



NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance

for Weighing and Measuring Devices

For:
Load Cell
Beam
Model: HSB & HAB Series
 n_{max} : 5000, Class III / Multiple Cell
10 000, Class IIIIL / Multiple Cell
Capacity: 500 kg to 5000 kg (1000 lb to 10 000 lb)

Accuracy Class: III/IIIIL

Submitted By:
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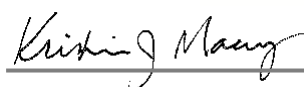
Standard Features and Options

- Nominal Output: 2 mV/V and 3 mV/V
- 4-wire and 6-wire Design
- Material: Alloy Steel and Stainless Steel
- Minimum dead load: 0 kg
- Model nomenclature: H(X)B-(Y)KG, where "X" = "A" for Alloy Steel or "S" for Stainless Steel, and "Y" = Capacity in kilograms. Example: 1000 kilogram capacity stainless steel model = "HSB-1000KG"
- Load Cell Parameters: *capacity evaluated

Capacity (kg)	Capacity (lb)	Multiple Cell / Class III n_{max} 5000 v_{min} (kg)	Multiple Cell / Class IIIIL n_{max} 10 000 v_{min} (kg)	Multiple Cell / Class III n_{max} 5000 v_{min} (lb)	Multiple Cell / Class IIIIL n_{max} 10 000 v_{min} (lb)
500	1000	0.04	0.025	0.08	0.050
750	1500	0.06	0.0375	0.12	0.075
1000	2000	0.08	0.050	0.16	0.10
1500*	3000	0.12	0.075	0.24	0.15
2000	4000	0.16	0.10	0.32	0.20
2500	5000	0.20	0.125	0.40	0.25
3000	6000	0.24	0.15	0.48	0.30
4000	7500	0.32	0.20	0.60	0.375
5000	10 000	0.40	0.25	0.80	0.50

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

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.



Kristin Macey
Chairman, NCWM, Inc.



Jerry Buendel
Chairman, National Type Evaluation Program Committee
Issued: July 11, 2017

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Cardinal Scale Manufacturing Company

Load Cell / HSB & HSB Series

Application: The load cells may be used in Class III and IIIIL 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} value, and temperature range are suitable for the application. The manufacturer may market the load cell with fewer divisions (n_{\max}) and with greater 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 label located on the cell, states manufacturer name, model and serial number. Other pertinent information, if not marked on the cell, will be specified on the Calibration Certificate accompanying the cell.

Test Conditions: This certificate was issued based upon the following tests and upon information provided by the manufacturer. Four 1500 kg load cell 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 . Tests were run on the cells 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. NCWM Publication 14 selection criteria were used to determine cells tested.

Evaluated By: K. Chesnutwood (NIST Force Group)

Type Evaluation Criteria Used: NIST, Handbook 44: Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices, 2017. NCWM, Publication 14: Weighing Devices, 2017.

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

Information Reviewed By: J. Truex (NCWM)

Examples of Device:

