

KDG Series AC606L

Ultrasonic flowmeter

Data sheet
IP372

- ▶ Ultrasonic flowmeter in IP 66 wall mounted enclosure
- ▶ Easy to install clamp-on sensors with no process interruption
- ▶ Non-invasive flow measurement of liquids, no pipeline disturbance, no pressure loss
- ▶ Suitable for all commonly used pipe materials with pipe diameters from 10 mm to 2.5 m (½" to 100")



Description

The AC600 range of non-invasive flowmeters utilises ultrasonic technology for the accurate flow measurement of liquids in full pipes.

The field mounted flow transmitter can be configured via the keypad without any additional programming devices and is available as single channel unit.

The measurement of flow is based on the principle that sound waves are influenced by a flowing medium.

Measurements are made by penetrating the pipe with ultrasound and subsequently time differences, frequency variations and phase shifts of the ultrasonic signals are evaluated. This measuring technique has no effect on the flowing liquid. There is no pressure loss in the pipe and no wear on components of the measuring device.

The ultrasonic sensors are clamped onto the outside of the pipe, thus eliminating the need to dismantle the pipework and interrupt the

process. The AC606L can be applied to any type of standard pipe carrying clean or dirty liquids.

Advantages:

- ▶ Low installation effort and costs
- ▶ Measurement is independent of fluid conductivity and pressure
- ▶ No pressure loss, no possibility of leakage
- ▶ Retrospective installation for existing plants possible
- ▶ No cutting of pipes necessary, no interruption of process, no plant shut down
- ▶ No additional fittings for maintenance required
- ▶ Hygienic measurement, no risk of contamination, suitable for ultra clean liquids
- ▶ No contact with medium, no risk of corrosion when used with aggressive media
- ▶ Cost advantages when used with large diameter pipes, high pressure systems, etc.
- ▶ Low stocking costs, nearly all pipe sizes are covered with only 2 types of sensors

Technical data

Measuring principle	Ultrasonic time difference correlation principle
Flow velocity range	0.01 ... 25 m/s
Resolution	0.025 cm/s
Repeatability	0.15 % of measured value ± 0.01 m/s
Accuracy	
Volume flow:	± 1 ... 3 % of measured value depending on application ± 0.5 % of measured value with process calibration
Flow velocity:	± 0.5 % of measured value
Turn down ratio	1/100
Gaseous and solid content	< 10 % of volume

Transmitter

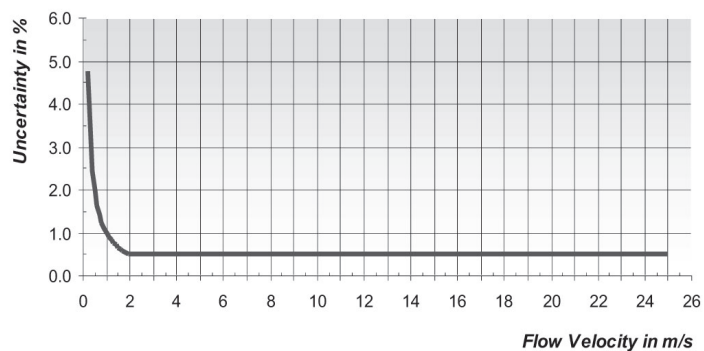
Enclosure	Wall mounted housing
Degree of protection	IP65 according to EN 60529
Operating temperature	-10 ... 60 °C
Housing material	Aluminium, powder coated
Flow channels	1
Power supply	100 ... 240 V AC or 18 ... 36 V DC, specials upon request
Display	2 x 16 digit LCD, dot matrix, backlit
Dimensions	H 140 X W 190 X D 70 mm without cable glands
Weight	Approx. 1.5 kg
Power consumption	< 10 W
Signal damping	0 ... 100 s, adjustable

Technical data

Response time	1 s
Measuring cycle	100 ...1000 Hz, single channel
Operating languages	Selectable between Danish, English, German, French, Dutch, Norwegian, Polish, Czech, Turkish and Spanish
Quantity & units of measurement	
Volumetric flow rate	m ³ /h, m ³ /min, m ³ /s, l/h, l/min, l/s, USgph (US gallons per hour), USgpm, USgps, bbl/d (barrels per day), bbl/min, bbl/s
Flow velocity	m/s, inch/s
Mass flow rate	g/s, t/h, kg/h, kg/min
Volume	m ³ , l, gal (US gallons), bbl
Mass	g, kg, t
Communication	
Serial interface	RS 485 optional
Process outputs	
Current	Galvanically isolated from main electronics
Digital (pulse, status)	0/4 ... 20 mA active (Rext <500 Ω), 0.1% of measured value ± 15 μA
	Totaliser value 0.01 ... 1000 / unit, width 80 ... 1000 ms, Open-Collector 24 V/4 mA

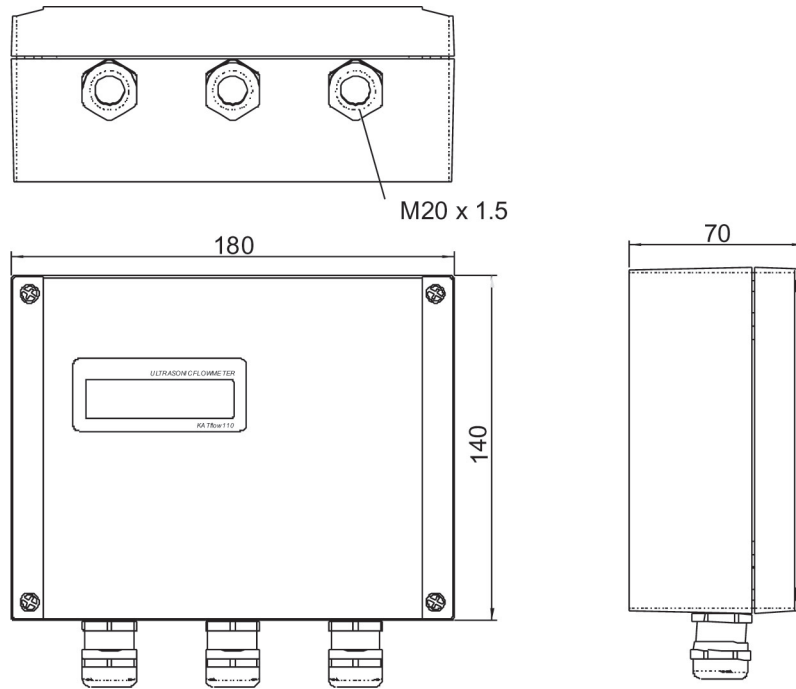
Clamp-on flow sensors:	
Large pipe transducers	
Diameter range	50 ... 2500 mm
Dimensions	60 x 30 x 34 mm
Material	Stainless steel, PEEK
Temperature range	-30 °C ... 70 °C (-22 ... 158°F) or -30 °C ... 130 °C (-22 ... 266°F), higher temperatures upon request
Degree of protection IP65 acc.	EN 60529, IP67 or 68 optional
Cable lengths	10 m, 20 m, 50 m, special
Small pipe transducers	
Diameter range	10 ... 250 mm
Dimensions	43 x 18 x 22 mm
Material	Stainless steel, PEEK
Temperature range	-30 °C ... 70 °C (-22 ... 158°F) or -30 °C ... 130 °C, (022 ... 266°F), Higher temperatures on request
Degree of protection IP65 acc.	EN 60529, IP67 or IP68 optional
Cable lengths	10 m, 20 m, 50 m special

Uncertainty specification AC606L series Ultrasonic Flowmeters

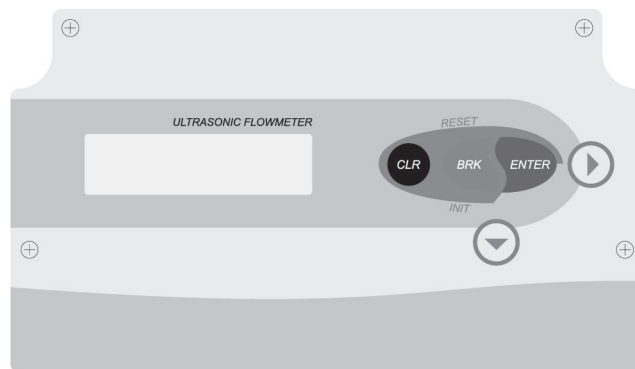


Flow transmitter

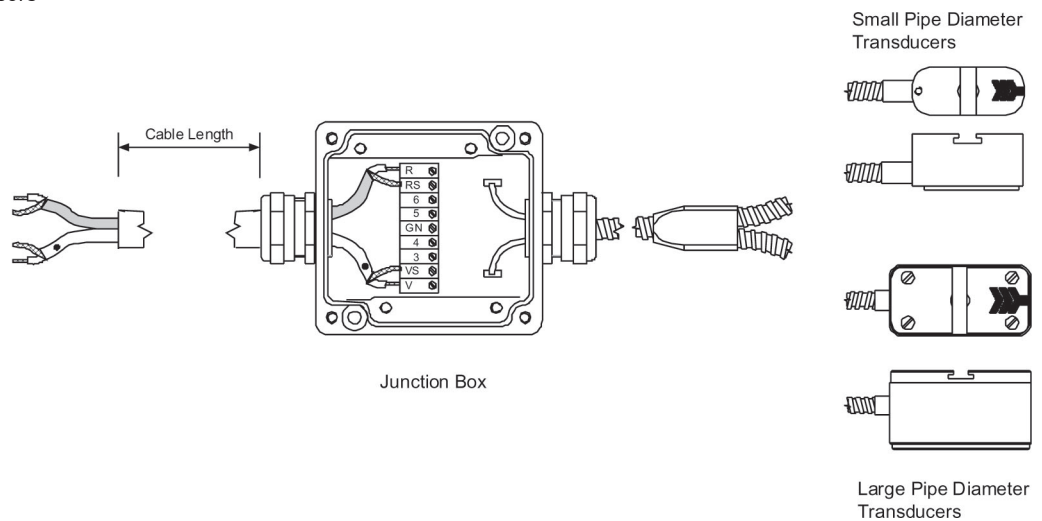
External dimensions



Front panel



Clamp-on sensors



Ordering information

Transmitter

AC606L	Basic Unit							
	Code	Power supply						
	1	100 ... 240 V AC, 50/60 Hz						
	2	18 ... 36 V DC						
	Z	Special						
	Code	Serial communication						
	0	Without						
	1	RS 485						
	Z	Special						
	Code	Clamp on transducers - Pipe diameter range						
	1	10 ... 250 mm						
	2	50 ... 2500 mm						
	Code	Process temperature						
	1	-30 ... 70 °C						
	2	-30 ... 130 °C						
	Z	Special						
	Code	Pipe mounting accessories						
	0	No mounting accessories						
	1	Clamping set DN 10 ... DN 40						
	2	Metallic straps / clamps DN 40 ... 100						
	3	Metallic straps / clamps DN 100 ... 2500						
	Z	Special						
	Code	Sensor cable length						
	010	10 m						
	020	20 m						
	050	50 m						
	-	Other (specify in m)						
	Code	Options						
	0	None						
	1	With pipe mounting bracket						
	Z	Special						
AC606L	2	1	2	1	3	010	0	Typical ordering code

Ordering examples :

AC606L-2-1-213-010-0

Ultrasonic flowmeter AC606L, wall mounted enclosure IP 66, analogue output 0/4 ... 20 mA, 2 x digital outputs (OC, 24 V/4 mA), 18 ... 36V DC power supply, serial interface RS 485, clamp-on transducers 50 ... 2500 mm, process temperature -30 ... 70 °C, with metallic straps/ clamps for DN 100 ... 2500, sensor cable length 10 m, no options.

AC606-1-0-122-020-1

Ultrasonic flowmeter AC606L, wall mounted enclosure IP 66, analogue output 0/4 ... 20 mA, 2 x digital outputs (OC, 24 V/4 mA), 100 ... 240 V AC power supply, no serial interface, clamp-on transducers 10 ... 250 mm, process temperature -30 ... 130 °C, with metallic straps/clamps for DN 40 ... 100, sensor cable length 20 m, with pipe mounting bracket.

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