



Nederlands Meetinstituut

Test certificate

Number **TC2272** revision 13
 Project number 307231
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Issued by NMI Certin B.V.
 Hugo de Grootplein 1
 3314 EG Dordrecht
 The Netherlands

Notified Body Number 0122

In accordance with Paragraph 8.1 of the European Standard on Metrological aspects of non-automatic weighing instruments EN 45501:1992/AC:1993 and by application of the OIML International Recommendation R 60 (Edition 1991). The applied error fraction p_j , meant in the paragraph 3.5.4. of the standard is 0.7.

Applicant Vishay Tedea-Huntleigh
 5a Hatzoran St.
 Netanya, 42506
 Israel

In respect of The model of a **shear-beam load cell**, with strain gauges, tested as a part of a weighing instrument.

Manufacturer : Vishay Tedea-Huntleigh
 Type : 3510 and 3510 B

Characteristics

| | | | | | | | |
|--|--|------|-------|--|-------|-------|-------|
| Maximum capacity (E_{max}) | 300, 450, 500, 750, 1000, 2000, 3000 and 5000 kg or 1000, 1500, 2500, 4000 and 5000 lb | | | 300, 450, 500, 750, 1000 and 1200 kg or 1000, 1500 and 2500 lb | | | |
| Accuracy Class | C | | | | | | |
| Maximum number of load cell intervals (n) | 1000 | 2000 | 3000 | 3000 | 4000 | 5000 | 6000 |
| Ratio of minimum LC Verification interval $Y = E_{max} / V_{min}$ | 4000 | 8000 | 12000 | 12000 | 16000 | 20000 | 24000 |
| Ratio of minimum dead load output return $Z = E_{max} / (2 * DR)$ | 1333 | 2667 | 4000 | 8000 | 5333 | 6667 | 8000 |

In the description TC2272 revision 13 further characteristics are described.

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Description and documentation The load cell is described in the description number TC2272 revision 13 and documented in the documentation folder number TC2272-8, appertaining to this test certificate.

Remarks Summary of the test involved: see Appendix number TC2272 revision 13.
This revision test certificate replaces the earlier version, except for its documentation folder.

Delft, 29 October 2003
NMI Certin B.V.

P.P.M. van Enkevort
Manager Certification Delft

1 General information about the load cell

All properties of the load cell, whether mentioned or not, may not be in conflict with the standard mentioned in the test certificate.

1.1 Essential parts

| Description | Drawing number | Rev. | Remarks |
|----------------|----------------|------|--------------------------|
| Model 3510 | 2AY007 | 12 | kg capacities, 2.02 mV/V |
| Model 3510 "B" | 2AY047 | 5 | kg capacities, 2 mV/V |
| Model 3510 | 2AY027 | 6 | lb capacities, 3.03 mV/V |
| Model 3510 | 2AY008 | 11 | kg capacities, 2.02 mV/V |
| Model 3510 | 2AY017 | 9 | -- |
| Model 3510 | 2AY018 | 9 | -- |

Cable:

The load cell is provided with a 4-wire or a 6-wire system.

Because no "remote-sensing" is used for the 4-wire system the cable length has to be approximately 5 meters.

The cable should be a shielded cable, the shield may be connected to the load cell.

1.2 Essential characteristics

| | |
|------------------------|--|
| Minimum dead load | : 0 kg |
| Safe overload | : 150 % of E_{max} |
| Rated Output | : 2.02 mV/V \pm 1.1% (kg versions) 3.03 mV/V \pm 1.1% (lb versions) |
| Input impedance | : 400 Ω \pm 20 Ω or 1110 Ω \pm 30 Ω |
| Output impedance | : 350 Ω or 1000 Ω |
| Recommended excitation | : 10 V DC/AC |
| Transducer material | : Stainless Steel |
| Atmospheric protection | : Hermetically sealed (T.I.G. welded) |



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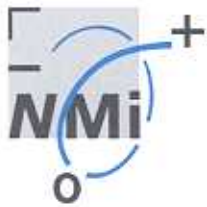
1.3 Essential shapes

The load cell is built according to drawing as mentioned under chapter 1.1.

The data plate is sealed against removal or will be destroyed when removed. The data plate mentions at least the information and markings as described in the OIML R60 document. In the countries where it is mandatory the load cell should bear this test certificate number: TC2272

Securing:

The connecting cable of the load cell or the junction box is provided with possibility to seal.



Tests carried out for this test certificate on the load cell 500 kg C3 and 300 kg C6:

| Test | Institute | Remarks |
|--|-----------------|---------|
| Temperature test and repeatability (20, 40, -10 and 20 °C) | NMi Certin B.V. | -- |
| Temperature effect on minimum dead load output (20, 40, -10 and 20 °C) | NMi Certin B.V. | -- |
| Creep test (20, 40 and -10 °C) | NMi Certin B.V. | -- |
| Minimum load output return (20, 40 and -10 °C) | NMi Certin B.V. | -- |
| Barometric pressure test at room temperature | NMi Certin B.V. | -- |
| Humidity test | NMi Certin B.V. | -- |