

# TEST AND POWER JUNCTION with Fault Detector

Part Number 400480FD

The Peterson *Test and Power Junction with Fault Detector* serves as a junction point for connections between an organ's DC power supply (rectifier) and various control system equipment. It incorporates provisions to suppress high voltage spikes that can be introduced into the DC power system of a pipe organ during electrical storms and other disruptions. Also included are a group of LED indicator lights and two special test points which can be invaluable for understanding, and troubleshooting, a pipe organ's DC electrical system. Following is a description of the function of each LED indicator:

**Green LED labelled "PWR"**- Illuminates any time organ rectifier voltage is applied to the Positive and Negative terminal studs and polarized correctly. If after initial wiring the organ rectifier power is turned on and the green light doesn't come on, turn off the power immediately and check for proper polarity of the wiring.

**Red LED labelled "TEST"**- Illuminates whenever a circuit is completed by using a wire or clip lead from the red binding post labelled "PROTECTED" back to Organ Negative. The binding post, LED, and associated resistor provide a safe way to key control system circuits with a positive voltage without risk of damage due to unlimited current.

**Yellow LED labelled "UNDER"**- Illuminates when the DC voltage falls below approximately 9.6 Volts, indicating an inadequate voltage level for the proper operation of organ rectifier powered circuits.

**Yellow LED labelled "OVER"**- Illuminates when the DC voltage rises above about 23 Volts, indicating a voltage spike or DC level approaching a dangerous amplitude.

The yellow UNDER and OVER indicators may be set to remain illuminated only as long as the voltage extreme continues, or latch on to catch even extremely short pulses that deviate outside of acceptable limits. This is selected by moving the slide switch to the "PULSED" or "LATCHED" positions, respectively. The "Reset" button turns off the yellow indicators until they are latched back on by another occurrence of an excessively low or high voltage. Note that upon turn-on of some unusually slow-rising rectifiers, the UNDER indicator may come on as the voltage rises through 9.6 Volts. If the slide switch is in the LATCHED position, it will remain on until the RESET button is pressed.

The yellow binding post labelled "MAG TEST +" is designed specifically for use in testing chests while they are wired to the output pins of Peterson driver boards which utilize the UDN 2987 transistor array chip. A clip lead from this binding post may be used to operate coils of 20 ohms or greater by touching the output pin on a driver board or output connector.

For more information, contact the Peterson tech support staff at 1.800.341.3311 or [email@petersonemp.com](mailto:email@petersonemp.com)

