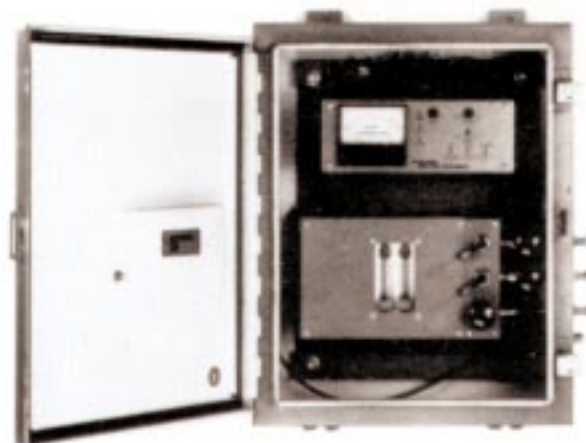


DATA SHEET

MODEL 175 FLUE GAS COMBUSTIBLES ANALYZER

The TAI Model 175 analyzer is designed to monitor the combustibles content of flue gas on a continuous basis. The analyzer has no sample conditioning system; therefore, it requires a scrubbed flue gas sample or it can be used to expand the measurement capability of an existing oxygen analyzer, i.e., TAI's Model 9500 or equivalent. The sample stream is diluted with an equal amount of air, then measured to determine by percentage its volumetric combustibles content. Blending an equal amount of "clean" compressed air with the sample gas stream insures that sufficient oxygen is present in the sample for complete combustion.



Model 175 Combustibles Analyzer

The analyzer consists of two integrated assemblies mounted within a weatherproof enclosure suitable for bulkhead mounting: (1) electronics control unit which houses all of the calibration controls, meter readout, alarm relays and power supply, and (2) temperature-controlled sampling unit consisting of the sensor, flowmeters, valves and heater circuit. Temperature within the sampling unit is held at 130°F to keep all components above the dew point of the sample gas.

The sensing element is a low-temperature catalytic bead-type transducer in a constant current-excited Wheatstone Bridge circuit. Two legs of the bridge are exposed to the sample gas. The other two legs are passive elements in the control unit. Gas diffuses into the sensing element and is oxidized at the catalytic surface of the active bead, causing its temperature to rise. The reference bead is not catalytically active and, consequently, is not affected by the combustibles. The disparity in resistance of the otherwise matched pair of catalytic beads creates a difference signal in the bridge circuit. Use of the uncoated reference bead compensates for the effects of temperature variations, humidity changes, ambient pressure changes and variations in line resistance. The signal from the bridge is amplified and displayed on a meter with a 0-5% combustibles range.

An adjustable alarm can be set at any value within the full range. The non-latching alarm relay can be wired to auxiliary lights, horns, fans, or used for equipment shutdown.

The basic control unit includes one setpoint alarm with integral sensor failure alarm circuitry. An additional adjustable setpoint alarm and independent power and sensor failure alarm can be provided.

 **TELEDYNE ANALYTICAL INSTRUMENTS**

A 0-1 VDC analog signal output is standard; however, other lower voltage (millivolt) outputs can be provided. Optional current outputs are available for instrumentation interface.

An explosion-proof version, designated Model 177, is suitable for Class I, Div. I, Groups B,C,D hazardous environments.

SPECIFICATIONS

Range	0-5% combustibles (CH ₄ equiv.) - standard
Sensitivity	0.5% of full scale
Accuracy	±1% of full scale
Response Time	90% in 15 seconds
Operating Temperature	+32°F to +125°F (0°C to +52°C)
Signal Output	0-1 VDC - standard (mVDC outputs available) Optional: 1-5, 4-20, 10-50 mADC, positive or negative ground Isolated current output: 1-5, 4-20, 10-50 mADC Isolated voltage output: 0-1, 1-5 VDC
Air Supply	Compressed air regulated to 5-25 psig; 2 scfh - typical req'd consumption rate
Sensor	Low-temperature catalytic bead
Alarms	1 Form "C" (SPDT), non-latching, rated at 3 A resistive Optional: Second fully adjustable alarm setpoint - 3 A resistive, non-latching Independent power and sensor failure alarm setpoint - 3 A resistive, non-latching
Operating Power	115 VAC, 50/60 Hz, single phase (other voltages available)
Power Consumption	300 W max.
Dimensions	22½" H, 16" W, 9-11/32" D

