Terminal and Transmitter

Tank Weighing Automation

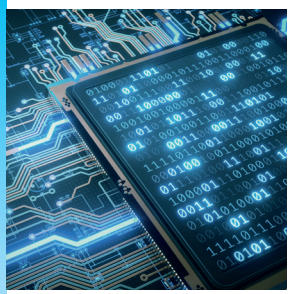
Efficient Inventory Management

Accurate Inventory Control

Weighing is a very accurate method for monitoring tank inventory. Because it is a contact-free method, it is not impacted by material type or vessel shape. IND360 offers a reliable, preprogrammed inventory control application to accelerate installation and eliminate programming costs.

Clear Process Visibility

IND360 offers instant visibility to process status and inventory levels via the automation interface or the human-machine interface (HMI). The bright display provides immediate visualization for walk-by status and facilitates easy calibration.

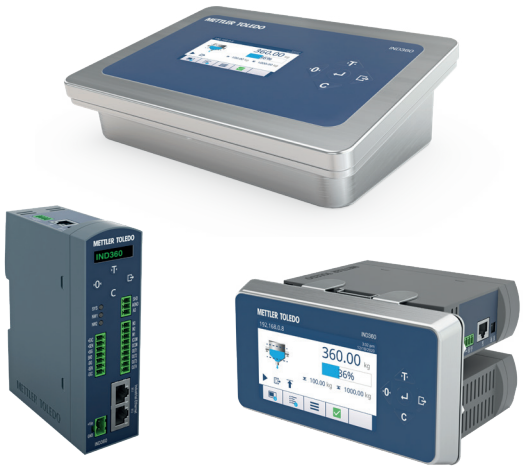


Simplify Integration

IND360 utilizes certified automation interfaces and includes drivers like EDS, GSD and GSDML for fast, failure-free startup. In addition, the terminal comes with a Rockwell AOP, AOI, sample code and Siemens function blocks.

Boost Machine Performance

With ultra-fast processing connected to the world's most widely-used PLCs and DCSs, the IND360 automation terminal boosts productivity while increasing uptime. Condition monitoring and Smart5™ alarming ensures your system is performing as expected allowing you to react quickly when issues arise.



IND360tank/vessel Terminals

Seamless Tank & Vessel Weighing

IND360tank/vessel delivers fully integrated inventory control with broad PLC/DCS connectivity and process visualization.

Features include:

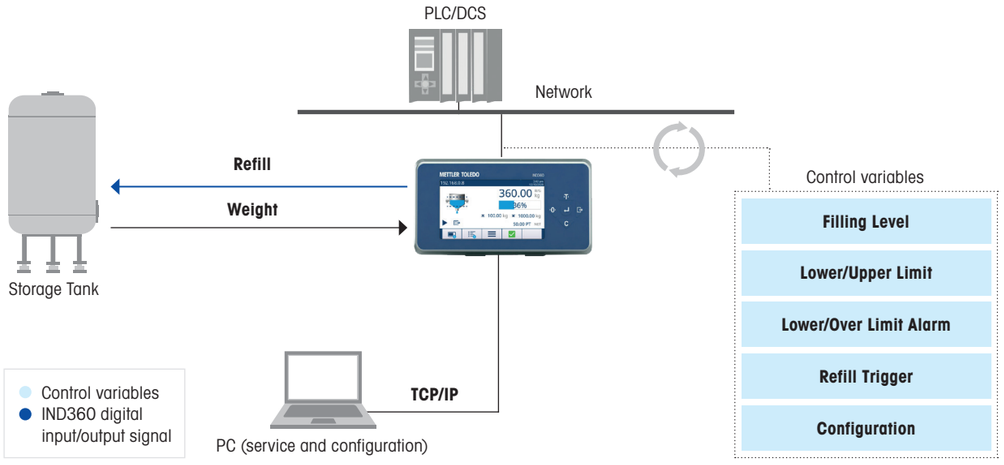
- High and low level alarm controls, with automatic refill
- PROFINET, Profibus DP, EtherNet/IP, Modbus RTU and 4-20mA
- Supports analog, POWERCELL® and high precision scales
- Automatic PLC-driven calibration of precision scales
- RapidCal™ for fast and efficient tank scale calibration

METTLER TOLEDO

Automation System Connectivity

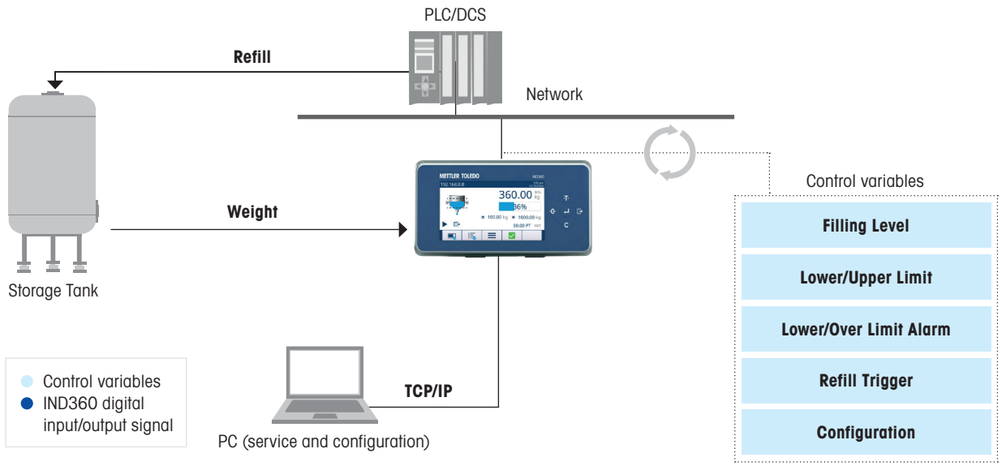
IND360 provides the optimal fit into your automation environment and serves your process needs by allowing the PLC/DCS to control all functions via the automation network.

Example 1: Automation Network with Direct Refill Control



IND360 controls the refill valve while providing visualization on HMI. Cyclic and acyclic access to application status information and read/write of configuration using PLC interface, display or web interface. Redundant ring topology for PROFINET and EtherNet/IP is supported.

Example 2: Automation Network with Indirect Refill Control

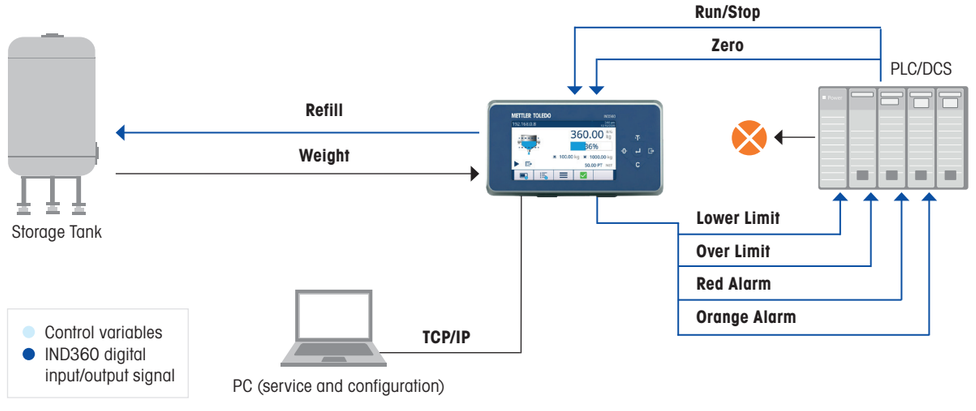


PLC controls the refill valve based on IND360 refill signal and other control information, the IND360 monitors the filling level and provides visualization on HMI. Cyclic and acyclic access to application status information and read/write of configuration using PLC interface, display or web interface. Redundant ring topology for PROFINET and EtherNet/IP is supported.

Automation System Connectivity

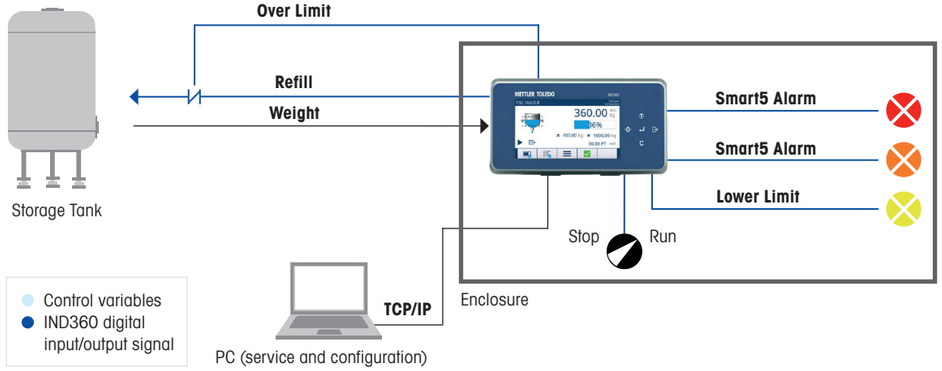
Extremely fast, configurable, digital inputs/outputs and analog output for basic connectivity or stand-alone operation; allowing you to save valuable processing capability in your PLC/DCS for more critical activities.

Example 3: Digital Input/Output Connectivity with PLC/DCS



IND360 controls the refill valve and provides visualization on HMI. PLC access to status information and control functionality using digital I/O. Optional 4-20 mA weight output available for PLC/DCS connectivity. Configuration through web interface or display.

Example 4: Stand-alone without PLC/DCS



Stand-alone setup without PLC connectivity. IND360 controls refill valve and provides visualization on HMI. Start application with hardware switch attached to digital input of IND360. The "Over Limit Alarm" signal is attached to a safety switch acting as an emergency stop for refill. Configuration through web interface or display.

IND360tank/vessel

Automation Terminals

For full device specifications and additional drawings, please refer to the IND360base datasheet.

	Parameter	Description
Application	Filling level indication	Gross weight, percentage including graphical visualization
	Automatic refill	Configurable low and high thresholds I/O and PLC/DCS refill signals
	Refill monitoring	Low level monitoring, overfill protection
	Prioritized alarming	Smart5™ based on NAMUR NE107 Display notification Available on PLC/DCS network
	Configuration	Web interface (integrated web server) PLC automation interface IND360 Human Machine Interface (HMI)
	Statistics	Counters for lower limit, upper limit, refill operations
Measuring	Supported scale types	Analog (480Hz), POWERCELL® (4 cells at 100 Hz), single-range Precision (up to 92 Hz)
	Digital filtering	Scale type dependent, removes mechanical and environmental noise, adjustable via PLC/DCS
	Tank calibration	RapidCal™ (mt.com/ind-rapidcal) CalFree™, CalFree Plus™ Test weight with or without substitution
PLC Connectivity	Industrial Ethernet	PROFINET, EtherNet/IP, Profibus DP, Modbus RTU
	Certification	PNO (Siemens), ODVA (Rockwell and others)
	Data exchange	Cyclic: 480 Hz bidirectional read/write data exchange via process image 16 byte or 64 byte Acyclic: dynamic data size
	Condition monitoring	Heartbeat 1Hz, Smart5™ alarms (NAMUR NE107), Individual POWERCELL® alarms, overload, underload, temperature, sensor network failure, etc.
	Selectable data	Up to 7 high-speed weight values (32-bit float), binary status for condition monitoring Device and application configuration, incl. set points (read/write) Device and application status information (read)
	Device description files	GSD and GSDML (for Profibus DP and PROFINET) EDS (for EtherNet/IP and others) Rockwell AOP integrated into Studio 5000
	Command set	METTLER TOLEDO Standard Automation Interface for tank vessel applications
	Sample code	Fully functional sample project for: Siemens TIA Portal (≥ V14 SP1) Rockwell Studio 5000 (≥ V24)
	4 – 20 mA weight output	For Gross, Net or Absolute Value Net 16 bit resolution
Digital I/O	Input signals	Up to 5 configurable inputs Functionality: run/stop, clear statistics, silence alarm, print, tare, clear tare, zero
	Output signals	Up to 8 configurable outputs Functionality: upper limit, lower limit, refill, Smart5™ orange alarm, Smart5™ red alarm, application alarm, center of zero, over capacity, under zero, motion, net, over-limit alarm, lower limit alarm
	Voltage	Logical high voltage: 10 … 24 VDC Profibus Logical low voltage: 0 … 5 VDC

www.mt.com/IND360
For more information

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