

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



### Tank Weighing

Available in capacities up to 75,000 lb, VLM3 weigh modules are suitable for weighing heavy-capacity tanks and hoppers.



### Load Cells

VLM3 weigh modules are available with load cells made of nickel-plated alloy steel (Model SLD425) or stainless steel (Model SLD525). Both can be used for indoor or outdoor applications. They feature a dual-ended-beam design with potted seals that provide IP67 protection.



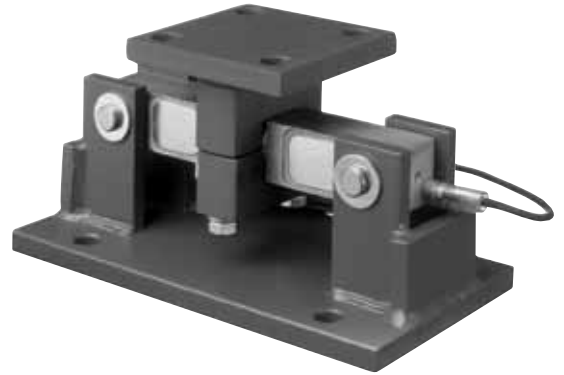
### Sliding Suspension

The weigh module suspension allows the load cell to slide laterally on the pins that secure it to the lower mounting plate. This design compensates for thermal expansion and contraction of vessels due to ambient temperature change or internal vessel reactions.



### Self-Checking Design

VLM3 weigh modules have mounting hardware with a self-checking design and anti-uplift protection. No external checking is needed.



### VLM3 Weigh Module

VLM3 weigh modules offer good value for general-purpose weighing of tanks, hoppers, and OEM machinery. They use dual-ended-beam load cells to deliver accurate and repeatable weighing. The self-checking design is suitable for static loading in applications where thermal expansion and contraction occurs. Mounting hardware is available in carbon steel or stainless steel to stand up to a variety of environments.

- Capacity range: 1K - 75K (0.4 - 34t)
- Carbon steel or stainless steel construction
- Self checking for economical system integration
- Uplift protection
- Compensation for thermal expansion/contraction
- Factory Mutual approved load cells

# VLM3 Weigh Module Specifications

Weigh Module Parameter		Unit of Measure	Specification									
Model No.			VLM3C / VLM3S									
Rated Capacity (R.C.)		t, nominal (klb)	0.4 (1)	0.9 (2)	2.2 (5)	4.4 (10)	6.8 (15)	11.4 (25)	15.9 (35)	22.7 (50)	34.1 (75)	
Load Limit, Safe <sup>1</sup>		%R.C.	150									
Max. Horizontal Force, Carbon Steel	Transverse <sup>6</sup>	%R.C.	100*	100	40	88	58	35	25	45	30	
	Longitudinal <sup>7</sup>	%R.C.	100*	100*	45	70	47	28	20	75	50	
Max. Horizontal Force, Stainless Steel	Transverse <sup>6</sup>	%R.C.	100*	88	35	70	47	28	20	30	20	
	Longitudinal <sup>7</sup>	%R.C.	100*	88	35	52	35	21	15	60	40	
Max. Uplift <sup>8</sup>	Carbon Steel	%R.C.	100*	100*	80	100*	93	56	40	67	45	
	Stainless Steel	%R.C.	100*	100*	45	100*	70	42	30	60	40	
Max. Top Plate Travel	Transverse	± mm (in)	1.5 (0.06)						5.3 (0.21)			
	Longitudinal	± mm (in)	0 (0)									
Weight (including load cell), nominal		kg (lb)	13.2 (29.1)			29.9 (65.9)			89 (196.2)			
Material			carbon steel / stainless steel									
Finish			painted / glass bead blasted									

Load Cell Parameter		Unit of Measure	Specification								
Model No.			SLD425 / SLD525								
Rated Capacity (R.C.)		t, nominal (klb)	0.4 (1)	0.9 (2)	2.2 (5)	4.4 (10)	6.8 (15)	11.4 (25)	15.9 (35)	22.7 (50)	34.1 (75)
Rated Output		mV/V @ R.C.	3 ± 0.27%								
Zero Load Output		%R.C.	≤ 1.0								
Combined Error <sup>2,3</sup>		%R.C.	≤ 0.026								
Repeatability Error		%A.L. <sup>4</sup>	≤ 0.01								
Creep, 30 minutes		%A.L.	≤ 0.017								
Temperature Effect on	Min. Dead Load Output	%R.C./10°C (50°F)	≤ 0.014								
	Sensitivity <sup>3</sup>	%R.C./10°C (50°F)	≤ 0.013								
Temperature Range	Compensated	°C (°F)	-10 ~ +40 (+14 ~ +104)								
	Operating	°C (°F)	-35 ~ +65 (-31 ~ +149)								
	Safe Storage	°C (°F)	-54 ~ +82 (-65 ~ +180)								
Factory Mutual Approval <sup>5</sup>	Rating		IS CL I,II,III, DIV 1, GP A,B,C,D,E,F,G, T4; CL I, ZN 0, AEx ia IIC, T4; CL I, ZN 0, Ex ia IIC, T4; CL I,II,III, DIV 2, GP A,B,C,D,F,G, T4; USA only: CL I, ZN 2, GP IIC T4; Canada only: Ex nL IIC T4; IP67								
	Entity Parameters		Vmax = 20V, Imax = 600mA, Pi = 6W, Ci = 12nF, Li = 40µH (200-ft cable length)								
Excitation Voltage	Recommended	V AC/DC	5 ~ 12								
	Maximum	V AC/DC	18								
Terminal Resistance	Excitation	Ω	700 ± 7								
	Output	Ω	703 ± 4								
Insulation Resistance @ 50VDC		M Ω	> 5000								
Material	Spring Element		Alloy Steel / 17-4 PH Stainless Steel								
	Cable		Polyurethane								
	Type		Potting Compound								
Protection	IP Rating		IP67								
	NEMA Rating		6/6P								
Load Limit	Safe	%R.C.	150								
	Ultimate	%R.C.	300								
Deflection @ R.C., nominal		mm (in)	0.02 (0.001)	0.08 (0.003)	0.19 (0.008)	0.11 (0.004)	0.16 (0.006)	0.27 (0.01)	0.37 (0.015)	0.26 (0.010)	0.54 (0.021)
Weight, nominal		kg (lb)	1 (2.2)			2.5 (5.5)			11 (24.2)		
Cable	Length	m (ft)	6 (19.7)								
	Diameter	mm (in)	5 (0.20)								

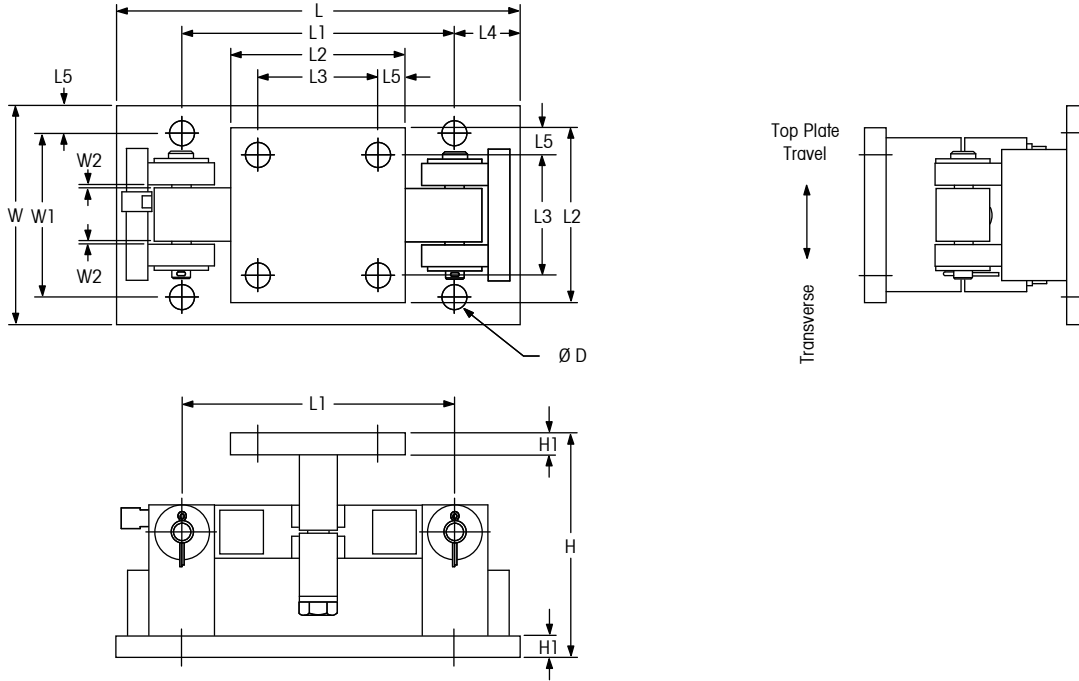


Produced in a facility that is



- 1 Maximum vertical downward force that can be applied to the top plate.
  - 2 Error due to the combined effect of non-linearity and hysteresis.
  - 3 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.
  - 4 A.L. = Applied Load.
  - 5 See certificate for complete information.
  - 6 Maximum horizontal force that can be applied to the top plate in a direction transverse to the longitudinal axis of the load cell (in the absence of vertical load).
  - 7 Maximum horizontal force that can be applied to the top plate in a direction parallel to the longitudinal axis of the load cell (in the absence of vertical load).
  - 8 Maximum vertical uplift force that can be applied to the top plate.
- Note: All maximum force values are derived by limiting stresses to 60% of yield stress in all weigh module components (verified by FEA analysis).  
\*Reduced from original published values.

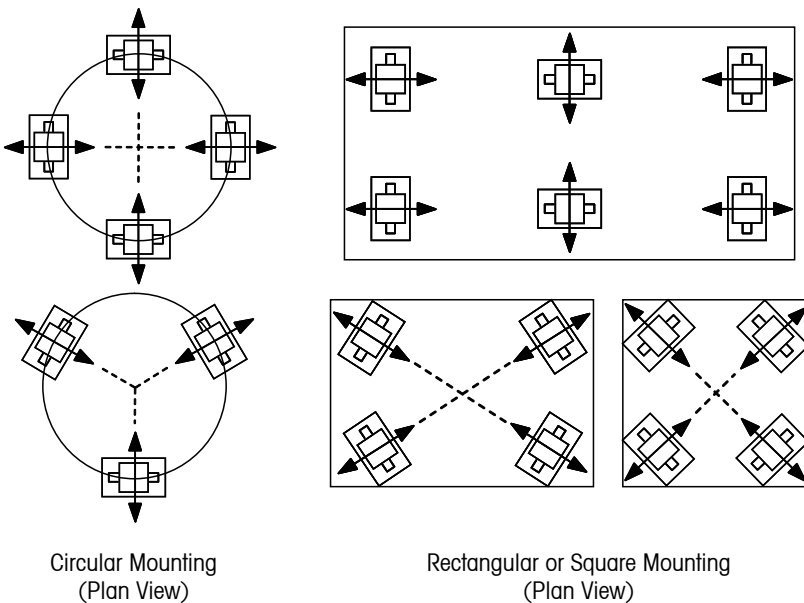
# VLM3 Weigh Module Dimensions



Capacity	D	H	H1	L	L1	L2	L3	L4	L5	W	W1	W2
454-2,268 kg (1,000-5,000 lb)	14.3 (0.56)	130.2 (5.13)	12.7 (0.50)	235.0 (9.25)	158.8 (6.25)	101.6 (4.00)	69.9 (2.75)	38.1 (1.50)	15.9 (0.62)	127.0 (5.00)	95.3 (3.75)	± 1.5 (± 0.06)
4,536-15,876 kg (10,000-35,000 lb)	20.6 (0.81)	200.7 (7.90)	19.1 (0.75)	304.8 (12.00)	190.5 (7.50)	203.2 (8.00)	152.4 (6.00)	57.2 (2.25)	25.4 (1.00)	203.2 (8.00)	152.4 (6.00)	± 1.5 (± 0.06)
22,680-34,020 kg (50,000-75,000 lb)	20.6 (0.81)	236.2 (9.30)	25.4 (1.00)	412.8 (16.25)	292.1 (11.50)	228.6 (9.00)	165.1 (6.50)	60.3 (2.38)	31.8 (1.25)	304.8 (12.00)	241.3 (9.50)	± 5.3 (± 0.21)

Dimensions are in mm (inches).  
Top plate travels in transverse direction only and equals ± W2.

# VLM3 Mounting Arrangements



# VLM3 Cable Colors

Color	Function
Red	+ Excitation
Black	- Excitation
Green	+ Signal
White	- Signal
Clear	Shield

## VLM3 Ordering Information

Description	Item No.	Trade Name
VLM3 CS WMA (with load cell), 1K	61043165	VLM3C101A
VLM3 CS WMA (with load cell), 2K	61043167	VLM3C102A
VLM3 CS WMA (with load cell), 5K	61043168	VLM3C105A
VLM3 CS WMA (with load cell), 10K	61043169	VLM3C110A
VLM3 CS WMA (with load cell), 15K	61043170	VLM3C115A
VLM3 CS WMA (with load cell), 25K	61043171	VLM3C125A
VLM3 CS WMA (with load cell), 35K	61043172	VLM3C135A
VLM3 CS WMA (with load cell), 50K	61043173	VLM3C150A
VLM3 CS WMA (with load cell), 75K	61043174	VLM3C175A
VLM3 SS WMA (with load cell), 1K	61043175	VLM3S101A
VLM3 SS WMA (with load cell), 2K	61043176	VLM3S102A
VLM3 SS WMA (with load cell), 5K	61043177	VLM3S105A
VLM3 SS WMA (with load cell), 10K	61043178	VLM3S110A
VLM3 SS WMA (with load cell), 15K	61043179	VLM3S115A
VLM3 SS WMA (with load cell), 25K	61043180	VLM3S125A
VLM3 SS WMA (with load cell), 35K	61043181	VLM3S135A
VLM3 SS WMA (with load cell), 50K	61043182	VLM3S150A
VLM3 SS WMA (with load cell), 75K	61043183	VLM3S175A
VLM3 CS WMK (without load cell), 1-5K	61042134	TB207348-05C
VLM3 CS WMK (without load cell), 10-35K	61042135	TB207348-35C
VLM3 CS WMK (without load cell), 50-75K	61042136	TB207348-75C
VLM3 SS WMK (without load cell), 1-5K	61042137	TB207348-05S
VLM3 SS WMK (without load cell), 10-35K	61042138	TB207348-35S
VLM3 SS WMK (without load cell), 50-75K	61042139	TB207348-75S

## Load Cell Ordering Information

Description	Item No.	Trade Name
SLD425 Load Cell, 1K, alloy steel*	61043224	TB601471-001
SLD425 Load Cell, 2K, alloy steel*	61043225	TB601471-002
SLD425 Load Cell, 5K, alloy steel*	61043226	TB601471-005
SLD425 Load Cell, 10K, alloy steel*	61043227	TB601471-010
SLD425 Load Cell, 15K, alloy steel*	61043228	TB601471-015
SLD425 Load Cell, 25K, alloy steel*	61043229	TB601471-025
SLD425 Load Cell, 35K, alloy steel*	61043230	TB601471-035
SLD425 Load Cell, 50K, alloy steel*	61043231	TB601471-050
SLD425 Load Cell, 75K, alloy steel*	61043232	TB601471-075
SLD525 Load Cell, 1K, stainless steel*	61042069	TB601448-001
SLD525 Load Cell, 2K, stainless steel*	61042072	TB601448-002
SLD525 Load Cell, 5K, stainless steel*	61042073	TB601448-005
SLD525 Load Cell, 10K, stainless steel*	61042074	TB601448-010
SLD525 Load Cell, 15K, stainless steel*	61042076	TB601448-015
SLD525 Load Cell, 25K, stainless steel*	61042077	TB601448-025
SLD525 Load Cell, 35K, stainless steel*	61042078	TB601448-035
SLD525 Load Cell, 50K, stainless steel*	61042079	TB601448-050
SLD525 Load Cell, 75K, stainless steel*	61042080	TB601448-075

\*Cable: 19.7 feet.



## 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)

For more information

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08/2012

109-TH03497.0E