

Flexim FLUXUS F401 Ultrasonic Flowmeter



Ultrasonic Flowmeter for Water

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

Transmitter

Technical data

FLUXUS F401	
measurement	
measurement principle	transit time difference correlation principle
flow direction	bidirectional
flow velocity	m/s 0.01...25
repeatability	0.25 % MV $\pm$ 0.01 m/s
fluid	water
measurement uncertainty (volumetric flow rate) ¹	$\pm$ 2 % MV $\pm$ 0.01 m/s
transmitter	
power supply	100...230 V/50...60 Hz (power supply unit) 10.5...15 V DC (socket at transmitter) - integrated battery
integrated battery • operating time	Li-Ion, max. 94 Wh without outputs and backlight, inner pipe diameter max. 1 400 mm: ² - continuous measurement: > 48 h - low-power mode: > 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: > 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	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
totaliser	volume, mass
communication interfaces	
service interfaces	- RS232 - USB (with adapter)
accessories	
data transmission kit • cable • adapter	optional RS232 RS232 - USB
software	- FluxDiagReader: reading of measured values and parameters, graphical representation - FluxDiag (optional): reading of measurement data, graphical representation, report generation
adapter	output adapter (optional)
data logger	
loggable values	all physical quantities and totalised physical quantities
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
range	mA	4...20 (0...22)
accuracy		0.1 % MV $\pm 15 \mu\text{A}$
passive output		$U_{\text{ext}} = 4...24 \text{ V}$, depending on R_{ext} ($R_{\text{ext}} < 1 \text{ k}\Omega$ at 24 V)
• binary output		
number		1
optorelay		32 V/200 mA
binary output as alarm output		
• functions		limit or error
binary output as pulse output		
• functions		mainly for totalising
• pulse value	units	0.01...1000
• pulse width	ms	80...1000

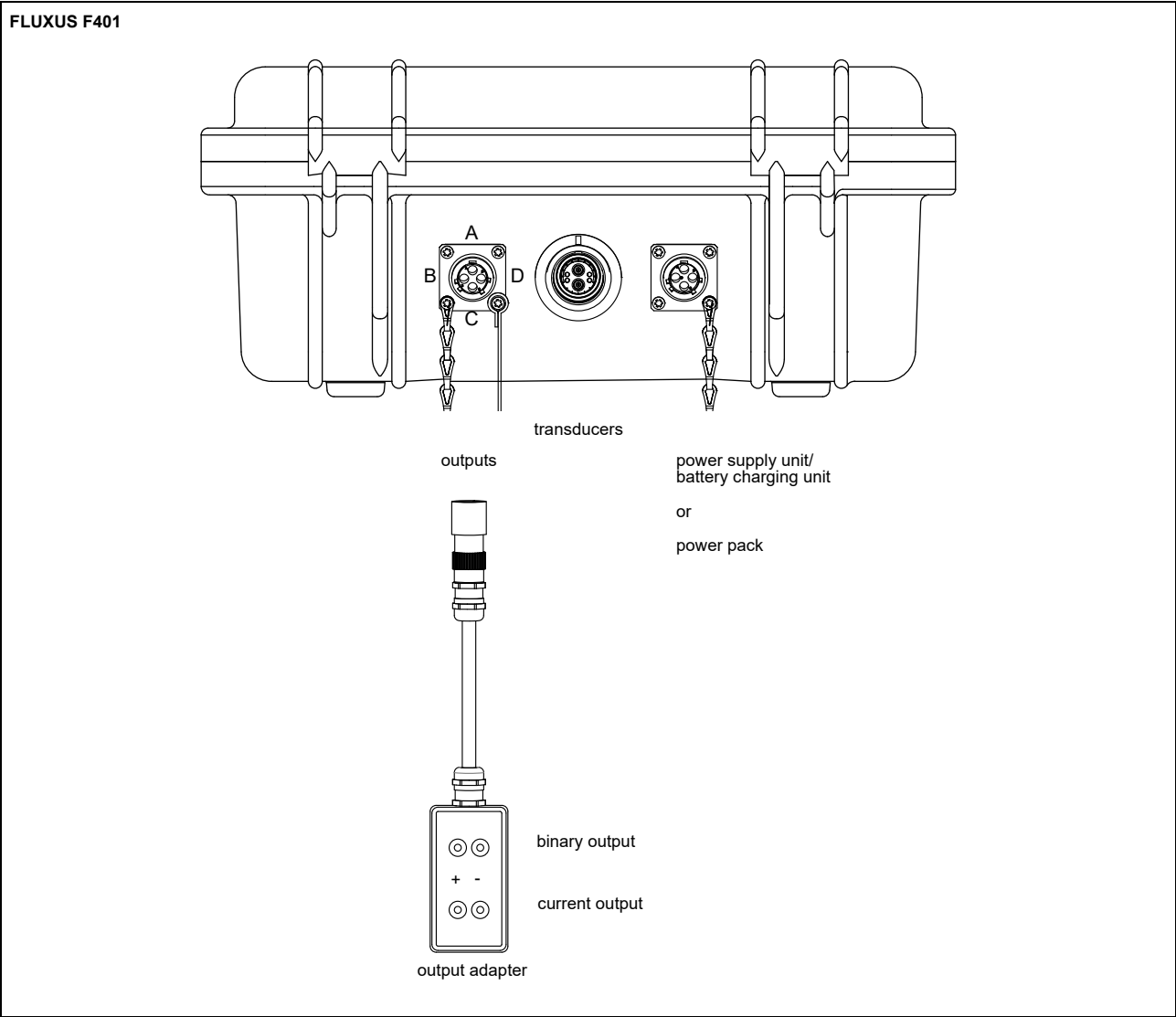
¹ for reference conditions and $v > 0.25 \text{ m/s}$

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

Storage

- do not store outdoors
- store within the original package
- store in a dry and dust-free place
- protect against sunlight
- keep all openings closed
- storing temperature: $-10...+50 \text{ }^{\circ}\text{C}$

Connection

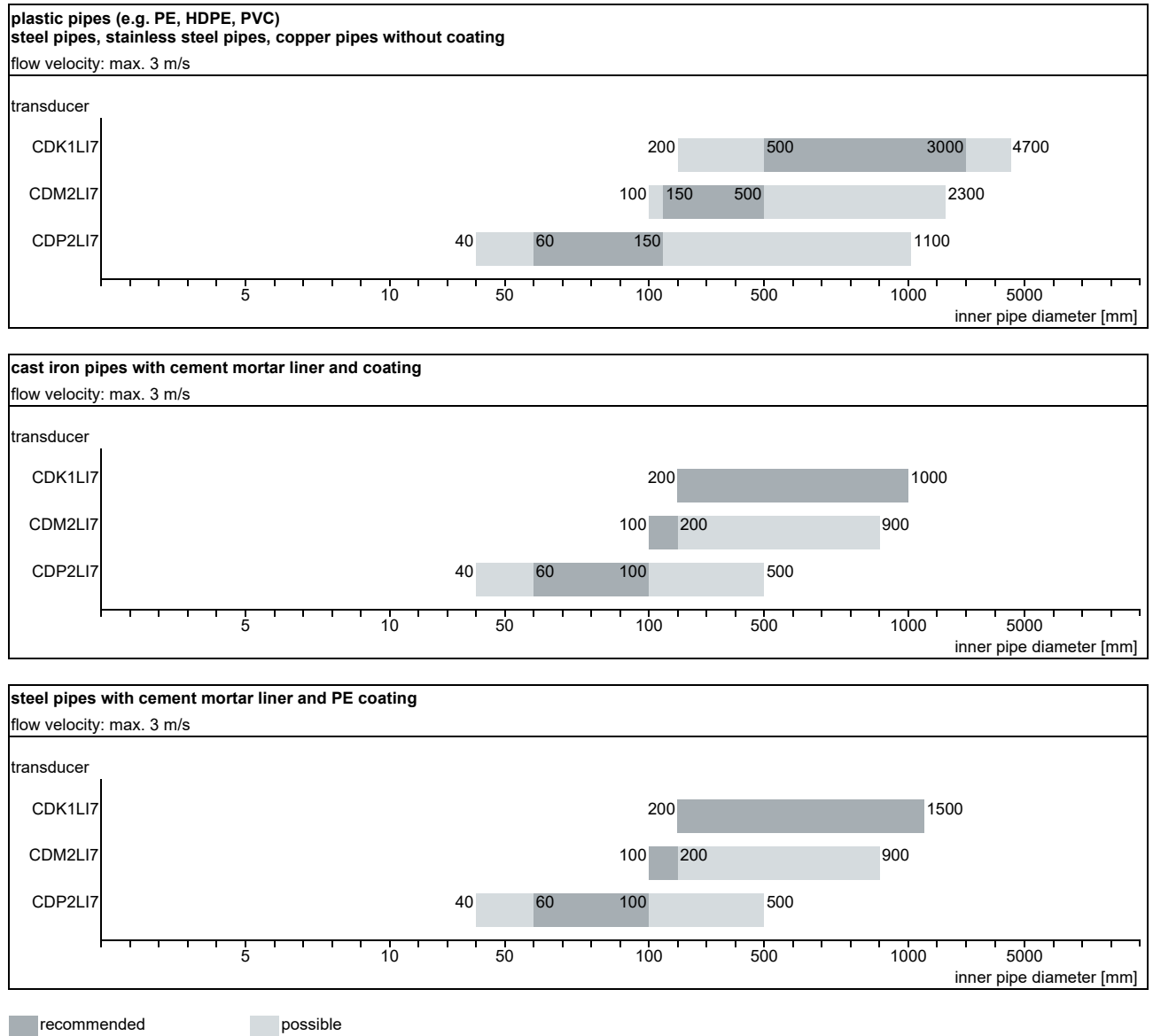


Output adapter

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

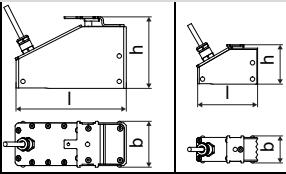
Transducers

Transducer recommendation for typical water pipe materials



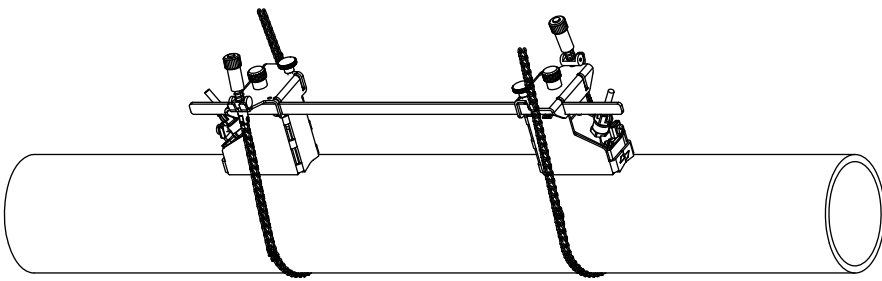
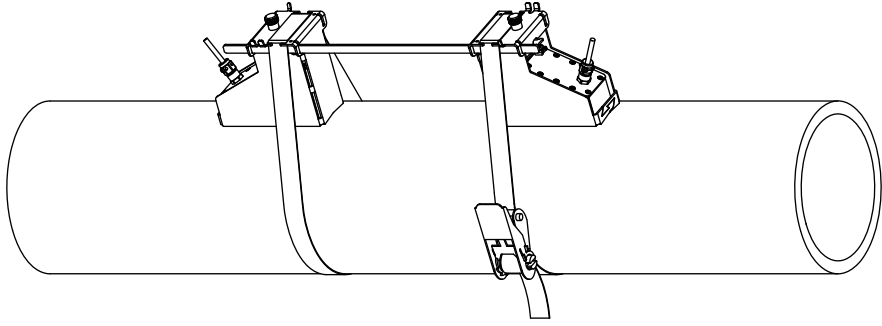
For other pipe materials and higher flow velocities please contact FLEXIM.

Technical data

order code		FSK-LNNN-**KL/ H68	FSM-LNNN-**KL/ H68	FSP-LNNN-**KL/ H68
technical type		CDK1LI7	CDM2LI7	CDP2LI7
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 cover 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	°C	-40...+100		
ambient temperature	°C	-40...+100		

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

Transducer mounting fixture

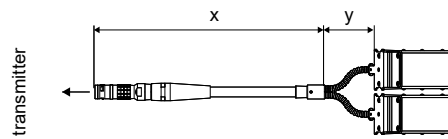
chains and transducer shoes 	material: stainless steel 316Ti (1.4571), 316L (1.4404), 304 (1.4301) chain length: 1/2 m
tension belts TB 	transducer frequency: K material: stainless steel 316Ti (1.4571), 316L (1.4404), steel, powder coated and textile tension belt length: 5/7 m ambient temperature: max.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

Coupling materials for transducers

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

Connection systems

direct connection



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 1		
material		PUR
outer diameter	mm	13 ±0.4
colour		grey
sheath 2		
material		stainless steel 316Ti (1.4571)
outer diameter	mm	8
connector		
type		Lemo 3K

For more information: **Emerson.com**

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