

Model 4660 Low Concentration H₂S Analyzer

Superior Benefits

- ▶ No moving parts
- ▶ No lead compound impregnated tape disposal
- ▶ Temperature-controlled environment not required
- ▶ Local or remotely mounted controller
- ▶ Electronic zero and span
- ▶ Solid state detector
- ▶ Microprocessor-based electronics
- ▶ Split beam technology
- ▶ Unsurpassed long-term accuracy
- ▶ Multi-point sampling
- ▶ Fully accepted by USEPA 40 CFR 60
- ▶ No saturator to maintain
- ▶ No out-of-service period due to overload saturation
- ▶ Remote dial-in facility via modem

Applications

- ▶ Sales (natural) gas
- ▶ Refinery fuel gas
- ▶ Absorber overhead gas
- ▶ Hydrogen recycle gas
- ▶ Other process streams

The Need

The need for the measurement of low level H₂S in sales gas is important both for corrosion control and personal safety. Reducing the level excessively to provide safety margin drastically increases the operating costs of removal and recovery operation whereas high levels of H₂S will result in costly plant shutdowns.

In the case of refinery fuel gas or absorber overheads, the measurement is mandated by various environmental protection agencies. The technology of measurement allows the AMETEK Western Research Model 4660 to be installed on various process streams and is virtually interference free from other species present in the gas.

No matter what your measurements needs are, the Model 4660 is field proven with numerous installations worldwide and is backed by AMETEK Western Research worldwide support.

Principle of Measurement

AMETEK Western Research Model 4660 utilizes ultraviolet (UV) light-based technology for accurate measurement of low levels of H₂S. The sample system is designed to completely convert the H₂S into (NH₄)₂S. The concentration of (NH₄)₂S is then measured with the photometer and is correlated back to the H₂S concentration. This principle of indirect measurement gives precise measurement and eliminates any possible interferences from unsaturated and aromatic hydrocarbons present in the process stream. The need for costly and maintenance intensive lead acetate tape spools are also eliminated.

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Low Concentration
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Performance Specifications

Methodology: Non-dispersive ultraviolet

Measurement Range: 0 to 10 ppm (Sales Gas); 0 to 300 ppm (Fuel Gas). Other ranges available on request.

Accuracy: ±3% full scale

Sensitivity: Less than 1% full scale

Linearity: Less than 1% full scale

Repeatability: ±1% full scale

Noise: ±0.3% full scale

Reproducibility: ±2% full scale

Zero Drift: ±1% full scale in 24 hours

Response Time⁽¹⁾: Less than 1 minute (T90)

Ambient Temperature: 5° C to 50° C

Outputs:

- Two (2) 4 to 20 mA, self powered, linear, 600 ohms load
- One (1) digital, common fail-safe alarm for system fault
- One (1) digital input for remote auto calibration

Zero: Automatic

Calibration: Automatic/Manual with calibration filter

Utilities:

Electrical: 120/240 VAC 50/60 Hz
200 W

Instrument Air: 70 to 700 kPa (10 to 100 psig) at 0.1 m³/hr (3 SCFH)

Steam Condensate: 35 to 350 kPa (5 to 50 psig) at 50 mL/min.

Ammonia: Commercial Grade (Liquified Gas), bottle lasts about 3 years

Process Sample Flow: 2 LPM

Digital Communication: RS485 serial port

Customer Supplied Items: 2 inches-150 lbs. or DIN equivalent RF stainless steel flange

Electrical Classification Options: CE

The analyzer's field unit is designed for use in NEC/CEC Class I, Division 2, Groups A,B,C,D, T6 to T4 areas. Optional versions are available for Class 1, Division 1, Group C, D or ATEX II 2 G IIC T3 areas.

The analyzer's controller is designated for use in Class I, Division 2, Groups A, B, C, D areas. It may be supplied in an ATEX II 2 G EEx d IIC T6 enclosure on special order.

The analyzer's power supply is only suitable for non-hazardous and Class I, Division 2 area installations.

Enclosure Material: Painted carbon steel

Physical Dimensions (H x W x D):

Field Unit: 1829 x 1219 x 305 mm (72 x 48 x 12 inches)

Controller Options:

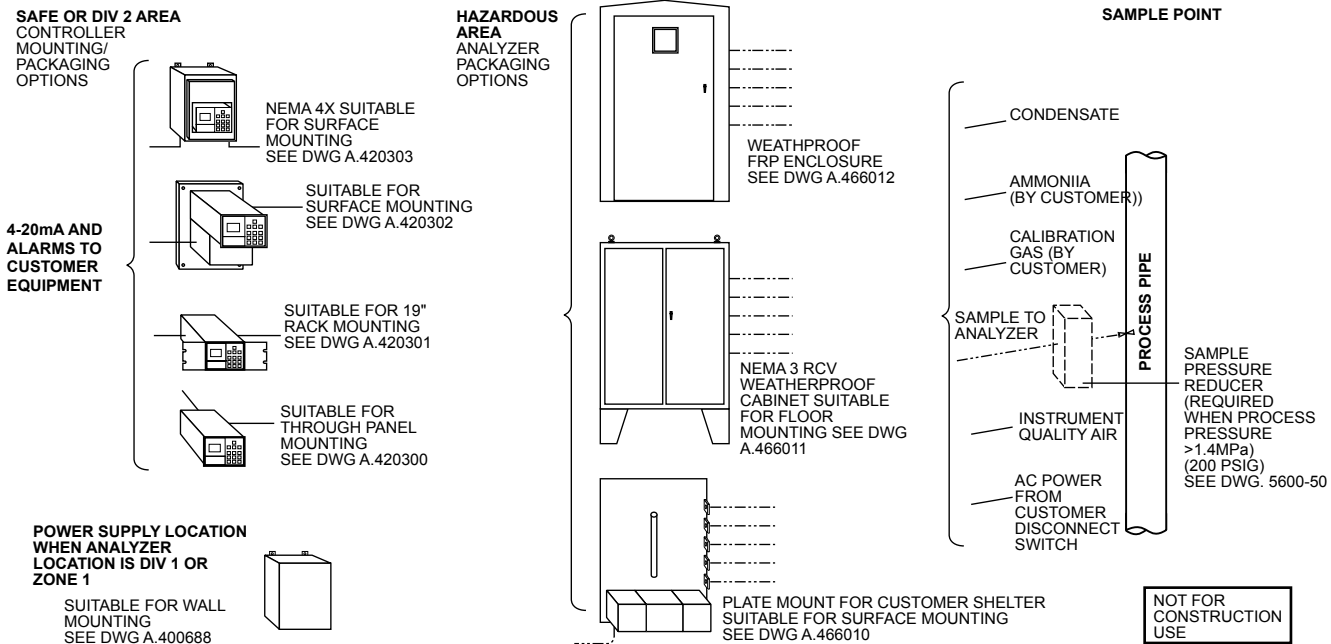
Through Panel Mount: 167 x 266 x 316 mm (6.57 x 10.45 x 12.4 in.)

19 Inch Rack Mount: 133 x 266 x 316 mm (6.57 x 10.45 x 2.6 in.)

Surface Mount: 289 x 292 x 194 mm (11.38 x 11.5 x 7.62 in.)

NEMA 4X Enclosure: 379 x 319 x 211 mm (14.94 x 12.55 x 8.31 in.)

Approximate Weight, Field Unit: 409 kg (900 lb.)



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One of a family of innovative process analyzer solutions from AMETEK Process Instruments.
Specifications subject to change without notice.

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