Hazardous Area Catalog

Catalog
2014/15

- Industrial Terminals
- Communication Modules
- Power Supplies
- Industrial Scales
- Industrial Platforms
- High Precision Weigh Modules
- Weigh Modules
- Vehicle Scales
- Lab Scales
- Process Analytics
- Metal Detection
- Checkweighing Solutions

Weighing and Process Solutions
from the Market Leader

METTLER TOLEDO

The Right Solution
for Your Hazardous Area Needs

Anywhere you find a hazardous area, we make our experience and knowledge of hazardous area (Ex) solutions count. With the largest range of Ex weighing solutions on the market we are confident that we can offer the right solution for your need.

Only compliant with the hazardous area regulations equipment provides highest protection against explosion risk. Some safety concepts, however, can have an influence on weighing performance. METTLER TOLEDO designs and supply high precision instruments and weighing equipment for hazardous areas which features excellent safety maintaining uncompromised weighing performance.

Explosive areas need special consideration, but performance need not be compromised

We understand that in potentially explosive certified areas the need for safe, accurate and reliable weighing is not reduced. That's why we have built the most extensive range of products certified for hazardous areas. These are not only designed to fulfill the latest safety legislation but also designed to perform to the same weighing accuracy standards that are found in non hazardous areas.

We believe that there should be no compromises when communicating from a safe to a hazardous area.

Our extensive range of intrinsically safe terminals provide high speed process control for automated processes or multiple scale and ERP integration for manual or semi manual processes. Choose from a range of compact, bench, floor and custom scales as well as load cells and vehicle scales up to 400 tons. Our products offer the flexibility of mobile battery operation and/or fixed, power supplies and enclosures.

We serve global customers on a worldwide base with the largest sales and service network in our industry. Our sales and service organizations around the globe ensure that we have factory-trained, experienced, and dedicated specialists serving our customers.

Courtesy Clariant

Table of Contents

For more information on hazardous area standards and regulations, methods of protection, product solutions, installation and maintenance a serie of white papers

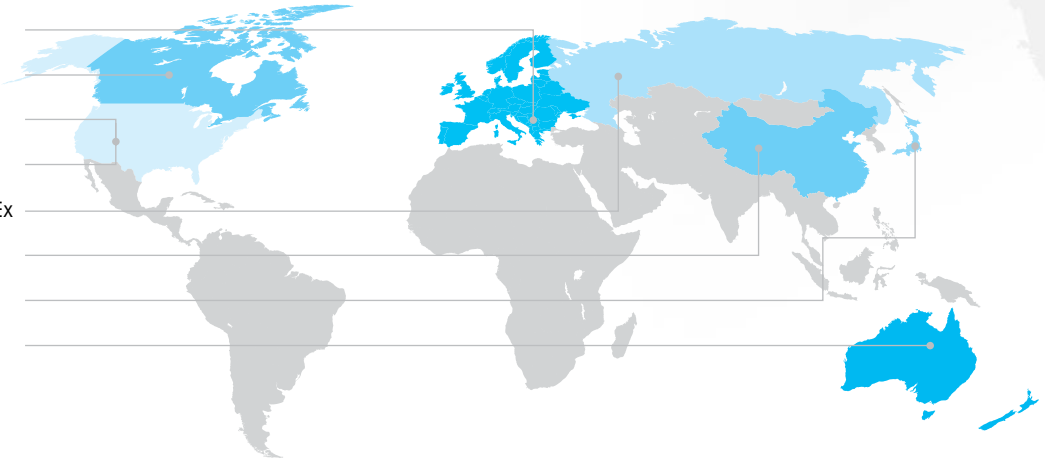
▶ **www.mt.com/haz-safety**

▶ **www.mt.com/ind-intrinsic-safety**

Worldwide Classification of Hazardous Areas

Whatever your requirement, where ever you are in the world, with global approvals and conformity with the latest guidelines, solutions provided by METTLER TOLEDO ensure that your processes are optimized for maximum safety and reliability.

Guidelines	Standard
CENELEC (Europe)	ATEX
CEC (Canada)	CSA
NEC (USA)	FM
NEC (USA)	UL
GOST R (Russia)	GOST R-Ex
AQSIQ (China)	NEPSI
MHLW (Japan)	TIIS
IEC (Australia)	IEC-Ex



North America

In North America (US/Canada) the regulations related to manufacturing facilities at risk are found in the National Electrical Code (NEC) Handbook. There are two classification systems one based on Class/ Divisions and the other based on Zones.

The most common hazardous area classification system in US is the Class/Division is defined in the NEC500 article. According to NEC 500 hazardous locations are divided into Substance Classes I, II, and III depending on the type of material present. Classes are further categorized into Division 1 and Division 2 according to the probability of the hazardous materials present in the ignitable concentrations. The second alternative system classification in North America is the Zone classification based on the IEC / CENELEC guidlines and defined in the NEC505 article. The article classified areas into three Zonesrather than 2 Divisions. The zoning system is however applies to gas and vapor hazardsonly.

Substance	Division	
Class I Gases Vapors	**Division 1**	Areas in which dangerous concentrations of flammable gases/vapors are present **continously** or **occasionally** under normal operating conditions.
	Division 2	Areas in which dangerous concentrations of flammable gases/vapors are **not** likely to be present under normal operating conditions.
Class II Dusts	**Division 1**	Areas in which dangerous concentrations of flammable dusts are present **continuously** or **occasionally** under normal operating conditions.
	Division 2	Areas in which dangerous concentrations of flammable dusts are **not** likely to be present under nomal operating conditions.
Class III Fibers Flyings	**Division 1**	Areas in which dangerous concentrations of flammable fibers and flyings are present **continuously** or **occasionally** under normal operating conditions.
	Division 2	Areas in which dangerous concentrations of flammable fibers and flyings are **not** likely to be present under normal operating conditions.

Hazardous Area Zoning System

As previously mentioned along side the division system in North America exists a zoning system based on IEC legislation. This is the method adopted by Europe and other countries.

Substance	NEC505	Zoning		Equipment category
Gases Vapors	Class 1	**Zone 0**	Area in which an atmosphere at risk of explosion from gases or vapor is **continuously** or **frequently** present during normal operation	1G
		Zone 1	Area in which an atmosphere at risk of explosion from gases or vapors can form **occasionally** during normal operation	2G (1G)*
		Zone 2	Area in which an atmosphere at risk of explosion from gases or vapors does **not normally** form or forms for only short periods during normal operation	3G (1G & 2G)*
Dusts	No NEC classification	**Zone 20**	Area in which an atmosphere at risk of explosion from flammable dust can form is **continuously** or **frequently** present during normal operation	1D
		Zone 21	Area in which an atmosphere at risk of explosion from flammable dust can form **occasionally** during normal operation	2D (1D)*
		Zone 22	Area in which an atmosphere at risk of explosion from flammable dust do **not normally** form or forms for only short periods during normal operation	3D (1D & 2D)*

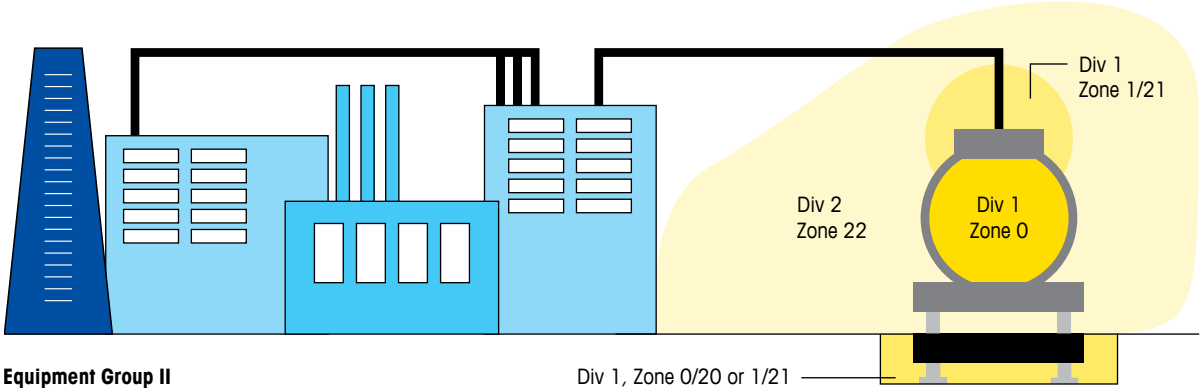
* approved products can also be used

Europe & International Classification

To establish requirements and safety standards that are the same throughout Europe, the EC commission has compiled product-related "European Directives." These directives apply to all types of products. The corresponding European standards developed the European Committee for Electrotechnical Standardization (CENELEC).

In Europe the areas are classified using the ATEX legislation. This legislation is based on methods developed by the IEC (International Electric Council) with the aim of creating one global standard. CENELEC (European Committee for Electrotechnical Standardization) and the IEC agreed in 1994 to combine standards wherever possible and this led to the ATEX standards being almost identical to the IEC standards. There are however some differences and the harmonization process is still on going. The IEC standards are frequently being adopted by national approval agencies such as NEPSI in China. This makes going local approvals easier. No single, internationally recognized and accepted standard exists at this time. Global agencies are committed to harmonizing standards, but it will be a long time before this becomes a reality.

This is why METTLER TOLEDO uses local approvals where necessary to ensure local compliance.



Equipment Group II

Understanding an Approved Label

Once the hazardous area is classified – the correct equipment must be choosed and installed.

European Union ATEX Type of Marking

Ex	**Explosion Protection mark** shows suitability of equipment for installation inpotentially explosive areas
II	**Equipment Group** I=for use in mines, II=for surface industries
2	**Equipment category,** shows in which zone the equipment can be used Gas: 1 = Zone 0; 2 = Zone 1; 3 = Zone 2 Dust: 1 = Zone 20; 2 = Zone 21; 3 = Zone 22
G or D	G=tested for gas atmospheres, D=tested for dust atmospheres
Ex	**Explosion-proof electrical equipment,** sometimes EEx is seen. The additional E=European certificate in accordance with harmonized standards however this has been phased-out
ib	**Type of ignition protection,** i = intrinsically safe, refers to the absence of the minimum ignition energy to cause a spark both during normal operation and if a fault occurs. ia = Intrinsically safe, if two safe guards fail. For use in 'Zone 0', 'Zone 1' and 'Zone 2'; classified hazardous areas ib = Intrinsically safe, if one safe guard fails. For use in 'Zone 1' and 'Zone 2' classified hazardous areas. d = Flameproof, Enclosure which can withstand an explosion and prevent its propagation e = increased safety, Enclosure in which there is no spark or no hot surface in normal operation m = encapsulated, all components encapsulated
IIC	**Explosion Substance Group** IIA = e.g. propane (least incendiary, low potential to be ignited by a spark) IIB = e.g. ethylene IIC = e.g. hydrogen and acetylene (most incendiary, high potential to be ignited by a spark)
T4	**Surface Temperature class.** Corresponds to the maximum working surface temperature of the product T1=450°C, T2=300°C, T3=200°C, T4=135°C, T5=100°C, T6=85°C
tD	**Indicates Standard protection against dusts.** All components are protected against ingress of dust by an enclosure
A21	**Test method used to test for dust tightness.** A21 = Test method for Cat 2 A22 = Test method for Cat 3
IP66	**IP Ingress Protection Rating.** Here the IP rating, if any, is defined
T60°C	This temperature will correspond to the maximum temperature of the internal or external surface of the product for dust

Additional Markings Seen Sometimes

II (2)	The brackets show that the product must be installed in the safe area but it can be connected into the hazardous area
[Ex ib]	The brackets indicate that the device must be installed in the safe area
nA	Non sparking equipment, does not generate a spark during normal operation
nL	Energy limited, intrinsically safe during standard operation

North American type of Marking

FM C APPROVED US	**Notified body** e.g. FM APPROVED Factory Mutual UL Underwriters Laboratories Opposite the C & US symbols show that this approval is applicable for both the US and Canadian markets
IS	**Type of protection** IS = intrinsically safe XP = explosion proof AIS = associated apparatus with intrinsically safe connections DIP = dust ignition proof
Class	**Classes of flammable Substances** Class I = Gas Class II = Dust Class III = Fibers
Division	**Division Classification:** designates the likelihood that a flammable substance might be present Division 1: Present during normal operation Division 2: Present during abnormal operation
Group A, B, C, D, E, F, G	**Explosion Substance Group** A–D = Gas A = Acetylene (most dangerous) B = Hydrogen C = Ethylene D = Propane E–G = Dust E = Metallic powder (most dangerous) F = Coal dust G = all other dusts e.g. grain dust
Temperature Class	**Temperature class.** Corresponds to the maximum working temperature of the product T1=450°C, T2=300°C, T2a=300°C, T2b=260°C, T2c=230°C, T2d=215°C, T3=200°C T3a=180°C, T3b=165°C, T3c=160°C, T4=135°C, T4a=120°C, T5=100°C, T6=85°C
Ta40°C	Ta = Ambient temperature, here defined as 40°C

▶ **www.mt.com/hazardous**

Precision, Speed, Intelligence – Terminals for Hazardous Areas

METTLER TOLEDO offers a wide range of industrial weighing terminals, communication modules and accessory power supplies, to meet the needs of most industries and their applications.

From simple weighing to high speed process control, we offer solutions that meet global regulations and integrate seamlessly into production process.

Applications

- Simple Weighing
- Filling/Dosing
- Formulation/Recipe
- Inventory Management
- Inbound/Outbound Vehicle Weighing
- Over/Under Checkweighing
- In-Line Checkweighing
- Mobile Weighing
- Customer Specific

Resolution (approvable)

Dimensions (HxWxD, mm)

Display

Keypad

Housing

Ingress Protection

Communication Interfaces

Power supply

Applications

Special features and functions

Accessories

Number of attachable platforms

Ambient temperature range

Hazardous area approval

IND226x	ICS466x	IND560x
		
Analog: 6000e SR OIML, 10,000d SR NTEP; non approved max. 30,000d	10.000e (OIML), 300.000d	**Europe:** Class II, resolution determined by platform approval; Class III, 10,000e. **USA:** Class II, 100,000d; Class III/IIIL, 10,000d. **Canada:** Class II, 100,000d; Class III, 10,000d; Class IIIHD, 20,000d
148×220×132	195x290x90	**Harsh:** 184×289×160 **Panel:** 160×265×92
7-segment LED display; 6 digits; character height 30mm	LCD Liquid crystal graphical display with colored backlight	128×64 dot matrix Liquid Crystal Display with backlight standard. 21mm high weight display
Hardcoated polyester, foil keypad; 6 function keys	Alphanumeric, Soft keys, Functions keys	Power on/off. Clear, Tare, Print, Zero. Numeric keys. Navigation keyset. 5 softkeys
Stainless steel	Stainless steel	**Panel:** Stainless steel front panel, aluminum chassis. Certified. Low profile front panel reduces contamination **Harsh:** Full stainless steel housing. Certified
IP66	IP65	**Panel:** IP65 **Harsh:** IP65
Two optional intrinsically serial data interfaces (Interface IND, Interface remote)	1x Standard RS232-IS 1x Communication Interface Current Loop (CL) passive or CL active	Serial (RS-232/422/485), Ethernet 10 Base-T, PLC (A-B RIO, Analog Output, DeviceNet, PROFIBUS DP, EtherNet/IP, Modbus TCP) Inputs: ASCIII, CPTZ, SICS Level 0/1, Remote display Outputs: METTLER TOLEDO Continuous, Demand, Continuous template, 5 configurable templates * Some communication options only available with ACM500
APS768x: 120, 230V AC, (50/60Hz); APS500 (120V, 50/60Mz) APS501 (240V, 50/60Mz) External NiMH battery pack; runtime up to 70 hours	Via APS768x: 120V AC or 240V AC	APS768x: 120V AC or 240V AC External NiMH battery pack (for Harsh version Analog scale interface only; requires PAB option); runtime up to 25 hours
Simple weighing in hazardous area; check-weighing; ×10; unit switching (lb or kg); active input can be configured as clear, print, tare or zero	Simple weighing Manual Filling and Checkweighing Remote display	Simple manual weighing, Tank, vessel and reactor weighing; Single-material and multi-material filling, manual, automatic or semi-automatic; Blending; Over/under checkweighing
MinWeigh®; CalFREE™; Remote display via Remote Interface within the classified area	Optional: Barcode reader in hazardous area (via APS768x)	**High speed update rate:** A/D conversion ≤366Hz. Target up to 50Hz. PLC up to 20Hz. Discrete I/O up to 25Hz. **I/O control:** Internal solid state discrete I/O options offer a total of 4 inputs and 6 outputs. Choose from one of three options: Active Inputs/Active Outputs, Active Inputs/Passive Outputs, Passive Inputs/Passive Outputs
Communication module type ACM200 for the communication into the safe area via current Loop connections; columns; bracket; rechargeable battery; printers	Communication Module type ACM200 for data communication in the safe area	Fiber optic or current loop connection to ACM500 in safe area; Current loop connection to ACM200 in safe area; Fiber optic connection to legacy METTLER TOLEDO fiber optic converter.
1 analog platform; up to 4 analog load cells (2 or 3 mV/V), total impedance ≥ 87Ω 30,000d maximum resolution	**Standard:** One scale interface **Optional:** Second interface or 2 scales (one analog and one digital scale or two digital scales)	Supports single scale interface: **Analog scale**, 5 VDC excitation, up to 4× 350Ω load cells (87Ω minimum resistance), 2 or 3 mV/V, 100,000d maximum resolution **IDNet scale**, current high-precision TBrick-Ex bases
-10°C to +40°C	-10°C to +40°C	-10°C to +40°C
Desk/wall-mount ATEX: II 2G Ex ib IIC T4 II 2D Ex tD A21 IP66 T60°C IECEx: Ex ib IIC T4 Gb Ex ib IIIC T60°C Db IP65 FM: IS, Class I, II, III; Division 1; Groups A B C D E F G; T4; Ta=40°C	**Compact/wall-mount/column mount** ATEX: II 2G Ex ib IIC T4 Gb, -10°C…40°C II 2D Ex ib IIIC T60°C Db IP 65 IECEx: Ex ib IIC T4 Gb EX ib IIIC T60°C Db IP65 FMc+us: IS, Class I, II, III; Division 1; Groups A B C D E F G; T4; Ta=40°C, IP65, NEMA, Type 4 AEx ib IIC T4; IP65, Type 4	**Desk/Wall-mount & Panel-mount** ATEX: II 2G Ex ib [op is Ga] IIC T4 Gb II 2D Ex ib [op is Da] IIIC T60°C Db IP65 IECEx: Ex ib [op is Ga] IIC T4 Gb Ex ib [op is Da] IIIC T60°C Db IP65 FM : IS, Class I, II, III; Div 1; Groups A-G T4 Ta = -10°C to +40°C; IP65; Type 4 AEx ib IIC T4

Applications

- Filling/Dosing
- Batching/Blending
- Formulation/Recipe
- Inventory Management
- Inbound/Outbound Vehicle Weighing
- Counting
- Over/Under Checkweighing
- In-Line Checkweighing
- Mobile Weighing
- Customer Specific

Resolution (approvable)

Dimensions (H×W×D, mm)

Display

Keypad

Housing

Ingress Protection

Communication Interfaces

Power

Applications

Special features and functions

Accessories

Number of attachable platforms

Ambient temperature range

Hazardous area approval

IND560xx	IND690xx	IND780xx
		
Analog: 10,000e OIML, 10,000d NTEP; Digital: 100,000d OIML, NTEP; Single Range, Multi Range, multi-interval	Analog: 7500e OIML Single Range, 3× 3000e OIML multi-interval; Digital: 15,000e/32,000e OIML Single Range	OIML: Class II, III, IIII to 10,000 e; NTEP: Class II 100,000d; III, IIIL 10,000d
Desk/wall-mount: 160×265×170.3 Panel-mount: 160×265×91.8	Desk/wall model: 219×354×165 Panel-mount: 205x355x100.5	Panel-mount: 220×320×105
Vacuum fluorescent, 128×64 dot matrix, 21mm	Active, bright VFD-dot matrix, graphics capability, green, patented BigWeight® display, screen size: 195×46mm	Backlit graphic LCD Monochrome or Active TFT Color, 320×240 pixels 145mm QVGA
25-key, tactile-feel, including softkeys and numeric keypad	33-key, tactile feel, including function keys and numeric keypad	30-key, tactile feel, including function keys and numeric keypad
Desk/Wall/Column-Mount: Fully stainless steel Panelmount: Stainless steel faceplate, alu chassis	Stainless steel	Stainless steel
Desk/wall-mount: IP69k; Panel-mount: IP65	IP69k	Harsh: IP69k; Panel:Type 4/12 (IP65)
Up to 3 serial interfaces RS232/422/485; Ethernet TCP/IP; 1 Allen-Bradley RIO, or 1 Profibus® DP, or 1 Analog output (4–20mA, 0–10V), or 1 DeviceNet™; Up to 12 digital inputs and 18 outputs, Ethernet/IP PLC	Various data interfaces in various combinations (max. 9): Serial interfaces RS232/422/485, CL 20mA, Ethernet TCP/IP, Profibus® DP, WLAN, Bluetooth, Analog output (0–20mA, 4–20mA, 0–10V), PS2 keyboard interface, up to 8 inputs and 8 outputs, DeviceNet™, Ethernet/IP	Ethernet 10/100-baseT, USB Master, serial RS232 (COM1), serial RS422/485 (COM2); RS232/422/485, Allen Bradley® RIO, ControlNET™, Ethernet/IP, Profibus® DP, DeviceNet™, Modbus TCP, external USB keyboard, digital in-/-outputs
85–264V AC (49–61Hz)	100–240V AC (50/60Hz)	100–240V AC
Tank, vessel and reactor weighing; Single-material and multi-material filling, manual, automatic or semi-automatic; Blending; Over/under checkweighing	Simultaneous multi-scale weighing; Batching and blending; Counting; Standalone and networked formulation; Single-material and multi-material filling, manual, automatic or semi-automatic; Custom applications	Simultaneous multi-scale weighing; Tank, vessel and reactor weighing; Single-material and multi-material filling, automatic or semi-automatic; Batching and blending; Vehicle scale weighing (Truck and railcars); Custom applications
SmartTrac™ graphical mode, Setpoint control, CalFREE™ calibration without test weight, MinWeigh® warning function, TraxDSP™ supreme noise filtering, TraxEMT™ maintenance diagnostics suite, InSite™ PC configuration tool, Alibi memory, Vehicle scale software pac, TaskExpert programming tool	In-motion weighing functionality, Stability detector, Vibration control, Setpoint control, DeltaTrac graphical display, Various software pacs available, COUNT Counting totalizing, FORM Formulation totalizing, COM Computer dialog mode, SUM Totalizing on 3 levels, FILL Dispensing, BATCH Multi-material dispensing, CONTROL Verifying, classifying, FormXP Formulation with PC connection	SmartTrac graphical mode, Setpoint control, CalFREE™ calibration without test weight, MinWeigh® warning function, TraxDSP™ supreme noise filtering, TraxEMT™ maintenance diagnostics suite, InSite™ PC configuration tool, Alibi memory, Vehicle scale software pacs, TaskExpert™ programming tool
Ethernet interface, Dual serial port card, PLC interface cards (see "Interfaces"), Various application software, Wide range of mechanical accessories	Serial interface cards (see "Interfaces"), PLC and network interfaces (see "Interfaces"), I/O interfaces, Cover for bench and wall models, Alibi memory, Wide range of mechanical accessories	Optional communications interfaces: PLC (one option only): Allen Bradley® RIO, ControlNet™, Ethernet/IP™, Profibus® DP; DeviceNet™; Serial (One or two): RS232/422/485; Optional I/O Interfaces: Local: (2) 4 inputs/4 outputs (Relay); PhotoMOS; Remote: (8) ARM100 I/O modules, 4 in/6 out Modbus TCP
1 analog weighing platform, or up to 8× 350Ω load cells, or 1 IDNet high-resolution weighing platform	Up to 4 weighing platforms connectable + summing scale (analog weighing platform, 4× 350Ω load cells, SICS weighing platform a/o IDNet high-resolution weighing platforms)	Up to 4 weighing platforms connectable + summing scale (analog weighing platform, 8× 350Ω load cells, POWERCELL® digital truck scale load cells, SICS weighing platform, WM/WMH a/o IDNet high-resolution weighing platforms)
-10°C to +40°C	-10°C to +40°C	-10°C to +40°C
Desk/wall-mount – Analog only ATEX: II 3G Ex ic nA [ic] IIB T4 Gc II 3D Ex tc IIC T85°C Dc IP65 $_{c}UL_{US}$: Class I Div 2 GP ABCD; Class II Div 2 GP FG: Class III; Class I Zone 2 GP IIC **Panel-mount – Analog and IDNet** ATEX: II 3G Ex ic nA [ic] IIB T4 Gc -10°C ≤ Ta ≤ +40°C II 3D Ex tc IIC T85°C Dc IP65 -10°C ≤ Ta ≤ +40°C $_{c}UL_{US}$: Class I Div2 GP Group A-D; Class II Div 2 GP Group FG; Class III; Class I, Zone 2 GP IIC Class I, Zone 2, Group IIC -10ºC<=Ta<=+40ºC/T4	**Desk/wall-mount:** ATEX: II 3G EEx nA L[L] IIC T4, II 3D T70°C IP69k **Panel-mount** ATEX: II 3G EEx nA L[L] IIC T4, II 3D T70°C IP69k	**Desk/wall-mount** ATEX: II 3G EEx nL[nL] IIB T4 II 3D Ex tc IIIC T85ºC Dc IP69K $_{c}UL_{US}$: Class I, II, III Div2 Group CDFG Ta=40ºC T4 IECEx: Ex nA nL [nL] IIB T4 Ex tc IIIC T85°C Dc IP69K **Panel-mount – Analog and IDNet** ATEX: II 3G Ex nA nL [nL] IIB T4 II 3D T85ºC -10ºC<=Ta<=+40ºC IP65 $_{c}UL_{US}$: Class I, II, III, Div 2, Groups CDFG, Ta=40ºC T4 Class I, Zone 2, Group IIB C T4 **PDX** ATEX: II 3G EEx nL[nL] IIB T4 $_{c}UL_{US}$: Class I Group CD Div2; Class II Group FG Div2; Class III and Class I

Applications

- Simple Weighing
- Filling/Dosing
- Formulation/Recipe
- Inventory Management
- Inbound/Outbound Vehicle Weighing
- Over/Under Checkweighing
- In-Line Checkweighing
- Mobile Weighing
- Customer Specific

Resolution (approvable)

Dimensions (H×W×D, mm)

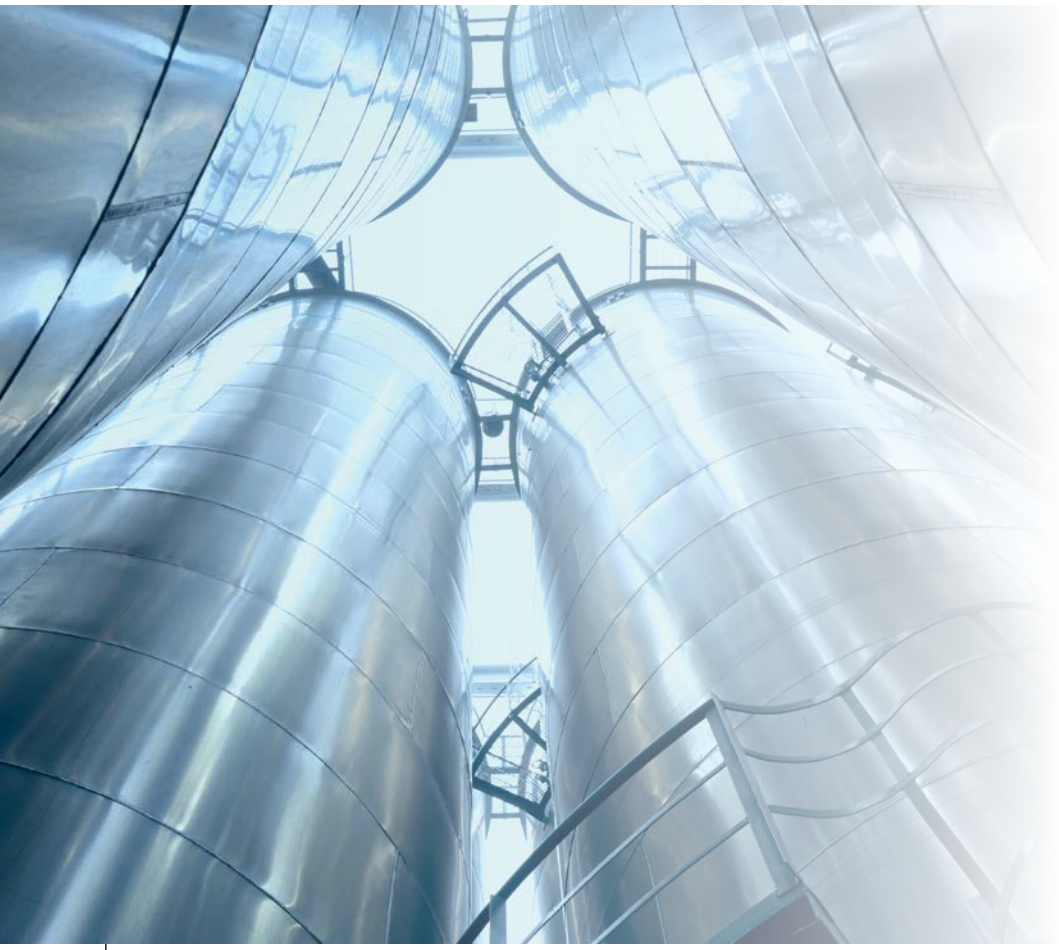
Display

Keypad

Housing

Ingress Protection

Communication Interfaces



Power

Applications

Special features and functions

Accessories

Number of attachable platforms

Ambient temperature range

Hazardous area approval

	IND331xx panel mount	IND131xx Junction-Box	IND131xx DIN-mount
			
	USA: NTEP Class III/IIIL, 10,000d; CoC 09-051 **CAN:** Class III/IIIHD, n max. 10,000d/20,000d; AM-5744 (max. displ. resolution: 100,000d; non appr.)	**USA:** NTEP Class III/IIIL, 10,000d; CoC 09-051 **CAN:** Class III/IIIHD, n max. 10,000d/20,000d; AM-5744 (max. displ. resolution: 100,000d; non appr.)	**USA:** NTEP Class III/IIIL, 10,000d; CoC 09-051 **CAN:** Class III/IIIHD, n max. 10,000d/20,000d; AM-5744 (max. displ. resolution: 100,000d; non appr.)
	168×68×12mm (front panel only) 138x68x111mm (for the panel)	251×261×169mm	68x138x111mm
	12mm character height, OLED	6mm character height (internal maintenance display)	6mm character height
	4 function keys – flat membrane with domed polyester overlay	4 function keys – flat membrane with domed polyester overlay (DIN chassis operator interface, internal)	4 function keys – flat membrane with domed polyester overlay
	Stainless steel front panel, plastic DIN housing	Stainless steel, wall-mountable	DIN-rail mount plastic
	IP65, type4x and 12	IP69k	IP20, Type 1
	Serial, RS-232; optional RS-485 with Modbus RTU protocol	Serial, RS-232; optional RS-485 with Modbus RTU protocol	Serial, RS-232; optional RS-485 with Modbus RTU protocol
	18-36 VDC, IND331xx (DC only)	18-36 VDC, IND131xx (DC only)	18-36 VDC, IND131xx (DC only)
	Simple basic and gain or loss-in-weight applications with 2-speed target control and limit values for three comparators	Simple basic and gain or loss-in-weight applications with 2-speed target control and limit values for three comparators	Simple basic and gain or loss-in-weight applications with 2-speed target control and limit values for three comparators
	Process weighing: Direct PLC connectivity – Analog output, Allen-Bradley® RIO, DeviceNet, EtherNet/IP, Modbus® TCP, Profibus® DP, ControlNet (DC only)	Process weighing: Direct PLC connectivity – Analog output, Allen-Bradley® RIO, DeviceNet, EtherNet/IP, Modbus® TCP, Profibus® DP, ControlNet (DC only)	Process weighing: Direct PLC connectivity – Analog output, Allen-Bradley® RIO, DeviceNet, EtherNet/IP, Modbus® TCP, Profibus® DP, ControlNet (DC only)
	–	–	–
	Single platform, up to 4 analog load cells (DC version)	Single platform, up to 4 analog load cells (DC version)	Single platform, up to 4 analog load cells (DC version)
	Operation: -10 to +40 °C **Storage:** -20 to +60°C	**Operation:** -10 to +40 °C **Storage:** -20 to +60°C	**Operation:** -10 to +40 °C **Storage:** -20 to +60°C
	ATEX: II 3G Ex nA nL [nL] IIC T5 II 3D Ex tD A22 IP65 T 100°C FM: NI / Class I, II, III / 2 / Groups A-G / T5, Ta 40°C; NIFW 1 / 2 / IIC / T5, Ta -10°C to +40°C (US only) IECEx: Ex nA nL [nL] IIC T5 Ex tD A22 IP65 T100°C	ATEX: II 3G Ex nA nL [nL] IIC T5 II 3D Ex tD A22 IP65 T 100°C FM: NI / Class I, II, III / 2 / Groups ABCDEFG / T5, Ta 40°C; NIFW1 / 2 / IIC / T5, Ta -10°C to +40°C (US only) IECEx: Ex nA nL [nL] IIC T5 Ex tD A22 IP65 T100°C	ATEX: II 3G Ex nA nL [nL] IIC T5 II 3D Ex tD A22 IP65 T 100°C FM: NI / Class I, II, III / 2 / Groups ABCDEFG / T5, Ta 40°C; NIFW 1 / 2 / IIC / T5, Ta -10°C to +40°C (US only) IECEx: Ex nA nL [nL] IIC T5 Ex tD A22 IP65 T100°C

Communication Modules
for Installation in the Safe Area

ACM200

Installed in the safe area the ACM200 provides extra communication options for the IND226x, ICS466x or IND560x weighing terminals. The ACM200 enables enhanced communication in the safe area with to peripheral devices like a PC, printer or remote weighing terminal.

ACM500

The iintrinsically safe ACM500 communication module is designed for installation only within the safe area. The module provides a safe communication link between the IND560x terminal in the hazardous area and safe area peripheral devices such as PLCs, PCs, printers or remote METTLER TOLEDO terminal. It can be equipped with one of a variety of PLC interfaces, and also provides expanded serial communication and Ethernet connectivity.

Model	**ACM200 – communication module**	**ACM500 – communication module**
Dimensions (H×W×D, mm)	69.5×175×160	210×265×106
Input voltage	24VDC 100–240V AC, 50/60Hz	Operates at 100-240V AC, 50/60Hz, 250mA
Power supply cable (L)	2,4m	2,4m
Ex cable	10m supplied, max length 300m	10m supplied, max length 300m
Protection	Stainless steel enclosure, certified IP66	Stainless steel enclosure, certified IP66
Terminal slot	For use with the IND226x or IND560x	For use with the IND560x
Interface slots	Intrinsically safe current loop	Intrinsically safe current loop, Fiber optic, Ethernet TCP/IP, COM2/COM3 Serial, A-B RIO®, PROFIBUS® DP, DeviceNet™, Analog output, EtherNet/IP™, Modbus TCP
Application	**Must be installed in the safe area**	**Must be installed in safe area**
Accessories	RS232, RS422/485, or 20mA CL interface options	Communicate with up to three ARM100 remote I/O modules through optional COM3 serial port. Will communicate with 2 ARM100s if the IND560x is utilizing an internal, hazardous area I/O option. The IND560x in conjunction with the ACM500 can manage a maximum of 12 inputs and 18 outputs.
Number of attach. platforms	–	–
Ambient temperature range	-10°C to +40°C	-10°C to +40°C
Hazardous area approval	ATEX: II (2)G [Ex ib] IIC II (2)D IP66 FM: AIS Class I, II, III, Div 1 Groups A–G IECEx: [Ex ib Gb] IIC [Ex ib Db] IIIC	ATEX: With current loop (CL) interface II (2)G [Ex ib] IIC; II (2)D [Ex ibD] ATEX: With fiber optic (FO) interface II (2)GD [Ex op is] IIC FM: AIS Class I, II, III / 1 / ABCDEFG; Entity; IP66

Power Supplies

	External NiMH Ex Battery	Power Supply - APS500/APS501	Power Supply - APS768x
	Provides the energy density required by the IND226x terminals. Intrinsically safe power option allows for mobile weighing in the hazardous area.	Provide intrinsically safe power to an IND226x terminal installed in a hazardous area, making barriers or additional protection un-necessary. Available for 120V or 240V input.	The APS768x is a multiple use accessory power supply, serving as a power source for several of METTLER TOLEDO's intrinstically safe weighing terminals IND226x, ICS466x and IND560x.
			
Model	**External NiMH Battery Pack**	**APS500 & APS501**	**APS768x**
Dimensions (H×W×D, mm)	133×236×76mm	170×153×108mm	**APS768x-230V:** 303x172x80mm; 320x 172x80mm (without/with connection parts) **APS768x-120V:** 320x172x80mm
Input voltage	Output voltage:7.5 to 12 VDC @ 127 mA min.to 500 mA max.	**APS500:** 85–132V AC, 50/60 Hz, 100mA **APS501:** 168–264V AC, 50/60 Hz, 50mA	**APS768x-230V:** 50 Hz **APS768x-120V:** 50/60 Hz
Ex cable	3m	3m	5m terminal/scale connection cable (9-wire Ex-i cable)
Protection	IP67	IP66	IP66
Terminal slot	For use with IND226x	For use with IND226x	for use with IND560x, IND226x, Viper-Ex, ICS466x
Interface slots	–	–	CL/CL-Scale and CL/CL-VIPER Ex interface
Application	Battery pack for use in hazardous areas	Power supply installed in the hazardous areas	Power supply installed in the hazardous area
Accessories	–	–	Barcode Reader Version Available
Number of attach. platforms	–	–	–
Ambient temperature range	-20°C to +40°C	-10°C to +40°C	-10°C to +40°C
Hazardous area approval	ATEX: II 2G Ex ib IIC T5, II 2D Ex ib D21 T93°C IP66 FM: IS Class I, II, III Div 1 Groups ABCDEFG T5 Ta=40°C IP66 IECEx: Ex ib IIC T5 Gb Ex ibD 21 T93°C Db	ATEX: II 2G Ex emb (ib) IIC T5, II 2D Ex tb IIIC T64°C Db IP66 FM: AIS Class I, II, III Div 1 Groups ABCDEFG T6 Ta=40°C IP66 IECEx: Ex e mb [ib] IIC T5 Gb Ex tb IIIC T64°C Db IP66	ATEX: II 2G Ex e mb [ib] IIC T4 Gb, II 2D Ex t IIIC [ib] IP66 T 70°C Db AIS FM: Class I,II,III DIV1, Groups ABCDEFG T4; IP66 Class I, Zone 1, AEx me[ib] IIC T4 IECEx: Ex e mb [ib] IIC T4 Gb Ex t IIIC [ib] IP66 T70°C Db

From Compact to Platform Scales
Even Under Hazardous Conditions

Choose from the largest range of hazardous area weighing solutions on the market with over 365 models and sizes to suit any weighing application.

Whether you are looking for carbon steel or stainless steel constructions, IP or NEMA protected load cells, hermetically sealed load cells or ultra precise magnetic compensation load cells, we have a weighing solution to suit your need.

For solutions in Zone 1/21 we offer weighing solutions from 1.6kg to 12 000kg. From high precision MonoBloc® digital technology to advanced analog load cells we can provide the level of weighing accuracy required even in Zone 1/21.

And for solutions in Zone 2/22 you will find weighing solutions from 0.1mg to 12 000kg. Our industrial excellence balances can provide very high precision weighing solutions whilst meeting the Zone 2/22 requirements.

▶ **www.mt.com/hazardous**

Zone 1, Division 1

Viper Ex
Compact Scales

1.5 to 60kg

Viper Ex is a complete range of intrinsically safe scales for pharmaceutical and chemical industries. Individual models are available with up to 3 different platform sizes and in 5 weighing ranges from 1.5 to 60kg.

Mono Bloc

Leading-edge technology
MonoBloc® High Speed weighing cell for best weighing performance and unmatched ruggedness.

Models	Viper Ex DR (Strain-Gauge Technology)	Viper Ex MB (Electro-Magnetic Force Restoration Technology (EMFR) – MonoBloc®)
Resolution (approved)	Analog: 2× 3000e Multi Range	Digital: up to 35,100e Single Range
Capacity (kg)	3, 6, 15, 35, 60	1.6, 3.1, 6.1, 15.1, 35.1
Readability [Max/e] (kg/g)	1.5/0.5, 3/1, 6/2, 15/5, 35/10, 60/20	[e=10 d] (g) 0.01, 0.1 (depending on capacity)
Dimensions (W×D×H, mm)	Small: 265×335×100 Large: 360×370×115	Small: 265×335×100 Large: 360×370×115
Display	Backlit LCD, 16mm	Backlit LCD, 16mm
Keypad	4-keys, tactile feel	4-keys, tactile feel
Housing	Diecast aluminum	Diecast aluminum
Protection	IP43	IP43
Interfaces	1 RS 232 or CL 20mA serial interface with PSU/Viper-Ex	1 RS 232 or CL 20mA serial interface with PSU/Viper-Ex
Power supply	APS768x	APS768x
Applications	Simple weighing, Dynamic weighing, Dispensing	Simple weighing, Dynamic weighing, Dispensing
Special features	Unit switching, Auto tare function	Unit switching, Auto tare function
Ambient temperature range	-10°C to +40°C	-10°C to +40°C
Hazardous area approval	FM: IS, Class I, Div 1, Groups A–D/T4	FM: IS, Class I, Div 1, Groups A–D/T4

The Correct Shade
Right from the Beginning

The intrinsically safe BBA242paint and BBA242form make it possible to mix components in predefined proportions by weighing. The BBA242paint offers simple functionality whilst an RS232 interface allows the scale to be connected to a paint mixing system, a printer, a computer, or an auxiliary display. The BBA242form brings a new level of functionality into the paint shop. An easy interface allows you to download up to 20 formulas from a PC and the large backlit LCD display with graphic capability guides you through your paint mixes with ease.

BBA242paint & BBA242form
Paint Scales

7.1kg

Rugged and dependable scale for mixing automotive refinishing paints.

	BBA242paint	BBA242form
Resolution	7100e/71000d	71000d
Capacity (kg)	7.1	7.1
Readability (g)	0.1 (0.05g up to 999g)	0.1 (0.05g up to 999g)
Dimensions (mm)	332×232, Platform Ø: 232	332×232, Platform Ø: 232
Display	Backlit graphic LCD, 192x64 pixel	Backlit graphic LCD, 192x64 pixel
Keypad	7 function keys	7 function keys
Housing	Cast aluminum	Cast aluminum
Platform	Stainless steel	Stainless steel
Protection	IP54	IP54
Interfaces	RS232, connectable to various color mixing systems; optional USB converters	RS232, connectable to various color mixing systems; optional USB converters
Power	120/230V AC power supplies available for safe or hazardous area applications	120/230V AC power supplies available for safe or hazardous area applications
Applications	General weighing in hazardous areas	General and formula weighing in hazardous areas
Accessories	Protective cover and USB adapter	Protective cover and USB adapter
Ambient temperature range	0°C to +40°C	0°C to +40°C
Hazardous area approval	**BBA242x paint:** ATEX: II 2 G Ex ib IIB T4, IECEx: Ex ib IIB T4 FM: IS Class I Div 1, Groups C & D T4 CSA: IS Class I, Div 1 Group C & D T4	**BBA242x form:** ATEX: II 2 G Ex ib IIB T4, IECEx: Ex ib IIB T4 FM: IS Class I Div 1, Groups C & D T4 CSA: IS Class I, Div 1 Group C & D T4
	BBA242xx paint: ATEX: II 3 G Ex nL IIB T4, IECEx: Ex nL IIB T4	**BBA242xx form:** ATEX: II 3 G Ex nL IIB T4, IECEx: Ex nL IIB T4

ADT645
Paint Formulation System

The ADT645 paint formulation system is a full color touch screen remote display and keyboard. The ADT645 allows the user to access the full paint formulation information within the hazardous area.

The touch sensitive display mirrors the information on the office PC. The PC itself must be installed in a safe area and connects via the ADT645 Interface. With a large 14″ color display formulation data can be accessed right from the touch display or the full size keyboard. It is solvent resistant and comes standard in a stainless steel housing. The stainless steel housing can easily be cleaned. The ADT645 works with all standard PC's and is compatible with all paint and office software packages.

Direct scale integration
Our intrinsically safe BBA242paint scale can be connected directly to the ADT645. You can choose between a standard scale with or without display.

True industrial design
The ADT645 is simple to install and it works with all standard computer programs developed for the ruggedness of automotive body shop environment.

Hazardous area approval	**Display** ATEX: II 1G Ga Ex ma ia IIV T5 **Interface** ATEX: II (1) G (Ga) [Ex ia] IIB
	Display FM: S-IS Class I, Div 1,Groups C & D, T5 **Interface** FM: AIS Class I, Div 1, Groups C & D

▶ **www.mt.com/refinish**

Proven Weighing Platforms
Tailor-made for Automation

The WMH weighing platforms are specifically designed for the use in automated processes under industrial environmental conditions. They are taylored for fast filling operations or weight control and can be directly connected to a PLC.

IP67

For Hazardous Automation

WMH-Ex Line
Bench/Floor Scales

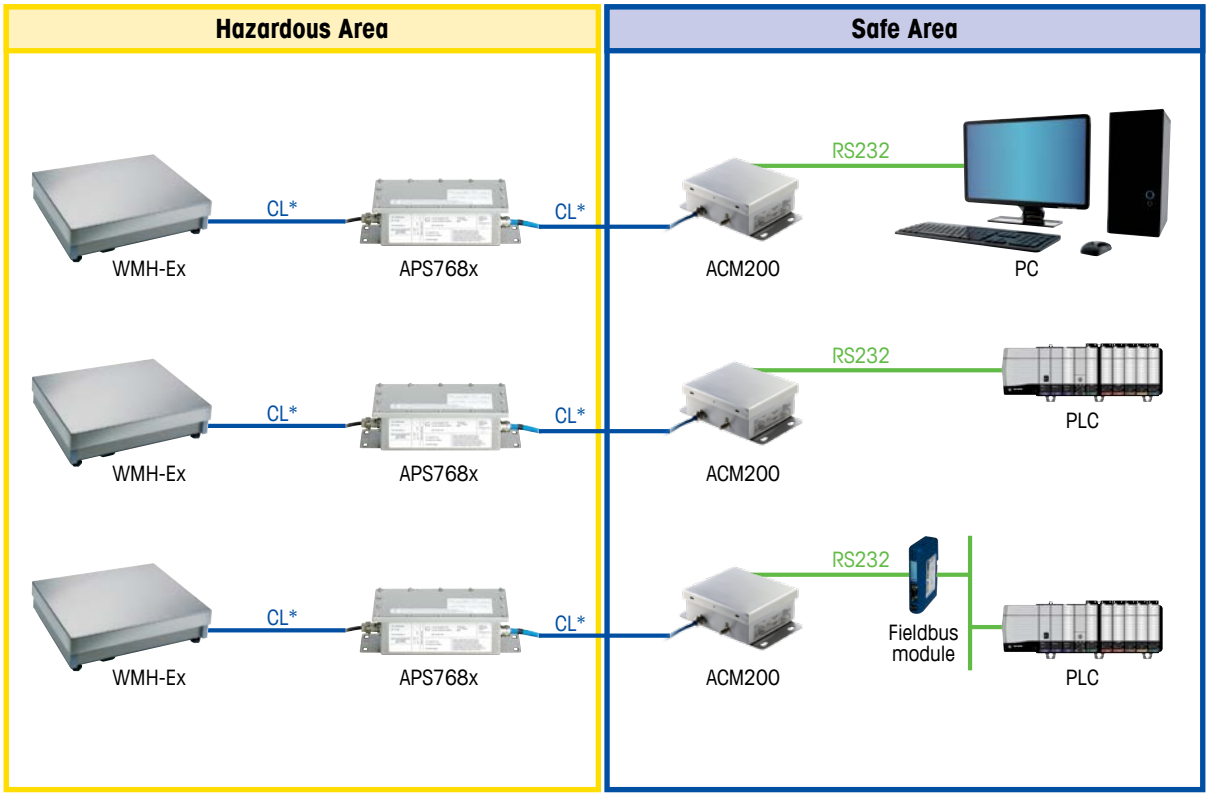
15–3000kg

The WMH-Ex weighing platforms are specifically designed for the use in automated processes in hazardous environments. Speed, ruggedness, precision and direct connectivity are the key features of this product range. With an update rate of 19 weighing updates per second, the innovative sensors can be used for fast weight control as well as filling/dosing applications.
High resolution – up to 320,000 points. Thanks to individual adjustability of filter characteristics and stability criteria, the platform can be optimally configured for any environment.

Model	Max. capacity	Readability	Platform size (mm)	Height (mm)
WMHA15sx	15 kg	0.1 g	350 x 280	117...130
WMHA32sx	32 kg	0.1 g	350 x 280	117...130
WMHB60x	60 kg	1 g	500 x 400	123...148
WMHCC150x	150 kg	1 g	800 x 600	130...155
WMHCC300x	300 kg	2 g	800 x 600	130...155
WMHCS300x	300 kg	2 g	800 x 800	115...140
WMHCS600x	600 kg	10 g	800 x 800	115...140
WMHC300x	300 kg	2 g	1000 x 800	115...140
WMHC600x	600 kg	10 g	1000 x 800	115...140
WMHD600x	600 kg	10 g	1250 x 1000	180...205
WMHD1500x	1500 kg	20 g	1250 x 1000	180...205
WMHE1500x	1500 kg	20 g	1500 x 1250	182...207
WMHE3000x	3000 kg	50 g	1500 x 1250	182...207
WMHES1500x	1500 kg	20 g	1500 x 1500	197...222
WMHES3000x	3000 kg	50 g	1500 x 1500	197...222

Scale material	Stainless steel, powder coated, hot galvanized
Load plate material	Stainless steel, powder coated, hot galvanized
Protection	IP66/67
Interfaces	RS232 via ACM200 Profibus®, DeviceNet™, Profinet® IO and Ethernet/IP with additional module (accessory)
Power	Via APS768x
Accessories	Longer connecting cable WMH-Ex to APS768x (5 m included in delivery); Various bench stands; Roller tracks; Approach ramps; Pit frames; Profibus® module (Profibus® DP); DeviceNet™ module; Adjustment weights
Ambient temperature range	-10°C to +40°C
Hazardous area approval	ATEX: II 2G EEx ib IIC T4 II 2D IP66/67 T55°C
	FM: Class I, II, III, Div 1, Groups A, B, C, D, E, F, G

▶ **www.mt.com/modulowmhex**



CL* - Intrinsic safe current loop.

ISB and ISBx

Intrinsic Safety Barriers

The ISB (Intrinsic Safety Barrier) is designed specifically for use in high accuracy/high resolution weighing applications. When installed in a load cell cable between a terminal in a safe area and analog load cells in a hazardous area, the ISB limits the energy delivered into the hazardous area to prevent ignition of a potentially explosive atmosphere.

The ISB barrier from METTLER TOLEDO is the only NTEP and OIML accepted barrier on the market. Using a barrier not designed for accurate weighing can seriously affect the weighing result.

Models	**ISB05**	**ISB15**	**ISB05x**	**ISB15x**
Description	Excitation voltage from 1 to 5 volts, mounted in safe area	Excitation voltage from 5 to 15 volts, mounted in safe area	Excitation voltage from 1 to 5 volts, enclosed in flameproof box	Excitation voltage from 5 to 15 volts, enclosed in flameproof box
Dimensions (W×D×H)	110×115×35mm		150×195×140mm	
Construction	Covers are ABS plastic		Cast aluminum alloy with no more than 6% magnesium by weight	
Environment	Dry, **non-hazardous** areas only		Washdown, within **hazardous** areas	
Housing	General purpose, IP20		Explosion-proof and dustignition-proof, IP66	
Signal processing	Analog		Analog	
Accessories			Kit with a ¾" NPT conduit seal Kit with a ¾" to 20mm thread adapter	
Haz. area approval	ATEX: II (2)G [EEx ia] IIC II (2)D [EEx ibD]		ATEX: II 2G Ex d IIB + H2 [ib] IIC T6 or II 2D Ex tD [ibD] A21 IP66 T85°C or II 2D (2)G Ex tD [ib] IIC A21 IP66 T85°C	
	FM: AIS Class I, II, III, Div 1, Groups A–G AIS Class I, Zones 0 and 1 Group IIC		FM: XP Class I, Div 1, Groups C–D T6 DIP Class II, III Div 1, Groups E, F, G T6 AIS Class I, II, III, Div 1, Groups C–G Class I, Zone 1 AEx d IIB + H_2/T6 [Class I, Div 1] AEx [ia] IIB + H_2	

High Accuracy and High Speed
All with Hazardous Area Approval

Our extensive range of bench scales provide high accuracy and high speed weighing solutions from 3 to 600kg. From industry leading high precision electromagnetic force compensation to highly durable analog load cells for every application, there is a solution.

IP67

Unrivalled Accuracy

K Line
Bench Scales

3–300kg

The K-line provides the pinnacle in high accuracy digital industrial weighing. With its advanced hybrid design, a high precision electromagnetic force compensation cell is combined with a lever system to produce a highly accurate industrial weighing system.

The K-line offers maximum precision with upto 32 000 approved calibration points combined with an ultra fast update rate of 20 weighing updates per second. The result is an industrial weighing scale perfect for high speed high accuracy applications such as filling or dosing. When this performance is combined with IP66 or IP67 protection and hazardous area approval the result is a scale that sets the highest standards for all aspects of industrial weighing.

Resolution e = 10d 15,000e/32,000e HR*	**Capacity** 3kg	6kg	15kg	32kg	60kg	150kg	300kg
Platform Size (mm)							
A 280×350 [1)]	0.01g	0.02g	0.1g	0.1g			
B 400×500					1g		
CC 600×800						1g	2g**
Optional	up to 320,000d						

[1)] KA3/KA6 with reduced weighing area 200×200mm
* HR = High Resolution
** KCC300, e=d, 1× 6000e SR

Scale material	Stainless steel (spec. sizes: powder coated)	
Load plate material	Standard: AISI 304, Option: AISI316	
Protection	IP66/67	
Scale interface	IDNet	
Accessories	Bench stand, Pillar support, Scale support, Roller track, IDNet- cable accessories	
Hazardous area approval	**K Line** ATEX	II 3G EEx nA II C T6 –10°C ≤ Ta ≤ +40°C II 3D IP67 T70°C
	Kx-T4 ATEX	II 2G EEx ib IIC T4 II 2D IP66/67 T55°C
	FM	IS Class I, II, III, Div 1 Groups A–G T4 Ta=40°C

Note: 3 & 6kg models not available as Kx-T4

Mono Bloc

Leading-edge technology
MonoBloc® High Speed weighing cell for best weighing performance and unmatched ruggedness.

Zone 2/22

IP67

Wet or Dry?

M Line
Bench Scales

15–300kg

The M-line combines strain gauge technology with digital connectivity. With its advanced hybrid design, a high precision analog strain gauge is combined with a lever system and integrated analog/digital converter to produce a highly accurate industrial weighing system. The M-Line also benefits from digital plug and weighing technology allowing for easy and problem free connection to all IDNet terminals.

The M-line also offers a high update of 10 weighing updates per second making it ideal for high speed applications such as filling and dosing. When this performance is combined with IP67 protection and hazardous area approval the result is a scale that is as tough as it is accurate.

Resolution e1/e2/e3 3× 3000e MI*	**Capacity**				
	15kg	30kg	60kg	150kg	300kg
Platform Size (mm)					
A 280×350	1/2/5g	2/5/10g			
B 400×500			5/10/20g		
CC 600×800				10/20/50g	20/50/100g
Optional	Up to 1× 7500e, up to 150,000d				

* MI = Multi Interval

Scale material	Stainless steel (spec. sizes: powder coated)
Load plate material	Standard: AISI 304, Option: AISI 316
Protection	IP67
Scale interface	IDNet
Accessories	Bench stand; Pillar support; Scale stand; Roller track; IDNet cable accessories
Hazardous area approval	II 3G Ex nA II T6 –10°C ≤ Ta ≤ +40°C II 3D T50°C

Use in Wet Areas

DB/DCC & DB/DCCx
Bench Scales

30–300kg

IP67

With its advanced hybrid design, analog strain gauge is combined with a lever system to produce an accurate and reliable industrial weighing system. Designed for use in harsh industrial conditions the weighing platform is made from stainless steel with an encapsulated IP67 load cell suitable for use in wet areas. All models are approved for use in hazardous areas.

Resolution e 3000e SR*	Capacity			
	30kg	60kg	150kg	300kg
Platform Size (mm)				
A 400×500	10g	20g		
CC 600×800			50g	100g
Optional	up to 30,000d			

* SR = Single Range

Scale material	Stainless steel
Load plate material	Stainless steel
Protection	IP67
Scale interface	IDNet, analog
Accessories	Bench stand; Pillar support; Scale support; Roller track; IDNet cable accessories
Hazardous area approval*	**DB/DCC:** 3GD; **DB/DCCx:** 2GD

* Full approval information available upon request from local MT office.

PBA426x & PBA429x
Highest Flexibility

3–60 kg

IP67

IP68

IP69k

Designed according to hygienic standards, these stainless steel platform series are very easy and fast to clean. Due to the different high end load cell technologies used in the various series, protection degrees up to IP68/IP69k are possible.

The PBA226, PBA426(x) and PBA429(x) stainless steel platform series are robust, durable and economical. They offer solutions for a wide range of weighing tasks and applications.

PBA426(x) models features a potted stainless steel load cell built around the latest strain gage technology with improved resistance against the impact of water & humidity. **PBA429(x) models** features an advanced welded, hermetically sealed load cell for any application in wet & harsh environments. The PBA429x and PBA426x series are ATEX & FM approved versions.

Res. E1 1× 3000e	Capacity				
	3kg	6kg	15kg	30kg	60kg
Platform Size (mm)					
A 240×300	1g	2g	5g		
BB 300×400				10g	20g
B 400×500				10g	20g
QA 229×229		2g			
QB 305×305			5g	10g	20g
QC 457×457					20g*
Optional	up to 15 000d				

* only available for the PBA226 models

Material	Platform Frame: Electro-polished stainless steel (1.4301 / AISI304)
Load Plate Material	Brushed stainless steel (1.4301 / AISI304)
Protection	**PBA426:** IP65/IP67 **PBA429:** IP68/IP69k
Scale Interface	analog
Accessories	Hygienic-Kit
Suitable Indicators	**Safe Area:** IND22x, IND560, IND690, ID30, IND780, IND890, ICS4x9, ICS6x9 **Hazardous Area:** IND226x, IND560x
Hazardous Area Approval	**PBA426x:** ATEX: Cat2GD / I.S. Class I, II, III, Division 1 **PBA429x:** ATEX: Cat2GD / I.S. Class I, II, III, Division 1

Superior Hygienic Design

PBA430 & PBA430x
Bench Scales

3–600kg

IP69k
EHEDG
NSF
GMP

With their stainless steel construction designed for optimal cleanability, the PBA430(x) weighing platforms give contamination and corrosion no chances. They can therefore be used in hygienically sensitive areas with HACCP requirements and when working to GMP. The hermetically sealed stainless steel load cells are capable of passing both IP68 and IP69K standards. This combined with hazardous area approval sets new standards in hygienic weighing.

	Capacity							
	3kg	6kg	15kg	30kg	60kg	150kg	300kg	600kg
Platform Size (mm)								
A 240×300	0.5/1g	1/2g	2/5g					
BB 300×400				5/10g	10/20g			
B 400×500				5/10g	10/20g	20/50g		
BC 500×600					10/20g	20/50g	50/100g	
CC 600×800					10/20g	20/50g	50/100g	100/200g
QA 229×229		1/2g						
QB 305×305			2/5g	5/10g	10/20g			
QC 457×457					10/20g	20/50g		
Optional	up to 30,000d							

* MR = Multi Range
* Resolution 1 x 3000e 2 x 3000e MR

Scale material	Base-/load frame: AISI 304 – electro-polished, (except 600×800)		
Load plate material	Standard: AISI 304; Option: AISI 316		
Ingress Protection (IP)	Analog: IP68/69k; IDNet: IP67		
Scale interface	**PBA430:** IDNet, analog; **PBA430x:** analog		
Accessories	Bench stand; Roller track; Pillar support; Scale stand; IDNet cable accessories		
Hazardous area approval	**PBA430:**	ATEX:	II 3G Ex nA II T4 –10°C ≤ Ta ≤ +40°C II 3D Ex tD A22 IP67 T75°C
	PBA430x:	ATEX:	II 2G EEx ia IIC T6/T5/T4 –40°C ≤ Ta ≤ +60°C II 2D IP65 T130°C
		FM:	IS Class I, II, III, Div1 Groups A-G T4 Ta=40°C

Maximum Ruggedness and Accuracy
for Heavier Industrial Weighing

Even for heavier weighing applications our range of floor and pit scales provide high accuracy and reliability with explosive areas approvals.

IP67

Unrivalled Accuracy

K Line
Floor/Pit Scales

300–3000kg

The K-line provides the pinnacle in high accuracy digital industrial weighing. With its advanced hybrid design, a high precision electromagnetic force compensation cell is combined with a lever system to produce a highly accurate industrial weighing system.

The K-line offers maximum precision with up to 3× 3000e multi-interval approved calibration points combined with an ultra fast update rate of 20 weighing updates per second. The result is an industrial weighingscale perfect for high speed high accuracy applications such as large scale filling or dosing. When this performance is combined with IP66 or IP67 protection and hazardous area approval the result is a scale that sets the highest standards for all aspects of industrial weighing.

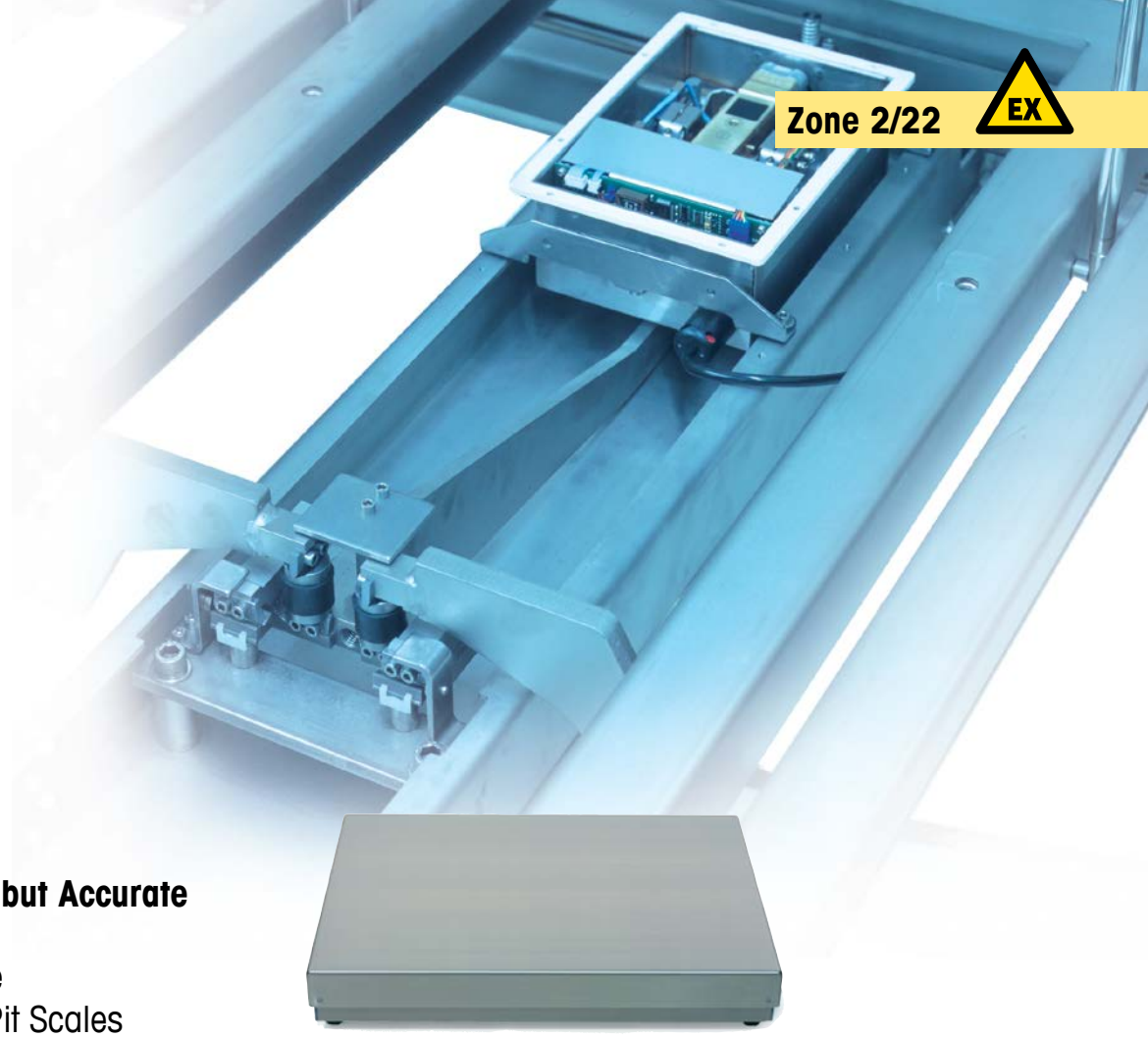
	Capacity			
	300kg	600kg	1500kg	3000kg
Platform Size (mm)				
800×800	2g**	10g**		
800×1000	2g**	10g**		
1000×1250		10g**	20g**	
1250×1500			20g**	50g**
1500×1500			20g**	50g**
Resolution SR*:	6000e, 7.500e			
Resolution MI***	3 x 3000e, 3 x 6000e			

* SR = Single Range
** Standard setting ex-works
*** MI -Multi Interval

Scale material	Stainless steel, hot galvanized (depending on scale model)	
Load plate material	Stainless steel, hot galvanized (depending on scale model)	
Protection	IP66/67	
Scale interface	Digital (IDNet)	
Accessories	Load plates; Pit frames; IDNet cable accessories	
Hazardous area approval	**K Line**	ATEX II 3G EEx nA II C T6 –10°C ≤ Ta ≤ +40°C II 3D IP67 T70°C
	Kx-T4	ATEX II 2G EEx ib IIC T4 II 2D IP66/67 T55°C
		FM IS Class I, II, III, Div 1 Groups A–G T4 Ta=40°C

Mono Bloc

Leading-edge technology
MonoBloc® High Speed weighing cell for best weighing performance and unmatched ruggedness.



Zone 2/22

IP67

Tough but Accurate

M Line
Floor/Pit Scales

300–3000kg

The M-line combines high precision strain gauge technology with digital connectivity. With its advanced hybrid design, a high precision analog strain gauge is combined with a lever system and integrated analog/digital converter to produce a highly accurate industrial weighing system. The M-Line also benefits from digital plug and weighing technology allowing for easy and problem free connection to all IDNet terminals.

The M-line also offers an update of 10 weighing updates per second making it ideal for high speed applications such a filling and dosing. When this performance is combined with IP67 protection and hazardous area approval the result is a scale that is as tough as it is accurate.

Resolution e1/e2/e3 3× 3000e MI*	**Capacity**			
	300kg	600kg	1500kg	3000kg
Platform Size (mm)				
800×800	20/50/100g	50/100/200g		
800×1000	20/50/100g	50/100/200g		
1000×1250		50/100/200g	100/200/500g	
1250×1500			100/200/500g	200/500/1000g
1500×1500			100/200/500g	200/500/1000g
Optional	Up to 150,000d			

* MI = Multi Interval

Scale material	Stainless steel, hot galvanized (depending on scale model)
Load plate material	Stainless steel, hot galvanized (depending on scale model)
Protection	IP67
Scale interface	IDNet
Accessories	Load plates; Pit frames; IDNet cable accessories
Hazardous area approval	II 3G Ex nA II T6 –10°C ≤ Ta ≤ +40°C II 3D T50°C

IP68

Easy to Clean & Hazardous Approval

PFA579lift & PFA579xlift
PFA779lift
Floor/Pit Scales with Raisable Load Plate

300–3000kg

Excellent metrology combined with high reliability & robustness and easy handling are the key features of the PFA579lift / PFA779lift floor scales.

The PFAlift floor scales are designed with an easy to raise load plate which allows the scales to be opened and cleaned easily and effectively.

Where the PFA579lift floor scale is the "all-rounder", focuses the PFA779lift on hygienic sensitive areas with its new design according to the latest hygienic design guidelines.

With a wide range of options and accessories, the PFA579(x)lift and PFA779lift floor scales can be adapted individually to the customers need.

Resolution e 3000e SR*	**Capacity**			
	300kg	600kg	1500kg	3000kg
Platform Size (mm)				
1000×1000	100g	200g	500g	1000g
1250×1000	100g	200g	500g	1000g
1500×1250	100g	200g	500g	1000g
1500×1500	100g	200g	500g	1000g
Free Sizes	800x800 –1500x1500mm (bigger sizes on request).			
Optional	2× 3000e Multi Range, 3× 3000e Multi Range, 2× 3000e Single Interval, 1× 6000e up to 30,000d			

* SR = Single Range

Scale material	stainless steel (AISI304 or AISI316)	
Load plate material	pattern smooth, grind (Ra<1µm)	
	On request: AISI 316, electro-polished (R_a <1µm)	
Protection	IP68	
Scale interface	IDNet, analog	
Accessories	Ramp, Pit Frame, Footplates, Installation Frame, IDNet cable accessories	
Hazardous area approval*	**PFA579lift**	3GD
	PFA579xlift	2GD
	PFA779lift	3GD

* Full approval information available upon request from local MT office.

IP68

Versatility in Weighing

PFA575 & PFA575x
PFA579 & PFA579x
Floor/Pit Scales

300–3000kg

Thanks to a wide range of options and accessories, the hazardous version of the product group PFA575/9 floor scales can be upgraded and modified extensively.They can be installed directly on adjustable feet onto the floor, installed into a pre-prepared pit frame or into an installation frame. They are available with a number of load cell configurations and resolutions to meet the specific requirements of the process. With all of this adaptability, rugged design and full ATEX approval, the PFA575/9 offer a solution for almost any weighing application.

Resolution e 1 x 3000e	**Capacity**			
	300kg*	600kg	1500kg	3000kg
Platform Size (mm)				
1000×1000	100g	200g	500g	1000g
1250×1000	100g	200g	500g	1000g
1500×1250	100g	200g**	500g	1000g
1500×1500	100g	200g**	500g	1000g
2000×1500	100g	200g**	500g	1000g
Free Sizes	700×400... 2000×1500			
Optional	2× 3000e Multi Range, 3× 3000e Multi Range*, 2× 3000e Multi Interval, 1× 6000e, up to 30,000d			

*300 kg/ 3x3000e MR is not available
**3 x 3000e MR is not available

Scale material	**PFA575 (x):** hot dip galvanized
	PFA579 (x): stainless steel (AISI304 or AISI316)
Load plate material	**PFA575 (x):** hot dip galvanized, stainless steel **PFA579 (x):** stainless steel (AISI304 or AISI316) surfaces: smooth, pattern or grid (R_a<1µm)
Protection	**PFA575 (x):** IP68 **PFA579 (x):** IP68
Scale interface	Digital (IDNet), analog
Accessories	Ramps, Pit frame, Quick pit, Load plate, Footplates, Installation frame; IDNet cable accessories
Hazardous area approval*	**PFA575:** 3GD
	PFA575x: 2GD
	PFA579: 3GD
	PFA579x: 2GD

* Full approval information available upon request from local MT office.

Hygienically Designed and ATEX Approved

PUA579 & PUA579x
Low Profile Scales

Designed with cleaning in mind the PUA579 and PUA579x low profile scales are certified to GMP (Good Manufacturing Practice) and EHEDG* (European Hygienic Equipment Design Group) as well as being ATEX compliant. The low profile scales are designed to be used where digging a pit is not an option. THE PUA579 and PUA579x have a profile of less than 35mm allowing for smooth and easy loading via a ramp. The easy clean lifting platform allows for quick and effective cleaning underneath the load plate. With so many options the PUA579 & PUA579x can be adapted to your process demands.

300–1500kg

IP68
EHEDG
GMP

* only CS and FL size are hygienically approved

Resolution e 3000e SR*	**Capacity**		
	300kg	600kg	1500kg
Platform Size (mm)			
850×850 (EHEDG)	100g	200g	500g
800×1000	100g	200g	500g
Free Sizes	750×400… 1500×1500 (length × inner width)		
Optional	2× 3000e Multi Range, 3× 3000e Multi Range, 2× 3000e Multi Interval, 1× 6000e, up to 30,000d		

* SR = Single Range

Scale material	Stainless steel 1.4301/AISI 304; Option: stainless steel AISI 316, electro-polished (R_a <1µm)
Protection	IP68
Scale interface	IDNet, analog
Accessories	Ramps, Set of foot plates, Lifting device, Foot plate set with stop, Approach ramps, Passage stop, IDNet cable accessories, Installation frame
Hazardous area approval*	**PUA579:** 3GD
	PUA579x: 2GD

* Full approval information available upon request from local MT office.

IP68

PTA459 & PTA459x
Pallet Scales

300–3000kg

PTA459 and PTA459x are the new generation of pallet scales designed for goods receiving and shipping, manufacturing and packaging. These rugged and reliable pallet scales are made of stainless steel. Designed with 4 load cells these pallet scales offer reliable and robust weighing solutions even under ATEX conditions.

Resolution e 3000e SR*	**Capacity**			
	300kg	600kg	1500kg	3000kg
Platform Size (mm)				
1260×600	100g	200g	500g	1000g
Free Sizes	500×450… 1260×1000 (length × inner width)			
Optional	2× 3000e Multi Range, 3× 3000e Multi Range, 2× 3000e Multi Interval, 1× 6000e, up to 30,000d			

* SR = Single Range

Scale material	Stainless steel, 1.4301/AISI 304 Option: Stainless steel AISI 316, electro-polished (R_a <1µm)
Protection	**PTA459:** IP68 **PTA459x:** IP68
Scale interface	IDNet, analog
Accessories	Load plate; Leg widener; Wheel set; Handle; IDNet cable accessories
Hazardous area approval*	**PTA459:** 3GD
	PTA459x: 2GD

* Full approval information available upon request from local MT office.

IP68

Heavy Duty Weighing

DRF/DSF & DRFx/DSFx
Floor/Pit Scales

3000–12 000kg

These heavy duty stainless steel floor/pit scales are designed for heavy weighing applications with fully ATEX approved weighing upto 12 000kg. The load cells are IP68 protected ensuring robust weighing even under extreme process conditions. There is also the option to combine up to 3 scales together to accurately weigh large objects. The measuring cells together with the integrated analog/digital converter allow a problem-free connection of all IDNet-operating terminals. For any large weighing application there floor/pit scales can provide an accurate robust weighing solution even under ATEX conditions.

Resolution e 3000e / 6000e SR*		**Capacity**		
		3000kg	6000kg	12 000kg
Platform Size (mm)				
DRF 1000×1000×120–6000×2000×120	3000e	1kg	2kg	
	6000e	0.5kg	1kg	
DSF 1000×1000×150–6000×2000×150	3000e	1kg	2kg	5kg
	6000e	0.5kg	1kg	2kg
Optional	Up to 30,000d			

* SR = Single Range

Scale material	**DRF/DSF:** Stainless steel, painted **DRFx/DSFx:** Stainless steel
Load plate material	**DRF/DSF:** Stainless steel, hot galvanized, painted **DRFx/DSFx:** Stainless steel, hot galvanized
Protection	IP68
Scale interface	IDNet
Accessories	Pit frame; IDNet-cable accessories
Hazardous area approval*	**DRF/DSF:** 3GD
	DRFx/DSFx: 2GD

* Full approval information available upon request from local MT office.

High Precision
High Speed Weighing

IP66

WM-Ex
Precision Weigh Modules

Whether your needs are for precision weighing, precise filling, specific characterisation of materials or quality control – precision weighing modules with a direct data connection are the right choice.

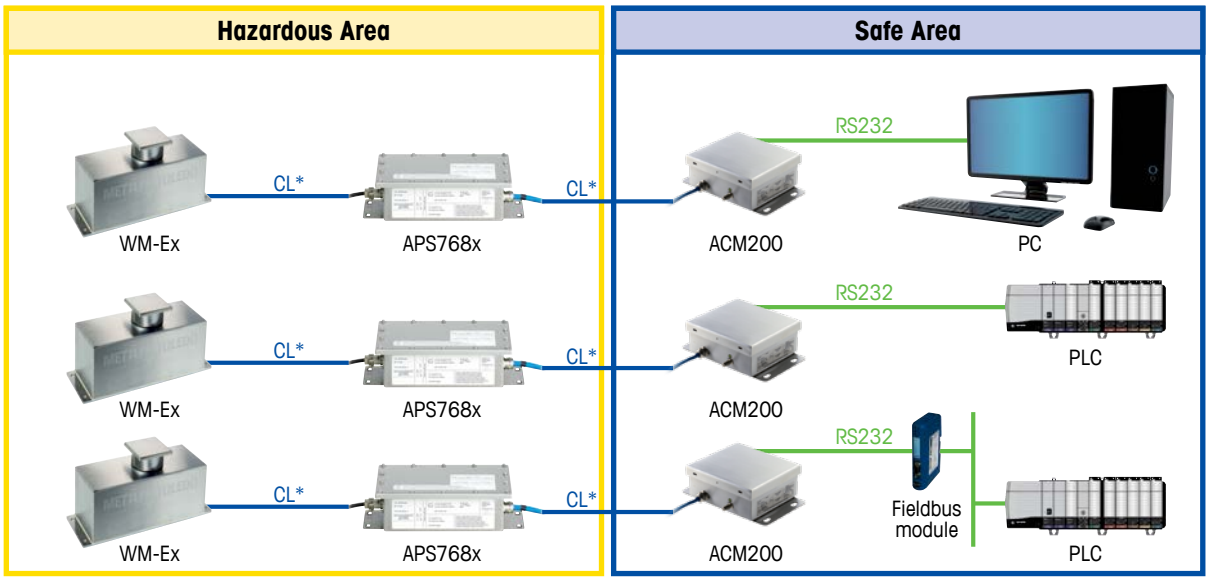
Benefits
- Extremely rugged – IP66 (wash down) and stainless steel construction
- High accuracy – Readability from 0.0001g
- High speed – Increases speed and accuracy of filling systems
- Connectivity – Directly connects to control systems
- Flexibility – Weighing ranges from 120g to 6kg

Hazardous area approval	**WM-Ex**	ATEX: II 2G Ex e mb [ib] IIC T4 Gb-10 °C … +40 °C II 2D Ex t IIIC [ib] IP66 T70 °C FM: Class 1, Div 1, Groups G, T4

▶ www.mt.com/ind-WM-Ex-1

Model Specific Data WM124X/WM503X/WM6002X

Power supply	Unit	WM124X	WM503X	WM6002X
Maximum load after switching on with base load (nominal maximum load)	g	121	510	6100
Nominal readability	g	0.0001	0.001	0.01
Repeatability (sd); with factory settings and normal environmental conditions	g	0.0001	0.001	0.01
Linearity (10 … 30°C)	g	± 0.0004	±0.002	± 0.04
Size of weighing platform with steel cover (standard)	mm	60x60	60x60	80x80
Size of weighing platform without steel cover	mm	58x58	58x58	78x78



CL* - Intrinsic safe current loop.

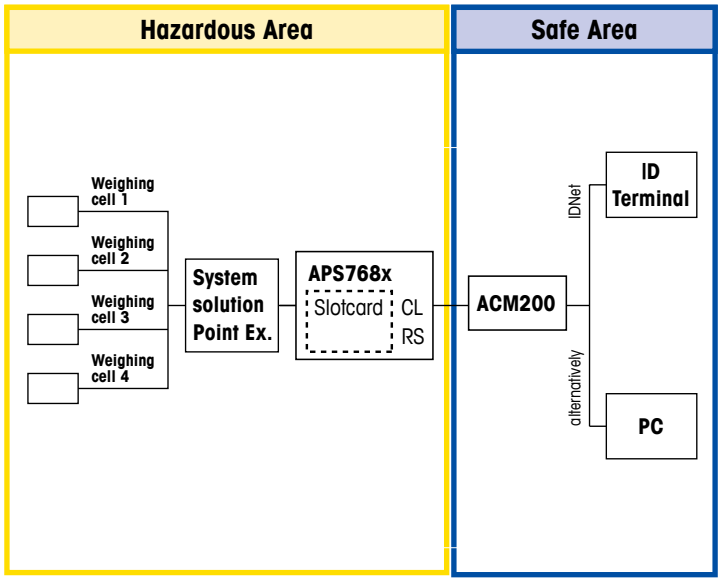
Hazardous Area Junction Boxes
Analog Ex & Point Ex

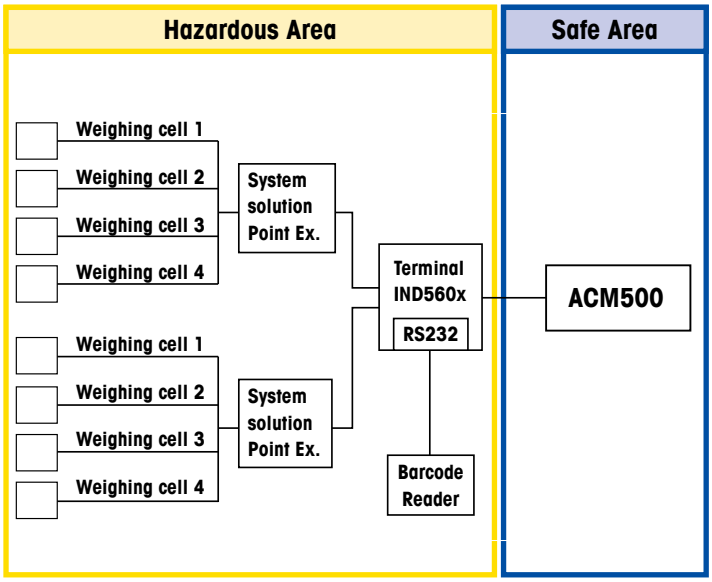
The multirange system junction boxes are designed to provide hazardous areas approved solutions for connecting 4 load cells to a hazardous area weighing terminal.

The Analog Ex combines the signal from four analog load cells and combines them into one analog signal which can then be sent directly into a hazardous area analog weighing terminal.

The Point Ex solution combines the signal from four analog load cells and converts the signal into a digital signal. This can be then sent directly into a hazardous area digital weighing terminal or directly to a PSU (page 12) and from there into a terminal or PC (see diagrams below).

	Analog Ex 2	Point	Analog Ex 1	Point Ex
Converter type	Analog/Analog	Analog/Digital	Analog/Analog	Analog/Digital
Ambient temperature range	-20°C to +60°C	-10°C to +40°C	-20°C to +60°C	-20°C to +60°C
Hazardous area approval ATEX	II 3G Ex nA II T4 II 3D Ex tD A22 IP65 T75°C	II 3G Ex nA II T4 II 3D Ex tD A22 IP67 T75°C	II 2G Ex ia IIC T4 II 2D Ex tD A21 IP68 T75°C	II 2G EEx ia IIC T4 II 2D IP68 T75°C
FM	–	–	–	IS Class I, II, III, Div 1 Groups A–G T4





From 5kg to Over 300t
Weigh Modules for Every Need

Our extensive range of analog and digital load cells meets most of your requirements in industrial weighing: from simple scale applications to high-speed, in-motion weighing. Compression weigh modules enable the quick and safe conversion of a tank or conveyor systems into a scale.



Weigh Modules	SWB505 MultiMount™	SWB605 PowerMount™	SWS310 - Tension Weigh Module
Loading	Static/Dynamic	Static	Static/Dynamic
Applications	Tanks, Conveyors, Mixers	Tanks	Hopper & Vessel Weighing
Capacity range	5 kg - 4.4 t	220-4400kg	50kg - 10t
Compensated temperature range	-10°C to +40°C	-10°C to +40°C	-10°C to +40°C
Approvals	OIML 3000e, NTEP 5000d	OIML: 220-2200kg 3000e, 6000e, 10000e 4400kg 3000e, 6000e NTEP: 220-4400kg 5000d, 10000d	OIML 3000e
ATEX	for Capacity: 5-300kg II 2 G Ex ib IIC T4 II 2 D Ex ibD 21 IP6X T135°C II 3 G Ex nA II T4 II 3 G Ex nL IIC T4 II 3 D Ex tD A22 IP6X T135°C for Capacity: 110-4400kg II 2 G Ex ia IIC T4 II 2 D Ex tD A21 IP6X T100°C II 3 G Ex nA II T4 II 3 G Ex nL IIC T4 II 3 D Ex tD A22 IP6X T100°C	II 3 G Ex nA IIC T6 Gc ; II 3 D Ex tc IIIC T85°C Dc IP6X	II 1 G Ex ia IIC T4 Ta =-20°C to +40°C; IP67 II 1 D Ex iaD T73°C; IP67 II 3 G Ex nL IIC T4 Ta =-20°C to +40°C; IP67
FM	for Capacity: 5-300kg IS / I,II,III / 1 / ABCDEFG /T4 NI / I / 2 / ABCD / T6 S / II,III / 2 / FG / T6 for Capacity: 110-4400kg IS / I,II,III / 1 / ABCDEFG /T4 NI / I / 2 / ABCD / T6 S / II,III / 2 / FG / T6	Class I, II, III, Division 2, Groups C, D, F, G, Temperature Class T6	IS / I,II,III / 1 / ABCDEFG / T4 I,II,III / 2 / ABCDFG / T4 Class 1, Zone 0, AEx, ia IIC T4 Class 1, Zone 0, Ex, ia IIC T4 Class 1, Zone 2, Group IIC T4 (USA only) Ex nL IIC T4 (Canada only)
Material	carbon steel / 304 stainless steel / 316 stainless steel	carbon steel / 304 stainless steel / 316 stainless steel	Stainless steel
IP Protection	IP68	IP68	IP67




Weigh Modules	0970 RingMount®	SWC515 PinMount™	SWC515 PinMount™ POWERCELL® PDX®	3390 Gage Mount™
Loading	Static/Dynamic	Static/Dynamic	Static/Dynamic	Static/Dynamic
Applications	Hygienic, Tanks, Conveyors, Mixers	Tanks, Conveyors, Mixers	Tanks, Conveyors, Mixers	Tanks, Conveyors, Mixers
Capacity range	250kg - 10t	7.5t - 100t	20t - 50t	200t - 300t
Compensated temperature range	-10°C to +40°C	-10°C to +40°C	-10°C to +40°C	-20°C to +40°C
Approvals	OIML 3000e/6000e NTEP 5000d/10000d	OIML 3000e, 4000e NTEP 6000d / 10000d	OIML3000e NTEP 10000d	OIML 3000e NTEP 10000d
ATEX	II 2 G EEx ib IIC T4 or T6 II 2 D T70°C ; II 3 G EEx nL IIC T4 or T6 II 3 D T70°C	II 2 GD EEx ib IIC T4-T6 IP68 T60°C II 3 GD EEx nL IIC T6 T60°C IP68 II 3 GD EEx nA II T6 T60°C IP68	II 3 G Ex nA IIC T6 Gc II 3 D Ex tc IIIC T85°C Dc IP6X	II 2 G Ex ib IIC T4 … T6 II 2 D Ex ibD 21 IP68 T60°C II 3 G Ex nL IIC T6II 3 G Ex nA II T6II 3 D Ex tD A22 IP 68 T60°C
FM	IS/I,II,III/1/ABCDEFG/T4 NI/I/2/ABCD/T6 S/II,III/2/FG	IS/I,II,III/1/ABCDEFG/T4	IECEx: Ex nA IIC T6 Gc , Ex tc IIIC T85°C Dc IP6X	IS II, 11,111/11 ABCDEFG I T4 NI/I,II,111/21 ABCDFG I T4
Material	Stainless steel 316	Zinc plated / 304 stainless steel / 316 stainless steel	Zinc plated/ stainless steel 304	Nickel plated/Stainless steel 304
IP Protection	IP68	IP68	IP68	IP68

▶ **www.mt.com/weigh_modules**

From 5kg to 20 Tonnes – Beam Load Cells

Our beam load cells are available from 5kg–20t. This type of construction provides an ideal combination of compact design and high weighing precision. To withstand the harsh industrial environment, the models are available in a stainless steel and fully welded version. This guarantees a high level of reliability and operational safety. All listed beam load cells have the major approvals OIML, NTEP and Ex certification ATEX, FM as standard, considerably simplifying your logistics.




Load Cell	MTB	0745A	0743	SLS510
Capacity	5–500kg	110kg–4.4t	9–20.4t	50kg–10t
Applications	Tank weighing, floor scales, belt scales	Tank weighing, floor scales, belt scales	-	Hopper & Vessel Weighing
Compensated temperature range	-10°C to +40°C	-10°C to +40°C	-10°C to +40°C	-10°C to +40°C
Approvals	OIML 3000e, NTEP 3000d / 5000d	OIML 3000e, NTEP 5000d	OIML 3000e, NTEP 5000d	OIML 3000e
ATEX	II 2 GD EEx ia IIC T4 T135°C II 3 GD EEx nL IIC T4 T135°C II 3 GD EEx nA II T4 T135°C IP65	II 2 G Ex ia IIC T4 II 2 D Ex tD A21 IP6X T100°C II 3 G Ex nA II T4 II 3 G Ex nL IIC T4 II 3 D Ex tD A22 IP6X T100°C	II 2 GD EEx ia IIC T4 T175°C II 3 GD EEx nL IIC T4 T135°C II 3 GD EEx nA T4 T135°C IP65	II 1 G Ex ia IIC T4 II 1 D Ex iaD 20 IP67 T73°C II 3 G Ex nL IIC T4
FM	IS / I,II,III / 1 / ABCDEFG /T4 NI / I / 2 / ABCD / T6 S / II,III / 2 / FG / T6	IS / I,II,III / 1 / ABCDEFG /T4 NI / I / 2 / ABCD / T6 S / II,III / 2 / FG / T6	IS / I,II,III / 1 / ABCDEFG /T4 NI / I / 2 / ABCD / T6 S / II,III / 2 / FG / T6	IS / I,II,III / 1 / ABCDEFG / T4 I,II,III / 2 / ABCDEFG / T4 Class 1, Zone 0, AEx, ia IIC T4 Class 1, Zone 0, Ex, ia IIC T4 Class 1, Zone 2, Group IIC T4 (USA only) Ex nL IIC T4 (Canada only)
Material	Stainless steel	Stainless steel	Stainless steel	Stainless Steel
IP Protection	IP68	IP68	IP68	IP67



Load Cell	MT1022	MT1041	MT1241
Capacity	3–30kg	10–100kg	30–250kg
Applications	Retail scales, small platform scales, packaging & process weighing	Retail scales, small platform scales, packaging & process weighing	Small floor scales, hoppers
Compensated temperature range	-10°C to +40°C	-10°C to +40°C	-10°C to +40°C
Approvals	OIML 3000e, NTEP 5000d	OIML 3000e, NTEP 5000d	OIML 3500e, NTEP 5000d
ATEX	II 2 G Ex ib IIC T4 II 2 D Ex ibD 21 IP66 T135°C II 3 G Ex nA II T4 II 3 G Ex nL IIC T4 II 3 D Ex tD A22 IP6X T100°C	II 2 G Ex ib IIC T4 II 2 D Ex ibD 21 IP66 T135°C II 3 G Ex nA II T4 II 3 G Ex nL IIC T4 II 3 D Ex tD A22 IP6X T100°C	II 2 G Ex ib IIC T4 II 2 D Ex ibD 21 IP66 T135°C II 3 G Ex nA II T4 II 3 G Ex nL IIC T4 II 3 D Ex tD A22 IP6X T100°C
Material	Aluminium	Aluminium	Aluminium
IP Protection	IP67	IP67	IP67

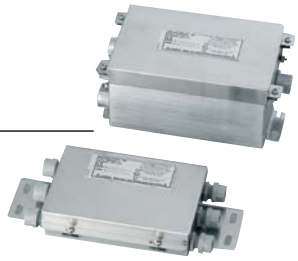

Load Cell	MT1260	SLP845
Capacity	50–750kg	15-200 kg
Applications	Floor scales, smaller hoppers	for scales, packaging and process weighing with hermetically sealed load cells
Compensated temperature range	-10°C to +40°C	-10°C to +40°C
Approvals	OIML 3000e, NTEP 5000d	OIML 3000e, NTEP 5000d
ATEX	II 2 G Ex ib IIC T4 II 2 D Ex ibD 21 IP66 T135°C II 3 G Ex nA II T4 II 3 G Ex nL IIC T4 II 3 D Ex tD A22 IP6X T100°C	II 2G Ex ib IIC T4 Gb II 2D Ex ib IIIC T100 Db II 3G Ex ic IIC T4 Gc II 3G Ex nA II T4 Gc II 3D Ex tD IIIC T100 Dc **FM:** IS / I,II,III / 1 / ABCDEFG /T4 Ta =50°C
Material	Aluminium	Aluminium
IP Protection	IP67	IP67

For Extra Heavy Loads
Compression Load Cells

Whether you are operating a truck, rail, or tank scale, accurate weights can save you money. By ensuring that every weight is accurate, our compression load cells help to prevent lost income due to incorrect billing, customer complaints, and fines for vehicle overloading. Each load cell is compensated for external influences such as temperature change, non-linearity, hysteresis, and creep.




Canister load cell	POWERCELL® PDX®	POWERCELL® MTX®	0782	SLC610
Capacity	20–50t	25–90t	20–300t	7.5–22.5t
Applications	Silo, Vehicle weighing	Silo, Vehicle weighing	Vehicle weighing, tank weighing	Tank weighing, floor scales, belt scales
Ambient temp. range	-30°C to +55°C	-20°C to +40°C	-20°C to +40°C	-20°C to +40°C
Approvals	OIML 3000e–6000e, NTEP 10,000d III LM	OIML 3000e–6000e, NTEP 10,000d III LM	OIML 3000e NTEP 10,000d III LM	OIML 3000e NTEP 6000d
ATEX	II 3G Ex nA IIC T6 Gc II 3D Ex tc IIIC T 85°C IP6X Dc -40°C ≤ Ta ≤ +55°C	2GD & 3GD	II 2G Ex ib IIC T4...T6 II 2D Ex ib D21 IP68 T60°C II 3G Ex nL IIC T6 II 3G Ex nA II T6 II 3D Ex tD A22 IP68 T60°C	II 1G Ex ia IIC T6/T5 II 1D Ex iaD 20 IP67 T100°C II 2G Ex ia IIC T6/T5 II 2D Ex iaD 21 IP67 T100°C
IECEx	Ex nA IIC T6 Gc Ex tc IIIC T 85°C IP6X Dc -40°C ≤ Ta ≤ +55°C	-	-	-
FM	Class I, II, III, Div 2, Groups CDFG, T6	Class I, II, III, Div 1&2	IS/I,II,III/1/ABCDEFG/T4	IS/I,II,III/1/ABCDEFG/T4
CSA	-	-	Class I, Div 1, Groups ABCD; Class II, Groups EF, Class III	-
Material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
IP Protection	IP68, IP69k	IP68, IP69k	IP68	IP68



ATEX Vehicle Junction Boxes

- ATEX approval
- Quick corner adjustment
- IP65 protection class
- Easy connection to screw type terminal blocks
- Stainless steel enclosure
- Integral mounting flanges

These analog junction boxes are suitable for quick and simple connection of multiple load cells to an approved barrier or terminal. Integrated trim pots equalise load cell to reduce corner error – no soldering or seperate resistors are necessary. The stainless steel housing provides the best reliability in rough and wet conditions.

Canister load cell	Analog junction box	POWERCELL® junction box
Features	Parallel connection, corner adjustment	Parallel connection, network terminator, integral lightning protection
Applications	Silo, Vehicle scales	Vehicle weighing, tank weighing
Ambient temp. range	-20°C to +40°C	-20°C to +40°C
Approvals	II 2GD Ex ia IIC T4 T900C II 3GD Ex nL IIC T4 T900C II 3GD Ex nA II T4 T900C	2GD
Material	Stainless steel 304L	Stainless steel 304L
IP protection	IP65	IP65

Vehicle Scales
Where Safety Meets Accuracy

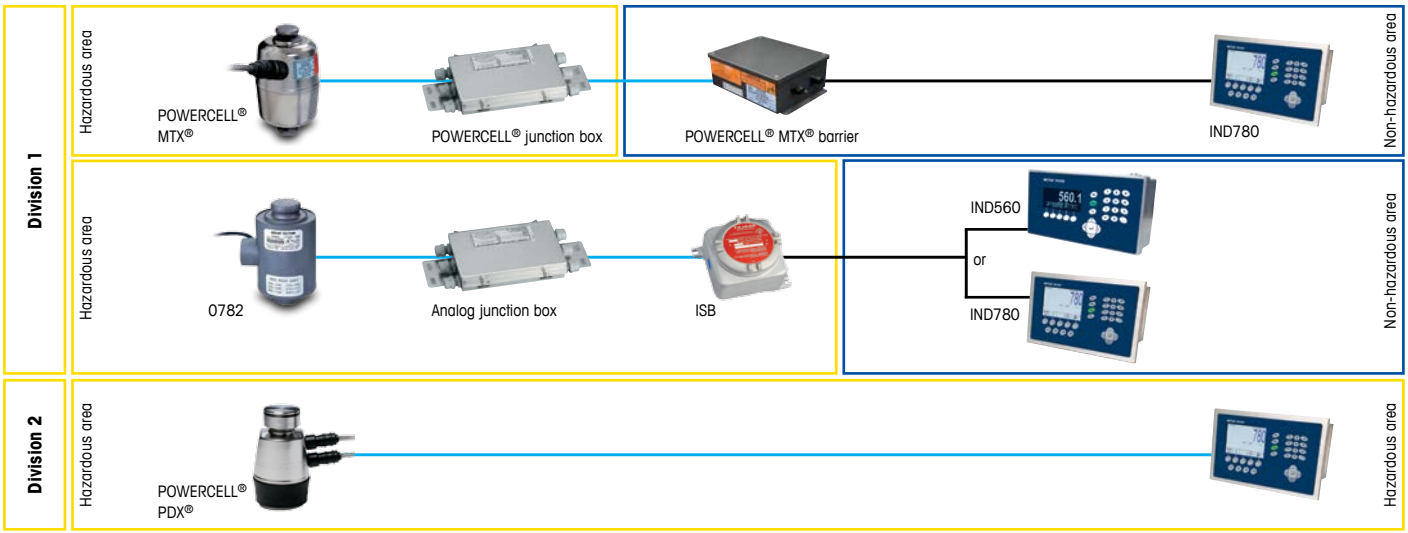
Our hazardous area solutions provide the industry's best performance by combining both weighing accuracy with safety in gaseous and dusty environments. With the exception of cables, all components originate from METTLER TOLEDO's certified production facilities.

Moreover, we offer two technologies in our truck and rail scales. For high-performance-minded customers, the POWERCELL® brand systems provide a strong, safe, digital signal that is not degraded by electrical noise, telephones and radios. POWERCELL® PDX® load cells offer the highest performance in reliability in accuracy, eliminates junction boxes, and are approved for use with no barrier needed in division 2, zones 2 & 22 with the IND780 terminal.

We lead the industry with analog vehicle scales comprised of certified cells, cables, junction boxes and barriers all of which do not compromise weighing accuracy for safety. A standard system, with specially constructed junction boxes and an approved terminal, is suitable for division 2. By using our dual-approved barrier this system can be installed in division 1.

Scales are available in almost any configuration, or weighing capacity and can be installed in, or above ground.

▶ **www.mt.com/vehicle**



Accurate Terminals Located in a Safe Area
Provide both the human machine interface as well as the machine interface to several types of Ethernet, serial and a variety of PLC interfaces. Selected models are approved for use in Division 2.

Accurate Intrinsic Safe Barriers Approved for Safety and Accuracy
For Division 1 select a barrier for both accurate measuring results and intrinsic safety. The POWERCELL® and DIN analog barriers are easily installed in a safe area, while the analog barrier is available in an approved explosion proof enclosure.

Accurate Junction Boxes
METTLER TOLEDO's exclusive hazardous junction boxes are approved for use when connected to the appropriate instrumentation and load cells to provide safe and accurate weighing results.

Accurate Load Cells
POWERCELL® PDX® load cells offer unprecedented performance and are approved for Division 2. POWERCELL® MTX® and 0782 analog are approved for Divisions 1 and 2. Cables are selected to minimize outside influence and carry the appropriate entity parameters to insure your system is completely compliant to your local and national regulations.

Uncompromised Safety and Efficiency in Hazardous Areas

With the Excellence XS Ex2 balances, we offer a modular balance available in three platform sizes (small, medium and large) with a weighing range from 0.1mg up to 64kg.

Touch screen display
Operation intuitive, fast and convenient. XS Ex2 offers graphical user guidance with alphanumeric keypad.

Built-in application
Choose between the 7 built-in applications: weighing, statistics, formulation, percent weighing, piece counting, density determination and dynamic weighing

Stand-alone platform
Available in three sizes, the X platform is the perfect solution for direct integration into automated systems. X platforms can be used without any terminal or together with the industrial IND4xx or IND690 terminals through the MT-SICS commands.

ErgoSens
Freely placeable and individually configurable, the ErgoSens enables hands-free operation of the balance.

Compact draft shield
The sliding doors are easy to open and allow free access to the weighing chamber as well as convenient cleaning. The doors never project beyond the back of the balance, which saves valuable space.

Safe Area

Bluetooth
Connect your balance wirelessly, up to 10m from the balance, to for example a computer and/or a printer installed in a safe area.

ATEX Zone 2
Approved for hazardous area zone 2 (category 3G).

MonoBloc® High Speed
High-performance technology for outstanding weighing performance.

Reliability
For smooth daily operation. Built of solid metal, resistant to chemicals.

TouchScreen
Display with touch-screen technology for safe and simple operation.

FACT
Fully automatic internal adjustment.

GxP – compliant documentation
Seamless documentation, full traceability.

Connectivity
Built-in RS232 interface, optional second interface (4 options, incl. wireless Bluetooth and Ethernet).

DeltaTrac
Graphical visualization of the remaining weighing capacity.

LabX PC software
For electronic data management.

Models	XS204SX, XS603SX, XS1003SX, XS5003SXDR	XS4002SX, XS6002SX, XS4001SX	XS6002MXDR, XS6001MX, XS12001MX	XS32001LX, XS64001LX, XS32000LX, XS64000LX
Capacity	210, 610, 1010, 5100g	4, 6, 4kg	6, 6, 12kg	32, 64, 32, 64kg
Readability	0.0001, 0.001, 0.001/0.01g	0.01, 0.01, 0.1g	0.01/0.1, 0.1, 0.1g	0.1, 0.1, 1, 1g
Dimensions (W×D×H)	214×363×366mm	194×96×366mm	240×110×393mm	360×130×404mm or 280×130×484mm
Display	Backlit graphical touchscreen display			
Housing	Diecast aluminum, laquered, plastic and stainless steel			
Protection	IP44			
Interfaces	RS232, optional: RS232, BTS (point to point), BT (multipoint), Ethernet			
Power	230V (+/- 10%), 0.1A, 50/60Hz, 115V (+/- 10%), 0.2A, 50/60Hz			
Applications	Weighing, Statistics, Formulation, Piece counting, Percent weighing, Density, Dynamic weighing, LabX client			
Accessories	Density kit, Draft shield, Interfaces, Printers, ErgoSens, Stand	Draft shield, Interfaces, Printers, ErgoSens, Stand, Magnetic protection shield (MPS)	Draft shield, Interfaces, Printers, ErgoSens, Stand	Draft shield, Interfaces, Printers, ErgoSens, Stand
Hazardous area approval	ATEX II 3G EEx nL IIC T5			

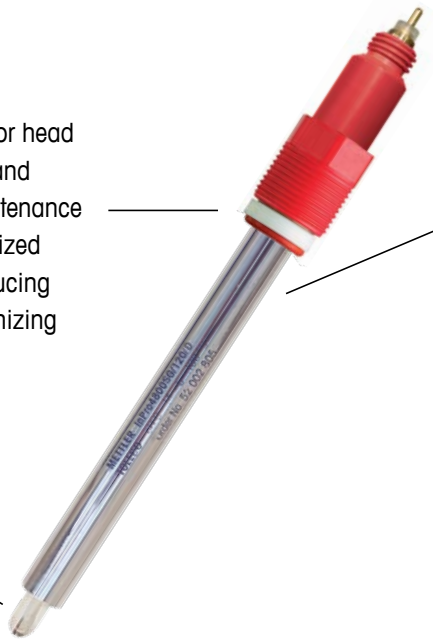
Maximized Quality and Yield
More Uptime, Less Maintenance

Our wide range of liquid analytics systems ensure you are getting the most from your manufacturing processes. Intelligent Sensor Management (ISM) technology reduces the installation, maintenance and calibration effort of our digital sensors to a minimum.

Multi-parameter
Measures pH, mV, ORP, DO, O_2 gas, conductivity.

HART Communication
Measurement values, sensor diagnostics and transmitter configuration over HART.

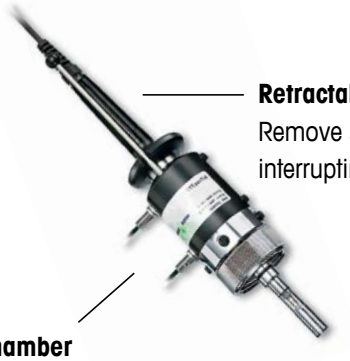
Mixed-mode Input
Accepts digital ISM or conventional analog sensors.



ISM
Microchip in the sensor head stores measurement and status data. Any maintenance requirement is recognized at an early stage, reducing downtimes and minimizing plant operating costs.

Electrolyte
A range of electrolytes (liquid, gel and solid) are available to ensure high measurement accuracy and long sensor lifetime.

Glass Membrane
High quality membrane glass for a wide variety of process conditions.



Retractable Housing
Remove sensor without interrupting the process.

Flushing Chamber
Sensor can be safely cleaned and calibrated without any risk of contamination to the process medium.

ISM

With Intelligent Sensor Management technology our sensors can be monitored in real time for wear and maintenance requirement. This considerably improves your process reliability, productivity and system availability.

Intelligence Starts in the Head

ISM sensors are equipped with integrated electronics in the sensor head that store all relevant sensor parameters and includes algorithms for enhanced sensor diagnostics.

Predictive Maintenance

Diagnostics information is calculated and displayed on the sensor's transmitter and tells you if and when the sensor needs maintenance or replacement – no more downtimes due to sensor failure!

Reliable Installation

Digital communication between sensor and transmitter means the signal is always reliable and unaffected by interferences such as moisture or external high frequency signals.

Plug and Measure

Pre-calibrated sensors can be installed directly at the measuring point, quickly and easily.

pH electrode

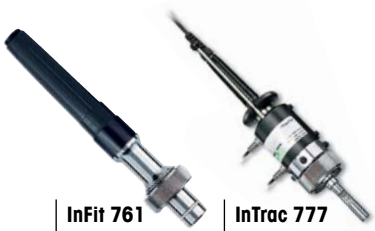
Models	InPro 4800i*	InPro 4260i*	InPro 3250i*
pH range	0–14	0–14	0–14
Temp. range (maximum)	130°C	130°C	140°C
Pressure resistance	0–13 bar	0–16 bar	0–4 bar
Hazardous area approval	ATEX: II 1/2G Ex ia IIC T6 / T5 / T4 / T3		
	FM: IS / Class I, II, III / Div 1 / Group A-G /T6 Ta 60°C		

Transmitter

Models	M400 2-wire	M700*
Parameters	pH / mV / ORP / DO / O2 gas / conductivity	pH /mV / rH / ORP
Enclosure rating	IP66	IP65
Current output	4–20 mA	4–20 mA
Hazardous area approval	II 2(1)G Ex ib [ia Ga] IIC T4 Gb IECEx: Ex ib[ia Ga] IIC T4 Gb Ex ia IIC T4 Ga	ATEX: II 2(1) GD Ex me ib [ia] IIC T4 T 70°C
	FM: submitted	FM: NI / Class I / Div 2 / Group A-D / T4 Ta 50°C – 201.004-110; NIFW

* Also available in non-ISM versions.

Housing



Models	InFit 761	InTrac 777
Measuring temp. range	0–140°C	0–70°C
Pressure resistance	0–16 bar	0–5 bar
Wetted materials	Stainless steel	Stainless steel
Hazardous area approval	ATEX: II 1/2G IIC T6 / T5 / T4 / T3, II 1/2D IP6X T 161°C / T 109°C / T 81°C / T 69°C	
	FM: IS / Class I, II, III / Div 1 / Group A–G /T6 Ta 60°C	

▶ www.mt.com/pro

Ultimate Product Quality
Optimized Operational Efficiency

Designed to deliver ultimate product quality and total peace of mind for you and your customers. Our range of Safeline metal detectors were developed to keep any operation metal contamination free.

Sealtite/Open diverter gravity fall

Sealtite and Y-Valve diverter system
Technology is utilized for dusty higher value products providing a dust-tight seal to reduce the escape of good product into the reject channel and minimizing product waste.

ATEX compliance for explosive atmospheres
Designed for use in dusty environments, METTLER TOLEDO Safeline gravity fall systems can be supplied with full compliance with ATEX.

ATEX: II 2 D T79°C

Y-Valve Gravity Fall

T Series
Metal Detection for Vertical Packaging Applications

Designed to detect metal contaminated product in vertical packaging applications, METTLER TOLEDO Safeline's T Series detectors provide the optimum solution for the rapid inspection of in-flight product immediately prior to packing into bags, pouches, sachets or boxes.

ATEX: II 2 D T79°C

R Series and RB series metal detection heads incorporate a 'windows' style full color touch screen to provide the easiest to use metal detector ever. Unprecedented levels of on-line sensitivity can be obtained and this combined with exceptional stability make R Series and RB Series Profile the most advanced metal detector on the market.

ATEX: II 2 D T79°C

RB-Series
Metal Detection for horizontal applications

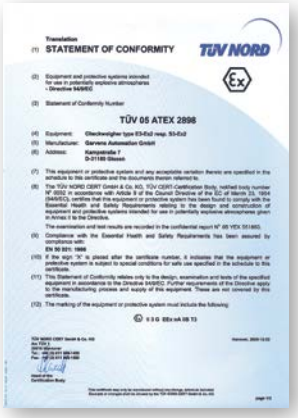
With its Safeline metal detection METTLER TOLEDO is the global market leader in the field of industrial metal detection for the food and pharmaceutical processing and packaging industries. Safeline metal detection solutions offer maximum detection sensitivity with minimum false rejects.

www.mt.com/safeline

Checkweighing Solutions
for ATEX Environments

Garvens offer ATEX explosive environment solutions in compliance with ATEX legislation up to zone 2 or 22. Special electrical connections and the use of special materials and parts including a separate control unit outside the explosive atmosphere or optionally protected for use inside the hazardous location are all designed to ensure that no sparks due to static charge are generated throughout the weighing process. All parts are therefore electrically conducting and earthed.

METTLER TOLEDO Garvens has vast experience with ATEX environments. Our solutions not only offer best explosion protection and extremely accurate weighing results but in combination with the many options available, also ensure increased productivity, increased safety, less product giveaway and a reduction in downtime.


STATEMENT OF CONFORMITY

TÜV NORD

TÜV 05 ATEX 2898

Checkweigher	XS2	3G/3D
	XE2	3G/3D
	XS3	3G/3D
	XE3	3G/3D
Chain Checkweigher	XS3	3G

Garvens is the leading global checkweighing manufacturer and is part of the METTLER TOLEDO Product Inspection Division. Garvens standard and highly customized product inspection solutions are built to suit your specific application, environment, regulatory, and industry requirements.

▶ **www.mt.com/garvens**

Essential Services
in Hazardous Areas

The integrity and safety of hazardous area equipment requires maintenance in a manner consistent with factory specifications. Only METTLER TOLEDO has the skills, parts and know-how to ensure that our hazardous area scales and equipment deliver the dependable accuracy your process demands.

Installation, Configuration, Integration and Training
Our service representatives are factory-trained on hazardous area installations. We make certain that your weighing equipment is ready for safe production in a cost-effective and timely fashion and that personnel are trained for success.

Initial Calibration and Qualification Documentation
The environment and application requirements are unique for every scale, so performance must be tested and certified. Our calibration and qualification services document performance to ensure accuracy and to verify operational readiness.

Periodic Maintenance and Calibration
A maintenance agreement provides on-going confidence that your equipment meets hazardous area specifications and that weighing process accuracy is certified to comply with quality system requirements.

▶ **www.mt.com/service**

ISO/IEC 17025 Accredited service organizations
Results, not promises.

METTLER TOLEDO Service

For your Notes

For your Notes

Mettler-Toledo AG
CH-8606 Nänikon, Switzerland
Phone +41-44-944 22 11
Fax +41-44-944 30 60

Australia **Mettler-Toledo Ltd.,** Port Melbourne, Victoria 3207
Tel. (03) 9644 5700, Fax (03) 9645 3935
Austria **Mettler-Toledo GmbH.,** A-1230 Wien
Tel. (01) 604 19 80, Fax (01) 604 28 80
Belgium **Mettler-Toledo s.a.,** B-1932 Zaventem
Tel. (02) 334 02 11, Fax (02) 334 03 34
Brazil **Mettler-Toledo Indústria e Comércio Ltda.,**
São Paulo CEP 06455-000
Tel. (11) 4166-7400, Fax (11) 4166-7401
Canada **Mettler-Toledo Inc.,** Missisauga, Ontario, Canada
Tel. (905) 821-4200
China **Mettler-Toledo (Changzhou) Ltd., Scale&System Ltd.**
Changzhou City, Jiangsu 213001
Tel. (519) 664 2040, Fax (519) 664 1991
Croatia **Mettler-Toledo, d.o.o.,** HR-10000 Zagreb
Tel. 01 29 58 633, Fax 01 29 58 140
Czech Republic **Mettler-Toledo, spol, s.r.o.,** CZ-100 00 Praha 10
Tel. 272 123 150, Fax 272 123 170
Denmark **Mettler-Toledo A/S,** DK-2600 Glostrup
Tel. (43) 270 800, Fax (43) 270 828
France **Mettler-Toledo SAS,** F-78222 Viroflay
Tel. (01) 3097 17 17, Fax (01) 3097 16 16
Germany **Mettler-Toledo GmbH,** D-35353 Giessen
Tel. (0641) 50 70, Fax (0641) 52 951
Hong Kong **Mettler-Toledo (HK) Ltd.,** Kowloon
Tel. (852) 2744 1221, Fax (852) 2744 6878
Hungary **Mettler-Toledo, Kft,** H-1173 Budapest
Tel. (01) 288 40 40, Fax (01) 288 40 50
India **Mettler-Toledo India Pvt Ltd,** Mumbai 400 072
Tel. (22) 2803 1111, Fax (22) 2857 50 71
Italy **Mettler-Toledo S.p.A.,** I-20026 Novate Milanese
Tel. (02) 333 321, Fax (02) 356 29 73
Japan **Mettler-Toledo K.K.,** Chiyoda-ku, Tokyo 102-0075
Tel. +81 (3) 3222 7106, Fax +81 (3) 3222 7122
Korea **Mettler-Toledo (Korea) Ltd.,** Seoul 137-130
Tel. 82-2-3498-3500, Fax 82-2-3498-3555
Malaysia **Mettler-Toledo (M) Sdn. Bhd.,** 40150 Selangor
Tel. (603) 7844 5888, Fax (603) 7845 8773
Mexiko **Mettler-Toledo S.A. de C.V.,** México C.P. 11570
Tel. (55) 1946 0900, Fax (55) 5541 2228
Netherlands **Mettler-Toledo B.V.,** NL-4000 HA Tiel
Tel. (0344) 638 363, Fax (0344) 638 390
Norway **Mettler-Toledo A/S,** NO-0581 Oslo
Tel. 22 30 44 90, Fax 22 32 70 02
Poland **Mettler-Toledo, Sp. z o.o.,** PL-02-822 Warszawa
Tel. (22) 545 06 80, Fax (22) 545 06 88
Russia **Mettler-Toledo AG,** 10 1000 Moskau
Tel. (095) 921 68 12, Fax (095) 921 63 53
S.E.A. **Mettler-Toledo (SEA), Reg. Office** 40150 Shah Alam
Tel. (03) 7845 5800, Fax (03) 7845 3478
Singapore **Mettler-Toledo (S) Pte. Ltd.,** Singapore 139959
Tel. 65-6890 0011, Fax 65-6890 0012
Slovakia **Mettler-Toledo s.r.o.,** SK-831 03 Bratislava
Tel. (2) 4444 1220-2, Fax (2) 4444 1223
Slovenia **Mettler-Toledo, d.o.o.,** SI-1236 Trzin
Tel. (01) 562 18 01, Fax (01) 562 17 89
Spain **Mettler-Toledo S.A.E.,** E-08908 Barcelona
Tel. (93) 223 76 00, Fax (93) 223 76 01
Sweden **Mettler-Toledo AB,** S-12008 Stockholm
Tel. (08) 702 50 00, Fax (08) 642 45 62
Switzerland **Mettler-Toledo (Schweiz) GmbH,** CH-8606 Greifensee
Tel. (044) 944 45 45, Fax (044) 944 45 10
Taiwan **Mettler-Toledo Pac Rim AG,** Taipei
Tel. (2) 2657 8898, Fax (2) 2657 0776
Thailand **Mettler-Toledo (Thailand) Ltd.,** Bangkok 10310
Tel. (02) 723 0300, Fax (02) 719 6479
United Kingdom **Mettler-Toledo Ltd.,** Leicester, LE4 1AW
Tel. (0116) 235 0888, Fax (0116) 236 5500
USA **Mettler-Toledo, LLC.,** Columbus, Ohio 43240
Tel. (614) 438 4511, Fax (614) 438 4900

For all other countries: **Mettler-Toledo AG**
PO Box VI-400, CH-8606 Nänikon
Tel. +41-44-944 22 11, Fax +41-44-944 31 70

www.mt.com/ind-hazcat

For more information