

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

Technical Specification
TSFLUXUS_F704SRV6-0EN_Leu

2024-08-01

Flexim FLUXUS F704 (SIL)
Ultrasonic Flowmeter



FLEXIM

EMERSON

Transmitter

Technical data

		F704SR-NN **F704SR-A2** **F704SR-F2**
		
design		standard field device SIL2
supported transducer frequencies		K, M, P, Q, S on request: G
measurement		
measurement principle		transit time difference correlation principle, automatic NoiseTrek selection for measurements with high gaseous or solid content
flow direction		bidirectional
flow velocity	m/s	0.01...25
repeatability		0.15 % MV ±0.01 m/s
fluid		all acoustically conductive liquids with < 10 % gaseous or solid content in volume (transit time difference principle)
temperature compensation		corresponding to the recommendations in ANSI/ASME MFC-5.1-2011
measurement uncertainty[1]		
with standard calibration		±1.6 % MV ±0.01 m/s
with advanced calibration (optional)		±1.2 % MV ±0.01 m/s
with field calibration[2]		±0.5 % MV ±0.01 m/s
transmitter		
power supply		100...230 V/50...60 Hz
power consumption	W	< 15
number of measuring channels		1, optional: 2
damping	s	0...100 (adjustable)
measuring cycle	Hz	100...1000 (1 channel)
response time	s	1 (1 channel), option: 0.07
housing material		aluminum, powder coated
degree of protection		IP65
dimensions	mm	see dimensional drawing
weight	kg	3.1
fixation		wall mounting, optional: 2" pipe mounting
ambient temperature	°C	-20...+60 °C
display		2 x 16 characters, dot matrix, backlight
menu language		English, German, French, Dutch, Spanish
explosion protection		
• **ATEX/IECEx**		
transmitter		F704**-A2
marking		CE 0637 Ex II3G II2D Ex nA nC ic IIC T4 Gc Ex tb IIIC T120 °C Db T_a -40...+60 °C
certification		IBExU11ATEX1015, IECEx IBE 11.0008
• **FM**		
transmitter		F704**-F2
FM code		F70[1 or 2]Z2**9
marking		FM APPROVED NI/Cl. I, II, III / Div. 2 / GP. A, B, C, D, E, F, G / T4A -20...+55 °C
measuring functions		
physical quantities		volumetric flow rate, mass flow rate, flow velocity
totaliser		volume, mass
calculation functions		average, difference, sum (2 measuring channels necessary)
diagnostic functions		sound speed, signal amplitude, SNR, SCNR, standard deviation of amplitudes and transit times
communication interfaces		
service interfaces		• RS232[3] • USB (with adapter)[3]
accessories		
data transmission kit • cable • adapter		 RS232 RS232 - USB
software		• FluxDiagReader: reading of measured values and parameters, graphical representation • FluxDiag (optional): reading of measurement data, graphical representation, report generation

[1] for transit time difference principle, reference conditions and v > 0.15 m/s

[2] reference uncertainty < 0.2 %

[3] outside the explosive atmosphere (housing cover open)

		F704SR-NN F704SR-A2 F704SR-F2
data logger		
loggable values		all physical quantities, totalised physical quantities and diagnostic values
capacity		> 100 000 measured values
outputs		
		The outputs are galvanically isolated from the transmitter.
• **current output**		
number		2 (1 (SIL2), 1 (diagnosis))
range	mA	0/4...20
accuracy		0.1 % MV ±15 µA
active output		R_{ext} < 500 Ω
• **binary output**		
number		0...3 (diagnosis)
optorelay		26 V/100 mA
binary output as alarm output		
• functions		limit, change of flow direction or error
binary output as pulse output		
• functions		mainly for totalising
• pulse value	units	0.01...1000
• pulse width	ms	1...1000

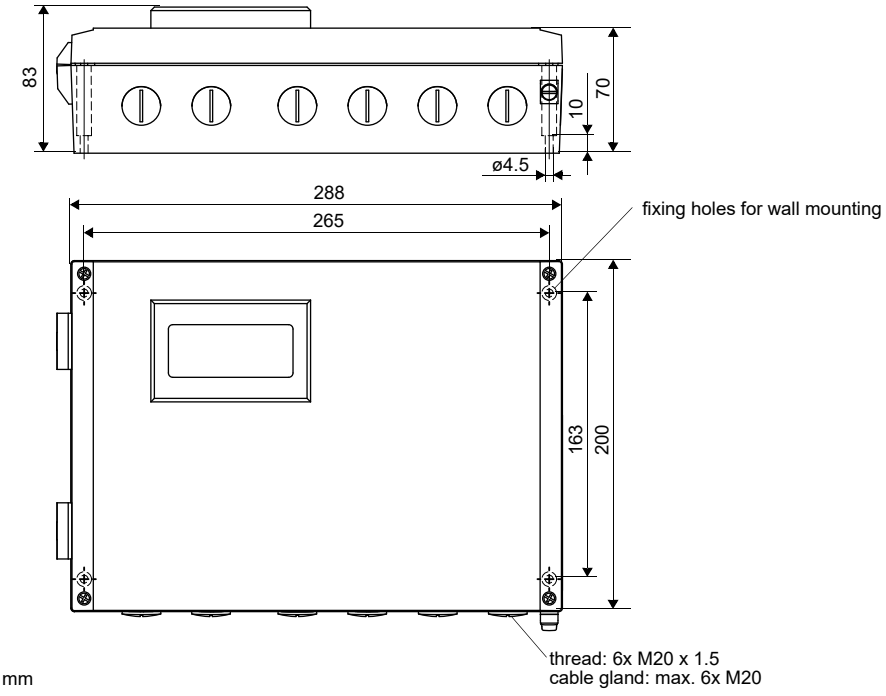
[1] for transit time difference principle, reference conditions and v > 0.15 m/s

[2] reference uncertainty < 0.2 %

[3] outside the explosive atmosphere (housing cover open)

Dimensions

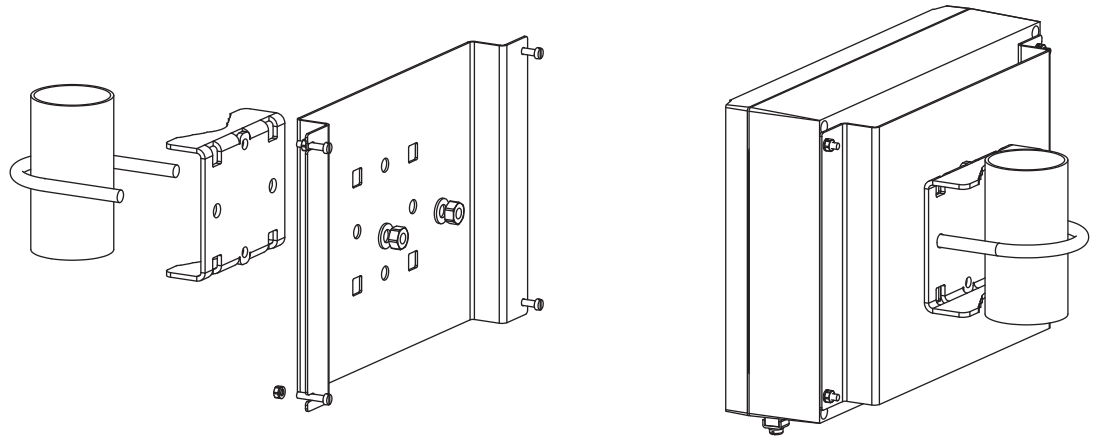
***704**



in mm

2" pipe mounting kit

***704**

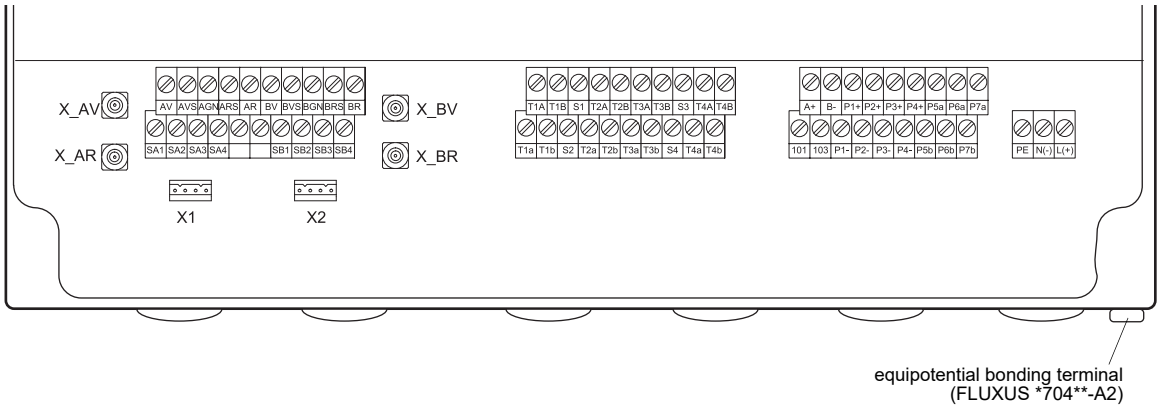


Storage

- 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: -20...+60 °C

Terminal assignment

***704**



power supply[1]							
terminal				**connection (AC)**			
PE				protective conductor			
N(-)				neutral conductor			
L(+)				line conductor			
transducers							
transducer cable (transducers *****53, *****8*, ****LI*), extension cable					transducer cable (transducers *****52)		
measuring channel A		**measuring channel B**			**measuring channel A**	**measuring channel B**	
terminal	**connection**	**terminal**	**connection**	**transducer**	**terminal**		**connection**
AV	signal	BV	signal		X_AV	X_BV	SMB connector
AVS	shield	BVS	shield				
ARS	shield	BRS	shield		X_AR	X_BR	SMB connector
AR	signal	BR	signal				
outputs[1]							
terminal				**connection**			
P1+...P2+ P1-...P2-				current output			
P5a...P7a P5b...P7b				binary output			

[1] cable (by customer): e.g. flexible wires, with insulated wire ferrules, wire cross-section: 0.5...1.5 mm^2

Transducers

Overview

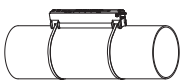
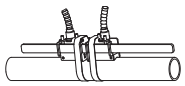
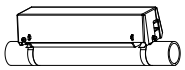
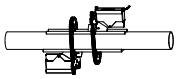
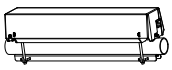
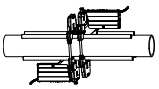
Shear wave transducers

	technical type					
	G	**K**	**M**	**P**	**Q**	**S**
zone 2 - FM Class I Div. 2 - nonEx SMB connector normal temperature range	CDG1N52 CLG1N52	CDK1N52 CLK1N52	CDM2N52 CLM2N52	CDP2N52 CLP2N52	CDQ2N52 CLQ2N52	CDS2N52
zone 2 - FM Class I Div. 2 - nonEx with stripped cable ends normal temperature range	CDG1N53 CLG1N53	CDK1N53 CLK1N53	CDM2N53 CLM2N53	CDP2N53 CLP2N53	CDQ2N53 CLQ2N53	CDS2N53
zone 2 - nonEx IP68	CDG1LI8	CDK1LI8	CDM2LI8	CDP2LI8		
zone 2 - FM Class I Div. 2 - nonEx SMB connector extended temperature range	CDG1E52[1] CLG1E52[1]	CDK1E52[1] CLK1E52[1]	CDM2E52 CLM2E52	CDP2E52 CLP2E52	CDQ2E52 CLQ2E52	
zone 2 - FM Class I Div. 2 - nonEx with stripped cable ends extended temperature range	CDG1E53[1] CLG1E53[1]	CDK1E53[1] CLK1E53[1]	CDM2E53 CLM2E53	CDP2E53 CLP2E53	CDQ2E53 CLQ2E53	
zone 1 normal temperature range	CDG1N81 CLG1N81	CDK1N81 CLK1N81	CDM2N81 CLM2N81	CDP2N81 CLP2N81	CDQ2N81 CLQ2N81	
zone 1 IP68	CDG1LI1	CDK1LI1	CDM2LI1	CDP2LI1		
zone 1 extended temperature range	CDG1E83 CLG1E83	CDK1E83 CLK1E83	CDM2E85 CLM2E85	CDP2E85 CLP2E85	CDQ2E85 CLQ2E85	
inner pipe diameter d						
min. extended mm	400	100	50	25	10	6
min. recommended mm	500	200	100	50	25	10
max. recommended mm	4000	2000	1000	400	150	70
max. extended mm	6500	2400	1200	480	240	70
pipe wall thickness						
min. mm	11	5	2.5	1.2	0.6	0.3

[1] nonEx, FM

for further data see Technical specification TS_Fxx-transducersVx-xXX_Leu

Transducer mounting fixture

Variofix L		**Variofix C**	**WaveInjector with chains**
	 transducer frequency S		
		Variofix C with bolt mounting plates	**WaveInjector with threaded rods**
		 outer pipe diameter: **VCM**: max. 46 mm **VCQ**: max. 36 mm	 outer pipe diameter: 35...380 mm

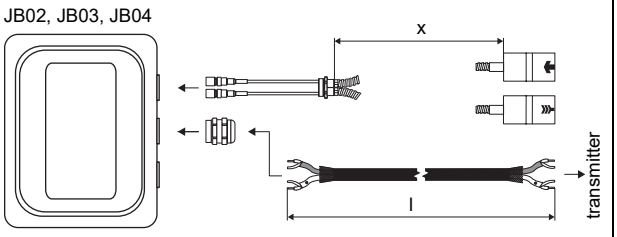
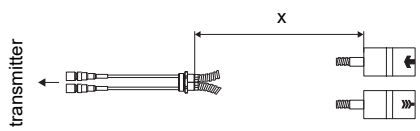
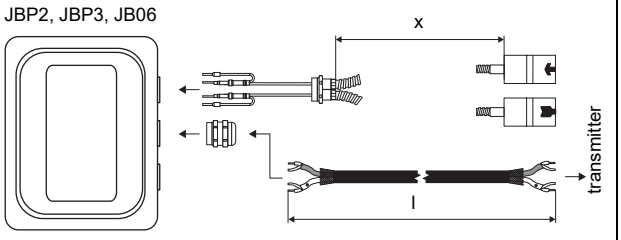
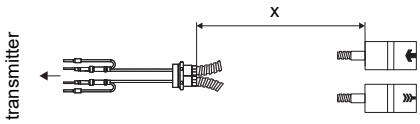
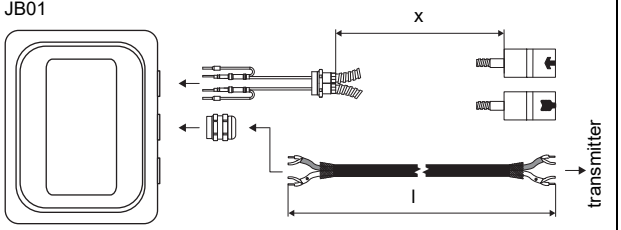
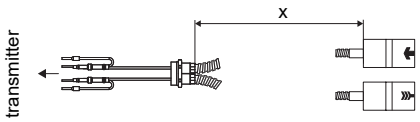
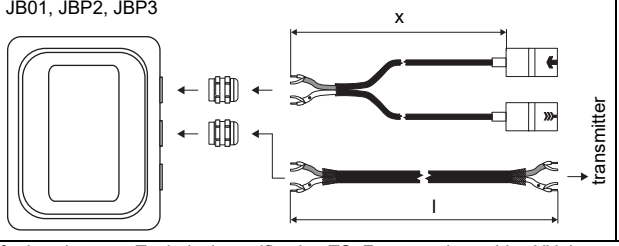
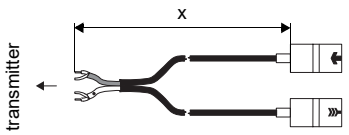
for further data see Technical specification TS_Fxx-transducersVx-xXX_Leu

Coupling materials for transducers

	normal temperature range (4th character of transducer order code = N)		**extended temperature range higher temperatures** (4th character of transducer order code = E, S)			**WaveInjector**	
	< 100 °C	< 130 °C	< 180 °C	< 200 °C	200...240 °C	< 280 °C	280...630 °C
< 24 h	coupling compound type N or coupling foil type VT	coupling compound type type N or E or coupling foil type VT	coupling compound type E or coupling foil type VT	coupling compound type E or coupling foil type VT	coupling compound type H or coupling foil type TF	coupling foil type A and coupling foil type VT	coupling foil type B and coupling foil type VT
long time measure-ment	coupling foil type VT	coupling foil type VT	coupling foil type VT	coupling foil type VT	coupling foil type TF	coupling foil type A and coupling foil type VT	coupling foil type B and coupling foil type VT

for further data see Technical specification TS_Fxx-transducersVx-xXX_Leu

Connection systems

connection system TS		
connection with extension cable	direct connection	transducers technical type
JB02, JB03, JB04 		*****52
connection system T1		
connection with extension cable	direct connection	transducers technical type
JBP2, JBP3, JB06 		****N53 ****E53 ****S53
JB01 		*****8*
JB01, JBP2, JBP3 		****LI*

for further data see Technical specification TS_Fxx-transducersVx-xXX_Leu

For more information: **Emerson.com**

© 2024 Emerson. All rights reserved.

Emerson Terms and Conditions of Sale are available upon request. The Emerson logo is a trademark and service mark of Emerson Electric Co. Flexim is a mark of one of the Emerson family of companies. All other marks are the property of their respective owners.

FLEXIM

EMERSON

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP