

### Stationary ultrasonic clamp-on system for flow measurement of compressed air and other industrial gases

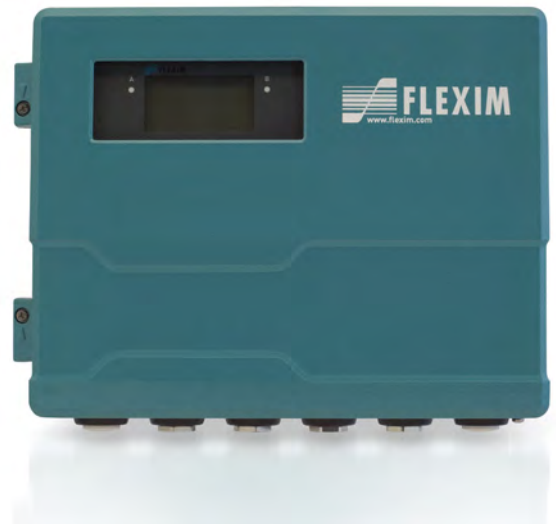
Transmitter for permanent outdoor wall or pipe mounting

#### Features

- Accurate and reliable flow measurement
- Bidirectional measurement for flow direction detection in compressed-air networks
- Installation and start-up do not require any pipe work nor any process interruptions
- Measurement unaffected by gas density, viscosity, dust content and humidity
- Measurement at extremely low pressure:
  - min. 3 bar(a) in metal pipes
  - 1 bar(a) in plastic pipes
- Extremely high turndown ratio > 1000:1
- High measuring accuracy, even at low flow velocities down to 0.01 m/s
  - Monitoring of small flows (e.g. during the night)
  - Leakage detection
- For pipe diameters of DN 15...DN 250
- Maintenance-free acoustic coupling using permanent coupling material
- Support of numerous fieldbus systems
- ATEX, IECEx, FM Class I Div. 2 approved transducers for hazardous areas available

#### Applications

- Industrial manufacturing facilities:
  - Air compressors and compressed-air distribution networks
  - Pressure generators and distribution networks for inert or purge gases
  - Pressure generators and distribution networks for oxygen, e.g. for steel production
- Measurement of atmospheric gases consumption: compressed air, nitrogen, oxygen, argon, helium



FLUXUS G721CA-\*\*\*\*A







FLUXUS G721CA-\*\*\*\*S



Variofix L

# Transmitter

## Technical data

	FLUXUS G721CA-NN0*A G721CA-NN0*S	FLUXUS G721CA-A20*A G721CA-A20*S	FLUXUS G721CA-F20*A G721CA-F20*S
			
design	standard field device	standard field device zone 2	standard field device FM Class I Div. 2
application	flow measurement of compressed air and industrial gases		
<b>measurement</b>			
measurement principle	transit time difference correlation principle		
flow velocity	m/s 0.01...35, depending on pipe diameter		
repeatability	0.15 % MV ±0.005 m/s		
fluid	compressed air, oxygen, nitrogen, argon, helium		
temperature compensation	corresponding to the recommendations in ANSI/ASME MFC-5.1-2011		
<b>measurement uncertainty (volumetric flow rate)</b>			
measurement uncertainty of the measuring system <sup>1</sup>	±0.3 % MV ±0.005 m/s		
measurement uncertainty at the measuring point	±1...2 % MV ±0.005 m/s, depending on the application		
<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, optional: 2		
damping	s 0...100 (adjustable)		
measuring cycle	Hz 100...1000 (1 channel)		
response time	s 1 (1 channel), option: 0.02		
housing material	aluminum, powder coated or stainless steel 316L (1.4404)		
degree of protection	IP66		aluminum housing: IP66/NEMA 4X stainless steel housing: IP65
dimensions	mm see dimensional drawing		
weight	kg aluminum housing: 5.4 stainless steel housing: 5.1		
fixation	wall mounting, optional: 2" pipe mounting		
ambient temperature	°C -40...+60 (< -20 °C without operation of the display)		aluminum housing: -40...+55/60 (< -20 °C without operation of the display) stainless steel housing: -20...+55/60
display	128 x 64 pixels, backlight		
menu language	English, German, French, Spanish, Dutch, Russian, Polish, Turkish, Italian		
<b>explosion protection</b>			
<b>• ATEX/IECEX</b>			
marking	-	CE 0637  II 3G II 2D Ex nA nC ic IIC T4 Gc Ex tb IIIC T120 °C Db T <sub>a</sub> -40...+60 °C	-
certification ATEX	-	IBExU11ATEX1015	-
certification IECEX	-	IECEX IBE 11.0008	-
<b>• FM</b>			
marking	-	-	G721**-F20*S2, G721**-F20*S3:  NI/Cl. I,II,III/Div. 2/ GP. A,B,C,D,E,F,G/ T5  G721**-F20*S1:  NI/Cl. I,II,III/Div. 2/ GP. A,B,C,D,E,F,G/ T4A
<b>measuring functions</b>			
physical quantities	operating volumetric flow rate, standard 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		

<sup>1</sup> with aperture calibration of the transducers

<sup>2</sup> outside the explosive atmosphere (housing cover open)

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<b>communication interfaces</b>			
service interfaces	measured value transmission, parametrisation of the transmitter: • USB <sup>2</sup> • LAN <sup>2</sup>		
process interfaces	max. 1 option: • RS485 (ASCII sender) • Modbus RTU • BACnet MS/TP • M-Bus • Profibus PA • FF H1 • Modbus TCP • BACnet IP	max. 1 option: • RS485 (ASCII sender) • Modbus RTU • BACnet MS/TP • Profibus PA • FF H1 • Modbus TCP • BACnet IP	max. 1 option: • RS485 (ASCII sender) • Modbus RTU • BACnet MS/TP • Profibus PA • FF H1 • Modbus TCP • BACnet IP
<b>accessories</b>			
data transmission kit	USB cable		
software	• FluxDiagReader: reading of measured values and parameters, graphical presentation • FluxDiag (optional): reading of measurement data, graphical presentation, report generation, parametrisation of the transmitter		
<b>data logger</b>			
loggable values	all physical quantities, totalised physical quantities and diagnostic values		
capacity	max. 800 000 measured values		
<b>outputs</b>			
	The outputs are galvanically isolated from the transmitter.		
<b>• switchable current output</b>			
	All switchable current outputs are jointly switched to active or passive.		
number	2 or 4		
range	mA	4...20 (3.2...22)	
accuracy	0.04 % MV ±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>• binary output</b>			
number	3		
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...1 000	
• pulse width	ms	optorelay: 1...1 000	
<b>inputs</b>			
	The inputs are galvanically isolated from the transmitter.		
<b>• temperature input</b>			
number	1 (1 measuring channel), 2 (2 measuring channels)		
type	Pt100/Pt1000		
connection	4-wire		
range	°C	-150...+560	
resolution	K	0.01	
accuracy	±0.01 % MV ±0.03 K		
<b>• current input</b>			
number	1 (1 measuring channel), 2 (2 measuring channels)		
accuracy	0.1 % MV ±10 µA		
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	

<sup>1</sup> with aperture calibration of the transducers

<sup>2</sup> outside the explosive atmosphere (housing cover open)

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