

Klinger ST

Ultrasonic Flowmeter Clamp on

Klinger ST is a compact flow meter for mounting on the outside of the measuring tube. The meter uses the transit time principle and can be used for all clean liquids.

Principle

The principle is based on the simultaneous transmission of one ultrasonic signal downstream and one countercurrent.

Since the countercurrent signal will be longer along the way, the difference in travel times will be an expression of the liquid velocity, which can be calculated purely electronically, as it turns out that measurement of the flow velocity, based on ultrasound, is:

- Independent of media density
- Independent of the viscosity of the media
- Independent of the speed of sound in the current media



Limitations

The transit time principle is primarily used for clean liquids / gases, as the ultrasonic signal must be able to run unhindered between the sensors.

Air bubbles / moisture and particles can dampen the sound signal, in some cases it can even give false reflections. It is not possible to state exact values for how "dirty" the medium can be, it depends on what material the source of pollution is made of, but as a rule of thumb applies:

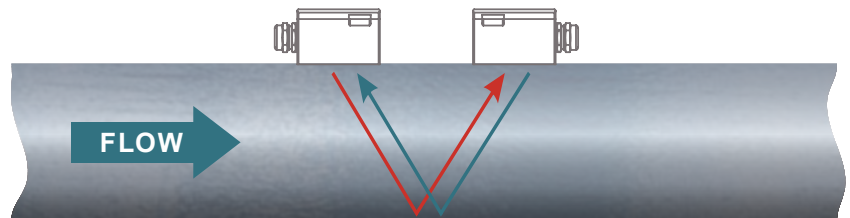
- Gas / air bubbles in liquid <1% vol
- Solid particles in the medium <5% vol

Although the principle is independent of the viscosity of the medium, there is an upper limit of 100cP / m, where the sound waves can no longer be compressed (transport the signal)

Application

Klinger DS116 can be mounted on all pipes made of steel, stainless steel or PVC - in dimensions DN 4mm to DN 80mm.

The meter is suitable for applications in most industries, e.g. for chemicals, alcohol, ultra clean water, refrigerants and more.



Klinger ST - Easy to use:

- For all clean Liquids
- Pipesizes DN 4 to DN 80mm
- Installation in few minutes
- Can be used for all homogenous pipematerials
- Analogue output as standard

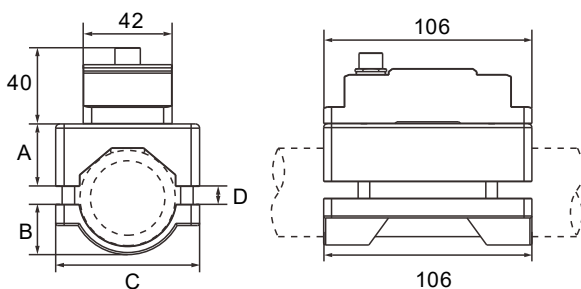
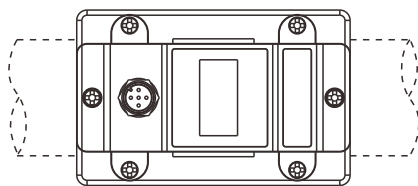
Technical data

Specifications	
Range	±0.1m/s ~ ±5m/s
Accuracy	±2.0% MV
Pipe size	DN 4mm...DN 80mm (inside dia.)
Media	Clean Liquids
Pipe Materials	Steel, Stainless steel, PVC etc.
Funktionality	
Output	Analogue: 4~20mA, max load 600Ω Option: Pulse output: 0~5000Hz.
Communication	RS485 / Modbus
Power Supply	24 VDC
Programming	4 buttons / menu
Display	OLED 128*64
Temperature	Media: 0...+100grC / HT: 0...+150grC Ambient: 0...+50 grC
Humidity	Max 99% RH, non condensing
Physical data	
Transmitter	Aluminium, IP54
Monting Bracket	Aluminium w. magnet
Signal Cable	2m w. M16 5-pin Connector
Weight	0,9 to 2,0 kg (dimension)



Dimensions

Compact vers.



Model	A(mm)	B(mm)	C(mm)	D(mm)	
				Min	Max
ST-Φ 6.35	-	-	-	-	-
ST-Φ 9.53	-	25.5	42	0/Φ 9.53	1/Φ 10.4
ST-Φ 12.7	-	26.8	42	0/Φ 12	1/Φ 13.1
ST-Φ 15	-	29	42	0/Φ 14.5	1/Φ 15.4
ST-Φ 20	25	10	58	1/Φ 16.5	7.5/Φ 23
ST-Φ 25	25	15	58	1/Φ 25	4/Φ 28
ST-Φ 32	28.5	18.5	58	1/Φ 32	4/Φ 35
ST-Φ 40	29.5	24	68	1/Φ 38	9/Φ 45
ST-Φ 50	36	27	78	1/Φ 48	7/Φ 54
ST-Φ 63	41	32	91	1.5/Φ 58	8.5/Φ 64
ST-Φ 75	46.5	40	105	1/Φ 72	7/Φ 78
ST-Φ 90	51.5	43	119	1/Φ 80	13/Φ 92

Installation

Klinger ST has been designed for simple and fast installation.

The mounting brackets are supplied with build-in magnets that keep the two parts together during installation. The construction makes it possible to mount and start the measurement in 2-3 minutes.

Follow the 5 steps:

01 Clean the pipe



The pipe is cleaned of dirt, paint and other irregularities at the installation site.

02 Mount the bracket



Place the mounting brackets around the pipe (they are held in place by the magnet coupling). Tighten with the supplied screws.

03 Install the transmitter



Remove the protective film from the sensors and place the unit in the mounting bracket. Fasten the transmitter to the bracket with the supplied screws.

04 Connect the Cable



Install the cable in the M16 socket and connect it according to the Manual.

05 Start measuring flow



Connect the power.

Wait for the display to show the message $Sq \geq 50$ - this indicates that the signal is strong enough to give a stable measurement.

Meter selection (Compact type)

Model	ST-Φ 6.35	ST-Φ 9.53	ST-Φ 12.7	ST-Φ 15	ST-Φ 20	ST-Φ 25
OD	6.35mm	9.53mm	12.7mm	15mm	20mm	25mm
DN	–	DN8	–	DN10	DN15	DN20
NB	–	1/4"	–	3/8"	1/2"	3/4"
Min pipe	–	9.5mm	12mm	14.5mm	16.5mm	25mm
Max pipe	–	10.4mm	13.1mm	15.4mm	23mm	28mm
Model	ST-Φ 32	ST-Φ 40	ST-Φ 50	ST-Φ 63	ST-Φ 75	ST-Φ 90
OD	32mm	40mm	50mm	63mm	75mm	90mm
DN	DN25	DN32	DN40	DN50	DN65	DN80
NB	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
Min Pipe	32mm	38mm	48mm	58mm	72mm	80mm
Max Pipe	35mm	45mm	54mm	64mm	78mm	92mm

Product selection:

Compact ultrasonic meter for 1" pipe w. RS485 and 4-20mA output and 2 m signal cable

Order code: Klinger ST - Ø32 - Compact

Other versions:

Klinger ST can be delivered as a separate version. Transmitter/display can be mounted 5 meter from the sensor.

The remote version are delivered for the same pipe dimensions as the Compact version:

Remote ultrasonic meter for 1" pipe w. RS485 and 4-20mA output incl. 2 m signal cable

Order code: Klinger ST - Ø32 - Remote



Other meters

Portable Flowmeter



Magnetic flowmeter



Thermal Flowswitch

