



## Remote I/O for Hydraulic PS with SSR's

Configuration and Testing SSR's

Mark J. Chomiczewski

V-Note # 0007

### Abstract

A customer wanted to use the VR9500 remote I/O and VibrationVIEW to initialize a start-up sequence for their hydraulic power supply. They also wanted to have an input condition satisfied before user could begin to "Run" a test profile.

### Question

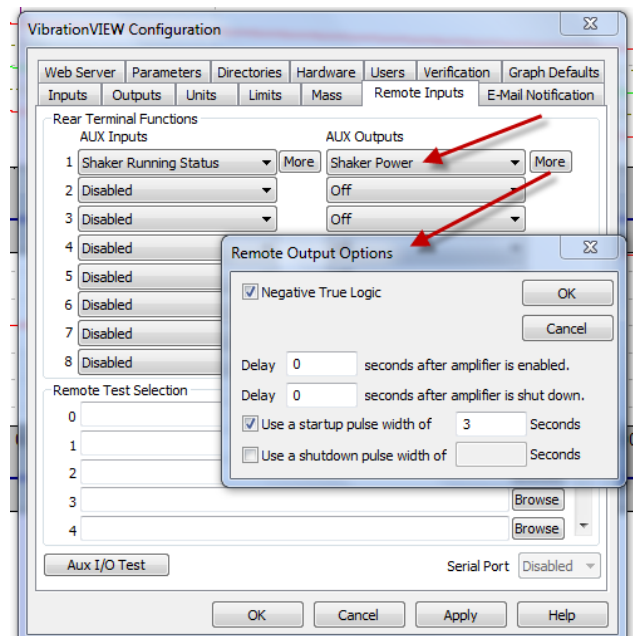
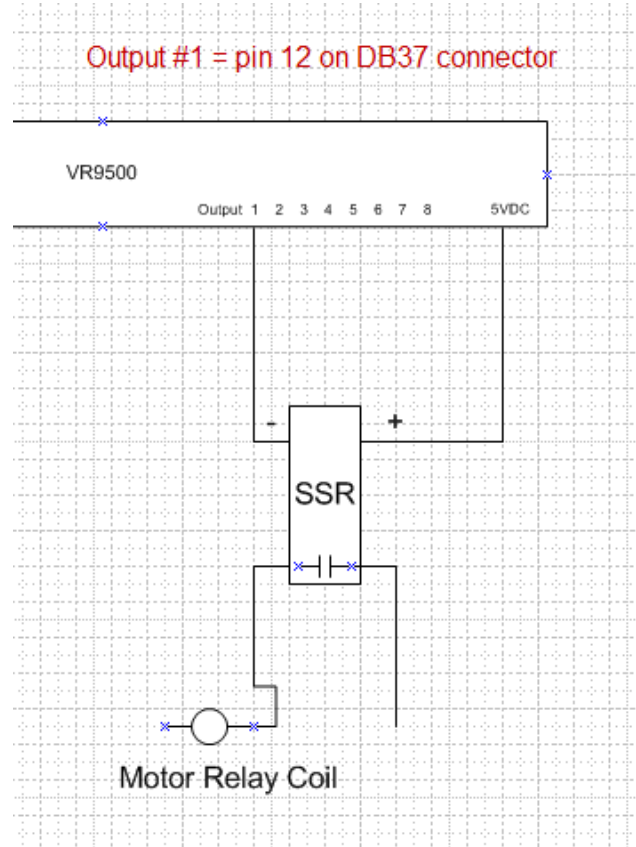
- 1) How should the remote inputs and outputs be configured?
- 2) Customer was concerned the output did not have sufficient voltage to drive his SSR after checking contact side for continuity with ohm-meter.

### Answer

**CONFIGURING REMOTE I/O** - Customer was using Grayhill SSR and needed output voltage to be 4-5VDC. We recommended:

- Connect 5VDC from VR9500 to Pos(+) side of Grayhill SSR.
- Connect a VR9500 Output to Neg(-) side of Grayhill SSR. (note- when output is "off" there is 5VDC present, so must use Negative True Logic in software configuration).
- NOTE: The 5VDC terminal on VR9500 is limited to 120mA. Use an external 5VDC power supply if requirements exceed 120mA.

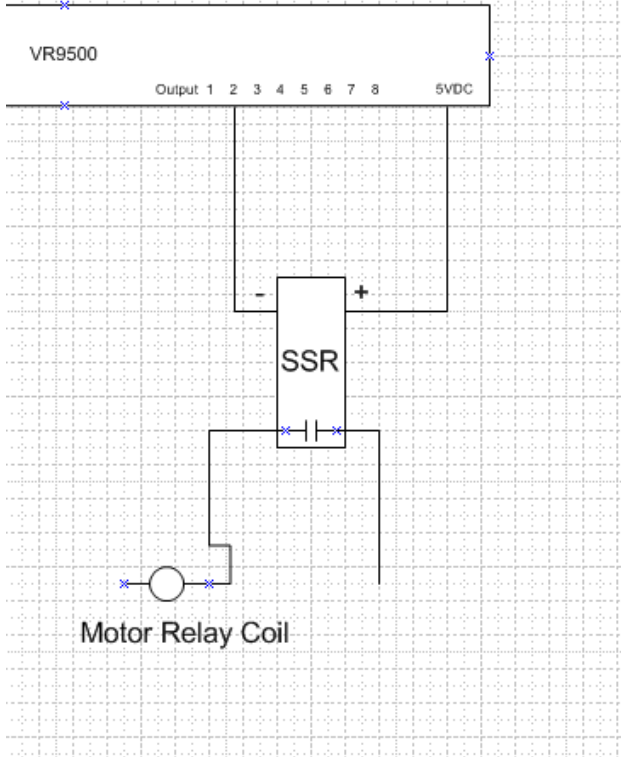
- 1) Start HPS motor



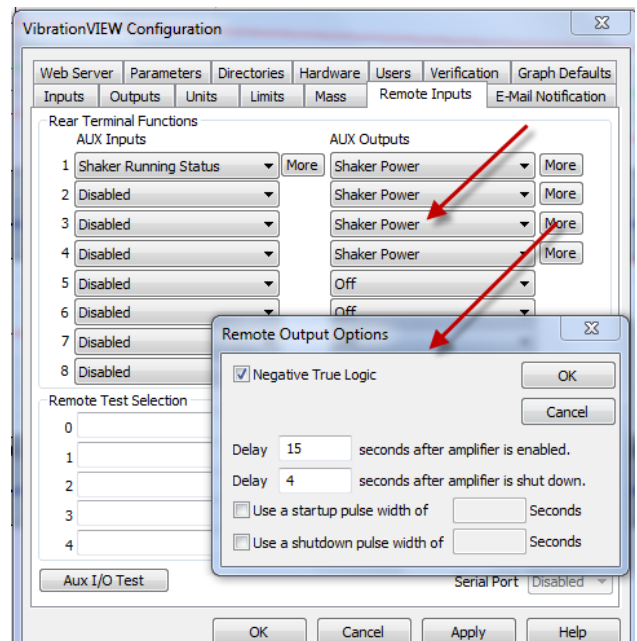
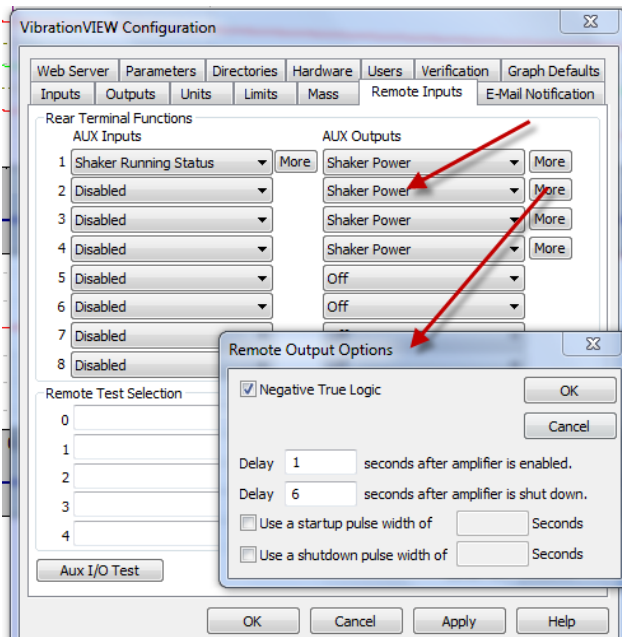
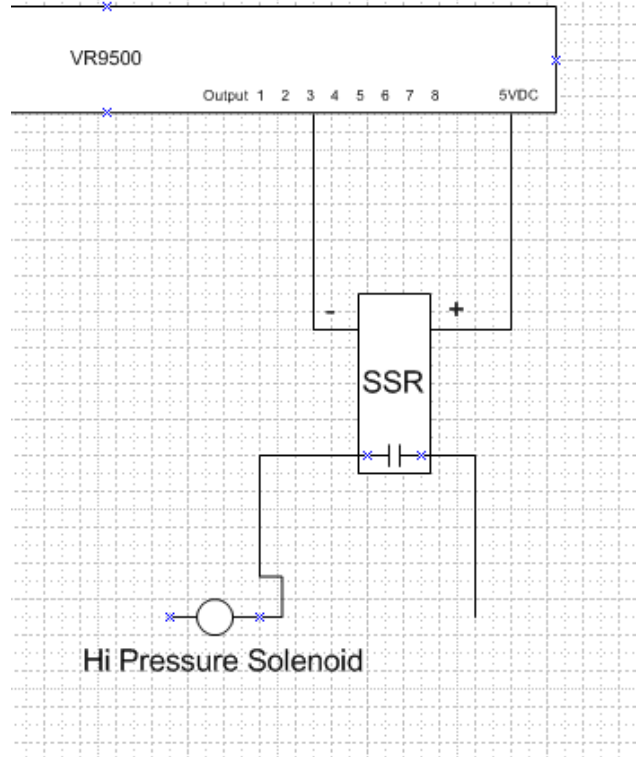
- 2) Latch HPS motor "on" (so no auto restart if safety tripped)

- 3) Open high pressure solenoid (15 sec wait for soft start to complete)

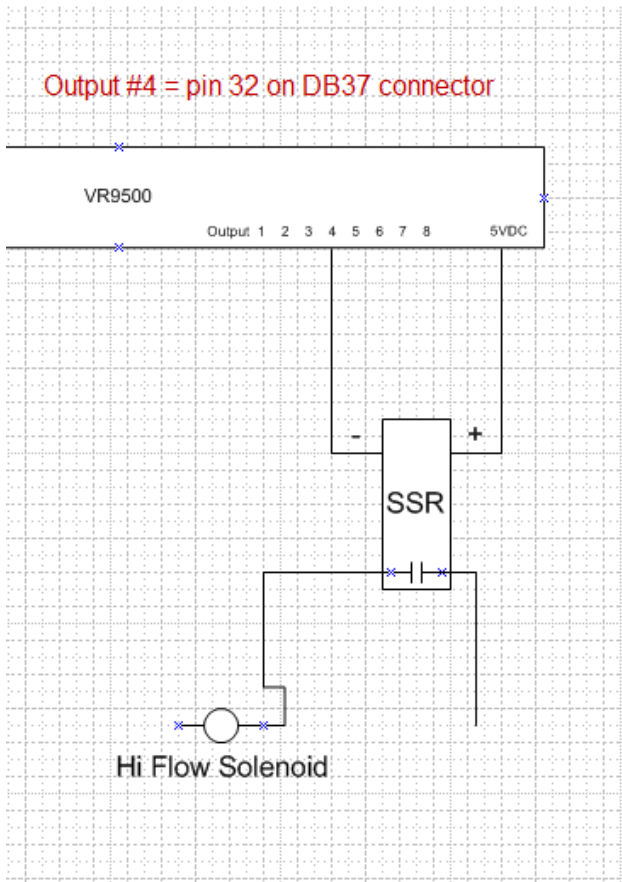
Output #2 = pin 31 on DB37 connector



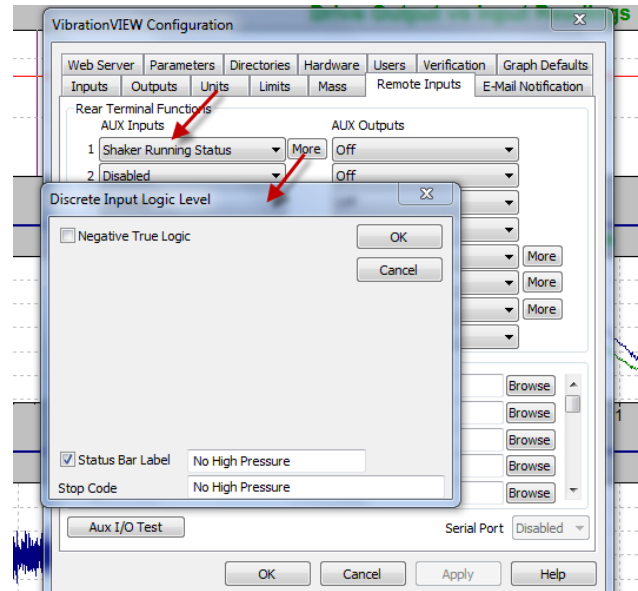
Output #3 = pin 13 on DB37 connector



4) Open high flow solenoid



5) Input sense high pressure



**Checking contact side of SSR's**

Customer checked voltage across VR9500 "5VDC terminal and Output terminal" with and without SSR connected. They measured approx 4.8VDC without SSR connected, and approx 4.2VDC with SSR connected. Customer felt voltage drop was too great.

Customer then connected ohm-meter across contact side of SSR and applied an input voltage. Customer was concerned because SSR LED flashes on but contacts did not close completely and felt the VR power supply was not sufficient because of voltage drop.

**ANSWER -**

The voltage drop when a load is connected is normal. Checking SSR's contact side requires that a load be applied (typically min 0.1A). Using an ohm-meter does not provide sufficient load.

