

www.intertechdevelopment.com

Instrumentation

Air Test Systems

Helium Test Systems

Hydraulic Test Systems

Functional Test Systems

Integrated Assembly & Test

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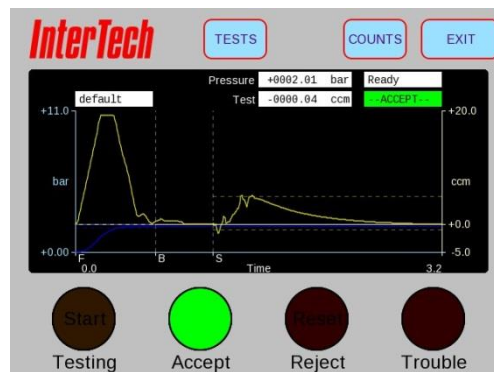
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This is a compact instrument designed for parts ranging in volume from several cubic-centimeters to several liters. InterTech's patented mass flow test technology results in a cost effective solution to the requirements of high speed testing.



Touch-screen control panel, real-time test cycle displays, Ethernet connectivity, and embedded Web page. User selectable language including English, French, Spanish, German, Chinese, and Korean



InterTech		TESTS	GRAPHS	EXIT
Clear				
Total Accept	1040	Zero Fault	0	
Total Reject	21	Reset	2	
Average	+0.594	Temp Comp Fault	0	
Std Dev	+2.424	Cal PreZero	+0.0000	
Upper Reject	5	Cal Zero	-0.1196	
Accept	1040	Cal Gain	+0.000	
Lower Reject	1	Cal Temp	+0.00	
Low Press	5	Total Cycles	1073	
High Press	3			
Scale Fault	5			
Bias Fault	0			
Valve Fault	0			

M1075-06y Instrument Specifications

Test Technology and Operation

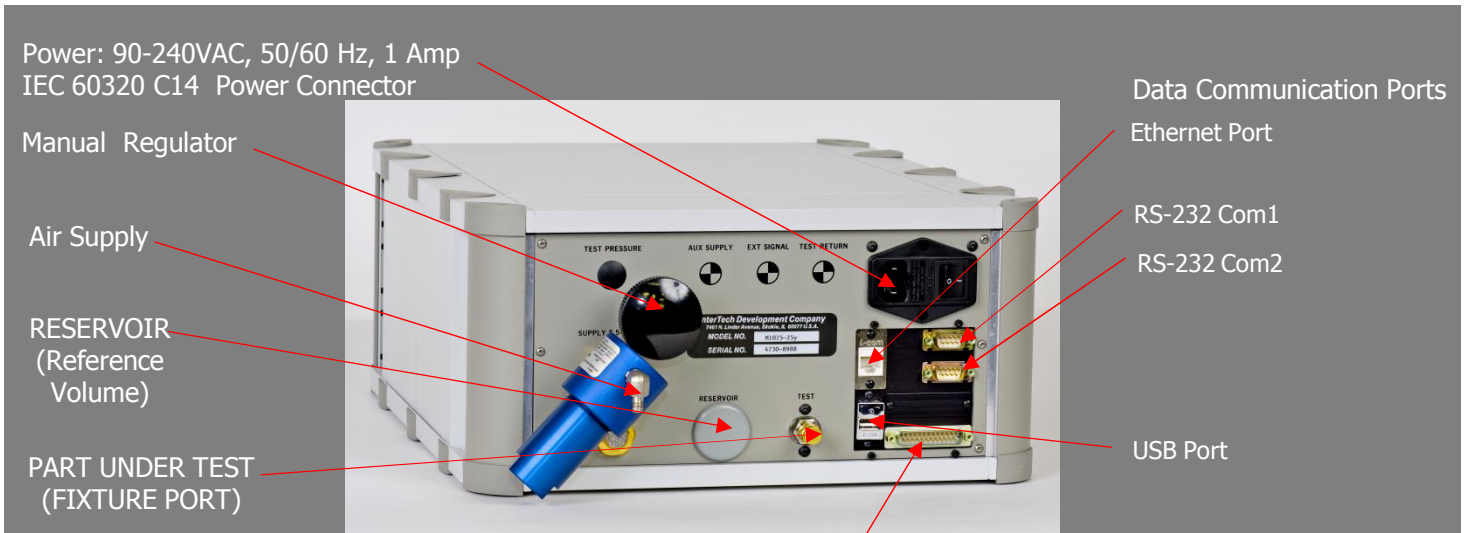
The mass flow transducer is connected to both the reservoir, and the test part. When this circuit is filled with air and isolated from the supply, any leak results in a flow of air from the reservoir to the test part through the transducer. The transducer output provides a direct measurement of leakage.

- Leak range: 0 - 20 sccm (standard)
- Pressure range: 2 - 100 psig (standard)
- 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.

User Connections and Controls



Pneumatic Connection

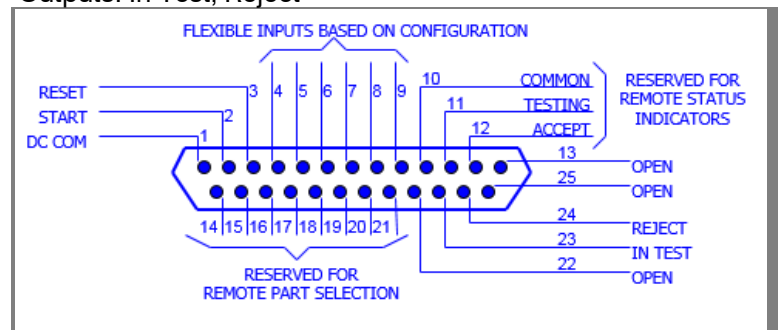
- Air Supply Port:
1/4 inch (standard) / 6 mm (metric tube)
- Test Port:
1/4 inch (6 mm) tube
- Reservoir Port:
1/4 inch (6 mm) tube or tank
- Calibration Port (front side):
1/8 inch (4 mm) quick connect type tube

Communication Connection

- USB Ports:
Upload/download data files
and program restore/backup
- RS-232 Com1 Port – data and control
- RS-232 Com2 Port – serial port available for additional capabilities or RS485 option
- Ethernet Port to connect with factory/host network (TCP/IP)
- Embedded web page server for remote viewing of instrument data and files

User I/O Connection

- 25-Pin male user I/O Port
- Inputs: Start, Reset, Part Select
- Outputs: In Test, Reject



Note: (2) 25-Pin I/O Connectors available as an option

Operator Touchscreen Displays

6.5 inches color monitor with touch-screen key-pad provides a user friendly and flexible operator interface.

- ~ Password protection is a standard feature
- ~ Amber, green, red displays indicate test-in-progress, accept, reject, and trouble status
- ~ Keypad functions
- ~ User selectable language: *English, German, French, Spanish, Chinese, and Korean*

Test Displays and Menus

All functions are Menu driven with touch-screen 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
- ~ Real-time test graph shows trace of test transducer verses cycle time (with upper and lower user specified limits).
- ~ Gauge R&R screen display of test records, automatically calculates R%R percentages based on the number of trials.
- ~ Display of all test records (up to 40,000,000) can be downloaded to USB drive

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.

Test Setup

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

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 signaled 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 Programs

Up to 99 different test programs may be selected.

Test parameters includes:

- ~ 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 (optional)
- ~ Pre-Fill pressure to reduce test cycle time, stress part, and stretch (requires programmable pressure regulator option)

Data Storage, Statistics & Communications

Two USB Ports are included for storing test records to the Thumb-Drive.

Up to 40,000,000 test records may be stored in a buffer and include:

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

Statistics calculated on up to the last (1000) test records include:

- Mean, standard deviation
- Mean \pm 3 standard deviation

Counts, accumulated since last "clear" command include:

Total – pass – fail

Buffer records, counts, and statistics:

- Can be recorded 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) is standard.
- Past records viewable on demand
- Copy part parameters (.pdf) to the USB Thumb-drive
- USB backup/restore system & configuration file to the Thumb-drive
- Download test records to the USB Thumb-drive
- Save R&R study (.pdf) to the USB Thumb-drive

Specifications

- “ **Dimensions:** 16.54” D x 13.97” W x 6.61” H (420 mm x 355 mm x 168 mm)
- “ **Touch-Screen Display:** 6.5 inch color monitor, 640 x 480 resolution
- “ **Weight:** 26 lbs.
- “ **Power Supply:** 90-240VAC, 50/60Hz, 1Amp, IEC 60320 C14 Power Connector (Mating connector requires IEC 60320 C13 power cord)
- “ **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.
- “ **Program selection:** (2) BCD digits with strobe
- “ **Data Communications:** (2) RS232 ports (Com1 & Com2) data & control serial ports available for additional capabilities or RS485 option; 2) USB Ports data & program restore/backup, (1) Ethernet Port - (see TU-113 for further details)

Options

- “ Temperature compensation (ambient \pm 5° C)
- “ Programmable pressure regulation
- “ Customer specific pressure ranges (0.03-2 psig, 2-150 psig)
- “ Customer specific leak ranges (0 - 4 sccm, 0 – 40 sccm, 0 – 80 sccm, 0 – 400 sccm)
- “ Combination of both pressure and vacuum construction
- “ Additional (2) 25-Pin I/O connectors (20 digital inputs, 20 digital outputs) for user machine/fixture controls
- “ Fast fill (large volume)
- “ Early pass
- “ External vent
- “ Auto calibration feature (under machine control)
- “ Active Com2 RS232 port
- “ Barcode reader interface
- “ Profibus, Modbus TCP/IP, or CANbus interface