

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

For:
 Load Cell
 S-Type, Tension
 Model: 9363 Series*
 n_{max} : Single Cell, Class III: 3000 and 5000
 n_{max} : Single Cell, Class III L: 10 000
 Capacity: 100 lb to 10 000 lb, 50 kg to 5.0 t

 Accuracy Class: III/III L

Submitted by:
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Standard Features and Options

*The specific load cell capacities, v_{min} values and minimum dead loads covered by this Certificate are listed in the tables on Page 2. The 9363 Series is identified by the model designation 9363-X₁X₂-YK-Z₁Z₂Z₃Z₄ where:

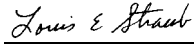
9363-	X ₁	X ₂ n_{max}	YK	Z ₁	Z ₂	Z ₃	Z ₄
	A = Class III B = Class III L	3 = 3000 5 = 5000 10 = 10 000	capacity in thousands of pound (e.g., 5K = 5000 lb)	electrical cable length	features which have no metro- logical effect	wiring and private label variations	


Nominal output: 3.0 mV/V
 4-wire design

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.

Effective Date: December 17, 1998


 Louis E. Straub
 Chairman, NCWM, Inc.


 G. Weston Diggs
 Chairman, National Type Evaluation Program Committee

Issue date: January 11, 1999

Note: The National Conference on Weights and Measures does not "approve", "recommend", or "endorse" any proprietary product or material, either as a single item or as a class or group. Results shall not be used in advertising or sales promotion to indicate explicit or implicit endorsement of the product or material by the NCWM.

This is a reissuance by the NCWM of a Certificate of Conformance already issued by the National Institute of Standards and Technology.

Revere Transducers, Inc.
Tension S-Type Load Cell
Model: 9363 Series

Model Designation: The manufacturer's model number 9363 is designated with a prefix X_1X_2 -YK-Z₁Z₂Z₃Z₄, where YK represents the capacities listed in the tables below:

Capacity		Class III (3000) v_{\min} (lb)	Class III (5000) v_{\min} (lb)	Class III L (10 000) v_{\min} (lb)	Minimum Dead Load (lb)
Model	lb				
100 *	100	0.010	0.01	0.003	2
150	150	0.015	0.016	0.005	2
200	200	0.020	0.021	0.006	2
250	250	0.025	0.026	0.008	2
300 *	300	0.030	0.031	0.009	2
500 *	500	0.050	0.052	0.015	5
750	750	0.075	0.078	0.026	5
1K	1000	0.100	0.104	0.034	10
1.5K	1500	0.150	0.156	0.051	10
2K	2000	0.200	0.208	0.068	10
2.5K	2500	0.250	0.260	0.085	10
3K *	3000	0.300	0.312	0.102	10
5K	5000	0.500	0.520	0.170	10
10K	10 000	1.000	1.040	0.340	10

* Load cells submitted for evaluation

Capacity (t) metric ton		Class III (3000) v_{\min} (kg)	Class III (5000) v_{\min} (kg)	Class III L (10 000) v_{\min} (kg)	Minimum Dead Load (kg)
Model	kg				
50 kg	50	0.005	0.005	0.002	0.9
0.1 t	100	0.010	0.010	0.003	0.9
0.25 t	250	0.025	0.026	0.008	2.3
0.50 t	500	0.050	0.052	0.017	4.5
1.00 t	1000	0.100	0.104	0.034	4.5
2.50 t	2500	0.250	0.260	0.085	4.5
5.00 t	5000	0.500	0.520	0.170	4.5

Application: The load cells may be used in Class III and III L scales for 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 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 must be on an accompanying document including the serial number of the load cell.

Revere Transducers, Incorporated
Tension S-Type Load Cell
Model: 9363 Series

Test Conditions: This Certificate supersedes Certificate of Conformance Number 87-051A2 and is issued to include the 150-lb, 250-lb, and 2500-lb capacity load cells; the Class III 5000 single load cell application; and to correct the model designation and v_{\min} values in the 9363 Series. Two 300-lb, and two 3000-lb capacity load cells were tested at NIST using dead weights as the reference standard. The data were analyzed for single 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. The test conditions for the previous evaluations are listed below for reference.

Certificate of Conformance Number 87-051A2: This Certificate superseded Certificate of Conformance Numbers 87-051 Amended and 87-051A1 and was issued to include the 50-kg, 0.1-t, 0.25-t, 0.5-t, 1.0-t, 2.5-t and 5.0-t load cell capacities based on NTEP policy and to reflect new v_{\min} values for the 3000-lb, 5000-lb and 10 000-lb capacity single cell application, Class III L load cells based on the change to Handbook 44 performance requirements for the temperature effect on zero, effective January 1, 1991.

Certificate of Conformance Number 87-051A1: This Certificate was issued in addition to Certificate of Conformance Number 87-051 Amended to reflect new v_{\min} values for the single cell application, Class III L load cells which range in capacity from 100 lb to 2 000 lb based on the change to Handbook 44 performance requirements for the temperature effect on zero, effective January 1, 1991.

Certificate of Conformance Number 87-051 Amended: This Certificate was issued to correct the Class III L load cell application from multiple to single and to renumber Certificates of Conformance Numbers 87-051 (12/10/87) to 87-051P to reflect the Certificate's original provisional status.

Certificate of Conformance Number 87-051 (4/5/89): This Certificate was issued to upgrade Certificate of Conformance Number 87-051PA from a status of provisional to full, to consolidate the load cell capacities covered on Certificates of Conformance Numbers 87-051 and 87-051PA, and to supersede those certificates. NTEP policy permits a pre-NTEP Certificate of Conformance to be upgraded from provisional to full provided no unfavorable comments are received during the comment period. Since no unfavorable comments were received on this device, this Certificate was issued as a full NTEP Certificate of Conformance.

Certificate of Conformance Number 87-051PA: This Certificate was issued in addition to 87-051P to include the 3000-lb, 5000-lb and 10 000-lb capacity load cells to the Model 9363 Series. One 3000-lb capacity load cell was tested at the manufacturer's facility using dead weights as the reference standard. The data were analyzed for single 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. Representatives from NIST evaluated the manufacturer's test facility, witnessed repeat tests on load cells and analyzed the data

Certificate of Conformance Number 87-051P(12/10/87): One 100-lb and one 500-lb capacity load cells were tested at the manufacturer's facility using dead weights as the reference standard. The data were analyzed for single 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. Representatives from NIST evaluated the manufacturer's test facility, witnessed repeat tests on load cells and analyzed the data.

The results of the evaluations indicate that the load cells comply with the applicable requirements.

Type Evaluation Criteria Used: NIST Handbook 44, 1998 Edition

Tested By: NIST Force Group, NIST Office of Weights and Measures

Information Reviewed By: H. Oppermann and T. Grimes (NIST) (87-051A1 and 87-051A2); J. Williams and G. Newrock (NIST) (87-051A3)