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(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 19 ATEX 0414 X**

(4) Equipment: **Mass Flowmeter EMIS-MASS 260**

(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 **414/2019/08/ATEX**

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with: **EN 60079-0:2012/A11:2013, EN 60079-1:2014, EN 60079-11:2012**

(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 table 2 in schedule to certificate**

Head of Certification Body:



Sergey Kovalev

Date of issue: 07 May, 2019
Jurmala, Latvia

(13) **SCHEDULE**

(14) **to EU-TYPE EXAMINATION CERTIFICATE: ICQC 19 ATEX 0414 X**

(15) **Description of Equipment:**

Mass Flowmeter EMIS-MASS 260 (hereinafter referred to as Flowmeter EM-260) is designed to measure the mass and volume flow, density, mass and volume of liquids and gases, and use the gathered information for technological purposes or commercial accounting. The flowmeter is used as the counter of gasoline, liquefied petroleum gas, kerosene, diesel fuel, oil, oil-water and other liquids in the chemical, petrochemical, oil, food, pharmaceutical and other industries and public municipal facilities. The flowmeter is used in technological processes automatic monitoring and control systems in various industries, for stationary technological plants, land mobile refueling and pumping equipment, and in commercial accounting systems.

Table 1 - EMIS-MASS 260 flowmeter's order code

EMIS-MASS 260	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1	Explosion protection modifications: ExA - II 2G Ex db ib IIA T6...T2 Gb ExB - II 2G Ex db ib IIB T6...T2 Gb ExC - II 2G Ex db ib IIC T6...T2 Gb (only for DN<100)															
2	Nominal diameter of pipe (DN), mm: 10, 15, 25, 40, 50, 80 - modification without power amplifier 100, 150, 200 - modification with power amplifier															
3	Flow range															
4	Sensor Body Type: - - Standard U-shaped C - Compact															
5	Measured medium															
6	Flow tube material: - Stainless steel															
7	Process pressure															
8	Process temperature range: 75 - from -50°C to +75°C 95 - from -50°C to +95°C 135 - from -50°C to +135°C 200 - from -50°C to +200°C 300 - from -50°C to +300°C															
9	Power Supply															
10	Output signals															
11	Accuracy class															
12	Display															
13	Connection to pipeline															
14	Calibration															
15	Flanges standard															

Depending on the nominal diameter (DN), the mass flowmeter has a version with power amplifier (for DN ≥ 100), and without power amplifier (for DN < 100).

Flowmeter EM-260 consist of:

- transmitter;
- sensor (flow tubes with sensor);
- power amplifier (for DN ≥ 100).

Transmitter is an explosion-proof cylindrical shape metal body, is sealed by a threaded cap on two sides. An adapter is installed in the bottom of the case. There are two threaded holes for cable glands on the side of the body. The set of main boards is installed inside the body, including indication board and optical button board.

The sensor is a measuring chamber with inlet and outlet fitting pipe and flanges for mounting on the pipeline. Two flow tubes are arranged in parallel in the measuring chamber, which are driven by an electromagnetic coil and magnet in an oscillatory motion. According to the geometry of the flow tubes, the meters have a design with a compact flow part and a standard version with a U-shaped flow part.

Power Amplifiers an explosion-proof cylindrical shape metal body, is sealed by a threaded cap. There are two threaded holes for cable glands on the side of the body. The amplifier board is installed inside the body.

Depending on the process temperature and flowmeter's configuration, EM-260 has explosion protection marking listed in Table2.

Table 2 - Explosion protection marking of EM-260

Configuration	Process temperature range, °C	Ambient temperature range, °C	Explosion protection marking
Modification without power amplifier (for DN < 100)			
"ExA"	from -50 to +75	-50 ≤ Ta ≤ +70	II 2G Ex db ib IIA T6 Gb
	from -50 to +95		II 2G Ex db ib IIA T5 Gb
	from -50 to +135		II 2G Ex db ib IIA T4 Gb
	from -50 to +200		II 2G Ex db ib IIA T3 Gb
	from -50 to +300		II 2G Ex db ib IIA T2 Gb
"ExB"	from -50 to +75	-50 ≤ Ta ≤ +70	II 2G Ex db ib IIB T6 Gb
	from -50 to +95		II 2G Ex db ib IIB T5 Gb
	from -50 to +135		II 2G Ex db ib IIB T4 Gb
	from -50 to +200		II 2G Ex db ib IIB T3 Gb
	from -50 to +300		II 2G Ex db ib IIB T2 Gb
"ExC"	from -50 to +75	-50 ≤ Ta ≤ +70	II 2G Ex db ib IIC T6 Gb
	from -50 to +95		II 2G Ex db ib IIC T5 Gb
	from -50 to +135		II 2G Ex db ib IIC T4 Gb
	from -50 to +200		II 2G Ex db ib IIC T3 Gb
	from -50 to +300		II 2G Ex db ib IIC T2 Gb
Modification with power amplifier (for DN ≥ 100)			
"ExA"	from -50 to +75	-50 ≤ Ta ≤ +70	II 2G Ex db ib IIA T6 Gb
	from -50 to +95		II 2G Ex db ib IIA T5 Gb
	from -50 to +135		II 2G Ex db ib IIA T4 Gb
	from -50 to +200		II 2G Ex db ib IIA T3 Gb
	from -50 to +300		II 2G Ex db ib IIA T2 Gb
"ExB"	from -50 to +75	-50 ≤ Ta ≤ +70	II 2G Ex db ib IIB T6 Gb
	from -50 to +95		II 2G Ex db ib IIB T5 Gb
	from -50 to +135		II 2G Ex db ib IIB T4 Gb
	from -50 to +200		II 2G Ex db ib IIB T3 Gb
	from -50 to +300		II 2G Ex db ib IIB T2 Gb

Basic technical characteristics are listed in Table3.

Table 3 – Basic technical characteristics of Flowmeter EM-260

Parameter	Value
Degree of protection of enclosure (IP)	IP 67
Output signal	4 – 20 mA HART RS-485 MODBUS Frequency/Pulse
1. Circuit Parameters of FlowmeterEM-260:	
1.1. Supply circuit (terminal blockXT1(1, 2)):	
– nominal voltage;	DC 18...30 V
– power consumption;	15 W
– maximum voltage U_m .	AC 250 V
1.2. Output Frequency/Pulse circuit (terminal blockXT2(2-7)):	
– nominal voltage;	DC 5...27V
–input current I_{in} .	0.1...50 mA
– maximum voltage U_m .	AC 250 V
1.3. Digital output signal circuit RS-485 (terminal blockXT1(3, 4)):	
– nominal voltage;	DC 12...30 V
– maximum voltage U_m .	AC 250 V
1.4. Analogue circuit of 4-20mA signal (terminal blocksXT1(5, 6, 7), XT2(1)):	
– input current I_{in} ;	4-20 mA
– maximum voltage U_m .	AC 250 V
2. Circuit Parameters of the power amplifier flowmeter EM-260:	
2.1. Supply circuit (terminal blockXT1(1, 2)):	
– nominal voltage;	DC 18...30 V or
– maximum voltage U_m .	AC 250 V

Routine tests:

Routine tests according to cl. 11.2 of EN 60079-11 shall be conducted for Ex i amplifier board transformer T1 with a test voltage of 500 V.

Routine tests according to cl. 16 of EN 60079-1 shall be conducted for Ex d electronic compartment with a test pressure of 3,4 MPa.

(16) Descriptive Documents:

Mass Flowmeter EMIS-MASS 260 Operation manual: EM-260.000.000.000.00AOM

The drawings are listed in Evaluation report No: 414/2019/08/ATEX

(17) Specific conditions of use:

17.1. The temperature of the medium to be measured shall not exceed the permissible value for the temperature class of transmitters specified in the explosion protection marking.

17.2. Painted transmitters and power amplifiers can be the source of electrostatic discharge. Wipe only with wet or antistatic cloth.

17.3. Explosion protection is provided with an excess pressure of the medium being measured, not exceeding the maximum value allowed for the flowmeter.

(18) Essential Health and Safety Requirements:

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