Instrument Features

Available 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
- Pressure/Vacuum Ramp-to-ΔP Event/Burst
- Pressure/Vacuum Ramp-to-Flow Event/Crack
- Pressure/Vacuum Proof
- Parent Program Linking
- Sequential Program Linking

99 Test Programs:
- Application flexibility including user programmed:
  - Test types
  - Timers
  - Pressure limits
  - Reject limits
  - Calibration parameters
  - Units of measurement
  - Digital I/O
  - Tooling control

Patented Auto Setup:
- Automated optimization of test program based on maximum user allowable cycle time
- Drastically simplifies instrument test programming

Automatic Program Calibration w/Leak Standard
- Tests master production part with internal calibrated leak standard to automatically establish the pressure-loss-over-time (or flow) to leak rate relationship for the part
- Ensures accurate results
- Easy to perform
- Values may be manually edited if averaging of multiple parts is required

Environmental Drift Correction:
- Maintains calibration accuracy by monitoring and automatically making continuous small adjustments for changes in temperature and environmental conditions

Quik Test Function:
- Monitors the instantaneous in-test results and ends the testing process early when it is obvious that a reject or accept result is imminent
- Reduces test time
- Analyzes test results in real time

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

Test Ports:
- Choice of:
  - 1/8" FNPT
  - 1/4" FNPT
  - BSPT adapters for either available
  - Male and Female Luer fittings included

Auto Supply-Shutoff Available
- Saves compressed gasses (typically nitrogen when used for higher pressure applications) when used for leak/flow testing
- Includes a shutoff valve between customer tank and instrument regulator to prevent loss of gas due to naturally bleeding precision pressure
Absolute Pressure Transducers:
- Unlike gauge transducers, environmental conditions (barometric pressure changes) do not impact test results
- Ranges available:
  - Vacuum 5.0 psig
  - Vacuum to 30.0 psig
  - Vacuum to 100.0 psig
  - Vacuum to 200.0 psig
  - Vacuum to 500.0 psig
- Transducer accuracy 0.05% full scale

Mass Flow Transducers:
- Ranges available:
  - 0.5 – 50 scc/m, 2-250 scc/m, 30-3,000 scc/m
  - Many custom ranges available from 10 to 250,000 sccm thermal and differential pressure flow based
- Transducer accuracy 0.5% full scale

Transducer Verification/Recertification:
- Pressure or Flow transducers can easily be performed by user by utilizing available NIST traceable digital pressure gauges and flow standards
  - 6-point standard pressure calibration
  - 5-point standard flow calibration
  - Up to 32 point calibration of either transducer type available (menu selectable)

Modular Pneumatic Manifold
- Two versions available:
  - 200 psig max
  - 500 psig max
- CNC machined modules allow optimum repeatability of internal test volume (allows much closer agreement of test results instrument to instrument)
- Unique function modules can be added/removed to facilitate easy instrument modification of pneumatic capabilities as testing needs change

Single or Multiple Sequential Test Ports
- Single, dual, triple and quad test ports available
- Each port has a unique light-ring indicator
- Allows setup for either:
  - Single part with multiple zones
  - Multiple unique parts
- Allows user-controlled pauses between linked tests:
  - Start button with Delay time

Manual or Electronic Pressure Regulation
- High precision pressure control
- Electronic allows automatic adjustment of pressure between tests
  - 20 point regulator range calibration
- Up to max 4 manual regulators available
  - -0.5 to -14.0 psig vacuum
  - 0.2 to 2.0 psig
  - 1.0 to 30.0 psig
  - 2.0 to 100.0 psig
  - 3.0 to 200.0 psig
  - 5.0 to 400.0 psig
- Up to max 2 electronic regulators available
  - -1.0 to -29.0 inHg vacuum
  - 0.1 to 4.0 inHg
  - 0.5 to 15.0 inH2O
  - 0.2 to 2.0 psig
  - 1.0 to 30.0 psig
  - 2.0 to 100.0 psig
  - 3.0 to 200.0 psig
  - 4.0 to 500.0 psig

Auto Supply-Shutoff Available
- Saves compressed gases (typically nitrogen) when used for higher pressure applications) when used for leak/flow testing
- Includes a shutoff valve between customer tank and instrument regulator to prevent loss of gas due to naturally bleeding precision pressure regulators

Internal Vacuum Generator Available
- Compact 2-Stage venturi
- External electric vacuum pumps also available

Units of Measure:
- Time: msec, sec, min, hour
- Pressure: psig, psiv, inH2O, cmH2O, mmH2O, kg/cm2, ATM, inHg, cmHg, mmHg, kPa, Pa, MPa, Bar, mBar, Torr
- Flow: sccm, scs, sccm, slpm, slps, slph, scfm, scfs, scfh
- All of the above selected globally or per test program

Built-In Inputs/Outputs and Tooling Control
- Supplied 24VDC isolated internal power supply exclusively for I/O use (2.5A fused)
- 6 - 24VDC digital inputs (sinking)
- 6 - 24VDC digital outputs (sourcing)
- Tooling control for up to 5 motions with feedback

Leak Standards:
- External (via quick-disconnect port)
- Internal (with calibration valve)
  - Single
  - Dual
- All of the above selected globally or per test program
Self-Test Functions:
- Internal leak detection process
- Program calibration verification (when leak standard used)

RS232 Communication Ports:
- 2-Way Telnet communication
- Test result data transmission with selectable fields
- Pressure streaming (20 samples/sec)
- Report transmission
- Barcode unique part identification

Ethernet Port:
- 2-Way Telnet communication
- w/Email of reports, test data, and alerts
- EtherNet/IP™ Option
- 26 Inputs/25 Outputs
- Test result data transmission with definable fields
- Test program selection

USB Port:
- Backup/Restore
- Cloning
- Report storage
- Test result data storage & result synchronization (appends data when synchronized USB drive inserted)

Data Management & Storage:
- Up to 5,000 tests stored in on-board memory, expandable through USB port
- Statistic data tracking for trending capability
  - History length
  - Accept %
  - Reject %
  - Accept Average
  - Reject Average
  - Accept Std Deviation
  - Sample Size (since last reset)
- Resettable production counters:
  - Accept
  - Reject
  - Malfunction
- Test result log viewable on display

CTS Connect Actuator Ports Available:
- Up to max 5 - 3-way pneumatic tooling control valves to actuate pneumatic seals or tooling motions

Large 480 x 272 Pixel Full-Color LCD Display
- User-friendly icon-based menus
- Menu operating modes:
  - Basic (simplified)
  - Advanced (detailed)
- Graphing of Pressure or Flow vs. Time with plot position and zoom capability
- Displays active/inactive status of digital inputs & outputs

Digital Inputs:
- Each user configurable for:
  - Start
  - Vent/Halt
  - Stop/Reset
  - Hold
  - SPC Test Part
  - BCD Program Selection (1-31)
  - Program Calibration
  - Part Presence
  - Open Leak Standard
  - External Pressure Switch
  - Tooling Extend Feedback 1-5
  - Tooling Retract Feedback 1-5

Digital Outputs:
- User configurable for:
  - Program Accept
  - Program Reject
  - Malfunction
  - Severe Leak
  - Program Cal Mode
  - Prefill
  - In Fill
  - Fill Valve
  - In Stabilize
  - Isolation Valve
  - In Test
  - In Exhaust
  - In Relax
  - Program Cal Master
  - Program Cal Leak Standard
  - Test Passed
  - Test Failed
  - Below Low Limit
  - Between Limits
  - Above High Limit
  - Tooling Extend 1-5
  - Tooling Retract 1-5
  - Pressure Select

3-Color Light-Ring Indicator:
- Unique indicator per test port provides clear feedback of test results
- Colors:
  - White: In Test
  - Green: Accept
  - Red: Reject
- Brightness menu adjustable in 20% increments
- Duration menu adjustable:
  - Always On
  - Always Off
  - 3-Sec Accept/Reject
Key or Password Security:
- User selection of menu items to secure or unsecure
  - Calibration
  - Program Selection
  - Program Configuration
  - Instrument Configuration
  - Clear Test Data
  - Clear Counters
  - Hold Function
  - Reject Release
  - Monitor Screens

Multiple Menu Languages:
- User selectable:
  - English
  - Spanish
  - Chinese
  - Korean

Help Menus:
- On-screen popup window description of parameters (activated by single shortcut key)
- Minimizes need to have the equipment manual present when programming the instrument

Audible Alarm:
- For faults and reject result tests
  - Volume menu adjustable in 20% increments.

Compact Benchtop Design:
- Dimensions: 11.25” high x 9” wide x 15” deep (285 mm high x 230 mm wide x 380 mm deep)
  - Weight: Up to 40 lbs (configuration dependant)

Input Requirements:
- Electrical: 90-260VAC, 50/60 Hz
- Pneumatic:
  - Pressure Input = 20 psig above maximum test pressure, clean dry compressed air or nitrogen
  - Pilot Input (if required) = 90 psig, clean dry compressed air or nitrogen

Ambient Operating Conditions:
- Temperature: 41 to 109°F (5 to 40°C)
- Humidity: 90% (non condensing)

![Pressure vs. Time Graph](image)