A COMPLETE, VERSATILE, MULTI-FUNCTIONAL PORTABLE GAS ANALYSER FOR INSTANT AND ACCURATE DATA

KL - 152

PORTABLE MULTI GAS ANALYZER

WITH OPTIONS TO USE PC INTERFACE, DATA LOGGER, INTEGRAL PRINTER, DATE & TIME
IDEAL FOR USE IN LABORATORY AND PLANT

SPECIAL FEATURES

- Portable, compact and rugged
- Complete Automatic Operation
- Backlit Graphic LCD displays messages and values through the operation of the anlayzer
- Self check facility and a special software ensures accurate analysis of data
- Standard Fuels with their parameters are pre-programmed. Others on request
- Battery operating period of 8 hours
- Inbuilt Buzzer announces various stages of operation
- A mere Six key to operate the complete instrument
- Visual alarms for Low Bat, Flow Fault and Sensor Fault
- Automatic sampling & Analysis for specified periods at preset intervals
- Completely unattended

Compact, Portable construction and simplicity of operation makes Portable Gas Analyser a valuable aid for insitute use in constantly changing measurement sites.

Its versatile modular design permits configuration and upgradation to suit specific needs. You determine the number of Sensors for your instrument from (1 to 8) or should your analyzer have a built-in printer or RS 232 Output or a smoke test probe so you pay only for what you need.

The highly upgradable KL-152 model can be AC Powered and/or Battery operated. It may include a chargeable battery, battery charger, Sampling Probe with condensate trap and an inline Micro Filter and an inbuilt Sampling Pump. It can be built to include upto 8 Nos. of Gas Sensors and Temperature Sensor, Draft/ Pressure besides the calculated parameters and have options of :

1. Data Logger
2. Integral Printer
3. RS 232 Output
4. Date & Time
5. Facility for Automatic analysis for specified periods at preset intervals.

Self check of components and functions by special software ensures perfect functioning of the unit, thereby accurate analysis data. Any unacceptable deviation from the standard stored values is displayed as an indication " FAULT".

Instant Printout (with Time and Date) confirms the displayed readings that have been measured and calculated at the point of test. The instrument may also be instructed to sample and analyze for specified periods at preset intervals completely unattended.

Software Package to store and analyze the data in various manners with PC XT, AT, 386, 486.

SAMPLE TREATMENT

- A condensate & Dust Trap & a low porosity in line filter to condition the sample.
- Time Tested, Sturdy, High Suction inbuilt Pump.
- A supervisory Electronic Circuit to continuously monitor the pump against failures.
- Proven Sensor Technology : Special purpose long life Sensors with cross interference filters to achieve high accuracy. Oxygen Sensor guaranteed for 4 years and other Electrochemical Sensor for 2 years.
- Volumetric (PPM), Quantitative (mg/m^3) analysis of desired parameters with print-outs confirming displayed readings.
- Calculated Values for NOX, Fuel Efficiency, Lambda, CO2 & Diff. Temp.
- Smoke Measurement - Analyzer samples a pre-calibrated volume of Flue Gas across a filter which can then be compared with the Bachrach Scale to determine the smoke density number.
- Customized Versions - Heated & other special probes and accessories available to measure and match customers special requirements.

DATA TREATMENT

- Complete & Instant Analysis of Data : The processor digitally processes, displays and logs the data instantly
- Simultaneous display of measured parameters
- A real time clock and memory to store data of analysis
- Automatic Sampling and analysis for specified period at preset intervals.
- Digital interface RS 232.
- Date and time stamp.
- Data can be printed on demand or transmitted through a serial interface to an external personal computer for further analysis.
- Choice of printout of last sample or all samples stored.
- A normal Paper Impact type Printer to document the analysis results and time reference.
- Continuous and stable Automatic Display of concentrations ensures accuracy and stability.
- Instant & easy to read display of combustion, Emission or Process Analysis Data.

APPLICATIONS

- Ambient and Emissions Monitoring
- Stack or Exhaust Gas Analysis in Boilers
- Power & Industrial Plants
- Process Analysis
- Fuel Efficiency
- Internal Combustion Engines
- Furnaces
- Quality Control Labs

KL - 152 CONNECTED TO A PC

MEASURING RANGES

	PARAMETERS	SENSORS	RANGES	RESOLUTION	ACCURACY
1	O2	Electrochemical / Paramagnetic	a) 0 - 2 % b) 25 % c) 100 %	0.1 %	0.5 %
2	CO	Electrochemical Infrared	0 - 200, 4000 PPM, 10 % 5000 PPM, 5 %, 20 %, 50 %, 100 %	1 PPM, 0.1 %	± 2 %
3	CO Sensor compensated for H2	Electrochemical	a) 0 - 200, b) 4000 PPM	1 PPM	± 2 %
4	CO2	Calculated	0 - 25 %, 99.9 %	0.1 %	
5	CO2	Thermal Conductivity Infrared	0 - 99.9 % 1000 PPM, 2000 PPM, 5000 PPM, 1 %, 5 %, 25 %, 100 %	0.1 %	± 2 %
6	NO	Electrochemical Infrared	0 - 1999, 5000 PPM 3000 PPM, 1 %, 5 %, 25 %, 100 %	1 PPM	± 2 %
7	NO2	Electrochemical	0 - 100, 1000 PPM	1 PPM	± 2 %
8	NOX	Electrochemical / Infrared	0 - 1999, 5000 PPM	1 PPM	± 2 %
9	SO2	Electrochemical Infrared	0 - 20, 1999 PPM 2000 PPM, 8000 PPM, 5 %, 30 %, 100 %	1 PPM	± 2 %
10	CxHx	Catalytic pellistor Thermal Conductive	0 - 100 % LEL 0 - 30 % & 0 - 100 %	0.1 % 0.01 0.1 %	± 2 % ± 2 %
	Ch4	Infrared	100 %		
11	Excess Air (A)	Calculated	1 to INFINITY	0.01 m/s	
12	Temp. Air (Ambient)	Semi conductor	0 -99 °C	1°C	0.5 %
13	Temp. Gas	Tc. K.	0 - 1600 °C	1°C	0.25 %
14	Temp. Differential	Calculated	0 - 1300 °C	1°C	
15	Pressure / Draft / DIFF	Bridge	+/- 20 WG	0.01	2 %
16	Gas Velocity	Pitot Tube	0 - 99.9 m/s	0.1 m/s	
17	Efficiency / Stack Los	Calculated	1 - 99.9 %	0.1 %	
18	Smoke	Paper Filter Method	0 - 9 Bachrach Scale	0.1 %	
19	H2S	Electrochemical	0 - 500 PPM	1 PPM	± 2 %
20	CL2, BR2, F2	Electrochemical	0 - 200 PPM	1 PPM	± 2 %
21	HCL / HBr / HF / HCN	Electrochemical	0 - 100 PPM	0.1 PPM	± 2 %
22	H2	Electrochemical	0 - 2000 PPM	1 PPM	± 4 %
	H2	Catalytic / Combustion Thermal Conductive	0 - 5 % 0 - 100 %	0.1 %	± 2 %
23	Toxic (Organics)	Solid State/ Electrochemical / PID	0 - 10, 2000 PPM	1 PPM	± 2 %
24	NH3	Electrochemical	0 - 100, 1000 PPM	1 PPM	± 2 %
25	Ethylene Oxide	Electrochemical	0 - 100 PPM	0.1 PPM	± 2 %
26	Phosphine / Arsine	Electrochemical	0 - 1 PPM	0.01 PPM	
	Phosgene	Electrochemical	0 - 5 PPM	1 PPM	+/-2 %
27	VOC	PID/Solid state	0 - 100 / 2000 PPM	1 PPM	+/- 2 %
28	C2H2 Acelelen	Infrared	0 - 20 VOL % 0-1000 PPM	1 PPM	+/- 2 %
29	C2H4 Ethelyne	Infrared	0 - 20 VOL % 0-1000 PPM	1 PPM	+/- 2 %
30	Propane	Infrared	0 - 20 VOL % 0-1000 PPM	1 PPM	+/- 2 %
31	N2O	NDIR	0 - 1000 PPM	1 PPM	+/- 2 %
32	H2O	Capacitive	0 - 100 % RA	0.1 PPM	+/- 2 %

SPECIFICATIONS

Display	:	Graphic LCD
Sampling	:	Inbuilt Sampling Pump.
Zero Calibration	:	Automatic at instrument start up with fresh air sample
SPAN Calibration	:	Automatic span areas 1) Fresh air for oxygen
Response Time	:	30 Seconds at 95% variation.
Power Supply	:	110 V or 220 V & AC Ni-cad battery pack with integral charger.
Working Temperature	:	-5 to 55°C
Storage Temperature	:	-20 to 50°C
Probe Length	:	SS 600 mm length standard (900 & 1200 mm optional)
Probe Diameter	:	8mm (12mm optional)
Connection Hose (Probe Unit)	:	2.0 meters, special lengths on demand.
Battery Life	:	6 Hours continuous operation.
Data Memory	:	500 readings for each gases.
Printer	:	Impact type 24 columns.
Printing Speed	:	0.75 lines / seconds.
Alarms	:	Visual and audible, 4 Alarms
Digital Interface	:	RS 232
Case	:	Aluminum
External Dimensions	:	280 x 210 x 185 mm
Weight (Gross)	:	< 5 kg. with batteries (approximately)
Interference Filters	:	Provided with Sensors
Line Filter	:	Replaceable 5 microns
Accessories	:	Moisture Trap
Pre-programmed Fuels	:	Light & Heavy Diesel Oil, Gas, Coal, Furnace Oil, Wood Special Fuels - preprogrammed on request.

ORDERING INFORMATION

NO. OF SENSORS	NO. OF PARAMETERS	EXTRA
1 TO 8	1 TO 27	1. WITH SMOKE MEASUREMENT 2. CONDENSATE TRAP
TYPE OF PROBES	**POWER**	**CONFIGURATION**
0 - NIL 1 - 600 mm 2 - 900 mm 3 - 1200 mm 4 - 1000 °C PROBE 5 - PILOT TUBE	1. 220 V AC 2. 110 V AC 3. CHARGEABLE BATTERIES 4. 220 V AC & CHARGEABLE BATTERIES 5. 110 V AC & CHARGEABLE BATTERIES	0. BASIC UNIT ONLY 1. PRINTER + DATA LOGGER 2. DATA LOGGER + RS 232 3. PRINTER + DATA LOGGER + RS 232 4. PRINTER