



# LDM Partially Filled Flow Measurement

## Highly Precise Ultrasonic Transit-Time Difference Flow Measurement

The LDM is a calibrated measuring device for backwater-free flow measurement in partially filled and full pipes. The system reliably detects even the lowest filling levels with maximum accuracy. To ensure the highest measurement precision, ten ultrasonic measuring paths are distributed across the entire pipe cross-section. The LDM is suitable for a wide range of media, including wastewater, raw sewage, and rainwater.

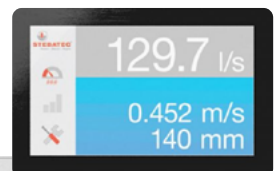
The device stands out due to its high precision and direct data transmission to the process control system via all common interfaces. Thanks to continuous self-monitoring, the LDM detects disturbing contamination and reports it automatically. Installation is particularly simple: the LDM is mounted between two pipe sections using bolts / threaded rods. Because of its standardized installation length, an existing measuring device can be replaced without any modifications to the pipeline. Factory calibration, intuitive operation, and a clear commissioning guide ensure fast and efficient installation and startup.

### Advantages of the LDM

- Factory-calibrated and ready for operation
- Integrated data logging of all raw signals
- Resistant to abrasion and chemicals
- Measures at extremely low filling levels (from 26.1 mm)
- Ultrasonic sensors measure reliably even with heavy contamination
- Sensor system monitors measured values and reports fouling
- Prevents sediment build-up due to measurement in partially filled pipes
- Operation and data display via an intuitive display
- Standardized installation dimensions

### Everything at a Glance & Under Control

The intuitive cockpit. Visualization, configuration, and simulation.



4.3" Touch-Display



### Online Access Solution

Secure remote access – enabled at the push of a button. Your controller is accessible at any time via the web interface.

## The transmitter – everything at a glance

The revolutionary signal processing ensures measurement stability, whilst the integrated web interface provides added user convenience. The transmitter is robustly built and has a long service life. In addition to its intuitive operation, it stands out for its seamless integration into an existing process control system. The large display shows flow rates and levels, providing you with all the relevant information.

Configuring and commissioning the signals, alarms and units is quick and easy. Simulations for service or analysis are also possible.

## High-precision flow rate measurement

The need for cost allocation based on actual usage is also growing in the wastewater sector. LDM offers significant advantages, particularly in light of increasing demands for precise measurement results.

The measurement uncertainty is a maximum of 2% of the measured value, or 0.5% of the full scale of the measurement range – thanks to the mutually monitoring ultrasonic sensors, even in the presence of heavy contamination.

## LDM – Areas of application

- Flow measurement in wastewater authorities
- Wastewater discharge monitoring for industrial facilities
- Measurement of drainage water
- Measurement of extraneous and rainwater
- Measurement of mine and process water (mining/tunnel construction)
- Cost accounting measurement (very high data quality)

DN [mm]	min. Measurement height [mm]	Gradient 0.5% Q [l/s]	Gradient 0.6% Q [l/s]	Gradient 0.7% Q [l/s]	Gradient 0.8% Q [l/s]	Gradient 0.9% Q [l/s]	Gradient 1.0% Q [l/s]	Gradient 2.0% Q [l/s]
150	26.1	0.95	1.01	1.09	1.17	1.24	1.31	1.85
200	26.8	1.16	1.27	1.37	1.47	1.56	1.64	2.32
250	28.0	1.45	1.59	1.71	1.83	1.94	2.05	2.89
300	31.7	2.08	2.28	2.47	2.64	2.80	2.95	4.17
350	33.4	2.54	2.78	3.00	3.21	3.40	3.59	5.07
400	34.8	2.98	3.27	3.53	3.77	4.00	4.22	5.96
500	37.9	4.04	4.42	4.78	5.11	5.42	5.71	8.08
600	40.7	5.19	5.68	6.14	6.56	6.96	7.34	10.38
700	43.4	6.47	7.08	7.65	8.18	8.68	9.14	12.93
800	46.0	7.86	8.61	9.31	9.95	10.55	11.12	15.73
900	48.5	9.38	10.27	11.09	11.86	12.58	13.26	18.75
1000	50.9	10.99	12.04	13.01	13.91	14.75	15.55	21.99
1100	53.3	12.76	13.98	15.10	16.14	17.12	18.05	25.52
1200	55.6	14.63	16.02	17.31	18.50	19.62	20.68	29.25

## Technical Specifications

<b>Nominal diameters</b>	DN150 to DN1200
<b>Power supply</b>	24VDC
<b>Power consumption</b>	25W
<b>Measurement method</b>	Ultrasonic transit-time difference measurement
<b>Measuring range</b>	-5 ... +5 m/s
<b>Protection class</b>	IP68
<b>ATEX</b>	Zone 1
<b>Max. permissible pressure</b>	1 bar
<b>Operation</b>	Via control panel or web interface / browser
<b>Communication</b>	Directly or via mobile network (≤ 4G) to any process control system
<b>Interfaces</b>	Modbus TCP, optional I/O interface (analogue and digital signals), via mobile network (≤ 4G)
<b>Mounting &amp; maintenance</b>	Easy installation with an intermediate flange; cleaning via an optional access opening



Find out more about LDM

## Want to Learn More?

Contact us for a personal consultation. We'll be happy to assist you!