Sentinel Blackbelt Pro
Benchtop Leak and Flow Test Instrument

Providing world-class leak test and assembly verification solutions to industries around the globe.

Instrument Features

Multi-Port, Multi-Channel, Multi Station:
- 1 to 4 independent leak tests
- 1 to 2 independent standard flow tests
  3 to 4 independent custom flow tests
- Multiple tests per port

Standard Test Types:
- Pressure/vacuum decay – leak standard
- Pressure/vacuum decay - ΔP
- Pressure/vacuum decay - ΔP/ΔT
- Pressure/vacuum occlusion
- Pressure mass flow
- Pressure mass flow – leak standard
- Vacuum mass flow option

999 Test Programs:
Program selections and flexibility:
- 200,000 selectable tests
- Pressure, flow, and vacuum test types
- Timers
- Pressure limits
- Reject leak limits
- Reject flow limits
- Calibration parameters
- Units of measurement
- Digital I/O
- Tooling control
- Data communication

Touch Screen Interface
- 9" LCD, 800 x 480 color touchscreen

Pneumatic Seal Actuation:
- 12 Outputs; easily actuate independent CTS Connect pneumatic seal devices

32-bit Processor & 24-Bit A/D Converter:
- Exceptionally fast, high resolution test processing
- Stable yet extremely responsive pressure/flow measurements

Absolute Pressure Transducer:
- Eliminates test variations from barometric pressure changes
- Uncertainty 0.05% full scale (all ranges)

Pressure Range:
- Standard from vacuum to 500.0 psig
- Option - above 500 psig

Standard Mass Flow Ranges:
- Standard ranges from 0.5 to 3,000 scc/m
- Above 3,000 scc/m available
- Uncertainty 0.5% full scale (standard ranges)

Transducer Verification/Recertification:
- Pressure and flow transducers
- 6-point standard pressure calibration
- 6-point standard flow calibration

Available Pneumatic Manifolds - Optimization
- Low volume
- Standard flow
- High flow
- Super high flow option
- Internal vacuum generation option

Test Ports:
- 1, 2, 3, or 4 ports
- 1/8" FNPT, Male or Female Luer
- Other size options

Leak Standards:
- Internal leak standard on the manifold
- Optional external leak standard port

Pressure Control
- Standard high precision manual regulators
- High flow, precision manual regulators for mass flow
- Select up to two precision electronic regulators for automatic pressure changes, unique to each test port
- Six point e-regulator calibration

Units of Measure:
- All standard industrial units of measure are easily selectable per part program

Self -Test Functions:
- Internal leak detection process
- Program calibration verification

TCP/IP and RS232 Communication Ports:
- 2-Way Telnet communication
- Test result data transmission with definable fields
- Pressure streaming for curve storage
- Email of reports, test data ,and alerts

USB Port:
- Backup/Restore
- Cloning
- Report storage
- Test result data storage & result synchronization

Automatic Calibration
- Easy to perform
- Permits manual edits if averaging multiple parts is required
- Calibrates to master part

Environmental Drift Correction:
- Automatically maintains calibration accuracy to compensate for changes in environmental conditions including temperature

Quik Test Function:
- Shortens test cycle when it is obvious and imminent the monitored pressure curve will result in a reject or accept
- Analyzes test results in real time
- Provides projected final test results

24 Volt Digital Inputs/Outputs
- 18 User configurable inputs
- 18 User configurable outputs
- Tooling control – up to five tooling motions with feedback - eliminates the need for a PLC in some cases

Key or Password Security:
- Select menu items to secure or unsecure

Standard Selectable Menu Languages:
- English
- Spanish
- Chinese
- Korean
- Portuguese

Help Button:
- On-screen popup help window
- Minimizes dependency on the manual

Data Management & Storage:
- 1,000,000 tests stored on internal memory
- Infinite - Expandable Storage Via USB
- Statistic Data Tracking
- Tracks Percent of Accept and Rejects
- Provides Average Accept and Reject
- Standard Deviation on Accepts
- Allows definable Sample Size
- Resettable counters:
- Test Results Including Malfunction
- Data Viewable on Display

Onscreen Status and Test Indicator:
- Onscreen status and color illumination provides clear feedback of each test
- Eliminates stack lights
- Adjustable brightness

Compact Enclosure Design:
- Dimensions:
  11" wide x 12.5" height x 17" deep

Utility Requirements:
- Electrical: 88-264 VAC, 47/63 Hz
- I/O supply: 24 VDC selectable on board
  Onboard use - maximum 1 Amp
- External I/O supply selectable and recommended when exceeding 1 Amp use.
- Pneumatic:
  - Pressure Input = 20 psig above maximum test pressure, clean dry compressed air or nitrogen
  - Pilot Input (if required) = 60 psig, clean dry compressed air or nitrogen