

# General-Purpose Weighing for Tanks, Hoppers, OEM Machinery



## Static Loading

SWB220 weigh modules are suitable for general-purpose weighing in static-loading applications that have minimal horizontal shear or thermally induced movement.



## Load Cells

The cantilever-bending-beam load cells are made of alloy or stainless steel for use in all environments. Load cells are hermetically sealed for IP68 to IP68/IP69K protection.



## Compression Mounts

SWB220 weigh modules have upper compression mounts made of neoprene elastomeric to isolate the load cells from vibration and shock. Cold-rolled steel inserts strengthen the compression mounts.



## Rigid Suspension

The upper compression mount is bolted to the load cell, providing anti-uplift protection. A built-in overload stop bolt protects the load cell from overload damage.



## SWB220 Weigh Module

SWB220 weigh modules offer good value for general-purpose weighing of OEM machinery, conveyors, and tanks or hoppers with flexible inlets and outlets. They use cantilever-bending-beam load cells to deliver accurate and repeatable weighing. The design is suitable for static loading in applications that have minimal lateral movement. Mounting hardware is available in zinc-plated carbon steel and stainless steel to stand up to a variety of environments.

- Capacity range: 110-1,100 kg (250-2,500 lb)
- Carbon steel or stainless steel mounting hardware
- NTEP and OIML metrology approvals
- FM and ATEX hazardous approvals

# SWB220 Weigh Module Specifications

Weigh Module Parameter		Unit of Measure	Specification			
Model Number			SWB220			
Rated Capacity (R.C.)		kg (lb)	110 (250)	220 (500)	550 (1250)	1100 (2500)
<b>Max. Rated Forces<sup>1</sup></b>						
Max. Compressive Force <sup>2</sup>			1.1 (250)	2.2 (500)	5.6 (1250)	11.1 (2500)
Max. Horizontal Force	Transverse <sup>3</sup>	kN (lb)	0.6 (135)	1.2 (270)	1.7 (382)	4.4 (989)
	Longitudinal <sup>4</sup>		0.6 (135)	1.2 (270)	1.7 (382)	4.4 (989)
Max. Uplift Force <sup>5</sup>			1.1 (250)	2.2 (500)	3.3 (742)	4.8 (1079)
<b>Max. Ultimate Force<sup>6</sup></b>						
Max. Compressive Force			3.4 (764)	6.7 (1506)	16.7 (3754)	33 (7419)
Max. Horizontal Force <sup>7,8</sup>	Transverse	kN (lb)	1.7 (382)	1.8 (405)	6.7 (1507)	7 (1574)
	Longitudinal		1.7 (382)	1.8 (405)	6.7 (1507)	7 (1574)
Max. Uplift Force			1.5 (337)	3 (674)	4.2 (944)	4.9 (1102)
Weight (including load cell), nominal			2.4 (5.2)	2.8 (6.2)	3.4 (7.5)	3.5 (7.8)
Material	Base Mounting Plate		carbon steel / stainless steel			
	Compression Mount		neoprene elastomeric over steel insert			
Finish	Base Mounting Plate		zinc plated / electropolished			

<sup>1</sup> The weigh module is rated for these forces in normal operation. A Factor of Safety has been applied by METTLER TOLEDO.

<sup>2</sup> Maximum vertical downward force that can be applied to the top plate.

<sup>3</sup> Maximum horizontal force that can be applied to the top plate in a direction transverse to the longitudinal axis of the load cell.

<sup>4</sup> Maximum horizontal force that can be applied to the top plate in a direction parallel to the longitudinal axis of the load cell.

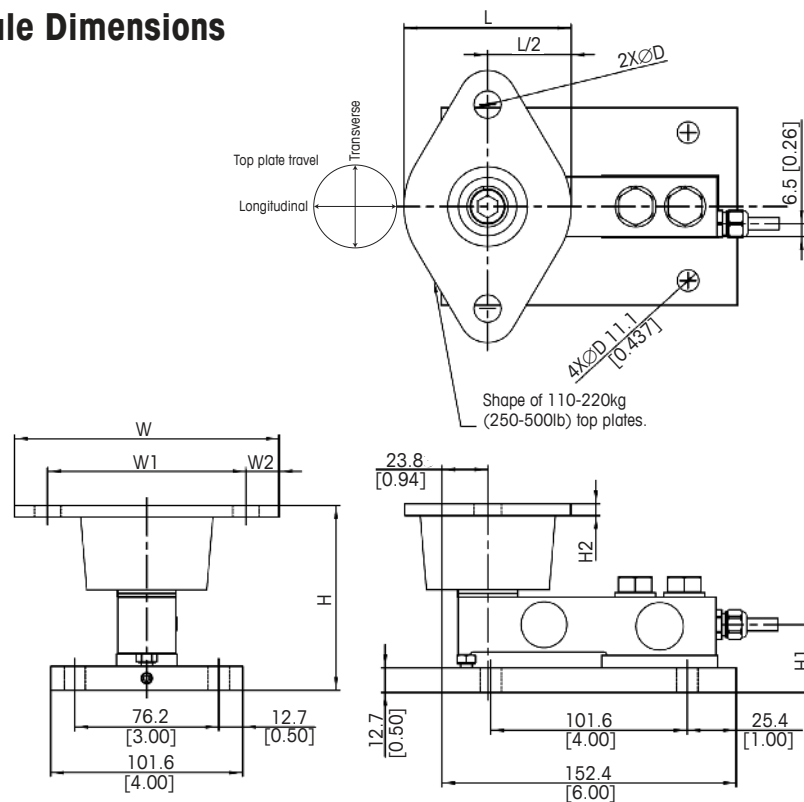
<sup>5</sup> Maximum vertical uplift force that can be applied to the top plate.

<sup>6</sup> **Warning:** If loaded statically one time in excess of these forces, the weigh module may break with the potential for serious injury and/or property damage.

<sup>7</sup> Although top plate can withstand published horizontal ratings, excessive lateral movement will result which could present other safety issues

<sup>8</sup> To ensure proper load cell performance, limit longitudinal and transverse top plate travel to values listed in the dimensional chart.

## SWB220 Weigh Module Dimensions



Capacity	D	H	H1	H2	L	W	W1	W2	Top Plate Travel		
									Longitudinal	Transverse	Vertical <sup>2</sup>
110 kg (250 lb)	8.6 (0.34)	83.3 (3.28)	30.2 (1.19)	5.6 (0.22)	60.5 (2.38)	98.6 (3.88)	76.2 (3.00)	11.2 (0.44)	± 0.7 (± 0.03)	± 0.7 (± 0.03)	3.3 (0.13)
220 kg (500 lb)	14.2 (0.56)	96.9 (3.82)	35.1 (1.38)	6.4 (0.25)	85.9 (3.38)	139.7 (5.50)	104.7 (4.12)	17.5 (0.69)	± 0.7 (± 0.03)	± 0.7 (± 0.03)	4.3 (0.17)
550 kg (1,250 lb)	11.2 (0.44)	101.7 (4.00)	35.1 (1.38)	6.4 (0.25)	76.2 (3.00)	130.1 (5.12)	104.7 (4.12)	12.7 (0.50)	± 0.7 (± 0.03)	± 0.7 (± 0.03)	4.2 (0.17)
1,100 kg (2,500 lb)	14.2 (0.56)	101.7 (4.00)	35.1 (1.38)	9.7 (0.38)	117.4 (4.62)	158.8 (6.25)	128.6 (5.06)	15.1 (0.59)	± 0.7 (± 0.03)	± 0.7 (± 0.03)	3.6 (0.14)

<sup>1</sup> Dimensions are in mm (inches).

<sup>2</sup> Vertical deflection at rated capacity.

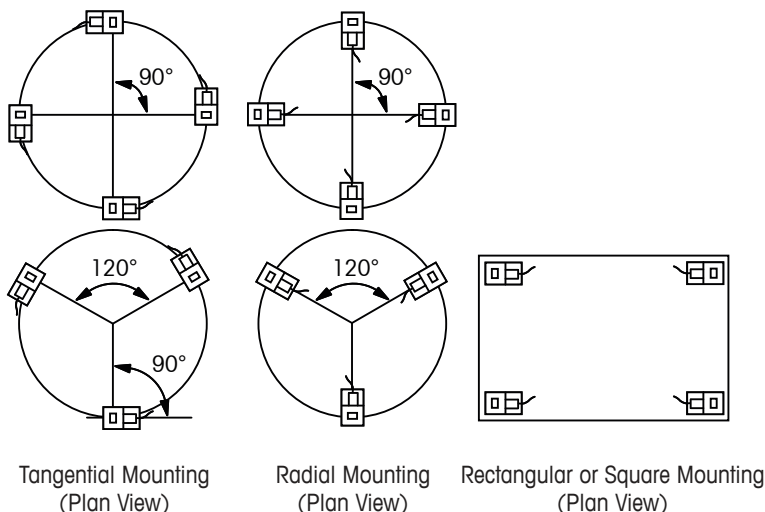
# Load Cell Specifications

Load Cell Parameter		Unit of Measure	Specification			
Model No.			<b>SLB215 / SLB515</b>			
Rated Capacity (R.C.)		kg (lb)	110 (250)	220 (500)	550 (1250)	1100 (2500)
Rated Output		mV/V @ R.C., kg	0.970 ± 0.2%		1.940 ± 0.1%	
		mV/V @ R.C., lb	1.000 ± 0.2%		2.000 ± 0.1%	
Zero Load Output		%R.C.	≤ 1 / ≤ 2		≤ 1	
Combined Error <sup>1, 2</sup>			≤ 0.018 / ≤ 0.03		≤ 0.018	
Repeatability Error		%A.L. <sup>3</sup>	≤ 0.01			
Creep, 30 Minute		%A.L.	≤ 0.017			
Temperature Effect on	Min. Dead Load Output	%R.C./°C(°F)	SLB215: ≤ 0.0032 (0.0018) SLB215: ≤ 0.0023 (0.0013)	≤ 0.0016 (0.0009)	≤ 0.0013 (0.0007)	
	Sensitivity <sup>2</sup>	%A.L./°C(°F)	≤ 0.00009 (0.00005) / ≤ 0.001 (0.0006)			
Temperature Range	Compensated	°C (°F)	-10 ~ +40 (+14 ~ +104)			
	Operating		-40 ~ +65 (-40 ~ +150)			
	Safe Storage		-40 ~ +80 (-40 ~ +176)			
OIML / European Approval <sup>4</sup>	Number, OIML Cert. Number		TC8311 / -	TC8311 / TC8758		
	Class		C3			
	nmax		3000			
	Vmin SLB215 / SLB515	g	18 / -	37 / 25	92 / 50	183 / 100
	PLC		0.7			
	Humidity Symbol		None / -	SLB215: None / SLB515: CH		
	Min. dead load, SLB215 / SLB515	kg (lb)	0.4 (0.88) / -	0.4 (0.88) / 0 (0)		
	Z		3000			
	Barometric Pressure Effect		-	none		
	NTEP Approval <sup>4</sup>	Number		13-081 / -	SLB215: 13-081 / SLB515: 15-052	
Class			IIIM			
nmax			5000			
Vmin, SLB215 / SLB515		lb	0.04 / -	0.08 / 0.05	0.20 / 0.10	0.40 / 0.25
ATEX Approval <sup>4</sup>	Min. dead load	lb	0 / -	0 / 0		
	Number, cat. 2 / cat. 3		DEKRA 13ATEX0081 / DEKRA 13ATEX0082			
	Number, cat. 2		II 2 G Ex ia IIC T4 Gb / II 2 D Ex ib IIIC T100°C Db (SLB215: II 2 G Ex ib IIC T4 Gb)			
	Number, cat. 3		II 3 G Ex ic IIC T4 Gc / II 3 G Ex nA IIC T4 Gc / II 3 D Ex tc IIIC T100°C Dc			
Factory Mutual Approval <sup>4</sup>	Entity Parameters		Ui=20V, Ii=600mA, Pi=1.25W, Ci=0.2nF/m <sup>5</sup> , Li=1µH/m <sup>5</sup>			
	Number, USA		3005885 / 3025753C			
	Rating, USA		IS / I,II,III / 1 / ABCDEFG / T4, NI / 1 / 2 / ABCD / T6; S / II, III / 2 / FG / T6 (SLB215: Ta = 50°C)			
	Rating, Canada <sup>6</sup>		IS / I,II,III / 1 / ABCDEFG / T4, NI / 1 / 2 / ABCD / T6; DIP / II, III 2 / FG / T6 (SLB215: Ta = 50°C)			
	Entity Parameters		Vmax=20V, Imax=600mA, Pi=1.25W, Ci=0, Li=0			
Excitation Voltage	Recommended	V DC	5 ~ 15			
	Maximum		20			
Terminal Resistance	Excitation	Ω	382 ± 4			
	Output		350 ± 1			
Insulation Resistance @ 50VDC		MΩ	> 5000			
Breakdown Voltage		V AC	> 500			
Material	Spring Element		Alloy Steel / Stainless Steel			
	Enclosure		304 Stainless Steel			
	Cable entry fitting		304 Stainless Steel			
	Cable		PVC / Polyurethane (PU)			
Protection	Type		Welded			
	IP Rating		IP68 / IP68, IP69K			
	NEMA Rating		NEMA 6 / NEMA6/6P			
Load Limit	Safe	%R.C.	150			
	Ultimate		300			
Safe Side Load			100			
Safe Dynamic Load			70			
Fatigue Life		cycles @ R.C.	>1,000,000			
Direction of Loading			beam			
Deflection @ R.C., nominal		mm (in)	0.07 (0.003)	0.14 (0.005)	0.23 (0.009)	0.26 (0.01)
Weight, nominal		kg (lb)	1 (2.2)			
Cable Length		m (ft)	5 (16.4)			

1) Error due to the combined effect of non-linearity and hysteresis.  
 2) Typical values only. The sum of errors due to combined error and temperature effect on sensitivity comply with the requirements of OIML R60 and NIST HB44.  
 3) A.L. = Applied Load.  
 4) See certificate for complete information.  
 5) Per m. of load cell cable  
 6) SLB215 does not have Canadian FM Approval



## SWB220 Mounting Arrangements



## SWB220 Cable Colors

### Model SLB215/SLB515 Load Cell

Color	Function
Green	+ Excitation
Black	- Excitation
White	+ Signal
Red	- Signal
Yellow	Shield*

\* Connected to load cell body

## SWB220 Ordering Information

Description	Item No.
SWB220 CS WMA (with load cell), 110 kg (250 lb)	30372783
SWB220 CS WMA (with load cell), 220 kg (500 lb)	30372949
SWB220 CS WMA (with load cell), 550 kg (1250 lb)	30372953
SWB220 CS WMA (with load cell), 1100 kg (2500 lb)	30372957
SWB220 SS WMA (with load cell), 110 kg (250 lb)	30372784
SWB220 SS WMA (with load cell), 220 kg (500 lb)	30372950
SWB220 SS WMA (with load cell), 550 kg (1250 lb)	30372954
SWB220 SS WMA (with load cell), 1100 kg (2500 lb)	30372958

## Load Cell Ordering Information

Description	Item No.	
	SLB215 Alloy	SLB515 Stainless Steel
Load Cell, 110 kg (250 lb)	30328249	30101611
Load Cell, 220 kg (500 lb)	72258650	30101617
Load Cell, 550 kg (1250 lb)	72258656	30101623
Load Cell, 1100 kg (2500 lb)...	72258693	30101629



## METTLER TOLEDO Service

Our extensive service network is among the best in the world and ensures maximum availability and service life of your product.

## Weigh-Connect-Control-Comply

METTLER TOLEDO embeds intelligence into weighing applications. Our industry leading scale electronics enable users to integrate their gravimetric measurement with applications running on PCs, PLCs, or DCS systems. Our products are designed specifically for industries subject to regulatory controls, such as pharmaceutical, chemical, food and beverage, and has been confirmed by multiple global agency standards including UL, CE, NTEP, and OIML.

[www.mt.com/weighmodule](http://www.mt.com/weighmodule)

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