Industrial Weighing Terminal

The IND560 is an easy-to-use terminal for use in process and other general weighing applications. Rugged yet versatile, it is available in a Panel-mount or Harsh Environment stainless steel enclosure that can be desk, wall or column mounted.

Specifications (continued)

Harsh Environment: Desk, Wall and Column Mount

- Enclosure: designed to comply with EHEDG and NSF sanitary cleaning standards; front panel rotates 180° for an improved viewing angle
- Material: 304L stainless steel front panel, 2J finish
- Protection: IP69K certified protection (pending), appropriate for heavy washdown with hot water under pressure
- Dimensions (h x w x d): 160 x 265 x 170 mm (10.4 x 6.3 x 6.7 in) with a viewing angle of 30°
- Wall / Column Mounting Bracket Option: improves viewing angle

Compliance and Approvals

- Weights and Measures:
  - U.S.A.: NTEP; CoC #05-057
  - IDNet: Class II, 100,000d
  - Analog: Class III / IIII, 10,000d
- Canada: (pending)
  - IDNet: Class II, 100,000d
  - Analog: Class III / IIII, 10,000d

Product Safety:

- UL: Tested and complies with UL1950 U.S. and Canada
  - Panel-mount: Recognized Component, IND. CONT. EQ. 202B
  - Harsh: UL Listed, I.T.E. 202B
- CE Conformity: (pending):
  - ENxxxx: Low voltage Directive
  - ENxxxx: EMC Directive

Hazardous Area Use (pending):

- Safe area installation interfacing Division 1 or Zone 1 Equipment: Capable of operation with analog load cells and scales located in a Division 1 or Zone 1 hazardous area when used with approved barrier (e.g. METTLER TOLEDO ISB15 or ISB15x)
- Purged Enclosure: option available upon request

Radio Frequency Interference Susceptibility (pending): meets requirements with a maximum of one display increment of change when calibrated for the recommended scale builds

- Radio Interference Frequency: 80-1000 MHz
- Field Strength: 10 volts / meter

Temperature Characteristics:

- Operating Temperature:
  - Class II: 32º F to 104º F (0ºC to 40ºC) at 10% to 95% relative humidity, non-condensing
  - Class III: 14º F to 104º F (-10ºC to 40ºC) at 10% to 95% relative humidity, non-condensing
- Storage Temperature: -40º F to 140º F (-40ºC to 60ºC) at 10% to 95% relative humidity, non-condensing
- Zero Temperature Coefficient: 0.3µV / °C maximum
- Span Temperature Coefficient: 6ppm / °C maximum

Specifications subject to change without notice.

©2005 Mettler-Toledo, Inc.

METTLER TOLEDO is a registered trademark of Mettler-Toledo, Inc.
Specifications (continued)

Scale Interface

Scale Types:
- Analog:
  - Powers eight (8) 350 ohm load cells (2 or 3 mV/V)
  - PCB analog section factory calibrated
- IDNet: T-Brick type standard; optional PIK-Brick® power supply
  - adaptor kit for field installation

Update Rates:
- Internal A/D:
  - Analog > 366 Hz
  - IDNET > 6 Hz for PIK-Brick; 20 Hz for T-Brick
- Target (setpoint): 50 Hz

PLC Interface / Analog output: 20 Hz

Analog Load Cell Excitation Voltage: 10 VDC

Maximum Sensitivity: 0.1 microvolts

Display Resolution: 100,000 divisions

Units:
- Primary: lb, kg, g, oz, ton, metric tons
- Secondary: lb, kg, g, oz, lb-oz, ton, ozt, dtw, metric tons, custom

Vibration/Stability Filtering with TraxDSP:
- digital multi-stage
  - vibration filtering includes low pass, analog notch, and stability filter to provide stability for high force equipment
  - settles after vibration

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Typical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Pass Frequency</td>
<td>0.0..9.9 Hz</td>
</tr>
<tr>
<td>Low Pass Poles</td>
<td>2,4,6,8</td>
</tr>
<tr>
<td>Notch Filter Frequency</td>
<td>2.188 Hz</td>
</tr>
<tr>
<td></td>
<td>30 Hz</td>
</tr>
</tbody>
</table>

Communications:

Serial Interfaces
- Standard: one (1) RS-232/RS-422/RS-485 port configurable from 300 to 115,200 baud
- Optional: Ethernet: 10Base-T with standard RJ-45 port with two additional serial ports

Protocol:
- Serial Inputs: ASCII Clear, Tare, Print, Zero; barcode; SICS level 0
- Serial Outputs: METTLER TOLEDO Continuous or Demand

Interface Options:
- Analog Output: 4-20 mA or 0-10 V, 16 bit
- PLC Interfaces:
  - Allen-Bradley® Remote IO: supports discrete or block transfer
  - PROFIBUS® L2 DP

Digital Discrete Input/Outputs: maximum 12 inputs, 18 outputs
- Local Digital Discrete I/O—high level relay:
  - 4 inputs: isolated dry contact; external sink source 5 to 30VDC; internal sink 5 VDC internal sink source for passive external push buttons
  - 6 outputs: normally open, dry contact; maximum 30 VDC/250 VAC, up to 1 amp current each output
- Remote Digital Discrete I/O Module ARM 100 accessory: high level relay; DIN rail mounted
  - 4 inputs: isolated dry contact; external sink source 5 to 30VDC; internal sink 5 VDC internal sink source for passive external push buttons
  - 6 outputs: normally open, dry contact relay, maximum 30 VDC/250 VAC, up to 1 amp current each output

10 Base-T Ethernet TCP/IP with Two Additional Serial Ports
- Functions to provide print server port, upgrade firmware, FTP Tare and Target Tables, TCP IP connectivity to InSite PC configuration tool for Shared Data exchange
- Adds serial ports:
  - COM2: RS-232
  - COM3: RS-232, RS-422, RS-485

Specifications (continued)

Internal Software Features and Functions:
- Alibi Memory: Access up to 60,000 transactional records; search by date and time, consecutive number, net and tare weight
- Bar Code Input: via serial input

Calibration Support:
- Traditional Calibration: separate single-step Zero and Span or 3, 4 or 5-point linearization of span adjustment
- Multi-step Calibration: use of substitution method when not enough test weight is available for calibration requirement

CalFREE™: electronic calibration without using test weights

Programmable Test Calibration Sequence: 20 step cal maintenance

Diagnostic Testing:
- standard functional terminal testing plus scale, digital I/O, serial port, network, and PLC testing

Discrete Outputs: provides material transfer management of process equipment; configure as latched or coincidence, overlapping or independent

Event Logging: exportable internal log file contains changes to calibration, communication and overload error conditions

Expand by 10 (x10): temporarily increase possible resolution by factor of 10

Geo Codes: Use to calculate Gravity Adjustment Factor

ID Fields: provides two 20 characters fields of prompt and response; barcode response for 1st field only; accessible for print templates

Literals: 20 fixed text

Filling- One and Two Speed: target comparison for single or dual speed material delivery control; concurrent or independent filling

MinWeigh: ensures weighing accuracy at the minimum weight value; input calculated or direct method

Over / Under Mode: uses stored target (setpoint) table and utilizes SmartTrac to visualize weighing operation

Power-up Options: enable or disable zero (auto zero maintenance), alternate units, and/or tare after power is restored

Printer Templates: 5 configurable templates with 3 preconfigured

Security Levels: 4 classes, with multiple user and multiple levels within a class

Softkey Configuration: icons utilized to reference processes or setup sequences

SmartTrac: Graphical representation of weight versus stored target, available with and without displayed weight

Tare Table: stores 25 tares with up to 25 IDs and descriptions with IDs; contains totalization features

Target (Setpoint) Table: stores 25 targets with IDs and tolerances

Time and Date: with battery backup option

Totalization: Subtotal and Grand Total are 8 digits and transaction weights, stored in primary units, are 10 digits

Transaction Counter: 9 digit

TraxEMT: Embedded Maintenance Technician permits creation and recall of electronic asset tag, logs scale counters: overloads, zero commands, zero command failures, weighments, absolute peak load

Software

InSite: Standard PC configuration tool used to interface IND560 to upgrade firmware and download terminal parameters via serial or FTP (with ethernet option); online or offline configure scale parameters, store Target and Tare Tables, and print templates

Optional Application Software:
- Fill-560: filling software to configure custom filling and blending sequences, including displaying SmartTrac and utilizes a learn mode. Sequences include:
  - Fill: weigh-in only
  - Fill / Dump: weigh-in and weigh-out
  - Dose: multiple weigh-out doses
  - Refill / Dose: weigh-in refill and weigh-out doses
  - Blend: weighing-in fills of 2-4 materials
  - Blend/Dump: weigh-in fills of 2-4 materials, weigh-out
  - Blend/Dose: weigh-in fills of 2-4 materials, weigh-out doses
IND560 Model Configuration

<table>
<thead>
<tr>
<th>Term. Type</th>
<th>Enclosure Type</th>
<th>Scale Type</th>
<th>Reserved</th>
<th>Ethernet/ Serial*</th>
<th>Discrete I/O</th>
<th>PLC Interface</th>
<th>Application Software</th>
<th>Software Module</th>
<th>Line Cord/ Plug</th>
<th>Region/Lang</th>
</tr>
</thead>
<tbody>
<tr>
<td>56</td>
<td>P, H</td>
<td>1, 4</td>
<td>0, 0</td>
<td>0, A</td>
<td>0, B</td>
<td>0, A, B, P, R</td>
<td>0, F</td>
<td>0, A, H</td>
<td>00...08</td>
<td></td>
</tr>
</tbody>
</table>

**Order Number**

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel-mount, Graphic VF Display</td>
<td>IND560</td>
</tr>
<tr>
<td>Harsh Environment, Graphic VF Display,</td>
<td></td>
</tr>
<tr>
<td>Analog</td>
<td>IND560</td>
</tr>
<tr>
<td>iDNet</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>IND560</td>
</tr>
<tr>
<td>Ethernet TCP/IP Port and Two Serial Ports</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>IND560</td>
</tr>
<tr>
<td>Local Discrete I/O, Relays</td>
<td></td>
</tr>
<tr>
<td>No output option</td>
<td></td>
</tr>
<tr>
<td>Analog output (4-20 mA or 0-10 V)</td>
<td></td>
</tr>
<tr>
<td>Allen-Bradley RIO Interface</td>
<td></td>
</tr>
<tr>
<td>PROFIBUS DP Interface, Panel-mount (horizontal header)</td>
<td></td>
</tr>
<tr>
<td>PROFIBUS DP Interface, Harsh (vertical header)</td>
<td></td>
</tr>
<tr>
<td>Basic Functionality</td>
<td></td>
</tr>
<tr>
<td>Fill-560: Filling and Blending</td>
<td></td>
</tr>
<tr>
<td>No Module</td>
<td></td>
</tr>
</tbody>
</table>

**Line Cords and Plugs**

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>No power cord (Panel-mount only)</td>
<td>0</td>
</tr>
<tr>
<td>120 VAC, U.S. Plug</td>
<td>A</td>
</tr>
<tr>
<td>230 VAC, Schuko Plug</td>
<td>B</td>
</tr>
<tr>
<td>240 VAC, U.K. Plug</td>
<td>C</td>
</tr>
<tr>
<td>240 VAC, Australian Plug</td>
<td>D</td>
</tr>
<tr>
<td>230 VAC, Swiss Plug</td>
<td>E</td>
</tr>
<tr>
<td>230 VAC, Danish Plug</td>
<td>F</td>
</tr>
<tr>
<td>220 VAC, U.S., No Plug</td>
<td>G</td>
</tr>
<tr>
<td>220 VAC, India Plug</td>
<td>H</td>
</tr>
</tbody>
</table>

**Region / Language / Character**

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>English, lb</td>
<td>00</td>
</tr>
<tr>
<td>Spanish</td>
<td>02</td>
</tr>
<tr>
<td>English, kg</td>
<td>03</td>
</tr>
<tr>
<td>French</td>
<td>04</td>
</tr>
<tr>
<td>German</td>
<td>05</td>
</tr>
<tr>
<td>Italian</td>
<td>06</td>
</tr>
<tr>
<td>Nordic</td>
<td>07</td>
</tr>
<tr>
<td>Swedish</td>
<td>08</td>
</tr>
</tbody>
</table>

**Options**

71209093: Local Discrete I/O Relay Kit
71209095: Ethernet and 2 Serial Port Kit
71209096: PROFIBUS® DP Interface Kit, Harsh Environment; vertical header
71209097: PROFIBUS® DP Interface Kit, Panel-mount; horizontal header
71209098: ALLEN-BRADLEY™ RIO Interface Kit
71209099: Analog Output Kit (4-20mA or 0 – 10V)
64055811: Fill-560 Application Software
71209352: ARM100 Remote I/O Relay Module
71209353: Mounting bracket, Harsh Environment model
71209388: Sealing KOP (3 screws, wire seal, switch cover plate, 5 security seals)
72185046: iDNet Power Supply Adaptor KOP (for non-T-Brick weigh cells)