

Translation

EU-Type Examination Certificate Supplement 7

Change to Directive 2014/34/EU

- 2 **Equipment intended for use in potentially explosive atmospheres**
Directive 2014/34/EU
- 3 EU-Type Examination Certificate Number: **BVS 05 ATEX E 103 X**
- 4 Product: **Measuring unit Liquicap M type F*15*-*******
- 5 Manufacturer: **Endress+Hauser SE+Co. KG**
- 6 Address: **Hauptstr. 1, 79689 Maulburg, Germany**

7 This supplementary certificate extends EC-Type Examination Certificate No. BVS 05 ATEX E 103 X to apply to products designed and constructed in accordance with the specification set out in the appendix of the said certificate but having any acceptable variations specified in the appendix to this certificate and the documents referred to therein.

8 DEKRA Testing and Certification GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 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 the confidential Report No. BVS PP 05.2068 EU.

9 The Essential Health and Safety Requirements are assured in consideration of:

EN IEC 60079-0:2018	General requirements
EN 60079-11:2012	Intrinsic Safety "i"
EN 60079-26:2015	Equipment with equipment protection level (EPL) Ga

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

11 This EU-Type Examination 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:

 see cl. 15.1

DEKRA Testing and Certification GmbH
Bochum, 2021-10-13

Signed: Jörg-Timm Kilisch

Managing Director



13 **Appendix**

14 **EU-Type Examination Certificate**

**BVS 05 ATEX E 103 X
Supplement 7**

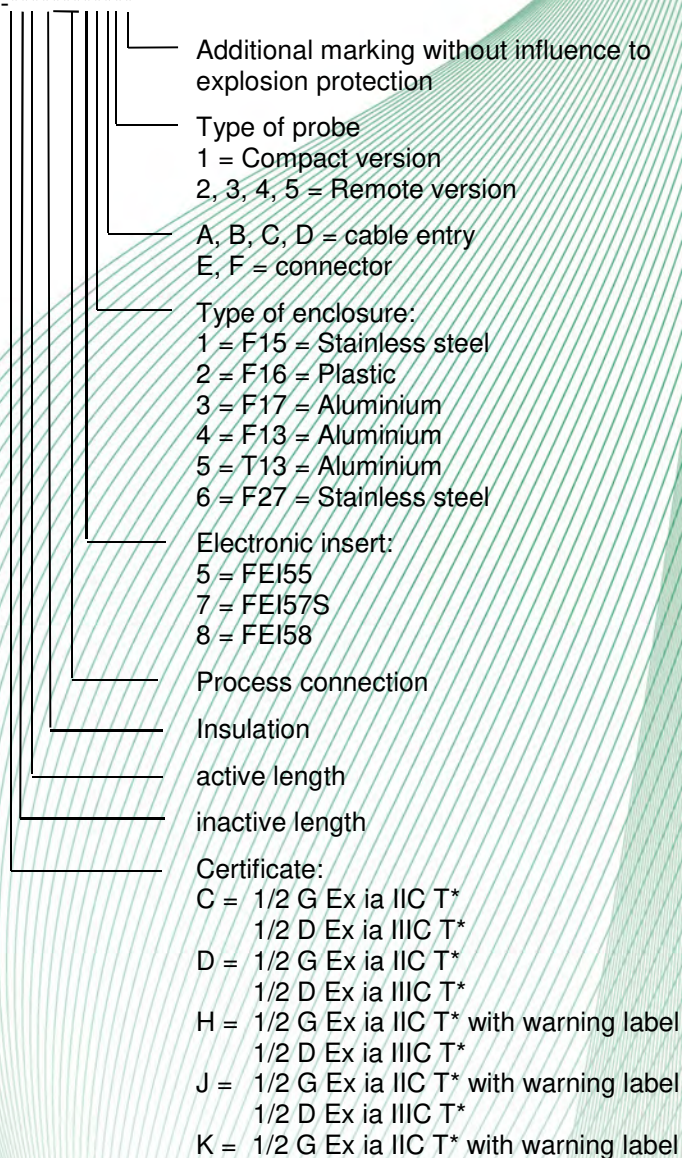
15 **Product description**

15.1 **Subject and type**

Measuring unit Liquicap M type FTI5*_*****
Measuring unit Liquicap M type FMI5*_*****

Instead of the *** in the complete denomination letters and numerals will be inserted which characterize modifications:

Liquicap M Typ FTI51_*****



Liquicap M Typ FTI52-*****

Additional marking without influence to explosion protection

Type of probe
1 = Compact version
2, 3, 4, 5 = Remote version

A, B, C, D = cable entry
E, F = connector

Type of enclosure:
1 = F15 = Stainless steel
2 = F16 = Plastic
3 = F17 = Aluminium
4 = F13 = Aluminium
5 = T13 = Aluminium
6 = F27 = Stainless steel

Electronic insert:
5 = FEI55
7 = FEI57S
8 = FEI58

Process connection

Insulation

active length

inactive length

Certificate:

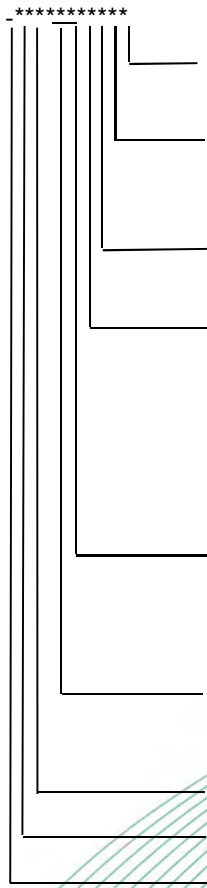
H = 1/2 G Ex ia IIC T* with warning label
1/2 D Ex ia IIIC T*

J = 1/2 G Ex ia IIC T* with warning label
1/2 D Ex ia IIIC T*

K = 1/2 G Ex ia IIC T* with warning label



Liquicap M Typ FMI51-*****



Additional marking without influence to explosion protection

Type of probe
 1 = Compact version
 2, 3, 4, 5 = Remote version

A, B, C, D = cable entry
 E, F = connector

Type of enclosure:
 1 = F15 = Stainless steel
 2 = F16 = Plastic
 3 = F17 = Aluminium
 4 = F13 = Aluminium
 5 = T13 = Aluminium
 6 = F27 = Stainless steel

Electronic insert:
 A = FEI50H with display
 B = FEI50H
 C = FEI57C

Process connection

active length / Insulation
 inactive length

Certificate:
 C = 1/2 G Ex ia IIC T*
 1/2 D Ex ia IIIC T*
 D = 1/2 G Ex ia IIC T*
 1/2 D Ex ia IIIC T*
 E = 1/2 G Ex ia IIB T*
 1/2 D Ex ia IIIC T*
 F = 1/2 G Ex ia IIB T*
 1/2 D Ex ia IIIC T*
 H = 1/2 G Ex ia IIC T* with warning label
 1/2 D Ex ia IIIC T*
 J = 1/2 G Ex ia IIC T* with warning label
 1/2 D Ex ia IIIC T*
 K = 1/2 G Ex ia IIC T* with warning label

Liquicap M Typ FMI52-*****

Additional marking without influence to explosion protection

Type of probe
1 = Compact version
2, 3, 4, 5 = Remote version

A, B, C, D = cable entry
E, F = connector

Type of enclosure:
1 = F15 = Stainless steel
2 = F16 = Plastic
3 = F17 = Aluminium
4 = F13 = Aluminium
5 = T13 = Aluminium
6 = F27 = Stainless steel

Electronic insert:
A = FEI50H with display
B = FEI50H
C = FEI57C

Process connection

active length / Insulation

inactive length

Certificate:

E = 1/2 G Ex ia IIB T*
1/2 D Ex ia IIIC T*

F = 1/2 G Ex ia IIB T*
1/2 D Ex ia IIIC T*

H = 1/2 G Ex ia IIC T* with warning label
1/2 D Ex ia IIIC T*

J = 1/2 G Ex ia IIC T* with warning label
1/2 D Ex ia IIIC T*

K = 1/2 G Ex ia IIC T* with warning label



The marking of the device must contain the following information:

type Liquicap M	Marking Gas	Marking Dust
FTI5*-K*****2*** FTI5*-*****2***	II 1/2 G Ex ia IIC T ³ Ga/Gb	- -
FTI51-D***** FTI51-C***** FTI5*-H***** FTI5*-J*****	II 1/2 G Ex ia IIC T ³ Ga/Gb	II 1/2 D Ex ia IIIC T* Da/Db but not for type FTI5*-*****2***
FMI5*-K*****	II 1/2 G Ex ia IIC T ³ Ga/Gb but not for types FMI5*-K*****2E** FMI5*-K*****2F**	- -
FMI5*-K*****2E** FMI5*-K*****2F**	II 1/2 G Ex ia IIB T ³ Ga/Gb	- -
FMI5*-F*****1)2)** FMI5*-E*****1)2)** FMI51-D*****1)2)** FMI51-C*****1)2)** FMI5*-H*****1)2)** FMI5*-J*****1)2)**	II 1/2 G Ex ia IIC T ³ Ga/Gb	II 1/2 D Ex ia IIIC T* Da/Db

- 1) Here the number 1, 3, 4, 5 or 6 will be inserted.
- 2) Here the letter A, B, C or D will be inserted.
- 3) Here the number 3, 4, 5 or 6 or 'T6...T3' will be inserted.

15.2 Description

With this supplement the certificate is changed to Directive 2014/34/EU.
(Annotation: In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.)

Reason for the supplement

- Change to Directive 2014/34/EU
- The equipment has been assessed in accordance with current standard versions
- The marking and surface temperatures were modified due to 200 mm of dust filling

Description of Product

The measuring unit is mounted to a tank by a flange.

The unit is inserted into the tank and, in case of the rod probe or the rope probe, it forms a capacitor with the tank walls or, in case of the rod probe, with a grounded tube.

The apparatus meet the requirements of Category 2G (Some types additionally Category 2D). The intrinsically safe probe circuit and the probes meet the requirements of Category 1G (Some types additionally Category 1D).

15.3 Parameters

15.3.1 Type Liquicap M FMI5*-*****A*** and type Liquicap M FMI5*-*****B***

Input / signal circuit (terminals 1 – 2)

Voltage	U_i	DC	30	V
Current	I_i		120	mA
Power	P_i		1	W
Effective internal inductance	L_i		negligible	
Effective internal capacitance	C_i		2.4 nF	

Ambient temperature range

Temperature class T6	T_a	-50 °C up to +60 °C
Temperature class T5, T4 and T3		-50 °C up to +70 °C

for type Liquicap M FMI5*-*****2***

Temperature class T6		-40 °C up to +60 °C
Temperature class T5, T4 and T3		-40 °C up to +70 °C

15.3.2 Type Liquicap M FMI5*-*****C***

Input / signal circuit (terminals 1 – 2)

Voltage	U_i	DC	19.2	V
Current	I_i		108	mA
Power	P_i		1	W
Effective internal inductance	L_i		negligible	
Effective internal capacitance	C_i		2.4 nF	

Ambient temperature range

Temperature class T6	T_a	-50 °C up to +60 °C
Temperature class T5, T4 and T3		-50 °C up to +70 °C

for type Liquicap M FMI5*-*****2***

Temperature class T6		-40 °C up to +60 °C
Temperature class T5, T4 and T3		-40 °C up to +70 °C

15.3.3 Liquicap M type FTI5*-*****5****

Input / signal circuit (terminals 1 – 2)

Voltage	U_i	DC	36	V
Current	I_i		100	mA
Power	P_i		1	W
Effective internal inductance	L_i		negligible	
Effective internal capacitance	C_i		2.4 nF	

Ambient temperature range

Temperature class T6	T_a	-50 °C up to +55 °C
Temperature class T5, T4, T3		-50 °C up to +70 °C

Type FTI5*-*****2****

Temperature class T6		-40 °C up to +55 °C
Temperature class T5, T4, T3		-40 °C up to +70 °C

15.3.4 Liquicap M type FTI5*-*****7****

Input / signal circuit (terminals 1 – 2)

Voltage	U_i	DC	16.1	V
Current	I_i		100	mA
Power	P_i		1	W
Effective internal inductance	L_i		negligible	
Effective internal capacitance	C_i		2.4 nF	

Ambient temperature range
 Temperature class T6
 Temperature class T5, T4, T3

T_a
 -50 °C up to +55 °C
 -50 °C up to +70 °C

Type FTI5* - *****2***
 Temperature class T6
 Temperature class T5, T4, T3

-40 °C up to +55 °C
 -40 °C up to +70 °C

15.3.5 Liquicap M type FTI5* - *****8****
 Input / signal circuit (terminals 1 – 2)

Voltage
 Current
 Power
 Effective internal inductance
 Effective internal capacitance

U_i	DC	18	V
I_i		52	mA
P_i		170	mW
L_i			negligible
C_i			negligible

Ambient temperature range
 for type FTI5* - *****2*** limited to

T_a
 -50 °C up to +60 °C
 -40 °C up to +60 °C

15.3.6 Temperature class, process temperature and surface temperature

15.3.6.1 Temperatures for gas application (EPL G*)

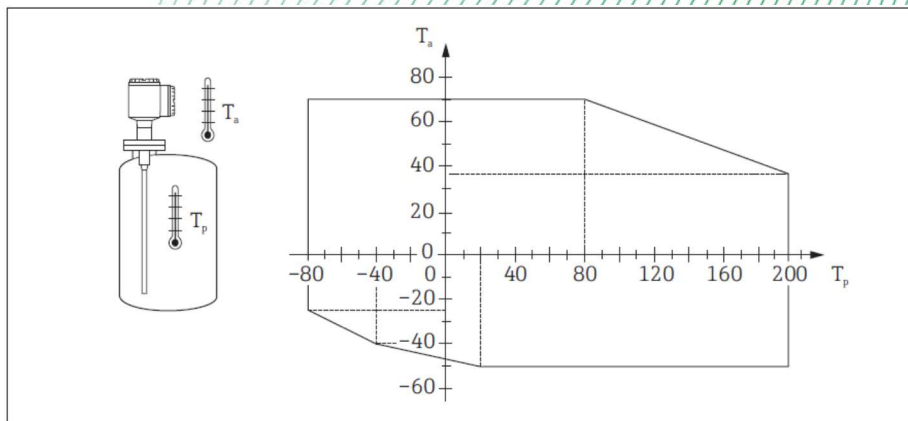
Process temperature
 Temperature class T6
 Temperature class T5
 Temperature class T4
 Temperature class T3

up to + 85 °C
 up to +100 °C
 up to +135 °C
 up to +200 °C

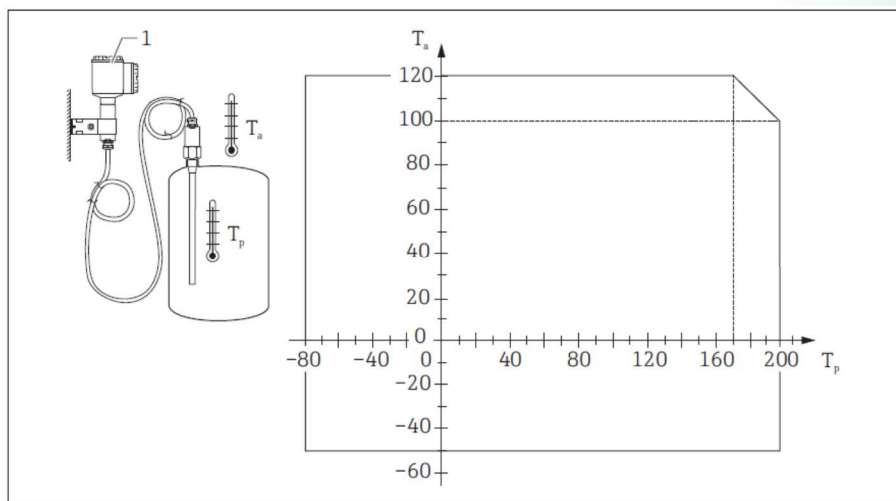
Compact version Liquicap M Typ - type F*15* - *****1*

T_a = ambient temperature [°C]

T_p = process temperature [°C]



Version with separate electronics enclosure
 Liquicap M type F*15*-***** (2, 3, 4, 5)*
 T_a = ambient temperature [°C]
 T_p = process temperature [°C]



¹ Temperature at electronics enclosure ≤ 70 °C

15.3.6.2 Temperatures for dust application (EPL D*)

max. surface temperature probe

$\leq T_{200} 200$ °C

Electronics enclosure for dust

Ambient temperature range electronics enclosure

T_a -50 °C up to +70 °C

	Probe in EPL Da	Electronics enclosure in EPL Db
Max. surface temperature at process resp. ambient temperature of 40 °C	$T_{200} 60$ °C at $T_p = +40$ °C	T60 °C at $T_a = +40$ °C
Max. surface temperature at process resp. ambient temperature of 70 °C	$T_{200} 90$ °C at $T_p = +70$ °C	T90 °C at $T_a = +70$ °C
Max. surface temperature for a process temperature of ≥ 80 °C...+180 °C at the probe under observation of the permissible ambient temperature of the electronics enclosure	$T_{200} 100$ °C at $T_p = +80$ °C	T90 °C at $T_a = +70$ °C
	$T_{200} 200$ °C at $T_p = +180$ °C	T90 °C at $T_a = +38$ °C

15.3.7 Degrees of protection of the electronics enclosure according to EN 60529

IP66

16 Report Number

BVS PP 05.2068 EG, as of 2021-10-13

17 **Special Conditions for Use**

For use in hazardous areas caused by gases:

The measuring units Liquicap M type F*15*-*****2*** may only be installed in a way that electrostatic charges will be avoided.

The measuring units Liquicap M type FT15*-K*****, type FT15*-H***** and type FT15*-J*****, as well as the measuring units Liquicap M type FMI5*-K*****, type FMI5*-E*****, type FMI5*-F*****, type FMI5*-H***** and type FMI5*-J***** shall only be used where electrostatic charging of the probe caused by the process is not possible.

For use in hazardous areas caused by dust:

An electrostatic charging of the sensor cable of the measuring units Liquicap M type FT15*-***** (2, 3, 4, 5)* (remote version) and type FMI5*-***** (2, 3, 4, 5)* (remote version) has to be excluded.

18 **Essential Health and Safety Requirements**


The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 **Drawings and Documents**

Drawings and documents are listed in the confidential report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
Bochum, 2021-10-13
BVS-Ben/Mu A20210143



Managing Director