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EN ISO/IEC 17065
S1-499

(1) **EU-TYPE EXAMINATION CERTIFICATE**

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number: **ICQC 21 ATEX 0465 X** **Issue: 0**

(4) Equipment: **Pressure Transmitters EMIS-BAR**

(5) Manufacturer: **EMIS CJSC**

(6) Address: **Lenina Avenue 3, office 308, Chelyabinsk, 454091, Russia**

(7) This equipment and any acceptable variation, also documents which are specified in the schedule to this certificate.

(8) The certification body ICQC, Notified body No. 2549 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.


The examination and test results are recorded in confidential report No. **465/2021/10/ATEX**

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN IEC 60079-0:2018, EN 60079-1:2014, EN 60079-31:2014

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and the construction of the specified equipment in accordance with Directive 2014/34/EU. Further requirements of this Directive apply to the manufacture and supply of this equipment. These are not covered by the certificate

(12) The marking of the equipment or protective system shall include the following:

 **See Schedule to certificate**

Head of Certification Body:



Sergey Kovalev

Date of issue: 12 November, 2021
Jurmala, Latvia

(13) **SCHEDULE**

(14) **to EU-TYPE EXAMINATION CERTIFICATE: ICQC 21 ATEX 0465 X**

Issue: 0

(15) **Description of Equipment:**

The pressure transmitters EMIS-BAR are designed for continuous measurement and converting gauge, absolute, vacuum, hydrostatic and differential pressure into a 4 – 20 mA analogue output signal with a HART Communication protocol as well as displaying the measured value on its own display (optional).

Table 1 – EMIS-BAR pressure transmitters type designation

EMIS-BAR	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Model – See Table 2																	
2	H – 4 – 20 mA HART																	
3	Explosion protection: Exd – II 2G Ex db IIC T6...T3, T1 Gb RV – I M2 Ex db I Mb Ex dD – II 2D Ex tb IIIC 85/100/120/200/400 °C Db																	
4	Measuring range *																	
5	Accuracy *																	
6	Materials (Diaphragm material, filling fluid cleaning measuring part, wetted parts material etc) *																	
7	Process connection* (see NOTE 1 and NOTE 2)																	
8	Electronic housing material Al – aluminium S – stainless steel X – aluminium (special coating)																	
9	LCD display *																	
10	Types of the cable glands *																	
11	Additional protection*																	
12	Transmitter lightning protection *																	
13	High-temperature version * (see NOTE 1)																	
14	Special version *																	
15	Calibration *																	
16	Valve block *																	
17	Medium separator *																	
18	Additional certificates (not related to explosion safety)*																	

* see Operation manual for more details.

Note 1: A radiator (code 13 in the order sheet) or a capillary tube at least 1 m long and appropriate filling liquid (code 7 in the order sheet) must be used if a temperature range of the measured medium is from 120 to 200 °C.

Note 2: A capillary tube at least 1 m long and appropriate filling liquid (code 7 in the order sheet) must be used if a temperature range of the measured medium is from 200 to 400 °C.

Table 2 – The models of the pressure transmitters EMIS-BAR covered by this certificate.

Type of a measured pressure	Model of the pressure transmitter (Pos. 1 in the type designation – see Table 1)	
Gauge pressure, vacuum pressure	103	In-Line process connection
	105	Flanged process connection (traditional-mount)
	113	With fully-welded diaphragm seal
	173	With remote diaphragm seal
	174	With remote extended diaphragm seal
Absolute pressure	123	In-Line process connection
	133	Flanged process connection (traditional-mount)
	175	With remote diaphragm seal
	176	With remote extended diaphragm seal
Differential pressure	143	Flanged process connection (traditional-mount)
	153	Flanged process connection (traditional-mount)
	183	With remote diaphragm seals (static pressure up to -50 kPa)
	184	With remote extended diaphragm seals (static pressure up to - 50 kPa)
	185	With one remote diaphragm seal and one remote extended diaphragm seal (static pressure up to - 50 kPa)
	193	Ultralow pressure
	186	With remote diaphragm seal (static pressure up to - 100 kPa)
	187	With remote extended diaphragm seal (static pressure up to - 100 kPa)
Hydrostatic pressure	163	For level measurement with remote diaphragm seal
	164	For level measurement with remote extended diaphragm seal

The pressure transmitter EMIS-BAR consists of an electronic unit and a pressure transducer. The electronic unit is a cylindrical metal housing, closed on both sides by screw covers. For the transmitter option with a LCD-display one cover has a window, cemented into the metallic frame of the cover and fixed from the inside. The pressure transducer is screwed in the threaded hole in a lower part of the electronic housing. There are two threaded holes for cable glands on the sides of the housing. The noise filter board, main board, sensor board, LCD module and the sensor settings buttons are installed in the electronic unit.

Depending on the design, the pressure transducers of the pressure transmitter EMIS-BAR have two versions – with flange or with in-line adapter. The in-line version consists of a housing and a connection sleeve with a sensor with a measuring diaphragm. The flanged version of the pressure transducer consists of a sensor with measuring diaphragms, flanges and fasteners. The sensors are optionally supplied with medium separators and capillary lines.

The transducer pressure part is separated from the electronic housing by a sealed entry with fused glass joints.

Depending on the temperature of the measured medium, ambient temperature range and configuration, the pressure transmitters EMIS-BAR have explosion protection marking listed in the Table 3.

Table 3 – Explosion protection marking of EMIS-BAR

Configuration	Maximum temperature of the measured medium, °C	Ambient temperature range, °C	Explosion protection marking
Exd	+85	$-60 \leq T_a \leq +70$	II 2G Ex db IIC T6 Gb
	+100	$-60 \leq T_a \leq +85$	II 2G Ex db IIC T5 Gb
	+120	$-60 \leq T_a \leq +85$	II 2G Ex db IIC T4 Gb
	+200 ¹⁾	$-60 \leq T_a \leq +85$	II 2G Ex db IIC T3 Gb
	+400 ²⁾	$-60 \leq T_a \leq +85$	II 2G Ex db IIC T1 Gb
RV	+120	$-60 \leq T_a \leq +70$	I M2 Ex db I Mb
	+200 ¹⁾³⁾	$-60 \leq T_a \leq +70$	
	+400 ²⁾³⁾	$-60 \leq T_a \leq +70$	
Ex dD	+85	$-60 \leq T_a \leq +70$	II 2D Ex tb IIIC 85 °C Db
	+100	$-60 \leq T_a \leq +85$	II 2D Ex tb IIIC 100 °C Db
	+120	$-60 \leq T_a \leq +85$	II 2D Ex tb IIIC 120 °C Db
	+200 ¹⁾	$-60 \leq T_a \leq +85$	II 2D Ex tb IIIC 200 °C Db
	+400 ²⁾	$-60 \leq T_a \leq +85$	II 2D Ex tb IIIC 400 °C Db

Note 1: For models with radiator or with capillary length 1 m or more only, see Operation manual.
 Note 2: For models with capillary length 1 m or more only, see Operation manual.
 Note 3: Where coal dust is not likely to form a layer.
 Note 4: The LCD display operates at a temperature not lower than -42 °C
 Note 5: The housing of the EMIS-BAR pressure transmitters with explosion protection marking I M2 Ex db I Mb are made only from stainless steel

Technical characteristics:

Parameter	Value	
Measuring range for sensors: - absolute pressure - gauge pressure - differential pressure - hydrostatic pressure For more details see EB100.000.00 manual.	from 0 up to 40 MPa from -0,1013 up to 70 MPa from -0,5 up to 20 MPa from -0,5 up to 10 MPa	
Ingress Protection code (IP) depending on selected cable entry or blanking plug	IP65/IP66/IP67/IP68	
Electric power supply	from 10,5 V (no load) up to 45 V DC	
Power consumption	max 1,0 W	
Ambient temperature	See Table 3	
Medium temperature for models without radiator	105, 113, 133, 143, 153, 163, 164, 193	$-40 \text{ °C} \leq T_m \leq +120 \text{ °C}$
	103, 123	$-60 \text{ °C} \leq T_m \leq +120 \text{ °C}$
	173...188	$-90 \text{ °C} \leq T_m \leq +400 \text{ °C}$ Depending on the operating temperature of the capillary line fill liquid, see Operation manual for more details
Medium temperature for models with radiator	163...188	$-90 \text{ °C} \leq T_m \leq +200 \text{ °C}$
Threaded holes for cable gland/plug	M20x1,5 or NPT 1/2	

Warning markings:

WARNING – DO NOT OPEN WHEN ENERGIZE.

WARNING – POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS.

Routine tests:

1. The electronic housing was subjected to testing of four times reference pressure, therefore no routine testing is necessary.
2. Routine tests according to cl. 16 of EN 60079-1 shall be conducted for pressure transducer part of the pressure transmitter EMIS-BAR with a test pressure of 0,95 MPa.

(16) Descriptive Documents:

Operation & Instruction Manual EB 100.000.00 OM
The drawings are listed in Evaluation report No: 465/2021/10/ATEX

Certificate History:

Issue/Date	Evaluation report	Comment
Issue 0 from 12.10.2021	465/2021/10/ATEX	The release of the prime certificate.

(17) Specific conditions of use:

- 17.1. The Ex d parts of the pressure transmitter EMIS-BAR enclosure may be repaired only by the manufacturer.
- 17.2. It is the responsibility of the user to ensure that certified cable glands and blanking plugs are installed in accordance with EN 60079-14 current edition.
- 17.3. Painted housing can be the source of electrostatic discharge. Care should be taken during installation and cleaning to avoid risk of ignition due to electro-static discharge. Cleaning of painted surface must be done with a damp or antistatic cloth.
- 17.4. For the medium with a temperature T_m above +120 °C, it is necessary to use high-temperature models. The user must provide the necessary thermal insulation for high-temperature versions so that the temperature on the pressure transducer must not exceed 120 °C and on the electronics housing must not exceed + 85 °C.
- 17.5. If the temperature at the cable entry point exceeds +70 °C, the insulation and outer sheath of the used cable should have an appropriated heat-resistance class.
- 17.6. The possibility of a dust layer deposition on the surface of transmitters EMIS-BAR model "RV" with explosion protection marking I M2 Ex db I Mb for medium temperature above 150 °C must be excluded.

(18) Essential Health and Safety Requirements:

Met by compliance with the standards mentioned in clause (9).