1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 16ATEX2219X** Issue: **7**

4 Equipment: **Proline Promass 300/500, Proline Cubemass 300/500 and Proline Promag 300/500**

5 Applicant: **Endress+Hauser Flowtec AG**

6 Address: Endress+Hauser Flowtec AG Kaegenstrasse 7, CH-4153, Reinach BL, Switzerland
Endress+Hauser Flowtec AG , Cernay, France
Endress+Hauser Flowtec (India) Pvt. Ltd. Waluj, India
Endress+Hauser Flowtec AG Div. U.S.A. Greenwood, USA
Endress+Hauser Flowtec (China) Co. Ltd. Suzhou, P.R. China
Endress + Hauser Flowtec (Brazil) Fluxômetros Ltda., Estrada Muncipal Antônio Sesti, 600 A - Recreio Costa Verde – Itatiba / SP, CEP 13254 – 085 – Brazil
Endress+Hauser Flowtec (China) Co. Ltd.,
Site 1: China- Singapore Suzhou Industrial Park (SIP), Su-Hong-Zhong-Lu No. 465
Site 2: Suzhou Industrial Park (SIP), Jiang-Tian-Li-Lu No. 31, 215021 Suzhou, P.R. China

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

8 CSA Group Netherlands B.V., notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN IEC 60079-0:2018	EN 60079-1:2014	EN 60079-11:2012
EN 60079-26:2015	EN 60079-31:2014	EN 60079-7:2015

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall be as defined in the Certificate Annexe.

Project Number 80036352

Signed: J A May

Title: Director of Operations

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SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE **Sira 16ATEX2219X**
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13 **DESCRIPTION OF EQUIPMENT**

The Proline 300 / 500 is a platform used for flowmeters of type Proline Promag 300, Proline Promag 500, Proline Promass 300, Proline Promass 500, Proline Cubemass 300, Proline Cubemass 500, Proline Prosonic Flow G 300, Proline Prosonic Flow G 500, Proline Prosonic Flow P 500, Proline t-mass 300 and Proline t-mass 500.

All flowmeters are available in two versions, a compact version (Proline 300) and a remote version (Proline 500). The remote Proline 500 version is also available as a version with ISEM integrated in transmitter where the sensor sends analog signals to the transmitter and a version with ISEM integrated in sensor where the sensor is connected by a digital circuit to the transmitter with additional electronics located at the sensor for assessment of the sensor signals. Proline Prosonic Flow G 500 and Proline t-mass 500 are not available as a version with ISEM integrated in transmitter.

For all versions of the Proline 300, an additional remote Display, e.g. DKX001 or ODKX001, may be connected to the electronics. The remote display is available in two options for the user. Either it is ordered as a separate product or by the product of the flowmeter.

Different electronics are used for the flowmeters where the sensor is installed in a Zone 1 location and where the transmitter can be installed in a safe area or Zone 1 or 2 locations. All versions of electronics are designed either with intrinsically safe IO's (Ex "ia" for Zone 1) or with non-intrinsically safe IO's. A mix of type of protections, Ex "i" in combination with non-Ex "i" IO's is not allowed.

All Proline Promag 300/500, Proline Promass 300/500, Proline Prosonic Flow G 300/500 and Proline t-mass 300/500 flowmeters are available for an ambient temperature of -40°C to +60°C and optional -50°C to +60°C.

In addition, the version of the sensor of Proline Promass F/X/Q 500 with ISEM electronic in transmitter is available also for -60°C to +60°C ambient. Proline Prosonic Flow P 500 sensors are available for an ambient temperature of -20/-40/-50°C to +80°C and Proline Prosonic Flow P 500 transmitters are available for an ambient temperature of -40°C to +60°C and optional -50°C to +60°C.

An antenna bushing at cable entry for transmitter enclosures in type of protection Ex "eb", and Ex "tb" is available for connection of an external antenna.

Variation 1 - This variation introduced the following changes:

i. Minor changes to product order codes of Promag W500.
ii. Minor corrections to product markings.
iii. Introduction of remote display as part of the flowmeter.
iv. Minor corrections to the product drawings

Variation 2 - This variation introduced the following changes:

i. The addition of model code for replacement transmitter OEM version and new assignment table of replacement transmitter to product of flowmeter.
ii. The addition of a new, certified sensor" Promass A" sensor with changes to model code.
iii. Update in the ambient temperature reduced optionally to -60°C for sensors of Promass F/Q/X 500 with code for integrated ISEM electronic k = "B" as described in the technical description document
iv. All the corresponding drawings were updated to recognise minor administrative amendments.
v. The introduction of the Proline Promass 300/500 and Proline Cubemass 300/500 flowmeters. These devices were previously covered by certificate Sira 16ATEX2177X using EN 60079-26:2015 as an

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assessment standard; therefore, this document needs to be recognised in the list of supporting documents. (Note: As a result of this change, Sira 16ATEX2177X is no longer required and will therefore be suspended.)

- Previously, EN 60079-15 was specified as a supporting document, this was an error and therefore this standard was removed.

Variation 3 – This variation introduced the following changes:

i. The recognition of minor drawings amendments, none of which affect compliance with the applicable standards.
ii. Minor correction of ATEX marking nameplate to separate the ATEX markings from IECEx.

Variation 4 – This variation introduced the following changes:

i. Introduction of new model version Proline Prosonic Flow G 300/500
ii. Introduction of new model version Proline t-mass 300/500
iii. Introduction of new Antenna bushing model H337 for external antenna connection with the Proline 300/500 transmitter
iv. Addition of new order codes for IO1 current output (active) with I/O code dd = “CC” and “CD”
v. Addition of new order codes for IO2, IO3 and IO4 with I/O code “K” for pulse output Ex i (passive) and with I/O code “L” for pulse output non Ex i
vi. Addition of new product order codes to include for Promag W300 and Promag W500
vii. Revised standard IEC 60079-0, Edition 6 to IEC60079-0, Edition 7.0
viii. The recognition of drawings amendments, none of which affect compliance with the applicable standards

Variation 5 – This variation introduced the following changes:

i. Addition of product order code “ww = A2” for model Proline Promag 300/500, Proline Prosonic 300/500 and Proline t-mass 300/500. See Certificate Annexe for order code details
ii. Correction of entity parameter for IO1 order codes: CA, CB (Ci= 0, changed to Ci =6nF) in the applicable drawings
iii. The recognition of drawings amendments, none of which affect compliance with the applicable standards.

Variation 6 – This variation introduced the following changes:

i. Changes in nomenclature (“Digital” is now referred as ISEM integrated in sensor, “Analog” is now referred to as ISEM integrated in transmitter)
ii. Introduction of new flange sizes for Proline Promass 300/500 for High Temperature (HT) flowmeters.
iii. Update of related product documentation
iv. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, EN 60079-0:2012/A11:2013 was replaced by EN IEC 60079-0:2018.
v. The description was amended to reflect the above changes
vi. Addition of two manufacturing locations in China as shown on TÜV QAN, TÜV 98 ATEX 1348Q

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Issue 0: See Cover Sheet of IECEx Test Report CA/CSA/ExTR16.0031/00 for a full list of drawings covered by this issue.

Issue 1: See Cover Sheet of IECEx Test Report CA/CSA/ExTR16.0031/01 for a full list of drawings covered by this issue.

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SCHEDULE

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Issue 2: See Cover Sheet of IECEx Test Report CA/CSA/ExTR16.0031/02 for a full list of drawings covered by this issue. These drawings were rationalised and supersede those detailed in Issues 0 and 1

Issue 3: See Cover Sheet of IECEx Test Report CA/CSA/ExTR16.0031/03 for a full list of drawings covered by this issue. These drawings were rationalised and supersede those detailed in Issue 2 and earlier.

Issue 4: See Cover Sheet of IECEx Test Report CA/CSA/ExTR16.0031/04 for a full list of drawings covered by this issue. These drawings were rationalised and supersede those detailed in Issue 3 and earlier.

Issue 5: See Cover Sheet of IECEx Test Report CA/CSA/ExTR16.0031/05 for a full list of drawings covered by this issue. These drawings were rationalised and supersede those detailed in Issue 4 and earlier.

Issue 6: No new drawings were introduced

Issue 7: See Cover Sheet of IECEx Test Report CA/CSA/ExTR16.0031/06 for a full list of drawings covered by this issue. These drawings were rationalised and supersede those detailed in Issue 5 and earlier.

14.2 **Associated Sira Reports and Certificate History**

Issue	Date	Report no.	Comment
0	19 July 2016	R70084415A	The release of the prime certificate.
1	23 February 2017	R70110427A	The introduction of Variation 1.
2	26 September 2017	R70140398A	The introduction of Variation 2.
3	12 January 2018	R70162908A	The introduction of Variation 3.
4	25 March 2019	R70214610A	The introduction of Variation 4.
5	23 August 2019	R80012315A	The introduction of Variation 5
6	15 October 2019	0626	Transfer of certificate Sira 16ATEX2219X from Sira Certification Service to CSA Group Netherlands B.V.
7	11 August 2020	R80036352A	The introduction of Variation 6.

15 **SPECIFIC CONDITIONS OF USE** (denoted by X after the certificate number)

15.1 All equipment of the measurement system shall be included in the equipotential bonding. Along the intrinsically safe circuits potential equalization must exist.

15.2 The sensors may only be used for those process media, for which the wetted parts are known to be suitable

15.3 Plastic transmitter enclosures for the order codes listed below shall be installed in an area of at least pollution degree 2.

Proline Promass 8*5***-(BI/BJ)*******A....,
Proline Promass O8*5***-(BI/BJ)*******A....,
Proline Promass 8X5* XX -(BI/BJ) *******A....
Proline Promass O8X5* XX -(BI/BJ) *******A....

Proline Promag 5*5***-(BJ)*******A....,
Proline Promag O5*5***-(BJ)*******A....,
Proline Promag 5X5* XX -(BJ) *******A....
Proline Promag O5X5* XX -(BJ) *******A....

Proline Prosonic Flow G 9*5***-(BJ)...,
Proline Prosonic Flow G O9*5***-(BJ) ...,
Proline Prosonic Flow G 9X5*XX-(BJ)...,
Proline Prosonic Flow G O9X5*XX-(BJ)...

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Proline t-mass 6*5***-(BJ)...,
Proline t-mass O6*5***-(BJ) ...,
Proline t-mass 6X5*XX-(BJ)...,
Proline t-mass O6X5*XX-(BJ)...

15.4 Equipment with the following order codes for Proline Promass shall be installed using a transient protection not exceeding 140% of the peak rated voltage value at the supply terminals to the equipment.

For order code 'dd' = BM, BN

15.5 If the flowmeter system is connected to remote display type DKX001, the approval codes 'dd' for the flowmeter shall be paired to the approval code "bb" of the remote display as follows:

Approval code 'dd' of Proline Promass 300	Approval code 'bb' of remote display DKX001/ODKX001 as covered by DEKRA15ATEX0044
BA, BB, BC or BD	BE, BF or BG

15.6 Equipment with the following order codes for Proline Promag, Proline Prosonic Flow G and Proline t-mass shall be installed using a transient protection not exceeding 140% of the peak rated voltage value at the supply terminals to the equipment.

For order code 'dd' = BN

15.7 For remote versions of Promag flowmeters with a flat gasket within the sensor terminal box, the user shall ensure that flat cover seals are not bent into the seal surface before securing the cover. Seals that are not flat shall be replaced.

15.8 If the flowmeter system is connected to remote display type DKX001, the approval codes 'dd' for the flowmeter shall be paired to the approval code "bb" of the remote display as follows:

Approval code 'dd' of Proline Promag 300, Proline Prosonic Flow G 300 and Proline t-mass 300	Approval code 'bb' of remote display DKX001/ODKX001 as covered by DEKRA15ATEX0044
BB, BD, B7 or B8	BE, BF or BG

15.9 For remote versions of Promag flowmeters with a flat gasket within the sensor terminal box, the user shall ensure that flat cover seals are not bent into the seal surface before securing the cover. Seals that are not flat shall be replaced.

15.10 The equipment has non-conductive surfaces which are a potential electrostatic charging hazard - see instructions for guidance.

Applicable to Antenna bushing H337 when used with Proline 300/500 transmitter enclosure:

15.11 Antenna supplied by Endress+Hauser shall be used only. As an alternate, any passive omni-directional RF antenna with or without cable is permitted to be connected when meeting the following parameters:

a) The antenna connected to the antenna bushing shall have an impedance of at least 50Ω
b) The rated frequency range of the antenna shall not exceed 1710MHz ... 6000MHz
c) The rated power of the antenna shall be at least 100mW

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15.12 The antenna bushing type H337 shall be mounted wrench tight to the transmitter enclosure to maintain the ingress protection of the enclosure

15.13 The RF antenna or the RF antenna cable shall be fitted with a Series N (MIL-STD-348) plug connector. The coupling nut of the Series N plug connector shall be hand tightened only

15.14 The metal enclosure of the Antenna Bushing H337 shall be securely connected to local earth, typically via the enclosure to which it is connected

16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II** (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

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Certificate Annexe

Certificate Number: **Sira 16ATEX2219X**

Equipment: **Proline Promag 300/500, Proline Promass 300/500, Proline Cubemass 300/500, Proline Prosonic Flow 300/500, Proline t-mass 300/500**

Applicant: **Endress+Hauser Flowtec AG**

1 Proline Promass 300/500, Proline Cubemass 300/500

1.1 Marking

Proline Promass 500 analog, Proline Cubemass 500 with ISEM integrated in transmitter				
i. Model Code: 8*5*** – dd*ff****B**********+#**# O8*5*** – dd*ff****B**********+#**#				
dd = approval	ff = I/O	Device	ATEX marking	Marking of Ex protection
BA	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	⟨Ex⟩ II2(1)G ⟨Ex⟩ II2(1)D	Ex db eb ia [ia Ga] IIB T6...T5 Gb Ex tb [ia Da] IIIC T85°C Db
		Sensor	⟨Ex⟩ II1/2G ⟨Ex⟩ II2G ⟨Ex⟩ II2D	Ex ia IIB T6...T1 Ga/Gb [1)] Ex ia IIB T6...T1 Gb Ex ia tb IIIC T** °C Db
BB	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	⟨Ex⟩ II2(1)G ⟨Ex⟩ II2(1)D	Ex db eb ia [ia Ga] IIC T6... T5 Gb Ex tb [ia Da] IIIC T85°C Db
		Sensor	⟨Ex⟩ II1/2G ⟨Ex⟩ II2G ⟨Ex⟩ II2D	Ex ia IIC T6...T1 Ga/Gb [1)] Ex ia IIC T6...T1 Gb Ex ia tb IIIC T** °C Db
BC	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	⟨Ex⟩ II2(1)G ⟨Ex⟩ II2(1)D	Ex db ia [ia Ga] IIB T6... T5 Gb Ex tb [ia Da] IIIC T85°C Db
		Sensor	⟨Ex⟩ II1/2G ⟨Ex⟩ II2G ⟨Ex⟩ II2D	Ex ia IIB T6...T1 Ga/Gb [1)] Ex ia IIB T6...T1 Gb Ex ia tb IIIC T** °C Db
BD	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	⟨Ex⟩ II2(1)G ⟨Ex⟩ II2(1)D	Ex db ia [ia Ga] IIC T6... T5 Gb Ex tb [ia Da] IIIC T85°C Db
		Sensor	⟨Ex⟩ II1/2G ⟨Ex⟩ II2G ⟨Ex⟩ II2D	Ex ia IIC T6...T1 Ga/Gb [1)] Ex ia IIC T6...T1 Gb Ex ia tb IIIC T** °C Db

1) The following sensors are marked for EPL Gb: Promass A DN1, Promass H DN8...50, Promass I DN 8...80

Proline Promass 500 analog, Proline Cubemass 500 analog				
Model Code: 8*5*** – dd*ff****B**********+#**# O8*5*** – dd*ff****B**********+#**#				
dd = approval	ff = I/O	Device	ATEX marking	Marking of Ex protection transmitter
BA	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	⟨Ex⟩ II2(1)G ⟨Ex⟩ II2(1)D	Ex db eb ia [ia Ga] IIB T6...T5 Gb Ex tb [ia Da] IIIC T85°C Db
		Sensor	⟨Ex⟩ II1/2G ⟨Ex⟩ II2G ⟨Ex⟩ II2D	Ex ia IIB T6...T1 Ga/Gb [1)] Ex ia IIB T6...T1 Gb Ex ia tb IIIC T** °C Db
BB	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	⟨Ex⟩ II2(1)G ⟨Ex⟩ II2(1)D	Ex db eb ia [ia Ga] IIC T6... T5 Gb Ex tb [ia Da] IIIC T85°C Db
		Sensor	⟨Ex⟩ II1/2G ⟨Ex⟩ II2G ⟨Ex⟩ II2D	Ex ia IIC T6...T1 Ga/Gb [1)] Ex ia IIC T6...T1 Gb Ex ia tb IIIC T** °C Db
BC	CA, CB, CC, CD, HA, TA, BA, BB,	Transmitter	⟨Ex⟩ II2(1)G ⟨Ex⟩ II2(1)D	Ex db ia [ia Ga] IIB T6... T5 Gb Ex tb [ia Da] IIIC T85°C Db

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Certificate Annexe

Certificate Number: **Sira 16ATEX2219X**

Equipment: **Proline Promag 300/500, Proline Promass 300/500, Proline Cubemass 300/500, Proline Prosonic Flow 300/500, Proline t-mass 300/500**

Applicant: **Endress+Hauser Flowtec AG**

Proline Promass 500 analog, Proline Cubemass 500 analog				
Model Code: 8*5*** – dd*ff****B**********+#**# O8*5*** – dd*ff****B**********+#**#				
	GA, LA, NA, RA, SA, MA	Sensor	⟨Ex⟩ II1/2G ⟨Ex⟩ II2G ⟨Ex⟩ II2D	Ex ia IIB T6...T1 Ga/Gb [1)] Ex ia IIB T6...T1 Gb Ex ia tb IIIC T** °C Db
BD	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	⟨Ex⟩ II2(1)G ⟨Ex⟩ II2(1)D	Ex db ia [ia Ga] IIC T6... T5 Gb Ex tb [ia Da] IIIC T85°C Db
		Sensor	⟨Ex⟩ II1/2G ⟨Ex⟩ II2G ⟨Ex⟩ II2D	Ex ia IIC T6...T1 Ga/Gb [1)] Ex ia IIC T6...T1 Gb Ex ia tb IIIC T** °C Db

1) The following sensors are marked for EPL Gb: Promass A DN1, Promass H DN8...50, Promass I DN 8...80

Proline Promass 500 digital, Proline Cubemass 500 with ISEM integrated in sensor				
Model Code: 8*5*** – dd*ff****A**********+#**# O8*5*** – dd*ff****A**********+#**#				
dd = Approval	ff = I/O	Device	ATEX marking	Marking of Ex protection transmitter
BI	BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	⟨Ex⟩ II(1)G ⟨Ex⟩ II(1)D	[Ex ia] IIC [Ex ia] IIIC
		Sensor	⟨Ex⟩ II1/2G ⟨Ex⟩ II2G ⟨Ex⟩ II2D	Ex ia IIB T6...T1 Ga/Gb [1)] Ex ia IIB T6...T1 Gb Ex ia tb IIIC T** °C Db
BJ	BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	⟨Ex⟩ II(1)G ⟨Ex⟩ II(1)D	[Ex ia] IIC [Ex ia] IIIC
		Sensor	⟨Ex⟩ II1/2G ⟨Ex⟩ II2G ⟨Ex⟩ II2D	Ex ia IIC T6...T1 Ga/Gb [1)] Ex ia IIC T6...T1 Gb Ex ia tb IIIC T** °C Db
BM	HA, TA, CA, CB, CC, CD	Transmitter	⟨Ex⟩ II(1)G ⟨Ex⟩ II(1)D	[Ex ia] IIC [Ex ia] IIIC
		Sensor	⟨Ex⟩ II1/2G ⟨Ex⟩ II2G ⟨Ex⟩ II2D	Ex ia IIB T6...T1 Ga/Gb [1)] Ex ia IIB T6...T1 Gb Ex ia tb IIIC T** °C Db
	BA, BB, GA, NA, RA, SA. MA	Transmitter	⟨Ex⟩ II(1)G ⟨Ex⟩ II(1)D	[Ex ia] IIC [Ex ia] IIIC
		Sensor	⟨Ex⟩ II1/2G ⟨Ex⟩ II2G ⟨Ex⟩ II2D	Ex ia IIB T6...T1 Ga/Gb [1)] Ex ia IIB T6...T1 Gb Ex ia tb IIIC T** °C Db
BN	HA, TA, CA, CB, CC, CD	Transmitter	⟨Ex⟩ II(1)G ⟨Ex⟩ II(1)D	[Ex ia] IIC [Ex ia] IIIC
		Sensor	⟨Ex⟩ II1/2G ⟨Ex⟩ II2G ⟨Ex⟩ II2D	Ex ia IIC T6...T1 Ga/Gb [1)] Ex ia IIC T6...T1 Gb Ex ia tb IIIC T** °C Db
	BA, BB, GA, NA, RA, SA. MA	Transmitter	⟨Ex⟩ II(1)G ⟨Ex⟩ II(1)D	[Ex ia] IIC [Ex ia] IIIC
		Sensor	⟨Ex⟩ II1/2G ⟨Ex⟩ II2G ⟨Ex⟩ II2D	Ex ia IIC T6...T1 Ga/Gb [1)] Ex ia IIC T6...T1 Gb Ex ia tb IIIC T** °C Db

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1) The following sensors are marked for EPL Gb: Promass A DN1, Promass H DN8...50, Promass I DN 8...80

1.2 Order Code

Extended order code Proline Promass 300 and Cubemass 300:

8a3bcc – ddeffghjlpsstttvww + ##**

O8a3bcc – ddeffghjlpssttvwwyy + ##** for OEM-version

8x3bxx – ddeffghjlprrssww + ##** for replacement transmitter

O8x3bxx – ddeffghjlprrsswwyy + ##** for replacement transmitter OEM

Extended order code Proline Promass 500 and Cubemass 500:

8a5bcc – ddeffghijkmnopssttvww + ##**

O8a5bcc – ddeffghijkmnopssttvwwyy + ##** for OEM-version

8x5bxx – ddeffghijkmopqqrrssww + ##** for replacement transmitter

O8x5bxx – ddeffghijkmopqqrrsswwyy + ##** for replacement transmitter OEM

a = **Type of sensor**
A = Promass A; C = Cubemass C; E = Promass E; F = Promass F; H = Promass H; I = Promass I; O = Promass O; P = Promass P; Q = Promass Q; S = Promass S; X = Promass X

b = **Generation**
B = Promass A (type 8A*B**, O8A*B**); Cubemass C; Promass E; Promass F; Promass H; Promass I; Promass O; Promass P; Promass Q; Promass S; Promass X
C = Promass A (type 8A*C**, O8A*C**)

cc = **Size**
any double digits with combination of number or letter

Certificate Annexe

Certificate Number: **Sira 16ATEX2219X**

Equipment: **Proline Promag 300/500, Proline Promass 300/500, Proline Cubemass 300/500, Proline Prosonic Flow 300/500, Proline t-mass 300/500**

Applicant: **Endress+Hauser Flowtec AG**

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dd **=** **Approval**

Proline Promass 300:

BA =Ex db eb [ia] IIB T6...T1 Gb
Ex tb IIIC T** Db
BB =Ex db eb [ia] IIC T6...T1 Gb
Ex tb IIIC T** Db
BC =Ex db [ia] IIB T6...T1 Gb
Ex tb IIIC T** Db
BD =Ex db [ia] IIC T6...T1 Gb
Ex tb IIIC T** Db

Proline Promass 500:

BA =Ex db eb [ia] IIB T6...T4 Gb	(transmitter)
Ex ia IIB T6...T1 Gb	(sensor)
Ex tb IIIC T** Db	(transmitter + sensor)
BB =Ex db eb [ia] IIC T6...T4 Gb	(transmitter)
Ex ia IIC T6...T1 Gb	(sensor)
Ex tb IIIC T** Db	(transmitter + sensor)
BC =Ex db [ia] IIB T6...T4 Gb	(transmitter)
Ex ia IIB T6...T1 Gb	(sensor)
Ex tb IIIC T** Db	(transmitter + sensor)
BD =Ex db [ia] IIC T6...T4 Gb	(transmitter)
Ex ia IIC T6...T1 Gb	(sensor)
Ex tb IIIC T** Db	(transmitter + sensor)
BI =[Ex ia] IIC	(transmitter)
Ex ia IIB T6...T1 Gb	(sensor)
Ex tb IIIC T** Db	(sensor)
BJ =[Ex ia] IIC	(transmitter)
Ex ia IIC T6...T1 Gb	(sensor)
Ex tb IIIC T** Db	(sensor)
BM =[Ex ia] IIC	(transmitter)
Ex ia IIB T6...T1 Gb	(sensor)
Ex tb IIIC T** Db	(sensor)
BN =[Ex ia] IIC	(transmitter)
Ex ia IIC T6...T1 Gb	(sensor)
Ex tb IIIC T** Db	(sensor)

e **=** **Power Supply**

D = 24Vdc
E = 100-230Vac
I = 100-230Vac / 24Vdc
X = sensor only

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ff = **Input / Output 1**

- BA = 4-20mA HART
- BB = 4-20mA WHART
- CA = 4-20mA HART Ex i (passive)
- CB = 4-20mA WHART Ex i (passive)
- CC = 4-20mA HART Ex i (active)
- CD = 4-20mA WHART Ex i (active)
- GA = Profibus PA
- HA = Profibus PA Ex i
- LA = Profibus DP
- NA = EtherNet/IP
- RA = Profinet IO
- SA = Foundation Fieldbus
- TA = Foundation Fieldbus Ex i
- MA = Modbus RS485
- X = sensor only

g = **Input / Output 2**

- A = without Input/Output 2
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- L = Pulse output Ex i
- K = Pulse output
- X = sensor only

h = **Input / Output 3**

- A = without Input/Output 3
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- L = Pulse output Ex i
- K = Pulse output
- X = sensor only

i	=	**Input / Output 4** (Proline 500 only) A = without Input/Output 4 B = 4-20mA C = 4-20mA Ex i (passive) D = Configurable IO E = Pulse/Frequency/Switch output F = Pulse output phase-shifted G = Pulse/Frequency/Switch output Ex i H = Relay I = 4-20mA input J = Status input L = Pulse output Ex i K = Pulse output X = sensor only
j	=	**Display / Operation** with remote Display : O without remote Display : any single number or letter except O
k	=	**Integrated ISEM electronic** (Proline 500 only) A = Sensor B = Transmitter
l	=	**Housing** (Proline 300 only) any single number or letter
m	=	**Transmitter Housing** (Proline 500 only) any single number or letter
n	=	**Sensor Housing** (Proline 500 only) any single number or letter
o	=	**Cable Sensor Connection** (Proline 500 only) any single number or letter
p	=	**Cable Entry** any single number or letter
qq	=	**Upgrade Kid** any double digits with combination of number or letter
rr	=	**Existing Product** (refer to section 1.3 for assignment table of flowmeter to replacement transmitter) any double digits with combination of number or letter
ss	=	**Measuring tube material** any double digits with combination of number or letter
ttt	=	**Process connection** any triple digits with combination of number or letter
v	=	**Calibration** any single number or letter
ww	=	**Device model (two digit)** (refer to section 1.3 for assignment table of flowmeter to replacement transmitter) A1 = product version 1 A2 = product version 2
yy	=	**Customer version (two digit)** any double digits with combination of number or letter

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****** = **Option in two digits (none, two or multiple of two digits)**
any combination of number and/or letter

#, + = **Signs used as indicator for optional abbreviation of extended order code**

1.3 Assignment of Flowmeter to Replacement Transmitter

The replacement transmitters are assigned to the flowmeter Proline Promass 300/500 as follows:

Product flowmeters			**Replacement transmitter type**			
model code	**Generation code b =**	**device model code ww =**	**model code**	**Generation code b =**	**existing product rr =**	**device model code ww =**
8A***b****-...**ww**, O8A***b****-...**ww**	B	A1	8x***b**xx-...**rr**...**ww**, O8x***b**xx-...**rr**...**ww**	B	AA	A1
8C***b****-...**ww**, O8C***b****-...**ww**	B	A1	8x***b**xx-...**rr**...**ww**, O8x***b**xx-...**rr** ...**ww**	B	C*	A1
8E***b****-...**ww**, O8E***b****-...**ww**	B	A1	8x***b**xx-...**rr**...**ww**, O8x***b**xx-...**rr**...**ww**	B	E*	A1
8F***b****-...**ww**, O8F***b****-...**ww**	B	A1	8x***b**xx-...**rr**...**ww**, O8x***b**xx-...**rr**...**ww**	B	F*	A1
8H***b****-...**ww**, O8H***b****-...**ww**	B	A1	8x***b**xx-...**rr**...**ww**, O8x***b**xx-...**rr**...**ww**	B	H*	A1
8I***b****-...**ww**, O8I***b****-...**ww**	B	A1	8x***b**xx-...**rr**...**ww**, O8x***b**xx-...**rr**...**ww**	B	I*	A1
8O***b****-...**ww**, O8O***b****-...**ww**	B	A1	8x***b**xx-...**rr**...**ww**, O8x***b**xx-...**rr**...**ww**	B	O*	A1
8P***b****-...**ww**, O8P***b****-...**ww**	B	A1	8x***b**xx-...**rr**...**ww**, O8x***b**xx-...**rr**...**ww**	B	P*	A1
8Q***b****-...**ww**, O8Q***b****-...**ww**	B	A1	8x***b**xx-...**rr**...**ww**, O8x***b**xx-...**rr**...**ww**	B	Q*	A1
8S***b****-...**ww**, O8S***b****-...**ww**	B	A1	8x***b**xx-...**rr**...**ww**, O8x***b**xx-...**rr**...**ww**	B	S*	A1
8X***b****-...**ww**, O8X***b****-...**ww**	B	A1	8x***b**xx-...**rr**...**ww**, O8x***b**xx-...**rr**...**ww**	B	X*	A1
8A***b****-...**ww**, O8A***b****-...**ww**	C	A1	8x***b**xx-...**rr**...**ww**, O8x***b**xx-...**rr**...**ww**	B	AB	A1

1.4 Sensor Groups

In the following tables, the Promass 300/500 sensors are assigned to different sensor groups depending on their sensor size and electronics version.

Assignment of Promass sensors and Cubemass sensors installed in Zone 1:

Sensor Group	Type of sensor	Size of sensor	Group	$T_{Med,min}$
A1	A (type 8A*B**)	01, 02, 04	IIC	-50°C
	C	01, 02, 04, 06	IIC	-50°C
	E	25, 40, 50	IIC	-50°C
	F	08, 15, 25, 40, 50	IIC	-50°C /-60°C *)
	F(HT)	15, 25, 50	IIC	-50°C
	H, S, P	08, 15, 25, 40	IIC	-50°C
	I	08, 15, 16, 25, 26, 40	IIC	-50°C
	Q	25, 50	IIC	-50°C /-60°C *)
B1	A (type 8A*C**)	01, 02, 04	IIC	-50°C
	E	08, 15, 80	IIC	-50°C
	F	08, 15	IIC	-50°C /-60°C *)
	F, F(HT), O	80, 100, 150, 250	IIC	-50°C /-60°C *)
	I	41, 50, 51, 80	IIC	-50°C
	H, S, P	50	IIC	-50°C
	Q	80, 100	IIC	-50°C /-60°C *)
	X	350	IIC	-50°C /-60°C *)
C1	F	15, 25, 40, 50	IIC	-200°C
	H	8, 15, 25, 40, 50	IIC	-200°C
D1	Q	25, 50	IIC	-200°C
	F	08, 15, 80, 100, 150, 250	IIC	-200°C
E1	H	50	IIC	-200°C
	Q	80, 100	IIC	-200°C
	E	80	IIB	-50°C
	F, F(HT), O	80, 100, 150, 250	IIB	-50°C /-60°C *)
	H, S, P	50	IIB	-50°C
	I	41, 50, 51, 80	IIB	-50°C
	Q	80, 100	IIB	-50°C /-60°C *)
	X	350	IIB	-50°C /-60°C *)
H1	F, F(HT)	80, 100, 150, 250	IIB	-200°C
	H	50	IIB	-200°C
	Q	80, 100	IIB	-200°C

*) Tmed,min = -60°C only applicable for sensor of Promass F 500, Promass Q 500 and Promass X 500 versions with ISEM integrated in transmitter.

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Certificate Annexe

Certificate Number:	**Sira 16ATEX2219X**
Equipment:	**Proline Promag 300/500, Proline Promass 300/500, Proline Cubemass 300/500, Proline Prosonic Flow 300/500, Proline t-mass 300/500**
Applicant:	**Endress+Hauser Flowtec AG**

Note: All sensors of Promass 300 and Promass 500 versions are available for EPL Ga/Gb except the versions “A” (size DN1), “H” (all sizes) and “I” (all sizes) which are only available for EPL Gb. For sensors with EPL Ga, Zone 0, the protection is only applicable for the interior of the measuring tube.

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1.5 Parameters

1.5.1 Electrical Parameters

Power Supply		
Order Code e =	**terminal no.**	**values**
D [1)]	No. 1(L+/L), 2(L-/N)	U_N = 19.2...28.8V_{DC} U_M = 250Vac
E [1)]	No. 1(L+/L), 2(L-/N)	U_N = 85...264V_{AC} U_M = 250Vac
I [2)]	No. 1(L+/L), 2(L-/N)	U_N = 19.2...28.8V_{DC} /85...264V_{AC} U_M = 250 V

1) applicable for products with approval code dd = BA, BB, BC, BD
2) applicable for products with approval code dd = BI, BJ, BM, BN

Input/Output 1			
Order Code ff =	**terminal no.**	**values**	
BA, BB, MA	No. 26, 27	U_N = 30V_{DC} U_M= 250Vac	
LA, GA, SA	No. 26, 27	U_N = 32V_{DC} U_M= 250Vac	
CA, CB	No. 26, 27	U_i = 30V I_i= 100mA P_i = 1.25W L_i= 0 C_i = 0	
CC, CD	No. 26, 27	1) U_O = 21.8V I_O = 90mA P_O = 491mW L_O = 4.1mH (IIC) / 15mH (IIB) C_O = 160nF (IIC) / 1160nF (IIB) Ui = 30V Ii = 10mA Pi = 0.3W Ci = 6nF Li = 4.1mH	2) U_O = 21.8V I_O = 90mA P_O = 491mW L_O = 9mH (IIC) / 39mH (IIB) C_O = 600nF (IIC) / 4000nF (IIB) Ui = 30V Ii = 10mA Pi = 0.3W Ci = 6nF Li = 4.1mH
HA, TA	No. 26, 27	1) Profibus PA (Fisco Field Device) / Foundation Fieldbus U_i = 30V I_i = 570mA P_i = 8.5W L_i = 10µH C_i = 5nF	2) Profibus PA (Fisco Field Device) / Foundation Fieldbus U_i = 32V I_i = 570mA P_i = 8.5W L_i = 10µH C_i = 5nF
NA, RA	IO1 / RJ45	U_N = 30V_{DC} U_M = 250Vac	

1) applicable for products with approval code dd = BA, BB, BC, BD
2) applicable for products with approval code dd = BM, BN

Input/Output 2		
Order Code g =	**terminal no.**	**values**
C, G, K	No. 24, 25	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0
B, D, E, F, I, J, L	No. 24, 25	U_N = $30V_{DC}$ U_M = 250Vac
H	No. 24, 25	U_N = $30V_{DC}$ I_N = $100mA_{DC}$ / $500mA_{AC}$ U_M = 250Vac

Input/Output 3		
Order Code h =	**terminal no.**	**values**
C, G, K	No. 22, 23	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0
B, D, E, F, I, J, L	No. 22, 23	U_N = $30V_{DC}$ U_M = 250Vac
H	No. 22, 23	U_N = $30V_{DC}$ I_N = $100mA_{DC}$ / $500mA_{AC}$ U_M = 250Vac

Input/Output 4		
Order Code i =	**terminal no.**	**values**
C, G, K	No. 20, 21	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0
B, D, E, F, I, J, L	No. 20, 21	U_N = $30V_{DC}$ U_M = 250Vac
H	No. 20, 21	U_N = $30V_{DC}$ I_N = $100mA_{DC}$ / $500mA_{AC}$ U_M = 250Vac

Service Interface		
Order Code dd =	**terminal no.**	**values**
BA, BB, BC, BD	Service Interface	Service Interface shall only be installed in areas which are known to be non hazardous
not for: BA, BB, BC, BD	Service Interface	U_N = 3.3V

Antenna bushing		
Order Code dd =	**terminal no.**	**values**
BA, BB, BI, BJ, BM, BN	N connector	See conditions of safe use

Display remote		
Order Code dd =	**terminal no.**	**values**
BA, BB, BC, BD	No. 81, 82, 83, 84	Uo = 3.9V Io = 1.5A (spark) 200mA (power) Po = 600mW Ri = 2.6Ω Co = 670µF Lo = 0
not for: BA, BB, BC, BD	No. 81, 82, 83, 84	U_N = 3.3V I_N = 150mA

For Transmitter with approval code dd = BA, BB, BC, BD connected to the Remote Display of Endress+Hauser, Type DKX001 or ODKX001, the cable parameter with ration L/R = ≤ 0.024 mH/Ω applies.

Proline Promass and Proline Cubemass Remote Transmitter and Remote Sensor:

8*****-... and O8*****-... with order code dd = BA, BB, BC, BD in combination with k = B:

Transmitter:

Terminals 41, 42	-> exciter coil circuit: Uo = 15V, Io = 129mA, Po = 484mW (sensor group A1/C1/E1) Uo = 15V, Io = 46mA, Po = 173mW (sensor group B1/D1/H1)
Terminals 9, 10, 11, 12, X3, X4	-> temperature circuit: Uo = 15V, Io = 18.2mA, Po = 68.3mW
Terminals 4, 5, 6, 7	-> sensor coil circuit: Uo = 15V, Io = 15.2mA, Po = 57mW

Sensor:

Terminals 41, 42	-> exciter coil circuit: Ui = 15V, Ii = 132mA, Pi = 494mW (sensor group A1/C1/E1) Ui = 15V, Ii = 48mA, Pi = 180mW (sensor group B1/D1/H1)
Terminals 9, 10, 11, 12, X3, X4	-> temperature circuit: Ui = 15V, Ii = 60.6mA , Pi = 227.3mW
Terminals 4, 5, 6, 7	-> sensor coil circuit: Ui = 15V, Ii = 15.2mA, Pi = 57mW

For interconnection using a cable with a maximum length of 120m is allowed when using a cable which has the following parameters:

Cable inductance ≤ 0.5 mH/km
Cable capacitance ≤ 0.5 µF/km

8*****-... and O8*****-... with order code dd = BI, BJ, BM, BN in combination with k = A:

Transmitter:

terminals 61, 62, 63, 64 -> Uo = 13.8V, Io = 1.156A, Po = 3.3W

Sensor:

terminals 61, 62, 63, 64 -> Ui = 14V, Ii = 1.2A, Pi = 3.4W

For interconnection of transmitter to sensor any cable may be used with the following requirements:

- L/R ≤ 0.0089 mH/Ω and C_{cable} ≤ 760nF for group IIC, L/R ≤ 0.0356 mH/Ω and C_{cable} ≤ 4.2µF for group IIB

Or

- L_{cable} ≤ 26µH and C_{cable} ≤ 760nF for group IIC, L_{cable} ≤ 104µH and C_{cable} ≤ 4.2µF for group IIB

1.5.2 Thermal Parameters (Zone 1)

Proline Promass A/E/F/H/I/O/P/Q/S/X 300 **Proline Cubemass C 300**

Notes: Pages 1 and 2 apply to versions with extended order code covering: 8*3B** – dd… O8*3B** – dd… 8x3Bxx – dd… O8x3Bxx – dd…
with approval option cCSAus / CSA: dd = CC, CD, CE, C1, C2, C3, C4
IECEx / ATEX: dd = BA, BB, BC, BD

Temperature table for versions with sensor not insulated

Sensor	Size / DN	T_{med} min [°C]	T_{med} max [°C]	$T_{a,max}$ [°C]	T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass A	01 … 04	-50	205	50	50	95	130	150	205	205
				60	---	95	130	150	205	205
Cubemass C	01 … 06	-50	205	50	50	95	130	150	205	205
				60	---	95	130	150	205	205
Promass E	08 … 50	-50	205	50	50	100	130	130	205	205
				55	---	80	100	130	205	205
				60	---	(80)	(100)	(130)	(205)	(205)
	80	-50	205	50	50	75	110	170	205	205
				55	---	75	110	170	205	205
				60	---	(75)	(110)	(170)	(205)	(205)
Promass F	08 … 15	-50	150	50	50	95	130	150	150	150
				60	---	95	130	150	150	150
		-50	240	50	50	95	130	160	240	240
				60	---	95	130	160	(240)	(240)
		-200	240	50	50	95	100	160	240	240
				60	---	95	100	160	(240)	(240)
	15 … 25	-50 / -200	350	50	45	95	130	175	275	350
				60	---	95	130	175	275	350
	25 … 50	-50	150	50	50	95	130	150	150	150
				60	---	95	130	150	150	150
		-50	240	50	50	95	130	160	240	240
				60	---	95	130	160	(240)	(240)
		-200	240	50	50	95	100	160	240	240
				60	---	95	100	160	(240)	(240)
	80 … 250	-50	150	50	50	75	110	150	150	150
				60	---	75	110	150	150	150
		-50	240	50	50	75	110	170	240	240
				60	---	75	110	170	(240)	(240)
		-200	240	50	50	75	110	170	240	240
				60	---	75	110	170	(240)	(240)
	50 … 250	-50 / -200	350	50	45	85	120	175	275	350
				60	---	85	120	175	275	350
Promass H	8	-50 / -200	205	50	50	65	100	160	205	205
				60	---	65	100	160	205	205
	15 … 50	-50 / -200	205	50	50	75	115	180	205	205
				60	---	75	115	180	205	205
Promass S, P	8	-50	150	45	45	65	100	150	150	150
				60	---	65	100	150	150	150
		-50	205	45	45	65	100	160	205	205
				60	---	65	100	160	205	205
	15 … 50	-50	150	50	50	75	115	150	150	150
				60	---	75	115	150	150	150
		-50	205	50	50	75	115	180	205	205
				60	---	75	115	180	205	205

Sensor	Size / DN	T_{med} min [°C]	T_{med} max [°C]	$T_{a,max}$ [°C]	T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass I	8, 15 15FB, 25	-50	150	50	50	95	130	150	150	150
				60	---	95	120	(150)	(150)	(150)
	25FB, 40 40FB, 50	-50	150	50	50	85	120	150	150	150
				60	---	85	120	(150)	(150)	(150)
	50FB, 80	-50	150	50	50	85	120	150	150	150
				60	---	85	120	(150)	(150)	(150)
Promass O	80 … 250	-50	205	50	50	75	110	170	205	205
				55	---	75	110	170	205	205
				60	---	75	110	170	(205)	(205)
Promass X	350	-50	205	50	50	90	120	170	205	205
				55	---	90	120	170	205	205
				60	---	(90)	(120)	(170)	(205)	(205)
Promass Q	25 … 100	-50 / -200	240	50	50	75	110	160	240	240
				60	---	75	110	160	240	240

Notes:
(1) Ta,min = -40°C, -50°C respectively (see nameplate)
(2) values in brackets are applicable for installation where the transmitter is not installed above the sensor
(3) for applicable version with maximum medium temperature and minimum medium temperature see nameplate

Aenderungen:					Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugänglich gemacht werden.	Ersetzt durch: Ersatz für: Ersteller: FES / Bn FILE: M:\Zeichng\FES0263E\FES0263E.doc
	A	10.05.2016 / Bn	F			
	B	24.10.2016 / Bn	G			
	C	08.05.2017 / Bn	H			
	D	04.07.2018 / Bn	J			
	E	22.10.2019 / Bn	K			

Control Drawing IECEx, ATEX, CSA, cCSAus
Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1
Thermal Parameter
Proline Promass 300/500, Proline Cubemass 300/500

Gezeichnet	10.05.2016	Bn
Geprüft		
Exgeprüft	22.10.2019	Bn
Gesehen		

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach

FES0263E **1/6**

Continued of previous page

Temperature table for versions with sensor insulated (for insulation refer to manual of Endress+Hauser Flowtec)

Sensor	Size / DN	T_{med} min [°C]	T_{med} max [°C]	T_{amb} [°C]	T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass A	01 ... 04	-50	205	50	50	95	130	150	205	205
				55	---	(95)	(130)	(150)	(205	(205)
Cubemass C	01 ... 06	-50	205	50	---	95	130	150	205	205
				55	---	(95)	(130)	(150)	(205)	(205)
Promass E	08 ... 50	-50	205	50	50	100	130	130	205	205
				55	---	(100)	(130)	(130)	(205)	(205)
	80	-50	205	45	50	75	110	170	205	205
				50	---	75	110	170	205	205
				55	---	(75)	(110)	(170)	(205)	(205)
Promass F	08 ... 15	-50	150	50	50	95	130	150	150	150
				60	---	95	110	(150)	(150)	(150)
		-50 / -200	240	50	50	95	130	160	240	240
				55	---	95	(130)	(160)	(240)	(240)
				60	---	95	110	110	110	110
	15 ... 25	-50 / -200	350	50	45	95	130	175	275	350
				60	---	95	130	175	275	350
	25 ... 50	-50	150	50	50	95	130	150	150	150
				60	---	95	110	(150)	(150)	(150)
		-50 / -200	240	50	50	95	130	160	240	240
				55	---	95	(130)	(160)	(240)	(240)
				60	---	95	110	110	110	110
	80 ... 250	-50	150	50	50	75	110	150	150	150
				60	---	75	110	(150)	(150)	(150)
		-50 / -200	240	50	50	75	110	170	240	240
				55	---	75	110	(170)	(240)	(240)
				60	---	75	110	110	110	110
	50 ... 250	-50 / -200	350	50	45	85	120	175	275	350
				60	---	85	120	175	275	350
Promass H	8	-50 / -200	205	50	50	65	100	160	205	205
				55	---	65	100	(160)	(205)	(205)
				60	---	65	100	100	100	100
	15 ... 50	-50 / -200	205	50	50	75	115	180	205	205
				55	---	75	115	(180)	(205)	(205)
				60	---	75	115	115	115	115
Promass S, P	8	-50	150	45	45	65	100	150	150	150
				50	---	65	100	150	150	150
				60	---	65	100	125	(150)	(150)
		-50	205	45	45	65	100	160	205	205
				50	---	65	100	160	205	205
				60	---	65	100	115	(205)	(205)
	15 ... 50	-50	150	50	50	75	115	150	150	150
				60	---	75	115	125	(150)	(150)
		-50	205	50	50	75	115	180	205	205
				60	---	75	115	(150)	(150)	(150)
Promass I	8, 15 15FB, 25	-50	150	50	50	95	130	150	150	150
				60	---	95	120	(150)	(150)	(150)
	25FB, 40 40FB, 50	-50	150	50	50	85	120	150	150	150
				60	---	85	120	(150)	(150)	(150)
	50FB, 80	-50	150	50	50	85	120	150	150	150
				60	---	85	120	(150)	(150)	(150)

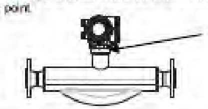
Sensor	Size / DN	T_{med} min [°C]	T_{med} max [°C]	T_{amb} [°C]	T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass O	80 ... 250	-50	205	50	50	75	110	170	205	205
				55	---	(75)	(110)	(170)	(205)	(205)
Promass X	350	-50	205	50	50	90	120	170	205	205
				55	---	(90)	(120)	(170)	(205)	(205)
Promass Q	25 ... 100	-50 / -200	240	50	50	75	110	160	240	240
				55	---	(75)	(110)	(160)	(240)	(240)

Notes:
(1) Ta,min = -40°C, -50°C respectively (see nameplate)
(2) values in brackets are applicable for installation where the transmitter is not installed above the sensor
(3) for applicable version with maximum medium temperature and minimum medium temperature see nameplate

Temperature table for versions with sensor insulated
(for insulation not in compliance to manual of Endress+Hauser Flowtec)

Sensor	Size / DN	T_{neck} to be measured at reference point at sensor neck [°C] T6 (85C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
all	all	59	72	75	76	77	77

Notes:
(1) for safe use temperatures shall not exceed all of the following
- temperature table for versions with sensor not insulated (refer to table above)
- temperature at reference point as listed in this table
- Ta,min = -40°C, -50°C respectively (see nameplate)
- for maximum medium temperature and minimum medium temperature see nameplate
(2) location of reference point


reference point

Aenderungen:	A	10.05.2016 / Bn	F		Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugängig gemacht werden.	Ersetzt durch:
	B	24.10.2016 / Bn	G			Ersatz für:
	C	03.05.2017 / Bn	H			Ersteller: FES / Bn
	D	04.07.2018 / Bn	J			
	E	22.10.2019 / Bn	K			FILE: M:\Zeichng\FES0263E\FES0263E.doc

Control Drawing IECEx, ATEX, CSA, cCSAus
Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1
Thermal Parameter
Proline Promass 300/500, Proline Cubemass 300/500

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	22.10.2019	Bn
Gesehen		

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach

FES0263E **2/6**

Certificate Number: Sira 16ATEX2219X

Equipment: Proline Promag 300/500, Proline Promass 300/500, Proline Cubemass 300/500, Proline Prosonic Flow 300/500, Proline t-mass 300/500

Applicant: Endress+Hauser Flowtec AG

Proline Promass A/E/F/H/I/O/P/Q/S/X 500 **Proline Cubemass C 500**

Notes: This page applies to versions with extended order code covering: 8*5*** – dd*****B… O8*5*** – dd*****B… 8x5Bxx – dd*****B… O8x5Bxx – dd*****B…
with approval option cCSAus / CSA: dd = CC, CD, CE, C1, C2, C3, C4
IECEx / ATEX: dd = BA, BB, BC, BD

Temperature table for versions with sensor not insulated

Sensor	Size / DN	T_{med} min [°C]	T_{med} max [°C]	$T_{a,max}$ [°C]	$T_{max,min}$ [°C] T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass A (type 8A5B)	01 … 04	-50	205	60	60	95	130	150	205	205
Promass A (type 8A5C)	01 … 04	-50	205	55	55	95	130	150	205	205
				60	---	95	130	150	205	205
Cubemass C	01 … 06	-50	205	50	50	95	130	150	205	205
				60	---	95	130	150	205	205
Promass E	08 … 50	-50	205	50	50	100	130	130	205	205
				60	---	100	130	130	205	205
	80	-50	205	60	60	75	110	170	205	205
Promass F	08 … 15	-50 / -60	150	55	50	95	130	150	150	150
				60	---	95	130	150	150	150
		-50 / -60 / -200	240	55	50	95	130	160	240	240
				60	---	95	130	160	240	240
	15 … 25	-50 / -200	350	60	70	95	130	175	265	350
	25 … 40	-50 / -60	150	55	55	95	130	150	150	150
				60	---	95	130	150	150	150
		-50 / -60 / -200	240	55	55	95	130	160	240	240
				60	---	95	130	160	240	240
	50	-50 / -60	150	55	55	95	130	150	150	150
				60	---	95	130	150	150	150
		-50 / -60 / -200	240	60	60	95	130	170	240	240
	80 … 250	-50 / -60	150	55	55	75	110	150	150	150
				60	---	75	110	150	150	150
		-50 / -60 / -200	240	60	60	75	110	170	240	240
	50 … 250	-50 / -200	350	60	70	85	120	175	265	350
Promass H	8	-50 / -200	205	50	50	65	100	160	205	205
				60	---	65	100	160	205	205
	15 … 50	-50 / -200	205	60	60	75	115	180	205	205
Promass S, P	8	-50	150	45	45	65	100	150	150	150
				60	---	65	100	150	150	150
		-50	205	45	45	65	100	160	205	205
				60	---	65	100	160	205	205
	15 … 40	-50	150	50	50	75	115	150	150	150
				60	---	75	115	150	150	150
		-50	205	50	50	75	115	180	205	205
				60	---	75	115	180	205	205
	50	-50	150	60	60	75	115	150	150	150
		-50	205	60	60	75	115	180	205	205

Sensor	Size / DN	T_{med} min [°C]	T_{med} max [°C]	$T_{a,max}$ [°C]	$T_{max,min}$ [°C] T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass I	8; 15 15FB; 25	-50	150	60	60	95	130	150	150	150
	25FB; 40; 40FB; 50; 50FB; 80	-50	150	60	70	85	120	150	150	150
Promass O	80 … 250	-50	205	60	60	75	110	170	205	205
Promass X	350	-50 / -60	205	60	70	90	120	170	205	205
Promass Q	25 … 100	-50 / -60 / -200	240	60	55	75	110	160	240	240

Notes: (1) Ta,min = -40°C, -50°C / -60°C respectively (see nameplate)
(2) for applicable version with maximum medium temperatue and minimum medium temperature see nameplate

Transmitter for all versions:

T_{amb} T6 (85°C)	T_{amb} T5 (100°C)
55	60

Notes: (1) Ta,min = -50°C (for limitation see name plate)

Aenderungen:					Ersetzt durch:
	A	10.05.2016 / Bn	F		
	B	24.10.2016 / Bn	G		Ersatz für:
	C	03.05.2017 / Bn	H		Ersteller: FES / Bn
	D	04.07.2018 / Bn	J		FILE: M:\Zeichng\FES0263E\FES0263E.doc
	E	22.10.2019 / Bn	K		

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Control Drawing IECEx, ATEX, CSA, cCSAus

Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1

Thermal Parameter

Proline Promass 300/500, Proline Cubemass 300/500

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	22.10.2019	Bn
Gesehen		

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach

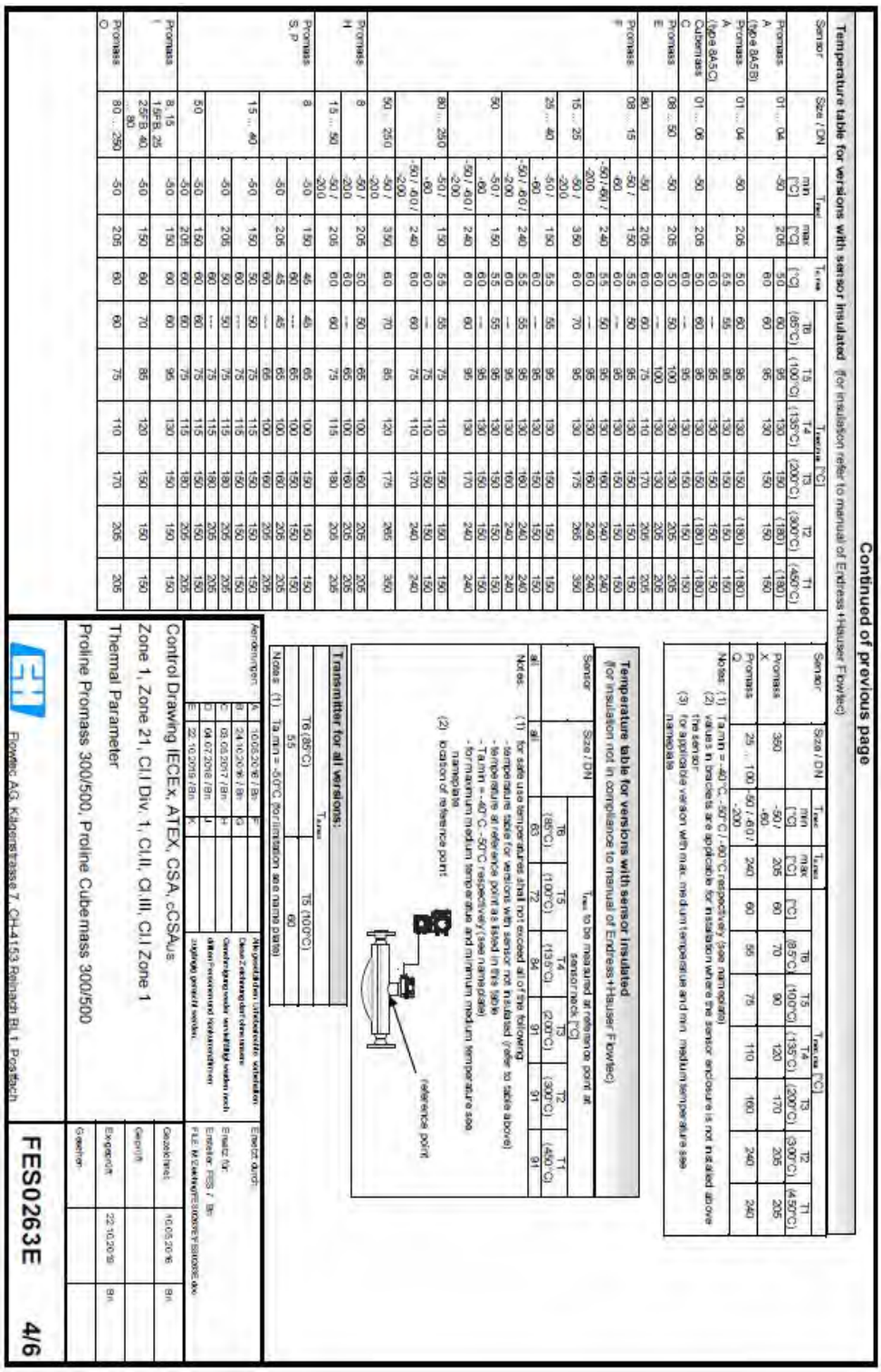
FES0263E **3/6**

Certificate Annexe

Certificate Number: **Sira 16ATEX2219X**

Equipment: **Proline Promag 300/500, Proline Promass 300/500, Proline Cubemass 300/500, Proline Prosonic Flow 300/500, Proline t-mass 300/500**

Applicant: **Endress+Hauser Flowtec AG**



CSA Group Netherlands B.V.
Utrechtseweg 310,
6812 AR, Arnhem Netherlands

Proline Promass A/E/F/H/I/O/P/Q/S/X 500 **Proline Cubemass C 500**

Notes: This page applies to versions with extended order code covering: 8*5*** – dd******A... O8*5*** – dd******A... 8x5Bxx – dd******A... O8x5Bxx – dd******A...

with approval option cCSAus / CSA: dd = CM, CN, C5, C6
IECEx / ATEX: dd = BI, BJ, BM, BN

Temperature table for versions with sensor not insulated

Sensor	Size / DN	Tmed min [°C]	Tmed max [°C]	Ta,max [°C]	T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass A (type 8A5B)	01 ... 04	-50	205	35	60	95	130	150	205	205
				50	---	95	130	150	205	205
				60	---	---	130	150	205	205
Promass A (type 8A5C)	01 ... 04	-50	205	35	55	85	130	150	205	205
				50	---	95	130	150	205	205
				55	---	---	130	150	205	205
				60	---	---	130	150	190	190
Cubemass C	01 ... 06	-50	205	35	40	75	130	150	205	205
				50	---	75	130	150	205	205
				55	---	---	130	150	205	205
				60	---	---	130	150	160	160
Promass E	08 ... 50	-50	205	35	40	60	130	130	205	205
				50	---	60	130	130	205	205
				60	---	---	130	130	205	205
	80	-50	205	35	40	60	110	170	205	205
				50	---	60	110	170	205	205
				60	---	---	110	170	205	205
Promass F	08 ... 50	-50	150	35	40	65	130	150	150	150
				50	---	65	130	150	150	150
				60	---	---	130	130	130	130
		-50 / -200	240	35	40	65	130	160	240	240
				50	---	65	130	160	240	240
				60	---	---	130	160	240	240
	15 ... 25	-50 / -200	350	35	40	80	130	175	275	350
				50	---	80	130	175	275	350
				60	---	---	130	175	240 (275)	240 (350)
	80 ... 250	-50	150	35	40	65	110	150	150	150
				50	---	65	110	150	150	150
				60	---	---	110	130	130	130
		-50 / -200	240	35	40	65	110	170	240	240
				50	---	65	110	170	240	240
				60	---	---	110	170	240	240
	50 ... 250	-50 / -200	350	35	40	80	120	175	275	350
				50	---	80	120	175	275	350
				60	---	---	120	175	240 (275)	240 (350)
Promass H	8	-50 / -200	205	35	40	65	100	160	205	205
				50	---	65	100	160	205	205
				60	---	---	100	160	205	205
	15 ... 50	-50 / -200	205	35	40	65	115	180	205	205
				50	---	65	115	180	205	205
				60	---	---	115	180	205	205
Promass S, P	8	-50	150	35	45	65	100	150	150	150
				50	---	65	100	150	150	150
				60	---	---	100	150	150	150
		-50	205	35	45	65	100	160	205	205
				50	---	65	100	160	205	205
				60	---	---	100	160	205	205
	15 ... 50	-50	150	35	45	65	110	150	150	150
				50	---	65	110	150	150	150
				60	---	---	110	150	150	150

Sensor	Size / DN	Tmed min [°C]	Tmed max [°C]	Ta,max [°C]	T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass S, P	15 ... 50	-50	205	35	45	65	110	180	205	205
				50	---	65	110	180	205	205
				60	---	---	110	180	205	205
Promass I	8, 80	-50	150	35	45	70	115	140	140	150
				50	---	70	115	140	140	150
				55	---	---	115	140	140	150
				60	---	---	115	140	140	140
Promass O	80 ... 250	-50	205	35	45	65	110	170	205	205
				50	---	65	110	170	205	205
				60	---	---	110	170	205	205
Promass X	350	-50	205	35	45	65	110	170	205	205
				50	---	65	110	170	205	205
				60	---	---	110	170	205	205
Promass Q	25 ... 100	-50 / -200	240	35	45	65	100	160	240	240
				50	---	65	100	160	240	240
				60	---	---	100	160	240	240

Notes:
(1) Ta,min = -40°C, -50°C respectively (see nameplate)
(2) values in brackets are applicable for installation where the transmitter is not installed above the sensor
(3) for applicable version with maximum medium temperature and minimum medium temperature see nameplate

Transmitter for all versions:

Type of enclosure	Ta,max Ordinary location (°C)	T6 (85°C)	T5 (100°C)	T4 (135°C)
aluminium	60	---	45	60
plastic	60	---	---	---

Notes: (1) aluminium enclosure: Ta,min = -50°C (for limitation see name plate)
plastic enclosure Ta,min = -40°C

Aenderungen:					Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugängig gemacht werden.	Ersetzt durch:
	A	10.05.2016 / Bn	F			
	B	24.10.2016 / Bn	G			Ersatz für:
	C	03.05.2017 / Bn	H			Ersteller: FES / Bn
	D	04.07.2018 / Bn	J			
	E	22.10.2019 / Bn	K			FILE: M:\Zeichng\FES0263E\FES0263E.doc

Control Drawing IECEx, ATEX, CSA, cCSAus

Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1

Thermal Parameter

Proline Promass 300/500, Proline Cubemass 300/500

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	22.10.2019	Bn
Gesehen		

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach

FES0263E **5/6**

Temperature table for versions with sensor insulated (for insulation refer to manual of Endress+Hauser Flowtec)

Sensor	Size / DN	T_{med} min [°C]	T_{med} max [°C]	T_{amb} [°C]	T_{medium} [°C] T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass A	01 ... 04	-50	205	35	40	90	90	150	150	150
				40	---	90	90	150	150	150
				45	---	---	90	150	150	150
				50	---	---	90	120	120	120
Cubemass C	01 ... 06	-50	205	35	40	90	100	150	150	150
				40	---	90	100	150	150	150
				45	---	---	100	150	150	150
				50	---	---	100	120	120	120
Promass E	08 ... 50	-50	205	35	40	55	130	160	205	205
				50	---	55	130	160	205	205
	80	-50	205	35	40	55	110	170	205	205
				50	---	55	110	170	205	205
Promass F	08 ... 50	-50	150	35	40	60	130	130	130	130
				45	---	60	130	130	130	130
				50	---	---	130	130	130	130
		-50 / -200	240	35	40	60	130	160	240	240
				45	---	60	130	160	240	240
				50	---	---	130	160	240	240
	15 ... 25	-50 / -200	350	35	40	80	130	175	275	350
				50	---	80	130	175	275	350
				60	---	---	130	175	240 (275)	240 (350)
	80 ... 250	-50	150	35	40	60	110	130	130	130
				45	---	60	110	130	130	130
				50	---	---	110	130	130	130
		-50 / -200	240	35	40	60	110	170	240	240
				45	---	60	110	170	240	240
				50	---	---	110	170	240	240
	50 ... 250	-50 / -200	350	35	40	80	120	175	275	350
				50	---	80	120	175	275	350
				60	---	---	120	175	240 (275)	240 (350)
Promass H	8	-50 / -200	205	35	40	65	100	160	205	205
				45	---	65	100	160	205	205
				55	---	---	100	160	205	205
	15 ... 50	-50 / -200	205	35	40	65	115	180	205	205
				45	---	65	115	180	205	205
				55	---	---	115	180	205	205
Promass S, P	8	-50	150	35	40	55	100	150	150	150
				45	---	55	100	150	150	150
				50	---	---	100	120	120	120
		-50	205	35	40	55	100	160	205	205
				50	---	55	100	160	205	205
				55	---	---	100	160	205	205
	15 ... 50	-50	150	35	40	55	110	150	150	150
				45	---	55	110	150	150	150
				50	---	---	110	120	120	120
		-50	205	35	40	55	100	180	205	205
				50	---	55	100	180	205	205
				55	---	---	100	180	205	205
Promass I	8, 80	-50	150	35	45	70	90	150	150	150
				45	---	70	90	150	150	150
				50	---	---	90	120	120	---
Promass O	80 ... 250	-50	205	35	40	55	110	170	205	205
				50	---	55	110	170	205	205
Promass X	350	-50	205	35	40	55	120	170	205	205
				50	---	55	120	170	205	205
				55	---	---	120	170	205	205

Sensor	Size / DN	T_{med} min [°C]	T_{med} max [°C]	T_{amb} [°C]	T_{medium} [°C] T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass Q	25 ... 100	-50 / -200	240	35	40	55	100	160	240	240
				50	---	55	100	160	240	240

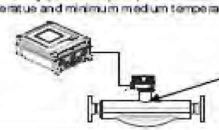
Notes (1) Ta min = -40°C, -50°C respectively (see nameplate)
(2) for applicable version with maximum medium temperature and minimum medium temperature see nameplate

Temperature table for versions with sensor insulated
(for insulation not in compliance to manual of Endress+Hauser Flowtec)

Sensor	Size / DN	T_{ref} to be measured at reference point at sensor neck [°C] T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
all	all	45	64	82	82	85	85

Notes (1) for safe use temperatures shall not exceed all of the following:
- temperature table for versions with sensor not insulated (refer to table above)
- temperature at reference point as listed in this table
- Ta,min = -40°C, -50°C respectively (see nameplate)
- for maximum medium temperature and minimum medium temperature see nameplate

(2) location of reference point



Transmitter for all versions:

Type of enclosure	Ordinary location (°C)	T_{amb} T6 (85°C)	T5 (100°C)	T4 (135°C)
aluminium	60	---	45	60
plastic	60	---	---	---

Notes: (1) aluminium enclosure: Ta,min = -50°C (for limitation see name plate)
plastic enclosure: Ta,min = -40°C

Aenderungen				Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugänglich gemacht werden.	Ersetzt durch:
	A	10.05.2016 / Bn	F		Ersatz für:
	B	24.10.2016 / Bn	G		Ersteller: FES / Bn
	C	03.05.2017 / Bn	H		FILE: M:\Zeichng\FES0263\E\FES0263E.doc
	D	04.07.2018 / Bn	J		
	E	22.10.2019 / Bn	K		

Control Drawing IECEx, ATEX, CSA, cCSAus
Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1
Thermal Parameter
Proline Promass 300/500, Proline Cubemass 300/500

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	22.10.2019	Bn
Gesehen		

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach

FES0263E 6/6

2. Proline Promag 300/500

2.1 Marking

Proline Promag 300			
Model Code: 5*3*** – dd*ff**********+#**# O5*3*** – dd*ff**********+#**#			
dd = Approval:	ff = I/O:	ATEX Marking	Marking of Ex protection
BB	CA, CB, CC, CD, HA, TA	II2(1)G II2(1)D	Ex db eb ia [ia Ga] IIC T6...T1 Gb Ex tb [ia Da] IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA	II2G II2D	Ex db eb ia IIC T6...T1 Gb Ex tb IIIC T** °C Db
BD	CA, CB, CC, CD, HA, TA	II2(1)G II2(1)D	Ex db eb ia [ia Ga] IIC T6...T1 Gb Ex tb [ia Da] IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA	II2G II2D	Ex db eb ia IIC T6...T1 Gb Ex tb IIIC T** °C Db

Proline Promag 500 with ISEM integrated in transmitter				
Model Code: 5*5*** – dd*ff****B**********+#**# O5*5*** – dd*ff****B**********+#**#				
dd = Approval:	ff = I/O:	Device	ATEX Marking	Marking of Ex protection transmitter
BB	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	II2(1)G II2(1)D	Ex db eb [ia Ga] IIC T6...T5 Gb Ex tb [ia Da] IIIC T85°C Db
		Sensor	II2G II2D	Ex eb ia IIC T6...T1 Gb Ex ia tb IIIC T** °C Db
BD	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	II2(1)G II2(1)D	Ex db [ia Ga] IIC T6...T5 Gb Ex tb [ia Da] IIIC T85°C Db
		Sensor	II2G II2D	Ex eb ia IIC T6...T1 Gb Ex ia tb IIIC T** °C Db
B7	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	II2(1)G	Ex db eb [ia Ga] IIC T6... T5 Gb
		Sensor	II2G	Ex eb ia IIC T6...T1 Gb
B8	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	II2(1)G	Ex db [ia Ga] IIC T6... T5 Gb
		Sensor	II2G	Ex eb ia IIC T6...T1 Gb

Proline Promag 500 Digital				
Model Code: 5*5*** – dd*ff****B**********+#**# O5*5*** – dd*ff****B**********+#**#				
dd = Approval:	ff = I/O:	Device	ATEX Marking	Marking of Ex protection transmitter
BN and BJ	HA, TA, BA, BB, GA, LA, NA, RA, SA, MA, CA, CB, CC, CD	Sensor	Ex II2G Ex II2D	Ex db ia IIC T6...T1 Gb Ex ia tb IIIC T** °C Db

2.2 Order Code

Extended order code Proline Promag 300:
5a3bcc – ddzeffghjlpstttuvww + ##**
O5a3bcc – ddzeffghjlpstttuvwwyy + ##** for OEM-version
5x3bxx – ddeffghjlpww + ##** for replacement transmitter only
O5x3bxx – ddeffghjlpwwyy + ##** for replacement transmitter OEM

Extended order code Proline Promag 500:
5a5bcc – ddzeffghijkmnopstttuvww + ##**
O5a5bcc – ddzeffghijkmnopstttuvwwyy + ##** for OEM-version
5x5bxx – ddeffghijkmopqqww + ##** for replacement transmitter only
O5x5bxx – ddeffghijkmopqqwwyy + ##** for replacement transmitter OEM

a = Type of sensor
H = Sensor Promag H
P = Sensor Promag P
W = Sensor Promag W

b = Generation
B = Generation of Flowmeter

cc = Size
any combination of number and/or letter up to size = DN3000

dd = Approval
Proline Promag 300:
BB = Ex db eb [ia] IIC T6...T1 Gb
Ex tb IIIC T* Db
BD = Ex db [ia] IIC T6...T1 Gb
Ex tb IIIC T* Db

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Proline Promag 500:

BB	=	Ex db eb [ia] IIC T6...T4 Gb	(transmitter)
		Ex eb ia IIC T6...T1 Gb	(sensor)
		Ex tb IIIC T** Db	(transmitter + sensor)
BD	=	Ex db [ia] IIC T6...T1 Gb	(transmitter)
		Ex eb ia IIC T6...T1 Gb	(sensor)
		Ex tb IIIC T** Db	(transmitter + sensor)
BJ	=	Ex db ia IIC T6...T1 Gb	(sensor)
		Ex tb IIIC T* Db	(sensor)
BN	=	Ex db ia IIC T6...T1 Gb	(sensor)
		Ex tb IIIC T* Db	(sensor)
B7	=	Ex db eb [ia] IIC T6...T1 Gb	(transmitter)
		Ex eb [ia] IIC T6...T1 Gb	(sensor)
B8	=	Ex db [ia] IIC T6...T1 Gb	(transmitter)
		Ex eb [ia] IIC T6...T1 Gb	(sensor)

z = **Design** (Promag W 300 and Proline W 500 only)
any single number or letter

e = **Power Supply**

- D = 24Vdc
- E = 100-230Vac
- I = 100-230Vac / 24Vdc
- X = sensor only

ff = **Input / Output 1**

- BA = 4-20mA HART
- BB = 4-20mA WHART
- CA = 4-20mA HART Ex i (passive)
- CB = 4-20mA WHART Ex i (passive)
- CC = 4-20mA HART Ex i (active)
- CD = 4-20mA WHART Ex i (active)

- GA = Profibus PA
- HA = Profibus PA Ex i
- LA = Profibus DP
- MA = Modbus RS485
- NA = EtherNet/IP
- RA = Profinet IO
- SA = Foundation Fieldbus
- TA = Foundation Fieldbus Ex i
- XX = sensor only

g = Input / Output 2

- A = without Input/Output 2
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- L = Pulse output Ex i
- K = Pulse output
- X = sensor only

h = Input / Output 3

- A = without Input/Output 3
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- L = Pulse output Ex i
- K = Pulse output
- X = sensor only

i = Input / Output 4 (Proline 500 only)

- A = without Input/Output 4
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- L = Pulse output Ex i
- K = Pulse output
- X = sensor only

j = Display / Operation

with remote Display : O

without remote Display : any single number or letter except O

k = **Integrated ISEM electronic** (Proline 500 only)
A = Sensor
B = Transmitter

l = **Housing** (Proline 300 only)
any single number or letter

m = **Transmitter Housing** (Proline 500 only)
any single number or letter

n = **Sensor Housing** (Proline 500 only)
any single number or letter

o = **Cable Sensor Connection** (Proline 500 only)
any single number or letter

p = **Cable Entry**
any single number or letter

qq = **Upgrade Kid**
any double digits with combination of number or letter

s = **Liner material**
any single number or letter

ttt = **Process connection**
any triple digits with combination of number or letter

u = **Electrode**
any number or letter

v = **Calibration**
any single number or letter

w = **Device Model (two digit)** (refer to section 2.3 for assignment table of flowmeter to replacement transmitter)
w
A1 = product version 1

yy = **Customer version (two digit)**
any double digits with combination of number or letter

****** = **Option in two digits (none, two or multiple of two digits)**
any combination of number and/or letter

#, + = **Signs used as indicator for optional abbreviation of extended order code**

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2.3 Assignment of Flowmeter to Replacement Transmitter

The replacement transmitters are assigned to the flowmeter Proline Promag 300/500 as follows:

Product flowmeters				**Replacement transmitter type**		
model code		**Generation code b =**	**device model code ww =**	**model code**	**Generation code b =**	**device model code ww =**
5H*b**-...ww, 5P*b**-...ww, 5W*b**-...ww,	O5H*b**-...ww O5P*b**-...ww O5W*b**-...ww	B	A1	5x*bxx-...ww, O5x*bxx-...ww	B	A1

2.4 Parameters

2.4.1 Electrical Parameters

Power Supply		
Order Code e =	**terminal no.**	**values**
D [1)]	No. 1(L+/L), 2(L-/N)	U_N = 19.2...28.8V_{DC} U_M = 250Vac
E [1)]	No. 1(L+/L), 2(L-/N)	U_N = 85...264V_{AC} U_M = 250Vac
I [2)]	No. 1(L+/L), 2(L-/N)	U_N = 19.2...28.8V_{DC} /85...264V_{AC} U_M = 250 V

3) applicable for products with approval code dd = BA, BB, BC, BD, B7, B8
4) applicable for products with approval code dd = BI, BJ, BM, BN

Input/Output 1			
Order Code ff =	**terminal no.**	**values**	
BA, BB, MA	No. 26, 27	U_N = 30V_{DC} U_M = 250Vac	
LA, GA, SA	No. 26, 27	U_N = 32V_{DC} U_M = 250Vac	
CA, CB	No. 26, 27	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0	
CC, CD	No. 26, 27	1) U_O = 21.8V I_O = 90mA P_O = 491mW L_O = 4.1mH (IIC) /	2) U_O = 21.8V I_O = 90mA P_O = 491mW L_O = 9mH (IIC) /

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		15mH (IIB) C_O = 160nF (IIC) / 1160nF (IIB) Ui = 30V Ii = 10mA Pi = 0.3W Ci = 6nF Li = 4.1mH	39mH (IIB) C_O = 600nF (IIC) / 4000nF (IIB) Ui = 30V Ii = 10mA Pi = 0.3W Ci = 6nF Li = 4.1mH
HA, TA	No. 26, 27	1) Profibus PA (Fisco Field Device) / Foundation Fieldbus U_i = 30V I_i = 570mA P_i = 8.5W L_i = 10µH C_i = 5nF	2) Profibus PA (Fisco Field Device) / Foundation Fieldbus U_i = 32V I_i = 570mA P_i = 8.5W L_i = 10µH C_i = 5nF
NA, RA	IO1 / RJ45	U_N = $30V_{DC}$ U_M = 250Vac	

1) applicable for products with approval code dd = BB, BD, B7, B8
2) applicable for products with approval code dd = BM, BN

Input/Output 2		
Order Code g =	**terminal no.**	**values**
C, G, K	No. 24, 25	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0
B, D, E, F, I, J, L	No. 24, 25	U_N = $30V_{DC}$ U_M = 250Vac
H	No. 24, 25	U_N = $30V_{DC}$ I_N = $100mA_{DC}$ / $500mA_{AC}$ U_M = 250Vac

Input/Output 3		
Order Code h =	**terminal no.**	**values**
C, G, K	No. 22, 23	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0
B, D, E, F, I, J, L	No. 22, 23	U_N = $30V_{DC}$

		U_M = 250Vac
H	No. 22, 23	U_N = 30V_{DC} I_N = 100mA_{DC} / 500mA_{AC} U_M = 250Vac

Input/Output 4		
Order Code i =	**terminal no.**	**values**
C, G, K	No. 20, 21	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0
B, D, E, F, I, J, L	No. 20, 21	U_N = 30V_{DC} U_M = 250Vac
H	No. 20, 21	U_N = 30V_{DC} I_N = 100mA_{DC} / 500mA_{AC} U_M = 250Vac

Service Interface		
Order Code dd =	**terminal no.**	**values**
BB, BD, B7, B8	Service Interface	Service Interface shall only be installed in areas which are known to be non hazardous
not for: BB, BD, B7, B8	Service Interface	U_N = 3.3V

Antenna bushing		
Order Code dd =	**terminal no.**	**values**
BB, BJ, BN, B7	N connector	See conditions of safe use

Display remote		
Order Code dd =	**terminal no.**	**values**
BB, BD, B7, B8	No. 81, 82, 83, 84	Uo = 3.9V Io = 1.5A (spark), 200mA (power) Po = 600mW Ri = 2.6Ω Co = 670µF Lo = 0
not for: BB, BD, B7, B8	No. 81, 82, 83, 84	U_N = 3.3V I_N = 150mA

For Transmitter with approval code dd = BB, BD, B7 and B8 connected to the Remote Display of Endress+Hauser, Type DKX001 or ODKX001, the cable parameter with ration L/R = ≤ 0.024 mH/Ω applies.

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Proline Remote Transmitter and Remote Sensor:

5*****-... and O5*****-... with order code dd = BB, BD, B7, B8 in combination with k = B:

Transmitter :

terminals 4, 5, 6, 7, 8, 32, 33, 34, 35, 36, 37	-> Uo = 26.6V, Io = 19.2mA, Po = 128mW, Lo = 20mH, Co = 94nF and Uo = 13.3V, Io = 39.2mA, Po = 131mW, Lo = 20mH, Co = 94nF
terminals 41, 42	-> U_N = 60V, I_N = 90mA

Sensor :

terminals 4, 5, 6, 7, 8, 32, 33, 34, 35, 36, 37	-> Ui = 26.6V, Ii = n.a., Pi = n.a., Li = 0, Ci = 0
terminals 41, 42	-> U_N = 60V, I_N = 90mA

Interconnection of circuit connected to terminals 4, 5, 6, 7, 8, 37, 36 for use of a cable with a maximum length of 200m is allowed when using a cable which has the following parameters:
Cable inductance ≤ 1 mH/km
Cable capacitance ≤ 0.42µF/km

5*****-... and O5*****-... with order code dd = BJ, BN in combination with k = A:

Transmitter:

terminals 61, 62	-> U_N = 35V
terminals 63, 64	-> U_N = 3.3V

Sensor:

terminals 61, 62	-> U_N = 35V
terminals 63, 64	-> U_N = 3.3V

Certificate Annexe

Certificate Number: Sira 16ATEX2219X

Equipment: Proline Promag 300/500, Proline Promass 300/500, Proline Cubemass 300/500, Proline Prosonic Flow 300/500, Proline t-mass 300/500

Applicant: Endress+Hauser Flowtec AG

2.4.2 Thermal Parameters (Zone 1)

Proline Promag H/P/W 300

Notes:
This page applies to versions with extended order code covering: 5(H/P)3B** - dd… 5W3B** - dd… O5(H/P)3B** - dd… O5W3B** - dd… 5x3Bxx - dd… 5x3Bxx - dd… O5x3Bxx - dd… O5x3Bxx - dd…
with approval option cCSAus / CSA: dd = CD, CE, C2, C4; IECEx / ATEX: dd = BB, BD

Standard version with sensor not insulated:

Sensor	Size / DN	Liner	$T_{med,min}$ [°C]	$T_{a,max}$ [°C]	$T_{med,max}$ [°C] T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promag P Promag W	15…600	PTFE	-40	45	80	90	130	130	130	130
				50	60	90	130	130	130	130
				55	---	---	130	130	130	130
				60	---	---	100	100	100	100
	25…200	PFA	-40	40	80	95	130	150	150	150
				45	80	95	130	130	130	130
				50	60	90	130	130	130	130
				60	---	---	100	100	100	100
	50…3000	HG	-20	50	60	80	80	80	80	80
				60	---	---	80	80	80	80
	25…1000	PU	-20	50	50	50	50	50	50	50
Promag H	2…150	PFA	-40	50	80 (3)	95	130	150	150	150
				55 (3)	65 (3)	80	130	150	150	150
				60 (3)	---	---	115	115	115	115

Notes: (1) Ta,min = -40°C (for limitation see name plate)
(2) $T_{med,max}$ may be reduced by versions. For limitation of range for T_{med} see name plate
(3) Promag H limited to Ta,max = 50°C @ class T6 and Tmed,max = 50°C @ class T6 for optional versions available with medium temperature measurement

High temperature version with sensor not insulated:

Sensor	Size / DN	Liner	$T_{med,min}$ [°C]	$T_{a,max}$ [°C]	$T_{med,max}$ [°C] T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promag P Promag W	15…600	PTFE	-40	50	60	95	130	130	130	130
				55	---	95	130	130	130	130
				60	---	---	100	100	100	100
	25…200	PFA	-40	45	80	95	130	150	150	150
				50	60	95	130	150	150	150
				60	---	---	100	100	100	100
	50…3000	HG	-20	50	60	80	80	80	80	80
				60	---	80	80	80	80	80
	25…1000	PU	-20	50	50	50	50	50	50	50

Notes: (1) Ta,min = -40°C (for limitation see name plate)
(2) $T_{med,max}$ may be reduced by versions. For limitation of range for T_{med} see name plate

High temperature version with sensor insulated
(for insulation refer to manual of E+H Flowtec):

Sensor	Size / DN	Liner	$T_{med,min}$ [°C]	$T_{a,max}$ [°C]	$T_{med,max}$ [°C] T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promag P Promag W	15…600	PTFE	-40	50	60	95	130	130	130	130
				55	---	95	130	130	130	130
				60	---	---	100	100	100	100
	25…200	PFA	-40	45	80	95	130	150	150	150
				50	60	95	130	150	150	150
				60	---	---	100	100	100	100
	50…3000	HG	-20	50	60	80	80	80	80	80
				60	---	80	80	80	80	80
	25…1000	PU	-20	50	50	50	50	50	50	50

Notes: (1) Ta,min = -40°C (for limitation see name plate)
(2) $T_{med,max}$ may be reduced by versions. For limitation of range for T_{med} see name plate

High temperature version with sensor insulated
(insulation not in compliance to manual of E+H Flowtec):

Sensor	Size / DN	Liner	$T_{med,min}$ [°C]	$T_{a,max}$ [°C]	$T_{med,max}$ @T1 [°C]	Tmax to be measured at reference point at sensor neck [°C] T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promag P Promag W	all	PTFE	-40	60	130	56.4	71.3	72.0	72.0	72.0	72.0
		PFA	-40	60	150	56.4	71.3	72.0	72.0	72.0	72.0
		HG	-20	60	80	56.4	71.3	72.0	72.0	72.0	72.0
		PU	-20	60	50	56.4	71.3	72.0	72.0	72.0	72.0

Notes: (1) Ta,min = -40°C (for limitation see name plate)
(3) location of reference point

Aenderungen:			
A	10.05.2016 / Bn	F	
B	24.10.2016 / Bn	G	
C	03.05.2017 / Bn	H	
D	15.02.2018 / Bn	J	
E		K	

Ersetzt durch:
Ersatz für:
Ersteller: FES / Bn
FILE: M:\Zeichng\FES0260D\FES0260D.doc

Control Drawing IECEx, ATEX, CSA, cCSAus
Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1
Thermal Parameter
Proline Promag 300/500

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	15.02.2018	Bn
Gesehen		

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach

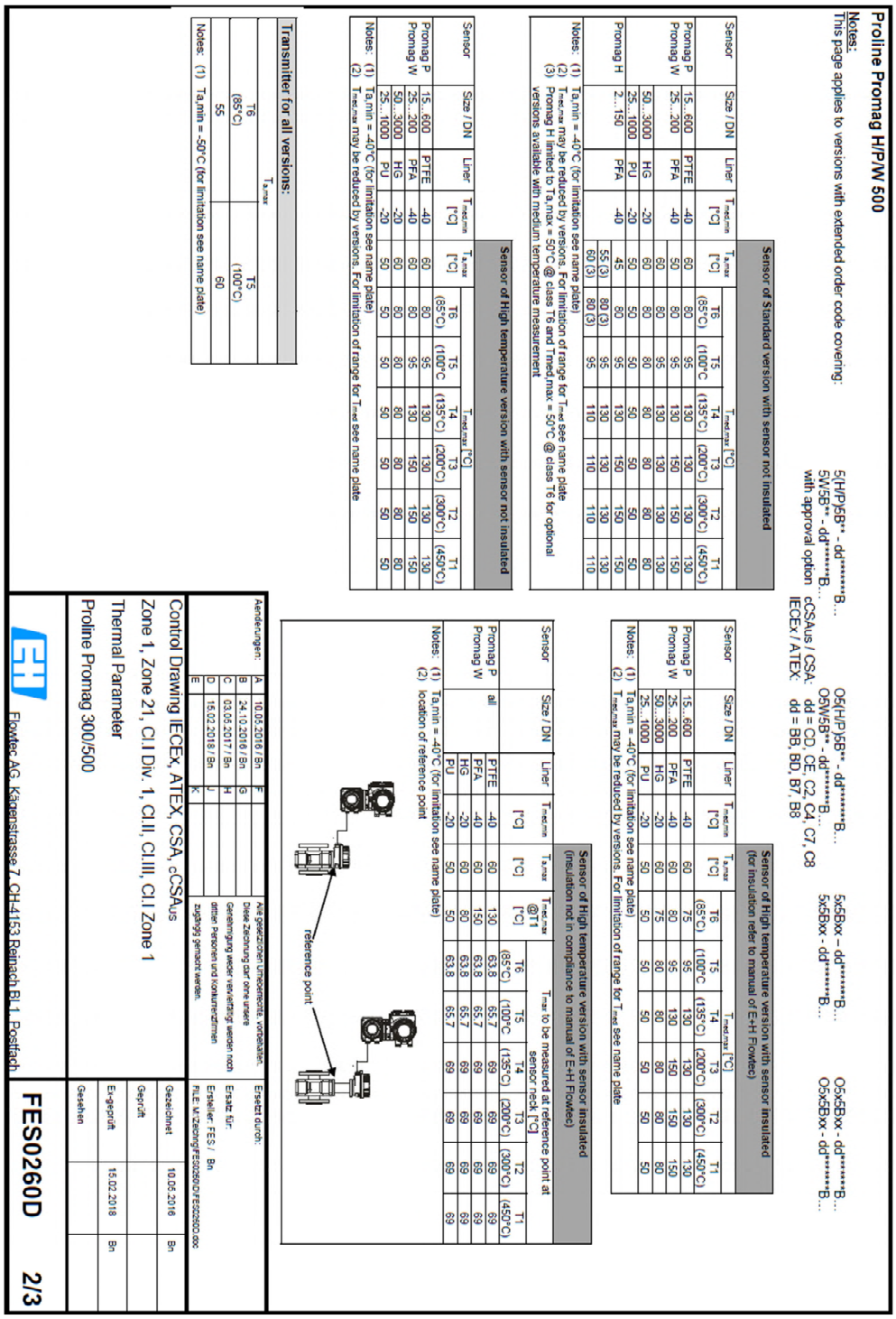
FES0260D 1/3

Certificate Annexe

Certificate Number: **Sira 16ATEX2219X**

Equipment: **Proline Promag 300/500, Proline Promass 300/500, Proline Cubemass 300/500, Proline Prosonic Flow 300/500, Proline t-mass 300/500**

Applicant: **Endress+Hauser Flowtec AG**

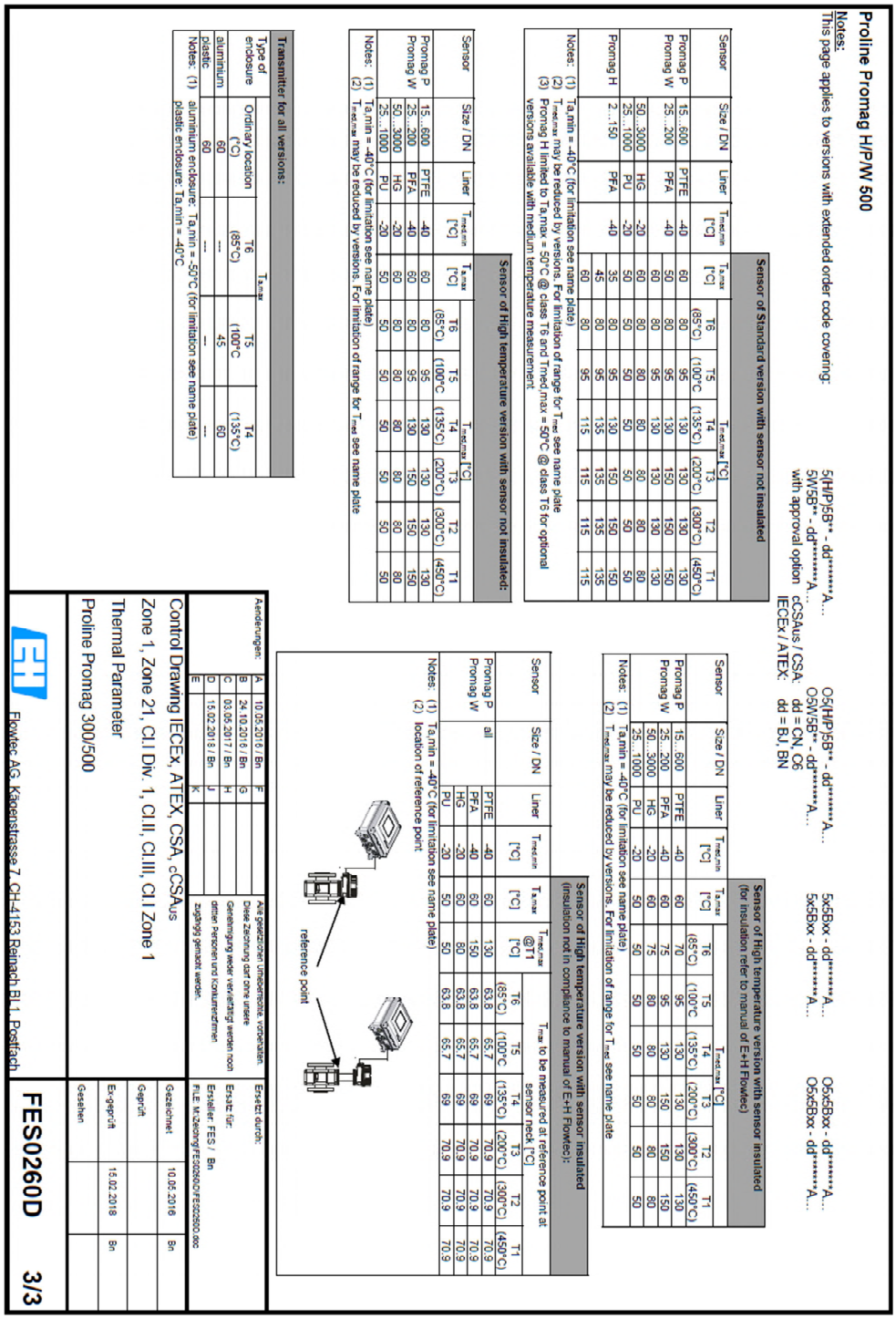


Certificate Annexe

Certificate Number: **Sira 16ATEX2219X**

Equipment: **Proline Promag 300/500, Proline Promass 300/500, Proline Cubemass 300/500, Proline Prosonic Flow 300/500, Proline t-mass 300/500**

Applicant: **Endress+Hauser Flowtec AG**



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3 Proline Promag 300/500

3.1 Marking

Proline Promag 300			
Model Code: 5*3*** – dd*ff**********+#**# O5*3*** – dd*ff**********+#**#			
dd = Approval:	ff = I/O:	ATEX Marking	Marking of Ex protection
BB	CA, CB, CC, CD, HA, TA	II2(1)G II2(1)D	Ex db eb ia [ia Ga] IIC T6...T1 Gb Ex tb [ia Da] IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA	II2G II2D	Ex db eb ia IIC T6...T1 Gb Ex tb IIIC T** °C Db
BD	CA, CB, CC, CD, HA, TA	II2(1)G II2(1)D	Ex db eb ia [ia Ga] IIC T6...T1 Gb Ex tb [ia Da] IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA	II2G II2D	Ex db eb ia IIC T6...T1 Gb Ex tb IIIC T** °C Db

Proline Promag 500 with ISEM integrated in transmitter				
Model Code: 5*5*** – dd*ff****B**********+#**# O5*5*** – dd*ff****B**********+#**#				
dd = Approval:	ff = I/O:	Device	ATEX Marking	Marking of Ex protection transmitter
BB	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	II2(1)G II2(1)D	Ex db eb [ia Ga] IIC T6...T5 Gb Ex tb [ia Da] IIIC T85°C Db
		Sensor	II2G II2D	Ex eb ia IIC T6...T1 Gb Ex ia tb IIIC T** °C Db
BD	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	II2(1)G II2(1)D	Ex db [ia Ga] IIC T6...T5 Gb Ex tb [ia Da] IIIC T85°C Db
		Sensor	II2G II2D	Ex eb ia IIC T6...T1 Gb Ex ia tb IIIC T** °C Db
B7	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	II2(1)G	Ex db eb [ia Ga] IIC T6... T5 Gb
		Sensor	II2G	Ex eb ia IIC T6...T1 Gb
B8	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	II2(1)G	Ex db [ia Ga] IIC T6... T5 Gb
		Sensor	II2G	Ex eb ia IIC T6...T1 Gb

Proline Promag 500 Digital				
Model Code: 5*5*** – dd*ff****B**********+#**# O5*5*** – dd*ff****B**********+#**#				
dd = Approval:	ff = I/O:	Device	ATEX Marking	Marking of Ex protection transmitter
BN and BJ	HA, TA, BA, BB, GA, LA, NA, RA, SA, MA, CA, CB, CC, CD	Sensor	Ex II2G Ex II2D	Ex db ia IIC T6...T1 Gb Ex ia tb IIIC T** °C Db

3.2 Order Code

Extended order code Proline Promag 300:
5a3bcc – ddzeffghjlpstttuvww + ##**
O5a3bcc – ddzeffghjlpstttuvwwyy + ##** for OEM-version
5x3bxx – ddeffghjlpww + ##** for replacement transmitter only
O5x3bxx – ddeffghjlpwwyy + ##** for replacement transmitter OEM

Extended order code Proline Promag 500:
5a5bcc – ddzeffghijkmnopstttuvww + ##**
O5a5bcc – ddzeffghijkmnopstttuvwwyy + ##** for OEM-version
5x5bxx – ddeffghijkmopqqww + ##** for replacement transmitter only
O5x5bxx – ddeffghijkmopqqwwyy + ##** for replacement transmitter OEM

a = Type of sensor
H = Sensor Promag H
P = Sensor Promag P
W = Sensor Promag W

b = Generation
B = Generation of Flowmeter

cc = Size
any combination of number and/or letter up to size = DN3000

dd = Approval
Proline Promag 300:
BB = Ex db eb [ia] IIC T6...T1 Gb
Ex tb IIIC T* Db
BD = Ex db [ia] IIC T6...T1 Gb
Ex tb IIIC T* Db

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Proline Promag 500:

BB	=	Ex db eb [ia] IIC T6...T4 Gb	(transmitter)
		Ex eb ia IIC T6...T1 Gb	(sensor)
		Ex tb IIIC T** Db	(transmitter + sensor)
BD	=	Ex db [ia] IIC T6...T1 Gb	(transmitter)
		Ex eb ia IIC T6...T1 Gb	(sensor)
		Ex tb IIIC T** Db	(transmitter + sensor)
BJ	=	Ex db ia IIC T6...T1 Gb	(sensor)
		Ex tb IIIC T* Db	(sensor)
BN	=	Ex db ia IIC T6...T1 Gb	(sensor)
		Ex tb IIIC T* Db	(sensor)
B7	=	Ex db eb [ia] IIC T6...T1 Gb	(transmitter)
		Ex eb [ia] IIC T6...T1 Gb	(sensor)
B8	=	Ex db [ia] IIC T6...T1 Gb	(transmitter)
		Ex eb [ia] IIC T6...T1 Gb	(sensor)

z = **Design** (Promag W 300 and Proline W 500 only)
any single number or letter

e = **Power Supply**

- D = 24Vdc
- E = 100-230Vac
- I = 100-230Vac / 24Vdc
- X = sensor only

ff = **Input / Output 1**

- BA = 4-20mA HART
- BB = 4-20mA WHART
- CA = 4-20mA HART Ex i (passive)
- CB = 4-20mA WHART Ex i (passive)
- CC = 4-20mA HART Ex i (active)
- CD = 4-20mA WHART Ex i (active)

- GA = Profibus PA
- HA = Profibus PA Ex i
- LA = Profibus DP
- MA = Modbus RS485
- NA = EtherNet/IP
- RA = Profinet IO
- SA = Foundation Fieldbus
- TA = Foundation Fieldbus Ex i
- XX = sensor only

g = Input / Output 2

- A = without Input/Output 2
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- L = Pulse output Ex i
- K = Pulse output
- X = sensor only

h = Input / Output 3

- A = without Input/Output 3
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- L = Pulse output Ex i
- K = Pulse output
- X = sensor only

i = Input / Output 4 (Proline 500 only)

- A = without Input/Output 4
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- L = Pulse output Ex i
- K = Pulse output
- X = sensor only

j = Display / Operation

with remote Display : O

without remote Display : any single number or letter except O

k = **Integrated ISEM electronic** (Proline 500 only)
A = Sensor
B = Transmitter

l = **Housing** (Proline 300 only)
any single number or letter

m = **Transmitter Housing** (Proline 500 only)
any single number or letter

n = **Sensor Housing** (Proline 500 only)
any single number or letter

o = **Cable Sensor Connection** (Proline 500 only)
any single number or letter

p = **Cable Entry**
any single number or letter

qq = **Upgrade Kid**
any double digits with combination of number or letter

s = **Liner material**
any single number or letter

ttt = **Process connection**
any triple digits with combination of number or letter

u = **Electrode**
any number or letter

v = **Calibration**
any single number or letter

w = **Device Model (two digit)** (refer to section 2.3 for assignment table of flowmeter to replacement transmitter)
w
A1 = product version 1

yy = **Customer version (two digit)**
any double digits with combination of number or letter

****** = **Option in two digits (none, two or multiple of two digits)**
any combination of number and/or letter

#, + = **Signs used as indicator for optional abbreviation of extended order code**

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3.3 Assignment of Flowmeter to Replacement Transmitter

The replacement transmitters are assigned to the flowmeter Proline Promag 300/500 as follows:

Product flowmeters				**Replacement transmitter type**		
model code		**Generation code b =**	**device model code ww =**	**model code**	**Generation code b =**	**device model code ww =**
5H*b**-...ww, 5P*b**-...ww, 5W*b**-...ww,	O5H*b**-...ww O5P*b**-...ww O5W*b**-...ww	B	A1	5x*bxx-...ww, O5x*bxx-...ww	B	A1

3.4 Parameters

3.4.1 Electrical Parameters

Power Supply		
Order Code e =	**terminal no.**	**values**
D [1)]	No. 1(L+/L), 2(L-/N)	U_N = 19.2...28.8V_{DC} U_M = 250Vac
E [1)]	No. 1(L+/L), 2(L-/N)	U_N = 85...264V_{AC} U_M = 250Vac
I [2)]	No. 1(L+/L), 2(L-/N)	U_N = 19.2...28.8V_{DC} /85...264V_{AC} U_M = 250 V

5) applicable for products with approval code dd = BA, BB, BC, BD, B7, B8
6) applicable for products with approval code dd = BI, BJ, BM, BN

Input/Output 1			
Order Code ff =	**terminal no.**	**values**	
BA, BB, MA	No. 26, 27	U_N = 30V_{DC} U_M = 250Vac	
LA, GA, SA	No. 26, 27	U_N = 32V_{DC} U_M = 250Vac	
CA, CB	No. 26, 27	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0	
CC, CD	No. 26, 27	1) U_O = 21.8V I_O = 90mA P_O = 491mW L_O = 4.1mH (IIC) /	2) U_O = 21.8V I_O = 90mA P_O = 491mW L_O = 9mH (IIC) /

		15mH (IIB) C_O = 160nF (IIC) / 1160nF (IIB) Ui = 30V Ii = 10mA Pi = 0.3W Ci = 6nF Li = 4.1mH	39mH (IIB) C_O = 600nF (IIC) / 4000nF (IIB) Ui = 30V Ii = 10mA Pi = 0.3W Ci = 6nF Li = 4.1mH
HA, TA	No. 26, 27	[1] Profibus PA (Fisco Field Device) / Foundation Fieldbus U_i = 30V I_i = 570mA P_i = 8.5W L_i = 10µH C_i = 5nF	[2] Profibus PA (Fisco Field Device) / Foundation Fieldbus U_i = 32V I_i = 570mA P_i = 8.5W L_i = 10µH C_i = 5nF
NA, RA	IO1 / RJ45	U_N = $30V_{DC}$ U_M = 250Vac	

[1] applicable for products with approval code dd = BB, BD, B7, B8
[2] applicable for products with approval code dd = BM, BN

Input/Output 2		
Order Code g =	**terminal no.**	**values**
C, G, K	No. 24, 25	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0
B, D, E, F, I, J, L	No. 24, 25	U_N = $30V_{DC}$ U_M = 250Vac
H	No. 24, 25	U_N = $30V_{DC}$ I_N = $100mA_{DC}$ / $500mA_{AC}$ U_M = 250Vac

Input/Output 3		
Order Code h =	**terminal no.**	**values**
C, G, K	No. 22, 23	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0
B, D, E, F, I, J, L	No. 22, 23	U_N = $30V_{DC}$

		U_M = 250Vac
H	No. 22, 23	U_N = 30V_{DC} I_N = 100mA_{DC} / 500mA_{AC} U_M = 250Vac

Input/Output 4		
Order Code i =	**terminal no.**	**values**
C, G, K	No. 20, 21	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0
B, D, E, F, I, J, L	No. 20, 21	U_N = 30V_{DC} U_M = 250Vac
H	No. 20, 21	U_N = 30V_{DC} I_N = 100mA_{DC} / 500mA_{AC} U_M = 250Vac

Service Interface		
Order Code dd =	**terminal no.**	**values**
BB, BD, B7, B8	Service Interface	Service Interface shall only be installed in areas which are known to be non hazardous
not for: BB, BD, B7, B8	Service Interface	U_N = 3.3V

Antenna bushing		
Order Code dd =	**terminal no.**	**values**
BB, BJ, BN, B7	N connector	See conditions of safe use

Display remote		
Order Code dd =	**terminal no.**	**values**
BB, BD, B7, B8	No. 81, 82, 83, 84	Uo = 3.9V Io = 1.5A (spark), 200mA (power) Po = 600mW Ri = 2.6Ω Co = 670µF Lo = 0
not for: BB, BD, B7, B8	No. 81, 82, 83, 84	U_N = 3.3V I_N = 150mA

For Transmitter with approval code dd = BB, BD, B7 and B8 connected to the Remote Display of Endress+Hauser, Type DKX001 or ODKX001, the cable parameter with ration L/R = ≤ 0.024 mH/Ω applies.

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Proline Remote Transmitter and Remote Sensor:

5*****-... and O5*****-... with order code dd = BB, BD, B7, B8 in combination with k = B:

Transmitter :

terminals 4, 5, 6, 7, 8, 32, 33, 34, 35, 36, 37	-> Uo = 26.6V, Io = 19.2mA, Po = 128mW, Lo = 20mH, Co = 94nF and Uo = 13.3V, Io = 39.2mA, Po = 131mW, Lo = 20mH, Co = 94nF
terminals 41, 42	-> U_N = 60V, I_N = 90mA

Sensor :

terminals 4, 5, 6, 7, 8, 32, 33, 34, 35, 36, 37	-> Ui = 26.6V, Ii = n.a., Pi = n.a., Li = 0, Ci = 0
terminals 41, 42	-> U_N = 60V, I_N = 90mA

Interconnection of circuit connected to terminals 4, 5, 6, 7, 8, 37, 36 for use of a cable with a maximum length of 200m is allowed when using a cable which has the following parameters:
Cable inductance ≤ 1 mH/km
Cable capacitance ≤ 0.42µF/km

5*****-... and O5*****-... with order code dd = BJ, BN in combination with k = A:

Transmitter:

terminals 61, 62	-> U_N = 35V
terminals 63, 64	-> U_N = 3.3V

Sensor:

terminals 61, 62	-> U_N = 35V
terminals 63, 64	-> U_N = 3.3V

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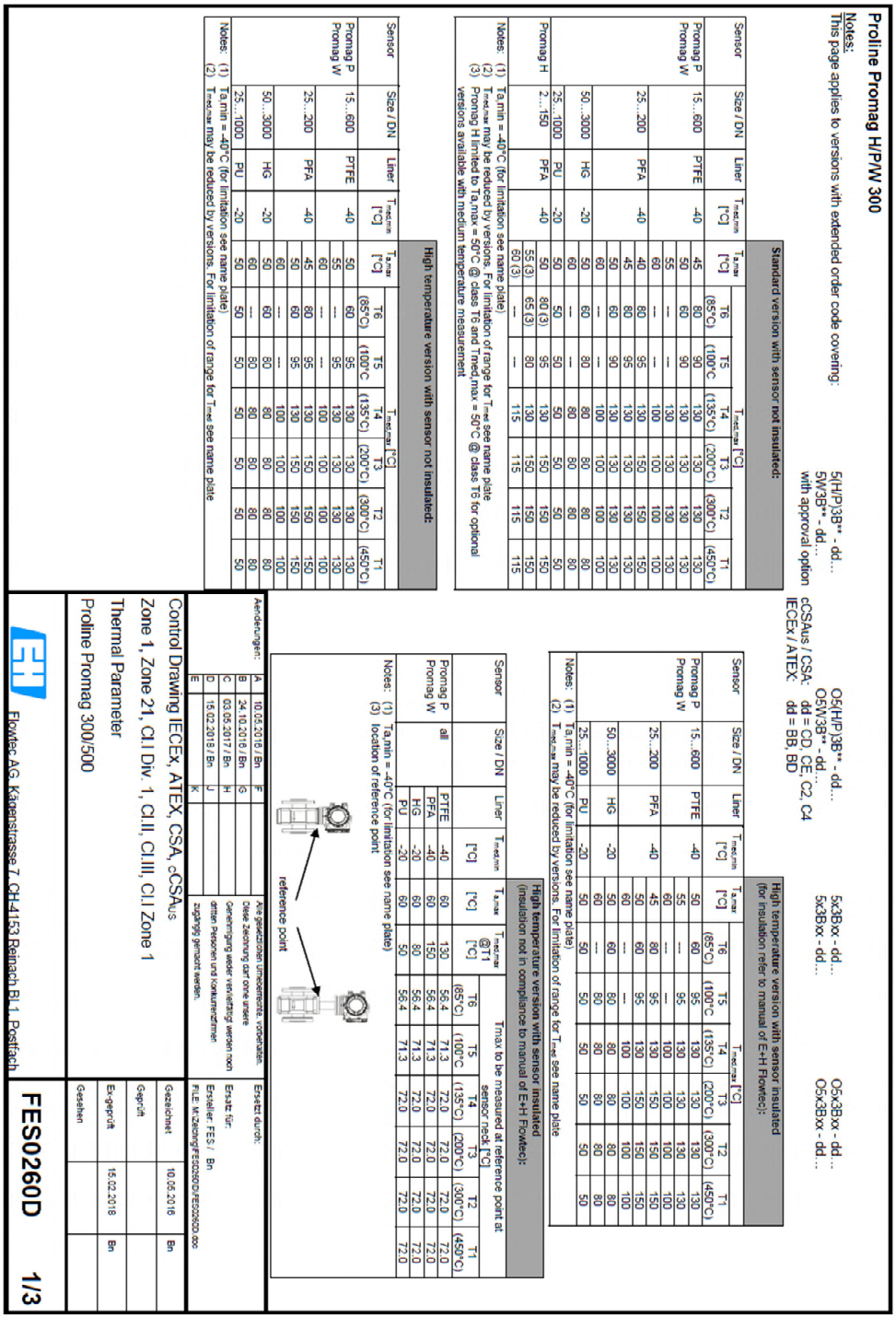
Certificate Annexe

Certificate Number: **Sira 16ATEX2219X**

Equipment: **Proline Promag 300/500, Proline Promass 300/500, Proline Cubemass 300/500, Proline Prosonic Flow 300/500, Proline t-mass 300/500**

Applicant: **Endress+Hauser Flowtec AG**

3.4.2 Thermal Parameters (Zone 1)



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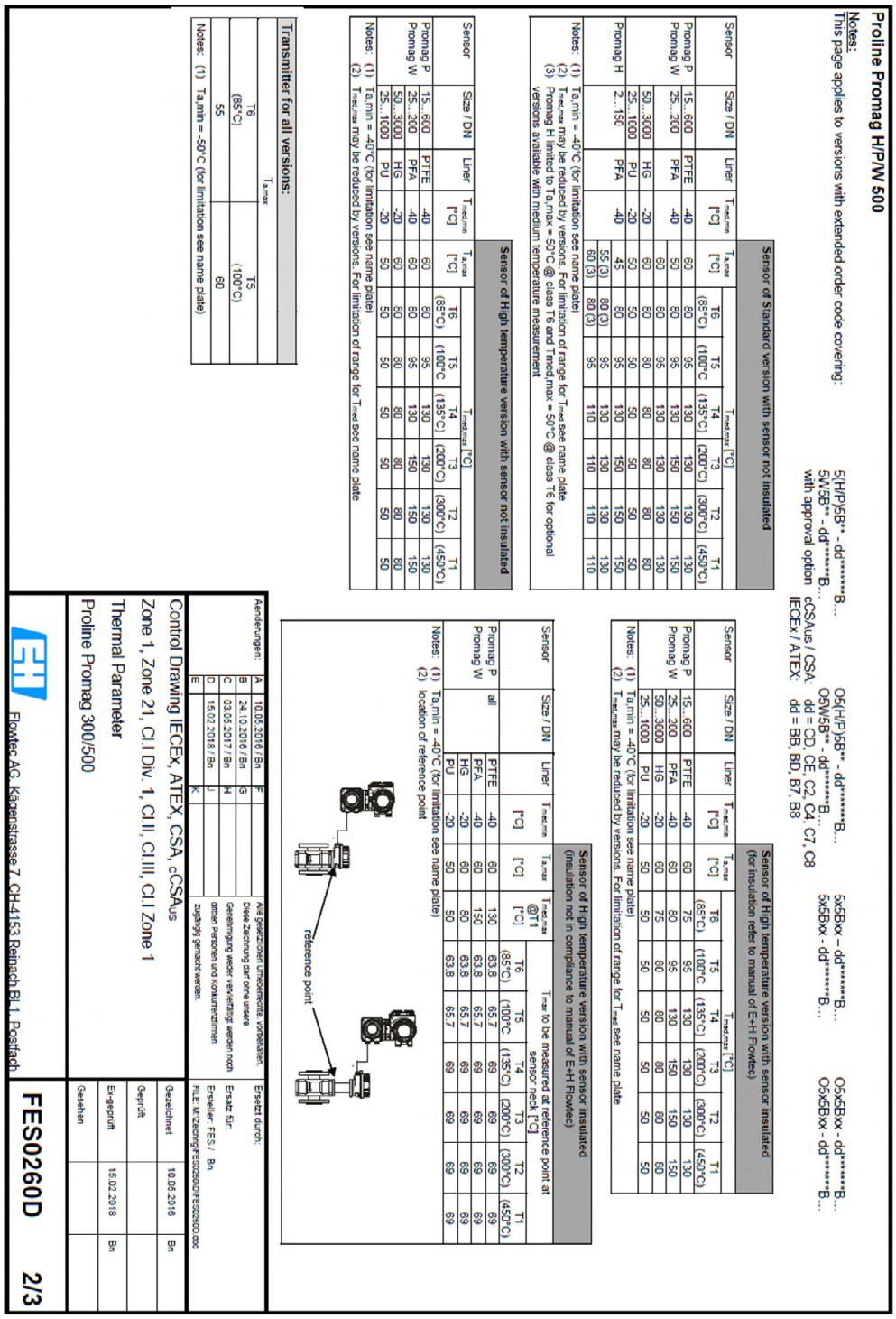
Certificate Annexe

Certificate Number: **Sira 16ATEX2219X**

Equipment: **Proline Promag 300/500, Proline Promass 300/500, Proline Cubemass 300/500, Proline Prosonic Flow 300/500, Proline t-mass 300/500**

Applicant: **Endress+Hauser Flowtec AG**

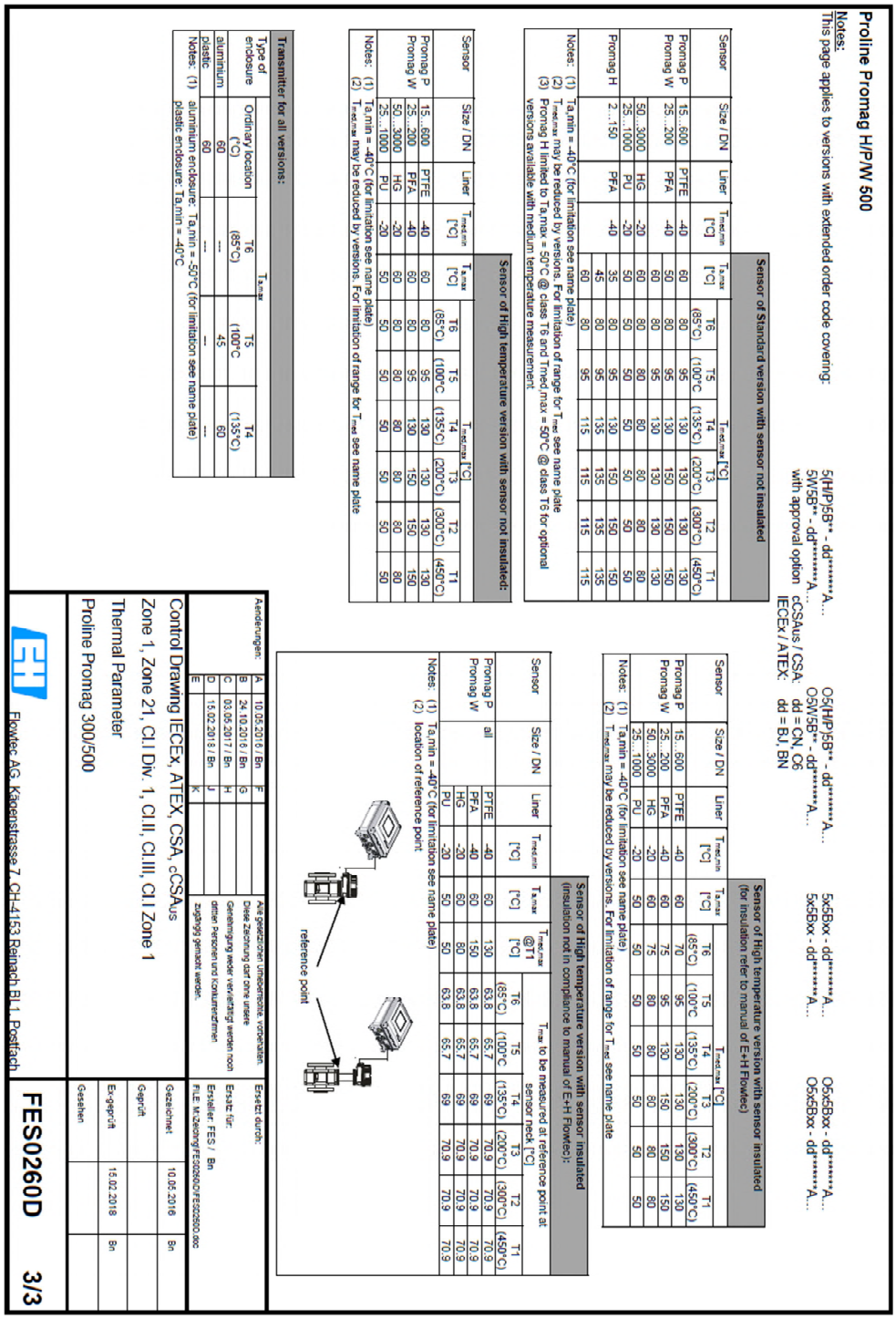


Certificate Annexe

Certificate Number: **Sira 16ATEX2219X**

Equipment: **Proline Promag 300/500, Proline Promass 300/500, Proline Cubemass 300/500, Proline Prosonic Flow 300/500, Proline t-mass 300/500**

Applicant: **Endress+Hauser Flowtec AG**



4 Proline Prosonic Flow 300/500

4.1 Marking

Proline Prosonic Flow G 300			
Model Code: 9*3*** – dd*ff**********+#**# O9*3*** – dd*ff**********+#**#			
dd = Approval	ff = I/O	ATEX marking	Marking of Ex protection
BB	CA, CB, CC, CD, HA, TA	Ex II2(1)G Ex II2(1)D	Ex db eb ia [ia Ga] IIC T6...T1 Gb Ex tb [ia Da] IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA	Ex II2G Ex II2D	Ex db eb ia IIC T6...T1 Gb Ex tb IIIC T** °C Db
BD	CA, CB, CC, CD, HA, TA	Ex II2(1)G Ex II2(1)D	Ex db ia [ia Ga] IIC T6...T1 Gb Ex tb [ia Da] IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA	Ex II2G Ex II2D	Ex db ia IIC T6...T1 Gb Ex tb IIIC T** °C Db

Proline Prosonic Flow G 500 with ISEM integrated in sensor				
Model Code: 5*5*** – dd*ff****A**********+#**# O5*5*** – dd*ff****A**********+#**#				
dd = Approval	ff = I/O	Device	ATEX marking	Marking of Ex protection transmitter
BJ and BN	HA, TA, BA, BB, GA, LA, NA, RA, SA, MA, CA, CB, CC, CD	Sensor	Ex II2G Ex II2D	Ex db ia IIC T6...T1 Gb Ex ia tb IIIC T** °C Db

Proline Prosonic Flow P 500 with ISEM integrated in transmitter				
ii. Model Code: 9P5*** – dd*ff***B**********+#**# O9P5*** – dd*ff***B**********+#**#				
iii. DK9013 – dd******** ODK9013 – dd**********				
dd = Approval	ff = I/O	Device	ATEX marking	Marking of Ex protection
BB	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	Ex II2(1)G Ex II2(1)D	Ex db eb ia [ia Ga] IIC T6... T5 Gb Ex tb [ia Da] IIIC T85°C Db
		Sensor	Ex II2G Ex II2D	Ex ia IIC T6...T1 Gb Ex ia IIIC T** °C Db
BD	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, SA, MA	Transmitter	Ex II2(1)G Ex II2(1)D	Ex db ia [ia Ga] IIC T6... T5 Gb Ex tb [ia Da] IIIC T85°C Db
		Sensor	Ex II2G Ex II2D	Ex ia IIC T6...T1 Gb Ex ia IIIC T** °C Db

4.2 Order Code

xtended order code Proline Prosonic Flow G 300:
9G3bcc – ddeffghjlpsstuuuvww + ##**
O9G3bcc – ddeffghjlpsstuuuvwwyy + ##** for OEM-versio

Extended order code Proline Prosonic Flow G 500:
9G5bcc – ddeffghijkmnopsstuuuvww + ##**
O9G5bcc – ddeffghijkmnopsstuuuvwwyy + ##** for OEM-version

a = Type of sensor
G = Prosonic Flow G

b = Generation
B = Generation of Flowmeter

cc = Size
any double digits with combination of number or letter

dd = Approval

Proline Prosonic Flow 300:

BB	=	Ex db eb [ia] IIC T6...T1 Gb	
		Ex tb IIIC T** Db	
BD	=	Ex db [ia] IIC T6...T1 Gb	
		Ex tb IIIC T** Db	

Proline Prosonic Flow 500:

BJ	=	[Ex ia] IIC	(transmitter)
		Ex ia IIC T6...T1 Gb	(sensor)
		Ex tb IIIC T** Db	(sensor)
BN	=	[Ex ia] IIC	(transmitter)
		Ex ia IIC T6...T1 Gb	(sensor)
		Ex tb IIIC T** Db	(sensor)

e = Power Supply

D	=	24Vdc
E	=	100-230Vac
I	=	100-230Vac / 24Vdc
X	=	sensor only

ff = Input / Output 1

BA	=	4-20mA HART
BB	=	4-20mA WHART
CA	=	4-20mA HART Ex i (passive)
CB	=	4-20mA WHART Ex i (passive)
CC	=	4-20mA HART Ex i (active)
CD	=	4-20mA WHART Ex i (active)
GA	=	Profibus PA
HA	=	Profibus PA Ex i
LA	=	Profibus DP
NA	=	EtherNet/IP
RA	=	Profinet IO
SA	=	Foundation Fieldbus
TA	=	Foundation Fieldbus Ex i
MA	=	Modbus RS485
X	=	sensor only

g = Input / Output 2

- A = without Input/Output 2
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- K = Pulse output Ex i
- L = Pulse output
- X = sensor only

h = Input / Output 3

- A = without Input/Output 3
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- K = Pulse output Ex i
- L = Pulse output
- X = sensor only

i = Input / Output 4 (Proline 500 only)

- A = without Input/Output 4
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- K = Pulse output Ex i
- L = Pulse output
- X = sensor only

j = Display / Operation

with remote Display : O

without remote Display : any single number or letter except O

k = **Integrated ISEM electronic** (Proline 500 only)
A = Sensor

l = **Housing** (Proline 300 only)
any single number or letter

m = **Transmitter Housing** (Proline 500 only)
any single number or letter

n = **Sensor Housing** (Proline 500 only)
any single number or letter

o = **Cable Sensor Connection** (Proline 500 only)
any single number or letter

p = **Cable Entry**
any single number or letter

qq = **Upgrade Kit**
any double digits with combination of number or letter

rr = **Existing Product** (refer to section 3.3 for assignment table of flowmeter to replacement transmitter)
any double digits with combination of number or letter

ss = **Measuring tube material, sensor version**
any double digits with combination of number or letter

t = **Pressure component**
any single number or letter

uuu = **Process connection**
any triple digits with combination of number or letter

v = **Calibration**
any single number or letter

ww = **Device model (two digit)** (refer to section 3.3 for assignment table of flowmeter to replacement transmitter)
A1 = product version 1

yy = **Customer version (two digits)**
any double digits with combination of number or letter

****** = **Option in two digits (none, two or multiple of two digits)**
any combination of number and/or letter

#, + = **Signs used as indicator for optional abbreviation of extended order code**

Extended order code Proline Prosonic Flow P 500:

9P5bcc – ddeffghjkmoqqrssttww + ##**
O9P5bcc – ddeffghjkmoqqrssttwwyy + ##** **for OEM-version**
9x5bxx – ddeffghijkmnoppqqww + ##** **for replacement transmitter**
O9x5bxx – ddeffghijkmnoppqqwwyy + ##** **for replacement transmitter OEM**

b = **Generation**
B = Generation of Flowmeter

cc = **Mounting Type**
any double digits with combination of number and/or letter

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dd = Approval Transmitter

- BB = Ex db eb [ia] IIC T6...T1 Gb
  Ex tb IIIC T** Db
- BD = Ex db [ia] IIC T6...T1 Gb
  Ex tb IIIC T** Db

e = Power Supply

- D = 24Vdc
- E = 100-230Vac
- I = 100-230Vac / 24Vdc

ff = Input / Output 1

- BA = 4-20mA HART
- BB = 4-20mA WHART
- CA = 4-20mA HART Ex i (passive)
- CB = 4-20mA WHART Ex i (passive)
- CC = 4-20mA HART Ex i (active)
- CD = 4-20mA WHART Ex i (active)
- GA = Profibus PA
- HA = Profibus PA Ex i
- LA = Profibus DP
- NA = EtherNet/IP
- RA = Profinet IO
- SA = Foundation Fieldbus
- TA = Foundation Fieldbus Ex i
- MA = Modbus RS485

g = Input / Output 2

- A = without Input/Output 2
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- K = Pulse output Ex i
- L = Pulse output

h = Input / Output 3

- A = without Input/Output 3
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output

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F = Pulse output phase-shifted
G = Pulse/Frequency/Switch output Ex i
H = Relay
I = 4-20mA input
J = Status input
K = Pulse output Ex i
L = Pulse output

i = Input / Output 4
A = without Input/Output 4

j = Display / Operation
any single number or letter

k = Integrated ISEM electronic
B = transmitter

m = Transmitter Housing
any single number or letter

n = Cable Sensor Connection
any single number or letter

o = Cable Entry
any single number or letter

pp = Existing Product (see assignment of flowmeter to replacement transmitter)
PA = Prosonic Flow P 500

qq = Sensor type
any double digits with combination of number and/or letter

r = Process Temperature
any single number or letter

ss = Cable
any double digits with combination of number and/or letter

tt = Installation set
any double digits with combination of number and/or letter

ww = Device model (two digit) (see assignment of flowmeter to replacement transmitter)
A2 = product version 2

yy = Customer version (two digits)
any double digits with combination of number or letter

**** = Option in two digits (none, two or multiple of two digits)**
any combination of number and/or letter

#, + = Signs used as indicator for optional abbreviation of extended order code

Extended order code Proline Prosonic Flow P 500 Clamp-On sensor:
DK9013 – cddqqrttssww + ##**
ODK9013 – cddqqrttsswwyy + ##** for OEM-version

c = Alteration Kit
any single number or letter

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Certificate Annexe

Certificate Number: **Sira 16ATEX2219X**

Equipment: **Proline Promag 300/500, Proline Promass 300/500, Proline Cubemass 300/500, Proline Prosonic Flow 300/500, Proline t-mass 300/500**

Applicant: **Endress+Hauser Flowtec AG**

---

dd = **Approval**

Proline Prosonic Flow P 500:

BB = Ex db eb [ia] IIC T6...T1 Gb
Ex tb IIIC T** Db

BD = Ex db [ia] IIC T6...T1 Gb
Ex tb IIIC T** Db

qq = **Sensor type**
any double digits with combination of number and/or letter

r = **Process Temperature**
any single number or letter

tt = **Cable**
any single number or letter

ss = **Installation set**
any double digits with combination of number and/or letter

ww = **Device model (two digit) (see assignment of flowmeter to replacement transmitter)**
A2 = product version 2

yy = **Customer version (two digits)**
any double digits with combination of number or letter

****** = **Option in two digits (none, two or multiple of two digits)**
any combination of number and/or letter

#, + = **Signs used as indicator for optional abbreviation of extended order code**

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4.3 Assignment of Flowmeter to Replacement Transmitter

The replacement transmitters are assigned to the flowmeter Proline Prosonic Flow G 300/500 as follows:

Product flowmeters			Replacement transmitter type			
model code	**Generation code b =**	**device model code ww =**	**model code**	**Generation code b =**	**existing product pp =**	**device model code ww =**
9G***b****-...**ww**, O9G***b****-...**ww**	B	A1 / A2	9x***b**xx-...**pp**...**ww**, O9x***b**xx-...**pp**...**ww**	B	AA	A1 / A2
9P***b****-...**ww**, O9P***b****-...**ww**	B	A1 / A2	9x***b**xx-...**pp**...**ww**, O9x***b**xx-...**pp**...**ww**	B	AB	A1 / A2

4.4 Parameters

4.4.1 Electrical Parameters

Power Supply		
Order Code e =	**terminal no.**	**values**
D [1)]	No. 1(L+/L), 2(L-/N)	U_N = 19.2...28.8V_{DC} U_M = 250Vac
E [1)]	No. 1(L+/L), 2(L-/N)	U_N = 85...264V_{AC} U_M = 250Vac
I [2)]	No. 1(L+/L), 2(L-/N)	U_N = 19.2...28.8V_{DC} /85...264V_{AC} U_M = 250 V

7) applicable for products with approval code dd = BA, BB, BC, BD, B7, B8

8) applicable for products with approval code dd = BI, BJ, BM, BN

Input/Output 1		
Order Code ff =	**terminal no.**	**values**
BA, BB, MA	No. 26, 27	U_N = 30V_{DC} U_M = 250Vac
LA, GA, SA	No. 26, 27	U_N = 32V_{DC} U_M = 250Vac
CA, CB	No. 26, 27	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0

Input/Output 1			
Order Code ff =	**terminal no.**	**values**	
CC, CD	No. 26, 27	1) U_O = 21.8V I_O = 90mA P_O = 491mW L_O = 4.1mH (IIC) / 15mH (IIB) C_O = 160nF (IIC) / 1160nF (IIB) Ui = 30V Ii = 10mA Pi = 0.3W Ci = 6nF Li = 4.1mH	2) U_O = 21.8V I_O = 90mA P_O = 491mW L_O = 9mH (IIC) / 39mH (IIB) C_O = 600nF (IIC) / 4000nF (IIB) Ui = 30V Ii = 10mA Pi = 0.3W Ci = 6nF Li = 4.1mH
HA, TA	No. 26, 27	1) Profibus PA (Fisco Field Device) / Foundation Fieldbus U_i = 30V I_i = 570mA P_i = 8.5W L_i = 10µH C_i = 5nF	2) Profibus PA (Fisco Field Device) / Foundation Fieldbus U_i = 32V I_i = 570mA P_i = 8.5W L_i = 10µH C_i = 5nF
NA, RA	IO1 / RJ45	U_N = 30V_{DC} U_M = 250Vac	

[1] applicable for products with approval code dd = BB, BD, B7, B8
[2] applicable for products with approval code dd = BM, BN

Input/Output 2		
Order Code g =	**terminal no.**	**values**
C, G, K	No. 24, 25	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0
B, D, E, F, I, J, L	No. 24, 25	U_N = 30V_{DC} U_M = 250Vac
H	No. 24, 25	U_N = 30V_{DC} I_N = 100mA_{DC} / 500mA_{AC} U_M = 250Vac

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Input/Output 3		
Order Code h =	**terminal no.**	**values**
C, G, K	No. 22, 23	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0
B, D, E, F, I, J, L	No. 22, 23	U_N = $30V_{DC}$ U_M = 250Vac
H	No. 22, 23	U_N = $30V_{DC}$ I_N = $100mA_{DC}$ / $500mA_{AC}$ U_M = 250Vac

Input/Output 4		
Order Code i =	**terminal no.**	**values**
C, G, K	No. 20, 21	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0
B, D, E, F, I, J, L	No. 20, 21	U_N = $30V_{DC}$ U_M = 250Vac
H	No. 20, 21	U_N = $30V_{DC}$ I_N = $100mA_{DC}$ / $500mA_{AC}$ U_M = 250Vac

Service Interface		
Order Code dd =	**terminal no.**	**values**
BB, BD, B7, B8	Service Interface	Service Interface shall only be installed in areas which are known to be non hazardous
not for: BB, BD, B7, B8	Service Interface	U_N = 3.3V

Antenna bushing		
Order Code dd =	**terminal no.**	**values**
BB, BJ, BN, B7	N connector	See conditions of safe use

Display remote		
Order Code dd =	**terminal no.**	**values**
BB, BD, B7, B8	No. 81, 82, 83, 84	Uo = 3.9V Io = 1.5A (spark) 200mA (power)

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		Po = 600mW Ri = 2.6Ω Co = 670µF Lo = 0
not for: BB, BD, B7, B8	No. 81, 82, 83, 84	U_N = 3.3V I_N = 150mA

For Transmitter with approval code dd = BB, BD, B7 and B8 connected to the Remote Display of Endress+Hauser, Type DKX001 or ODKX001, the cable parameter with ration L/R = ≤ 0.024 mH/Ω applies.

Proline Prosonic Flow G Remote Transmitter and Remote Sensor:

9G*****-… and O9G*****-… with order code dd = BJ, BN, in combination with k = A:
Transmitter:
terminals 61, 62 -> U_N = 35V
terminals 63, 64 -> U_N = 3.3V

Sensor:
terminals 61, 62 -> U_N = 35V
terminals 63, 64 -> U_N = 3.3V

Proline Prosonic Flow P Remote Transmitter and Remote Sensor:

9P****-... and O9P****-... with order code dd = BB, BD in combination with k = B:

Transmitter:
CH1, CH2 -> Uo = 40V, Io = 36.7mA, Po =459mW, Li = n.a., Ci = n.a.

Sensor:
Connector -> Ui = 40V, Ii = n.a., Pi =n.a., Li = n.a., Ci = n.a.

Certificate Annexe

Certificate Number: **Sira 16ATEX2219X**

Equipment: **Proline Promag 300/500, Proline Promass 300/500, Proline Cubemass 300/500, Proline Prosonic Flow 300/500, Proline t-mass 300/500**

Applicant: **Endress+Hauser Flowtec AG**

4.4.2 **Thermal Parameters (Zone 1)**

Proline Prosonic Flow G 300

Notes:
This page applies to versions with extended order code covering: 9*3B** – dd… O9*3B** – dd… 9x3Bxx – dd… O9x3Bxx – dd…
with approval option cCSAus / CSA: dd = CD, CE, C2, C4
IECEx / ATEX: dd = BB, BD

Temperature table for versions with sensor insulated and not insulated
(for insulation refer to manual of Endress+Hauser Flowtec)

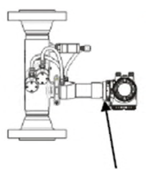
Size / DN	T_{med}		$T_{a,max}$	$T_{med,max}$ [°C]					
	min [°C]	max [°C]	[°C]	T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
25 … 300	-50	90	40	40	40	90	90	90	90
			55	---	40	90	90	90	90
			60	---	---	90	90	90	90
		150 (1)	45 (1)	70	85	120	150	150	150
			55 (1)	---	85	120	150	150	150
			60 (1)	---	(85)	(120)	(150)	(150)	(150)

Notes:
(1) temperatures not applicable for versions with pressure sensor
(2) Ta,min = -40°C, -50°C respectively (see nameplate)
(3) values in brackets are applicable for installation where the transmitter is not installed above the sensor

Temperature table for versions with sensor insulated
(for insulation not in compliance to manual of Endress+Hauser Flowtec)

Size / DN	T_{max} to be measured at reference point at sensor neck [°C]					
	T6 (85C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
all	55	69	72	74	74	74

Notes:
(1) for versions with pressure sensor, the pressure sensor shall not be insulated
(2) for safe use temperatures shall not exceed all of the following:
- temperature table for versions with sensor not insulated (refer to table above)
- temperature at reference point as listed in this table
- Ta,min = -40°C, -50°C respectively (see nameplate)
- for maximum medium temperatue and minimum medium temperature see nameplate
(3) versions with pressure sensor shall not exceed temperatures as listed in table beside for insulated and not insulated sensor
(4) location of reference point



Aenderungen:	A	22.02.2018 / Bn	F		Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugängig gemacht werden.	Ersetzt durch:
	B		G			Ersatz für:
	C		H			Ersteller: FES / Bn
	D		J			FILE: M:\Zeichng\FES0321\A\FES0321A.doc
	E		K			

Control Drawing IECEx, ATEX, CSA, cCSAus
Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1
Thermal Parameter
Proline Prosonic Flow G 300/500

Gezeichnet	07.02.2018	Bn
Geprüft		
Ex-geprüft	22.02.2018	Bn
Gesehen		

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach

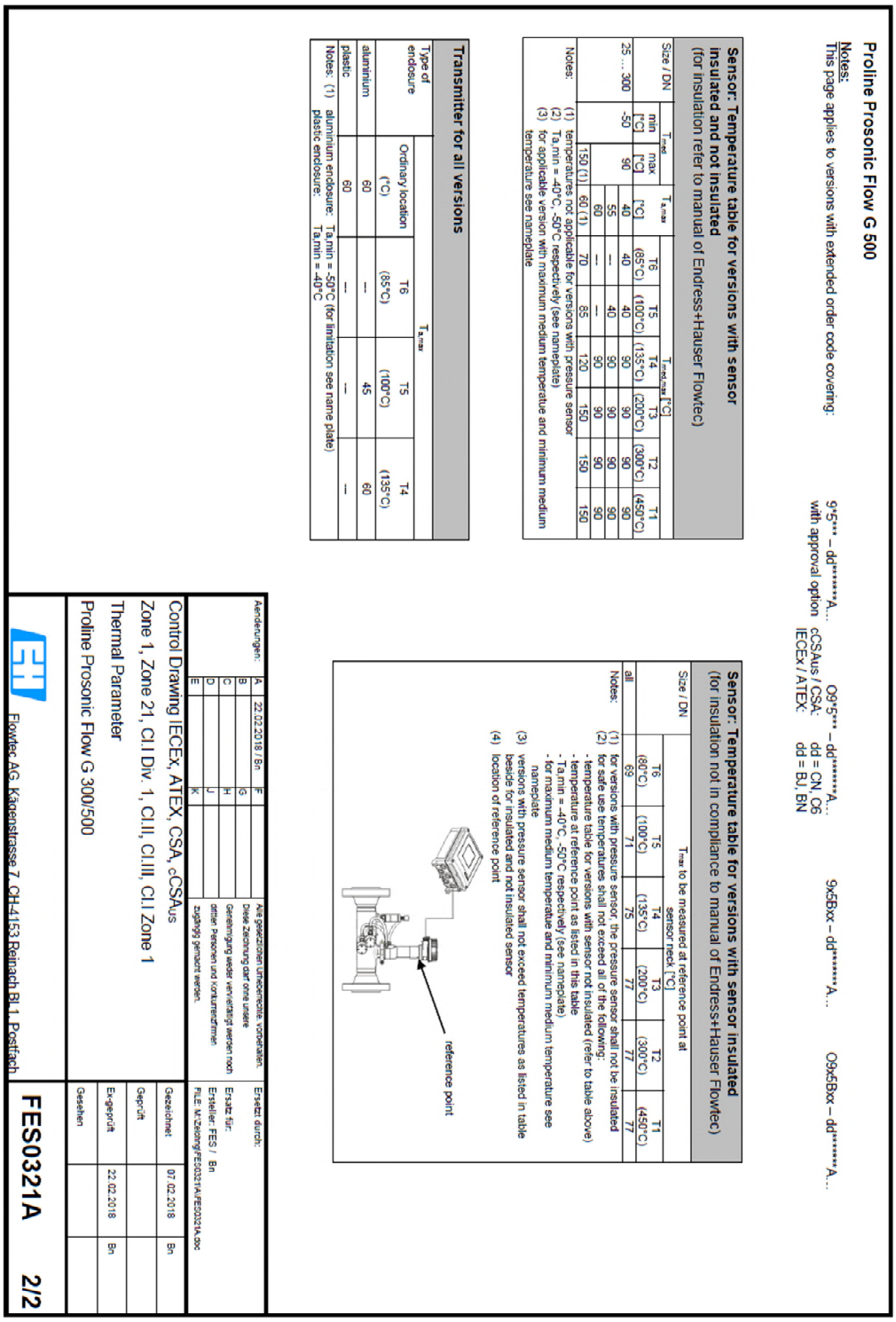
FES0321A **1/2**

Certificate Annexe

Certificate Number: **Sira 16ATEX2219X**

Equipment: **Proline Promag 300/500, Proline Promass 300/500, Proline Cubemass 300/500, Proline Prosonic Flow 300/500, Proline t-mass 300/500**

Applicant: **Endress+Hauser Flowtec AG**



Proline Prosonic Flow G 500

Notes:
This page applies to versions with extended order code covering:

9*5*** – dd*******A...
with approval option

09*5*** – dd*******A...
dd = CN, C6
dd = BJ, BN

9x5Bxx – dd*******A...

09x5Bxx – dd*******A...

cCSAus / CSA:
IECEx / ATEX:

Sensor: Temperature table for versions with sensor insulated and not insulated
(for insulation refer to manual of Endress+Hauser Flowtec)

Size / DN	T_{amb} min [°C]	T_{amb} max [°C]	T_a max [°C]	T_{medium} max [°C]				
			T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
25 ... 300	-50	90	40	40	90	90	90	90
			55	40	90	90	90	90
			60	---	90	90	90	90
		150 (1)	60 (1)	---	85	120	150	150

Notes:
(1) temperatures not applicable for versions with pressure sensor
(2) Ta,min = -40°C, -50°C respectively (see nameplate)
(3) for applicable version with maximum medium temperatue and minimum medium temperature see nameplate

Sensor: Temperature table for versions with sensor insulated
(for insulation not in compliance to manual of Endress+Hauser Flowtec)

Size / DN	T_{max} to be measured at reference point at sensor neck [°C]				
	T6 (80°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
all	69	71	75	77	77	77

Notes:
(1) for versions with pressure sensor, the pressure sensor shall not be insulated
(2) for safe use temperatures shall not exceed all of the following:
- temperature table for versions with sensor not insulated (refer to table above)
- temperature at reference point as listed in this table
- Ta,min = -40°C, -50°C respectively (see nameplate)
- for maximum medium temperature and minimum medium temperature see nameplate
(3) versions with pressure sensor shall not exceed temperatures as listed in table beside for insulated and not insulated sensor
(4) location of reference point

Transmitter for all versions

Type of enclosure	T_{amb}			
	Ordinary location (°C)	T6 (85°C)	T5 (100°C)	T4 (135°C)
aluminium	60	---	45	60
plastic	60	---	---	---

Notes: (1) aluminium enclosure: Ta,min = -50°C (for limitation see name plate)
plastic enclosure: Ta,min = -40°C

Aenderungen:	A.	22.02.2018 / Bn	F.		Alle gekennzeichneten Urheberrechte vorbehalten.	Ersetzt durch:
	B.		G.		Diese Zeichnung darf ohne unsere	
	C.		H.		Genehmigung weder vervielfältigt werden noch	Ersatz für:
	D.		J.		dritten Personen und Konkurrenzfirmen	Ersteller: FES / Bn
	E.		K.		zugänglich gemacht werden.	FILE: M:\Zeichnig\FES\0321A\FES0321A.doc

Control Drawing IECEx, ATEX, CSA, cCSAus

Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1

Thermal Parameter

Proline Prosonic Flow G 300/500

Gezeichnet:	07.02.2018	Bn	
Geprüft			
Freigegeben	22.02.2018	Bn	
Gesehen			

Flowtec AG, Käppelistrasse 7, CH-4153 Reinach BL 1, Postfach

FES0321A **2/2**

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5 Proline t-mass 300/500

5.1 Marking

Proline t-mass F/I 300			
Model Code: 6F3*** – dd*ff**********+#**#		O6F3*** – dd*ff**********+#**#	
6I3*** – dd*ff**********+#**#		O6I3*** – dd*ff**********+#**#	
dd = Approval	ff = I/O	ATEX marking	Marking of Ex protection
BB	CA, CB, CC, CD, HA, TA	Ex II2(1)G Ex II1/2(1)G Ex II2(1)D	Ex db eb ia [ia Ga] IIC T4...T1 Gb Ex db eb ia [ia Ga] IIC T4...T1 Ga/Gb Ex tb [ia Da] IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA	Ex II2G Ex II1/2G Ex II2D	Ex db eb ia IIC T4...T1 Gb Ex db eb ia IIC T4...T1 Ga/Gb Ex tb IIIC T** °C Db
BD	CA, CB, CC, CD, HA, TA	Ex II2(1)G Ex II1/2(1)G Ex II2(1)D	Ex db ia [ia Ga] IIC T4...T1 Gb Ex db ia [ia Ga] IIC T4...T1 Ga/Gb Ex tb [ia Da] IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA	Ex II2G Ex II1/2G Ex II2D	Ex db ia IIC T4...T1 Gb Ex db ia IIC T4...T1 Ga/Gb Ex tb IIIC T** °C Db

Proline t-mass F/I 500 with ISEM integrated in sensor				
Model Code: 6F5*** – dd*ff****A**********+#**#			O6F5*** – dd*ff****A**********+#**#	
6I5*** – dd*ff****A**********+#**#			O6I5*** – dd*ff****A**********+#**#	
dd = Approval	ff = I/O	Device	ATEX marking	Marking of Ex protection transmitter
BJ and BN	HA, TA, BA, BB, GA, LA, NA, RA, SA, MA, CA, CB, CC, CD	Transmitter	Ex II(1)G Ex II(1)D	[Ex ia] IIC [Ex ia] IIIC
		Sensor	Ex II2G Ex II1/2G Ex II2D	Ex db ia IIC T4...T1 Gb Ex db ia IIC T4...T1 Ga/Gb Ex ia tb IIIC T** °C Db

5.2 Order Code

Extended order code Proline t-mass 300:

6F3bcc – ddeffghjlpsstttvww + ##**
6I3bcc – ddeffghjlpsstttuuvww + ##**
O6F3bcc – ddeffghjlpsstttvwwyy + ##** for OEM-version
O6I3bcc – ddeffghjlpsstttuuvwwyy + ##** for OEM-version
6x3bxx – ddeffghjlpssww + ##** for replacement transmitter
O6x3bxx – ddeffghjlpsswwyy + ##** for replacement transmitter OEM

Extended order code Proline t-mass 500:

6F5bcc – ddeffghijkmnopsstttvww + ##**
6I5bcc – ddeffghijkmnopsstttuuvww + ##**
O6F5cc – ddeffghijkmnopsstttvwwyy + ##** for OEM-version
O6I5cc – ddeffghijkmnopsstttuuvwwyy + ##** for OEM-version
6x5bxx – ddeffghijkmopssww + ##** for replacement transmitter
O6x5bxx – ddeffghijkmopsswwyy + ##** for replacement transmitter OEM

b = Generation
B = Generation of Flowmeter

cc = Size
any combination of number and/or letter up to size = DN100 (t-mass F) / 1500mm (t-mass I)

dd = Approval

Proline t-mass 300:

BB	=	Ex db eb [ia] IIC T4...T1 Gb	
		Ex tb IIIC T* Db	
BD	=	Ex db [ia] IIC T4...T1 Gb	
		Ex tb IIIC T* Db	

Proline t-mass 500:

BJ	=	[Ex ia] IIC	(transmitter)
		Ex db ia IIC T4...T1 Gb	(sensor)
		Ex tb IIIC T** Db	(sensor)
BN	=	[Ex ia] IIC	(transmitter)
		Ex db ia IIC T4...T1 Gb	(sensor)
		Ex tb IIIC T* Db	(sensor)

e = Power Supply

D	=	24Vdc
E	=	100-230Vac
I	=	100-230Vac / 24Vdc
X	=	sensor only

ff = Input / Output 1

BA	=	4-20mA HART
BB	=	4-20mA WHART
CA	=	4-20mA HART Ex i (passive)
CB	=	4-20mA WHART Ex i (passive)
CC	=	4-20mA HART Ex i (active)
CD	=	4-20mA WHART Ex i (active)
GA	=	Profibus PA
HA	=	Profibus PA Ex i
LA	=	Profibus DP
MA	=	Modbus RS485
NA	=	EtherNet/IP
RA	=	Profinet IO
SA	=	Foundation Fieldbus
TA	=	Foundation Fieldbus Ex i
XX	=	sensor only

g = Input / Output 2
- A = without Input/Output 2
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- K = Pulse output Ex i
- L = Pulse output
- X = sensor only

h = Input / Output 3
- A = without Input/Output 3
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- K = Pulse output Ex i
- L = Pulse output
- X = sensor only

i = Input / Output 4 (Proline 500 only)
- A = without Input/Output 4
- B = 4-20mA
- C = 4-20mA Ex i (passive)
- D = Configurable IO
- E = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- H = Relay
- I = 4-20mA input
- J = Status input
- K = Pulse output Ex i
- L = Pulse output
- X = sensor only

j = Display / Operation

with remote Display : O

without remote Display : any single number or letter except O

k = Integrated ISEM electronic (Proline 500 only)
- A = SensorI

l = **Housing** (Proline 300 only)
any single number or letter

m = **Transmitter Housing** (Proline 500 only)
any single number or letter

n = **Sensor Housing** (Proline 500 only)
any single number or letter

o = **Cable Sensor Connection** (Proline 500 only)
any single number or letter

p = **Cable Entry**
any single number or letter

ss = **material sensor**
any double digits with combination of number or letter

ttt = **Process connection**
any triple digits with combination of number or letter

uu = **gasket**
any double number or letter

v = **Calibration**
any single number or letter

ww = **Device Model (two digit)** (refer to section 4.3 for assignment table of flowmeter to replacement transmitter)
A1 = product version 1

yy = **Customer version (two digits)**
any double digits with combination of number or letter

****** = **Option in two digits (none, two or multiple of two digits)**
any combination of number and/or letter

#, + = **Signs used as indicator for optional abbreviation of extended order code**

5.3 Assignment of Flowmeter to Replacement Transmitter

The replacement transmitters are assigned to the flowmeter Proline t-mass 300/500 as follows:

Product flowmeters			**Replacement transmitter type**			
model code	**Generation code b =**	**device model code ww =**	**model code**	**Generation code b =**	**existing product rr =**	**device model code ww =**
6F***b******-...ww**, O6F***b******-...ww**	B	A1	6x***b*****xx...ww**, O6x***b*****xx-...ww**	B	n.a.	A1
6I***b******-...ww**, O6I***b******-...ww**	B	A1	6x***b*****xx-...ww**, O6x***b*****xx-...ww**	B	n.a.	A1

5.4 Parameters

5.4.1 Electrical Parameters

Power Supply		
Order Code e =	**terminal no.**	**values**
D [1)]	No. 1(L+/L), 2(L-/N)	U_N = 19.2...28.8V_{DC} U_M = 250Vac
E [1)]	No. 1(L+/L), 2(L-/N)	U_N = 85...264V_{AC} U_M = 250Vac
I [2)]	No. 1(L+/L), 2(L-/N)	U_N = 19.2...28.8V_{DC} /85...264V_{AC} U_M = 250 V

9) applicable for products with approval code dd = BA, BB, BC, BD, B7, B8

10) applicable for products with approval code dd = BI, BJ, BM, BN

Input/Output 1			
Order Code ff =	**terminal no.**	**values**	
BA, BB, MA	No. 26, 27	U_N = 30V_{DC} U_M = 250Vac	
LA, GA, SA	No. 26, 27	U_N = 32V_{DC} U_M = 250Vac	
CA, CB	No. 26, 27	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0	
CC, CD	No. 26, 27	1) U_O = 21.8V I_O = 90mA P_O = 491mW L_O = 4.1mH (IIC) / 15mH (IIB) C_O = 160nF (IIC) / 1160nF (IIB) Ui = 30V Ii = 10mA Pi = 0.3W Ci = 6nF Li = 4.1mH	2) U_O = 21.8V I_O = 90mA P_O = 491mW L_O = 9mH (IIC) / 39mH (IIB) C_O = 600nF (IIC) / 4000nF (IIB) Ui = 30V Ii = 10mA Pi = 0.3W Ci = 6nF Li = 4.1mH

Input/Output 1			
Order Code ff =	**terminal no.**	**values**	
HA, TA	No. 26, 27	[1] Profibus PA (Fisco Field Device) / Foundation Fieldbus U_i = 30V I_i = 570mA P_i = 8.5W L_i = 10µH C_i = 5nF	[2] Profibus PA (Fisco Field Device) / Foundation Fieldbus U_i = 32V I_i = 570mA P_i = 8.5W L_i = 10µH C_i = 5nF
NA, RA	IO1 / RJ45	U_N = $30V_{DC}$ U_M = 250Vac	

[1] applicable for products with approval code dd = BB, BD, B7, B8
[2] applicable for products with approval code dd = BM, BN

Input/Output 2		
Order Code g =	**terminal no.**	**values**
C, G, K	No. 24, 25	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0
B, D, E, F, I, J, L	No. 24, 25	U_N = $30V_{DC}$ U_M = 250Vac
H	No. 24, 25	U_N = $30V_{DC}$ I_N = $100mA_{DC}$ / $500mA_{AC}$ U_M = 250Vac

Input/Output 3		
Order Code h =	**terminal no.**	**values**
C, G, K	No. 22, 23	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0
B, D, E, F, I, J, L	No. 22, 23	U_N = $30V_{DC}$ U_M = 250Vac
H	No. 22, 23	U_N = $30V_{DC}$ I_N = $100mA_{DC}$ / $500mA_{AC}$ U_M = 250Vac

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Input/Output 4		
Order Code i =	**terminal no.**	**values**
C, G, K	No. 20, 21	U_i = 30V I_i = 100mA P_i = 1.25W L_i = 0 C_i = 0
B, D, E, F, I, J, L	No. 20, 21	U_N = $30V_{DC}$ U_M = 250Vac
H	No. 20, 21	U_N = $30V_{DC}$ I_N = $100mA_{DC}$ / $500mA_{AC}$ U_M = 250Vac

Service Interface		
Order Code dd =	**terminal no.**	**values**
BB, BD, B7, B8	Service Interface	Service Interface shall only be installed in areas which are known to be non hazardous
not for: BB, BD, B7, B8	Service Interface	U_N = 3.3V

Antenna bushing		
Order Code dd =	**terminal no.**	**values**
BB, BJ, BN, B7	N connector	See conditions of safe use

Display remote		
Order Code dd =	**terminal no.**	**values**
BB, BD, B7, B8	No. 81, 82, 83, 84	Uo = 3.9V Io = 1.5A (spark) 200mA (power) Po = 600mW Ri = 2.6Ω Co = 670µF Lo = 0
not for: BB, BD, B7, B8	No. 81, 82, 83, 84	U_N = 3.3V I_N = 150mA

For Transmitter with approval code dd = BB, BD, B7 and B8 connected to the Remote Display of Endress+Hauser, Type DKX001 or ODKX001, the cable parameter with ration L/R = ≤ 0.024 mH/Ω applies.

Proline t-mass Remote Transmitter and Remote Sensor:

6*****-… and O6*****-… with order code dd = BJ, BN in combination with k = A:
Transmitter:
terminals 61, 62, 63, 64 -> Uo = 13.8V, Io = 1.156A, Po = 3.3W

Sensor:
terminals 61, 62, 63, 64 -> Ui = 14V, Ii = 1.2A, Pi = 3.4W

For interconnection of transmitter to sensor any cable may be used with the following requirements:

- L/R ≤ 0.0089 mH/Ω and C_{cable} ≤ 760nF for group IIC, L/R ≤ 0.0356 mH/Ω and C_{cable} ≤ 4.2µF for group IIB
  or
- L_{cable} ≤ 26µH and C_{cable} ≤ 760nF for group IIC, L_{cable} ≤ 104µH and C_{cable} ≤ 4.2µF for group IIB

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5.4.2 Thermal Parameters (Zone 1)

Proline t-mass 300

Notes:
This page applies to versions with extended order code covering: 6*3B** – dd… O6*3B** – dd… 6x3Bxx – dd… O6x3Bxx – dd…
with approval option cCSAus / CSA: dd = CD, CE, C2, C4
IECEx / ATEX: dd = BB, BD

Temperature table for versions with sensor insulated and not insulated
(for insulation refer to manual of Endress+Hauser Flowtec)

Size / DN	T_{med} min [°C]	T_{med} max [°C]	$T_{a,max}$ [°C]	$T_{med,max}$ [°C] T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
all	-50	180	50	—	—	115	150	180	180
			55	—	—	115	155	160 (180)	160 (180)
			60	—	—	100 (115)	100 (130)	100 (130)	100 (130)

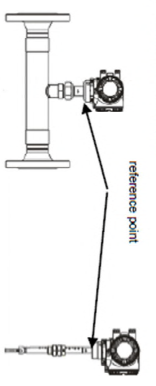
Notes: (1) Ta,min = -40°C, -50°C respectively (see nameplate)
(2) values in brackets are applicable for installation where the transmitter is not installed above the sensor

Temperature table for versions with sensor insulated
(for insulation not in compliance to manual of Endress+Hauser Flowtec)

Size / DN	T_{max} to be measured at reference point at sensor neck [°C] T6 (85C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
all	—	—	73	76	77	77

Notes: (1) for safe use temperatures shall not exceed all of the following:
- temperature table for versions with sensor not insulated (refer to table above)
- temperature at reference point as listed in this table
- Ta,min = -40°C, -50°C respectively (see nameplate)
- for maximum medium temperatue and minimum medium temperature see nameplate

(2) location of reference point



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	A	19.07.2018 / Bn	F			Ersatz für:
	B		G			Ersteller: FES / Bn
	C		H			FILE: M:\Zeichng\FES0331\A\FES0331A.doc
	D		J			
	E		K			

Control Drawing IECEx, ATEX, CSA, cCSAus Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1 Thermal Parameter Proline t-mass 300/500	Gezeichnet	19.07.2018	Bn
	Geprüft		
	Ex-geprüft	19.07.2018	Bn
	Gesehen		

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FES0331A 1/2

Proline t-mass 500

Notes:
This page applies to versions with extended order code covering: 6*5*** – dd*******A... O6*5*** – dd*******A... 6x5Bxx – dd*******A... O6x5Bxx – dd*******A...
with approval option cCSAus / CSA: dd = CN, C6
IECEx / ATEX: dd = BJ, BN

Sensor: Temperature table for versions with sensor insulated and not insulated
(for insulation refer to manual of Endress+Hauser Flowtec)

Size / DN	T_{med} min [°C]	T_{med} max [°C]	$T_{a,max}$ [°C]	$T_{med,max}$ [°C] T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
all	-50	180	55	---	---	115	155	180	180
			60	---	---	115	130	130	130

Notes: (1) Ta,min = -40°C, -50°C respectively (see nameplate)

Transmitter for all versions

Type of enclosure	$T_{a,max}$ Ordinary location (°C)	T6 (85°C)	T5 (100°C)	T4 (135°C)
aluminium	60	---	45	60
plastic	60	---	---	---

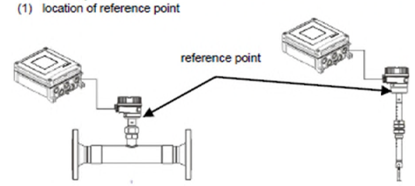
Notes: (1) aluminium enclosure: Ta,min = -50°C (for limitation see name plate)
plastic enclosure: Ta,min = -40°C

Sensor: Temperature table for versions with sensor insulated
(for insulation not in compliance to manual of Endress+Hauser Flowtec)

Size / DN	T_{max} to be measured at reference point at sensor neck [°C] T6 (80°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
all	---	---	76	78	82	82

Notes: (1) for safe use temperatures shall not exceed all of the following:
- temperature table for versions with sensor not insulated (refer to table above)
- temperature at reference point as listed in this table
- Ta,min = -40°C, -50°C respectively (see nameplate)
- for maximum medium temperatue and minimum medium temperature see nameplate

(1) location of reference point



Aenderungen:	A	19.07.2018 / Bn	F	Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugängig gemacht werden.	Ersetzt durch:
	B		G		Ersatz für:
	C		H		Ersteller: FES / Bn
	D		J		FILE: M:\Zeichng\FES0331A\FES0331A.doc
	E		K		

Control Drawing IECEx, ATEX, CSA, cCSAus
Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1
Thermal Parameter
Proline t-mass 300/500

Gezeichnet	19.07.2018	Bn
Geprüft		
Ex-geprüft	19.07.2018	Bn
Gesehen		

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