



ADOS
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Instrumentation and Control



INFRARED GAS ANALYSIS SYSTEM

ITR 498



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Application

The ITR 498 infrared gas analysis system measures continuously the concentration of carbon dioxide. This gas has typical absorption bands in the infrared region of radiation with which the exact concentration can be determined. Typically used for measurements over the range of 0–5.000 ppm to 0–100 Vol%.

The ITR 498 is available as: transmitter with current output, as complete test unit with optical, acoustic and electrical output as well as a hand-held tester.

Fields of Application

- Monitoring the ventilation and air conditioning, according to TRSK 313, for cellarage containing carbon dioxide bottles
- Monitoring the ventilation in fruit storage rooms
- Regulating climatic conditions in large open-plan offices or departmental stores
- Monitoring the maximum concentration at working places, according to TRGS 900 (MAC-value)
- Monitoring carbon dioxide fire extinguishing systems
- Analysing flue gases
- Monitoring production processes (e.g. fermenting processes)
- Optimising chemical processes
- and others

Method of Operation

The ADOS ITR 498 gas analysis units function on the principle of non-dispersive infrared absorption.

The wide-band infrared radiation generated by the radiating element, passes through measurement and reference filters, then on to the gas measuring vessel.

The measurement filter allows the passage of infrared radiation in a wavelength range which includes the gas absorption bands of the gas to be measured. The reference filter on the other hand, allows the passage of a wavelength range in which there are no absorption bands of the gas.

From the absorption of the infrared radiation in the measurement chamber, the concentration of the gas is calculated and evaluated by a microcontroller.

Accessories

Gas extraction, filter, gas purifier, gas cooler, signal horn, warning lamps, warning banners, plotter, ventilation control accessories.

Other accessories are available, depending on specific measuring tasks, on request.

Technical Data

Test principle:	Non-dispersive infrared analysis		
Range:	0–5.000 ppm to 0–100 Vol.% CO ₂ hand-held tester: 0–2 Vol. % to 0–100 Vol. % CO ₂		
Response time (t ₉₀):	<20 sec		
Linearity error:	<2 %		
Accuracy:	<±3 % of upper range value		
Overall accuracy:	<3 % of upper range value		
Long-term drift:	<0,5 % / month		
Ambient temperature:	-20 °C to +45 °C		
Protection class:	IP 54		
	Transmitter	Test unit	Hand-held tester
Voltage supply:	12 – 25 V DC	230V/115V AC	12V Battery
Power consumption:	2 VA	9 VA	9 VA (charge)
Battery life (on charge):			>8 h
Outputs:	RS 232 4 – 20 mA		
		Floating contacts	
Optional extra measurements:			O ₂
Dimensions (WxHxD) mm:	120 x 120 x 90	120 x 120 x 90	120 x 200 x 60
Weight:	500 g	910 g	900 g
Tested:		TRSK 313	