



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

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

Certificate No.:	IECEX CSA 16.0034X	Page 1 of 7	<u>Certificate history:</u>
Status:	Current	Issue No: 9	Issue 8 (2022-05-20)
Date of Issue:	2023-10-17		Issue 7 (2020-10-17)
Applicant:	Endress+Hauser Flowtec AG Kägenstrasse 7 CH-4153 Reinach/BL1 Switzerland		Issue 6 (2020-05-26)
			Issue 5 (2019-08-22)
			Issue 4 (2019-03-01)
			Issue 3 (2017-12-27)
			Issue 2 (2017-08-31)
			Issue 1 (2017-01-17)
			Issue 0 (2016-07-13)

Equipment: **Proline 300/500 flowmeter system**

Optional accessory:

Type of Protection: **Ex d, n, i, t, e**

Marking:

See below annexes attached to this certificate for details:

Annex A - Proline Promass 300/500 and Proline Cubemass 300/500

Annex B - Proline Promag 300/500

Annex C - Proline Prosonic Flow 300/500

Annex D - Proline t-mass 300/500

Annex E - Proline Teqwave M 300/500

Approved for issue on behalf of the IECEx
Certification Body:

Dave Magee

Position:

Senior Director of Operations, Toronto

Signature:
(for printed version)

Date:
(for printed version)

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178 Rexdale Boulevard
Toronto, Ontario M9W 1R3
Canada





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Manufacturer: **Endress+Hauser Flowtec AG**
Kagenstrasse 7
CH-4153
Reinach/BL1
Switzerland

Manufacturing locations: **Endress+Hauser Flowtec AG**
Kagenstrasse 7
CH-4153
Reinach/BL1
Switzerland

Endress+Hauser Flowtec AG
35, Rue de l' Europe
68700 Cernay
France

Endress+Hauser Flowtec (Brazil)
Fluxômetros Ltda.
Estrada Municipal Antônio Sesti,
600 Bairro Recreio Costa Verde
Itatiba, SP - 13254-085
Brazil

See following pages for more locations

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

STANDARDS :

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

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-1:2014](#) Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

[IEC 60079-15:2017](#) Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:5.0

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

[IEC 60079-31:2013](#) Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

[IEC TS 60079-47:2021](#) Explosive atmospheres – Part 47: Equipment protection by 2-wire intrinsically safe Ethernet concept (2-WISE)
Edition:1.0

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

TEST & ASSESSMENT REPORTS:

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

Test Reports:

[CA/CSA/ExTR16.0031/00](#)
[CA/CSA/ExTR16.0031/03](#)
[CA/CSA/ExTR16.0031/06](#)
[CA/CSA/ExTR16.0031/09](#)

[CA/CSA/ExTR16.0031/01](#)
[CA/CSA/ExTR16.0031/04](#)
[CA/CSA/ExTR16.0031/07](#)

[CA/CSA/ExTR16.0031/02](#)
[CA/CSA/ExTR16.0031/05](#)
[CA/CSA/ExTR16.0031/08](#)



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Quality Assessment Report:

[DE/TUN/QAR06.0004/10](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

This certificate covers various type of flowmeters as given below:

- A) Proline Promass 300, Proline Promass 500, Proline Cubemass 300 and Proline Cubemass 500
- B) Proline Promag 300 and Proline Promag 500
- C) Proline Prosonic Flow 300 and Proline Prosonic Flow 500
- D) Proline t-mass 300 and Proline t-mass 500
- E) Proline Teqwave M 300/500

Description for Proline Promag, Proline Promass, Proline Cubemass, Proline Prosonic Flow, Proline t-mass and Proline Teqwave M:

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, Proline t-mass 500, Proline Teqwave M 300 and Proline Teqwave M 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 (Intelligent Sensor Electronics Module) electronic integrated in transmitter (i.e. Proline 500 analog) where the sensor sends analog signals to the transmitter and a version with ISEM electronic in sensor where the sensor is connected by a digital circuit to the transmitter (i.e. Proline 500 digital) with additional electronics located at the sensor for assessment of the sensor signals. As an exception Proline Prosonic Flow G 500, Proline t-mass 500 and Proline Teqwave M 500 are not available with ISEM integrated in the transmitter and Proline Prosonic Flow P 500 is not available with ISEM integrated in the sensor. 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 or 2 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 Ex "ic" for Zone 2) 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 Cubemass 300/500, Proline Prosonic Flow 300/500, Proline t-mass 300/500 and Proline Teqwave M 300/500 flowmeters are available for an ambient temperature of -40°C to +60°C and optional -50°C to +60°C. 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.

In addition the version of Proline Promass F/X/Q 500 with ISEM electronic in transmitter is available also for -60°C to +60°C ambient.

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

The intrinsically safe output circuits for order code MC/RC meet the requirements for 2-WISE according to the used standards IEC 60079-11:2011 and IEC TS 60079-47:2021.

Note: The above description is meant to provide a brief overview. For a complete description of the equipment, refer to the Technical Description. The applicable ambient temperature, medium temperature, and temperature class is described in the technical description and annexes of the certificate.

See below annexes attached to the certificate for details:

Annex A - Proline Promass 300/500 and Proline Cubemass 300/500

Annex B - Proline Promag 300/500

Annex C - Proline Prosonic Flow 300/500

Annex D - Proline t-mass 300/500

Annex E - Proline Teqwave M 300/500

SPECIFIC CONDITIONS OF USE: YES as shown below:

See annexes attached to this certificate for specific conditions.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1:

This certificate is updated to include:- Minor changes to product order code- Minor corrections to product marking- Introduction of remote display as part of the flowmeter- Minor corrections to the product drawings

Issue 2:

The addition of model code for replacement transmitter OEM version and new assignment table of replacement transmitter to product of flowmeter.- The addition of new certified sensor "Promass A" sensor with changes to model code.- Update in the ambient temperature reduced optionally to -60°C for sensors of Promass F/Q/X 500 with code for integrated ISEMelectronic k = "B" as described in the technical description document.- All the corresponding drawings were updated.- Combining all the Proline 300/500 sensor models from two separate certificates IECEX CSA 16.0031X and IECEX CSA 16.0034X into one single certificate IECEX CSA 16.0034X.

Issue 3:

The introduction of a new hygienic stainless steel transmitter enclosure for versions Promag 300, Promass 300 and Cubemass300, installation in Zone 2 only.- Revision of corresponding drawings to include the new hygienic enclosure.

Issue 4:

Addition of new model version Proline Prosonic Flow G 300/500- Addition of new model version Proline t-mass 300/500- Addition of new Antenna bushing model H337 for external antenna connection- Addition of new order codes for IO1 current output (active) with I/O code xx = "CC" and "CD"- 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 Ex i- Addition of new product order codes to include the following: sensor enclosure G350 (plastic) for Promag 500 in Zone 2 for remote version; an alternative transmitter enclosure G328 (plastic) for Proline 500; changes to order code for Promag W300 and Promag W500- Revised standard IEC 60079-0, Edition 6 to IEC60079-0, Edition 7.0- Revised standard IEC 60079-15, Edition 4 to IEC60079-15, Edition 5.0- Revised control drawings to include the above changes in revision 4.0 of this report.

Issue 5:

This revision includes the following changes:- Addition of product order code "ww = A2" that was missed in the previous edition for model Proline Promag 300/500, Proline Prosonic300/500 and Proline t-mass 300/500. See Certificate Annex for order code details- Correction of entity parameter for IO1 order codes: CA, CB. Affected nameplate drawings are revised in this edition.

Issue 6:

This revision includes the below changes:- Introduction of new model version Proline Prosonic Flow P 500- Changes in nomenclature ("Digital" is now referred as ISEM integrated in sensor, "Analog" is now referred as ISEM integrated in transmitter)- Introduction of new flange sizes for Proline Promass 300/500 for High Temperature (HT) flowmeters- Update of related product documentation- Addition of new manufacturing location in China.

Issue 7:

Update to cover corrections related to the maximum process temperature.

Issue 8:

The following changes are introduced in this issue:

- Introduction of additional sensor sizes DN150/200/250 for Proline Promass Q
- Introduction of additional sensor type CH-050-A, CH-100-A for Proline Prosonic Flow P500 with process temperature up to 435°C
- Introduction of additional IO's with IO-1 order code ff = MB, MC for Modbus and ff = RB, RC for Profinet
- Revision to order codes for Proline Prosonic Flow G300/500 and P500 replacement transmitter
- Introduction of new type of liner ETFE for Proline Promag sensors
- Proline Promag P500/W500, when used with sensor enclosure G300, is now available with rating IP68 in addition to IP67
- Introduction of new standard IEC TS 60079-47 for 2-WISE concept
- Update of standard IEC60079-7:2015 Ed. 5 to IEC60079-7:2017 Ed. 5.1
- Update of certification drawings

Issue 9:

- Introduction of new model, flowmeter Proline Teqwave M 300/500
- Correction to product order code and marking of Proline Promag 500 and Proline Prosonic Flow 500
- Update references of component certificates as applicable
- Introduction of additional combination of existing certified enclosures for Proline Promag 300, Proline Promag 500, Proline Promas 500, Proline Flow G 500 and Proline t-mass 500
- Introduction of additional temperature table for Proline Promass 300 (Ex d version) for use with Tmed < -50°C and for Proline Promass 300/500 with sensor Promass F DN 25/40 for use with Tmed at +170°C based on previous calculation and tests



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- Introduction of additional sensor size DN15 for Promag W.
- Revision of technical documentation for the above changes.



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Additional manufacturing locations:

Endress+Hauser Flowtec (India) Pvt. Ltd.
M 171-176, Waluj MIDC, Industrial Area
Aurangabad - , Maharashtra State 431136
India

Endress+Hauser Flowtec (China) Co. Ltd.
China-Singapore Industrial Park (SIP)
Su-Hong-Zhong-Lu No. 465
Suzhou 215021
China

Endress+Hauser Flowtec (China) Co. Ltd.
Suzhou Industrial Park (SIP)
Jiang-Tian-Li-Lu No. 31
Suzhou 215021
China

Endress+Hauser Flow USA, Inc.
2330 Endress Place
Greenwood, Indiana 46143
United States of America

Annexes:

[Annex_A_to_IECEX_CSA_16.0034X_Issue_9_Promass.pdf](#)
[Annex_B_to_IECEX_CSA_16.0034X_Issue_9_Promag.pdf](#)
[Annex_C_to_IECEX_CSA_16.0034X_Issue_9_Prosonic.pdf](#)
[Annex_D_to_IECEX_CSA_16.0034X_Issue_9_t-mass.pdf](#)
[Annex_E_to_IECEX_CSA_16.0034X_Issue_9_Teqwave M.pdf](#)



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Annex A:

**This Annex is applicable for flowmeters type
 Proline Promass 300/500 and Proline Cubemass 300/500**

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1. Description

The Proline Promass 300 / 500 and Proline Cubemass 300 / 500 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 electronic integrated in transmitter (i.e. Proline 500 Analog) where the sensor sends analog signals to the transmitter and a version with ISEM electronic in sensor (i.e. Proline 500 Digital) 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.

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 as part of the flowmeter.

Different electronics are used for the flowmeters where the sensor is installed in a Zone 1 or 2 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 Ex ic for Zone 2) 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 Promass 300/500 and Proline Cubemass 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 Proline Promass F/X/Q 500 with ISEM electronic in transmitter is available also for -60°C to +60°C ambient.

All versions of flowmeters Proline Promass 300, Proline Promass 500, Proline Cubemass 300 and Proline Cubemass 500 are available for an enclosure protection of degree IP66, IP67.



2. Order Code

2.1. Proline Promass 300/500, Proline Cubemass 300/500

Extended order code Proline Promass 300 and Cubemass 300:

8a3bcc – ddeffghjlpstttvww + ###	
O8a3bcc – ddeffghjlpstttvwwyy + ###	for OEM-version
8x3bxx – ddeffghjprssww + ###	for replacement transmitter
O8x3bxx – ddeffghjprsswwyy + ###	for replacement transmitter OEM

Extended order code Proline Promass 500 and Cubemass 500:

8a5bcc – ddeffghjkmnopsstttvww + ###	
O8a5bcc – ddeffghjkmnopsstttvwwyy + ###	for OEM-version
8x5bxx – ddeffghjkmopqrrssww + ###	for replacement transmitter
O8x5bxx – ddeffghjkmopqrrsswwyy + ###	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
- dd = Approval**
Proline Promass 300:
 BA = Ex db eb [ja] IIB T6...T1 Gb
 Ex tb IIIC T** Db
 BB = Ex db eb [ja] IIC T6...T1 Gb
 Ex tb IIIC T** Db
 BC = Ex db [ja] IIB T6...T1 Gb
 Ex tb IIIC T** Db
 BD = Ex db [ja] IIC T6...T1 Gb
 Ex tb IIIC T** Db
 BS = Ex ec IIC T5...T1 Gc



Proline Promass 500 :

BA	=	Ex db eb [ia] IIB T6...T5 Gb	(transmitter)
		Ex ia IIB T6...T1 Gb	(sensor)
		Ex tb IIIC T** Db	(transmitter + sensor)
BB	=	Ex db eb [ia] IIC T6...T5 Gb	(transmitter)
		Ex ia IIC T6...T1 Gb	(sensor)
		Ex tb IIIC T** Db	(transmitter + sensor)
BC	=	Ex db [ia] IIB T6...T5 Gb	(transmitter)
		Ex ia IIB T6...T1 Gb	(sensor)
		Ex tb IIIC T** Db	(transmitter + sensor)
BD	=	Ex db [ia] IIC T6...T5 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)
BL	=	non-Ex	(transmitter)
		Ex ec IIC T6...T1 Gc	(sensor)
BM	=	Ex ec [ia Ga] IIC T6...T1 Gc	(transmitter)
		Ex ia IIB T6...T1 Gb	(sensor)
		Ex tb IIIC T** Db	(sensor)
BN	=	Ex ec [ia Ga] IIC T6...T1 Gc	(transmitter)
		Ex ia IIC T6...T1 Gb	(sensor)
		Ex tb IIIC T** Db	(sensor)
BS	=	Ex ec IIC T6...T1 Gc	(transmitter + 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
- MA = Modbus RS485
- MB = Modbus TCP
- MC = Modbus TCP Ex i
- NA = EtherNet/IP
- RA = Profinet IO
- RB = Profinet
- RC = Profinet Ex i
- 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 = 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 assignment 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 assignment of flowmeter to replacement transmitter)
 - A1 = product version 1
 - 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**



2.2. 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			
Order code	Generation code b =	device model code ww =	Order code	Generation code b =	existing product rr =	device model code ww =
8A*b**-...ww, O8A*b**-...ww	B	A1 / A2	8x*bxx-...rr...ww, O8x*bxx-...rr...ww	B	AA (all sizes)	A1 / A2
8A*b**-...ww, O8A*b**-...ww	C	A1 / A2	8x*bxx-...rr...ww, O8x*bxx-...rr...ww	B	AB (all sizes)	A1 / A2
8C*b**-...ww, O8C*b**-...ww	B	A1 / A2	8x*bxx-...rr...ww, O8x*bxx-...rr...ww	B	CA (all sizes)	A1 / A2
8E*b**-...ww, O8E*b**-...ww	B	A1 / A2	8x*bxx-...rr...ww, O8x*bxx-...rr...ww	B	EA (DN8...15) EB (DN25...50) EC (DN80)	A1 / A2 A1 / A2 A1 / A2
8F*b**-...ww, O8F*b**-...ww	B	A1 / A2	8x*bxx-...rr...ww, O8x*bxx-...rr...ww	B	FA (DN8...15) FB (DN25...50) FC (DN80...250)	A1 / A2 A1 / A2 A1 / A2
8H*b**-...ww, O8H*b**-...ww	B	A1 / A2	8x*bxx-...rr...ww, O8x*bxx-...rr...ww	B	HA (DN8...40) HB (DN50)	A1 / A2 A1 / A2
8I*b**-...ww, O8I*b**-...ww	B	A1 / A2	8x*bxx-...rr...ww, O8x*bxx-...rr...ww	B	IA (DN8...40) IB (DN40FB...80)	A1 / A2 A1 / A2
8O*b**-...ww, O8O*b**-...ww	B	A1 / A2	8x*bxx-...rr...ww, O8x*bxx-...rr...ww	B	OA (all sizes)	A1 / A2
8P*b**-...ww, O8P*b**-...ww	B	A1 / A2	8x*bxx-...rr...ww, O8x*bxx-...rr...ww	B	PA (DN8...40) PB (DN50)	A1 / A2 A1 / A2
8Q*b**-...ww, O8Q*b**-...ww	B	A1 / A2	8x*bxx-...rr...ww, O8x*bxx-...rr...ww	B	QA (DN25...50) QB (DN80...100) QC (DN150...250)	A1 / A2 A1 / A2 A1 / A2
8S*b**-...ww, O8S*b**-...ww	B	A1 / A2	8x*bxx-...rr...ww, O8x*bxx-...rr...ww	B	SA (DN8...40) SB (DN50)	A1 / A2 A1 / A2
8X*b**-...ww, O8X*b**-...ww	B	A1 / A2	8x*bxx-...rr...ww, O8x*bxx-...rr...ww	B	XA (all sizes)	A1 / A2

2.3. Sensor Groups

In the following tables, the Promass 300/500 sensors are assigned to different sensor groups from A1 to C2 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(DN1), 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 A*C**)	01(DN1), 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, 150, 200, 250	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
	Q	25, 50	IIC	-200°C
D1	F	08, 15, 80, 100, 150, 250	IIC	-200°C
	H	50	IIC	-200°C
	Q	80, 100, 150, 200, 250	IIC	-200°C
E1	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, 150, 200, 250	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, 150, 200, 250	IIB	-200°C

*) T_{med,min} = -60°C only applicable for sensor of Proline Promass F 500, Proline Promass Q 500 and Proline Promass X 500 version with ISEM integrated in transmitter.

Note: All sensors of Proline Promass 300 and Proline 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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Assignment of Promass sensors and Cubemass sensors installed in Zone 2:

Sensor Group	Type of sensor	Size of sensor	T _{Med,min}
A2	C	01, 02, 04, 06	-50°C
	E	25, 40, 50, 80	-50°C
	F	25, 40, 50, 80, 100, 150, 250	-50°C / -60°C *)
	F(HT)	15, 25, 50, 80, 100, 150, 250	-50°C
	H, S, P	15, 25, 40, 50	-50°C
	I	08, 15, 16, 25, 26, 40, 41, 50, 51, 80	-50°C
	O	80, 100, 150, 250	-50°C
	Q	25, 50, 80, 100, 150, 200, 250	-50°C / -60°C *)
	X	350	-50°C / -60°C *)
B2	A (type 8A*B**)	01, 02, 04	-50°C
	F	08, 15	-50°C
	E	08, 15	-50°C
	H, S, P	08	-50°C
C2	F	25, 40, 50, 80, 100, 150, 250	-200°C
	F(HT)	15, 25, 50, 80, 100, 150, 250	-200°C
	H	8, 25, 40, 50	-200°C
	Q	25, 50, 80, 100, 150, 200, 250	-200°C
D2	F	08, 15	-200°C
E2	A (type 8A*C**)	01, 02, 04	-50°C

*) T_{med,min} = -60°C only applicable for sensor of Proline Promass F 500, Proline Promass Q 500 and Proline Promass X 500 version with ISEM integrated in transmitter.

3. Parameters

3.1. 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 = 250V _{AC}
E ¹⁾	No. 1(L+/L), 2(L-/N)	U _N = 85...264V _{AC} U _M = 250V _{AC}
I ²⁾	No. 1(L+/L), 2(L-/N)	U _N = 19.2...28.8V _{DC} / 85...264V _{AC} U _M = 250V _{AC}

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

2) applicable for products with approval code dd = BS, BI, BJ, BL, BM, BN

Input/Output 1		
Order Code ff =	terminal no.	values
BA, BB, MA	No. 26, 27	U _N = 30V _{DC} U _M = 250V _{AC}



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LA, GA, SA	No. 26, 27	$U_N = 32V_{DC}$ $U_M = 250V_{AC}$	
CA, CB	No. 26, 27	$U_i = 30V$ $I_i = 100mA$ $P_i = 1.25W$ $L_i = 0$ $C_i = 6nF$	
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) $U_i = 30V$ $I_i = 10mA$ $P_i = 0.3W$ $C_i = 6nF$ $L_i = 5\mu H$	2) $U_o = 21.8V$ $I_o = 90mA$ $P_o = 491mW$ $L_o = 9mH$ (IIC) / 39mH (IIB) $C_o = 600nF$ (IIC) / 4000nF (IIB) $U_i = 30V$ $I_i = 10mA$ $P_i = 0.3W$ $C_i = 6nF$ $L_i = 5\mu H$
HA, TA	No. 26, 27	1) <u>Profibus PA (Fisco Field Device) / Foundation Fieldbus</u> $U_i = 30V$ $I_i = 570mA$ $P_i = 8.5W$ $L_i = 10\mu H$ $C_i = 5nF$	2) <u>Profibus PA (Fisco Field Device) / Foundation Fieldbus</u> $U_i = 32V$ $I_i = 570mA$ $P_i = 8.5W$ $L_i = 10\mu H$ $C_i = 5nF$
MB, RB	No. 26, 27	<u>APL port profile SLAX / SPE PoDL classes 10, 11, 12</u> $U_N = 30V_{DC}$ $U_M = 250V_{AC}$	
MC, RC	No. 26, 27	1), 3) <u>2-WISE power load</u> <u>APL port profile SLAA</u> $U_i = 17.5V$ $I_i = 380mA$ $P_i = 5.32W$ $L_i \leq 10\mu H$ $C_i \leq 5nF$	2), 3) <u>2-WISE power load</u> <u>APL port profile SLAC</u> $U_i = 17.5V$ $I_i = 380mA$ $P_i = 5.32W$ $L_i \leq 10\mu H$ $C_i \leq 5nF$
NA, RA	IO1 / RJ45	$U_N = 30V_{DC}$ $U_M = 250V_{AC}$	

- 1) applicable for products with approval code dd = BA, BB, BC, BD
- 2) applicable for products with approval code dd = BS, BM, BN
- 3) no additional internal capacitances are effective to the output value (refer to note 1 of drawing "Ethernet-APL Installation Drawing – Device Vendors v1.0, March 8th 2022")

Input/Output 2		
Order Code	terminal no.	values
g =		



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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	$U_N = 30V_{DC}$ $U_M = 250V_{AC}$
H	No. 24, 25	$U_N = 30V_{DC}$ $I_N = 100mA_{DC} / 500mA_{AC}$ $U_M = 250V_{AC}$

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

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	$U_N = 30V_{DC}$ $U_M = 250V_{ac}$
H	No. 20, 21	$U_N = 30V_{DC}$ $I_N = 100mA_{DC} / 500mA_{AC}$ $U_M = 250V_{AC}$

Service Interface		
Order Code dd =	terminal no.	values
BA, BB	Service Interface	Service Interface shall only be installed <ul style="list-style-type: none"> in areas which are known to be non hazardous with a non intrinsically safe circuit: $U_N = 3.3 V, U_M = 250 V_{AC}$ or



		<ul style="list-style-type: none"> to an intrinsically safe circuit with: $U_i = 10V$, $l_i = n.a.$, $P_i = n.a.$, $C_i = 200nF$, $L_i = 0$
BC, BD	Service Interface	Service Interface shall only be installed <ul style="list-style-type: none"> to a non intrinsically safe circuit with: $U_N = 3.3V$, $U_M = 250V_{AC}$ or to an intrinsically safe circuit with: $U_i = 10V$, $l_i = n.a.$, $P_i = n.a.$, $C_i = 200nF$, $L_i = 0$
BS, BI, BJ, BL, BM, BN	Service Interface	$U_N = 3.3V$

Antenna bushing		
Order Code dd =	terminal no.	values
BA, BB, BI, BJ, BL, BM, BN, BS	Type N connector	See conditions of certification

Remote Display		
Order Code dd =	terminal no.	values
BA, BB, BC, BD	No. 81, 82, 83, 84	$U_o = 3.9V$ $I_o = 1.5A$ (spark) 200mA (power) $P_o = 600mW$ $R_i = 2.6\Omega$ $C_o = 670\mu F$ $L_o = 0$
BS	No. 81, 82, 83, 84	$U_N = 3.3V$ $I_N = 150mA$

Notes:

- For Transmitter with approval code dd = BA, BB, BC and BD connected to the Remote Display of Endress+Hauser, Type DKX001 or ODKX001, the cable parameter with ration $L/R = \leq 0.024$ mH/ Ω shall be used.
- Remote display type DKX001 or ODKX001 is not intended to be connected to the transmitter electronics with approval code dd = BI, BJ, BL, BM, BN

Promass and Cubemass Remote Transmitter and Remote Sensor:

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

Transmitter terminal board:

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



Only for Promass Q DN \geq 150 (Dual ISEM):

Terminals 41, 42, X1, X2 ->

exciter coil circuit:

$U_o = 15V, I_o = 129mA, P_o = 484mW$
 (sensor group E1) or

$U_o = 15V, I_o = 46mA, P_o = 173mW$
 (sensor group B1/D1/H1)

Terminals 9, 10, 11, 12, X3, X4 ->

temperature circuit:

$U_o = 15V, I_o = 18.2mA, P_o = 68.3mW$

Terminals 4, 5, 6, 7, X5, X6, X7, X8 ->

sensor coil circuit:

$U_o = 15V, I_o = 15.2mA, P_o = 57mW$

Sensor terminal board:

Terminals 41, 42 ->

exciter coil circuit:

$U_i = 15V, I_i = 129mA, P_i = 484mW$
 (sensor group A1/C1/E1) or

$U_i = 15V, I_i = 46mA, P_i = 173mW$
 (sensor group B1/D1/H1)

Terminals 9, 10, 11, 12, X3, X4 ->

temperature circuit:

$U_i = 15V, I_i = 18.2mA, P_i = 68.3mW$

Terminals 4, 5, 6, 7 ->

sensor coil circuit:

$U_i = 15V, I_i = 15.2mA, P_i = 57mW$

Only for Promass Q DN \geq 150 (Dual ISEM):

Terminals 41, 42, X1, X2 ->

exciter coil circuit:

$U_i = 15V, I_i = 129mA, P_i = 484mW$
 (sensor group E1) or

$U_i = 15V, I_i = 46mA, P_i = 173mW$
 (sensor group B1/D1/H1)

Terminals 9, 10, 11, 12, X3, X4 ->

temperature circuit:

$U_i = 15V, I_i = 18.2mA, P_i = 68.3mW$

Terminals 4, 5, 6, 7, X5, X6, X7, X8 ->

sensor coil circuit:

$U_i = 15V, I_i = 15.2mA, P_i = 57mW$

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 μ F/km

8****-... and O8****-... with order code dd = BS in combination with k = B (ISEM in transmitter):

Transmitter terminal board:

Terminals 41, 42 ->

exciter coil circuit:

$U_N = 15V, I_N = 100mA$ (sensor group A2/C2) or
 $U_N = 15V, I_N = 72mA$ (sensor group B2/D2) or

$U_N = 15V, I_N = 25mA$ (sensor group E2) or

Terminals 9, 10, 11, 12, X3, X4 ->

temperature circuit:

$U_N = 15V, I_N = 18.2mA$

Terminals 4, 5, 6, 7 ->

sensor coil circuit:

$U_N = 15V, I_N = 15.2mA$

Only for Promass Q DN \geq 150 (Dual ISEM):

Terminals 41, 42, X1, X2 ->

exciter coil circuit:



Terminals 9, 10, 11, 12, X3, X4	->	$U_N = 15\text{ V}$, $I_N = 100\text{mA}$ (sensor group A2/C2) temperature circuit: $U_N = 15\text{ V}$, $I_N = 18.2\text{mA}$
Terminals 4, 5, 6, 7, X5, X6, X7, X8	->	sensor coil circuit: $U_N = 15\text{ V}$, $I_N = 15.2\text{mA}$

Sensor terminal board:

Terminals 41, 42	->	exciter coil circuit: $U_N = 15\text{ V}$
Terminals 9, 10, 11, 12, X3, X4	->	temperature circuit: $U_N = 15\text{ V}$
Terminals 4, 5, 6, 7	->	sensor coil circuit: $U_N = 15\text{ V}$

Only for Promass Q DN ≥ 150 (Dual ISEM):

Terminals 41, 42, X1, X2	->	exciter coil circuit: $U_N = 15\text{ V}$, $I_N = 100\text{mA}$ (sensor group A2/C2)
Terminals 9, 10, 11, 12, X3, X4	->	temperature circuit: $U_N = 15\text{ V}$, $I_N = 18.2\text{mA}$
Terminals 4, 5, 6, 7, X5, X6, X7, X8	->	sensor coil circuit: $U_N = 15\text{ V}$, $I_N = 15.2\text{mA}$

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

Transmitter terminal board:

Terminals 61, 62, 63, 64	->	$U_o = 13.8\text{V}$, $I_o = 1.156\text{A}$, $P_o = 3.3\text{W}$
--------------------------	----	--

Sensor terminal board:

Terminals 61, 62, 63, 64	->	$U_i = 14\text{V}$, $I_i = 1.2\text{A}$, $P_i = 3.4\text{W}$
--------------------------	----	--

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

- $L/R \leq 0.0089\text{ mH}/\Omega$ and $C_{\text{cable}} \leq 760\text{nF}$ for group IIC, $L/R \leq 0.0356\text{ mH}/\Omega$ and $C_{\text{cable}} \leq 4.2\mu\text{F}$ for group IIB
- Or
- $L_{\text{cable}} \leq 26\mu\text{H}$ and $C_{\text{cable}} \leq 760\text{nF}$ for group IIC, $L_{\text{cable}} \leq 104\mu\text{H}$ and $C_{\text{cable}} \leq 4.2\mu\text{F}$ for group IIB

8****-... and O8****-... with order code dd = BL, BS in combination with k = A (ISEM in sensor):

Transmitter terminal board:

Terminals 61, 62	->	$U_N = 32\text{V}$
Terminals 63, 64	->	$U_N = 3.3\text{V}$

Sensor terminal board:

Terminals 61, 62	->	$U_N = 32\text{V}$
Terminals 63, 64	->	$U_N = 3.3\text{V}$



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3.2. 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...											Notes: Pages 1 and 2 apply to versions with extended order code covering: 8*3B** – dd...												
with approval option cCSAus / CSA: dd = CC, CD, CE, C1, C2, C3, C4											with approval option cCSAus / CSA: dd = CC, CD, CE, C1, C2, C3, C4												
IECEX / ATEX: dd = BA, BB, BC, BD											IECEX / ATEX: dd = BA, BB, BC, BD												
Temperature table for versions with sensor not insulated																							
Sensor	Size / DN	T _{rated}		T _{a,max} (°C)	T _{med,max} (°C)							Sensor	Size / DN	T _{rated}		T _{a,max} (°C)	T _{med,max} (°C)						
		min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)	min (°C)			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	Promass I	8, 15	-50	150	50	50	95	130	150	150	150		
Cubemass C	01...06	-50	205	50	50	95	130	150	205	205		15FB, 25	-50	150	50	50	95	120	150	150	150		
Promass C				50	50	95	130	150	205	205		25FB, 40			50	50	85	120	150	150	150		
Promass E	08...50	-50	205	50	50	100	130	130	205	205		40FB, 50			50	50	85	120	150	150	150		
				55	---	80	100	130	205	205		50FB, 80			50	50	85	120	150	150	150		
				60	---	(80)	(100)	(130)	(205)	(205)					60	---	85	120	(150)	(150)	(150)		
	80	-50	205	50	50	75	110	170	205	205	Promass O	80...250	-50	205	50	50	75	110	170	205	205		
				55	---	75	110	170	205	205					55	---	75	110	170	205	205		
				60	---	(75)	(110)	(170)	(205)	(205)					60	---	75	110	170	(205)	(205)		
Promass F	08...15	-50	150	50	50	95	130	150	150	150	Promass X	350	-50	205	50	50	90	120	170	205	205		
				60	---	95	130	150	150	150					55	---	90	120	170	205	205		
				50	50	95	130	160	240	240	Promass Q	25...250	-50 / -200	240	50	50	75	110	160	240	240	240	
				60	---	95	130	160	(240)	(240)					60	---	75	110	160	240	240		
	15...25	-50 / -200	350	50	45	95	130	175	275	350					50	50	75	110	160	240	240		
				60	---	95	130	175	275	350					60	---	(90)	(120)	(170)	(205)	(205)		
	25...40	-50	150	50	50	95	130	150	150	150					50	50	75	110	160	240	240		
				60	---	95	130	150	150	150					60	---	75	110	160	240	240		
				50	50	95	130	170	240	240					50	50	90	120	170	205	205		
				60	---	95	130	170	(240)	(240)					60	---	(90)	(120)	(170)	(205)	(205)		
				50	50	95	100	160	240	240					50	50	75	110	160	240	240		
				60	---	95	100	160	(240)	(240)					60	---	75	110	160	240	240		
	50	-50	150	50	50	95	130	150	150	150					50	50	75	110	160	240	240		
				60	---	95	130	150	150	150					60	---	95	130	160	240	240		
				50	50	95	130	160	240	240					50	50	95	100	160	240	240		
				60	---	95	100	160	(240)	(240)					60	---	95	100	160	(240)	(240)		
	80...250	-50	150	50	50	75	110	150	150	150					50	50	95	100	160	240	240		
				60	---	75	110	150	150	150					60	---	95	100	160	(240)	(240)		
				50	50	75	110	170	240	240					50	50	75	110	170	240	240		
				60	---	75	110	170	(240)	(240)					60	---	75	110	170	(240)	(240)		
				50	50	75	110	170	240	240					50	50	75	110	170	240	240		
				60	---	75	110	170	(240)	(240)					60	---	75	110	170	(240)	(240)		
	50...250	-50 / -200	350	50	45	85	120	175	275	350					50	45	85	120	175	275	350		
				60	---	85	120	175	275	350					60	---	85	120	175	275	350		
Promass H	8	-50 / -200	205	50	50	65	100	160	205	205					50	50	65	100	160	205	205		
				60	---	65	100	160	205	205					60	---	65	100	160	205	205		
	15...50	-50 / -200	205	50	50	75	115	180	205	205					50	50	75	115	180	205	205		
				60	---	75	115	180	205	205					60	---	75	115	180	205	205		
Promass S, P	8	-50	150	45	45	65	100	150	150	150					45	45	65	100	160	205	205		
				60	---	65	100	150	150	150					60	---	65	100	160	205	205		
				45	45	65	100	160	205	205					45	45	65	100	160	205	205		
				60	---	65	100	160	205	205					60	---	65	100	160	205	205		
	15...50	-50	150	50	50	75	115	150	150	150					50	50	75	115	150	150	150		
				60	---	75	115	150	150	150					60	---	75	115	150	150	150		
				50	50	75	115	180	205	205					50	50	75	115	180	205	205		
				60	---	75	115	180	205	205					60	---	75	115	180	205	205		

Sensor	Size / DN	T _{rated}		T _{a,max} (°C)	T _{med,max} (°C)						
		min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)	
Promass I	8, 15	-50	150	50	50	95	130	150	150	150	
	15FB, 25			60	---	95	120	(150)	(150)	(150)	
	25FB, 40			50	50	85	120	150	150	150	
	40FB, 50			60	---	85	120	(150)	(150)	(150)	
	50FB, 80			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...250	-50 / -200	240	50	50	75	110	160	240	240	
				60	---	75	110	160	240	240	

Notes:
 (1) T_{a,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

Restriction of T _{a,min} for versions used at T _{med,min} < -50°C							
T _{med,min}	-50°C	-75°C	-100°C	-125°C	-150°C	-175°C	-200°C
T _{a,min}	-50°C	-47°C	-45°C	-43°C	-41°C	-39°C	-37°C

Notes: (1) This table is applicable only for the Proline Promass 300 with Ex db or XP rated enclosures and for a short period when the flowmeter is switched on until it is heated up

Anderungen:	A	10.05.2019 / Bn	F	09.06.2021 / Bn	Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugänglich gemacht werden.	Ersetzt durch: Erstellt: FES / Bn FILE: M:\Zeichng\FES0263\G\FES0263G - changes.doc		
	B	24.10.2019 / Bn	G	15.07.2023 / DOMI				
	C	03.05.2017 / Bn	H					
	D	04.07.2018 / Bn	J					
	E	22.10.2019 / Bn	K					
Control Drawing IECEx, ATEX, CSA, cCSAus						Gezeichnet	10.05.2018	Bn
Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1						Geprüft		
Thermal Parameter						Ex-geprüft	15.07.2023	DOMI
Proline Promass 300/500, Proline Cubemass 300/500						Gesehen		
						FES0263G 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}		T _{a,max} (°C)	T _{med,max} (°C)						
		min (°C)	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	
				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	
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)	
	15 ... 25	-50 / -200	350	50	45	95	130	175	275	350	
				60	---	95	130	175	275	350	
	25 ... 40	-50	150	50	50	95	130	150	150	150	
				60	---	95	110	(150)	(150)	(150)	
		-50 / -200	240	50	50	95	130	170	240	240	
				55	---	95	(130)	(170)	(240)	(240)	
	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)		
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)		
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)
Promass S, P	8	-50	150	45	45	65	100	150	150	150	
				50	---	65	100	150	150	150	
	-50	205	45	45	65	100	125	(150)	(150)		
			50	---	65	100	160	205	205		
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}		T _{a,max} (°C)	T _{med,max} (°C)						
		min (°C)	max (°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	
Promass X	350	-50	205	50	50	90	120	170	205	205	
				55	---	(90)	(120)	(170)	(205)	(205)	
Promass Q	25 ... 250	-50 / -200	240	50	50	75	110	160	240	240	
				55	---	(75)	(110)	(160)	(240)	(240)	

Notes: (1) T_{a,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 _{max} 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	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
 - T_{a,min} = -40°C, -50°C respectively (see nameplate)
 - for maximum medium temperature and minimum medium temperature see nameplate
 (2) location of reference point

Restriction of T_{a,min} for versions used at T_{med,min} < -50°C

T _{med,min}	-50°C	-75°C	-100°C	-125°C	-150°C	-175°C	-200°C
T _{a,min}	-50°C	-47°C	-45°C	-43°C	-41°C	-39°C	-37°C

Notes: (1) This table is applicable only for the Proline Promass 300 with Ex db or XP rated enclosures and for a short period when the flowmeter is switched on until it is heated up

Aenderungen:	A	B	C	D	E	F	G	H	I	J	K
	10.05.2016 / Bn	24.10.2016 / Bn	03.05.2017 / Bn	04.07.2018 / Bn	22.10.2019 / Bn	09.06.2021 / Bn	15.07.2023 / DOMI				

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 Ersatz für:
 Ersteller: FES / Bn
 FILE: M:\Zeichng\FES0263G\FES0263G - changes.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	15.07.2023	DOMI
Gesehen		



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 Certificate No.:
 IECEx CSA 16.0034X Issue 9
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Proline Promass A/E/F/H/I/O/P/Q/S/X 500

Proline Cubemass C 500

Notes: Pages 3 and 4 apply to versions with extended order code covering: 8*5*** – 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 _{temp}		T _{a,max} (°C)	T _{max,exp} (°C)					
		min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass A (type 8ASB)	01 ... 04	-50	205	60	60	95	130	150	205	205
Promass A (type 8ASC)	01 ... 04	-50	205	55 60	55 ---	95 95	130 130	150 150	205 205	205 205
Cubemass C	01 ... 06	-50	205	50 60	50 ---	95 95	130 130	150 150	205 205	205 205
Promass E	08 ... 50	-50	205	50 60	50 ---	100 100	130 130	130 130	205 205	205 205
Promass F	80	-50	205	60	60	75	110	170	205	205
	08 ... 15	-50 / -60	150	55 60	55 ---	95 95	130 130	150 150	150 150	150 150
		-50 / -60 / -200	240	55 60	55 ---	95 95	130 130	160 160	240 240	240 240
		15 ... 25	-50 / -200	350	60	70	95	130	175	265
	25 ... 40	-50 / -60	150	55 60	55 ---	95 95	130 130	150 150	150 150	150 150
		-50 / -60 / -200	240	55 60	55 ---	95 95	130 130	170 170	240 240	240 240
		50	-50 / -60 / -200	150	55 60	55 ---	95 95	130 130	150 150	150 150
	80 ... 250	-50 / -60 / -200	240	60	60	95	130	170	240	240
	50 ... 250	-50 / -200	350	60	70	85	120	175	265	350
	Promass H	8	-50 / -200	205	50 60	50 ---	65 65	100 100	160 160	205 205
15 ... 50		-50 / -200	205	60	60	75	115	180	205	205
Promass S, P	8	-50	150	45 60	45 ---	65 65	100 100	150 150	150 150	150 150
		-50	205	45 60	45 ---	65 65	100 100	160 160	205 205	205 205
		15 ... 40	-50	150	50 60	50 ---	75 75	115 115	150 150	150 150
	50	-50	205	50 60	50 ---	75 75	115 115	180 180	205 205	205 205
		-50	150	60	60	75	115	150	150	150
		-50	205	60	60	75	115	180	205	205

Sensor	Size / DN	T _{temp}		T _{a,max} (°C)	T _{max,exp} (°C)					
		min (°C)	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	60	60	95	130	150	150	150
		25FB, 40, 40FB, 50, 50FB, 80	-50	150	60	70	85	120	150	150
	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 ... 250	-50 / -60 / -200	240	60	55	75	110	160	240	240

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

Transmitter for all versions:	
T _{a,max} (°C)	
T6 (85°C)	T5 (100°C)
55	60

Notes: (1) T_{a,min} = -50°C (for limitation see name plate)

Änderungen:	A	10.05.2016 / Bn	F	09.08.2021 / Bn	Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugänglich gemacht werden.	Ersetzt durch: Erstellt für: FES / Bn FILE: M:\Zeichnung\FES0263G\FES0263G -- changes.doc
	B	24.10.2016 / Bn	G	15.07.2023 / DOMI		
	C	03.05.2017 / Bn	H			
	D	04.07.2018 / Bn	J			
	E	22.10.2019 / Bn	K			

Control Drawing IECEx, ATEX, CSA, cCSAus			Gezeichnet	10.05.2016	Bn
Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1			Geprüft		
Thermal Parameter			Ex-geprüft	15.07.2023	DOMI
Proline Promass 300/500, Proline Cubemass 300/500			Gesehen		



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

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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}		T _{a,max}	T _{med,max} (°C)					
		min (°C)	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	50	60	95	130	150	(180)	(180)
				60	60	95	130	150	150	150
Promass A (type 8A5C)	01 ... 04	-50	205	50	60	95	130	150	(180)	(180)
				55	55	95	130	150	150	150
Cubemass C	01 ... 06	-50	205	60	---	95	130	150	150	150
				50	60	95	130	150	(180)	(180)
Promass E	08 ... 50	-50	205	60	---	95	130	150	150	150
				50	50	100	130	130	205	205
Promass F	80	-50	205	60	60	75	110	170	205	205
				60	---	95	130	150	150	150
	08 ... 15	-50 / -60	150	55	50	95	130	150	150	150
				60	---	95	130	150	150	150
	15 ... 25	-50 / -60 / -200	240	55	50	95	130	160	240	240
				60	---	95	130	160	240	240
	25 ... 40	-50 / -60	150	55	55	95	130	150	150	150
				60	---	95	130	150	150	150
	50	-50 / -60 / -200	240	55	55	95	130	170	240	240
				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 ... 250	-50 / -60 / -200	240	60	60	75	110	170	240	240	
			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
Promass S, P	15 ... 50	-50 / -200	205	60	60	75	115	180	205	205
				45	45	65	100	150	150	150
	8	-50	150	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	-50 / -200	205	50	50	75	115	180	205	205	
			60	---	75	115	180	205	205	
Promass I	8, 15, 15FB, 25, 25FB, 40, ... 80	-50	150	60	60	95	130	150	150	150
				60	70	85	120	150	150	150
Promass O	80 ... 250	-50	205	60	60	75	110	170	205	205

Sensor	Size / DN	T _{med}		T _{a,max}	T _{med,max} (°C)					
		min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass X	350	-50 / -60	205	60	70	90	120	170	205	205
Promass Q	25 ... 250	-50 / -60 / -200	240	60	55	75	110	160	240	240

Notes: (1) T_{a,min} = -40°C, -50°C / -60°C respectively (see nameplate)
 (2) values in brackets are applicable for installation where the sensor enclosure is not installed above the sensor
 (3) for applicable version with max. medium temperature and min. 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 _{max} 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	63	72	84	91	91	91	91	91	91

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
 - T_{a,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:	
T _{a,max} (°C)	
T6 (85°C)	T5 (100°C)
55	60

Notes: (1) T_{a,min} = -50°C (for limitation see name plate)

Änderungen: A 10.05.2016 / Bn B 24.10.2016 / Bn C 03.05.2017 / Bn D 04.07.2018 / Bn E 22.10.2019 / Bn	F 09.06.2021 / Bn	Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugänglich gemacht werden.	Ersetzt durch:
	G 15.07.2023 / DOMI		Erstellt für:
	H		Ersteller: FES / Bn
	J		FILE: M:\Zeichnung\FES0263G\FES0263G - changes.doc
	K		
Control Drawing IECEx, ATEX, CSA, cCSA _{us} 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 15.07.2023 DOMI Gesehen
Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach			FES0263G 4/6



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 Certificate No.:
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Proline Promass A/E/F/H/I/O/P/Q/S/X 500 **Proline Cubemass C 500**
Notes: Pages 5 and 6 apply to versions with extended order code covering: 8*5*** – dd*****A... 08*5*** – dd*****A... 8x5Bxx – dd*****A... 08x5Bxx – 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											Temperature table for versions with sensor not insulated														
Sensor	Size / DN	T _{amb}		T _{a,max} (°C)	T _{meas,max} (°C)						Sensor	Size / DN	T _{amb}		T _{a,max} (°C)	T _{meas,max} (°C)									
		min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)			min (°C)	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	Promass S, P	15...50	-50	205	35	45	65	110	180	205	205				
				50	---	95	130	150	205	205					50	---	65	110	180	205	205				
				60	---	---	130	150	205	205					60	---	---	110	180	205	205				
Promass A (type 8A5C)	01...04	-50	205	35	55	95	130	150	205	205	Promass H	8	-50 / -200	205	35	40	65	100	160	205	205				
				50	---	95	130	150	205	205					50	---	65	100	160	205	205				
				55	---	---	130	150	205	205					60	---	---	100	160	205	205				
Cubemass C	01...06	-50	205	35	40	75	130	150	205	205	Promass I	8, 80	-50	150	35	45	70	115	140	140	150				
				50	---	75	130	150	205	205					50	---	70	115	140	140	150				
				55	---	---	130	150	205	205					55	---	---	115	140	140	150				
Promass E	08...50	-50	205	35	40	60	130	130	205	205	Promass O	80 ... 250	-50	205	35	45	65	110	170	205	205				
				50	---	60	130	130	205	205					50	---	65	110	170	205	205				
				60	---	---	130	130	205	205					60	---	---	110	170	205	205				
Promass F	08...40	-50	150	35	40	65	130	150	150	150	Promass X	350	-50	205	35	45	65	110	170	205	205				
				50	---	65	130	150	150	150					50	---	65	110	170	205	205				
				60	---	---	130	130	130	130					60	---	---	110	170	205	205				
		-50 / -200	240	35	40	65	130	170	240	240					Promass Q	25 ... 250	-50 / -200	240	35	45	65	100	160	240	240
		50		---	65	130	170	240	240	50									---	65	100	160	240	240	
		60		---	---	130	170	240	240	60									---	---	100	160	240	240	
	50	-50	150	35	40	65	130	150	150	150	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:													
	50			---	65	130	150	150	150	Type of enclosure		T _{a,max} (°C)													
	60			---	---	130	130	130	130	Ordinary location		T6 (85°C)	T5 (100°C)	T4 (135°C)											
	15...25	-50 / -200	350	35	40	80	130	175	275	350		aluminium	60	---	45	60									
	50			---	80	130	175	275	350	plastic		60	---	---	---	---									
	60			---	---	130	175	240	240	(275) (350)		Notes: (1) aluminium enclosure: Ta,min = -50°C (for limitation see name plate) plastic enclosure: Ta,min = -40°C													
80...250	-50	150	35	40	65	110	150	150	150	Anderungen:	A	10.05.2016 / Bn	F	09.06.2021 / Bn	Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch Dritten Personen und Konkurrenzfirmen zugänglich gemacht werden.	Ersetzt durch:									
			50	---	65	110	150	150	150		B	24.10.2016 / Bn	G	15.07.2023 / DOMI											
			60	---	---	110	130	130	130		C	03.05.2017 / Bn	H												
	-50 / -200	240	35	40	65	110	170	240	240		D	04.07.2018 / Bn	J				Ersetzt für: Ersteller: FES / Bn FILE: M:\Zeichng\FES0263G\FES0263G - changes.doc								
	50		---	65	110	170	240	240	E		22.10.2019 / Bn	K													
	60		---	---	110	170	240	240																	
50...250	-50 / -200	350	35	40	80	120	175	275	350	Control Drawing IECEx, ATEX, CSA, cCSAus				Gezeichnet	10.05.2016	Bn									
50			---	80	120	175	275	350	Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1				Geprüft												
60			---	---	120	175	240	240	(275) (350)	Thermal Parameter				Ex-geprüft	15.07.2023	DOMI									
Promass S, P	8	-50	150	35	45	65	100	150	150	Proline Promass 300/500, Proline Cubemass 300/500				Gesehen											
				50	---	65	100	150	150	150															
				60	---	---	100	150	150	150															
15...50	-50	150	35	45	65	110	150	150	150																
			50	---	65	110	150	150	150																
			60	---	---	110	150	150	150																



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

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Temperature table for versions with sensor insulated (for insulation refer to manual of Endress+Hauser Flowtec)											
Sensor	Size / DN	T _{amb}		T _{a,max} (°C)	T _{meas,max} (°C)						
		min (°C)	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	35	40	90	90	150	150	150	150
				40	---	90	90	150	150	150	150
				45	---	---	90	150	150	150	150
Cubemass C	01 ... 06	-50	205	35	40	90	100	150	150	150	
				40	---	90	100	150	150	150	150
				45	---	---	100	150	150	150	150
Promass E	08 ... 50	-50	205	35	40	55	130	160	205	205	
				50	---	55	130	160	205	205	205
				80	-50	205	35	40	55	110	170
Promass F	08 ... 40	-50	150	35	40	60	130	130	130	130	
				45	---	60	130	130	130	130	
				50	---	---	130	130	130	130	
	50	-50	150	35	40	60	130	130	130	130	
				45	---	60	130	130	130	130	
				50	---	---	130	130	130	130	
	15 ... 25	-50 / -200	350	35	40	80	130	175	275	350	
				50	---	80	130	175	275	350	
				60	---	---	130	175	240	240	
	80 ... 250	-50	150	35	40	60	110	130	130	130	
				45	---	60	110	130	130	130	
				50	---	---	110	130	130	130	
50 ... 250	-50 / -200	350	35	40	80	120	175	275	350		
			50	---	80	120	175	275	350		
			60	---	---	120	175	240	240		
Promass S, P	8	-50	150	35	40	55	100	150	150	150	
				45	---	55	100	150	150	150	
				50	---	---	100	120	120	120	
	15 ... 50	-50	205	35	40	55	100	160	205	205	
				45	---	55	100	160	205	205	
				55	---	---	100	160	205	205	
	80 ... 250	-50	150	35	40	55	110	150	150	150	
				45	---	55	110	150	150	150	
				50	---	---	110	120	120	120	
	Promass I	8, 80	-50	150	35	40	55	100	180	205	205
					45	---	55	100	180	205	205
					55	---	---	100	180	205	205
Promass O	80 ... 250	-50	205	35	40	55	110	170	205	205	
				45	---	55	110	170	205	205	
				50	---	---	110	170	205	205	
Promass X	350	-50	205	35	40	55	120	170	205	205	
				45	---	55	120	170	205	205	
				55	---	---	120	170	205	205	

Temperature table for versions with sensor insulated (for insulation not in compliance to manual of Endress+Hauser Flowtec)											
Sensor	Size / DN	T _{amb}		T _{a,max} (°C)	T _{meas,max} (°C)						
		min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)	
Promass Q	25 ... 250	-50 / -200	240	35	40	55	100	160	240	240	
				50	---	55	100	160	240	240	
Promass H	8	-50 / -200	205	35	40	65	100	160	205	205	
				45	---	65	100	160	205	205	
	15 ... 50	-50 / -200	205	35	40	65	115	180	205	205	
				45	---	65	115	180	205	205	

Notes: (1) T_{a,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 _{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	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
 - T_{a,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	T _{a,max} (°C)			
	Ordinary location	T6 (85°C)	T5 (100°C)	T4 (135°C)
aluminium	60	---	45	60
plastic	60	---	---	---

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

Anderungen:	Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch driten Personen und Konkurrenzfirmen zugänglich gemacht werden.				Ersetzt durch: Ersteller: FES / Bn FILE: M:\Zeichng\FES0263\G\FES0263G - changes.doc
	A	B	C	D	
	10.05.2016 / Bn	F	09.08.2021 / Bn	G	15.07.2023 / DOMI
	24.10.2016 / Bn	G	15.07.2023 / DOMI	H	
	03.05.2017 / Bn	H		J	
	04.07.2018 / Bn	J		K	
	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	15.07.2023	DOMI
Gesehen		

	Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach	FES0263G	6/6
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3.3. Thermal Parameters (Zone 2)

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

Notes:

This page applies to versions with extended order code covering: 8*3B** – dd... O8*3B** – dd... 8x3Bxx – dd... O8x3Bxx – dd...
 with approval option cCSAus / CSA: dd = CS, CZ IECEx / ATEX: dd = BS

Temperature table for versions in type of protection Ex ec, AEx ec or Non-incendive with sensor not insulated												
Sensor	Size / DN	Type of protection	T _{exp}		T _{a,max} (°C)	T _{med,max} (°C)						
			min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)	
Promass A	01...04	Ex ec / NI	-50	205	50	---	90	130	170	205	205	
					60	---	---	130	170	205	205	
Cubemass C	01...06	Ex ec / NI	-50	205	50	---	90	130	140	205	205	
					60	---	---	130	140	205	205	
Promass E	08...15	Ex ec / NI	-50	205	50	---	80	115	165	205	205	
					55	---	---	115	165	205	205	
					60	---	---	---	---	---	---	
					60	---	---	(115)	(140)	(205)	(205)	
Promass F	08...15	Ex ec / NI	-50 / -200	150	50	---	80	115	150	150	150	
					60	---	---	115	150	150	150	
			-50 / -200	240	50	---	80	115	170	240	240	
					55	---	---	115	170	240	240	
Promass H	8	Ex ec / NI	-50 / -200	150	50	---	60	95	150	150	150	
					60	---	---	95	150	150	150	
			-50 / -200	240	50	---	60	95	170	240	240	
					55	---	---	95	170	240	240	
Promass S, P	8	Ex ec / NI	-50 / -200	150	50	---	60	95	150	150	150	
					60	---	---	95	150	150	150	
			-50 / -200	205	50	---	80	115	150	150	150	
					60	---	---	115	150	150	150	
Promass I	8...80	Ex ec / NI	-50	150	50	---	60	95	150	150	150	
					60	---	---	95	150	150	150	
			-50	205	50	---	60	95	160	205	205	
					60	---	---	95	160	205	205	

- Notes:
- (1) this page covers sensors with type of protection Ex ec, AEx ec and non-incendive. Sensors with type of protection Ex nC is applicable only for sensor versions without purge connection or rupture disk (temperature table see next page)
 - (2) T_{a,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
 - (4) for maximum medium temperature and minimum medium temperature see nameplate
 - (5) versions with transmitter enclosure stainless steel (hygienic) only for installation where transmitter is not installed above the sensor
 - (6) Versions with transmitter enclosure stainless steel (hygienic) installed in temperature class T5, a degree of 3°C for ambient temperature shall be taken into account

A	10.05.2018 / Bn	F	22.10.2019 / Bn	Alle gesetzlichen Urheberrechte vorbehalten.	Ersetzt durch: Erstellt für: Ersteller: FES / Bn FILE: M:\Zeichng\FES0264\G\FES0264.G.doc
B	24.10.2018 / Bn	G	09.08.2021 / Bn	Diese Zeichnung darf ohne unsere	
C	03.05.2017 / Bn	H	15.07.2023 / DOMI	Genehmigung weder vervielfältigt werden noch	
D	30.10.2017 / Bn	J		drillen Personen und Konkurrenzfirmen	
E	04.07.2018 / Bn	K		zugänglich gemacht werden.	

Control Drawing IECEx, ATEX, CSA, cCSAus
 Zone 2, Cl.I Div. 2, Cl.I Zone 2
 Thermal Parameter
 Proline Promass 300/500, Proline Cubemass 300/500

Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach	Gezeichnet	10.05.2018	Bn
	Geprüft		
	Ex-geprüft	15.07.2023	DOMI
	Gesehen		
FES0264H		1/12	



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

Proline Cubemass C 300

Notes:

This page applies to versions with extended order code covering:

8*3B** – dd...
 with approval option cCSAus / CSA: dd = CZ
 IECEx / ATEX: dd = BS

8x3Bxx – dd...

O8x3Bxx – dd...

Temperature table for versions in type of protection Ex ec nC or AEx ec nC with sensor not insulated

Sensor	Size / DN	Type of protection	T _{prod}		T _{a,max}	T _{prod,max} (°C)						
			min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)	
Promass A	01 ... 04	Ex ec nC	-50	205	50	---	95	130	195	205	205	
					60	---	---	130	195	205	205	
Cubemass C	01 ... 06	Ex ec nC	-50	205	50	---	95	130	195	205	205	
					60	---	---	130	195	205	205	
Promass E	08 ... 15	Ex ec nC	-50	205	50	---	95	130	195	205	205	
					55	---	---	130	195	205	205	
					60	---	---	(130)	(195)	(205)	(205)	
	25 ... 80	Ex ec nC	-50	205	50	---	95	130	195	205	205	
					55	---	---	130	195	205	205	
					60	---	---	(130)	(195)	(205)	(205)	
Promass F	08 ... 15	Ex ec nC	-50 / -200	150	50	---	95	130	150	150	150	
					60	---	---	130	150	150	150	
					50	---	95	130	195	240	240	
			-50 / -200	240	55	---	---	130	195	240	240	
					60	---	---	130	170	170	170	
										(240)	(240)	
	25 ... 80	Ex ec nC	-50 / -200	150	50	---	95	130	150	150	150	
					60	---	---	130	150	150	150	
					50	---	95	130	195	240	240	
			-50 / -200	240	55	---	---	130	195	240	240	
					60	---	---	130	170	170	170	
										(240)	(240)	
100 ... 250	Ex ec nC	-50 / -200	150	50	---	95	130	150	150	150		
				60	---	---	130	150	150	150		
				50	---	95	130	195	240	240		
		-50 / -200	240	55	---	---	130	195	240	240		
				60	---	---	130	170	170	170		
									(240)	(240)		
15 ... 250	Ex ec nC	-50 / -200	350	50	---	95	130	195	290	350		
				60	---	---	130	195	290	350		
Promass H	8	Ex ec nC	-50 / -200	205	50	---	95	130	195	205	205	
					60	---	---	130	195	205	205	
Promass S, P	8	Ex ec nC	-50	150	50	---	95	130	150	150	150	
					60	---	---	130	150	150	150	
					50	---	95	130	195	205	205	
	-50	205	50	---	95	130	195	205	205			
			60	---	---	130	195	205	205			
			50	---	95	130	150	150	150			
Promass I	8 ... 80	Ex ec nC	-50	150	50	---	95	130	150	150	150	
					60	---	---	(130)	(150)	(150)	(150)	
					55	---	---	130	150	150	150	
					60	---	---	(130)	(150)	(150)	(150)	
					50	---	95	130	150	150	150	
					60	---	---	(130)	(150)	(150)	(150)	

Sensor	Size / DN	Type of protection	T _{prod}		T _{a,max}	T _{prod,max} (°C)						
			min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)	
Promass O	80 ... 250	Ex ec nC	-50	205	50	---	95	130	195	205	205	
					55	---	---	130	195	205	205	
Promass X	350	Ex ec nC	-50	205	50	---	95	130	195	205	205	
					55	---	---	130	195	205	205	
Promass Q	25 ... 250	Ex ec nC	-50 / -200	240	50	---	95	130	195	240	240	
					60	---	---	130	195	240	240	

Notes: (1) type of protection Ex ec nC and AEx ec nC is applicable only for sensor versions without purge connection or rupture disk
 (2) T_{a,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
 (4) for maximum medium temperature and minimum medium temperature see nameplate
 (5) versions with transmitter enclosure stainless steel (hygienic) only for installation where transmitter is not installed above the sensor
 (6) Versions with transmitter enclosure stainless steel (hygienic) installed in temperature class T5, a degree of 3°C for ambient temperature shall be taken into account
 (7) this temperature table is not applicable for Class I Division 2 versions. For Class I Division 2 versions see temperature table on page 1/12

A	10.05.2016 / Bn	F	22.10.2019 / Bn	Alle gesetzlichen Urheberrechte, vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugänglich gemacht werden.	Ersetzt durch: Ersteller: FES / Bn FILE: M:\Zeichng\FES0264\G\FES0264G.doc
B	24.10.2016 / Bn	G	09.06.2021 / Bn		
C	03.05.2017 / Bn	H	15.07.2023 / DOMI		
D	30.10.2017 / Bn	J			
E	04.07.2018 / Bn	K			

Control Drawing IECEx, ATEX, CSA, cCSAus	Gezeichnet	10.05.2016	Bn
Zone 2, CI.I Div. 2, CI.I Zone 2	Geprüft		
Thermal Parameter	Ex-geprüft	15.07.2023	DOMI
Proline Promass 300/500, Proline Cubemass 300/500	Gesehen		

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

Proline Cubemass C 300

Notes:

This page applies to versions with extended order code covering:

8*3B** – dd...

O8*3B** – dd...

8x3Bxx – dd...

O8x3Bxx – dd...

with approval option cCSAus / CSA: dd = CS, CZ

IECEx / ATEX: dd = BS

Temperature table for versions in type of protection Ex ec, AEx ec or Non-incendive with sensor insulated (for insulation refer to manual of Endress+Hauser Flowtec)

Sensor	Size / DN	Type of protection	T _{med}		T _{a,max}	T _{med,max} (°C)						
			min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)	
Promass A	01...04	Ex ec / NI	-50	205	50	---	90	130	170	205	205	
			55	---	---	(130)	(170)	(205)	(205)			
Cubemass C	01...06	Ex ec / NI	-50	205	50	---	95	130	195	205	205	
			55	---	---	(130)	(170)	(205)	(205)			
Promass E	08...15	Ex ec / NI	-50	205	50	---	80	115	165	205	205	
			55	---	---	(115)	(140)	(205)	(205)			
Promass F	08...15	Ex ec / NI	-50 / -200	150	50	---	80	115	150	150	150	
			55	---	---	(115)	(150)	(150)	(150)			
Promass F	25...40	Ex ec / NI	-50 / -200	240	50	---	80	115	170	240	240	
			55	---	---	(115)	(170)	(240)	(240)			
Promass F	50...80	Ex ec / NI	-50 / -200	150	50	---	60	95	150	150	150	
			55	---	---	(95)	(150)	(150)	(150)			
Promass F	100...250	Ex ec / NI	-50 / -200	240	50	---	60	95	160	240	240	
			55	---	---	(95)	(160)	(240)	(240)			
Promass F	15...250	Ex ec / NI	-50 / -200	350	50	---	85	120	185	280	350	
			60	---	---	120	185	280	350			
Promass H	8	Ex ec / NI	-50 / -200	205	50	---	80	115	165	205	205	
			55	---	---	(115)	(165)	(205)	(205)			
Promass H	15...50	Ex ec / NI	-50 / -200	205	50	---	60	95	130	205	205	
			55	---	---	(95)	(130)	(205)	(205)			
Promass S, P	8	Ex ec / NI	-50	150	50	---	80	115	150	150	150	
			55	---	---	(115)	(150)	(150)	(150)			
Promass S, P	15...50	Ex ec / NI	-50	150	50	---	60	95	150	150	150	
			55	---	---	(95)	(150)	(150)	(150)			
Promass S, P	15...50	Ex ec / NI	-50	205	50	---	60	95	160	205	205	
			55	---	---	(95)	(160)	(205)	(205)			
Promass S, P	15...50	Ex ec / NI	-50	205	50	---	60	95	160	205	205	
			55	---	---	(95)	(160)	(205)	(205)			
Promass I	8...80	Ex ec / NI	-50	150	50	---	60	95	150	150	150	
			55	---	---	(95)	(150)	(150)	(150)			
Promass O	80...250	Ex ec / NI	-50	205	50	---	60	95	160	205	205	
			55	---	---	(95)	(160)	(205)	(205)			
Promass X	350	Ex ec / NI	-50	205	50	---	60	95	160	205	205	
			55	---	---	(95)	(160)	(205)	(205)			

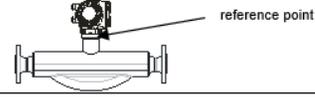
Sensor	Size / DN	Type of protection	T _{med}		T _{a,max}	T _{med,max} (°C)						
			min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)	
Promass Q	25...250	Ex ec / NI	-50 / -200	240	50	---	60	95	160	205	205	
					55	---	(40)	(95)	(160)	(240)	(240)	

Notes: (1) this page covers sensors with type of protection Ex ec, AEx ec and non-incendive. Sensors with type of protection Ex nC is applicable only for sensor versions without purge connection or rupture disk (temperature table see next page)
 (2) T_{a,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
 (4) for maximum medium temperature and minimum medium temperature see nameplate
 (5) Versions with transmitter enclosure stainless steel (hygienic) are not allowed to be installed with insulation

Temperature table for versions in type of protection Ex ec, AEx ec or Non-incendive with sensor insulated (for insulation not in compliance with manual of Endress+Hauser Flowtec)

Sensor	Size / DN	T _{max} 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	---	63 °C	72 °C	75 °C	77 °C	77 °C

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
 - T_{a,min} = -40°C, -50°C respectively (see nameplate)
 - for maximum medium temperature and minimum medium temperature see nameplate
 (2) location of reference point



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B 24.10.2016 / Bn	G 09.06.2021 / Bn	Diese Zeichnung darf ohne unsere	
C 03.05.2017 / Bn	H 15.07.2023 / DOMI	Genehmigung weder vervielfältigt werden noch	
D 30.10.2017 / Bn	J	dritten Personen und Konkurrenzfirmen	
E 04.07.2018 / Bn	K	zugänglich gemacht werden.	

Control Drawing IECEx, ATEX, CSA, cCSAus
 Zone 2, Cl.I Div. 2, Cl.I Zone 2
 Thermal Parameter
 Proline Promass 300/500, Proline Cubemass 300/500

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	15.07.2023	DOMI
Gesehen		

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

Notes:

This page applies to versions with extended order code covering: 8*3B** – dd... O8*3B** – dd... 8x3Bxx – dd... O8x3Bxx – dd...
 with approval option cCSAus / CSA: dd = CZ IECEx / ATEX: dd = BS

Temperature table for versions in type of protection Ex ec nC or AEx ec nC with sensor insulated (for insulation refer to manual of Endress+Hauser Flowtec)

Sensor	Size / DN	Type of protection	T _{max}		T _{a,max}	T _{med,max} (°C)						
			min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)	
Promass A	01...04	Ex ec nC	-50	205	50	---	95	130	195	205	205	205
					55	---	(130)	(195)	(205)	(205)		
Cubemass C	01...06	Ex ec nC	-50	205	50	---	95	130	195	205	205	205
					55	---	(130)	(195)	(205)	(205)		
Promass E	08...15	Ex ec nC	-50	205	50	---	95	130	195	205	205	205
					55	---	(130)	(195)	(205)	(205)		
Promass F	08...15	Ex ec nC	-50 / -200	150	50	---	95	130	150	150	150	150
					55	---	(130)	(150)	(150)	(150)		
Promass F	25...80	Ex ec nC	-50 / -200	150	50	---	95	130	150	150	150	150
					55	---	(130)	(150)	(150)	(150)		
Promass F	100...250	Ex ec nC	-50 / -200	150	50	---	95	130	150	150	150	150
					55	---	(130)	(150)	(150)	(150)		
Promass F	15...250	Ex ec nC	-50 / -200	350	50	---	95	130	195	290	350	350
					60	---	130	195	290	350		
Promass H	8	Ex ec nC	-50 / -200	205	50	---	95	130	195	205	205	205
					55	---	(130)	(195)	(205)	(205)		
Promass H	15...50	Ex ec nC	-50 / -200	205	50	---	95	130	195	205	205	205
					55	---	(130)	(195)	(205)	(205)		
Promass S, P	8	Ex ec nC	-50	150	50	---	95	130	150	150	150	150
					55	---	(130)	(150)	(150)	(150)		
Promass S, P	15...50	Ex ec nC	-50	150	50	---	95	130	150	150	150	150
					55	---	(130)	(150)	(150)	(150)		
Promass S, P	15...50	Ex ec nC	-50	205	50	---	95	130	195	205	205	205
					55	---	(130)	(195)	(205)	(205)		
Promass I	8...80	Ex ec nC	-50	150	50	---	95	130	150	150	150	150
					60	---	(130)	(150)	(150)	(150)		
Promass O	80...250	Ex ec nC	-50	205	50	---	95	130	195	205	205	205
					55	---	(130)	(195)	(205)	(205)		
Promass X	350	Ex ec nC	-50	205	50	---	95	130	195	205	205	205
					55	---	(130)	(195)	(205)	(205)		

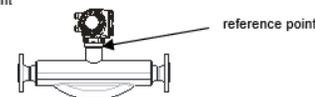
Sensor	Size / DN	Type of protection	T _{max}		T _{a,max}	T _{med,max} (°C)						
			min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)	
Promass Q	25...250	Ex ec nC	-50 / -200	240	50	---	95	130	195	205	205	205
					55	---	(40)	(95)	(160)	(240)	(240)	

Notes: (1) type of protection Ex ec nC and AEx ec nC is applicable only for sensor versions without purge connection or rupture disk
 (2) T_{a,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 for maximum medium temperature and minimum medium temperature see nameplate
 (4) Versions with transmitter enclosure stainless steel (hygienic) are not allowed to be installed with insulation this temperature table is not applicable for Class I Division 2 versions. For Class I Division 2 versions see temperature table on page 3/12

Temperature table for versions in type of protection Ex ec nC, AEx ec nC with sensor insulated (for insulation not in compliance with manual of Endress+Hauser Flowtec)

Sensor	Size / DN	T _{max} 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	---	63 °C	72 °C	75 °C	77 °C	77 °C

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
 - T_{a,min} = -40°C, -50°C respectively (see nameplate)
 - for maximum medium temperature and minimum medium temperature see nameplate
 (2) location of reference point



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D	30.10.2017 / Bn	J		drüben Personen und Konkurrenzfirmen	
E	04.07.2018 / Bn	K		zugänglich gemacht werden.	

Control Drawing IECEx, ATEX, CSA, cCSAus	Gezeichnet	10.05.2016	Bn
Zone 2, CI.I Div. 2, CI.I Zone 2	Geprüft		
Thermal Parameter	Ex-geprüft	15.07.2023	DOMI
Proline Promass 300/500, Proline Cubemass 300/500	Gesehen		



IECEx Certificate of Conformity
 Certificate No.:
 IECEx CSA 16.0034X Issue 9
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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... with approval option cCSAus / CSA: IECEx / ATEX: O8*5*** – dd*****B... dd = CS, CZ dd = BS 8x5Bxx – dd*****B... O8x5Bxx – dd*****B...

Temperature table for versions in type of protection Ex ec, AEx ec or Non-incendive with sensor not insulated

Sensor	Size / DN	Type of protection	T _{med}		T _{a,max} (°C)	T _{med,max} (°C)					
			min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass A	01 ... 04	Ex ec / NI	-50	205	50	50	95	130	170	205	205
			60	---	95	130	170	205	205		
Cubemass C	01 ... 06	Ex ec / NI	-50	205	60	---	90	130	140	205	205
			60	---	90	130	140	205	205		
Promass E	08 ... 15	Ex ec / NI	-50	205	45	45	80	115	165	205	205
			60	---	80	115	165	205	205		
Promass F	08 ... 15	Ex ec / NI	-50 / -200	150	50	50	80	115	150	150	150
			60	---	80	115	150	150	150		
Promass F	25 ... 40	Ex ec / NI	-50 / -200	240	50	50	80	115	170	240	240
			60	---	80	115	170	240	240		
Promass F	50 ... 80	Ex ec / NI	-50 / -200	150	45	60	60	95	150	150	150
			60	---	60	95	150	150	150		
Promass F	100 ... 250	Ex ec / NI	-50 / -200	240	45	60	60	95	160	240	240
			60	---	60	95	160	240	240		
Promass F	15 ... 250	Ex ec / NI	-50 / -200	350	60	70	85	120	185	280	350
			60	---	85	120	185	280	350		
Promass H	8	Ex ec / NI	-50 / -200	205	50	45	80	115	165	205	205
			60	---	80	115	165	205	205		
Promass H	15 ... 50	Ex ec / NI	-50 / -200	205	60	---	60	95	130	205	205
			60	---	60	95	130	205	205		
Promass S, P	8	Ex ec / NI	-50	150	45	45	80	115	150	150	150
			60	---	80	115	150	150	150		
Promass S, P	15 ... 50	Ex ec / NI	-50	205	45	45	80	115	170	205	205
			60	---	80	115	170	205	205		
Promass S, P	15 ... 50	Ex ec / NI	-50	150	45	45	60	95	150	150	150
			60	---	60	95	150	150	150		
Promass S, P	15 ... 50	Ex ec / NI	-50	205	45	45	60	95	160	205	205
			60	---	60	95	160	205	205		
Promass I	8 ... 80	Ex ec / NI	-50	150	45	45	60	95	150	150	150
			60	---	60	95	150	150	150		

Sensor	Size / DN	Type of protection	T _{med}		T _{a,max} (°C)	T _{med,max} (°C)					
			min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass O	80 ... 250	Ex ec / NI	-50	205	45	45	60	95	160	205	205
			60	---	60	95	160	205	205		
Promass X	350	Ex ec / NI	-50	205	45	45	60	95	160	205	205
			60	---	60	95	160	205	205		
Promass Q	25 ... 250	Ex ec / NI	-50 / -200	240	45	45	60	95	160	240	240
			60	---	60	95	160	240	240		

Notes: (1) this page covers sensors with type of protection Ex ec, AEx ec and non-incendive. Sensors with type of protection Ex nC applicable only for versions without purge connection or rupture disk (temperature tables see next page)
 (2) T_{a,min} = -40°C, -50°C respectively (see nameplate)
 (3) for maximum medium temperature and minimum medium temperature see nameplate

Transmitter for all versions:

T _{a,max} (°C)		
T6 (85°C)	T5 (100°C)	T4 (135°C)
---	45	60

Notes: (1) T_{a,min} = -40°C, -50°C respectively (see name plate)

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C	03.05.2017 / Bn	H	15.07.2023 / DOMI		
D	30.10.2017 / Bn	J			
E	04.07.2018 / Bn	K			

Control Drawing IECEx, ATEX, CSA, cCSAus
 Zone 2, Cl.I Div. 2, Cl.I Zone 2
 Thermal Parameter
 Proline Promass 300/500, Proline Cubemass 300/500

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	15.07.2023	DOMI
Gesehen		



IECEx Certificate of Conformity
 Certificate No.:
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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 = CZ
 IECEx / ATEX: dd = BS

Temperature table for versions in type of protection Ex ec nC or AEx ec nC with sensor not insulated

Sensor	Size / DN	Type of protection	T _{med}		T _{a,max} (°C)	T _{med,max} (°C)					
			min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass A	01 ... 04	Ex ec nC	-50	205	60	80	95	130	195	205	205
Cubemass C	01 ... 06	Ex ec nC	-50	205	60	80	95	130	195	205	205
Promass E	08 ... 15	Ex ec nC	-50	205	60	80	95	130	195	205	205
Promass F	25 ... 80	Ex ec nC	-50 / -200	150	60	80	95	130	150	150	150
			-50 / -200	240	60	80	95	130	195	240	240
	100...250	Ex ec nC	-50 / -200	150	60	80	95	130	150	150	150
			-50 / -200	240	60	80	95	130	195	240	240
	15...250	Ex ec nC	-50 / -200	150	60	80	95	130	150	150	150
			-50 / -200	240	60	80	95	130	195	240	240
Promass H	8	Ex ec nC	-50 / -200	205	60	80	95	130	195	205	205
	15 ... 50	Ex ec nC	-50 / -200	205	60	80	95	130	195	205	205
Promass S, P	8	Ex ec nC	-50	150	60	80	95	130	150	150	150
	15 ... 50	Ex ec nC	-50	205	60	80	95	130	195	205	205
Promass I	8 ... 80	Ex ec nC	-50	150	60	80	95	130	150	150	150
Promass O	80...250	Ex ec nC	-50	205	60	80	95	130	195	205	205
Promass X	350	Ex ec nC	-50	205	60	80	95	130	195	205	205
Promass Q	25...250	Ex ec nC	-50 / -200	240	60	80	95	130	195	240	240

Notes: (1) type of protection Ex ec nC and AEx ec nC is applicable only for sensor versions without purge connection or rupture disk
 (2) T_{a,min} = -40°C, -50°C respectively (see nameplate)
 (3) for maximum medium temperature and minimum medium temperature see nameplate
 (4) this temperature table is not applicable for Class I Division 2 versions. For Class I Division 2 versions see temperature table on page 5/12

Transmitter for all versions:

T _{a,max} (°C)		
T6 (85°C)	T5 (100°C)	T4 (135°C)
---	45	60

Notes: (1) T_{a,min} = -40°C, -50°C respectively (see name plate)

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B	24.10.2016 / Bn	G	09.06.2021 / Bn		
C	03.05.2017 / Bn	H	15.07.2023 / DOMI		
D	30.10.2017 / Bn	J			
E	04.07.2018 / Bn	K			

Control Drawing IECEx, ATEX, CSA, cCSAus Zone 2, CI.I Div. 2, CI.I Zone 2 Thermal Parameter Proline Promass 300/500, Proline Cubemass 300/500	Gezeichnet	10.05.2016	Bn
	Geprüft		
	Ex-geprüft	15.07.2023	DOMI
	Gesehen		



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

FES0264H 6/12

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... with approval option

O8*5*** - dd*****B... 8x5Bxx - dd*****B... O8x5Bxx - dd*****B...
 cCSAus / CSA: dd = CS, CZ
 IECEx / ATEX: dd = BS

Temperature table for versions in type of protection Ex ec, AEx ec or Non-incendive with sensor insulated (for insulation refer to manual of													
Sensor	Size / DN	Type of protection	T _{med}		T _{a,max} (°C)	T _{med,max} (°C)							
			min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)		
Promass A	01 ... 04	Ex ec / NI	-50	205	50	50	95	130	150	150	150		
					60	---	95	130	150	150	150		
Cubemass C	01 ... 06	Ex ec / NI	-50	205	50	---	90	130	140	(180)	(180)		
					60	---	90	130	140	150	150		
Promass E	08 ... 15	Ex ec / NI	-50	205	45	45	80	115	165	205	205		
					60	---	80	115	165	205	205		
	25 ... 80	Ex ec / NI	-50	205	60	---	60	95	140	205	205		
					60	---	60	95	140	205	205		
Promass F	08 ... 15	Ex ec / NI	-50 / -200	150	50	50	80	115	150	150	150		
					60	---	80	115	150	150	150		
			-50 / -200	240	50	50	80	115	170	240	240		
					60	---	80	115	170	240	240		
			25 ... 40	Ex ec / NI	-50 / -200	150	45	60	60	95	150	150	150
							60	---	60	95	150	150	150
	-50 / -200	240	45	60	60	95	170	240	240				
			60	---	60	95	170	240	240				
	50 ... 80	Ex ec / NI	-50 / -200	150	45	60	60	95	150	150	150		
					60	---	60	95	150	150	150		
			-50 / -200	240	45	60	60	95	160	240	240		
					60	---	60	95	160	240	240		
100 ... 250			Ex ec / NI	-50 / -200	150	45	60	60	95	150	150	150	
						60	---	60	95	150	150	150	
-50 / -200	240	45	60	60	95	160	240	240					
		60	---	60	95	160	240	240					
15 ... 250	Ex ec / NI	-50 / -200	350	60	70	85	120	185	280	350			
				60	70	85	120	185	280	350			
Promass H	8	Ex ec / NI	-50 / -200	205	50	45	80	115	165	205	205		
					60	---	80	115	165	205	205		
	15 ... 50	Ex ec / NI	-50 / -200	205	60	---	60	95	130	205	205		
					60	---	60	95	130	205	205		
Promass S, P	8	Ex ec / NI	-50	150	45	45	80	115	150	150	150		
					60	---	80	115	150	150	150		
			-50	205	45	45	80	115	170	205	205		
					60	---	80	115	170	205	205		
			15 ... 50	Ex ec / NI	-50	150	45	45	60	95	150	150	150
							60	---	60	95	150	150	150
-50	205	45	45	60	95	160	205	205					
		60	---	60	95	160	205	205					
Promass I	8 ... 80	Ex ec / NI	-50	150	45	45	60	95	150	150	150		
Promass O	80 ... 250	Ex ec / NI	-50	205	45	45	60	95	160	205	205		
Promass X	350	Ex ec / NI	-50	205	45	45	60	95	160	205	205		
Promass Q	25 ... 250	Ex ec / NI	-50 / -200	240	45	45	60	95	160	240	240		
					60	---	60	95	160	240	240		

Notes: (1) this page covers sensors with type of protection Ex ec, AEx ec and non-incendive. Sensors with type of protection Ex nC applicable only for versions without purge connection or rupture disk (temperature tables see next page)
 (2) T_{a,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
 (4) for maximum medium temperature and minimum medium temperature see nameplate

Temperature table for versions in type of protection Ex ec, AEx ec or Non-incendive with sensor insulated
 (for insulation not in compliance with manual of Endress+Hauser Flowtec)

Sensor	Size / DN	T _{max} 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	69	72	84	91	91	91

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
 - T_{a,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:

T _{a,max} (°C)		
T6 (85°C)	T5 (100°C)	T4 (135°C)
---	45	60

Notes: (1) T_{a,min} = -40°C, -50°C respectively (see name plate)

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B	24.10.2016 / Bn	G	09.08.2021 / Bn		
C	03.05.2017 / Bn	H	15.07.2023 / DOMI		
D	30.10.2017 / Bn	J			
E	04.07.2018 / Bn	K			

Control Drawing IECEx, ATEX, CSA, cCSAus
 Zone 2, Cl.I Div. 2, Cl.I Zone 2
 Thermal Parameter
 Proline Promass 300/500, Proline Cubemass 300/500

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	15.07.2023	DOMI
Gesehen		

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... 08*5*** – dd*****B... 8x5Bxx – dd*****B... 08x5Bxx – dd*****B...
 with approval option cCSAus / CSA: dd = CZ IECEx / ATEX: dd = BS

Temperature table for versions in type of protection Ex ec nC or AEx ec nC with sensor insulated
 (for insulation refer to manual of Endress+Hauser Flowtec)

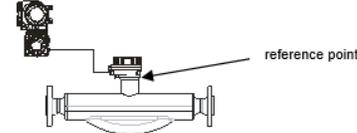
Sensor	Size / DN	Type of protection	T _{med}		T _{a,max}	T _{med,max} (°C)					
			min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass A	01 ... 04	Ex ec nC	-50	205	50	80	95	130	150	150	150
					60	---	95	130	150	150	150
Cubemass C	01 ... 06	Ex ec nC	-50	205	50	80	95	130	150	150	150
Promass E	08 ... 15	Ex ec nC	-50	205	60	80	95	130	195	205	205
					25 ... 80	Ex ec nC	-50	205	60	80	95
Promass F	08 ... 15	Ex ec nC	-50 / -200	150	60	80	95	130	150	150	150
			-50 / -200	240	60	80	95	130	195	240	240
	25 ... 80	Ex ec nC	-50 / -200	150	60	80	95	130	150	150	150
			-50 / -200	240	60	80	95	130	195	240	240
	100 ... 250	Ex ec nC	-50 / -200	150	60	80	95	130	150	150	150
			-50 / -200	240	60	80	95	130	195	240	240
	15 ... 250	Ex ec nC	-50 / -200	350	60	80	95	130	195	290	350
	Promass H	8	Ex ec nC	-50 / -200	205	60	80	95	130	195	205
-50 / -200				205	60	80	95	130	195	205	205
Promass S, P	8	Ex ec nC	-50	150	60	80	95	130	150	150	150
			-50	205	60	80	95	130	195	205	205
Promass I	15 ... 50	Ex ec nC	-50	150	60	80	95	130	150	150	150
			-50	205	60	80	95	130	195	205	205
Promass O	8 ... 80	Ex ec nC	-50	150	60	80	95	130	150	150	150
Promass X	80 ... 250	Ex ec nC	-50	205	60	80	95	130	195	205	205
			-50	205	60	80	95	130	195	205	205
Promass Q	25 ... 250	Ex ec nC	-50 / -200	240	60	80	95	130	195	240	240

Notes: (1) type of protection Ex ec nC and AEx ec nC is applicable only for sensor versions without purge connection or rupture disk
 (2) T_{a,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
 (4) for maximum medium temperature and minimum medium temperature see nameplate
 (5) this temperature table is not applicable for Class I Division 2 versions. For Class I Division 2 versions see temperature table on page 7/12

Temperature table for versions in type of protection Ex ec nC or AEx ec nC with sensor insulated
 (for insulation refer to manual of Endress+Hauser Flowtec)

Sensor	Size / DN	T _{max} 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	69	72	84	91	91	91

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
 - T_{a,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:

T _{a,max} (°C)		
T6 (85°C)	T5 (100°C)	T4 (135°C)
---	45	60

Notes: (1) T_{a,min} = -40°C, -50°C respectively (see name plate)

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C	03.05.2017 / Bn	H	15.07.2023 / DOMI		
D	30.10.2017 / Bn	J			
E	04.07.2018 / Bn	K			

Control Drawing IECEx, ATEX, CSA, cCSAus		
Zone 2, CI.I Div. 2, CI.I Zone 2		
Thermal Parameter		
Proline Promass 300/500, Proline Cubemass 300/500		
Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	15.07.2023	DOMI
Gesehen		



IECEx Certificate of Conformity
 Certificate No.:
 IECEx CSA 16.0034X Issue 9
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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... with approval option cCSAus / CSA: IECEx / ATEX: O8*5*** – dd*****A... dd = CS, CZ dd = BS, BL 8x5Bxx – dd*****A... O8x5Bxx – dd*****A...

Temperature table for versions in type of protection Ex ec, AEx ec or Non-incendive with sensor not insulated

Sensor	Size / DN	Type of protection	T _{med}		T _{a,max}	T _{med,max} (°C)					
			min (°C)	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	Ex ec / NI	-50	205	60	---	95	130	170	205	205
Promass A (type 8A5C)	01 ... 04	Ex ec / NI	-50	205	55	---	95	130	170	205	205
Cubemass C	01 ... 06	Ex ec / NI	-50	205	60	---	95	130	140	160	160
Promass E	08 ... 15	Ex ec / NI	-50	205	60	---	75	115	165	205	205
	25 ... 80	Ex ec / NI	-50	205	60	---	60	95	140	205	205
Promass F	08 ... 15	Ex ec / NI	-50 / -200	150	55	---	80	115	130	150	150
			-50 / -200	240	60	---	80	115	130	130	130
	25 ... 40	Ex ec / NI	-50 / -200	150	55	---	60	95	150	150	150
			-50 / -200	240	60	---	60	95	170	240	240
50 ... 80	Ex ec / NI	-50 / -200	150	55	---	60	95	150	150	150	
		-50 / -200	240	60	---	60	95	130	130	130	
	100 ... 250	Ex ec / NI	-50 / -200	150	55	---	60	95	150	150	150
			-50 / -200	240	60	---	60	95	160	240	240
15 ... 250	Ex ec / NI	-50 / -200	350	50	---	85	120	185	280	350	
		-50 / -200	60	---	85	120	185	240	240	(280) (350)	
Promass H	8	Ex ec / NI	-50 / -200	205	60	---	80	115	165	205	205
	15 ... 50	Ex ec / NI	-50 / -200	205	60	---	60	95	130	205	205
Promass S, P	8	Ex ec / NI	-50	150	60	---	80	115	150	150	150
	15 ... 50	Ex ec / NI	-50	205	60	---	80	115	170	205	205
Promass I	8 ... 80	Ex ec / NI	-50	150	60	---	60	95	150	150	150
			-50	205	60	---	60	95	160	205	205
Promass O	80 ... 250	Ex ec / NI	-50	150	55	---	60	95	150	150	150
			-50	205	60	---	60	95	140	140	140

Sensor	Size / DN	Type of protection	T _{med}		T _{a,max}	T _{med,max} (°C)					
			min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass X	350	Ex ec / NI	-50	205	60	---	60	95	160	205	205
Promass Q	25 ... 250	Ex ec / NI	-50 / -200	240	60	---	60	95	160	240	240

Notes: (1) this page covers sensors with type of protection Ex ec, AEx ec and non-incendive. Sensors with type of protection Ex nC applicable only for versions without purge connection or rupture disk (temperature tables see next page)
 (2) T_{a,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
 (4) for maximum medium temperature and minimum medium temperature see nameplate

Transmitter for all versions:

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

Notes: (1) aluminium enclosure: T_{a,min} = -40°C, -50°C respectively (for limitation see name plate)
 plastic enclosure: T_{a,min} = -40°C

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B 24.10.2016 / Bn	G 09.06.2021 / Bn	Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch	
C 03.05.2017 / Bn	H 15.07.2023 / DOMI	an dritten Personen und Konkurrenzfirmen	
D 30.10.2017 / Bn	J	zugänglich gemacht werden.	
E 04.07.2018 / Bn	K		

Control Drawing IECEx, ATEX, CSA, cCSAus
 Zone 2, CI.I Div. 2, CI.I Zone 2
 Thermal Parameter
 Proline Promass 300/500, Proline Cubemass 300/500

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	15.07.2023	DOMI
Gesehen		



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

FES0264H 9/12



IECEx Certificate of Conformity
 Certificate No.:
 IECEx CSA 16.0034X Issue 9
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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 = CZ IECEx / ATEX: dd = BS, BL

Temperature table for versions in type of protection Ex ec nC or AEx ec nC with sensor not insulated

Sensor	Size / DN	Type of protection	T _{max}		T _{a,max} (°C)	T _{max} (°C)					
			min (°C)	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	Ex ec nC	-50	205	60	---	95	130	195	205	205
Promass A (type 8A5C)	01 ... 04	Ex ec nC	-50	205	55	---	95	130	195	205	205
Cubemass C	01 ... 06	Ex ec nC	-50	205	60	---	95	130	160	160	160
Promass E	08 ... 15	Ex ec nC	-50	205	60	---	95	130	195	205	205
Promass E	25 ... 80	Ex ec nC	-50	205	60	---	95	130	195	205	205
Promass F	08 ... 15	Ex ec nC	-50 / -200	150	55	---	95	130	130	150	150
			-50 / -200	240	60	---	95	130	130	130	130
	25 ... 80	Ex ec nC	-50 / -200	150	55	---	95	130	150	150	150
			-50 / -200	240	60	---	95	130	130	130	130
100...250	Ex ec nC	-50 / -200	150	55	---	95	130	150	150	150	
		-50 / -200	240	60	---	95	130	130	130	130	
	15...250	Ex ec nC	-50 / -200	350	50	---	95	130	195	290	350
			-50 / -200	240	60	---	95	130	195	240	240
Promass H	8	Ex ec nC	-50 / -200	205	60	---	95	130	195	205	205
Promass H	15 ... 50	Ex ec nC	-50 / -200	205	60	---	95	130	195	205	205
Promass S, P	8	Ex ec nC	-50	150	60	---	95	130	150	150	150
			-50	205	60	---	95	130	195	205	205
Promass I	8 ... 80	Ex ec nC	-50	150	60	---	95	130	150	150	150
			-50	205	60	---	95	130	195	205	205
Promass O	80 ... 250	Ex ec nC	-50	150	60	---	95	130	140	140	140
Promass X	350	Ex ec nC	-50	205	60	---	95	130	195	205	205
Promass Q	25 ... 250	Ex ec nC	-50 / -200	240	60	---	95	130	195	240	240

Notes: (1) type of protection Ex ec nC and Ex ec nC is applicable only for sensor versions without purge connection or rupture disk
 (2) T_{a,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
 (4) for maximum medium temperature and minimum medium temperature see nameplate
 (5) this temperature table is not applicable for Class I Division 2 versions. For Class I Division 2 versions see temperature table on page 9/12

Transmitter for all versions:

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

Notes: (1) aluminium enclosure: T_{a,min} = -40°C, -50°C respectively (for limitation see name plate)
 plastic enclosure: T_{a,min} = -40°C

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B	24.10.2016 / Bn	G	09.06.2021 / Bn		
C	03.05.2017 / Bn	H	15.07.2023 / DOMI		
D	30.10.2017 / Bn	J			
E	04.07.2018 / Bn	K			

Control Drawing IECEx, ATEX, CSA, cCSAus
 Zone 2, Cl.I Div. 2, Cl.II Zone 2
 Thermal Parameter
 Proline Promass 300/500, Proline Cubemass 300/500

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	15.07.2023	DOMI
Gesehen		

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... with approval option cCSAus / CSA: dd = CS, CZ IECEx / ATEX: dd = BS, BL 08*5*** - dd*****A... 8x5Bxx - dd*****A... 08x5Bxx - dd*****A...

Temperature table for versions in type of protection Ex ec, AEx ec or Non-incendive with sensor insulated (for insulation refer to manual of Endress+Hauser Flowtec)											
Sensor	Size / DN	Type of protection	T _{liquid} (°C)		T _{a,max} (°C)	T _{meas,max} (°C)					
			min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass A	01 ... 04	Ex ec / NI	-50	205	50	---	95	130	130	130	130
Cubemass C	01 ... 06	Ex ec / NI	-50	205	50	---	90	130	130	130	130
Promass E	08 ... 15	Ex ec / NI	-50	205	50	---	75	115	165	205	205
	25 ... 80	Ex ec / NI	-50	205	50	---	60	95	140	205	205
Promass F	08 ... 15	Ex ec / NI	-50 / -200	150	45	---	80	115	150	150	150
			-50 / -200	240	50	---	80	115	170	240	240
		Ex ec / NI	-50 / -200	150	45	---	60	95	150	150	150
			-50 / -200	240	50	---	60	95	130	130	130
	25 ... 80	Ex ec / NI	-50 / -200	150	45	---	60	95	150	150	150
			-50 / -200	240	50	---	60	95	130	130	130
		Ex ec / NI	-50 / -200	150	45	---	60	95	150	150	150
			-50 / -200	240	50	---	60	95	130	130	130
100 ... 250	Ex ec / NI	-50 / -200	150	45	---	60	95	150	150	150	
		-50 / -200	240	50	---	60	95	130	130	130	
	Ex ec / NI	-50 / -200	150	45	---	60	95	150	150	150	
		-50 / -200	240	50	---	60	95	160	240	240	
Promass H	8	Ex ec / NI	-50 / -200	205	55	---	80	115	165	205	205
	15 ... 50	Ex ec / NI	-50 / -200	205	55	---	60	95	130	205	205
Promass S, P	8	Ex ec / NI	-50	150	45	---	80	100	150	150	150
			-50	205	55	---	80	115	170	205	205
	Ex ec / NI	-50	150	45	---	60	95	150	150	150	
		-50	205	55	---	60	95	160	205	205	
Promass I	8 ... 80	Ex ec / NI	-50	150	45	---	60	95	150	150	
Promass O	80 ... 250	Ex ec / NI	-50	205	55	---	60	95	160	205	
Promass X	350	Ex ec / NI	-50	205	55	---	60	95	160	205	
Promass Q	25 ... 250	Ex ec / NI	-50 / -200	240	50	---	60	95	160	240	

Notes: (1) this page covers sensors with type of protection Ex ec, AEx ec and non-incendive. Sensors with type of protection Ex ec nC applicable only for versions without purge connection or rupture disk (temperature tables see next page)
 (2) T_{a,min} = -40°C, -50°C respectively (see nameplate)
 (3) for maximum medium temperature and minimum medium temperature see nameplate

Temperature table for versions in type of protection Ex ec, AEx ec or Non-incendive with sensor insulated (for insulation not in compliance with manual of Endress+Hauser Flowtec)									
Sensor	Size / DN	T _{max} 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	---	72	82	85	85	85	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
 - T_{a,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	T _{a,max} (°C)			
	Ordinary location (°C)	T6 (85°C)	T5 (100C)	T4 (135°C)
aluminium	60	---	45	60
plastic	60	---	---	---

Notes: (1) aluminium enclosure: T_{a,min} = -40°C, -50°C respectively (for limitation see name plate)
 plastic enclosure: T_{a,min} = -40°C

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C 03.05.2017 / Bn	H 15.07.2023 / DOMI		
D 30.10.2017 / Bn	J		
E 04.07.2018 / Bn	K		

Control Drawing IECEx, ATEX, CSA, cCSAus
 Zone 2, Cl.I Div. 2, Cl.I Zone 2
 Thermal Parameter
 Proline Promass 300/500, Proline Cubemass 300/500

Gezeichnet	10.05.2016	Bn
Geprüft		
Ex-geprüft	15.07.2023	DOMI
Gesehen		



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

FES0264H 11/12

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... with approval option O8*5*** – dd*****A... cCSAus / CSA: dd = CZ IECEx / ATEX: dd = BS, BL 8x5Bxx – dd*****A... O8x5Bxx – dd*****A...

Temperature table for versions in type of protection Ex ec nC or AEx ec nC with sensor insulated
 (for insulation refer to manual of Endress+Hauser Flowtec)

Sensor	Size / DN	Type of protection	T _{fluid}		T _{a,max}	T _{med,max} (°C)					
			min (°C)	max (°C)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass A	01...04	Ex ec nC	-50	205	50	---	95	130	130	130	130
Cubemass C	01...06	Ex ec nC	-50	205	50	---	95	130	130	130	130
Promass E	08...15	Ex ec nC	-50	205	50	---	95	130	195	205	205
	25...80	Ex ec nC	-50	205	50	---	95	130	195	205	205
Promass F	08...15	Ex ec nC	-50 / -200	150	45	---	95	130	150	150	150
			-50 / -200	240	50	---	95	130	130	130	130
			-50 / -200	240	50	---	95	130	195	240	240
	25...80	Ex ec nC	-50 / -200	150	45	---	95	130	150	150	150
			-50 / -200	240	50	---	95	130	130	130	130
			-50 / -200	240	50	---	95	130	195	240	240
100...250	Ex ec nC	-50 / -200	150	45	---	95	130	150	150	150	
		-50 / -200	240	50	---	95	130	130	130	130	
		-50 / -200	240	50	---	95	130	195	240	240	
15...250	Ex ec nC	-50 / -200	350	50	---	95	130	195	280	350	
		-50 / -200	350	50	---	95	130	195	280	350	
Promass H	8	Ex ec nC	-50 / -200	205	55	---	95	130	195	205	205
	15...50	Ex ec nC	-50 / -200	205	55	---	95	130	195	205	205
Promass S, P	8	Ex ec nC	-50	150	45	---	95	130	150	150	150
			-50	150	50	---	95	130	130	130	130
			-50	205	55	---	95	130	195	205	205
	15...50	Ex ec nC	-50	150	45	---	95	130	150	150	150
			-50	150	50	---	95	130	130	130	130
			-50	205	55	---	95	130	195	205	205
Promass I	8...80	Ex ec nC	-50	150	45	---	95	130	150	150	150
Promass O	80...250	Ex ec nC	-50	205	55	---	95	130	195	205	205
Promass X	350	Ex ec nC	-50	205	55	---	95	130	195	205	205
Promass Q	25...250	Ex ec nC	-50 / -200	240	50	---	95	130	195	240	240

Notes: (1) type of protection Ex ec nC and AEx ec nC is applicable only for sensor versions without purge connection or rupture disk
 (2) T_{a,min} = -40°C, -50°C respectively (see nameplate)
 (3) for maximum medium temperature and minimum medium temperature see nameplate
 (4) this temperature table is not applicable for Class I Division 2 versions. For Class I Division 2 versions see temperature table on page 11/12

Temperature table for versions in type of protection Ex ec nC or AEx ec nC with sensor insulated
 (for insulation refer to manual of Endress+Hauser Flowtec)

Sensor	Size / DN	T _{max} 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	---	72	82	85	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
 - T_{a,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	T _{a,max} (°C)			
	Ordinary location (°C)	T6 (85°C)	T5 (100°C)	T4 (135°C)
aluminium	60	---	45	60
plastic	60	---	---	---

Notes: (1) aluminium enclosure: T_{a,min} = -40°C, -50°C respectively (for limitation see name plate)
 plastic enclosure: T_{a,min} = -40°C

A	10.05.2016 / Bn	F	22.10.2019 / Bn	Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch Dritten Personen und Konkurrenzfirmen zugänglich gemacht werden.	Ersetzt durch: Ersteller: FES / Bn FILE: M:\Zeichng\FES0264\G\FES0264G.dwg
B	24.10.2016 / Bn	G	09.08.2021 / Bn		
C	03.05.2017 / Bn	H	15.07.2023 / DOMI		
D	30.10.2017 / Bn	J			
E	04.07.2018 / Bn	K			

Control Drawing IECEx, ATEX, CSA, cCSAus	Gezeichnet	10.05.2016	Bn
Zone 2, CI.I Div. 2, CI.I Zone 2	Geprüft		
Thermal Parameter	Ex-geprüft	15.07.2023	DOMI
Proline Promass 300/500, Proline Cubemass 300/500	Gesehen		



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4. Marking

Proline Promass 300, Proline Cubemass 300		
Order Code: 8*3*** - dd*ff*****+##*# O8*3*** - dd*ff*****+##*#		
dd = approval	ff = I/O	Marking of Ex protection
BA	CA, CB, CC, CD, HA, TA, MC, RC	Ex db eb ia [ja Ga] IIB T6...T1 Ga/Gb ¹⁾ or Ex db eb ia [ja Ga] IIB T6...T1 Gb and/or Ex tb [ja Da] IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex db eb ia IIB T6...T1 Ga/Gb ¹⁾ or Ex db eb ia IIB T6...T1 Gb and/or Ex tb IIIC T** °C Db
BB	CA, CB, CC, CD, HA, TA, MC, RC	Ex db eb ia [ja Ga] IIC T6...T1 Ga/Gb ¹⁾ or Ex db eb ia [ja Ga] IIC T6...T1 Gb and/or Ex tb [ja Da] IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex db eb ia IIC T6...T1 Ga/Gb ¹⁾ or Ex db eb ia IIC T6...T1 Gb ¹⁾ and/or Ex tb IIIC T** °C Db
BC	CA, CB, CC, CD, HA, TA, MC, RC	Ex db ia [ja Ga] IIB T6...T1 Ga/Gb ¹⁾ or Ex db ia [ja Ga] IIB T6...T1 Gb and/or Ex tb [ja Da] IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex db ia IIB T6...T1 Ga/Gb ¹⁾ or Ex db ia IIB T6...T1 Gb and/or Ex tb IIIC T** °C Db
BD	CA, CB, CC, CD, HA, TA, MC, RC	Ex db ia [ja Ga] IIC T6...T1 Ga/Gb ¹⁾ or Ex db ia [ja Ga] IIC T6...T1 Gb and/or Ex tb [ja Da] IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex db ia IIC T6...T1 Ga/Gb ¹⁾ or Ex db ia IIC T6...T1 Gb and/or Ex tb IIIC T** °C Db
BS	CA, CB, CC, CD, HA, TA, MC, RC	Ex ec nC [ic] IIC T5...T1 Gc
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex ec nC IIC T5...T1 Gc

Information: Marking of protection representative for ...	
db	-> electronic compartment
eb	-> terminal compartment
ia	-> sensor, display
tb	-> transmitter enclosure, sensor
[ja Ga]	-> electronic with input/output Ex ia
[ja Da]	-> electronic with input/output Ex ia
db	-> electronic and terminal compartments
ia	-> sensor, display
tb	-> transmitter enclosure, sensor
[ja Ga]	-> electronic with input/output Ex ia
[ja Da]	-> electronic with input/output Ex ia
ec	-> transmitter enclosure, sensor, electronic, display
nC	-> electronic
[ic]	-> electronic with input/output Ex ic

1) The following sensors are marked for EPL Gb and Cl.I Zone 1 only without zone separation: Promass A DN1, Promass H DN8...50, Promass I DN 8...80



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Proline Promass 500 Analog (with ISEM integrated in transmitter), Proline Cubemass 500 Analog (with ISEM integrated in transmitter)			
Order Code: 8*5*** - dd*ff****B*****+##*# O8*5*** - dd*ff****B*****+##*#			
dd = approval	ff = I/O	Device	Marking of Ex protection
BA	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, RB, RC, SA, MA, MB, MC	Transmitter	Ex db eb ia [ia Ga] IIB T6...T5 Gb and/or Ex tb [ia Da] IIIC T85°C Db
		Sensor	Ex ia IIB T6...T1 Ga/Gb ¹⁾ or Ex ia IIB T6...T1 Gb and/or Ex ia tb IIIC T** °C Db
BB	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, RB, RC, SA, MA, MB, MC	Transmitter	Ex db eb ia [ia Ga] IIC T6... T5 Gb and/or Ex tb [ia Da] IIIC T85°C Db
		Sensor	Ex ia IIC T6...T1 Ga/Gb ¹⁾ or Ex ia IIC T6...T1 Gb and/or Ex ia tb IIIC T** °C Db
BC	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, RB, RC, SA, MA, MB, MC	Transmitter	Ex db ia [ia Ga] IIB T6... T5 Gb and/or Ex tb [ia Da] IIIC T85°C Db
		Sensor	Ex ia IIB T6...T1 Ga/Gb ¹⁾ or Ex ia IIB T6...T1 Gb and/or Ex ia tb IIIC T** °C Db
BD	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, RB, RC, SA, MA, MB, MC	Transmitter	Ex db ia [ia Ga] IIC T6... T5 Gb and/or Ex tb [ia Da] IIIC T85°C Db
		Sensor	Ex ia IIC T6...T1 Ga/Gb ¹⁾ or Ex ia IIC T6...T1 Gb and/or Ex ia tb IIIC T** °C Db
BS	CA, CB, CC, CD, HA, TA, MC, RC	Transmitter	Ex ec nC [ic] IIC T5...T4 Gc
		Sensor	Ex ec IIC T6...T1 Gc or Ex ec nC IIC T6...T1 Gc ²⁾
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	Ex ec nC IIC T5...T4 Gc
		Sensor	Ex ec IIC T6...T1 Gc or Ex ec nC IIC T6...T1 Gc ²⁾

Information: Marking of protection representative for ...	
db	-> electronic compartment
eb	-> terminal compartment, wall mounted terminal box
ia	-> sensor, display
tb	-> transmitter enclosures, sensor terminal box, sensor
[ia Ga]	-> electronic with input/output Ex ia and/or output for sensor circuit
[ia Da]	-> electronic with input/output Ex ia and/or output for sensor circuit
db	-> electronic and terminal compartments, wall mounted terminal box
ia	-> sensor, display
tb	-> transmitter enclosures, sensor terminal box, sensor
[ia Ga]	-> electronic with input/output Ex ia and/or output for sensor circuit
[ia Da]	-> electronic with input/output Ex ia and/or output for sensor circuit
ec	-> transmitter enclosures, sensor , electronic, display, sensor terminal box
nC	-> electronic
[ic]	-> electronic with input/output Ex ic

- 1) The following sensors are marked for EPL Gb and Cl.I Zone 1 only without zone separation: Promass A DN1, Promass H DN8...50, Promass I DN 8...80
- 2) Marking Ex ec nC only applicable for sensors without purge connection or rupture disk

Proline Promass 500 Digital (with ISEM integrated in sensor), Proline Cubemass 500 Digital (with ISEM integrated in sensor)			
Order Code: 8*5*** - dd*ff****A*****+##*# O8*5*** - dd*ff****A*****+##*#			
dd = approval	ff = I/O	Device	Marking of Ex protection

Information: Marking of protection representative for ...



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Proline Promass 500 Digital (with ISEM integrated in sensor), Proline Cubemass 500 Digital (with ISEM integrated in sensor)			
Order Code: 8*5*** – dd*ff****A*****+##*# O8*5*** – dd*ff****A*****+##*#			
BI	CA, CB, CC, CD, HA, TA, MC, RC	Transmitter	[Ex ia] IIC and/or [Ex ia] IIIC
		Sensor	Ex ia IIB T6...T1 Ga/Gb ¹⁾ or Ex ia IIB T6...T1 Gb and/or Ex ia tb IIIC T** °C Db
BJ	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	[Ex ia] IIC and/or [Ex ia] IIIC
		Sensor	Ex ia IIC T6...T1 Ga/Gb ¹⁾ or Ex ia IIC T6...T1 Gb and/or Ex ia tb IIIC T** °C Db
BL	CA, CB, CC, CD, HA, TA, MC, RC	Transmitter	[Ex ic] IIC
		Sensor	Ex ec IIC T5...T1 Gc or Ex ec nC IIC T5...T1 Gc ²⁾
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	n.a. (non-Ex)
		Sensor	Ex ec IIC T5...T1 Gc or Ex ec nC IIC T5...T1 Gc ²⁾
BM	CA, CB, CC, CD, HA, TA, MC, RC	Transmitter	Ex ec nC [ic] [ia Ga] IIC T5...T4 Gc and/or [Ex ia] IIIC
		Sensor	Ex ia IIB T6...T1 Ga/Gb ¹⁾ or Ex ia IIB T6...T1 Gb and/or Ex ia tb IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	Ex ec nC [ia Ga] IIC T5...T4 Gc and/or [Ex ia] IIIC
		Sensor	Ex ia IIB T6...T1 Ga/Gb ¹⁾ or Ex ia IIB T6...T1 Gb and/or Ex ia tb IIIC T** °C Db
BN	CA, CB, CC, CD, HA, TA, MC, RC	Transmitter	Ex ec nC [ic][ia Ga] IIC T5...T4 Gc and/or [Ex ia] IIIC
		Sensor	Ex ia IIC T6...T1 Ga/Gb ¹⁾ or Ex ia IIC T6...T1 Gb and/or Ex ia tb IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	Ex ec nC [ia Ga] IIC T5...T4 Gc and/or [Ex ia] IIIC
		Sensor	Ex ia IIC T6...T1 Ga/Gb ¹⁾ or Ex ia IIC T6...T1 Gb and/or Ex ia tb IIIC T** °C Db

[Ex ia] -> electronic with input/output Ex ia and output for sensor circuit ia -> sensor tb -> sensor, sensor terminal box
[Ex ia] -> electronic with output for sensor circuit ia -> sensortb -> sensor, sensor terminal box
[Ex ic] -> electronic with input/output Ex ic ec -> sensor, electronic, sensor terminal box nC -> sensor, electronic ec -> sensor, electronic, sensor terminal box nC -> sensor, electronic
[ia Ga] -> electronic with output for sensor circuit [Ex ia] -> electronic with output for sensor circuit [ic] -> electronic with input/output Ex ic ec -> transmitter enclosures, electronic, display nC -> electronic ia -> sensor tb -> sensor terminal box
[ia Ga] -> electronic with output for sensor circuit [Ex ia] -> electronic with output for sensor circuit [ic] -> electronic with input/output Ex ic ec -> transmitter enclosures, electronic, display nC -> electronic ia -> sensor tb -> sensor terminal box



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Proline Promass 500 Digital (with ISEM integrated in sensor), Proline Cubemass 500 Digital (with ISEM integrated in sensor)			
Order Code: 8*5*** – dd*ff****A*****+##*# O8*5*** – dd*ff****A*****+##*#			
BS	CA, CB, CC, CD, HA, TA, MC, RC	Transmitter	Ex ec nC [ic] IIC T5...T4 Gc
		Sensor	Ex ec IIC T5...T1 Gc or Ex ec nC IIC T5...T1 Gc ²⁾
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	Ex ec nC IIC T5...T4 Gc
		Sensor	Ex ec IIC T5...T1 Gc or Ex ec nC IIC T5...T1 Gc ²⁾

[ic]	-> electronic with input/output Ex ic
ec	-> transmitter enclosures, sensor, electronic, display, sensor terminal box
nC	-> sensor, electronic

- 1) The following sensors are marked for EPL Gb and Cl.I Zone 1 only without zone separation: Promass A DN1, Promass H DN8...50, Promass I DN 8...80
- 2) Marking Ex ec nC only applicable for sensors without purge connection or rupture disk

5. Conditions of Certification

- All equipment of the measurement system shall be included in the equipotential bonding. Along the intrinsically safe sensor circuits potential equalization must exist.
- The sensors may only be used for those process media, for which the wetted parts are known to be suitable.
- If the flowmeter system is connected to remote display type DKX001, the approval code '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 / Proline Cubemass 300	Approval code 'bb' of remote display DKX001/ODKX001 as covered by IECEX DEK 15.0024
BA, BB, BC or BD	BE, BF or BG
BS	BS

- The equipment may have non-conductive surfaces which are a potential electrostatic charging hazard – see instructions for guidance.
- Only use battery Renata type lithium CR1632, 3V.
- The flameproof joints are not intended to be repaired.
- For Proline Promass 300/500 with order code 'dd' = BA, BB, BC, BD, BI, BJ, BM & BN: Zone 0 is only applicable to sensor with process medium in the measuring tube.

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

- 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 shall have an impedance of at least 50Ω



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- b) The rated frequency range of the antenna shall not exceed 1710MHz ... 6000MHz
- c) The RF antenna or the RF antenna cable shall be fitted with a Type N connector plug (MIL-STD-348)
- The antenna bushing type H337 shall be mounted wrench tight to the transmitter enclosure to maintain the ingress protection of the enclosure.
- The coupling nut of the Type N plug connector shall be hand tightened only.
- The metal enclosure of the Antenna Bushing H337 shall be securely connected to local earth, typically via the enclosure to which it is connected.



Annex B:

This Annex is applicable for flowmeters type Proline Promag 300/500

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1. Description

The Proline Promag 300 / 500 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 electronic integrated in transmitter (i.e. Proline 500 Analog) where the sensor sends analog signals to the transmitter and a version with ISEM electronic in sensor (i.e. Proline 500 Digital) 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.

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 as part of the flowmeter.

Different electronics are used for the flowmeters where the sensor is installed in a Zone 1 or 2 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 Ex ic for Zone 2) 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 flowmeters are available for an ambient temperature of -40°C to +60°C and optional -50°C to +60°C.

All versions of flowmeters Proline Promag 300 and Promag 500 are available for an enclosure protection of degree IP66, IP67. In addition versions of remote sensor Proline Promag 500 are available for enclosure protection of degree IP68 as an optional.



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2. Order Code

2.1. Proline Promag 300/500

Extended order code Proline Promag 300:

5a3bcc – ddzeffghjlpstttuvww + ###

O5a3bcc – ddzeffghjlpstttuvwwyy + ###

5x3bxx – ddeffghjlpww + ###

O5x3bxx – ddeffghjlpwwyy + ###

for OEM-version
 for replacement transmitter only
 for replacement transmitter OEM

Extended order code Proline Promag 500:

5a5bcc – ddzeffghijklmnopstttuvww + ###

O5a5bcc – ddzeffghijklmnopstttuvwwyy + ###

5x5bxx – ddeffghjkmopqqww + ###

O5x5bxx – ddeffghjkmopqqwwyy + ###

for OEM-version
 for replacement transmitter only
 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 [ia] IIC T6...T1 Gb
Ex tb IIIC T* Db
 - BD = Ex db ia [ia] IIC T6...T1 Gb
Ex tb IIIC T* Db
 - BS = Ex ec IIC T5...T1 Gc



Proline Promag 500 :

- | | | | |
|----|---|------------------------------|------------------------|
| BB | = | Ex db eb [ia] IIC T6...T5 Gb | (transmitter) |
| | | Ex eb ia IIC T6...T1 Gb | (sensor) |
| | | Ex tb IIIC T** Db | (transmitter + sensor) |
| BD | = | Ex db [ia] IIC T6...T5 Gb | (transmitter) |
| | | Ex eb ia IIC T6...T1 Gb | (sensor) |
| | | Ex tb IIIC T** Db | (transmitter + sensor) |
| BJ | = | non-Ex | (transmitter) |
| | | Ex db ia IIC T6...T1 Gb | (sensor) |
| | | Ex ia tb IIIC T** Db | (sensor) |
| BL | = | non-Ex | (transmitter) |
| | | Ex ec ic IIC T6...T1 Gc | (sensor) |
| BN | = | Ex ec IIC T5...T4 Gc | (transmitter) |
| | | Ex db ia IIC T6...T1 Gb | (sensor) |
| | | Ex ia tb IIIC T* Db | (sensor) |
| BS | = | Ex ec IIC T5...T4 Gc | (transmitter) |
| | | Ex ec IIC T6...T1 Gc | (sensor) |
| B7 | = | Ex db eb [ia] IIC T6...T5 Gb | (transmitter) |
| | | Ex eb [ia] IIC T6...T1 Gb | (sensor) |
| B8 | = | Ex db [ia] IIC T6...T5 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 |
| | | MB = Modbus TCP |
| | | MC = Modbus TCP Ex i |
| | | NA = EtherNet/IP |
| | | RA = Profinet IO |
| | | RB = Profinet |
| | | RC = Profinet Ex i |
| | | 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 = 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 Kit**
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
- ww** = **Device Model (two digit)** (refer to assignment of flowmeter to replacement transmitter)
A1 = product version 1
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**

2.2. 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		
Order code	Generation code b =	device model code ww =	Order code	Generation code b =	device model code ww =
5H*b**-...ww, O5H*b**-...ww 5P*b**-...ww, O5P*b**-...ww 5W*b**-...ww, O5W*b**-...ww	B	A1 / A2	5x*bxx-...ww, O5x*bxx-...ww	B	A1 / A2



3. Parameters

3.1. 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 = 250V _{AC}
E ¹⁾	No. 1(L+/L), 2(L-/N)	U _N = 85...264V _{AC} U _M = 250V _{AC}
I ²⁾	No. 1(L+/L), 2(L-/N)	U _N = 19.2...28.8V _{DC} / 85...264V _{AC} U _M = 250V _{AC}

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

2) applicable for products with approval code dd = BS, BJ, BL, BN

Input/Output 1			
Order Code ff =	terminal no.	Values	
BA, BB, MA	No. 26, 27	U _N = 30V _{DC} U _M = 250V _{AC}	
LA, GA, SA	No. 26, 27	U _N = 32V _{DC} U _M = 250V _{AC}	
CA, CB	No. 26, 27	U _i = 30V I _i = 100mA P _i = 1.25W L _i = 0 C _i = 6nF	
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) U _i = 30V I _i = 10mA P _i = 0.3W C _i = 6nF L _i = 5μH	2) U _o = 21.8V I _o = 90mA P _o = 491mW L _o = 9mH (IIC) / 39mH (IIB) C _o = 600nF (IIC) / 4000nF (IIB) U _i = 30V I _i = 10mA P _i = 0.3W C _i = 6nF L _i = 5μH
HA, TA	No. 26, 27	1) <u>Profibus PA (Fisco Field Device) / Foundation Fieldbus</u> U _i = 30V I _i = 570mA P _i = 8.5W L _i = 10μH	2) <u>Profibus PA (Fisco Field Device) / Foundation Fieldbus</u> U _i = 32V I _i = 570mA P _i = 8.5W L _i = 10μH



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		$C_i = 5nF$	$C_i = 5nF$
MB, RB	No. 26, 27	<u>APL port profile SLAX / SPE PoDL classes 10, 11, 12</u> $U_N = 30V_{DC}$ $U_M = 250V_{AC}$	
MC, RC	No. 26, 27	<u>1), 3)</u> <u>2-WISE power load</u> <u>APL port profile SLAA</u> $U_i = 17.5V$ $I_i = 380mA$ $P_i = 5.32W$ $L_i \leq 10\mu H$ $C_i \leq 5nF$	<u>2), 3)</u> <u>2-WISE power load</u> <u>APL port profile SLAC</u> $U_i = 17.5V$ $I_i = 380mA$ $P_i = 5.32W$ $L_i \leq 10\mu H$ $C_i \leq 5nF$
NA, RA	IO1 / RJ45	$U_N = 30V_{DC}$ $U_M = 250V_{AC}$	

- 1) applicable for products with approval code dd = BB, BD, B7, B8
- 2) applicable for products with approval code dd = BS, BN
- 3) no additional internal capacitances are effective to the output value (refer to note 1 of drawing "Ethernet-APL Installation Drawing – Device Vendors v1.0, March 8th 2022")

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	$U_N = 30V_{DC}$ $U_M = 250V_{AC}$
H	No. 24, 25	$U_N = 30V_{DC}$ $I_N = 100mA_{DC} / 500mA_{AC}$ $U_M = 250V_{AC}$

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



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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	$U_N = 30V_{DC}$ $U_M = 250V_{AC}$
H	No. 20, 21	$U_N = 30V_{DC}$ $I_N = 100mA_{DC} / 500mA_{AC}$ $U_M = 250V_{AC}$

Service Interface		
Order Code dd =	terminal no.	values
BB, B7	Service Interface	Service Interface shall only be installed <ul style="list-style-type: none"> in areas which are known to be non hazardous with a non intrinsically safe circuit: $U_N = 3.3 V$, $U_M = 250 V_{AC}$ or to an intrinsically safe circuit with: $U_i = 10V$, $I_i = n.a.$, $P_i = n.a.$, $C_i = 200nF$, $L_i = 0$
BD, B8	Service Interface	Service Interface shall only be installed <ul style="list-style-type: none"> to an non intrinsically safe circuit with: $U_N = 3.3V$, $U_M = 250V_{AC}$ or to an intrinsically safe circuit with: $U_i = 10V$, $I_i = n.a.$, $P_i = n.a.$, $C_i = 200nF$, $L_i = 0$
BS, BJ, BL, BN	Service Interface	$U_N = 3.3V$

Antenna bushing		
Order Code dd =	terminal no.	values
BB, BJ, BL, BN, BS, B7	Type N connector	See conditions of certification

Remote Display		
Order Code dd =	terminal no.	values
BB, BD, B7, B8	No. 81, 82, 83, 84	$U_o = 3.9V$ $I_o = 1.5A$ (spark) 200mA (power) $P_o = 600mW$ $R_i = 2.6\Omega$ $C_o = 670\mu F$ $L_o = 0$
BS	No. 81, 82, 83, 84	$U_N = 3.3V$ $I_N = 150mA$

Notes:

- 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 $L/R = \leq 0.024 \text{ mH}/\Omega$ shall be used.



- Remote display type DKX001 or ODKX001 is not intended to be connected to the transmitter electronics with approval code dd = BJ, BL, BN

Promag Remote Transmitter and Remote Sensor:

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

Transmitter terminal board:

Terminals	4, 5, 6, 7, 8, 32, 33, 34, 35, 36, 37	->	U _o = 26.6V, I _o = 19.2mA, P _o = 128mW, L _o = 20mH, C _o = 94nF and U _o = 13.3V, I _o = 39.2mA, P _o = 131mW, L _o = 20mH, C _o = 94nF
Terminals	41, 42	->	U _N = 60V, I _N = 90mA

Sensor terminal board:

Terminals	4, 5, 6, 7, 8, 32, 33, 34, 35, 36, 37	->	U _i = 26.6V, I _i = n.a., P _i = n.a., L _i = 0, C _i = 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 ≤ 0.42 µF/km

5****-... and O5****-... with order code dd = BS in combination with k = B (ISEM in transmitter):

Transmitter terminal board:

Terminals	4, 5, 6, 7, 8, 32, 33, 34, 35, 36, 37	->	U _o = 26.6V, I _o = 19.2mA, P _o = 128mW, L _o = 50mH, C _o = 325nF and U _o = 13.3V, I _o = 39.2mA, P _o = 131mW, L _o = 50mH, C _o = 325nF
Terminals	41, 42	->	U _N = 60V

Sensor terminal board :

Terminals	4, 5, 6, 7, 8, 32, 33, 34, 35, 36, 37	->	U _i = 26.6V, I _i = 19.2mA, P _i = n.a., L _i = 0, C _i = 0 (+13.3V to -13.3V) or U _i = 13.3V, I _i = 39.2mA, P _i = n.a., L _i = 0, C _i = 0 (to ground)
Terminals	41, 42	->	U _N = 60V

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 ≤ 1 µF/km

5****-... and O5****-... with order code dd = BJ, BL, BN, BS in combination with k = A (ISEM in sensor):

Transmitter terminal board:

Terminals	61, 62	->	U _N = 35V
Terminals	63, 64	->	U _N = 3.3V

Sensor terminal board:

Terminals	61, 62	->	U _N = 35V
Terminals	63, 64	->	U _N = 3.3V



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3.2. 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... with approval option	05(H/P)3B** - dd... 05W3B** - dd... cCSAus : dd = CD, CE, C2, C4	5x3Bxx - dd... 5x3Bxx - dd... IECEx / ATEX: dd = BB, BD	05x3Bxx - dd... 05x3Bxx - dd...
--	--	---	------------------------------------

Standard version with sensor not insulated:

Sensor	Size / DN	Liner	T _{med.min} (°C)	T _{a,max} (°C) (1)	T _{med,max} (°C) (2)					
					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
				40	80	95	130	150	150	150
				45	80	95	130	130	130	130
	25...200	PFA	-40	50	60	90	130	130	130	130
				60	---	---	100	100	100	100
				50	60	80	80	80	80	80
				60	---	---	80	80	80	80
				50	50	50	50	50	50	50
				60	---	---	100	100	100	100
50...3000	HG	-20	50	60	80	80	80	80	80	
			60	---	---	80	80	80	80	
			50	50	50	50	50	50	50	
			60	---	---	100	100	100	100	
			50	50	50	50	50	50	50	
			60	---	---	100	100	100	100	
25...1000	PU	-20	50	50	50	50	50	50	50	
			60	---	---	100	100	100	100	
			50	50	50	50	50	50	50	
			60	---	---	100	100	100	100	
			50	50	50	50	50	50	50	
			60	---	---	100	100	100	100	
25...3000	ETFE (4)	-40	45	80	95	120	120	120	120	
			55	---	---	95	120	120	120	
			60	---	---	95	100	100	100	
			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) T_{a,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 T_{a,max} = 50°C @ class T6 and T_{med,max} = 50°C @ class T6 for optional versions available with medium temperature measurement
 (4) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)

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) (1)	T _{med,max} (°C) (2)					
					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
				60	---	---	100	100	100	100
				45	80	95	130	150	150	150
				50	60	95	130	150	150	150
				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	60	80	80	80	80	80
				60	---	---	80	80	80	80
				50	50	50	50	50	50	50
50...3000	HG	-20	50	60	80	80	80	80	80	
			60	---	---	80	80	80	80	
			50	50	50	50	50	50	50	
			60	---	---	100	100	100	100	
			50	50	50	50	50	50	50	
			60	---	---	100	100	100	100	
25...1000	PU	-20	50	50	50	50	50	50	50	
			60	---	---	100	100	100	100	
			50	50	50	50	50	50	50	
			60	---	---	100	100	100	100	
			50	50	50	50	50	50	50	
			60	---	---	100	100	100	100	
25...3000	ETFE (3)	-40	45	80	95	120	120	120	120	
			55	---	---	95	120	120	120	
			60	---	---	95	100	100	100	

Notes: (1) T_{a,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) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)

High temperature version with sensor not insulated:

Sensor	Size / DN	Liner	T _{med.min} (°C)	T _{a,max} (°C) (1)	T _{med,max} @T1 (°C)	T _{max} 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
						56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
Promag P Promag W	all	PFA	-40	60	150	56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
Promag P Promag W	all	HG	-20	60	80	56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
Promag P Promag W	all	PU	-20	60	50	56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
						56.4	71.3	72.0	72.0	72.0	72.0
Promag P Promag W	all	ETFE	-40	60	120 (3)	56.3	71.3	72.0	72.0	72.0	72.0
						56.3	71.3	72.0	72.0	72.0	72.0
						56.3	71.3	72.0	72.0	72.0	72.0
						56.3	71.3	72.0	72.0	72.0	72.0
						56.3	71.3	72.0	72.0	72.0	72.0
						56.3	71.3	72.0	72.0	72.0	72.0

Notes: (1) T_{a,min} = -40°C (for limitation see name plate)
 (2) Location of reference point
 (3) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)

Aenderungen:	A	B	C	D	E	F	G	H	I	J	K
	10.05.2018 / Bn	24.10.2018 / Bn	03.05.2017 / Bn	15.02.2018 / Bn	10.06.2021 / Bn	12.10.2022 / Bn					

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Ersetzt durch:
 Ersatz für:
 Ersteller: FES / Bn
 FILE: M:\Zeichng\FES0260F\FES0260F -- changes.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	12.10.2022	Bn
Gesehen		

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

FES0260F **1/3**

Proline Promag H/P/W 500

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

5(H/P)5B** - dd*****B... 5W5B** - dd*****B...	05(H/P)5B** - dd*****B... 05W5B** - dd*****B...	5x5Bxx - dd*****B... 5x5Bxx - dd*****B...	05x5Bxx - dd*****B... 05x5Bxx - dd*****B...
with approval option cCSAus: dd = CD, CE, C2, C4, C7, C8		IECEX / ATEX: dd = BB, BD, B7, B8	

Sensor of Standard version with sensor not insulated

Sensor	Size / DN	Liner	T _{med.min} (°C)	T _{a,max} (°C) (1)	T _{med,max} (°C) (2)					
					T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promag P	15...600	PTFE	-40	60	80	95	130	130	130	130
Promag W	25...200	PFA	-40	50	80	95	130	150	150	150
				60	80	95	130	130	130	130
	50...3000	HG	-20	60	80	80	80	80	80	80
		PU	-20	50	50	50	50	50	50	50
Promag H	2...150	PFA	-40	45	80	95	130	150	150	150
				55 (3)	80 (3)	95	130	130	130	130
				60 (3)	80 (3)	95	110	110	110	110

Notes: (1) T_{a,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 T_{a,max} = 50°C @ class T6 and T_{med,max} = 50°C @ class T6 for optional versions available with medium temperature measurement
 (4) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)

Sensor of High temperature version with sensor not insulated

Sensor	Size / DN	Liner	T _{med.min} (°C)	T _{a,max} (°C) (1)	T _{med,max} (°C) (2)					
					T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promag P	15...600	PTFE	-40	60	80	95	130	130	130	130
Promag W	25...200	PFA	-40	60	80	95	130	150	150	150
				60	80	80	80	80	80	80
	50...3000	HG	-20	60	80	80	80	80	80	80
		PU	-20	50	50	50	50	50	50	50
Promag H	25...3000	ETFE	-40	60	80	95	120	120	120	120
				60 (3)	80 (3)	95	120	120	120	120

Notes: (1) T_{a,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) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)

Transmitter for all versions:	
T _{a,max} (°C) (1)	
T6 (85°C)	T5 (100°C)
55	60

Notes: (1) T_{a,min} = -50°C (for limitation see name plate)

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

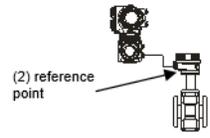
Sensor	Size / DN	Liner	T _{med.min} (°C)	T _{a,max} (°C) (1)	T _{med,max} (°C) (2)					
					T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promag P	15...600	PTFE	-40	60	75	95	130	130	130	130
Promag W	25...200	PFA	-40	60	80	95	130	150	150	150
				60	80	80	80	80	80	80
	50...3000	HG	-20	60	75	80	80	80	80	80
		PU	-20	50	50	50	50	50	50	50
Promag H	25...3000	ETFE	-40	55	80	95	120	120	120	120
				60	75	95	120	120	120	120

Notes: (1) T_{a,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) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)

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

Sensor	Size / DN	Liner	T _{med.min} (°C)	T _{a,max} (°C) (1)	T _{med,max} @T1 (°C)	T _{max} 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	all	PTFE	-40	60	130	63.8	65.7	69	69	69	69
Promag W		PFA	-40	60	150	63.8	65.7	69	69	69	69
		HG	-20	60	80	63.8	65.7	69	69	69	69
		PU	-20	50	50	63.8	65.7	69	69	69	69
		ETFE	-40	60	120 (3)	63.8	65.7	68	68	68	68

Notes: (1) T_{a,min} = -40°C (for limitation see name plate)
 (2) Location of reference point
 (3) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)



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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 Promag 300/500			Gezeichnet 10.05.2016 Bn Geprüft Ex-geprüft 12.10.2022 Bn Gesehen	FES0260F 2/3
			Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach	

Proline Promag H/P/W 500

Notes:

This page applies to versions with extended order code covering:

5(H/P)5B** - dd*****A...
 5W5B** - dd*****A...
 with approval option

O5(H/P)5B** - dd*****A...
 O5W5B** - dd*****A...
 cCSAus: dd = CN, C6

5x5Bxx - dd*****A...
 5x5Bxx - dd*****A...
 IECEx / ATEX: dd = BJ, BN

O5x5Bxx - dd*****A...
 O5x5Bxx - dd*****A...

Sensor of Standard version with sensor not insulated

Sensor	Size / DN	Liner	T _{mod.min} (°C)	T _{a,max} (°C) (1)	T _{med,max} (°C) (2)					
					T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promag P	15...600	PTFE	-40	60	80	95	130	130	130	130
Promag W	25...200	PFA	-40	50	80	95	130	150	150	150
				60	80	95	130	130	130	130
	50...3000	HG	-20	60	80	80	80	80	80	80
				25...1000	PU	-20	50	50	50	50
Promag H	2...150	PFA	-40	35	80	95	130	150	150	150
				45	80	95	135	135	135	135
				60	80	95	115	115	115	115

- Notes: (1) T_{a,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 T_{a,max} = 50°C @ class T6 and T_{med,max} = 50°C @ class T6 for optional versions available with medium temperature measurement
 (4) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)

Sensor of High temperature version with sensor not insulated:

Sensor	Size / DN	Liner	T _{mod.min} (°C)	T _{a,max} (°C) (1)	T _{med,max} (°C) (2)					
					T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promag P	15...600	PTFE	-40	60	80	95	130	130	130	130
Promag W	25...200	PFA	-40	60	80	95	130	150	150	150
				50...3000	HG	-20	60	80	80	80
	25...1000	PU	-20	50	50	50	50	50	50	50
				25...3000	ETFE	-40	60	80	95	120

- Notes: (1) T_{a,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) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)

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

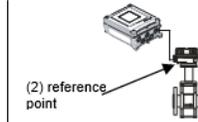
Sensor	Size / DN	Liner	T _{mod.min} (°C)	T _{a,max} (°C) (1)	T _{med,max} (°C) (2)					
					T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promag P	15...600	PTFE	-40	60	70	95	130	130	130	130
Promag W	25...200	PFA	-40	60	75	95	130	150	150	150
				50...3000	HG	-20	60	75	80	80
	25...1000	PU	-20	50	50	50	50	50	50	50
				25...3000	ETFE	-40	60	70	95	120

- Notes: (1) T_{a,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) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)

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

Sensor	Size / DN	Liner	T _{mod.min} (°C)	T _{a,max} (°C) (1)	T _{med,max} @T1 (°C)	T _{max} 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	63.8	65.7	69	70.9	70.9	70.9
		PFA	-40	60	150	63.8	65.7	69	70.9	70.9	70.9
		HG	-20	60	80	63.8	65.7	69	70.9	70.9	70.9
		PU	-20	50	50	63.8	65.7	69	70.9	70.9	70.9
ETFE	-40	60	120 (3)								

- Notes: (1) T_{a,min} = -40°C (for limitation see name plate)
 (2) Location of reference point
 (3) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)



Transmitter for all versions:

Type of enclosure	T _{a,max} (°C) (1)			
	Ordinary location (°C)	T6 (85°C)	T5 (100°C)	T4 (135°C)
aluminium	60	---	45	60
plastic	60	---	---	---

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

Aenderungen:	A	10.05.2018 / Bn	F	12.10.2022 / Bn	Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugänglich gemacht werden.
	B	24.10.2018 / Bn	G		
	C	03.05.2017 / Bn	H		
	D	15.02.2018 / Bn	J		
	E	10.08.2021 / Bn	K		

Ersetzt durch:
 Ersteller: FES / Bn
 FILE: M:\Zeichn\FES0260\F\FES0260F -- changes.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	12.10.2022	Bn
Gesehen		



3.3. Thermal Parameters (Zone 2)

Proline Promag H/P/W 300

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

5(H/P)3B** - dd... 5W3B** - dd... with approval option	O5(H/P)3B** - dd... O5W3B** - dd... cCSAus: dd = CS, CZ	5x3Bxx - dd... 5x3Bxx - dd... IECEX / ATEX: dd = BS	O5x3Bxx - dd... O5x3Bxx - dd...
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Standard version with sensor not insulated												
Sensor	Size / DN	Liner	T _{med.min} (°C) (2)	T _{a,max} (°C) (1)	T _{med,max} (°C) (2)							
					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	---	90	130	130	130	130		
				55	---	---	130	130	130	130		
				60	---	---	100	100	100	100		
		25...200		PFA	-40	40	---	---	150 (3)	150 (3)	150 (3)	
						45	---	95	130	130	130	130
						50	---	90	130	130	130	130
	50...3000	HG	-20	60	---	---	100	100	100	100		
				50	---	80	80	80	80	80		
				60	---	---	80	80	80	80		
		25...1000	PU	-20	50	---	50	50	50	50	50	
					60	---	---	80	80	80	80	
					50	---	90	120	120	120	120	
25...3000	ETFE (7)	-40	60	---	---	100	100	100	100			
			50	---	---	100	100	100	100			
			55 (4)	---	80 (4)	130	150	150	150			
Promag H (5), (6)	2...150	PFA	-40	50	---	95 (4)	130	150	150	150		
				60	---	---	100	100	100	100		
				60 (4)	---	---	100	100	100	100		

Notes: (1) T_{a,min} = -40°C (for limitation see name plate)
 (2) T_{med,max} and/or T_{med,min} may be limited by versions. For limitation of range for T_{med} see name plate
 (3) Sensor Promag P with liner type PFA may be used for condition of process with T_{med}=180°C@T_a=50°C for a short period of time (max. 10 min.)
 (4) Promag H limited to T_{a,max} = 50°C @ class T6 and T_{med,max} = 50°C @ class T6 for optional versions available with medium temperature measurement
 (5) versions with transmitter enclosure stainless steel (hygienic) only for installation where transmitter is not installed above the sensor
 (6) Versions with transmitter enclosure stainless steel (hygienic) installed in temperature class T5, a degree of 3°C for ambient temperature shall be taken into account
 (7) Limitation of T_{med,max} = 85/120°C depending on process pressure (see nameplate)

High temperature version with sensor not insulated												
Sensor	Size / DN	Liner	T _{med.min} (°C) (2)	T _{a,max} (°C) (1)	T _{med,max} (°C) (2)							
					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	---	90	130	130	130	130		
				55	---	---	130	130	130	130		
				60	---	---	100	100	100	100		
		25...200		PFA	-40	45	---	95	130	180	180	180
						50	---	90	130	160	160	160
						60	---	---	100	100	100	100
	50...3000	HG	-20	50	---	80	80	80	80	80		
				60	---	---	80	80	80	80		
				50	---	50	50	50	50	50		
		25...1000	PU	-20	50	---	50	50	50	50	50	
					60	---	---	80	80	80	80	
					50	---	90	120	120	120	120	
25...3000	ETFE (3)	-40	60	---	---	100	100	100	100			
			50	---	---	100	100	100	100			
			55 (4)	---	80 (4)	130	150	150	150			

Notes: (1) T_{a,min} = -40°C (for limitation see name plate)
 (2) T_{med,max} and/or T_{med,min} may be limited by versions. For limitation of range for T_{med} see name plate
 (3) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)

High temperature version with sensor insulated (for insulation refer to manual of E+H Flowtec)												
Sensor	Size / DN	Liner	T _{med.min} (°C) (2)	T _{a,max} (°C) (1)	T _{med,max} (°C) (2)							
					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	---	90	130	130	130	130		
				55	---	---	130	130	130	130		
				60	---	---	100	100	100	100		
		25...200		PFA	-40	45	---	95	130	170	170	170
						50	---	90	130	160	160	160
						60	---	---	100	100	100	100
	50...3000	HG	-20	50	---	80	80	80	80	80		
				60	---	---	80	80	80	80		
				50	---	50	50	50	50	50		
		25...1000	PU	-20	50	---	50	50	50	50	50	
					60	---	---	80	80	80	80	
					50	---	90	120	120	120	120	
25...3000	ETFE (3)	-40	60	---	---	100	100	100	100			
			50	---	---	100	100	100	100			
			55 (4)	---	80 (4)	130	150	150	150			

Notes: (1) T_{a,min} = -40°C (for limitation see name plate)
 (2) T_{med,max} and/or T_{med,min} may be limited by versions. For limitation of range for T_{med} see name plate
 (3) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)

High temperature version with sensor insulated (insulation not in compliance with manual of E+H Flowtec)											
Sensor	Size / DN	Liner	T _{med.min} (°C) (2)	T _{a,max} (°C) (1)	T _{med,max} @T1 (°C) (1)	T _{max} 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	55	130	---	62.2	74.0	75.6	75.6	75.6
				50	150	---	62.2	74.0	75.6	75.6	75.6
				60	80	---	62.2	74.0	75.6	75.6	75.6
				50	50	---	62.2	74.0	75.6	75.6	75.6
				60	120 (3)	---	62.2	74.0	74.0	74.0	74.0
				60	120 (3)	---	62.2	74.0	74.0	74.0	74.0

Notes: (1) T_{a,min} = -40°C (for limitation see name plate)
 (2) Location of reference point
 (3) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)

(2) reference point

Aenderungen:									
A	B	C	D	E	F	G	H	J	K
10.05.2018 / Bn	03.05.2017 / Bn	30.10.2017 / Bn	15.02.2018 / Bn	10.06.2021 / Bn	12.10.2022 / Bn				
Alle gesetzlichen Urheberrechte. vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugänglich gemacht werden.					Ersetzt durch: Ersteller: FES / Bn FILE: M:\Zeichng\FES0261\F\FES0261F -- changes.doc				

Control Drawing IECEx, ATEX, CSA, cCSAus			Gezeichnet	10.05.2016	Bn
Zone 2, Cl.I Div. 2, Cl.I Zone 2			Geprüft		
Thermal Parameter			Ex-geprüft	12.10.2022	Bn
Proline Promag 300/500			Gesehen		

	Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach	FES0261F	1/3
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Proline Promag H/P/W 500

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

5(H/P)5B** - dd*****B...	O5(H/P)5B** - dd*****B...	5x5Bxx - dd*****B...	O5x5Bxx - dd*****B...
5W5B** - dd*****B...	O5W5B** - dd*****B...	5x5Bxx - dd*****B...	O5x5Bxx - dd*****B...
with approval option	cCSAus: dd = CS, CZ	IECEx / ATEX: dd = BS	

Sensor of Standard version with sensor not insulated

Sensor	Size / DN	Liner	T _{med.min} (°C) (2)	T _{a,max} (°C) (1)	T _{med,max} (°C) (2)					
					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	60	80	95	130	130	130	130
	25...200	PFA	-40	50	80	95	130	180	180	180
				60	80	95	130	130	130	130
	50...3000	HG	-20	60	80	80	80	80	80	80
25...1000	PU	-20	50	50	50	50	50	50	50	
25...3000	ETFE	-40	60	80	95	120	120	120	120	120
Promag H	2...150	PFA	-40	45	80 (3)	95	130	150	150	150
				55 (3)	80 (3)	95	130	130	130	130
				60 (3)	80 (3)	95	110	110	110	110

Notes: (1) T_{a,min} = -40°C (for limitation see name plate)
 (2) T_{med,max} and/or T_{med,min} may be limited by versions. For limitation of range for T_{med,max} see name plate
 (3) Promag H limited to T_{a,max} = 50°C @ class T6 and T_{med,max} = 50°C @ class T6 for optional versions available with medium temperature measurement
 (4) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)

Sensor of High temperature version with sensor not insulated

Sensor	Size / DN	Liner	T _{med.min} (°C) (2)	T _{a,max} (°C) (1)	T _{med,max} (°C) (2)					
					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	60	80	95	130	130	130	130
	25...200	PFA	-40	50	80	95	130	180	180	180
60				80	95	130	150	150	150	
80				80	80	80	80	80	80	
50...3000	HG	-20	60	80	80	80	80	80	80	
25...1000	PU	-20	50	50	50	50	50	50	50	
25...3000	ETFE	-40	60	80	95	120	120	120	120	120

Notes: (1) T_{a,min} = -40°C (for limitation see name plate)
 (2) T_{med,max} and/or T_{med,min} may be limited by versions. For limitation of range for T_{med,max} see name plate
 (3) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)

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

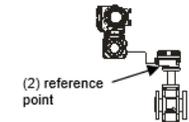
Sensor	Size / DN	Liner	T _{med.min} (°C) (2)	T _{a,max} (°C) (1)	T _{med,max} (°C) (2)					
					T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promag P Promag W	15...600	PTFE	-40	60	75	95	130	130	130	130
				35	60	95	130	180	180	180
	25...200	PFA	-40	40	80	95	130	170	170	170
				60	75	95	130	150	150	150
	50...3000	HG	-20	60	75	80	80	80	80	80
	25...1000	PU	-20	50	50	50	50	50	50	50
25...3000	ETFE	-40	55	80	95	120	120	120	120	
		(3)	60	75	95	120	120	120	120	120

Notes: (1) T_{a,min} = -40°C (for limitation see name plate)
 (2) T_{med,max} and/or T_{med,min} may be limited by versions. For limitation of range for T_{med,max} see name plate
 (3) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)

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

Sensor	Size / DN	Liner	T _{med.min} (°C)	T _{a,max} (°C) (1)	T _{med,max} @T1 (°C)	T _{max} 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	63.8	65.7	69	70.9	70.9	70.9
		PFA	-40	60	150	63.8	65.7	69	70.9	70.9	70.9
		HG	-20	60	80	63.8	65.7	69	70.9	70.9	70.9
		PU	-20	50	50	63.8	65.7	69	70.9	70.9	70.9
		ETFE	-40	60	120 (3)	63.8	65.7	68	68	68	68

Notes: (1) T_{a,min} = -40°C (for limitation see name plate)
 (2) Location of reference point
 (3) Limitation of T_{med,max} = 20°C depending on process pressure (see nameplate)



Transmitter for all versions

T _{a,max} (°C) (1)		
T6 (85°C)	T5 (100°C)	T4 (135°C)
---	45	60

Notes: (1) T_{a,min} = -50°C (for limitation see name plate)

Änderungen:	A 10.05.2018 / Bn	F 12.10.2022 / Bn	Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugänglich gemacht werden.	Ersetzt durch:
	B 03.05.2017 / Bn	G		Ersetzt für:
	C 30.10.2017 / Bn	H		Ersteller: FES / Bn
	D 15.02.2018 / Bn	J		FILE: M:\Zeichng\FES0261F\FES0261F -- changes.doc
	E 10.06.2021 / Bn	K		

Control Drawing IECEx, ATEX, CSA, cCSAus	Gezeichnet	10.05.2018	Bn
Zone 2, Cl.I Div. 2, Cl.I Zone 2	Geprüft		
Thermal Parameter	Ex-geprüft	12.10.2022	Bn
Proline Promag 300/500	Gesehen		

Proline Promag H/P/W 500

Notes: This page applies to versions with extended order code covering: 5(H/P)5B** - dd*****A... 05(H/P)5B** - dd*****A... 5x5Bxx - dd*****A... 05x5Bxx - dd*****A...
 5W5B** - dd*****A... 05W5B** - dd*****A... 5x5Bxx - dd*****A... 05x5Bxx - dd*****A...
 with approval option cCSA: dd = CS, CZ IECEX / ATEX: dd = BL, BS

Sensor of Standard version with sensor not insulated

Sensor	Size / DN	Liner	T _{mod.min} (°C) (2)	T _{a,max} (°C) (1)	T _{med,max} (°C) (2)					
					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	50	95	130	130	130	130
				60	---	95	130	130	130	130
	25...200	PFA	-40	50	50	95	130	150 (3)	150 (3)	150 (3)
				60	---	95	130	130	130	130
	50...3000	HG	-20	50	80	80	80	80	80	80
				60	---	80	80	80	80	80
25...1000	PU	-20	45	50	50	50	50	50	50	
			50	---	50	50	50	50	50	
25...3000	ETFE (5)	-40	50	40	95	120	120	120	120	
			60	---	95	120	120	120	120	
Promag H	2...150	PFA	-40	40	50	95	130	150	150	150
				45	50 (4)	95	130	145	145	145
				55 (4)	---	95	115	115	115	115
				60 (4)	---	115	115	115	115	115

- Notes:** (1) T_{a,min} = -40°C (for limitation see name plate)
 (2) T_{med,max} and/or T_{med,min} may be limited by versions. For limitation of range for T_{med} see name plate
 (3) Sensor Promag P with liner type PFA may be used for condition of process with T_{med}=180°C@T_a=50°C for a short period of time (max. 10 min.)
 (4) Promag H limited to T_{a,max} = 50°C @ class T6 and T_{med,max} = 50°C @ class T6 for optional versions available with medium temperature measurement
 (5) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)

Sensor of High temperature version with sensor not insulated

Sensor	Size / DN	Liner	T _{mod.min} (°C) (2)	T _{a,max} (°C) (1)	T _{med,max} (°C) (2)					
					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	70	95	130	130	130	130
				60	---	95	130	130	130	130
	25...200	PFA	-40	50	40	95	130	180	180	180
				60	---	95	130	150	150	150
	50...3000	HG	-20	45	50	80	80	80	80	80
				60	---	80	80	80	80	80
25...1000	PU	-20	45	50	50	50	50	50	50	
			50	---	50	50	50	50	50	
25...3000	ETFE (3)	-40	50	40	95	120	120	120	120	
			60	---	95	120	120	120	120	

- Notes:** (1) T_{a,min} = -40°C (for limitation see name plate)
 (2) T_{med,max} and/or T_{med,min} may be limited by versions. For limitation of range for T_{med} see name plate
 (3) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)

Transmitter for all versions

Type of enclosure	T _{a,max} (°C) (1)		
	Ordinary location (°C)	T6 (85°C)	T5 (100°C)
aluminium	60	---	45
plastic	60	---	---

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

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

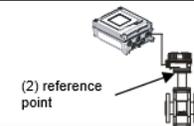
Sensor	Size / DN	Liner	T _{mod.min} (°C) (2)	T _{a,max} (°C) (1)	T _{med,max} (°C) (2)					
					T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
Promag P Promag W	15...600	PTFE	-40	45	70	95	130	130	130	130
				60	---	95	130	130	130	130
	25...200	PFA	-40	35	40	95	130	180	180	180
				50	40	95	130	175	175	175
	50...3000	HG	-20	60	---	95	130	150	150	150
				45	45	80	80	80	80	80
25...1000	PU	-20	60	---	80	80	80	80	80	
			45	50	50	50	50	50	50	
25...3000	ETFE (3)	-40	50	40	95	120	120	120	120	
			60	---	95	120	120	120	120	

- Notes:** (1) T_{a,min} = -40°C (for limitation see name plate)
 (2) T_{med,max} and/or T_{med,min} may be limited by versions. For limitation of range for T_{med} see name plate
 (3) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)

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

Sensor	Size / DN	Liner	T _{mod.min} (°C)	T _{a,max} (°C) (1)	T _{med,max} @T1 (°C)	T _{max} 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	51.4	65.7	69	70.9	70.9	70.9			
						PFA	-40	60	150	51.4	65.7	69	70.9	70.9
						HG	-20	60	80	51.4	65.7	69	70.9	70.9
						PU	-20	50	50	51.4	65.7	69	70.9	70.9
ETFE	-40	60	120 (3)	49.6	65.7	69	70.9	70.9						

- Notes:** (1) T_{a,min} = -40°C (for limitation see name plate)
 (2) Location of reference point
 (3) Limitation of T_{med,max} = 120°C depending on process pressure (see nameplate)



Aenderungen:	A	10.05.2018 / Bn	F	12.10.2022 / Bn	Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugänglich gemacht werden.	Ersetzt durch: Erstellt für: Ersteller: FES / Bn FILE: M:\Zeichng\FES0261F\FES0261F - changes.doc
	B	03.05.2017 / Bn	G			
	C	30.10.2017 / Bn	H			
	D	15.02.2018 / Bn	J			
	E	10.08.2021 / Bn	K			

Control Drawing IECEX, ATEX, CSA, cCSA _{US}			Gezeichnet	10.05.2016	Bn
Zone 2, Cl.I Div. 2, Cl.I Zone 2			Geprüft		
Thermal Parameter			Ex-geprüft	12.10.2022	Bn
Proline Promag 300/500			Gesehen		





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4. Marking

Proline Promag 300		
Order Code: 5*3*** – dd*ff*****+### O5*3*** – dd*ff*****+###		
dd = approval	ff = I/O	Marking of Ex protection
BB	CA, CB, CC, CD, HA, TA, MC, RC	Ex db eb ia [ja Ga] IIC T6...T1 Gb and/or Ex tb [ja Da] IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex db eb ia IIC T6...T1 Gb and/or Ex tb IIIC T** °C Db
BD	CA, CB, CC, CD, HA, TA, MC, RC	Ex db eb ia [ja Ga] IIC T6...T1 Gb and/or Ex tb [ja Da] IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex db eb ia IIC T6...T1 Gb and/or Ex tb IIIC T** °C Db
BS	CA, CB, CC, CD, HA, TA, MC, RC	Ex ec nC ic [ic] IIC T5...T1 Gc
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex ec nC ic IIC T5...T1 Gc

Information: Marking of protection representative for ...	
db	-> electronic compartment
eb	-> terminal compartment, sensor, electronic for sensor circuit Ex eb
ia	-> sensor, display
tb	-> transmitter enclosure and sensor
[ja Ga]	-> electronic with input/output Ex ia
[ja Da]	-> electronic with input/output Ex ia
db	-> electronic and terminal compartments
ia	-> sensor, display
eb	-> sensor, electronic for sensor circuit Ex eb
tb	-> transmitter enclosure and sensor
[ja Ga]	-> electronic with input/output Ex ia
[ja Da]	-> electronic with input/output Ex ia
ec	-> transmitter enclosure, sensor, electronic, display
nC	-> electronic -> sensor
[ic]	-> electronic with input/output Ex ic

Proline Promag 500 Analog (with ISEM integrated in transmitter)			
Order Code: 5*5*** – dd*ff****B*****+### O5*5*** – dd*ff****B*****+###			
dd = approval	ff = I/O	Device	Marking of Ex protection
BB	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, RB, RC, SA, MA, MB, MC	Transmitter	Ex db eb [ja Ga] IIC T6...T5 Gb and/or Ex tb [ja Da] IIIC T85°C Db
		Sensor	Ex eb ia IIC T6...T1 Gb and/or Ex ia tb IIIC T** °C Db
BD	CA, CB, CC, CD, HA, TA, BA, BB, GA,	Transmitter	Ex db eb [ja Ga] IIC T6...T5 Gb and/or Ex tb [ja Da] IIIC T85°C Db

Information: Marking of protection representative for ...	
db	-> electronic compartment
eb	-> terminal compartment, sensor, wall mounted terminal box, sensor terminal box, electronic for sensor circuit Ex eb
ia	-> sensor, display
tb	-> transmitter enclosures, sensor, sensor terminal box
[ja Ga]	-> electronic with input/output Ex ia and/or output for sensor circuit
[ja Da]	-> electronic with input/output Ex ia and/or output for sensor circuit
db	-> electronic and terminal compartments
eb	-> sensor, wall mounted terminal box, electronic for sensor circuit Ex eb



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	LA, NA, RA, RB, RC, SA, MA, MB, MC	Sensor	Ex eb ia IIC T6...T1 Gb and/or Ex ia tb IIIC T** °C Db
BS	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, RB, RC, SA, MA, MB, MC	Transmitter	Ex ec nC [ic] IIC T5... T4 Gc
		Sensor	Ex ec ic IIC T6...T1 Gc
B7	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, RB, RC, SA, MA, MB, MC	Transmitter	Ex db eb [ja Ga] IIC T6... T5 Gb
		Sensor	Ex eb ia IIC T6...T1 Gb
B8	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, RB, RC, SA, MA, MB, MC	Transmitter	Ex db eb [ja Ga] IIC T6... T5 Gb
		Sensor	Ex eb ia IIC T6...T1 Gb

ia	-> sensor, display
tb	-> transmitter enclosures, sensor, sensor terminal box
[ja Ga]	-> electronic with input/output Ex ia and/or output for sensor circuit
[ia Da]	-> electronic with input/output Ex ia and/or output for sensor circuit
ec	-> transmitter enclosures, sensor, sensor terminal box, electronic, display
nC	-> electronic
ic	-> sensor
[ic]	-> electronic with input/output Ex ic and/or output for sensor circuit
db	-> electronic compartment
eb	-> terminal compartment, sensor, wall mounted terminal box, sensor terminal box, electronic for sensor circuit Ex eb
ia	-> sensor, display
[ja Ga]	-> electronic with input/output Ex ia and/or output for sensor circuit
db	-> electronic and terminal compartments
eb	-> sensor, wall mounted terminal box, sensor terminal box, electronic for sensor circuit Ex eb
ia	-> sensor, display
[ja Ga]	-> electronic with input/output Ex ia and/or output for sensor circuit

Proline Promag 500 Digital (with ISEM integrated in sensor)			
Order Code: 5*5*** - ddff****A*****+##*# O5*5*** - ddff****A*****+##*#			
dd = approval	ff = I/O	Device	Marking of Ex protection
BJ	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, RB, RC, SA, MA, MB, MC	Transmitter	n.a. (non-Ex)
		Sensor	Ex db ia IIC T6...T1 Gb and/or Ex ia tb IIIC T** °C Db
BL	HA, TA, CA, CB, CC, CD, MC, RC	Transmitter	[Ex ic] IIC
		Sensor	Ex ec ic IIC T6...T1 Gc
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	n.a. (non-Ex)
		Sensor	Ex ec ic IIC T6...T1 Gc
BN	HA, TA, CA, CB, CC, CD, MC, RC	Transmitter	Ex ec nC [ic] IIC T5... T4 Gc
		Sensor	Ex db ia IIC T6...T1 Gb and/or Ex ia tb IIIC T** °C Db

Information: Marking of protection representative for ...	
db	-> sensor terminal box
tb	-> sensor, sensor terminal box
ia	-> sensor
ec	-> sensor terminal box
ic	-> sensor
[Ex ic]	-> electronic with input/output Ex ic and/or output for sensor circuit
ec	-> transmitter enclosure, electronic, display
nC	-> electronic
db	-> sensor terminal box



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	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	Ex ec nC IIC T5...T4 Gc	ia	-> sensor
		Sensor	Ex db ia IIC T6...T1 Gb and/or Ex ia tb IIIC T** °C Db	tb	-> sensor, sensor terminal box
				[ic]	-> electronic with input/output Ex ic
BS	HA, TA, CA, CB, CC, CD, MC, RC	Transmitter	Ex ec nC [ic] IIC T5...T4 Gc	ec	-> transmitter enclosures, electronic, display, sensor terminal box
		Sensor	Ex ec ic IIC T6...T1 Gc	nC	-> electronic
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	Ex ec nC IIC T5...T4 Gc	ic	-> sensor
		Sensor	Ex ec ic IIC T6...T1 Gc	[ic]	-> electronic with input/output Ex ic and/or output for sensor circuit

5. Conditions of Certification

- All equipment of the measurement system shall be included in the equipotential bonding. Along the intrinsically safe sensor circuits potential equalization must exist.
- The sensors may only be used for those process media, for which the wetted parts are known to be suitable.
- 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.
- If the flowmeter system is connected to remote display type DKX001, the approval code '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	Approval code 'bb' of remote display DKX001/ODKX001 as covered by IECEX DEK 15.0024
BB, BD, B7 or B8	BE, BF or BG
BS	BS

- The equipment may have non-conductive surfaces which are a potential electrostatic charging hazard – see instructions for guidance.
- Only use battery Renata type lithium CR1632, 3V.
- The flameproof joints are not intended to be repaired.

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

- 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:
 - The antenna shall have an impedance of at least 50Ω
 - The rated frequency range of the antenna shall not exceed 1710MHz ... 6000MHz
 - The RF antenna or the RF antenna cable shall be fitted with a Type N connector plug (MIL-STD-348)
- The antenna bushing type H337 shall be mounted wrench tight to the transmitter enclosure to maintain the ingress protection of the enclosure.



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- The coupling nut of the Type N plug connector shall be hand tightened only.
- The metal enclosure of the Antenna Bushing H337 shall be securely connected to local earth, typically via the enclosure to which it is connected.



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Annex C:

This Annex is applicable for flowmeters type Proline Prosonic Flow 300/500

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1. Description

The Proline Prosonic Flow G 300, Proline Prosonic Flow G 500, and Proline Prosonic Flow P 500 flowmeters are available in two versions, a compact version (Proline 300) and a remote version (Proline 500). The remote version of Proline Prosonic Flow G 500 is available as a version with ISEM electronic integrated in sensor (i.e. Proline 500 Digital) only 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. The remote version of Proline Prosonic Flow P 500 is available as a version with ISEM integrated in transmitter (i.e. Proline 500 Analog).

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 as part of the flowmeter.

Different electronics are used for the flowmeters where the sensor is installed in a Zone 1 or 2 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 Ex ic for Zone 2) 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 Prosonic Flow G 300/500 flowmeters are available for an ambient temperature of -40°C to +60°C and optional -50°C to +60°C. 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.

All versions of flowmeters Proline Prosonic Flow G 300/500 are available for an enclosure protection of degree IP66, IP67 and Proline Prosonic Flow P 500 are available for an enclosure protection of degree IP66, IP67 (transmitter) and IP66, IP68 (sensor).



2. Order Code

2.1. Proline Prosonic Flow G 300/500

Extended order code Proline Prosonic Flow G 300:

9G3bcc – ddeffghjlpstuuuvww + ###

O9G3bcc – ddeffghjlpstuuuvwwyy + ###

9x3bxx – ddeffghjlprrssww + ###

O9x3bxx – ddeffghjlprrsswwyy + ###

for OEM-version

for replacement transmitter

for replacement transmitter OEM

Extended order code Proline Prosonic Flow G 500:

9G5bcc – ddeffghijkmnopsstuuuvww + ###

O9G5bcc – ddeffghijkmnopsstuuuvwwyy + ###

9x5bxx – ddeffghijkmopqrrssww + ###

O9x5bxx – ddeffghijkmopqrrsswwyy + ###

for OEM-version

for replacement transmitter

for replacement transmitter OEM

b = Generation

B = Generation of Flowmeter

cc = Size

any double digits with combination of number or letter

dd = Approval

Proline Prosonic Flow G 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

BS = Ex ec IIC T6...T1 Gc

Proline Prosonic Flow G 500:

BJ = Non-Ex (transmitter)
 Ex ia IIC T6...T1 Gb (sensor)
 Ex tb IIIC T** Db (sensor)

BL = non-Ex (transmitter)
 Ex ec IIC T6...T1 Gc (sensor)

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

BS = Ex ec IIC T6...T1 Gc (transmitter + 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
 - MB = Modbus
 - MC = Modbus Ex i
 - NA = EtherNet/IP
 - RA = Profinet IO
 - RB = Profinet
 - RC = Profinet Ex i
 - 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 = 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 Kid**
 - any double digits with combination of number or letter
- rr** = **Existing Product** (refer to assignment of flowmeter to replacement transmitter)
 - GA = Prosonic Flow G
 - 00 = not used
- ss** = **Measuring tube material, sensor version**
 - any double digits with combination of number or letter
- t** = **Process 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 assignment of flowmeter to replacement transmitter)
 - A1 = product version 1
 - 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**



2.2. Proline Prosonic Flow P 500

Extended order code Proline Prosonic Flow P 500:

9P5bcc – ddeffghjkmossuuuvvww + ###

09P5bcc – ddeffghjkmossuuuvvwwyy + ###

9x5bxx – ddeffghjkmnoprrssww + ###

09x5bxx – ddeffghjkmnoprrsswwyy + ###

for OEM-version

for replacement transmitter

for replacement transmitter OEM

b = Generation

B = Generation of Flowmeter

cc = Mounting Type

any double digits with combination of number and/or letter

dd = Approval Transmitter

BB	=	Ex db eb [ia] IIC T6...T5 Gb	(transmitter)
		Ex tb IIIC T** Db	(transmitter)
		Ex ia IIC T6...T1 Gb	(Sensor)
		Ex ia IIIC T** Db	(Sensor)
BD	=	Ex db [ia] IIC T6...T5 Gb	(transmitter)
		Ex tb IIIC T** Db	(transmitter)
		Ex ia IIC T6...T1 Gb	(Sensor)
		Ex ia IIIC T** Db	(Sensor)
BS	=	Ex ec IIC T5...T4 Gc	(transmitter)
		Ex ic IIC T6...T1 Gc	(Sensor)

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
 MA = Modbus RS485
 MB = Modbus TCP
 MC = Modbus TCP Ex i
 NA = EtherNet/IP
 RA = Profinet IO
 RB = Profinet
 RC = Profinet Ex i
 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**
 - A = without Input/Output 4
 - X = Sensor only
- j = Display / Operation**
 - any single number or letter
- k = Integrated ISEM electronic**
 - A = Sensor
 - 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 = Upgrade Kit**
 - AA = not used
- rr = Existing Product (see assignment of flowmeter to replacement transmitter)**
 - PA = Prosonic Flow P
 - 00 = not used
- ss = Sensor type**
 - any double digits with combination of number and/or letter



- t** = **Process Temperature**
any single number or letter
- uu** = **Cable**
any double digits with combination of number and/or letter
- vv** = **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 – ddqqrww + ##**

ODK9013 – ddqqrwwyy + ##**

for OEM-version

- dd** = **Approval**
 - BB = Ex ia IIC T6...T1 Gb
Ex ia IIIC T** Db
 - BD = Ex ia IIC T6...T1 Gb
Ex ia IIIC T** Db
 - BS = Ex ic IIC T6...T1 Gc

- qq** = **Sensor type**
any double digits with combination of number and/or letter
- r** = **Process Temperature**
any single number or letter
- ww** = **Device model (two digit)** (see assignment of flowmeter to replacement transmitter)
00 = not used
- 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**

Note: Clamp-On sensors types DK9013 and ODK9013 are intended for use as replacement of sensors for product Prosonic Flow P500 types 9P5B and O9P5B or for extension of Prosonic Flow P500 types 9P5B and O9P5B from one sensor set to two sensor sets



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2.3. Assignment of Flowmeter to Replacement Transmitter

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

Product flowmeters			Replacement transmitter type			
Order code	Generation code b =	device model code ww =	Order code	Generation code b =	existing product rr =	device model code ww =
9G*b**-...ww, O9G*b**-...ww	B	A1 / A2	9x*bxx-...rr...ww, O9x*bxx-...rr...ww	B	GA	A1 / A2
9P*b**-...ww, O9P*b**-...ww	B	A1 / A2	9x*bxx-...rr...ww, O9x*bxx-...rr...ww	B	PA	A1 / A2



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3. Parameters

3.1. 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 = 250V _{AC}
E ¹⁾	No. 1(L+/L), 2(L-/N)	U _N = 85...264V _{AC} U _M = 250V _{AC}
I ²⁾	No. 1(L+/L), 2(L-/N)	U _N = 19.2...28.8V _{DC} / 85...264V _{AC} U _M = 250V _{AC}

- 1) applicable for products with approval code dd = BB, BD
 2) applicable for products with approval code dd = BS, BJ, BL, BN

Input/Output 1			
Order Code ff =	terminal no.	values	
BA, BB, MA	No. 26, 27	U _N = 30V _{DC} U _M = 250V _{AC}	
LA, GA, SA	No. 26, 27	U _N = 32V _{DC} U _M = 250V _{AC}	
CA, CB	No. 26, 27	U _i = 30V I _i = 100mA P _i = 1.25W L _i = 0 C _i = 6nF	
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) U _i = 30V I _i = 10mA P _i = 0.3W C _i = 6nF L _i = 5μH	2) U _O = 21.8V I _o = 90mA P _o = 491mW L _o = 9mH (IIC) / 39mH (IIB) C _o = 600nF (IIC) / 4000nF (IIB) U _i = 30V I _i = 10mA P _i = 0.3W C _i = 6nF L _i = 5μH
HA, TA	No. 26, 27	1) <u>Profibus PA (Fisco Field Device) / Foundation Fieldbus</u> U _i = 30V I _i = 570mA P _i = 8.5W L _i = 10μH	2) <u>Profibus PA (Fisco Field Device) / Foundation Fieldbus</u> U _i = 32V I _i = 570mA P _i = 8.5W L _i = 10μH



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		$C_i = 5nF$	$C_i = 5nF$
MB, RB	No. 26, 27	<u>APL port profile SLAX / SPE PoDL classes 10, 11, 12</u> $U_N = 30V_{DC}$ $U_M = 250V_{AC}$	
MC, RC	No. 26, 27	<u>1), 3)</u> <u>2-WISE power load</u> <u>APL port profile SLAA</u> $U_i = 17.5V$ $I_i = 380mA$ $P_i = 5.32W$ $L_i \leq 10\mu H$ $C_i \leq 5nF$	<u>2), 3)</u> <u>2-WISE power load</u> <u>APL port profile SLAC</u> $U_i = 17.5V$ $I_i = 380mA$ $P_i = 5.32W$ $L_i \leq 10\mu H$ $C_i \leq 5nF$
NA, RA	IO1 / RJ45	$U_N = 30V_{DC}$ $U_M = 250V_{AC}$	

- 1) applicable for products with approval code dd = BB, BD
- 2) applicable for products with approval code dd = BS, BL, BN
- 3) no additional internal capacitances are effective to the output value (refer to note 1 of drawing "Ethernet-APL Installation Drawing - Device Vendors v1.0, March 8th 2022")

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	$U_N = 30V_{DC}$ $U_M = 250V_{AC}$
H	No. 24, 25	$U_N = 30V_{DC}$ $I_N = 100mA_{DC} / 500mA_{AC}$ $U_M = 250V_{AC}$

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



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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	$U_N = 30V_{DC}$ $U_M = 250V_{AC}$
H	No. 20, 21	$U_N = 30V_{DC}$ $I_N = 100mA_{DC} / 500mA_{AC}$ $U_M = 250V_{AC}$

Service Interface		
Order Code dd =	terminal no.	values
BB	Service Interface	Service Interface shall only be installed <ul style="list-style-type: none"> in areas which are known to be non hazardous with a non intrinsically safe circuit $U_N = 3.3 V, U_M = 250 V_{AC}$ or to an intrinsically safe circuit with: $U_i = 10V, I_i = n.a., P_i = n.a., C_i = 200nF, L_i = 0$
BD	Service Interface	Service Interface shall only be installed <ul style="list-style-type: none"> to an non intrinsically safe circuit with: $U_N = 3.3V, U_M = 250V_{AC}$ or to an intrinsically safe circuit with: $U_i = 10V, I_i = n.a., P_i = n.a., C_i = 200nF, L_i = 0$
BS, BJ, BL, BN	Service Interface	$U_N = 3.3V$

Antenna bushing		
Order Code dd =	terminal no.	values
BB, BJ, BL, BN, BS	Type N connector	See conditions of certification

Remote Display		
Order Code dd =	terminal no.	values
BB, BD	No. 81, 82, 83, 84	$U_o = 3.9V$ $I_o = 1.5A$ (spark) 200mA (power) $P_o = 600mW$ $R_i = 2.6\Omega$ $C_o = 670\mu F$ $L_o = 0$
BS	No. 81, 82, 83, 84	$U_N = 3.3V$ $I_N = 150mA$

Notes:

- For Transmitter with approval code dd = BB and BD connected to the Remote Display of Endress+Hauser, Type DKX001 or ODKX001, the cable parameter with ration $L/R = \leq 0.024 mH/\Omega$ shall be used .



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- Remote display type DKX001 is not intended to be connected to the transmitter electronics with approval code dd = BJ, BL, BN

Prosonic Flow G Remote Transmitter and Remote Sensor:

9G****-... and O9G****-... with order code dd = BJ, BN in combination with k = A (ISEM in sensor):

Transmitter terminal board:

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

Sensor terminal board:

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

9G****-... and O9G****-... with order code dd = BL, BS in combination with k = A (ISEM in sensor):

Transmitter terminal board:

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

Sensor terminal board:

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

Prosonic Flow P Remote Transmitter and Remote Sensor:

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

Transmitter terminal board:

CH1, CH2 -> $U_o = 40V, I_o = 36.7mA, P_o = 459mW, L_i = n.a., C_i = n.a.$

Sensor terminal board:

Connector -> $U_i = 40V, I_i = n.a., P_i = n.a., L_i = n.a., C_i = n.a.$

9P****-... and O9P****-... with order code dd = BS in combination with k = B (ISEM in transmitter):

Transmitter terminal board:

CH1, CH2 -> $U_o = 50V, I_o = 45.9mA, P_o = 459mW, L_i = n.a., C_i = n.a.$

Sensor terminal board:

Connector -> $U_i = 50V, I_i = n.a., P_i = n.a., L_i = n.a., C_i = n.a.$

3.2. Thermal Parameters (Zone 1)

3.2.1. Proline Prosonic Flow G 300/500

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 _{max}		T _{max} [°C]	T _{max} [°C]						
	min [°C]	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	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 (85°C)	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 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) 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

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	B		G				
	C		H				
	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 Prosonic Flow G 300/500					Gezeichnet	07.02.2018	Bn
					Geprüft		
					Es-geprüft	22.02.2018	Bn
					Gesehen		
Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach					FES0321A 1/2		

Proline Prosonic Flow G 500

Notes:
 This page applies to versions with extended order code covering:
 9*5*** – dd*****A... 09*5*** – dd*****A... 9x5Bxx – dd*****A... 09x5Bxx – 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 _{max}		T _{a,max} [°C]	T _{medium} [°C]					
	min [°C]	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	40	90	90	90	90
			55	---	40	90	90	90	90
			60	---	---	90	90	90	90
			150 (1)	60 (1)	70	85	120	150	150

Notes: (1) temperatures not applicable for versions with pressure sensor
 (2) T_{a,min} = -40°C, -50°C respectively (see nameplate)
 (3) for applicable version with maximum medium temperature 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 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
 - T_{a,min} = -40°C, -50°C respectively (see nameplate)
 - for maximum medium temperature and minimum medium temperature see nameplate
 (2) versions with pressure sensor shall not exceed temperatures as listed in table beside for insulated and not insulated sensor
 (3) location of reference point

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: T_{a,min} = -50°C (for limitation see name plate)
 plastic enclosure: T_{a,min} = -40°C

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	B		G		
	C		H		Ersetzt durch: Gezeichnet: 07.02.2018 Bn Geprüft: Es-geprüft: 22.02.2018 Bn Gesehen:
	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 Prosonic Flow G 300/500					
Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach					FES0321A 2/2



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3.2.2. Proline Prosonic Flow P500

Proline Prosonic Flow P 500

Notes:

This page applies to versions with extended order code covering: 9*5*** – dd*****B... O9*5*** – dd*****B... 9x5Bxx – dd*****B... O9x5Bxx – dd*****B...
 DK9013-dd... ODK9013-dd...
 with approval option cCSAus / CSA: dd = CD, C2, C4
 IECEx / ATEX: dd = BB, BD

Transmitter: Temperature table for all versions	
T _{amb}	
T6 (85°C)	T5 (100°C)
55	60

Notes: (1) T_{a,min} = -50°C (for limitation see name plate)

Sensor: Temperature table for versions with sensor Insulated and not insulated										
Type of sensor	T _{med}		T _a		T _{med,max} [°C]					
	min [°C]	max [°C]	min [°C]	max [°C]	T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
C-030-A	-50	120	-50	80	80	95	120	120	120	120
C-100-B	-40	80	-40	50	50	80	80	80	80	80
				80	---	80	80	80	80	80
C-100-C	0	170	-40	50	50	95	130	170	170	170
				80	---	95	130	170	170	170
C-200-B	-40	80	-40	65	65	80	80	80	80	80
				80	---	80	80	80	80	80
C-200-C	0	170	-40	65	65	95	130	170	170	170
				80	---	95	130	170	170	170
C-500-A	-40	150	-40	75	75	95	130	150	150	150
				80	---	95	130	150	150	150
CH-050-A	-50	435	-50	75	75	95	130	190	285	435
				80	---	95	130	190	285	435
CH-100-A	-50	435	-50	75	75	95	130	190	285	435
				80	---	95	130	190	285	435

Notes: (1) for type of sensor, temperature range and applicable Group see name plate

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	B	30.07.2020 / Bn	G				
	C	30.09.2021 / Bn	H		Erstellt für:		
	D		I		Ersteller: FES/ Bn		
	E		K		FILE: M\Zeichng\FES0351C\FES0351C.dwg		
Control Drawing IECEx, ATEX, CSA, cCSAus					Gezeichnet	07.08.2019	Bn
Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1					Geprüft		
Thermal Parameter					Ex-geprüft	30.09.2021	Bn
Proline Prosonic Flow P 500					Gesehen		
 Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach					FES0351C 1/1		

3.3. Thermal Parameters (Zone 2)

3.3.1. Proline Prosonic Flow G 300/500

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 = CS, CZ	
	IECEx / ATEX:	dd = BS	

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

Size / DN	T _{ref}		T _{min} [°C]	T _{max} [°C]						
	min	max		T6	T5	T4	T3	T2	T1	
	[°C]	[°C]		(85°C)	(100°C)	(135°C)	(200°C)	(300°C)	(450°C)	
25 ... 300	-50	90	55	---	40	90	90	90	90	
			60	---	---	90	90	90	90	
			150 (1)	50 (1)	---	85	120	150	150	150
			55 (1)	---	---	120	150	150	150	
			60 (1)	---	---	(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
- (4) versions with transmitter enclosure stainless steel (metal sheet) only for installation where transmitter is not installed above the sensor
- (5) Versions with transmitter enclosure stainless steel (metal sheet) installed in temperature class T5, a degree of 3°C for ambient temperature shall be taken into account

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

Size / DN	T _{ref} to be measured at reference point at sensor neck [°C]					
	T6	T5	T4	T3	T2	T1
	(85°C)	(100°C)	(135°C)	(200°C)	(300°C)	(450°C)
all	---	62	72	73	73	73

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

reference point

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	B	06.12.2021 / Bn	G		
	C		H		
	D		J		
	E		K		

Control Drawing IECEx, ATEX, CSA, cCSAus	Gezeichnet	07.02.2016	Bn
Zone 2, Cl.I Div. 2, Cl.I Zone 2	Geprüft		
Thermal Parameter	Ex-geprüft	06.12.2021	Bn
Proline Prosonic Flow G 300/500	Gesehen		

<p>Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach</p>	<p>FES0322B 1/2</p>
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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...
 cCSAus / CSA: dd = CS, CZ
 IECEx / ATEX: dd = BL, BS

9x5Bxx – dd*****A...

09x5Bxx – dd*****A...

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

Size / DN	T _{max}		T _{a,max}	T _{ref,max} [°C]					
	min [°C]	max [°C]		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
25 ... 300	-50	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) T_{a,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: T_{a,min} = -50°C (for limitation see name plate)
 plastic enclosure: T_{a,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 _{ref} 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	---	71	75	77	77	77

Notes: (1) for versions with pressure sensor, the pressure sensor shall not be insulated 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
 - T_{a,min} = -40°C, -50°C respectively (see nameplate)
 - for maximum medium temperature and minimum medium temperature see nameplate
 (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
 - T_{a,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

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	B	06.12.2021 / Bn	G		
	C		H		
	D		J		
	E		K		
Control Drawing IECEx, ATEX, CSA, cCSAus					Gezeichnet: 07.02.2018 Bn Geprüft: Ex-geprüft: 06.12.2021 Bn Gesehen:
Zone 2, Cl.I Div. 2, Cl.I Zone 2					
Thermal Parameter					
Proline Prosonic Flow G 300/500					
Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach					FES0322B 2/2



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4. Marking

Proline Prosonic Flow G 300		
Order Code: 9*3*** – dd*ff*****+##*# O9*3*** – dd*ff*****+##*#		
dd = approval	ff = I/O	Marking of Ex protection
BB	HA, TA, CA, CB, CC, CD, MC, RC	Ex db eb ia [ia Ga] IIC T6...T1 Gb and/or Ex tb [ia Da] IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex db eb ia IIC T6...T1 Gb and/or Ex tb IIIC T** °C Db
BD	HA, TA, CA, CB, CC, CD, MC, RC	Ex db ia [ia Ga] IIC T6...T1 Gb and/or Ex tb [ia Da] IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex db ia IIC T6...T1 Gb and/or Ex tb IIIC T** °C Db
BS	HA, TA, CA, CB, CC, CD, MC, RC	Ex ec nC ic [ic] IIC T5...T1 Gc
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex ec nC ic IIC T5...T1 Gc

Information: Marking of protection representative for ...	
db	-> electronic compartment
eb	-> terminal compartment
ia	-> sensor, display
tb	-> transmitter enclosure
[ia Ga]	-> electronic with input/output Ex ia
[ia Da]	-> electronic with input/output Ex ia
db	-> electronic and terminal compartments
ia	-> sensor, display
tb	-> transmitter enclosure
[ia Ga]	-> electronic with input/output Ex ia
[ia Da]	-> electronic with input/output Ex ia
ec	-> transmitter enclosure, electronic, display
nC	-> electronic
ic	-> sensor
[ic]	-> electronic with input/output Ex ia

Proline Prosonic Flow G 500 Digital (with ISEM integrated in sensor)			
Order Code: 9*5*** – dd*ff****A*****+##*# O9*5*** – dd*ff****A*****+##*#			
dd = approval	ff = I/O	Device	Marking of Ex protection
BJ	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	n.a. (non-Ex)
		Sensor	Ex db ia IIC T6...T1 Gb and/or Ex ia tb IIIC T** °C Db
BL	HA, TA, CA, CB, CC, CD, MC, RC	Transmitter	[Ex ic] IIC
		Sensor	Ex ec ic IIC T5...T1 Gc
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	n.a. (non-Ex)
		Sensor	Ex ec ic IIC T5...T1 Gc
BN	HA, TA, CA, CB, CC, CD, MC, RC	Transmitter	Ex ec nC [ic] IIC T5...T4 Gc
		Sensor	Ex db ia IIC T6...T1 Gb and/or Ex ia tb IIIC T** °C Db

Information: Marking of protection representative for ...	
db	-> sensor terminal box
ia	-> sensor
tb	-> sensor, sensor terminal box
ec	-> sensor terminal box
ic	-> sensor
[Ex ic]	-> electronic with input/output Ex ic and output for sensor circuit
ec	-> transmitter enclosure, electronic, display
nC	-> electronic



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Proline Prosonic Flow G 500 Digital (with ISEM integrated in sensor)			
Order Code: 9*5*** – dd*ff****A*****+### O9*5*** – dd*ff****A*****+###			
BS	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	Ex ec nC IIC T5...T4 Gc
		Sensor	Ex db ia IIC T6...T1 Gb and/or Ex ia tb IIIC T** °C Db
	HA, TA, CA, CB, CC, CD, MC, RC	Transmitter	Ex ec nC [ic] IIC T5...T4 Gc
		Sensor	Ex ec ic IIC T5...T1 Gc
BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	Ex ec nC IIC T5...T4 Gc	
	Sensor	Ex ec ic IIC T5...T1 Gc	

db	-> sensor terminal box
ia	-> sensor
tb	-> sensor, sensor terminal box
[ic]	-> electronic with input/output Ex ic
ec	-> sensor terminal box, transmitter enclosures, electronic, display
nC	-> electronic
ic	-> sensor
[ic]	-> electronic with input/output Ex ic and/or output for sensor circuit

Proline Prosonic Flow P 500 Analog (with ISEM integrated in transmitter)			
Order Code: 9P5*** – dd*ff****B*****+### O9P5*** – dd*ff****B*****+### DK9013 – dd* ODK9013 – dd*			
dd = approval	ff = I/O	Device	Marking of Ex protection
BB	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, RB, RC, SA, MA, MB, MC	Transmitter	Ex db eb ia [ia Ga] IIC T6... T5 Gb and/or Ex tb [ia Da] IIIC T85°C Db
		Sensor	Ex ia IIC T6...T1 Gb and/or Ex ia IIIC T** °C Db
BD	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, RB, RC, SA, MA, MB, MC	Transmitter	Ex db ia [ia Ga] IIC T6... T5 Gb and/or Ex tb [ia Da] IIIC T85°C Db
		Sensor	Ex ia IIC T6...T1 Gb and/or Ex ia IIIC T** °C Db
BS	HA, TA, CA, CB, CC, CD, MC, RC	Transmitter	Ex ec nC ic [ic] IIC T5...T4 Gc
		Sensor	Ex ic IIC T6...T1 Gc or Ex ic IIB T6...T1 Gc ¹⁾
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	Ex ec nC ic [ic] IIC T5...T4 Gc
		Sensor	Ex ic IIC T6...T1 Gc or Ex ic IIB T6...T1 Gc ¹⁾

Information: Marking of protection representative for ...	
db	-> electronic compartment
eb	-> terminal compartment
ia	-> sensor, display
tb	-> transmitter enclosures
[ia Ga]	-> electronic with input/output Ex ia and/or output for sensor circuit
[ia Da]	-> electronic with input/output Ex ia and/or output for sensor circuit
db	-> electronic and terminal compartments
ia	-> sensor, display
tb	-> transmitter enclosures
[ia Ga]	-> electronic with input/output Ex ia and/or output for sensor circuit
[ia Da]	-> electronic with input/output Ex ia and/or output for sensor circuit
ec	-> transmitter enclosures, electronic, display
nC	-> electronic
ic	-> sensor
[ic]	-> electronic with input/output Ex ia and/or output for sensor circuit

1) Sensors type C-200-A and I-100-A are available only for group IIB



5. Conditions of Certification

- All equipment of the measurement system shall be included in the equipotential bonding. Along the intrinsically safe sensor circuits potential equalization must exist.
- The sensors may only be used for those process media, for which the wetted parts are known to be suitable.
- If the flowmeter system is connected to remote display type DKX001, the approval code 'dd' for the flowmeter shall be paired to the approval code "bb" of the remote display as follows:

Approval code 'dd' of Proline Prosonic Flow G 300	Approval code 'bb' of remote display DKX001/ODKX001 as covered by IECEX DEK 15.0024
BB, BD	BE, BF or BG
BS	BS

- The equipment may have non-conductive surfaces which are a potential electrostatic charging hazard – see instructions for guidance.
- Only use battery Renata type lithium CR1632, 3V.
- The flameproof joints are not intended to be repaired.

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

- 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 shall have an impedance of at least 50Ω
 - b) The rated frequency range of the antenna shall not exceed 1710MHz ... 6000MHz
 - c) The RF antenna or the RF antenna cable shall be fitted with a Type N connector plug (MIL-STD-348)
- The antenna bushing type H337 shall be mounted wrench tight to the transmitter enclosure to maintain the ingress protection of the enclosure.
- The coupling nut of the Type N plug connector shall be hand tightened only.
- The metal enclosure of the Antenna Bushing H337 shall be securely connected to local earth, typically via the enclosure to which it is connected.



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Annex D:

This Annex is applicable for flowmeters type Proline t-mass 300/500

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1. Description

The Proline t-mass 300 / 500 flowmeters are available in two versions, a compact version (Proline 300) and a remote version (Proline 500). The remote version of Proline 500 is available as a version with ISEM electronic in sensor only (i.e. Proline 500 Digital) 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.

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 as part of the flowmeter.

Different electronics are used for the flowmeters where the sensor is installed in a Zone 1 or 2 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 Ex ic for Zone 2) 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 t-mass 300/500 flowmeters are available for an ambient temperature of -40°C to +60°C and optional -50°C to +60°C.

All versions of flowmeters Proline t-mass 300 and Proline t-mass 500 are available for an enclosure protection of degree IP66, IP67. In addition versions of remote sensor Proline t-mass 500 are available for enclosure protection of degree IP68 as an optional.



2. Order Code

2.1. Proline t-mass 300/500

Extended order code Proline t-mass 300:

- 6F3bcc – ddeffghjlpstttvww + ###
- 6I3bcc – ddeffghjlpstttuuvww + ###
- O6F3bcc – ddeffghjlpstttvwwyy + ###
- O6I3bcc – ddeffghjlpstttuuvwwyy + ###
- 6x3bxx – ddeffghjlpssww + ###
- O6x3bxx – ddeffghjlpsswwyy + ###

for OEM-version
 for OEM-version
 for replacement transmitter
 for replacement transmitter OEM

Extended order code Proline t-mass 500:

- 6F5bcc – ddeffghijknopsstttvww + ###
- 6I5bcc – ddeffghijknopsstttuuvww + ###
- O6F5cc – ddeffghijknopsstttvwwyy + ###
- O6I5cc – ddeffghijknopsstttuuvwwyy + ###
- 6x5bxx – ddeffghijkmopssww + ###
- O6x5bxx – ddeffghijkmopsswwyy + ###

for OEM-version
 for OEM-version
 for replacement transmitter
 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
 BS = Ex ec IIC T4...T1 Gc

Proline t-mass 500:
 BJ = [Ex ia] IIC (transmitter)
 Ex ia IIC T4...T1 Gb (sensor)
 Ex tb IIIC T** Db (sensor)
 BL = non-Ex (transmitter)
 Ex ec IIC T4...T1 Gc (sensor)
 BN = Ex ec [ia Ga] IIC T5...T4 Gc (transmitter)
 Ex ia IIC T4...T1 Gb (sensor)
 Ex tb IIIC T** Db (sensor)
 BS = Ex ec IIC T4...T1 Gc (transmitter + 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
		MA = Modbus RS485
		MB = Modbus TCP
		MC = Modbus TCP Ex i
		NA = EtherNet/IP
		RA = Profinet IO
		RB = Profinet
		RC = Profinet Ex i
		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 = 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
- 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 assignment of flowmeter to replacement transmitter)
 - A1 = product version 1
 - 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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2.2. 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			
Order code	Generation code b =	device model code ww =	Order code	Generation code b =	existing product rr =	device model code ww =
6F*b**-...ww, O6F*b**-...ww	B	A1 / A2	6x*bxx...ww, O6x*bxx-...ww	B	n.a.	A1 / A2
6l*b**-...ww, O6l*b**-...ww	B	A1 / A2	6x*bxx-...ww, O6x*bxx-...ww	B	n.a.	A1 / A2

3. Parameters

3.1. 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 = 250V _{AC}
E ¹⁾	No. 1(L+/L), 2(L-/N)	U _N = 85...264V _{AC} U _M = 250V _{AC}
I ²⁾	No. 1(L+/L), 2(L-/N)	U _N = 19.2...28.8V _{DC} / 85...264V _{AC} U _M = 250V _{AC}

1) applicable for products with approval code dd = BB, BD

2) applicable for products with approval code dd = BS, BJ, BL, BN

Input/Output 1		
Order Code ff =	terminal no.	values
BA, BB, MA	No. 26, 27	U _N = 30V _{DC} U _M = 250V _{AC}
LA, GA, SA	No. 26, 27	U _N = 32V _{DC} U _M = 250V _{AC}



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CA, CB	No. 26, 27	$U_i = 30V$ $I_i = 100mA$ $P_i = 1.25W$ $L_i = 0$ $C_i = 6nF$	
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) $U_i = 30V$ $I_i = 10mA$ $P_i = 0.3W$ $C_i = 6nF$ $L_i = 5\mu H$	2) $U_o = 21.8V$ $I_o = 90mA$ $P_o = 491mW$ $L_o = 9mH$ (IIC) / 39mH (IIB) $C_o = 600nF$ (IIC) / 4000nF (IIB) $U_i = 30V$ $I_i = 10mA$ $P_i = 0.3W$ $C_i = 6nF$ $L_i = 5\mu H$
HA, TA	No. 26, 27	1) <u>Profibus PA (Fisco Field Device) / Foundation Fieldbus</u> $U_i = 30V$ $I_i = 570mA$ $P_i = 8.5W$ $L_i = 10\mu H$ $C_i = 5nF$	2) <u>Profibus PA (Fisco Field Device) / Foundation Fieldbus</u> $U_i = 32V$ $I_i = 570mA$ $P_i = 8.5W$ $L_i = 10\mu H$ $C_i = 5nF$
MB, RB	No. 26, 27	<u>APL port profile SLAX / SPE PoDL classes 10, 11, 12</u> $U_N = 30V_{DC}$ $U_M = 250V_{AC}$	
MC, RC	No. 26, 27	1), 3) <u>2-WISE power load</u> <u>APL port profile SLAA</u> $U_i = 17.5V$ $I_i = 380mA$ $P_i = 5.32W$ $L_i \leq 10\mu H$ $C_i \leq 5nF$	2), 3) <u>2-WISE power load</u> <u>APL port profile SLAC</u> $U_i = 17.5V$ $I_i = 380mA$ $P_i = 5.32W$ $L_i \leq 10\mu H$ $C_i \leq 5nF$
NA, RA	IO1 / RJ45	$U_N = 30V_{DC}$ $U_M = 250V_{AC}$	

- 1) applicable for products with approval code dd = BB, BD
- 2) applicable for products with approval code dd = BS, BL, BN
- 3) no additional internal capacitances are effective to the output value (refer to note 1 of drawing "Ethernet-APL Installation Drawing - Device Vendors v1.0, March 8th 2022")



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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	$U_N = 30V_{DC}$ $U_M = 250V_{AC}$
H	No. 24, 25	$U_N = 30V_{DC}$ $I_N = 100mA_{DC} / 500mA_{AC}$ $U_M = 250V_{AC}$

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

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	$U_N = 30V_{DC}$ $U_M = 250V_{AC}$
H	No. 20, 21	$U_N = 30V_{DC}$ $I_N = 100mA_{DC} / 500mA_{AC}$ $U_M = 250V_{AC}$



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Service Interface		
Order Code dd =	terminal no.	values
BB	Service Interface	Service Interface shall only be installed <ul style="list-style-type: none"> in areas which are known to be non hazardous with a non intrinsically safe circuit: $U_N = 3.3\text{ V}$, $U_M = 250\text{ V}_{AC}$ or to an intrinsically safe circuit with: $U_i = 10\text{ V}$, $l_i = \text{n.a.}$, $P_i = \text{na.}$, $C_i = 200\text{ nF}$, $L_i = 0$
BD	Service Interface	Service Interface shall only be installed <ul style="list-style-type: none"> to an non intrinsically safe circuit with: $U_N = 3.3\text{ V}$, $U_M = 250\text{ V}_{AC}$ or to an intrinsically safe circuit with: $U_i = 10\text{ V}$, $l_i = \text{n.a.}$, $P_i = \text{na.}$, $C_i = 200\text{ nF}$, $L_i = 0$
BS, BJ, BL, BN	Service Interface	$U_N = 3.3\text{ V}$

Antenna bushing		
Order Code dd =	terminal no.	values
BB, BJ, BL, BN, BS	Type N connector	See conditions of certification

Remote Display		
Order Code dd =	terminal no.	values
BB, BD	No. 81, 82, 83, 84	$U_o = 3.9\text{ V}$ $I_o = 1.5\text{ A}$ (spark) 200 mA (power) $P_o = 600\text{ mW}$ $R_i = 2.6\Omega$ $C_o = 670\mu\text{ F}$ $L_o = 0$
BS	No. 81, 82, 83, 84	$U_N = 3.3\text{ V}$ $I_N = 150\text{ mA}$

Notes:

- For Transmitter with approval code dd = BB and BD connected to the Remote Display of Endress+Hauser, Type DKX001 or ODKX001, the cable parameter with ration $L/R = \leq 0.024\text{ mH}/\Omega$ shall be used .
- Remote display type DKX001 is not intended to be connected to the transmitter electronics with approval code dd = BJ, BL, BN



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t-mass Remote Transmitter and Remote Sensor:

6****-... and O6****-... with order code dd = BJ, BN in combination with k = A (ISEM in sensor):

Transmitter terminal board:

Terminals 61, 62, 63, 64 -> $U_o = 13.8V$, $I_o = 1.156A$, $P_o = 3.3W$

Sensor terminal board:

Terminals 61, 62, 63, 64 -> $U_i = 14V$, $I_i = 1.2A$, $P_i = 3.4W$

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

- $L/R \leq 0.0089 \text{ mH}/\Omega$ and $C_{\text{cable}} \leq 760\text{nF}$ for group IIC, $L/R \leq 0.0356 \text{ mH}/\Omega$ and $C_{\text{cable}} \leq 4.2\mu\text{F}$ for group IIB
- or
- $L_{\text{cable}} \leq 26\mu\text{H}$ and $C_{\text{cable}} \leq 760\text{nF}$ for group IIC, $L_{\text{cable}} \leq 104\mu\text{H}$ and $C_{\text{cable}} \leq 4.2\mu\text{F}$ for group IIB

6****-... and O6****-... with order code dd = BL, BS in combination with k = A (ISEM in sensor):

Transmitter terminal board:

Terminals 61, 62 -> $U_N = 32V$
Terminals 63, 64 -> $U_N = 3.3V$

Sensor terminal board:

Terminals 61, 62 -> $U_N = 32V$
Terminals 63, 64 -> $U_N = 3.3V$

3.2. Thermal Parameters (Zone 1)

Proline t-mass 300

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

6*3B** - dd... with approval option	O6*3B** - dd... cCSAus / CSA: IECEx / ATEX:	6x3Bxx - dd... dd = CD, CE, C2, C4 dd = BB, BD	O6x3Bxx - dd...
--	---	--	-----------------

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

Size / DN	T _{amb}		T _{a,max} [°C]	T _{max} [°C]					
	min [°C]	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	180	180
			60	---	---	100	100	100	100
			(115)	(130)	(130)	(130)	(130)	(130)	

Notes: (1) T_{a,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 (85°C)	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
 - T_{a,min} = -40°C, -50°C respectively (see nameplate)
 - for maximum medium temperature and minimum medium temperature see nameplate
 (2) location of reference point

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Control Drawing IECEx, ATEX, CSA, cCSAus								Gezeichnet	19.07.2018	Bn
Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1								Geprüft		
Thermal Parameter								Er-geprüft	19.07.2018	Bn
Proline t-mass 300/500								Gesehen		
Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach								FES0331A 1/2		

Proline t-mass 500

Notes:

This page applies to versions with extended order code covering:

6*5*** – dd*****A... 06*5*** – dd*****A... 6x5Bxx – dd*****A... 06x5Bxx – 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}		T _{a,max} [°C]	T _{med,max} [°C]					
	min [°C]	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) T_{a,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: T_{a,min} = -50°C (for limitation see name plate)
 plastic enclosure: T_{a,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
 - T_{a,min} = -40°C, -50°C respectively (see nameplate)
 - for maximum medium temperature and minimum medium temperature see nameplate

(1) location of reference point

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	B		G				
	C		H				
	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		
Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach					FES0331A 2/2		

3.3. Thermal Parameters (Zone 2)

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 = CS, CZ
 IECEX / ATEX: dd = BS

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

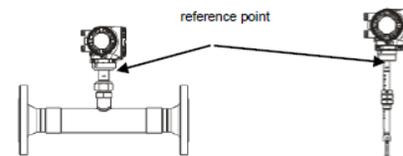
Size / DN	T _{med}		T _{a,max} [°C]	T _{med,max} [°C]					
	min [°C]	max [°C]		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
all	-50	180	50	---	---	115	155	180	180
			55	---	---	115	155	160 (180)	160 (180)
			60	---	---	100 (115)	100 (130)	100 (130)	100 (130)

- Notes: (1) T_{a,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) versions with transmitter enclosure stainless steel (metal sheet) only for installation where transmitter is not installed above the sensor
 (4) versions with transmitter enclosure stainless steel (metal sheet) installed in temperature class T5, a degree of 3°C for ambient temperature shall be taken into account

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 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)
all	---	---	73	76	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
 - T_{a,min} = -40°C, -50°C respectively (see nameplate)
 - for maximum medium temperature and minimum medium temperature see nameplate
 (2) location of reference point



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Control Drawing IECEX, ATEX, CSA, cCSAus					Gezeichnet	19.07.2018 Bn
Zone 2, Cl.I Div. 2, Cl.I Zone 2					Geprüft	
Thermal Parameter					Ex-geprüft	19.07.2018 Bn
Proline t-mass 300/500					Gesehen	
Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach					FES0332A 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 = CS, CZ
 IECEx / ATEX: dd = BL, BS

Sensor: 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} [°C]	T _{med,max} [°C]					
	min [°C]	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) T_{a,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: T_{a,min} = -50°C (for limitation see name plate)
 plastic enclosure: T_{a,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
 - T_{a,min} = -40°C, -50°C respectively (see nameplate)
 - for maximum medium temperature and minimum medium temperature see nameplate
 (1) location of reference point

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	B		G				
	C		H				
	D		J				
	E		K				
Control Drawing IECEx, ATEX, CSA, cCSAus Zone 2, Cl.I Div. 2, Cl.I Zone 2 Thermal Parameter Proline t-mass 300/500					Gezeichnet	19.07.2018	Bn
					Geprüft		
					Ex-geprüft	19.07.2018	Bn
					Gesehen		
Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach					FES0332A 2/2		



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4. Marking

Proline t-mass 300		
Order Code: 6F3*** – dd*ff*****+### 6I3*** – dd*ff*****+### O6F3*** – dd*ff*****+### O6I3*** – dd*ff*****+###		
dd = approval	ff = I/O	Marking of Ex protection
BB	CA, CB, CC, CD, HA, TA, MC, RC	Ex db eb ia [ia Ga] IIC T4...T1 Gb or Ex db eb ia [ia Ga] IIC T4...T1 Ga/Gb and/or Ex tb [ia Da] IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex db eb ia IIC T4...T1 Gb or Ex db eb ia IIC T4...T1 Ga/Gb and/or Ex tb IIIC T** °C Db
BD	CA, CB, CC, CD, HA, TA, MC, RC	Ex db ia [ia Ga] IIC T4...T1 Gb or Ex db ia [ia Ga] IIC T4...T1 Ga/Gb and/or Ex tb [ia Da] IIIC T** °C Db
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex db ia IIC T4...T1 Gb or Ex db ia IIC T4...T1 Ga/Gb and/or Ex tb IIIC T** °C Db
BS	CA, CB, CC, CD, HA, TA, MC, RC	Ex ec nC [ic] IIC T4...T1 Gc
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex ec nC IIC T4...T1 Gc

Information: Marking of protection representative for ...	
db	-> electronic compartment
eb	-> terminal compartment
ia	-> sensor, display
tb	-> transmitter enclosure, sensor
[ia Ga]	-> electronic with input/output Ex ia
[ia Da]	-> electronic with input/output Ex ia
db	-> electronic and terminal compartments
ia	-> sensor, display
tb	-> transmitter enclosure, sensor
[ia Ga]	-> electronic with input/output Ex ia
[ia Da]	-> electronic with input/output Ex ia
ec	-> transmitter enclosure, sensor , electronic, display
nC	-> electronic
[ic]	-> electronic with input/output Ex ic

Proline t-mass 500 Digital (with ISEM integrated in sensor)			
Order Code: 6F5*** – dd*ff****A*****+### 6I5*** – dd*ff****A*****+### O6F5*** – dd*ff****A*****+### O6I5*** – dd*ff****A*****+###			
dd = approval	ff = I/O	Device	Marking of Ex protection
BJ	CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, RB, RC, SA, MA, MB, MC	Transmitter	[Ex ia] IIC and/pr [Ex ia] IIIC
		Sensor	Ex db ia IIC T4...T1 Gb or Ex db ia IIC T4...T1 Ga/Gb and/or Ex ia tb IIIC T** °C Db
BL	CA, CB, CC, CD, HA, TA, MC, RC	Transmitter	[Ex ic] IIC
		Sensor	Ex ec IIC T4...T1 Gc

Information: Marking of protection representative for ...	
[Ex ia]	-> electronic with input/output Ex ia and/or output for sensor circuit
db	-> sensor terminal box
ia	-> sensor
tb	-> sensor terminal box
ec	-> sensor , sensor terminal box, electronic
[Ex ic]	-> electronic with input/output Ex ic



	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	n.a. (non-Ex)	
		Sensor	Ex ec IIC T4...T1 Gc	
BN	CA, CB, CC, CD, HA, TA, MC, RC	Transmitter	Ex ec nC [ic] [ia Ga] IIC T5...T4 Gc and/or [Ex ia] IIIC	db -> sensor terminal box ia -> sensor [ia Ga] -> electronic with output for sensor circuit [Ex ia] -> electronic with output for sensor circuit ec -> transmitter enclosure, electronic boards, display nC -> electronic [ic] -> electronic with input/output Ex ic tb -> sensor terminal box
		Sensor	Ex db ia IIC T4...T1 Gb or Ex db ia IIC T4...T1 Ga/Gb and/or Ex ia tb IIIC T** °C Db	
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	Ex ec nC [ia Ga] IIC T5...T4 Gc and/or [Ex ia] IIIC	
		Sensor	Ex db ia IIC T4...T1 Gb or Ex db ia IIC T4...T1 Ga/Gb and/or Ex ia tb IIIC T** °C Db	
BS	CA, CB, CC, CD, HA, TA, MC, RC	Transmitter	Ex ec nC [ic] IIC T5...T4 Gc	db -> sensor terminal box ia -> sensor [ia Ga] -> electronic with output for sensor circuit [Ex ia] -> electronic with output for sensor circuit ec -> transmitter enclosure nC -> electronic [ic] -> electronic with input/output Ex ic tb -> sensor terminal box
		Sensor	Ex ec IIC T4...T1 Gc	
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	Ex ec nC IIC T5...T4 Gc	
		Sensor	Ex ec IIC T4...T1 Gc	
				ec -> transmitter enclosure, sensor terminal box, electronic, display nC -> electronic [ic] -> electronic with input/output Ex ic

5. Conditions of Certification

- All equipment of the measurement system shall be included in the equipotential bonding. Along the intrinsically safe sensor circuits potential equalization must exist.
- The sensors may only be used for those process media, for which the wetted parts are known to be suitable.
- If the flowmeter system is connected to remote display type DKX001, the approval code 'dd' for the flowmeter shall be paired to the approval code "bb" of the remote display as follows:

Approval code 'dd' of Proline t-mass 300	Approval code 'bb' of remote display DKX001/ODKX001 as covered by IECEx DEK 15.0024
BB, BD	BE, BF or BG
BS	BS



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- The equipment may have non-conductive surfaces which are a potential electrostatic charging hazard – see instructions for guidance.
- Only use battery Renata type lithium CR1632, 3V.
- The flameproof joints are not intended to be repaired.
- For Proline t-mass 300/500 with approval code 'dd' = BB, BD, BJ & BN:
Zone 0 is only applicable to sensor with process medium in the measuring tube

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

- 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 shall have an impedance of at least 50Ω
 - b) The rated frequency range of the antenna shall not exceed 1710MHz ... 6000MHz
 - c) The RF antenna or the RF antenna cable shall be fitted with a Type N connector plug (MIL-STD-348)
- The antenna bushing type H337 shall be mounted wrench tight to the transmitter enclosure to maintain the ingress protection of the enclosure.
- The coupling nut of the Type N plug connector shall be hand tightened only
- The metal enclosure of the Antenna Bushing H337 shall be securely connected to local earth, typically via the enclosure to which it is connected



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Annex E:

This Annex is applicable for flowmeters type Proline Teqwave M 300/500

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1. Description

The Proline Teqwave M 300 / 500 flowmeters are available in two versions, a compact version (Proline 300) and a remote version (Proline 500). The remote version of Proline 500 is available as a version with ISEM electronic in sensor only (i.e. Proline 500 Digital) 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.

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 as part of the flowmeter.

Different electronics are used for the flowmeters where the sensor is installed in a Zone 2 location and where the transmitter can be installed in a safe area or Zone 2 locations. All versions of electronics are designed either with intrinsically safe IO's (Ex ic for Zone 2) 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 Teqwave M 300/500 flowmeters are available for an ambient temperature of -20°C to +60°C.

All versions of flowmeters Proline Teqwave M 300/500 are available for an enclosure protection of degree IP66, IP67.



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2. Order Code

2.1. Proline Teqwave M 300/500

Extended order code Proline Teqwave M 300:

4a3bcc – ddeffghjlpstttww + ###	
O4a3bcc – ddeffghjlpstttwwyy + ###	for OEM-version
4x3bxx – ddeffghjlpww + ###	for replacement transmitter
O4x3bxx – ddeffghjlpwwyy + ###	for replacement transmitter OEM

Extended order code Proline Teqwave M 500:

4a5bcc – ddeffghijkmnopstttww + ###	
O4a5cc – ddeffghijkmnopstttwwyy + ###	for OEM-version
4x5bxx – ddeffghijkmopww + ###	for replacement transmitter
O4x5bxx – ddeffghijkmopwwyy + ###	for replacement transmitter OEM

- a = Type of sensor**
W = Teqwave MW
- b = Generation**
B = Generation of Flowmeter
- cc = Size**
any combination of number and/or letter up to size = DN300
- dd = Approval**
Proline Teqwave M 300:
 BS = Ex ec IIC T5...T1 Gc

- Proline Teqwave M 500:
 BL = non-Ex (transmitter)
 Ex ec IIC T6...T1 Gc (sensor)
 BS = Ex ec IIC T5...T4 Gc (transmitter)
 Ex ec IIC T6...T1 Gc (sensor)
- e = Power Supply**
 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
- MB = Modbus TCP
- MC = Modbus TCP Ex i
- NA = EtherNet/IP
- RA = Profinet IO
- RB = Profinet
- RC = Profinet Ex i
- 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 = 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
- s = Design**
 - any single number or letter
- ttt = Process connection**
 - any triple digits with combination of number or letter
- ww = Device Model (two digits)** (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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2.2. Assignment of Flowmeter to Replacement Transmitter

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

Product flowmeters			Replacement transmitter type		
Order code	Generation code b =	Device model code ww =	Order code	Generation code b =	Device model code ww =
4W*b**-...ww, O4W*b**-...ww	B	A2	4x*bxx-...ww, O4x*bxx-...ww	B	A2

3. Parameters

3.1. Electrical Parameters

Power Supply		
Order Code e =	Terminal No.	Values
I	No. 1(L+/L), 2(L-/N)	U _N = 19.2...28.8V _{DC} / 85...264V _{AC} U _M = 250V _{AC}

Input/Output 1		
Order Code ff =	Terminal No.	Values
BA, BB, MA	No. 26, 27	U _N = 30V _{DC} U _M = 250V _{AC}
LA, GA, SA	No. 26, 27	U _N = 32V _{DC} U _M = 250V _{AC}
CA, CB	No. 26, 27	U _i = 30V I _i = 100mA P _i = 1.25W L _i = 0 C _i = 6nF
CC, CD	No. 26, 27	U _O = 21.8V I _O = 90mA P _O = 491mW L _O = 9mH (IIC) / 39mH (IIB) C _O = 600nF (IIC) / 4000nF (IIB) U _i = 30V I _i = 10mA P _i = 0.3W C _i = 6nF L _i = 5μH



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Input/Output 1		
Order Code ff =	Terminal No.	Values
HA, TA	No. 26, 27	<u>Profibus PA (Fisco Field Device) / Foundation Fieldbus</u> $U_i = 32V$ $I_i = 570mA$ $P_i = 8.5W$ $L_i = 10\mu H$ $C_i = 5nF$
MB, RB	No. 26, 27	<u>APL port profile SLAX / SPE PoDL classes 10, 11, 12</u> $U_N = 30V_{DC}$ $U_M = 250V_{AC}$
MC, RC	No. 26, 27	1) <u>2-WISE power load</u> <u>APL port profile SLAC</u> $U_i = 17.5V$ $I_i = 380mA$ $P_i = 5.32W$ $L_i \leq 10\mu H$ $C_i \leq 5nF$
NA, RA	IO1 / RJ45	$U_N = 30V_{DC}$ $U_M = 250V_{AC}$

1) no additional internal capacitances are effective to the output value (refer to note 1 of drawing "Ethernet-APL Installation Drawing - Device Vendors v1.0, March 8th 2022")

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	$U_N = 30V_{DC}$ $U_M = 250V_{AC}$
H	No. 24, 25	$U_N = 30V_{DC}$ $I_N = 100mA_{DC} / 500mA_{AC}$ $U_M = 250V_{AC}$



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

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	$U_N = 30V_{DC}$ $U_M = 250V_{AC}$
H	No. 20, 21	$U_N = 30V_{DC}$ $I_N = 100mA_{DC} / 500mA_{AC}$ $U_M = 250V_{AC}$

Service Interface		
Order Code dd =	Terminal No.	Values
BS, BL	Service Interface	$U_N = 3.3V$

Antenna bushing		
Order Code dd =	Terminal No.	Values
BL, BS	Type N connector	See conditions of certification

Remote Display		
Order Code dd =	Terminal No.	Values
BS	No. 81, 82, 83, 84	$U_N = 3.3V$ $I_N = 150mA$

Note: Remote Display type DKX001 is not intended to be connected to the transmitter electronics with approval code dd = BL



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Tegwave M Remote Transmitter and Remote Sensor:

4****-... and O4****-... with order code dd = BL, BS in combination with k = A (ISEM in sensor):

Transmitter terminal board:

Terminals	61, 62	->	$U_N = 32V$
Terminals	63, 64	->	$U_N = 3.3V$

Sensor terminal board:

Terminals	61, 62	->	$U_N = 32V$ (amplifier supply)
Terminals	63, 64	->	$U_N = 3.3V$ (sensor supply)



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3.2. Thermal Parameters (Zone 2)

Proline Teqwave M 300

Notes:

This page applies to versions with extended order code covering:

4*3B** – dd...	O4*3B** – dd...	4x3Bxx – dd...	O4x3Bxx – dd...
with approval option	cCSAus / CSA:	dd = CS, CZ	
	IECEX / ATEX:	dd = BS	

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)		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
50...300	0	80	50	---	80	80	80	80	80
			55	---	70	80	80	80	80
			60	---	60	80	80	80	80

Notes: T_{a,min} = -20°C

Änderungen: A B C D E	A	12.06.2023 / DOMI	F	Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugänglich gemacht werden.	Ersetzt durch: Ersteller: RDES / DOMI FILE: M:\Zeichng\FES0332A\FES0422A.doc
			G		
			H		
			J		
			K		
Control Drawing IECEX, ATEX, CSA, cCSAus Zone 2, Cl.I Div. 2, Cl.I Zone 2 Thermal Parameter Proline Teqwave M 300/500					Gezeichnet 12.06.2023 DOMI Geprüft Ex-geprüft 12.06.2023 DOMI Gesehen
 Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach					FES0422A 1/2



4. Marking

Proline Teqwave M 300		
Order Code: 4*3*** – dd*ff*****+##*# O4*3*** – dd*ff*****+##*#		
dd = approval	ff = I/O	Marking of Ex protection
BS	CA, CB, CC, CD, HA, TA, MC, RC	IECEX: Ex ec nC [ic] IIC T5...T1 Gc ATEX: ---
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	IECEX: Ex ec nC IIC T5...T1 Gc ATEX: ---

Information: Marking of protection representative for ...	
ec	-> transmitter enclosure, sensor, electronic, display
nC	-> electronic
[ic]	-> electronic input/output Ex ic

Proline Teqwave M 500 with ISEM integrated in sensor			
Order Code: 4*5*** – dd*ff****A*****+##*# O4*5*** – dd*ff****A*****+##*#			
dd = approval	ff = I/O	Device	Marking of Ex protection
BL	CA, CB, CC, CD, HA, TA, MC, RC	Transmitter	IECEX: [Ex ic] IIC
		Sensor	IECEX: Ex ec IIC T6...T1 Gc
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	n.a. (non-Ex)
		Sensor	IECEX: Ex ec IIC T6...T1 Gc
BS	CA, CB, CC, CD, HA, TA, MC, RC	Transmitter	IECEX: Ex ec nC [ic] IIC T5...T4 Gc
		Sensor	IECEX: Ex ec IIC T6...T1 Gc
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter	IECEX: Ex ec nC IIC T5...T4 Gc
		Sensor	IECEX: Ex ec IIC T6...T1 Gc

Information: Marking of protection representative for ...	
ec	-> sensor, sensor terminal box, electronic
[Ex ic]	-> electronic with input/output Ex ic
ec	-> transmitter enclosure, sensor, sensor terminal box, electronic, display
nC	-> electronic
[ic]	-> electronic with input/output Ex ic
[Ex ic]	-> electronic with input/output Ex ic



5. Conditions of Certification

- All equipment of the measurement system shall be included in the equipotential bonding. Along the intrinsically safe sensor circuits potential equalization must exist.
- The sensors may only be used for those process media, for which the wetted parts are known to be suitable.
- If the flowmeter system is connected to remote display type DKX001, the approval code 'dd' for the flowmeter shall be paired to the approval code "bb" of the remote display as follows:

Approval code 'dd' of Proline Teqwave 300	Approval code 'bb' of remote display DKX001/ODKX001 as covered by IECEX DEK 15.0024
BS	BS

- The equipment may have non-conductive surfaces which are a potential electrostatic charging hazard – see instructions for guidance.
- Only use battery Renata type lithium CR1632, 3V.

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

- 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 shall have an impedance of at least 50Ω
 - b) The rated frequency range of the antenna shall not exceed 1710MHz ... 6000MHz
 - c) The RF antenna or the RF antenna cable shall be fitted with a Type N connector plug (MIL-STD-348)
- The antenna bushing type H337 shall be mounted wrench tight to the transmitter enclosure to maintain the ingress protection of the enclosure.
- The coupling nut of the Type N plug connector shall be hand tightened only
- The metal enclosure of the Antenna Bushing H337 shall be securely connected to local earth, typically via the enclosure to which it is connected