CARBON DIOXIDE ANALYZER

GO BEYOND THE LIMITS. . .

The technology

Such results are obtained by using a high frequency discharge ionization detector in Helium (Carbon dioxide n 1) or by using a flame ionization detector (Carbondioxide n 2 system). Carbon dioxide n 3 system uses both detectors.

High frequency discharge ionization detector in Helium:

The "HE12" detector has been designed to detect the ionization current produced by ionized molecules. This ionization is produced by a single high frequency discharge within the detector (HF plasma), causing a high energy photon emission (24.5eV). This emission is capable of ionizing all gases within the cell with the exception of Helium.

The main advantage of this HE12 detector is that the photoioize discharge is achieved without any radioactive emission and without excessive voltage being applied to the cell.

Another important characteristic of the HE12 is that the detector operates on only one gas. This one gas is used as the carrier, the flushing gas and the purging gas. This gas can also serve to purge and clean all valves. (Injections and sample valve, switching valve, back-flushing valve, ...).

The housing does not require any flushing gas: no contamination of the gas circuits is possible before detection. The input connection is located directly on the cell of the HE12 detector.

The HE12 detector is mainly used to measure and control impurities in Helium (H2, O2+Ar, N2, CH4, CO and CO2), but may also be used for the measure and control of impurities in other gases such as Hydrogen, Oxygen, Nitrogen, corrosive gases,...

Flame ionization detector:

The "FID" detector is mainly composed of a flame ionization detector placed in a temperature regulated chamber. It is designed to detect traces of hydrocarbons. Coupled with a methanizer, it also detects traces of CO and CO2.

The combustion of Hydrocarbon and synthetic air creates a flame in which the organic compounds contained in the gas to be analyzed are burnt off. When burning, these components produce ions which are collected by an electrode. The very weak current obtained this way is amplified in an electrometer with high gain and directed to a recording system. A polarization electrode is connected on the level of the nozzle and the collecting adjustable electrode makes it possible to achieve the best results.

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The Analytical Systems

To control the quality of CO2, Orthodyne uses different techniques, and by using a modular system conception, Orthodyne can offer you the best adapted analyzer to your analytical problem Orthodyne analyzers for measuring impurities in carbon dioxide include the following:

SYSTEM : CO_2 n°1

Analysis of H_2, O_2+Ar, N_2, CH_4 and CO in CO_2.

H_2	<	0.05 ppm
O_2+Ar	<	0.01 ppm
N_2	<	0.01 ppm
CH_4	<	0.01 ppm
CO	<	0.1 ppm

SYSTEM : CO_2 n°2

Analysis of THC, C_6H_6 in CO_2.

THC	<	0.01 ppm
C_6H_6	<	0.01 ppm

SYSTEM : CO_2 n°3

Analysis of H_2, O_2+Ar, N_2, CH_4, CO, THC, C_6H_6 in CO_2.

H_2	<	0.05 ppm
O_2+Ar	<	0.01 ppm
N_2	<	0.01 ppm
CH_4	<	0.01 ppm
CO	<	0.1 ppm
THC	<	0.01 ppm
C_6H_6	<	0.01 ppm