals 41 to 43 — Do not use.

CONTROLLER POSITIONS FOR:		HT:	DIM. (A)		DIM. (B)		DIM. (C)		DIM. (D)		DIM. (E)		WEIGHT	
FIRE	GAS		INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	LB	KG
8	16	4U	19.00	482.6	18.30	464.8	17.36	440.9	4.00	101.6	6.97	177.1	9.3	4.2
6	12	4U	15.06	382.6	14.36	364.7	13.42	340.9	↓	↓	↓	↓	7.6	3.5
4	8	4U	11.13	282.6	10.43	264.9	9.49	241.1					5.9	2.7
3	6	4U	9.16	232.7	8.46	214.9	7.52	191.0					5.1	2.3
2	4	4U	7.19	182.7	6.49	164.9	5.55	141.0					4.2	1.9
1	2	4U	5.22	132.6	4.52	114.8	3.58	90.9	↓	↓	↓	↓	3.1	1.4
	16	3U	19.00	482.6	18.30	464.8	17.36	440.9	2.25	57.15	5.22	132.6	9.3	4.2

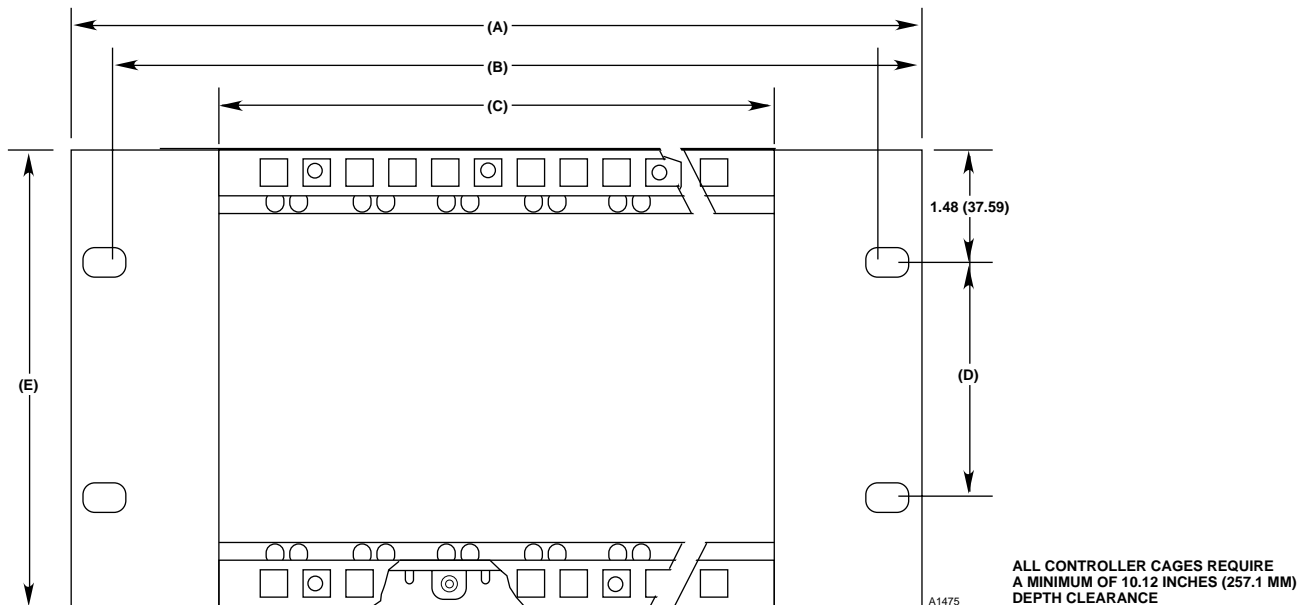


Figure 2—Dimensions of the Q4004 Mounting Rack in Inches (Millimeters)

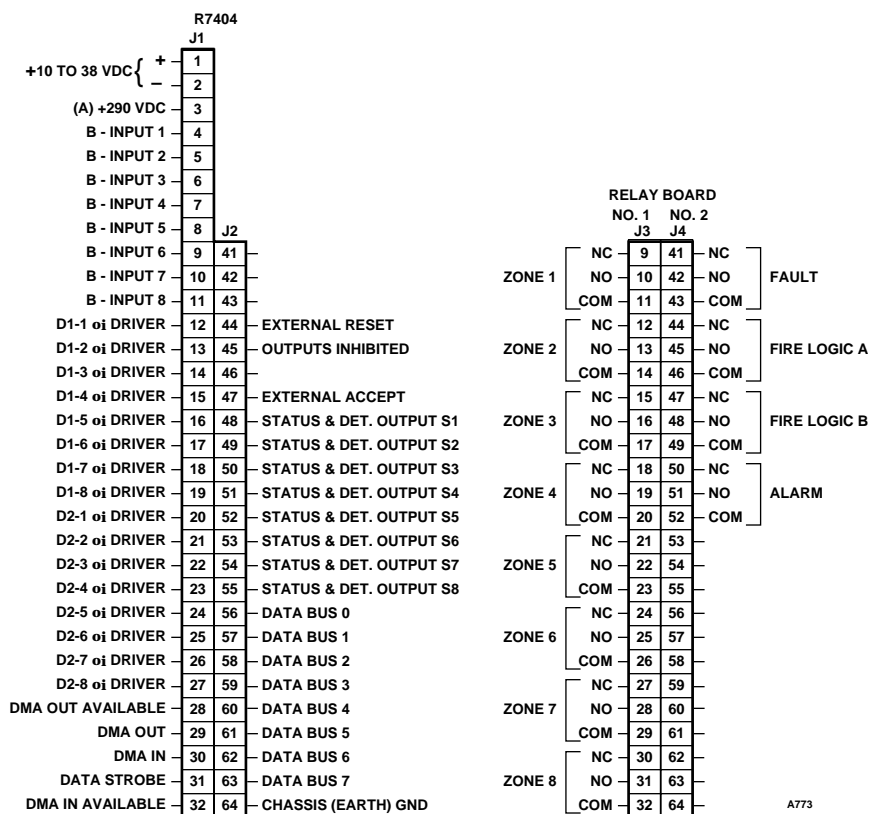


Figure 3—Terminal Configuration for the R7404/R6007A Combination

Terminal 44 — External Reset/Inhibit, a switch connected between terminal 44 and circuit ground (terminal 2) allows the controller to be reset or inhibited from a remote location.

Terminal 45 — Outputs Inhibited, for connecting an indicating device to signal when the outputs are inhibited by the controller keylock switch (keylock switch in the TEST or RESET position).

Terminal 46 — Do not use.

Terminal 47 — External Accept, a switch connected between terminal 47 and circuit ground (terminal 2) allows remote de-activation of the alarm output without interrupting the zone and fire logic outputs.

Terminals 48 to 55 — Status and Detector terminals provide solid state output representations of the front panel digital displays for zone, detectors and system status.

Terminals 56 to 63 (R7404 with STAR Logic) — Data Bus In from previous R7404/R6007 combination when common (intercontroller) voting is chosen.

Terminal 64 — Chassis (earth) Ground.

R7409 CONTROLLER

When installing the system, refer to the R7409 UV/IR System Instructions for all application, programming and other information. A few items specific to the R7409/

R6007 combination are not provided in the R7409 UV/IR System Instructions and are provided here. Figure 4 illustrates the terminal configuration for the R6007 and the R7409 UV/IR Controller. A further description of each terminal connection is provided below.

Intercontroller voting is available with the R7409 Controller. If intercontroller voting is required, refer to the R7409 UV/IR System Instructions for detector wiring and controller programming instructions and the “Intercontroller Voting” section for data bus wiring instructions.

R7409 Terminal Descriptions

Terminal 1 — Connect to the positive (+) side of an external 24 vdc power source (+18 to +38 vdc).

Terminal 2 — Connect to the negative (–) side of the dc power source (circuit ground). The C terminals on the detectors must also be connected to circuit ground.

Terminal 3 — Connect to the A terminals of the UV detectors.

Terminals 4 to 11 — Connect to the B terminals of the detectors (detector output signal). Terminals 4 to 11 correspond to detectors 1 to 8, respectively.

Terminals 12 to 19 — Connect to the D terminals of the detectors (**oi** test signal). Terminals 12 to 19 correspond to detectors 1 to 8, respectively.

Terminals 20 to 27 — Data bus out for connection to the next controller when common (intercontroller) voting is chosen. Refer to the “Programming the Controller” section of the R7409 UV/IR System Instructions. Instructions for programming intercontroller voting are provided under the heading “Fire Logic Selection.”

Terminals 28 and 29 — Do not use.

Terminal 30 — Data Strobe from the previous R7409C/R6007 combination (J4 - terminal 45) is connected here when common (intercontroller) voting is chosen.

Terminals 41 to 43 — Do not use.

Terminals 44 — External Reset/Inhibit, a switch connected between terminal 44 and circuit ground (terminal 2) allows the controller to be reset or inhibited from a remote location.

Terminal 45 — Outputs Inhibited, for connecting an indicating device to signal when the outputs are inhibited by controller keylock switch (keylock switch in the TEST or RESET position).

Terminal 46 — Do not use.

Terminal 47 — External Accept, a switch connected between terminal 47 and circuit ground (terminal 2) allows remote de-activation of the alarm output without interrupting the zone and fire logic outputs.

Terminals 48 to 55 — Status and Detector terminals provide solid state output representations of the front panel digital displays for zone, detectors and system status.

Terminals 56 to 63 — Data Bus In from previous R7409C/R6007 combination when common (intercontroller) voting is chosen.

Terminal 64 — Chassis (earth) Ground.

R7484 CONTROLLER

When installing the system, refer to the R7484 IR System Instructions for all application, programming and other information. A few items specific to the R7484/R6007 combination are not provided in the R7484 IR System Instructions and are provided here. Figure 5 illustrates the terminal configuration for the R6007 and the R7484 IR Controller. A further description of each terminal connection is provided below.

Intercontroller voting is available with the R7484 Controller. If intercontroller voting is required, refer to the R7484 System Instructions for detector wiring and controller programming instructions and the “Intercontroller Voting” section for data bus wiring instructions.

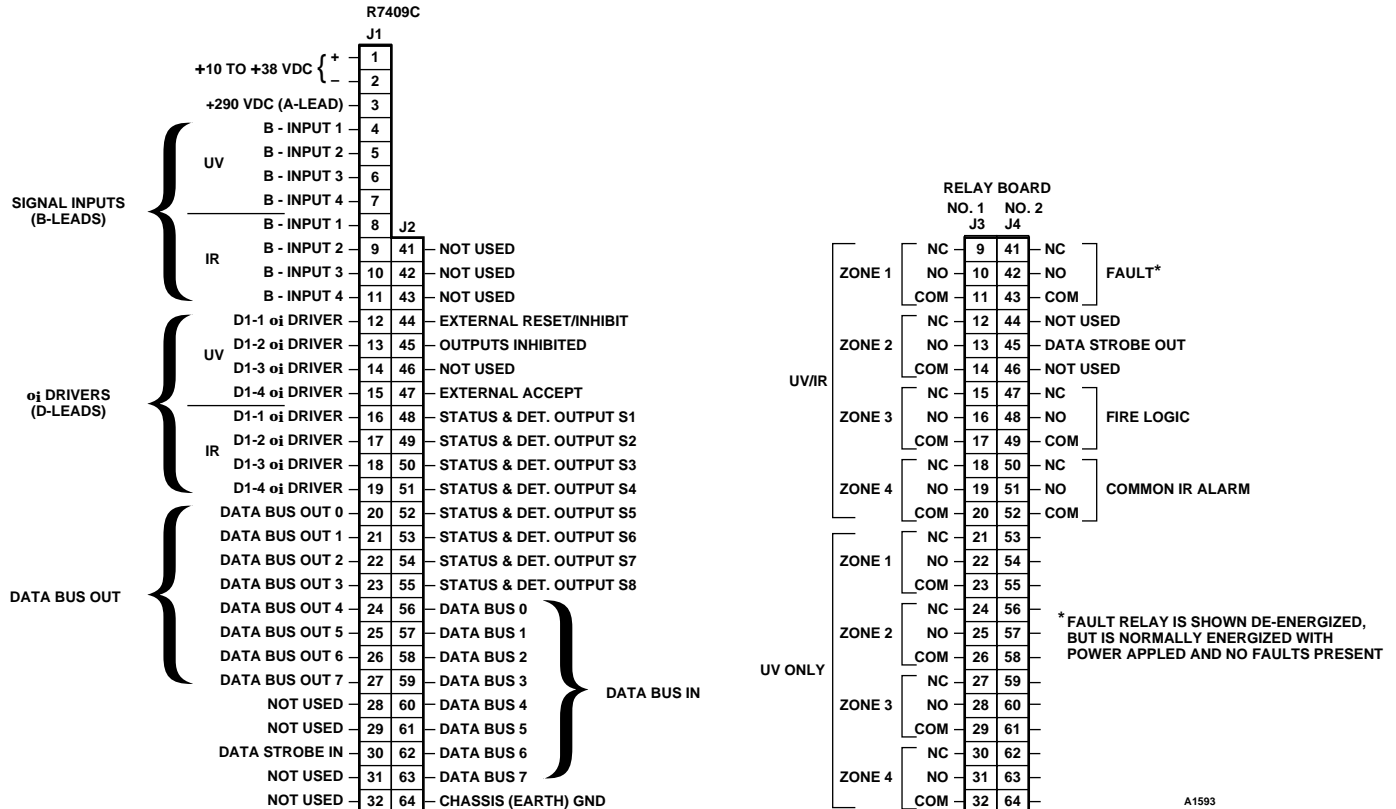


Figure 4—Terminal Configuration for the R7409C/R6007A Combination

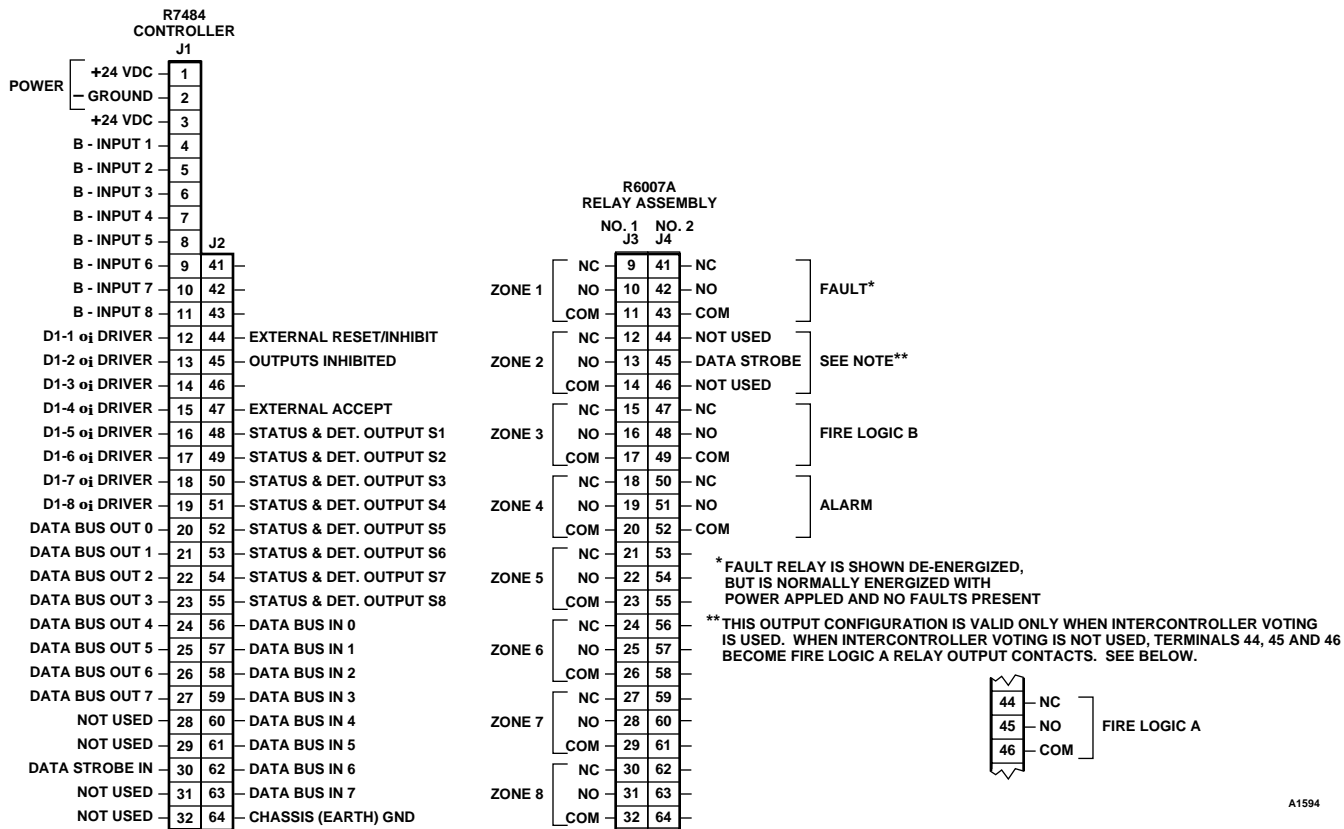


Figure 5—Terminal Configuration for the R7484/R6007A

R7484 Terminal Descriptions

Terminal 1 — Connect to the positive (+) side of an external 24 vdc power source (+18 to +38 vdc).

Terminal 2 — Connect to the negative (–) side of the dc power source (circuit ground). The C terminals on the detectors must also be connected to circuit ground.

Terminal 3 — Connect to the A terminal of detector.

Terminals 4 to 11 — Connect to the B terminals of the detectors (detector output signal). Terminals 4 to 11 correspond to detectors 1 to 8, respectively.

Terminals 12 to 19 — Connect to the D terminals of the detectors. Terminals 12 to 19 correspond to detectors 1 to 8, respectively.

Terminals 20 to 27 — Data bus out for connection to the next controller when common (intercontroller) voting is chosen. Refer to the “Programming the Controller” section of the R7484 IR System Instructions. Instructions for programming intercontroller voting is provided under the heading “Fire Logic Selection.”

Terminals 28 and 29 — Do not use.

Terminal 30 — Data Strobe from the previous R7484/R6007 combination (J4 –terminal 45) is connected here when common (intercontroller) voting is chosen.

Terminals 41 to 43 — Do not use.

Terminal 44 — External Reset/Inhibit, a switch connected between terminal 44 and circuit ground (terminal 2) allows the controller to be reset or inhibited from a remote location.

Terminal 45 — Outputs Inhibited, for connecting an indicating device to signal when the outputs are inhibited by the controller keylock switch (keylock switch in the TEST or RESET position).

Terminal 46 — Do not use.

Terminal 47 — Do not use.

Terminals 48 to 55 — Status and Detector terminals provide solid state output representations of the front panel digital displays for zone, detectors and system status.

Terminals 56 to 63 — Data Bus In from previous R7484/R6007 combination when common (intercontroller) voting is chosen.

Terminal 64 — Chassis (earth) Ground.

R7494 CONTROLLER

When installing the system, refer to the R7494 UV/IR System Instructions for all application, programming and other information. A few items specific to the R7494/R6007 combination are not provided in the R7494 UV/IR System Instructions and are provided here. Figure

6 illustrates the terminal configuration for the R6007 and the R7494 UV/IR Controller. A further description of each terminal connection is provided below.

Intercontroller voting is available with the R7494 Controller. If intercontroller voting is required, refer to the R7494 UV/IR System Instructions for detector wiring and controller programming instructions and the “Intercontroller Voting” section for data bus wiring instructions.

R7494 Terminal Descriptions

Terminal 1 — Connect to the positive (+) side of an external 24 vdc power source (+18 to +38 vdc). Connect to the A terminals of detectors.

Terminal 2 — Connect to the negative (–) side of the dc power source (circuit ground). The C terminals on the detectors must also be connected to circuit ground.

Terminal 3 — Do not use.

Terminals 4 to 11 — Connect to the B terminals of the detectors (detector output signal). Terminals 4 to 11 correspond to detectors 1 to 8, respectively.

Terminals 12 to 19 — Connect to the D terminals of the detectors. Terminals 12 to 19 correspond to detectors 1 to 8, respectively.

Terminals 20 to 27 — Data bus out for connection to the next controller when common (intercontroller) voting is chosen. Refer to the “Programming the Controller” section of the R7494 UV/IR System Instructions. Instructions for programming intercontroller voting is provided under the heading “Fire Logic Selection.”

Terminals 28 and 29 — Do not use.

Terminal 30 — Data Strobe from the previous R7494/R6007 combination (J4 – terminal 45) is connected here when common (intercontroller) voting is chosen.

Terminals 41 to 43 — Do not use.

Terminal 44 External Reset/Inhibit, a switch connected between terminal 44 and circuit ground (terminal 2) allows the controller to be reset or inhibited from a remote location.

Terminal 45 — Outputs Inhibited, for connecting an indicating device to signal when the outputs are inhibited by the controller keylock switch (keylock switch in the TEST or RESET position).

Terminal 46 — Do not use.

Terminal 47 — External Accept, a switch connected between terminal 47 and circuit ground (terminal 2) allows remote de-activation of the alarm output without interrupting the zone and fire logic outputs.

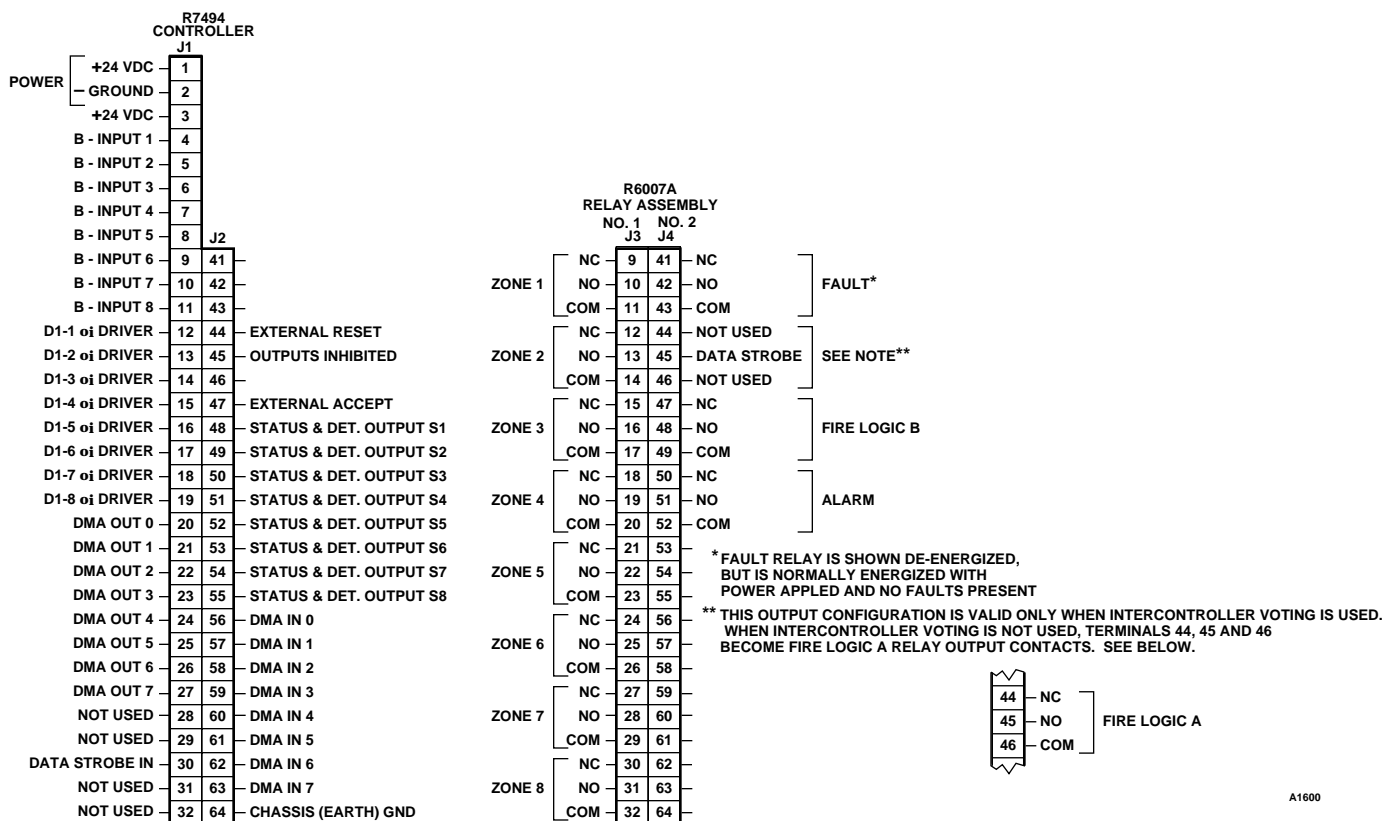


Figure 6—Terminal Configuration for the R7494/R6007A

Terminals 48 to 55 — Status and Detector terminals provide solid state output representations of the front panel digital displays for zone, detectors and system status.

Terminals 56 to 63 — Data Bus In from previous R7494/R6007 combination when common (inter-controller) voting is chosen.

Terminal 64 — Chassis (earth) Ground.

INTERCONTROLLER VOTING

Figure 7 shows the wiring necessary to use intercontroller voting. In this example, three controller/R6007 pairs are used. Note that **only** the Fire Logic B relay responds when voting criteria are met. Alarm and Fault relays respond only to their specific controller conditions. Refer to the applicable controller instruction manual for detector wiring and controller programming instructions.

BOARD REPLACEMENT

To replace a malfunctioning board:

1. Remove power from the system, first securing output loads as necessary.
2. Remove relay board front panel using the two thumbscrews at the top and bottom of the panel.
3. Slide the faulty relay board straight out from the backplate. (There will be some resistance before it is released from the backplate connector.)
4. Slide the replacement board into the same slot, ensuring that it is oriented correctly and that the keyed positions on the board and on the backplate are aligned. Push in the backplate connector until it is secure.
5. Replace the Relay Board front panel.
6. Restore power and perform checkout procedure per applicable Controller System Instructions.

DEVICE REPAIR AND RETURN

Prior to returning devices or components, contact the nearest local Detector Electronics office so that an RMI (Return Material Identification) number can be assigned. A written statement describing the malfunction must accompany the returned device or component to expedite finding the cause of the failure, thereby reducing the time and cost of the repair to the customer.

Return all equipment transportation prepaid to the Minneapolis location.

OFFICE LOCATIONS

Detector Electronics Corporation
6901 West 110th Street
Minneapolis, Minnesota 55438 USA
Telephone (612) 941-5665 or (800) 765-FIRE
Telex 6879043 DETEL UW
Cable DETRONICS
Facsimile (612) 829-8750

Detector Electronics Corporation
13949 Williams Road
P. O. Box 1329
Glen Ellen, CA 95442 USA
Telephone (707) 996-0196
Facsimile (707) 996-0197
Voice Mail Box Number 930

Detector Electronics Corporation
466 Conchester Highway
Aston, Pennsylvania 19014 USA
Telephone (610) 497-5593
Facsimile (610) 485-2078

Detector Electronics Corporation
3000 Wilcrest
Suite 145
Houston, Texas 77042 USA
Telephone (713) 782-2172
Facsimile (713) 782-4287

Detector Electronics (UK) Limited
Riverside Park, Poyle Road
Colnbrook
Slough, Berkshire
SL3 OHB
ENGLAND
Telephone 01753 683059
Telex 848124 GRAVIN G
Facsimile 01753 684540

Det-Tronics France
La Valette
Rue du Cimetiere
78790 Septeuil
FRANCE
Telephone 33 1 3497 0650
Facsimile 33 1 3497 0648

Det-Tronics Deutschland
Deugra GmbH
Postfach 1457
Harkortstrasse 3
D-4030 Ratingen 1
GERMANY
Telephone 49 2102 4050
Direct 49 2102 405152
Facsimile 49 2102 405109
Telex 8589029



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Telephone 02 90362148
Telephone 0336 339748
Facsimile 02 90361068

Detector Electronics
C/O Polydrill Engineers, Pvt., Ltd.
Veers Desai Road, Andheri (West)
Bombay 400 053
INDIA
Telephone (91) 22 632 2374
Facsimile (91) 22 632 2374 (Dial)

Det-Tronics Scandinavia AB
Costerweg 5
P O Box 46
6700 AA Wageningen
THE NETHERLANDS
Telephone 31 8370 97625
Facsimile 31 8370 27308

FSI Moscow
Flat 25
Leninsky
Pr 37A
Moscow 117334
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Det-Tronics Scandinavia AB
Box 81
S-260 83 Vejbystrand
SWEDEN
Telephone 431-53002/53240
Facsimile 431-52236

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143 Cecil Street
#15-01 G. B. Building
SINGAPORE 0106
Telephone (65) 220-1355
Facsimile (65) 226-16305

Det-Tronics Middle East
P O Box 44026
Abu Dhabi
U.A.E.
Telephone 971 2 313304
Facsimile 971 2 393248

Det-Tronics South America.
AV17 Con Calle 72, No. 71-92
Apartado 10055
Maracaibo, VENEZUELA
Telephone 58-61-521274, -529154, -529749
Facsimile 58-61-529144
Telex 61331

Detector do Brasil
Avenida Geremario Dantas 493
Rio de Janeiro 22740-011
BRAZIL
Telephone (55) 21 392 9633
Facsimile (55) 21 392 5568

ORDERING INFORMATION

When ordering, specify:

- R6007 Auxiliary Relay Output Assembly
- Controller model it is to be used with (R7404, R7409, R7484, or R7494)
 - Number of relays required (see below for availability according to system configuration)
 - System configuration without intercontroller voting (controller operates independently):
 - 4 Relays – Fire Logic A, Fire Logic B, Alarm, Fault
 - 8 Relays – Individual relay output for each of 8 zones
 - 12 Relays – Fire Logic A, Fire Logic B, Alarm, Fault, Individual relay for each of 8 zones.
 - System configuration with intercontroller voting (more than one controller connected via data bus):
 - 3 Relays – Fire Logic B, Alarm, Fault
 - 11 Relays – Fire Logic B, Alarm, Fault, Individual relay for each of 8 zones.

SPARE PARTS

DE3340-001	8-Relay replacement board
DE3340-002	4-Relay replacement board
DE3340-003	Shorting Board replacement

ACCESSORIES

- Q4004 Mounting Cage accommodates eight modules (Controllers) and fits standard 19-inch instrument rack. Smaller sizes are available.
- Filler panels for empty spaces in the Q4004 Mounting Cage
- 000507-XXX power supplies

APPLICATION ASSISTANCE

For assistance in ordering a system to fit your application, please contact:

Detector Electronics Corporation
Field Support Group
6901 West 110th Street
Minneapolis, Minnesota 55438 USA
Telephone (612) 941-5665 or (800) 765-FIRE
Telex 6879043 DETEL UW
Cable DETRONICS
Facsimile (612) 829-8750