



ANKERSMID Online Infrared Analyzer ABYSS SynGas Series 100-800



* Picture may vary

Application

The general application is coal or biomass gasification or pyrolysis, coal chemical process, off-gas from steel and iron making process such as blast furnace, coking, converter, direct Iron ore smelting reduction as well as Endo & Exo gas generators for heating treating.

Description

The analyzers can be used for measurement of the concentration of up to 6 gases such as CO, CO₂, CH₄, C_nH_m, H₂ and O₂ components in sample gases simultaneously. It is based on the single source dual-beam non-dispersion infrared (NDIR) method for CO, CO₂, CH₄, C_nH_m and a micro-TCD (Thermal Conductivity Detector) gas sensor for H₂ and O₂ by fuel cell method. This analyzer is designed with a digital pulsable infrared source and dual-beam systems.

There is no effect of CO₂ and CH₄ on the H₂ detector as the H₂ reading is compensated for the interference effects of the other gases measured.

- **Up to 6 gases measurement with combination of NDIR, TCD and ECD gas sensor technology**
- **Simple construction with pulsable infrared source and dual-beam technology**
- **Constant temperature control for gas bench for high stability**
- **320*240 LCD display with menu operation**
- **Integrated flow meter with needle valve**
- **Automatic zero calibration**
- **Compensation of H₂ by CO, CO₂ and CH₄ sensor**

Version	Part number	Gas components
ABYSS SynGas 800	ASG 800	CO+CO ₂ +CH ₄ +H ₂ +O ₂ +C _n H _m +Calorie
ABYSS SynGas 700	ASG 700	CO+CO ₂ +CH ₄ +H ₂ +O ₂ +Calorie
ABYSS SynGas 600	ASG 600	CO+CO ₂ +CH ₄ +H ₂ +Calorie
ABYSS SynGas 500	ASG 500	CO+CO ₂ +CH ₄ +O ₂
ABYSS SynGas 400	ASG 400	CO+CO ₂ +O ₂
ABYSS SynGas 300	ASG 300	CO+CO ₂
ABYSS SynGas 200	ASG 200	CO+O ₂
ABYSS SynGas 100	ASG 100	CO/CO ₂ /H ₂ /CH ₄ (Single Gas %)



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ABYSS SynGas Series 100-800

Technical data

Specifications					
Measurement	CO, CO ₂ , CH ₄ , C _n H _m , O ₂ , H ₂ + BTU index (gas calorific value)				
Calculation	High heating value or low heating value in MJ/m ³ or kcal/m ³ N ₂ (Optional)				
Gas flow	0.7 - 1.2 l/min, external flow meter with needle valve				
Pressure of gas inlet	20 - 100mbar				
Sampling gas requirement	Remove water vapor, dust (<1um) and oil				
Response time	<15s (NDIR)				
Warm-up time	15min				
Interface	RS232 (real time and memory data download software included)				
Output	4 - 20mA (according to the requirement)				
Technology	CO, CO ₂ , CH ₄ , C _n H _m : proprietary dual-beam NDIR detectors O ₂ : industrial electrochemical cell H ₂ : proprietary thermal conductivity detector				
Display	LCD 320 x 240 with back-light function Simultaneous indication of the 7 measures and units Auto-zero function via keyboard interface				
Data logging	Up to 1500 sets of data; logging rate adjustable from 3 to 99 sec Possibility to identify 10 different sites and up to 100 measuring points				
Operating temperature	0 - 50°C				
Relative humidity	0 - 95%				
Ambient air pressure	86 - 108kPa				
Power supply	230V/50Hz				
Dimension	483mm x 373mm x 140mm (W x L x H)				
Weight	± 10-13Kg (stationary), ± 4-5Kg (portable)				
Gas	Method	Range	Resolution	Precision	Error
CO	NDIR	0-5%, 10%, 30%, 50%, 75%, 100%	0,01%	≤2% FS	≤2%
CO ₂	NDIR	0-5%, 10%, 25%, 50%, 100%	0,01%	≤2% FS	≤2%
CH ₄	NDIR	0-5%,10%, 30%, 100%	0,01%	≤2% FS	≤2%
H ₂	TCD	0-10%, 20%, 25%, 30%, 50%, 75%, 100%	0,01%	≤3% FS	≤2%
O ₂	ECD	0-5%, 25%	0,01%	≤3% FS	≤2%
C _n H _m	NDIR	0-5%, 10%, 20%	0,01%	≤2% FS	≤2%



ANKERSMID Portable Infrared Analyzer
ABYSS SynGas Series 100P-800P



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Application

The general application is coal or biomass gasification or pyrolysis, coal chemical process, off-gas from steel and iron making process such as blast furnace, coking, converter, direct Iron ore smelting reduction as well as Endo & Exo gas generators for heating treating.

Description

The ABYSS portable infrared SynGas analyzer is powered by Li-ion battery and can be used without AC power supply.

The analyzers can be used for measurement of the concentration of up to 6 gases such as CO, CO₂, CH₄, C_nH_m, H₂ and O₂ components in sample gases simultaneously. It is based on the single source dual-beam non-dispersion infrared (NDIR) method for CO, CO₂, CH₄, C_nH_m and a micro-TCD (Thermal Conductivity Detector) gas sensor for H₂ and O₂ by fuel cell method. This analyzer is designed with a digital pulsable infrared source and dual-beam systems.

A nylon carrying bag for analyzer and accessories is included as standard.

There is no effect of CO₂ and CH₄ on the H₂ detector as the H₂ reading is compensated for the interference effects of the other gases measured.

- **Up to 6 gases measurement with combination of NDIR, TCD and ECD gas sensor technology**
- **Simple construction with pulsable infrared source and dual-beam technology**
- **Constant temperature control for gas bench for high stability**
- **320*240 LCD display with menu operation**
- **Integrated flow meter with needle valve**
- **Automatic zero calibration**
- **Built-in sample pump**
- **Compensation of H₂ by CO, CO₂ and CH₄ sensor**

Version	Part number	Gas components
ABYSS SynGas 800P	ASG 800p	CO+CO ₂ +CH ₄ +H ₂ +O ₂ +C _n H _m +Calorie
ABYSS SynGas 700P	ASG 700p	CO+CO ₂ +CH ₄ +H ₂ +O ₂ +Calorie
ABYSS SynGas 600P	ASG 600p	CO+CO ₂ +CH ₄ +H ₂ +Calorie
ABYSS SynGas 500P	ASG 500p	CO+CO ₂ +CH ₄ +O ₂
ABYSS SynGas 400P	ASG 400p	CO+CO ₂ +O ₂
ABYSS SynGas 300P	ASG 300p	CO+CO ₂
ABYSS SynGas 200P	ASG 200p	CO+O ₂
ABYSS SynGas 100P	ASG 100p	CO/CO ₂ /H ₂ /CH ₄ (Single Gas %)



ANKERSMID Portable Infrared Analyzer
ABYSS SynGas Series 100P-800P

Technical data

Specifications					
Measurement	CO, CO ₂ , CH ₄ , C _n H _m , O ₂ , H ₂ + BTU index (gas calorific value)				
Calculation	High heating value or low heating value in MJ/m ³ or kcal/m ³ N ₂ (Optional)				
Gas flow	0.7 - 1.2 l/min, external flow meter with needle valve				
Pressure of gas inlet	20 - 100mbar				
Sampling gas requirement	Remove water vapor, dust (<1um) and oil				
Response time	<15s (NDIR)				
Warm-up time	15min				
Interface	RS232 (real time and memory data download software included)				
Output	4 - 20mA (according to the requirement)				
Technology	CO, CO ₂ , CH ₄ , C _n H _m : proprietary dual-beam NDIR detectors O ₂ : industrial electrochemical cell H ₂ : proprietary thermal conductivity detector				
Display	LCD 320 x 240 with back-light function Simultaneous indication of the 7 measures and units Auto-zero function via keyboard interface				
Data logging	Up to 1500 sets of data; logging rate adjustable from 3 to 99 sec Possibility to identify 10 different sites and up to 100 measuring points				
Operating temperature	0 - 50°C				
Relative humidity	0 - 95%				
Ambient air pressure	86 - 108kPa				
Power supply	External: 230V/50Hz Internal: with battery and charger; autonomy of > 4h with pump in operation				
Dimension	380mm x 380mm x 255mm (L x D x H)				
Weight	± 5Kg				
Gas	Method	Range	Resolution	Precision	Error
CO	NDIR	0-5%, 10%, 30%, 50%, 75%, 100%	0,01%	≤2% FS	≤2%
CO ₂	NDIR	0-5%, 10%, 25%, 50%, 100%	0,01%	≤2% FS	≤2%
CH ₄	NDIR	0-5%,10%, 30%, 100%	0,01%	≤2% FS	≤2%
H ₂	TCD	0-10%, 20%, 25%, 30%, 75%, 100%	0,01%	≤3% FS	≤2%
O ₂	ECD	0-5%, 25%	0,01%	≤3% FS	≤2%
C _n H _m	NDIR	0-5%, 10%, 20%	0,01%	≤2% FS	≤2%