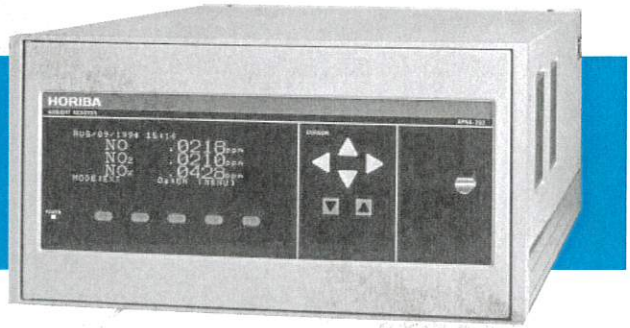
APNA-360CE

Ambient NO_x Monitor



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Features

The APNA-360CE uses a combination of (1) the dual cross flow modulation type chemiluminescence principle and (2) the referencial calculation method. This gives it the advantages of the single-detector method plus the ability to do continuous measurements of NOx, NO, and NO_2. The design gives great stability and extremely high sensitivity (F.S. 0.1 ppm)

Standard equipment includes a drier unit with an automatic recycle function to provide dry ambient air as the ozone source. This makes longrun continuous measurements possible.

The detector uses a semiconductor sensor for compactness and long working life.

All the necessary features are built right into a single rack-sized unit, including a reference-gas generator, an ozone-source drier unit, an ozone decomposer, and a sampling pump. No supplemental gas is required.

Principle

Cross flow modulation type, reduced pressure chemiluminescence (CLD)
The chemiluminescence method uses the reaction of NO with O_3

$NO + O_3 \rightarrow NO_2^* + O_2$

$NO_2^* \rightarrow NO_2 + h\nu$

A portion of the NO_2 generated as the result of this reaction becomes NO_2^*. As these excited molecules return to the ground state, chemiluminescence is generated in the range of 600 nm 3,000 nm. The light intensity is in proportion to the concentration of NO molecules and by measuring it we obtain the NO concentration of the sample. A deoxidation converter changes the NO_2 to NO, which is measured. In other words, the NO_2 concentration can be obtained by the difference between (1) the NOx concentration measured when the sample gas is directed through a converter and (2) the NO concentration measured when the gas is not run through the converter.

Specifications

Principle: Cross flow modulation type, reduced pressure chemiluminescence (CLD)
Application: NO_2, NO and NOx in ambient air
Range:
Standard ranges: 0-0.1/0.2/0.5/1.0 ppm; auto range • •manual range selectable; can be operated by remote switching.
Optional (measurable) ranges: 4 ranges selectable from 0-10 ppm, within 10 times range ratio; auto range • •manual range selectable; can be operated by remote switching.
Lower detectable limit: 0.5 ppb (3 sigma)
Repeatabiliy: • •1.0 • •of F.S.
Linearity: • •1.0 • •of F.S.
Zero drift:
<LDL/day at lowest range
• •1.0ppb/week at lowest range
Span drift:
<LDL/day at lowest range
• •1.5 • •of F.S./week
Response time (T_{90}):
Within 90 sec at lowest range
Sample gas flow rate: Approx. 0.8L/min
Indication: Measured value, range, alarm, maintenance screen
Alarms: During AIC, zero calibration error, span calibration error, temperature error in converter, etc.
On-screen messages are available in four languages: English, German, French, and Japanese.
Input/output:
- •0-1 V/0-10 V/4-20 mA, to be specified (2 systems: either (1) momentary value and integrated or (2) moving average value)
- •Contact input/output
- •RS-232C

Ambient temperature: 5-40 • •
Power: 100/110/115/120/220/230/240 VAC, 50/60 Hz (to be specified)
Dimensions: 430(W)• •550(D)• •221(H)mm
Mass: Approx. 26 kg,