

## Specifications

### Mechanical

**UBC Allowed Frame and Bolt Loads;**  
**Ultimate Frame and Bolt Design Strength:**  
Refer to table on page 3

**Sensor Functional Integrity:** 200% of rated load

### Input

#### Excitation Voltage:

Standard: 12 VDC

Maximum: 30 VDC

Current Draw: 15.52 mA (70° F; 21° C)

**Power Consumption:** 186.4 mW (70° F; 21° C)  
at 12 VDC excitation

### Output

**Rated Output:** See Rated Output Table

**No Load Output:** +/- 50mV

**Nonlinearity & Hysteresis:** +/- 0.20% of  
rated output

**Repeatability:** +/- 0.10% of rated output

### Environmental

**Rating:** Designed for outdoor applications

**Temperature Range - Operational:** -30° to 150° F  
(-34° to 66° C); unit remains operational, however,  
if the temperature exceeds the compensated range,  
the unit may not perform to specifications

**Temperature Range - Storage:** -30° to 150° F  
(-34° to 66° C)

**Temperature Range - Compensated:**  
Standard temperature range: 0° to 100° F  
(-18° to 38° C)

Mid-range: 50° to 150° F (10° to 66° C)

**Humidity:** 100% noncondensing

### Physical

**Pedestal:** ASTM A53 GR B

**Flanges:** ASTM A36

**Junction Box:** Noryl

**Resilient Pad:** Reinforced rubber

**Finish:** Two coats rust preventative primer  
or approved equivalent; two coats epoxy enamel  
or approved equivalent

**Sensor:** Microcell II



**Load Stand II**  
In-use

P/N 97-7006-01 Rev C  
Specifications subject to change without notice.  
©2003, Kistler-Morse Corporation. All rights reserved.



#### WORLD HEADQUARTERS

150 Venture Boulevard  
Spartanburg, SC 29306 USA

**1.800.778.9242**

tel: 864.574.8060

fax: 864.574.8063

kistlermorse.com



## Technical Specifications

### Load Stand II

**A load cell for weighing large vessels which becomes an integral part of your vessel structure for rugged, maintenance free, weight measurements with full UBC wind and seismic ratings.**

The Kistler-Morse Load Stand II is a direct vessel-to-foundation structural member designed to be your dependable and accurate continuous inventory monitoring and control solution. The Load Stand II system is ideal for vessels with loads of 100,000 lbs (45,000 kg) or more and is available for loads of 25,000 to 1,000,000 lbs (11,000 to 453,000 kg) per support point.

Have no concern for ongoing maintenance or failure. The Load Stand II becomes a permanent part of the vessel support structure because it never needs to be removed for repair or maintenance. The sensing elements are accessible on the outside and can be replaced without taking the vessel out of service.

The mechanical design of the Load Stand II lends to simplified design of the mounting, whether by legs or gussets. Simple, rugged, and easy to match end-mounting plates yield minimum design time and easy installations.



### Features & Benefits

#### Monolithic Design

Means simplified installation and lower cost as no external vessel tie downs are needed as with other load cells.

#### High Output

Higher output for greater noise immunity and longer cable runs.

#### Multiple Weight Ranges

25,000 lbs to 1,000,000 lbs covers all your bulk applications, meets all UBC codes and has FM approval.

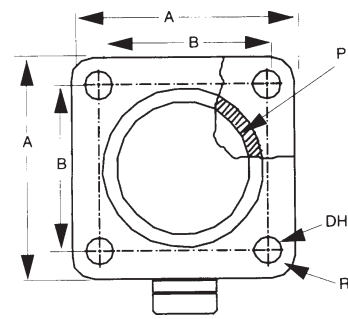
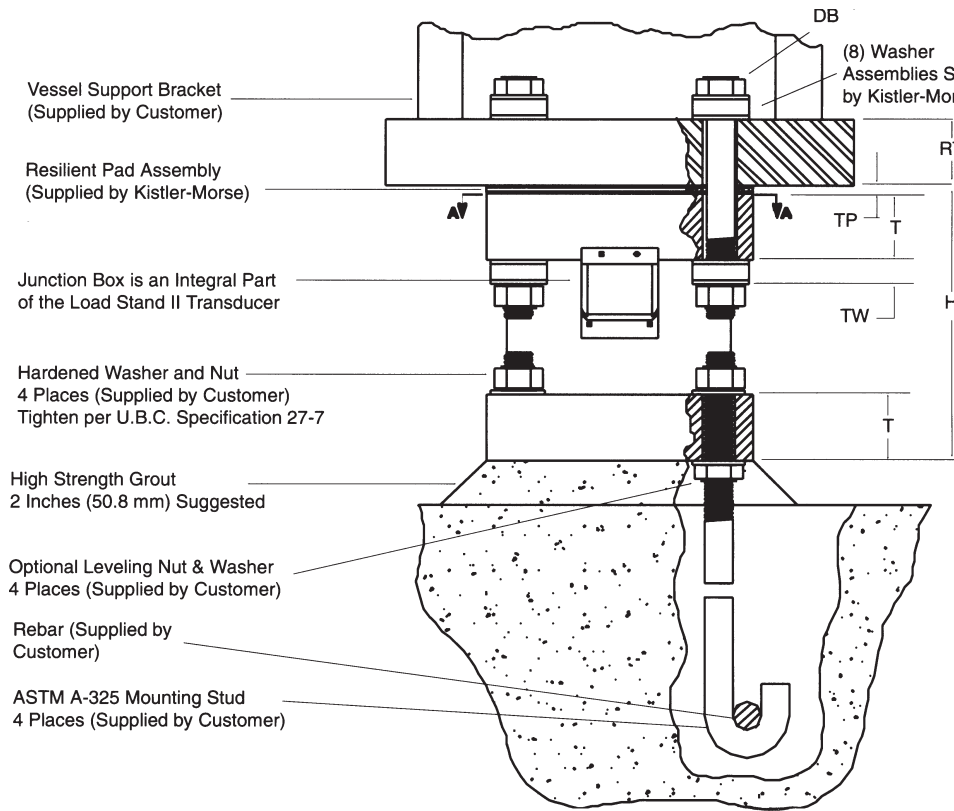
#### Solid State Strain Sensors

No summing boxes required, cuts costs and allows field replacement of sensing elements.

KM is represented in your area by:

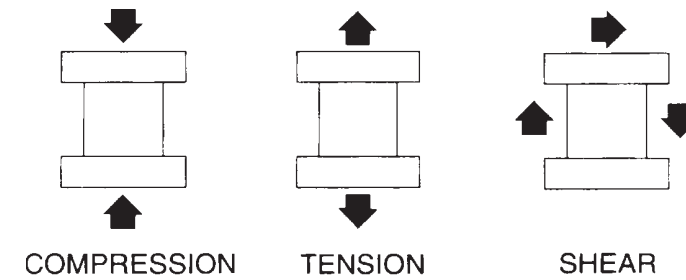
# Specifications

Install top bolts in oversized holes (DH) and tighten nuts 1-1/2 turns past fingertight. Apply locknut, adhesive or spoil threads to prevent loosening.



Top view of Load Stand II

Legend	
A	Outside Dimension
B	Hole Dimension
DB	Bolt Size
DH	Hole Diameter
DW	Washer Outside Diameter
H	Installed Height
P	Pipe Size
R	Corner Radius
RT	Recommended Thickness
T	Plate Thickness
TP	Pad Thickness
TW	Washer Thickness



This Maximum Loads Allowed per UBC table was calculated per Uniform Building Code Standards 1988 Edition and is based on A325 and A354 high strength bolts. The user should analyze vessel loading conditions imposed on the transducer to assure the design will provide adequate strength.

All values may be increased by 33.3% when considering wind or earthquake forces, either acting alone or when combined with vertical loads. No increase is allowed for vertical loads acting alone. Reference UBC Section 27.920.

Rated Output Table			
Model Number	Output (±1%)	Rated Load	
		lbs	kg
S2-025K	320mV	25,000	11,340
S2-050K	320mV	50,000	22,680
S2-075K	320mV	75,000	34,020
S2-100K	320mV	100,000	45,360
S2-150K	320mV	150,000	68,040
S2-200K	320mV	200,000	90,720
S2-300K	320mV	300,000	136,080
S2-400K	320mV	400,000	181,440
S2-500K	320mV	500,000	226,800
S2-750K	320mV	750,000	340,190
S2-1M	320mV	1,000,000	453,600

**Note:** For 300K, 400K, 500K, 750K and 1M Load Stand Its, consult factory for application review.

Ultimate Frame Loads (based on material strength)			
Load Rating	Compression	Tension	Shear
25,000 lbs (11339kg)	93,750 lbs (42525kg)	45,390 lbs (20588kg)	9,500 lbs (4309kg)
50,000 lbs (22679kg)	195,000 lbs (88452kg)	146,000 lbs (66225kg)	19,500 lbs (8845kg)
75,000 lbs (34020kg)	294,175 lbs (133435kg)	270,000 lbs (122472kg)	29,750 lbs (13494kg)
100,000 lbs (45359kg)	374,500 lbs (169873kg)	270,000 lbs (122472kg)	29,750 lbs (13494kg)
150,000 lbs (68040kg)	624,750 lbs (283386kg)	387,450 lbs (175747kg)	53,480 lbs (24258kg)
200,000 lbs (90718kg)	768,950 lbs (348795kg)	387,450 lbs (175747kg)	53,850 lbs (24426kg)
300,000 lbs (136077kg)	1,437,800 lbs (652186kg)	787,500 lbs (357210kg)	193,000 lbs (87544kg)
400,000 lbs (181440kg)	1,750,000 lbs (793800kg)	989,100 lbs (448655kg)	224,480 lbs (101824kg)
500,000 lbs (226796kg)	2,302,300 lbs (1044323kg)	989,100 lbs (448655kg)	480,200 lbs (217818kg)
750,000 lbs (340194kg)	3,511,500 lbs (1592816kg)	1,472,400 lbs (667880kg)	681,200 lbs (309001kg)
1,000,000 lbs (453592kg)	4,420,500 lbs (2005138kg)	2,121,000 lbs (962085kg)	938,600 lbs (425749kg)

Maximum Loads Allowed per UBC			
Load Rating	Compression	Tension	Shear
25,000 lbs (11339kg)	55,000 lbs (24947kg)	27,240 lbs (12355kg)	5,726 lbs (2597kg)
50,000 lbs (22679kg)	120,000 lbs (54431kg)	60,000 lbs (27215kg)	11,700 lbs (5307kg)
75,000 lbs (34020kg)	220,000 lbs (99790kg)	103,000 lbs (46720kg)	17,850 lbs (8096kg)
100,000 lbs (45359kg)	220,000 lbs (99790kg)	103,000 lbs (46720kg)	17,850 lbs (8096kg)
150,000 lbs (68040kg)	368,000 lbs (166924kg)	162,000 lbs (73481kg)	31,480 lbs (14285kg)
200,000 lbs (90718kg)	449,000 lbs (203662kg)	162,000 lbs (73481kg)	32,325 lbs (14662kg)
300,000 lbs (136077kg)	876,000 lbs (397346kg)	316,000 lbs (143335kg)	108,000 lbs (48988kg)
400,000 lbs (181440kg)	1,029,000 lbs (466754kg)	414,000 lbs (187790kg)	134,680 lbs (61090kg)
500,000 lbs (226796kg)	1,400,000 lbs (635029kg)	414,000 lbs (187790kg)	141,000 lbs (63956kg)
750,000 lbs (340194kg)	2,000,000 lbs (907184kg)	647,000 lbs (293474kg)	220,860 lbs (100181kg)
1,000,000 lbs (453592kg)	2,600,000 lbs (1179340kg)	933,000 lbs (423201kg)	318,000 lbs (144242kg)

Load Stand II Dimensions														
Load Rating	P	A	B	ODB <sup>1</sup>	DH	R	H	T	TP	DW	TW	WEIGHT	RT	SX <sup>2</sup>
25,000 lbs 11,339 kg	3.8 SCH 40	6.25in 158.75mm	4.25in 107.95mm	6.25in 158.95mm	3.75in 95.25mm	1.00in 25.4mm	9.37in 238.4mm	1.25in 31.75mm	3.7in 94mm	1.30in 33.0mm	4.4in 111.8mm	31 lbs 14.1 kg	1.25in 31.75mm	1.87in 47.5mm
50,000 lbs 22,679 kg	4 SCH 120	7.00in 177.80mm	4.75in 120.65mm	7.5in 190.5mm	1.00in 25.4mm	1.12in 28.4mm	9.37in 238.4mm	1.50in 38.1mm	3.7in 94mm	1.48in 37.5mm	6.5in 165.1mm	50 lbs 22.7 kg	1.50in 38.1mm	1.87in 47.5mm
75,000 lbs 34,020 kg	6 SCH 120	9.00in 228.6mm	6.75in 171.4mm	1.00in 25.4mm	1.25in 31.75mm	1.40in 35.5mm	12.37in 314.2mm	2.00in 50.8mm	3.7in 94mm	2.00in 50.8mm	7.7in 196mm	127 lbs 57.7 kg	2.00in 50.8mm	4.7mm
100,000 lbs 45,359 kg	6 SCH 120	9.00in 228.6mm	6.75in 171.4mm	1.00in 25.4mm	1.25in 31.75mm	1.40in 35.5mm	12.37in 314.2mm	2.00in 50.8mm	3.7in 94mm	2.00in 50.8mm	7.7in 196mm	128 lbs 58.1 kg	2.00in 50.8mm	4.7mm
150,000 lbs 68,040 kg	8 SCH 120	12.20in 312.4mm	8.50in 215.9mm	1.25in 31.75mm	1.50in 38.1mm	1.90in 48.2mm	15.37in 390.4mm	2.50in 63.5mm	3.7in 94mm	2.50in 63.5mm	1.03in 26.2mm	184 lbs 83.9 kg	2.50in 63.5mm	4.7mm
200,000 lbs 90,718 kg	8 SCH 160	12.20in 312.4mm	8.50in 215.9mm	1.25in 31.75mm	1.50in 38.1mm	1.90in 48.2mm	15.37in 390.4mm	2.50in 63.5mm	3.7in 94mm	2.50in 63.5mm	1.03in 26.2mm	262 lbs 119.0 kg	2.50in 63.5mm	4.7mm
300,000 lbs 136,077 kg	12 SCH 140	16.50in 419.1mm	12.40in 314.9mm	1.75in 44.4mm	2.00in 50.8mm	2.60in 66.0mm	22.00in 558.8mm	3.00in 76.2mm	7.5in 191.1mm	3.37in 85.3mm	1.03in 26.2mm	619 lbs 281.0 kg	3.00in 76.2mm	4.7mm
400,000 lbs 181,440 kg	14 SCH 140	17.50in 444.5mm	13.50in 342.9mm	2.00in 50.8mm	2.25in 57.2mm	2.80in 71.1mm	23.75in 597.8mm	3.00in 76.2mm	7.5in 191.1mm	3.75in 95.3mm	1.03in 26.2mm	719 lbs 326.5 kg	3.00in 76.2mm	4.7mm
500,000 lbs 226,796 kg	16 SCH 140	18.50in 469.9mm	14.75in 374.6mm	2.00in 50.8mm	2.25in 57.2mm	2.80in 71.1mm	24.80in 622.3mm	3.50in 88.9mm	7.5in 191.1mm	3.75in 95.3mm	1.03in 26.2mm	788 lbs 354.1 kg	3.50in 88.9mm	4.7mm
750,000 lbs 340,194 kg	20 SCH 140	24.00in 609.6mm	19.00in 482.6mm	2.50in 63.5mm	2.75in 69.8mm	3.40in 86.3mm	30.00in 762.0mm	4.00in 101.6mm	7.5in 191.1mm	4.50in 114.3mm	1.03in 26.2mm	1,728 lbs 783.2 kg	4.00in 101.6mm	4.7mm
1,000,000 lbs 453,592 kg	24 SCH 120	27.00in 688.8mm	21.50in 546.1mm	3.00in 76.2mm	3.25in 82.5mm	3.75in 95.3mm	35.80in 904.7mm	4.00in 101.6mm	7.5in 191.1mm	4.50in 114.3mm	1.03in 26.2mm	2,523 lbs 1,146.4 kg	4.00in 101.6mm	4.7mm

1. Bolts: ASTM A-325, bolt length determined and applied by the Customer.  
2. SX = Maximum thermal deformation allowed. Computed as shown here:  
SX = DH - DB - 1/16" (1.5mm).

Shipping Container Weights				
Load Rating	Qty/Ship per crate	Crate Weight LBS	Hardware Weight LBS	Total Weight per crate/frame non-inclusive LBS
25,000 lbs 11,339 kg	8	40	14	54
50,000 lbs 22,679 kg	4	40	7	47
75,000 lbs 34,020 kg	4	40	7	47
100,000 lbs 45,359 kg	4	40	7	47
150,000 lbs 68,040 kg	4	40	58	98
200,000 lbs 90,718 kg	2	40	29	69
300,000 lbs 136,077 kg	1	45	14.5	59.5
400,000 lbs 181,440 kg	1	45	25	70
500,000 lbs 226,796 kg	1	50	25	75
750,000 lbs 340,194 kg	1	50	25	75
1,000,000 lbs 453,592 kg	1	50	25	75