FLEXIM

Technical specification

FLUXUS F401

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
- Adherence to AWWA manual M36

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

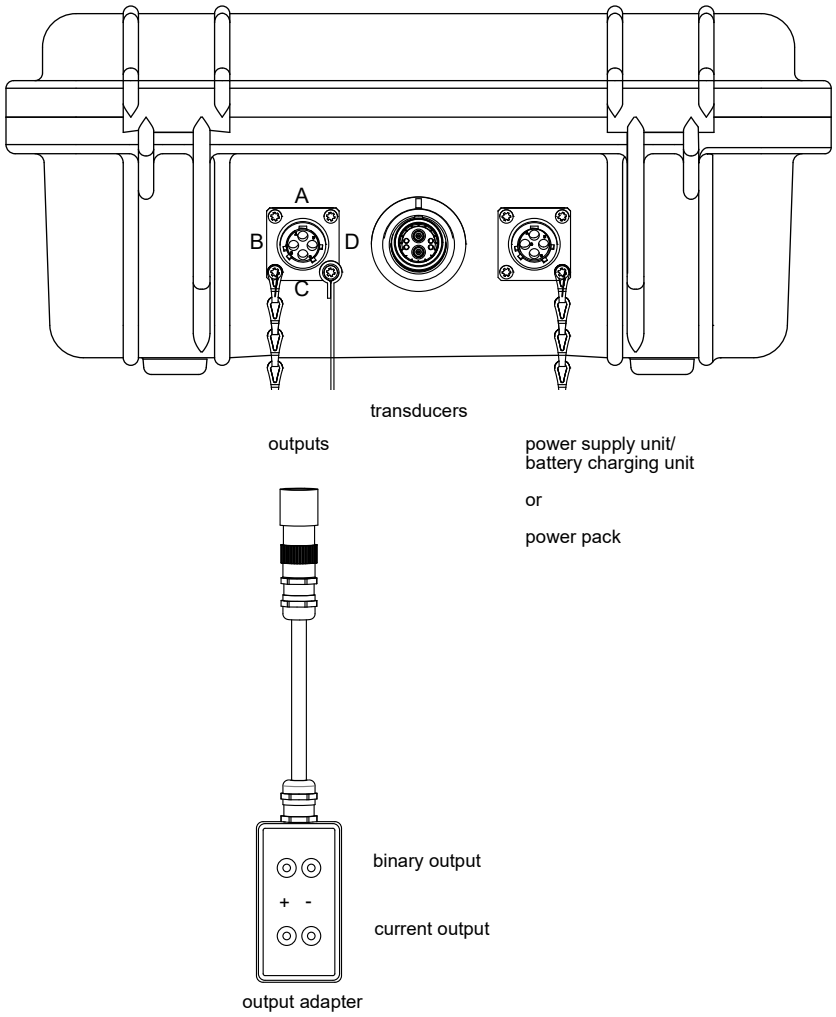
Technical data

		FLUXUS F401
measurement		
measurement principle		transit time difference correlation principle
flow velocity	ft/s	0.03 to 82
repeatability		0.25 % of reading ±0.03 ft/s
fluid		water
measurement uncertainty (volumetric flow rate)[1]		±2 % of reading ±0.03 ft/s
transmitter		
power supply		• 100 to 230 V/50 to 60 Hz (power supply unit) • 10.5 to 15 V DC (socket at transmitter) • integrated battery
integrated battery • operating time		Li-Ion without outputs and backlight, inner pipe diameter max. 55.1 in: • 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 to 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		NEMA 6 (housing cover closed) NEMA 4 (housing cover open)
dimensions	in	10.75 x 9.72 x 5
weight	lb	6.8
ambient temperature	°F	14 to +122
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		• RS232 • USB (with adapter)
accessories		
serial data kit • cable • adapter		optional RS232 RS232 - USB
software		• 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 totalized values
capacity		> 100 000 measured values
outputs		
		The outputs are galvanically isolated from the transmitter.
• current output		
number		1 (continuous measurement)
range	mA	4 to 20 (0 to 22)
accuracy		0.1 % of reading ±15 µA
passive output		U_{ext} = 4 to 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 to 1000
• pulse width	ms	80 to 1000

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

Connection

FLUXUS F401

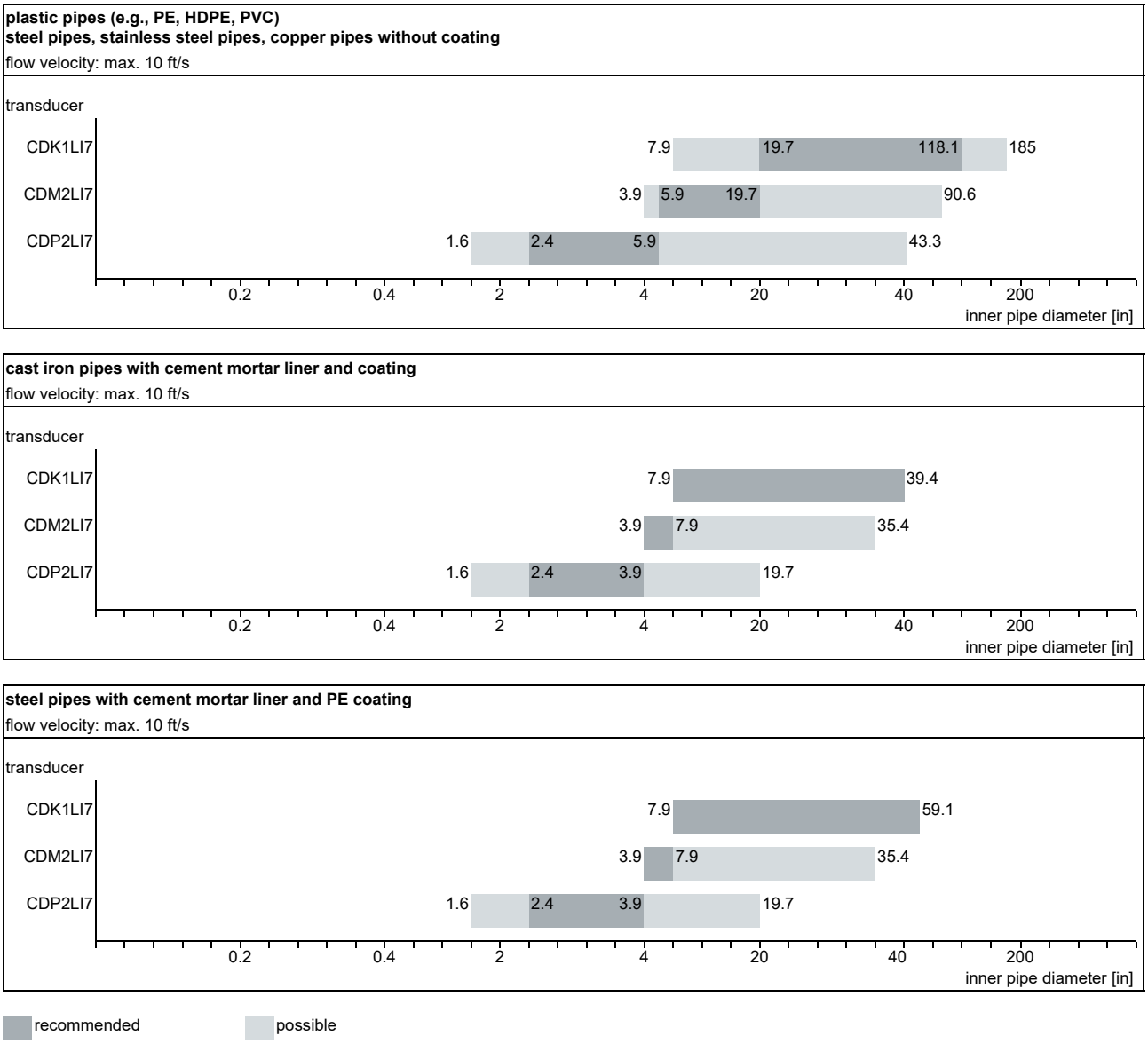


Output adapter

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

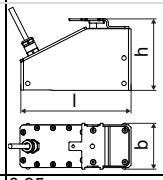
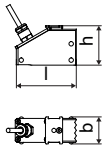
Transducers

Transducer recommendation for typical water pipe materials



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

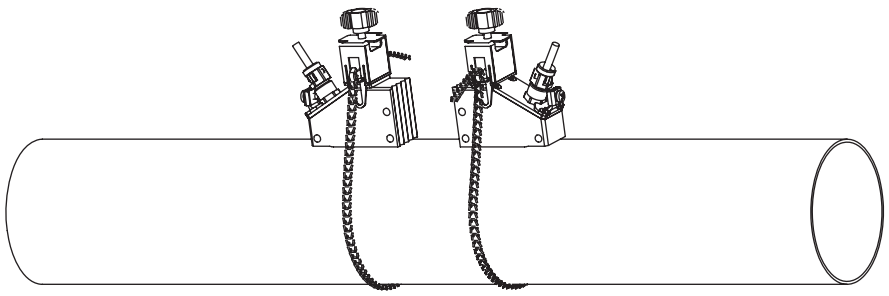
Technical data

order code		FSK-NNNNL/IP68	FSM-NNNNL/IP68	FSP-NNNNL/IP68
technical type		CDK1LI7	CDM2LI7	CDP2LI7
transducer frequency	MHz	0.5	1	2
inner pipe diameter		see transducer recommendation		
pipe wall thickness				
min.	in	0.2	0.1	0.05
material				
housing		PEEK with stainless steel cap 316Ti		
contact surface		PEEK		
degree of protection		IP68[1]		
transducer cable				
type		7819		
length	ft	19		
dimensions				
length l	in	5.12	2.76	
width b	in	2.13	1.26	
height h	in	3.29	1.81	
dimensional drawing				
weight (without cable)	lb	0.95	0.19	
pipe surface temperature				
min.	°F	-40		
max.	°F	+212		
ambient temperature				
min.	°F	-40		
max.	°F	+212		

[1] test conditions: 3 months/29 psi (65 ft)/36 °F

Transducer mounting fixture

ladder chain mounting accessory



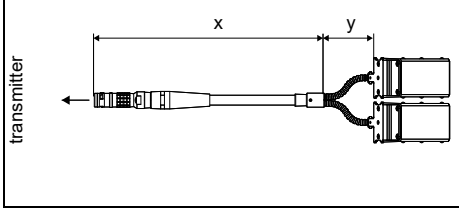
material: 301, 304
chain length: 30/78 in

Coupling materials for transducers

type	**ambient temperature** °F
coupling pad type VT	14 to +392
coupling compound type E	-22 to +392

Connection systems

direct connection



Cable

transducer cable		
type		**7819**
length	ft	x, y: 9.5
ambient temperature	°F	-40 to +212
cable jacket		
material		PUR
outer diameter	in	0.2 ±0.01
thickness	in	0.04
color		gray
shield		x
sheath x		
material		PUR
outer diameter	in	0.51 ±0.02
color		gray
sheath y		
material		stainless steel 316Ti
outer diameter		0.31
connector		
type		Lemo 3K

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2021-06-01, TSFLUXUS_F401V2-3-1US_Lus