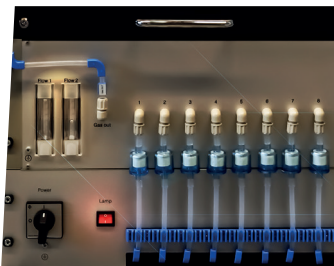


# Mercury Monitoring System MMS

AIR QUALITY MONITORING / PROCESS

The Mercury Monitoring System MMS automatically measures mercury concentrations in air or other gases at up to 24 measuring points. Each system can be customized to meet the specific demands of our clients.

## SYSTEM DESIGN



The MMS system basically comprises a multiplexer valve unit and the highly accurate and selective mercury detector VM-3000 Vapor Monitor. A bypass pump maintains a steady flow of sample through the sample filters, sample lines and multiplexer valves.

Flow meters with optical alarm sensors guarantee that flow rates are stable. All components are installed inside a protective cabinet.



## SPECIFIC FEATURES

- Monitors 2 to 24 measuring points automatically
- Permanent purging of all sample lines
- Measuring ranges from 0.01  $\mu\text{g}/\text{m}^3$  to 2000  $\mu\text{g}/\text{m}^3$  Hg
- Customized versions for air, hydrogen and other gases available
- Customized software for data acquisition, data visualisation and data storage
- Low maintenance demand
- No sensitivity for water vapor
- Quick response time
- Minimized memory effect
- Automatic calibration module



## MAIN APPLICATIONS

- Chlorine-alkaline plants with mercury cells
- Metallurgical industry
- Fluorescent lamp production and recycling
- Battery recycling plants
- Contaminated sites
- Hydrogen production plants
- Laboratories or processing plants working with mercury
- Natural gas industry,  
(see also brochures for natural gas systems)

OPTIONS

- An optional calibration module allows automatic calibration checks and re-calibrations of the system. The calibration gas is generated by mercury vapor saturation of air and automatic dilution. The mercury filling of the calibrator is sufficient for the entire lifetime of the instrument.
- A special version employing the UT-3000 Mercury Ultratracer as detector is available for concentrations in the sub- $\mu\text{g}/\text{m}^3$  range.
- Air conditioning assures reliable function of the system even under extreme climatic conditions.

TECHNICAL SPECIFICATIONS

Multiplexer Module

Number of sampling points:	2 ... 24
Purging of sample lines:	continuously, approx. 40 - 80 l/h for each channel
Flow control:	flow meters with alarm sensors for low flow
Heating of valve unit:	approx. 70°C
Measuring duration:	45 sec ... 99 min, separately adjustable for each channel

Detector

Measuring principle:	UV absorption (CVAAS), wavelength = 253.7 nm
Principle of preconcentration: (only special version with UT-3000)	Amalgamation on gold surface, thermal desorption by rapid heating (MI GoldTrap)
Measuring ranges: (standard version with VM-3000)	<ul style="list-style-type: none"> <li>• 0.1 - 100 <math>\mu\text{g}/\text{m}^3</math></li> <li>• 0 - 1000 <math>\mu\text{g}/\text{m}^3</math></li> <li>• 0 - 2000 <math>\mu\text{g}/\text{m}^3</math></li> </ul>
Measuring range: (special version with UT-3000)	0.01 ... 50 $\mu\text{g}/\text{m}^3$
Sample flow:	approx. 80 l/h per channel
Signal outputs:	<ul style="list-style-type: none"> <li>• analogue: 4-20 mA</li> <li>• serial: RS 232</li> <li>• Modbus RTU (optional)</li> <li>• Ethernet (optional)</li> </ul>

Construction, weight and dimensions

Cabinet:	metal, protection standard IP 55 (NEMA 4X, others as an option)
Dimensions:	from 553 x 600 x 500 mm (WxHxD) to 800 x 2000 x 600 mm; according to number of channels and optional equipment (e. g. air conditioning)

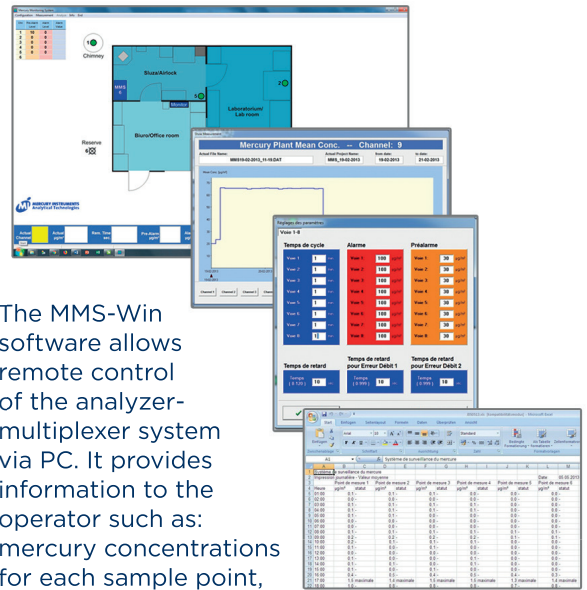
Software

System requirements:	Windows XP or higher
Display of measuring data:	current readings numerically, filed data as concentration-time graphs

SELF DIAGNOSIS OF THE SYSTEM

The MMS software permanently checks the status of the system. Low flow of bypass stream or sample, plugging up of sample filters and photometer malfunctions are detected by the system and an error message is displayed.

SOFTWARE AND REMOTE CONTROL OF THE ANALYZER SYSTEM



The MMS-Win software allows remote control of the analyzer-multiplexer system via PC. It provides information to the operator such as: mercury concentrations for each sample point, history of measurement results for each sample point, status of the system and calibration information.

Alarm thresholds, duration of measurement for each channel, zero adjustment and specific deactivation of measuring points can be controlled by PC.

The operator can interrupt any running measurement and select a sample point for immediate measurement. It is also possible to deactivate any sample point. Emission reports are created automatically and stored as \*.txt and \*.xls (EXCEL) files.

Product developed and manufactured in Germany by:

Mercury Instruments GmbH  
Analytical Technologies  
Liebigstr. 5  
D-85757 Karlsfeld, Germany

+ 49 (0)8131 505720  
mail.mi.envea.global

(part of the ENVEA Group)



ENVEA (Headquarters)  
111 Bd Robespierre / CS 80004  
78304 Poissy CEDEX 4 - FRANCE  
+33(0)1 39 22 38 00  
info@envea.global



Visit us at:  
www.envea.global

