

M-1075-06z Instrument Specifications

Mass Flow Leak Detector

This is a compact instrument designed for the high speed testing of parts ranging in volume from several cubic-centimeters to several liters. InterTech's patented mass flow test technology results in a cost effective solution to the requirements of high speed testing.

World Leader in
Leak Detection
Technology

ISO 9001 Registered

Turnkey, Single
Source Capabilities

InterTech has the in-house resources required to assume single source responsibility for its products while maintaining outstanding quality and meeting delivery commitments.

Instrumentation
Air Leak Test Systems
Helium Leak Test Systems
Assembly and Test Systems
Functional Test Systems

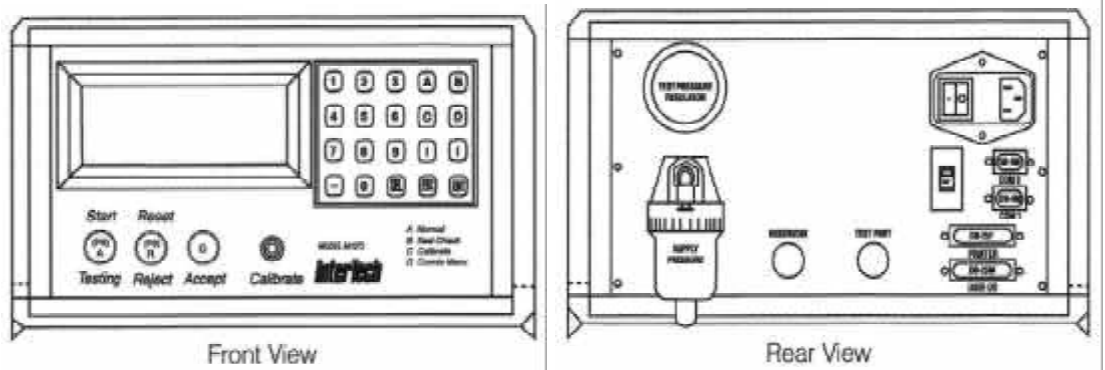
InterTech Development
Company
7401 N. Linder Avenue
Skokie, IL 60077, USA
T. 847.679.3377
F. 847.679.3391
www.intertechdevelopment.com



May be covered by one or more of the following U.S. patents:
No. 5,363,689
No. 5,161,410
No. 5,546,789
No. 6,279,383
No. 6,422,550

Specifications subject to change without notice

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October 12, 2003



Standard upstream testing, high speed operation, compact construction, and mass flow test technology instrumentation.

Test Technology and Operation

The mass flow transducer is connected to both the reservoir, and the test part. When this circuit is filled with air and isolated from the supply, any leak results in a flow of air from the reservoir to the test part through the transducer. The transducer output provides a direct measurement of leakage.

- Leak range: 0 - 20 sccm.
- Pressure range: 2 - 100 psig or 1 - 20 psig.
- Transducer repeatability: 0.05% F.S.D.
- Transducer sensitivity: 0.05% F.S.D.
- A/D Conversion: 14 bit, 1,000 samples/sec.
- Timer increments: 0.01 sec.
- NIST traceable calibration to less than 5% R&R.

Calibration

Calibration is NIST traceable using a transfer standard such as the CalMaster CM-15 which can be connected to the panel mounted calibration port. A menu driven sequence results in the independent calibration of instrument zero and span.

Operator Displays and Keypad

A highly legible 80 character 4 line vacuum fluorescent display, combined with a 20 key touch-pad, provides a user friendly and flexible operator interface.

- Password protection is a standard feature
- Amber, green, and red lights indicate test-in-progress, accept, and reject status
- User selectable language: English, German, French, and Spanish

Test Programs

Up to 99 different test programs may be selected.

Test Parameters include:

- Fill/bypass/stabilize times
- Minimum and maximum pressure limits
- Upper and lower accept limits
- Calibration factors

User selectable features include:

- Hold pressure on reject
- Quick/Early Pass
- Pre-Fill pressure to reduce test cycle time, stress part, and stretch (requires programmable regulator option)

Fail-Safe Operation

Test pressure and mass flow transducer status are monitored during each test cycle to ensure correct operation of all components of the test circuit. Fault conditions are signalled by a red light, error message, and test record entry. The trouble contact output can be programmed to energize after a user selectable consecutive number of rejects.

Test Displays and Menus

All functions are Menu driven with prompts for ease of use.

The normal test mode display includes:

- Test state: *Ready, Fill, Bypass, Stabilize.*
- Test status: *Accept, Cause of Reject.*
- Leak rate in sccm
- Real-time display of supply pressure, leak, and time remaining.

Seal check facilitates troubleshooting (continuous test state display, indicating time elapsed).

Counts display shows total accepts, rejects, and related statistics. Test program Edit Menu allows the on-site entry of new test programs and changes to existing programs without the need for a remote terminal. Additional menus prompt the user through calibration, print, and diagnostic functions.

Data Storage, Statistics & Communications

Up to (1000) test records may be stored in a buffer and include:

Part number, part name, date, time, test value, pass/fail status

Statistics calculated on the buffer records include:

*Mean, standard deviation
Mean ± 3 standard deviation*

Counts, accumulated since last "clear" command include:

Total - pass - fail

Buffer records, counts and statistics:

*Can be printed on demand
Cleared on demand or automatically on part changeover
Viewed on the counts display (not records)*

Individual test records are automatically transferred to the Com1 RS232 port at the end of each test, and can also be printed (user selectable) at that time. Bi-directional communications to interface with InterTech's S-3085 monitoring software (or customer network) are standard.

Set-up

The leak detector may operate as a stand alone instrument, or can be easily interfaced with a PLC or PC.

The test cycle is started and reset:

*Manually by depressing the front panel controls
By the PLC using digital start and reset inputs
By using the Com1 RS232 port*

In addition:

*The required test program is externally selectable using a BCD input (selector switch, PLC) or RS232 (PC)
Fixture control using anti-tie-down palm buttons, proximity switches, and solenoid valves are available*

Options

- Temperature compensation
- Programmable pressure regulation
- Customer specific pressure/vacuum ranges (*0.03-2 psig, 2-150 psig, 2-200 psig, 0-29" Hg*)
- Customer specific leak ranges
- High Pressure Balston Filter
- RS485 Com2 port
- Active Com2 RS232 port
- InterTech S-3085 Windows based software
- Barcode interface
- Profibus, Ethernet, Modbus TCP/IP, or CANbus interface

Specifications

- **Dimensions:** 15.75" D x 12.60" W x 6.77" H (400 mm x 320 mm x 172 mm)
- **Weight:** 26 lbs.
- **Power Supply:** 90-240VAC, 50/60Hz, 1Amp
- **Air Supply:** Clean, dry, and minimum 10 psig higher than test pressure
- **Inlet Filter:** 5 micron particulate filter
- **Pneumatic connections:** (1) test port, (1) air supply, (1) calibration port, (1) reservoir port
- **Test outputs(4):** 5-30VDC, 0.3 Amp Contact closures (accept, reject, trouble, testing)
- **Test inputs(2):** 24VDC Digital (test start & reset)
- **Fixture control:** (1) 24VDC digital input (anti-tie-down), (3) 24 VDC digital proximity switch inputs, (1) 5-30VDC 0.3 Amp contact closure output Note: Above test outputs also available
- **Program selection:** (2) BCD digits with strobe
- **Data Communications:** (1) RS232 port: Com1 data and control; Com2: serial port available for additional capabilities or RS485 option; (1) Parallel printer port
- **Operating System:** MS-DOS

User Tube Connections and Sizes

- **Air Supply Port:** 1/4 inch (standard) / 6 mm (metric) tube
- **Test Port:** 1/4 inch (standard) / 6 mm (metric) tube
- **Reservoir Port:** 1/4 inch (standard) / 6 mm (metric) tube
- **Calibration Port:** 1/8 inch (standard) / 4 mm (metric) quick connect type tube

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