No. 689 AC POWER/TELEPHONE LINE MONITOR

GENERAL INFORMATION:

The No. 689 AC Power/Telephone Line Monitor is used to monitor both the incoming telephone line to a digital communicator or tape dialer and the AC input to a protective system control panel (such as an Alarm Processing Center). If either of the input lines is faulted in any way, a signal will be generated to allow the user to take corrective action during the day (while the system is disarmed) or cause an automatic indication at night (while the system is armed).

A built-in delay of approximately 30 seconds on the telephone line input prevents false alarms in the event of momentary outages of telephone service. A delay on the AC line input of about half a second prevents momentary power drops from causing an output.

OPERATION:

The No. 689 operates from 6V. DC available from the main control power supply. It must also be connected to the AC input of the main control so as to monitor the AC line. The connections to the telephone line should be made at whatever digital communicator or tape dialer is used with the system. It is assumed that protection is available on the dialing equipment to protect against voltage surges on the telephone line.

The outputs of the No. 689 include two LED indicators plus a buzzer that informs the user during the day that a fault has occurred or has been restored. Other outputs serve, during the night, to activate a digital communicator or tape dialer channel if an AC failure occurs, and to initiate a local alarm if a telephone line fault occurs.

During the DAY (system DISARMED):

- Normally both LED's are out and the buzzer is silent.

- If AC fails, the AC POWER FAILURE LED lights and the buzzer sounds continuously. The LED may be silenced by depressing the SILENCE/RESET switch momentarily. The LED will remain lit if the AC failure continues.

- When AC is restored, the "AC POWER" LED remains lit and the buzzer (if previously silenced) starts to sound again continuously. Depressing the SILENCE/RESET switch momentarily will silence the buzzer and turn off the LED.

- If a telephone line fault occurs that exceeds approximately 30 seconds, the TELEPHONE LINE FAILURE LED lights and the buzzer pulses on and off. The buzzer may be silenced by depressing the SILENCE/RESET switch momentarily. The LED will remain lit if the fault continues.

- When the telephone line fault clears, the "TEL. LINE" LED remains lit and the buzzer (if previously silenced) starts to pulse again. Depressing the SILENCE/RESET switch momentarily will silence the buzzer and turn off the LED.
At NIGHT (system ARMED):

Normally both the LED's are out and the buzzer is silent.

If AC fails, the LED will light (the buzzer will not sound) and an output trigger voltage will be supplied by the No. 689 that can be used to activate a channel of a digital communicator or tape dialer. The output trigger voltage remains while the system is armed and as long as the AC failure continues.

Note: At opening time, when the protective system is disarmed, the buzzer will sound continuously and the "AC" LED will stay lit to indicate that an AC fault has occurred. Depressing the SILENCE/RESET switch momentarily will silence the buzzer. If the "AC" LED goes out, it shows that AC has been restored. If the LED remains lit it shows that AC is still absent.

If a telephone line fault occurs that exceeds approximately 30 seconds, the LED will light (the buzzer will not sound) and, if connected as shown in the diagram, a short (of about 1 second's duration) will be placed across the system's protective circuit to cause a local alarm. (This momentary short will also be applied to the protective circuit if a telephone line fault occurs during the DAY, but it will not cause any indication at the disarmed control).

Note: At opening time the buzzer will start to sound (pulse). Depressing the SILENCE/RESET switch will silence the buzzer. If the LED goes out, it shows that the telephone line has been restored. If it remains lit, it shows that the telephone line is still faulted.

INSTALLATION AND WIRING:

The No. 689 may be mounted in any suitable cabinet, such as the No. 204 or 205 which contain windows through which the LED's may be observed and the SILENCE/RESET switch may be operated.

The No. 689 should be wired to the main control and the telephone line as shown in the diagram.

Note: It is important that the AC input to the No. 689 come from an ungrounded lead on the secondary (low voltage) side of any power transformer used. Generally when a lead acid battery system is used, either lead may be connected to the No. 689's AC input terminal 8. When a NICAD rechargeable battery is used, one side of the transformer secondary is generally grounded. The connections shown in the diagram are correct for the controls shown. With other equipment, if the AC indicator will not go out, try obtaining the AC input for the No. 689 from the unit's other AC terminal.

SPECIFICATIONS:

Physical: Width: 8" (20.3 cm)  
           Height: 4" (10.2 cm)  
           Depth: 2" (5.1 cm)

Electrical: Operating Voltage: 6V.DC, generally available from the main control or its power supply.

Current Drain: Approximately 1.2 ma (with no fault indicated and buzzer not on.)
Phone Line: Sensod Voltage: The No. 689 will stay in an unfaulted mode if the voltage at the telephone line input is 0.7V. DC or more. It is insensitive to phone line polarity.

Input Impedance at Phone Line Terminals: At least 20 megohms between lines.

Impedance Between Telephone Lines and Ground or Battery: Greater than 100 megohms, 1500V. breakdown.

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**Diagram: TYPICAL FIELD CONNECTIONS**

<table>
<thead>
<tr>
<th>TYPICAL CONNECTIONS</th>
<th>(+)</th>
<th>(-)</th>
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<tbody>
<tr>
<td>Nos. 1023, 1024, 1026</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>No. 1028</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>No. 1022</td>
<td>14</td>
<td>21</td>
</tr>
<tr>
<td>CONTROL USING No. 492 OR 493 BATTERY PACK</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

NOTE: IF AC LED ON No. 689 WILL NOT GO OUT. MAKE THIS CONNECTION TO CONTROL'S OTHER AC INPUT TERMINAL.