Flow Monitoring Multipath Clamp-On

Ductus TT COHP
Datasheet

Innovative measurement solutions
for valuable resources

Ductus TT COHP

Advanced Flow Monitoring

For pipes with a diameter of more than half a meter, acoustic flow measurement systems have long established themselves as a reliable and convenient measurement method. Measurements in several planes are a recommended method to determine the efficiency of the turbine without the need for calibration meeting the latest international standards. Fixed installed equipment form the basis for verifying the efficiency. A deterioration of efficiency can be detected right away and therefore corrections can be initiated at an early stage.

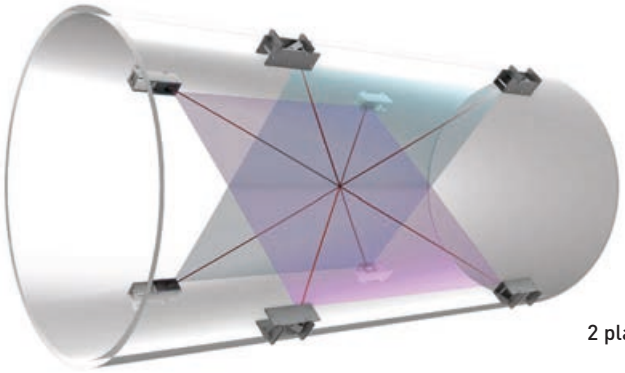
The transmitter can handle up to 8 acoustic paths, arranged in one pipe (max. 8 paths per pipe) or spread over up to 4 pipes (max. 2 paths per pipe). When installed in multiple pipes, the flow meter measures the flow in each pipe and calculates the total flow.

A further area of application is the detection of burst pipes. Here at least 2 systems have to be permanently installed in the pipelines to be monitored. Because of the accuracy of our products, even small leakages can be detected instantaneously.

Advantages

A flow meter using clamp-on transducers makes measuring flow non-intrusive and easy from the outside of the pipe. The transducers are installed with little technical effort and without process interruption on the pipeline.

Rotationally symmetric flow profiles can be determined with a single acoustic path; non-symmetric profiles require the use of several acoustic paths.



2 planes (45°) crossed

Typical Applications

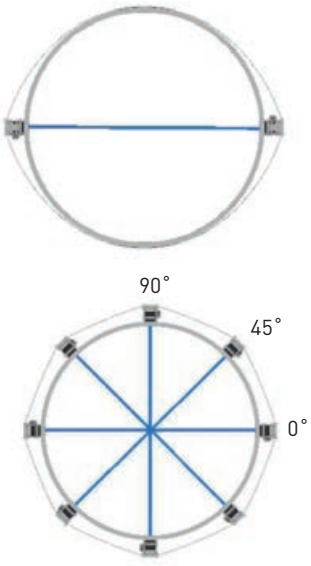
- Pipes - partially and full-filled
- HydroPower plants
- Turbine efficiency
- Leakage Detection

Non-parallel planes

The arrangement of acoustic paths is dependent on the flow profile, the pipe diameter and the measuring principle. A differentiation is made between single path and multi-path arrangements. Arrangement of the single path or multi-paths is theoretically possible in the entire range of the angle of inclination $0° < \varphi < 90°$.

Measurement with a crosswise arrangement of acoustic paths reduces the influence of cross flows. Further improvement in the measuring result can be obtained by arranging an appropriate number of acoustic crossed paths in various planes. These arrangements have special advantages under unfavourable flow conditions or if the lengths of inlet and outlet sections are insufficient thereby preventing the creation of specific flow profiles.

In the case of primary measuring systems with single paths in several non-parallel planes, the signal paths are frequently lengthened by reflection. Reflection my also be necessary when the pipe is accessible from only one side or the acoustic path has to be extended in the case of small pipe diameters.



System Components

Path Arrangements

Installation in Iceland

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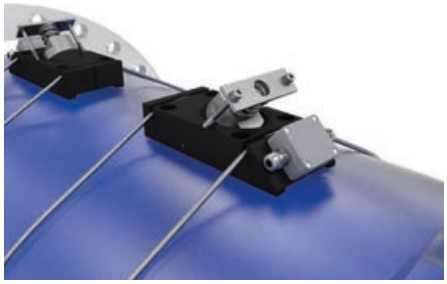


Ductus TT COHP IE
Stationary transmitter

Transducer & Straps
For easy mounting

Ductus TT COHP ME
Portable transmitter

The flowmeter is available both as a stationary version or as a portable unit for temporary measurements in a watertight and rugged transport case and inclusive automatic pressure equalization valve.

Technical Data

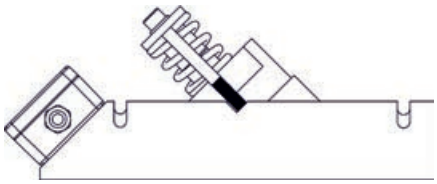
Specifications

Transmitter

	Ductus TT COHP IE
Acoustic Paths	1 to 8
Accuracy	up to ± 0,5 % with 8 paths (dependig on number of installed paths)
Range	± 20 m/s
Display	4 lines, 20 characters
Pipe Diameter	0,3 to 10 m
Datalogger	internal, sampling interval user selectable
Communication	RS-232, Modbus, Ethernet, USB
Inputs	max. 8 x 4-20 mA
Outputs	max. 4 x 4-20 mA, 2 x Relay, 2 x Pulse
Power Supply	85-260 V_{AC} (48-60 Hz) or 9-36 V_{DC}
Battery Backup	integrated, 2 Ah
Enclosure	Aluminium, wall mounted
Dimensions	600 x 400 x 170 mm

	Ductus TT COHP ME portable
Range	± 20 m/s
Power Supply	12 V_{DC}
Display	4 lines, 20 characters
Keyboard/LED's	4 LED control lights, 2 keys
Housing Material	Aluminium
Communication	2x RS232, 4x USB, 2x Ethernet (100 Mbit)
Dimensions incl. case	850 x 700 x 450 mm (L x W x H)

Specifications



	Sensor TD 200/8 CO – Clamp-On Type
Pipe Diameter	0,3 m to 15 m
Pipe Wall Thickness	up to 100 mm (steel, plastic, glass fiber)
Frequency	200 kHz
Beam Width	8° (-3dB)
Material	Stainless steel, Polyamide
Dimensions	270 x 115 x 100 mm
Mounting	non intrusive, from the outside of the pipe

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