METTLER TOLEDO

TECHNICAL BRIEF

IND560 Panel

IND560 Harsh

IND560

Industrial Weighing Terminal

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

Applications

- General weighing
- Process weighing and control
- Filling and blending
- Over/Under checkweighing

Standard Features

- Shallow depth Panel-mount or EHEDG and NSF-friendly designed Harsh Environment model for desk, column or wall mounting
- Interfaces one analog scale, up to 8 load cells, or one IDNet scale
- Menu-driven, "Windows-like" navigation for setup
- Bright 21mm (0.83") graphical weight display
- Setup from front panel using function keys, softkeys, navigation keys, and numeric keypad. Online and offline setup with InSite™
- TraxDSP™ digital filtering and TraxEMT™ maintenance features
- Optional discrete I/O; coincidence or latching outputs
- Optional PLC fieldbus support
- Optional Ethernet TCP/IP connectivity with additional serial ports

Specifications

Graphical Display

Type: Vacuum fluorescent, 128 x 64 pixels, 1.7mm (0.7") polycarbonate clear lens
Size: 43 mm (1.69") total display with 21 mm (0.82") of weight display
Display Update Rate: 10 Hz

Keypad

Type: Flat switch membrane with tactile-feel keys; 1.2mm (0.05") polyester (PET) overlay;
Primary function keys: Zero, Tare, Clear, Print
Navigation keys: Up, Down, Left, Right, Enter, Clear
Numeric keys: 0..9, decimal point
Softkeys: 3 rows of 5 (15 programmable) with access to alpha characters and symbols

Power

Termination:
Panel: Two position removal terminal strip for 16 to 12 AWG wire
Harsh: Integral power cord
Supply Criteria: 100..240 VAC (+10%, -15%) at 49-61 Hz
Consumption: 750 mA maximum

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: 0.3uV / ºC maximum
Span Temperature Coefficient: 6ppm / ºC maximum

Specifications (continued)

Enclosures

Panel Mount:
Material: 5mm (0.19") 304L stainless steel front plate. Aluminum frame. 2J sanitary finish.
Protection: Certified TYPE 4x/12 (ref. IP65) protection in appropriate enclosure
Mounting Panel Thickness Range: 16 to 11 gauge

Harsh Environment: Desk, Wall and Column Mount
Enclosure: Designed to comply with EHEDG and NSF sanitary cleaning standards.
Material: 304L stainless steel. 2J sanitary finish.
Protection: IP69K certified protection**.** Appropriate for heavy wash down with hot water under pressure.
Wall / Column Mounting Bracket Option: Adjustable viewing angle. Front panel also rotates 180° for an improved viewing angle.

Compliance and Approvals

Weights and Measures:
U.S.A.: NTEP CoC 05-057
- Class II: 100,000d. Class III/IIIL: 10,000d

Canada: CoC AM-5593
- Class II: 100,000d. Class III: 10,000d

Europe: NMi CoC TC6812
- 7500e for Class II/III

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:
- *EN60950-1:2001*: Low voltage Directive
- *89/336/EEC*: EMC Directive
- *90/384/EEC*: Non-automatic Weighing Instruments Directive

Hazardous Area Use:
*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)

Radio Frequency Interference Susceptibility: 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

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

	Parameters	Typical
Low Pass Frequency	0.0..9.9 Hz	2.0 Hz
Low Pass Poles	2,4,6,8	6
Notch Filter Frequency	2..188 Hz	30 Hz

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INDB0008.1E

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. PIK-Brick* requires field installation of optional power supply adaptor kit

Update Rates:

Internal A/D:

- Analog > 366 Hz
- IDNET > 6 Hz for PIK-Brick; 20 Hz for T-Brick

Target: 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, dwt, metric tons, custom

Communications

Interfaces:

Standard:

Serial: One (1) RS-232/RS-422/RS-485 port configurable from 300 to 115,200 baud

Optional:

- Ethernet: Ethernet 10Base-T with RJ-45 port. 3 assignable ports. Includes 2 additional serial ports.
  COM2: RS-232
  COM3: RS-232/RS-422/RS-485

Protocol:

Serial Inputs: ASCII, CTPZ, SICS level 0

Serial Outputs:, Demand and continuous template (5 configurable print templates), METTLER TOLEDO Continuous, report printing, ARM100 remote digital I/O module, external DeviceNet™ Bridge

Ethernet Outputs: Demand and continuous template, METTLER TOLEDO Continuous, report printing.

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

DeviceNet

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.

ARM 100 Remote Digital Discrete I/O Module (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.

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 Test: *Calibration Test:* 25 programmable steps. Improve consistency, efficiency and accuracy of calibration.

Specifications (continued)

Internal Software Features and Functions (continued)

Calibration

Traditional Calibration: Separate single-step Zero and Span or 3, 4 or 5-point linearization of span adjustment

Step Calibration: Use of substitution method when not enough test weight is available for calibration requirement

CalFREE™: Electronic calibration without using test weights

Comparators: 5 simple targets with programmable outputs. 2 modes of operation: coincidence or range. Rate, displayed weight or gross weight available as sources.

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.

E-mail Alerts: Configure terminal to send email alerts when encountering a calibration change, calibration expiration, or failure that might indicate a hardware problem.

Event Logging: Exportable internal log file. Contains changes to calibration, communication and overload error conditions.

Expand by 10 (x10): Temporarily increase resolution by factor of 10

Geo Codes: Use to calculate Gravity Adjustment Factor

ID (Prompting): 20 fields of prompt and response. Accessible for print templates.

Filling- One and Two Speed (Material Transfer Mode): 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 Target 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

Rate: Display weight vs. time data in terminal display. Use as a source for Comparators or Analog Output.

Security Levels: 4 classes. Up to 20 users with independent IDs, passwords and access.

Softkey Configuration: Icons utilized to reference processes or setup sequences

SmartTrac: Graphical representation of weight versus stored target. 3 display options available.

Tare Table: Stores 25 tares with IDs and descriptions. Contains net and gross weight totalization feature.

Target Table: Stores 25 targets with IDs and tolerances

Time and Date: With battery backup option

Totalization: Subtotal and Grand Total

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

Web Server: Remotely view diagnostic information and scale statistics. Utilize Shared Data server to make changes to terminal configuration.

Software

Firmware: Continually upgrade terminal firmware to avoid out of date firmware, features and functions.

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

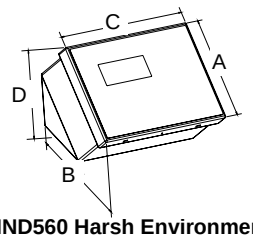
Optional Application Software:

Fill-560: Advanced filling software to configure custom filling and blending sequences of up to 4 materials. Includes a learn mode, expanded I/O, timers.

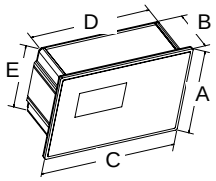
Dimensions (in millimeters)

	Harsh	Panel-mount	Panel Cutout*
A	160	160	130
B	170.3	91.8	243.3
C	265	265	N/A
D	160	241	N/A
E	N/A	125	N/A

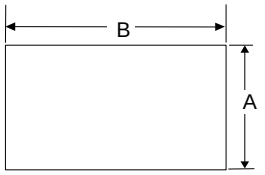
*Fits into Lynx or JAGXTREME cutout



IND560 Harsh Environment



IND560 Panel-mount



IND560 Panel Cutout

IND560 Model Configuration

Term. Type	Enclosure Type	Scale Type	Reserved	Ethernet/ Serial	Discrete I/O	PLC Interface	Application Software	Software Module	Line Cord/ Plug	Region
56	P ,H	1, 4	0 0 0	0, A	0,B	0,A,B,P,R,D	0,F	0	0, A..H	00..08

56 H - 1 0 0 0 A B - A F 0 – A 0 0

IND560 Enclosure Type

P	Panel-mount, Graphic VF Display
H	Harsh Environment, Graphic VF Display,

IND560 Scale Type

1	Analog
4	IDNet

IND560 Ethernet/ Serial Option

0	None
A	Ethernet TCP/IP Port and Two Serial Ports

IND560 Discrete I/O Option

0	None
B	Local Discrete I/O, Relays

IND560 PLC Interface Option

0	No output option
A	Analog output (4-20 mA or 0-10 V)
B	Allen-Bradley RIO Interface
P	PROFIBUS DP Interface, Panel-mount (horizontal header)
R	PROFIBUS DP Interface, Harsh (vertical header)
D	DeviceNet

IND560 Application Software Option

0	Basic Functionality
F	Fill-560: Filling and Blending

IND560 Software Module Option

0	No Module

IND560 Line Cords and Plugs

0	No power cord (Panel-mount only)
A	120 VAC, U.S. Plug
B	230 VAC, Schuko Plug
C	240 VAC, U.K. Plug
D	240 VAC, Australian Plug
E	230 VAC, Swiss Plug
F	230 VAC, Danish Plug
G	220 VAC, U.S., No Plug
H	220 VAC, India Plug

IND560 Region / Language / Character

00	English, lb
02	Spanish
03	English, kg
04	French
05	German
06	Italian
07	Nordic
08	Swedish

IND560 Options

Part #	Description
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
72193580	DeviceNet™ Interface Kit
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)

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