초정밀 습도 측정기 (측정 범위 0~1000 ppm)

제품 특성

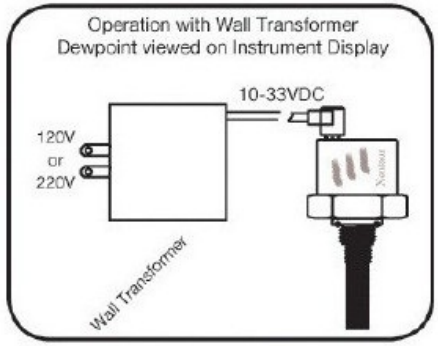
4~20mA 루프 전원식(2선식) 노점 트렌스미터로 측정값은 트랜스미터에 장착된 LCD에 표시되며, 그 값은 전원부 측으로부터의 4~20mA 전류로 전환되어 전송됩니다. **0~1000ppm** 까지 측정 가능한 HTF Sensor 기술을 채택한 High Technology Dewpoint Meter입니다.

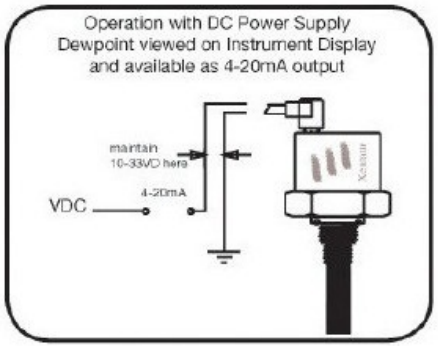
Features / Advantages for LPDT

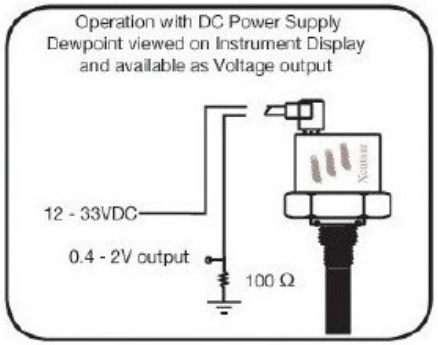
2 Wire type Transmitter로써 본체 내에 모든 기능이 조립
12~32V DC의 외부 전원에 의해 Loop power로 작동
C, F, g/M3, Lbs/M.scf, ppmV 등 5개의 노점 단위 지원
2개의 노점 단위를 번갈아 가며 표시하는 기능 (Ex. C 3 sec, ppm 2sec)
4~20mA Programmable Range Analog Output
전면 Display 회전식으로 감시 방향 조절
세계 최초의 2 선식 전류 및 Digital (RS232C modem) 신호 전송
PC와 연결하여 Data 처리 가능 (Optional)
Remote에 Alarm Relay Board 설치 가능 (Optional)
Remote에 대형 LED Indicator 및 Alarm Setter 설치 가능 (Optional)

첨단의 Hyper Thin Film Al2O3 센서 기술
균일한 개체 특성으로 센서간 호환성
주위온도에 대한 미미한 Drift로 정확한 측정 가능
기존 제품에 비해 60 ~ 600배의 고감도 출력으로 안정된 측정
현존 센서 중 최고의 응답 속도
(65% Down : 2.5min, 65% Up : 1.3min)
주의 온도 Full Range에서 정확한 Automatic Calibration
센서 내부에 어떠한 전기적 장치도 존재하지 않음
착탈식 센서 Element

METHODS OF USING AND INTERFACING THE LPDT

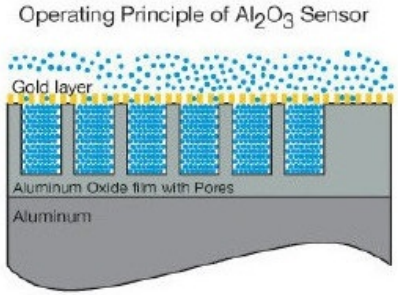






XENTAUR HYPER-THIN-FILM (HTF) Al_2O_3™ MOISTURE SENSOR TECHNOLOGY

The model LPDT uses a Xentaur HTF™ Aluminum Oxide sensor. The breakthrough HTF™ sensor technology represents advances in thin film and metal oxide sciences and offers significant performance advantages over all other aluminum oxide sensors.

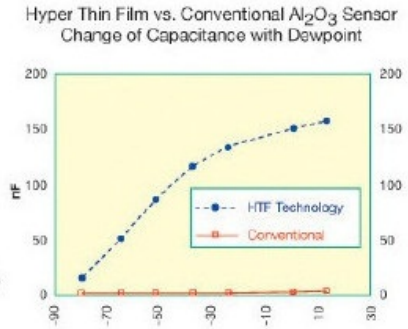


The operating principle of the HTF™ aluminum oxide sensors is that a hygroscopic layer of aluminum oxide adsorbs or releases water molecules within its pores, depending on the water vapor pressure in its environment. The electrical capacitance of the aluminum oxide layer changes with the surrounding water vapor pressure. The electrical capacitance is measured between the aluminum core of the sensor and a porous conductive gold layer on the outside.

The advantages of the HTF sensor technology are a result of the proprietary manufacturing method in which the aluminum oxide layer is made to be hyper thin as well as extremely hygroscopic. This results in a very sensitive sensor with fast response.

HIGH CAPACITANCE RESPONSE

HTF sensors have a capacitance change, several orders of magnitude larger than that of conventional aluminum oxide sensors due to the hyper thin film, a sharp transition layer and a special pore geometry. Additionally, this change is quasi linear and its sensitivity to temperature is negligible. The advantages of a linear high capacitance response are: better sensitivity, better repeatability and faster response times. Also, the measurement system is less prone to noise and drift, and signal conditioning is kept to a minimum.



TECHNICAL SPECIFICATIONS

Dewpoint Sensor Element

Type: Hyper-Thin-Film high capacitance Al_2O_3

Dewpoint Range

Output Analog 4-20mA

Alarms The 4-20 mA of the digital output may be used by an external device to operate relays

XTR-100 ..... -100°C to +20°C
(-148°F to +68°F)
XTR-65 .....-65°C to +20°C
(-85°F to +68°F)
Capacitance .....15nF to 200nF
Accuracy .....±3°C (± 5.5°F)
Repeatability.....±0.5°C (±0.9°F)
Temperature range .....-10°C to +70°C
(+14°F to +158°F)
Sample Flow Range
(linear vel. @ 1 atm.) ...Static to 100 m/s
Storage Temperature.....-40°C to +80°C
(-40°F to +176°F)
Calibration Method .....Field span check
NIST/NPL traceable
multipoint calibration

Temperature Measurement

The instrument measures the sample temperature with a precision integrated circuit sensor.

Electronics

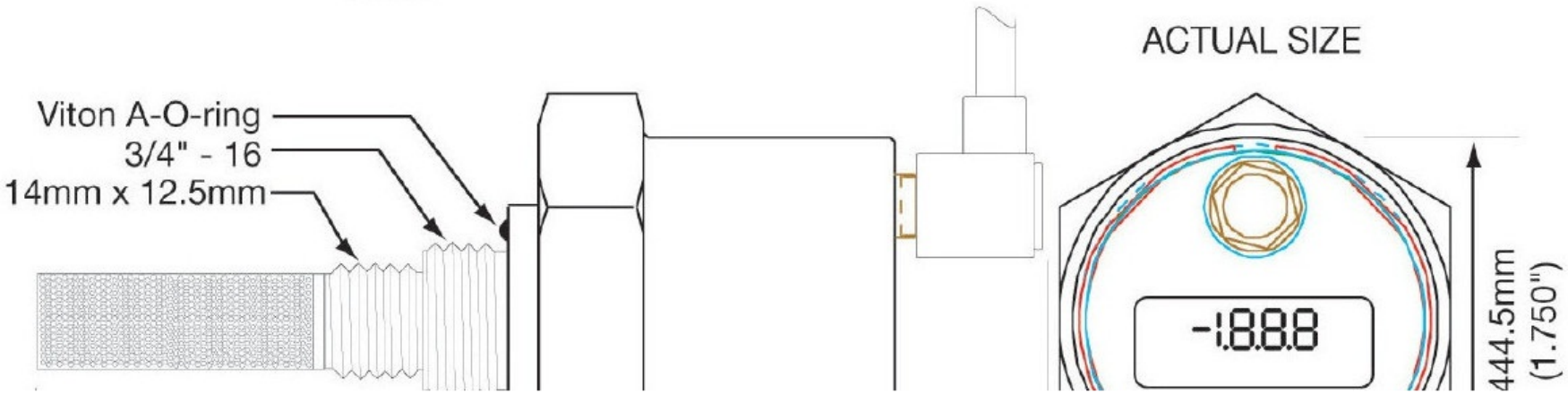
Input resolution.....0.1°C(dp)
Indicators.....3.5 digit LCD with
custom legends
Engineering units.....°C, °F, ppmv, LBS H_2O/mm scf,
gm H_2O/M3
Controls .....3 push buttons, all settings stored in
EPROM

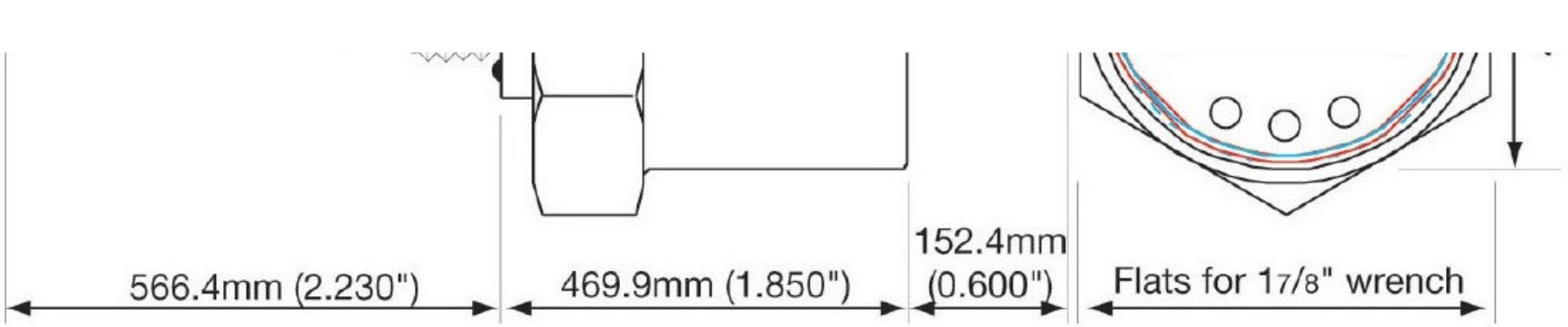
Isolation .....Sensor and case are isolated from
the current loop and shunted with
33V transorbs

Mechanical

Enclosure.....Stainless steel
(Weather proof cover optionally
available)
Pressure operating range..Standard: 34bar (500PSI)
Optional: 340 bar (5,000 PSI)
Electrical connections .....2.1 mm power jack with retainer
thread size 3/4"-16, 14mm x 12.5mm
Cable .....Two conductor cable
Power Requirements.....10 to 33 VDC, the instrument
draws 4-20mA depending
on measurement dewpoint

Warranty .....1 year




566.4mm (2.230")
469.9mm (1.850")
152.4mm
(0.600")
Flats for 1 7/8" wrench