

FLUID INVENTORY IN STORAGE TANKS

Pressure Measurement

Application

Note 2

General Description

Scanivalve's line of Intelligent Pressure Scanners are well suited for making multiple tank level measurements. The 16 channel pressure modules are rugged and enclosed in a stainless steel box that is splash resistant. 1/16, 1/8 or 1/4 inch steel or plastic tubing can be accommodated depending on the model.

Pressure Measurement

TANKS OPEN TO ATMOSPHERE

One of the oldest level measuring methods is bleeding a gas, such as CO₂ or N₂, to the bottom of a storage tank and using this gas pressure to determine stored weight and fluid height. This process can economically be applied with Scanivalve's intelligent pressure modules. The model DSA3217 pressure module can measure tank levels and can be located near the tanks, utilizing an Ethernet TCP/IP worldwide communication interface. This digital approach eliminates many analog wires, signal conditioners and individual pressure transducers or transmitters.

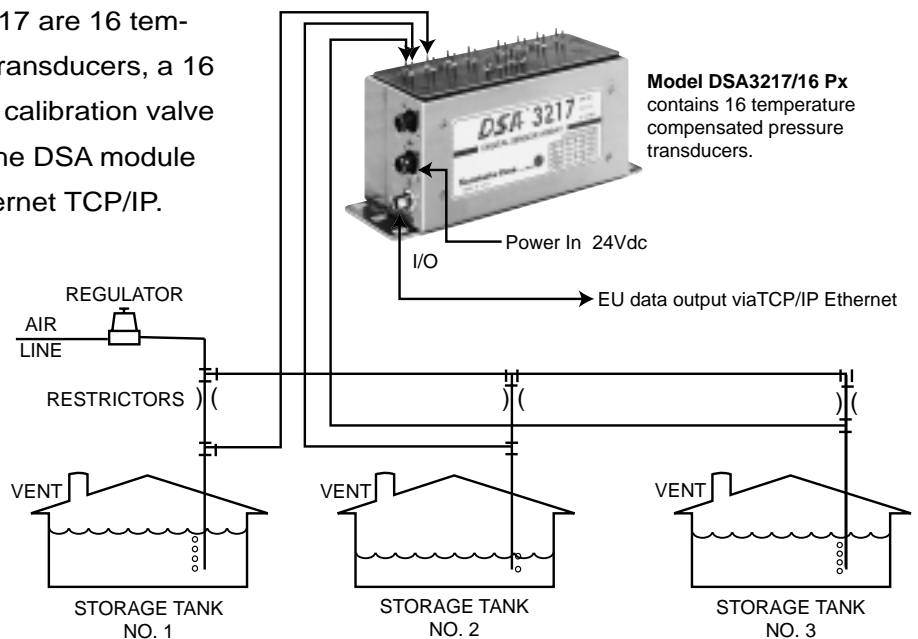
Another important advantage is the increased reliability through the absence of moving parts in the storage tanks.

Incorporated in the Model DSA3217 are 16 temperature compensated pressure transducers, a 16 bit A/D, microprocessor, and auto calibration valve in a rugged stainless steel box. The DSA module outputs engineering units via Ethernet TCP/IP.

Recommended Models:

Model DSA3217/16px-xx psid
16 channel module (With 1/16
inch input tubulations)

Model DSA3218/16px-xx psid
16 channel module (With 1/8 or
1/4 inch steel swagelok input
fittings)



TANKS CLOSED TO ATMOSPHERE

This method of tank level measurement is more common today than that using tanks open to the atmosphere. The same advantages and principles from the front page still apply only now we are measuring a differential pressure.

Using the no moving parts technique of bleeding a gas at the bottom of each tank, the PC or host can determine the stored weight from the differential pressure measurements that are referenced to the inside tank vapor pressure. From this information, the weight and height of the fluid can be determined.

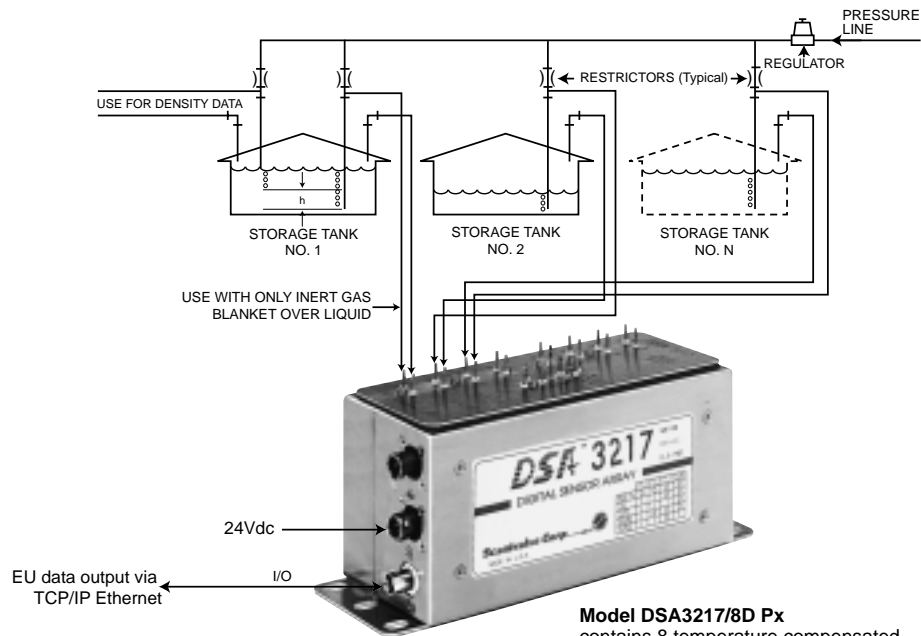
Communication

The DSA3200 series intelligent modules communicate through industry proven Ethernet TCP/IP. Communication can be made directly with ASCII commands via Telnet. Optional LabVIEW drivers or OPC server are available.

Recommended Models:

Model DSA3217/8DPx-xx psid 8 channels of true differential measurement with individual reference ports (With 1/16 inch input tubulations).

Model DSA3218/16DPx-xx psid 16 channels with individual reference ports per transducer (With 1/8 or 1/4 inch steel swagelok fittings)



Model DSA3217/8D Px
contains 8 temperature compensated
true differential pressure transducers.

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