CTS
CINCINNATI
TEST SYSTEMS

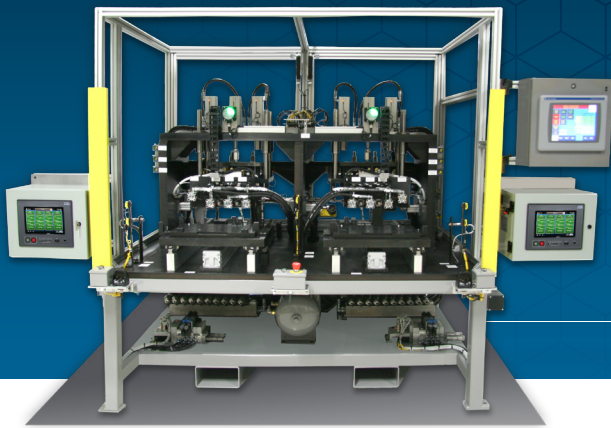*Your Global Leak
and Function Test
Solution Experts*

Sentinel
Blackbelt Pro™

MULTI-CHANNEL LEAK, FLOW, PRESSURE AND VACUUM INSTRUMENT

cincinnati-test.com

Blackbelt Pro Benchtop Instrument for Medical Industry Applications

Blackbelt Pro Wall Mount Instrument for Industrial Applications

The Standard for High-Productivity Multi-Channel Leak Testing

The Sentinel Blackbelt Pro™ streamlines leak testing processes by providing up to four individual testing channels with one fully integrated instrument.

Industry Applications

- Medical
- Automotive
- Industrial
- Consumer electronics
- Aerospace
- Military

## Blackbelt Pro Spotlight Features

- Available in Benchtop and Wall Mount units
- Configurable to provide up to 4 independent test ports
- Synchronous and asynchronous testing capability
- Sequential and conditional linked test capability
- On-board storage for 999 programs
- On-board storage for 1 million test results
- Flexible communication capability
  - Ethernet/Telnet, EtherNet/IP™, download, backup, and data storage via USB
- Digital I/O
  - Discrete instrument I/O, 18 inputs, 18 outputs, up to 8 tooling motions and tooling control
  - EtherNet/IP I/O - Additional 50 inputs / 53 outputs
- 21 CFR Part 11/EU Annex 11 compliant
  - User ID's, Smart Key, Audit Logging, and PDF Reporting
- 40+ million cycle valve manifolds

EtherNet/IP Communication

- System integration made easy
  - RJ45 interface connection
  - Reduces installation time
  - Simple 'plug-and-play' integration with PLCs
- Provides more I/O
  - 50 inputs / 53 outputs
- CTS EtherNet/IP™ is ODVA™ Conformance Tested for flawless operation and verified data exchange
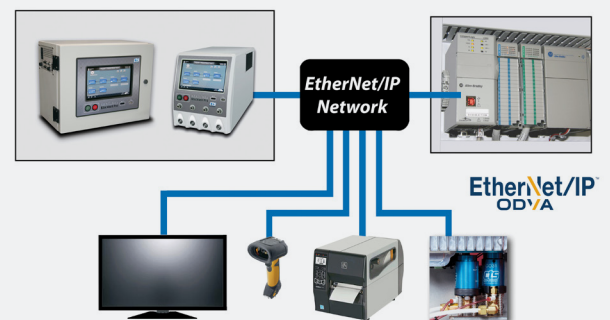
Leak, Flow, Pressure and Vacuum Testing in One Integrated Unit

Wall Mount Unit

The Blackbelt Pro Wall Mount is an industrial test instrument designed for leak, flow, pressure, and vacuum testing in automated or semi-automated processes. Its small footprint cabinet provides room for multi-channel hardware, wiring, and connections designed for easy installation and maintenance.

Easy access manual pressure regulators are located on the bottom of each cabinet for its 1 to 4 independent test ports. Optionally, the instrument can be equipped with electronic pressure regulators for programmable test pressure control.

The communications panel for the Wall Mount instrument is located on the left side of the instrument and provides connectivity to power, I/O, RS232, Ethernet, and USB.

Instrument Highlights

- Leak, flow, pressure, and vacuum testing in one instrument
- Small footprint multi-channel instrument: 16.9 W x 16.6 H x 10.3 D (inches)
- Integrated controls and pneumatics
- Concurrent, sequential, and conditional testing
- Test ports and pressure regulators are located on the bottom of the cabinet for easy access
- Standard ranges: -14.5 psig, 0.2-2 psig, 1-30 psig, 1-100 psig, 2-200 psig, 4-400 psig, and 5-500 psig
- Replacement control to the CTS legacy M24 instrument
- Complimentary control to the Sentinel I28

Three test channel configuration shown
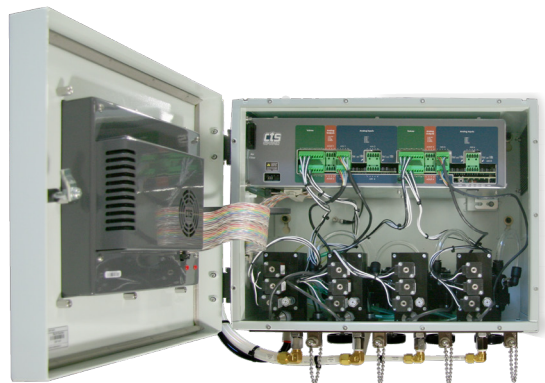
Four test channel configuration shown

Independent
Four Channel
Integrated Testing

One Blackbelt Pro instrument can replace 4 independent test instruments.

Benchtop Unit

The Benchtop unit is an advanced small packaged design integrated with controls and pneumatics to simultaneously manage and execute up to 4 independent tests, synchronously or asynchronously. Most commonly used for manual or semi-automated tests, the Benchtop is supplied with the test port connections on the front of the unit for easy connection.

Pressure regulators are located on the rear of the unit for manual adjustment; optional electronic pressure regulators are also available. As standard, the Blackbelt Pro Benchtop is equipped with 1, 2, 3, or 4 1/8 -inch FNPT test port connections.

The Benchtop's communications panel is located on the rear of the enclosure for connectivity to power, I/O, RS232, Ethernet, USB, and up to 8 pneumatic actuation circuits for sealing actuation.

Instrument Highlights

- Leak, flow, pressure, and vacuum testing all in one instrument
- Small footprint multi-channel instrument: 10.8 W x 12.9 H x 21.7 D (inches)
- Integrated controls and pneumatics
- Test ports on the front with LED operator lights
- 1, 2, 3, or 4 independent test channels
- Concurrent , sequential, and conditional testing
- Pressure regulators and electrical connections are located on the rear of the unit
- Standard ranges: -14.5 psig, 0.2-2 psig, 1-30 psig, 1-100 psig, 2-200 psig, 4-400 psig, and 5-500 psig
- Complimentary control to the Sentinel Blackbelt, providing enhancements meeting medical industry requirements

CTS pneumatic manifolds rated for 40 million cycle life

Sentinel Blackbelt®

The Sentinel Blackbelt benchtop instrument is the sister control to the Blackbelt Pro. The Blackbelt provides up to 4 port sequential part testing in a single instrument.

Blackbelt Pro: The Next Generation of Multi-Part Test Instruments

CTS World-Class Features

- Broad range of functional test types
- Absolute pressure transducers
- Pressure correction
- Auto calibration to leak standard

- 21 CFR Part 11 compliance
- "Quik Test" functionality
- Environmental drift correction

- Choice of manifold flow
- 2-year warranty
- 24/7/365 no-charge phone support

Available Test Types

Pressure or Vacuum Testing

- Pressure decay - ΔP
- Pressure decay over time - ΔP/ΔT
- Pressure decay to leak standard
- Occlusion (blockage)
- Pressure verify
- Flow
- Flow to leak standard
- Ramp to pressure event
- Ramp to input event
- Ramp to proof

Certified Performance

Cincinnati Test Systems supplies each standard Blackbelt Pro instrument with a N.I.S.T. Traceable Certificate of Calibration identifying multiple pressure and flow measurement points for its full range of operation.

Flexible Communications

- Ethernet/Telnet
- Ethernet/IP™ communications
- RS232 connections (two ports)
- USB - 3 ports
- Digital Hardware I/O
    - 18 inputs, 18 outputs with Tooling Control
    - All programmable
- Additional EtherNet/IP I/O
    - 18 inputs / 21 outputs pre-defined
    - 32 inputs / 32 outputs programmable
- Program selection:
    - Touchscreen, digital I/O, and RS232 download
- System backup and cloning
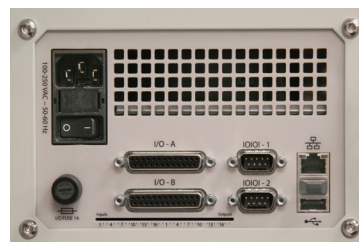
Operator Interface

- Large 9 inch touch screen hi-res 800 x 480 LCD display with graphics to display custom charts and XY graphs
- Touchscreen menu selection technology
- Two operation modes: basic and advanced
- Data security:
    - Multi-level password access
    - SmartKey™ technology
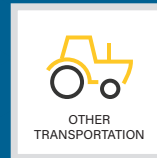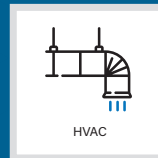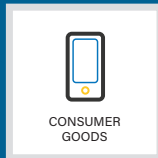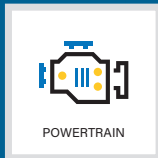   - 250 unique user IDs

Optional SmartKey™

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Your Global Leak and Function Test Solution Experts
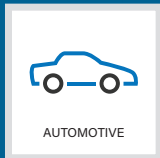
innomatec Leak Test Solutions

sciemetric

BETTER TOGETHER

CTS, innomatec and Sciemetric are subsidiaries of the TASI Group, within TASI's Product Integrity Division. We are unified by the fact that we are "Better Together". Together, we deliver the broadest leak test portfolio in the industry. Together, we serve our customers through a global network of offices and partners. Together, we will harness the power of the Industrial Internet of Things and bring all of its potential to industrial companies worldwide.

INDUSTRIES WE SPECIALIZE IN

| AUTOMOTIVE | POWERTRAIN | CONSUMER GOODS | MEDICAL | ENERGY | HVAC | OTHER TRANSPORTATION |

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