CMS5000

Installation Data Sheet

The CMS5000 Monitoring System employs gas chromatograph technology (GC) with a Micro Argon Ionization Detector (MAID) to analyze and quantify volatile organic compounds in air or water. Designed as a stationary instrument, the CMS5000 is ideal for long-term, unattended VOC monitoring.

Basic installation and setup of the CMS5000 can be performed by the end-user. Please review the CMS5000 training CD (IPN 074-5020-G1) and the CMS5000 operator manual (IPN 074-5021-G1) prior to setting up the instrument.

CMS5000
(shown in water sampling configuration)

Operating Specifications

Power requirement	120-240 V(ac)
Weight	55.1 lbs (25Kg) without sampling vessel
Dimensions	16.9" x 32.7" x 10.2" (43 cm x 83 cm x 26 cm)
Operating temperature	5-45°C; 95% RH (non-condensing)
Ionization source	2.4 mCi Ni-63 Micro Argon Ionization Detector (MAID)
Storage	If the CMS5000 is installed outdoors, it should be mounted under a covered shelter. The unit should not be exposed to direct sunlight or driving rain.
Regulator specification	M3300 regulator with CGA, quick connect, needle valve, pre-set to 90 psi (IPN 935-412-P1)

Instrument Information / Ship Kit

Ship kit contents (IPN 935-721-GX)	Power supply (IPN 930-469-PX) Ethernet cable (IPN 600-1319-P2) Operator manual (IPN 074-5021-G1) Argon tank regulator (IPN 935-412-P1) Argon fill line (IPN 935-212-G1) CMS5000 training CD (IPN 074-5020-G1)
Quantitative methods	Water Purge Method (19 Compound VOC mix) Check Standard (Toluene Permeation Tube) Please contact INFICON for information regarding other available methods.
Sampling vessel	The CMS5000 can be used to monitor air or water. In order to switch between sampling configurations, a modification will need to be made to the sampling vessel (see operator manual for instructions). The optional water sampling vessel (IPN 935-700-G3) and the air sampling vessel (IPN 935-701-G1) are available from INFICON.
Exhaust lines	To prevent backpressure, the two exhaust lines on the bottom of the instrument should not be obstructed. One of the lines carries the exhaust from the sample and the other carries the exhaust from the detector. When facing the front of the instrument, the sample exhaust is on the left and the detector exhaust is on the right.

Installation / Set-up

Securing the instrument to a structure	CMS5000 is shipped with four (4) mounting brackets to support the instrument. The mounting surface must be able to support 55.1 lbs (25 Kg), plus the weight of the water vessel or air sampling vessel. The total weight depends on what type of device is connected to the sampling inlet on the instrument.
Minimum mounting clearance	The necessary space will depend on what type of sample vessel you are using. As a general rule, there should be approximately 3' of clearance between the bottom of the instrument and the ground. The sample vessel must be able to be affixed to the chassis of the CMS5000 allowing it to suspend freely without obstruction.
Line input for water vessel	Line input to the water vessel is ¼" NPT (National Pipe Thread) and output is 1¼" NPT. The CMS5000 water vessel was designed as an open system to prevent water from getting into the sample path in the event of a water vessel overflow. The output should be put into a waste drain.
Required flow rate through the water vessel	1 liter/min
Integration	TCP/IP based; USB for local diagnostics, 19 pin I/0 relay contacts
Recommended tubing for water monitoring	Copper or stainless steel tubing is recommended. Polymer tubing is acceptable, provided there is a constant flow of water to prevent VOCs from building up in the pathway.
Recommended tubing for air monitoring	Copper or stainless steel tubing.
Factory acceptance protocol	Water analysis: Water Purge Method (19 Compound VOC mix) Air analysis: BTEX standard

Consumables / Maintenance

Carrier gas requirement	Ultra-high purity Argon (99.999%)
Carrier gas line	Stainless steel
Consumables	Tri-Bed concentrator (IPN 930-716-G1) Argon gas (Sourced from your local gas distributor) GC column (HP-1, 0.32mm id, 30M,4.0 µm df or equivalent) (IPN 930-489-G14) Toluene Permeation Tube (IPN 935-213-G1)
Check standard	Toluene Permeation Tube
Maintenance	The water vessel and the air sampling tube must be kept free of debris. Toluene permeation tube will need to be replaced approximately every 8 years. Argon tank will need to be replaced as needed.