

Sentinel C-20 Specification Sheet Pressure Decay Leak Test Instrument

- **Simple, Compact, Economical**
- **Single Pressure/Vacuum Decay Test Capability**
- **AutoCal with Drift Correction**
- **High Flow Valve Option and Quik Test**

Versatile Configurations

Single Pressure (Vacuum) Decay Test
Single Pressure (Vacuum) Decay Test
using High Cv Valves
High Speed, Single Pressure (Vacuum)
Decay Test using High Cv Valves

Modular Pneumatics with manifold
mounted valves, calibrated leak standard,
and regulator and gage pressure transducer.

High resolution 24 bit A/D converter for
fast, repeatable test results (resolution to
0.00005% of the transducer full scale)

Compact modular enclosure for easy
installation (includes all electronics and
pneumatics) for **backplane mounting**
(5.5”h x 7.9”w x 3.5”d)

Monitoring and Programming via integral
operator panel available in English or
Spanish. Download test and instrument
setup via RS232.



Operator Display panel makes operator
interface simple, fast and comprehensive

- **VFD display** with digital test results,
test parameters, counters, past test
results (2 lines by 40 character display)
- **Test result lights** for Test Accept and
Reject and In-Test
- **Simple Keypad** for direct access to
Auto Calibrate, Menu for Part and
Instrument configuration, Self Test,
Start, Stop, and Counters with test data.

Part Program Configuration for 4 parts
includes timers, test pressures, reject rates,
calibration parameters, Quik test setup, and
Process Drift correction setup

Instrument Configuration includes Leak
standard value, test result display (leak rate
or pressure drop), pressure range and units
(psi or kPa), Input/Output option selection,
Cal method, display language selection, and
Communication commands.

Auto Calibration routine tests master production part with internal calibrated leak standard to automatically establish the pressure-loss-over-time to leak rate relationship for the part program.

Process drift correction maintains calibration accuracy by monitoring and automatically making incremental adjustments for changes in temperature and environmental conditions.

Quik Test monitors the instantaneous in-test results and ends the testing process early for obvious accept and reject parts saving up to 80% of test timer.

Self Test functions include internal pneumatic leak check and calibration verification.

Data Collection stores the digital test results of final leak rate, Quik test leak rate, pressure loss, part program number, and test result for 500 tests.

Communication via RS232 includes test parameters, instrument setup, test results and counter information at a baud rate of 9600.

Instrument Language

Operator panel: Specified English or Spanish
Operator display: Programmable in instrument setup as either English or Spanish

Simple tooling interface for applications requiring one tooling output with no operator safety requirements, there is a seal output option. Standard Start and Stop inputs and Accept and Reject outputs are also available for interface to a PLC or pushbuttons and lights.

Standard integral 3 input/3 output digital interface. One input and one output are programmable within the Menu command for the instrument configuration.

Digital Inputs include Start and Stop plus the selection of Part Presence or Auto Cal on the programmable input terminal. Remote part program selection utilizes a pulse train signal via the programmable input between tests.

Digital Outputs include Part Accept and Part Reject plus the selection of Seal Advance, Exhaust, In Cycle, or Part Program Feedback on the programmable output terminal.

Specifications

Test Functions

Pressure decay testing with gage pressure transducer

Single Pressure Pneumatics, Standard Cv (1/8" orifice) valves

Pressure range: Vacuum, 15, and 100 psig

Single Pressure Pneumatics, High Cv (5 times higher flow -1/4" orifice) valves

Pressure range: Vacuum, 15, and 100 psig

Single Pressure Pneumatics. High Speed Test Cycle capability with High Cv valves

Pressure range: Vacuum, 15, and 100 psig

Pressure resolution: 0.00005% of pressure range

- **Displayed pressure resolution for fill and stabilization:** 0.1 units
- **Displayed pressure resolution for test:** 0.0001 units

Part Program storage

- 4 part programs

Calibration system

- NIST traceable calibrated leak standard sized to within +5%/-0% of specified reject rate with an accuracy of +/-1.2% of value. Mounted directly to pneumatic manifold

Communication: One way

- RS232 - on front of operator panel for external connection
- 9600 baud, no parity, 8 bits, 1 stop bit, no flow control
- Includes part setup, instrument setup, counters, and test results
- Stream of pressure values during test every 0.1 seconds

Input/Output Terminals

3 inputs and 3 outputs are available via a 12-pin cable connector on the top of the enclosure. The Inputs are sinking and outputs are sourcing via mechanical relays.

Inputs include:

Start Stop/release

- Programmable options
Part presence or Auto Cal

Outputs include:

Part Accept Part Reject

- Programmable options
Seal advance Exhaust
In Cycle or Part Select Feedback

Instrument Power Requirements

- 120 VAC – 2.5 amps;
- 24 VDC – 2.5 amps

Enclosure:

Nema 12 industrial enclosure, die cast aluminum

Dimensions: 7.9”W x 5.5”H x 3.5”D

Weight: 10 lbs

Ambient conditions: 5 to 40 C (41 to 109 F)

Humidity: 90% non-condensing

Instrument Option Selection

| | Test Capability Desired |
|--|--|
| | Single pressure, Pressure Decay Leak Rate and Pressure Drop |
| | Fast-fill valves, Single pressure, Pressure Decay Leak Rate and Pressure Drop |
| | High Speed Test, Fast-fill valves, Single pressure, Pressure Decay Leak Rate and Pressure Drop |

| | Test pressure range |
|--|----------------------------|
| | Vacuum (0 to 14.7 psiv) |
| | 0 – 15 psig |
| | 0 – 100 psig |

| | Power source for instrument |
|--|------------------------------------|
| | 120 VAC |
| | 24 VDC |

| | Face Plate Language |
|--|----------------------------|
| | English |
| | Spanish |

Leak Rate_____

Test Pressure_____