Weighing Terminals

**IND560x Terminal**

Comply

Weigh

Connect

Control

**Division 1**

**Zone 1/21**

EX

# Uncompromising Weighing Performance
## for Hazardous Areas

**METTLER TOLEDO**

# Performance and Compliance

**The IND560x intrinsically safe weighing terminal brings uncompromised performance and versatility into Division 1, Zone 1 and Zone 21 classified areas.**

## Comply…..globally

Approved locally. The IND560x is designed for the global market because it is approved to local standards such as ATEX (EU), FM (USA & Canada) and NEPSI (China).

| Type/Model: | IND560x |
|---|---|
| S/N: | Year of Manufacture: 11 |

II 2G       Ex ib [op is Ga] IIC T4 Gb
II 2D       Ex ib [op is Da] IIIC T60°C Db
BVS 09 ATEX E010  IECEx BVS 10.0096X  CE 0344

IS
Class I,II,III / DIV 1      AEx ib  IIC  T4
Group A,B,C,D,E,F,G/T4 Ta 40°C

**Weights and Measures (W&M) compliance:**
With a pioneering 10V/m susceptibility the IND560x harsh meets the highest electromagnetic immunity standards. This ensures the IND560x remains compliant even when current W&M legislation requirements are raised. The IND560x is also fully certified to existing OIML, NTEP and many local W&M standards.

**Regulatory compliance:**
With built-in maintenance and change logs and alibi memory, achieve traceability in accordance with quality standards. To operate in the harshest of environments, the IND560x is certified to NEMA and ingress protection standards.

Harsh: IP66, IP68, IP69k
Panel: IP65 (Front), Type 4

**IP69k**

**For more local approvals see**
▶ **www.mt.com/IND560x**

## Weigh…..quickly

The IND560x excels in controlling filling and dosing applications. It delivers best in class perfomance with a target update rate of 50Hz. This means once a set target is reached you can trigger a process control in only 20ms. Choose between an analog or digital scale interface, to deliver precise, repeatable measurements from milligrams to tons, in manual, semi-automatic or fully automatic operations (pages 4-5). The IND560x is also ideally suited for manual weighing applications. The SmartTrac™ graphic LCD display with back light provides operators with unmistakable weighing transaction information, helping to reduce errors and eliminate waste. The IND560x also supports up to 20 programmable, on-screen prompts to assist an operator through complex operations.
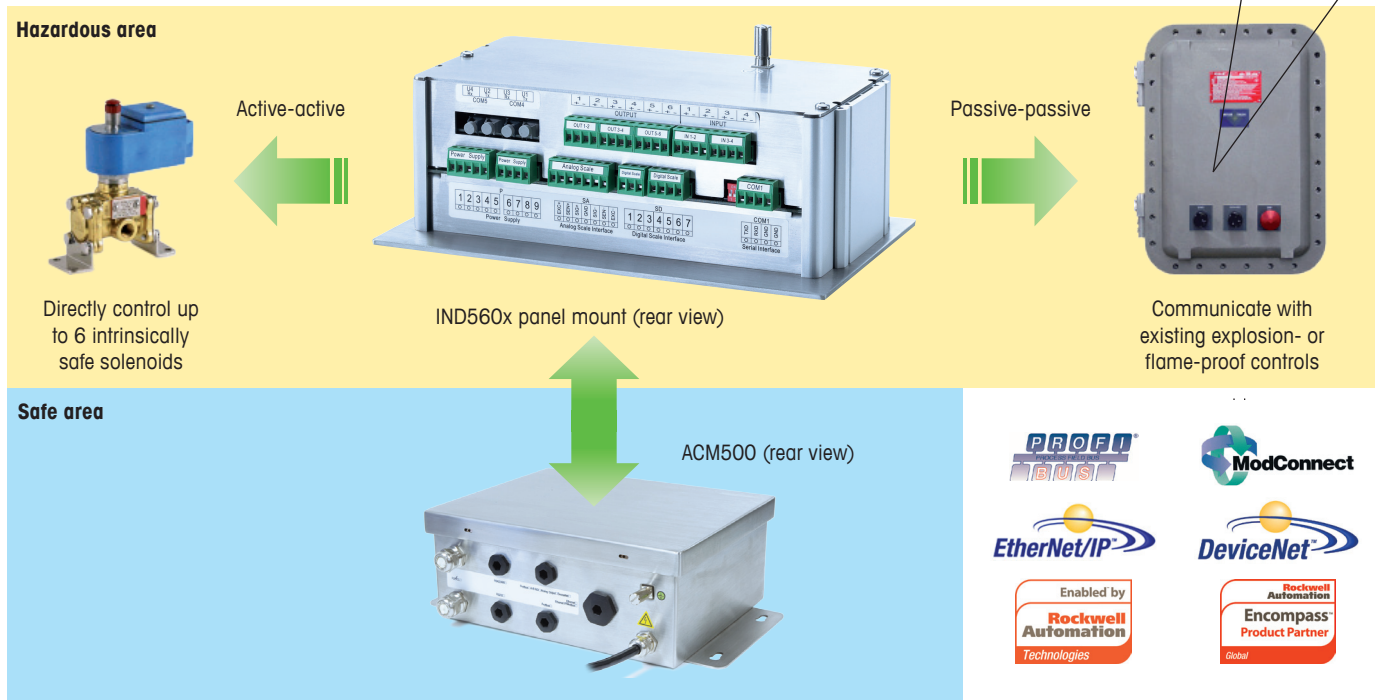
# Speed, Communication and Control

**A wide range of communication protocols permits
real time data sharing with all your operating systems**

## Control…..directly

Are you looking to control devices directly in hazardous areas without the need to use expensive barriers or purges?…Look no further!

As well as the traditional passive-passive I/O control the IND560x now offers you internal active-active solid state I/Os. This has an

advantage over traditional passive-passive systems by reducing the wiring, simplifying the installation and reducing capital investment.

**Hazardous area**

Active-active

Passive-passive

Directly control up to 6 intrinsically safe solenoids

IND560x panel mount (rear view)

Communicate with existing explosion- or flame-proof controls

**Safe area**

ACM500 (rear view)

PROFIBUS

ModConnect

EtherNet/IP™

DeviceNet™

Enabled by
Rockwell Automation
Technologies

Rockwell Automation
Encompass™
Product Partner
Global

## Connect…..universally

Connect the IND560x with the ACM500 and open a world of communication possibilities. From the safe area, the ACM500 provides an ultra fast communication rate of up to 115 kbaud allowing high volume data transfer.

This means integration with higher level automation equipment such as PLCs (Programmable Logic Controllers) or DCS (Distributed

Control Systems) can be easily achieved. The ACM500 provides bi-directional communication between the weighing terminal and the higher-level automation system, allowing the terminal to be used in a variety of enhanced production applications.

The ACM500 and IND560x communicate using either a copper wire-carried current loop signal

or a fiber optic connection. The ACM500 allows the IND560x to communicate with multiple devices using 3 different protocols simultaneously: PLC, Ethernet TCP/IP and serial (see page 7).

**For more information see**
▸ **www.mt.com/ACM500**

# Built-in Software Solutions

**Depending upon your requirements, various built-in software solutions can be used to improve the performance of your weighing system.**
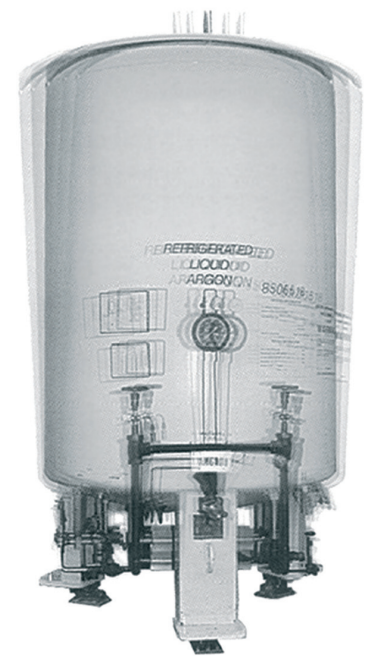
**TraxDSP®**

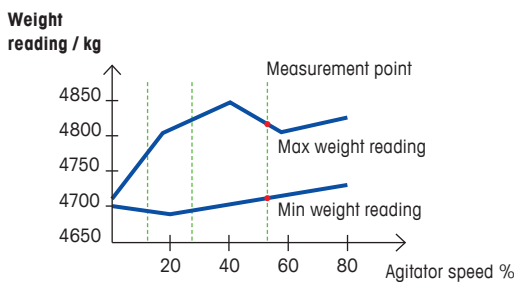TraxDSP® is a combination of hardware and software that utilizes advanced multi-stage filters to supress background electrical noise created by mechanical vibration or electrical sources.
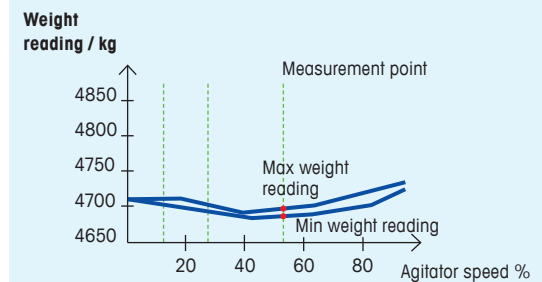This system constantly tracks the load cell signal and rapidly produces filtered weight data that represents the true weight portion of the signal.
Filtering is performed digitally, which permits on-site adjustments to suit each customer's unique weighing requirements.

**Traditional Vibration Filtering**

Weight reading / kg

4850
4800
4750
4700
4650

Measurement point
Max weight reading
Min weight reading

20  40  60  80  Agitator speed %

**TraxDSP®**

Weight reading / kg

4850
4800
4750
4700
4650

Measurement point
Max weight reading
Min weight reading

20  40  60  80  Agitator speed %

TraxDSP® leads to realized material and cost savings in process control.
**For more information on TraxDSP® log onto:** ▶ **www.mt.com/ind-traxdsp**

**TraxEMT™**

The Embedded Maintenance Technician (EMT) monitors and analyzes your system performance, enabling action before a failure occurs.
TraxEMT™ monitors the condition of the weighing system and in specific circumstances can alert designated individuals of potential failures or maintenance requirements via email or via the operator interface.

**CalFREE™**

Calibration using test weights can be difficult or even impossible for large tank or hopper scales used in process weighing applications.
Use the exclusive CalFREE™ technology to get up and running without using test weights. Alternatively, use the standard calibration with 5-point linearization or step calibration routines for the highest accuracy.

**MinWeigh**

MinWeigh functionality helps ensure the weighing of your critical ingredients are always within acceptable limits by displaying a warning when the weight is below the minimum weight threshold.

**QM✓**
MinWeigh

**For more information on TraxEMT™ log onto:**
▶ **www.mt.com/ind-traxemt**

**For more information on CalFREE™ log onto:**
▶ **www.mt.com/calfree**

**For more information on MinWeigh log onto:**
▶ **www.mt.com/minweigh**

# Filling and Blending Applications

**The IND560x excels as a single material filling or dosing controller with features such as target memory tables and latching discrete inputs and outputs for secure control of material delivery equipment.**

### Save programming costs

With the optional Fill-560 application, the IND560x becomes capable of handling complex combinations of multi-material filling and dosing sequences. The Fill-560 solution features many customizable filling and dosing sequences that can be combined and easily configured to suit specific application requirements.

**Weigh-in/weigh-out sequences**

* Fill
* Fill/Dump
* Fill/Dose
* Dose
* Blend
* Blend/Dump
* Blend/Dose
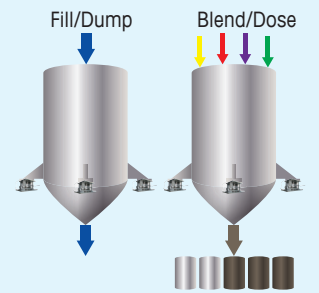


Fill-560 application software capabilities

An IND560x with Fill-560 can manage both single and multiple material applications, blending up to four different materials. The entire contents can be dispensed or dosed in a precise, controlled manner during the weigh-out cycle.

Operators can be freed to perform additional tasks when running sequences in Automatic Mode, or their skills can be focused on critical points in the process when utilizing the Semi-Automatic Mode.
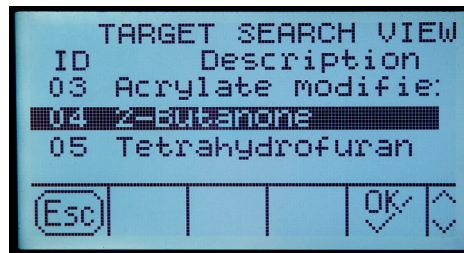


99 individual material targets

### Information at your fingertips

99 individual material targets, acceptable tolerances and descriptions can be stored in the Target Table of the IND560x. Softkeys provide quick access to the Target Table, making it simple to search for and select the correct target every time. Multi-material formulas are easily populated with targets recalled from the Target Table.

### Learn Mode improves process quality

The Learn Mode and Automatic Spill Adjustment capabilities provide a means of continuously refining the accuracy of the weighing process.

### For more information on IND560fill log onto:

▶ **www.mt.com/IND560fill**

# Truck and Rail Weighing
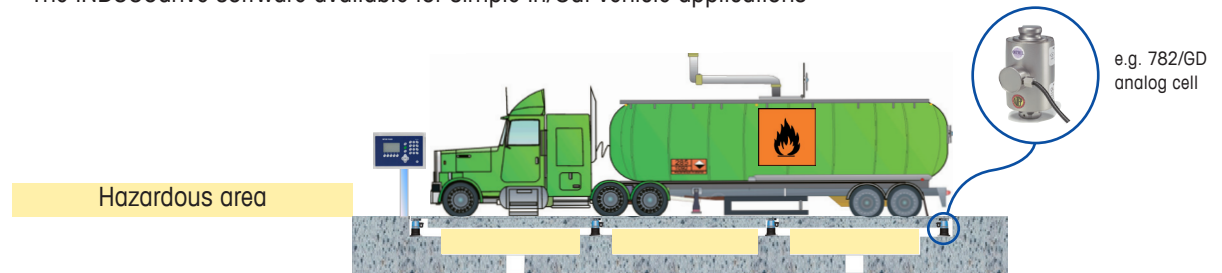
### Uncompromised accuracy

Safely and accurately weigh with a 100% approved solution. Approvals for the terminal, junction boxes and analog load cells are available.

Since there is no need to place the terminal in a safe area, the IND560x provides "at the scale" weight indication and improves driver convenience.
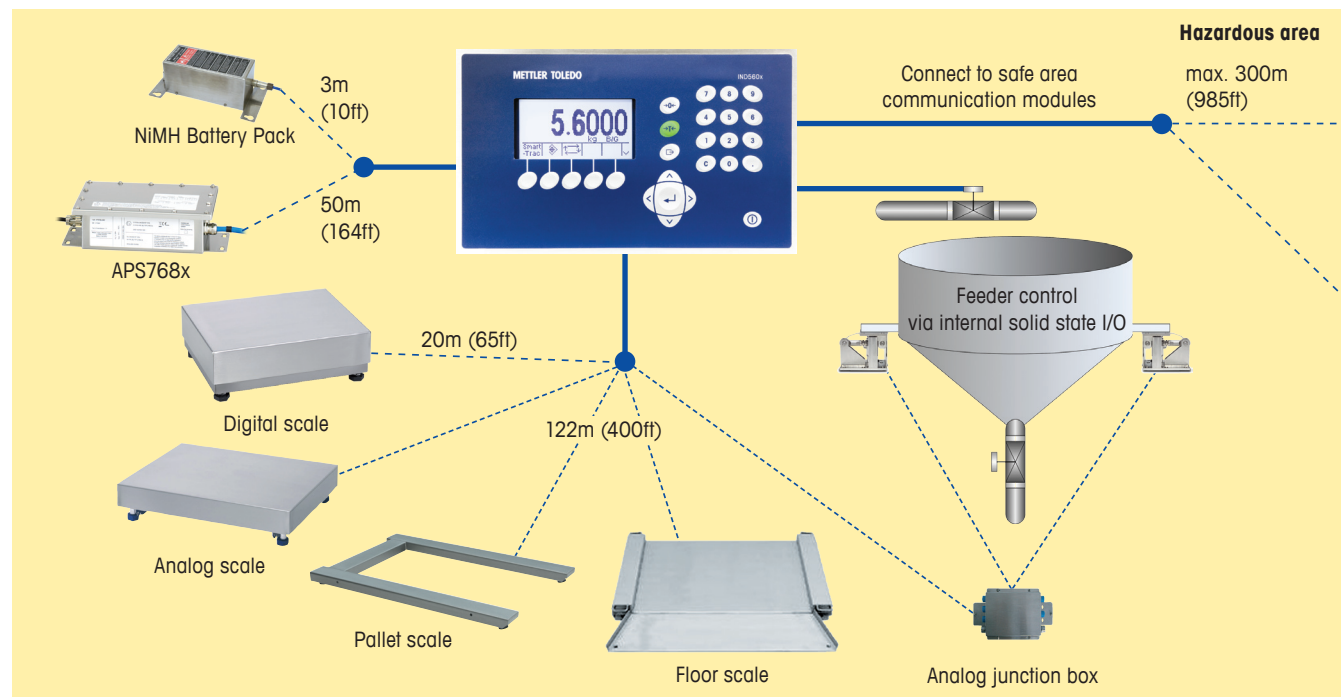
**For more information log onto:**
▶ **www.mt.com/IND560drive**

### Features & benefits

• Alibi Memory saves up to 60,000 weighing transactions
• Multiple connectivity options aid communication of important shipping and receiving information into external databases
• Up to 20 programmable operator prompts to help with traffic throughput
• The IND560drive software available for simple In/Out vehicle applications



e.g. 782/GD analog cell

Hazardous area

# From Simple Weighing to Process Control



Hazardous area

NiMH Battery Pack

3m (10ft)

APS768x

50m (164ft)

METTLER TOLEDO
5.6000

Connect to safe area communication modules

max. 300m (985ft)

Feeder control via internal solid state I/O

Digital scale

20m (65ft)

122m (400ft)

Analog scale

Pallet scale

Floor scale

Analog junction box

# Specialized Applications and Custom Programming

**If your application requires programming beyond the standard software packages, TaskExpert® may be the perfect solution.**

While several specialized software packages exist for the IND560x, TaskExpert® – a custom program development tool – gives end users and licensed programmers the opportunity to work together to create applications for the IND560x weighing terminal that satisfy the unique and specific needs of an end user's application. Using TaskExpert®, the programmer can:

- Create a special user interface including graphics, softkeys, labels, text and selection boxes
- Interact with system variables & functions of the IND560x
- Implement I/O control through the terminal's ladder logic engine

**For more information on TaskExpert® log onto:**
▶ **www.mt.com/ind-taskexpert**
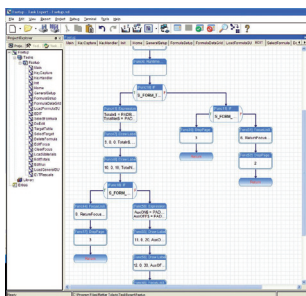
TaskExpert® development tool

TaskExpert® custom interface screens

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**The IND560x is designed to accept a single scale input.**

**Safe area**

Connect to one device via serial connector using the ACM200

ACM200

max. 300m (985ft)

PLC Fieldbus Interface

Serial printer

Serial printer

ACM500

Connect multiple devices using 3 different protocols (PLC, serial and Ethernet)

Ethernet

ARM100 I/O module
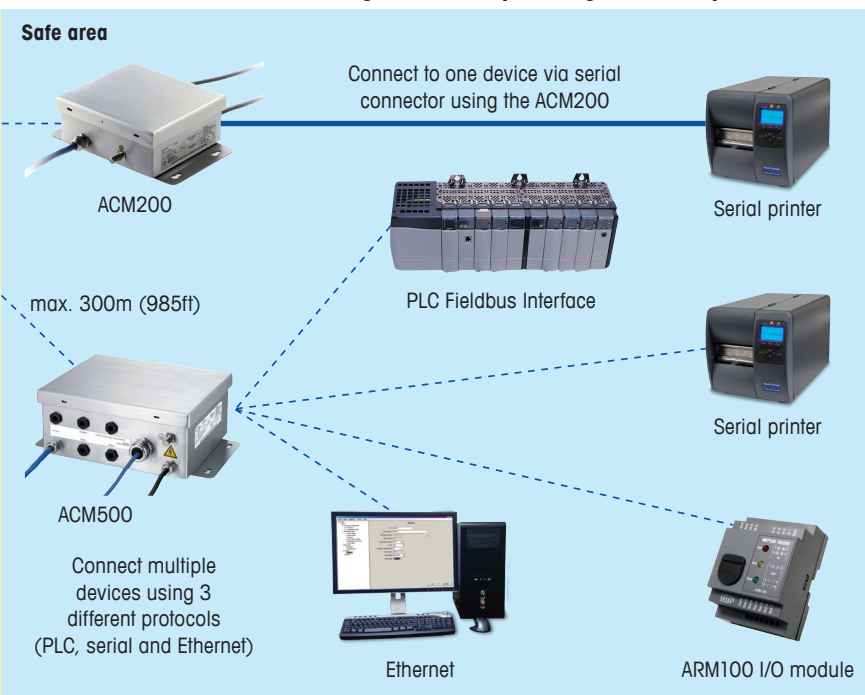
**Connect to the right scale**
Whether the application requires a digital or analog scale the IND560x can connect to one scale directly in the zone.
- High precision digital scales ranging from 15kg to 12 000kg capacity.
- Robust and accurate analog scales ranging from 3kg to 3 000kg capacity.
- Rugged weigh modules for weighing 5kg to 300 tons.

**Power options increase flexibility**
Choose between AC power using the intrinsically safe APS768x power supply, and the external the NiMH battery pack, both of which can be located within the hazardous area.

# Uncompromised Commitment to Excellence

**The integrity and safety of hazardous area equipment requires maintenance in a manner consistent with factory specifications. Only METTLER TOLEDO has the skills, original parts and know-how to ensure that your 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.

**For more information on service, log onto:** ▶ **www.mt.com**

**Harsh enclosure dimensions in mm (inches)**

289 (11.38)  207.5 (8.17)  52°  170 (6.69)  183 (7.20)
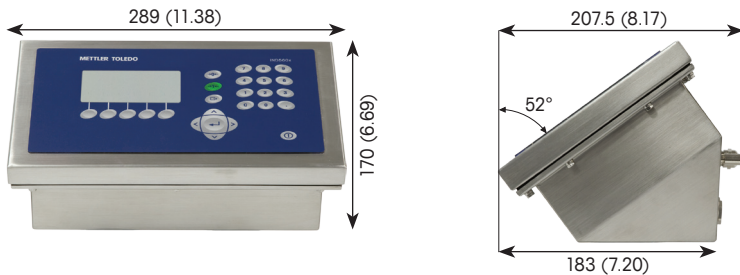
**Panel mount dimensions in mm (inches)**

265 (10.43)  160 (6.3)  92.5 (3.64)  116.3 (4.58)

**www.mt.com**

For more information

**Quality certification.** Development, production, and auditing in accordance with ISO9001. Environmental management system in accordance with ISO14001.

ISO 9001 certified
ISO 14001 certified

ISO 17025 certified

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

**Conformité Européene**
This label is your guarantee that our products conform to the latest guidelines.

C E