InHumid Test Module

High Parallel Test of Environmental Sensors

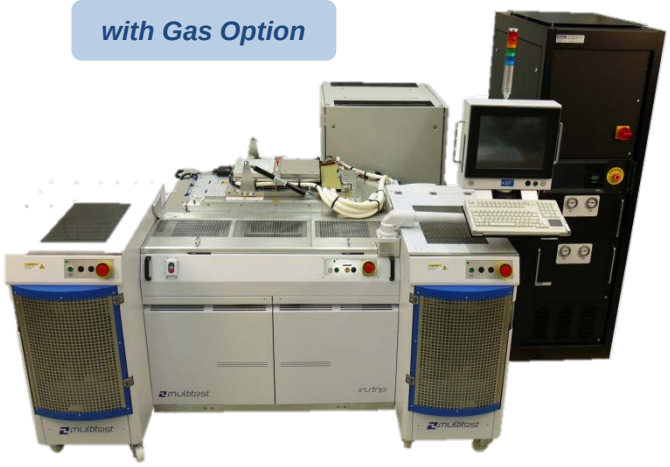
Applications

- 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 30 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**

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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 menues 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

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