

Installation Information

For Sentinel B-21/I-21 Instruments

Mounting, Electrical connections, Pneumatic connections

APPLICATION BULLETIN #119A

June 6, 2002

This application bulletin summarizes important information found in the instruction manual for the Sentinel B-21 and I-21 instruments. This information should answer most of the questions that are asked when planning the integration of these instruments into a test system.

Dimensions:

Sentinel B-21 Single Pressure (pressure test, ≤ 100 psi, version S pneumatics) & Fast-fill/Integrity (≤ 100 psi, version F pneumatics)

6"H x 17"W x 12"D

Dual Pressure (F,D, and T) and all vacuum and 200 psi versions

6"H x 17"W x 15 1/2"D

Sentinel I-21 Single Pressure (pressure test, ≤ 100 psi, version S pneumatics)

13 1/2"H* x 11"W x 6 3/4" D

Dual Pressure (F,D, and T) and all vacuum and 200 psi versions

17"H* x 14"W x 7"D

*(Allow extra on 1" on top and bottom for mounting flanges)

Power Supply Requirements (AC model) 95-125 VAC, 6 amps

(DC model) 95-125 VAC, 600 ma and 24 VDC, 5 A min depending on I/O

The instrument electronics are fused for 1 amp with an additional 5 amp fuse for all 20 outputs which are individually fused at 2.0 amps each.

Air Supply Requirements: Clean, dry instrument air with a pressure that must be at least 10 psi above test pressure at all times. Recommend that good plant plumbing practices be used. In addition 5.0 and 0.3 micron coalescing filters set should be installed.

Mounting

The Sentinel B-21 instrument is a portable or bench-top mounted instrument. It has a swivel handle that can be positioned to elevate the operator panel to a comfortable viewing angle for the operator. The four mounting feet are positioned on a 12"W by 6"D grid centered under the B-21 small version enclosure. They are in a 12W" by 9.5D" grid under the larger enclosure. When the adjustable arm is utilized to support the instrument, it will extend the front to back dimension by as much as 6 inches and the width to 15".



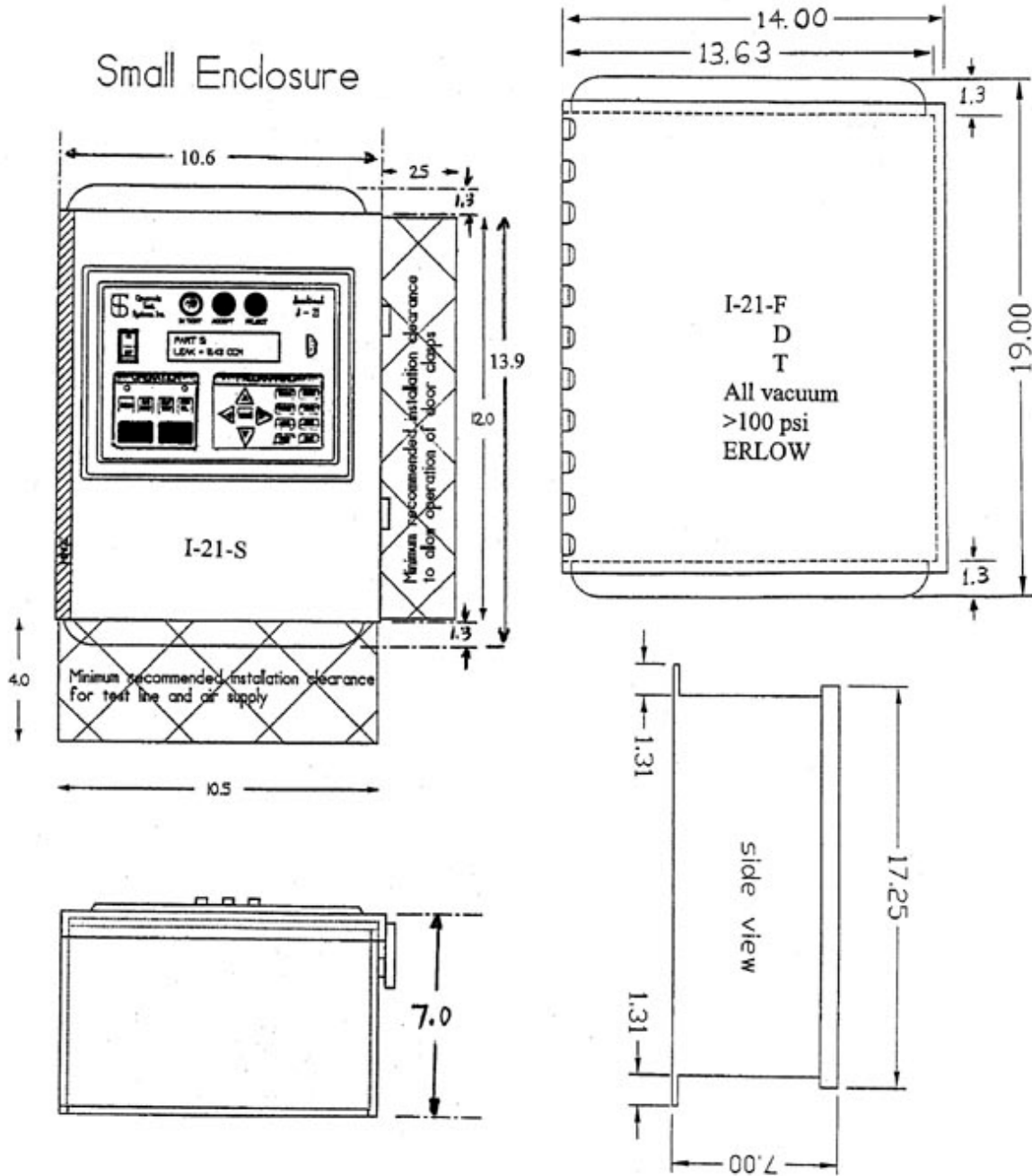
Cincinnati Test Systems, Inc.

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5555 Dry Fork Road, Village of Cleves, OH 45002 • Tel. 513-367-6699 • Fax 513-367-5426

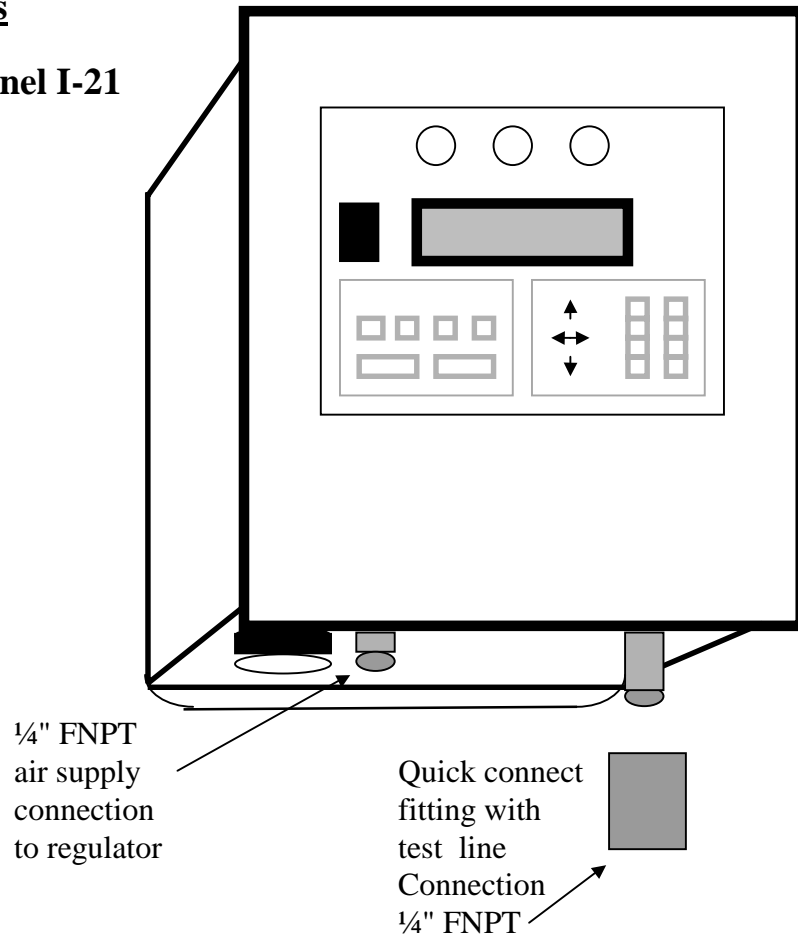
Website: www.cincinnati-test.com • E-mail: sales@cincinnati-test.com

The **Sentinel I-21** instrument was mounting plates on the top and bottom of the back plane of the instrument. These mounting plates are 1.3” tall by the width of the box. Because the case and mounting plate material is PVC, it is very easy to drill mounting holes wherever needed to secure the enclosure to a back wall or support structure. The diagrams on page 2 show the critical dimensions for the standard and expanded enclosures.

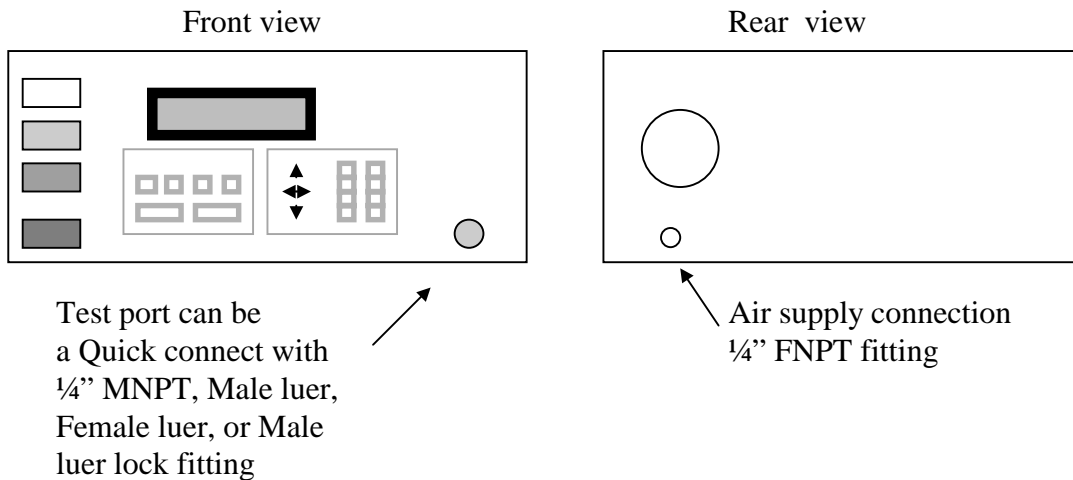


Pneumatic Connections

Sentinel I-21



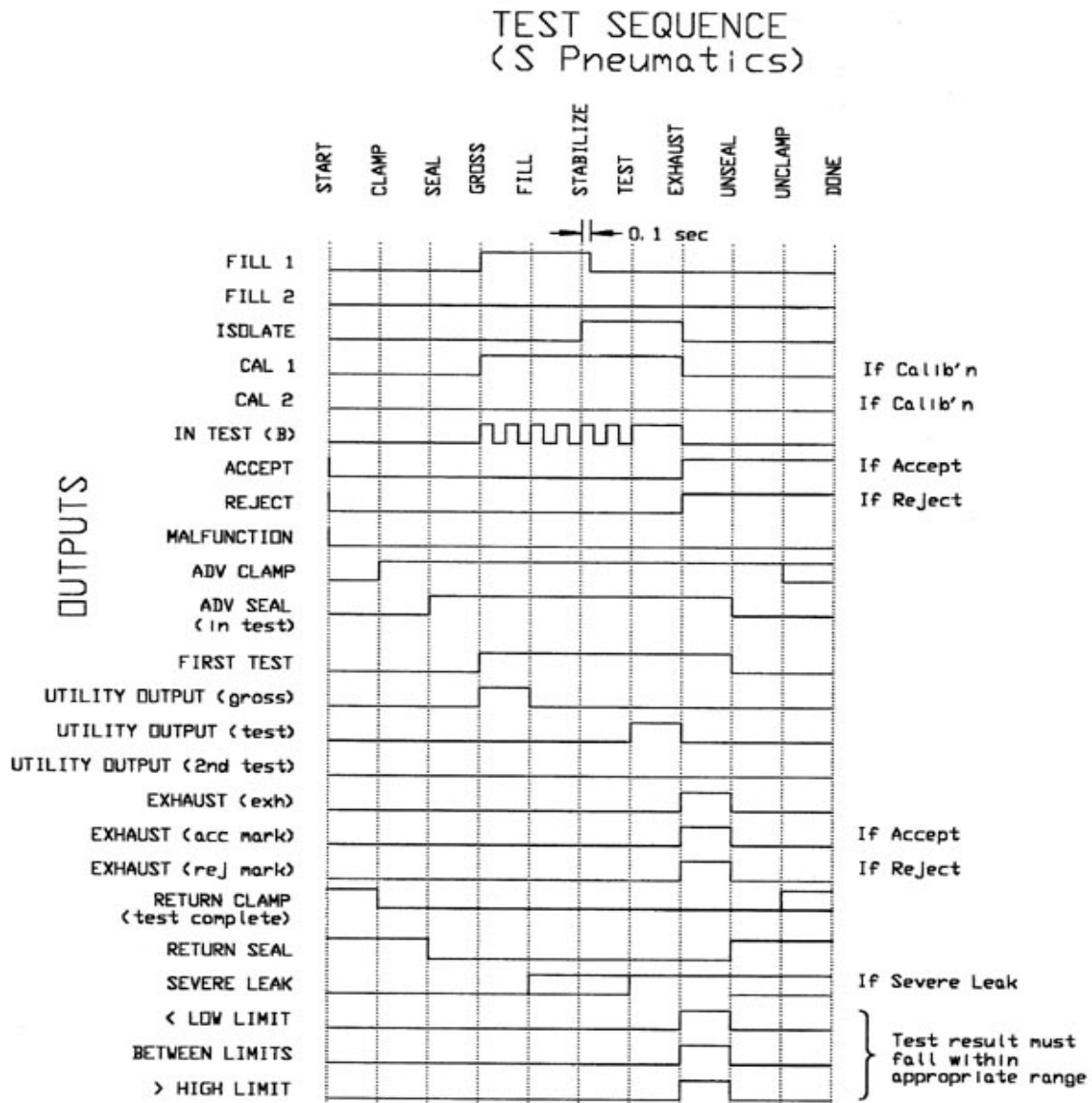
Sentinel B-21



Time Sequence Diagram

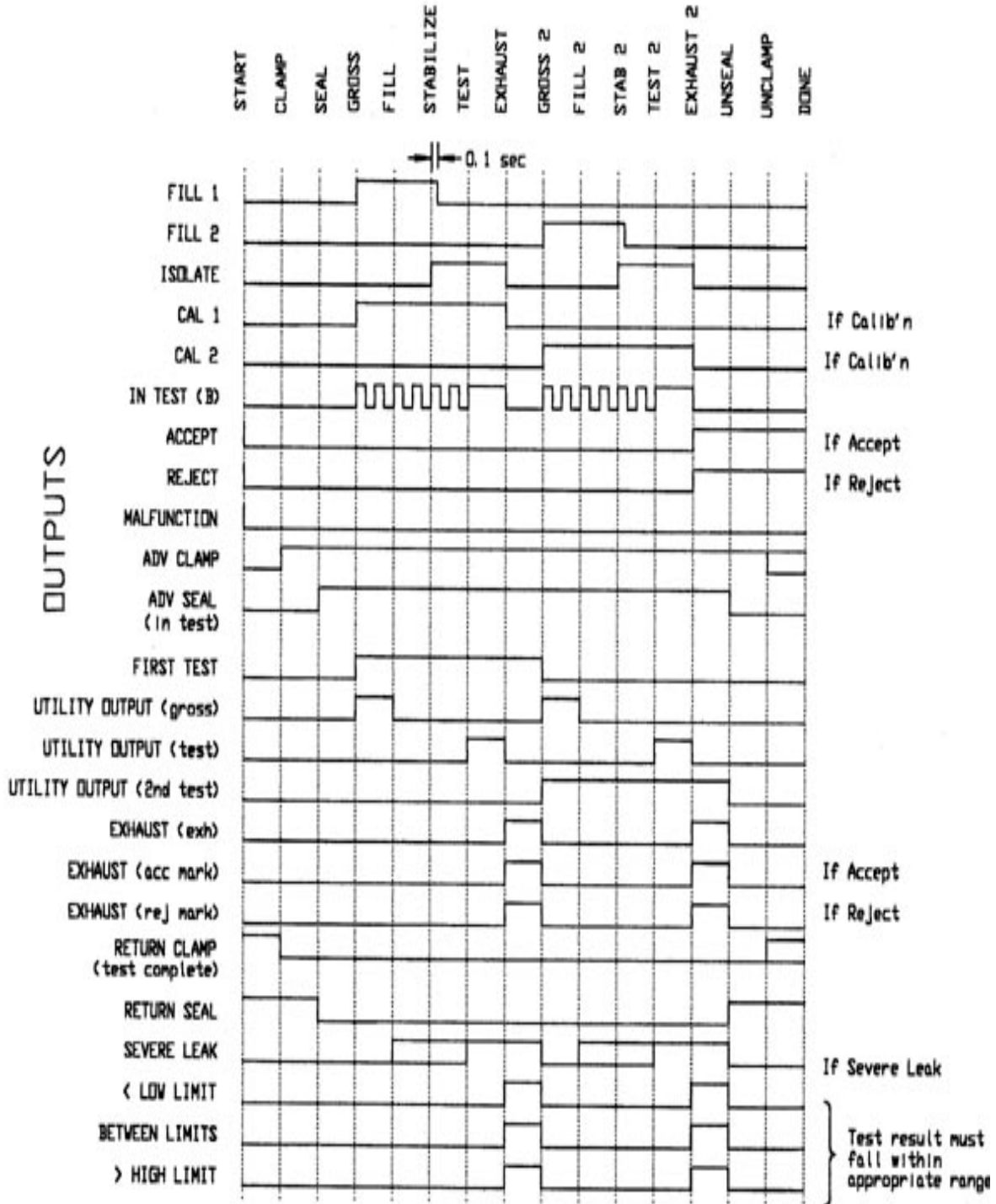
The next two diagrams indicate when the 20 outputs of the Sentinel I-21 and B-21 sequence on during the test cycle for a single pressure test (Version S) and the dual pressure tests (Version F, D, and T). The Utility Output, programmable within the MENU function, can only sequence on for one function (during gross timer, during test timer, during second test of dual test, or during calibration cycle). The Exhaust Output, programmable within the MENU function, can only sequence on in one of three ways (after every test- exh, after accept parts only, or after reject parts only).

Single Test



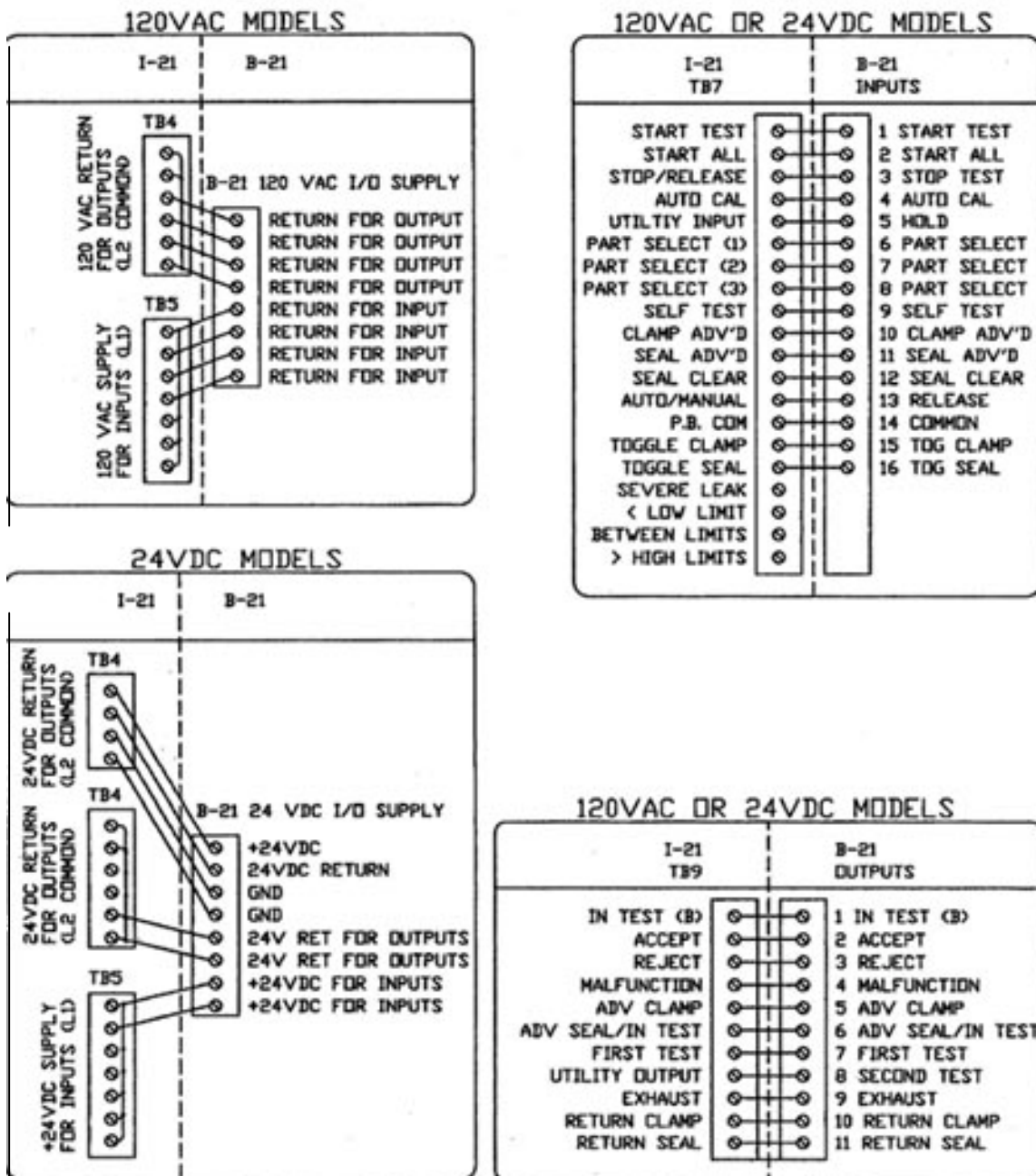
Dual Test

TEST SEQUENCE
(F, D, T Pneumatics)



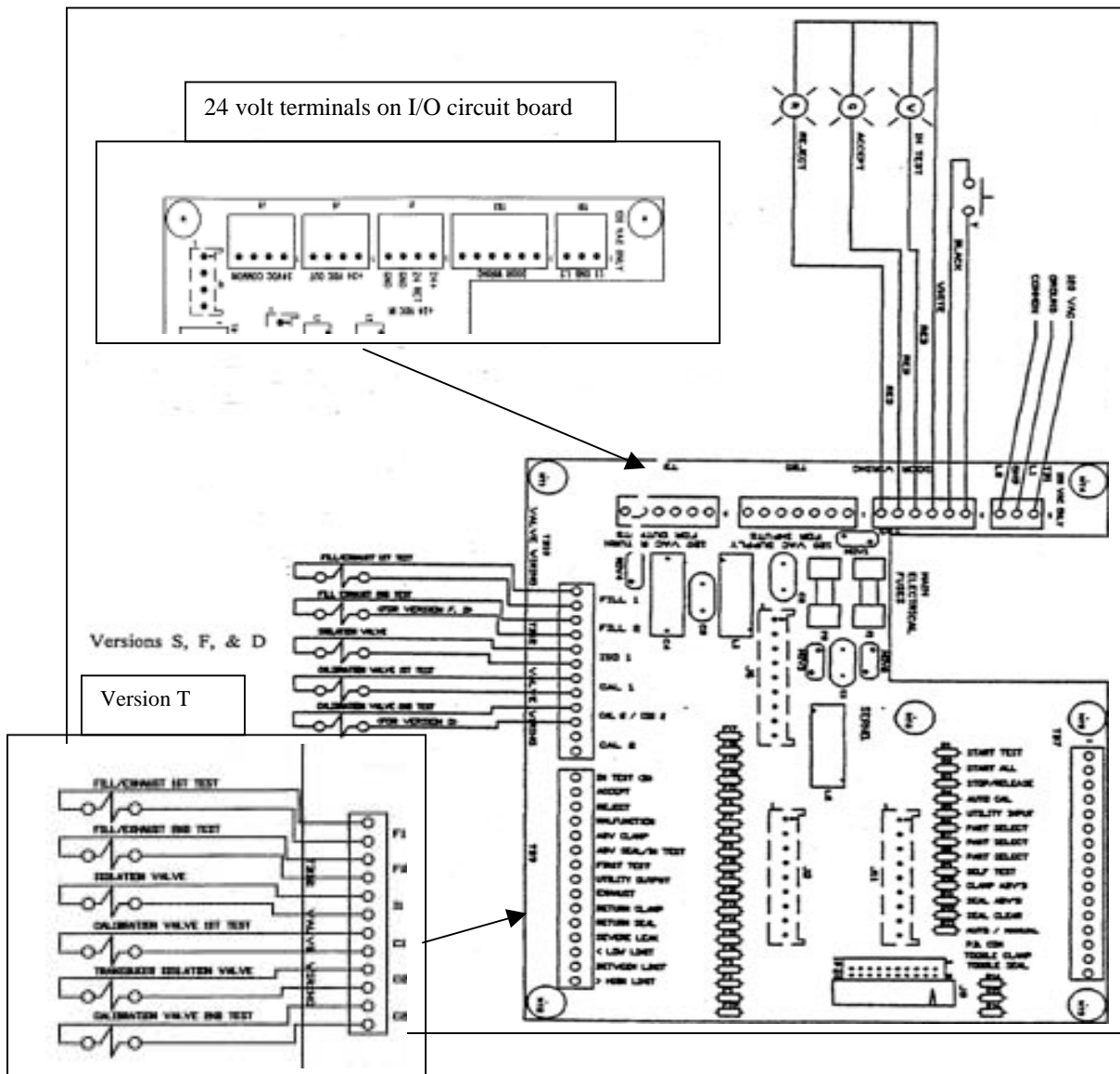
Electrical Connections

The Sentinel B-21 and I-21 terminals are setup for easy interface wiring. The Sentinel B-21 instrument is designed for portable or desktop applications. Therefore, the terminals are located on the back for direct access without opening the enclosure. Not all of the outputs are available on these external terminals. The diagram below shows the interface wiring from the internal circuit board to the external terminals.

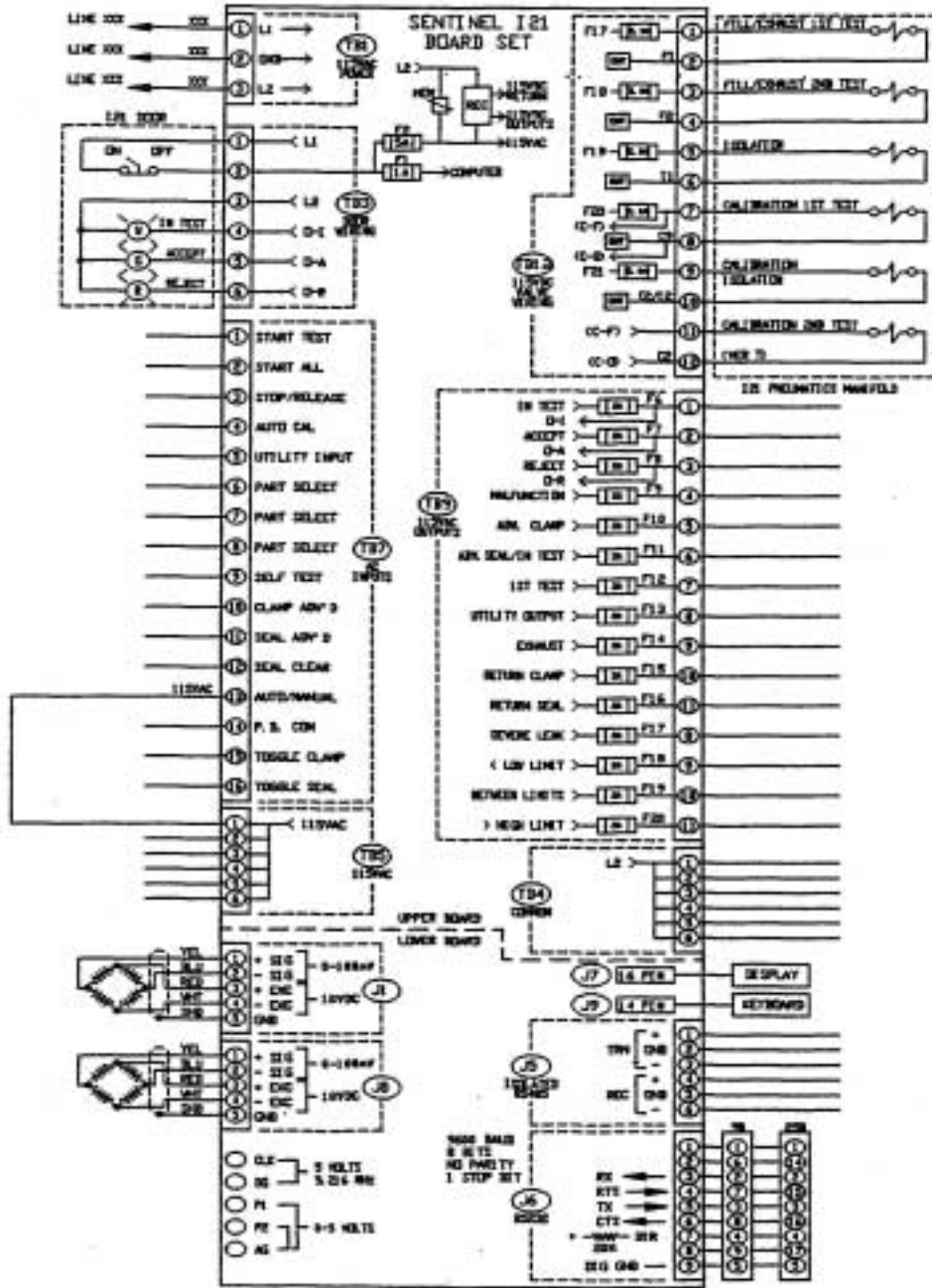


The Sentinel B-21 instrument provides external wiring terminals on the back panel for your convenience. The Sentinel I-21 wiring terminations are on the internal I/O board. The charts above reference the terminals for the two instruments. Use these charts if there is any confusion in reviewing the following wiring diagrams.

The diagram below shows the physical layout of the input/output board of the Sentinel B-21/I-21 instrument. On the diagram the wiring for the lights and the valves are shown. There are two versions of the valve wiring to show the difference between the Version S, F, and D versus Version T. This diagram shows the actual location of the input terminals, output terminals, 120 v power source for the inputs, and common for the outputs. A extra view of a portion of the optional DC I/O board shows the 120 VAC and 24 VDC terminations. The terminals are Phoenix connectors which plug onto the input/output board.



Next are outline diagrams of the Sentinel B-21 and I-21 electronics, 120 VAC and 24 VDC. They show the power inputs, lights, valves, control inputs, power source for inputs, control outputs, common for outputs, transducer inputs, RS232 interface, and fusing. This diagram is helpful for understanding the interface wiring with other devices.



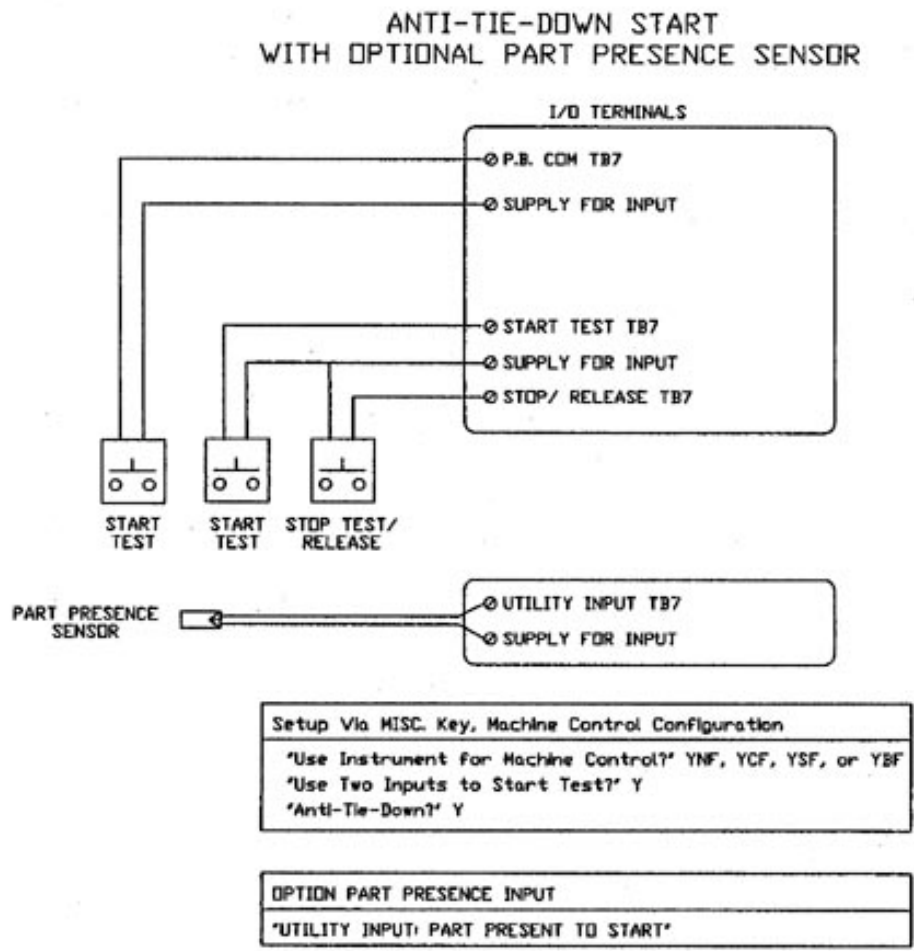
120 VAC Circuit Diagram

Anti-Tie-Down Start Capability

The Sentinel B-21 and I-21 instruments have the capability of being setup for anti-tie-down start logic. The anti-tie-down start logic requires that the two Start inputs, “Start” and “P.B.Com”, be received within ± 500 ms of each other and held until the completion of the “clamp” and “seal” timers. The anti-tie-down logic also applies when manually unclamping a reject part at the end of test (“Stop/release” and “P.B.Com”). The diagram below shows the wiring connections and the MENU selections to activate this function.

Part Presence Logic

Part presence logic is also available. This logic requires the part presence sensor detect that the part is in place before receiving the start signals. Also the part must be removed from the fixture between tests in order to start the next test cycle.



Clamp or Seal Tooling Action

The diagram below shows how to wire and setup the MENU function to activate the 1st tooling output (clamp) with optional feedback. A similar wiring scheme would apply for the seal output.

