# Weigh Modules & Load Cell Accessories

In Potentially Explosive Atmospheres

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#### 1. Application

1.1. The products listed in the Appendix are nonelectrical weigh modules, their options and load cell accessories. They provide a convenient means of mounting load cells to various platforms, tanks & hoppers to create a weighing scale. In potentially explosive atmospheres they must be used with load cells that are independently and appropriately approved for the purpose; this applies also to junction boxes, barriers, terminals and other equipment which may be included as part of the system.

1.2. The equipment listed in the Appendix is suitable for use in hazardous areas of Zones 1 and 2 and Zones 21 and 22 when used under the following conditions and in accordance with the Instructions contained herein:

Group:	&
EPL:	Gb, Gc, Db or Dc
Materials:	Gas & Dust
Temp. Class:	T4
Max. Surface Temp:	135°C
Ambient Temp:	-40°C ≤ Ta ≤ +50°C

Note that the load cells are approved independently for use in hazardous areas and these approvals must be reviewed for suitability in any given environment.

1.3. Mettler-Toledo has performed the Ignition Hazard Assessment required in EN ISO 80079-36:2016 and found that the non-electrical weigh module hardware, weigh module options and load cell accessories fall outside the scope of the ATEX directive 2014/34/EU when installed according to the requirements in this document. Hence, there are no ATEX markings on the products, other than those on the load cells. Dekra Certification B.V. reviewed the Hazard Assessment and indicated their concurrence by issuing Attestation of Conformity number KEMA 211129000.

1.4. Go to <u>http://www.mt.com</u> to get copies of the latest certificates, drawings, Attestation of Conformity and Declarations of Conformity.

#### 2. Safety

2.1. No modifications may be made to the products in the Appendix and the use of components not complying with the specifications is prohibited.

2.2. Repairs may be made only by trained and authorized personnel.

2.3. Comply with the product's Installation Instructions and the following:

- Regulations and standards for the respective country
- Regulations and standards for electrical and mechanical systems in hazardous areas for the respective country
- All instructions related to safety issued by the owner.

2.4. Avoid static electricity build-up on non-conductive parts at all times. In particular, avoid any highly efficient charge generating mechanisms to avoid propagating brush discharges. See also cleaning instructions in section 5.

## 3. Installation

3.1 Only install or perform maintenance work on the weighing system in the hazardous area if the following conditions are fulfilled:

- The intrinsically safe characteristic values and zone approval of the individual components are in accord with one another.
- The owner has issued a permit ("spark permit" or "fire permit").
- The area has been rendered safe and the owner's safety coordinator has confirmed that there is no danger.
- The necessary tools and any required protective clothing are provided (danger of build-up of static electricity).

3.2 Perform the installation in accordance with the product's general installation instructions.

3.3 In the Hazard Assessment, scale lift-off (tipping) was classified as a Rare Malfunction. If liftoff is considered to occur more frequently, this should be eliminated by, for example, the application of check rods to prevent lift-off of the scale. Note: GageMount<sup>™</sup> 200-500t do not have lift-off protection which must be provided externally in all cases where required.

3.4 Any oscillation or bumping of the scale in a horizontal plane must be prevented by, for example, the application of check rods.

3.5 Shock/Vibration, Acetal & PEI pads must be fully sandwiched between conductive steel plates with only the vertical perimeter surface exposed.

#### WARNING

# RISK OF EXPLOSION DUE TO STATIC-ELECTRICITY DISCHARGE

- Connect equipotential bonding straps in accordance with national regulations & standards. In particular, ensure that the scale frame (tank, hopper, etc.) is connected to all weigh module base plates. Ensure that all connections between parts are conductive.
- Avoid static electricity build-up on nonconductive parts at all times. In particular, avoid any highly efficient charge generating mechanisms to avoid propagating brush discharges. See also cleaning instructions in section 5.

# WARNING



DANGER OF EXPLOSION DUE TO MECHANICALLY GENERATED SPARKS.

Impacts involving rust & light metals & their alloys can cause sparks.

- Do not use tools with rusty / corroded surfaces.
- Install all components in hazardous area in such a way that they are protected from impacts & falling objects.

# WARNING



DANGER OF EXPLOSION WITH PAINTED SURFACES

The equipotential bonding only works with painted surfaces if a conductive connection exists.

- When possible, use only stainless, galvanized or plated parts.
- Otherwise carry out suitable measures for the prevention of static-electricity discharge.

#### 4. Operation

4.1 Be familiar with the product specifications and follow the operating instructions for the various pieces of equipment making up the system.

4.2 Comply with all limit values. For example, do not exceed the rated capacity of any equipment.

#### 5. Maintenance & Care

5.1 Regularly clean all products:

5.1.1 As dust deposits cause heat accumulation on open surfaces and could thus become flammable.

5.1.2 As dust trapped between moving parts can become an ignition hazard.

5.2 If necessary, observe maintenance intervals and check for proper functioning of the system including options and accessories.

5.3 Repairs may be made only by trained and authorized personnel.

5.4 Clean non-conductive parts with a damp cloth only to avoid electrostatic charging. This applies to weigh module labels, accessory pads (Shock/Vibration, Acetal and PEI pads), rubber seals/gaskets and load cell accessories EVK, EVKT, EVK FL, FTK and FTKT.

5.4.1 Highlight this danger with a warning label that states "Non-conductive parts, clean only with a damp cloth" attached to the parts. Add this warning statement also to any work instructions and to any on-site explosion protection documents.

# 6 Appendix

6.1 Weigh Modules

Weigh Module Model No.	Load Cell Model No.*	Capacity Range	WM Ver- sions	
3390 GageMount™	0782/SLC820	200t-500t	All	
SWB405 MultiMount™	SLB415	110kg – 4.4t	All	12 Jun
SWB505 MultiMount™	MTB, 0745A	5kg – 4.4t	All	1 Alexandre
SWB605 PowerMount™	SLB615D	220kg - 4.4t	All	AT A
SWC415 / SWC515 PinMount™ SWC615 PowerMount™	SLC610, 0782, SLC820 (PDX®), SLC611, SLC611D	7.5t - 100t	All	A.
0970 RingMount™	RLC	250kg – 10t	All	
SWB805 Hygienic MultiMount	SLB815	110kg - 4.4t	All	
SWC515 / SWC615 PinMount / PowerMount 200t / 300t	0782, SLC820 (PDX®)	200t - 300t	All	A CONTRACTOR
SWB305 MultiMount	SLB215, SLB515	110kg - 4.4t	All	

\* Applicable load cell model numbers are shown here for reference. Also refer to their ATEX certificates.

#### 6.2 Weigh Module Options

- Spacer Plate
- Dummy Load Cell
- Dead Stand (not painted versions)
- Top Welding Kit
- Bottom Welding Kit

• Stabilizer option

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- Top Threaded-Hole Kit
  - Bottom Threaded-Hole Kit
- Ground Strap
- Top Shim Set Option
- Shock/Vibration,
- Acetal & PEI pads
- Top Threaded Kit
- Bottom Welding Kit
- Bottom Concrete Kit

## 6.3. Load Cell Accessories

Accessory	Load Cell Model No.*	Capacity Range	Accessory Versions	
Base Plate Kit (BPKM) for Beam load cells	MTB,0745A, SLB415, SLB615D, SLB215, SLB515	5kg – 4.4t	AII	<u> </u>
Expansion Kit (EK) for Blind Hole	0745A, SLB415, SLB615D	110kg – 4.4†	All	4
Expansion Kit (EK) for MTB	МТВ	5kg – 500kg	All	L L
Expansion & Vibration Kit (EVK) for Blind Hole	0745A, SLB415, SLB615D	110kg - 4.4t	All	÷.
Expansion & Vibration Kit (EVKT) for Threaded Hole	SLB215, SLB515	220kg - 4.4t	All	<u>L</u>
Expansion & Vibration Kit (EVK) for MTB	МТВ	5kg – 500kg	All	d l
Foot Kit (FTK) for Blind Hole	0745A, SLB415, SLB615D	110kg - 4.4t	All	4
Foot Kit (FTKT) for Threaded Hole	SLB215, SLB515	220kg - 4.4t	All	-J-
Foot Kit (FTK) for MTB	МТВ	5kg – 500kg	All	4
Alternative Expansion & Vibra- tion Kit (EVK FL) for MTB	МТВ	5kg – 500kg	All	

\* Applicable load cell model numbers are shown here for reference. Also refer to their ATEX certificates.

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