Ultrasonic Measurement of Water Flow

Permanently installed ultrasonic clamp-on system for flow measurement of water

Features

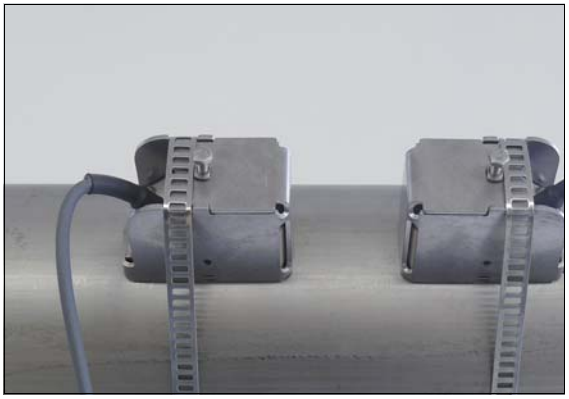
- Non-invasive measurement using clamp-on technology for precise bi-directional, highly dynamic flow measurements
- Highly robust transducers are water-tight and NEMA 6 certified
- Designed for simple retrofitting of existing installations without the need for process interruption or pipe work
- User-friendly menu navigation with menus specifically designed for the needs of the water industry
- For nominal diameters of 0.5 to 100 in
- Installation and commissioning can be carried out during operation
- A specialized DSP chip and proprietary signal processing ensure stable and reliable results even under difficult measurement conditions
- High measuring accuracy, even at low flow velocities
- Especially cost effective for large diameter pipes

FLUXUS ADM 5107

FLUXUS ADM 5207

Applications

- Water and waste water industry
- Clean measurement process for drinking water systems
- Leakage detection
- Hydroelectric power plant reservoirs
- Reservoirs



Flow transducers in transducer shoe, mounted with tension strap

Flowmeter

Technical Data

FLUXUS	ADM 5107	ADM 5207
design	water measurement with 1 measuring channel	water measurement with 2 measuring channels
measurement		
measuring principle	transit time difference correlation principle	
flow velocity	0.03 to 82 ft/s	
resolution	$8.2 \cdot 10^{-4}$ ft/s	
repeatability	0.25 % of reading ±0.03 ft/s	
accuracy[1] - volumetric flow rate	±2 % of reading ±0.03 ft/s	
medium	water and acoustically similar liquids with < 6 % gaseous or solid content by volume	
flowmeter		
power supply	100 to 240 V/50 to 60 Hz or 20 to 32 V DC	
power consumption	< 10 W	
number of flow measuring channels[2]	1	2 (for transducers of the same type)
signal damping	0 to 100 s, adjustable	
measuring cycle (1 channel)	10 Hz	
response time	1 s (1 channel)	
housing material	aluminum, powder coated	
degree of protection according to ANSI/IEC 60529	NEMA 4	
dimensions	see dimensional drawing	
weight	3.3 lb	3.7 lb
fixation	wall mounting, optional: 2 " pipe mounting	
operating temperature	14 to +140 °F	
display	2 x 16 characters, dot matrix, backlit	
menu language	English, German, French, Dutch, Spanish	
measuring functions		
physical quantities	volumetric flow rate, mass flow, flow velocity	
totalizers	volume, mass	
calculation functions	-	average, difference, sum
outputs		
	The outputs are galvanically isolated from the flowmeter.	
	current output	
number	1	2
range	0/4 to 20 mA	0/4 to 20 mA
accuracy	0.1 % of reading ±15 µA	0.1 % of reading ±15 µA
active output	R_{ext} < 500 Ω	R_{ext} < 500 Ω
	binary output	
number	2	
Reed relay	48 V/0.25 A	
binary output as alarm output - functions	limit, change of flow direction or error	
binary output as pulse output - pulse value - pulse width	0.01 to 1000 units 80 to 1000 ms	

[1] for reference conditions and v > 0.82 ft/s

[2] only connection of the supplied transducer type possible

Dimensions

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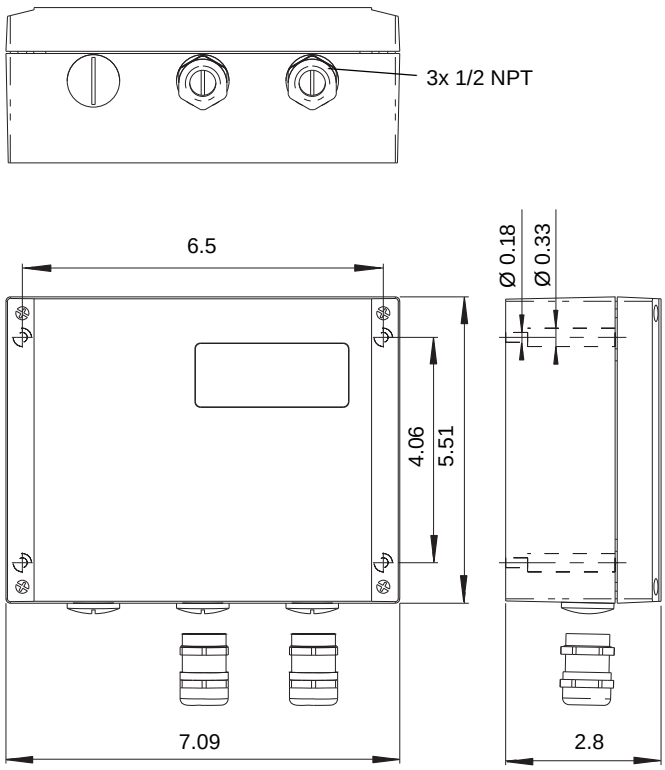

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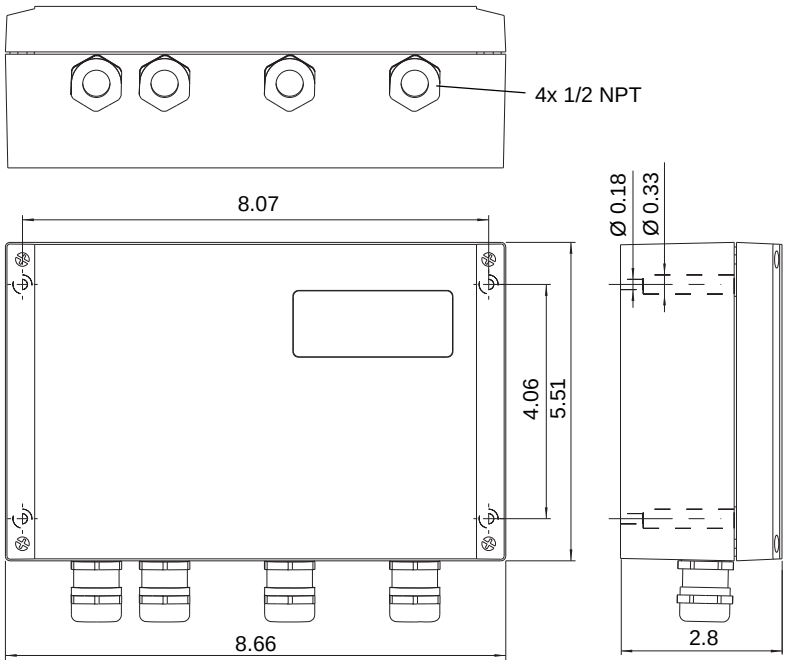
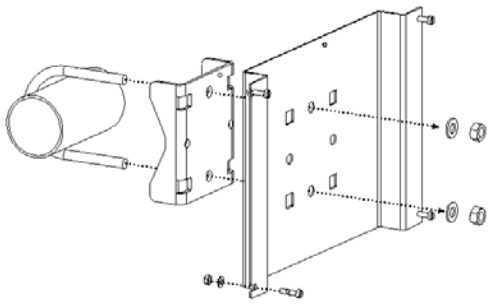
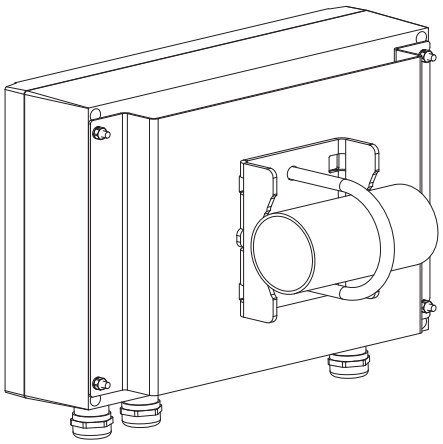


in inch

2 " Pipe Mounting Kit (optional)

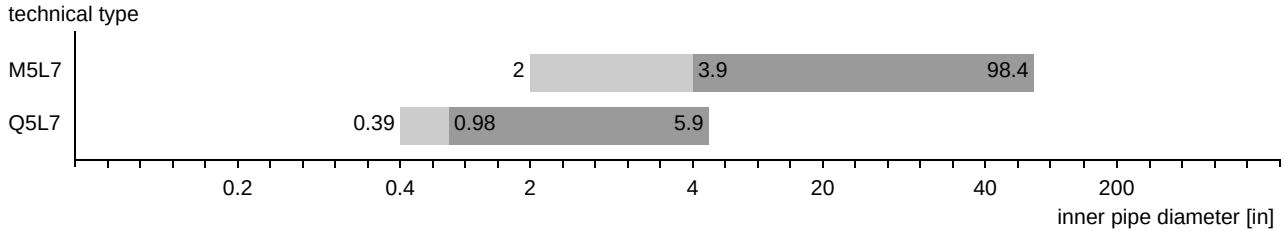




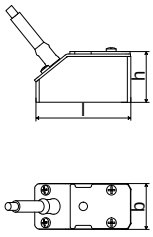
for vertical and horizontal pipes

Transducers

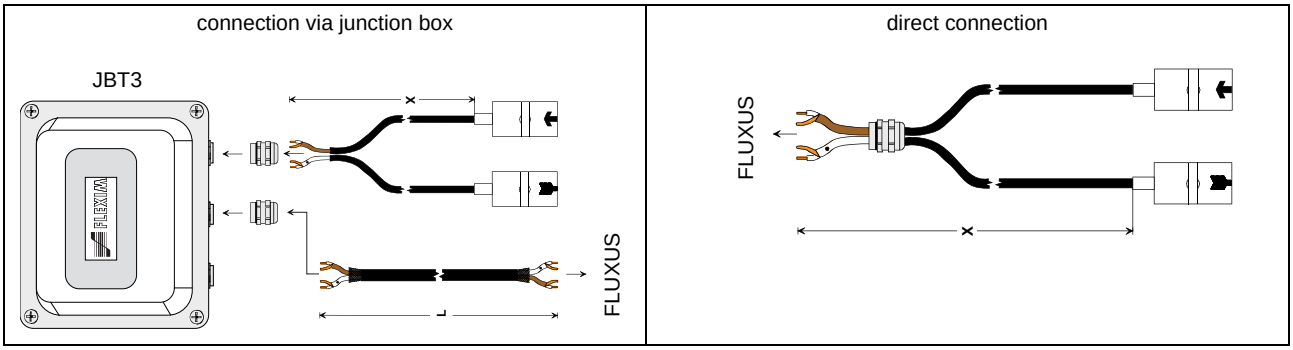
Transducer Selection



Technical Data

technical type		M5L7	Q5L7
transducer frequency	MHz	1	4
inner pipe diameter d			
min. extended	in	2	0.39
min. recommended	in	3.9	0.98
max.	in	98.4	5.9
material			
housing contact surface		PEEK with stainless steel cap 304 PEEK	PEEK with stainless steel cap 304 PEEK
degree of protection according to ANSI/ IEC 60529		NEMA 6	NEMA 6
transducer cable			
type		2606	2606
length	ft	13	9
dimensions			
length l	in	2.32	1.38
width b	in	1.1	0.71
height h	in	1.16	0.83
dimensional drawing			
operating temperature			
min.	°F	-40	-40
max.	°F	+212	+212

Connection Systems



Transducer Cables

Technical Data

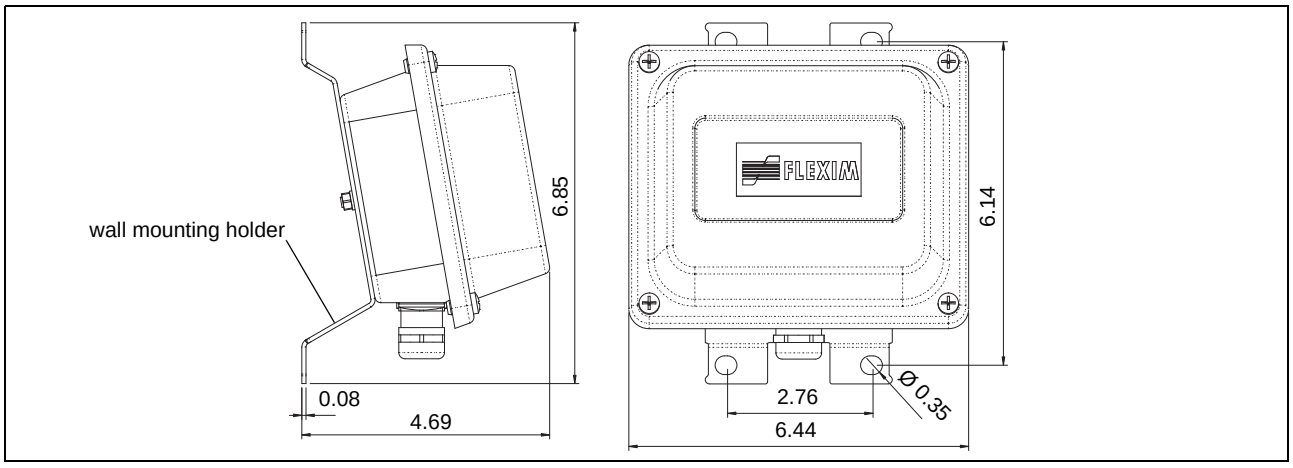
		transducer cable	extension cable	
item number		2606	2552	2615
standard length	ft	32	-	-
max. length	ft	-	M5L7: 984 Q5L7: 295	M5L7: 984 Q5L7: 295
temperature	°F	-22 to +212	< 176	-40 to +158
properties				halogen free fire propagation test according to IEC 60332-1 combustion test according to IEC 60754-2
cable jacket				
material		PUR	TPV	PUR
outer diameter	in	0.2	0.47	0.47
thickness	in			0.08
color		gray	black	black
shield		x	x	x

Junction Box

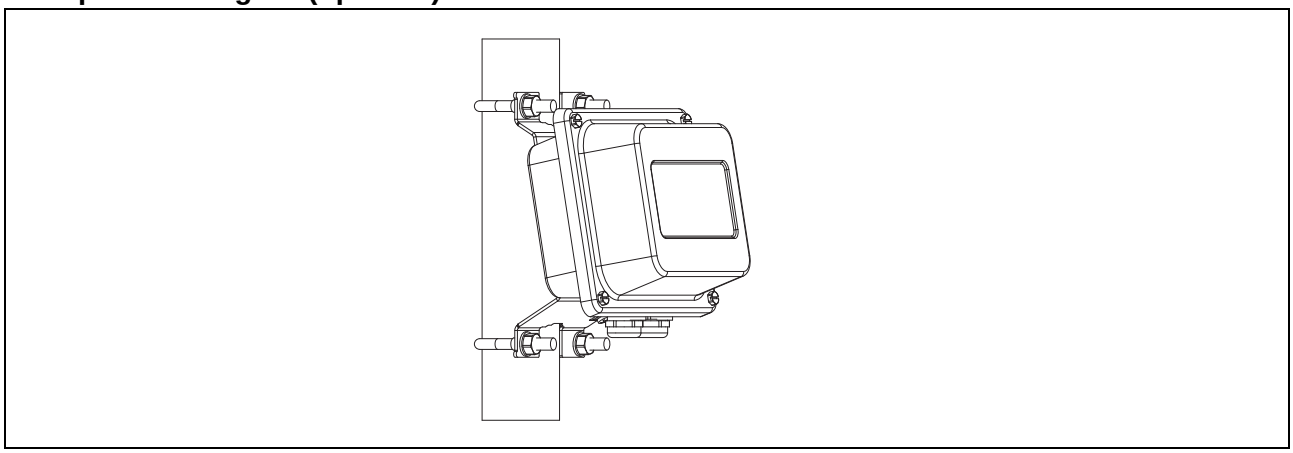
Technical Data

technical type		**JBT3**
dimensions		see dimensional drawing
fixation		wall mounting optional: 2 " pipe mounting
material		
housing gasket		stainless steel 304 silicone
degree of protection according to ANSI/IEC 60529		NEMA 6
cable gland		1/2 NPT
operating temperature		
min. max.	°F °F	-40 +176

Dimensions

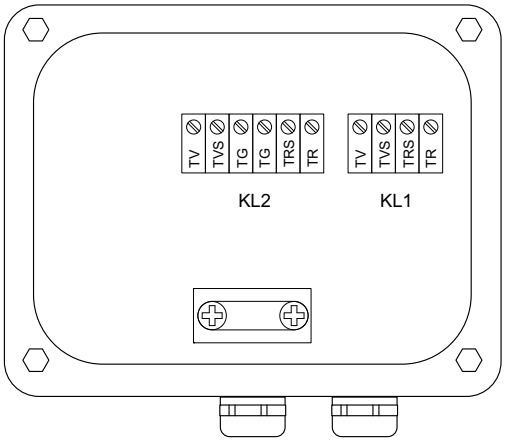


2 " Pipe Mounting Kit (optional)



Terminal Assignments

JBT3



Transducers

terminal strip KL1

terminal	connection
TV	signal
TVS	shield
TRS	shield
TR	signal

Extension Cable (Flowmeter)

terminal strip KL2

terminal	connection
TV	signal
TVS	shield
TRS	shield
TR	signal

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