

# Max Connectivity, Mini Footprint Process Weighing in Hazardous Areas



### Weigh

The IND131xx and IND331xx terminals deliver excellent accuracy, reliability and efficiency for process weighing applications in hazardous areas.



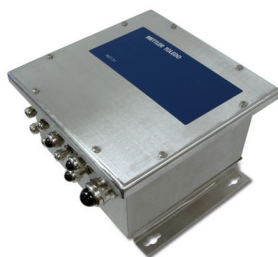
### Comply

These superior weighing terminals feature the performance and reliability expected of instruments designed to comply with Weights & Measures, hazardous area and product safety regulations. They include features and functionality never before offered in such a compact and versatile form factor.



### Control

The inherent qualities of process weighing terminals from METTLER TOLEDO make it easier for OEMs and system integrators to build best-in-class weighing systems cost-effectively.



### Connect

Easy integration into process-based network architectures provides valuable plant-floor information to process owners to optimize production and reduce down-time.



### Multiple PLC interfaces

All IND131xx and IND331xx terminals can be equipped with any of a wide array of PLC options.

## Zone 2/22, Division 2



## IND131xx and IND331xx Weighing Terminals

The IND131xx and IND331xx analog scale terminals deliver precision measurement data in a single, cost-effective package, safe for use in Zone 2/22 and Division 2/Zone 2 hazardous areas. Terminal features include:

- Organic LED display readable in all light conditions
- Ultra-fast A/D conversion rate and TraxDSP™ digital filtering
- Enclosures designed to match application environment – modular design enables multiple mounting possibilities
- 24 VDC operation
- Support for a wide variety of options, including DIO, additional serial port, and PLC interfaces
- Portable calibration/configuration settings and firmware update via an SD memory card
- Scale calibration through PLC interface. CalFree™ allows scales to be calibrated without test weights

# IND131xx / IND331xx Packaged Solutions

## Enhanced Terminals in Robust Enclosures

- Packaged IND131xx and IND331xx in Enclosures Approved for Division 2, Zone 2 and Zone 22
- Each version can be configured with any of the terminals' multiple interface and connectivity options
- Packages include an agency-approved 24 VDC power supply

### Enclosure Specifications

The stainless steel enclosure housing the IND131xx DIN and IND331xx panel packaged solutions is FM-approved for use in non-hazardous areas, and in Division 2, Zone 2 hazardous areas. The enclosure is ATEX/IECEX certified for Zone 22 (dust) hazardous areas. Cable entry points can be either conduit hubs for use in the U.S., or ATEX-approved glands for European applications.

- FM-certified enclosure, gas and dust
- ATEX and IECEx certified for Zone 2/22 environments
- Rated IP66, IP65 when used with panel-mount terminal
- T5 temperature class rating

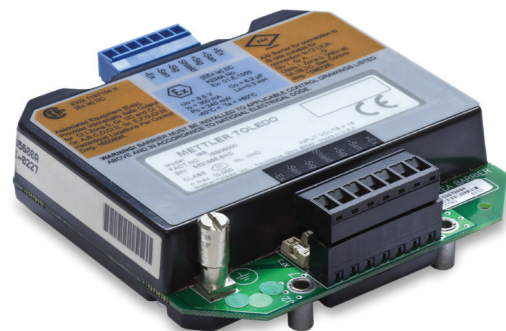


### Multiple Terminal Configurations Available

When a single terminal is not enough, multi-terminal designs are available, with agency-approved power supply, optional ISB (Intrinsically Safe Barrier) and additional features as required for the application.

### Load Cells in Hazardous Areas

In applications with load cells installed in Division 1 / Zone 1 or Zone 1/21 areas, an intrinsically safe analog load cell barrier (ISB) is required. IND131xx and IND331xx terminals packaged with a METTLER TOLEDO ISB05 intrinsically safe barrier provide an integrated solution for such applications. Refer to the control drawing for load cell compatibility.



### Packaged Model Configurations

IND131xx and IND331xx packages are highly customizable. **Table** shows the array of available primary configurations.

Two possible variants are illustrated below. **Figure 1** shows a system comprising an IND131xx with optional ISB05 barrier. **Figure 2** shows an IND331xx panel-mount terminal (its front panel interface not shown). The packaged model configurations are available with any of the PLC interfaces (EtherNet/IP, PROFIBUS DP, Modbus TCP, ControlNet, Device-Net), and Solid State DIO.

### IND131xx-based package

- ISB05 (optional)
- FM/CSA/ATEX approved power supply, 24VDC at 1.3 A, 100-240 VAC, 50/60 Hz
- ATEX glands (for European installations)
- FM, ATEX and IECEx- certified enclosure

### IND331xx-based standard package

- (front panel display not shown)
- FM/CSA/ATEX approved power supply, 24VDC at 1.3 A, 100-240 VAC, 50/60 Hz
  - Conduit hubs (for installation in US/Canada)
  - FM, ATEX and IECEx-certified enclosure

### Customized Interfaces

The packaged IND131xx and IND331xx can be customized for specific uses, to include agency-approved operators for I/O, such as annunciators and pushbuttons, making operator interactions even easier, more consistent and safer.

Table	FM-approved conduit hubs	ATEX-approved glands
Terminal	Single /Dual terminal	Single /Dual terminal
IND131xx	Standard*	Standard*
DIN-mount	with ISB05(s)	with ISB05(s)
IND331xx	Standard*	Standard*
Panel-mount	with ISB05(s)	with ISB05(s)

\* Terminal with agency-approved 24VDC power supply







Figure 1



Figure 2



# IND131xx and IND331xx Weighing Terminals

Technical Data			IND131xx DIN mounted	IND331xx Panel mounted	IND131xx JBox enclosure
					
Enclosure types		Unit of Measure	DIN rail-mount, plastic, with operator interface	Panel mount, stainless steel with operator interface + plastic chassis	Stainless steel enclosure including internal board to sum load cells
Dimensions	L x H x D	mm in.	68 x 138 x 111 2.7 x 5.4 x 4.4	Front panel: 168 x 68 x 12 6.6 x 2.7 x 0.5	251 x 261 x 123 9.9 x 10.3 x 4.8
Shipping weight		kg / lb	1 / 2.2	1.5 / 3.3	5.5 / 12.1
Environmental protection			IP20, Type 1	IP65, Type 4x and 12	IP65
Ambient environment	Operation	°C / °F	-10 to 40 / 14 to 104, 10% to 90% relative humidity, non-condensing		
	Storage	°C / °F	-20 to 60 / -4 to 140, 10% to 90% relative humidity, non-condensing		
Power requirements		VDC / mA	18-36; nominal 24 / 84-170; nominal 120 (IND131xx), nominal 130 (IND331xx)		
Display	Type		Green OLED including weight display, weight units, gross/net indication and graphic symbols for motion and center of zero. 10 updates/sec.		
	Character height	mm / in.	5.6 / 0.22	12 / 0.47	5.6 / 0.22 (internal)
Weight display			Maximum displayed resolution of 100,000 divisions		
Scale type			Analog load cells		
Number of cells			Up to 4 350 Ω load cells, 2 or 3 mV/V		
Number of scales			1		
Analog/Digital update rates		Hz	Internal analog: 366 / Target comparison: 50 / PLC Interface: 20		
Digital Filtering			TraxDSPTM		
Memory			Stores two-speed target control values and limit values for three comparators		
Applications			Basic process weighing for gain-in-weight (filling), loss-in-weight (dosing) and level indication		
Load cell excitation voltage		VDC	5		
µV Build Minimum/Approved		microvolts	0.1 / 0.6		
Keypad			4 keys (Clear, Zero, Tare, Print); 1.22 mm thick polyester overlay (PET) with polycarbonate keypad lens		
Communications	Serial interfaces		Standard: One serial port (COM1), RS-232, 300 to 115,200 baud Optional: Serial port (COM2), RS-232/485, 300 to 115,200 baud		
	Protocol		Serial inputs: ASCII commands for CTPZ (Clear, Tare, Print, Zero), SICS (most commands, levels 0 and 1) Serial outputs: Continuous, Extended continuous, or Demand (limited formats)		
Approvals	Weights and Measures		USA: NTEP Class III/IIIL - 10,000d; CoC 09-051 Canada: Class III/IIILD - n max. 10,000/20,000; AM-5744		Europe: OIML, Class III, 6000e; R76/2006-NL1-09.26
	Hazardous locations	USA - FM	Canada - FM	ATEX 	IECEx
		NI / I, II, III / 2 / ABCDEFG / T5 Ta = 40°C 1 / 2 / IIC / T5 Ta = 40°C	NI / I / 2 / ABCD / T5 Ta = 40°C; DIP / II, III / 2 / EFG / T5 Ta = 40°C	II 3 G Ex nA nL [nL] IIC T5 II 3 D Ex ID A22 IP 65 T 100°C	Ex nA nL [nL] IIC T5 Ex ID A22 IP65 T100°C
	MID		OIML R51 (Automatic Catchweighing) T10262; OIML R61 (Automatic Gravimetric Weighing) T10261		
Product Safety		UL, cUL, CE			

## Options

COM2 / DIO, includes:	COM2 RS-232/485 serial	Modbus RTU capability	
	4 solid state discrete outputs	2 discrete inputs (selectable active or passive)	
Programmable Logic Control (PLC) interfaces	4-20 mA Analog Output	Ethernet/IP™*	DeviceNet™
	PROFIBUS® DP	Modbus TCP	
		ControlNet™*	

\* Class 1 Cyclic and Class 3 Discrete / Explicit messaging supported



IND331 with PTPN adapter plate

## Accessories

Agency-approved (FM/CSA/ATEX) 24VDC DIN rail mount Power Supply	PTPN Terminal adapter plate (for IND331 Panel unit)
ISB05 Intrinsically Safe Barrier when Load Cells are in Zone 1/21 or Div 1 areas	2GB Memory SD Card for configuration and calibration data backup and restore

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