

Ultrasonic flowmeter for water

Portable, very robust and easy-to-use ultrasonic flowmeter for the water and wastewater industry

Features

- Several months of battery operation possible
- Very high bidirectional measuring accuracy and highly dynamic flow measurement
- IP68 transducers, reinforced transducer cables and very robust housing
- Easy and intuitive use
- Very fast and easy installation
- Permanent coupling foil
- High measuring accuracy, even at low flow velocities
- Suitable for highly diverse nominal pipe sizes and pipe materials
- Minimum nightflow mode

Applications

- Temporary measurements in the water and wastewater industry
- Leakage detection
- Water loss balancing
- Accuracy verification of permanently installed flowmeters
- Monitoring of pumping tests



FLUXUS F401

Transmitter

Technical data

FLUXUS F401	
measurement	
measurement principle	transit time difference correlation principle
flow velocity	m/s 0.01...25
repeatability	0.25 % of reading \pm 0.01 m/s
fluid	water
measurement uncertainty (volumetric flow rate) ¹	\pm 2 % of reading \pm 0.01 m/s
transmitter	
power supply	<ul style="list-style-type: none"> 100...230 V/50...60 Hz (power supply unit) 12 V DC (socket at transmitter) integrated battery
integrated battery • operating time	Li-Ion without outputs and backlight, inner pipe diameter max. 1 400 mm: ² <ul style="list-style-type: none"> continuous measurement: > 48 h low power mode: <ul style="list-style-type: none"> -> 7 d (measuring interval: 1 min) -> 30 d (measuring interval: 10 min) -> 180 d (measuring interval: 30 min) -> 270 d (measuring interval: 60 min) minimum nightflow mode: <ul style="list-style-type: none"> -> 14 d (4 h continuous measurement per 24 h) -> 30 d (2 h continuous measurement per 24 h) -> 60 d (1 h continuous measurement per 24 h)
power consumption	W < 3, charging: 18
number of measuring channels	1
damping	s 0...100 (adjustable, continuous measurement)
measuring cycle	Hz 10
measuring interval	<ul style="list-style-type: none"> 1 s (continuous measurement) 1, 5, 10, 15, 30, 60 min (low power mode) max. 12 h continuous measurement per 24 h (minimum nightflow mode)
housing material	PP
degree of protection	IP67 (housing cover closed) IP65 (housing cover open)
dimensions	mm 273 x 247 x 127
weight	kg 3.1
ambient temperature	°C -10...+50
display	2 x 16 characters, dot matrix, backlight
menu language	English, German, French, Dutch, Spanish
measuring functions	
physical quantities	volumetric flow rate, mass flow rate, flow velocity
totalizer	volume, mass
communication interfaces	
service interfaces	<ul style="list-style-type: none"> RS232 USB (with adapter)
accessories	
serial data kit • cable • adapter	optional RS232 RS232 - USB
software	<ul style="list-style-type: none"> FluxDiagReader: download of measured values and parameters, graphical presentation FluxDiag (optional): download of measurement data, graphical presentation, report generation
adapter	output adapter (optional)
data logger	
loggable values	all physical quantities and totaled values
capacity	> 100 000 measured values

¹ for reference conditions and $v > 0.25$ m/s

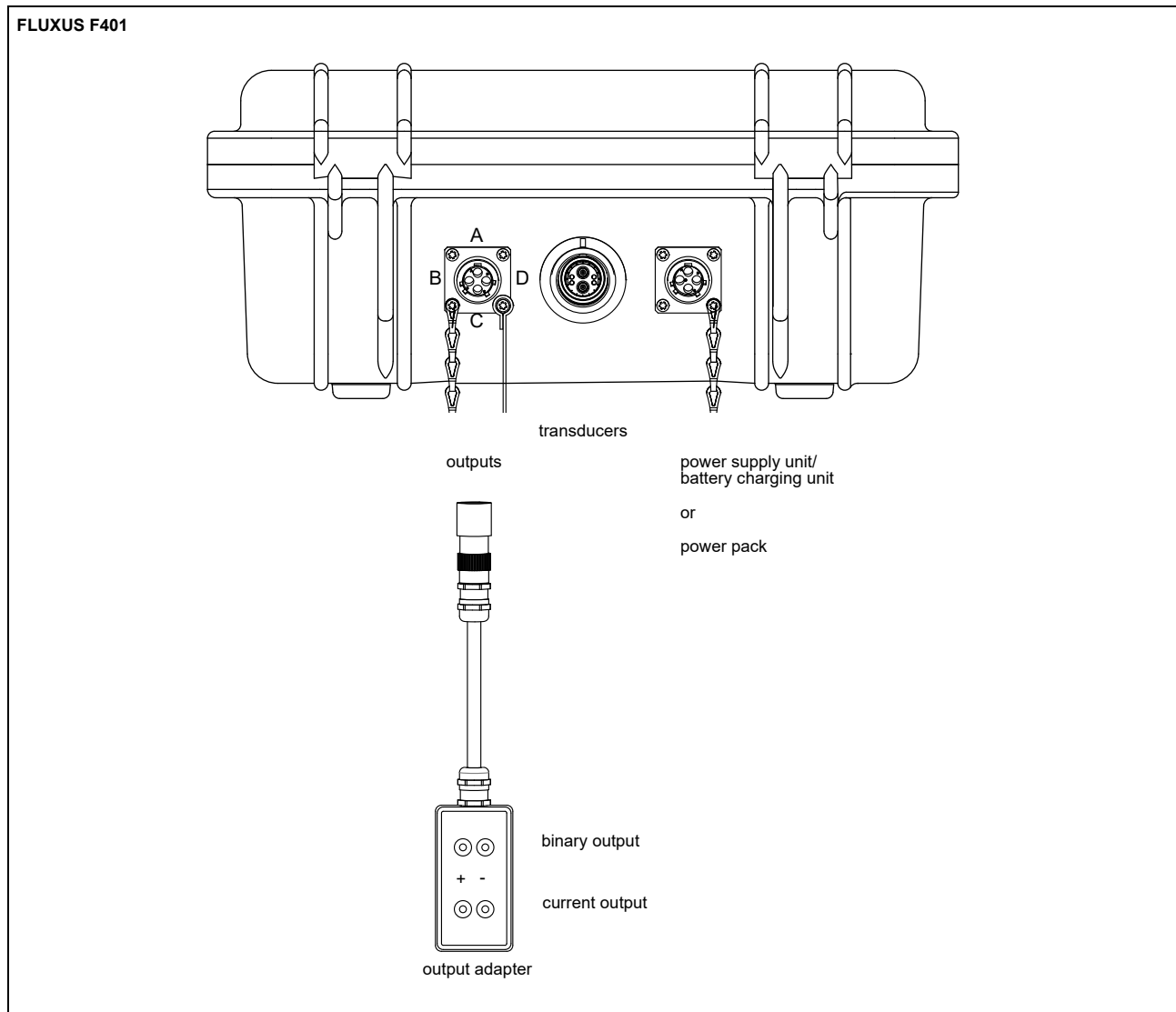
² operating time extension using the power pack PP026NN (optional)

		FLUXUS F401
outputs		
		The outputs are galvanically isolated from the transmitter.
• current output		
number		1 (continuous measurement)
range	mA	4...20 (0...22)
accuracy		0.1 % of reading ±15 µA
passive output		U _{ext} = 4...24 V, depending on R _{ext} (R _{ext} < 1 kΩ at 24 V)
• binary output		
number		1 (continuous measurement)
optorelay		32 V/200 mA
binary output as alarm output		
• functions		limit or error
binary output as pulse output		
• functions		mainly for totalizing
• pulse value	units	0.01...1000
• pulse width	ms	80...1000

¹ for reference conditions and v > 0.25 m/s

² operating time extension using the power pack PP026NN (optional)

Connection

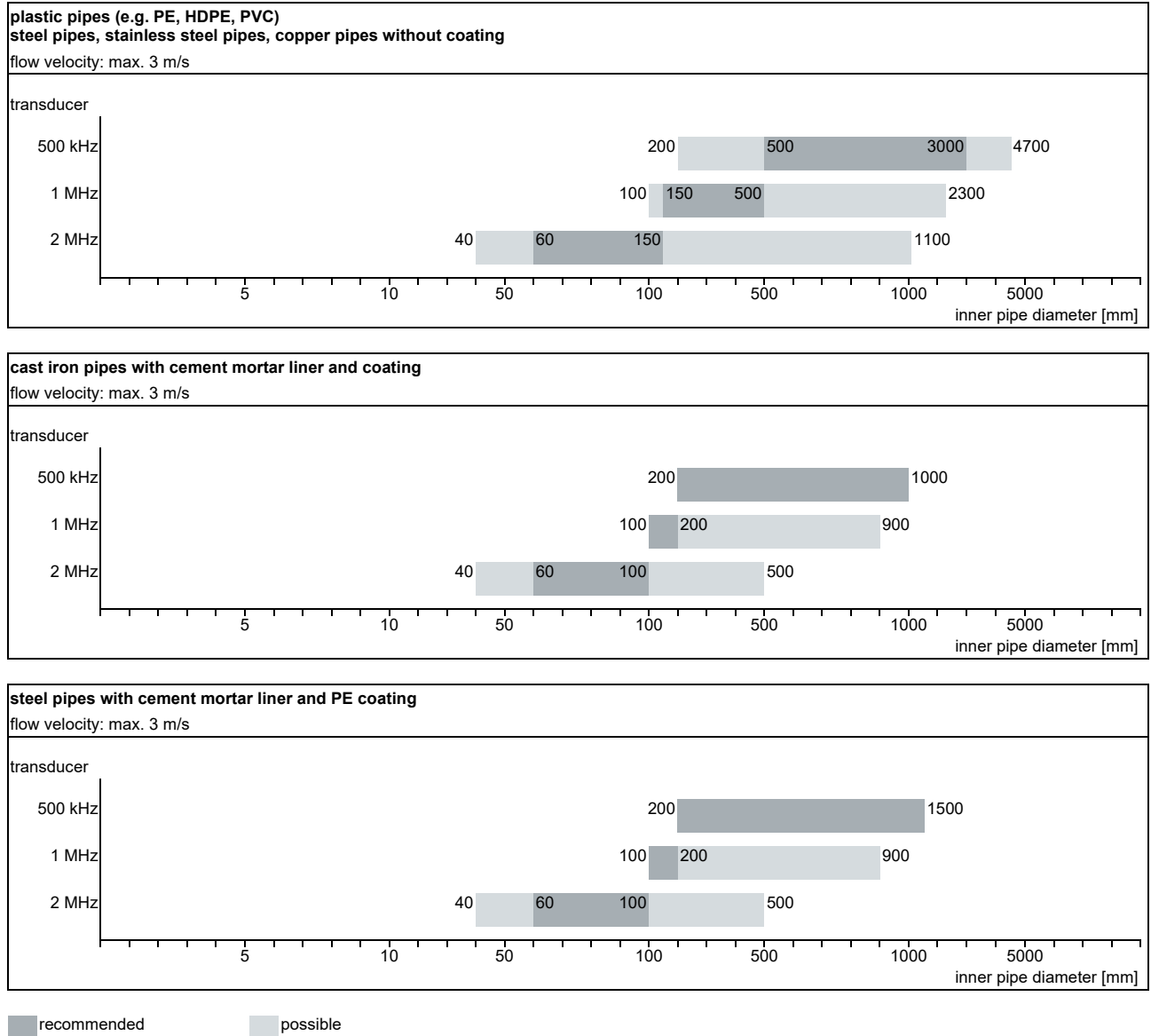


Output adapter

pin	connection
A	binary output (+)
B	binary output (-)
C	current output (+)
D	current output (-)

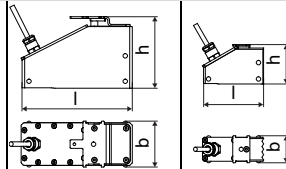
Transducers

Transducer recommendation for typical water pipe materials



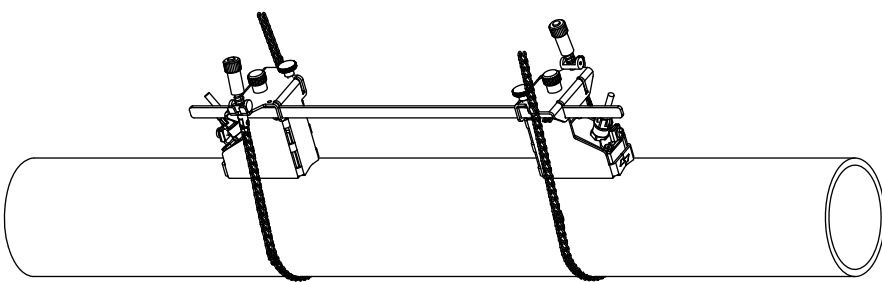
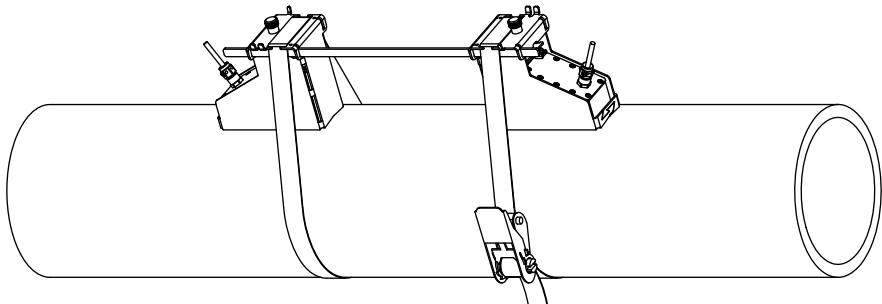
For other pipe materials and higher flow velocities please contact FLEXIM.

Technical data

technical type		500 kHz	1 MHz	2 MHz
transducer frequency	MHz	0.5	1	2
inner pipe diameter		see transducer recommendation		
pipe wall thickness				
min.	mm	5	2.5	1.2
material				
housing		PEEK with stainless steel cap 316Ti (1.4571)		
contact surface		PEEK		
degree of protection		IP68 ¹		
transducer cable				
type		7819		
length	m	6		
dimensions				
length l	mm	130	72	
width b	mm	54	32	
height h	mm	83.5	46	
dimensional drawing				
weight (without cable)	kg	0.43	0.085	
pipe surface temperature				
min.	°C	-40		
max.	°C	+100		
ambient temperature				
min.	°C	-40		
max.	°C	+100		

¹ test conditions: 3 months/2 bar (20 m)/20 °C

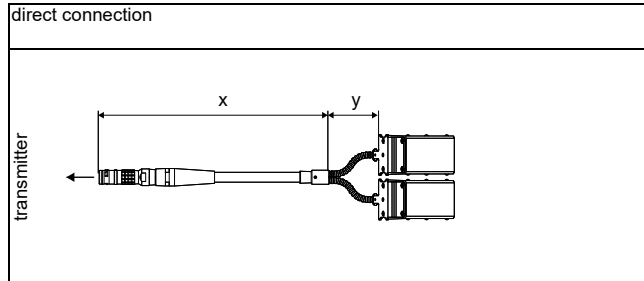
Transducer mounting fixture

<p>chains and transducer shoes</p> 	<p>material: stainless steel 316Ti (1.4571), 316L (1.4404), 304 (1.4301) chain length: 1/2 m</p>
<p>tension belts TB</p> 	<p>transducer frequency: K material: stainless steel 316Ti (1.4571), 316L (1.4404), steel, powder coated and textile tension belt length: 5/7 m ambient temperature: max. 60 °C outer pipe diameter: max. 1500/2100 mm</p>

Coupling materials for transducers

type	ambient temperature °C
coupling foil type VT	-10...+200
coupling compound type E	-30...+200

Connection systems



Cable

transducer cable	
type	7819
length	m x, y: 3
ambient temperature	°C -40...+100
cable jacket	
material	PUR
outer diameter	mm 5.2 ±0.2
thickness	mm 0.9
colour	grey
shield	x
sheath x	
material	PUR
outer diameter	mm 13 ±0.4
colour	grey
sheath y	
material	stainless steel 316Ti (1.4571)
outer diameter	8
connector	
type	Lemo 3K

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