



EU-TYPE EXAMINATION CERTIFICATE

Number: TCM 142/20 - 5738

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In accordance: with Directive 2014/32/EU of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments (implemented in Czech Republic by Government Order No. 120/2016 Coll.).

Manufacturer: ELIS PLZEŇ a.s.
Luční 425/15
301 00 Plzeň
Czech Republic

For: water meter – electromagnetic
Type: FLONET FH3014, FLONET FH3015
FLONEX FX2114, FLONEX FX1114, FLONEX FX2116, FLONEX FX1116

Accuracy class: 2
Temperature class: T30

Valid until: 18 June 2030

Document No: 0511-CS-A011-20

Description: Essential characteristics, approved conditions and special conditions, if any, are described in this certificate.

Date of issue: 19 June 2020

Certificate approved by:




RNDr. Pavel Klenovský

1 Characteristics of instrument

The water meters type FLONET FH3014 and FH3015 and of types FLONEX in performance for non-explosive environment FX2114, FX1114 and FX2116, FX1116 are designed to measure, memorise and display the volume at metering conditions of water passing through the measurement transducer in the sense of the Directive 2014/32/EU of the European Parliament and of the Council of the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments (implemented in Czech Republic by Government Order No. 120/2016 Coll.), as amended.

Principle of electromagnetic flow sensor is based on Faraday law of magnetic induction. Flow sensor consists of non-magnetic and non-conductive pipe, where in perpendicular direction on magnetic lines of force measurement electrodes for identification of induced voltage are installed. For creation of alternating magnetic field, on the pipe are installed two coils parallel with plain of sensing electrodes. By moving of conductive liquid, which creates a conductor in magnetic field (by given induction B), on sensing electrodes arises an induced voltage U . This one is proportional to a liquid velocity and to distance of electrodes. See you Figure 1

$$U = B \times l \times v$$

U	induced voltage
B	magnetic induction (density of magnetic flow)
l	distance of electrodes
v	liquid velocity



Figure 1: Principle of the electromagnetic flowmeter

Magnetic induction and distance of electrodes are constant for given dimension of flow sensor. Induced voltage on sensing electrodes is proportional to a liquid velocity in the pipe. In this case a volumetric flow Q is a multiplication of liquid velocity and of cross-section of pipe S :

$$Q = v \times S .$$

Water meters FLONET marked FH3014 and FH3015 and water meters FLONEX in performance for potentially explosive atmospheres marked FX2114, FX1114 and FX2116, FX1116 consist of flow sensor and of electronic transducer with totalizer. A body of flow sensor is welded from steel by using of standard flanges. Sensing electrodes are fixed on body of flow sensor.

Casing of transducer is created by aluminum box with aperture from glass for OLED display and by non-contact (opto) buttons, on one side. On second side, there are different connectors (clamps) for communication and for supply voltage. Connectors are saved by cover with thread. There is available a communication via RS485 by MOD-BUS protocol. Following, there are to disposition two programmable outputs, one for impulses, second for frequency. Also a current output can be used. Maximum length of connecting cables is 25 m.

Water meter FLONET marked as FH3014, it is a compact version where a flow sensor is firmly connected with electronic transducer. Water meter FLONET marked as FH3015, it is a remote version where a flow sensor and transducer are connected by cable.

Water meter FLONEX FX2114, it is a compact meter (as FH3014) in performance for potentially explosive atmospheres by main supply 230 V AC. Version FLONEX FX1114 (compact) for potentially explosive atmospheres uses a supply 24 V DC.

A table *Interfaces* specifies a possible interface of all water meters and version FLONET, FLONEX. Details of interfaces are specified in manuals, see you part 7 of this document.

OLED display
pulse output
frequency output
RS 485 module (ModBus)
Current output

Table Interfaces

Water meter FX2116, it is a remote version (as FH3015) in performance for potentially explosive atmospheres by main supply 230 V AC. Version FX1116 (remote) for potentially explosive atmospheres uses a supply 24 V DC. Water meters FLONET and FLONEX in all over presented version and marking shall be installed to operate in horizontal position only with the indicating device positioned at the top.

2 Main characteristics

Basic technical data of water meters types FLONET, FLONEX, compact and remote versions; DN15 – DN40:

Manufacturer:		Elis Plzeň, a.s.				
Model number:	compact version:	FLONET FH3014, FLONEX 2114, FLONEX FX1114				
	remote version:	FLONET FH3015, FLONEX 2116, FLONEX FX1116				
Nominal diameter:		15	20	25	32	40
Type details:						
Q_1 [m ³ /h]:		flowrates are shown in Table Basic metrological data (flowrates)				
Q_2 [m ³ /h]:						
Q_3 [m ³ /h]:						
Q_4 [m ³ /h]:						
Q_3/Q_1 :	compact version:	400; 315; 250; 200; 160; 125; 100; 80; 63; 50; 40				
	remote version:	200; 160; 125; 100; 80; 63; 50; 40				
Q_2/Q_1 :		1.6				
Q_4/Q_3 :		1.25				
Measuring principle:		electromagnetic water meter				
Accuracy class:		2				
Maximum permissible error for the lower flowrate zone (MPE _l):		±5 %				
Maximum permissible error for the upper flowrate zone (MPE _u):		±2 % for water having a temperature ≤ 30 °C ±3 % for water having a temperature > 30 °C				
Temperature class:		T30				
Water pressure class:		MAP16				
Pressure loss class:		ΔP25				
Environmental class:		B for power supply 24 V DC; O for power supply 230 V AC				
Electromagnetic environment:		E1; E2				
Maximum admissible temperature [°C]:		30				
Maximum admissible pressure [MPa]:		1.6				
Orientation limitation:		horizontal position with the indicating device at the top				
Indicating range [m ³]:		999 999 999 999 999 with floating decimal point				
Resolution of the indicating device [dm ³]:		0,001 – 1000				
Pulse output l/imp		0,001 – 1000				

Current output	4-20mA				
EUT testing requirements (OIML R 49-2:2013, 8.1.8):					
Category:	Electromagnetic water meters				
Case:	Case B				
Installation details:					
Connection type:	flange				
Flow profile sensitivity class:	U5 D3				
Flow conditioner (details if required):	No				
Mounting:	in line meter				
Orientation:	horizontal position with the indicating device at the top				
Other relevant information:	IP FLONET 67/68 FLONEX 67				
Lining [mm]:	PTFE				PTFE or NG or TG
Length [mm]:	200	200	200	200	200
Installation details (electrical):					
Wiring instructions:	Low flow cut off: 50 % of the value Q_1				
Mounting arrangement:	-				
Orientation limitations:	H↑				
Power supply:					
Type (battery, mains AC, mains DC):	230 V AC				
U_{max} (V):	253 V AC				
U_{min} (V):	195 V AC				
Frequency:	50				
Type (battery, mains AC, mains DC):	24 V DC				
U_{max} (V):	29 V DC				
U_{min} (V):	19 V DC				
Software version (of the main (controlling) processor):	v 2.0				
Software version (of the measuring processor):	v 1.0				
CRC-32 checksum:	934ADE26				
Access to SW version and to CRC	<p>The identification can be shown on a display following the way: Press the left bottom button for more than 2 seconds for skipping to the menu items. Using upper buttons go to the menu "Production Data". Press "Enter" button (the right bottom button) and scrolling the menu items go to the:</p> <p>„Cntrl Process SW“ (SW version of the main processor) „Meas Process SW“ (SW version of the measuring processor) „Check sum“ (CRC-32 checksum).</p>				

Basic technical data of water meters types FLONET, FLONEX, compact and remote versions; DN50 – DN125:

Manufacturer:	Elis Plzeň, a.s.				
Model number:	compact version:	FLONET FH3014, FLONEX 2114, FLONEX FX1114			
	remote version:	FLONET FH3015, FLONEX 2116, FLONEX FX1116			
Nominal diameter:	50	65	80	100	125

Type details:					
Q_1 [m ³ /h]:	flowrates are shown in Table <i>Basic metrological data (flowrates)</i>				
Q_2 [m ³ /h]:					
Q_3 [m ³ /h]:					
Q_4 [m ³ /h]:					
Q_3/Q_1 :	compact version:	400; 315; 250; 200; 160; 125; 100; 80; 63; 50; 40			
	remote version:	200; 160; 125; 100; 80; 63; 50; 40			
Q_2/Q_1 :	1.6				
Q_4/Q_3 :	1.25				
Measuring principle:	electromagnetic water meter				
Accuracy class:	2				
Maximum permissible error for the lower flowrate zone (MPE _l):	±5 %				
Maximum permissible error for the upper flowrate zone (MPE _u):	±2 % for water having a temperature ≤ 30 °C ±3 % for water having a temperature > 30 °C				
Temperature class:	T30				
Water pressure class:	MAP16				
Pressure loss class:	ΔP25				
Environmental class:	B for power supply 24 V DC; O for power supply 230 V AC				
Electromagnetic environment:	E1; E2				
Maximum admissible temperature [°C]:	30				
Maximum admissible pressure [MPa]:	1.6				
Orientation limitation:	horizontal position with the indicating device at the top				
Indicating range [m ³]:	999 999 999 999 999 with floating decimal point				
Resolution of the indicating device [dm ³]:	0,001 – 1000				
Pulse output l/imp	0,001 – 1000				
Current output	4-20mA				
EUT testing requirements (OIML R 49-2:2013, 8.1.8):					
Category:	Electromagnetic water meters				
Case:	Case B				
Installation details:					
Connection type:	flange				
Flow profile sensitivity class:	U5 D3				
Flow conditioner (details if required):	No				
Mounting:	in line meter				
Orientation:	horizontal position with the indicating device at the top				
Other relevant information:	IP FLONET 67/68 FLONEX 67				
Lining [mm]:	PTFE or NG or TG				
Length [mm]:	200	200	200	250	250
Installation details (electrical):					
Wiring instructions:	Low flow cut off: 50 % of the value Q_1				

Mounting arrangement:	-
Orientation limitations:	H↑
Power supply:	
Type (battery, mains AC, mains DC):	230 V AC
U_{max} (V):	253 V AC
U_{min} (V):	195 V AC
Frequency:	50
Type (battery, mains AC, mains DC):	24 V DC
U_{max} (V):	29 V DC
U_{min} (V):	19 V DC
Software version (of the main (controlling) processor):	v 2.0
Software version (of the measuring processor):	v 1.0
CRC-32 checksum:	934ADE26
Access to SW version and to CRC	The identification can be shown on a display following the way: Press the left bottom button for more than 2 seconds for skipping to the menu items. Using upper buttons go to the menu "Production Data". Press "Enter" button (the right bottom button) and scrolling the menu items go to the: „Cntrl Process SW“ (SW version of the main processor) „Meas Process SW“ (SW version of the measuring processor) „Check sum“ (CRC-32 checksum).

Basic technical data of water meters types FLONET, FLONEX, compact and remote versions; DN150 – DN400:

Manufacturer:	Elis Plzeň, a.s.					
Model number:	compact version:	FLONET FH3014, FLONEX 2114, FLONEX FX1114				
	remote version:	FLONET FH3015, FLONEX 2116, FLONEX FX1116				
Nominal diameter:	150	200	250	300	350	400
Type details:						
Q_1 [m ³ /h]:	flowrates are shown in Table <i>Basic metrological data (flowrates)</i>					
Q_2 [m ³ /h]:						
Q_3 [m ³ /h]:						
Q_4 [m ³ /h]:						
Q_3/Q_1 :	compact version:	400; 315; 250; 200; 160; 125; 100; 80; 63; 50; 40	250; 200; 160; 125; 100; 80; 63; 50; 40	200; 160; 125; 100; 80; 63; 50; 40	125; 100; 80; 63; 50; 40	80; 63; 50; 40
	remote version:	200; 160; 125; 100; 80; 63; 50; 40	100; 80; 63; 50; 40	80; 63; 50; 40	40	
Q_2/Q_1 :	1.6					
Q_4/Q_3 :	1.25					
Measuring principle:	electromagnetic water meter					
Accuracy class:	2					
Maximum permissible error for the lower flowrate zone (MPE _l):	±5 %					

Maximum permissible error for the upper flowrate zone (MPE_u):	$\pm 2\%$ for water having a temperature $\leq 30\text{ }^\circ\text{C}$ $\pm 3\%$ for water having a temperature $> 30\text{ }^\circ\text{C}$					
Temperature class:	T30					
Water pressure class:	MAP16		MAP10			
Pressure loss class:	AP25					
Environmental class:	B for power supply 24 V DC; O for power supply 230 V AC					
Electromagnetic environment:	E1; E2					
Maximum admissible temperature [$^\circ\text{C}$]:	30					
Maximum admissible pressure [MPa]:	1.6					
Orientation limitation:	horizontal position with the indicating device at the top					
Indicating range [m^3]:	999 999 999 999 999 with floating decimal point					
Resolution of the indicating device [dm^3]:	0,001 – 1000					
Pulse output l/imp	0,001 – 1000					
Current output	4-20mA					
EUT testing requirements (OIML R 49-2:2013, 8.1.8):						
Category:	Electromagnetic water meters					
Case:	Case B					
Installation details:						
Connection type:	flange					
Flow profile sensitivity class:	U5 D3					
Flow conditioner (details if required):	No					
Mounting:	in line meter					
Orientation:	horizontal position with the indicating device at the top					
Other relevant information:	IP FLONET 67/68 FLONEX 67					
Lining [mm]:	PTFE or NG or TG					
Length [mm]:	300	350	400	500	550	600
Installation details (electrical):						
Wiring instructions:	Low flow cut off: 50 % of the value Q_1					
Mounting arrangement:	-					
Orientation limitations:	H \uparrow					
Power supply:						
Type (battery, mains AC, mains DC):	230 V AC					
U_{max} (V):	253 V AC					
U_{min} (V):	195 V AC					
Frequency:	50					
Type (battery, mains AC, mains DC):	24 V DC					
U_{max} (V):	29 V DC					
U_{min} (V):	19 V DC					
Software version (of the main (controlling) processor):	v 2.0					
Software version (of the measuring processor):	v 1.0					

CRC-32 checksum:	934ADE26
Access to SW version and to CRC	The identification can be shown on a display following the way: Press the left bottom button for more than 2 seconds for skipping to the menu items. Using upper buttons go to the menu "Production Data". Press "Enter" button (the right bottom button) and scrolling the menu items go to the: „Cntrl Process SW“ (SW version of the main processor) „Meas Process SW“ (SW version of the measuring processor) „Check sum“ (CRC-32 checksum).

Basic metrological data (flowrates)

Manufacturer:	Elis Plzeň, a.s.										
Model number:	FLONET and FLONEX										
Nominal diameter:	15										
Type details:											
Q_1 [m ³ /h]:	0.016	0.020	0.025	0.032	0.039	0.050	0.063	0.079	0.100	0.126	0.158
Q_2 [m ³ /h]:	0.025	0.032	0.040	0.050	0.063	0.081	0.101	0.126	0.160	0.202	0.252
Q_3 [m ³ /h]:	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Q_4 [m ³ /h]:	7.88	7.88	7.88	7.88	7.88	7.88	7.88	7.88	7.88	7.88	7.88
Q_3/Q_1 :	400	315	250	200	160	125	100	80	63	50	40

Manufacturer:	Elis Plzeň, a.s.										
Model number:	FLONET and FLONEX										
Nominal diameter:	20										
Type details:											
Q_1 [m ³ /h]:	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.159	0.200	0.250
Q_2 [m ³ /h]:	0.040	0.051	0.064	0.080	0.100	0.128	0.160	0.200	0.254	0.320	0.400
Q_3 [m ³ /h]:	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Q_4 [m ³ /h]:	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
Q_3/Q_1 :	400	315	250	200	160	125	100	80	63	50	40

Manufacturer:	Elis Plzeň, a.s.										
Model number:	FLONET and FLONEX										
Nominal diameter:	25										
Type details:											
Q_1 [m ³ /h]:	0.040	0.051	0.064	0.080	0.100	0.128	0.160	0.200	0.254	0.320	0.400
Q_2 [m ³ /h]:	0.064	0.081	0.102	0.128	0.160	0.205	0.256	0.320	0.406	0.512	0.640
Q_3 [m ³ /h]:	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Q_4 [m ³ /h]:	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Q_3/Q_1 :	400	315	250	200	160	125	100	80	63	50	40

Manufacturer:	Elis Plzeň, a.s.										
Model number:	FLONET and FLONEX										
Nominal diameter:	32										
Type details:											
Q_1 [m ³ /h]:	0.063	0.079	0.100	0.125	0.156	0.200	0.250	0.313	0.397	0.500	0.625
Q_2 [m ³ /h]:	0.100	0.127	0.160	0.200	0.250	0.320	0.400	0.500	0.635	0.800	1.000
Q_3 [m ³ /h]:	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Q_4 [m ³ /h]:	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3
Q_3/Q_1 :	400	315	250	200	160	125	100	80	63	50	40

Manufacturer:	Elis Plzeň, a.s.										
Model number:	FLONET and FLONEX										
Nominal diameter:	40										
Type details:											
Q_1 [m ³ /h]:	0.100	0.127	0.160	0.200	0.250	0.320	0.400	0.500	0.635	0.800	1.000
Q_2 [m ³ /h]:	0.160	0.203	0.256	0.320	0.400	0.512	0.640	0.800	1.016	1.280	1.600
Q_3 [m ³ /h]:	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Q_4 [m ³ /h]:	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Q_3/Q_1 :	400	315	250	200	160	125	100	80	63	50	40

Manufacturer:	Elis Plzeň, a.s.										
Model number:	FLONET and FLONEX										
Nominal diameter:	50										
Type details:											
Q_1 [m ³ /h]:	0.158	0.200	0.252	0.315	0.394	0.504	0.630	0.788	1.000	1.260	1.575
Q_2 [m ³ /h]:	0.252	0.320	0.403	0.504	0.630	0.806	1.008	1.260	1.600	2.016	2.520
Q_3 [m ³ /h]:	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0
Q_4 [m ³ /h]:	78.8	78.8	78.8	78.8	78.8	78.8	78.8	78.8	78.8	78.8	78.8
Q_3/Q_1 :	400	315	250	200	160	125	100	80	63	50	40

Manufacturer:	Elis Plzeň, a.s.										
Model number:	FLONET and FLONEX										
Nominal diameter:	65										
Type details:											
Q_1 [m ³ /h]:	0.250	0.317	0.400	0.500	0.625	0.800	1.000	1.250	1.587	2.000	2.500
Q_2 [m ³ /h]:	0.400	0.508	0.640	0.800	1.000	1.280	1.600	2.000	2.540	3.200	4.000
Q_3 [m ³ /h]:	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Q_4 [m ³ /h]:	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0
Q_3/Q_1 :	400	315	250	200	160	125	100	80	63	50	40

Manufacturer:	Elis Plzeň, a.s.										
Model number:	FLONET and FLONEX										
Nominal diameter:	80										
Type details:											
Q_1 [m ³ /h]:	0.400	0.508	0.640	0.800	1.000	1.280	1.600	2.000	2.540	3.200	4.000
Q_2 [m ³ /h]:	0.640	0.813	1.024	1.280	1.600	2.048	2.560	3.200	4.063	5.120	6.400
Q_3 [m ³ /h]:	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0
Q_4 [m ³ /h]:	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
Q_3/Q_1 :	400	315	250	200	160	125	100	80	63	50	40

Manufacturer:	Elis Plzeň, a.s.										
Model number:	FLONET and FLONEX										
Nominal diameter:	100										
Type details:											
Q_1 [m ³ /h]:	0.63	0.79	1.00	1.25	1.56	2.00	2.50	3.13	3.97	5.00	6.25
Q_2 [m ³ /h]:	1.00	1.27	1.60	2.00	2.50	3.20	4.00	5.00	6.35	8.00	10.00
Q_3 [m ³ /h]:	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0
Q_4 [m ³ /h]:	312.5	312.5	312.5	312.5	312.5	312.5	312.5	312.5	312.5	312.5	312.5
Q_3/Q_1 :	400	315	250	200	160	125	100	80	63	50	40

Manufacturer:	Elis Plzeň, a.s.										
Model number:	FLONET and FLONEX										
Nominal diameter:	125										
Type details:											
Q_1 [m ³ /h]:	1.00	1.27	1.60	2.00	2.50	3.20	4.00	5.00	6.35	8.00	10.00
Q_2 [m ³ /h]:	1.60	2.03	2.56	3.20	4.00	5.12	6.40	8.00	10.16	12.80	16.00
Q_3 [m ³ /h]:	400.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0
Q_4 [m ³ /h]:	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0
Q_3/Q_1 :	400	315	250	200	160	125	100	80	63	50	40

Manufacturer:	Elis Plzeň, a.s.										
Model number:	FLONET and FLONEX										
Nominal diameter:	150										
Type details:											
Q_1 [m ³ /h]:	1.58	2.00	2.52	3.15	3.94	5.04	6.30	7.88	10.00	12.60	15.75
Q_2 [m ³ /h]:	2.52	3.20	4.03	5.04	6.30	8.06	10.08	12.60	16.00	20.16	25.20
Q_3 [m ³ /h]:	630.0	630.0	630.0	630.0	630.0	630.0	630.0	630.0	630.0	630.0	630.0
Q_4 [m ³ /h]:	787.5	787.5	787.5	787.5	787.5	787.5	787.5	787.5	787.5	787.5	787.5
Q_3/Q_1 :	400	315	250	200	160	125	100	80	63	50	40

Manufacturer:	Elis Plzeň, a.s.										
Model number:	FLONET and FLONEX										
Nominal diameter:	200										
Type details:											
Q_1 [m ³ /h]:	2.50	3.17	4.00	5.00	6.25	8.00	10.00	12.50	15.87	20.00	25.00
Q_2 [m ³ /h]:	4.00	5.08	6.40	8.00	10.00	12.80	16.00	20.00	25.40	32.00	40.00
Q_3 [m ³ /h]:	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0
Q_4 [m ³ /h]:	1250.0	1250.0	1250.0	1250.0	1250.0	1250.0	1250.0	1250.0	1250.0	1250.0	1250.0
Q_3/Q_1 :	400	315	250	200	160	125	100	80	63	50	40

Manufacturer:	Elis Plzeň, a.s.										
Model number:	FLONET and FLONEX										
Nominal diameter:	250										
Type details:											
Q_1 [m ³ /h]:	4.0	5.1	6.4	8.0	10.0	12.8	16.0	20.0	25.4	32.0	40.0
Q_2 [m ³ /h]:	6.4	8.1	10.2	12.8	16.0	20.5	25.6	32.0	40.6	51.2	64.0
Q_3 [m ³ /h]:	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0
Q_4 [m ³ /h]:	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0
Q_3/Q_1 :	400	315	250	200	160	125	100	80	63	50	40

Manufacturer:	Elis Plzeň, a.s.										
Model number:	FLONET and FLONEX										
Nominal diameter:	300										
Type details:											
Q_1 [m ³ /h]:	6.4	8.0	10.0	12.8	16.0	20.0	25.4	32.0	40.0		
Q_2 [m ³ /h]:	10.2	12.8	16.0	20.5	25.6	32.0	40.6	51.2	64.0		
Q_3 [m ³ /h]:	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0	
Q_4 [m ³ /h]:	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	
Q_3/Q_1 :	250	200	160	125	100	80	63	50	40		

Manufacturer:	Elis Plzeň, a.s.								
Model number:	FLONET and FLONEX								
Nominal diameter:	350								
Type details:									
Q_1 [m ³ /h]:	6.4	8.0	10.0	12.8	16.0	20.0	25.4	32.0	40.0
Q_2 [m ³ /h]:	10.2	12.8	16.0	20.5	25.6	32.0	40.6	51.2	64.0
Q_3 [m ³ /h]:	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0
Q_4 [m ³ /h]:	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0
Q_3/Q_1 :	250	200	160	125	100	80	63	50	40

Manufacturer:	Elis Plzeň, a.s.								
Model number:	FLONET and FLONEX								
Nominal diameter:	400								
Type details:									
Q_1 [m ³ /h]:	8.0	10.0	12.8	16.0	20.0	25.4	32.0	40.0	
Q_2 [m ³ /h]:	12.8	16.0	20.5	25.6	32.0	40.6	51.2	64.0	
Q_3 [m ³ /h]:	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0	1600.0
Q_4 [m ³ /h]:	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0
Q_3/Q_1 :	200	160	125	100	80	63	50	40	

3 Tests

Technical tests of the water meters type FLONET and FLONEX were performed in compliance with the International Recommendation OIML R 49 Edition 2013 (E) with conformity to ISO 4064, Test Report No. 6015-PT-P0026-20, Software validation test Report No. 8552-PT-S0006-20 and EMC Test Reports No. 20-10-2 and Nr. 20-10-3 (issued by Faculty of Electrotechnics, ZU (West-Bohemian University), Plzeň).

Technical tests of the water meters type Flonex were performed in compliance with the Essential Health and Safety Requirements with EN IEC 60079-0:2018, EN 60079-1:2014, EN 60079-7:2015, EN 60079-11:2012 and EN 60079-31:2014 by Physical-Technical Testing Institute (notified body 1026); Certificate No. FTZÚ 18 ATEX 0117X.

4 Conformity marks and inscription

The water meters type FLONET and FLONEX shall be clearly and indelibly marked with the following information:

- Water meter type
- Unit of measurement (m³)
- Numerical value Q_3 in m³/h ($Q_3 \times \times$) and the ratio Q_3 / Q_1 ,
- EU-type examination certificate number
- Manufacturer's name, registered trade name or registered trade mark
- Post address of manufacturer
- Year of manufacture, two last digits of the year of manufacture, or the month and year of manufacture
- Serial number (as near as possible to the indicating device)
- Direction of flow, by means of an arrow (shown on both sides of the body or on one side only provided the direction of flow arrow is easily visible under all circumstances)
- Maximum admissible pressure (MAP $\times \times$)
- Letter H \uparrow (horizontal position with the indicating device at the top)
- The temperature class (T $\times \times$)
- The pressure loss class ($\Delta P \times \times$)
- The installation sensitivity class (Ux Dx)
- Environmental class
- Electromagnetic class
- (Mechanical class)
- Software version, checksum
- Dimension DN $\times \times$

- Power supply (24 V DC or 230 V AC)
- Output signals (impulses, frequency, current)
- ATEX parameters (for FLONEX meters)
- CE marking and metrology marking in line with the Directive 2014/32/EU

These markings shall be visible without dismantling the water meter after the instrument has been placed on the market or put into use. Example is in Figure 4 to Figure 9.

5 Additional specifications

The water meters type FLONET, FLONEX shall be put onto the market in line with the procedure of conformity assessment according to the Annex D or F of the Directive 2014/32/EU as well as in compliance with the technical description of this report and shall be tested in accordance with the requirements determined in ISO 4064-1:2017, respectively OIML R 49-1:2013.

A metrological test may only be performed by a producer, or a notified body respectively in line with the conformity assessment procedure by the D or F Annexes of the Directive 2014/32/EU, respectively.

6 Ensuring the integrity of the instruments

Basic drawing of water meters FLONET, FLONEX, of compact version is presented on Figure 2. Remote version of the meters, on Figure 3.

Labels of electromagnetic water meters FLONET and FLONEX (for all meter, for electronic transducer and for flow sensor) are presented on next Figures 4 up to Figure 7. On label of meter FLONEX (for potentially explosive atmospheres), there are included an information concerning ATEX parameters, also a number of notified body which performed a tests. Figures also presented a form of labels with customer logo. Labels are located on determined places of water meter, of electronic transducer and of flow sensor.

Security sealing of water meters FLONET, FLONEX are specified on Figures 8 and 9. There are also given an installation (mounting) locking screw of FLONET, FLONEX electronic. This screw, connects covering of clamps with body of electronic transducer.

7 Drawing of the instrument

Water meters type FLONET, FLONEX are manufactured according to the technical documentation of manufacturer. Technical documentation contains following drawings:

Document reference	Date	Brief description
Es 300799	20.2.2013	Weldment Ex DN(15-125) for FH3014
Es 300800	18.6.2020	Electromagnetic sensos Ex ES for DN(15-300) for FH3014
Es 300804	30.5.2020	Drawing of sensor upside part cover („Komínek ES“)
Es 401219	18.12.2015	Drawing of sensor downside part cover
Es 301716	11.12.2018	Display board FXD1.5
Es 301718	21.12.2017	Probe connector board FXK1.5
Es 301719	24.8.2018	Terminal blocks board FXS1.5
Es 301720	21.12.2017	Subpanel board FXB1.5
Es 301756	26.1.2018	Subassembly of electronic boards FXP1.5+FXV1.5+FXM1,5
Es 301799	13.8.2019	Drawing of Electronic C14.00 and C15.00 for FH30XX (2 pages)
Es 301801	19.2.2019	Drawing of compact version Flonet with HART (FH30X4)
Es 460095	18.6.2020	Label of watermeter Flonet FH30xx
Es 460096	18.6.2020	Label of electronic Flonet FH30xx for C14 and C15
Es 460097	18.6.2020	Label of sensor ISX.xxx of watermeter Flonet FH30xx
Es 700798	18.6.2020	List of parts – sensor (FH30xx)
Es 700749	18.6.2020	List of parts – electronic (FH30xx)
Es 700752	17.6.2020	List of parts – watermeter – compact (95 – 250) V AC
Es 800431	4.6.2020	Connection scheme between sensor and electronic for FH30x4 (compact)
Es 200872	13.3.2019	Drawing of remote version Flonet with HART (FH30X5)

Es 300800	18.6.2020	Electromagnetic sensos Ex ES DN(15-300) for FH3015
Es 300839	27.4.2017	Mounting base for electronic for remote version (FH3015)
Es 301042	25.11.2013	Weldment DN(150-300) for FH3015
Es 301717	13.9.2018	Power supply board FXN1.5 for FH3015
Es 301838	29.1.2019	Terminal blocks of Flonet sensor with U-AWE box (FH3015)
Es 301840	10.9.2019	Terminal block box for C6.00, C7.00, C14.00 and C15.00 (FH3015)
Es 401269	9.2.2005	Electronic seal drawing for electronic FN
Es 402506	29.1.2020	Terminal blocks board of sensor FN
Es 701119	18.6.2020	List of parts of sensor Flonet IP67 with U-AWE –remote version
Es 700749	18.6.2020	List of parts – electronic – separate version (95 – 250) V AC for FH30xx
Es 700786	18.6.2020	List of parts – sensor ES grounding electrode
Es 701842	18.6.2020	List of parts for assembling flowsensor FH30x5 for separate version
Es 701852	17.6.2020	List of parts – watermeter Flonet EN TG separate version
Es 800427	4.6.2020	Connection scheme between sensor and electronic C14.00, C15.00 (rem. ver.)
Es 301881	19.6.2020	Drawing of electromagnetic sensor body
Es 301882	19.6.2020	Drawing of electronic body – compact version
Es 301884	19.6.2020	Drawing of electronic body – separate version
Es 200 878	10.5.2019	technical documentation for FLONEX FX1114 and FX2114 water meter
Es 200 879	21.5.2019	technical documentation for FLONEX FX1116 and FX2116 water meter
Es 401248	6.5.2005	Security mark drawing
Es90678K	18.6.2020	Project design, installation and service manual of Flonet FH30xx
Es90675K	18.6.2020	Project design, installation and service manual ATEX and IECEx for Flonex FXx11x
Es 9066K/a	16.6.2020	Manual for controlling, manipulation, reading, etc. for FLONEX and FLONET water meter

History of additions

Addition No.	Description
Addition 0	Issuing certificate

Figure 2: Compact version of water meters FLONET, FLONEX – view:

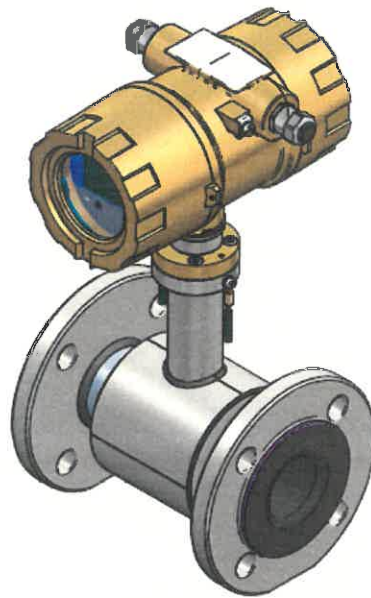


Figure 3: Remote version of water meters FLONET, FLONEX – view:

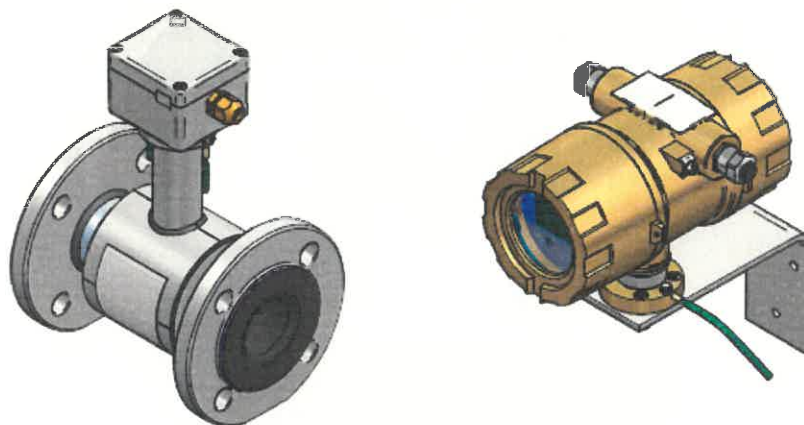


Figure 4: Water meter label of FLONET, located on the top of electronic

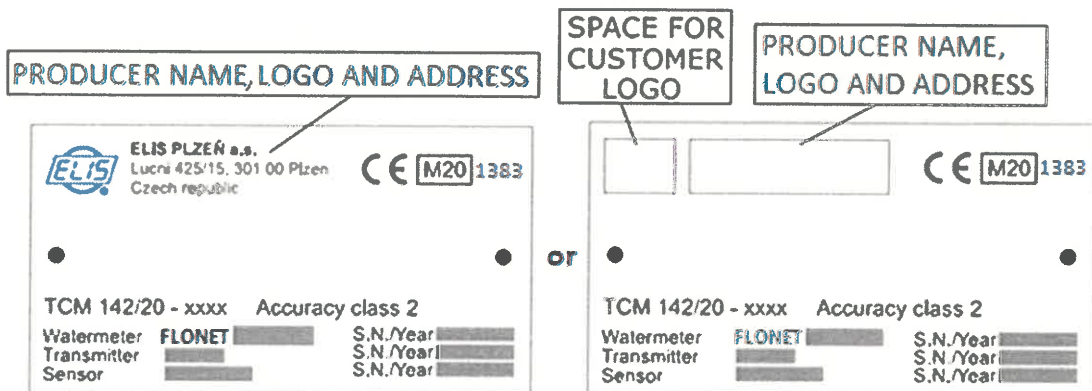


Figure 5: Water meter label of FLONEX (with ATEX parameters and with number of notified body for ATEX testing, also) located on the top of electronic

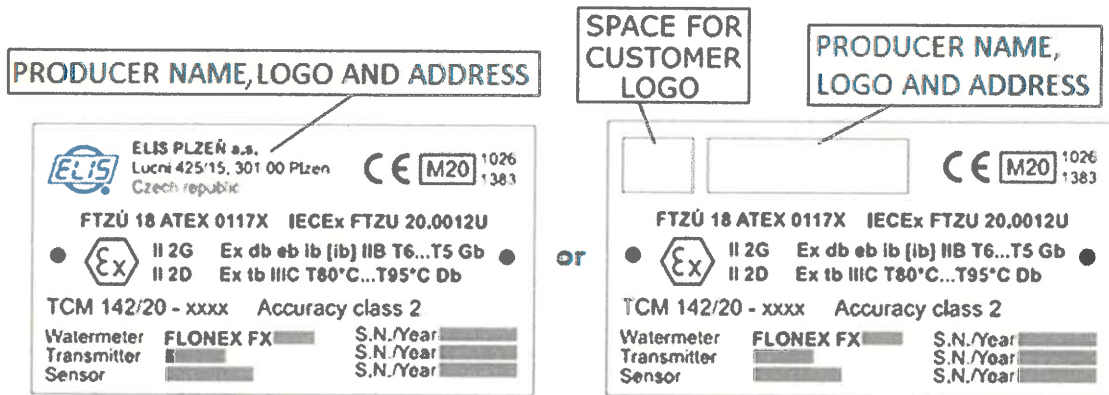


Figure 6: Label of electronic transducer of meters FLONET, FLONEX, located on back side cover

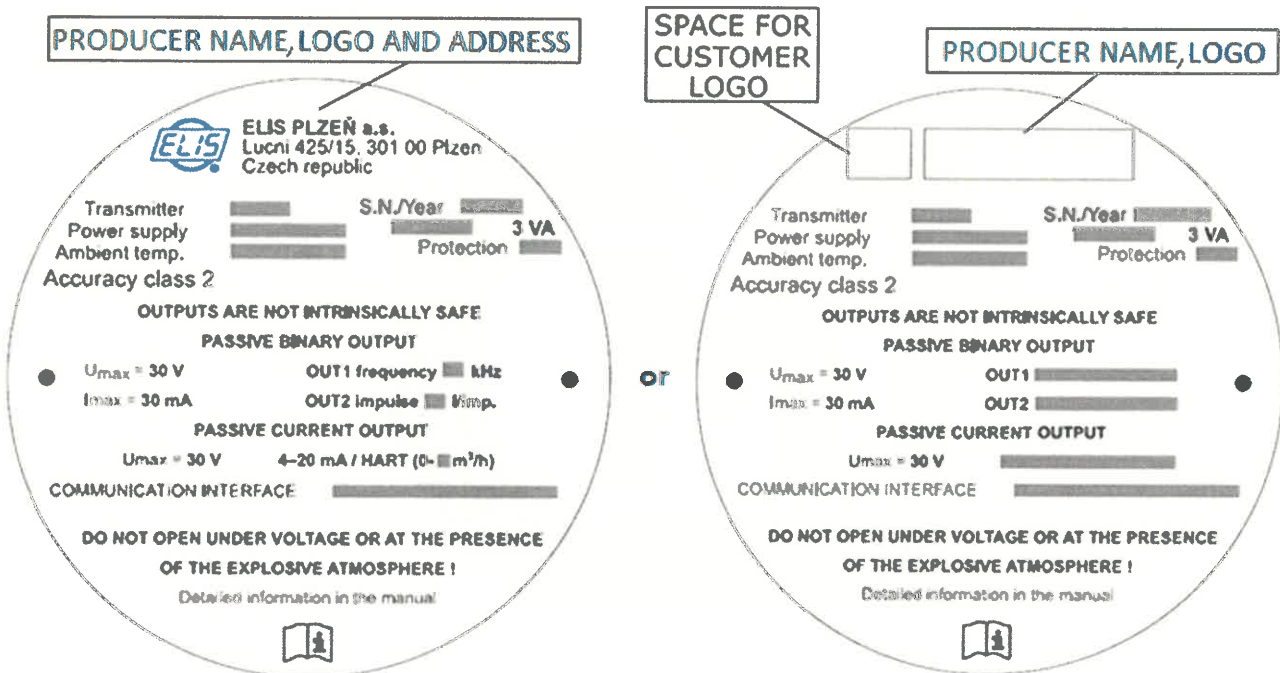


Figure 7: Label of flow sensor of water meters FLONET, FLONEX, located on the body of flow sensor

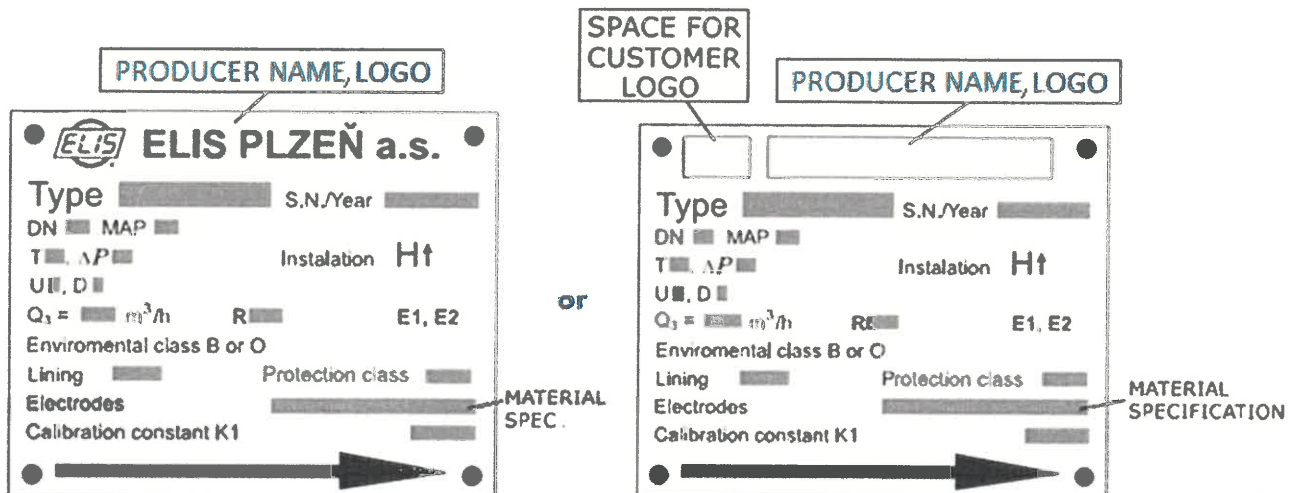


Figure 8: Security sealing of compact version of water meters FLONET, FLONEX. Also installation (mounting) locking screw (between covering of clamps and body of electronic transducer)

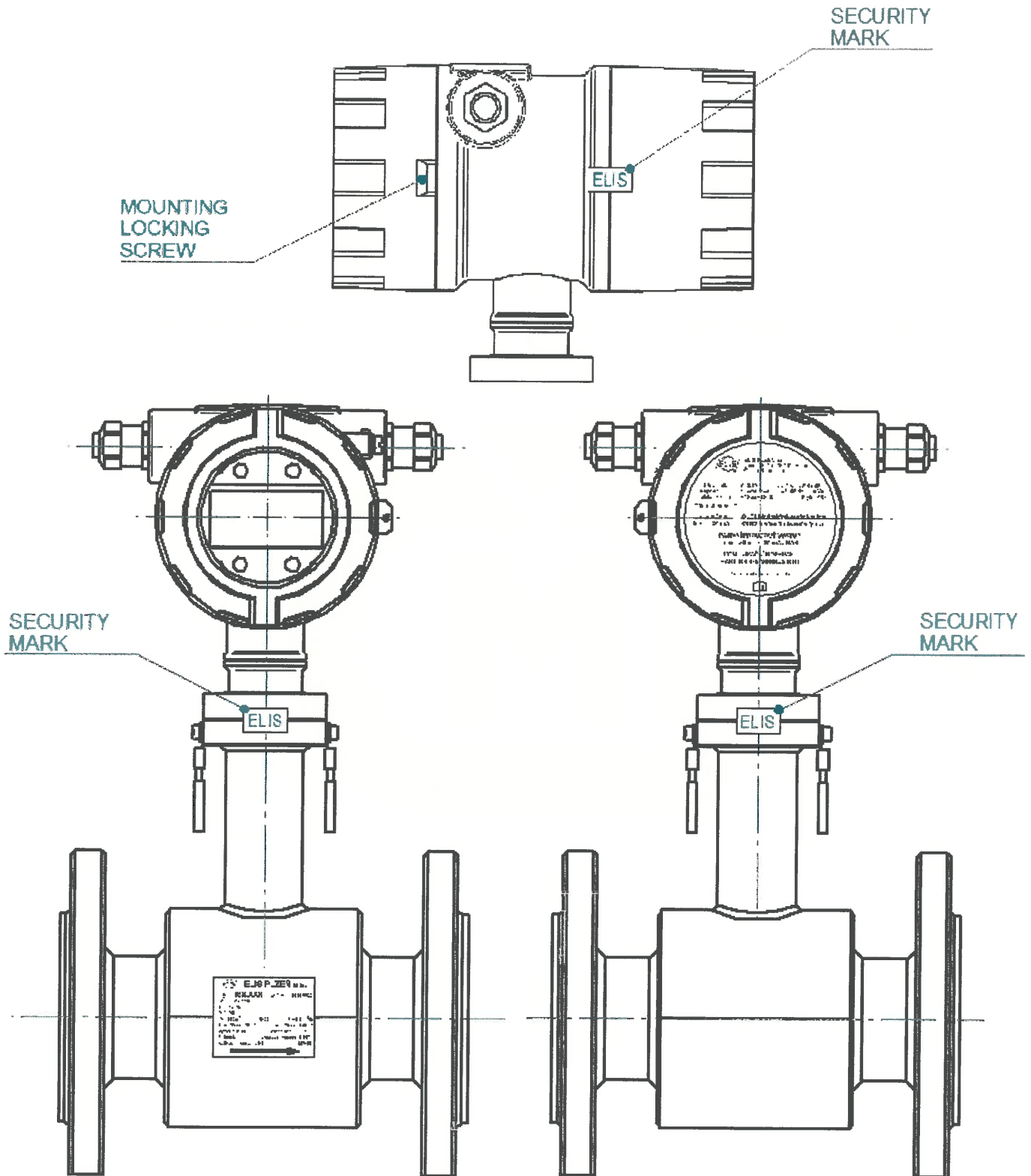


Figure 9: Security sealing of remote version of water meters FLONET, FLONEX. Also installation (mounting) locking screw (between covering of clamps and body of electronic transducer)

