Automation Indicator

IND360 Automation Indicators

- Cutting-Edge Speed
- Easy Integration
- Targeted Applications
- Broad Range of Capacities
- Global Compliance

Simplifies Weighing Automation

For Highest Throughput

METTLER TOLEDO

Modular Family Concept
Customize with Ease

The IND360 family offers three modules based on the same core technology with global approvals to minimize complexity for machine builders, integrators and end-users when designing customized solutions. The indicator family allows you to reuse existing PLC software for different needs with the optimal housing and interface technology for each project.

Benefits for Machine and Instrument Manufacturers

Software engineer
"I like programming new things; however, I don't like to adapt the same functionality again and again just because of minor equipment inconsistencies. With the IND360 indicator family, I don't lose any time with repetitive work because I can reuse my existing code even if I change scale capacity. In fact, I can clone units to make setup even faster."

Project manager
"I prefer to standardize equipment wherever possible for quick implementation and setup time. Therefore, I like the modular family concept, especially the variety of housings and connectivity solutions for control systems. The ability to integrate different weighing technologies, from very light to very heavy, makes IND360 the easy choice for integrating weighing."

Benefits for End Users

Production manager
"Ease of operation and high equipment uptime are key to achieve a high yield in my production. Thankfully, IND360 automation indicators are as reliable as all METTLER TOLEDO weighing technology. In the event something unexpected occurs, I know immediately through condition monitoring and alarming, so I can take quick action before my process goes out of specification."

Maintenance engineer
"Since I do not have to spend a lot of time working with our METTLER TOLEDO weighing equipment, I appreciate when the occasional problem is easy to identify and resolve. With the IND360, I can see condition information anytime I want. I also like the fact that we use the same product family for many applications because it keeps me out of the classroom and improves my effectivity."

Boost Machine Performance
Consistent, Accelerated Results

“Learn more about the IND360 automation indicator.”
Watch the Video: www.mt.com/IND360

The IND360 automation indicators offer ultra-fast processing connected to the world's most widely used PLCs and DCSs to increase productivity and operational uptime. Condition monitoring and Smart5™ alarming provide instant visibility to the system status so that you are confident in your machine performance and avoid out-of-spec products.

Configure, Monitor, and Backup
A web interface is available for parameter configuration, status reading, diagnostics, data cloning, backup, and restore.

Data Entry via Keyboard Interface and Control System
Data input of process variables via tactile keyboard or automation interface.

Graphical Process Overview
The IND360 offers integrated applications for common automated weighing processes.

IND360 Panel Mount

IND360 Harsh Wall/Desk

IND360 DIN Mount

Bright OLED Display
The DIN Rail Unit includes a bright OLED display for weight, configuration and status.

Network Status LEDs
Red, orange, and green LEDs show the status of the automation network and system.

Applications Status
The human-machine interface provides process status information for the operator. The same information is available to the automation system.

Bright Color Display
Bright color and fast display update rate provides instantaneous weight information that automatically changes size for best readability.

“Smart5” Condition Monitoring
The display indicates events and alarm status according to NAMUR NE107, including operator instructions to eliminate the root cause when problems occur.

Streamline Weighing Integration
Modular, Fast and Easy to Implement

Up and running in minutes, IND360 is the smartest way to integrate weighing because this device utilizes and connnects to both analog and smart sensors for high-speed integration. With step-by-step engineering instructions and auto-configuration, you save time and money on installation and maintenance.

High speed communication
IND360 communicates cyclically at up to 960Hz via industrial Ethernet and acyclically to facilitate one-time control functions. The heartbeat ensures continuous functionality check.

Fast and easy IT/OT integration
Efficient integration is supported with device description files of major automation protocols. Sample programs such as Add-on Profiles for Rockwell and function blocks for Siemens enable a quick start in obtaining data. JSON REST API (preview version) and OPC UA allow easy data exchange with Information Technology (IT) systems in parallel with Operating Technology (OT) systems.

Redundancy and high availability
Two industrial Ethernet ports are used to build a hardware-saving redundant-ring network topology with MRP for PROFINET or DLR for EtherNet/IP to provide higher reliability at lower cost. IND360 supports PROFINET S2 redundancy, increasing uptime of critical systems and confidence in operational continuity.

Variety of housings
All IND360 connectivity options and applications are available for desktop placement, control-panel mount, DIN-rail mount or standard VESA 100 column mount.

Embedded MES, ERP and Cloud Connectivity
Streamline Integration

REST API OPC UA

IND360 is ready for communication with Manufacturing Execution Systems (MES), Enterprise Resource Planning (ERP) and Cloud Service via the OPC UA and JSON REST API data exchange technologies.

Standardize on One Technology
Ideal for a Multitude of Applications

The IND360 family offers ultra-fast weighing and pre-programmed applications for semi- or fully automated weighing processes, making it the ideal solution for machine builders and system integrators to be more efficient in engineering and for end users to take advantage of decades of METTLER TOLEDO's experience in weighing applications.

Two Choices for Machine Control

1. Advanced machine control
All applications of IND360 can also conveniently operate with PLC/DCS systems where the two devices exchange all data via PROFINET, Profibus DP, EtherNet/IP, EtherCAT, CC Link IE Field Basic or Modbus RTU/TCP. The direct digital outputs of the IND360 offer the fastest reaction for actuator control because they are independent from the cycle time of the control system.

2. Economic machine control
The applications included in IND360 can operate without a PLC system. The indicator features digital inputs for start, stop, and other functions, as well as digital outputs to control actuators such as valves.

Precise flow control
IND360rateControl uses real-time weight measurements to provide accurate flow control (loss-in-weight). It features automatic controller tuning, fill to target, and graphical diagnostics.

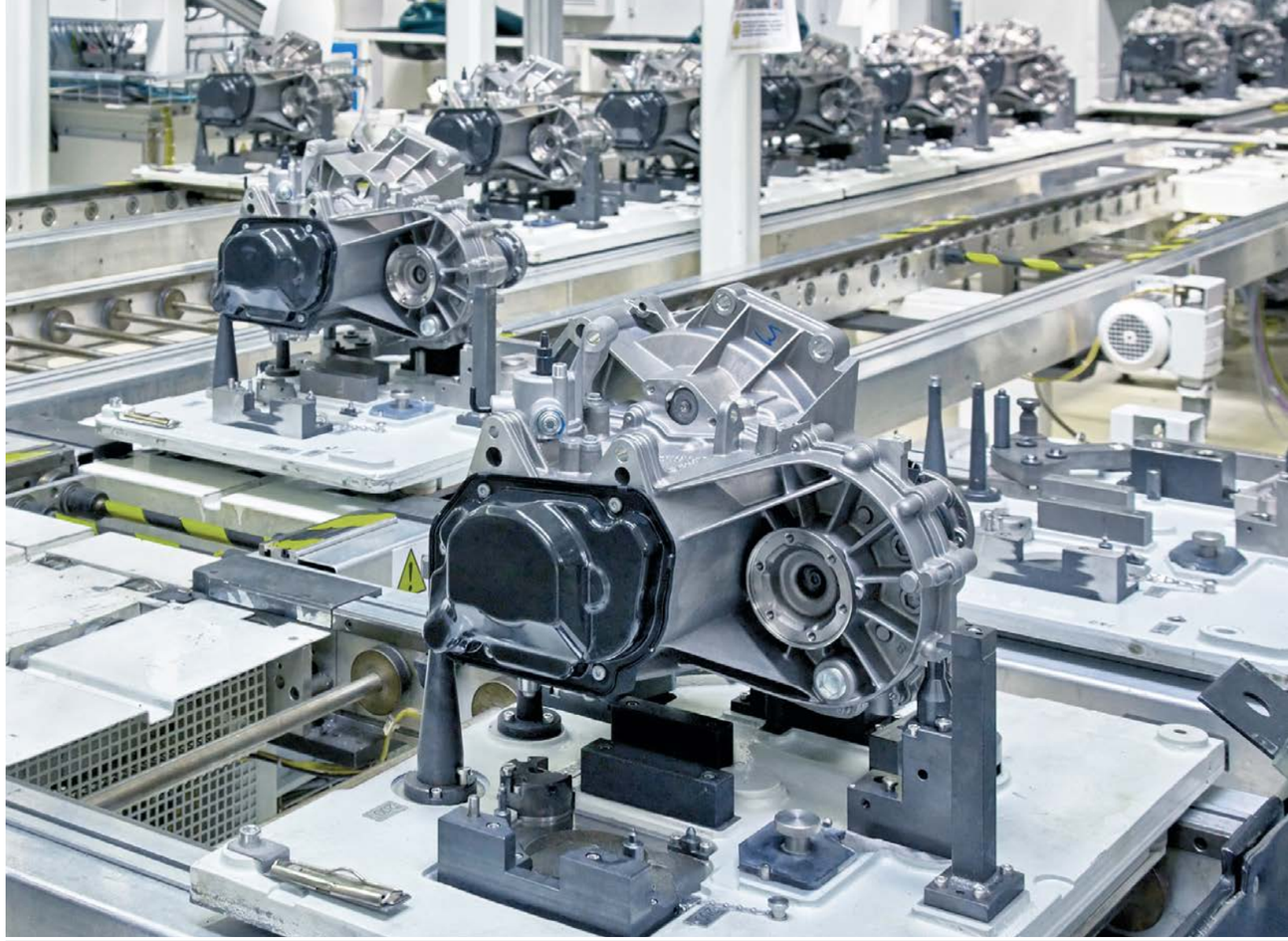
Reliable inventory control
The graphic display with high and low limits, events and alarms provides reliable inventory control for tanks, silos and reactors in indoor and outdoor applications.

Ideal bio-processes
Condition monitoring in combination with high precision weighing technology provides the long-term reliability, security and accuracy that is required for bioprocess control.

Efficient filling for liquids
IND360's smart algorithms and high-speed actuator control enable very fast and accurate filling even when integrated in a cost-saving single-speed design.

Accurate filling for solids
IND360 with smart scales and sensors provides excellent linearity, repeatability and reproducibility. The indicator automatically adjusts for changing material flows.

In-motion weighing
The IND360dynamic application for static and in-motion weighing is legal-for-trade approved, includes checkweighing, and directly connects photo eyes and reject pushers to IND360's I/O.



Versatile Parameter Setting for Applications

IND360 offers three different interfaces for configuration, operation and uptime assurance. Data exchange and application configuration are possible via the human-machine interface, the automation system, and a web interface:

Configuration 1

Data input via PLC or DCS Systems
The control system writes floating point or binary data directly into digital input/output image from which the IND360 reads them.

Configuration 2

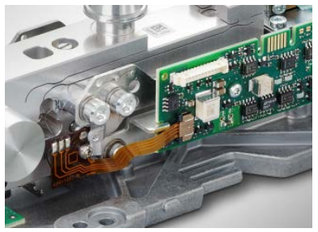
Manual data input
Operators can set configuration and application data manually using the display and keyboard of the IND360 indicator.

Configuration 3

Data input via web interface
A TCP/IP connection facilitates configuration and data input. This port is easily disabled via the PLC/DCS or a soft switch for extra security.

Suitable for All Weighing Capacities
from Very Light to Very Heavy

The IND360 family connects all weighing equipment from 1 microgram up to 1000 tons, always providing excellent accuracy and very fast weighing speed. The unique capability of supporting three different weighing technologies helps to efficiently design customized solutions for all capacity and accuracy requirements.



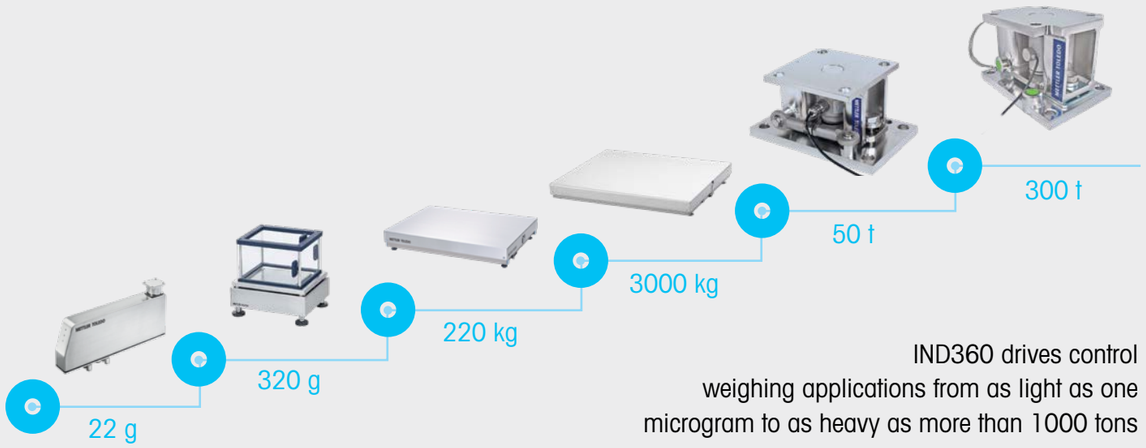
Smart electromagnetic force restoration technology
Sensors and scales with this technology provide the highest resolution with unique linearity, repeatability, and the lowest hysteresis and creep. The technology delivers the recommended readability from 300,000 to 210,000,000 digits and approved readabilities from 30,000 to 300,000 digits according to OIML and NTEP legal for trade standards. Incorporated calibration weights allow fast performance tests at any time.

POWERCELL® Smart weighing technology
Weigh modules and scales incorporating POWERCELL® weighing technology are available for recommended readability up to 100,000 digits and are approved up to 10,000 digits or C10 accuracy according to the OIML and NTEP. This performance is two to three times more accurate than typical industrial load cells due to the built-in microprocessor utilizing highly specialized algorithms.

Typical analog strain gage technology
Simple traditional analog load cells can do the job for many industrial applications where condition monitoring is not required and the commonly known weaknesses of analog technology such as temperature sensitivity, electromagnetic sensitivity, creep and repeatability are not critical to your operations.

Easily Integrate the Optimal Technology

IND360 allows you to integrate the right weighing sensor, or scale, for your automated control system. The weight variables in your PLC, DCS, or server, all look the same independent of your choice of control system, weighing technology, capacity, or readability. This saves you programming effort while also reducing startup time an minimizing errors.



IND360 drives control weighing applications from as light as one microgram to as heavy as more than 1000 tons

Explore Our Service Solutions
Tailored to Fit Your Equipment Needs

METTLER TOLEDO Service delivers resources to enhance your efficiency, performance, and productivity by providing service packages that fit your operational needs, maximize your equipment lifetime, and protect your investment.

www.mt.com/IND-Service

Start with professional installation

Installation services include support for your unique production situation:
- Professional IQ/OQ/PQ/MQ documentation
- Initial calibration and confirmation of fit-for-purpose
- Hazardous area installations

Extend your warranty coverage

Add two years of preventive maintenance and repair coverage to protect your equipment purchase and achieve maximum productivity and budget control.

Calibrate for quality and compliance

The professional Accuracy Calibration Certificate (ACC) determines measurement uncertainty in use over the entire weighing range. Corresponding annexes gives a clear pass/fail statement for specific tolerances applied, such as fit-for-purpose (GWP®), OIML R76, NTEP HB44, or further regulations.

Schedule maintenance

Full preventative maintenance plans offer inspection, functional testing, and proactive replacement of worn parts.

Health inspections offer a full assessment of current equipment condition with professional maintenance recommendations.

Maintain accuracy over time

Receive professional guidance (GWP® Verification™), including a routine testing plan that specifies four key factors to maximize your efficiency and ensure quality:
- Tests to perform
- Weights to use
- Testing frequency
- Tolerances to apply

METTLER TOLEDO Service

Certified Global Compliance

For Local and International Business

To eliminate many of the headaches associated with exporting equipment, IND360 is compliant with both international and local standards. This makes it the ideal weighing automation device for global applications.

Legal for trade included

A legal-for-trade approval is more than permission to use weighing equipment for trading goods. It is also a quality statement about weighing equipment accuracy issued by a neutral and accredited organization.

IND360 includes legal-for-trade approval for most markets globally, enabling export of machines to other countries without compliance issues.

Safety Approvals Included

There is no room for doubt when it comes to the mechanical and electrical safety of weighing equipment used in harsh or dangerous industrial environments.

IND360 includes safety approvals allowing it to be installed and operated in most markets around the world.

www.mt.com/IND360

For more information

METTLER TOLEDO Group
Industrial Division
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Subject to technical changes
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