Pinch Point Level Monitoring

Introduction

Pinch points are areas that are particularly responsive to rainfall and over burdening. The heavier the rain, the greater the flow the sewer has to carry. It is inevitable in heavy rainfall or equivalent weather events that some of these sewers will be overwhelmed. The overloading, if not relieved by Combined Sewer Overflows (CSOs), would lead to storm sewage flooding homes, gardens, streets, highways and open spaces.

Monitoring pinch points as well as CSOs leads to a better understanding of the waste water network. This can also provide an early warning system which allows problems to be highlighted before the event results in a spill.







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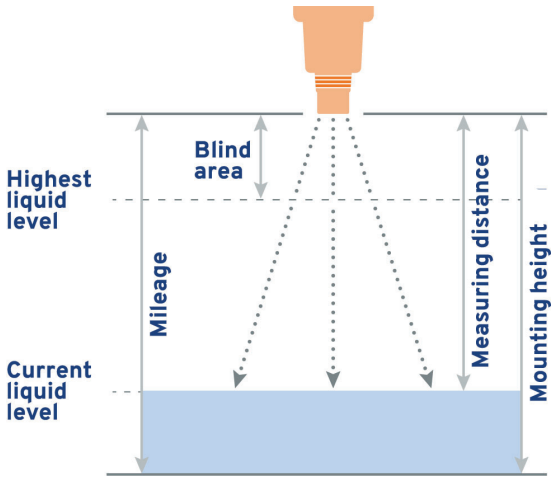
Pinch Point Level Monitoring

Technology

Non-Intrusive

Ultrasonic

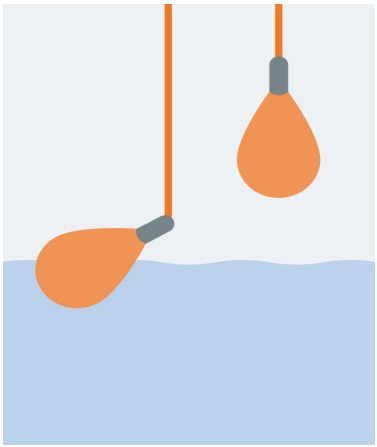
Ultrasonic pulses are fired at the surface of the water. Return time calculations are used to determine the depth of the water.



Intrusive

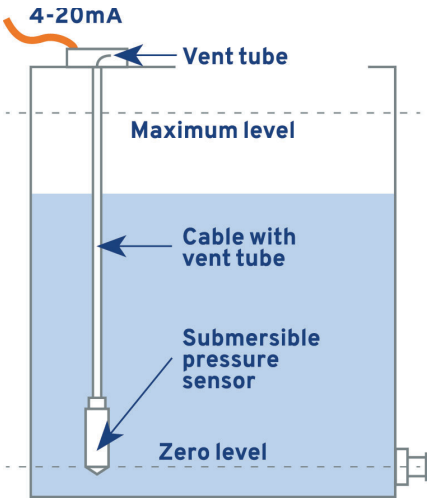
Float Switches

A float on a line contains an internal switch which is triggered when the float is tilted due to rising water level.



Submersible Level Transmitter

A level transmitter submersed within the body of water. The pressure from the surrounding water is measured using an internal strain gauge or similar and level calculated.



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Pinch Point Level Monitoring

Technology

Application	Ultrasonic	Float Switch	Level Transmitter
Fast moving water			✓
Slow moving water	✓		✓
Still water	✓	✓	✓
Debris on surface			✓
Risk of freezing	✓	✓	
High accuracy required			✓
Risk of ragging / sediment build up	✓		
Low maintenance requirement	✓	✓	
Low budget	✓	✓	
Water movement <3m	✓	✓	✓
Water movement <15m		✓	✓
Water movement <30m		✓	✓
Intrinsically Safe	✓	✓	

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Product Technical Matrix

	Cello IS Encoder	Newlog 4DR Mk2	Cello GS4
Service	Water, Waste Water	Gas	Gas
Available Communication Options	Local / 2G	Local / 2G	Local / 2G / 3G NB-IOT / Cat M1
User Accessible SIM	No	Yes	Yes
User Replaceable Battery	Yes	Yes	Yes
Available Channels	2	3	8
Optional Pressure Inputs	N/A	1	3
Supported Pressure Recording Strategies	I	I / A / S	I / A / S
Optional Temperature (PT-100) Inputs	0	0	1
Available Digital Inputs	0	2	5
Available Analogue Inputs	0	0	5
Internal / External Supply	Internal	Internal	Internal
Powering of Third Party Sensors	No	No	No
WITS Compliance	Yes	No	No
Intrinsically Safe	Yes	Yes	Yes
Protection Class	IP 68	IP 68	IP 67
Level Monitoring Capability	Ultrasonic Probe, PTI Transmitter	Float Switch	Ultrasonic Probe, Level transmitter, Float Switch

Key : Pressure Recording Strategy (I - Instantaneous / A - Average / S - Statistical / T - Transient)

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