

Sensor Tester IST01



Sensor Tester for Piezoelectric Accelerometers.

Tests accelerometers working according to the ICP[®] / IEPE principle (constant current supply)

- Checks for short circuit between housing, shield and signal wire
- Measures and displays the bias voltage
- Tests PT 100 and PT 1000 temperature sensors
- Measurement mode displaying vibration velocity mm/s RMS
- Display language selectable German, English, French

The sensor tester is designed for the quick check of acceleration sensors, which operate on the principle IEPE (ICP[®]). These sensors are supplied with a constant current, which the tester provides. The test sequence is started by pressing a button, and runs all meaningful tests for the respective sensor type automatically. The test result will be displayed in meaningful messages on the 4-line display. The tester alone is not able to measure the sensor's sensitivity, as a known vibration excitation would have to be applied to the sensor. An additional vibration exciter (shaker) could be used for this. The tester is then used in measurement mode, measuring vibration velocity in mm/s RMS.

How it works:

The sensor is connected with terminals on flying leads, or a matching interface cable from the tester. The sensor model is selected in the tester's menu. By pressing a button the test procedure begins, first testing for short circuits between the terminals and also to the housing. Subsequently, the tester supplies the sensor with a constant current of 4 mA and measures the bias voltage (DC voltage average) over the sensor and displays it. Any errors are indicated through meaningful messages in the display. In measurement mode, vibration velocity [mm/s RMS] is measured using the connected accelerometer. When the sensor is exposed to a defined vibration, for example on a vibration exciter, the sensor sensitivity can be checked.

Examples of display messages:

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|--|---|---|
| <pre> Sensorcheck Connect sensor and press Start Start Mode </pre> | <pre> Result: Bias: 11,4V Sensor OK Start Mode </pre> | <pre> Result: Bias: 0,0V 1 Error: Bias error Short U+ -> U- Start Mode </pre> |
| <pre> Result: Bias: 0,0V 2 Errors: Bias error Short shield -> U- Start Mode </pre> | <pre> Vibration 100 mV/g 0,00 mm/sec RMS Bereich: 10 mm/sec Bereich Modus </pre> | <pre> Vibration 10 mV/g 0,39 mm/sec RMS Bereich: 10 mm/sec Bereich Modus </pre> |

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Technical specifications

- Measurements: - Short circuit or interruption of connections, depending on the selected sensor type.
 - Bias voltage
 - Vibration velocity mm/s RMS
 - Resistance of PT 100 / PT 1000 element
- Case: Aluminum enclosure IP20
 Dimensions 175 x 115 x 35 mm (W x H x D), plus connectors
 Display 4 x 20 characters, backlit
- Sensor Connections: Sensor signal
 Sensor ground
 Shield
 Case
 Temperature sensor signal
 Temperature sensor ground
- Testable sensor types IBIS AE100.xxx.xxx
 IBIS AE10.xxx.xxx
 IBIS AI100.xxx.xxx
 IBIS AI10.xxx.xxx
 IBIS AI100.xxx.TR
 IBIS AM100.xxx
- Other piezoelectric accelerometers with supply by the constant current principle
 (ICP® / IEPE)
- Power Supply: 24 VDC (90 to 230 VAC using included mains adapter)
- Measurement Ranges: Bias Voltage 0 – 24 Volts
 For Sensors with 100 mV/g:sensitivity
 vibration velocity: 0,1 - 10 / 20 / 40 / 80 mm/s RMS

Versions and Order Numbers:

| Part Name | Description | Order-Number |
|--------------------|--|--------------|
| Sensortester IST01 | Sensor tester for accelerometers 100mV/g, or 10 mV/g, Temperature sensor PT100 | IST01 |
| Adapter cable A001 | For Sensor types AE, AI without temperature sensor | IST-A001 |
| Adapter cable A002 | For Sensor types with temperature sensor | IST-A002 |
| Adapter cable A003 | For Sensor types AM with M12 connector | IST-A003 |
| Adapter cable A004 | With flying leads at sensor side | IST-A004 |

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