DUKANE
Ultrasonics

Application Notes

Application Note 104

Model 110-2837 Status Relay Output

- Relay contact outputs are not attached to ground and can switch up to 28Vdc @ 2A
- Relay contact outputs can also switch resistive ac loads up to 120Vac @ 1A
- Single Pole Double Throw (SPDT) contacts offer normally open or normally closed options
- Output state is jumper programmable with one of four selections on SH402 on driver board
- Relay contacts are fused at 2 Amps to protect the internal generator circuitry

The Status Relay Output is a circuit board mounted inside the generator that provides a SPDT relay contact output on the rear panel connector labeled J23 Status Relay. This output is useful when a floating (non-grounded) mechanical switch is needed. The user must provide a load to be switched and the load's power source. The power source can be ac or dc within the voltage switching capabilities of the internal relay. The load current must also be within the relay switching capacity. A 2 Amp fuse is installed on the circuit board to protect the internal generator circuitry, but the relay contacts may fail if it is connected to dc sources greater than 28Vdc, non-resistive ac loads, or ac loads exceeding 1 Amp.

The status relay contacts are controlled by the status driver output on the generator driver board (Dukane Part #110-2586 or #110-2611). Using selections available on jumper block SH402, the user can select one jumper for either ultrasound output status or overload fault status. Jumper JU404 is installed at the factory. The jumper options available are as follows:

HEADER SH402 USER SELECTABLE JUMPER BLOCK OPTIONS

JUMPER BLOCK NOT INSTALLED ON SH402 - STATUS OUTPUT DISABLED

JU402 - RELAY COIL IS NORMALLY OFF - ACTIVATES WHEN ULTRASOUND IS ACTIVE

JU403 - RELAY COIL IS NORMALLY ON - DEACTIVATES WHEN ULTRASOUND IS ACTIVE

JU404 - RELAY COIL IS NORMALLY OFF - ACTIVATES IF AN OVERLOAD FAULT OCCURS

JU405 - RELAY COIL IS NORMALLY ON - DEACTIVATES IF AN OVERLOAD FAULT OCCURS

Note: It is recommended to select a jumper option that keeps the relay coil OFF for a majority of the time. **Only one jumper should be installed on SH402. Internal circuit damage will result if more than one status jumper is installed.**

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Application Note 104

The user must connect an external power source (ac or dc) and an appropriate load to the J23 Status Relay connector on the generator rear panel. The power source common (or negative) should be connected to one side of the load (negative side if the load is polarity sensitive). The other side of the power source, hot (or positive), should connect to J23 pin 1 (relay common). The other side of the load (+ side) is connected to J23 pins 2 or 4, depending on whether the load is supposed to be normally OFF or normally ON. If jumpers JU402 or JU404 are installed on SH402, connecting the load (+ side) to J23 pin 2 will result in the load being normally OFF. If jumpers JU403 or JU405 are installed on SH402, connecting the load (+ side) to J23 pin 4 will also result in the load being normally OFF. For the load to be normally ON, connect the load (+ side) to the opposite J23 pin number (i.e., pin 4 instead of pin 2, or pin 2 instead of pin 4) that is described above. Refer to the connection diagram on the following page for further details on how to correctly connect the external power source and load.

(next page)

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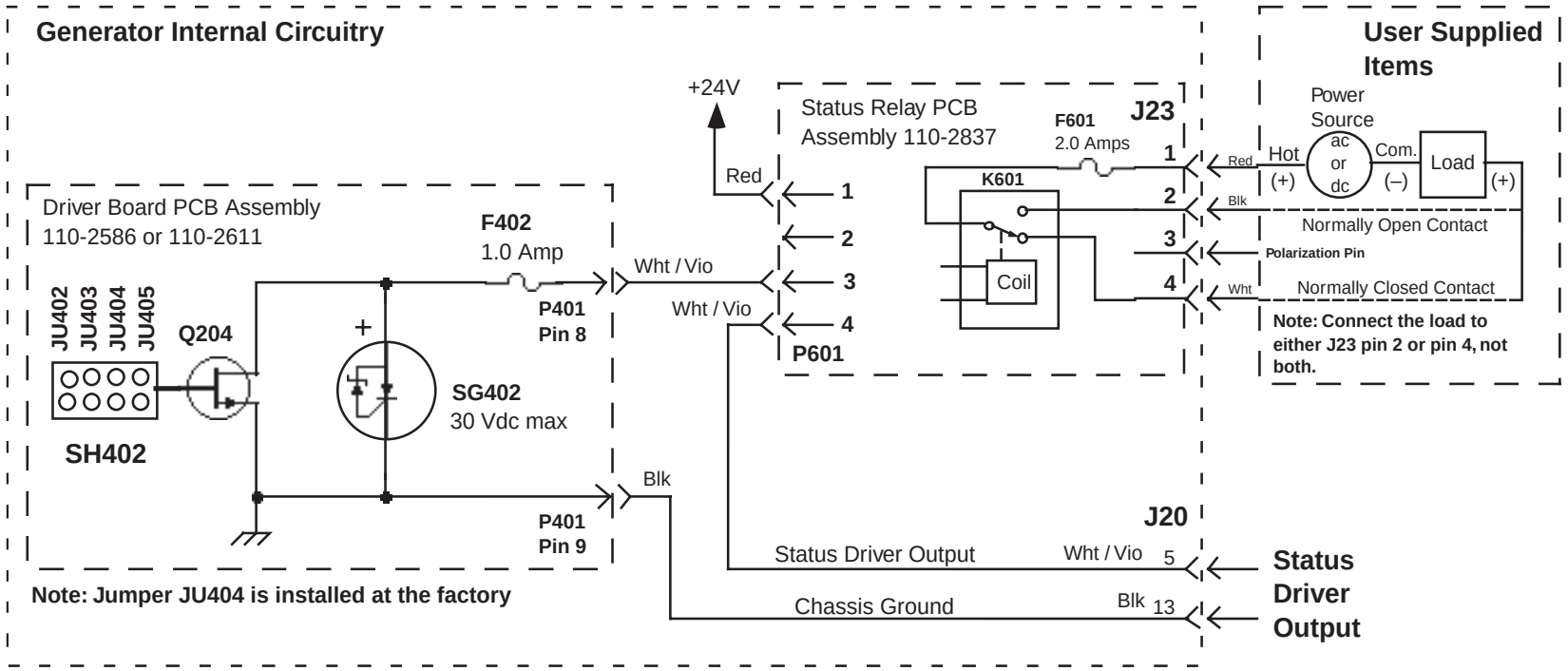
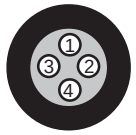
Status Relay Connection Diagram



Status Relay Cable
200-999 Wire Colors

Pin #1 = Red Wire = Relay Common
Pin #2 = Black Wire = Normally Open Contact
Pin #3 = Polarization Pin = No Connection
Pin #4 = White Wire = Normally Closed Contact

J23 Status Relay Output



Connector Pin Locations on Generator Rear Panel