

InHumid Test Module

High Parallel Test of Environmental Sensors

Applications

- single insertion test of environmental sensors: barometric pressure, temperature, humidity, (selected) gases
- other MEMS applications for same base handler available

Facts

- high parallel test in structures, i.e. strips, panels, or carriers
- scalable, modular architecture: convertible to various sensor applications and package types
- support of a large variety of packages incl. tiny and fragile packages
- robust handling with minimum number of device contacts and low jam rates
- real-world (physical) sensor stimuli with high accuracy

with Gas Option



Solution for

- all leaded and leadless packages, including tiny and fragile devices
- typical carrier size 215 x 65 mm
- strip sizes from 40 x 150 mm to 70 x 230 mm
- tri-temp test from -40° C to +125° C

environmental sensor test equipment

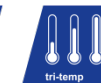
standard strip handler



physical stimuli module



peripherals



InHumid Test Module



High Parallel Test of Environmental Sensors

1. Base System

- 1.1 InHumid Module
 - module for physical stimulation of barometric pressure, humidity, and gas sensors
 - compatible with Multitest InStrip test handler for automatic strip or carrier handling, compliant to InCarrier process
 - seamless uplift from Multitest InBaro barometric pressure module (in-field)
 - option for gas test
 - enabling high parallel test based on 2400 signal lines
- 1.2 Supplementary Equipment for Pressure, Humidity and Gas Test
 - pressure generator, e.g. Mensor 9415-LP
 - humidity generator Adrop AgeproV4XC
 - gas supply of test gases (for gas test option)
- 1.3 Temperature Test Options
 - -40° C to +125° C for barometric pressure test
 - +10° C to 70° C for humidity and gas test
 - cooling medium: LN2
 - chiller option on request
- 1.4 Test Interface
 - tester interface: IEEE 488.2 (TCP/IP optional)
 - pressure control from tester: via RS232 (Mensor 9415-LP)
 - humidity / gas control from tester: via RS232 / USB (Adrop)
- 1.5 Human Machine Interface
 - panel PC with 15" touch screen, Windows 7
 - remote recipe management
 - user configurable menus and run-screen
 - online help system

2. Conversion

- 2.1 Conversion Style
 - package / strip style conversion
- 2.2 Conversion Time
 - package conversion time required: <30 min, depending on number of parts that need to be converted
 - only 1 person necessary
- 2.3 Adjustment / Calibration after Conversion
 - semi automatic adjustment at InStrip, e.g. width adjustment of conveyer system

3. Packages

- 3.1 Possible Package Style
 - singulated packages (with InCarrier process)
 - packages in strips (e.g. leadframes, BGA strips)
 - package types: leaded and leadless devices (e.g. BGA, LGA, QFN, MLF, WLCSP, SOIC, SOT, QFP)

4. Contacting

- 4.1 Number of Contact Sites
 - max. number of pins tested simultaneously: 2400
- 4.2 Type of Contacting
 - typical: spring probe
- 4.3 Typical Contact Force:
 - 30 g / pin

5. Performance

- 5.1 Pressure
 - range: 100 mbar – 1.5 bar absolute pressure
 - pressure ports: 5
 - pressure settling time: < 1 sec (typ with Mensor pressure generator)
 - accuracy control: 0.01 % FS (with Mensor pressure generator)
 - leakage at maximum pressure delta to ambient pressure: < 10 mbar/min (w/o tank attached), < 1 mbar / min (with Mensor tank attached); no pressure drop in control mode
 - calibration sensor accuracy: 0.01 % IntelliScale-50
 - temperature: -40° C to +125° C
- 5.2 Humidity
 - relative humidity: 5 %...80 % (...85 % on request)
 - dew point: -20° C...50° C (65° C on request)
 - accuracy: ±1 % RH, stability: ±0.5 % RH
 - optional: ref sensors in homogeneous humid air stream next to DUT's
 - temperature: +10° to +70° C
- 5.3 Gas
 - environmental gases, e.g. CO, NO2, H2
 - up to 2 different test gases
 - uplift option (in-field) to InHumid module
 - temperature: +10° C to +70° C
- 5.4 Temperature
 - temperature range: application dependent pls. s. under "performance"
 - accuracy at contact site: ± 1° C
 - stability at contact site: ± 0.5° C
 - uniformity across strip/carrier: ± 0.5° C
 - reading accuracy: PT100 class A system sensor, optional PT100/PT1000 class y (1/3 B) reference sensors at DUT's
- 5.5 Throughput
 - dependent on tester capability (number of parallel contact sites, number of devices, layout of a panel, test time)
 - index time: 1 s (note: indexing for barometric test only; no indexing for humidity/gas test)
 - strip exchange time: 6 s
 - soak time: 6 s / 60°C (typical)

6. Facility Requirements

- 6.1 Supply Requirements
 - InStrip test handler: see InStrip fact sheet
 - InHumid/Gas Module supplied by InStrip handler
 - Mensor pressure generator 200-240 V, 47-63 Hz, max. 1000 W; shop air supplied by InStrip base unit
 - Adrop humidity/gas generator: 1x 230 V AC, max 6.3 A; dry air max. 6 l/min
- 6.2 Weight InHumid Module: 100 kg
- 6.3 Size InHumid Module: 100 cm x 60 cm x 30 cm
- 6.4 Mobility
 - InStrip+InHumid+loader/unloader moveable on caster by 2 persons as one system; pressure generator and humidity generator to be moved separately

7. Compliance and Standards

- 7.1 Compliant to CE, E142

All performance figures such as MTBF, MTBA, Uptime, Yield, Jam Rate, Life Span, Cleaning Cycles etc. can vary with specific package type, test program and / or specific application environment. They assume that only original Multitest spare and consumable parts are used, recommended maintenance intervals and procedures are respected, operators/maintenance technicians have successfully participated in formal equipment training by Multitest to the appropriate level, and only Multitest approved software is used on the systems. Multitest assumes no warranty or liability if any of these requirements is not met. All listed data are for information only. For binding specification

