

Product Portfolio & Special Systems.

Application Experience since 1985.



M&C Product Portfolio – Products for individual and complete solutions.



▼ New Products & Highlights



In line with the conditions in the market, M&C constantly offers new and innovative product solutions. Here you'll get a first overview.

For further information, you are welcome to contact us at any time.

- ▶ Portable gas conditioning system (IP42) according to EN 15267-4:2017
- ▶ Peltier gas cooler with digital controller for an ambient temperature up to 50 °C
- ▶ Compact gas sample probe with certificate for Ex zone 1

▼ Gas Sampling

Gas sampling is the first step in the process of gas analysis. The starting point is the process sampling point, where the conditioning of the sample gas for the analyzer begins under process conditions using a gas filter, the so-called gas sample probe. The industrial process with its gas matrix and all other process components, such as pressure, temperature, dust and corrosive or sublimating components, determines the selection of the materials and filters used.

M&C offers a wide range of probes with an outstanding spectrum of options for nearly unlimited fields of applications – also in special materials.

- ▶ Gas sample tubes and pre-filters in different materials
- ▶ Explosion-proof probes according to ATEX, FM and CSA, probes for dusts with zone separation
- ▶ Highly heatable probes, probes with pre-separator function
- ▶ Back-purging probes for applications with a high dust level



▼ Gas Transport



The sampling path, i.e. the way the gas takes from the sampling point in the process to the analyzer, must meet some important requirements. The top priority is to ensure that the gas composition remains unchanged to the highest possible degree.

Unpleasant side effects such as diffusion through lines and fittings as well as deposits or reactions during gas transport must be avoided. The pumps, valves, fittings and tubes should convey the gas with as little pulsation as possible. Heated lines are used to maintain the temperature level so as not to change the composition of the process gas (e.g. the acid dew point).

- ▶ Gas pumps and lines for safe and maintenance-free operation
- ▶ Heat-traced lines for the safe gas transport: self-regulating and regulated also in Ex version, holding temperature up to 250 °C (200 °C for Ex)
- ▶ Sample gas pumps in full PTFE and chemically resistant design up to 10 NL/min, also as Ex version

▼ Gas Analysis



In extractive measuring systems, the gas analysis is carried out at the end of gas conditioning. The spectrum of measuring methods we use is widely diversified, starting with electrochemical sensors and paramagnetic oxygen cells up to IR, UV and WLD diodes.

- ▶ Analog or microprocessor-controlled + options
- ▶ Heated analyzers for highest measuring accuracy
- ▶ Ex-protected versions with ATEX approval
- ▶ Adjustable measuring ranges and many more options

▼ Gas Conditioning

The task of gas conditioning systems with gas coolers, filters, but also converters, washing and reaction filters is to condition the process gases in the sampling path in such a way that the gas analyzer is not damaged, thus ensuring consistent quality of the results and a long service life of the analyzer.

We offer you low-maintenance and self-monitoring products. Completely according to your requirements in compact design for wall or 19" mounting.

- ▶ Cooling capacities from 150 NL/h to 1000 NL/h
- ▶ Materials of the heat exchangers: glass, stainless steel and PVDF (also special materials possible)
- ▶ Peltier coolers for up to two gas paths
- ▶ Compressor coolers for up to four gas paths



▼ Process Control



For the analysis process to run smoothly, a large number of process and conditioning parameters must be measured and monitored along the entire sampling path, from the gas sampling point to the analyzer, in order to ensure the safety and quality of gas analysis as well as the protection and long product life cycle of the equipment used.

- ▶ Temperature controllers with alarm thresholds for high and low temperature (also as Ex version)
- ▶ Flow meters with min./max.-alarms and float-type flow meters and forked light barriers
- ▶ Monitoring of liquid ingress with liquid alarm sensors (also as Ex version)

▼ Spare & Wear Parts

Original Spare Parts and Accessories:

- ▶ Gas sample probes
- ▶ Heated sample lines
- ▶ Analytical pumps
- ▶ Gas coolers
- ▶ Filters
- ▶ Gas conditioning systems
- ▶ Converters
- ▶ Gas dilution probes and units
- ▶ Wash bottles and humidifiers
- ▶ Analyzers

We will be glad to advise you on the procurement and appropriate stocking of spare parts according to your needs.

In cases of uncertainty, e.g. about the type of device you have, we will be pleased to clarify the specific details of the required original M&C spare part.



M&C's Special Systems.
Over 35 years of application experience.

We offer a high level of expertise in planning and designing customer-specific analyzer systems in all areas of industry.

- ▶ Qualified solutions – even for more complex or difficult measuring tasks
- ▶ Large variety – from smaller conditioning plates up to the densely loaded large container



- ▼ Our Customer Companies
- ▶ Plant manufacturers, device manufacturers, engineers, industrial end customers
 - ▶ Customers from all industries and a wide range of customer types nationally and worldwide
 - ▶ System solutions with branch expertise from steel, cement industries, maritime, chemical and petro-chemical industries, power plants, etc.
 - ▶ Technology partnerships with highly competent customer companies
 - ▶ Transfer of technical competence and know-how to customer companies, if required

▼ Planning & Engineering

Prior to order acceptance, appropriate advice is provided on the design and selection of the components taking into consideration the measurement task to be fulfilled and the process environment in operation. We perform the planning of the gas analysis systems, the related project planning as well as the engineering of the system solution and the installation site including time scheduling and logistics for mounting and commissioning.

We always comply with our own high and practice-oriented documentation standard or the specifications of our customer companies. We also safeguard copies of documentation far beyond legal requirements.

The manufacturing of our systems is carried out exclusively in Germany in compliance with all applicable general standards (including factory standards, if available). This also applies to particular application cases, such as ATEX and SIL. We only use high-quality brand products and rely on our experienced, long-term employees.

Our customers obtain all necessary preliminary documentation as a basis; careful final documentation is obligatory.



- ▼ Our Goals
- ▶ Meeting your requirements parameters for process reliability and productivity increase
 - ▶ High system availability, high economic efficiency
 - ▶ Optimum system processes for constantly high product quality
 - ▶ Cost benefits in procurement and operation
 - ▶ Simple integration of new systems into operational environments
 - ▶ Facilitates compliance with stringent laws and environmental requirements

- ▼ Service Performance
- ▶ In-house or on-site acceptance
 - ▶ System installations national and abroad
 - ▶ Commissioning and functional tests
 - ▶ Maintenance of the systems and system components supplied by M&C
 - ▶ Training for operating and maintaining our products and systems
 - ▶ Individual training events, always practice-oriented and also on site

- ▼ Services
- ▶ Technical telephone support
 - ▶ Assistance for operational environments with interference influences
 - ▶ On-site detection and correction of faults
 - ▶ Qualified in-house repair service
 - ▶ Replacement devices in case of factory repairs
 - ▶ Recommendation for keeping spare parts in stock
 - ▶ Meeting special requirements as agreed



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