

Sentinel C20 World Edition (WE) Leak Test Instrument

- Multi Language Software
- RS232
- Color Graphic Display

Versatile Test Capabilities

Pressure (Vacuum) Decay Leak Rate
Pressure (Vacuum) Drop
Pressure Rate of Change

Instrument Flexibility accommodates:

- different pressure test pneumatics
- performs various test methods
- accepts different part-to-part test parameters
- allows test specific units of measurement
- selectable digital input and output functions
- utilizes RS232 communications methods to interface with the factory network.

4 Part Programs with Application

Flexibility includes test type, timers, pressure parameters, leak rates, calibration parameters, units of measurement, and digital input/output options.

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.

Environmental Drift Correction maintains calibration accuracy by monitoring and automatically making continuous small adjustments for changes in temperature and environmental conditions.



Quik Test monitors the instantaneous in-test results and ends the testing process early when it is obvious that a reject or accept result is imminent.

Self Test Functions include internal pneumatic leak check, calibration verification, transducer zero and span calibration, and test regulator adjustment.

Compact Modular Enclosure for easy installation and maintenance (includes all electronics and pneumatics) in a wall mount configurations

Wall mount: 6.6”h x 8.7”w x 7.2”d

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

Transducers

Absolute Pressure Transducer:

Monitors test pressures for all tests and displays pressure relative to atmosphere (gauge pressure) or pressure loss or rate of loss during standard pressure/vacuum decay tests.

High resolution 24 bit A/D converter and patent pending signal conditioning for fast, repeatable test results (resolution to 0.00001% of the transducer full scale)

High speed, powerful computer with 32 bit processor for fast, high resolution processing.

Monitoring and Programming via integral operator panel or remote computer. Remote part program selection using Binary digital inputs (4 part programmable) with no part input select.

Operator Display Panel makes operator interface simple, fast and comprehensive

- **Vivid, color LCD display** with bar graph test results, digital test results, test parameters, and counters. Icon menu screens for easy navigation.
- **Test result lights** for In test/Accept/Reject
- **Language Neutral Keypad** international icon design keypad accesses user friendly menu driven set up screens.

High Speed Communication via RS232 includes test parameters, test results, and counter information at baud rates up to 115200 for RS232.

Pressure Streaming - Test data output every 0.05 seconds via RS232 for plotting test curves.

Data Collection stores test results of leak pressure loss, test pressure, time, date, and more for up to 5,000 tests.

Tooling Control for simple applications includes an extend for part seal with one input start and part presence before start. Easy setup performed within each part program.

Five Fixed Digital Inputs include Start, Stop/Reset, and 1-3 Binary Program Select.

One Programmable Digital Input provides Program Calibration and Part Present options.

Two Fixed Digital Outputs include Part Accept and Part Reject.

One Programmable Digital Output provides Malfunction, In Cycle, Exhaust, and Seal Extend options.

Specifications

Pneumatic Manifold Options for Test Types

Pressure Decay – Leak Standard

Calculates the part Leak Rate, based upon the measured Pressure Loss; the result is presented in units of flow. This test requires a calibrated Leak Standard.

Pressure Decay – ΔP

Calculates the part Pressure Loss (ΔP), loss over a fixed time; the result is presented in units of delta pressure.

Pressure Decay – $\Delta P/\Delta T$

Calculates the part Rate of Pressure Loss ($\Delta P/\Delta T$), loss over unit time; the result is presented in units of delta pressure over delta time.

Transducer Resolution

- **Absolute Pressure Transducer**
 - Displayed Pressure Resolution: 0.001 units during pre-fill, fill, and stabilize
 - Displayed Resolution of pressure loss during test: 0.00001 units
 - Absolute Pressure Resolution: 0.00005% of transducer range (.15 pa for 100 psi range)

I/O Power Requirements

- Supplied independent of instrument power
- 24 VDC fused for 2.5 amp total

Control inputs are sinking

- 6 optically isolated inputs

Control outputs are sourcing

- 3 dry contact relays

Input/Output Terminals

- Integral 6 inputs and 3 outputs are available within the enclosure.
- Input and output functions per terminal are assigned within the part programs

Instrument Power Requirements

- 120 VAC – 1 amps;
- 230 VAC – 0.5 amps,
- 24 VDC - 2 amps

Part Program Storage

- Up to 4 part programs

Calibration System

- Optional 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:

- RS232 (on front of operator panel for external connection)
 - 115600, 57800, 33600, 19200, or 9600 baud rate
 - no parity, 8 bits, 1 stop bit, no flow control

USB mass storage (Formatted Fat32):

- Firmware update only

Enclosures:

Nema 12 Industrial Enclosure

Die cast aluminum

Dimensions: 8.7"W x 6.6"H x 7.2"D

Weight: 12.5 lbs (5.7 kg)

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

Humidity: 90% non-condensing

Test screen samples



Icon Menu Set-up Screen



Test Accept Screen



Multi Language Software

Instrument Options

	Instrument mounting
	Wall

	Pneumatic connections
	NPT

	Digital I/O Voltage
	24 VDC

	Power Source for instrument
	120 VAC
	24 VDC
	230 VAC

Pneumatic Module Options

	Manifold
	Standard CV Manifold
	High CV Manifold

	Pressure Package Range
	Vacuum (0 to 14.7 psiv)
	0.5 – 2 psig
	2 – 30 psig
	2 – 100 psig

	Pressure Transducer
	0 – 20 psia (Vacuum)
	0 – 45 psia
	0 – 115 psia

	Transducer Option
	No Transducer

1st Test Leak Rate _____

1st Test Pressure _____



Standard CV Manifold



High CV Manifold