



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEX KEM 10.0032	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 8	Issue 7 (2017-09-20)
Date of Issue:	2021-08-06		Issue 6 (2016-09-23)
Applicant:	Endress+Hauser Flowtec AG Kägenstrasse 7 4153 Reinach BL1 Switzerland		Issue 5 (2016-06-28)
Equipment:	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		Issue 4 (2014-03-25)
Optional accessory:			Issue 3 (2013-07-19)
Type of Protection:	Ex db, Ex ec, Ex ia, Ex ic, Ex tb		Issue 2 (2012-07-03)
Marking:	Marking as listed in the Annexes to this certificate, not repeated here because of the many variations.		

Approved for issue on behalf of the IECEx
Certification Body:

R. Schuller

Position:

Certification Manager

Signature:
(for printed version)

Date:

2021-08-06

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6825 MJ Arnhem
Netherlands





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Manufacturer: **Endress+Hauser Flowtec AG**
Kägenstrasse 7
4153 Reinach BL1
Switzerland

Additional manufacturing locations: Refer to Annex 6

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-26:2014-10 Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
Edition:3.0

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[NL/DEK/ExTR12.0029/06](#)

Quality Assessment Report:

[DE/TUN/QAR06.0004/09](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Description

Coriolis Massflow Transmitters series Proline Promass, for measurement of the mass flow of gases and liquids, based on controlled Coriolis forces.

See Annex 2 for more details of the Promass description.

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.

See Annex 3 for more details of the Promag description.

Ultrasonic Flowmeter Proline Prosonic Flow B 200 is used for measurement of a gas flow.

See Annex 4 for more details of the Prosonic description.

Vortex Flowmeters Proline Prowirl C 200, Prowirl D 200, Prowirl F 200, Prowirl R 200 and Prowirl O 200 are used for the measurement of the volume flow of gases, liquids or steam.

See Annex 5 for more details of the Prowirl description.

Electrical data

See Annex 1 for the electrical data.

SPECIFIC CONDITIONS OF USE: NO



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

1. Type of protection Ex nA as well as [ia Da] are no longer in scope
2. Assessed per IEC 60079-0 Ed. 7 and IEC 60079-7 Ed. 5.1
3. Minor constructional changes.

Annexes:

[225622000-Annex1 to ExTR12.0029.06\(Promass_Promag_Prosonic_Prowirl\).pdf](#)
[225622000-Annex2 to ExTR12.0029.06\(Promass\).pdf](#)
[225622000-Annex3 to ExTR12.0029.06\(Promag\).pdf](#)
[225622000-Annex4 to ExTR12.0029.06\(Prosonic\).pdf](#)
[225622000-Annex5 to ExTR12.0029.06\(Prowirl\).pdf](#)
[225622000-Annex6-to IECEx KEM 10.0032.pdf](#)

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 = IA, IB, IJ, I4, I6 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:

$U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1 \text{ W}$; $C_i = 5 \text{ nF}$; $L_i = 0 \text{ mH}$.

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:

$U_o = 7.3 \text{ V}$; $I_o = 100 \text{ mA}$; $P_o = 160 \text{ mW}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$.

Flowmeter with Approval codes cc = IA, IB, IJ, I4, I6 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:

$U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1 \text{ W}$; $C_i = 5 \text{ nF}$; $L_i = 0 \text{ mH}$;

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:

$U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1 \text{ W}$; $C_i = 6 \text{ nF}$; $L_i = 0 \text{ mH}$.

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:

$U_o = 7.3 \text{ V}$; $I_o = 100 \text{ mA}$; $P_o = 160 \text{ mW}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$.

Flowmeter with Approval codes cc = IA, IB, IJ, I4, I6 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:

$U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1 \text{ W}$; $C_i = 30 \text{ nF}$; $L_i = 0 \text{ mH}$;

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:
 $U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1 \text{ W}$; $C_i = 30 \text{ nF}$; $L_i = 0 \text{ mH}$.

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:
 $U_o = 7.3 \text{ V}$; $I_o = 100 \text{ mA}$; $P_o = 160 \text{ mW}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$.

Flowmeter with Approval codes cc = IA, IB, IJ, I4, I6 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:
 $U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1 \text{ W}$; $C_i = 5 \text{ nF}$; $L_i = 0 \text{ mH}$;

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:
 $U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1 \text{ W}$; $C_i = 6 \text{ nF}$; $L_i = 0 \text{ mH}$;

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:
 $U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1 \text{ W}$; $C_i = 5 \text{ nF}$; $L_i = 0 \text{ mH}$.

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:
 $U_o = 7.3 \text{ V}$; $I_o = 100 \text{ mA}$; $P_o = 160 \text{ mW}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$.

Flowmeter with Approval codes cc = IA, IB, IJ, I4, I6 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:
 $U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1.2 \text{ W}$; $C_i = 5 \text{ nF}$; $L_i = 10 \text{ }\mu\text{H}$;

or in accordance with FISCO, with following maximum values:
 $U_i = 17.5 \text{ V}$; $I_i = 550 \text{ mA}$; $P_i = 5.5 \text{ W}$; $C_i = 5 \text{ nF}$; $L_i = 10 \text{ }\mu\text{H}$;

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:
 $U_i = 30 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1 \text{ W}$; $C_i = 6 \text{ nF}$; $L_i = 0 \text{ mH}$.

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:
 $U_o = 7.3 \text{ V}$; $I_o = 100 \text{ mA}$; $P_o = 160 \text{ mW}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$.

Flowmeter with Approval codes cc = IC, IG, IK, I5, I7, TC and I/O code d = A

Supply/output circuit (terminals 1 and 2):

$U_N = 35 \text{ V dc}$

$U_m = 250 \text{ V}$.

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:

$U_o = 7.3 \text{ V}$; $I_o = 100 \text{ mA}$; $P_o = 160 \text{ mW}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$.

Flowmeter with Approval codes cc = IC, IG, IK, I5, I7, TC and I/O code d = B

Supply/output circuit (terminals 1 and 2):

$U_N = 35 \text{ V dc}$

$U_m = 250 \text{ V}$.

Supply/output circuit (terminals 3 and 4):

$U_N = 35 \text{ V dc}$

$U_m = 250 \text{ V}$

$P_{\max} = 1 \text{ W}$

NOTE: this circuit is functionally limited by an internal resistance of 760.5Ω ; 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:

$U_o = 7.3 \text{ V}$; $I_o = 100 \text{ mA}$; $P_o = 160 \text{ mW}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$.

Flowmeter with Approval codes cc = IC, IG, IK, I5, I7, TC and I/O code d = C

Supply/output circuits (terminals 1 and 2; 3 and 4):

$U_N = 30 \text{ V dc}$

$U_m = 250 \text{ V}$.

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:

$U_o = 7.3 \text{ V}$; $I_o = 100 \text{ mA}$; $P_o = 160 \text{ mW}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$.

Flowmeter with Approval codes cc = IC, IG, IK, I5, I7, TC and I/O code d = D

Supply/output circuit (terminals 1 and 2):

$U_N = 35 \text{ V dc}$

$U_m = 250 \text{ V}$.

Supply/output circuit (terminals 3 and 4):

$U_N = 35 \text{ V dc}$

$U_m = 250 \text{ V}$

Input circuit (terminals 5 and 6):

$U_N = 35 \text{ V dc}$

$U_m = 250 \text{ V}$.

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:

$U_o = 7.3 \text{ V}$; $I_o = 100 \text{ mA}$; $P_o = 160 \text{ mW}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$.

Flowmeter with Approval codes cc = IC, IG, IK, I5, I7, TC and I/O codes d = E, G

Supply/output circuit (terminals 1 and 2):

$U_N = 32 \text{ V dc}$

$U_m = 250 \text{ V}$

$P_{max} = 0.88 \text{ W}$

Supply/output circuit (terminals 3 and 4):

$U_N = 35 \text{ V dc}$

$U_m = 250 \text{ V}$

$P_{max} = 1 \text{ W}$

NOTE: this circuit is functionally limited by an internal resistance of 760.5Ω ; 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:

$U_o = 7.3 \text{ V}$; $I_o = 100 \text{ mA}$; $P_o = 160 \text{ mW}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$.

Flowmeter with Approval codes cc = ID, IH 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:

$U_i = 35 \text{ V}$; $I_i = \text{N/A}$; $P_i = 1 \text{ W}$; $C_i = 5 \text{ nF}$; $L_i = 0 \text{ mH}$.

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:

$U_o = 7.3 \text{ V}$; $I_o = 100 \text{ mA}$; $P_o = 160 \text{ mW}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$.

Flowmeter with Approval codes cc = ID, IH 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:

$U_i = 35 \text{ V}$; $I_i = \text{N/A}$; $P_i = 1 \text{ W}$; $C_i = 5 \text{ nF}$; $L_i = 0 \text{ mH}$.

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:

$U_i = 35 \text{ V}$; $I_i = \text{N/A}$; $P_i = 1 \text{ W}$; $C_i = 6 \text{ nF}$; $L_i = 0 \text{ mH}$.

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:

$U_o = 7.3 \text{ V}$; $I_o = 100 \text{ mA}$; $P_o = 160 \text{ mW}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$.

Flowmeter with Approval codes cc = ID, IH 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:

$U_i = 30 \text{ V}$; $I_i = \text{N/A}$; $P_i = 1 \text{ W}$; $C_i = 30 \text{ nF}$; $L_i = 0 \text{ mH}$;

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:

$U_i = 30 \text{ V}$; $I_i = \text{N/A}$; $P_i = 1 \text{ W}$; $C_i = 30 \text{ nF}$; $L_i = 0 \text{ mH}$.

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:

$U_o = 7.3 \text{ V}$; $I_o = 100 \text{ mA}$; $P_o = 160 \text{ mW}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$.

Flowmeter with Approval codes cc = ID, IH 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:

$U_i = 35 \text{ V}$; $I_i = \text{N/A}$; $P_i = 1 \text{ W}$; $C_i = 5 \text{ nF}$; $L_i = 0 \text{ mH}$;

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:

$U_i = 35 \text{ V}$; $I_i = \text{N/A}$; $P_i = 1 \text{ W}$; $C_i = 6 \text{ nF}$; $L_i = 0 \text{ mH}$;

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:

$U_i = 35 \text{ V}$; $I_i = \text{N/A}$; $P_i = 1 \text{ W}$; $C_i = 5 \text{ nF}$; $L_i = 0 \text{ mH}$;

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:

$U_o = 7.3 \text{ V}$; $I_o = 100 \text{ mA}$; $P_o = 160 \text{ mW}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$.

Flowmeter with Approval codes cc = ID, IH 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:

$U_i = 32 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = \text{N/A}$; $C_i = 5 \text{ nF}$; $L_i = 10 \text{ }\mu\text{H}$;

or in accordance with FISCO, with following maximum values:

$U_i = 17.5 \text{ V}$; $I_i = \text{N/A}$; $P_i = \text{N/A}$; $C_i = 5 \text{ nF}$; $L_i = 10 \text{ }\mu\text{H}$;

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:

$U_i = 35 \text{ V}$; $I_i = 300 \text{ mA}$; $P_i = 1 \text{ W}$; $C_i = 6 \text{ nF}$; $L_i = 0 \text{ mH}$.

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:

$U_o = 7.3 \text{ V}$; $I_o = 100 \text{ mA}$; $P_o = 160 \text{ mW}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$.

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 $L_c/R_c \leq 38.2 \mu\text{H}/\Omega$.

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:

$U_o = 7.3 \text{ V}$; $I_o = 157 \text{ mA}$; $P_o = 362 \text{ mW}$; $C_o = 388 \text{ nF}$; $L_o = 149 \mu\text{H}$;

maximum allowed cable capacitance $C_c = 125 \text{ nF}$; maximum allowed cable inductance $L_c = 149 \mu\text{H}$.

In other cases, if used as interface in type of protection intrinsic safety Ex ia IIC/IIIC, the following maximum values apply:

$U_o = 7.3 \text{ V}$; $I_o = 327 \text{ mA}$; $P_o = 800 \text{ mW}$; $U_i = 7.3 \text{ V}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$.

If used as non-intrinsically safe interface, $U_N = 6.5 \text{ V}$.

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:

$U_o = 4.1 \text{ V}$; $I_o = 450 \text{ mA}$; $P_o = 150 \text{ mW}$; $C_o = 99.3 \mu\text{F}$; $L_o = 84 \mu\text{H}$.

This annex is applicable for flowmeters type Proline Promass A/E/F 200

Equipment

Coriolis Massflow Transmitters series Proline Promass, for measurement of the mass flow of gases and liquids, based on controlled Coriolis forces.

The transmitter consist of an electronics enclosure and an integral sensor assembly.

Depending on the applied interface, the sensor measurement signal is converted into an electrical output signal. See Annex 1 for details.

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 T_{xx} °C is referred to the enclosures at the maximum ambient temperature without a dust layer.

Marking

**Ex ia IIC T6...T1 Gb or Ex db [ia] IIC T6...T1 Gb or
Ex ia IIC T6...T1 Ga/Gb or Ex db [ia] IIC T6...T1 Ga/Gb or
Ex ic [ia] IIC T6...T1 Ga/Gc or
Ex ec [ia Ga] IIC T6...T1 Gc
Ex ic [ia Ga] IIC T6...T1 Gc
Ex tb IIIC Txx °C Db**

Type designation

Proline Promass A 200:

code 8A2Bbb - ccdefghhiiikoo + ###
code O8ABbb - ccdefghhiiikoop + ###

Proline Promass E 200 ($T_m = 205^\circ\text{C}$):

code 8E2Cbb - ccdefghhiiikoo + ###
code O8ECbb - ccdefghhiiikoop + ###

Proline Promass E 200 ($T_m = 140^\circ\text{C}$):

code 8E2Bbb - ccdefghhiiik + ###
code O8EBbb - ccdefghhiiikp + ###

Proline Promass F 200:

code 8F2Bbb - ccdefghhiiik + ###
code O8FBbb - ccdefghhiiikp + ###

Proline Promass 200 transmitter only:

code 8X2BXX - ccdefg + ###
code 8X2BX1 - aaccdefg + ###
code 8X2CXX - ccdefgoo + ###
code O8X2BXX - ccdefgp + ###
code O8X2BX1 - aaccdefgp + ###
code O8X2CXX - ccdefgoop + ###

- aa = Size (replacement transmitter Promass F DN80 only)
80 = Promass F DN80
- bb = Size
01, 02, 04, 08, 15, 25, 40, 50, 80 or XX
- cc = Approval code ¹⁾
 - IB = Ex ia IIC T6...T1 Ga/Gb
 - IC, TC = Ex db [ia] IIC T6...T1 Ga/Gb
 - ID = Ex ic [ia] IIC T6...T1 Ga/Gc
 - IG = Ex ec IIC T6...T1 Gc or
Ex ec [ia Ga] IIC T6...T1 Gc ²⁾
 - IH = Ex ic IIC T6...T1 Gc or
Ex ic [ia Ga] IIC T6...T1 Gc ²⁾
 - IJ = Ex ia IIC T6...T1 Gb
 - IK = Ex db [ia] IIC T6...T1 Gb
 - I4 = Ex ia IIC T6...T1 Ga/Gb
Ex tb IIIC T** °C Db
 - I5 = Ex db [ia] IIC T6...T1 Ga/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, hh = Tube material
 - h: Promass E (Tm = 140°C): any single number or letter
 - hh: Promass A, Promass F, Promass E (Tm = 205°C):
Tm ≤ 150°C: with any combination of double number and/or letter
Tm ≤ 205°C: SD, SE, SF, TH
- iii = Process connection
any triple numbers or letters
- k = Calibration
any single number or letter
- oo = Device model (two digit)
A1 = product version 1
- p = 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: Transmitters with type designation (O)8F2B80 - (size code bb = 80) and replacement transmitter with type designation O8X2BX1 are Group IIB
 Note 2: Approval code for Flowmeters with Display code e = L or M only

Assignment of Coriolis Massflow Transmitters series Proline Promass to replacement transmitter

Product flowmeters		Replacement transmitter type		
model code	device model code oo =	model code	Size aa =	device model code oo =
8A2B**-...oo O8A2B**-...oo...	A1	8X2CXX-...oo O8X2CXX-...oo...	n.a.	A1
8E2B**-... O8E2B**-...	n.a.	8X2BXX-... O8X2BXX-...	n.a.	n.a.
8E2C**-...oo O8E2C**-...oo...	A1	8X2CXX-...oo O8X2CXX-...oo...	n.a.	A1
8F2B**-... (DN08...50) O8F2B**-... (DN08...50)	n.a.	8X2BXX-... O8X2BXX-...	n.a.	n.a.
8F2B**-... (DN80) O8F2B**-... (DN80)	n.a.	8X2BX1-aa... O8X2BX1-aa...	80	n.a.

Thermal data

Ambient temperature range -40 °C to +60 °C ¹⁾
 Process temperature range: -40 °C to +140 °C for Promass E 200 types 8E2B**-... and O8E2B**-...
 -50 °C to +205 °C for Promass E 200 types 8E2C**-... and O8E2C**-...
 -50 °C to +205 °C for Promass F 200

Note 1: Minimum temperature -60 °C for Flowmeters with approval code cc = IG and I/O interface codes d = A, d = B and d = D;
 minimum temperature -50 °C for Flowmeters with all approval codes other than cc = IG for Promass A, Promass F and Promass E types 8E2C**-***** + ### and O8E2C**-***** + ###

Note 2: For ambient temperatures below -40 °C, only enclosure-variants without breathing element are allowed.

The relation between ambient temperature, process temperature and temperature class and maximum surface temperature T for the different models of Massflow Transmitters is listed in the following tables:

Promass E 200 with I/O code d = A

Type designation 8E2B**-***** + ### and O8E2B**-***** + ###:

Temp class (Txx)	Max. process temperature			
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3...T1 (200 °C)
Tamb (max)				
50 °C ¹⁾	50 °C	95 °C	130 °C	140 °C
60 °C ¹⁾	--	95 °C	130 °C	140 °C

Type designation 8E2C**-***** + ### and O8E2C**-***** + ###:

Temp class (Txx)	Max. process temperature				
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3 (200 °C)	T2...T1 (300 °C)
Tamb (max)					
40 °C ¹⁾	50 °C	95 °C	130 °C	170 °C	205 °C
60 °C ¹⁾	--	95 °C	130 °C	170 °C	205 °C

Note 1: For versions with approval code IB, ID, IH, IJ, I4 and provided with option OVP or TRM, the maximum ambient temperature decreases by 2 K

Promass A and Promass F 200 with I/O code d = A

Temp class (Txx)	Max. process temperature				
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3 (200 °C)	T2...T1 (300 °C)
Tamb (max)					
40 °C ¹⁾	50 °C	95 °C ²⁾	130 °C ³⁾	170 °C ⁴⁾	205 °C ⁴⁾
60 °C ¹⁾	--	95 °C ²⁾	130 °C ³⁾	170 °C ⁴⁾	205 °C ⁴⁾

Note 1: For versions with approval code IB, ID, IH, IJ, I4 and provided with option OVP or TRM, the maximum ambient temperature decreases by 2 K

Note 2: Max. process temperature 85 °C for size code bb = 80

Note 3: Max. process temperature 110 °C for size code bb = 80

Note 4: Maximum process temperature depending on temperature specification of the sensor

Promass E 200 with Approval codes cc = IB, ID, IH, IJ, I4 and I/O code d = B

Type designation 8E2B**-***** + ### and O8E2B**-***** + ###:

Temp class (Txx)	Max. process temperature			
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3...T1 (200 °C)
Tamb (max)				
35 °C ^{1) 3)}	50 °C	95 °C	130 °C	140 °C
50 °C ^{2) 3)}	--	95 °C	130 °C	140 °C
60 °C	--	--	130 °C	140 °C

Type designation 8E2C** - ***** + ### and O8E2C** - ***** + ###:

Temp class (Txx)	Max. process temperature				
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3 (200 °C)	T2...T1 (300 °C)
Tamb (max)					
35 °C ^{1) 3)}	50 °C	95 °C	130 °C	170 °C	205 °C
50 °C ^{2) 3)}	--	95 °C	130 °C	170 °C	205 °C
55 °C	--	--	130 °C	170 °C	205 °C
60 °C	--	--	130 °C	170 °C	200 °C

Note 1: Tamb (max) = 40 °C for PFS input with $P_i = 0.85$ W

Note 2: Tamb (max) = 55 °C for PFS input with $P_i = 0.85$ W

Note 3: For versions provided with option OVP or TRM, for temperature class T6 and T5, the maximum ambient temperature decreases by 2 K

Promass A and Promass F 200 with Approval codes cc = IB, ID, IH, IJ, I4 and I/O code d = B

Temp class (Txx)	Max. process temperature				
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3 (200 °C)	T2...T1 (300 °C)
Tamb (max)					
35 °C ^{1) 3)}	50 °C	95 °C ⁴⁾	130 °C ⁵⁾	170 °C ⁶⁾	205 °C ⁶⁾
50 °C ^{2) 3)}	--	95 °C ⁴⁾	130 °C ⁵⁾	170 °C ⁶⁾	205 °C ⁶⁾
55 °C	--	--	130 °C ⁵⁾	170 °C ⁶⁾	205 °C ⁶⁾
60 °C	--	--	130 °C ⁵⁾	170 °C ⁶⁾	200 °C ⁶⁾

Note 1: Tamb (max) = 40 °C for PFS input with $P_i = 0.85$ W

Note 2: Tamb (max) = 55 °C for PFS input with $P_i = 0.85$ W

Note 3: For versions provided with option OVP or TRM, the maximum ambient temperature decreases by 2 K for temperature class T6 and T5

Note 4: Max. process temperature 85 °C for size code bb = 80

Note 5: Max. process temperature 110 °C for size code bb = 80

Note 6: Maximum process temperature depending on temperature specification of the sensor

Promass E 200 with Approval codes cc = IC, IG, IK, I5, TC and I/O code d = B

Type designation 8E2B** - ***** + ### and O8E2B** - ***** + ###:

Temp class (Txx)	Max. process temperature			
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3...T1 (200 °C)
Tamb (max)				
40 °C	50 °C	95 °C	130 °C	140 °C
50 °C ¹⁾	--	95 °C	130 °C	140 °C
60 °C	--	--	130 °C	140 °C

Type designation 8E2C**-***** + ### and O8E2C**-***** + ###:

Temp class (Txx)	Max. process temperature				
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3 (200 °C)	T2...T1 (300 °C)
Tamb (max)					
40 °C	50 °C	95 °C	130 °C	170 °C	205 °C
50 °C ¹⁾	--	95 °C	130 °C	170 °C	205 °C
55 °C	--	--	130 °C	170 °C	205 °C
60 °C	--	--	130 °C	170 °C	200 °C

Note 1: Tamb (max) = 55 °C for PFS input with $P_i = 0.85$ W

Promass A and Promass F 200 with Approval codes cc = IC, IG, IK, I5, TC and I/O code d = B

Temp class (Txx)	Max. process temperature				
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3 (200 °C)	T2...T1 (300 °C)
Tamb (max)					
40 °C	50 °C	95 °C ²⁾	130 °C ³⁾	170 °C ⁴⁾	205 °C ⁴⁾
50 °C ¹⁾	--	95 °C ²⁾	130 °C ³⁾	170 °C ⁴⁾	205 °C ⁴⁾
55 °C	--	--	130 °C ³⁾	170 °C ⁴⁾	205 °C ⁴⁾
60 °C	--	--	130 °C ³⁾	170 °C ⁴⁾	200 °C ⁴⁾

Note 1: Tamb (max) = 55 °C for PFS input with $P_i = 0.85$ W

Note 2: Max. process temperature 85 °C for size code bb = 80

Note 3: Max. process temperature 110 °C for size code bb = 80

Note 4: Maximum process temperature depending on temperature specification of the sensor

Promass E 200 with Approval codes cc = IB, IJ, I4 and I/O code d = C

Type designation 8E2B**-***** + ### and O8E2B**-***** + ###:

Temp class (Txx)	Max. process temperature			
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3...T1 (200 °C)
Tamb (max)				
35 °C ¹⁾	50 °C	95 °C	130 °C	140 °C
50 °C ¹⁾	--	95 °C	130 °C	140 °C
60 °C	--	--	130 °C	140 °C

Type designation 8E2C**-***** + ### and O8E2C**-***** + ###:

Temp class (Txx)	Max. process temperature				
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3 (200 °C)	T2...T1 (300 °C)
Tamb (max)					
35 °C ¹⁾	50 °C	95 °C	130 °C	170 °C	205 °C
50 °C ¹⁾	--	95 °C	130 °C	170 °C	205 °C
55 °C	--	--	130 °C	170 °C	205 °C
60 °C	--	--	130 °C	170 °C	200 °C

Note 1: For versions provided with option OVP or TRM, the maximum ambient temperature decreases by 2 K for temperature class T6 and T5

Promass A and Promass F 200 with Approval codes cc = IB, IJ, I4 and I/O code d = C

Temp class (Txx)	Max. process temperature				
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3 (200 °C)	T2...T1 (300 °C)
Tamb (max)					
35 °C ¹⁾	50 °C	95 °C ²⁾	130 °C ³⁾	170 °C ⁴⁾	205 °C ⁴⁾
50 °C ¹⁾	--	95 °C ²⁾	130 °C ³⁾	170 °C ⁴⁾	205 °C ⁴⁾
55 °C	--	--	130 °C ³⁾	170 °C ⁴⁾	205 °C ⁴⁾
60 °C	--	--	130 °C ³⁾	170 °C ⁴⁾	200 °C ⁴⁾

Note 1: For versions provided with option OVP or TRM, the maximum ambient temperature decreases by 2 K for temperature class T6 and T5

Note 2: Max. process temperature 85 °C for size code bb = 80

Note 3: Max. process temperature 110 °C for size code bb = 80

Note 4: Maximum process temperature depending on temperature specification of the sensor

Promass E 200 with Approval codes cc = IC, ID, IG, IH, IK, I5, TC and I/O code d = C

Type designation 8E2B**-***** + ### and O8E2B**-***** + ###:

Temp class (Txx)	Max. process temperature			
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3...T1 (200 °C)
Tamb (max)				
40 °C ¹⁾	50 °C	95 °C	130 °C	140 °C
55 °C ¹⁾	--	95 °C	130 °C	140 °C
60 °C	--	--	130 °C	140 °C

Type designation 8E2C**-***** + ### and O8E2C**-***** + ###:

Temp class (Txx)	Max. process temperature				
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3 (200 °C)	T2...T1 (300 °C)
Tamb (max)					
40 °C ¹⁾	50 °C	95 °C	130 °C	170 °C	205 °C
55 °C ¹⁾	--	95 °C	130 °C	170 °C	205 °C
60 °C	--	--	130 °C	170 °C	200 °C

Note 1: For versions with approval code ID, IG, IH and provided with option OVP or TRM, the maximum ambient temperature decreases by 2 K for temperature class T6 and T5

Promass A and Promass F 200 with Approval codes cc = IC, ID, IG, IH, IK, I5, TC and I/O code d = C

Temp class (Txx)	Max. process temperature				
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3 (200 °C)	T2...T1 (300 °C)
Tamb (max)					
40 °C ¹⁾	50 °C	95 °C ²⁾	130 °C ³⁾	170 °C ⁴⁾	205 °C ⁴⁾
55 °C ¹⁾	--	95 °C ²⁾	130 °C ³⁾	170 °C ⁴⁾	205 °C ⁴⁾
60 °C	--	--	130 °C ³⁾	170 °C ⁴⁾	200 °C ⁴⁾

Note 1: For versions with approval code ID, IG, IH and provided with option OVP or TRM, the maximum ambient temperature decreases by 2 K for temperature class T6 and T5

Note 2: Max. process temperature 85 °C for size code bb = 80

Note 3: Max. process temperature 110 °C for size code bb = 80

Note 4: Maximum process temperature depending on temperature specification of the sensor

Promass E 200 with I/O code d = D

Type designation 8E2B**_***** + ### and O8E2B**_***** + ###:

Temp class (Txx)	Max. process temperature			
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3 ...T1 (200 °C)
Tamb (max)				
35 °C ¹⁾	50 °C	95 °C	130 °C	140 °C
50 °C ¹⁾	--	95 °C	130 °C	140 °C
55 °C	--		130 °C	140 °C

Type designation 8E2C**_***** + ### and O8E2C**_***** + ###:

Temp class (Txx)	Max. process temperature				
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3 (200 °C)	T2 ...T1 (300 °C)
Tamb (max)					
35 °C ¹⁾	50 °C	95 °C	130 °C	170 °C	205 °C
50 °C ¹⁾	50 °C	95 °C	130 °C	170 °C	205 °C
55 °C		95 °C	130 °C	170 °C	205 °C
60 °C	--		130 °C	170 °C	205 °C

Note 1: For versions with approval code IB, ID, IG, IH, IJ, I4 and provided with option OVP or TRM, for temperature class T6 and T5, the maximum ambient temperature decreases by 2 K

Promass A and Promass F 200 with I/O code d = D

Temp class (Txx)	Max. process temperature				
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3 (200 °C)	T2 ...T1 (300 °C)
Tamb (max)					
35 °C ¹⁾	50 °C	95 °C ²⁾	130 °C ³⁾	170 °C ⁴⁾	205 °C ⁴⁾
50 °C ¹⁾	50 °C	95 °C ²⁾	130 °C ³⁾	170 °C ⁴⁾	205 °C ⁴⁾
55 °C		95 °C ²⁾	130 °C ³⁾	170 °C ⁴⁾	205 °C ⁴⁾
60 °C	--		130 °C ³⁾	170 °C ⁴⁾	205 °C ⁴⁾

Note 1: For versions with approval code IB, ID, IG, IH, IJ, I4 and provided with option OVP or TRM, for temperature class T6 and T5, the maximum ambient temperature decreases by 2 K

Note 2: Max. process temperature 85 °C for size code bb = 80

Note 3: Max. process temperature 110 °C for size code bb = 80

Note 4: Maximum process temperature depending on temperature specification of the sensor

Promass E 200 with I/O codes d = E, G

Type designation 8E2B**_***** + ### and O8E2B**_***** + ###:

Temp class (Txx)	Max. process temperature			
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3 ...T1 (200 °C)
Tamb (max)				
40 °C ^{1) 3)}	55 °C	95 °C	130 °C	140 °C
55 °C ^{2) 3)}	--	95 °C	130 °C	140 °C
60 °C	--	--	130 °C	140 °C

Type designation 8E2C**_***** + ### and O8E2C**_***** + ###:

Temp class (Txx)	Max. process temperature				
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3 (200 °C)	T2 ...T1 (300 °C)
Tamb (max)					
40 °C ^{1) 3)}	50 °C	95 °C	130 °C	170 °C	205 °C
55 °C ^{2) 3)}	--	95 °C	130 °C	170 °C	205 °C
60 °C	--	--	130 °C	170 °C	205 °C

Note 1: Tamb (max) = 50 °C for PFS output with $P_i = 0.85$ W

Note 2: Tamb (max) = 60 °C for PFS output with $P_i = 0.85$ W

Note 3: For versions with approval code IB, ID, IG, IH, IJ, I4 and provided with option OVP or TRM, the maximum ambient temperature decreases by 2 K for temperature class T6 and T5

Promass A and Promass F 200 with I/O code d = E, G

Temp class (Txx)	Max. process temperature				
	T6 (85 °C)	T5 (100 °C)	T4 (135 °C)	T3 (200 °C)	T2 ...T1 (300 °C)
Tamb (max)					
40 °C ^{1) 3)}	50 °C	95 °C ⁴⁾	130 °C ⁵⁾	170 °C ⁶⁾	205 °C ⁶⁾
55 °C ^{2) 3)}	--	95 °C ⁴⁾	130 °C ⁵⁾	170 °C ⁶⁾	205 °C ⁶⁾
60 °C	--	--	130 °C ⁵⁾	170 °C ⁶⁾	205 °C ⁶⁾

Note 1: Tamb (max) = 50 °C without PFS output

Note 2: Tamb (max) = 60 °C without PFS output

Note 3: For versions with approval code IB, ID, IG, IH, IJ, I4 and provided with option OVP or TRM, the maximum ambient temperature decreases by 2 K for temperature class T6 and T5

Note 4: Max. process temperature 85 °C for size code bb = 80

Note 5: Max. process temperature 110 °C for size code bb = 80

Note 6: Maximum process temperature depending on temperature specification of the sensor

Annex 6 to Certificate of Conformity IECEx KEM 10.0032

Manufacturing locations

1. Endress+Hauser Flowtec AG
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