







### Transmitter

#### Technical data

	FLUXUS F704LF-NN FLUXUS F704LF-A2	FLUXUS F704LF-F2	FLUXUS F705LF-NN FLUXUS F705LF-A2	FLUXUS F705LF-F2
				
design	standard field device		field device with stainless steel housing	
application	extreme low flow measurement for liquids			
transducers	CDQ*N**			
transducer mounting fixture	<ul style="list-style-type: none"> <li>Variofix L with bolt mounting plates VLQ-DS-B (outer pipe diameter ≤ 48 mm)</li> <li>Variofix L VLQ-DS-S (outer pipe diameter &gt; 48 mm)</li> </ul>			
<b>measurement</b>				
measurement principle	transit time difference correlation principle			
flow velocity	m/s	depending on pipe diameter, see diagrams		
fluid	all acoustically conductive liquids with < 2 % gaseous or solid content in volume			
Reynolds number	< 1 000			
temperature compensation	corresponding to the recommendations in ANSI/ASME MFC-5.1-2011			
accuracy	depending on pipe diameter, see diagrams			
<b>transmitter</b>				
power supply	<ul style="list-style-type: none"> <li>100...230 V/50...60 Hz or</li> <li>20...32 V DC or</li> <li>11...16 V DC</li> </ul>			
power consumption	W	< 15		
number of measuring channels		1		
damping	s	0...100 (adjustable)		
measuring cycle	Hz	100...1000		
response time	s	1		
housing material		aluminum, powder coated	stainless steel 316L (1.4404)	
degree of protection		IP65	IP66	
weight	kg	3.1	4.9	
fixation		wall mounting, optional: 2" pipe mounting		
ambient temperature	°C	-40...+60 °C (< -20 °C without operation of the display)	-20...+60 °C	-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		
<b>explosion protection</b>				
• ATEX/IECEx				
transmitter	F704LF-A2	-	F705LF-A2	-
marking	CE 0637 Ex II3G II2D Ex nA nC ic IIC T4 Gc Ex tb IIIC T 120 °C Db Ta -40...+60 °C	-	CE 0637 Ex II3G II2D Ex nA nC ic IIC T4 Gc Ex tb IIIC T 120 °C Db Ta -40...+60 °C	-
certification ATEX	IBExU11ATEX1015	-	IBExU11ATEX1015	-
certification IECEx	IECEx IBE 11.0008	-	IECEx IBE 11.0008	-
• FM				
transmitter	-	F704**-F2	-	F705**-F2
marking	-	F70[1 or 2]Z2**[1 or 2]:  NI/Cl. I,II,III/Div. 2/ GP. A,B,C,D,E,F,G/ T5 Ta = 60 °C  F70[1 or 2]Z2**9:  NI/Cl. I,II,III/Div. 2/ GP. A,B,C,D,E,F,G/ T4A Ta = 55 °C	-	F703Z2**[1 or 2]:  NI/Cl. I,II,III/Div. 2/ GP. A,B,C,D,E,F,G/ T5 Ta = 60 °C  F703Z2**9:  NI/Cl. I,II,III/Div. 2/ GP. A,B,C,D,E,F,G/ T4A Ta = 55 °C

<sup>1</sup> outside of explosive atmosphere (housing cover open)

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<b>measuring functions</b>				
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			
<b>communication interfaces</b>				
service interfaces	<ul style="list-style-type: none"> <li>• RS232<sup>1</sup></li> <li>• USB (with adapter)<sup>1</sup></li> </ul>			
process interfaces	max. 1 option: <ul style="list-style-type: none"> <li>• RS485 (ASCII sender)</li> <li>• Modbus RTU</li> <li>• HART</li> <li>• BACnet MS/TP</li> <li>• FF H1</li> <li>• SD card (nonEx)</li> </ul>	max. 1 option: <ul style="list-style-type: none"> <li>• RS485 (ASCII sender)</li> <li>• Modbus RTU</li> <li>• HART</li> <li>• BACnet MS/TP</li> <li>• FF H1</li> </ul>	max. 1 option: <ul style="list-style-type: none"> <li>• RS485 (ASCII sender)</li> <li>• Modbus RTU</li> <li>• HART</li> <li>• BACnet MS/TP</li> <li>• FF H1</li> <li>• SD card (nonEx)</li> </ul>	max. 1 option: <ul style="list-style-type: none"> <li>• RS485 (ASCII sender)</li> <li>• Modbus RTU</li> <li>• HART</li> <li>• BACnet MS/TP</li> <li>• FF H1</li> </ul>
<b>accessories</b>				
serial data kit	<ul style="list-style-type: none"> <li>• cable</li> <li>• adapter</li> </ul> RS232 RS232 - USB			
software	<ul style="list-style-type: none"> <li>• FluxDiagReader: download of measured values and parameters, graphical presentation</li> <li>• FluxDiag (optional): download of measurement data, graphical presentation, report generation</li> <li>• FluxSubstanceLoader: upload of fluid data sets</li> </ul>			
<b>data logger</b>				
loggable values	all physical quantities, totalized values and diagnostic values			
capacity	> 100 000 measured values			
<b>SD card, removable (nonEx, optional)</b>				
loggable values	all physical quantities and totalized values	-	all physical quantities and totalized values	-
capacity	min. 2 GB	-	min. 2 GB	-
<b>outputs</b>				
number	The outputs are galvanically isolated from the transmitter. on request			
<b>• switchable current output</b>				
	The switchable current outputs are menu selectable all together as passive or active.			
range	mA	4...20 (3.2...22)		
accuracy		0.04 % of reading ±3 µA		
active output		R <sub>ext</sub> < 350 Ω		
passive output		U <sub>ext</sub> = 8...30 V, depending on R <sub>ext</sub> (R <sub>ext</sub> < 1 kΩ at 30 V)		
<b>• current output</b>				
range	mA	0/4...20		
accuracy		0.1 % of reading ±15 µA		
active output		R <sub>ext</sub> < 500 Ω		
passive output		U <sub>ext</sub> = 4...24 V, depending on R <sub>ext</sub> (R <sub>ext</sub> < 1 kΩ at 24 V)		
current output in HART mode		I1		
• range	mA	4...20		
• active output		U <sub>int</sub> = 24 V		
• passive output		U <sub>ext</sub> = 10...24 V DC		
<b>• voltage output</b>				
range	V	0...1 or 0...10		
accuracy		0...1 V: 0.1 % of reading ±1 mV 0...10 V: 0.1 % of reading ±10 mV		
internal resistance		R <sub>int</sub> = 500 Ω		
<b>• frequency output</b>				
range	kHz	0...5		
optorelay		24 V/4 mA, R <sub>int</sub> = 66.5 Ω		
<b>• binary output</b>				
optorelay		26 V/100 mA		
open collector		24 V/4 mA, P1...P4: R <sub>int</sub> = 22 Ω		
Reed relay		48 V/100 mA, P1...P4: R <sub>int</sub> = 22 Ω		
binary output as alarm output				
• functions		limit, change of flow direction or error		
binary output as pulse output				
• functions		mainly for totalizing		
• pulse value	units	0.01...1000		
• pulse width	ms	optorelay: 1...1000 Reed relay, open collector: 80...1000		

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<b>inputs</b>				
	The inputs are galvanically isolated from the transmitter.			
number	max. 4, on request			
<b>• temperature input</b>				
type	Pt100/Pt1000			
connection	4-wire			
range	°C	-150...+560		
resolution	K	0.01		
accuracy	±0.01 % of reading ±0.03 K			
<b>• current input</b>				
accuracy	0.1 % of reading ±10 μ			
active input	U <sub>int</sub> = 24 V, R <sub>int</sub> = 50 Ω, P <sub>int</sub> < 0.5 W, not short-circuit proof			
• range	mA	0...20		
passive input	R <sub>int</sub> = 50 Ω, P <sub>int</sub> < 0.3 W			
• range	mA	-20...+20		
<b>• voltage input</b>				
range	V	0...1		
accuracy	0.1 % of reading ±1 mV			
internal resistance	R <sub>int</sub> = 1 MΩ			
<b>• binary input</b>				
switching signal	5...30 V, 1 mA	5...26 V, 1 mA	5...30 V, 1 mA	5...26 V, 1 mA
functions	<ul style="list-style-type: none"> <li>• resetting the measured values</li> <li>• resetting the totalizers</li> <li>• stopping the totalizers</li> <li>• activation of the measuring mode for highly dynamic flows</li> </ul>			

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Diagrams

