Physical-Technical Testing Institute
Ostrava - Radvanice

(1) # EU - Type Examination Certificate

(2) **Equipment or Protective Systems Intended for Use in Potentially Explosive Atmospheres (Directive 2014/34/EU)**

(3) EU - Type Examination Certificate number:

FTZÚ 18 ATEX 0117X

(4) Product: **Inductive flow meter type FLONEX**

(5) Manufacturer: **ELIS PLZEŇ a.s.**

(6) Address: **Luční 425/15, 301 00 Plzeň, Czech Republic**

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) The Physical-Technical Testing Institute, Notified Body number 1026, in accordance with Articles 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26.02.2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report number:

18/0117 dated 20.12.2018

(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 60079-7:2015, EN 60079-11:2012, EN 60079-31:2014

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Use specified in the schedule to this certificate.

(11) This certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:

II 2G Ex db eb ib [ib] IIB T6...T3 Gb
II 2D Ex tb IIIC T80°C...T155°C Db

This certificate is valid till: **31.12.2023**

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body

PHYSICAL-TECHNICAL TESTING INSTITUTE FTZÚ Ex AO 210 NB 1026

Date of issue: 21.12.2018

Physical-Technical Testing Institute, s.p., Pikartská 1337/7, 716 07 Ostrava - Radvanice, Czech Republic
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(13) **Schedule**

(14) # EU - Type Examination Certificate No. FTZÚ 18 ATEX 0117X

(15) Description of Product:
The inductive flow meter FLONEX FXx11x is a liquid flow meter in a fully flooded pipeline designed for potentially explosive atmospheres.
The flow meter is designed for two variants – compact and separate.

a) compact design:
The evaluation unit is situated inside of instrument head with type of Ex protection Ex db and Ex tb, certificate No. FTZÚ 04 ATEX 0332U and connected with Ex- sensor type ISx.1xxEx, certificate No. FTZÚ 12 ATEX 0139U through line – bushing in Ex protection Ex db, certificate No. EPS 11 ATEX 1342X. Into the instrument head are created intrinsically safe circuits which are connected directly to the intrinsically safe parts of sensor type ISx. 1xxEx.

b) separate design:
The evaluation unit with "chimney" is connected and terminated in connection box with Ex protection Ex db and Ex tb, certificate No. FTZÚ 07 ATEX 0134U. The connection box is connected with Ex inductive sensor with connection box type ISx.1xxEx, Ex protection Ex eb ia and Ex tb, certificate No. FTZÚ 14 ATEX 0160X by cable (the length can be 150m). Into the instrument head are created intrinsically safe circuits which are connected by connecting boxes and cable to the intrinsically safe parts of sensor type ISx. 1xxEx.

The type and Ex marking of the variants – see Annex No.1.

Electrical parameters:
Power Supply AC: 95 - 250 V AC, 45 - 65 Hz, 3 VA max
Power Supply DC: 24 V± 20% (19,2 ÷ 28,8 V), 3 W max
Verified degree of IP protection: IP 67

Intrinsically safe parameters:

- Power supply Um = 250 V
- 1x current output 4-20 mA : Umax = 30 V; passive: galvanically isolated from ground and other outputs, HART communication
- 2x Binary output: Umax = 30 V, Imax = 30 mA; galvanically isolated from ground and all outputs
- Communication interface: Umax = 30 V; interface RS-485 MODBUS RTU galvanically isolated from ground and all outputs

(16) Report Number.: 18/0117

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(13) **Schedule**

(14) EU - Type Examination Certificate No. FTZÚ 18 ATEX 0117X

(17) Specific Conditions of Use:

1. Ambient temperature range:
   - Compact design: -35°C ≤ Tamb ≤ +60°C;
   - Separate design: - the evaluation unit: -40°C ≤ Tamb ≤ +70°C
     - the inductive sensor type ISx.1xxEx: -35°C ≤ Tamb ≤ +60°C
2. The maximum permitted fluid temperature depends on the pipe lining material; the temperature class and the maximum permitted surface temperature - see Annex No1;
3. The inductive sensor shall be fully flooded at all times;
4. The cable glands shall be only used with Ex protection:
   - Ex db IIB Gb and Ex tb IIIC Db – The evaluation unit,
   - Ex eb IIB Gb and Ex tb IIIC Db – The connection boxes.
5. When product is used in the zones 1 or 2 so electronic circuits which are connected to the product have to be limited to overvoltage category I/II according to standard IEC 60664-1.
6. Maximal length of cable between a head part and sensor part of separate design of product have to be lower than 150m.

(18) Essential Health and Safety Requirements:

Compliance with the Essential Health and Safety Requirements is covered by standards mentioned in clause (9) of this certificate.

(19) Drawings and Documents:

Number	Sheets	Issue	Date	Description
Es90663K	28	No.1	18.12.2018	User manual FLONEX FXx11x
Es200865	1	-	16.11.2018	Electronic unit Ex C12.1,C13.10 (compact design)
Es200866	1	-	16.11.2018	Electronic unit Ex C12.30,C13.30 (separate design)
Es460082	2	-	19.12.2018	Label FX1116_FX2116 (separate design)
Es460081	1	-	19.12.2018	Label FX1114_FX2114 (compact design)
Es701753/01	1	-	19.12.2018	BOM FXZ2.0
Es701758/01	1	-	19.12.2018	BOM FXZ2.0 (parts on which safety depend)
Es701736/01	1	-	19.12.2018	BOM FXR1.5
Es701774/01	1	-	19.12.2018	BOM FXR1.5 (parts on which safety depend)
Es701712/01	1	-	19.12.2018	BOM FXK1.5
Es701778/01	1	-	19.12.2018	BOM FXK1.5 (parts on which safety depend)
Es701711/01	2	a	19.12.2018	BOM FXD1.5

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PHYSICAL-TECHNICAL TESTING INSTITUTE PŘÍRODNĚ-TECHNICKÝ ZKUŠEBNÍ ÚSTAV FTZÚ Ex AC 210

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(13) **Schedule**

(14) **EU - Type Examination Certificate No. FTZÚ 18 ATEX 0117X**

(19) Drawings and Documents: continuation

Number	Sheets	Issue	Date	Description
Es701710/01	1	-	19.12.2018	BOM FXB1.5
Es701709/01	3	a	19.12.2018	BOM FXM1.5
Es701756/01	1	-	19.12.2018	BOM FXM1.5 (parts on which safety depend)
Es701708/01	2	-	19.12.2018	BOM FXP1.5
Es701776/01	1	-	19.12.2018	BOM FXP1.5 (parts on which safety depend)
Es701707/01	3	-	19.12.2018	BOM FXV1.5
Es701755/01	1	-	19.12.2018	BOM FXV1.5 (parts on which safety depend)
Es701706/01	2	-	19.12.2018	BOM FXS1.5
Es701754/01	1	-	19.12.2018	BOM FXS1.5 (parts on which safety depend)
Es701705/01	1	-	19.12.2018	BOM FXN1.5
Es701757/01	1	-	19.12.2018	BOM FXN1.5 (parts on which safety depend)
Es800416	1	-	13.09.2018	Schematic diagram FXZ 2.0
Es800412	1	-	13.09.2018	Schematic diagram FXR 1.5
Es800410	1	c	10.09.2018	Schematic diagram FXM 1.5
Es800409	1	0	11.09.2018	Schematic diagram FXB 1.5
Es800408	1	0	13.09.2018	Schematic diagram FXK 1.5
Es800407	1	-	07.12.2018	Schematic diagram FXD 1.5
Es800399	1	1	10.09.2018	Schematic diagram FXV 1.5
Es800398	1	0	10.09.2018	Schematic diagram FXP1.5
Es800395	1	-	13.09.2018	Schematic diagram FXN 1.5
Es800267	1	-	19.12.2018	Schematic diagram FXS 1.5
Es800404	1		19.12.2018	Block diagram C13.00
Es800413	1		19.12.2018	Block diagram C12.00
Es301734	1	a	13.09.2018	PCB assembly drawing FXZ2.0
Es301733	1	a	24.09.2018	PCB assembly drawing FXR1.5
Es301720	1		21.12.2017	PCB assembly drawing FXB1.5
Es301719	1	a	24.09.2018	PCB assembly drawing FXS1.5
Es301718	1	a	21.12.2017	PCB assembly drawing FXK1.5
Es301717	1	a	13.09.2018	PCB assembly drawing FXN1.5
Es301716	1	b	11.12.2018	PCB assembly drawing FXD1.5
Es301715	1	a	11.12.2018	PCB assembly drawing FXM1.5
Es301714	1	a	20.09.2018	PCB assembly drawing FXV1.5
Es301713	1	a	13.09.2018	PCB assembly drawing FXP1.5
Es600283	2	-	16.10.2018	PCB layout FXZ20

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(13) **Schedule**

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(19) Drawings and Documents: continuation

Number	Sheets	Issue	Date	Description
Es600277	2	-	11.10.2018	PCB layout FXR15
Es600268	1	-	10.10.2018	PCB layout FXB15
Es600267	2	-	11.10.2018	PCB layout FXS15
Es600266	1	-	16.10.2018	PCB layout FXK15
Es600265	2	-	11.10.2018	PCB layout FXN15
Es600264	2	-	10.10.2018	PCB layout FXD15
Es600263	2	-	10.10.2018	PCB layout FXM15C
Es600262	2	-	11.10.2018	PCB layout FXV15
Es600261	2	-	11.10.2018	PCB layout FXP15
Es200870	1	-	26.10.2018	Placement of Label (separate design)
Es200871	1	-	26.10.2018	Placement of Label (compact design)

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Physical-Technical Testing Institute
Ostrava - Radvanice

Annex No.1

to EU - Type Examination Certificate No. FTZÚ 18 ATEX 0117X

Flow meter type marking FLONEX FXx11x

FLONEX FXx11x

- 4 – Compact version including transmitters C12.10 and C13.10
  6 – Remote version including transmitters C12.30 and C13.30 and terminal box plus two cables
- 1 – Flow sensor including flanges
- 1 – Explosive environment
- 1 – Transmitter ELIS C12.x0 (24V ± *20%, 19.2 – 28.8 DC*)
  2 – Transmitter ELIS C13.x0 (95 - 250V AC)

Electromagnetic sensor ISx.1xxEx

- 0 – Measuring electrodes
  1 – Measuring electrodes plus a grounding electrode
- 2 – Soft rubber
  3 – Hard rubber for drinking water
  4 – PTFE
  7 – E – CTFE
- 1 – Connecting column and round flange
- 1 – Flanges EN1092-1
  2 – Flanges ASME B16.5
  9 – Other flange types, as required

PHYSICAL-TECHNICAL TESTING INSTITUTE FTZÚ TECHNICKÝ ZKUŠEBNÍ ÚSTAV FTZÚ Ex AO 210 NB 1026

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Annex No.1

to EU - Type Examination Certificate No. FTZÚ 18 ATEX 0117X

Ex marking:

- The inductive flow meter FLONEX FXx114 – compact design

II 2G Ex db eb ib [ib] IIB T6...T5 Gb
II 2D Ex tb IIIC T80 °C...T95 °C Db

- Inductive flow meter FLONEX FXx116 – separate design

a) The evaluation unit:

II 2G Ex db eb ib [ib] IIB T6...T5 Gb
II 2D Ex tb IIIC T80 °C...T95 °C Db

b) Sensor:

II 2G Ex eb ib IIB T6...T3 Gb
II 2D Ex tb IIIC T155°C Db

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Annex No.1

to EU - Type Examination Certificate No. FTZÚ 18 ATEX 0117X

The maximum permitted fluid temperature depends on the pipe lining material, temperature class and maximum permitted surface temperature of sensors

For DN 15 - DN 25

Type of lining	*Maximum temperature of measured medium*	*Temperature class for 2G*	*Surface temperature for 2D*
MG	-35°C ÷ +48°C	T6	80°C
NG	+5°C ÷ +48°C	T6	80°C
PTFE	-35°C ÷ +48°C	T6	80°C
PTFE	-35°C ÷ +63°C	T5	95°C
PTFE	-35°C ÷ +98°C	T4	130°C
PTFE	-35°C ÷ +123°C	T3	155°C

For DN 32- DN 300

Type of lining	*Maximum temperature of measured medium*	*Temperature class for 2G*	*Surface temperature for 2D*
MG	-35°C ÷ +64°C	T6	80°C
NG	+5°C ÷ +64°C	T6	80°C
E-CTFE a PTFE	-35°C ÷ +64°C	T6	80°C
E-CTFE a PTFE	-35°C ÷ +79°C	T5	95°C
E-CTFE a PTFE	-35°C ÷ +114°C	T4	130°C
PTFE	-35°C ÷ +139°C	T3	155°C

Note: MG ... soft rubber
NG ... hard rubber for drinking water

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