Industrial Gas Combustible Analyzer : Wobbe Index

IGCA-WI



The IGCA-WI allows to measure the quality of natural gas and others combustible gases (Biogas, fuel gas, COG, BFG, recovery gas…) by determination of Comburity index (CARI) or Wobbe index.

This information is particularly useful where a combustible variation produces a disturbance in the process.

Principle

The device is based on an air / gas blender, a catalytic combustion chamber where is burnt the air / sample gas mix and a cell to measure the oxygen remaining after combustion.

An electronic of control manages all the measurement and security informations and provides a continuous measurement of Comburity (CARI) or Wobbe Index. The controller also permits to make automatic calibration with a detection of operation defaults related to the calibration.

Main characteristics

- Continuous measurement
- Wobbe Index, Comburity Index (CARI)
- Fast response time
- Accuracy and repeatability
- Automatic calibration in 2 points minimum :
  - Oxygen between 1.5% and 2.5%
  - Reference gas with a regular Wobbe Index

Applications

- Furnaces control : steel, glass, ceramic, lime…
- Control of combustible and air ratio
- Calculation of energy balance
- Control of the quality of gases mix :

- Recovery gases (COG, BFG, …)[1]
- Natural gas
- Biogas[1]
- Surrogate of natural gas like air / propane or air / butane
- …

[1] The measurement of COG (Coke Oven Gas), BFG (Blast Furnace Gas) or of biogas requires a specific conditioning system to separate from the gas sample the dust, the naphthalene, tars, the water or acids which can damage the analyzer.
Refer to us for a specialized study.

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Technical characteristics

Comburity index (CARI)	From 10 to 14 (others scales after studies)
Wobbe Index	From 11.5 to 16.5 kWh/Nm^3 (others scales after studies)
Accuracy	± 0.5% of the full scale
Repeatability	± 0.5% of the measured value
Hysteresis	Less than 0.1% of the reading each month
Response time	T_{90} < 30 seconds
Display	Display on the regulator (all functions)
Units	n/a for Cari and kWh/Nm^3 for Wobbe Index
Output 4-20 mA	Comburity (CARI) or Wobbe Index
Alarm outputs	At choice : Alarms for high and low thresholds, Alarms for air and/or sample pressure, Alarm for calibrations pressure, Calibration in progress, Calibration default, General default
Calibration	Manual and automatic by 2 points
Save configuration	Memory card
Power supply	230 VAC, 50Hz / 115 VAC, 50/60 Hz / 400 W
Sample flow rate	50 L/h
Sample pressure	From 1 to 3 relatives bars
Instrument air flow rate	From 2 to 7 relatives bars (dry and defatted, class 3 according to ISO 8573.1 & ISO 12500)
Calibration gas	O_2 bottles between 1.5% and 2.5% Calibration gas bottles with a regular Wobbe Index
Weight	70kg
Ambient temperature	10 to 40°C
Air/gas mixture controlled	40°C
Dimensions (H * W * D)	600 mm * 600 mm * 640 mm

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Codification

Product	
IGCA-WI	ARCIGCAWI_1+

Options	
Modbus communication option for IGCA	ARCOPTMODBUSIGCA
Option Leak Detection IGCA (Internal Leak Detection Alarm)	ARCOPTMONS500IGCA
Option PROFIBUS communication protocol for IGCA	ARCOPTPROFIBUSIGCA
Option thermostat IGCA (Case of a Site with Wide Thermal Amplitude)	ARCOPTTHERMOSIGCA

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