

Application Note 109

Model 110-2814 Isolated Remote Power Control

- This optional board remotely adjusts the ultrasound power output with a 4–20mA current loop controller (Current source compliance voltage must be at least 5 Vdc @ 20mA)
- Front panel power control is included with this option
- Front panel mode switch allows selection between LOCAL and REMOTE control of the generator output power
- Current loop input is electrically isolated from generator circuitry and provides an isolation rating of 7,500V_{PEAK}
- Current loop input is protected from reverse polarity and overcurrent fault conditions (Active 25mA current limit circuit protection up to 40Vdc max.)
- A broken (open) current loop input connection will program the generator to its minimum power output level

The Isolated Remote Power Control is an optional circuit board that mounts inside the generator behind the front panel. This circuit board includes a front panel power control potentiometer that enables LOCAL adjustment of the generator output power. When the front panel mode switch is in the REMOTE position, the generator output power is controlled by an isolated (4–20mA) current loop controller.

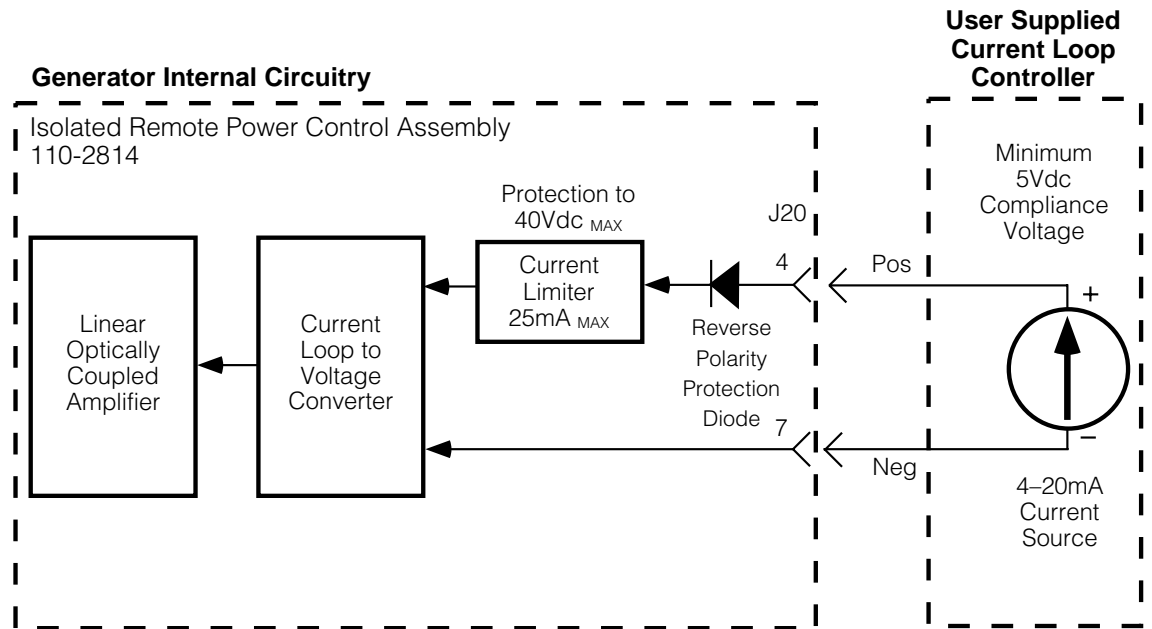
An opto-coupler on the circuit board provides isolation between the current loop controller and the internal generator circuitry. The current loop input to the generator is protected and will not be damaged by reverse polarity or overcurrent fault conditions. A 4.0mA input from the current loop controller will correspond to about the same generator power output that would result if the front panel power control was set to minimum (fully counterclockwise). Likewise, a 20mA input will result in maximum generator power output, the same as if the front panel power control was set to its fully clockwise position. Minimum power output will result if the current loop input connection is broken or if the polarity is reversed. This option allows the user to change the generator output power during a weld cycle or to regulate a continuous welding process with an appropriate feedback signal.

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Connection to this option is made through J20 connector pins 4 and 7, which are the input pins used for the Isolated Voltage Activated Operate Input circuit. Connection of the Isolated Remote Power Control to these pins will make the Isolated Voltage Activated Operate Input circuit unavailable. Refer to the connection diagram below for further details on how to connect a current loop controller to a generator with this option installed.



Isolated Remote Power Control Connection Diagram

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