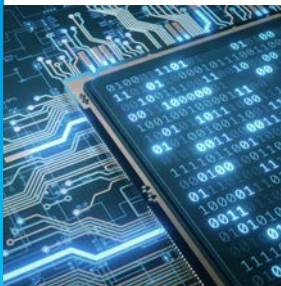


Modular Weighing for Automation Connect Smart Sensors to Systems



Boost Machine Performance

With ultra-fast processing connected to the world's most widely used PLCs/DCS, the IND360 terminal boosts productivity and increases operational uptime. Condition monitoring and Smart5™ alarming ensure your system is performing as expected and lets you react quickly when issues arise.



Simplify Integration

IND360 is the smartest way to integrate weighing. For ease of use, terminals use certified automation interfaces and include sample-programming code. Detailed documentation and automation drivers including Rockwell EDS, AOPs and Siemens function blocks save you time and money on implementation and maintenance.



Eliminate Programming Time

Preprogrammed applications for semi- or fully automated weighing processes including tank/vessel weighing, filling/dosing, rate control and dynamic weighing allow you to benefit from METTLER TOLEDO's weighing expertise. You improve process throughput without spending time on custom programming.



Make Compliance Worry-Free

IND360 product family is certified compliant with both international and local standards enabling streamlined procurement, faster implementation, and more efficient cross-border startup without the usual headaches associated with exporting equipment.



IND360base Automation Terminals Optimize Weighing Integration

IND360base automation terminals deliver precision measurement and status information to your control system. This gives you the ability to easily and efficiently manage your weighing applications, boost throughput and save time and materials.

IND360 includes the following key features:

- Up to 960 Hz ultra-high cyclical PLC update rate
- Up to 7 simultaneous floating point variables
- Automation Buses: PROFINET, Profibus DP, EtherNet/IP, Modbus RTU and 4-20mA/0-10V
- Operator display and network status LEDs, web interface for service and monitoring
- CalFree™ and CalFree Plus™, as well as automatic PLC/DCS-driven calibration of precision scales




Technical Features

IND360 Automation Terminal

| Parameter | Detail | Units of Measurement | DIN | Panel | Harsh |
|---------------------------|---------------------------------------|----------------------|--|---|--|
| Housing | Enclosure type | | DIN-Rail mount, quick connection with automatic grounding | Panel mount with detachable electronics | VESA 100 Desk/wall/column mount |
| | Material | | Rugged ABS plastic | Stainless steel front panel with hygienic drip edge including mounting hardware | Stainless steel, includes fixed-angle brackets |
| | Ingress protection | | IP20, Type 1 | IP65 display, IP20 electronics | IP66 and IP69K |
| | W × H × D | mm / in | 40 × 130 × 100 / 1.6 × 5.1 × 3.9 | 175 × 94 × 16 / 6.9 × 3.7 × 0.6 | 275 × 85 × 200 / 10.8 × 3.3 × 7.9 |
| | Shipping weight | kg / lb | 0.5 / 1.1 | 1.7 / 3.7 | 3.6 / 7.9 |
| | Legal for Trade | °C / °F | -10 to 40 / 14 to 104; 10% to 90% relative humidity, non-condensing | | |
| | Operation | °C / °F | -10 to 50 / 14 to 122; 10% to 90% relative humidity, non-condensing | | |
| | Storage | °C / °F | -40 to 60 / -40 to 140; 10% to 90% relative humidity, non-condensing | | |
| Power Requirements | DC powered | VDC / W | 20 - 28VDC ¹ / 12W ² | | NA |
| | | | ¹ Power supply short circuit protection time shall be equal or longer than 100ms. ² 18W, when 5 to 8 POWERCELLs are connected | | |
| | AC powered | VAC / Hz | NA | 100 - 240 VAC / 49 - 61 Hz | |
| Power Dissipation | DC powered | W | 3 | 4.5 | NA |
| | AC powered | W | NA | 6 | 6 |
| Scale | Number of scales | | 1 | | |
| | Strain gauge (analog) type | | Max. 8× 350Ω (20× 1,000Ω) load cells; 1-4mV/V sensitivity; 5VDC excitation voltage | | |
| | µV build recommended / approved | | 0.1 µV/d recommended; 0.3 µV/e Weights and Measures approved | | |
| | POWERCELL® type | | Supports one PowerDeck™ floor scale or a network of up to 8 POWERCELL® load cells, or PowerMount™ weigh modules | | |
| | Precision type | | Precision scales and weigh modules – see Precision Scale Compatibility on page 6 | | |
| | Adjustment / calibration | | Zero / span with linearization up to 5 points; step; CalFree (analog scale) / CalFree Plus (POWERCELL® scale) | | |
| | Primary unit | | Analog/POWERCELL®: g, kg, lb, † and ton Precision: Determined by scale or weigh module | | |
| | Calibration unit | | Analog/POWERCELL®: g, kg, lb, † and ton Precision: Determined by scale or sensor | | |
| | Capacity & increment | | Analog/POWERCELL®: 1,000,000 maximum Capacity, maximum 100,000 display increments Precision: Determined by scale or or sensor | | |
| Connectivity | Automation interface | | Optional: EtherNet/IP, Profibus DP®, PROFINET®, Modbus RTU, or Analog Output (4-20 mA/0-10V, 16-bit resolution) | | |
| | Redundancy | | Media Redundancy Protocol (MRP - Siemens) and Device Level Ring (DLR - ODVA) | | |
| | Protocol | | Standard Automation Interface (SAI) 2 and 8 block format | | |
| | Protocol type | | 32-bit floating point and binary; cyclical or acyclical | | |
| | Simultaneous floating point variables | | 1 or 7 user-selectable including status block for condition monitoring | | |
| | Alarm status | | Smart5™ based on NAMUR NE107 | | |
| | Condition monitoring | | Heartbeat, Data OK, Smart5™ | | |
| | Automation Bus drivers - Siemens | | GSD (Profibus DP), GSDML (PROFINET), function block | | |
| | Certification Profibus DP / PROFINET | | Profibus international Certificate No: Z02266, Z13050, Z13051 | | |

Technical Features Continued

IND360 Automation Terminal

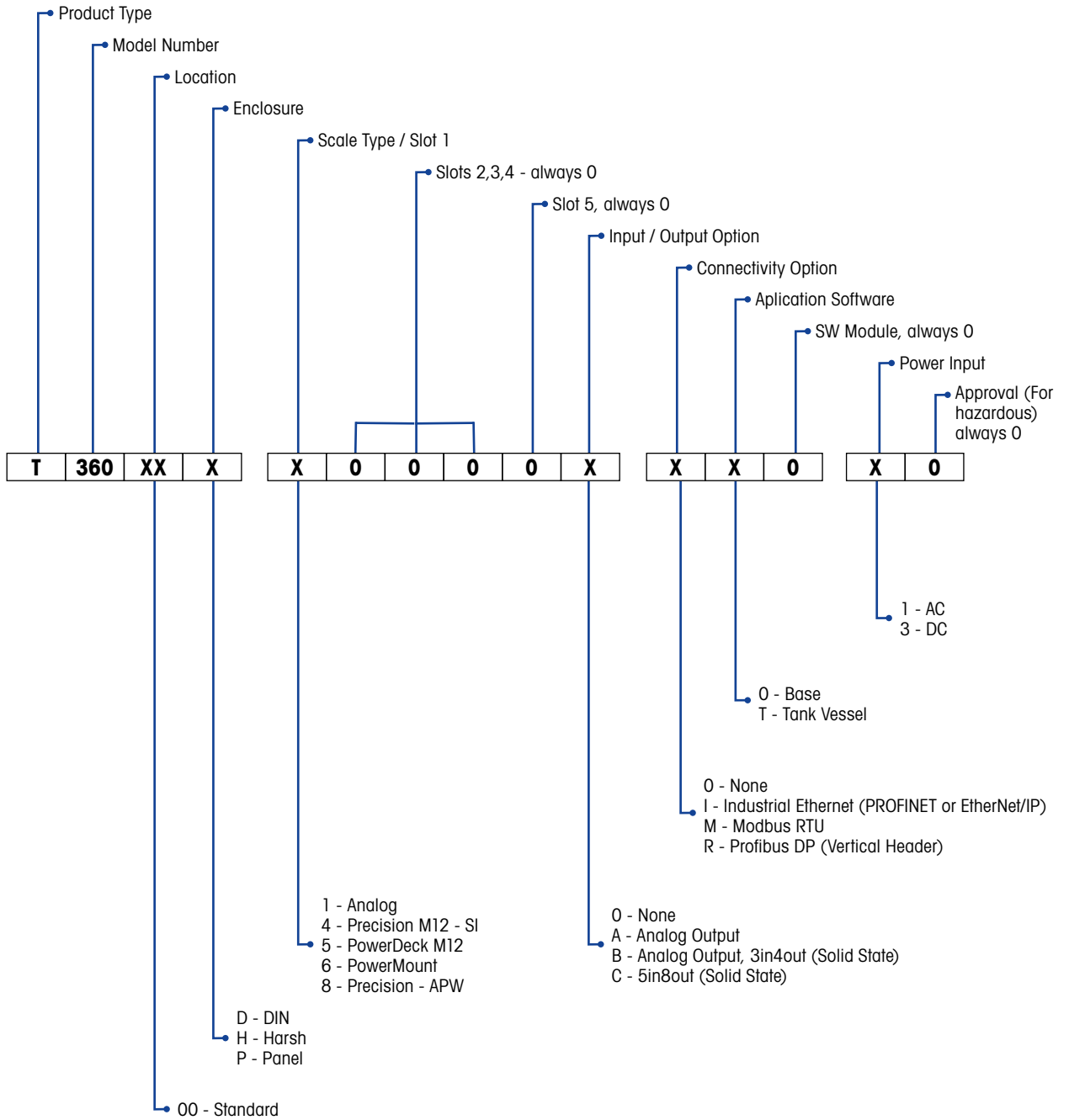
| Parameter | Detail | Units of Measurement | DIN | Panel | Harsh |
|------------------------------------|---|--|---|---|-------|
| Connectivity | Automation device drivers ODVA / Rockwell | | Electronic Data Sheet (EDS), Custom Add-on Profile (AOP), Custom Add-on Instruction (AOI) | | |
| | Certification EtherNet/IP | | Open Device Vendors Association (ODVA) File Number: 12095.01 | | |
| Service Interfaces | Service interfaces | | Web interface over Ethernet TCP/IP and/or keypad and display | | |
| | Service functions | | Configuration, adjustment, parameter backup and restore, cloning and monitoring | | |
| Automation Bus Update Rate | Strain gauge (analog) | Hz | 960 for PROFINET & EtherNet/IP, Profibus DP IND360 without application 480 for PROFINET & EtherNet/IP, Profibus DP IND360 with application 100 for analog output and Modbus RTU | | |
| | POWERCELL®/ PowerMount™/ PowerDeck™ | | 100 for 1-4 load cells; 50 for 5-8 load cells over all automation interfaces | | |
| | Precision | | 92Hz over all automation interfaces | | |
| Filtering | Strain gauge (analog) | Weighing Mode | Normal, dynamic | | |
| | | Environment | Very stable, stable, standard, unstable, very unstable | | |
| | | Limit Frequency | Low pass filter, 1 - 20Hz | | |
| | POWERCELL®/ PowerMount™/ PowerDeck™ | Low Pass Filter | Very light, light, medium, heavy | | |
| | | Stability Filter | Enable, disable | | |
| Precision scales and weigh modules | | Filter type and settings depending on scale or weigh module | | | |
| Inputs / Outputs | Optional inputs (selectable polarity) | | Max. 5 inputs - functions: none, clear tare, tare, zero, print. Voltage range high: 5 ~ 30VDC; voltage range low 0 ~ 3VDC | | |
| | Optional Outputs | | Max. 8 outputs - functions: none, center of zero, comparators (1-8), Smart5 red, Smart5 orange, motion, net, over capacity, under zero. Voltage range high: 5 ~ 30VDC, max current 150mA | | |
| Display | Type | | 1.04" Green OLED | 4.3" Color TFT | |
| | On-display status indicators | | Weight units, gross/net indication; graphic symbols for motion, center of zero, Smart5 alarms. | | |
| | Tri-color status LEDs | | System (SYS), Network 1 (NW1), Network 2 (NW2) | Status information displayed on main display | |
| | Weight display | Characters | Maximum 9 digits including sign, displays 8 weight digits on high-precision devices | | |
| Keyboard | Keys | | 4 keys (Up, Down, Left, Enter) | 5 keys (Up, Down, Left, Right, Enter) | |
| | Overlay | | 0.9 mm thick polyester overlay (PET) with 0.178 mm thick polycarbonate display lens | 0.9 mm thick polyester overlay (PET) with 0.178 mm thick polycarbonate display lens | |
| User Security | - | | 3 levels: administrator, maintenance and operator | | |
| Logs | Alibi | | 27,000 records | | |
| | Error log | | 500 records | | |
| | Maintenance log | | 2,500 records | | |
| | Change log | | 2,500 records | | |
| Approvals | Product safety | | UL, cUL, CE, FCC, CB | | |
| | Metrology approval | | IND360 Analog and IND360 POWERCELL®: Europe: Class  , T11060 TC11949 USA: Class III / III L n max. 10,000 CC No. 21-002 Canada: Class III / IIIHD n max. 10,000 AM-6161 China: Class  n max. 10,000 | | |
| | | | IND360 Precision: Europe:  T11060, TC11949 USA: Class II / III / III L n max. 100,000 / 10,000 CC No. 21-002 Canada: Class II / III / IIIHD n max. 100,000 / 10,000 AM-6161 | | |
| | | Additional certifications may be found at www.mt.com/compliance | | | |

Ordering Information

IND360 Automation Terminals

IND360 is available in different variants with the main item number 30601194.

Choose options according to the variant configuration structure, and contact your METTLER TOLEDO Sales representative for detailed ordering information.



Ordering Information

IND360 Automation Terminals

| Base Unit | Descriptions |
|--------------------|---------------------------------------|
| Item Number | IND360 in different enclosures |
| 30601194 | IND360 DIN Mount |
| | IND360 Panel Mount |
| | IND360 Harsh |

Smart Options

| | |
|--|--|
| | 1 = None (analog scale) |
| | 4 = Precision (PBK, PFK) - Standard Industrial (approved readability and M12 connector on terminal side) |
| | 5 = PowerDeck M12 (connector on terminal side) |
| | 6 = PowerMount (open wires on terminal side) |
| | 8 = Precision - APW incl. PBK, PFK (higher readability and open wires on terminal side) |

Input/Output Options

| | |
|--|--|
| | 0 = None |
| | A = Analog output (4 - 20mA) |
| | B = Analog output (4 - 20mA) plus 3 digital inputs / 4 digital outputs (solid state) |
| | C = 5 digital inputs / 8 digital outputs (solid state) |

Connectivity Options

| | |
|--|---|
| | 0 = None |
| | I = Industrial Ethernet (PROFINET or EtherNet/IP) |
| | M = Modbus RTU |
| | R = Profibus DP (vertical header - connector) |

Application Options

| | |
|--|-----------------|
| | 0 = Base |
| | T = Tank vessel |

Power Options

| | |
|--|--------------------------------------|
| | 1 = AC (AC/DC power module included) |
| | 3 = DC |

Accessories

| Item Number | Descriptions |
|-------------|---|
| 30601149 | 4-20mA analog output PCBA kit for IND360 DIN and Panel mount version including enclosure opening tool |
| 30601150 | 4-20mA analog output PCBA kit for IND360 Harsh version |
| 30601151 | PCBA kit of 4-20mA analog output, 3 discrete inputs, 4 discrete outputs (solid state) for IND360 DIN and Panel mount version including enclosure opening tool |
| 30601152 | PCBA kit of 4-20mA analog output, 3 discrete inputs, 4 discrete outputs (solid state) for IND360 Harsh version |
| 30601153 | PCBA kit of 5 discrete inputs, 8 discrete outputs (solid state) for IND360 DIN and Panel mount version including enclosure opening tool |
| 30601154 | PCBA kit of 5 discrete inputs, 8 discrete outputs (solid state) for IND360 Harsh version |
| 30601155 | PCBA kit of Industrial Ethernet connection (PROFINET or EtherNet/IP) for IND360 DIN and Panel mount version including enclosure opening tool |
| 30601156 | PCBA kit of Industrial Ethernet connection (PROFINET or EtherNet/IP) for IND360 Harsh version |
| 30601159 | PCBA kit of Modbus RTU connection for IND360 DIN and Panel mount version including enclosure opening tool |
| 30601160 | PCBA kit of Modbus RTU connection for IND360 Harsh version |
| 30601161 | PCBA kit of Profibus DP connection for IND360 DIN and Panel mount version including enclosure opening tool |
| 30601162 | PCBA kit of Profibus DP connection for IND360 Harsh version |
| 30617714 | AC/DC Power Module APS324 |
| 30617716 | Power supply cable from the APS324 power module to IND360 |
| 30624028 | Complete set of IND360 connectors. |
| 30624029 | Display cable (3m) from IND360 module to the panel. Use this when the IND360 module is not mounted to the back of the panel. |
| 30624030 | Display cable (11cm) from IND360 module to the panel. Use this when the IND360 module is mounted to the back of the panel. |
| 30462051 | VESA 100 Bracket to mount a IND360 Harsh version on desk or on wall |
| 22020286 | Adjustable Column Bracket VESA 100 for IND360 Harsh version |
| 30624077 | Opening tool for IND360 DIN mount version enclosure |

Precision Scale Compatibility

IND360 Automation Terminals

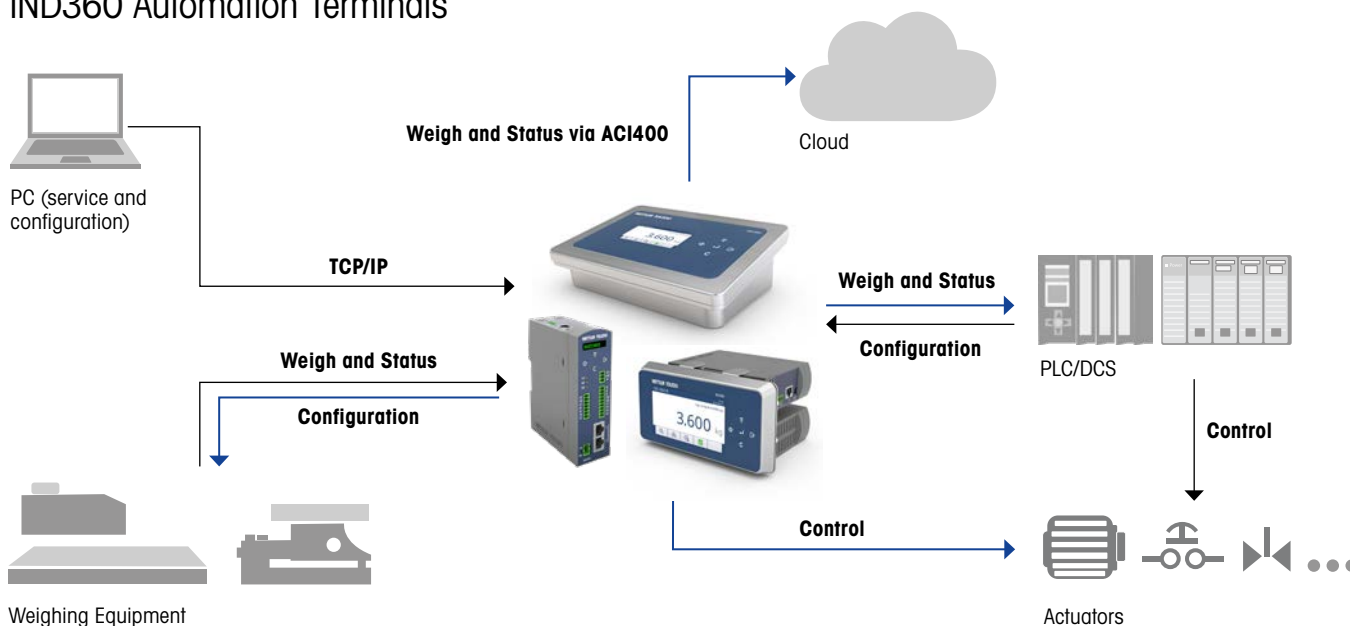
IND360 Precision connects to many types of precision weigh modules. The following table lists how various functions are supported when different types of weigh modules or scales are connected.

| | Precision Scales for Legal-for-Trade | Precision Scales for Automation |
|--|---|--|
| Compatible Modules | PBD555 / PBD769 / PBD655 / PBK785 / PBK9 / PTA4XX / PFA5XX / PUA5XX / PFA779lift / PFK9 | WKC / WMS / WXS / SLF6 / PBK989-APW / PFK989-APW |
| Basic Functions: Read weight and status, tare, zero, clear | Display/keypad | Display/keypad |
| | Web interface | Web interface |
| | Automation interface | Automation interface |
| Parameter configuration: e.g. calibration, adjustment, filter parameters | Display/keypad on Panel and Harsh versions | Display/keypad |
| | | Software tool: APW-Link |
| | | Automation interface ¹ |
| Firmware upgrade for precision modules | Software tool: eloader | Software tool: eloader |

¹ Each weigh module supports different functions. Please consult the SAI (Standard Automation Interface) manual for further details.

Connection Drawings

IND360 Automation Terminals



IND360 connects many different types of weighing equipment to automation controls such as PLCs or DCSs. It provides the ability to manage weighing applications that directly drive outputs for actuators and receive inputs from switches - see IND360 manuals for more details. IND360 is very easy to setup using the web interface that is accessed via a web browser such as Microsoft Edge or Google Chrome. When cloud connectivity is desired, choose the METTLER TOLEDO ACI400. All relevant documentation, software, device description files, and sample code are available at:

► www.mt.com/ind-IND360-downloads

www.mt.com/IND360

For more information

METTLER TOLEDO Group

Industrial Division

Local contact: www.mt.com/contacts

Subject to technical changes

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