

INDEPENDENT TYPE TANK HIGH/OVERFILL ALARM SYSTEM (NO MOVEMENT TYPE)

Cargo Tank Measuring System

HANLA's cargo tank level alarm system is thoroughly designed according to IMO'S latest rule requirements, and are to be required by IBC code.

General

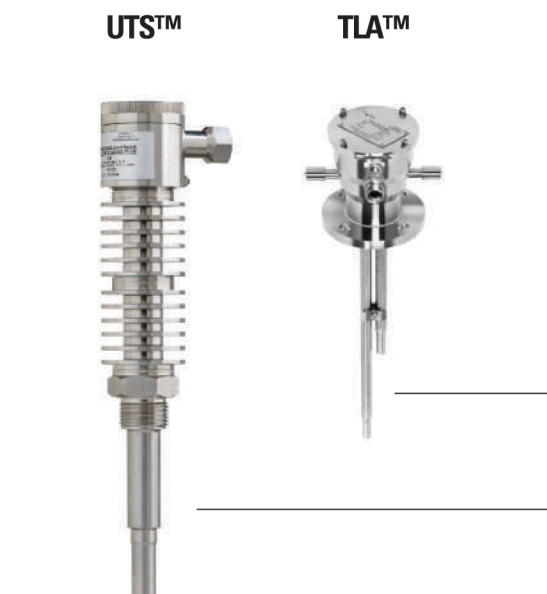
UTS™ - Ultrasonic Tank Switch
Universal Level Switch UTS™ has extended operating temperature range from -200°C to +450°C and is designed for level detection in cargo holds, wells & service tanks in sea and river ships, oil tankers, chemical tankers, gas carriers, offshore drilling platforms. Ultrasonic Tank Switch UTS™ is made of stainless steel and is used for level detection of liquids in vessel tanks, storage tanks, bilge water tanks, cofferdams as well as for control of water ingress to vessel's compartments.

TLA™ - Tank Level Alarm is used for detection of high (95%) and high-high (98%) levels in tanks. TLA™ is installed on the deck of tankers, gas carriers, floating storages, FSO, FPSO, onshore storage tanks for oil, petroleum products and liquefied gases. Built on the same patented acoustic wave technology as UTS™, TLA™ features high level of accuracy, reliability and customizability.

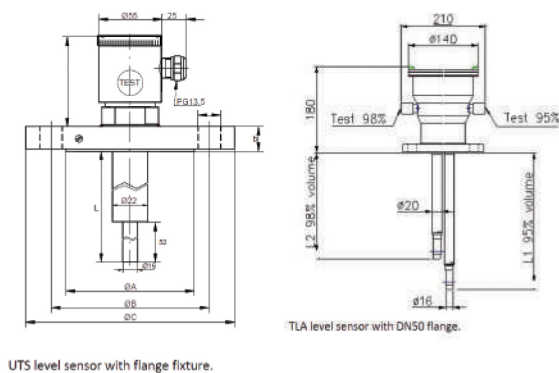
Features

- UTS™ Features:**
- Any type of liquid
 - Only steel rod inside the tank (electronics and connections outside)
 - Fully welded construction
 - No moving parts
 - Extended temperature range
 - No maintenance required
 - Automatic self test
 - No calibration needed
 - Explosion proof
 - Pre-adjustable alarm points
 - No sensitivity to foam
 - More than 300 possible variations

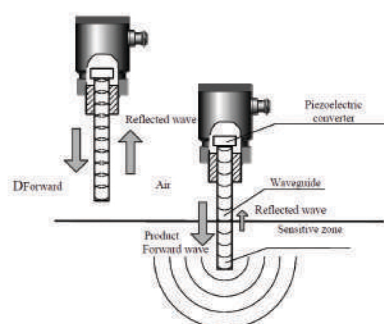
- TLA™ Features:**
- Works with any type of liquid and liquefied gas
 - Easy installation
 - No maintenance
 - No moving parts
 - No electronics inside the tank
 - No sensitivity to vapor, moisture and foam
 - Automatic self test
 - Lengths on request
 - Only steel rod inside the tank (electronics and connections outside)



DIMENSION & TEST DEVICE / UTS™/TLA™



PRINCIPLE OF OPERATION



CARGO TANK LEVEL ALARM PANEL



ALARM MODULE

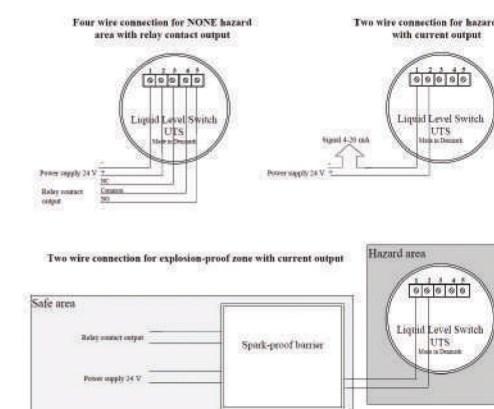


- Channel number : 16 contacts.
- Alarm Input time delay : 0~99 sec.
- Alarm escape time delay : 0~99 sec.
- Channel outputs : NC or NO.
- Common relay output.
- Internal Buzzer.
- Buzzer Stop button.
- Flicker Stop button.
- Supply voltage : 24VDC(18~32VDC).
110V or 220VAC
- Indication LEDs : 16 × red/green, 1× yellow, 1× green
- First alarm flashing.
- Serial Communication : RS-485.
- Channel setting : by internal rotary switch.
by windows setting program.
- Power consumption : Max. 4.5 Watt at 24VDC.
- Operating temperature : -10°C to +55°C (70°C peak).
- Alarm module enclosure : standard DIN 144 × 144 × 86 mm.
- Type code selection : AU-160D.
A : Channel Output.
0 : None.
1 : Isolated Output.
B : Power.
0 : 24VDC.
1 : 100~240VAC
- AU-160D : High Level Alarm, Overfill Alarm application.
Inhibit buttons for each channel.
Navigation function
- Optional repeater unit : AU-160R by RS-485.

Technical specification

- Output signal :
a) Current : 14 ± 1 mA «dry/wet» and 7 ± 1 mA «wet/dry».
b) Solid state relay : On resistance 15ohm. Off resistance:
NO 0.35Gohm, NC 0.1Gohm, current limit 200mA,
max. switching voltage 200V. Isolation 3.75KV.
- Repetition of actuation level : Vertical installation: 3 mm
Horizontal installation : 1 mm
- Power supply voltage : 24V +20%/-25% direct-current
- Maximum permissible resistance in supply circuit at 24V :
less than 720 Ohm
- Power consumption: less than 0,5 W
- Insulation resistance at~500V: not less than 5 GOhm
- Ambient operating temperature: -40° to +85 ° (for IS -40° to +57°)
- Product temperature: -200° to +450 °
- Relative ambient humidity: up to 100% at 50°
- Ambient air pressure: 600 to 2500 mm of Mercury
- Reservoir pressure: -500mbar to +500mbar
- Response time: 1 min. depending on actual programming
- Protection rate: IP67
- Vibration: 4 g. for standard length 115 mm, 1-100 Hz
- Constant magnetic field: max. 400 /m
- Alternating magnetic field: 50 and 400 Hz, max. 80 /m
- MBTF: 50000 hrs
- MTRR: Less than 30 min

WIRING DIAGRAM



INDEPENDENT TYPE TANK HIGH / OVERFILL ALARM SYSTEM (MAGNETIC FLOAT TYPE)

Cargo Tank Measuring System

HANLAs' cargo tank high/overflow alarm system is thoroughly designed according to USCG latest requirements, and are to be required by IBC code.

General

This alarm system consists of level alarm sensor, I.S barrier and alarm panel. When the liquid level reaches a set point, the reed switch in the alarm sensor is actuated by magnetic float. This signal is connected to alarm annunciator through safety barrier. At the same time, we can get audible and visible alarm on the main alarm panel as well as external alarm on the bridge top. The 95% of volume is normally for high alarm and 98% of volume is normally for overflow alarm.

Features

- Most advanced electric technology for high reliability and durability.
- Certified by major certifying authorities.
- Designed for all kind of liquid.
- Simple for construction.
- Intrinsically safe designed unit is applicable to all kind of inflammable fluids.
- Lifting type manual test device which can check the function.

Application

These systems are used for the level alarm in cargo tanks of all kind of oil and chemical carriers.

Technical specification

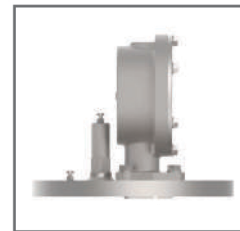
Alarm sensor

- Model : High alarm:TMR-701T
High and overflow alarm:TMR-702T
- Conn. size : JIS 5K 100A(standard)
- Conduit conn. size : JIS 5K 32A(standard)
- Material : - Housing - SUS304
- Flange - SUS304 or SUS316
- Guide pipe - SUS316
- Magnetic float - SUS316
- Contact form/rating : SPST/250VAC, 0.5A
- Accuracy : ± 5 mm on level rise or fall
- Specific gravity : 0.65~1.5
- Max. working temp : -25~+100°C
- Alarm point : 95% of volume for high level alarm
98% of volume for overflow alarm
- Protection : IP56 over
- Safety : Ex ia II C T6

Level alarm panle

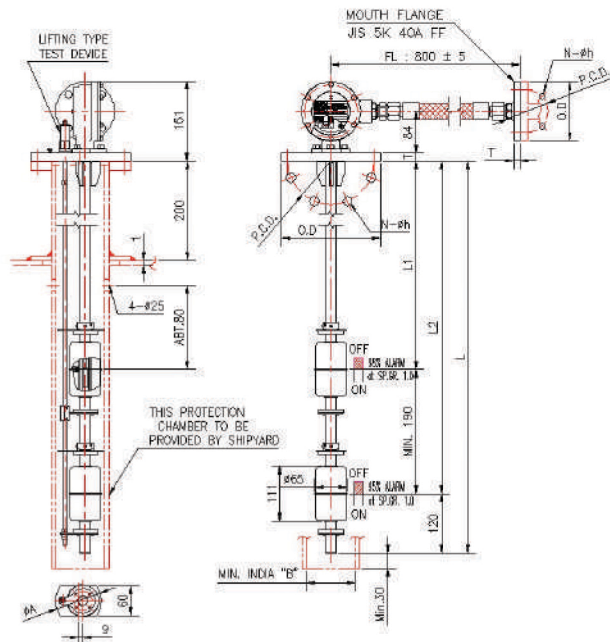
- Power supply : AC 110/220V(Main)
DC 24V(Back up)
- Consist of : - Alarm annunciator - I.S Barrier
- Power lamp - DC power fail alarm
- Alarm buzzer
- External alarm : Horn & Light

HIGH AND OVERFILL ALARM SENSOR



MANUAL TEST DEVICE

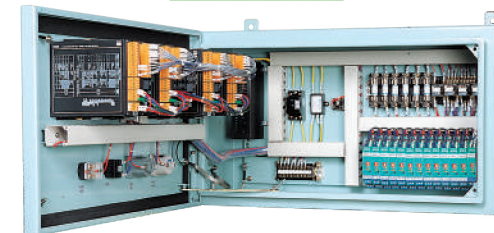
DIMENSION FOR HIGH AND OVERFILL ALARM SENSOR/TMR-702T



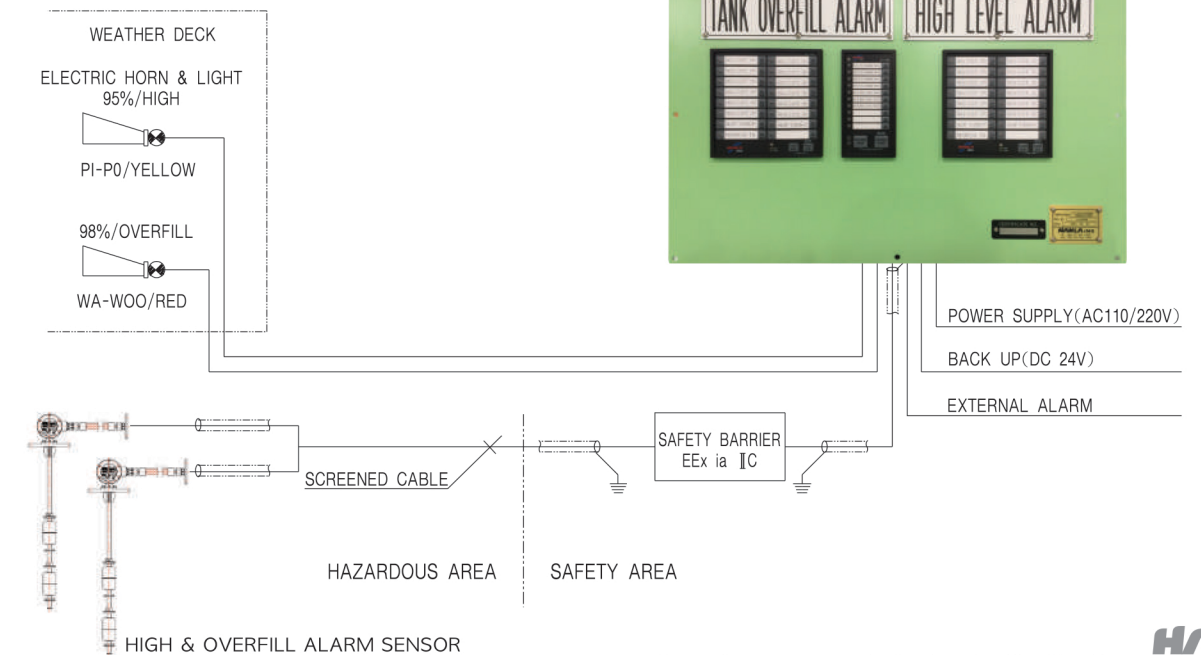
HIGH AND OVERFILL ALARM PANEL



INTERNAL VIEW



ONE LINE BLOCK DIAGRAM FOR HIGH AND OVERFILL ALARM SYSTEM



ALARM MODULE



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- Alarm escape time delay : 0~99 sec.
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- Common relay output.
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- Serial Communication : RS-485.
- Channel setting : by internal rotary switch.
by windows setting program.
- Power consumption : Max. 4.5 Watt at 24 VDC.
- Operating temperature : -10°C to +55°C(70°C peak).
- Alarm module enclosure : standard DIN 144x 144x 86 mm.
- Type code selection : AU-160D-AB.
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0 : 24VDC.
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- AU-160D : High Level Alarm, Overflow Alarm application.
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Navigation function.
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POWER SUPPLY(AC110/220V)
BACK UP(DC 24V)
EXTERNAL ALARM