

COMBIMASS[®]

Technical Data

COMBIMASS[®] Flow Conditioners
In-line flange or Insertion Type

Version 2011-12



COMBIMASS® FLOW CONDITIONER FOR GASEOUS FLOWS

To achieve the desired accuracies using COMBIMASS® thermal gas flowmeter, a minimum inlet and outlet straight pipe runs must be considered when installing according to DIN ISO 5167-1 as a result of the actual piping, flow profile irregularities and the necessary calming distances. If no sufficient calming distances are available, the desired measuring accuracy can possibly be achieved with a special calibration of the mass flowmeter by simulating the actual site conditions in our CAMASS® Calibration Lab with the same field operating process conditions under real load conditions and even the same piping layout.

If there is insufficient inlet and outlet straight pipe runs (e.g. in very big pipe diameters or ducts) and if our CAMASS® Calibration Lab is not feasible to perform a special calibration (due to price or technical reasons), a precise flow measurement can still be achieved with the patented and precise COMBIMASS® Flow conditioner. They work on the SCH-principle: **S**wirl-reduction, **C**rossflow-conditioning and **H**omogenization.

The COMBIMASS® Flow conditioner has a very low pressure drop compared to others and produces a defined and reproducible flow profile during turbulent flow conditions. Using a flow conditioner, straight inlet and outlet pipe run as well as complete construction volume can be reduced a lot. The standard overall length of the straight pipe run amounts only 7*D. The COMBIMASS® flow conditioner is insensitive to dirt and can be inserted also in damp gases such as digester or biofermentation gas. Further pulsations (e.g. coming from propeller blades of compressors) and back flows which would affect the accuracy of the measurement are absorbed.

Different types are available as standard versions: in-line type with fixed welded flanges or stainless steel seal curling and plastic-coated aluminum collar flange - to replace a pipe piece in new or existing pipe systems can be supplied having pipe dimensions DN50 to DN800. As well, a push-in/insertion type for existing pipes or a construction kit with loose components can be supplied as a simple module to the existing piping. This type is realized often in rectangular channels.

Special designs with a total overall length of only 3*D with integrated mass flowmeter and flanged ends are available on request.

ADVANTAGES

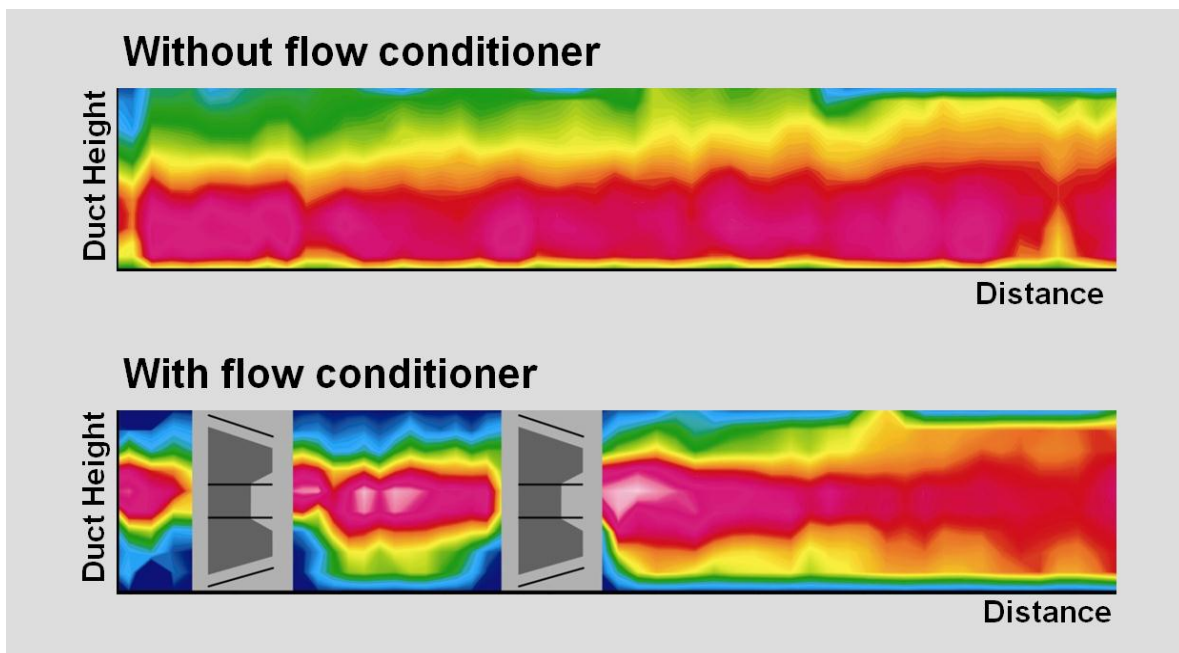
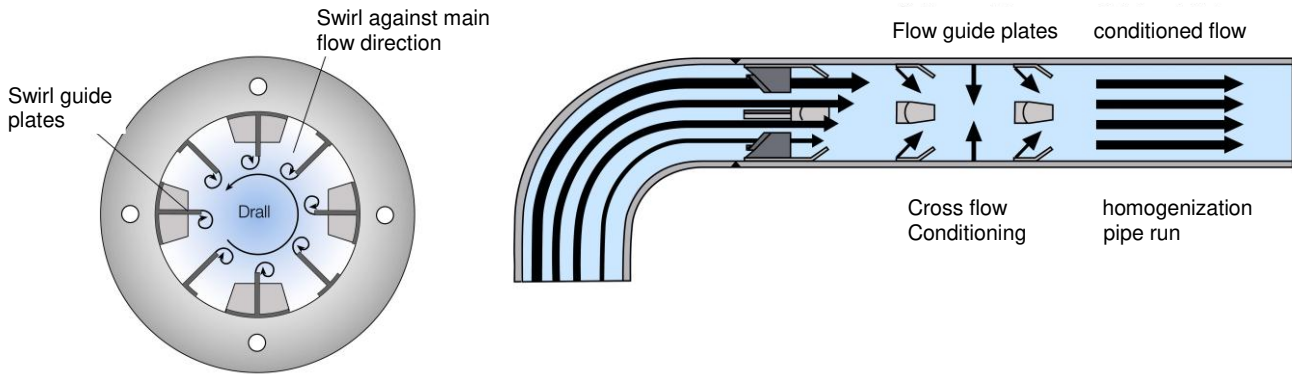
- makes a defined and reproducible flow profile
- improves accuracy of flow measurement significantly
- reduces required straight inlet and outlet pipe runs, thus reduces costs
- very low pressure drop
- rugged design, not sensitive to dust particles
- easy installation and maintenance
- dampens flow pulsations
- different types and materials available
- special types with integrated flowmeter can be supplied (total length only 3D)

INSTALLATION EXAMPLES

- flow conditioning in test facilities
- measurement of aeration air in wastewater treatment plants (for control purpose)
- biogas and digester gas measurement in containerized cogenerator rooms (short pipe runs and vibrations)
- various industrial applications with difficult pipe runs and high requirements on accuracy of flow measurement

OPERATING PRINCIPLE

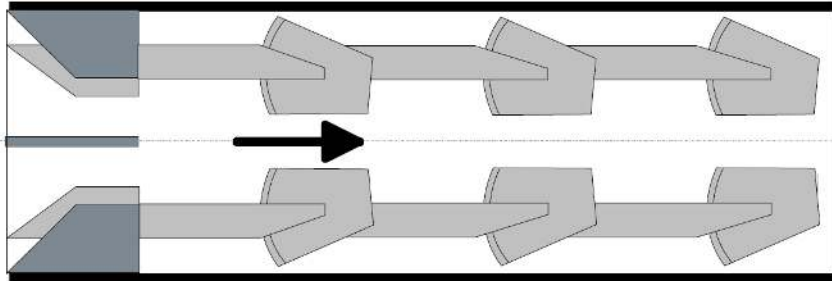
SCH-principle: **S**wirl-reduction, **C**rossflow-conditioning and **H**omogenization



TECHNICAL DATA

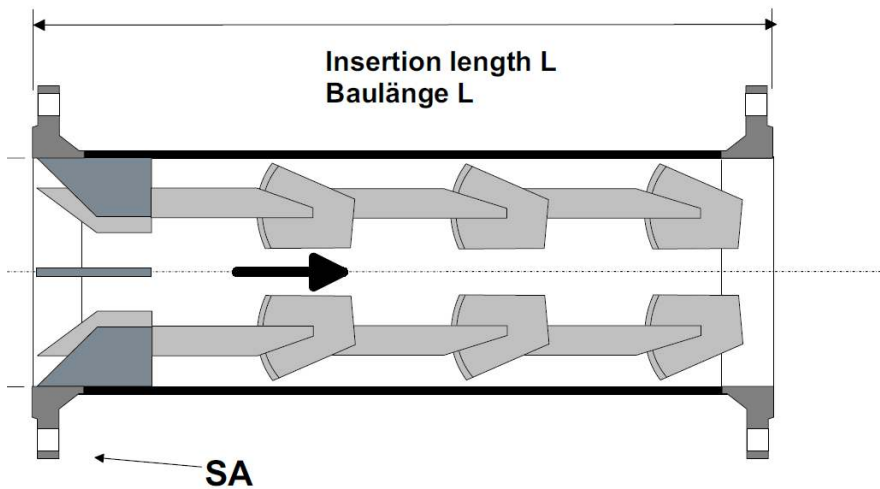
Insertion Type

Installation of gas flowmeter 3*D after the conditioner, requires straight outlet pipe length 1*D
Total length: 7*D



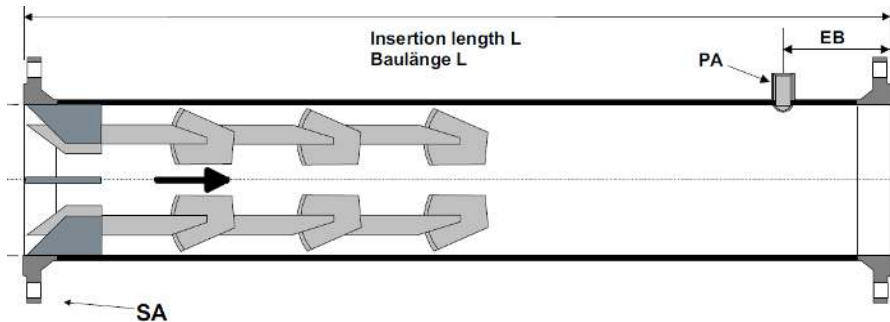
Flange Type 3D

With fixed welded flanges (alternative with SS seal curling and plastic-coated aluminum collar flanges), Installation of gas flowmeter 3*D after the conditioner, required straight outlet pipe length 1*D
Total length: 7*D



Flange Type 7D

With fixed welded flanges (alternative with SS seal curling and plastic-coated aluminum collar flanges)
Total length: 7*D



IMPRESSUM

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