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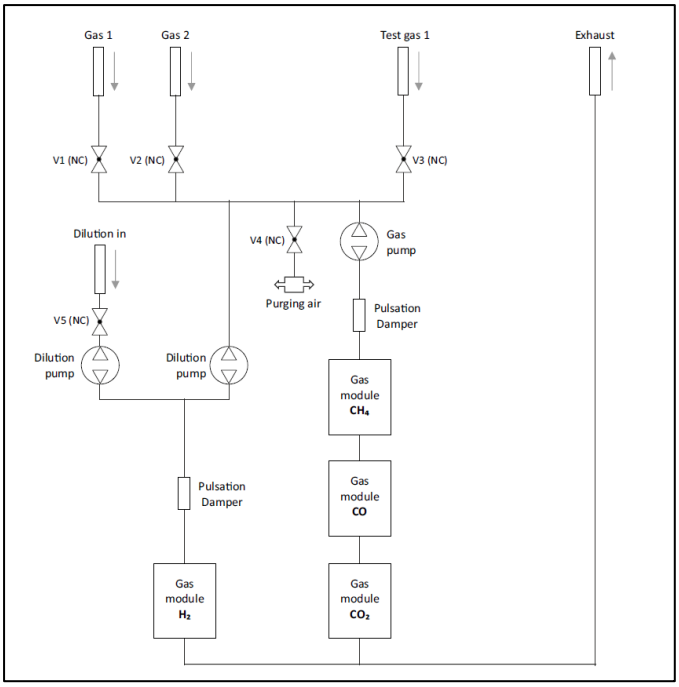
Modular Analyzer station for syngas with maintenance diagnosis - COMBIMASS GA-s hybrid syngas



Modern analysis technologies are used for many years for process monitoring and control in anaerobic digestion plants, landfills and digester gas from sewage treatment plants. A further use of organic solid waste in the last years lead to a revival of wood gasification plants. Syngas flow sensors and analyzer stations are used for process monitoring on one hand, but also for calculation of energy contents in the syngas.

Typical configuration of a measuring system contains of a thermal mass flow meter of the COMBIMASS® series with an automatic signal compensation of changing gas composition, and a gas analysis in front of the CHP. The analyzer cabinet presented at the exhibition is used for cyclic analysis of methane, CO, CO_2 and H_2 in the syngas. The H_2-contents mainly influences the calorific value of the gas and requires therefore a precise analysis. Therefore the syngas is diluted with a carrier gas (N_2). The gas bottle must be connected permanently to the analyzer station.

The design of the COMBIMASS® GA-s hybrid syngas station is completely modular. All pumps, valves and gas modules are mounted on DIN-rails for easy maintenance. Data can be stored internally on an USB-stick or SD-card. They can be transferred via various bus systems or analog/digital signals. Further options like an external access for monitoring of operation, maintenance diagnosis and/or data transmission can be supplied. The analyzer cabinet and the gas are monitored for pressure and temperature level. A hardware or software key can be used to secure the configuration settings.

All gas modules can become recalibrated in the cabinet during normal operation. So a long-time accuracy can be achieved easily. Manual calibration function is supplied as a standard, but an auto-calibration software can be applied too, if a span gas bottle is connected permanently with the analyzer cabinet.

The actual status of the gas modules is displayed on the graphic display using traffic light colours: green – okay and precisely; yellow – recalibration/ maintenance is required soon; red – maintenance now. Based on the maintenance diagnosis system, time cycles for service can be adjusted to the frequency of use as well as requirements on accuracy.

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