

No.687 VOLTAGE REGULATOR

GENERAL INFORMATION:

The No. 687 Voltage Regulator is designed to power 6V. DC devices from a nominally 12V. DC (8.5 to 15V. DC) source. It is intended primarily for use with the No. 612 Tape Dialer or with digital communicators such as the Nos. 669 or 670 (original models that utilize screw programming or later jumper programmed versions) or the No. 679. Up to 600 ma at 6V. DC (nominal) can be supplied by the No. 687.

- Caution:
1. Input voltage must be from a filtered DC source (an unfiltered supply, a such as the No. 89-12 may not be used).
 2. The No. 687 may be used to power a 6V. DC communicator or dialer that is triggered from a higher voltage control to which bells are also connected. It should not be used, however, to provide power to a 6V. DC control to which bells are directly connected.
 3. Some controls manufactured by others may not have sufficient filtering to permit powering of a digital communicator via the No. 687. A procedure for testing for and correcting this condition is given under OPERATION.

PRELIMINARY:

Determine the amount of current that is to be supplied. If more than one device is to be powered and the total current draw at 6V. DC will exceed 600 ma, separate No. 687s should be used, with each No. 687 supplying no more than 600 ma. CAUTION: If more than one No. 687 is required, DO NOT connect the +6V. outputs of two or more No. 687s together to feed a single load. See Diagram 2.

INSTALLATION AND WIRING:

1. Install the No. 687 in the cabinet of the unit to which it will be connected, mounting lip is provided on the No. 687 which can be slipped over the cabinet's edge without interfering with the closing of the cabinet's cover.

The No. 687 will generate some heat when supplying high currents. To aid in heat dissipation, the mounting position should be chosen so that its metal surface touches the inside of the cabinet cover when the cabinet is closed. (Also see IMPORTANT NOTE under OPERATION.)

2. Connect the No. 687 (or 687s) as indicated in Diagram 1 (or 2).

OPERATION:

The No. 687 will normally supply a steady 6V. DC output as long as the input voltage remains within the range given in SPECIFICATIONS. While the No. 687 is supplying current it will get warm. This is normal.

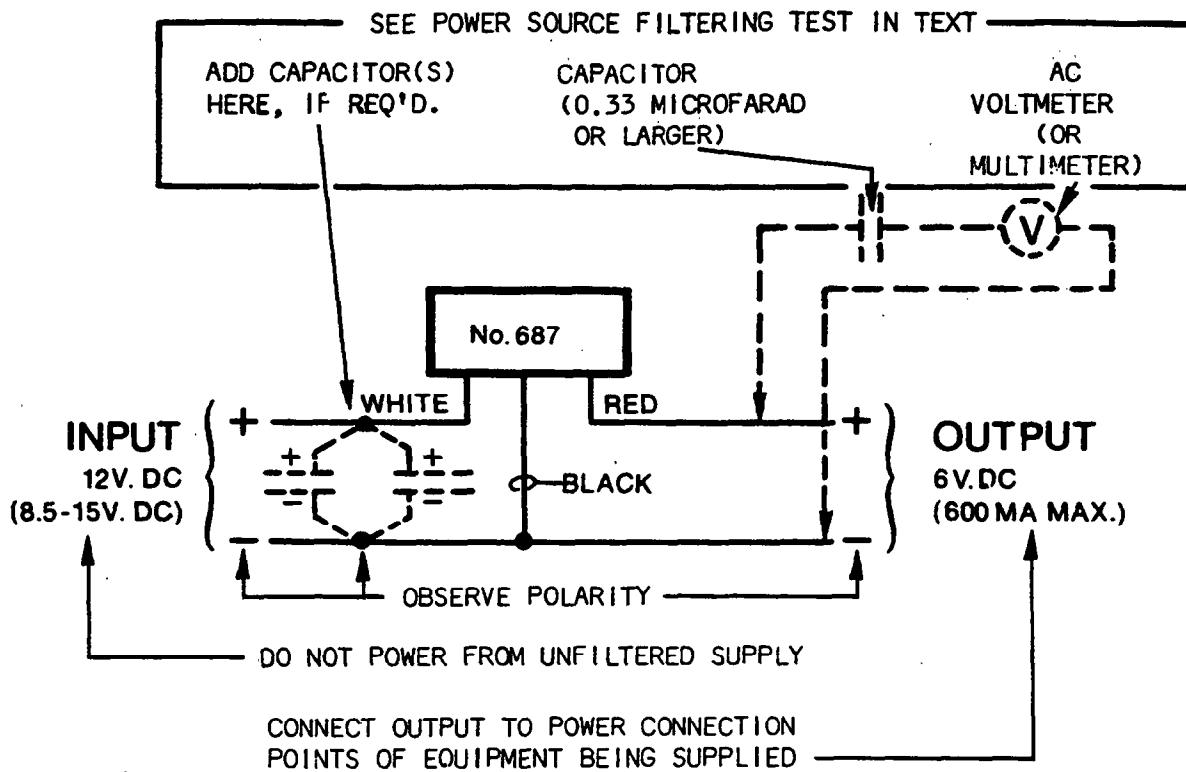


Diagram 1: WIRING CONNECTIONS-SINGLE UNIT

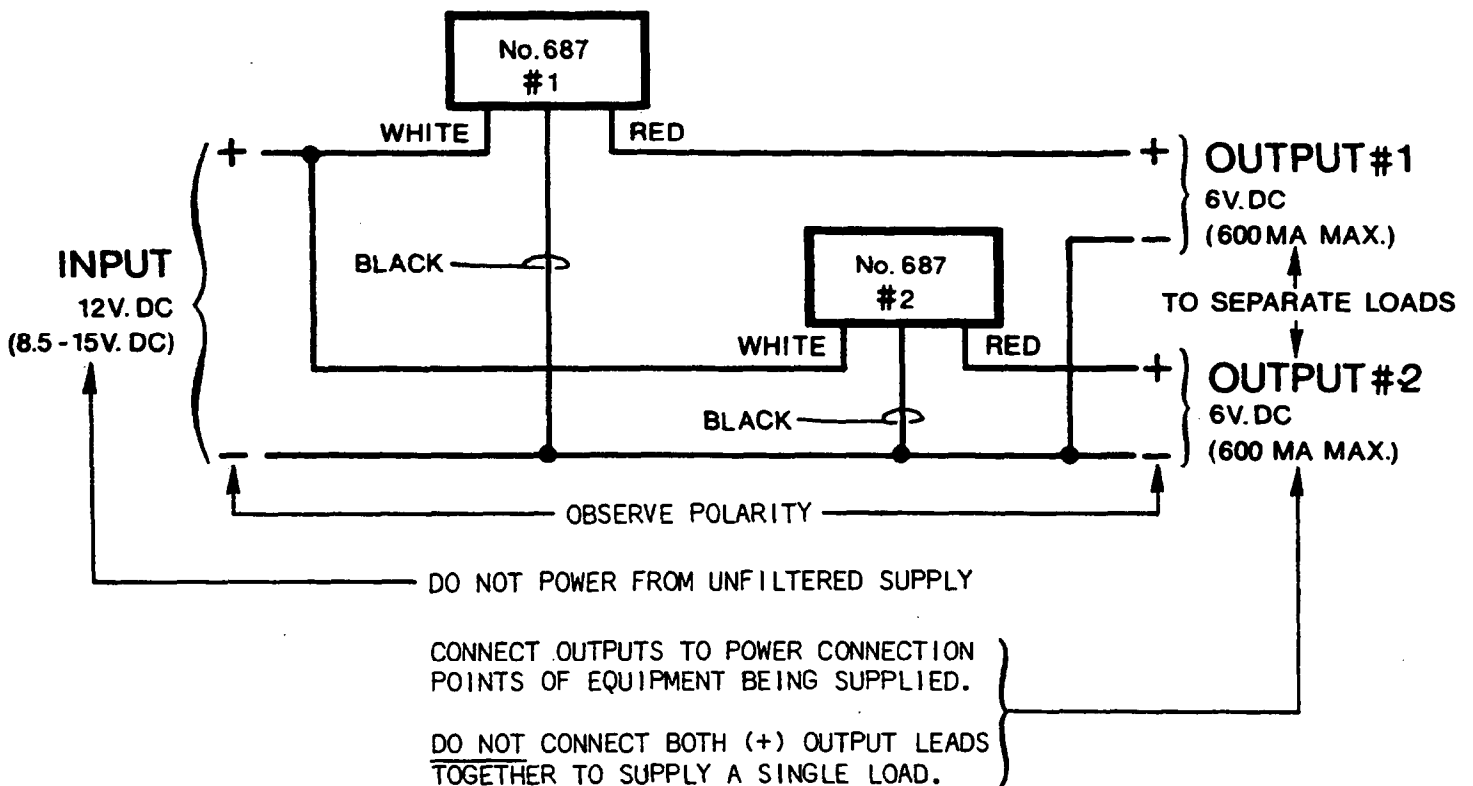


Diagram 2: WIRING CONNECTIONS-TWO UNITS

IMPORTANT NOTE

The No. 687 will protect itself against excessive internal temperature. This can occur if the mounting position does not permit enough heat to be dissipated for the current being drawn. If this happens, the output voltage will drop suddenly to approximately 4 volts and will continue to drop until the temperature of the unit stops rising.

If this occurs, try the following:

1. Try to increase the cooling of the No. 687 by improving its housing's contact with a large metal surface, such as the inside of the cabinet in which it is used.
 2. If multiple loads are being supplied, divide the load between more than one No. 687, if possible, as shown in Diagram 2. (DO NOT connect the +6V. outputs of two No. 687s together.)
-

POWER SOURCE FILTERING TEST:

Some non-Ademco controls may not have sufficient filtering for unmodified use (via a No. 687) as a power source for a digital communicator. The following procedure should be conducted to test for this condition and to correct it when necessary.

See Diagram 1.

With the No. 687's input powered from the control and its output connected to the communicator:

1. Connect an AC voltmeter (or multimeter) temporarily to the No. 687's output as shown, with a 0.33 microfarad (or larger) capacitor in series with one of the meter leads. Use the meter's most sensitive range (typically 2.5 or 10V. AC). No steady deflection should be observed on the meter at this time (disregard any initial movement as the meter is connected).
2. Activate all of the loads connected to the control (e.g.: bells, sirens, etc.) and trigger the communicator.
3. Observe the meter. If no deflection is seen, reverse the meter's connections to the No. 687's output and check the meter again. If, still, no deflection is seen, the source's filtering is adequate and the meter may be removed. No further action is necessary.

If, however, the meter needle deflects even slightly (even 0.05 volts) the filtering on the No. 687's input must be increased. Proceed to Step 4.

4. To increase the filtering, connect one or more (in parallel) 1000 microfarad, 25 volt capacitors across the No. 687's input as shown (observe polarity) until no deflection is indicated on the meter. When this condition is reached remove the meter but leave the capacitors in place permanently.

