IND131xx / IND331xx

Max. Connectivity, Mini Footprint

Process Weighing in Hazardous Areas

Weigh

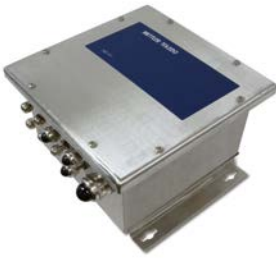
The IND131xx and IND331xx terminals deliver excellent accuracy, reliability and efficiency for process weighing applications in hazardous areas.

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

FM APPROVED IECEx

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

METTLER TOLEDO

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 safe 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.

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		

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, Allen-Bradley RIO, ControlNet, DeviceNet), and Solid State DIO.

Figure 1

Figure 2

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.

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 × H × D	mm in.	68 × 138 × 111 2.7 × 5.4 × 4.4	Front panel: 168 × 68 × 12 6.6 × 2.7 × 0.5	251 × 261 × 123 9.9 × 10.3 × 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	IP69k
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			TraxDSP®		
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 display 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/IIIHD - n max. 10,000/20,000; AM-5744		Europe: OIML, Class III, 6000e; R76/2006-NL1-09.26
	Hazardous locations		**USA - FM** NI / I, II, III / 2 / ABCDEFG / T5 Ta = 40 °C I / 2 / IIC / T5 Ta = 40 °C **Canada - FM** NI / I / 2 / ABCD / T5 Ta = 40 °C; DIP / II, III / 2 / EFG / T5 Ta = 40 °C Install per control drawing 72238303R	**ATEX** II 3 G Ex nA nL [nL] IIC T5 II 3 D Ex tD A22 IP 65 T 100 °C **IECEx** Ex nA nL [nL] IIC T5 Ex tD A22 IP65 T100 °C Install per installation drawing 72246295R	**NEPSI** Pending
	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
	Allen-Bradley RIO™	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

www.mt.com

For more information

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Document No. 44098190 A
MarCom Industrial