



PRODUCTS AND SOLUTIONS  
CHEMICAL AND OIL TANKERS

SENSORS & AUTOMATION SYSTEMS



**DEVELOPMENT, DESIGN  
& PRODUCTION OF  
ADVANCED TANK  
SENSORS AND  
AUTOMATION SYSTEMS  
FOR MARINE  
APPLICATIONS**

# Tankers

## SCOPE OF SUPPLY FOR CHEMICAL & PRODUCT TANKERS

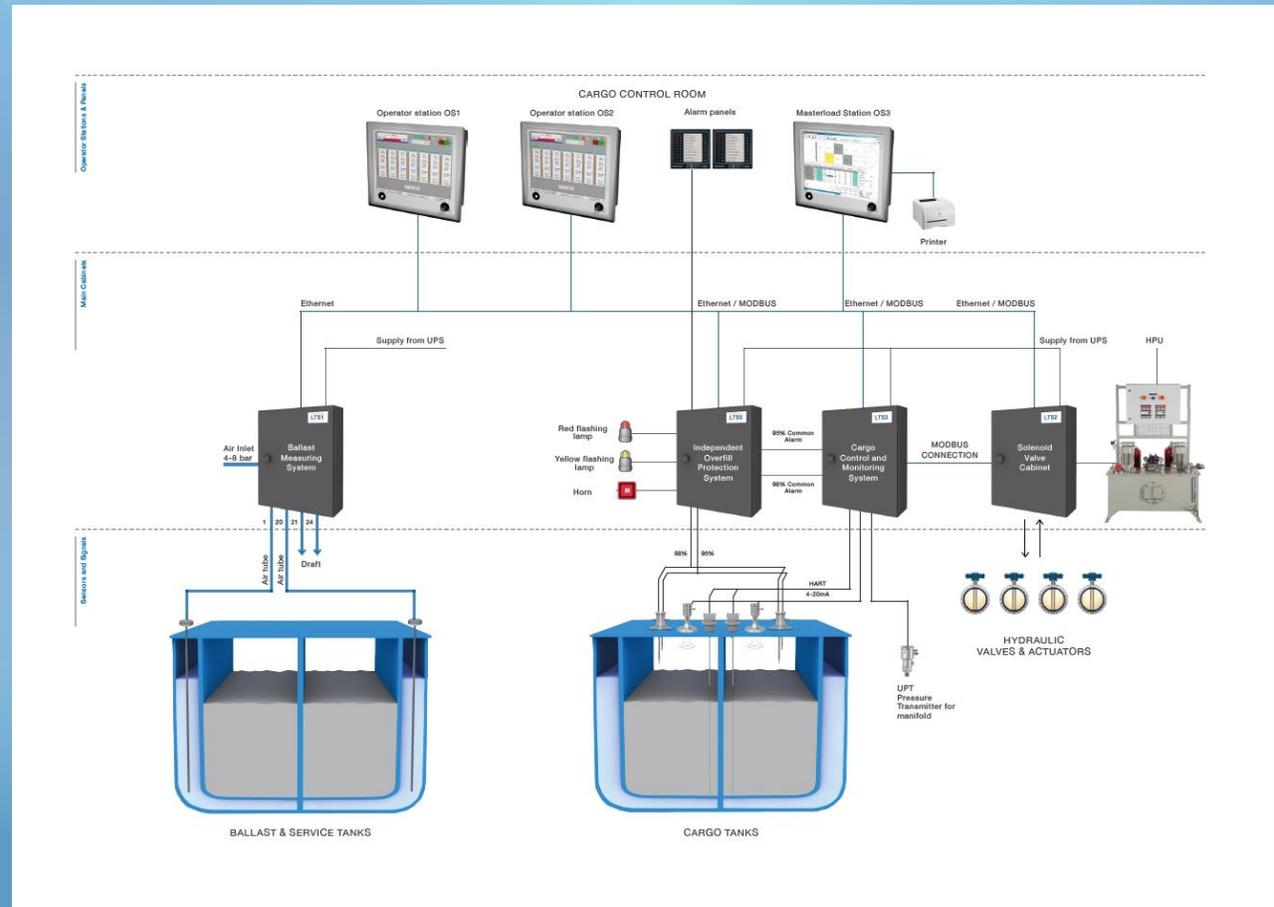
- Tank Level Gauging System for Cargo Tanks
- High Level and Overfill Alarm System
- Tank Level Gauging System for Ballast and Service Tanks
- Valve and Remote Control System
- Online Loading and Stability Computer System

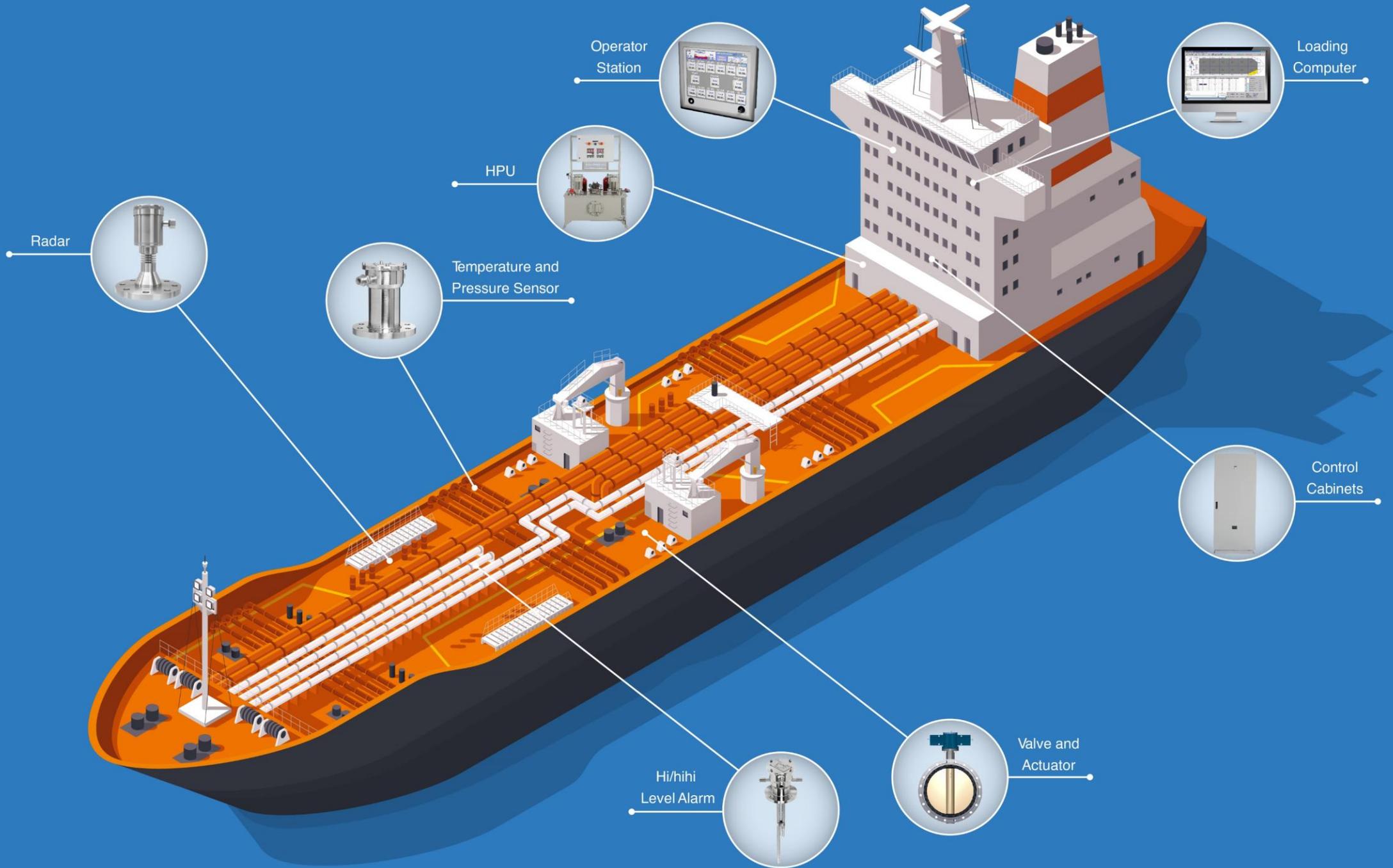


## Tanker

### Typical Scope of supply

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

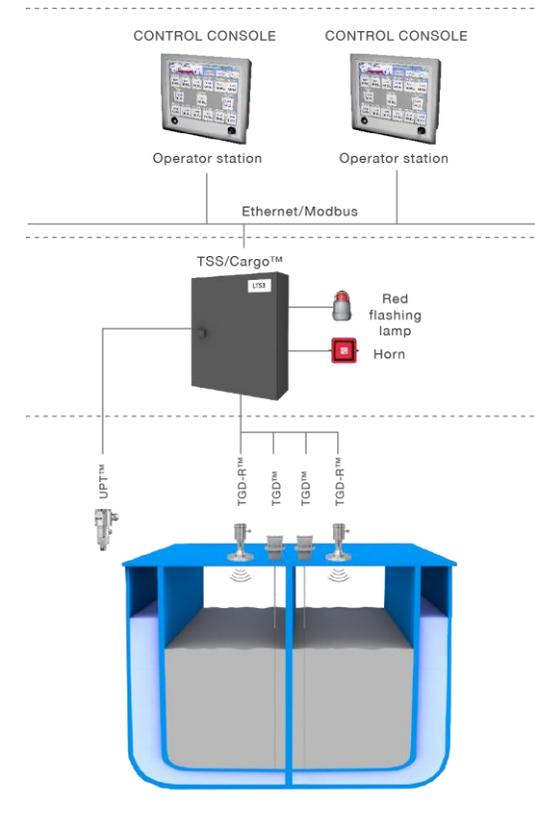




(TSS/CARGO™)

## FEATURES AND FUNCTIONS

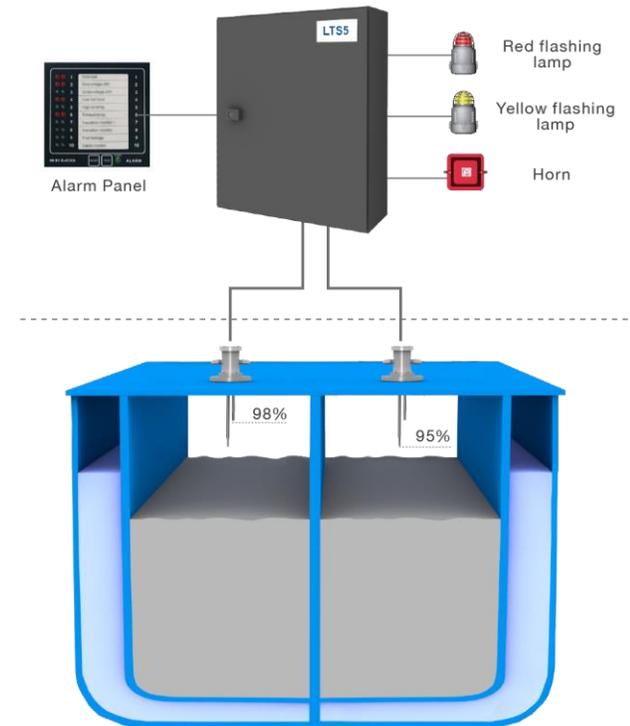
- System configuration with Radar and combined Temperature/pressure sensor
- TGD-R Radar (API own development)
- TGD-TP Combined Pressure / 3x temperature
- Proven solution for chemical and product tankers



(TSS/ALARM™)

## FEATURES AND FUNCTIONS

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

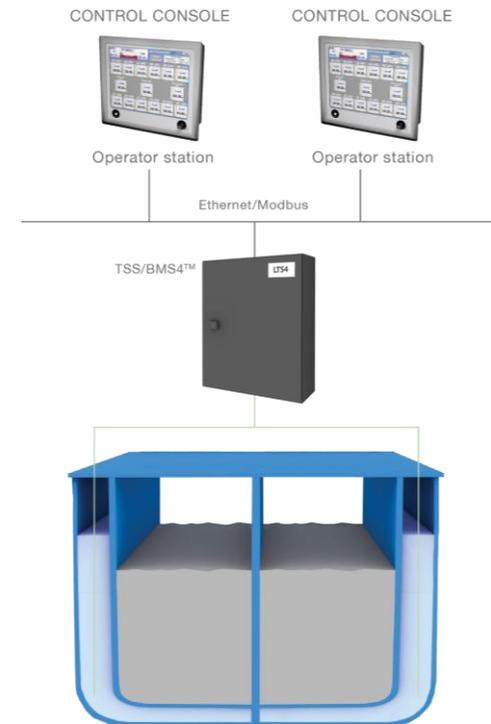
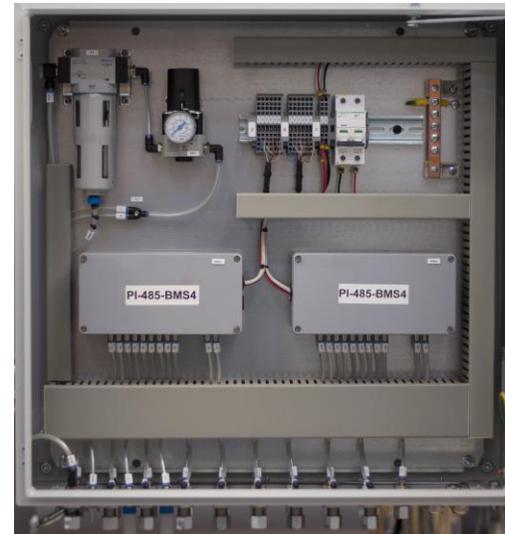


# TLGS (TSS/BMS4)

(Electro Pneumatic)

## FEATURES AND FUNCTIONS

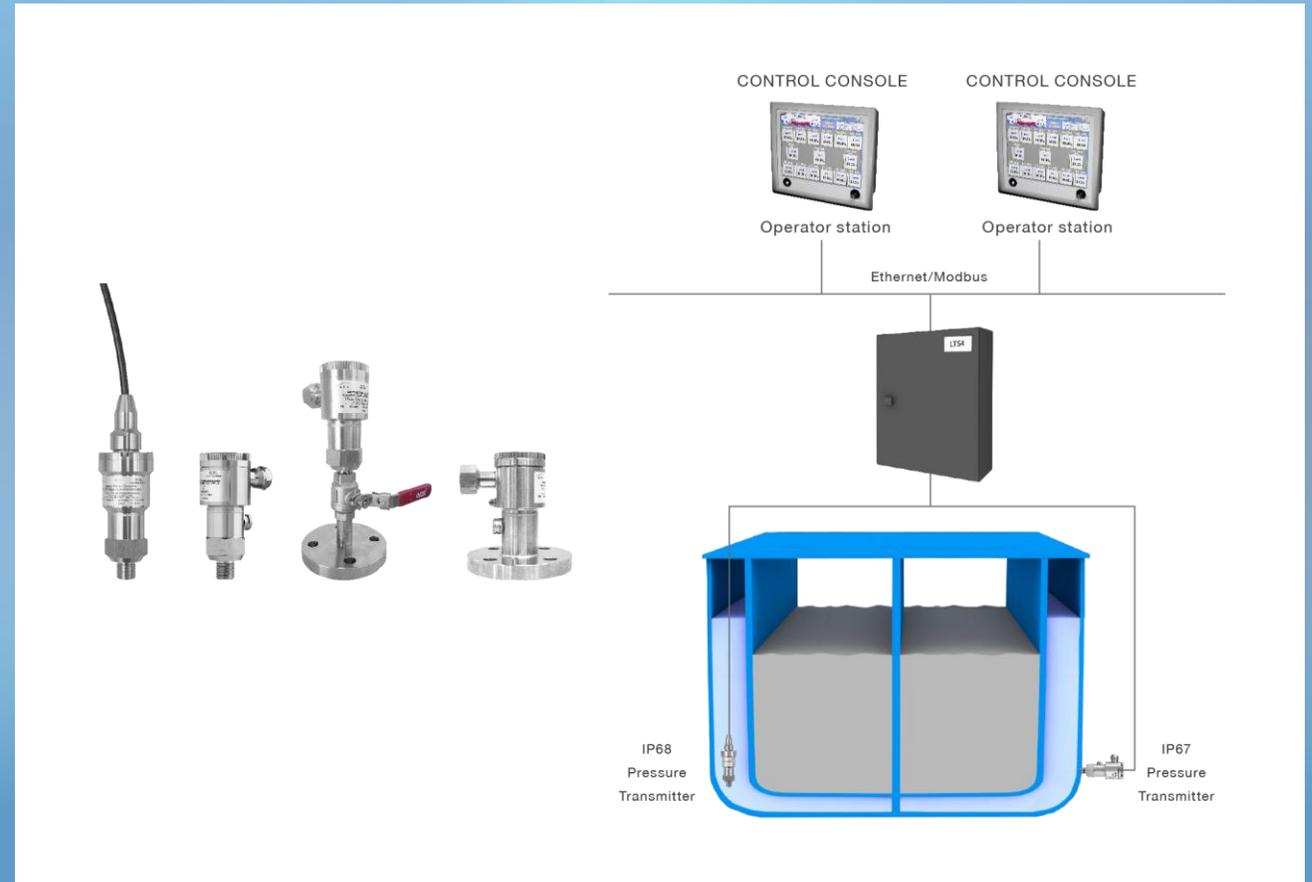
- Electro pneumatic level and draft measurement
- System suitable for all types of vessels
- Compact and fully integrated system
- Competitive pricing / low investment cost
- Flexible and modular concept and design



(Pressure Transmitter)

## FEATURES AND FUNCTIONS

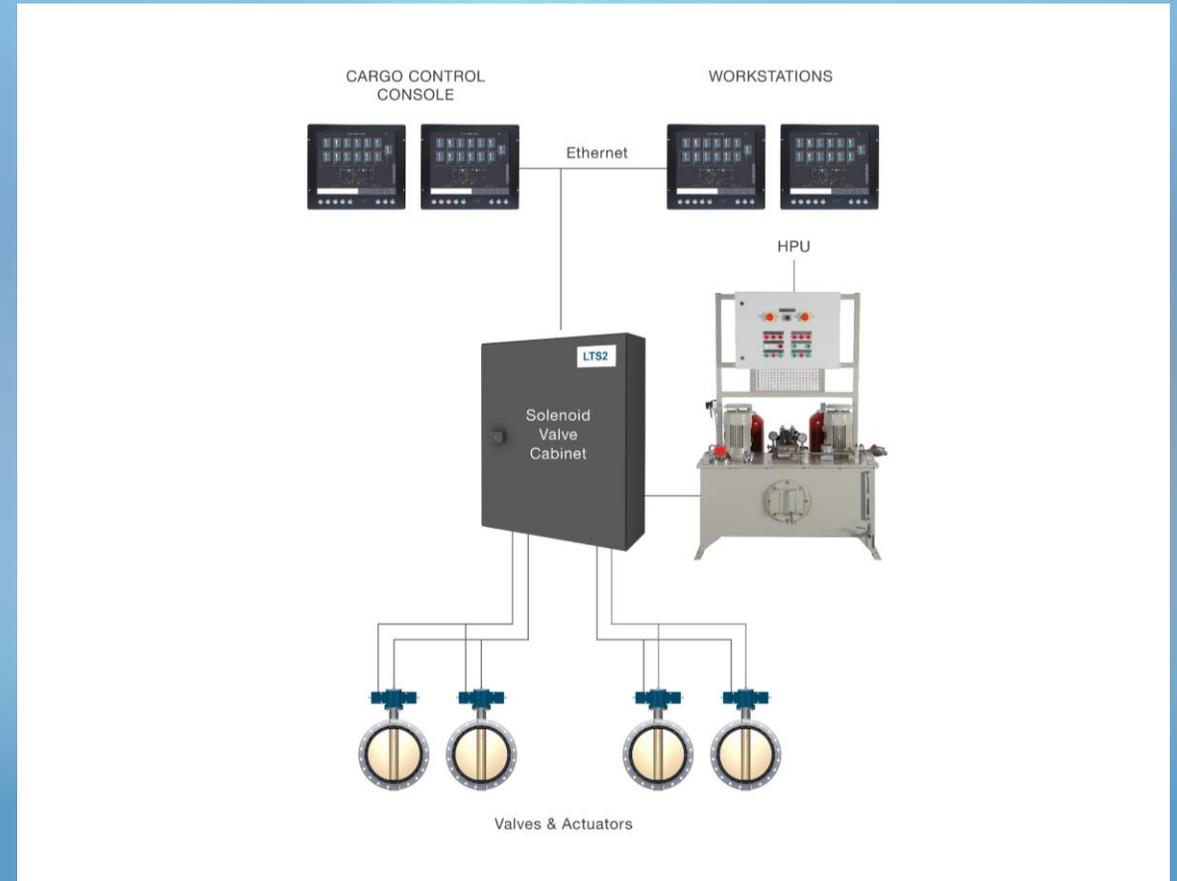
- Level measurement
- Draft measurement
- Can be supplied as stand-alone system
- Easily integrated and extended
- Level alarm functionalities
- Suitable for retrofit installations
- Sensors available in a wide variety of versions



Hydraulic (TSS/VRC™)

## FEATURES AND FUNCTIONS

- 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



## Actuators

### FEATURES AND FUNCTIONS

- 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



## Actuators

### FEATURES AND FUNCTIONS

- 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

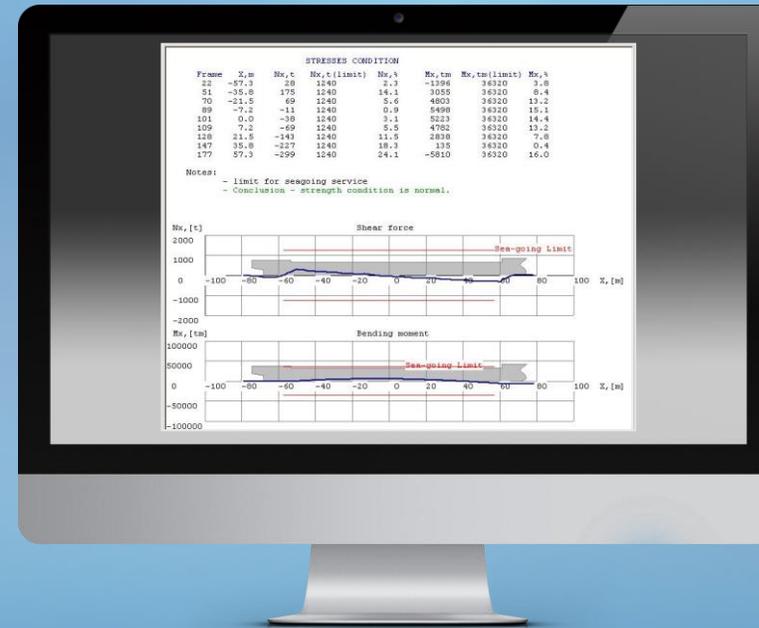




# Loading & Stability Computer - TSS/MasterLoad

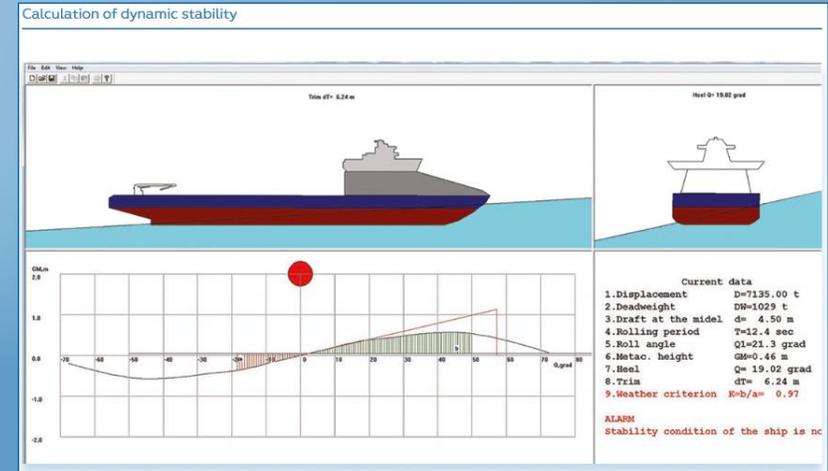
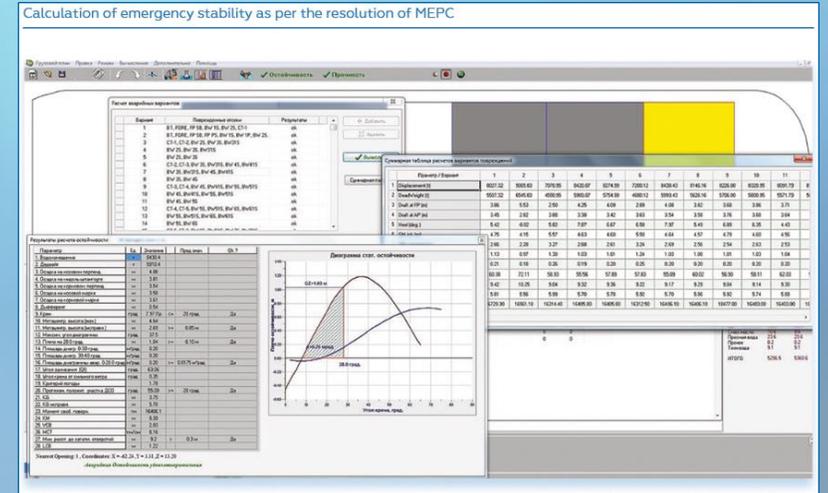
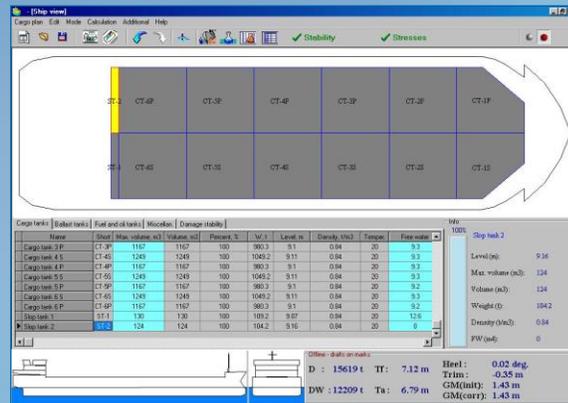
## FEATURES AND FUNCTIONS

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



### FEATURES AND FUNCTIONS

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



## 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

## FEATURES AND FUNCTIONS

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



## 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

### UTS™

- Ultrasonic Tank Switch

### TLA™

- Tank Level Alarm  
(95%/98%)

## TRANSMITTERS

### UPT™

- Universal Pressure  
Transmitter

### UTT™

- 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 3<sup>rd</sup> 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!



# API MARINE

QUALITY - RELIABILITY - SAFETY