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

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.

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.

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.

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 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.
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.

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.
## Technical Data

<table>
<thead>
<tr>
<th>Enclosure types</th>
<th>Unit of Measure</th>
<th>IND131xx DIN mounted</th>
<th>IND331xx Panel mounted</th>
<th>IND31xx JBox enclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DIN rail-mount, plastic, with operator interface</td>
<td>Panel mount, stainless steel with operator interface + plastic chassis</td>
<td>Stainless steel enclosure including internal board to sum load cells</td>
</tr>
<tr>
<td>Dimensions</td>
<td>L × H × D mm × in.</td>
<td>68 × 138 × 111</td>
<td>168 × 68 × 12</td>
<td>251 × 261 × 123</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.7 × 5.4 × 4.4</td>
<td>6.6 × 2.7 × 0.5</td>
<td>9.9 × 10.3 × 4.8</td>
</tr>
<tr>
<td>Shipping weight</td>
<td>kg / lb</td>
<td>1 / 2.2</td>
<td>1.5 / 3.3</td>
<td>5.5 / 12.1</td>
</tr>
<tr>
<td>Environmental protection</td>
<td>Operation °C / °F</td>
<td>IP20, Type 1</td>
<td>IP65, Type 4x and 12</td>
<td>IP69k</td>
</tr>
<tr>
<td></td>
<td>Storage °C / °F</td>
<td>-10 to 40 / 14 to 104, 10 % to 90 % relative humidity, non-condensing</td>
<td>-20 to 60 / -4 to 140, 10 % to 90 % relative humidity, non-condensing</td>
<td></td>
</tr>
<tr>
<td>Power requirements</td>
<td>VDC / mA</td>
<td>18-36; nominal 24 / 84-170; nominal 120 (IND131xx), nominal 130 (IND331xx)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display</td>
<td></td>
<td>Green OLED including weight display, weight units, gross/net indication and graphic symbols for motion and center of zero. 10 updates/sec.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Character height mm / in.</td>
<td>5.6 / 0.22</td>
<td>12 / 0.47</td>
<td>5.6 / 0.22 (internal)</td>
</tr>
<tr>
<td>Weight display</td>
<td></td>
<td>Maximum displayed resolution of 100,000 divisions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scale type</td>
<td></td>
<td>Analog load cells</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of cells</td>
<td></td>
<td>Up to 4 350 D load cells, 2 or 3 mV/V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of scales</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analog/Digital update rates</td>
<td>Hz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital Filtering</td>
<td></td>
<td>TraxDSP®</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memory</td>
<td></td>
<td>Stores two-speed target control values and limit values for three comparators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applications</td>
<td></td>
<td>Basic process weighing for gain-in-weight (filling), loss-in-weight (dosing) and level indication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Load cell excitation voltage</td>
<td>VDC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>μV Build Minimum/Approved</td>
<td></td>
<td>0.1 / 0.6</td>
<td></td>
<td></td>
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<tr>
<td>Keypad</td>
<td></td>
<td>4 keys (Clear, Zero, Tare, Print); 1.22 mm thick polyester overlay (PET) with polycarbonate display lens</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communications</td>
<td>Serial interfaces</td>
<td>Standard: One serial port (COM1), RS-232, 300 to 115,200 baud</td>
<td>Optional: Serial port (COM2), RS-232/485, 300 to 115,200 baud</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Protocol</td>
<td>Serial inputs: ASCII commands for CTPZ (Clear, Tare, Print, Zero), SICS (most commands, levels 0 and 1)</td>
<td>Serial outputs: Continuous, Extended continuous, or Demand (limited formats)</td>
<td></td>
</tr>
<tr>
<td>Weights and Measures</td>
<td>USA - FM</td>
<td>NI / I, II, III / 2 / ABCDEFG / TS To = 40°C</td>
<td>NI / I, II / ABCD / TS To = 40°C</td>
<td>NI / I, II / ABCD / TS To = 40°C</td>
</tr>
<tr>
<td></td>
<td>Canada - FM</td>
<td>NI / I / II / ABCD / TS To = 40°C</td>
<td>NI / I, II / ABCD / TS To = 40°C</td>
<td>NI / I, II / ABCD / TS To = 40°C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Install per Control Drawing 72238303R</td>
<td>Install per Installation Drawing 72246295R</td>
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<tr>
<td></td>
<td>IECEx</td>
<td>Ex nA nL [nL] IIC T5</td>
<td>Ex A22 IP65 T</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Install per Control Drawing</td>
<td>Install per Installation Drawing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NEPSI</td>
<td></td>
<td></td>
<td>Pending</td>
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<tr>
<td>MID</td>
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<td>USA: NTEP Class III/III-L - 10,000d; CoC 09-051</td>
<td>Europe: OIML, Class III, 6000e; R76/2006-09.26</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Canada: Class III/IIIHD - n max. 10,000/20,000, AM-5744</td>
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<td></td>
</tr>
<tr>
<td>Product Safety</td>
<td></td>
<td>OIML R51 (Automatic Catchweighing) T10262; OIML R61 (Automatic Gravimetric Weighing) T10261</td>
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<td></td>
</tr>
<tr>
<td>Options</td>
<td>COM2 / DIO, includes:</td>
<td>Modbus RTU capability</td>
<td>2 discrete inputs (selectable active or passive)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>COM2 RS-232/485 serial</td>
<td>4-20mA Analog Output</td>
<td>Modbus TCP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Programmable Logic Control (PLC) interfaces</td>
<td>PROFINET®</td>
<td>ControlNet®</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Allen-Bradley RIO®</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Programmable Logic Control (PLC) interfaces</td>
<td>Ethernet/IP™</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>DeviceNet™</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>* Class 1 Cyclic and Class 3 Discrete / Explicit messaging supported</td>
<td></td>
<td></td>
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<tr>
<td>Accessories</td>
<td>Agency-approved (FM/CSA/ATEX) 24VDC DIN rail mount Power Supply</td>
<td>2GB Memory SD Card for configuration and calibration data backup and restore</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PTPN Terminal adapter plate (for IND331 Panel unit)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Options

- **COM2 / DIO, includes:**
  - COM2 RS-232/485 serial
  - Modbus RTU capability

- **Programmable Logic Control (PLC) interfaces**
  - 4-20mA Analog Output
  - PROFINET®
  - Modbus TCP
  - Allen-Bradley RIO®
  - ControlNet®

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

## Accessories

- Agency-approved (FM/CSA/ATEX) 24VDC DIN rail mount Power Supply
  - 2GB Memory SD Card for configuration and calibration data backup and restore

## Approvals

- **USA - FM**
  - NI / I, II, III / 2 / ABCDEFG / TS To = 40°C
  - Install per Control Drawing 72238303R

- **Canada - FM**
  - NI / I / II / ABCD / TS To = 40°C
  - Install per Installation Drawing 72246295R

- **ATEX**
  - II 3 G Ex nA nL [nL] IIC T5
  - II 3 D Ex nA nL IIC T5

- **IECEx**
  - Ex nA nL [nL] IIC T5
  - Ex A22 IP65 T

- **NEPSI**
  - Pending

## MID

- USA: NTEP Class III/III-L - 10,000d; CoC 09-051
- Canada: Class III/IIIHD - n max. 10,000/20,000, AM-5744
- Europe: OIML, Class III, 6000e; R76/2006-09.26

## Options

- **COM2 / DIO, includes:**
  - COM2 RS-232/485 serial
  - Modbus RTU capability

- **Programmable Logic Control (PLC) interfaces**
  - 4-20mA Analog Output
  - PROFINET®
  - Modbus TCP
  - Allen-Bradley RIO®
  - ControlNet®

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

## Accessories

- Agency-approved (FM/CSA/ATEX) 24VDC DIN rail mount Power Supply
  - 2GB Memory SD Card for configuration and calibration data backup and restore

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**IND331 with PTPN adapter plate**

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