

JOWA



Metritape

World's only Tank Gauge
that works well with
all BWT systems.

**JOWA USA, Inc., headquartered in Littleton, MA,
has provided reliable tank gauging systems to
customers worldwide since 1965. Now as one of the
JOWA companies it is also the North American Sales and
Service agent for all JOWA products.**



With its innovative resistance-tape technology, JOWA USA provides reliable level gauging solutions for a diverse and demanding mix of applications.



Metritape Level Sensor

Commonly known as Metritape, this non-mechanical, continuous level sensor offers clear advantages over other level technologies, especially in thick, sticky liquids that cause mechanical level gauges to seize. With over 30,000 units installed throughout the world, the Metritape resistance-tape level sensor is a proven success.

- Full height, Independent High Alarm, 3 Point Temperature and IGP monitoring all in a single deck penetration with a single cable run per tank; reducing installation costs
- Metritape sensor extends into cargo sump providing gauging below tank bottom and speeding discharge time
- Flexible Metritape sensors follow contour of “J-shaped” ballast tanks for high performance level detection at an affordable price
- No tank entry required for installation or service
- Virtually maintenance-free

Ballast Water Management and Tank Gauging - The Lost Connection

IMO regulations will require ships be outfitted with a BWT system. The connection between the tank gauge and the selected BWT system must be considered when designing a system. In cases where the system is to be selected later, the installation of an incompatible level gauge could eliminate choices, cause the system to not operate correctly or force very costly retrofit expenses.

Install a Metritape system:

- Reliable Gauge with high level alarms: D2 regulations prohibit the discharge of poisonous water
- A WIA system that also operates as a Tank Gauge - Preventing overflows
- Unaffected by changes in Tank pressure that some BWT systems generate.
- Eliminates a concern: Is it safe to enter the tank to work on a Gauge with potential residual Chlorine Gas?

Metritape
World's only Tank Gauge that
works well with all Ballast Water
Treatment systems.

Our Individual Tank Meters and Water Ingress Alarm System offer superior solutions in Fuel Tanks and Cargo holds.



Metrimeter Display

The Metrimeter is a single tank instrument that directly interfaces with Metritape level and level / temperature sensors. It provides a 6-digit alphanumeric display, a 40-point bar graph display and six alarm and fault indicators. In addition, it may be used as a slave meter when connected to other systems. Through an extensive menu system, the meter may be set up and configured to match a customer's needs.

Features:

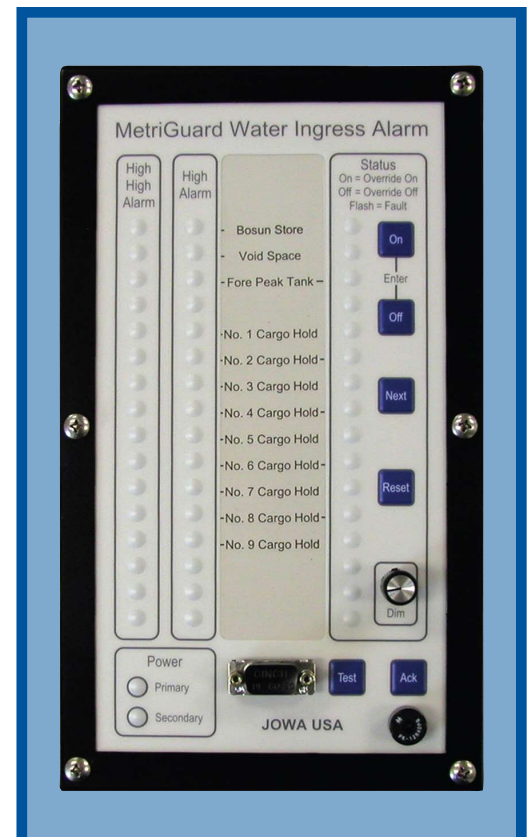
- Single tank instrument with digital and bar graph display
- Four input channels to monitor resistance-tape levels and temperature or overflow
- Five alarm indicators, 1 fault indicator & 3 relay outputs
- RS-485 serial interface
- Capable of remote alarm acknowledge and/or horn silence

MetriGuard Alarm System

MetriGuard Water Ingress Alarm System is intended for use on bulk carriers. MetriGuard and the unique Metritape sensor provide reliability and accuracy, even in demanding cargo hold conditions.

Protected from damage in a stillpipe that runs from the weather deck down to the inner bottom of the hold, the Metritape sensor allows two alarm set points to be derived from one sensor. Metrimeters can be added to MetriGuard, which makes it possible to monitor water levels and allow for additional alarm points.

With approved intrinsic safety barriers, MetriGuard may be operated in hazardous areas.



Tank Gauging Comparison

Example: 16 Cargo / Slop Tanks with Full Height Cargo, Independent High Alarm, Temperature, and Inert Gas Pressure Monitoring

Radar

- 3 penetrations per tank
- 48 total deck penetrations
- 48 total cable runs

Floats

- 2 penetrations per tank
- 32 total tank penetrations
- 32 total cable runs

Metritape™

- Only 1 penetration per tank
- Only 16 total tank penetrations
- Only 16 total cable runs

Metritape Features & Benefits:

- Full height cargo
- Independent High Alarm
- 3 Point Temperature Detection
- IG Pressure Monitoring
All in a single deck penetration with a single cable run per tank; saves installation costs
- Performs all required level gauging with one sensor technology; simplifies training and reduces spares requirements
- For increased safety, Independent High Alarm sensor provides continuous level indication in critical topping zone in addition to 98% alarm
- Metritape sensor extends into cargo sump providing gauging below tank bottom and speeding discharge time
- Flexible Metritape sensors follow contour of "J-shaped" ballast tanks for high performance level detection at an affordable price
- No tank entry required for installation or service
- Reliable; no-moving-parts; simple to install; easy to use
- Virtually maintenance-free
- Low capital investment
- Compatible with all Ballast Water Treatment Systems

Full height level

Independent High Alarm

Temperature

Full height level

Independent High Alarm

Independent High Level Alarm sensor

Full height level sensor with 3 point temperature detection

Metritape sensor extends into cargo sump

"J-shaped" Ballast Tanks - A better solution

"J-shaped" Ballast Tanks - Low performance gauges:

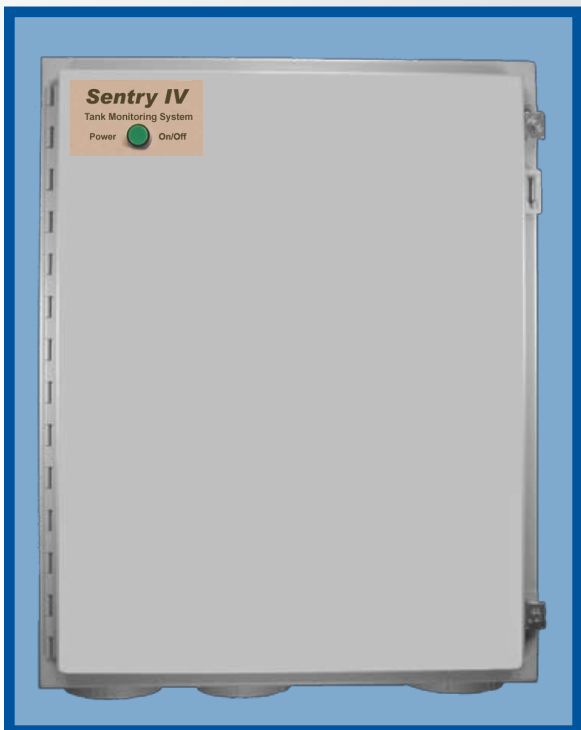
Air Purge

Floats

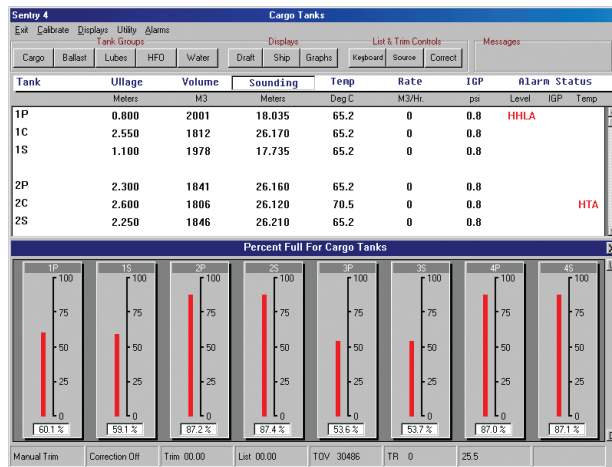
Pressure Cells

The flexible Metritape sensor can be mounted in a curved still pipe for high performance ballast gauging

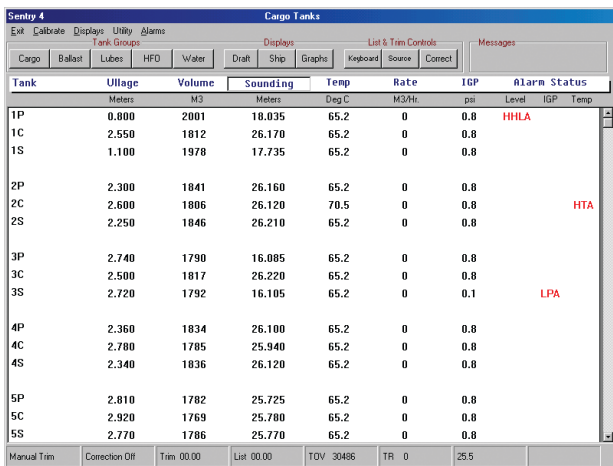
Computer-based systems like the Sentry & Vanguard offer a cost competitive solution to monitor cargo, ballast, draft and service tanks along with IGP.



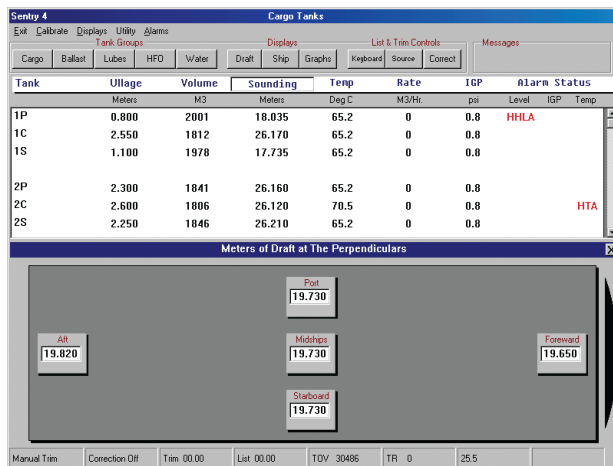
Sentry IV Central Electronics



Bar Graph Display



Tabular Display



Draft Display

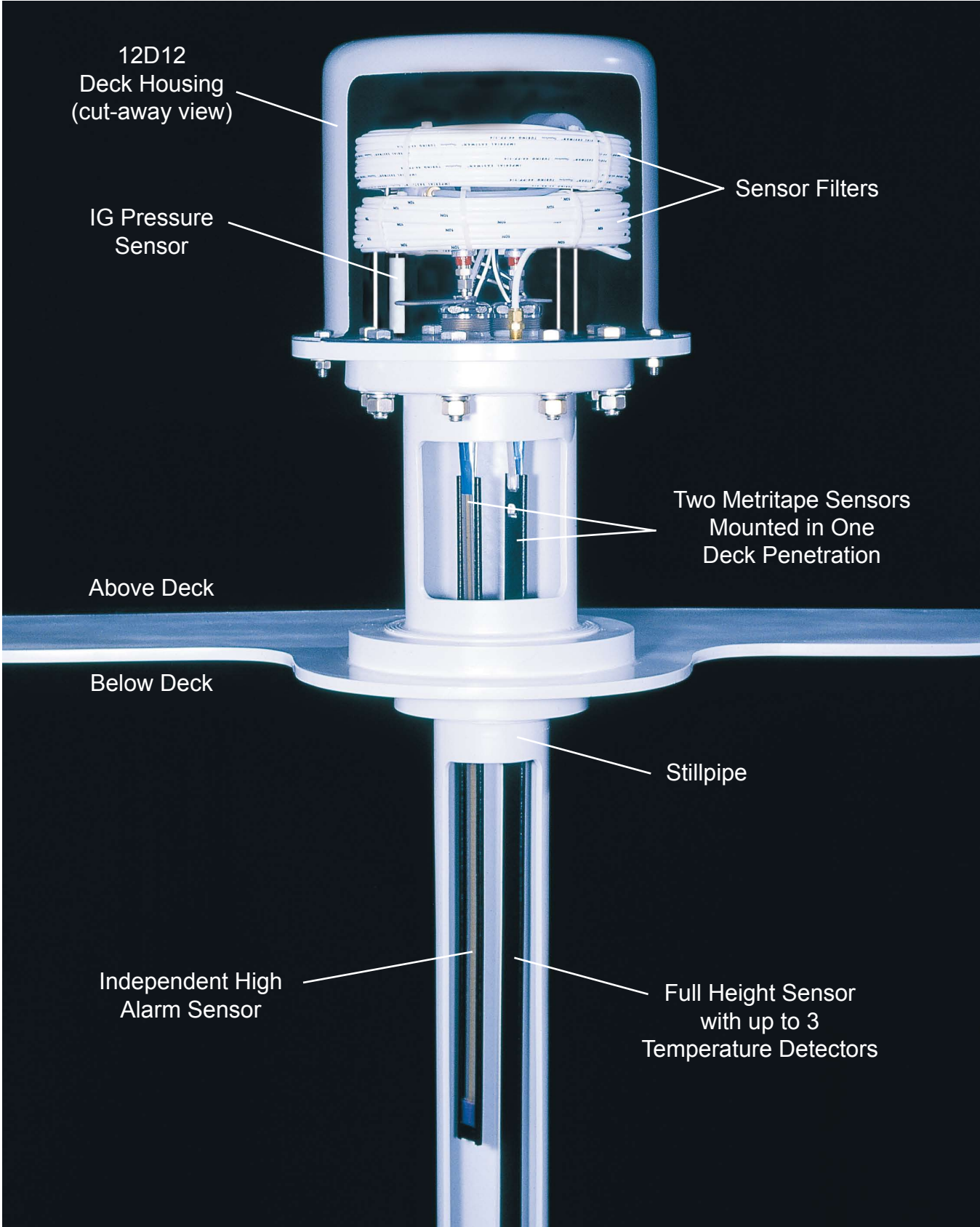
Description:

The Sentry and Vanguard monitoring systems are cost competitive computer based solution for today's value minded customer. Tank level data from Metritape level sensors or our Radar is sent to a central processing unit and displayed on a flat screen monitor. This easy information access and control makes Sentry the most advanced system in its price range.

If you need Full Height, IHA, 3 Temp and IGP, you can do all of it in one penetration with the Metritape solution. With our Radar solution, you need two penetrations. In addition to this, the Metritape works in all other tanks and with all Water Ballast Treatment Systems.

Satisfy All Your Requirements in a Single Deck Penetration

Full Height Cargo, Independent High Alarm, Temperature, and IG Pressure



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