

## Tek-CARE150 TekTip: Testing the PK151N

The PK151N is the control unit for the NC110N, NC150N, and NC200N Nurse Call Systems. It detects the calls placed by patient and bath stations and sends control signals to the master station to activate certain annunciator functions.

A call placed on the system will typically draw current from the "R" or "Q" terminal, activating the PK151N. The PK151N then uses the "J," "D," "E," and "P" lines to trigger the "CALL" light and tone generator. The "J" and "E" lines will provide a path to ground to trigger the call tones (regular calls will cause "J" to pulse approximately once every eight seconds and emergency calls will cause "J" and "E" to continuously pulse). "D" also applies a ground and is used to control the "CALL" lamp on the master station (regular calls will cause "D" to ground constantly for the duration of the call, while emergency calls will cause "D" to continuously pulse). "P" is a positive 24 VDC voltage that completes the light and tone circuits' power.

To activate the PK151N, place an LI381(or LI382) across terminal "P" and terminal "R." NOTE: This test should be done only when all field connections are removed! Once connected, the LI381 should light steadily and the PK151N should begin operating. A voltage meter set to read at least 24 volts DC can be used to check for operation: Place the positive meter probe on the "P" terminal and the negative probe on the "J" terminal (an LI381 may also be connected to these same points to check for voltage). The meter should pulse to 24 VDC approximately once every eight seconds. If an LI381 is used, it should flash every eight seconds. The meter's negative probe should now be moved to the "D" terminal causing the meter to read a steady 24 VDC. The LI381 currently connected to "P" and "R" should now be moved to the "P" and "Q" terminals -- causing it to flash. The meter (with probes still connected to "P" and "D") will show constant voltage changes from 0 VDC to 24 VDC (if your meter cannot respond quickly enough, an LI381 may be used instead). The meter's negative probe should be moved to the "J" terminal next and should show constant voltage changes from 0 VDC to 24 VDC. Finally, the meter's negative probe should be moved to the "E" terminal, and the readings should duplicate those of the "J" terminal.

If the PK151N under test responds differently than stated above, it should be suspected bad.

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