**National Conference on Weights and Measures**
15245 Shady Grove Road, Suite 130 • Rockville, MD 20850



# *National Type Evaluation Program*
## *Certificate of Conformance for Weighing and Measuring Devices*

**For:**
Force Transducer (Load Cell)
Double End Shear Beam
Model: H9C Series (see table page 2)
$n_{max}$: Class III Multiple Cell: 5000
Class III L Multiple Cell: 10 000
Capacity: 20 000 lb to 200 000 lb
Accuracy Class: III/IIIL (see table page 2)

**Submitted by:**
Zemic (USA) Inc.
12000 E. Slauson Ave. #15
Santa Fe Springs, CA 90670
Tel: (626) 938-0200
Fax: (626) 938-0202
Contact: Jaime San Pedro

### Standard Features and Options

The H9C Series is identified by the Model Number H9C-XX, where the XX suffix represents the load cell capacity in thousands of pounds.

Nominal output: 3mV/V
Cable: 4-wire design
Material: Alloy Steel
Nominal Input Impedance: 700 ohms

**Load Cell Parameters**: See Page 2

Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

This device was evaluated under the National Type Evaluation Program (NTEP) and was found to comply with the applicable technical requirements of Handbook 44, "Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Mike Cleary
Chairman, NCWM, Inc.

Don Onwiler
Chairman, National Type Evaluation Program Committee

Issue date: February 14, 2007

**ZEMIC (USA) Inc.**
**Force Transducer (Load Cell)**
**Model: H9C Series**

**Application:** The load cells may be used in Class III or Class III L scales for multiple cell applications consistent with the model designations, number of scale divisions, and parameters specified in this certificate. Load cells of a given accuracy class may be used in applications with lower accuracy class requirements provided the number of scale divisions, the $v_{min}$ values, and temperature range are suitable for the application. The manufacturer may market the load cell with fewer divisions $n_{max}$ and with larger $v_{min}$ values than those listed on the certificate. However, the load cells must be marked with the appropriate $n_{max}$ and $v_{min}$ for which the load cell may be used.

**Identification:** A pressure sensitive identification badge containing the manufacturer, model designation, and serial number is located on the load cell. All other required information, if not marked on the load cell, must be on an accompanying document including the serial number of the load cell.

**Load Cell Parameters:**

| Model Number | Capacity (lb) | Multiple Cell, Class III $v_{min}$ (lb) | No. of Inc. $n_{max}$ | Multiple Cell, Class III L $v_{min}$ (lb) | No. of Inc. $n_{max}$ | Minimum Dead Load (lb) |
|---|---|---|---|---|---|---|
| H9C-20K | 20 000 | 1.32 | 5000 | 0.67 | 10 000 | 200 |
| H9C-25K | 25 000 | 1.65 | 5000 | 0.83 | 10 000 | 500 |
| H9C-30K | 30 000 | 1.98 | 5000 | 1.00 | 10 000 | 500 |
| H9C-40K | 40 000 | 2.64 | 5000 | 1.33 | 10 000 | 500 |
| H9C-50K | 50 000 | 3.30 | 5000 | 1.67 | 10 000 | 1000 |
| H9C-60K | 60 000 | 3.96 | 5000 | 2.00 | 10 000 | 1000 |
| H9C-75K* | 75 000 | 4.95 | 5000 | 2.50 | 10 000 | 1500 |
| H9C-100K | 100 000 | 6.60 | 5000 | 3.33 | 10 000 | 2000 |
| H9C-125K | 125 000 | 8.25 | 5000 | 4.16 | 10 000 | 2000 |
| H9C-150K | 150 000 | 9.90 | 5000 | 5.00 | 10 000 | 3000 |
| H9C-200K | 200 000 | 13.20 | 5000 | 6.66 | 10 000 | 4000 |
| * Two load cells submitted for evaluation | | | | | | |

**ZEMIC (USA) Inc.**
**Force Transducer (Load Cell)**
**Model: H9C Series**

**Test Conditions:** Two Model H9C 75k (75 000 lb capacity) load cells were tested at NIST using dead weights as the reference standard. The data were analyzed for multiple load cell applications. The cells were tested over a temperature range of -10 °C to 40 °C. Three tests were run on each cell at each temperature. The temperature effect on zero was measured and a time dependence (creep) test was performed. The barometric pressure test was waived due to the insensitivity of the load cell design to changes in barometric pressure.

**Evaluated By:** T. Bartel (NIST Force Group, NIST Office of Weights and Measures)

**Type Evaluation Criteria Used:** NIST Handbook 44, 2007 Edition; NCWM Publication 14, 2006 Edition

**Conclusion:** The results of the evaluations and information provided by the manufacturer indicate the devices comply with applicable requirements.

**Information Reviewed By:** S. Patoray (NCWM), L. Bernetich (NCWM)

**Example of Model H9C Series:**

**H9C**