

Honeywell Enraf provides an integrated solution to meet all terminal management needs, however large or small.

Honeywell Enraf provides an integrated solution that delivers value from conception to implementation for all types of distribution and bulk terminals, such as refinery off-sites, biofuel storage and distribution, petrochemical storage and loading facilities, and marine, rail and truck loading terminals.

Honeywell Enraf's solutions are totally integrated and scalable, so whether you are building a new facility, or expanding or upgrading an existing one, Honeywell Enraf can help reduce overall project risk, accelerate production schedules and improve your business performance through solutions that drive safety, reliability and efficiency.



Before installation	At time of installation	After installation
<ul style="list-style-type: none"> • Site survey • Consulting • Project planning • Functional design specification • Product selection 	<ul style="list-style-type: none"> • Hardware and software supply • Supervision of installation • Specific application development • System configuration and integration 	<ul style="list-style-type: none"> • Commissioning • Acceptance testing • Training • Systems optimization • Remote and onsite service programs, extended warranty, help desk and emergency support

Outstanding Service and Maintenance

In the development of Entis, specific attention was paid to service and maintenance of both the system itself and the associated gauges to lower the total cost of ownership. The open and modular system structure not only contributes towards simplification of maintenance but it also guarantees rapid and problem-free upgrading of the Entis system components. Moreover, integration of additional instrumentation can be performed at any time. System extensions involving new or existing instrumentation can be scheduled to coincide with software updates, thereby avoiding unnecessary cost. Furthermore, the standardized and open data and interfaces facilitate integration with other systems.

Customer-Specific Functions

The standard monitoring systems based on Entis provide several levels of functionality to cover almost any requirement. In some cases additional functions may be required to cover specific needs. In order to allow the extension of the monitoring systems software the architecture has been set up in a modular way, providing the ability to reuse standard functions and reducing the extra costs for developing the functionality needed.

Examples of customer-specific functional modules include:

- **Roof immersion compensation for variable floating roof immersion due to heavy snowfall. Especially during (un)loading the fluctuation may cause variations in the stock inventory calculation. With this additional module the system is approved by weights and measures authorities.**
- **Floating roof monitoring to detect a roof out of sync during unloading causing a possible fall. A falling roof can cause serious spills or damages and may result in serious losses.**

For More Information

To learn more about Honeywell Enraf's Terminal Automation Solutions, contact your Honeywell Enraf account manager or visit www.honeywell.com/ps.

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Terminal Automation Solutions

Honeywell Enraf



Terminal Inventory Solutions

Honeywell Enraf



Trust Honeywell Enraf with Your Stock Information



From monitoring your oil inventory and operating your terminal to custody transfer and financial reporting, Honeywell Enraf can help maximize results on your investments while reducing costs. Honeywell Enraf offers integrated solutions as well as the required products and systems for terminal inventory management. Based on extensive experience in terminal inventory management Honeywell Enraf can help improve the safety, reliability and efficiency of terminal operations.



Honeywell Enraf's terminal inventory management portfolio includes the flexible environment based on the proven Entis inventory system. Customers will have the flexible functionality for tank farms from one single tank to more than 250 tanks, covering multiple locations and a variety of gauges and interfaces. Honeywell Enraf protects your investment while keeping lifecycle costs as low as possible.

Customers expect the right type of gauge to precisely meet their needs and have the same expectations for the whole installation, including the network and the monitoring system. Monitoring systems used to be configured as standalone systems being locally manned. Today's monitoring systems often interface with central management systems to provide actual inventory information enabling centralized planning and scheduling with actual data.

Improve Business Performance

Honeywell Enraf helps customers improve business performance with solutions that drive safety, reliability and efficiency including inventory systems.

Safety

Safety includes the protection of people, assets and inventory data. Entis systems offer overfill protection, leak detection and alarming to mitigate or prevent possible disasters, protecting your people and the environment.

Secure inventory data is provided in a convenient orderly way on screen or printed. If the data is used for custody transfer or financial reporting sealing may be required by weights and measures authorities. Several products and Entis components are approved, enabling optional sealing of the installation.

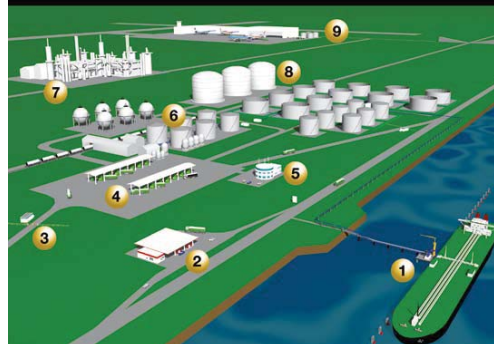
Reliability

The Entis systems provide accurate and secure inventory data at all times. The system is tested and has been proven in more than 2,000 installations. If the standard reliability is not enough, the availability can be increased by using redundancy.

To ensure the reliability of the inventory data the entire Entis system, including network and gauges, can be weights and measures approved.

Inventory Management Functions

- | | |
|-------------------------------|-------------------------|
| 1 Ship Loading and Unloading | 6 Blending and Movement |
| 2 Retail Outlet | 7 Refinery |
| 3 Access Control and Security | 8 Tank Farm and Storage |
| 4 Loading Bay Automation | 9 Aircraft Terminal |
| 5 Control Building | |



Tank Inventory Management Knowledge and Experience

- Local support and centralized specialists
- More than 2,000 installations worldwide
- Over 50 years experience in tank gauging and inventory management
- Best-in-class tank management and custody transfer
- Partnerships with best-in-class product and service suppliers

Benefits of the Entis Terminal Inventory System

- Increase operator efficiency with user interfaces presenting the required information in an orderly way, and reducing manual inputs with integrated automated processes
- Increase safety of people, installation and environment
- Increase return on investments by reducing installation and maintenance costs and an extended lifecycle program
- Reduce inventory uncertainties with higher accuracy
- Reduce product losses with reductions in spills

Efficiency

Efficiency is determined by how the operators use the system and the way the inventory system is maintained throughout its lifecycle.

The Entis systems are able to distribute the inventory data throughout your entire site or to your central administration elsewhere. Web-enabled functionality ensures a user-friendly way of operating and retrieving the information, thus increasing the efficiency.

With Entis you are able to reduce the cost of manually entered transactions and the cost of training your personnel on complex systems.

After setup the configuration and operation can begin. During operation, settings such as alarms can be changed easily. Installation modifications or extensions can be adapted and resealed by authorized Honeywell Enraf personnel for weights and measures approved systems.

Accuracy

Monitoring systems are expected to provide accurate and up to date stock information. By using specific algorithms configured according to the applicable standards, the accuracy of the measured oil stock is of the highest obtainable level.

Whereas flow measurement provides highly accurate information of a batch, the resulting inventory information is less accurate due to multiple oil movements resulting in uncertainty of flow measurement.

When using Honeywell Enraf's Entis system, the correct tank inventory data is available instantly and accurately.

Weights and Measures Approved

Especially when stock inventory information is used for financial reporting it is possible to get your installation approved by the weights and measures authorities. To get your installation approved the individual parts must be approved after which a combined approval can be issued. Honeywell Enraf can provide the monitoring system as well as the required network interface and gauges to achieve an installation approval.

Integration Capabilities

Honeywell Enraf's ability to integrate systems for inventory management, blending and movement, terminal inventory, loading and micro-blending reduces the manual transactions between independent systems, and lowers costs significantly. Honeywell Enraf provides the software packages and is able to ensure a high level of integration. Standards such as ODBC, OPC, Modbus and others are supported.



Monitoring Multiple Locations

Today's terminal operators have tank farms in multiple locations around the globe. Your central office requires an actual overview of the stock inventory of all tank farms. The web-enabled options provide convenient and easy access to this information via the Internet. Security restrictions are considered and adapted to your security policy.

Functionality		
Basic tasks	Advanced tasks	Additional functions
<ul style="list-style-type: none"> • Alarms and events • Change dimensions • Tank view • Tank detail • Group detail • Report printing 	<ul style="list-style-type: none"> • Alarm and Delta column • Group totalizer • Manual density entry • Profiles • Group configuration • Task scheduling • Real-time trending 	<ul style="list-style-type: none"> • Back-up scheduling • Customized reporting • Group gauge commands • Host communication • Product movements • Multi-language • Pipeline configuration