

PGA 3510

Precision measurement of protective heat treating atmospheres

Color Touch Screen



Portable Multi-Gas Analyzer

- CO: Carbon Monoxide**
Range: 0 - 100%
- CO₂: Carbon Dioxide**
Range: 0 - 2.0%
Optional Range: 0 - 20.0%
- CH₄: Natural Gas/Methane**
Range: 0 - 100%
- %O₂: Oxygen**
Range: 0.1 - 25.0%
- Optional H₂: Hydrogen**
Range: 0 - 100%
- Calculated % Carbon**
Range: 0.01 - 2.00%
- Suggested COF / PF factors**
- On-board Datalogger**

Calculations

K_N

K_C

%C

SSi PGA3510	
CO	5.00%
CO ₂	0.100%
CH ₄	0.00%
H ₂	14.00%
Pump On	SESSION NOT ENABLED
GAS: N ₂ /H ₂ /O ₂ /CO	COFF: N/A
CO: ppm	1.7
Menu	Carbon Calculation
	Chart

- Accurate measurement of carbon based on gas composition
- **CQI-9** carbon potential verification device
- Easy to operate
- Built in sample pump
- Battery operated
- Easy to use onboard calibration
- Software utilities for printing charts
- Available with ammonia compatible design

Enhanced with Nitriding/FNC Calculations

- Carbon Activity (K_C)*
- Nitriding Potential (K_N)*
- *Requires Optional H₂ Cell

Nitriding Calculations	
Measured CO	5.00%
Measured CO ₂	0.100%
Measured CH ₄	0.00%
N ₂ (gas analyzer)	2.55%
N ₂ Flow	0.00
N ₂ Flow	0.00
CO ₂ Flow	0.00
H ₂	14.00
K _C	0.50
K _N	38.5%
Pump On	SESSION NOT ENABLED
GAS: N ₂ /H ₂ /O ₂ /CO	COFF: N/A
CO: ppm	1.7
Menu	Chart
	Return

Included Software for Data Management

- Language editor
- Datamanager for downloading
- Print charts and tabular data
- Setup furnace identifiers
- Add notes when capturing data
- Real time graphical display on PC
- Export utilities
- Backup data manager

Other Features

- Field calibration for zero and span
- Ethernet and USB connection to PC
- Universal power (110 - 230 VAC)
- Rechargeable battery



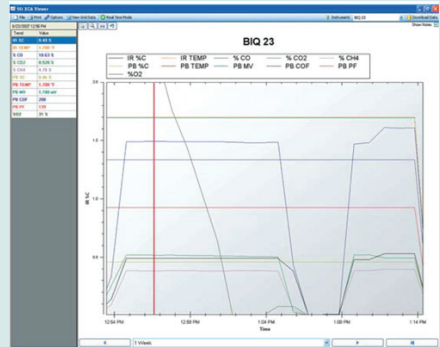
PN 20263
Coated sample tube
for non-catalytic reaction

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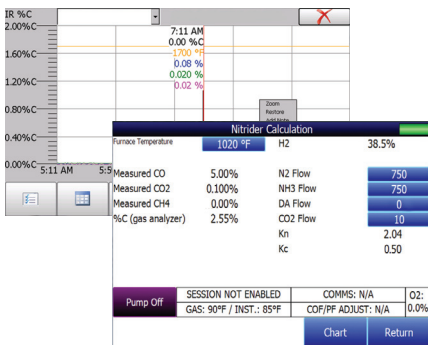
Super Systems
incorporated

PGA Utility Software



For configuration, equipment, language and data management with an easy interface

Why a Portable Multi-Gas IR Analyzer?



Endothermic Generator Diagnostics

- The effectiveness of the catalyst is measured by the CH₄ content. Less than 0.5% is an indication of properly functioning catalyst. Higher concentrations indicate the necessity for either conditioning or replacement
- Measuring the level of CO in the carrier gas allows correction of the %Carbon reading at the furnace

Heat Treat Furnaces - Conventional Endo Gas

- Furnace atmosphere carbon potential (%C) can be verified
- Measuring Carbon Monoxide (CO) allows adjustment of the COF/PF parameters to fine tune the %Carbon calculation in the furnace.
- Measuring Carbon Monoxide (CO) and Carbon Dioxide (CO₂) can show possible problems (i.e. sooting, water leaks, air leaks, and radiant tube leaks)
- Too much free methane (CH₄) could be an early indication of a furnace problem

Heat Treat Furnaces - Nitrogen/Methanol Endo Gas

- The Carbon Monoxide (CO) level in the furnace atmosphere indicates the effectiveness of the cracking of the methanol
- Furnace atmosphere carbon potential (%C) can be verified
- Measuring Carbon Monoxide (CO) allows adjustment of the COF/PF parameters to fine tune the %Carbon calculation in the furnace
- Measuring Carbon Monoxide (CO) and Carbon Dioxide (CO₂) can show possible problems (i.e. sooting, water leaks, air leaks, and radiant tube leaks)

Nitriding/FNC Applications

- Nitriding Potential (K_N) calculated using H₂ sensor
- Used to address single and multi-stage nitriding applications where precision measurement is required for controlling gas flows to get specific case and white layer requirements addressing AMS 2759/12 requirements
- Carbon activity (K_C) calculated for FNC applications using gas composition from CO or endothermic gas flows and H₂ present



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