Cincinnati Test Systems
MiniSentinel Applications Bulletin

Interfacing to MiniSentinel Valve Outputs

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OVERVIEW
The MiniSentinel series of leak test instruments has 16 predefined outputs,
five of which are used to control the internal pneumatic valves. If
necessary, users may interface to these outputs. However, these five outputs
do not behave like the other eleven. Special considerations must be
employed in order to use these outputs. This document describes the
"valve" outputs and provides some typical interface circuits for different
applications.

DISCUSSION
The I21 software implements a "coil saving" technique designed to reduce
the amount of unnecessary power (and the resultant heat) delivered to the
pneumatic valves. To do so, the I21 circuit board rectifies the AC voltage to
DC. When a valve is to be turned on, the software allows full DC power
(about 110 volts) to be delivered to the valve for 50 ms. After that time, the
software chops (pulse width modulates) the DC voltage such that the
average output is reduced to 8 volts.

Hardware:
> Serial printer, DB9 to DB9 printer cable (available from CTS or most
> computer stores).

Instrument Settings:
> Select "Comm/Printer or RS485 Network/Each Test" from the
> keypad.

Printer Settings (typically dip switch selected):
> 9600 baud

8 data bits
no parity
1 stop bit

Hard Wiring

Because the MiniSentinel is talking to a serial printer, only three wires of the serial cable are actually carrying information. They are:

Data (pin 2)
Ground (pin 5)
Not Busy (pin 8)

If you are making your own cable, make sure that the Data output from the instrument connects to the Data input of your printer. This is typically pin 3.

B. B.
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