CERTIFICATE

(1) ## EU-Type Examination

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

(3) EU-Type Examination Certificate Number: **KEMA 10ATEX0072**   Issue Number: **9**

(4) Product: **Flowmeters Proline, types**
Promass A 200, E 200 and F 200
Promag H 200, P 200, E 200 and W 200
Prosonic Flow B 200
Prowirl C 200, D 200, F 200, R 200 and O 200

(5) Manufacturer: **Endress+Hauser Flowtec AG**

(6) Address: **Kägenstrasse 7, 4153 Reinach BL1, Switzerland**

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

(8) DEKRA Certification B.V., Notified Body number 0344 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 confidential test report number NL/DEK/ExTR12.0029/06.

(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 + A1 : 2018
EN 60079-11 : 2012	EN 60079-26 : 2015	EN 60079-31 : 2014

except in respect of those requirements listed at item 18 of the Schedule.

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

⟨Ex⟩   **Promass see Annex 2**
Promag see Annex 3
Prosonic see Annex 4
Prowirl see Annex 5

Date of certification: 6 August 2021
DEKRA Certification B.V.

R. Schuller
R. Schuller
Certification Manager

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(13)   **SCHEDULE**

(14)   **to EU-Type Examination Certificate KEMA 10ATEX0072**   Issue No. **9**

(15)   **Description**

See Annex 2 for the Promass description.
See Annex 3 for the Promag description.
See Annex 4 for the Prosonic description.
See Annex 5 for the Prowirl description.

Electrical data

See Annex 1 for the electrical data.

Installation instructions

The instructions provided with the product shall be followed in detail to assure safe operation.

(16)   **Report Number**

No. NL/DEK/ExTR12.0029/06.

(17)   **Specific conditions of use**

None, except for Prowirl refer to Marking section in Annex 5.

(18)   **Essential Health and Safety Requirements**

Covered by the standards listed at item (9).

(19)   **Test documentation**

As listed in Report No. NL/DEK/ExTR12.0029/06.

(13) **SCHEDULE**

(14) **to EU-Type Examination Certificate KEMA 10ATEX0072**   Issue No. **9**

(20) **Certificate history**

Issue 1 - 213234300 - initial certificate
Issue 2 - 213234300 - Added Flowmeters Proline Promass E 200 with identical construction and
                        order code;
                        - minor changes to the electrical circuit.
Issue 3 - 215428300 - Updated and extended Model code range, thermal specifications and
                        electrical specifications
Issue 4 - 216240100 - Added I/O interface option D
                        - Added Display options L, M
                        - Updated electrical and thermal data
Issue 5 - 217052400 - increased maximum medium temperature for Promass F 200 to 205°C
                        - additional version of Promass E (type 8E2C andO8E2C)
                        - changes to type designation
                        - updated thermal data
                        - drawing revision to previous certification
Issue 6 - 218301700 - Increased maximum medium temperature for Promass F 200 to 205°C.
                        - New version of Promass E.
                        - Minor product updates, including changes to type designation.
                        - Update to IEC60079-26 Ed 3 and IEC6079-31 Ed 2.
Issue 7 - 219708300 - Change of model code for Promass E 200
Issue 8 - 221778700 - Integrating of Promag, Prosonic and Prowirl which previously had
                        individual certificates based on the same report.
                        - Introduction of a Promass A 200
                        - Introduction of a new pressure sensor for Prowirl 200
                        - Update EN 60079-1:2007 to EN 60079-1: 2014
                        - Introduction of Ex ec per EN 60079-7:2015 as alternative to Ex nA per
                          EN 60079-15:2010
Issue 9 - 225622000 - Type of protection Ex nA as well as [ia Da] are no longer in scope.
                        - Assessed per latest EN IEC 60079-0 and EN 60079-7.
                        - Minor constructional changes.

Annex 1 to EU-Type Examination Certificate KEMA 10ATEX0072, issue 9

This annex is applicable for flowmeters type
Proline Promass A/E/F 200,
Proline Promag H/P/E/W 200
Proline Prosonic Flow B 200
Proline Prowirl C/D/F/R/O 200

Electrical data
For assignment of approval code and I/O code to type of flowmeter refer to type designation of Annex 2 to Annex 5.

Flowmeter with Approval codes cc = BA, BB, BJ, B2, B5 and I/O code d = A

Supply/output circuit (terminals 1 and 2):
in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:
U_i = 30 V; I_i = 300 mA; P_i = 1 W; C_i = 5 nF; L_i = 0 mH.

Service connector:
in type of protection intrinsic safety Ex ia IIC, for connection of E+H Service Interface FXA291 or any other certified interface, with following maximum values:
U_o = 7.3 V; I_o = 100 mA; P_o = 160 mW; C_i = 0 nF; L_i = 0 mH.

Flowmeter with Approval codes cc = BA, BB, BJ, B2, B5 and I/O code d = B

Supply/output circuit (terminals 1 and 2):
in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:
U_i = 30 V; I_i = 300 mA; P_i = 1 W; C_i = 5 nF; L_i = 0 mH;

Supply/output circuit (terminals 3 and 4):
in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:
U_i = 30 V; I_i = 300 mA; P_i = 1 W; C_i = 6 nF; L_i = 0 mH.

Service connector:
in type of protection intrinsic safety Ex ia IIC, for connection of E+H Service Interface FXA291 or any other certified interface, with following maximum values:
U_o = 7.3 V; I_o = 100 mA; P_o = 160 mW; C_i = 0 nF; L_i = 0 mH.

Flowmeter with Approval codes cc = BA, BB, BJ, B2, B5 and I/O code d = C

Supply/output circuit (terminals 1 and 2):
in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:
U_i = 30 V; I_i = 300 mA; P_i = 1 W; C_i = 30 nF; L_i = 0 mH;

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Supply/output circuit (terminals 3 and 4):
in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:
U_i = 30 V; I_i = 300 mA; P_i = 1 W; C_i = 30 nF; L_i = 0 mH.

Service connector:
in type of protection intrinsic safety Ex ia IIC, for connection of E+H Service Interface FXA291 or any other certified interface, with following maximum values:
U_o = 7.3 V; I_o = 100 mA; P_o = 160 mW; C_i = 0 nF; L_i = 0 mH.

Flowmeter with Approval codes cc = BA, BB, BJ, B2, B5 and I/O code d = D

Supply/output circuit (terminals 1 and 2):
in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:
U_i = 30 V; I_i = 300 mA; P_i = 1 W; C_i = 5 nF; L_i = 0 mH;

Supply/output circuit (terminals 3 and 4):
in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:
U_i = 30 V; I_i = 300 mA; P_i = 1 W; C_i = 6 nF; L_i = 0 mH;

Input circuit (terminals 5 and 6):
in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:
U_i = 30 V; I_i = 300 mA; P_i = 1 W; C_i = 5 nF; L_i = 0 mH.

Service connector:
in type of protection intrinsic safety Ex ia IIC, for connection of E+H Service Interface FXA291 or any other certified interface, with following maximum values:
U_o = 7.3 V; I_o = 100 mA; P_o = 160 mW; C_i = 0 nF; L_i = 0 mH.

Flowmeter with Approval codes cc = BA, BB, BJ, B2, B5 and I/O codes d = E, G

Supply/output circuit (terminals 1 and 2):
in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:
U_i = 30 V; I_i = 300 mA; P_i = 1.2 W; C_i = 5 nF; L_i = 10 µH;

or in accordance with FISCO, with following maximum values:
U_i = 17.5 V; I_i = 550 mA; P_i = 5.5 W; C_i = 5 nF; L_i = 10 µH;

Supply/output circuit (terminals 3 and 4):
in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:
U_i = 30 V; I_i = 300 mA; P_i = 1 W; C_i = 6 nF; L_i = 0 mH.

Service connector:
in type of protection intrinsic safety Ex ia IIC, for connection of E+H Service Interface FXA291 or any other certified interface, with following maximum values:
U_o = 7.3 V; I_o = 100 mA; P_o = 160 mW; C_i = 0 nF; L_i = 0 mH.

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Flowmeter with Approval codes cc = BC, BG, BK, B3, B6, TC and I/O code d = A

Supply/output circuit (terminals 1 and 2):
U_N = 35 V dc
U_m = 250 V.

Service connector:
in type of protection intrinsic safety Ex ia IIC, for connection of E+H Service Interface FXA291 or any other certified interface, with following maximum values:
U_o = 7.3 V; I_o = 100 mA; P_o = 160 mW; C_i = 0 nF; L_i = 0 mH.

Flowmeter with Approval codes cc = BC, BG, BK, B3, B6, TC and I/O code d = B

Supply/output circuit (terminals 1 and 2):
U_N = 35 V dc
U_m = 250 V.

Output circuit (terminals 3 and 4):
U_N = 35 V dc
U_m = 250 V
P_{max} = 1 W
NOTE: this circuit is functionally limited by an internal resistance of 760.5 Ω; herewith P_{max} may be determined

Service connector:
in type of protection intrinsic safety Ex ia IIC, for connection of E+H Service Interface FXA291 or any other certified interface, with following maximum values:
U_o = 7.3 V; I_o = 100 mA; P_o = 160 mW; C_i = 0 nF; L_i = 0 mH.

Flowmeter with Approval codes cc = BC, BG, BK, B3, B6, TC and I/O code d = C

Supply/output circuits (terminals 1 and 2; 3 and 4):
U_N = 30 V dc
U_m = 250 V.

Service connector:
in type of protection intrinsic safety Ex ia IIC, for connection of E+H Service Interface FXA291 or any other certified interface, with following maximum values:
U_o = 7.3 V; I_o = 100 mA; P_o = 160 mW; C_i = 0 nF; L_i = 0 mH.

Flowmeter with Approval codes cc = BC, BG, BK, B3, B6, TC and I/O code d = D

Supply/output circuit (terminals 1 and 2):
U_N = 35 V dc
U_m = 250 V.

Supply/output circuit (terminals 3 and 4):
U_N = 35 V dc
U_m = 250 V

Input circuit (terminals 5 and 6):
U_N = 35 V dc
U_m = 250 V.

Service connector:
in type of protection intrinsic safety Ex ia IIC, for connection of E+H Service Interface FXA291 or any other certified interface, with following maximum values:
U_o = 7.3 V; I_o = 100 mA; P_o = 160 mW; C_i = 0 nF; L_i = 0 mH.

Flowmeter with Approval codes cc = BC, BG, BK, B3, B6, TC and I/O codes d = E, G

Supply/output circuit (terminals 1 and 2):
U_N = 32 V dc
U_m = 250 V
P_{max} = 0.88 W

Supply/output circuit (terminals 3 and 4):
U_N = 35 V dc
U_m = 250 V
P_{max} = 1 W
NOTE: this circuit is functionally limited by an internal resistance of 760.5 Ω; herewith P_{max} may be determined.

Service connector:
in type of protection intrinsic safety Ex ia IIC, for connection of E+H Service Interface FXA291 or any other certified interface, with following maximum values:
U_o = 7.3 V; I_o = 100 mA; P_o = 160 mW; C_i = 0 nF; L_i = 0 mH.

Flowmeter with Approval codes cc = BD, BH and I/O code d = A

Supply/output circuit (terminals 1 and 2):
in type of protection intrinsic safety Ex ic IIC, only for connection to an intrinsically safe circuit, with following maximum values:
U_i = 35 V; I_i = N/A; P_i = 1 W; C_i = 5 nF; L_i = 0 mH.

Service connector:
in type of protection intrinsic safety Ex ia IIC, for connection of E+H Service Interface FXA291 or any other certified interface, with following maximum values:
U_o = 7.3 V; I_o = 100 mA; P_o = 160 mW; C_i = 0 nF; L_i = 0 mH.

Flowmeter with Approval codes cc = BD, BH and I/O code d = B

Supply/output circuit (terminals 1 and 2):
in type of protection intrinsic safety Ex ic IIC, only for connection to an intrinsically safe circuit, with following maximum values:
U_i = 35 V; I_i = N/A; P_i = 1 W; C_i = 5 nF; L_i = 0 mH.

Supply/output circuit (terminals 3 and 4):
in type of protection intrinsic safety Ex ic IIC, only for connection to an intrinsically safe circuit, with following maximum values:
U_i = 35 V; I_i = N/A; P_i = 1 W; C_i = 6 nF; L_i = 0 mH.

Service connector:
in type of protection intrinsic safety Ex ia IIC, for connection of E+H Service Interface FXA291 or any other certified interface, with following maximum values:
U_o = 7.3 V; I_o = 100 mA; P_o = 160 mW; C_i = 0 nF; L_i = 0 mH.

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Flowmeter with Approval codes cc = BD, BH and I/O code d = C

Supply/output circuit (terminals 1 and 2):
in type of protection intrinsic safety Ex ic IIC, only for connection to an intrinsically safe circuit, with following maximum values:
U_i = 30 V; I_i = N/A; P_i = 1 W; C_i = 30 nF; L_i = 0 mH;

Supply/output circuit (terminals 3 and 4):
in type of protection intrinsic safety Ex ic IIC, only for connection to an intrinsically safe circuit, with following maximum values:
U_i = 30 V; I_i = N/A; P_i = 1 W; C_i = 30 nF; L_i = 0 mH.

Service connector:
in type of protection intrinsic safety Ex ia IIC, for connection of E+H Service Interface FXA291 or any other certified interface, with following maximum values:
U_o = 7.3 V; I_o = 100 mA; P_o = 160 mW; C_i = 0 nF; L_i = 0 mH.

Flowmeter with Approval codes cc = BD, BH and I/O code d = D

Supply/output circuit (terminals 1 and 2):
in type of protection intrinsic safety Ex ic IIC, only for connection to an intrinsically safe circuit, with following maximum values:
U_i = 35 V; I_i = N/A; P_i = 1 W; C_i = 5 nF; L_i = 0 mH;

Supply/output circuit (terminals 3 and 4):
in type of protection intrinsic safety Ex ic IIC, only for connection to an intrinsically safe circuit, with following maximum values:
U_i = 35 V; I_i = N/A; P_i = 1 W; C_i = 6 nF; L_i = 0 mH;

Input circuit (terminals 5 and 6):
in type of protection intrinsic safety Ex ic IIC, only for connection to an intrinsically safe circuit, with following maximum values:
U_i = 35 V; I_i = N/A; P_i = 1 W; C_i = 5 nF; L_i = 0 mH;

Service connector:
in type of protection intrinsic safety Ex ia IIC, for connection of E+H Service Interface FXA291 or any other certified interface, with following maximum values:
U_o = 7.3 V; I_o = 100 mA; P_o = 160 mW; C_i = 0 nF; L_i = 0 mH.

Flowmeter with Approval codes cc = BD, BH and I/O codes d = E, G

Supply/output circuit (terminals 1 and 2):
in type of protection intrinsic safety Ex ic IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:
U_i = 32 V; I_i = 300 mA; P_i = N/A; C_i = 5 nF; L_i = 10 µH;

or in accordance with FISCO, with following maximum values:
U_i = 17.5 V; I_i = N/A; P_i = N/A; C_i = 5 nF; L_i = 10 µH;

Supply/output circuit (terminals 3 and 4):
in type of protection intrinsic safety Ex ic IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:
U_i = 35 V; I_i = 300 mA; P_i = 1 W; C_i = 6 nF; L_i = 0 mH.

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Service connector:
in type of protection intrinsic safety Ex ia IIC, for connection of E+H Service Interface FXA291 or any other certified interface, with following maximum values:
U_o = 7.3 V; I_o = 100 mA; P_o = 160 mW; C_i = 0 nF; L_i = 0 mH.

All models

Interconnection cable for remote versions of Proline Prowirl C/D/F/R/O 200

When the interconnection between Transmitter and Sensor of the Remote versions of the Flowmeter is in type of protection intrinsic safety Ex ia IIC/IIIC or Ex ic IIC/IIIC, then the interconnecting cable shall have an L_c/R_c ≤ 38.2 µH/Ω.

External display connector

The type of protection of the external display connector depends on the Approval code of the equipment.

For transmitter models with Display codes e = M or L, prepared for connection of the external display of Endress+Hauser, Type FHX50, or any other suitable display in type of protection intrinsic safety Ex ia IIC/IIIC, the following maximum values apply:
U_o = 7.3 V; I_o = 157 mA; P_o = 362 mW; C_o = 388 nF; L_o = 149 µH;
maximum allowed cable capacitance C_c = 125 nF; maximum allowed cable inductance L_c = 149 µH.

In other cases, if used as interface in type of protection intrinsic safety Ex ia IIC/IIIC, the following maximum values apply:
U_o = 7.3 V; I_o = 327 mA; P_o = 800 mW; U_i = 7.3 V; C_i = 0 nF; L_i = 0 mH.
If used as non-intrinsically safe interface, U_N = 6.5 V.

Interface pressure sensor (only for Proline Prowirl)

in type of protection intrinsic safety Ex ia IIC, for connection of sensor DPC21, with following maximum values:
U_o = 4.1 V; I_o = 450 mA; P_o = 150 mW; C_o = 99.3 µF; L_o = 84 µH.

Annex 3 to EU-Type Examination Certificate KEMA 10ATEX0072, issue 9

This annex is applicable for flowmeters type Proline Promag H/P/E/W 200

Equipment

Magnetic-inductive flowmeters series Proline Promag H 200, Proline Promag P 200, Proline Promag E 200 and Proline Promag W 200 are intended for measurement of flow of conductive fluids, based on Faraday's law.

The flowmeter consists of a transmitter and an integral sensor assembly.

Depending on the applied interface, the sensor measurement signal is converted into an electrical output signal.

For detailed information regarding the ambient temperature range, the process temperature range and their relation to temperature class and maximum surface temperature, see thermal data below.

The maximum surface temperature Txx °C is referred to the enclosures at the maximum ambient temperature without a dust layer.

Marking

II 2 G	**Ex ia IIC T6…T1 Gb** or **Ex db [ia] IIC T6…T1 Gb** or
II 3 (1) G	**Ex ec [ia Ga] IIC T6…T1 Gc** or
II 3 (1) G	**Ex ic [ia Ga] IIC T6…T1 Gc** or
II 2 D	**Ex tb IIIC Txx °C Db**

Type designation

Proline Promag H 200:
  code 5H2Bbb - ccdefghiiik + #**#;
  code O5H2Bbb - ccdefghiiikl + #**#

Proline Promag P 200:
  code 5P2Bbb - ccdefghiiik + #**#;
  code O5P2Bbb - ccdefghiiikl + #**#

Proline Promag E 200:
  code 5E2Bbb - ccdefghiiik + #**#;
  code O5E2Bbb - ccdefghiiikl + #**#

Proline Promag W 200:
  code 5W2Bbb - ccdefghiiik + #**#;
  code O5W2Bbb - ccdefghiiikl + #**#

Proline Promag 200 transmitter only:
  code 5X2abb - ccdefg + #**#
  code O5X2abb - ccdefgl + #**#

bb	= Size
	02, 04, 08, 15, 22, 25, 26, 40, 50, 65, 80, 1H, 1Z, 1F, 2H or XX

cc		= Approval code
	BG	= Ex ec [ia Ga] II T6...T1 Gc [1]
	BH	= Ex ic [ia Ga] IIC T6...T1 Gc [1]
	BJ	= Ex ia IIC T6...T1 Gb
	BK, TC	= Ex db [ia] IIC T6...T1 Gb
	B5	= Ex ia IIC T6...T1 Gb
		Ex tb IIIC T** °C Db or
	B6	= Ex db [ia] IIC T6...T1 Gb
		Ex tb IIIC T** °C Db

d		= I/O - interface
	A	= 4 - 20 mA HART
	B	= 4 - 20 mA HART + pulse/frequency/switch output
	C	= 4 - 20 mA HART + 4 - 20 mA
	D	= 4 - 20 mA HART + pulse/frequency/switch output + 4 - 20 mA input
	E	= Foundation Fieldbus + pulse/frequency/switch output
	G	= Profibus PA + pulse/frequency/switch output
	X	= Sensor only

e	= Display, operation
	L, M = prepared for FHX50
	any other single number or letter

f	= Enclosure
	any single number or letter

g	= Cable gland
	any single number or letter

h	= Tube material
	any single number or letter

iii	= Process connection
	any triple numbers or letters

k	= Calibration
	any single number or letter

l	= Customer version
	any single number or letter

**	= Option (no, two or multiples of two digits)
	any combination of numbers and letters

#	= Additional options, not relevant for safety

Note 1: Approval code for Flowmeters with Display code e = L or M only

Assignment of Magnetic-inductive flowmeters series Proline Promag to replacement transmitter

Product flowmeters	Replacement transmitter type
model code	model code
5 (H/P/W/E) 2B**-…	5X2BXX-…
O5 (H/P/W/E) 2B**-…	O5X2BXX-…

Thermal data

Ambient temperature range -40 ℃ to +60 ℃
Process temperature range -40 ℃ to +150 ℃   [1]

Note 1: The specific process temperature range depends on the sensor liner material used.

The relation between ambient temperature, process temperature and temperature class and maximum surface temperature T for the flow meters is listed in the following table:

Temp class (Txx)	Max. process temperature			
	T6 (85 ℃)	T5 (100 ℃)	T4 (135 ℃)	T3...T1 (200 ℃)
Tamb (max) [1]				
40 ℃ [2]	80 ℃	95 ℃	130 ℃	150 ℃
55 ℃	--	95 ℃	130 ℃	150 ℃
60 ℃ [3]	--	95 ℃	130 ℃	150 ℃

Note 1:   For versions with approval code BH, BJ, B5 and provided with option OVP or TRM, the maximum ambient temperature decreases by 2 K
Note 2:   Tamb (max) = 35 ℃ for I/O code c = D
Note 3:   Only for I/O code A, B, E and G with pulse/frequency output limited to $P_i = 0.85$ W