NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance

for Weighing and Measuring Devices

For:
Load Cell
Models: Z Family
n_{max}: Single Cell III (see below)
n_{max}: Single Cell III L: 10 000
Capacity: (see below)
Accuracy Class: III and III L

***Submitted By: Contact Info. Updated: December 09**
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Standard Features and Options

The specific model of load cells covered by this certificate are identified by the capacity of each load cell represented.

Load Cell Parameters:

Model	Capacity (lb)	Class III – Single		Class III L – Single		Minimum Dead Load (lb)
		v_{min} (lb)	n_{max}	v_{min} (lb)	n_{max}	
Z-50	50	0.005	5 000	0.0025	10 000	5
Z-100	100	0.010	5 000	0.005	10 000	5
Z-250	250	0.035	3 000	0.025	10 000	10
Z-500	500	0.070	3 000	0.050	10 000	10
Z-1,000	1 000	0.140	3 000	0.100	10 000	10

Nominal Output:
- 2 mV/V

Temperature Range: -10 ºC to 40 ºC (14 ºF to 104 ºF)

This device was evaluated under the National Type Evaluation Program and was found to comply with the applicable technical requirements of "NIST 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.

Randy Jennings
Chairman, NCWM, Inc.

Judy Cardin
Chairman, National Type Evaluation Program Committee
Issued: December 8, 2009

Cardinal Scale Manufacturing Co.

Load Cell / Z Family

Application: These load cells may be used in both Class III and III L scales for both single and 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 load cells with fewer scale 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: The manufacturer name, model designation, and serial number are located on an identification plate mounted on the load cell. A document with a matching serial number and the remainder of the required information accompanies the load cell.

Test Conditions: This certificate supersedes Certificate of Conformance Number 88-166A1 and is issued to include the 50 lb and 100 lb capacity load cells. The current and original test conditions are listed below.

Certificate of Conformance Number 88-166A1: One 50 lb capacity load cell was tested using dead weights as the reference standard. The data were analyzed for both single and multiple load cell applications. The cell was tested over a temperature range of -10 to 40 °C. Three tests were run on the 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.

Certificate of Conformance Number 88-166: One 500 lb capacity load cell was tested to capacity using dead weights. The data were analyzed for both single and multiple load cell applications. The cell was tested over a temperature range of -10 to 40 °C. Three tests were run on the 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. The manufacturer's laboratory was used to collect the test data.

Evaluated By: NIST Force Group, NIST Office of Weights and Measures, and G. Castro (CA)

Type Evaluation Criteria Used: NIST, Handbook 44: Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices, 1993. NCWM, Publication 14: Weighing Devices, 1993.

Conclusion: The results of the evaluation and information provided by the manufacturer indicate the device complies with applicable requirements.