TELEDYNE
ANALYTICAL INSTRUMENTS

MODEL

9950

One System . . .
Multiple Solutions . . .

Reliable Combustion and Pollution Monitoring in a Compact, Affordable Package

PORTABLE
POLLUTION EMISSIONS MONITOR

Model 9950
Portable Pollution Emissions Monitor

Reliable Combustion and Pollution Monitoring in an Affordable Package

Model 9950 is a full-featured monitor offering fast, cost-effective analysis of stack gas emissions. As many as five parameters can be displayed at once, allowing the operator to optimize combustion efficiency while minimizing pollution. Teledyne incorporates advanced microprocessor technology which provides a menu-driven interface with all functions through front panel controls and a large LCD display. In other words, we put all the best features in one affordable package.

High accuracy is expected of any pollution emissions monitor, but the 9950 accomplishes the task in record time. This model provides an emissions analysis and a hard copy printout in less than 5 minutes with an accuracy of better than +/-3% of full scale.

Self-Contained and Easy to Operate

Light weight and compact with both an internal battery and AC powered operation, the Model 9950 is housed in a rugged aluminum case, tough enough for the worst you have to offer. Completely portable, the monitor is ideal for spot-checking in even the most difficult environments. Typical applications include boilers, furnaces, fireboxes and compressor engines, and other stationary combustion processes.

Precise Measurement of Combustion Efficiency and Pollution Levels

Enter the fuel type to be measured by means of the 5-button panel and take a sample. Model 9950 automatically calculates the net combustion efficiency making it easy for you to fine-tune the combustion process and reduce unwanted emissions.

SO_2 and NO_x ($NO + NO_2$) measurements provide valuable data about combustion process performance versus emission standards. In addition, the Model 9950 calculates the concentration of CO_2 for any given fuel to assist with adjustments.

Hard copy printouts of emissions concentrations are available at the push of a button to document compliance with various state and federal regulations.
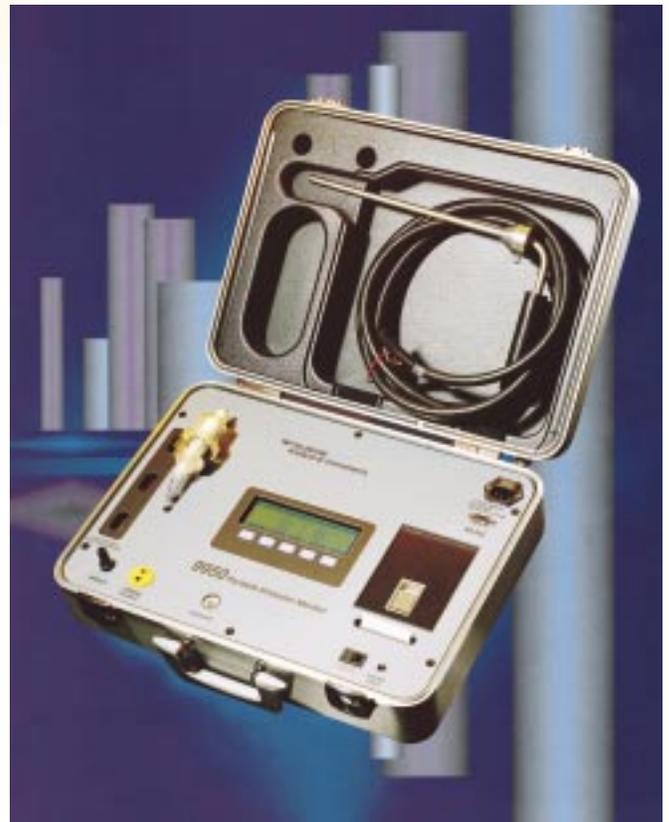
Features:

○ Analyzes O_2, CO, SO_2, NO, NO_2, and stack temperature - Calculates CO_2, combustion efficiency and pollutants emitted.

○ Long-term stability and performance

○ Microprocessor-based design

○ RS-232 serial interface

○ Logical, menu-driven LCD graphic readout with 5 button front panel

○ Internal battery or AC-powered operation

○ Lightweight (27 pounds) and compact

○ Heavy-duty, aluminum case

○ Integral sample pumps

○ Printer for emissions results

○ 99-test memory

Easy Calibration & Test Data Storage

An auto-zero feature for the gas sensors takes even more of the work out of your hands. Span settings are carried out by means of front-panel control switches, and keypad controls remain functional during setup, allowing the operator to select any analysis parameters or fuels as necessary. All settings remain in memory – even when power is turned off – and will be stored until amended by the user or the analyzer is deliberately "cold started" to clear the memory.

The 9950 stores up to 99 individual tests (including a complete set of measurements and boiler ID number) which are maintained in a non-volatile memory and can be retrieved for printout for downloading via the RS-232 serial port.

Sample Integrity is Never in Question

Model 9950 accomplishes sample conditioning through a fully integrated handling system capable of delivering stack gas to the analyzer without compromising integrity. A stainless steel probe is connected to the monitor by a flexible hose. A high-efficiency vane pump draws the sample through the probe and into a coalescing filter where particulates and condensates are removed prior to analysis, assuring you the highest accuracy possible. Water and particulate matter are automatically pumped from the system.
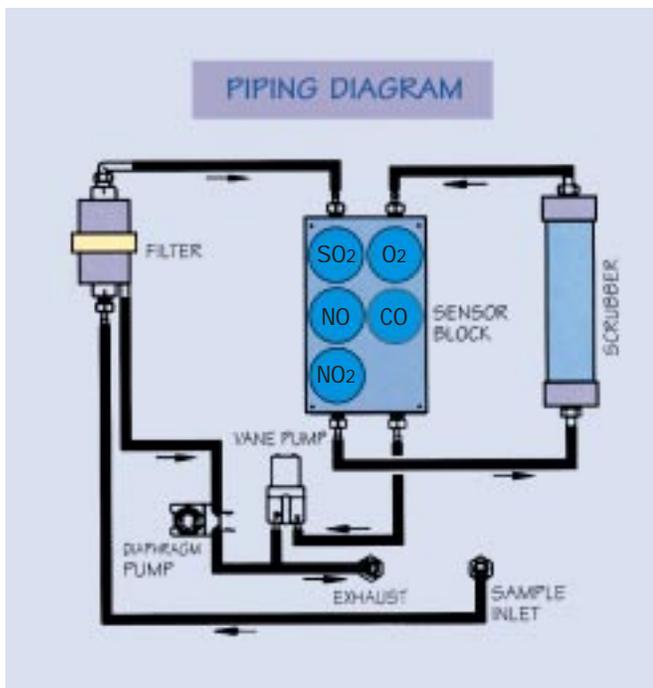

Measured Parameters

	Range*	Resolution	Accuracy
Oxygen (O_2) Electrochemical cell Expected Life - 24-36 months	0-25%	0.1%	+/-1%FS**
Carbon Monoxide Electrochemical cell Expected Life - 24-36 months	0-2000 ppm	1ppm*	+/-3%FS**
Sulfur Dioxide (SO_2) Electrochemical cell Expected Life - 24-36 months	0-1000 ppm	1ppm*	+/-3%FS**
Nitric Oxide (NO) Electrochemical cell Expected Life - 24-36 months	0-2000 ppm	1ppm*	+/-3%FS**
Nitrogen Dioxide (NO_2) Electrochemical cell Expected Life - 24-36 months	0-200 ppm	1ppm*	+/-3%FS**
Combustion Gas Temperature K-type thermocouple	0-850°C continuous 0-1200°C intermittent	1°C 1°C	
Ambient Temperature	0-50°C (for less than 85% relative humidity) 0-40°C (for 85% relative humidity-printer specifications)	1°C	

Calculations

	Range	Resolution	Accuracy
Carbon Dioxide (CO_2)	0-20%	0.1%	+/-5%
Combustion Efficiency	0-100%	0.1%	varies with application
Pollutant Emissions	0-9.999 lbs / million BTU	0.001	+/-3%

* Please contact factory regarding non-standard ranges.
** At constant temperature once thermal equilibrium is achieved.

Options   Probe and hose lengths
NOTE: longer lengths may not fit within case
Selected optimal ranges for the
CO / SO_2 / NO / NO_2 analysis are available
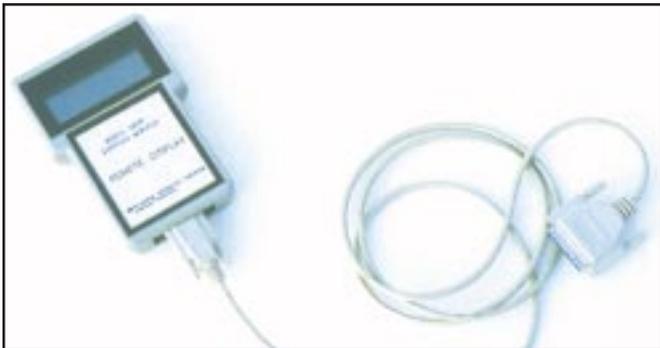Remote display unit
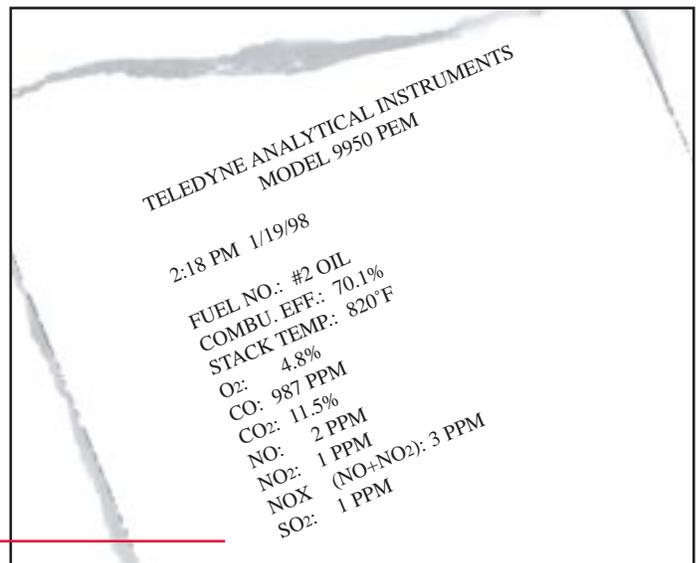
Real Technical Support

As with any Teledyne product, you are one phone call away from assistance with Model 9950. Whether in the field or in the factory, a Teledyne Field Service Engineer can assist with questions. Simply refer to the phone numbers below for a Teledyne representative in your area. Also, the instruction manual included with every product offers quick reference for any process required of the 9950. Clear, easy-to-read instructions with charts and illustrations guide every step of the process to assure accurate results and maximum safety.

Teledyne Analytical Instruments

World Leader in Gas and Liquid Analysis

With over 40 years of analytical instrument experience, Teledyne supplies sensors, custom engineered analyzers and complete monitoring systems to satisfy unique applications.

Optional remote display unit available

Specifications

Operating Temperature:	0-50°C; not to be used for more than 8 hours above 40°C
Digital Outputs:	Measured and stored data; RS-232 serial interface, 1200 baud rate; 8 data bits; 1 stop bit; no parity
User Interface:	LCD; 30 characters wide by 7 lines; 5 soft keys; menu-driven program
Fuels:	15 User selectable
	Natural gas
	No. 2 fuel oil
	No. 4 fuel oil
	No. 6 fuel oil
	Anthracite coal
	Bituminous coal
	Lignite coal
	Kerosene
	Propane
	Butane
	Wood chips - 50%H_2O
	Wood chips - 0% H_2O
	Coke oven gas
	Blast furnace gas
	Sewer gas
Power Requirements:	AC power mains and/or internal battery; 90-255 VAC at 50-60 Hz; rechargeable 12VDC battery; low battery indicator on LCD display (8 hours on one charge)
Data Logging:	Archives up to 99 tests
Probe:	316 stainless steel; K-type thermocouple; 3/8" OD; 13" / 33cm insertion length; 10' / 3m neoprene hose
Printer:	2-1/4" / 5.7cm wide thermal paper, line feed button
Packaging:	Suitcase-type, heavy-duty aluminum case. Case holds probe, 10' / 3m hose and instruction manual.
Dimensions:	18" W x 13"D x 6" H 45.7cm W x 33cm D x 15.25cm H
Weight (approx.):	27 lbs. / 12.27 kg

**TELEDYNE
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Regional Office

Tokyo, Japan **81-33-239-9090**

Warranty

Instrument is warranted for 1 year against defects in material or workmanship

NOTE: Specifications and features will vary with application. The above are established and validated during design, but are not to be construed as test criteria for every product. All specifications and features are subject to change without notice.

CERTIFIED
ISO 9001

Accredited by the Council
for Accreditation (RvA)

INTERTEK
CERTIFICATION

ANSI·RAB
QMS
ACCREDITED
National Accreditation
Program