



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX SEV 22.0007X** Page 1 of 3 [Certificate history:](#)
Status: **Current** Issue No: 0
Date of Issue: 2022-03-03
Applicant: **Mems AG**
Bruggerstrasse 30
5413 Birmenstorf
Switzerland
Equipment: **Gas quality measurement device, Type: gasQS flonic**
Optional accessory:
Type of Protection: **i**
Marking: **Ex ia IIC T4 Ga or**
Ex ib IIC T4 Gb

Approved for issue on behalf of the IECEx
Certification Body:

Martin Plüss

Position:

Manager Product Certification

Signature:
(for printed version)

Date:
(for printed version)

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

Eurofins Electric & Electronic Product Testing AG
Luppenstrasse 3
8320 FEHRALTORF .
Switzerland



E&E



IECEX Certificate of Conformity

Certificate No.: **IECEX SEV 22.0007X**

Page 2 of 3

Date of issue: 2022-03-03

Issue No: 0

Manufacturer: **Mems AG**
Bruggerstrasse 30
5413 Birmenstorf
Switzerland

Manufacturing
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEX Quality system requirements. This certificate is granted subject to the conditions as set out in IECEX Scheme Rules, IECEX 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[CH/SEV/ExTR22.0007/00](#)

Quality Assessment Report:

[CH/SEV/QAR22.0001/00](#)



IECEX Certificate of Conformity

Certificate No.: **IECEX SEV 22.0007X**

Page 3 of 3

Date of issue: 2022-03-03

Issue No: 0

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Test item description: Gas quality measurement device

Model/type reference: gasQS flonic

The gasQS flonic is a micro-electromechanical gas quality measurement device. Based on its CMOS chip micro-thermal flow sensor in combination with a sonic nozzle and two on/off valves, thermal conductivity, heat capacity and relative density of natural gas are measured. From these parameters, calorific value or Wobbe index are correlated.

Compared to process gas chromatographs, the typical analytical tool to determine gas parameters, this standalone device needs no carrier gas, is robust, compact and inexpensive. It also provides a control output for automatic calibration in the field.

The device is connected via intrinsic safe associated apparatus to supply power, RS485 or CAN interface and GPIO interface.

Classification of installation and use:	stationary
Ingress protection:	IP20
Rated ambient temperature range (°C):	-20 °C ... +60 °C respective -10 °C ... +55 °C
Rated ambient temperature range (°C) for Ex Components:	N/A

SPECIFIC CONDITIONS OF USE: YES as shown below:

- For protection level Ga the gas quality sensor enclosure must be installed protected against impact and friction.
- gasQS flonic with build in valve from ASCO NUMATICS GmbH type Piezotronic 630 can be used with natural gas as a controllable medium insofar that there are no explosive gas-air-mixtures in the pressure-system. Otherwise, the piezo valve may be used to control non-flammable media only.
- gasQS flonic with build in valve from Bürkert Werke GmbH type 6164 are intended for installation at EPL Gb respective Zone 1.
- For calculation of the intrinsic safe RS485/CAN output circuit the internal capacitance of $C_i = 1.1 \mu\text{F}$ and the internal inductance of $L_i = 52 \mu\text{H}$ must be regarded.

Annex:

[IECEX SEV 22.0007 App i0.pdf](#)

Annexe to: IECEX SEV 22.0007
Issue No.: 0
 page 1 of 1

Applicant Name: MEMS AG
Equipment: Gas quality measurement device
Type designation:

order key flonic		examples						
		flonic, H-gas, Hs, no optional "01A1B1"						
		flonic, special measuring spectrum, Hs, Wobbe, no optional "01ASB1B4"						
		01	A	...	B	...	C	...
measuring spectrum	natural gas G260 2nd family		1					
	natural gas G260 focus E (H-gas)		2					
	natural gas G260 focus LL (L-gas)		3					
	biogas raw (CH4CO2)		6					
	biomethane (CH4CO2)		7					
	specified other on request		S					
output value	H ₂					1		
	H _i					2		
	d _n					3		
	W ₂					4		
	methane number					6		
	Lambda air index					7		
	Lambda ratio to G20					8		
	specified other on request					S		
ATEX approval	II 1 G ia IIC T4 Ga (Zone 0)							1
	II 2 G ib IIC T4 Gb (Zone 1)							2

Rating:

Supply circuit

U_i = 15.75 V
 I_i = 0.723 A
 P_i = 2.84 W
 C_i = 0.188 µF
 L_i = 0.024 mH

GPIO circuit

U_i = 28.0 V
 I_i = 0.1 A
 P_i = 0.7 W
 C_i = 0.003 µF
 L_i = 0.01 mH

RS485
 respective
 CAN circuit

Input circuit:

U_i = 7.5 V
 I_i = 1.5 A
 P_i = 2.8 W
 C_i = 1.1 µF
 L_i = 0.63 µH

Output circuit:

U_o = 4.1 V
 I_o = 0.091 A
 P_o = 0.094 W
 C_o = 7.9 µF
 L_o = 0.2 mH
 C_i = 1.1 µF (max. internal capacity)
 L_i = 0.63 µH (max. internal inductance)