API

PRODUCTS AND SOLUTIONS

CHEMICAL AND OIL TANKERS

SENSORS & AUTOMATION SYSTEMS





Tankers

SCOPE OF SUPPLY FOR CHEMICAL & PRODUCT TANKERS

- Tank Level Gauging System for Cargo Tanks
- High Level and Overfill Alarm System
- Tank Level Gauging System for Ballast and Service Tanks
- Valve and Remote Control System
- Online Loading and Stability Computer System



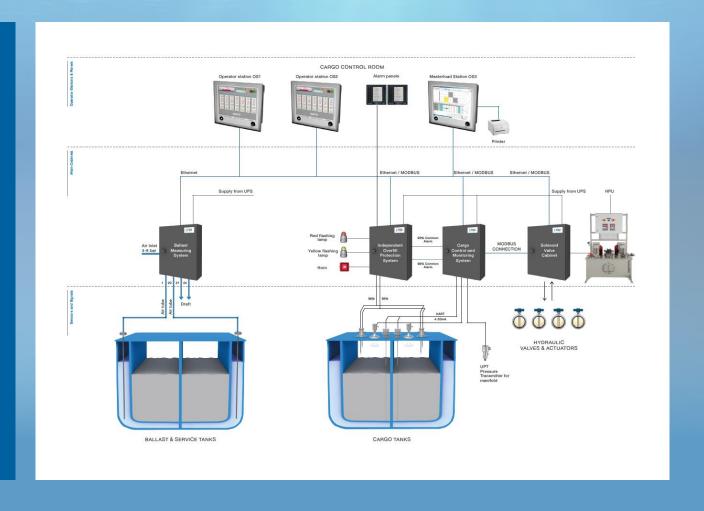


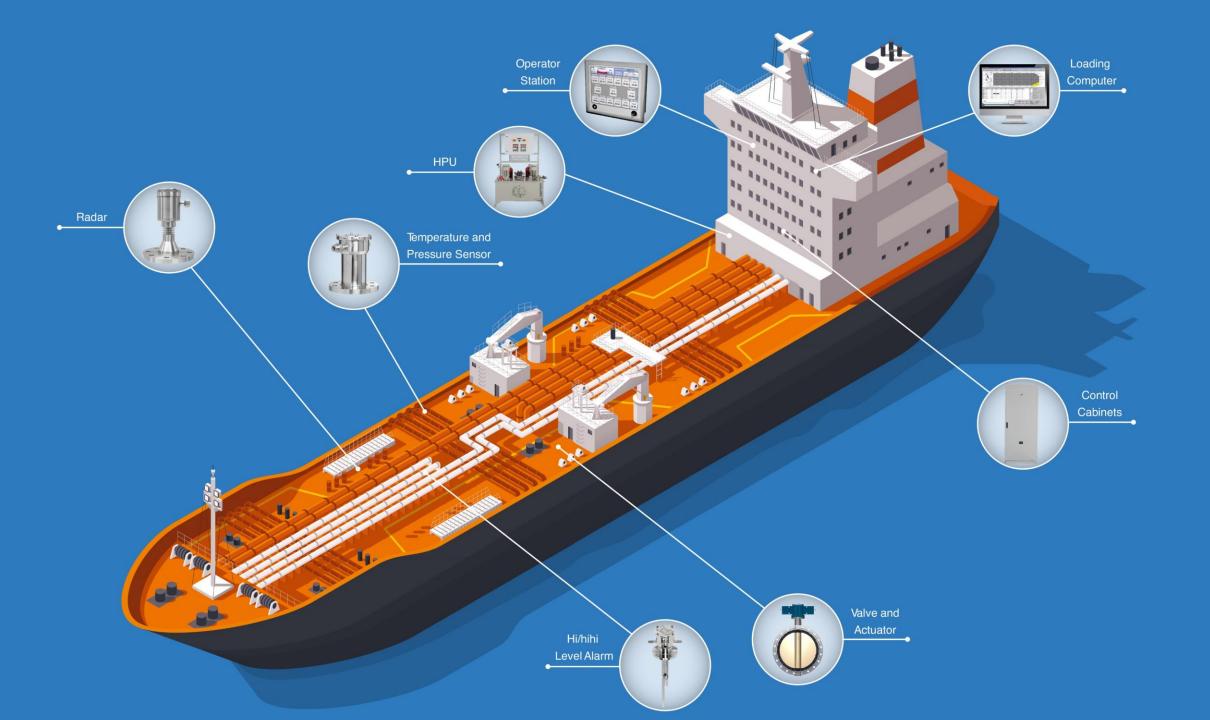
Typical Configuration

Tanker

Typical Scope of supply

- TLGS Cargo Tanks
- High Level & Overfill Alarm
- TLGS Ballast & Service Tanks
- Valve Remote Control System
- Loading Computer



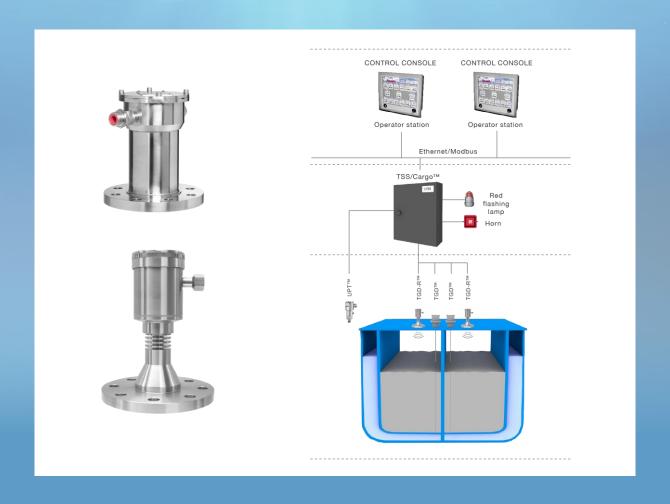




Tank Gauging System Cargo Tanks

(TSS/CARGOTM)

- System configuration with Radar and combined Temperature/pressure sensor
- TGD-R Radar (API own development)
- TGD-TP Combined Pressure / 3x temperature
- Proven solution for chemical and product tankers

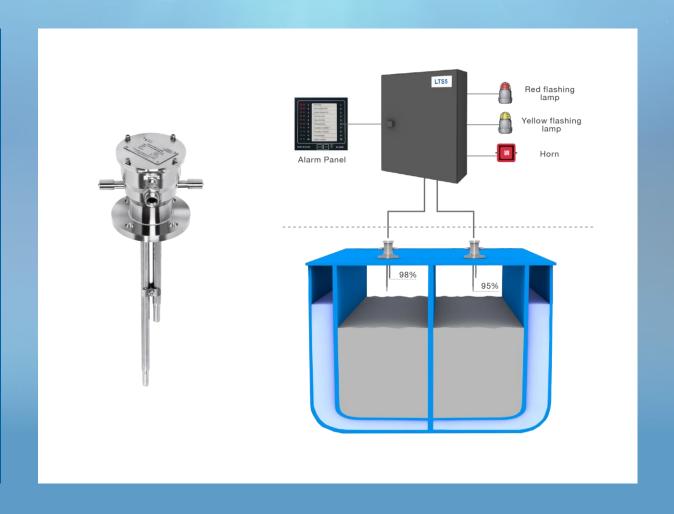




High Level & Overfill Alarm System

(TSS/ALARMTM)

- Highly compact and economical solution
- Easy replacement
- Fits any tank
- New and improved (TLATM)
- No moving parts or electronics
- Low "total cost of ownership"



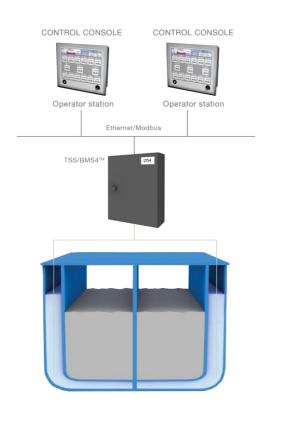


TLGS (TSS/BMS4)

(Electro Pneumatic)

- Electro pneumatic level and draft measurement
- System suitable for all types of vessels
- Compact and fully integrated system
- Competitive pricing / low investment cost
- Flexible and modular concept and design



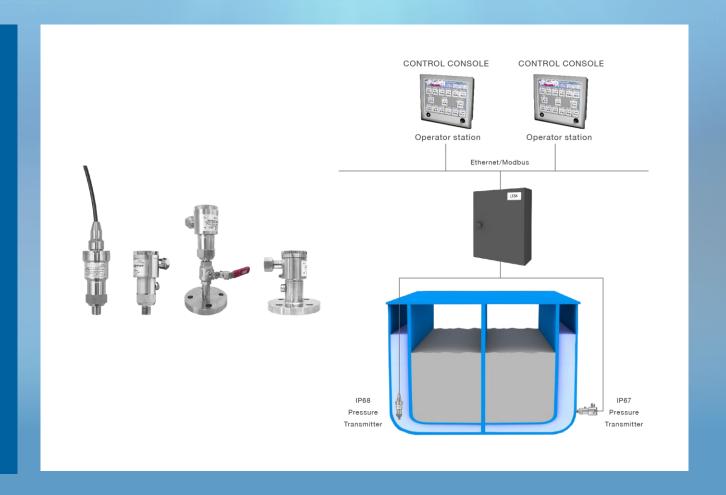




TLGS (TSS/UPT)

(Pressure Transmitter)

- Level measurement
- Draft measurement
- Can be supplied as stand-alone system
- Easily integrated and extended
- Level alarm functionalities
- Suitable for retrofit installations
- Sensors available in a wide variety of versions

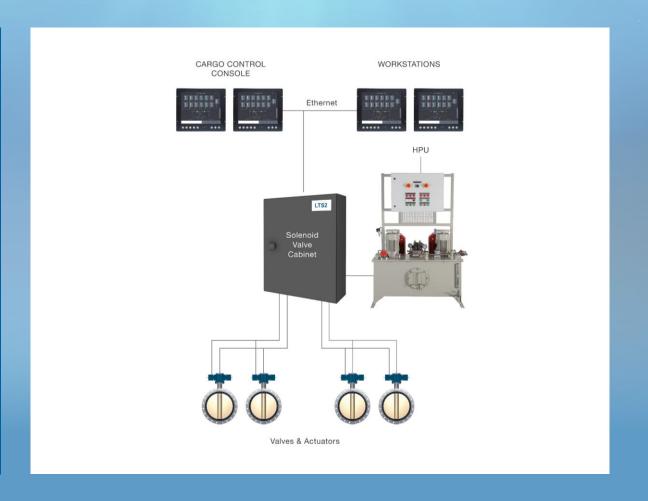


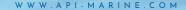


Valve Remote Control System

Hydraulic (TSS/VRCTM)

- Compact and flexible solutions
- Fully compatible with API Marine and other tank level gauging systems
- Modern hardware and software (mimic) for easy and flexible control
- Advantage to combine maker for TLGS/VRC
 - Less problems!
- Own development, design & approvals







Valve Remote Control System

Actuators

- API Marine own development Unique and simple design
- Single and double acting
- Compact and low weight
- Easy mounting to all quarter turn valves
- Horizontal and vertical mounting
- Meets major Class requirements
- Dry or submerged mounting
- Low maintenance



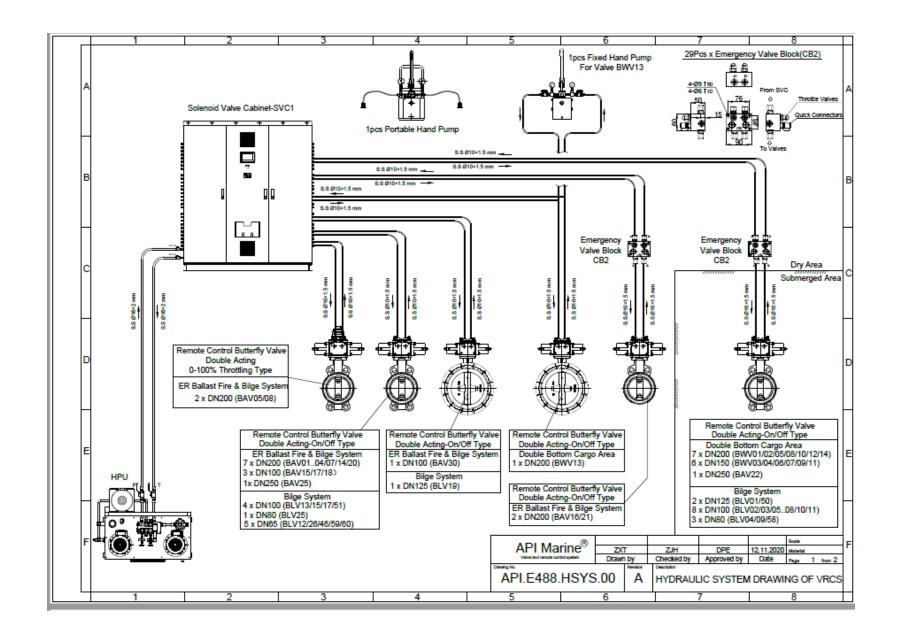


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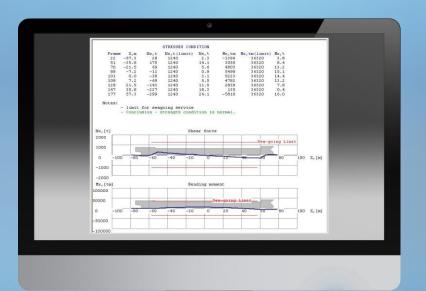






Loading & Stability Computer - TSS/MasterLoad

- Online / Offline modes
- Tank and Loading Status
- Stability & Stress calculations
- Damage Stability

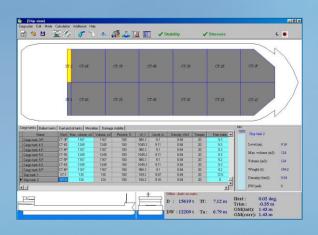


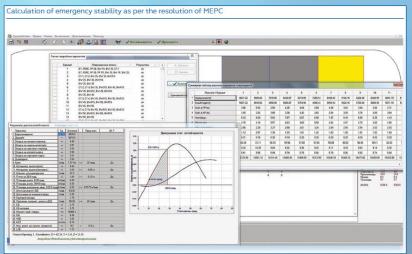


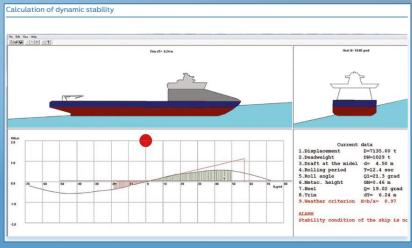
Loading Computer

TSS / MasterLoad

- 100% own development
- API Marine works directly with Class for approval
- New building or retrofit/upgrade applications
- Meet all requirements for MARPOL ANNEXI
 REGULATIOS 2016









UTI

TSS/UTI

FEATURES AND ADVANTAGE

- Great accuracy and durability
- User friendly
- Tape cleaning function and tube protection
- Closed system (gas-tight)
- Modular design and low maintenance cost
- Designed for hydrocarbons and corrosive liquids application (oil/chemical tankers)
- ATEX approval
- BC Class approval







Sensors for Critical Applications in Harsh Environments

- Designed and manufactured for marine applications
- High quality and reliable automation systems starts with good sensors
- Patented technologies









Sensors & Transmitters

TGD SERIES

TGD™

• Tank Gauging Device (Level, Pressure & 3 X Temperature)

TGD-R™

• Tank Level Radar

TGD-L™

• Tank Gauging Device (Level)

TGD-TP™

Tank Gauging Device (Temp/Pressure)

LEVEL SWITCHES

UTSTM

• Ultrasonic Tank Switch

TLATM

Tank Level Alarm (95%/98%)

TRANSMITTERS

UPTTM

• Universal Pressure

Transmitter

UTTTM

Universal

Temperature

Transmitter



















Reference Project - Chemical Tankers

Shipyard Tongbao Shipbuilding

(Nantong)

Owner Dinheng Shipping

8500 DWT Vessels - ABS Class

13000 DWT Vessels - BV Class

API SCOPE OF SUPPLY

- Cargo Tank Monitoring System
- High Level & Overfill Alarm System
- Remote Sounding System
- Valve Remote Control System
- Loading Computer







API Marine Tankers Summary

- Integrated and flexible solution
- Integrated "one-stop-supply" = less problems for the shipyard
- All sensors and key components are 100% own development no 3rd party sensors
- High quality sensors = the heart of the system
- API Marine scope of work: initial proposal phase to final commissioning
- (Class approval drawing & FAT)
- Proven track record
- High reliability and robust design
- Competitive solution!



QUALITY - RELIABILITY - SAFETY