



# Technical Specifications

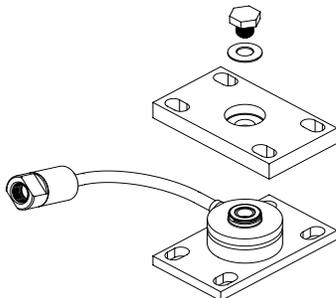
## Load Disc II™ Compression Load Cell

**For in-process applications that require a stainless steel load cell that is easy to keep clean. Vessel is locked in-place to protect the product and operators from vessel movement or seismic events.**

The Load Disc II™ weight transducer has the lowest profile for its load ranges in the industry. Utilizing the proven KM semiconductor strain gage technology, the Load Disc II™ continuously measures the weight of material for in-process and bulk storage vessels. Its sealed, stainless steel construction – fully potted in NEMA-6P enclosure with watertight cable system and cable entry – makes the Load Disc II™ transducer ideal for use in high-pressure wash down, corrosive or submerged environments. It is particularly suitable for use on mixing and blending vessels, surge hoppers, and vessels with agitators. Standard load ranges are from 150 to 100,000 pounds (68 to 45,360 kg) per vessel support with system performance accuracies of 0.1% and 0.2%.

Low-profile design for low clearance installations also keeps the vessel's center of gravity low and stable. Vessel tipping, walking or overturning while agitating is eliminated. Installation and setup is simplified with less hardware. No external vessel hold-downs are necessary, even in areas of high wind or seismic activity. There are no moving parts that can wear out or require replacement. The high output of the semiconductor sensor provides immunity to industrial electrical noise and allows longer load cell to signal processor runs.

150 LB TO 25K LBS MINIMUM HEIGHT: 2.70" [68.6mm]  
35K TO 100K MINIMUM HEIGHT: 5.50" [139.7mm]



LD II with UA1 Top Adapter Plate



## Features & Benefits

### Single Footprint & Low Profile Height Range

For 150 to 25K and 35K to 100K pound rated output, a single system design and installation keeps the vessel locked down and secure from tipping, even in Zone 4 seismic areas.

### Minimal Deflection

Only 0.004 inch at rated output minimizes piping & plumbing influences for reliable results.

### NEMA-6P Stainless Steel Submersion Rating

Incorporates NEMA-4 & -4X in a stainless steel hermetically sealed package for protection in high pressure, caustic wash downs.

### High Output Rugged Design

Greater electrical noise immunity provides long term reliability under a wide range of operating conditions with cable runs to 2000 feet.

### FM Approved

For use in hazardous areas with or without barriers.

# Specifications

## Mechanical

### Compression:

150 to 25,000 lbs. 4 x rated load  
35,000 to 100,000 lbs. 2.5 x rated load

**Tension:** 1 x rated load

**Shear:** 0.5 x rated load

**Functional Integrity:** 2.0 x rated load (compression)

## Electrical

**Excitation Voltage - Operating Range:** 10-30 VDC

**Recommended Supply Voltage:** 12 VDC

**Maximum Current:** 4 mA at 12 VDC excitation (0°F)

**Output Resistance:** 7.5K ohms, +/-1%

## Output

### Nonlinearity/Hysteresis Combined:

0.2% Performance: 0.2% rated output  
0.1% Performance: 0.1% rated output  
Consult factory for batching accuracy; typically  
0.05% to 0.01% full scale

**Return to Zero:** 0.05% rated output

**Zero Balance:** 6.9% rated output

### Rated Output:

Temperature Range - Std/Mid: 30 mV/V +/- 1.4%  
Temperature Range - High: 20 mV/V +/- 1.25%

## Environmental

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

**Temperature Range-Mid:** 50° to 150°F (10° to 66°C); up to 300°F during CIP/SIP

**Temperature Range-High:** 150° to 250°F (66° to 121°C); up to 300°F during CIP/SIP

**Temperature -Sensitivity Change:** 0.015%/°F (0.027%/°C)  
0° to 100°F (-18° to 38°C)

**Temperature -Zero Shift:** Std/Mid-Temperature Ranges:  
0.008%/°F (0.015%/°C)

High Temperature Range: 0.012%/°F (0.022%/°C)

**Humidity:** 100%

## Physical

**Construction:** 17-4 PH 900 heat-treated stainless steel; all welds full penetration weldment in accordance with Uniform Building Code (UBC) criteria per specification AWS B2.1.009-90

**Cable:** 3-conductor, 22 gage unshielded, 10 ft (3m) long, with tinned pigtail termination

**Signal Cable Armor:** 12 in (305 mm) sanitary food-grade tubing

**Conduit Fitting:** 304 stainless steel 1/2-inch female NPT

**Rating:** NEMA-6P (includes NEMA-4, NEMA-4X and NEMA-6); hermetically sealed for high-pressure caustic washdown and prolonged submergence in water (watertight conduit provided by customer)

### Shipping Weight:

150 to 25,000 lbs. rated load: 5 lbs. (2.3 kg)  
35,000 to 100,000 lbs. rated load: 17 lbs

**Approvals:** Factory Mutual (FM) approved for hazardous locations when installed per KM specifications; intrinsically safe, Class I, II and III, Division 1, Groups C, D, E, F and G; non-incendive, Class I, Division 2, Groups A, B, C and D; suitable for Class II, Division 2, Groups F and G, and suitable for Class III, Divisions 1 and 2

Ordering Information			
C1-a-b-c-d-e			
[a] Transducer Accuracy		[d] Cable Length	
1	± 0.1% of rated load	015	15 foot (4.5m)
2	± 0.2% of rated load	###	25,50,100ft lengths
5B	Use for 150 lb to 500 lbs	025T	25 foot cable used with option C high temp range
[b] rated load		##T	50, 100 foot cable used with option C high temp range
150	150 lbs (68 kg)		
250	250 lbs (113 kg)		
500	500 lbs (226 kg)		
		[e] Finish	
01K	1,000 lbs (454 kg)	X	Brushed (Standard)
02K	2,000 lbs (907 kg)	P	Polished
		Installation Hardware 150 to 25K	
03K	3,000 lbs (1,361 kg)	NO1	No Hardware kit (Standard)
05K	5,000 lbs (2,268 kg)	UA1	Universal Top Adapter Plate
07K	7,500 lbs (3,402 kg)	UA1P	Universal Top Adapter Plate Polished
10K	10,000 lbs (4,536 kg)	TP1	Top Adapter plate with shock pad
15K	15,000 lbs (6,804 kg)	LB1	leveling base adapter plate
20K	20,000 lbs (9,072 kg)	LBR	Load Block to Load Disc II retrofit kit
25K	25,000 lbs (11,340 kg)	OS1	Omnislid expansion mount hardware Kit
35K	35,000 lbs (15,880 kg)	OU1	Spacer plate and universal top adapter plate kit
50K	50,000 lbs (22,680 kg)		
75K	75,000 lbs (34,020 kg)		
100K	100,000 lbs (45,360 kg)		
[c] Operating Temperature		Installation Hardware 35K to 100K	
X	Ambient Temp 0° to 100°F (-18° to 38°C) (Standard)	NO2	No Hardware kit (Standard)
F	Mid-range Temp 50° to 150°F (10° to 66°C)	UA2	Universal Top Adapter Plate
C	High range Temp 150° to 250°F (66° to 121°C)	UA2P	Universal Top Adapter Plate Polished
		TP2	Top Adapter plate with shock pad
		LB2	leveling base adapter plate
		OS2	Omnislid expansion mount hardware Kit
		OU2	Spacer plate and universal top adapter plate kit

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