



NATIONAL WEIGHTS AND MEASURES LABORATORY

The National Weights & Measures Laboratory

TEST CERTIFICATE NUMBER GB-1226

Issued by: National Weights and Measures Laboratory
Stanton Avenue
Teddington
Middlesex TW11 0JZ
United Kingdom

Notified Body Number 0126

In accordance with - Paragraph 8.1 of the European Standard EN45501:1992. The applied error fraction p_{LC} with reference to paragraph 3.5.4 of this standard is 0.7.
- OIML R60, Edition 1991E


Applicant: Vishay Transducers Israel
2 Hazoran Street
New Industrial Zone
P.O. Box 8381
Netanya 42506
Israel

In respect of: The model of a 'S' type strain gauged, beam (bending) load cell
Manufacturer: Zelo Konstruktions und Vertriebs GmbH
Type: SWZ

Characteristics: Accuracy class C3
Further details are provided in the Descriptive Annex

Description and documentation: The load cell is described in the Descriptive Annex.
Documents appertaining to this test certificate are held by the National Weights and Measures Laboratory.

Remarks: The load cell has been tested and found to conform with the relevant parts of OIML R60, Edition 1991E and WELMEC Guide 2.4. A summary of the tests carried out in support of this certificate is provided in the Descriptive Annex.

Signature: 

M A Bokota
for Chief Executive
National Weights and Measures Laboratory

Date: 22 June 2006
Reference: STD 8438

TEST CERTIFICATION NO GB-1226

Descriptive Annex

1 TECHNICAL DATA

The technical characteristics which are necessary to use this load cell as a module in a Type Approval Certificate are presented in Table 1.

Table 1 Technical Characteristics

Classification		C3	
Additional marking		-	
Maximum No. of LC verification intervals	n_{LC}	3000	
Maximum capacity in kg	E_{max}	500, 1000, 2000 and 5000	kg
Minimum dead load relative	E_{min}/E_{max}	0	%
Ratio of minimum LC verification interval	$Y=E_{max}/V_{min}$	6250	
Ratio of minimum output deadload return	$Z=E_{max}/(2*DR)$	6820	
Rated output	C	2	mV/V
Maximum excitation voltage		10	V
Input impedance	R_{LC}	400 ± 20	
Temperature rating		-10 / +40	C
Safe overload relative	E_{lim}/E_{max}	150	%

2 TESTS

The tests listed in the Table 2 have been carried out in accordance with OIML R60, Edition 1991E at the National Weights and Measures Laboratories and are documented in Test Report No. TR:00388 (tension) that include 24 pages and TR:00339 (compression) that includes 26 pages.

The tests were performed on the following load cell model SWZ in tension and compression:

Serial Number:	10898
Class:	C
E_{MAX} :	500 kg
n_{LC} :	3000
Y:	6250
Z:	6820

Table 2: Tests performed.

Test	R60/R60A No.	Pass/fail
Temperature test and repeatability (at 20, 40, -10 and 20 °C)	15.1 & 5.1 & 9.0 / A1, A2, A3	+
Temperature effect on minimum dead load output (at 20, 40, -10 and 20 °C)	15.1 & 10.1.3 / A1 & A4	+
Creep test (at 20, 40, -10 and 20 °C)	15.2 & 7.1 / A5	+
Minimum dead load output return (at 20, 40, -10 and 20 °C)	15.3 77.2 / A5	+
Barometric pressure effects at room temperature*	15.4 & 7.2 / A6	+
Humidity tests*	15.5 & 7.3 / A7	+

* Tested in compression only

- + The load cell has passed the test
- The load cell has failed the test
- / The test is not applicable

3 DESCRIPTION OF THE LOAD CELL

A stain gauged 'S' type bending beam load cell constructed from stainless steel. The load cell is welded hermetically sealed against moisture. The load cell has a 6 wire, polyurethane jacket, cable with dual floating screen and a standard length of 5 metres.

A drawing of the Model SWZ load cell is presented in figure 1.

4 DOCUMENTATION

The test results and documentation giving a full description of the load cell are kept by National Weights and Measures Laboratories together with the following drawings:

Drawing No.	Description
2BE017	Technical Construction Drawing. Capacities: 500 kg, 1000 kg and 2000 kg.
2BE018	Technical Construction Drawing. Capacity: 5000 kg
2BE007	Specification Sheet. Capacities: 500 kg, 1000 kg and 2000 kg
2BE008	Specification Sheet. Capacity: 5000 kg

5 VALIDITY OF CERTIFICATE

The validity of this certificate assumes that the manufacturing process, materials and sealing of the production load cells are in accordance with that of the tested pattern. Any significant changes are only allowed with the permission of National Weights and Measures Laboratory.

6 ILLUSTRATIONS

Figure 1 Model SWZ load cell

7 TEST CERTIFICATE HISTORY

ISSUE No.	DATE	DESCRIPTION
GB-1226	22 June 2006	Test certificate first issued
	-	There have been no revisions