





Application Low Flow

Flow transmitter

Technical data

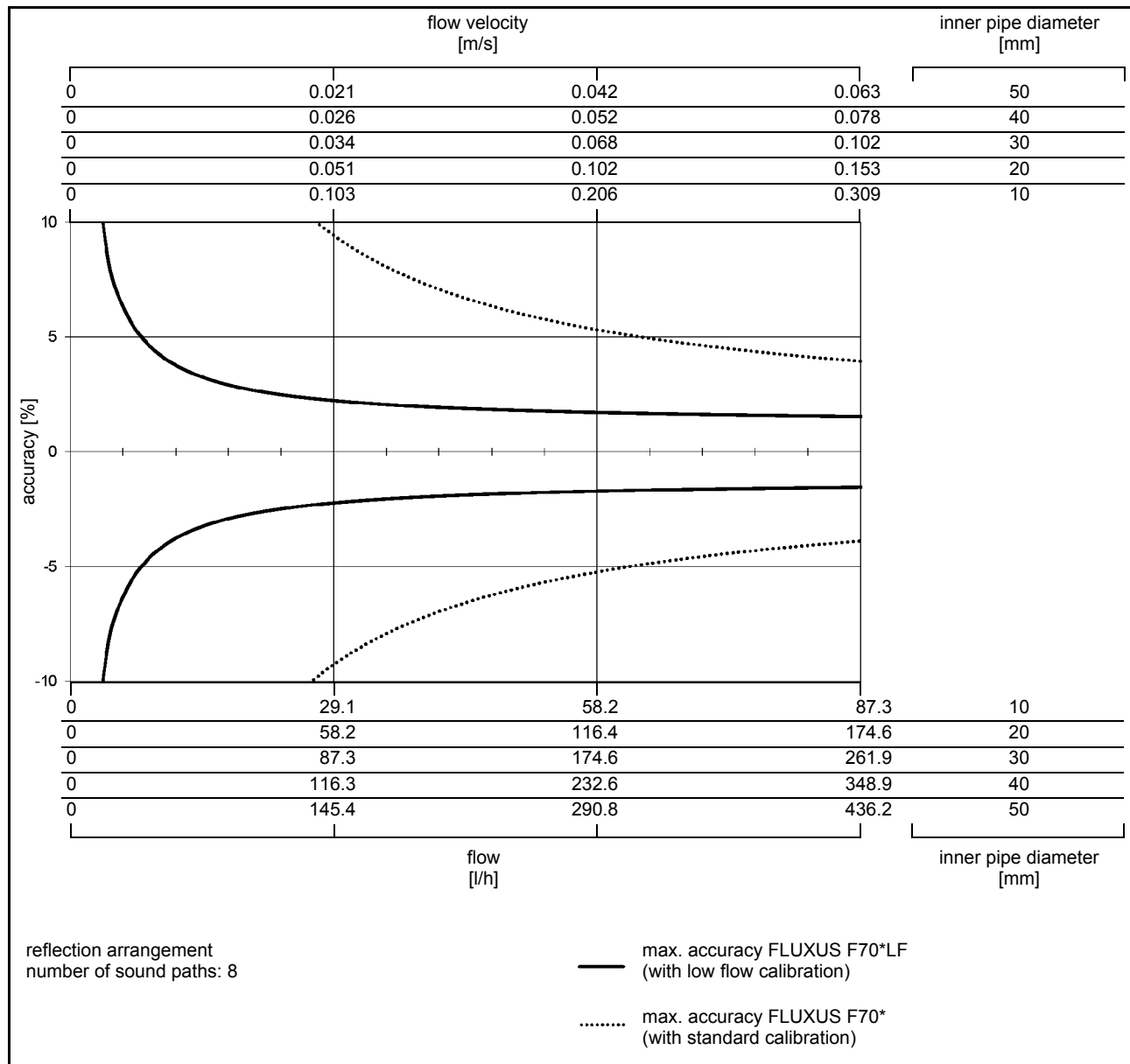
FLUXUS	F704LF-NN F704LF-A2	F705LF-NN F705LF-A2	
design	standard field device	field device with stainless steel housing	
application	extreme low flow measurement for liquids		
transducers	CDQ*N**		
transducer mounting fixture	Variofix L with bolt mounting plates VLQ-DS-B (outer pipe diameter ≤ 48 mm) Variofix L VLQ-DS-S (outer pipe diameter > 48 mm)		
			
measurement			
measurement principle	transit time difference correlation principle		
flow velocity	depending on pipe diameter, see diagrams		
fluid	all acoustically conductive liquids with < 2 % gaseous or solid content in volume		
temperature compensation	corresponding to the recommendations in ANSI/ASME MFC-5.1-2011		
accuracy	depending on pipe diameter, see diagrams		
flow transmitter			
power supply	100...230 V/50...60 Hz or 20...32 V DC		
power consumption	< 15 W		
number of flow measuring channels	1		
damping	0...100 s, adjustable		
measuring cycle	100...1000 Hz		
response time	1 s		
housing material	aluminum, powder coated	stainless steel 316L (1.4404)	
degree of protection according to IEC/EN 60529	IP65	IP66	
dimensions	see dimensional drawing		
weight	3.1 kg	4.9 kg	
fixation	wall mounting, optional: 2" pipe mounting		
ambient temperature	-40...+60 °C (< -20 °C without operation of the display)		
display	2 x 16 characters, dot matrix, backlight		
menu language	English, German, French, Dutch, Spanish		
explosion protection			
ATEX / IECEx	transmitter zone marking	F704LF-A2 2 CE 0637  II3G II2D Ex nA nC ic IIC T4 Gc Ex tb IIIC T 120 °C Db T _a -40...+60 °C	F705LF-A2 2 CE 0637  II3G II2D Ex nA nC ic IIC T4 Gc Ex tb IIIC T 120 °C Db T _a -40...+60 °C
	certification ATEX	IBExU11ATEX1015	IBExU11ATEX1015
	certification IECEx	IECEX IBE 11.0008	IECEX IBE 11.0008
	type of protection	gas: non sparking dust: protection by enclosure	gas: non sparking dust: protection by enclosure
	intrinsic safety parameters	U _m = 250 V (power supply 100...230 V AC) U _m = 36 V (power supply 20...32 V DC)	U _m = 250 V (power supply 100...230 V AC) U _m = 36 V (power supply 20...32 V DC)

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measuring functions		
physical quantities	volumetric flow rate, mass flow rate, flow velocity	
totalizer	volume, mass	
diagnostic functions	sound speed, signal amplitude, SNR, SCNR, standard deviation of amplitudes and transit times	
communication interfaces		
diagnostic interfaces	- diagnosis: RS232 ¹ - USB (with adapter) ¹	
process interfaces (max. 1 optional)	- RS485 (sender) - Modbus RTU - HART - BACnet MS/TP - FF H1 - SD card	
serial data kit (optional)		
software	- FluxDiagReader: download of measured values and parameters, graphical presentation - FluxDiag (optional): download of measurement data, graphical presentation, report generation - FluxSubstanceLoader: upload of fluid data sets	
cable	RS232 ¹	
adapter	RS232 - USB ¹	
data logger		
loggable values	all physical quantities, totaled values and diagnostic values	
capacity	> 100 000 measured values	
SD card, removable (optional)		
loggable values	all physical quantities and totaled values	
capacity	min. 2 GB	
outputs (optional)		
	The outputs are galvanically isolated from the transmitter.	
number	on request	
switchable current output		
	All switchable current outputs are switched to active or passive mode at the same time.	
- range	4...20 mA (3.2...22 mA)	
- accuracy	0.04 % of reading $\pm 3 \mu\text{A}$	
- active output	$R_{\text{ext}} < 350 \Omega$	
- passive output	$U_{\text{ext}} = 8...30 \text{ V}$, depending on R_{ext} , $R_{\text{ext}} < 1 \text{ k}\Omega$	
current output		
current output		
- range	0/4...20 mA	
- accuracy	0.1 % of reading $\pm 15 \mu\text{A}$	
- active output	$R_{\text{ext}} < 500 \Omega$	
- passive output	$U_{\text{ext}} = 4...24 \text{ V}$, depending on R_{ext} , $R_{\text{ext}} < 1 \text{ k}\Omega$	
current output I1 in HART mode		
- range	4...20 mA	
- passive output	$U_{\text{ext}} = 10...24 \text{ V}$	
voltage output		
range	0...1 V or 0...10 V	
accuracy	0...1 V: 0.1 % of reading $\pm 1 \text{ mV}$ 0...10 V: 0.1 % of reading $\pm 10 \text{ mV}$	
internal resistance	$R_{\text{int}} = 500 \Omega$	
frequency output		
range	0...5 kHz	
open collector	24 V/4 mA, $R_{\text{int}} = 66.5 \Omega$	
binary output		
Reed relay	48 V/100 mA, P1...P4: $R_{\text{int}} = 22 \Omega$	
open collector	24 V/4 mA, P1...P4: $R_{\text{int}} = 22 \Omega$	
optorelay	26 V/100 mA	
binary output as alarm output		
- functions	limit, change of flow direction or error	
binary output as pulse output	mainly for totalizing	
- pulse value	0.01...1000 units	
- pulse width	optorelay: 1...1000 ms Reed relay, open collector: 80...1000 ms	

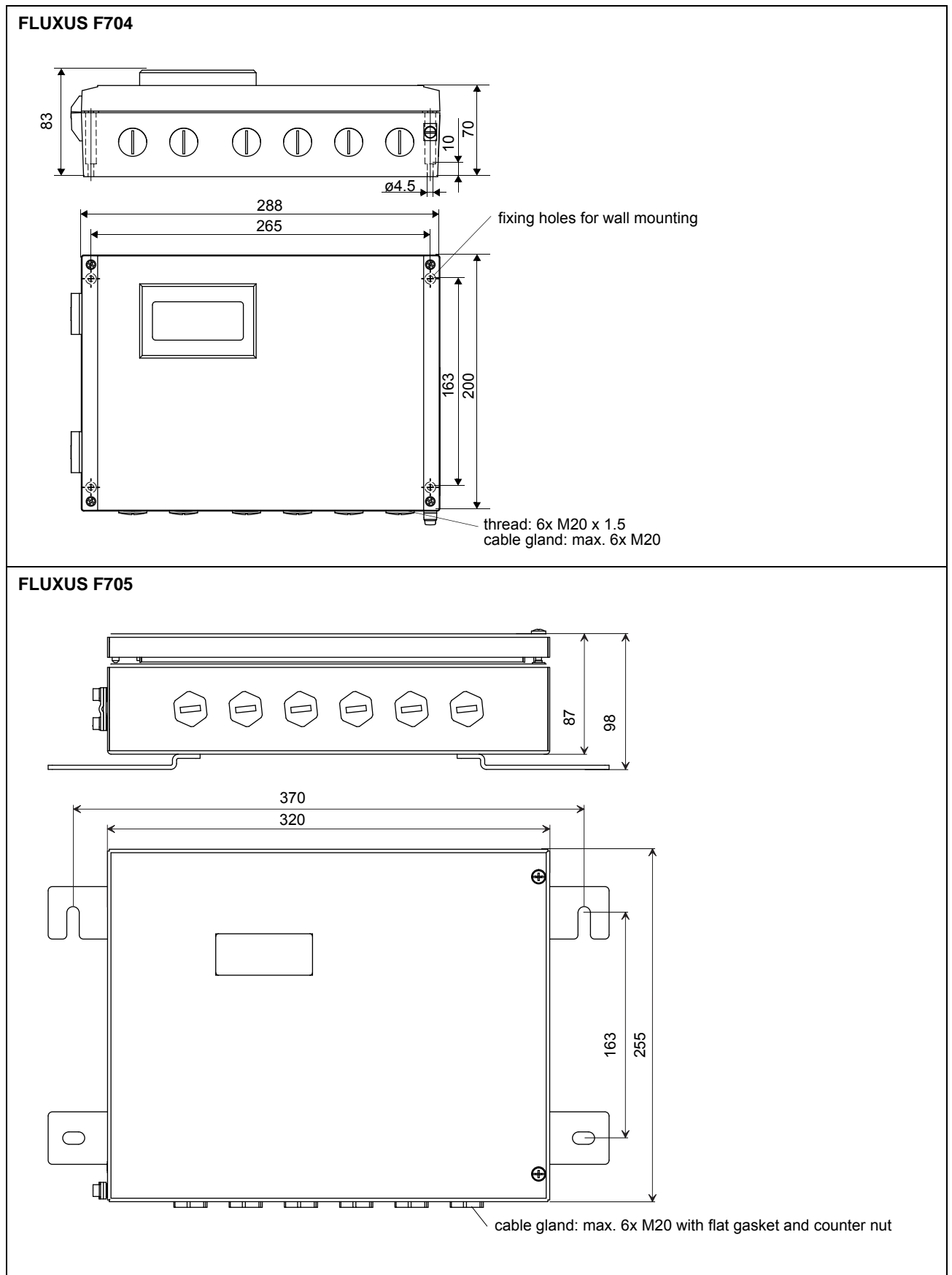
¹ F70***-A2: connection of the interface RS232 outside of explosive atmosphere (housing cover open)

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inputs (optional)		
	The inputs are galvanically isolated from the transmitter.	
number	max. 4, on request	
temperature input		
type	Pt100/Pt1000	
connection	4-wire	
range	-150...+560 °C	
resolution	0.01 K	
accuracy	±0.01 % of reading ±0.03 K	
current input		
accuracy	0.1 % of reading ±10 µA	
active input	$U_{int} = 24 \text{ V}$, $R_{int} = 50 \text{ } \Omega$, $P_{int} < 0.5 \text{ W}$, not short-circuit proof	
- range	0...20 mA	
passive input	$R_{int} = 50 \text{ } \Omega$, $P_{int} < 0.3 \text{ W}$	
- range	-20...+20 mA	
voltage input		
range	0...1 V	
accuracy	0.1 % of reading ±1 mV	
internal resistance	$R_{int} = 1 \text{ M}\Omega$	
binary input		
switching signal	5...30 V, 1 mA	
functions	<ul style="list-style-type: none"> - resetting the measured values - resetting the totalizers - stopping the totalizers 	

Diagrams



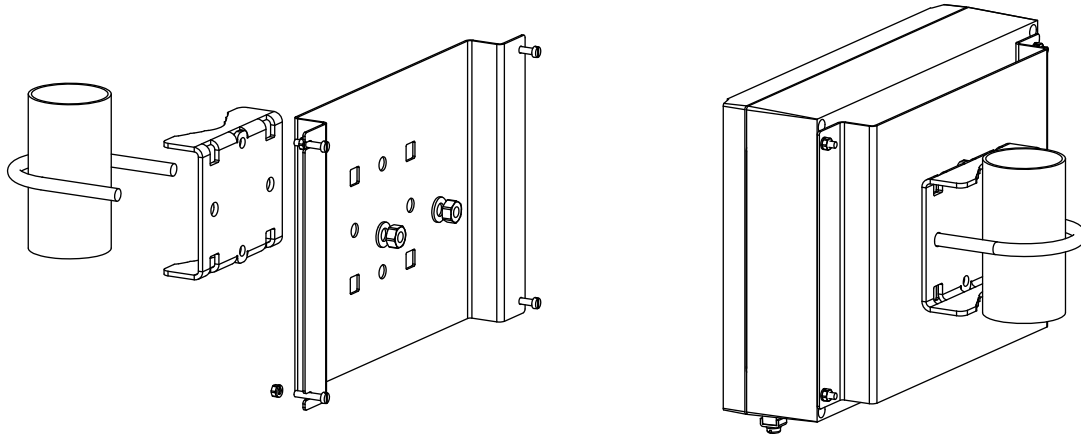
Dimensions



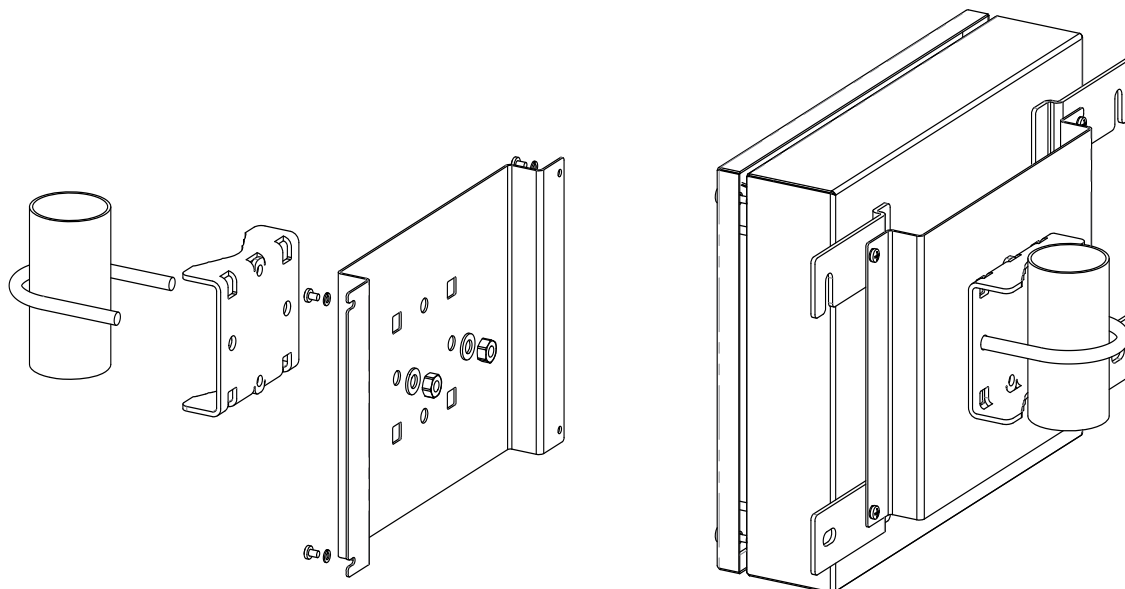
in mm

2" pipe mounting kit (optional)

FLUXUS F704



FLUXUS F705



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