

Efficient Tank Weighing

Accurate, Reliable, Service-Friendly



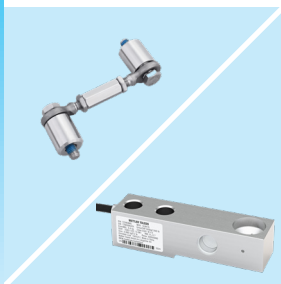
All Safety on Board

SWB405 MultiMount™ weigh modules offer all safety features, including anti-uplift protection, 360° checking and down-stop protection to ensure the safety of tank weighing.



Easy Integration

SafeLock™ feature is built into SWB405 MultiMount™ weigh modules to make installation easier with all components locked in ideal initial positions.



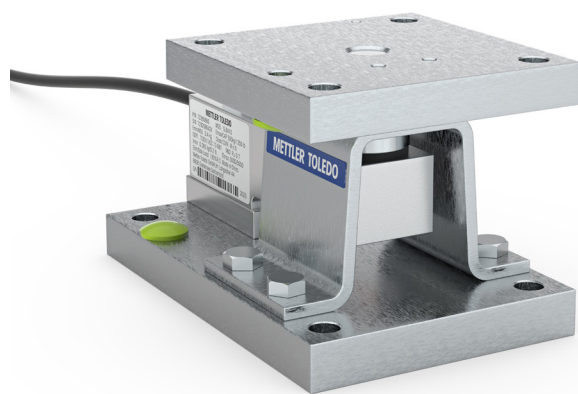
Reliable Weighing

The hermetically sealed SLB415 load cell with IP68 rating can meet most industrial requirements. One optional stabilizer can be applied to each weigh module to improve the weighing stability of a tank scale with vibration or for in-motion weighing.



Low Contamination Risk

The powder-coated SWB405 MultiMount™ ensures zinc and copper material content is below 1% to significantly reduce the risk of cross-contamination in Li-ion battery production.



SWB405 MultiMount™ Weigh Module

Key Features:

- Full mechanical safety (anti-uplift protection, down-stop protection, 360° checking)
- SafeLock™ – Weigh module locked and load cell protected during shipment and installation
- Hermetically sealed, stainless-steel load cell with IP68 rating
- Hazardous approvals with IECEx, ATEX and FM
- OIML C3/NTEP III M n:5
- Stainless-steel or powder-coated weigh module hardware
- EN1090 structural safety standard (Europe only)

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SWB405 MultiMount™ Specifications – Weigh Module

Parameter		Unit of Measure	Specification					
Model			SWB405 MultiMount™					
Size			2			3		
Rated capacity		kg (lb, nominal)	110 (250)	220 (500)	550 (1250)	1100 (2500)	2200 (5000)	4400 (10000)
Max. rated forces ¹⁾								
	Max. compressive force, rated	kN (lb)	1.1 (250)	2.2 (500)	5.6 (1250)	11.1 (2500)	22.2 (5000)	44.5 (10000)
	Max. horizontal force, rated	transverse	5.5 (1236)					12.5 (2809)
		longitudinal						
	Max. uplift force, rated	kN (lb)	11.5 (2584)					20.0 (4495)
Max. horizontal force (longitudinal) per stabilizer option, rated ⁷⁾	kN (lb)	3.5 (787)					5.0 (1124)	
Max. yield forces ^{2) 4)}								
	Max. compressive force, yield	kN (lb)	1.7 (375)	3.3 (750)	8.3 (1875)	16.7 (3750)	22.8 (5120)	49.8 (11200)
	Max. horizontal force, yield	transverse	7 (1573)					16.5 (3709)
		longitudinal						
Max. uplift force, yield	kN (lb)	17 (3821)					30 (6743)	
Max. ultimate forces ^{3) 4)}								
	Max. compressive force, ultimate ⁵⁾	kN (lb)	65 (14609)					110 (24724)
	Max. horizontal force, ultimate	transverse	17 (3821)					29 (6518)
		longitudinal						
Max. uplift force, ultimate	kN (lb)	35 (7867)					50 (11238)	
Restoring force		%A.L./mm (./in) ⁶⁾	4.4 (111)					5.5 (140)
Max. top plate travel	transverse	± mm (in)	3 (0.12)					3.5 (0.14)
	longitudinal ⁸⁾							
Weight (including load cell), nominal		kg (lb)	6 (13.2)					13.5 (29.7)
Material			Stainless Steel 304 / Carbon Steel					
Finish			Electropolished / Powder coating					
Shipping dimensions (LxWxH)		mm (in)	275*195*160 (10.8 x 7.7 x 6.3)					370*270*185 (14.5 x 10.6 x 7.3)
Shipping weight		kg (lb)	6.5 (14.3)					14 (30.8)

1) The weigh module is rated for these forces in normal operation, a factor of safety has been applied by METTLER TOLEDO.

2) Warning: if loaded statically one time in excess of these forces, the weigh module may yield and need replacing.

The Max. yield forces do not consider fatigue/cyclic loading and should be approached only in exceptional circumstances.

3) Warning: if loaded statically one time in excess of these forces, the weigh module may break with potential for serious injury and/or property damage.

4) Warning: apply a factor of safety appropriate to the application.

5) The top plate will travel downwards by 5 mm (0.2 inches) before the down-stop engages and this ultimate force can be developed.

6) % of Applied Load (A.L.) per mm (in) displacement of the top plate (transverse & longitudinal).

7) 1 stabilizer per weigh module. Max. permissible longitudinal force per stabilizer.

8) 0 with stabilizer.

SWB405 MultiMount™ Specifications – Load Cell

Parameter		unit of measure	Specification					
Model No.			SLB415					
Rated Capacity (R.C.)		kg (lb, nominal)	110 (250)	220 (500)	550 (1250)	1100 (2500)	2200 (5000)	4400 (10000)
Rated Output		mV/V @R.C. - kg	0.97 ± 0.002	1.940 ± 0.002				
		mV/V @R.C. - lb	1.000 ± 0.002	2.000 ± 0.002				
Zero load Output		%R.C.	≤ 1.0					
Combined Error ⁽¹⁾⁽²⁾		%R.C.	≤ 0.018					
Temperature Effect on	Min. Dead load Output	%R.C./°C (./°F)	≤ 0.0023 (0.0013)					
	Sensitivity ⁽²⁾	%A.L./°C (./°F)	≤ 0.0009 (0.0005)					
Temperature Range	Compensated	°C (°F)	-10 ~ +40 (+14 ~ +104)					
	Operating	0	-40 ~ +65 (-40 ~ +150)					
	Safe Storage	0	-40 ~ +80 (-40 ~ +176)					
OIML / European Approval ⁽⁴⁾	Class		C3					
	nmax		3000					
	Y		11000					
NTEP Approval ⁽⁴⁾	Class		III M					
	nmax		5000					
	Vmin	kg (lb)	0.01 (0.022)	0.02 (0.044)	0.05 (0.11)	0.1 (0.22)	0.2 (0.44)	0.4 (0.88)
ATEX Approval ⁽⁴⁾	Rating		II 2 G Ex ib IIC T4 Gb / II 2 D Ex ib IIIC T100°C Db					
			II 3 G Ex ic IIC T4 Gc / II 3 G Ex ec IIC T4 Gc / II 3 D Ex tc IIIC T100°C Dc					
IECEx Approval ⁽⁴⁾	Number		IECEx DEK 20.0086X					
	Rating		Ex ib IIC T4 Gb / Ex ib IIIC T100°C Db Ex ic IIC T4 Gc / Ex ec IIC T4 Gc / Ex tc IIIC T100°C Dc					
	Entity Parameters		Ui=20V, li=600mA, Pi=1.25W, Ci=1.2nF, Li=6µH					
Factory Mutual Approval ⁽⁴⁾	Rating, USA		IS / I,II,III / 1 / ABCDEFG / T4 Ta = -40°C to +50°C					
			NI / I / 2 / ABCD / T6 ; DIP / II,III / 2 / FG / T6 Ta = -40°C to +50°C					
	Rating, Canada		IS / I,II,III / 1 / ABCDEFG / T4 Ta = -40°C to +50°C NI / I / 2 / ABCD / T6 ; DIP / II,III / 2 / FG / T6 Ta = -40°C to +50°C					
Excitation Voltage	Recommended	V DC	5~15					
	Max.		20					
Terminal Resistance	Excitation	Ω	384±4					
	Output		350±1					
Material	Spring Element		Stainless Steel					
Protection	Type		Welded					
	IP Rating		IP68					
	NEMA Rating		NEMA 6					
Weight, nominal		kg (lb)	1 (2.2)			1.4 (3.1)	2.4 (5.3)	
Cable	Length	m (ft)	5 (16.4)				10 (32.8)	
	Diameter	mm (in)	5.2 (0.20)					

(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

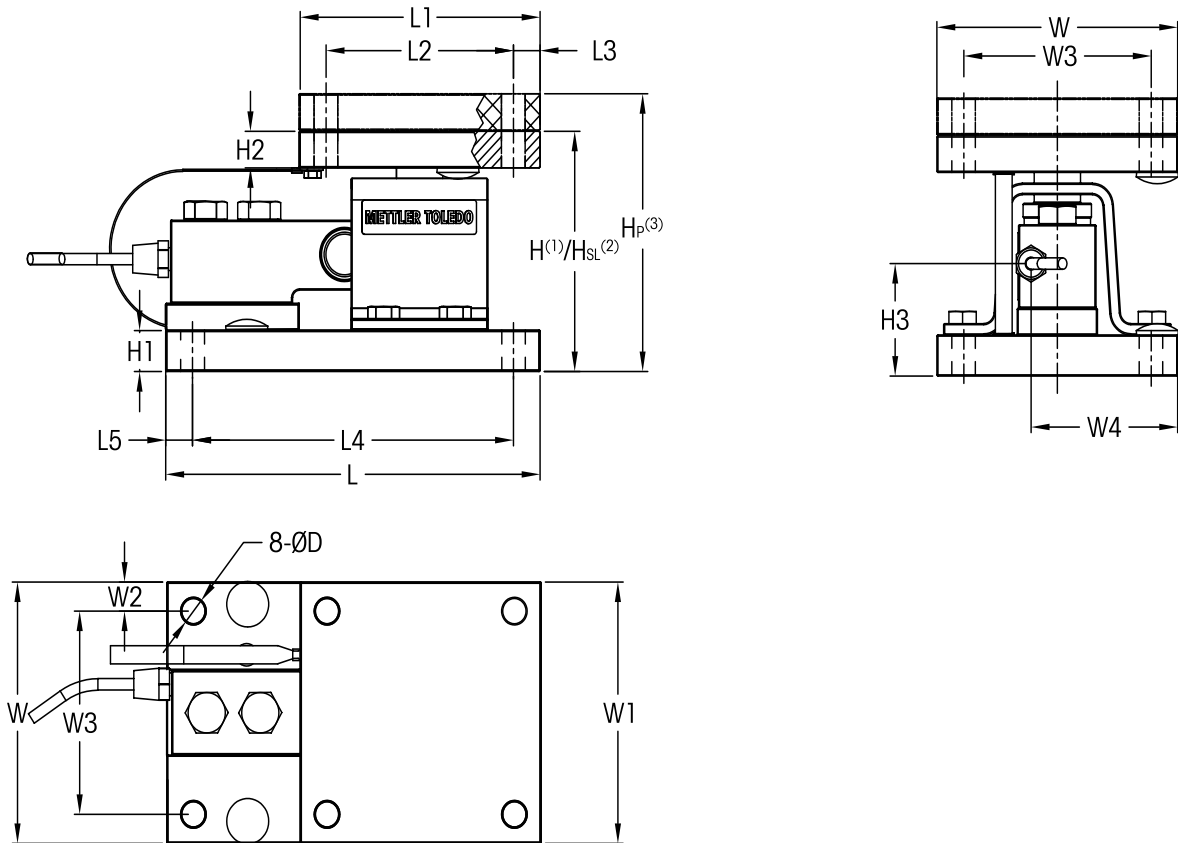
(4) See certificate for complete information.



Cable Color SLB415 Load Cell

Colour	Function
Green	+ Excitation
Black	- Excitation
White	+ Signal
Red	- Signal
Yellow	Shield

SWB405 MultiMount™ Weigh Module Dimensions mm [in]



Size	Capacity	Dimensions: mm(in)																	
		H ⁽¹⁾	H _{sl} ⁽²⁾	H _p ⁽³⁾	H1	H2	H3	L	L1	L2	L3w	L4	L5	W	W1	W2	W3	W4	D
2	220 kg – 1.1 t (500 lb – 2.5 klb)	105.2 (4.14)	106.8 (4.20)	130.6 (5.14)	18.0 (0.71)	16.0 (0.63)	46.7 (1.84)	177.8 (7.00)	114.4 (4.50)	89.0 (3.50)	12.7 (0.50)	152.4 (6.00)	12.7 (0.50)	114.4 (4.50)	114.4 (4.50)	12.7 (0.50)	89.0 (3.50)	66.1 (2.60)	11.2 (0.44)
	2.2t (5 klb)	105.2 (4.14)	106.8 (4.20)	130.6 (5.14)	18.0 (0.71)	16.0 (0.63)	49.3 (1.94)	177.8 (7.00)	114.4 (4.50)	89.0 (3.50)	12.7 (0.50)	152.4 (6.00)	12.7 (0.50)	114.4 (4.50)	114.4 (4.50)	12.7 (0.50)	89.0 (3.50)	66.1 (2.60)	11.2 (0.44)
3	4.4 t (10 klb)	136.6 (5.38)	138.1 (5.44)	162.0 (6.38)	24.0 (0.94)	20.0 (0.79)	63.5 (2.50)	235.0 (9.25)	152.4 (6.00)	101.6 (4.00)	25.4 (1.00)	184.2 (7.25)	25.4 (1.00)	152.4 (6.00)	152.4 (6.00)	25.4 (1.00)	101.6 (4.00)	90.2 (3.55)	17.5 (0.69)

Note:

- 1)H Height when activating weigh module by removing SafeLock™ plates
- 2)H_{sl} Height when shipping or mounting weigh module with SafeLock™ plates
- 3)H_p Height when using thermal pad or shock/vibration pad



SWB405 MultiMount™ download page,
including 2D/3D drawings:
▶ www.mt.com/ind-downloads-swb405

Order Information SWB405 MultiMount™ – Weigh Module with Load Cell

SWB405 MultiMount™ – Weigh Module with Load Cell /

SWB405 MultiMount™ EN1090 – Weigh Module with Load Cell (Europe Only)

Order information, Weigh module Assembly					Material	
Size	Rated capacity	Description	Class Description	Cable, material / length	SS304	CS
2	110 kg / 250 lb	Weigh Module Assembly	C3 / III M n:5	PVC / 5 m (16.4ft)	30801025	30801027
					30801023	30801024
	220 kg / 500 lb				30830606	30830611
					30830590	30830595
	550 kg / 1250 lb				30830607	30830612
	30830591	30830596				
	1100 kg / 2500 lb				30830608	30830613
					30830592	30830597
	2200 kg / 5000 lb				30830609	30830614
					30830593	30830598
3	4400 kg / 10000 lb			PVC / 10 m (32.8ft)	30830610	30830615
					30830594	30830599

Bolded entries are stocked

Order Information SWB405 MultiMount™ – Weigh Module without Load Cell

SWB405 MultiMount™ – Weigh Module without Load Cell /

SWB405 MultiMount™ EN1090 – Weigh Module without Load Cell (Europe Only)

Order information		Weigh module kit Item No.		Suitable Load Cells Item No.			
Size	Rated capacity	Material		Class	Cable, material / length	Dummy load cell	
		SS304	CS				
2	110 kg / 250 lb	30830616 30830600	30830619 30830603	C3 / III M n:5	PVC / 5 m (16.4ft)	30856223	
						30856216	
	220 kg / 500 lb					30856225	
	550 kg / 1250 lb						30856217
	1100 kg / 2500 lb						30856218
	2200 kg / 5000 lb	30830617 30830601	30830620 30830604		30856219	30856226	
3	4400 kg / 10000 lb	30830618 30830602	30830621 30830605		PVC / 10 m (32.8ft)	30856220	30856227

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SWB405 MultiMount™ – Weigh Module Accessories

METTLER TOLEDO offers an extensive range of accessories for weighing modules and weighing cells. Correct installation is thus simplified and the consequences of harmful environmental influences reduced.

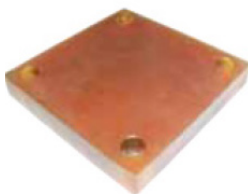


Stabilizers

Stabilizers⁽¹⁾ are used to stabilize a scale subject to heavy vibration, high torque, or in-motion weighing. Each weigh module can host one stabilizer. With stabilizer installed, thermal expansion is still possible, guaranteeing the best weighing performance. Stabilizers (and weigh modules) shall be installed perpendicular to the direction of thermal expansion/contraction, for details see the Installation Guide on the product download page.

Rated capacity	Item Nr.	
	For stainless steel weigh module	For carbon steel weigh module
110 - 2200 kg / 500 - 5000 lb	30830653	
4400 kg / 10,000 lb	30830655	

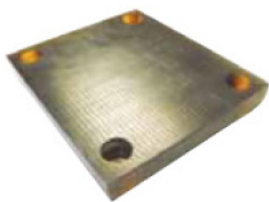
¹⁾ 1 per weigh module.



Thermal Pads

Thermal pads are used in the case of hot tanks. They protect the weighing cell from temperature load caused by convection, thereby increasing accuracy and the life span of the system.

Rated capacity		Item Nr.	
		80°C	110 - 2200kg / 500 - 5000lb
	4400 kg / 10,000 lb	61010621	
170°C	110 - 2200kg / 500 - 5000lb	61024642	
	4400 kg / 10,000 lb	61037510	



Mechanical Pad

Mechanical pads are used for reducing load peaks in the case of decreasing loads or vibrations. This effect is achieved through the installation of a relatively soft material with high internal damping.

Rated capacity	Item Nr.		
	Carbon Steel (CS)	304 Stainless Steel	316 Stainless Steel
-			
110 - 2200kg / 500 - 5000lb	61005965		
4400 kg / 10,000 lb	61005938		



Shim Set

For optimal weigh module alignment thin plates of metal can be used to level the tank scale and evenly distribute the load.

Rated capacity	Item Nr.
110 - 2200 kg / 500 - 5,000 lb	30693512
4400 kg / 10,000 lb	30693513

Related Products

Precision Junction Boxes

Precision junction boxes connect the load cells and transfer the signal to the weighing indicator or transmitter.



Junction Box:

▶ www.mt.com/ind-downloads-precision-junctionbox



Weighing Indicators and Transmitters

METTLER TOLEDO offers a complete family of weighing indicators, controllers and transmitters for applications from simple weighing to filling, stock control, batching, formulation, counting, or checkweighing.



ACT350 Weight Transmitter:

▶ www.mt.com/ind-act350



IND360 Automation Indicator:

▶ www.mt.com/ind360



IND570 Industrial Indicator:

▶ www.mt.com/ind570



IND780 Industrial Indicator:

▶ www.mt.com/ind780



Weigh Module Knowledge Base



Weigh Module Proven Safety Video

Watch the video to understand how force ratings are tested and mechanical safety of weigh modules are ensured.

▶ <https://www.youtube.com/watch?v=jmOzLrB9HdA>



Weigh Module Buying Guide

Ensure that you make the proper weigh module selection with the support of our free Weigh Module Buying Guide.

▶ www.mt.com/ind-wm-buying-guide



Dos and Don'ts

Discover best practices for weigh module installation and integration in custom scales with straightforward, real-world examples.

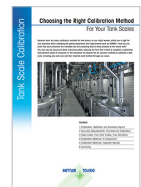
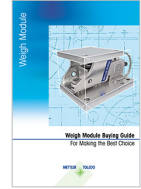
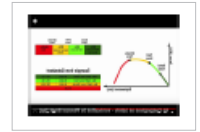
▶ www.mt.com/ind-wm-dos-donts



Tank Scale Calibration Methods

In this document, we discuss the six common methods to calibrate tank scales and then illustrate each method with practical use cases.

▶ www.mt.com/ind-tankscalecalibration



Further Readings

Safety-Related Force Ratings:

www.mt.com/ind-wp-safety

Weighing Accuracy in Tank Scales:

www.mt.com/ind-weighing-accuracy-brochure

Analog and PowerMount™ Weigh Modules:

www.mt.com/ind-modern-weigh-modules-WP

Weigh Module Systems Handbook:

www.mt.com/ind-system-handbook

Weightless Tank Scale Calibration:

www.mt.com/ind-weightless-tank-scale-calibration-WP

RapidCal™ Tank Scale Calibration:

www.mt.com/ind-rapidcal

Explore Our Service Solutions

Maximize the Value of Your Tank Weighing Systems

METTLER TOLEDO helps to increase the value of your tank scales, maximize your equipment lifetime, and protect your investment. Leverage our unique RapidCal™ calibration technology to improve your efficiency, performance, and productivity.



Designing and installing tank weighing systems

RapidCal™ is a fast, hassle-free calibration method for most tank, reactor, hopper, and silo scales. Design your tanks ready for RapidCal to increase your efficiency during site acceptance tests, and win more business by offering unique benefits to your customer, including minimized downtime for calibration, simplified compliance, and less material waste.

- Sustainability
- Minimized downtime for calibration
- Compliance

With minimal implementation effort, step-by-step guidance, and technical drawings, you can take your systems to the next level and strengthen your customer relationships.



Operating tank weighing systems

Tank weighing systems in production must be calibrated for quality and compliance at regular intervals. METTLER TOLEDO's RapidCal™ calibration takes only about one hour to complete and helps you to achieve your sustainability goals because it does not require expensive substitution materials. RapidCal is also available as ISO17025 accredited calibration service in select countries.



Learn more about RapidCal™:

► www.mt.com/IND-rapidcal



METTLER TOLEDO Service

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

www.mt.com

For more information

METTLER TOLEDO Group
Industrial Division
Local contact: www.mt.com/contacts

Subject to technical changes
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