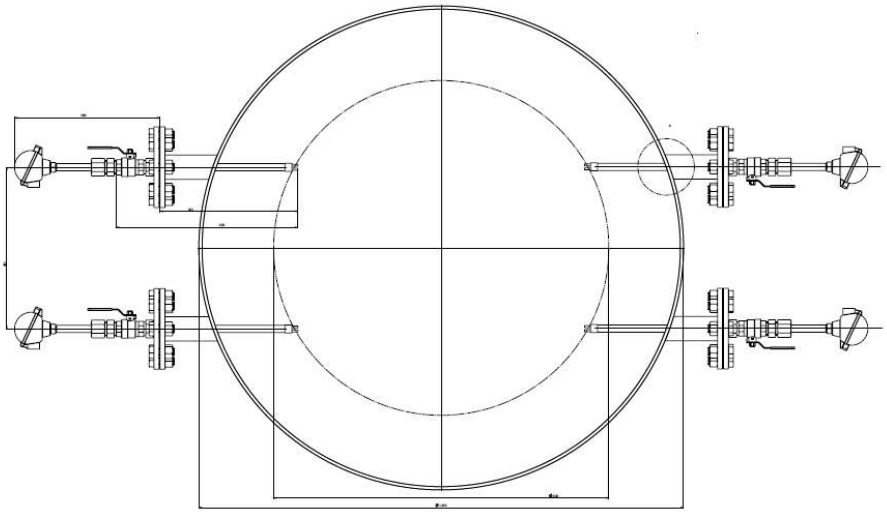
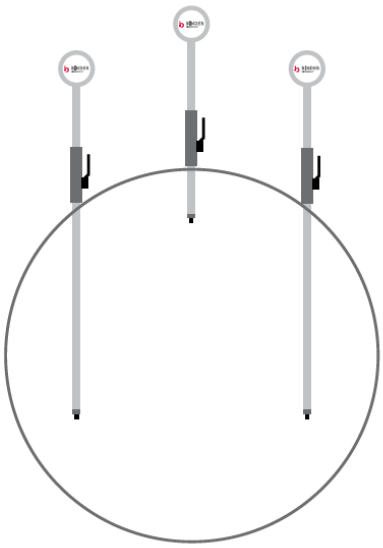
COMBIMASS®

Technical data

COMBIMASS® multi





BINDER

BINDERGROUP

THE SYSTEM

A COMBIMASS® multipoint system allows precise measurements of flow rate of pressurized air and technical gases even with short inlet and outlet pipe sections, nominal diameters larger than DN 500 or rectangular ducts. In such situations flow profile distortions may occur, which normally lead to errors in flow metering of gases. All flow meter of COMBIMASS® series (basic, eco, eco-bio+) can be used in combination with the **COMBIMASS® multi** electronics in a field housing. The flow meter are powered by the field housing. Analog output signals or current loop signals can be read into the electronics for further processing and signal compensation.

By installing multiple measuring points over the cross-section of the pipe or duct and averaging the flow signals, **COMBIMASS® multi** enables accurate and reproducible results even in such difficult applications. The COMBIMASS® multi was designed to build up a high performance multipoint system for thermal flow rate measurement of gases. There can be a number of flow transmitters connected to the PLC-based **COMBIMASS®** multi electronics.

For applications, which are critical from a safety point of view or in such cases where faulted results may cause considerable costs due to uneconomical process control, **COMBIMASS® multi** enables redundant monitoring of gas flow rates. Permanent functionality checks of the connected sensors as well as continuous plausibility checking of the flow signals guarantee outstanding reliability of the system. In case of any inconsistency or if one of the connected sensors fails an alarm will be immediately released. In such case of malfunction, **COMBIMASS® multi** automatically considers only those signals of the working flow sensors for signal processing, thus largely avoiding erroneous measuring results.

For indication of the measured flow rates or selected compensation parameters as well as for programming of the multipoint system the PLC is placed in the field housing for indoor or outdoor installation, powered with 24 VDC or 230 VAC. The 4.3”-touch-TFT graphic display (7” size can be supplied as an option) can be placed on a holder inside the cabinet or in the door of the cabinet with a protection cover (if mounted outdoors). The field housing can be made from stainless steel or plastics, for wall mounting or mounted on a rack.

All kinds of data transmission are available: analog signals, Ethernet Modbus TCP, Modbus RTU, Profibus, Profinet or Ethernet IP. **COMBIMASS® multi** allows indication and checking of the actual reading of any of the connected flow transmitters in the field. For monitoring of flow rate or temperature limits up to three switch points can be field set using additional relay outputs. Via those relay outputs either an alarm may be released.

COMBIMASS® multi features processing of external control signals in order to run complex applications. In order to enable monitoring of those external control signals an analog input as well as a relay input are available.

SMART FEATURES

- Designed to build up high-performance multipoint measuring systems easily
- May be combined with any flow transmitter of the COMBIMASS® series
- Highly precise flow rate measurement of gases even with short inlet and outlet pipe sections, large nominal diameters or rectangular ducts
- Redundant gas flow measurement for the purpose of safety precaution or economical control of critical processes
- Suitable for complex applications such as flow metering of mixed gases with variable composition

APPLICATIONS VERSATILITY

- Flow rate measurement of air or sterilized air in rectangular ducts, eg. in semiconductor industry, for dosing of drugs in pharmaceutical industry, in air conditioning
- Stack monitoring in power and incineration plants, cement industry and other industrial plants
- Combustion air and pre-heater air flow monitoring
- Flue and waste gas recirculation monitoring
- Gas flow monitoring through scrubbers and precipitators
- Redundant flow monitoring of process gases in critical applications
- Flow rate measurement of gas mixtures with variable composition in pipes with large nominal diameter or short inlet and outlet sections (eg. combustion gases, flare gases, process gases, …)

SPECIFICATIONS

TECHNICAL DATA

Measuring principle	Multipoint measurement or redundant monitoring of gas flow rates based on thermal dispersion technology
Number of measuring points	The COMBIMASS® multi electronics allows connection of 2-6 sensors / field transmitters per measuring point and additionally up to 3 measuring points of the COMBIMASS® series
Applications	Flow rate measurement of air, technical gases, inert gases, supply gases, combustion gases, flue and waste gases, process gases, explosive and flammable gases, dirty and moist gases, gases at extreme process temperatures and pressures, gases and gas mixtures of known and variable composition, depending on configuration of connected sensors / field transmitters • Multipoint measurement of flow rates in case of flow profile distortions, especially in case of short inlet and outlet pipe sections, large nominal diameters or rectangular ducts • Redundant monitoring of gas flow rates, especially for the purpose of safety precaution or economical control of critical processes

TECHNICAL DATA

Signal processing	Microprocessor based, fully digital signal processing
Calibration	Up to three different calibration groups with advanced temperature compensation for different gases, gas mixtures or process conditions
Housing	Plastic/ stainless steel field housing, min. size 400x400x200
Protection class	IP 22 - IP 65
Ambient conditions	Ambient temperature: –40° C to 70° C Relative humidity: < 80% rel.
Power supply	24 VDC / 230 VAC Power supply via standard supply units possible
Power consumption	Depends on specific configuration
Turndown ratio	10 : 1 to 1000 : 1
Graphic display with control pad *(optional)*	• 4.3” or 7” graphic display • Indication of flow rate, totalized flow and medium temperature • Integrated totalizer • Easy-to-use menu for system set-up
Signal input (isolated)	1 x analog input: 4-20 mA, passive 10 bit resolution 1 current loop optional Modbus RTU
Transmission of data and alarms	4-20 mA analog/ relays/ digital outputs, Ethernet Modbus TCP, Modbus RTU, Profibus DP, Profinet, Ethernet IP
Possible combinations	The COMBIMASS® multi electronics may be combined with following flow transmitters of the COMBIMASS® series: • COMBIMASS® basic (combination not possible with low-cost version) • COMBIMASS® eco • COMBIMASS® eco-bio+

IMPRESSUM

BINDER GmbH
Buchbrunnenweg 18
89081 Ulm, Germany
Tel. +49 731 18998-0
Fax +49 731 18998-88

info@bindergroup.info
www.bindergroup.info

BIDE-M-D-COMBIMASS multi-EN-R02-
Datenblatt COMBIMASS multi