

## Dual Shear Beam Load Cell

WBSeries

The WB Series is a high performance strain gage load cell constructed of alloy tool steel or stainless steel. The WB Series is designed to accurately measure compression loads ranging from 0-20,000 lbs. to 0-100,000 lbs.

The WB Series is a high performance, bonded foil strain gage load cell constructed of alloy tool steel (WB1) or stainless steel (WB4). The WB Series is designed to accurately measure compression loads in capacities ranging from 0-20,000 lbs. to 0-100,000 lbs. The robust, rectangular shear beam design readily tolerates angular, eccentric and side loading effects, with minimal sensitivity to these anomalies. This load cell is Harsh Environment Sealed (IP67-Limited Immersion) by virtue of proprietary, multi-re-dundant barriers uniquely integrated to protect all internal components. The cable is a durable polyure-thane-jacketed cable, with a tinned-copper braided shield for mechanical protection and to minimize the effects of RFI and EMI. The WB Series output signals are calibrated to a close tolerance to facilitate their use with summing/junction devices for multiple load cell applications. Non-standard versions of the WB Series load cells produce exceptional results in High Capacity applications such steel mill ladle scales, coil weighing systems, crane scales, aircraft weighing platforms and similarly demanding situations. The attributes of the WB Series make it ideal for truck scale and railroad track scale weighing, as well as for O.E.M. requirements where a versatile, rugged and high performance NTEP Certified load cell solution is needed.



## For more information call 1-888-545-8988

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### **APPLICATIONS**

- Compression Measurements
- Tank/Silo/Large Vessel Weighing
- Truck Scales
- Railroad Track Scales
- Legal-For-Trade Certified Systems
- OEM and VAR Solutions

### **FEATURES**

- 20,000 to 100,000 lbs. Capacities
- Dual Shear Beam Technology
- 0.02% Accuracy Class NTEP
- Alloy Tool Steel Element
- End-Mounted/Center-Link Loaded
- High Eccentric Load Tolerance
- IP67 Environmental Sealing
- Lightning Protection Option
- Matched Output Sensitivities
- Two Year Warranty

## **WB** Series Specifications

### PERFORMANCE

Rated capacities (1) (lbs.)	10K, 25K, 40K, 50K, 60K, 75K, 100K
Rated output (FSO)	3 mV/V
Output Tolerance	± .25 % R.O.
Combined Error Band	$\leq$ 0.03 % FSO
Non-Linearity	$\leq$ 0.03 % FSO
Hysteresis	$\leq$ 0.03 % FSO
Non-Bepeatability	≤ 0.015 % FSO (WB1)
Non hopotability	≤ 0.01 % FS0 (WB4)
Side Load Rejection Ratio	500:1
Zero balance	± 1 % FS0
Creep (20 minutes)	0.03 % of Load
<sup>(1)</sup> ("K" = thousand)	

### MECHANICAL

Material	Alloy tool steel (WB1) 17-4ph Stainless Steel (WB4)
Finish	Electroless nickel plated (WA1) Bead Blasted (WB4)
Safe overload	Compression 150 % FSO Side Load 100% FSO
Ultimate overload	Compression 300% FS0 Side Load: 2000% FS0
Deflection	See Dimensions Page
Weight	See Dimensions Page
Mounting Bolt Torque	Torque Table

### Innovative Measurement Solutions

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ELECTRICAL							
Input Impedance	700 ± 14 ohms						
Output Impedance	703 ± 4 ohms						
Insulation Resistance	>5000 Megohms @ 50VDC						
Excitation Voltage	10 V AC/DC (25 V maximum)						
Cable Color Code	<ul> <li>+ Excitation (red)</li> <li>- Excitation (black)</li> <li>+ Output (green)</li> <li>- Output (white) Shield (natural)</li> </ul>						
Cable Type	4-conductor, 22 AWG, Polyurethane Jacket, Tinned Copper Braid, Diameter: 0.187"						
Cable Length	See Dimensions Table						
Cable Termination	Finished Conductors						
Cable Seal	Conduit Adapter; Stainless						

#### ENVIRONMENTAL Temperature, Operating 4 to +150 °F (-18 to +65°C) Temperature, Compensated 14 to +104 °F (-10 to +40°C) -40 to +170 °F (-40 to +77°C) (WB1) Temperature, Storage -60 to +185 °F (-50 to +85°C) (WB4) **Temperature Effects** Zero < 0.015% FS0/°F < 0.0026% FS0/°C **Temperature Effects** Output < 0.0008% of Rdg./°F < 0.0014% Rdg./°C IP67; Multi-redundant; Limited Immer-Sealing sion Tolerance FM Approval Intrinsically Safe: Class I, II, III; Div.1 Groups A-G Non-Incendive: Class 1; Div.2 Groups A-D

# WB Typical System Configuration

SENSING LOAD CELL(S)	SIGNAL CONDITIONING	OUTPUT OPTIONS						
	Analog Transmitters	0-5 VDC 0-10VDC						
	Serial Transmitters	±5 VDC ±10 VDC 4-20 mA						
	Digital Indication	0-20 mA RS-232 RS-422						
	Process Control	RS-485 20 mA Serial Loop Ethernet						
	Batch Control	Profibus DP DeviceNet CANOpen						
	Data Acquisition	ControlNet Modbus RTU Wireless						
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## **WB** Dimensions





Capacity (LB)	H1	H2	H3	W	L1	L2	L3	R1	R2	D	Conduit Adapter	Deflect	Weight
	DIMENSIONS (INCHES)												
20K, 25K	1.94	1.70	1.63	1.69	7.75	4.99	6.50	0.75	0.90	0.68	1/4-18 NPT	0.020"	8.0 LBS
40K	2.44	2.10	2.00	1.94	10.25	6.39	8.50	1.00	1.12	0.81	1/4-18 NPT	0.020"	12.0 LBS
50K, 60K, 75K	2.94	2.65	2.54	2.44	10.25	6.39	8.50	1.00	1.37	1.6	1/2-14 NPT	0.020"	19.0 LBS
100K, 125K	3.86	3.43	3.30	2.90	15.25	8.99	12.75	1.50	1.80	1.62	1/2-14 NPT	0.020"	38.0 LBS

## WB Wiring Diagram



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# **Application Examples**

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