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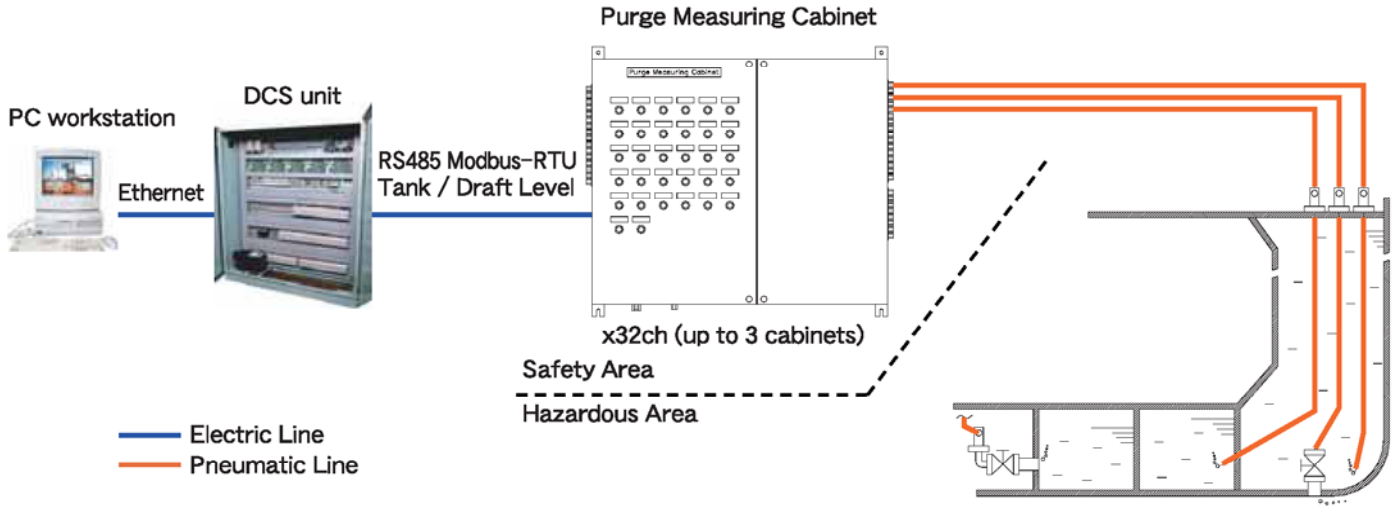
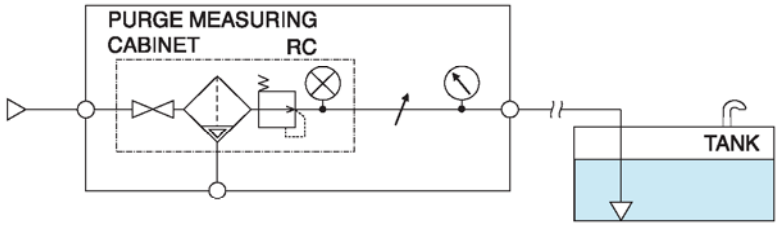
ELECTRO-PNEUMATIC TYPE LEVEL AND DRAFT REMOTE MEASURING SYSTEM

Overview



Tank & Draft Level Measuring Principle

Principle based on Purge Measuring Cabinet which are supplied air power source and counter-pressure is measured by transmitter in the cabinet to every tank and draft through each only one purge pipe.
From every tank and draft transmitter in the cabinet, a seamless copper or stainless steel pipe of about O.D.ϕ10mm - I.D.ϕ8mm is installed to every tank top or side, and to draft measuring location.
Based on supplied by electric power and air to purge measuring cabinet, it is measured liquid level through air pipe at certain measuring points.
And also, our electric-pneumatic system is not necessary for installing any electric parts on machine side and shall be used space effectively as well as able to adapt explosion type. And also, purge measuring cabinet shall be measured maximum 32ch (16ch, 8ch, 4ch) per purge measuring up to 3 cabinet.
On measurement, flow modulator can be determinate suitable quantity air is supplied in purge cabinet. So that, have a good response as measurement and improved stable measurement.
Also, it is not influenced circumstance condition. In combined necessary components into purge measuring cabinet, it can be done adjustment and maintenance effectively case by case. This is related with reducing material, space and working time extremely as whole cost.



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Purge Measuring Cabinet

Purge measuring cabinet is filtered impurities and supplied air quantity by adjustment device to every tank side.
At the same time, air quantity of pressure is transferred by pressured transfer device same as the hydrostatic pressure. Therefore level reduced pressure is transferred output signal (4-20mA DC) according to full scale of the transmitter in the cabinet.
And also, measured analogue signal is converted into RS485 Modbus-RTU digital signal by 16ch AD control board in the cabinet.

- Power supply : 230/115 VAC
- System accuracy : System accuracy including transmitter accuracy ±0.5% F.S.
- Measuring range : Up to 35 m
- Air supply : Clean and dry instrument air, 0.7 Mpa
- Working pressure : 0.4 to 0.5 Mpa
- Flow rate : Flow modulator, 0 to 1.0 liter/min
- Purge : Built-in valve for purging with full air pressure
- Air cleaning : Air filter and regulator with drain unit
- Protection class : IP 44
- Standard color : Munsell 7.5BG 7/2, other colors at request
- Operating temp. : 0 to +60 ℃
- Storage temp. : − 40 to +80 ℃
  (No humidity / freeze)

Pressure Sensor Type : RC
- Bubbling Pressure Transmitter Built-in The Purge Measuring Cabinet

Type RC bubbling pressure transmitters are specially designed for use in demanding sea/fresh water tanks, draft and variety of oil level gauging application. The integral 2-wire, 4-20mA electronics provide power supply regulation, reverse polarity, over voltage and EMC protection.

Technical data

- Gauge pressure range : 0.5 / 1.0 / 2.0 / 3.5 kgf/cm² (up to 35.0m),
  Option : Deeper ranges are available
- Pressure containment : 6 / 10 / 15 / 25 kgf/cm² (for respective pressure range)
- Explosion-proof : Ex ia IIC T6
- Power supply : DC24V±10%
- Operating temperature ranges : − 25˚ to 80 ℃
- Output signal : 4 to 20mA, 2-wires
- Accuracy : ±0.25% FS at 20 ℃
- Temperature effects : 0.015% / ˚C (− 25˚ to 80 ℃ not freeze)
- EMC Protection
- Electrostatic discharge protection :
  Contact discharge 6kV spike test to IEC61000-4-2 without damage applied between excitation lines and case.

Non-return Valve

Non-return valve can be reverse flow of liquid is stopped short of purge cabinet.
In case, pipe will be installed through tank side, this valve shall be applied to install the pipe at lower position than air purge pipe.

- Maximum working pressure : 0.5 Mpa
- Tank connection : JIS 5K-25A as standard, DIN type connection as optional