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, CO_2, CH_4, C_nH_m, H_2 and O_2 components in sample gases simultaneously. It is based on the single source dual-beam non-dispersion infrared (NDIR) method for CO, CO_2, CH_4, C_nH_m and a micro-TCD (Thermal Conductivity Detector) gas sensor for H_2 and O_2 by fuel cell method. This analyzer is designed with a digital pulsable infrared source and dual-beam systems.

There is no effect of CO_2 and CH_4 on the H_2 detector as the H_2 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 vave**

- **Automatic zero calibration**

- **Compensation of H_2 by CO, CO_2 and CH_4 sensor**

Version	Part number	Gas components
ABYSS SynGas 800	ASG 800	$CO+CO_2+CH_4+H_2+O_2+C_nH_m+$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 %)

ANKERSMID Online Infrared Analyzer   Technical data
ABYSS SynGas Series 100-800

Specifications	
Measurement	CO, CO_2, CH_4, C_nH_m, O_2, H_2 + BTU index (gas calorific value)
Calculation	High heating value or low heating value in MJ/m3 or kcal/m3 N2(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_nH_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%, 75%, 100%	0,01%	≤3% FS	≤2%
O_2	ECD	0-5%, 25%	0,01%	≤3% FS	≤2%
C_nH_m	NDIR	0-5%, 10%, 20%	0,01%	≤2% FS	≤2%

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

* 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 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, CO_2, CH_4, C_nH_m, H_2 and O_2 components in sample gases simultaneously. It is based on the single source dual-beam non-dispersion infrared (NDIR) method for CO, CO_2, CH_4, C_nH_m and a micro-TCD (Thermal Conductivity Detector) gas sensor for H_2 and O_2 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 CO_2 and CH_4 on the H_2 detector as the H_2 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 vave**

- **Automatic zero calibration**

- **Built-in sample pump**

- **Compensation of H_2 by CO, CO_2 and CH_4 sensor**

Version	Part number	Gas components
ABYSS SynGas 800P	ASG 800p	$CO+CO_2+CH_4+H_2+O_2+C_nH_m$+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   Technical data

ABYSS SynGas Series 100P-800P

Specifications	
Measurement	CO, CO_2, CH_4, C_nH_m, O_2, H_2 + BTU index (gas calorific value)
Calculation	High heating value or low heating value in MJ/m3 or kcal/m3 N2(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_nH_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_nH_m	NDIR	0-5%, 10%, 20%	0,01%	≤2% FS	≤2%