

DAT37 - ENVIRONMENTAL %RH, °C, CO, CO2 DATALOGGER

DAT37 are datalogger, suitable for monitoring the quality of indoor air, able to measure and memorize simultaneously with storage interval parameters Relative Humidity RH, temperature T, CO Carbon Monoxide and Carbon Dioxide CO2.

Typical applications include the examination of air quality in buildings where there is crowding of people (schools, hospitals, auditoriums, cafeterias, etc.). At the workplace to optimize comfort and in general to see if there are small losses CO, with danger of explosion or fire. This analysis allows you to adjust the air conditioning (temperature and humidity) and ventilation (air changes / hour) in order to achieve two objectives: get a good quality in accordance with ASHRAE and IMC regulations and energy saving. They are great tools to combat the so-called sick building syndrome.

The measurement of RH (Relative Humidity) is obtained with a capacitive sensor.

The temperature T is measured with a NTC sensor of high accuracy.

The sensor for the measurement of CO (carbon monoxide) is constituted by an electrochemical cell with two electrodes indicated for detecting the presence of carbon monoxide, lethal for man, in residential and industrial.

The measurement of CO2 (carbon dioxide) is obtained with a special infrared sensor NDIR technology that, thanks to the use of a double filter and a particular measurement technique, ensures accurate and stable measurements for a long time. The presence of a protective membrane, which is spread through the air to be analyzed, protects the sensor from dust and atmospheric agents.

Via the USB input to connect to the PC. The instruments are supplied with software which manage the operations of connection to the PC, the calibration of the sensors RH, CO and CO2, the setting of the operating parameters of the instrument, data transfer, graphical presentation and printing of measurements acquired or stored. The software evaluates the parameter % OA (percentage of outside air), according to the formula:

$$\%OA = \frac{X_r - X_s}{X_r - X_0} \cdot 100$$

with: X_r = CO2 in return air X_s = CO2 in the outlet air X_0 = CO2 in the external air

Models:

Kit DAT37AB17D composed of the instrument for the measurement of CO, CO2, RH, T, Software, CP22 USB cable, AC adapter, battery pack, Italian/English instruction manual, carrying case.

Kit DAT37B17D composed of the instrument for the measurement of CO2, RH, T, Software, CP22 USB cable, AC adapter, battery pack, Italian instruction manual, carrying case.



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TECHNICAL SPECIFICATIONS

Dimensions:	275 mm x 45 mm x 40 mm
Weight:	230 g (with batteries)
Materials:	ABS
Mains power supply:	Batteries charger 100-240Vac/6Vdc-1A
Batteries:	Package with 2 rechargeable batteries 1.2V type AA (NiMH)
Current absorbed:	with instrument off 200µA
Working temperature:	0...50°C
Working relative Humidity:	0...90%RH no condensation
Storage:	-25...+65°C
Safety of the stored data:	unlimited
USB connections:	USB 2.0 cable B type Baudrate 460800
Batteries charger:	2 poles connector. Output voltage 6Vdc. Maximum current 1600mA-9, 60 VA Max
Measuring rate:	1 sample every three seconds
Storage capacity:	20000 Record (composed by: date and time, CO ₂ , CO, UR, T
Logging interval:	selectable within 3, 6, 12, 15, 30, 60, 120, 180, 240, 300 seconds, 2, 3, 4, 5 minutes The stored values represent the average value of the samples that are stored every 3 seconds
Printing interval:	selectable within 3, 6, 12, 15, 30, 60, 120, 180, 240, 300 seconds, 2, 3, 4, 5 minutes The stored values represent the average value of the samples that are stored every 3 seconds
Sensor Features	
Relative Humidity RH:	Capacitive - Net sensor made in stainless steel (on request 20µm AISI316 or 10µm PTFE) Range 0...100 % RH - Working range sensor -40...+80°C Accuracy ±1,5% RH (0-90%RH)- ±2% RH in the remaining range, for T=15...35°C ±(1,5+1,5% of the measured value)%RH for T=-20...+60°C resolution 0,1%, thermal effect ±2% on whole temperature range, long term stability 1%/year
Temperature T:	NTC 10KΩ - Range -40...+60°C - Accuracy ±0.2°C ±0.15% m.v. - Resol. 0,1°C Response time (T90)<30 sec.(air velocity= 2m/sec) - Long term stability 0.1°C/year
Carbon monoxide CO:	Electro chemical cell - Range 0...500ppm Working measuring sensor -5...50°C - Accuracy ±3ppm +3% m.v. - Resol. 1ppm Response time (T90) < 50 sec. - Long term stability 5% of the measure/year Expected life > 5 years in normal environmental condition
Carbon dioxide CO ₂ :	NDIR sensor with double wave length - Range 0...5000 ppm Working range sensor -5...50°C - Accuracy ±50ppm +3% m.v. - Resolution 1ppm Thermal effect 0,1%f.s./°C -Response time (T90)<120 sec.(air velocity=2m/sec) Long term stability 5% of the measure/5 years
Accessories:	Instrument tripod maximum height 270 mm. 100-240Vac/6Vdc-1A mains voltage power supply Replacement batteries pack with integrated temperature sensor Sintered stainless steel 10µ grid protection, for probes diameter 14, thread M12×1 20µ PTFE protection, for probes diameter 14, thread M12×1. Stainless steel and PTFE protection for probes diameter 14, thread M12×1 Saturated solution for testing the Relative Humidity with 75% HR Saturated solution for testing the Relative Humidity with 33% HR (complete with adapter for probes diameter 14, thread M12×1) Cylinder of nitrogen for the calibration of CO and CO ₂ at 0ppm. Vol.12 l. With valve. Cylinder of nitrogen for the calibration of CO and CO ₂ at 0ppm. Vol.12 l. Without valve. Spare CO sensor Kit connection pipe for the calibration CO Kit connection pipe for the calibration CO ₂



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