



Ultrasonic Flow Meter Brochure

Rev. 2011/06/10



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Descriptions

SL1168 Ultrasonic Flowmeter uses the latest digital technology and low-voltage broadband pulse transmission. The instrument is tolerant of liquids with small amounts of air bubbles or suspended solids found in most industrial environments. With distinctive features such as high accuracy, high reliability, the MPU in the instrument provides unique digital signal processing and a relevant test programs.

This flowmeter provides long-term no-drift measurements and sorts the operating software to adjust parameters according to changing conditions.

Specifications

Transmitter:

Flow range: 0 to ± 40 ft/s (0 to ± 12 m/s)

Accuracy: $\pm 1\%$ of reading

Repeatability: 0.3%

Outputs:

OCT pulse, 0~10 KHz

Relay output

4-20mA output (optional)

Communications: RS232, Modbus Protocol

Power consumption: 2W

Clamp on transducers (standard):

Measurement pipe range: 1" to 48" (25mm to 1200mm)

Protection rating: IP68

Operating temp.: 0°C to 60°C

Transducer cable standard length: 30ft (9m) standard



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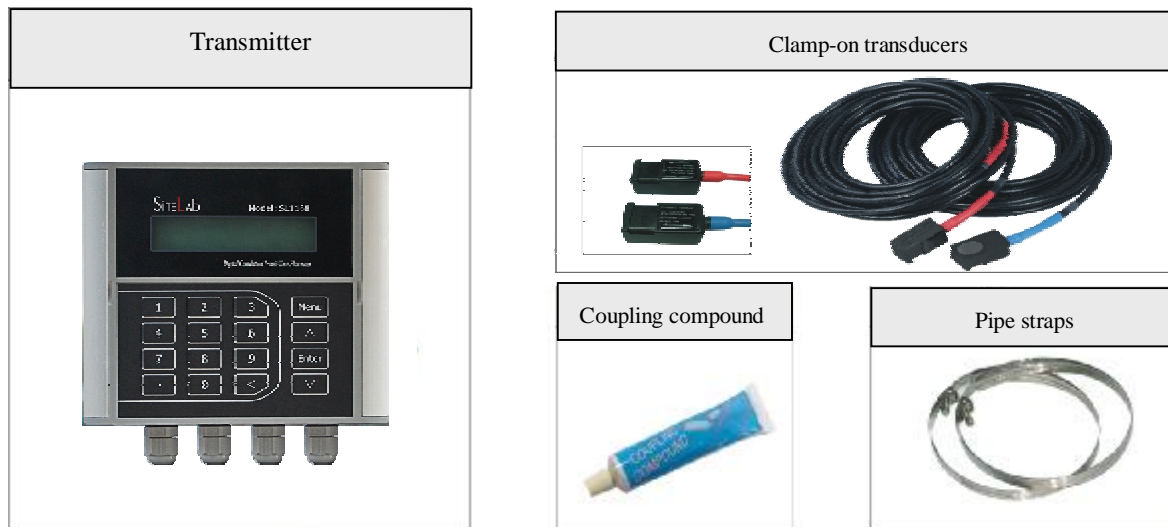


About SL1168

SL1168 is equipped clamp-on transducers made with SiteLab patented technology, which is suitable for metal, PVC and other pipe materials, or lined pipe. The transducers use robust material with the high performance piezoelectric crystals, which with high accuracy and good performance during measurement. At the same time, it's easy and convenient to install. Users only need to fix it on the pipe with the pipe straps, and setup the transducer spacing according to the prompt calculation of the meter. It only takes minutes to complete.

Features

- I Compact design, easy to install.
- I Using weather-proof robust housing materials: corrosion-resistant, rust-resistant, freeze resistant.
- I Designed to be user friendly, easy to operate. Users can finish installations within just 20 min.
- I Suitable for measurement in many different working conditions.





Wall Mount Ultrasonic Flowmeter

Model	Description
SL1168	<p>Digital Correlation Transit Time Flowmeter</p> <p>Installation method: Wall mount</p> <p>Flow Range: 0 to ± 40ft/s (0 to ± 12 m/s)</p> <p>Accuracy: 1% of measurement; Repeatability: 0.3%</p> <p>Pipe Size Range: 1" to 48" (25mm to 1200mm)</p> <p>Display: 20*2, alphanumeric, backlit LCD</p> <p>Power supply: 10~30V DC@1Amax</p> <p>Transmitter enclosure: IP65, ABS/PC enclosure</p> <p>Temperature: -20~50 °C</p> <p>Outputs: OCT pulse output, relay output, 4~20mA DC (optional)</p> <p>Communications: RS232 terminal</p> <p>Transducer protecting rate: IP68</p>
Code	Output
1	OCT pulse output, relay output, RS232
2	OCT pulse output, relay output, RS485
3	OCT pulse output, relay output, RS232, 4-20mA output
4	OCT pulse output, relay output, RS232, RTD temperature input
Code	Type of transducers
CP	Clamp on transducer, Operating temperature: -40°C to 60°C
WS	Wetted transducer (small type), Operating temperature: -40°C to +80°C apply to the pipe sizes below 16" (400mm)
Standard Model: SL1168-1-CP	
Description: standard enclosure with Clamp on transducers, OCT pulse output, relay output, RS232, 30ft (9m) cable.	



Flow



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proof



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control



GPRS
function



3C certification

Specifications

To get higher strength signal and better accuracy, WS type transducers are recommended. Normally they are used in the following conditions: big pipe sizes, old pipe, heavy corroded pipe, and especially in areas where there is limited space for installation.

Pipe size: 2" to 16" (50mm to 400mm)

Sensor material: 316 stainless steel

Protection rating: IP68

Medium temperature: -40F to 176F (-40°C to 80°C)

Transducer cable standard length: 30ft (9m)

Ball valve material: brass body, PTFE threaded weldolet, 316 stainless steel ball

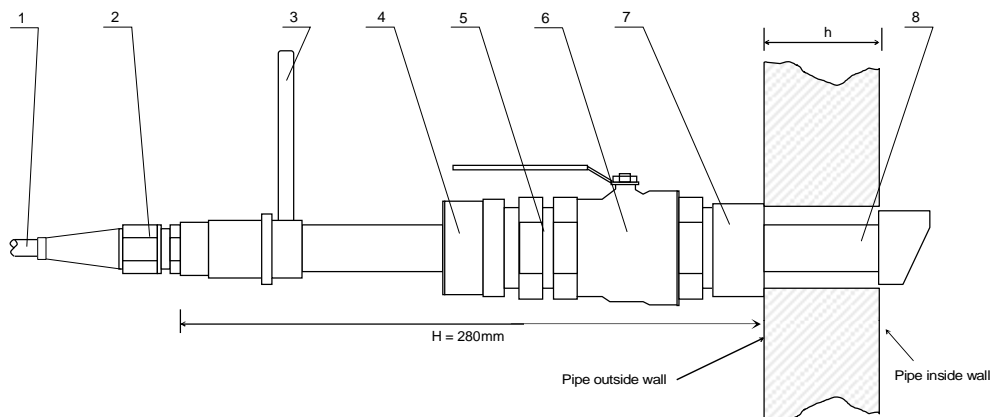
Threaded weldolet material: carbon steel, (optional: stainless steel)

Press rating: 232 psig (PN1.6Mpa)

Weight (including cable and ball valve): 5.5lbs (2.5kg)



Dimensions



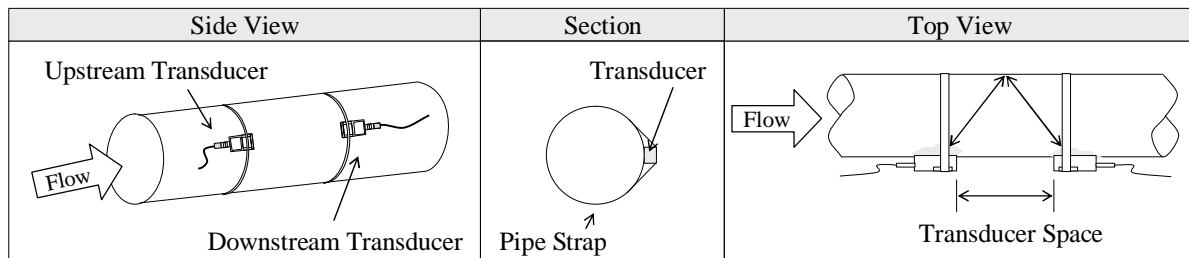
1. Flexible revolving piece
2. Connector
3. Orientation handle
4. Locating sleeve

5. Joint nut
6. Ball valve
7. Threaded weldolet
8. Transducer housing

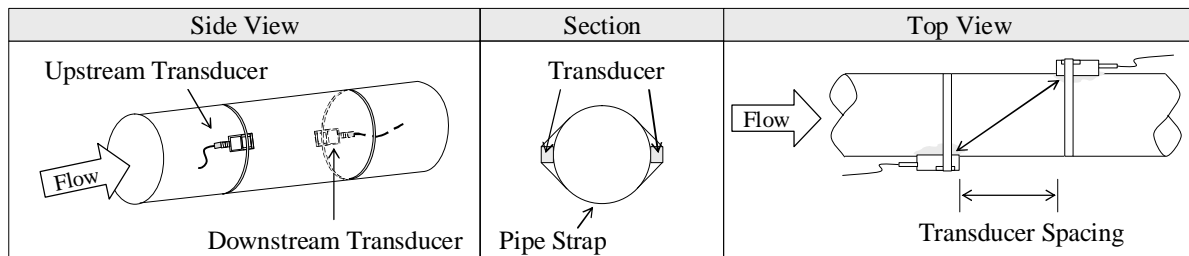
Clamp-on Transducers Installation Methods

Clamp-on Ultrasonic Flow-meters are installed simply by applying coupling compound on the bottom of the transducers and strapping them to the outside of the pipe. SiteLab Clamp-on Ultrasonic Flowmeters are internationally known for their simple and convenient installation and low maintenance characteristics.

V method installation on pipe size: 1" to 16" (25mm to 400mm)



Z method installation on pipe size: 4" to 120" (100mm to 1200mm)





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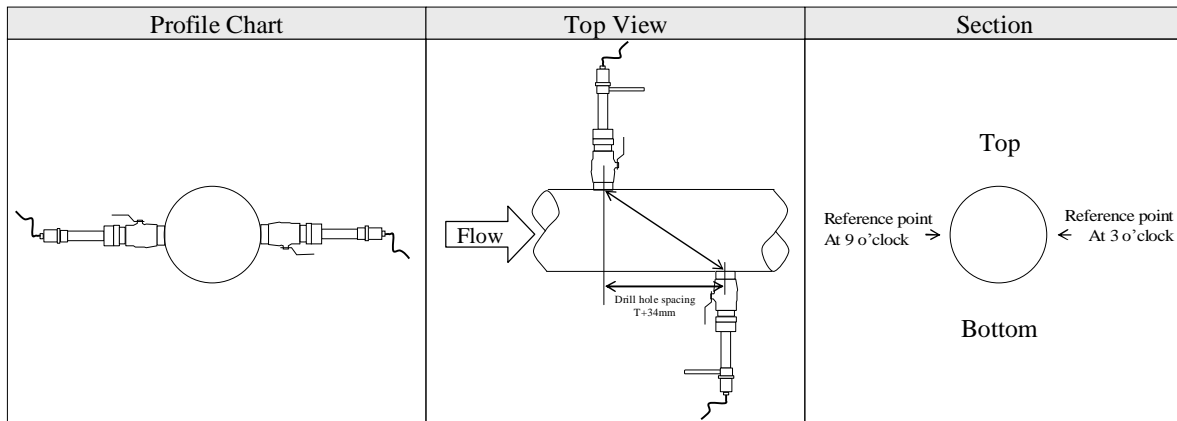


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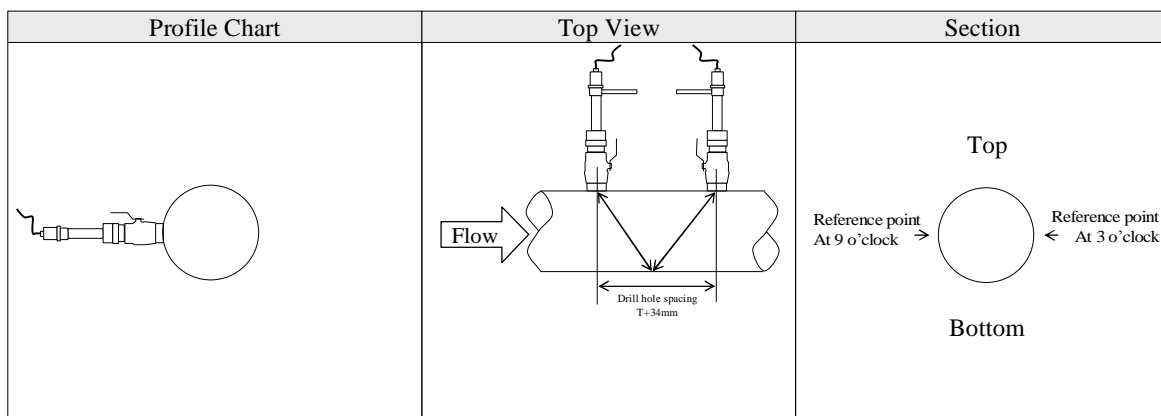
Wetted Transducers Installation Methods

Insertion type (wetted type) transducers can be installed under flow conditions and pressure by hot-tapping them into the pipe via an isolation ball valve. Wetted sensors are used normally on large pipe, concrete pipes, corroded pipes, and old pipe to have direct contact with the liquid to be measured. The speed of sound of the pipe material is eliminated from the calculation of spacing between transducers.

Z method installation



V method installation



Transducer	Spacing(L)	Installation Method and Pipe Size	
WS Style	Inner size-10mm	Z 2"~16" (50mm~400mm)	V 4"~10" (100mm~250mm)



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Installation Site Selection

When selecting a measurement site, it is important to select an area where the fluid flow profile is fully developed to guarantee a highly accurate measurement. Use the following guidelines to select a proper installation site:

Choose a section of pipe that is always full of liquid, such as a vertical pipe with flow in the upward direction or a full horizontal pipe.

Ensure enough straight pipe length at least equal to the figure shown below for the upstream and downstream transducers installation.

Name	Straight length of upstream piping	Straight length of downstream piping
90° bend		
Tee		
Diffuser		
Reduce		
Valve		
Pump		

Ensure that the pipe surface temperature at the measuring point is within the transducer temperature limits.

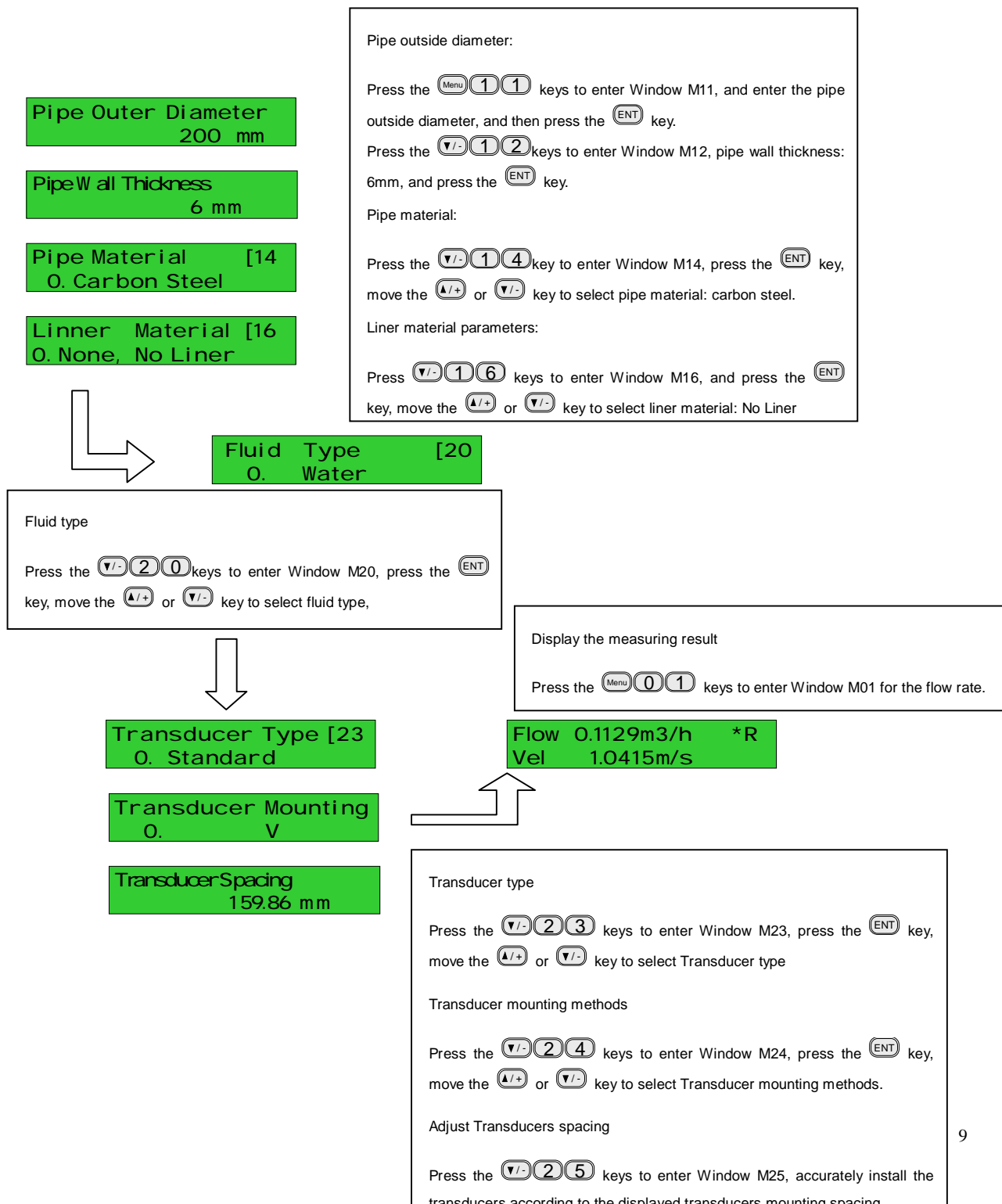
Consider the inside condition of the pipe carefully. If possible, select a section of pipe where the inside is free of excessive corrosion or scaling.

Note: D is pipe diameter.

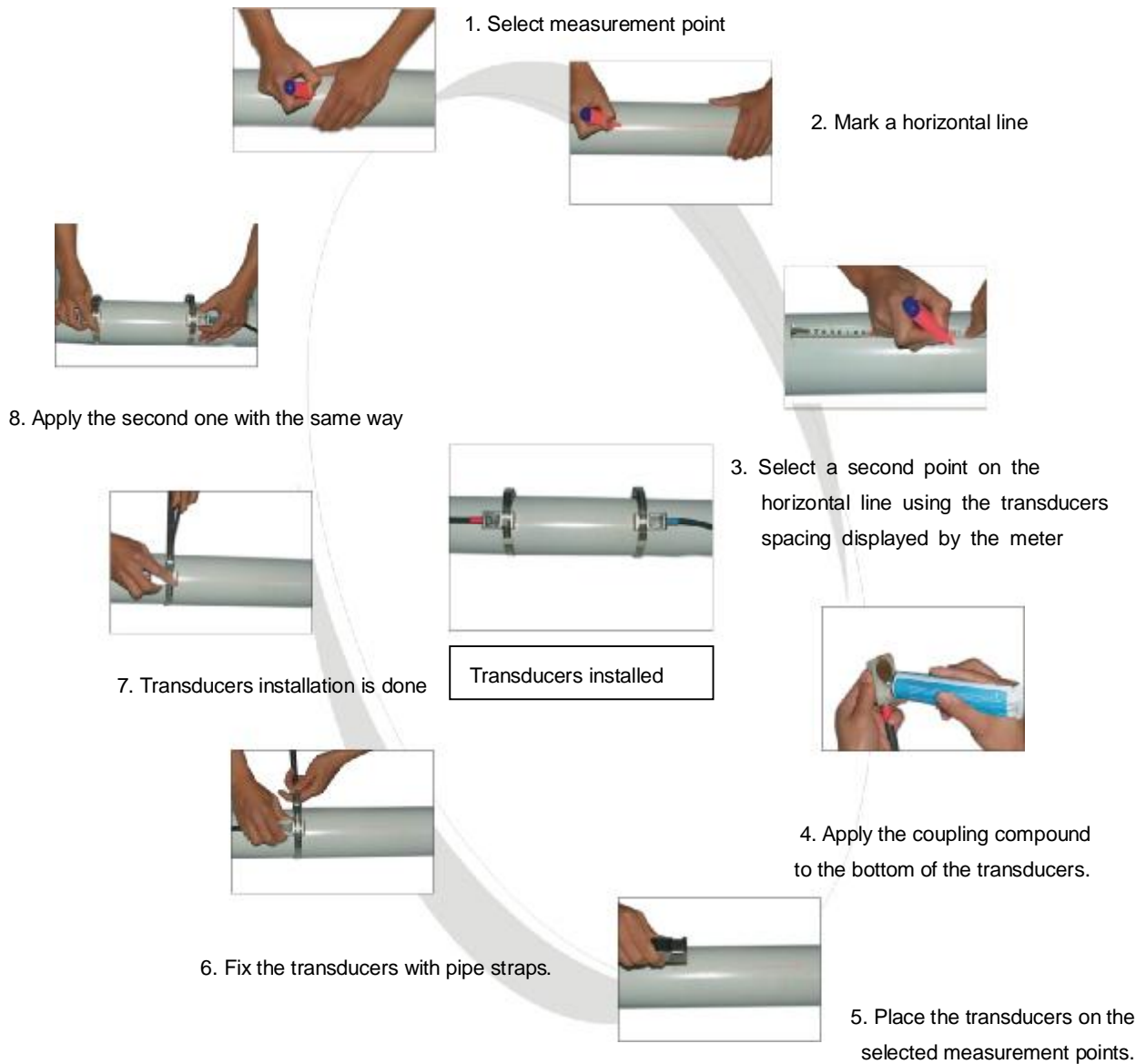


Quick Start setup

For example, with a pipe diameter of DN200, fluid type: water, pipe material: carbon steel, pipe wall thickness: 6mm, no pipe inside liner, the SL1168 can be programmed as follows:



Transducer installation steps





SL1168 Ultrasonic Flowmeter targets irrigation applications and features compact design, easy operations, high dynamic response with economical price; also, the meter features intelligent control, fault alarms and self diagnostics, which highly increases the working efficiency.



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