



# Sentinel Blackbelt Pro

## Wall Mount 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 -  $\Delta P$
- Pressure/vacuum decay -  $\Delta P/\Delta T$
- 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

#### 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
- 1/4" FNPT
- Other size options

**Leak Standards:**

- Internal leak standard on the manifold
- Optional external leak standard ports

**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: 16.25" wide x 13.5" height x 10" 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