

Canada

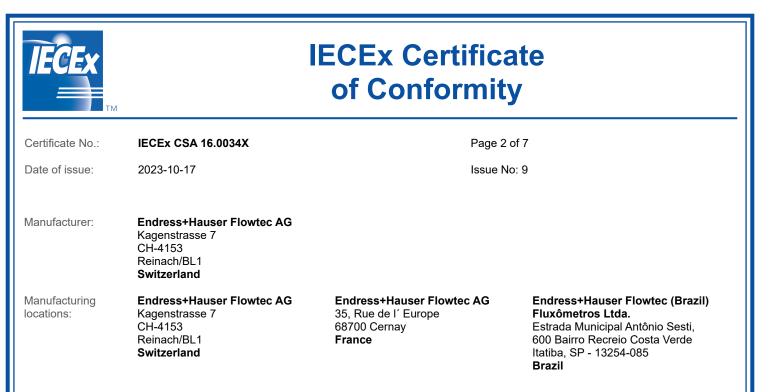
IECEx Certificate of Conformity

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	Certificate history:
Status:	Current	Issue No: 9	lssue 8 (2022-05-20) Issue 7 (2020-10-17)
Date of Issue:	2023-10-17		Issue 6 (2020-05-26) Issue 5 (2019-08-22)
Applicant:	Endress+Hauser Flowtec AG Kägenstrasse 7 CH-4153 Reinach/BL1 Switzerland		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	or 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 of Certification Body:	n behalf of the IECEx	Dave Magee	
Position:		Senior Director of Operations, Toronto	
Signature: (for printed version)			
Date: (for printed version)			
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Certificate issued	l by:		
CSA Group 178 Rexdale Bo Toronto, Ontario		(5)	CSA GROUP™



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 Edition:7.0	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-1:2014 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11:2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-15:2017 Edition:5.0	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
IEC 60079-26:2014 Edition:3.0	Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
IEC 60079-31:2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7:2017 Edition:5.1	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
IEC TS 60079-47:2021 Edition:1.0	Explosive atmospheres – Part 47: Equipment protection by 2-wire intrinsically safe Ethernet concept (2-WISE)
	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:

2023-10-17

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 Tegwave M 300/500

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

2023-10-17

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 productof 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 intoone 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 outputnon 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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China

Additional manufacturing locations:

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

China-Singapore Industrial Park (SIP) Su-Hong-Zhong-Lu No. 465 Suzhou 215021 China

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

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.





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2. Order Code

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

8a3bcc – c O8a3bcc - 8x3bxx – c	Extended order code Proline Promass 300 and Cubemass 300: 8a3bcc – ddeffghjlpsstttvww + #**# 08a3bcc – ddeffghjlpsstttvwwyy + #**# 8x3bxx – ddeffghjlprrssww + #**# 08x3bxx – ddeffghjlprrsswwyy + #**# for replacement transmitter OEM						
Extended order code Proline Promass 500 and Cubemass 500: 8a5bcc - ddeffghijkmnopsstttvww + #**# O8a5bcc - ddeffghijkmnopsstttvwwy + #**# for OEM-version 8x5bxx - ddeffghijkmopqqrrssww + #**# O8x5bxx - ddeffghijkmopqqrrsswwy + #**# for replacement transmitter for replacement transmitter							
а	=		ss A; C = Cubemass C; E = Pron s I; O = Promass O; P = Promass	nass E; F = Promass F; H = Promass H; s P; Q = Promass Q; S = Promass S;			
b	=		nass A (type 8A*B**, O8A*B**); C				
		Pror	nass F; Promass H; Promass I; F nass P; Promass Q; Promass S;				
			mass A (type 8A*C**, O8A*C**)				
CC	=	Size		1.4			
dd			digits with combination of number	er or letter			
uu	=	Approval Proline Pro	mass 300 [.]				
			Ex db eb [ia] IIB T6T1 Gb				
			Ex tb IIIC T** Db				
		BB =	Ex db eb [ia] IIC T6…T1 Gb				
			Ex tb IIIC T** Db				
		BC =	Ex db [ia] IIB T6…T1 Gb Ex tb IIIC T** Db				
		BD =	Ex db [ia] IIC T6T1 Gb				
			Ex tb IIIC T** Db				
		BS =	Ex ec IIC T5T1 Gc				





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BA		omass 500 :	(transmittar)
DA	=	Ex db eb [ia] IIB T6T5 Gb	(transmitter)
		Ex ia IIB T6T1 Gb	(sensor)
חח		Ex tb IIIC T** Db	(transmitter + sensor)
BB	=	Ex db eb [ia] IIC T6T5 Gb	(transmitter)
		Ex ia IIC T6T1 Gb	(sensor)
		Ex tb IIIC T** Db	(transmitter + sensor)
BC	=	Ex db [ia] IIB T6T5 Gb	(transmitter)
		Ex ia IIB T6T1 Gb	(sensor)
		Ex the IIIC T** Db	(transmitter + sensor)
BD	=	Ex db [ia] IIC T6T5 Gb	(transmitter)
		Ex ia IIC T6T1 Gb	(sensor)
וח		Ex tb IIIC T** Db	(transmitter + sensor)
BI	=	[Ex ia] IIC	(transmitter)
		Ex ia IIB T6T1 Gb	(sensor)
ы		Ex tb IIIC T** Db	(sensor)
BJ	=	[Ex ia] IIC	(transmitter)
		Ex ia IIC T6T1 Gb	(sensor)
וח		Ex tb IIIC T** Db	(sensor)
BL	=	non-Ex	(transmitter)
		Ex ec IIC T6T1 Gc	(sensor)
BM	=	Ex ec [ia Ga] IIC T6T1 Gc	(transmitter)
		Ex ia IIB T6T1 Gb	(sensor)
		Ex tb IIIC T** Db	(sensor)
BN	=	Ex ec [ia Ga] IIC T6T1 Gc	(transmitter)
		Ex ia IIC T6T1 Gb	(sensor)
BS		Ex tb IIIC T** Db	(sensor)
	=	Ex ec IIC T6T1 Gc	(transmitter + sensor)

D = 24Vdc

е

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





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ff = Input / Output 1

- = 4-20mA HART ΒA
- BΒ = 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)
- = Profibus PA GA
- = Profibus PA Ex i HA
- LA = Profibus DP
- MA = Modbus RS485
- MB = Modbus TCP
- MC = Modbus TCP Ex i
- = EtherNet/IP NA
- = Profinet IO RA
- RB = Profinet
- = Profinet Ex i RC
- SA = Foundation Fieldbus
- TA = Foundation Fieldbus Ex i
- XX = sensor only
- Input / Output 2 g =

А

Е

F

G

Х

А В

С

D

- = without Input/Output 2
- В = 4-20mA С
 - = 4-20mA Ex i (passive)
- D = Configurable IO
 - = Pulse/Frequency/Switch output
 - = Pulse output phase-shifted
 - = Pulse/Frequency/Switch output Ex i
- Н = Relay
- = 4-20mA input L
- J = Status input
- Κ = Pulse output Ex i
- L = Pulse output
 - = sensor only
- h Input / Output 3 =
 - = without Input/Output 3
 - = 4-20mA
 - = 4-20mA Ex i (passive)
 - = Configurable IO
 - Е = Pulse/Frequency/Switch output
 - F = Pulse output phase-shifted
 - G = Pulse/Frequency/Switch output Ex i
 - Н = Relay
 - L = 4-20mA input
 - J = Status input
 - = Pulse output Ex i Κ
 - L = Pulse output
 - Х = sensor only





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> А В

F

1

Х

L

ο

р

qq

- i. = Input / Output 4 (Proline 500 only)
 - = without Input/Output 4
 - = 4-20mA
 - С = 4-20mA Ex i (passive)
 - D = Configurable IO Е
 - = Pulse/Frequency/Switch output
 - = Pulse output phase-shifted
 - G = Pulse/Frequency/Switch output Ex i
 - Н = Relay
 - = 4-20mA input
 - J = Status input
 - Κ = Pulse output Ex i L
 - = Pulse output
 - = sensor only
- j Display / Operation =
 - with remote Display :0
 - without remote Display : any single number or letter except O
- = Integrated ISEM electronic (Proline 500 only) k А
 - = Sensor
 - В = Transmitter
 - = Housing (Proline 300 only) any single number or letter
- = Transmitter Housing (Proline 500 only) m any single number or letter
- = Sensor Housing (Proline 500 only) n any single number or letter
 - = Cable Sensor Connection (Proline 500 only)
 - any single number or letter
 - = Cable Entry any single number or letter

 - = Upgrade Kid
 - any double digits with combination of number or letter
- = Existing Product (refer to assignment of flowmeter to replacement transmitter) rr any double digits with combination of number or letter
- = Measuring tube material SS
 - any double digits with combination of number or letter
- = Process connection ttt any triple digits with combination of number or letter
- = Calibration v
 - any single number or letter
- = Device model (two digit) (refer to assignment of flowmeter to replacement transmitter) ww A1 = product version 1 A2 = product version 2
- = Customer version (two digits) уу
 - 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	В	A1 / A2	8x*bxxrr…ww, O8x*bxxrr…ww	В	AA	(all sizes)	A1 / A2
8A* b ** ww , 08A* b ** ww	С	A1 / A2	8x*bxxrrww, 08x*bxxrrww	В	AB	(all sizes)	A1 / A2
8C* b ** ww , O8C* b ** ww	В	A1 / A2	8x*bxxrrww, O8x*bxxrrww	В	CA	(all sizes)	A1 / A2
8E* b ** ww , O8E* b ** ww	В	A1 / A2	8x* b xx rr … ww , O8x* b xx rr … ww	В	EA EB EC	(DN815) (DN2550) (DN80)	A1 / A2 A1 / A2 A1 / A2
8F* b ** ww , O8F* b ** ww	В	A1 / A2	8x*bxx rrww , O8x*bxx rrww	В	FA FB FC	(DN815) (DN2550) (DN80250)	A1 / A2 A1 / A2 A1 / A2
8H* b ** ww , O8H* b ** ww	В	A1 / A2	8x*bxxrrww, O8x*bxxrrww	В	HA HB	(DN840) (DN50)	A1 / A2 A1 / A2
8l* b ** ww , O8l* b ** ww	В	A1 / A2	8x*bxxrrww, O8x*bxxrrww	В	IA IB	(DN840) (DN40FB80)	A1 / A2 A1 / A2
80* b ** ww , 080* b ** ww	В	A1 / A2	8x*bxxrrww, O8x*bxxrrww	В	OA	(all sizes)	A1 / A2
8P* b ** ww , O8P* b ** ww	В	A1 / A2	8x*bxxrr…ww, O8x*bxxrr…ww	В	PA PB	(DN840) (DN50)	A1 / A2 A1 / A2
8Q* b ** ww , O8Q* b ** ww	В	A1 / A2	8x*bxx rrww , O8x*bxx rrww	В	QA QB QC	(DN2550) (DN80100) (DN150250)	A1 / A2 A1 / A2 A1 / A2
8S* b ** ww , O8S* b ** ww	В	A1 / A2	8x*bxxrrww, O8x*bxxrrww	В	SA SB	(DN840) (DN50)	A1 / A2 A1 / A2
8X* b ** ww , O8X* b ** ww	В	A1 / A2	8x* b xx rrww , O8x* b xx rrww	В	ХА	(all sizes)	A1 / A2





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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.

Sensor Group	Type of sensor	Size of sensor	Group	T _{Med,min}
A1	A (type 8A*B**)	01(DN1), 02, 04	IIC	-50°C
	С	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
		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 *)
		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 *)
	Х	350	IIC	-50°C / -60°C *)
C1	F	15, 25, 40, 50	IIC	-200°C
	Н	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
	Н	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
		41, 50, 51, 80	IIB	-50°C
	Q	80, 100, 150, 200, 250	IIB	-50°C / -60°C *)
	Х	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

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

*) Tmed,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.

<u>Note:</u> 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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Sensor Group	Type of sensor	Size of sensor	T _{Med,min}
A2	С	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
	1	08, 15, 16, 25, 26, 40, 41, 50, 51, 80	-50°C
	0	80, 100, 150, 250	-50°C
	Q	25, 50, 80, 100, 150, 200, 250	-50°C / -60°C *)
	Х	350	-50°C / -60°C *)
B2	A	01, 02, 04	-50°C
	(type 8A*B**)		
	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
	Н	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

Assignment of Promass sensors and Cubemass sensors installed in Zone 2:

Tmed,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	terminal no.	values			
e =					
D ¹⁾	No. 1(L+/L), 2(L-/N)	$U_N = 19.228.8V_{DC}$			
		$U_{M} = 250 V_{AC}$			
E ¹⁾	No. 1(L+/L), 2(L-/N)	$U_N = 85264V_{AC}$			
		$U_{M} = 250 V_{AC}$			
2)	No. 1(L+/L), 2(L-/N)	U _N = 19.228.8V _{DC} /85264V _{AC}			
		$U_{M} = 250 V_{AC}$			

applicable for products with approval code dd = BA, BB, BC, BD
 applicable for products with approval code dd = BS, BI, BJ, BL, BM, BN

Input/Output 1		
Order Code	terminal no.	values
ff =		
BA, BB, MA	No. 26, 27	$U_N = 30V_{DC}$
		$U_{M} = 250 V_{AC}$





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LA, GA, SA	No. 26, 27	$U_{N} = 32V_{DC}$ $U_{M} = 250V_{AC}$	
CA, CB	No. 26, 27	$\begin{array}{rcl} U_{i} &= 30V\\ U_{i} &= 30V\\ I_{i} &= 100mA\\ P_{i} &= 1.25W\\ L_{i} &= 0\\ C_{i} &= 6nF \end{array}$	
CC, CD	No. 26, 27	1) Uo = 21.8V Io = 90mA Po = 491mW Lo = 4.1mH (IIC) / 15mH (IIB) Co = 160nF (IIC) / 1160nF (IIB)	2) U_0 = 21.8V I_0 = 90mA P_0 = 491mW L_0 = 9mH (IIC) / 39mH (IIB) C_0 = 600nF (IIC) / 4000nF (IIB)
		Ui = $30V$ Ii = $10mA$ Pi = $0.3W$ Ci = $6nF$ Li = $5\mu H$	$\begin{array}{llllllllllllllllllllllllllllllllllll$
ΗΑ, ΤΑ	No. 26, 27	1) <u>Profibus PA (Fisco Field</u> <u>Device) /</u> <u>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</u> <u>Device) /</u> <u>Foundation Fieldbus</u> U _i = 32V I _i = 570mA P _i = 8.5W L _i = 10 μ H C _i = 5nF
MB, RB	No. 26, 27	$\frac{APL \text{ port profile SLAX / SPI}}{U_N = 30V_{DC}}$ $U_M = 250V_{AC}$	
MC, RC	No. 26, 27	$\begin{array}{l} \underline{1),3)}\\ \underline{2\text{-WISE power load}}\\ \underline{APL port profile SLAA}\\ U_i &= 17.5 \lor\\ I_i &= 380 mA\\ P_i &= 5.32 \lor\\ L_i &\leq 10 \mu H\\ C_i &\leq 5 n F \end{array}$	$\begin{array}{l} \underline{2),3)}\\ \underline{2\text{-WISE power load}}\\ \underline{APL \ port \ profile \ SLAC}\\ U_i &= 17.5 \lor\\ I_i &= 380 mA\\ P_i &= 5.32 \lor\\ L_i &\leq 10 \mu H\\ C_i &\leq 5 nF \end{array}$
NA, RA	IO1 / RJ45	$U_{N} = 30V_{DC}$ $U_{M} = 250Vac$	

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

applicable for products with approval code dd = BS, BM, BN
 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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С, G, К	No. 24, 25	$\begin{array}{llllllllllllllllllllllllllllllllllll$
B, D, E, F, I, J, L	No. 24, 25	$U_{N} = 30V_{DC}$ $U_{M} = 250V_{AC}$
Н	No. 24, 25	$\begin{array}{ll} U_{N} &= 30V_{DC} \\ I_{N} &= 100mA_{DC} / 500mA_{AC} \\ U_{M} &= 250V_{AC} \end{array}$

Input/Output 3		
Order Code h =	terminal no.	values
С, G, К	No. 22, 23	$\begin{array}{llllllllllllllllllllllllllllllllllll$
B, D, E, F, I, J, L	No. 22, 23	$U_{N} = 30V_{DC}$ $U_{M} = 250V_{AC}$
Н	No. 22, 23	$\begin{array}{l} U_N &= 30 V_{DC} \\ I_N &= 100 m A_{DC} / 500 m A_{AC} \\ U_M &= 250 V_{AC} \end{array}$

Input/Output 4			
Order Code	terminal no.	values	
i =			
C, G, K	No. 20, 21	$U_i = 30V$	
		li = 100mA	
		$P_i = 1.25W$	
		$L_i = 0$	
		$C_i = 0$	
B, D, E, F, I, J, L	No. 20, 21	$U_N = 30V_{DC}$	
		$U_{M} = 250 Vac$	
Н	No. 20, 21	$U_N = 30V_{DC}$	
		$I_{\rm N} = 100 \text{mA}_{\rm DC} / 500 \text{mA}_{\rm AC}$	
		$U_{M} = 250 V_{AC}$	

Service Interface		
Order Code dd =	terminal no.	values
BA, BB	Service Interface	 Service Interface shall only be installed 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





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		 to an intrinsically safe circuit with: Ui = 10V, Ii = n.a., Pi = na., Ci = 200nF, Li = 0
BC, BD	Service Interface	 Service Interface shall only be installed to an non intrinsically safe circuit with: U_N = 3.3V, U_M = 250V_{AC} or to an intrinsically safe circuit with: Ui = 10V, Ii = n.a., Pi = na., Ci = 200nF, Li = 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	$Uo = 3.9V$ $Io = 1.5A (spark)$ $200mA (power)$ $Po = 600mW$ $Ri = 2.6\Omega$ $Co = 670\mu F$ $Lo = 0$
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 $L/R = \le 0.024 \text{ mH}/\Omega$ shall be used.
- Remote display type DKX001 or ODKX001 is not intended to be connected to the transmitter electronics with approval code dd = BI, BJ, BL, BM, BN

Promass and Cubemass Remote Transmitter and Remote Sensor:

8***** and O8***** with order code d	d = BA, BI	B, BC, BD in combination with k = B (ISEM in transmitter):
Transmitter terminal board:		
Terminals 41, 42	->	exciter coil circuit: Uo = 15V, Io = 129mA, Po = 484mW (sensor group A1/C1/E1) or Uo = 15V, Io = 46mA, Po = 173mW (sensor group B1/D1/H1)
Terminals 9, 10, 11, 12, X3, X4	->	temperature circuit: Uo = 15V, Io = 18.2mA, Po = 68.3mW
Terminals 4, 5, 6, 7	->	sensor coil circuit: Uo = 15V, Io = 15.2mA, Po = $57mW$





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Only for Promass Q DN ≥ 150 (Dual ISEN Terminals 41, 42, X1, X2	M): ->	exciter coil circuit: Uo = 15V, Io = 129mA, Po = 484mW (sensor group E1) or Uo = 15V, Io = 46mA, Po = 173mW (sensor group B1/D1/H1)
Terminals 9, 10, 11, 12, X3, X4	->	temperature circuit: Uo = 15V, Io = 18.2mA, Po = 68.3mW
Terminals 4, 5, 6, 7, X5, X6, X7, X8	->	sensor coil circuit: Uo = 15V, Io = 15.2mA, Po = 57mW
Sensor terminal board:		
Terminals 41, 42	->	exciter coil circuit: Ui = $15V$, Ii = $129mA$, Pi = $484mW$ (sensor group A1/C1/E1) or Ui = $15V$, Ii = $46mA$, Pi = $173mW$ (sensor group B1/D1/H1)
Terminals 9, 10, 11, 12,X3, X4	->	temperature circuit: Ui = $15V$, Ii = $18.2mA$, Pi = $68.3mW$
Terminals 4, 5, 6, 7	->	sensor coil circuit: Ui = 15V, Ii = 15.2mA, Pi = 57mW
Only for Promass Q DN ≥ 150 (Dual ISE	<i>A</i>).	
Terminals 41, 42, X1, X2	->	exciter coil circuit: Ui = 15V, Ii = 129mA, Pi = 484mW (sensor group E1) or Ui = 15V, Ii = 46mA, Pi = 173mW (sensor group B1/D1/H1)
Terminals 9, 10, 11, 12, X3, X4	->	temperature circuit: Ui = 15V, li = 18.2mA, Pi = 68.3mW
Terminals 4, 5, 6, 7, X5, X6, X7, X8	->	sensor coil circuit: Ui = 15V, Ii = 15.2mA, Pi = 57mW

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

Cable inductance ≤ 0.5 mH/km Cable capacitance $\leq 0.5 \mu$ F/km

8***** and O8***** with order code d	d = BS ii	n combination with $k = B$ (ISEM in transmitter):
Transmitter terminal board:		
Terminals 41, 42	->	exciter coil circuit:
		$U_N = 15 \text{ V}, I_N = 100 \text{ mA}$ (sensor group A2/C2) or
		$U_N = 15 \text{ V}, I_N = 72 \text{mA}$ (sensor group B2/D2) or
		$U_N = 15 \text{ V}, I_N = 25 \text{mA}$ (sensor group E2) or
Terminals 9, 10, 11, 12, X3, X4	->	temperature circuit:
		U _N = 15 V, I _N = 18.2mA
Terminals 4, 5, 6, 7	->	sensor coil circuit:
		$U_N = 15 V, I_N = 15.2 mA$
Only for Promass Q DN ≥ 150 (Dual IS	EM):	
Terminals 41, 42, X1, X2	->	exciter coil circuit:





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Terminals 9, 10, 11, 12, X3, X4 Terminals 4, 5, 6, 7, X5, X6, X7, X8	->	$ \begin{array}{l} U_N = 15 \ V, \ I_N = 100 \text{mA} \ (\text{sensor group A2/C2}) \\ \text{temperature circuit:} \\ U_N = 15 \ V, \ I_N = 18.2 \text{mA} \\ \text{sensor coil circuit:} \\ U_N = 15 \ V, \ I_N = 15.2 \text{mA} \end{array} $		
Sensor terminal board:				
Terminals 41, 42	->	exciter coil circuit: $U_N = 15 V$		
Terminals 9, 10, 11, 12, X3, X4	->	temperature circuit: $U_N = 15 V$		
Terminals 4, 5, 6, 7	->	sensor coil circuit: $U_N = 15 V$		
Only for Promass Q DN ≥ 150 (Dual ISEI	M):			
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: $U_N = 15 V, I_N = 18.2 mA$		
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):				
<u>Transmitter terminal board:</u> Terminals 61, 62, 63, 64	->	Uo = 13.8V, Io = 1.156A, Po = 3.3W		
Sensor terminal board:				
Terminals 61, 62, 63, 64	->	Ui = 14V, Ii = 1.2A, Pi = 3.4W		
For interconnection of transmitter to sensor any cable may be used with the following requirements:				

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

• $L_{cable} \le 26\mu$ H and $C_{cable} \le 760$ nF for group IIC, $L_{cable} \le 104\mu$ H and $C_{cable} \le 4.2\mu$ F for group IIB

<u>8*****</u>-... and O8*****-... 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	->	$U_{N} = 3.3V$



Г



3.2. Thermal Parameters (Zone 1)

Proline P <u>Notes:</u> Pag								ing:	8*3B** –		on cC		O8*3B** – d A: dd = CC (: dd = BA	, CD, C		C2, C3,		xx – dd			O8x3B	xx – dd.		
Tempera	ture table	e for v	ersion	s with	sensor	not ins	ulated																	
Sensor	Size / DN	Tm min (°C)	max (°C)	T _{a.max} (°C)	T6 (85°C)	T5 (100°C)	T _{med.max} T4 (135°C)	(°C) T3 (200°C)	T2 (300°C)	T1 (450°C)		Sensor	Size / DN	T _n min (°C)	max (°C)	T _{a.max} (°C)	T6 (85°C)	T5 (100°C)	T _{med.n} T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)		
Promass	0104	-50	205	50	50	95	130	150	205	205	ľ	Promass	8, 15	-50	150	50	50	95	130	150	150	150	1	
A Cubemass	0106	-50	205	60 50	50	95 95	130 130	150 150	205 205	205 205		1	15FB, 25 25FB, 40	-50	150	60 50	 50	95 85	120 120	(150) 150	(150) 150	(150) 150		
C Promass	0850	-50	205	60 50	 50	95 100	130 130	150 130	205 205	205 205			40FB, 50 50FB, 80	-50	150	60 50	 50	85 85	120 120	(150) 150	(150) 150	(150) 150	-	
E				55 60		80 (80)	100 (100)	130 (130)	205 (205)	205 (205)	ŀ	Promass	80250	-50	205	60 50	 50	85 75	120 110	(150) 170	(150) 205	(150) 205		
	80	-50	205	50	50	75	110	170	205	205		0	00250	-50	205	55		75	110	170	205	205		
				55 60		75 (75)	110 (110)	170 (170)	205 (205)	205 (205)	ŀ	Promass	350	-50	205	60 50	 50	75 90	110 120	170 170	(205) 205	(205) 205		
Promass F	0815	-50	150	50 60	50	95 95	130 130	150 150	150 150	150 150		х				55 60		90 (90)	120 (120)	170 (170)	205 (205)	205 (205)	-	
		-50	240	50	50	95	130	160	240	240	ľ	Promass	25250	-50 /	240	50 60	50	75	110	160	240	240	1	
		-200	240	60 50	50	95 95	130 100	160 160	(240) 240	(240) 240	ŀ	Notes:				spectively			110	160	240	240	-	
	1525	-50/	350	60 50	 45	95 95	100 130	160 175	(240) 275	(240) 350			(2) values in the sense		s are ap	plicable fo	r installati	on where	the transi	mitter is no	ot installed a	above		
	2540	-200	150	60 50	50	95 95	130 130	175 150	275 150	350 150			(3) for applic see name		sion with	h maximur	n medium	temperat	tue and m	inimum m	edium temp	erature		
	2340			60		95	130	150	150	150													-	
		-50	240	50 60	50	95 95	130 130	170 170	240 (240)	240 (240)	[Postriot	ion of Ta,r	nin fa	r vorci	ione us	nd at T	mod mi	n < 50	· ~				
		-200	240	50 60	50	95 95	100	170 170	240 (240)	240 (240)	ļ	Tmed.min	-50°C	-75		-100°C	-12		-150°C	-175°	0 20	0°C		
	50	-50	150	50 60	50	95 95	130 130	150 150	150 150	150 150	ļ	Ta,min	-50°C	-47	°C	-45°C	-43	°C	-41°C	-39°C	-37	°C		
		-50	240	50	50	95	130	160	240	240		Notes:	(1) This table and for a			ily for the i en the flow						sures		
		-200	240	60 50	 50	95 95	130 100	160 160	(240) 240	(240) 240														
	80250	-50	150	60 50	 50	95 75	100 110	160 150	(240) 150	(240) 150														
		-50	240	60	50	75	110 110	150 170	150 150 240	150 150 240	_													
				50 60		75	110	170	(240)	(240)	Aen	derungen: A B	10.05.2018			.2021 / Bn .2023 / DOI		etzlichen Urh eichnung darf	eberrechte. vo ohne unsere	orbehalten.	Ersetzt duro	sh:		
		-200	240	50 60	50	75 75	110 110	170 170	240 (240)	240 (240)		c	03.05.2017		1				vervielfältigt v Konkurrenzfir		Ersatz für: Ersteller: F8			
	50250	-50 / -200	350	50 60	45	85 85	120 120	175 175	275 275	350 350		E	04.07.2018		(ig gemacht w					3\G\FES0263G	- changes.doc
Promass	8	-50 /	205	50	50	65	100	160	205	205	Co	ntrol Dra	wing IECE		ΈX, C	CSA, cC	SAus				Gezeichnet	10	.05.2016	Bn
н	1550	-200 -50 /	205	60 50	50	65 75	100 115	160 180	205 205	205 205	Zo	ne 1. Zor	ne 21, Cl.I	Div. 1	1. CLI	. CLIII	CLI Zo	ne 1						
Promass	8	-200 -50	150	60 45	45	75 65	115 100	180 150	205 150	205 150		ermal Pa	,		.,	,,	0				Geprüft			
S, P		-50	205	60 45	45	65 65	100	150 160	150 205	150 205											Ex-geprüft	15	07.2023	DOMI
	15 50			60		65	100	160	205	205	Pro	oline Pror	mass 300	500, I	Prolin	e Cube	mass 3	300/50	D		Gesehen			
	1550	-50	150	50 60	50	75 75	115 115	150 150	150 150	150 150														•
		-50	205	50 60	50 	75 75	115 115	180 180	205 205	205 205		E	Flowte	c AG. K	(ägenst	rasse 7,	CH-4153	Reinac	h BL 1. P	ostfach	FES	5026	63G	1/6





											ued of previous page
Tempera	ature table	e for v	ersion	s with s	sensor	insulate	ed (for in	sulation	refer to	manual	al of Endress+Hauser Flowtec)
Sensor	Size / DN	T,	med	T _{a.max}			T _{med.m}	_{ax} (°C)			Sensor Size / DN T _{med} T _{a.max} T _{med max} (°C)
		min	max		T6	T5	T4	T3	T2	T1	min max T6 T5 T4 T3 T2 T1
Dramasa	01 04	(°C) -50	(°C) 205	(°C) 50	(85°C)	(100°C) 95	(135°C) 130	(200°C) 150	(300°C) 205	(450°C) 205	
Promass	0104	-50	205	55	50	(95)	(130)	(150)	(205	(205)	
Cubemass	01 06	-50	205	50		95	130	150	205	205	
C			200	55		(95)	(130)	(150)	(205)	(205)	
Promass	08 50	-50	205	50	50	100	130	130	205	205	Promass 25250 -50 / 240 50 50 75 110 160 240 240
E				55		(100)	(130)	(130)	(205)	(205)	
	80	-50	205	45	50	75	110	170	205	205	
				50 55		75 (75)	(110)	170 (170)	205 (205)	205 (205)	(2) values in brackets are applicable for installation where the transmitter is not installed above the sensor
Promass	08 15	-50	150	55	50	95	130	150	(205)	(205)	 (3) for applicable version with maximum medium temperatue and minimum medium temperature
F	00 15	-30	150	60		95	110	(150)	(150)	(150)	
•		-50 /	240	50	50	95	130	160	240	240	
		-200		55		95	(130)	(160)	(240)	(240)	
				60		95	110	110	110	110	(for insulation not in compliance to manual of Endress+Hauser Flowtec)
	15 25	-50 /	350	50	45	95	130	175	275	350	Sensor Size / DN T to be measured at reference point at
	25 40	-200 -50	150	60 50		95 95	130 130	175 150	275 150	350 150	Sensor Size / DN T _{max} to be measured at reference point at sensor neck (°C)
	25 40	-50	150	60	50	95	110	(150)	(150)	(150)	
		-50 /	240	50	50	95	130	170	240	240	(85C) (100°C) (135°C) (200°C) (300°C) (450°C)
		-200	2.0	55		95	(130)	(70)	(240)	(240)	all all 59 72 75 76 77 77
				60		95	110	110	110	110	Notes: (1) for safe use temperatures shall not exceed all of the following:
	50	-50	150	50	50	95	130	150	150	150	 temperature table for versions with sensor not insulated (refer to table above) temperature at reference point as listed in this table
				60		95	110	(150)	(150)	(150)	- Ta,min = -40°C, -50°C respectively (see nameplate)
		-50 / -200	240	50	50	95	130	160	240	240	for maximum medium temperatue and minimum medium temperature see namenlate
		-200		55 60		95 95	(130)	(160)	(240)	(240)	(2) location of reference point
	80 250	-50	150	50	50	75	110	150	150	150	reference point
				60		75	110	(150)	(150)	(150)	
		-50 /	240	50	50	75	110	170	240	240	
		-200		55		75	110	(170)	(240)	(240)	
	50 250	50.4	050	60	45	75	110	110	110 275	110 350	
	50 250	-50 / -200	350	50 60	45	85 85	120 120	175 175	275	350	Restriction of Ta,min for versions used at Tmed,min < -50°C
Promass	8	-50 /	205	50	50	65	100	160	205	205	Tmed,min -50°C -75°C -100°C -125°C -150°C -175°C -200°C
н	-	-200		55		65	100	(160)	(205)	(205)	
				60		65	100	100	100	100	Notes: (1) This table is applicable only for the Proline Promass 300 with Ex db or XP rated enclosures and
	15 50	-50 /	205	50	50	75	115	180	205	205	for a short period when the flowmeter is switched on until it is heated up
		-200		55		75	115	(180)	(205)	(205)	Aerderdingen: A 10.05.2010/ Bit F 09.00.2021/ Bit
Promass	8	-50	150	60 45	45	65	115	115 150	115	115 150	B 24.10.2016 / Bn G 15.07.2023 / DOMI Dese Zeichnung darf ohne unsere
S. P	г С	-30	150	50	45	65	100	150	150	150	C 03.05.2017 / Bn H Genehmigung weder vervielfätigt werden noch Ersatz für:
, ·				60		65	100	125	(150)	(150)	D 04.07.2018 / Bn J dritten Personen und Konkurrenzfirmen Ersteller: FES / Bn
		-50	205	45	45	65	100	160	205	205	E 22.10.2019 / Bn K zugängig gemacht werden. FILE: M:1Zeichngl/FES0263/G/FES0263/G
				50		65	100	160	205	205	Control Drawing IECEx, ATEX, CSA, cCSAus Gezeichnet 10.05.2018
	10.00			60		65	100	115	(205)	(205)	Gezeld met
	15 50	-50	150	50 60	50	75	115	150 125	150 (150)	150 (150)	Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1
		-50	205	50		75	115	125	205	(150) 205	
		-30	203	60		75	115	(150)	(150)	(150)	Thermal Parameter Ex-geprüft 15.07.2023
Promass	8, 15	-50	150	50	50	95	130	150	150	150	
I	15FB, 25			60		95	120	(150)	(150)	(150)	Proline Promass 300/500, Proline Cubemass 300/500
	25FB, 40	-50	150	50	50	85	120	150	150	150	
	40FB, 50			60		85	120	(150)	(150)	(150)	
	50FB, 80	-50	150	50	50	85	120	150	150	150	FES0263G
	1		I	60		85	120	(150)	(150)	(150)	FLOUZOJO





Proline P	romass	A/E/F/H	/I/O/P	/Q/S/)	(500		Pr	oline (Cubem	ass C {	500												
Notes: Page	es 3 and 4	apply to ve	ersions	with ex	tended	order coo	le coveri			d******B	 n cCSAus / CS	O8*5*** – A: dd = C			2, C3, 0		x – dd**'	*****B		O8x5B	xx – dd*****	**B	
											IECEx / ATE	X: dd = B	A, BB, BC	C, BD									
Temperat	ture table	for vers	ions v	vith se	nsor n	ot insu	lated																
Sensor	Size / DN	T _{mec} min	max	T _{a.max}	T6	T5	T _{med.} T4	_{лах} (°С) Т3	T2	T1	Sensor	Size / DN	T _m	max	T _{a.max}	Т6	T5	T _{med.m} T4	_{ах} (°С) Т3	T2	T1		
		(°C)	(°C)	(°C)	(85°C)	(100°C)	(135°C)	(200°C)	(300°C)	(450°C)			(°C)	(°C)	(°C)	(85°C)	(100°C)	(135°C)	(200°C)	(300°C)	(450°C)		
Promass A	01 04	-50	205	60	60	95	130	150	205	205	Promass I	8, 15 15FB, 25	-50	150	60	60	95	130	150	150	150		
(type 8A5B) Promass	01 04	-50	205	55	55	95	130	150	205	205		25FB, 40, 40FB, 50,	-50	150	60	70	85	120	150	150	150		
A (type				60		95	130	150	205	205	Promass	50FB, 80 80 250	-50	205	60	60	75	110	170	205	205		
8A5C) Cubemass C	01 06	-50	205	50 60	50	95 95	130 130	150 150	205 205	205 205	O Promass X	350	-50 / -60	205	60	70	90	120	170	205	205		
Promass E	08 50	-50	205	50 50 60	50	100	130 130	130	205	205	Promass	25 250	-50 / -60 / -200	240	60	55	75	110	160	240	240		
	80	-50	205	60	60	75	110	170	205	205	Notes:	 Ta,min = for appli 	-40°C, -50	°C / -60°	C respec	tively (see	e namepla	te)		lium tomas	ratura		
Promass F	08 15	-50 / -60	150	55 60	50	95 95	130 130	150 150	150 150	150 150		(2) for appli see nam		an with fi	aAmum	neuidin te	mperatue	, and mini	mum mec	aam tempe	ature		
		-50 / -60 /	240	55	50	95	130	160	240	240	1												
	15 25	-200 -50 / -200	350	60 60	70	95 95	130 130	160 175	240 265	240 350													
	25 40	-50 /	150	55	55	95	130	150	150	150													
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		-200	240	60		95	130	170	240	240	·						_						
	50	-50 / -60	150	55 60	55	95 95	130 130	150 150	150 150	150 150	Transmitte	er for all ve											
		-50 / -60 / -200	240	60	60	95	130	170	240	240		T6 (85°C)	T _{a.max} (°0	C)	T5 (100°	C)	_						
	80 250	-50 /	150	55	55	75	110	150	150	150		55			60								
		-60 -50 / -60 / -200	240	60 60	60	75 75	110 110	150 170	150 240	150 240	Notes: (1)	Ta,min = -50	°C (for limit	ation see	e name pl	ate)							
	50 250	-50 / -200	350	60	70	85	120	175	265	350													
Promass H	8	-50 / -200	205	50 60	50	65 65	100	160 160	205	205													
	15 50	-50 / -200	205	60	60	75	115	180	205	205	Aenderungen:	A 10.05.201 B 24.10.201	l6/Bn G		021 / Bn 023 / DON	I Diese Zei	chnung darf c			Ersetzt duro	h:		
Promass S, P	8	-50	150	45 60	45	65 65	100 100	150 150	150 150	150 150		C 03.05.201 D 04.07.201		-				ervielfältigt we onkurrenzfirm		Ersatz für: Ersteller: FB	S/Bn		
3, 14		-50	205	45	45	65	100	160	205	205		E 22.10.201		+		zugängig	gemacht wer	den.			ng\FES0263\G\FE	ES0263G	- changes.do
	45 40			60		65	100	160	205	205	Control Dra			EX. C	SA, cC	SAus				Gezeichnet	10.05.2	016	Bn
	15 40	-50	150	50 60	50	75 75	115 115	150 150	150 150	150 150				,						Gezeichnet	10.00.2	- 10	2
		-50	205	50 60	50 	75 75	115 115	180 180	205 205	205 205	Zone 1, Zo		.i Div. 1	, CLII,	CLIII,	ULI ZOI	ne 1			Geprüft			
	50	-50 -50	150 205	60 60	60 60	75 75	115 115	150 180	150 205	150 205	Thermal Pa	arameter								Ex-geprüft	15.07.2	023	DOMI
	I	-30	200	00	00	13	113	100	200	200	Proline Pro	mass 30	0/500, F	roline	Cuber	nass 3	00/500			Gesehen			
											E	Flowt	ec AG, Ki	agenstra	asse 7. (CH-4153	Reinach	BL1. Pa	ostfach	FES	60263	G	3





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									С	ontinu	ed of previous page					
Temperatu	ire table fo	r version	s with	sensor	insulat	ed (for i	nsulation	refer to ı	manual o	f Endres:	s+Hauser Flowtec)					
Sensor	Size / DN	Tmer		Tamax			T _{med.m}	_{ax} (°C)			Sensor Size / DN T _{med} T _{a.max} T _{med.max} (°C)					
		min	max		T6	T5	T4	T3	T2	T1	min max T6 T5 T4 T3 T2 T1					
		(°C)	(°C)	(°C)	(85°C)	(100°C)	(135°C)	(200°C)	(300°C)	(450°C)	(°C) (°C) (°C) (85°C) (100°C) (135°C) (200°C) (300°C) (450°C)					
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Promass	01 04															
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type 8A5C) Cubemass	01 06	50	205													
505611035	0100	-50	205													
Promass	08 50	-50	205	50			130	130	205	205						
E									205							
	80										Temperature table for versions with sensor insulated					
romass	08 15		150								(for insulation not in compliance to manual of Endress+Hauser Flowtec)					
F			240													
			240													
	15 25	525 -50 / .200 350 60 70 95 130 175 265 350 540 -50 / .60 -55 55 95 130 150 160 172 84 91 91 91 150 150 150 150 <td< td=""></td<>														
	-200 60 95 130 160 240 240 15 -200 -60 -60 -70 95 130 175 265 350 -750 / 150 155 55 95 130 150 150 150 150 150 -50 / -60 / 240 55 55 95 130 170 240 240 -10															
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	80 250															
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	-60 60 95 130 150 150 150 - for maximum medium temperature see															
	50 250	-50 / -60 / -200 240 60 60 95 130 170 240 240 -200 -														
Promass	8 -307 203 30 30 03 100 100 203 203															
H	0	-200	205	60		65	100	160	205	205						
	15 50	-50 /	205	60	60	75	115	180	205	205	Transmitter for all versions:					
Promass	8	-200 -50	150	45	45	65	100	150	150	150	T _{a.max} (°C) T6 (85°C) T5 (100°C)					
S, P	0	-30	150	60	45	65	100	150	150	150	<u>T6 (85°C)</u> <u>T5 (100°C)</u> 55 <u>60</u>					
0,1		-50	205	45	45	65	100	160	205	205	Notes: (1) Ta.min = -50°C (for limitation see name plate)					
				60		65	100	160	205	205						
	15 40	-50	150	50	50	75	115	150	150	150	Aenderungen: A 10.05.2018 / Bn F 09.06.2021 / Bn Alle gesetzlichen Urheberrechte. vorbehalten. Ersetzt durch:					
		-50	205	60 50	 50	75 75	115 115	150 180	150 205	150 205	B 24.10.2016 / Bn G 15.07.2023 / DOMI Diese Zeichnung darf ohne unsere					
		-50	205	60	50	75	115	180	205	205						
	50	-50	150	60	60	75	115	150	150	150	D 04.07.20187 Bn 3					
		-50	205	60	60	75	115	180	205	205						
Promass	8, 15 15FB, 25	-50	150	60	60	95	130	150	150	150	Control Drawing IECEx, ATEX, CSA, cCSAus Gezeichnet 10.05.2016 Bn					
	25FB, 40, 80	-50	150	60	70	85	120	150	150	150	Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.II, Cl.I Zone 1					
Promass D	80 250	-50	205	60	60	75	110	170	205	205	Thermal Parameter Ex-geprüft 15.07.2023 DOMI					
											Proline Promass 300/500, Proline Cubemass 300/500					
											Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach					





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Sensor	Size / DN	Τ.	ed .	Tamax			Treed or	(°C)			Sensor	Size / DN	т		Tamax			т	_{sd.max} (°C)						
	0.201 0.11	min (°C)	max (°C)	(°C)	T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)	0011001	01207 011	min (°C)	max (°C)	(°C)	T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)				
Promass	0104	-50	205	35	40	90	90	150	150	150	Promass	25 250	-50 /	240	35	40	55	100	160	240	240				
A				40		90	90	150	150	150	Q		-200		50		55	100	160	240	240				
				45			90	150	150	150	Promass	8	-50 /	205	35	40	65	100	160	205	205				
				50			90 150 150 150 90 120 120 120 120 120 120 120 120 120 120 120 120 120 120 155																		
Cubemass C	01 06	-50	205	35 40	40		90 150 150 150 150 90 120 150																		
0				40				100 150 <td></td>																	
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Promass	08 50	-50	205	35	40	55	130	160	120 120 120 55 115 180 205 205 205 205 205 205 (2) for applicable version with maximum medium temperatue and minimum medium temperature see nameplate) 205 205 205 205 205 205 205 130 130 130 130																
E				50		55					(2	2) for applicable version with maximum medium temperatue and minimum medium temperature see nameplat iture table for versions with sensor insulated													
	80	-50	205	35	40						T	4					4 a al								
Promass	0840	-50	150	50 35	40													loutee)							
FIOIIIass	0040	-50	150	45	40						(IOI IIISUIA	auon not in c	ompilai	nce to n	ianuai o	I Endress	Thauserr	lowlec)							
				50							Sensor	Size / DN			T _{max} t	to be meas	ured at refe	rence point	at sensor ne	eck (°C)					
		-50 /	240	35	40	60	130	170	240			T6 T5 T4 T3 T2 T1 (80°C) (100°C) (135°C) (200°C) (300°C) (450°C) all 45 64 82 82 85 85 (1) for safe use temperatures shall not exceed all of the following: 5 5 5 5													
		-200		45		60						T6 T5 T4 T3 T2 T1 (80°C) (100°C) (135°C) (200°C) (300°C) (450°C) all 45 64 82 82 85 85 (1) for safe use temperatures shall not exceed all of the following: - temperature table for versions with sensor not insulated (refer to table above) - temperature at reference point as listed in this table - Ta_min = -40°C, -50°C respectively (see nameplate)													
	50		150	50								T6 T5 T4 T3 T2 T1 (80°C) (100°C) (135°C) (200°C) (300°C) (450°C) all 45 64 82 82 85 85 (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 -													
	50	-50	150	35 45	40	60 60	130	130	130 130		all (80°C) (100°C) (135°C) (200°C) (330°C) (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 to this table - Ta,min = -40°C, -50°C respectively (see nameplate) - for maximum medium temperature and minimum medium temperature see nameplate (2) location of reference point														
				50			130	130	130																
		-50 /	240	35	40	60	130	160	240	240		Notes: (1) for safe use temperatures shall not exceed all of the following: - temperature table for versions with sensor not insulated (refer to table above) - temperature at reference point as listed in this table - Ta,min = -40°C, -50°C respectively (see nameplate) - for maximum medium temperature and minimum medium temperature see nameplate													
		-200		45		60	130	160	240	240															
				50			130	160	240																
	15 25	-50 /	350	35	40	80	130	175	275		240 (80°C) (100°C) (135°C) (200°C) (300°C) (450°C) 240 all all 45 64 82 82 85 85 130 130 . . . temperature shall not exceed all of the following: .<														
		-200		50 60		80	130 130	175 175	275 240																
				00			130	1/5	(275)																
	80 250	-50	150	35	40	60	110	130	130																
				45		60	110	130	130			es: (1) for safe use temperatures shall not exceed all of the following: - temperature table for versions with sensor not insulated (refer to table above) - temperature at reference point as listed in this table - Ta,min = -40°C, -50°C respectively (see nameplate) - for maximum medium temperature and minimum medium temperature see nameplate (2) location of reference point (2) location of reference point se of enclosure T _{a,max} (°C) Ordinary location T6 (85°C) T5 (100°C) T4 (135°C)													
				50			110	130	130		Transmitte														
		-50 / -200	240	35 45	40	60 60	110 110	170 170	240 240		Type of encl														
		-200		50			110	170	240	240			Ordina	n locatio		T6 /8			00°C)	T4 /1	35°C)	1			
	50 250	-50 /	350	35	40	80	120	175	275	350	aluminium			60	-		,	· ·	45		33 C) 60	1			
		-200		50		80	120	175	275	350							-		+5		50	-			
				60			120	175	240	240	plastic			60						-					
Deamana	8	50	450	35	40		400	450	(275)	(350)	Notes: (1)	aluminium er				(for limitati	on see name	e plate)							
Promass S, P	°	-50	150	45	40	55 55	100	150 150	150 150	150 150		plastic enclos	sure: ra,	.min = -4(0.0							1			
0,1				50			100	120	120	120	Aenderungen:	A 10.05.20			.06.2021 /	DIT	gesetzlichen Urhe		ehalten. Ers	setzt durch:					
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			[50		55	100	160	205	205	1	C 03.05.20		н			hmigung weder			satz für:					
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	15 50	-50	150	35 45	40	55 55	110 110	150 150	150 150	150 150		E 22.10.20		К		-	ingig gemacht w	erden.	FIL	E: M:\zeichng\FES	50263(GVFES02630	 changes.doc 			
			ł	45 50		55	110	150	150	150	Control D	rawing IE	CEx, /	ATEX,	CSA,	cCSAus	6		6	zeichnet	10.05.2016	Bn			
		-50	205	35	40	55	100	180	205	205	I								L L			-			
				50		55	100	180	205	205	Zone 1, Z	one 21, C	I.I Div	/. 1, Cl	.11, Cl.1	II, CLI Z	cone 1		Ge	prüft					
				55			100	180	205	205	Thormal	Joromoter							- H	-					
Promass	8, 80	-50	150	35	45	70	90	150	150	150	Thermal F	-arameter	-						Ex	-geprüft	15.07.2023	DOMI			
1				45		70	90	150	150	150	Proline Pr			Dreli	no Cui	homoss	200/60/	n				+			
Promass	80 250	-50	205	50 35	40		90 110	120 170	120 205	205	Proline Pr	Unass 30	0/500	, PIOI	ne cu	bemass	500/300		Ge	isehen					
Fromass	00250	-50	205	35 50	40	55	110	170	205													1			
Promass	350	-50	205	35	40	55	120	170	205	205	205														
				50		55	120	170	205																
Х			1	50		22	120	1/0	203	Figure 1 Figure 2005 Figure 2005															





3.3. Thermal Parameters (Zone 2)

Promass	000							95	150	150	150		-										
_	8 80	Ex ec	-50	150	60 50		60	95 95	160 150	205	205		_								S02		1/1:
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S, P		/ NI	-50	205	60 50		80	115 115	150 170	150 205	150 205	Zone 2, 0		,	ne 2					Geprüft			
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			-200	F	55 60			95 95	160 160	240 170	240 170												
		/ NI	-200 -50 /	240	60 50		60	95 95	150 160	150 240	150 240												
	100250	Exec	-50 /	150	50		60	95	150	150	150												
				ľ	60			95	160	170 (240)	170 (240)												
			-50 / -200	240	50 55		60	95 95	160 160	240 240	240 240												
	5000	/ NI	-200		60			95	150	150	150												
	5080	Ex ec	-50 /	150	50		60	95	150	(240) 150	(240)												
			-200	ŀ	55 60			95 95	170 170	240 170	240 170												
		7.00	-50 /	240	50		60	95	170	240	240		3°C for a	mbient tempe	erature s	hall be ta	aken into	account					
	2540	Exec /NI	-50 / -200	150	50 60		60	95 95	150 150	150 150	150	(6) Versions	above the se with transmit	tter enclo				c) installe	d in tempe	rature cla	ss T5, a d	egree of
					60			115	170	170 (240)	170 (240)	(5) versions	with transmit	ter enclo							ansmitter	is not
			-200	240	55			115	170	240	240	(3) values in	brackets are num medium	applicat	ole for in	stallation	where the				ve the ser	nsor
F		/ NI	-200	240	60 50		80	115	150	150	150	(2	(tempera	ture table see -40°C, -50°C	e next pa	ige)				-			
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	25 80	Exec /NI	-50	205	50 55		80	95 95	140 140	205 205	205 205	Q		/ NI	-200		60			95	160	240	240
-	25 90		50	205	60			(115)	(140)	(205)	(205)	Promass	25250	Exec	-50 /	240	60 50			(95) 95	(160)	(205) 240	(205) 240
Promass E	08 15	Exec /NI	-50	205	50 55		80	115 115	165 165	205 205	205 205	Promass X	350	Ex ec / NI	-50	205	50 55		60	95 95	160 160	205 205	205 205
Cubemass C	01 06	Exec /NI	-50	205	50 60		90	130 130	140 140	205 205	205 205						60			95	160	180 (205)	180 (205)
A		/ NI			60			130	170	205	205	0	50200	/ NI	-00	200	55			95	160	205	205
Promass	01 04	protection Ex ec	(°C) -50	(°C) 205	(°C) 50	(85°C)		(135°C) 130	(200°C) 170	(300°C) 205	(450°C) 205	Promass	80250	protection Ex ec	(°C) -50	(°C) 205	(°C) 50	(85°C)	(100°C) 60	(135°C) 95	(200°C) 160	(300°C) 205	(450°C) 205
Sensor	Size / DN	Type of	T	ed max	T _{a.max}	T6	T5	T _{med.m}	_{nax} (°C) T3	T2	T1	Sensor	Size / DN	Type of	T, min	max	T _{a.max}	Т6	T5	T _{med.me} T4	_ж (°С) Т3	T2	T1
Tempera	ature table	e for vers	ions ir	1 type	of prot	tection	Ex ec	, AEx	ec or	Non-	incend	ive with sen	sor not	insulated									
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This page a	applies to ve	ersions with	n extend	led orde	er code	covering	E		8*3B** – with app		tion cCS					8x3Bx	x – dd			O8x3Bxx	– dd		
lotes:																							
				Q/S/X	300		Pr	oline	Cuben	nass C	: 300												





<u>lotes:</u> This page ap	oplies to ve	rsions with	extend	ed orde	er code	covering	[]		3*3B** – vith appr			O8*3B** us/CSA: do /ATEX: do	= CZ			8x3Bx	k – dd			O8x3Bxx	– dd		
Tempera	ture table	e for vers	ions i	n type	of pro	tection	Ex eq	c nC c	or AEx	ec nC	with se	nsor not in	sulated										
Sensor	Size / DN	Type of protection	T _m min (°C)	max (°C)	T _{a.max} (°C)	T6 (85°C)	T5 (100°C)	T _{med.} T4 (135°C)	max (°C) T3 (200°C)	T2 (300°C)	T1 (450°C)	Sensor	Size / DN	Type of protection	T _n min (°C)	max (°C)	T _{a.max} (°C)	T6 (85°C)	T5 (100°C)	T _{med.ma} T4 (135°C)	(°C) T3 (200°C)	T2 (300°C)	T1 (450°C)
Promass	01 04	Ex ec nC	-50	205	50 60		95	130 130	195	205	205	Promass O	80250	Ex ec nC	-50	205	50 55		95	130	195 195	205 205	205
Cubemass	01 06	Ex ec nC	-50	205	50 60		95	130 130 130	195	205 205 205	205 205 205	0					60			130	180	205 180 (205)	205 180 (205)
Promass E	08 15	Ex ec nC	-50	205	50 55		95	130 130	195 195	205	205 205	Promass X	350	Ex ec nC	-50	205	50 55		95	130 130	195 195	205	205
	25 80	Ex ec nC	-50	205	60 50		 95	(130) 130	(195) 195	(205) 205	(205) 205	Promass	25250	Ex ec nC	-50 /	240	60 50		 95	(130) 130	(195) 195	(205) 240	(205) 240
					55 60			(130)	195 (195)	205 (205)	205 (205)) type of p	rotection Ex e		d AEx eq		plicable o	only for se	130 nsor version	195 is without	240 purge conr	240 nection
Promass F	08 15	Ex ec nC	-50 / -200	150	50 60		95	130 130	150 150	150 150	150 150) Ta,min =	-40°C, -50°C					-				
		Image: Constraint of the sensor SS																	ve the sen	sor			
																				ansmitter is	not		
	25 80	Ex ec nC		150			95			150	150	(6							nic) installe	ed in tempe	rature cla	ss T5, a de	gree of
			-200	240	60 50		 95	130 130	150 195	150 240	150 240	(7) this temp	erature table	is not ap	plicable			n 2 versior	ns. For Clas	s I Divisio	n 2 version	s see
			-200	240	55 60			130 130	195 170	240 240 170	240 240 170		temperat	ure table on	bage 1/1	2							
	100250	Ex ec nC	-50 /	150	50		95	130	170	(240)	(240)												
	100250	Exectic	-200		60			130	150	150	150 150												
			-50 / -200	240	50 55		95	130 130	195 195	240 240	240 240												
			-200		60			130	170	170	170												
-	15250	Ex ec nC	-50 /	350	50		95	130	195	(240) 290	(240) 350												
Promass	8	Ex ec nC	-200 -50/	205	60 50		95	130 130	195 195	290 205	350 205												
н	15 50	Ex ec nC	-200	205	60 50		 95	130 130	195 195	205 205	205 205	A 10.05.201 B 24 10 201		22.10.2019 09.06.2021				eberrechte. v ohne unsere	orbehalten.	Ersetzt di	urch:		
Promass	8	Ex ec nC	-200	150	60 50		95	130 130	195 150	205 150	205 150	C 03.05.201	7 / Bn H	H 15.07.2023		Genehm	igung weder	vervielfältigt		Ersatz für			
S, P	•	EX CONC	-50	205	60 50		95	130 130	150 195	150 150 205	150 205	D 30.10.201 E 04.07.201		۱ ۲			ersonen und g gemacht w	Konkurrenzfi erden.	men		FES / Bn sichng\FES0;	264\G\FES0264	G.doc
	45 50	5			60			130	195	205	205			IECEx, A	TEX, (CSA,	CSAu	s		Gezeichn	et 1	0.05.2016	Bn
	15 50	Ex ec nC	-50	150	50 60		95 	130 130	150 150	150 150	150 150	Zone 2,	CI.I Div.	2, CI.I Zo	ne 2					Geprüft			
			-50	205	50 60		95	130 130	195 195	205	205 205	Thermal		,								5.07.2023	DOMI
Promass I	8 80	Ex ec nC	-50	150	50 55 60		95	130 130 (130)	150 150 (150)	150 150 (150)	150 150 (150)			300/500.	Prolin	e Cuł	oemas	s 300/	500	Ex-geprüf	π 1	0.07.2023	DOM
					60			(130)	(150)	(150)	(150)	1 1011101	.511035	550,000,		o out	Jonius	000/		Gesehen			1





<u>otes:</u> his page ap	oplies to ve	rsions with	n exten	ded ord	er code	coverin	g:		8*3B** – (with appro			O8*3B** us/CSA: do /ATEX: do		1		8x3Bxx –	dd			O8x3Bxx	– dd		
Tempera	ture tabl	e for ver	sions	in type	ofpro	otectio	n Ex e	ec, AE	x ec or	Non-i	incendi	Ve with ser	sor insu	lated (for	insulati	on refer t	to ma	inual of	Endres	s+Hause	r Flowt	ec)	
Sensor	Size / DN	Type of protection	T, min (°C)		T _{a.max}	T6 (85°C)	T5 (100°C)		max (°C) T3 (200°C)	T2 (300°C)	T1 (450°C)	Sensor	Size / DN	Type of protection	T min (°C)	max 1	r _{a.max}	T6 (85°C)	T5 (100°C)	T _{med.ma} T4 (135°C)	(°C) T3 (200°C)	T2	T1 450°C)
Promass	0104	Ex ec	-50	205	50		90	130 (130)	170 (170)	205 (205)	205 (205)	Promass Q	25250	Ex ec	-50 /	240	50 55		60 (40)	95	160	205 (240)	205 (240)
Cubemass	0106	/ NI Ex ec	-50	205	55 50		 95	130	195	205	205	Notes: (1		/ NI e coveres se	nsors with	type of pro	tection	n Ex ec, A	Ex ec and			sors with	
C Promass F	0815	/NI Exec /NI	-50	205	55 50 55		 80 	(130) 115 (115)	(170) 165 (140)	(205) 205 (205)	(205) 205 (205)	(2	(temper	protection Ex ature table se = -40°C, -50°	e next pa	ige) .			ions witho	ut purge co	nnection	or rupture di	isk
	2580	0 Ex ec /NI -50 205 50 60 95 140 205 205 (3) values in brackets are applicable for installation where the (4) for maximum medium temperatue and minimum medium t 5 Ex ec /NI -200 55 (95) (140) (205) (205) (4) for maximum medium temperatue and minimum medium t 60 95 115 150 150 (5) Versions with transmitter enclosure stainless steel (hygien (5) Versions with transmitter enclosure stainless steel (hygien)														temperatu	re see nam	eplate					
Promass F	0815			150 240									version:	s mur u anSIII	aut enclo	SUIC STAILIN	,33 SIC	er (nygler	nc/ are no	anowed to	oc məldi	ico with inst	nation
F	2540	Ex ec	-200 -50 /	150	55 50		 60	(115) 95	(170) 150	(240) 150	(240) 150						f pro	tection	Ex ec	, AEx e	ec or		
		/ NI -200 55 (95) (150) </td <td>s+Hause</td> <td>er Flowte</td> <td>C)</td> <td></td> <td></td>													s+Hause	er Flowte	C)						
	5080														:k (°C)								
		80 Ex ec / NI -200 55 60 95 150 150 150 150 50 60 95 150 150 150 150 50 / 240 50 (95) (150) (150) (150) (150) (150) 60 95 160 240 240 60 95 160 240 60 95 160 240 60 95 160 240 60 95 160 240 60 95 160 240 60 95 160												T3 (200°C)	T2 (300°	C)	T1 (450°C)						
	100250	-50 / 240 50 60 95 160 240 240 -200 55 (95) (160) (240) (240) (85°C) (100°C) (135°C) 250 Exec -50 / 150 50 60 95 150 150 150 all all 63°C 72°C / NI -200 55 60 95 160 150 150 150 150 all all all 63°C 72°C - / NI -200 55 60 95 160 240 240 - 63°C 72°C -														table abov		77°C					
F	15250	Exec /NI	-200 -50 / -200	350	55 50 60		 85 	(95) 120 120	(160) 185 185	(240) 280 280	(240) 350 350		- Ta,r - for r	nin = -40°C, - naximum me	50°C resp dium temp	pectively (se	ee nan	neplate)	um tempe	rature see r	nameplate	e	
Promass H	8	Exec /NI	-50 / -200	205	50 55		80 	115 (115)	165 (165)	205 (205)	205 (205)		(2) locati	on of referen	e point	×.			refere	ence point			
	1550 8	Exec /NI Exec	-50 / -200 -50	205 150	50 55 50		60 80	95 (95) 115	130 (130) 150	205 (205) 150	205 (205) 150				l								
S, P		/ NI	-50	205	55 50 55		 80 	(115) 115 (115)	(150) 170 (170)	(150) 205 (205)	(150) 205 (205)	A 10.05.201	6/Bn	F 22.10.201	U /Bn	Alle gesetzlic	hen Urhe	berrechte. vo	orbehalten.	Ersetzt di	urch:		
	15 50	Exec /NI	-50	150	50 55 60		60 	95 95 (95)	150 150 (150)	150 150 (150)	150 150 (150)	B 24.10.201 C 03.05.201	6 / Bn 7 / Bn	G 09.06.202 H 15.07.202	l / Bn	Diese Zeichn Genehmigun	g weder v	vervielfältigt v		Ersatz fü			
	-50 205 50 60 95 160 205 205 E 04.07.2018 S zugångig gemacht werden.													tichng\FES0	264\G\FES0264G	-							
Promass	8 80	Exec /NI	-50	150	60 50 60		 60 	(95) 95 (95)	(160) 150 (150)	(205) 150 (150)	(205) 150 (150)		-	2, CI.I Zo		USA, CU	JAU	5		Gezeichn	iet 1	10.05.2016	Bn
Promass O	80250	Ex ec / NI	-50	205	50 55		60	(95) 95 (95)	(150) 160 (160)	(150) 205 (205)	(150) 205 (205)	Thermal								Geprüft		5 07 0000	
Promass X	350	Exec /NI	-50	205	50 55		60 	95 (95)	160 (160)	205 (205)	205 (205)			300/500	Prolin	e Cube	mass	s 300/5	500	Ex-geprü Gesehen		15.07.2023	DOMI
																			-	Gesenen			





nis page ap	oplies to ve	rsions with	exten	ded ord	er code	covering	Ľ		8*3B** – with appr			O8*3B** us/CSA: dd c/ATEX: dd	= CZ		8	3x3Bxx – dd.		0	08x3Bxx - (dd		
Tempera	ture tabl	e for vers	ions i	n type	of pro	tection	Ex e	c nC c	or AEx	ec nC	with se	nsor insulat	ed (for in	sulation re	fer to m	anual of Er	dress+H	lauser Flo	owtec)			
Sensor	Size / DN	Type of protection	T, min (°C)	max (°C)	T _{a.max} (°C)	T6 (85°C)	T5 (100°C)	T _{med.} T4 (135°C)	max (°C) T3 (200°C)	T2 (300°C)	T1 (450°C)	Sensor	Size / DN	Type of protection	Tm min (°C)	ad Ta.ma max (°C) (°C)	T6	T5 (100°C)	T4	°C) T3 200°C) (T2 (300°C) (T1 (450°C)
Promass	01 04	Ex ec nC	-50	205	50 55		95	130 (130)	195 (195)	205 (205)	205 (205)	Promass	25250	Ex ec nC	-50 /	240 50		95 (40)	130	195	205	205 (240)
Cubemass	01 06	Ex ec nC	-50	205	50		95	130	195	205	205	Notes: (1				AEx ec nC is						
C Promass E	08 15	Ex ec nC	-50	205	55 50 55		 95 	(130) 130 (130)	(195) 195 (195)	(205) 205 (205)	(205) 205 (205)	(2	values ir	-40°C, -50°C brackets are	applicabl	vely (see name le for installatio	on where th				ve the sens	or
Promass	25 80 08 15	Ex ec nC Ex ec nC	-50 -50/	205	50 55 50		95 95	130 (130) 130	195 (195) 150	205 (205) 150	205 (205) 150	(4 (5	 Versions 	with transmit	tter enclos	ue and minimu sure stainless s plicable for Cla	steel (hygie	nic) are not	allowed to b	e installe		
F	vo 13	LX ec IIC	-200 -50 /	240	55 50		 95	(130) 130	(150) 195	(150) 240	(150) 240			ture table on j								
	25 80	Ex ec nC	-200 -50 / -200 -50 /	150 240	55 50 55 50		95 95	(130) 130 (130) 130	(195) 150 (150) 195	(240) 150 (150) 240	(240) 150 (150) 240	with se	nsor insi	ulated		n type of p th manual o			,		nC	
-	100250	Ex ec nC	-200 -50 / -200 -50 /	150 240	55 50 55 50		95 95	(130) 130 (130) 130	(195) 150 (150) 195	(240) 150 (150) 240	(240) 150 (150) 240	Sensor	Size / DN	і т6		T _{max} to be r	sensor ne		point at	, 	T1	
-	15250	Ex ec nC	-200 -50 /	350	55 50		95	(130) 130	(195) 195	(240) 290	(240) 350	all	all	(85°C)		00°C) (1	T4 35°C) 72 °C	T3 (200°C) 75°C	(300°C) 77°C		450°C) 77°C	
Promass H	8	Ex ec nC	-200 -50 / -200	205	60 50 55		 95 	130 130 (130)	195 195 (195)	290 205 (205)	350 205 (205)	Notes:	- temp	erature table	for versio	all not exceed ons with sensor oint as listed in	r not insulat		table above)			
	15 50	Ex ec nC	-200 -50 / -200	205	50 55		95	(130) (130)	(195) (195)	205 (205)	205 (205)		- Ta,n	nin = -40°C, -5	50°C resp	ectively (see n eratue and mir	ameplate)	lium temper	ature see na	meplate		
Promass S, P	8	Ex ec nC	-50	150 205	50 55 50		95 95	130 (130) 130	150 (150) 195	150 (150) 205	150 (150) 205		(2) locatio	on of referenc	e point			refere	ence point			
-	15 50	Ex ec nC	-50	150	55 50 55		 95 	(130) 130 130	(195) 150 150	(205) 150 150	(205) 150 150				þ							
			-50	205	60 50 55 60		95 	(130) 130 130 (130)	(150) 195 195 (195)	(150) 205 205 (205)	(150) 205 205 (205)	A 10.05.2016 B 24.10.2016 C 03.05.2017	3/Bn G	_	/ Bn	Alle gesetzlichen U Diese Zeichnung da Genehmigung wede	arf ohne unsere		Ersetzt durch	h:		
Promass	8 80	Ex ec nC	-50	150	50 60		95 	130 (130)	150 (150)	150 (150)	150 (150)	D 30.10.2017 E 04.07.2018	7/Bn J			dritten Personen un zugängig gemacht	d Konkurrenzfir		Ersteller: FE FILE: M:\Zeich		\G\FES0264G	.doc
Promass O	80250	Ex ec nC	-50	205	50 55		95	130 (130)	195 (195)	205 (205)	205 (205)				TEX, C	SA, cCSA	us		Gezeichnet	10.0	05.2016	Bn
Promass X	350	Ex ec nC	-50	205	50 55		95 	130 (130)	195 (195)	205 (205)	205 (205)	Zone 2, 0	CI.I Div.	2, CI.I Zor	ne 2				Geprüft			
												Thermal	Parame	ter					Ex-geprüft	15.0	07.2023	DOMI
												Proline P	romass	300/500,	Proline	e Cubema	ss 300/5	500	Gesehen			





<u>Notes:</u> This page ap	oplies to ve	rsions with	extend	ded ord	er code	covering			dd****** roval opti	on cCS	Aus / CSA: Ex / ATEX:	dd = CS,	– dd******* CZ	В	8	x5Bxx	– dd*****	***B	C	08x5Bxx –	dd****	****B	
Tempera Non-ine	iture table cendive						Ex e	, AEx	ec or														
Sensor	Size /	Туре	T	ed	$T_{a.max}$		1	T _{med.}	_{nax} (°C)			Sensor	Size /	Туре	T,	ed	T _{a.max}			T _{med.max} (°			
	DN	of protection	min (°C)	max (°C)	(°C)	T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)		DN	of protection	min (°C)	max (°C)	(°C)			T4 T 35°C) (200			T1 (0°C)
Promass	01 04	Ex ec	-50	205	50	50	95	130	170	205	205	Promass	80250	Ex ec	-50	205	45			95 16			205
A		/ NI			60		95	130	170	205	205	0	00200	/ NI	-30	200	60				50		205
Cubemass	01 06	Exec	-50	205	60		90	130	140	205	205	Promass	350	Ex ec	-50	205	45				50		205
C Promass	08 15	/NI Exec	-50	205	45	45	80	115	165	205	205	X Promass	25250	/ NI Ex ec	-50 /	240	60 45			95 16 95 16			205
E	00 15	/ NI	-50	205	60		80	115	165	205	205	Q	25250	/ NI	-200	240	45			95 16			40
	25 80	Exec /NI	-50	205	60		60	95	140	205	205	Notes: (1) this page rotection Ex (coveres sen	sors with		protection	n Ex ec, AE)	x ec and r	non-incendiv	e. Sen	sors with typ	e of
Promass F	08 15	Exec	-50 /	150	50 60	50	80	115 115	150	150 150	150 150		e next page			in the first							
F		/ NI	-200 -50/	240	50	 50	80	115	150 170	240	240		 Ta,min = for maxim 						mperature	see namep	late		
			-200	2.0	60		80	115	170	240	240	,											
[25 40	Ex ec	-50 /	150	45	60	60	95	150	150	150												
		/ NI	-200 -50 /	240	60 45	 60	60 60	95 95	150 170	150 240	150 240												
			-200	240	45 60		60	95	170	240	240												
ľ	50 80	Ex ec	-50 /	150	45	60	60	95	150	150	150												
		/ NI	-200		60		60	95	150	150	150												
			-50 /	240	45 60	60	60 60	95 95	160 160	240 240	240 240												
ŀ	100250	Ex ec	-200	150	45	60	60	95	150	150	150	Transmitt	er for all v	ersions:									
		/ NI	-200		60		60	95	150	150	150		Tan	nax (°C)									
			-50 /	240	45	60	60	95	160	240	240		T6		T5			T4	1				
ŀ	15250	Ex ec	-200 -50 /	350	60 60	70	60 85	95 120	160 185	240 280	240 350	(8	5°C)		(100°C)			35°C)	-				
		/ NI	-200							200					45			60	4				
Promass	8	Ex ec	-50 /	205	50	45	80	115	165	205	205	Notes: (1)	Ta,min = -4	0°C, -50°C r	espectiv	ely (see	name plat	te)					
н	15 50	/NI Exec	-200 -50 /	205	60 60		80 60	115 95	165 130	205 205	205												
	13 30	/ NI	-200	205	00		00	55	150	205	205												
Promass	8	Ex ec	-50	150	45	45	80	115	150	150	150	A 10.05.20	16/Bn	22.10.201	/ Po	Alle ons	etzlichen Urb	eberrechte. vorb	oehalten.	Ersetzt dur	-h-		
S, P		/ NI	-50	205	60 45	 45	80 80	115 115	150 170	150 205	150 205	B 24.10.20						f ohne unsere		LISELL OUN			
			-50	205	45 60	45	80	115	170	205	205	C 03.05.20		1 15.07.202		Genehm	nigung weder	vervielfältigt wer	rden noch	Ersatz für:			
ľ	15 50	Ex ec	-50	150	45	45	60	95	150	150	150	D 30.10.20	7/Bn J	J				Konkurrenzfirme	en	Ersteller: Fl			
		/ NI			60		60	95	150	150	150	E 04.07.20					ig gemacht w			FILE: M:\Zeic	hng\FES0	264\G\FES0264(3.doc
			-50	205	45 60	45	60 60	95 95	160 160	205	205 205	Control	Drawing	IECEX, A	TEX,	CSA,	cCSAu	JS		Gezeichnet		10.05.2016	Bn
Promass	8 80	Ex ec	-50	150	45	45	60	95	150	205	150					-7				Sezerumet			
1		/ NI			60		60	95	150	150	150		CI.I Div.		ne 2					Geprüft			
													Parame							Ex-geprüft		15.07.2023	DOMI
												Proline I	Promass	300/500	, Prolii	ne Cul	bemas	s 300/50	00	Gesehen			
												E	7	ec AG, Kāge		7.01				FES	502	64H	5





Proline P Notes:	romass	A/E/F/H	/I/O/P	(Q/S/)	500		P	roline	Cuberr	iass C	500										
This page a	ded ord	er code	covering		8*5*** – with app		ion cCS		O8*5* dd = CZ dd = BS							O8x5Bxx - dd******B					
Tempera	ature tabl	e for vers	sions	in type	of pro	tection	Exe	c nC c	or AEx	ec nC	with ser	nsor not i	insulate	ed							
Sensor	Size / DN	Type of	T. min	max	T _{a.max}	T6	Т5	T _{med.}	_{так} (°С) Т3	T2	T1	Notes:			ction Ex ec nC a r rupture disk	nd AEx ec nC	is applicable only	for sensor ver	sions witho	out purge	
Promass	01 04	protection Ex ec nC	(°C) -50	(°C) 205	(°C) 60	(85°C) 80	(100°C) 95	(135°C) 130	(200°C) 195	(300°C) 205	(450°C) 205		(3) for m	aximum	°C, -50°C respective medium temper	ratue and minir	num medium tem	perature see n	ameplate		
A Cubemass	01 06	Ex ec nC	-50	205	60	80	95	130	195	205	205				ure table is not a table on page 5/		Class I Division 2 v	Versions. For C	Jass I Divi	sion 2 versions	see
C Promass	08 15	Ex ec nC	-50	205	60	80	95	130	195	205	205										
E	25 80	Ex ec nC	-50	205	60	80	95	130	195	205	205										
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										
	100250	Ex ec nC	-50 / -200	150	60	80	95	130	150	150	150										
			-50 / -200	240	60	80	95	130	195	240	240										
_	15250	Ex ec nC	-50 / -200	350	60	80	95	130	195	290	350										
Promass H	8	ExecnC ExecnC	-50 / -200 -50 /	205 205	60 60	80 80	95 95	130 130	195 195	205	205	Transm	itter for a	all vers T _{a.max} (
Promass	8	Ex ec nC	-200 -200	150	60	80	95	130	195	150	150		T6 (85°C)	- almax v	T5 (100°C	,	T4 (135°C)				
S, P	15 50	Ex ec nC	-50 -50	205	60 60	80 80	95 95	130 130	195 150	205	205				45		60				
Promass	8 80	Ex ec nC	-50 -50	205	60 60	80 80	95 95	130 130	195 150	205	205	Notes: (1	(1) Ta,min = -40°C, -50°C respectively (see name plate)								
Promass	80250	Ex ec nC	-50	205	60	80	95	130	195	205	205										
O Promass	350	Ex ec nC	-50	205	60	80	95	130	195	205	205		016 / Bn 016 / Bn		2.10.2019 / Bn 19.06.2021 / Bn	-	n Urheberrechte. vorbeh: g darf ohne unsere	alten. Erset	izt durch:		
X Promass Q	25250	Ex ec nC	-50 / -200	240	60	80	95	130	195	240	240	C 03.05.2 D 30.10.2	017 / Bn 017 / Bn	H 1 J	5.07.2023 / DOMI	Genehmigung	veder vervielfältigt werde n und Konkurrenzfirmen	Erste	ller: FES / I	Bn 50264\G\FES0264G	dae
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												Therma	, 	,				Ex-ge		15.07.2023	DOMI
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Proline Promass A/E/F/H/I/O/P/Q/S/X 500 Proline Cubemass C 500 8*5*** - dd******B... O8*5*** - dd******B... 8x5Bxx - dd******B... Notes: This page applies to versions with extended order code covering: O8x5Bxx - dd******B. dd = CS, CZ with approval option cCSAus / CSA dd = BS IECEx / ATEX: Temperature table for versions in type of protection Ex ec, AEx ec or Non-incendive with sensor insulated (for insulation refer to manual of Temperature table for versions in type of protection Ex ec, AEx ec or Size / Sensor Туре Tmer " (°C) T_{a.ma} or Non-incendive with sensor insulated DN of min max T6 T5 Τ4 T3 T2 T1 (100°C) (45<u>0°C)</u> (for insulation not in compliance with manual of Endress+Hauser Flowtec) (°C) (°C) (°C) (85°C) (135°C) (300°C) otection (200°C) Promass 01 ... 04 Ex ec -50 205 50 50 95 130 150 150 150 Sensor Size / DN Tmax to be measured at reference point at (180) (180) / NI sensor neck (°C) 60 95 130 150 150 150 T6 T5 T2 T1 Τ4 T3 Cubemass 01 ... 06 Ex ec -50 205 50 90 130 140 (180) (180) (85°C) (135°C) (450°C) (100°C) (200°C (300°C) ---60 90 / NI 130 140 150 150 all all 69 72 84 91 91 91 08 ... 15 -50 205 45 Promass Ex ec 45 80 115 165 205 205 Notes: (1) for safe use temperatures shall not exceed all of the following: F / NI 60 80 115 165 205 205 - temperature table for versions with sensor not insulated (refer to table above) ----25 ... 80 Ex ec -50 205 60 60 95 140 205 205 - temperature at reference point as listed in this table / NI - Ta,min = -40°C, -50°C respectively (see nameplate) Promass 08 ... 15 -50/ 150 50 50 80 115 150 150 150 - for maximum medium temperatue and minimum medium temperature see nameplate Ex ec /NI -200 60 80 115 150 150 150 (2) location of reference point 50 -50 / 240 50 80 115 170 240 240 60 80 115 170 240 240 200 ---reference point 25 40 60 Ex ec -50 / 150 45 60 95 150 150 150 / NI -200 60 60 95 150 150 150 -50 / 240 45 60 60 95 170 240 240 60 60 -200 95 170 240 240 50 ... 80 Ex ec 150 45 60 60 150 -50 / 95 150 150 / NI -200 60 60 95 150 150 150 -50 / 60 240 45 60 95 160 240 240 -200 60 60 95 160 240 240 100...250 Ex ec -50 / 150 45 60 60 95 150 150 150 60 150 / NI -200 60 95 150 150 ---240 -50 / 45 60 60 95 160 240 240 -200 60 60 95 240 240 160 15 250 70 Ex ec -50 / 350 60 85 120 185 280 350 -200 Transmitter for all versions: / NI Promass 8 Ex ec -50 / 205 50 45 80 115 165 205 205 T_{a.max} (°C) н / NI -200 60 ----80 115 165 205 205 T6 Τ5 Τ4 15 ... 50 205 Ex ec -50 / 60 ----60 95 130 205 205 (100°C) (135°C) (85°C) / NI -200 45 150 Promass 8 Ex ec -50 150 45 80 115 150 150 S.P / NI 60 80 115 150 150 150 Notes: (1) Ta,min = -40°C, -50°C respectively (see name plate) -50 205 45 45 80 115 170 205 205 60 80 115 170 205 205 10.05.2016 / Bn F 22.10.2019 / Bn Alle gesetzlichen Urbeberrechte, vorbehalter Ersetzt durch: 15 ... 50 Ex ec -50 150 45 45 60 95 150 150 150 24.10.2016 / Bn 09.06.2021 / Bn Diese Zeichnung darf ohne unsere / NI 60 60 95 150 150 150 Genehmigung weder vervielfältigt werden noch -50 03.05.2017 / Bn 15.07.2023 / DOMI Ersatz für: 205 45 45 60 95 160 205 205 н dritten Personen und Konkurrenzfirmer 60 60 95 160 205 205 D 30 10 2017 / Bn L Ersteller: FES / Bn ---FILE: M:\Zeichng\FES0264\G\FES0264G.doc zugängig gemacht werder Promass 8 ... 80 Ex ec -50 150 45 45 60 95 150 150 150 04.07.2018 / Bn ĸ / NI 60 60 95 150 150 150 ---Control Drawing IECEx, ATEX, CSA, cCSAus 80....250 -50 205 45 45 60 95 160 205 205 Gezeichnet 10.05.2016 Bn Promass Ex ec / NI 60 60 95 160 205 205 Zone 2, Cl.I Div. 2, Cl.I Zone 2 Promass 350 -50 205 45 45 60 95 160 205 205 Ex ec Geprüft / NI 60 60 95 160 205 205 Thermal Parameter 25 250 -50 / 240 45 45 60 95 240 240 Promass Ex ec 160 15 07 2023 DOMI Ex-geprüft / NI -200 60 ---60 95 160 240 240 Proline Promass 300/500, Proline Cubemass 300/500 Notes: (1) this page coveres sensors with type of protection Ex ec, AEx ec and non-incendive. Sensors Geseher with type of protection Ex nC applicable only for versions without purge connection or rupture disk (temperature tables see next page) (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 FES0264H 7/12 (4) for maximum medium temperatue and minimum medium temperature see nameplate **D** 1 Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach





Proline P	romass	A/E/F/H	/I/O/P/	Q/S/X	500		Р	roline	Cuberr	nass C	500															
Notes: This	page appli	es to versi	ons witl	h exten	ded orde	er code	covering		8*5*** – c with appr		on cCSA	08*5*** – do Nus / CSA: do x / ATEX: do	= CZ	B	8x5Bxx	< – dd**	*****B	O8x5E	3xx – dd'	******B						
sensor i	ature table nsulated ation refer							c nC d	or AEx	ec nC	with	AEx e	c nC \	with	for versio sensor ins	sulated	d									
Sensor	Size /	Туре	т		T _{a.max}			T _{med}	max (°C)			Sensor	Size /				T _{max} to be me			,						
0011001	DN	of	min	max		T6	T5	T4	T3	T2	T1	0011001	OILO /				s	ensor neck	(°C)							
Promass	0104	protection Ex ec nC	(°C) -50	(°C) 205	(°C) 50	(85°C) 80	(100°C) 95	(135°C) 130	(200°C) 150	(300°C) 150	(450°C) 150				T6 (85°C)	(100			T3 (200°C)	T2 (300°C)	T1 (450°C)					
A	0104	EX CONO	-00	200						(180)	(180)	all	all		69	72	2 8	4	91	91	91					
Cubemass	01 06	Ex ec nC	-50	205	60 50		95	130	150	150	150 (180)	Notes:			se temperatur					table above)						
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Promass	08 15	Ex ec nC	-50	205	60	80	95	130	195	205	205		- fo	r maxi	.min = -40°C, -50°C respectively (see nameplate) maximum medium temperatue and minimum medium temperature see nameplate											
E	25 80	Ex ec nC	-50	205	60	80	95	130	195	205	205		(2) loca) location of reference point												
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			-507 -200 -507	240 150	60	80	95	130	195	150	240 150					л,										
			-200	240	60	80	95	130	195	240	240					Į.	L_	, ¶E								
	100250	Ex ec nC	-200 -50 /	150	60	80	95	130	150	150	150															
			-200 -50 /	240	60	80	95	130	195	240	240															
	15250	Ex ec nC	-200	350	60	80	95	130	195																	
Promass	8	Ex ec nC	-200 -50 / -200	205	60	80	95	130	195	205	205		T _{a.max} (°C) T6 T5 T4													
н	15 50	Ex ec nC	-200 -50 / -200	205	60	80	95	130	195	205	205	(35°C) 		(100°C) (135°C) 45 60											
Promass	8	Ex ec nC	-50	150	60	80	95	130	150	150	150	Notes: (1)	Ta,min	= -40°	°C, -50°C resp	ectively	(see name pla	ite)								
S, P			-50	205	60	80	95	130	195	205	205															
	15 50	Ex ec nC	-50 -50	150 205	60 60	80 80	95 95	130 130	150 195	150 205	150 205															
Promass	8 80	Ex ec nC	-50	150	60	80	95	130	150	150	150					,										
 Bromann	80250	Ex ec nC	-50	205	60	80	95	130	195	205	205	A 10.05.20 B 24.10.20			22.10.2019 / Br 09.06.2021 / Br		Vile gesetzlichen Urh Diese Zeichnung dar		behalten.	Ersetzt durch:						
Promass O Promass	350	Ex ec nC	-50	205	60	80	95	130	195	205	205	C 03.05.20 D 30.10.20	7 / Bn		15.07.2023 / DO	OMI G	Senehmigung weder Iritten Personen und			Ersatz für: Ersteller: FES /	Bo					
X Promass	25250	Ex ec nC	-50 /	240	60	80	95	130	195	240	240	E 04.07.20	8 / Bn	к		2	zugängig gemacht w	erden.			ES0264\G\FES02640	3.doc				
Q Notes: (1)			-200											-	CEX, ATE		SA, cCSAL	IS		Gezeichnet	10.05.2016	Bn				
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) 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													CI.I Zone	2				Geprüft								
) for maxim	um medium	tempera	tue and	minimum	medium	temperat	ure see n	ameplate			Thermal	Paran	nete	r					Ex-geprüft	15.07.2023	DOMI				
(5)) this tempe temperatu	rature table re table on j			tor Class	I Divisio	n 2 versio	ons. ⊢or C	lass I Divi	sion 2 ver	sions see	Proline I	roma	ss 30	00/500, Pi	roline	Cubemas	s 300/5	00	Gesehen						
													FES0264H							8/12						



Notes:

Sensor

Promass

(type 8A5B)

Cubemass

Promass

Promass

Promass

Promass

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Size /

01 ... 04

01 ... 04

01 ... 06

08 ... 15

25 ... 80

08 ... 15

25 ... 40

50 ... 80

100...250

15...250

15 ... 50

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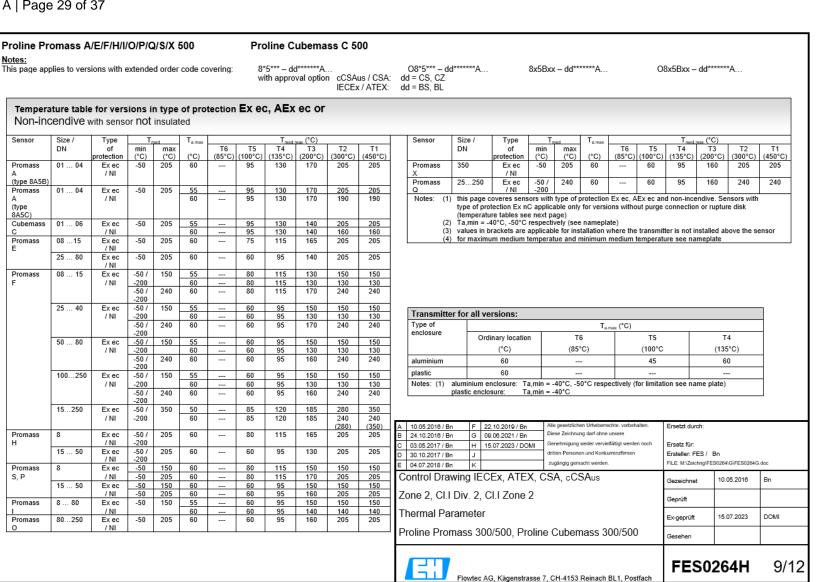
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SA ROUP[™]





Promass 25250 Exec nC -50/ 240 60 95 130 195 240 240 Proline Promass 300/500 Proline Cubemass 300/500	Temperat						overing:	wi	ith appro	d******A. val optio	n cCSA		dd = CZ dd = BS, BL	***A		Bxx – dd******A	C			
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implement implement <t< th=""><th>Sensor</th><th></th><th></th><th>T,</th><th>ied</th><th>T_{a.max}</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>C and Ex ec nC is applic</th><th>able only for s</th><th>ensor versions</th><th>without purge</th><th></th></t<>	Sensor			T,	ied	T _{a.max}										C and Ex ec nC is applic	able only for s	ensor versions	without purge	
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(np. 64.06) - <th< td=""><td>Promass</td><td>01 04</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>(3) va</td><td>lues in brad</td><td></td><td></td><td></td><td>nitter is not inst</td><td>alled above the</td><td></td></th<>	Promass	01 04											(3) va	lues in brad				nitter is not inst	alled above the	
Promase (h) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c															medium tem	neratue and minimum m	edium temner	ature see name	nlate	
A C R		01 04	Ex ec nC	-50	205	55		95	130	195	205	205	(5) th	is temperat	ure table is n	ot applicable for Class I				rsions
abds(c) - </td <td>A</td> <td></td> <td>se</td> <td>e temperat</td> <td>ture table on</td> <td>page 9/12</td> <td></td> <td></td> <td></td> <td></td>	A												se	e temperat	ture table on	page 9/12				
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Promass E 0815 Ex ex nC -50 205 60 95 130 195 205 205 Promass F 0815 Ex ex nC -50 205 60 95 130 195 205 205 Promass F 0815 Ex ex nC -50 120 150 150 150 150 150 200 60 95 130	Cubemass	01 06	Ex ec nC	-50	205															
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H -				-200		60		92	150	195			plas	tic enclosu	re: Ta,m	in = -40°C				
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		25250	Ex ec nC		240	60		95	130	195	240	240						Ex-gepruit	10.07.2023	0000
Gesenen Gesenen	u			-200									Proline Promas	s 300/50	00, Prolin	e Cubemass 300	/500	Gesehen		





Proline Promass A/E/F/H/I/O/P/Q/S/X 500 Proline Cubemass C 500 8*5*** - dd******A. O8*5*** - dd*******A... 8x5Bxx - dd******A... O8x5Bxx - dd******A... Notes: This page applies to versions with extended order code covering: with approval option cCSAus / CSA: dd = CS. CZ IECEx / ATEX: dd = BS, BL Temperature table for versions in type of protection Ex ec, AEx ec or Temperature table for versions in type of protection EX eC, AEX eC or Non-incendive with sensor insulated Non-incendive with sensor insulated (for insulation refer to manual of Endress+Hauser Flowtec) (for insulation not in compliance with manual of Endress+Hauser Flowtec) Sensor Size / DN Tmax to be measured at reference point at Sensor Size Туре Tmed (°C) F_{a.max} DN of max T5 T4 Т3 T1 sensor neck (°C) mir Τ6 Т2 (°C) (85°C) (100°C) (450°C) tection (°C) (°C) (135°C) (200°C (300°C) T5 T1 **T6** Τ4 T3 T2 Promass 01 ... 04 Ex ec -50 205 50 95 130 130 130 130 (85°C) (100°C) (135°C) (200°C (300°C) (450°C) ---all all 72 82 85 85 85 /NI Cubemass 01 ... 06 Ex ec -50 205 50 90 130 130 130 130 Notes: (1) for safe use temperatures shall not exceed all of the following: ----/ NI - temperature table for versions with sensor not insulated (refer to table above) 205 Promass 08 ... 15 Ex ec -50 205 50 75 115 165 205 - temperature at reference point as listed in this table ----- Ta,min = -40°C, -50°C respectively (see nameplate) E / NI - for maximum medium temperatue and minimum medium temperature see nameplate 25 ... 80 -50 205 50 60 95 140 205 205 Ex ec ----(2) location of reference point /NI 08 ... 15 -50 / 150 115 150 150 150 Promass Ex ec 45 80 ----/NI -200 50 80 115 130 130 130 -50 / 240 50 80 115 170 240 240 -200 reference point 25 ... 40 150 60 150 150 150 Ex ec -50 / 45 95 ----/ NI -200 50 60 95 130 130 130 240 60 95 -50 / 50 170 240 240 -----200 25 80 Ex ec -50 / 150 45 60 95 150 150 150 / NI -200 50 60 95 130 130 130 -50 / 240 50 ----60 95 160 240 240 -200 Transmitter for all versions: 100...250 Ex ec -50 / 150 45 60 95 150 150 150 ----Type of Tamax (°C) -200 60 95 130 130 / NI 50 130 enclosure -50 / 240 50 240 Ordinary location Т6 Т5 Τ4 60 95 160 240 -----200 (°C) (85°C) (100C (135°C) 15 250 Ex ec -50/ 350 50 85 120 185 280 350 ----60 45 60 aluminium ---/ NI 200 Promass 8 Ex ec -50 / 205 55 ----80 115 165 205 205 plastic 60 / NI -200 Notes: (1) aluminium enclosure: Ta,min = -40°C, -50°C respectively (for limitation see name plate) 15 ... 50 205 55 60 95 130 205 205 Ex ec -50 / Ta,min = -40°C plastic enclosure: / NI -200 Promass 150 45 80 100 150 150 150 8 Ex ec -50 S P 50 80 100 130 130 130 /NI A 10.05.2016 / Bn F 22.10.2019 / Bn Alle gesetzlichen Urheberrechte, vorbehalter Ersetzt durch: -50 205 55 80 115 170 205 205 24.10.2016 / Bn G 09.06.2021 / Bn Diese Zeichnung darf ohne unsere 15 ... 50 60 150 150 150 Ex ec -50 150 45 95 Genehmigung weder vervielfältigt werden noch 03.05.2017 / Bn 15.07.2023 / DOMI Ersatz für н /NI 50 60 95 130 130 130 dritten Personen und Konkurrenzfirmen Ersteller: FES / Bn -50 30.10.2017 / Bn л 205 55 60 95 160 205 205 zugängig gemacht werden FILE: M:\Zeichng\FES0264\G\FES0264G.doc Promass 8 ... 80 Ex ec -50 150 45 60 95 150 150 150 E 04.07.2018 / Bn ĸ / NI 50 60 95 130 130 130 Control Drawing IECEx, ATEX, CSA, cCSAus 10.05.2018 Bn 80....250 -50 205 205 Gezeichne Promass Ex ec 55 60 95 160 205 / NE Zone 2, Cl.I Div. 2, Cl.I Zone 2 205 350 Promass Ex ec -50 205 55 ----60 95 160 205 Geprüft / NL Thermal Parameter 25...250 -50 / 240 50 60 160 240 240 Promass Ex ec ----95 15 07 2023 DOM Ex-geprüft -200 / NI Proline Promass 300/500. Proline Cubemass 300/500 Notes: (1) this page coveres sensors with type of protection Ex ec, AEx ec and non-incendive. Sensors Gesehen with type of protection Ex ec nC applicable only for versions without purge connection or rupture disk (temperature tables see next page) (2) Ta,min = -40°C, -50°C respectively (see nameplate) (3) for maximum medium temperatue and minimum medium temperature see nameplate FES0264H 11/12 **D** 1 Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach





Proline Promass A/E/F/H/I/O/P/Q/S/X 500 Proline Cubemass C 500 8x5Bxx - dd******A... O8x5Bxx - dd******A... Notes: This page applies to versions with extended order code covering: 8*5*** – dd******A O8*5*** - 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 Temperature table for versions in type of protection Ex ec nC or AEx ec nC with sensor insulated sensor insulated (for insulation not in compliance to manual of Endress+Hauser Flowtec) (for insulation refer to manual of Endress+Hauser Flowtec) Tmax to be measured at reference point at Sensor Size , (°C) Sensor Size / DN Туре T_{a.ma} Tma DN T2 (300°C) of min max T6 T5 Τ4 Т3 T1 sensor neck (°C) (450°C) (°C) (°C) (°C) (85°C) (100°C) (135°C) (200°C) rotection T6 T5 Τ4 T3 T2 T1 (135°C) (450°C) Promass 01...04 Ex ec nC -50 205 50 95 130 130 130 130 (85°C) (100°C) (200°C) (300°C) all all 72 82 85 85 85 Cubemass 01 ... 06 Ex ec nC -50 205 50 95 130 130 130 130 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) Promass 08 ... 15 -50 205 50 95 130 195 205 205 - temperature at reference point as listed in this table Ex ec nC ----- Ta,min = -40°C, -50°C respectively (see nameplate) - for maximum medium temperatue and minimum medium temperature see nameplate 25 ... 80 Ex ec nC -50 205 50 95 130 195 205 205 ----(2) location of reference point Promass 08 ... 15 Ex ec nC -50/ 150 45 95 130 150 150 150 200 50 95 130 130 130 130 -50 / 240 50 ----95 130 195 240 240 -200 reference point 25 ... 80 Ex ec nC -50 / 150 45 95 130 150 150 150 130 -200 50 95 130 130 130 ----240 50 95 130 -50/ 195 240 240 -----200 100...250 Ex ec nC 150 150 -50 / 45 95 130 150 150 -200 50 95 130 130 130 130 240 -50 / 50 ----95 130 195 240 240 Transmitter for all versions: -200 15...250 Ex ec nC -50 / 350 50 95 130 195 280 350 Type of Tamax (°C) -200 enclosure Ordinary location Т6 Т5 Τ4 Promass Ex ec nC -50 / 205 55 95 130 195 205 205 -200 (85°C) (100C) (135°C) (°C) 15 ... 50 Ex ec nC -50/ 205 55 95 130 195 205 205 ---aluminium 60 45 60 -----200 130 150 150 plastic 60 Promass Ex ec nC -50 150 45 95 150 ----50 130 S P 95 130 130 130 Notes: (1) aluminium enclosure: Ta,min = -40°C, -50°C respectively (for limitation see name plate) -50 205 55 95 130 195 205 205 plastic enclosure: Ta,min = -40°C 15 50 Ex ec nC -50 150 45 95 130 150 150 150 50 95 130 130 130 130 95 205 55 130 195 205 205 -50 Alle gesetzlichen Urheberrechte, vorbehalten A 10.05.2016 / Bn F 22.10.2019 / Bn Ersetzt durch: Promass 8 ... 80 Ex ec nC -50 150 45 95 130 150 150 150 Diese Zeichnung darf ohne unsere 24.10.2016 / Bn G 09.06.2021 / Bn 130 50 95 130 130 130 Genehmigung weder vervielfältigt werden noch 03.05.2017 / Bn H 15.07.2023 / DOMI Ersatz für: 80 250 -50 205 205 Ex ec nC Promass 55 ----95 130 195 205 fritten Personen und Konkurrenzfirmer Ersteller: FES / Bn D 30.10.2017 / Bn J zugängig gemacht werder FILE: M:\Zeichng\FES0264\G\FES0264G.doc Promass 350 Ex ec nC -50 205 55 ----95 130 195 205 205 04.07.2018 / Bn К Control Drawing IECEx, ATEX, CSA, cCSAus 10.05.2016 Promass 25...250 Ex ec nC -50 / 240 50 95 130 195 240 240 Gezeichnet Bn -200 Zone 2, Cl.I Div. 2, Cl.I Zone 2 Notes: (1) type of protection Ex ec nC and AEx ec nC is applicable only for sensor versions without purge Georüft connection or rupture disk Thermal Parameter (2) Ta,min = -40°C, -50°C respectively (see nameplate) Ex-geprüft 15.07.2023 DOMI for maximum medium temperatue 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 Proline Promass 300/500, Proline Cubemass 300/500 Geseher temperature table on page 11/12 FES0264H 12/12 **D** I Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach



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4. Marking

Proline Pr	omass 300, Pro	line Cubemass 300	7
	de: d*ff************** dd*ff************	#**# *** + #**#	
dd =	ff =	Marking of Ex protection	Information: Marking of protection representative
approval	I/O		for
BA	CA, CB, CC, CD, HA, TA, MC, RC BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex db eb ia [ia Ga] IIB T6T1 Ga/Gb ¹⁾ or Ex db eb ia [ia Ga] IIB T6T1 Gb and/or Ex tb [ia Da] IIIC T ^{**} °C Db Ex db eb ia IIB T6T1 Ga/Gb ¹⁾ or Ex db eb ia IIB T6T1 Gb and/or Ex tb IIIC T ^{**} °C Db	db-> electronic compartmenteb-> terminal compartmentia-> sensor, displaytb-> transmitter enclosure, sensor[ia Ga] -> electronic with input/output Ex ia[ia Da] -> electronic with input/output Ex ia
BB	CA, CB, CC, CD, HA, TA, MC, RC BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex db eb ia [ia Ga] IIC T6T1 Ga/Gb ¹⁾ or Ex db eb ia [ia Ga] IIC T6T1 Gb and/or Ex tb [ia Da] IIIC T** °C Db Ex db eb ia IIC T6T1 Ga/Gb ¹⁾ or Ex db eb ia IIC T6T1 Gb ¹⁾ and/or Ex tb IIIC T** °C Db	
BC	CA, CB, CC, CD, HA, TA, MC, RC BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex db ia [ia Ga] IIB T6T1 Ga/Gb ¹⁾ or Ex db ia [ia Ga] IIB T6T1 Gb and/or Ex tb [ia Da] IIIC T ^{**} °C Db Ex db ia IIB T6T1 Ga/Gb ¹⁾ or Ex db ia IIB T6T1 Gb and/or Ex tb IIIC T ^{**} °C Db	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
BD	CA, CB, CC, CD, HA, TA, MC, RC BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex db ia [ia Ga] IIC T6T1 Ga/Gb ¹⁾ or Ex db ia [ia Ga] IIC T6T1 Gb and/or Ex tb [ia Da] IIIC T ^{**} °C Db Ex db ia IIC T6T1 Ga/Gb ¹⁾ or Ex db ia IIC T6T1 Gb and/or Ex tb IIIC T ^{**} °C Db	
BS	CA, CB, CC, CD, HA, TA, MC, RC BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex ec nC [ic] IIC T5T1 Gc Ex ec nC IIC T5T1 Gc	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 CI.I Zone 1 only without zone separation: Promass A DN1, Promass H DN8...50, Promass I DN 8...80





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			I integrated in transmitter),			
		nalog (with ISE	EM integrated in transmitter)			
Order Coo		L.L.L				
	d*ff****B******* dd*ff****B******					
			Marking of Expression			an Marking of protoction
0.0.	ff =	Device	Marking of Ex protection			on: Marking of protection
approval BA	1/0	T				tative for
ВА	CA, CB, CC,	Transmitter	Ex db eb ia [ia Ga] IIB T6…T5 Gb and/or			electronic compartment
	CD, HA, TA,			e	-> ut	terminal compartment, wall
	BA, BB, GA, LA, NA, RA,	Sensor	Ex tb [ia Da] IIIC T85°C Db Ex ia IIB T6T1 Ga/Gb ¹⁾ or		a ->	mounted terminal box sensor, display
	RB, RC, SA,	Sensor	Ex ia IIB T6T1 Gb and/or			transmitter enclosures, sensor
	MA, MB, MC		Ex ia the IIIC T** °C Db	ľ	.0 ->	terminal box. sensor
BB	CA, CB, CC,	Transmitter	Ex db eb ia [ia Ga] IIC T6 T5 Gb	r	ia Gal->	electronic with input/output Ex ia
00	CD, HA, TA,	Tansmiller	and/or			and/or output for sensor circuit
	BA, BB, GA,		Ex tb [ia Da] IIIC T85°C Db	ſ	ia Dal ->	electronic with input/output Ex ia
	LA, NA, RA,	Sensor	Ex ia IIC T6T1 Ga/Gb ¹⁾ or	Ľ		and/or output for sensor circuit
	RB, RC, SA,	0011301	Ex ia IIC T6T1 Gb and/or			
	MA, MB, MC		Ex ia the IIIC T** °C Db			
BC	CA, CB, CC,	Transmitter	Ex db ia [ia Ga] IIB T6 T5 Gb	c	db ->	electronic and terminal
	CD, HA, TA,		and/or			compartments, wall mounted
	BA, BB, GA,		Ex tb [ia Da] IIIC T85°C Db			terminal box
	LA, NA, RA,	Sensor	Ex ia IIB T6T1 Ga/Gb ¹⁾ or	i	a ->	sensor, display
	RB, RC, SA,		Ex ia IIB T6T1 Gb and/or	t	b ->	transmitter enclosures, sensor
	MA, MB, MC		Ex ia tb IIIC T** °C Db			terminal box, sensor
BD	CA, CB, CC,	Transmitter	Ex db ia [ia Ga] IIC T6… T5 Gb	[ia Ga]->	electronic with input/output Ex ia
	CD, HA, TA,		and/or			and/or output for sensor circuit
	BA, BB, GA,		Ex tb [ia Da] IIIC T85°C Db	[ia Da] ->	electronic with input/output Ex ia
	LA, NA, RA,	Sensor	Ex ia IIC T6T1 Ga/Gb ¹⁾ or			and/or output for sensor circuit
	RB, RC, SA,		Ex ia IIC T6T1 Gb and/or			
	MA, MB, MC		Ex ia tb IIIC T** °C Db			
BS	CA, CB, CC, CD, HA, TA,	Transmitter	Ex ec nC [ic] IIC T5…T4 Gc	e	ec ->	transmitter enclosures, sensor, electronic, display, sensor terminal
	MC, RC	Sensor	Ex ec IIC T6T1 Gc or			box
		0011001	Ex ec nC IIC T6T1 Gc $^{2)}$		-	electronic
	BA, BB, GA, LA, NA, RA,	Transmitter	Ex ec nC IIC T5T4 Gc]	ic] ->	electronic with input/output Ex ic
	SA, MA, MB,	Sensor	Ex ec IIC T6T1 Gc or			
	RB		Ex ec nC IIC T6T1 Gc 2)			

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****************** 08*5*** – dd*ff****A*****************								
dd = approval	ff = I/O	Device	Marking of Ex protection					

Information:Marking of protection representative for ...





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Order C			M integrated in sensor)	
	· dd*ff****A*******	****+#**#		
	- dd*ff****A*****			
BI	CA, CB, CC, CD, HA, TA, MC, RC	Transmitter Sensor	[Ex ia] IIC and/or [Ex ia] IIIC Ex ia IIB T6T1 Ga/Gb ¹⁾ or Ex ia IIB T6T1 Gb and/or	[Ex ia] -> electronic with input/output Ex ia and output for sensor circuit ia -> sensor tb -> sensor, sensor terminal box
			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	[Ex ia] -> electronic with output for sensor circuit ia -> sensortb -> sensor, sensor terminal box
		Sensor	Ex ia IIC T6T1 Ga/Gb ¹⁾ or Ex ia IIC T6T1 Gb and/or Ex ia tb IIIC T ^{**} °C Db	
BL	CA, CB, CC,	Transmitter	[Ex ic] IIC	[Ex ic] -> electronic with input/output Ex ic
	CD, HA, TA, MC, RC	Sensor	Ex ec IIC T5T1 Gc or Ex ec nC IIC T5T1 Gc ²⁾	ec -> sensor, electronic, sensor termina box nC -> sensor, electronic
	BA, BB, GA, LA, NA, RA, SA, MA, MB,	Transmitter	n.a. (non-Ex)	ec -> sensor, electronic, sensor termina box nC -> sensor, electronic
	RB	Sensor	Ex ec IIC T5T1 Gc or Ex ec nC IIC T5T1 Gc ²⁾	
BM	CA, CB, CC, CD, HA, TA, MC, RC	Transmitter	Ex ec nC [ic] [ia Ga] IIC T5T4 Gc and/or [Ex ia] IIIC	[ia Ga] -> electronic with output for sensor circuit [Ex ia] -> electronic with output for sensor
		Sensor	Ex ia IIB T6T1 Ga/Gb ¹⁾ or Ex ia IIB T6T1 Gb and/or Ex ia tb IIIC T** °C Db	[ic] -> electronic with input/output Ex ic ec -> transmitter enclosures, electronic,
	BA, BB, GA, LA, NA, RA, SA, MA, MB,	Transmitter	Ex ec nC [ia Ga] IIC T5T4 Gc and/or [Ex ia] IIIC	display nC -> electronic ia -> sensor tb -> sensor terminal box
	RB	Sensor	Ex ia IIB T6T1 Ga/Gb ¹⁾ or Ex ia IIB T6T1 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 T5T4 Gc and/or [Ex ia] IIIC	[ia Ga] -> electronic with output for sensor circuit [Ex ia] -> electronic with output for sensor circuit
		Sensor	Ex ia IIC T6T1 Ga/Gb ¹⁾ or Ex ia IIC T6T1 Gb and/or Ex ia tb IIIC T** °C Db	[ic] -> electronic with input/output Ex ic ec -> transmitter enclosures, electronic, display
	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	nC -> electronic ia -> sensor tb -> sensor terminal box
		Sensor	Ex ia IIC T6T1 Ga/Gb ¹⁾ or Ex ia IIC T6T1 Gb and/or Ex ia tb IIIC T** °C Db	





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Proline C Order Co 8*5*** – d	ubemass 500 Ď	igital (with ISE ****+#**#	integrated in sensor), M integrated in sensor)		
BS	CA, CB, CC, CD, HA, TA, MC, RC	Transmitter Sensor	Ex ec nC [ic] IIC T5T4 Gc Ex ec IIC T5T1 Gc or Ex ec nC IIC T5T1 Gc ²⁾	[ic] ec nC	 -> electronic with input/output Ex ic -> transmitter enclosures, sensor, electronic, display, sensor terminal box -> sensor, electronic
	BA, BB, GA, LA, NA, RA,	Transmitter	Ex ec nC IIC T5T4 Gc		·
	SA, MA, MB, RB	Sensor	Ex ec IIC T5T1 Gc or Ex ec nC IIC T5T1 Gc ²⁾		

- 1) The following sensors are marked for EPL Gb and CI.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.



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Annex B:

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

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4.	Marking	
5.	Conditions of Certification	





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 + #**#

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

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

а	=	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 T6T1 Gb
		Ex tb IIIC T* Db
		BD = Ex db ia [ia] IIC T6T1 Gb

- BD = Ex db ia [ia] IIC T6...T1 Gb Ex tb IIIC T* Db
- BS = Ex ec IIC T5...T1 Gc





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	Prolino	Dro	omag 500 :	
	BB	=		(transmitter)
	DD	=	Ex eb ia IIC T6T1 Gb	(sensor)
			Ex to IIIC T** Db	,
	BD	_	Ex db [ia] IIC T6T5 Gb	(transmitter + sensor) (transmitter)
	עם	=	Ex eb ia IIC T6T1 Gb	· · · · · · · · · · · · · · · · · · ·
			Ex tb IIIC T** Db	(sensor)
	BJ	_	non-Ex	(transmitter + sensor) (transmitter)
	DJ	=	Ex db ia IIC T6T1 Gb	· · · · · · · · · · · · · · · · · · ·
			Ex ia the IIIC T** Db	(sensor)
	BL	=	non-Ex	(sensor) (transmitter)
	DL	-	Ex ec ic IIC T6T1 Gc	(sensor)
	BN	_	Ex ec IIC T5T4 Gc	(transmitter)
	DN	-	Ex db ia IIC T6T1 Gb	(sensor)
			Ex ia the IIIC T* Db	(sensor)
	BS	=		(transmitter)
	00	-	Ex ec IIC T6T1 Gc	(sensor)
	B7	=	Ex db eb [ia] IIC T6T5 Gb	(transmitter)
	01	-	Ex eb [ia] IIC T6T1 Gb	(sensor)
	B8	=	Ex db [ia] IIC T6T5 Gb	(transmitter)
	DU	_	Ex eb [ia] IIC T6T1 Gb	(sensor)
=	Design	(P	romag W 300 and Proline W 50	00 only)
			number or letter	,,
=	Power	Su	vlaa	
	D		24Vdc	
	Е	=		
	1	=		
	Х	=	sensor only	
=	Input /	Ou		
	ВÅ	=	·	
	BB	=	4-20mA WHART	
	CA	=	4-20mA HART Ex i (passive)	
	СВ	=	4-20mA WHART Ex i (passiv	e)
	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	





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= Input / Output 2 g А

В

С D

Е

F

G

Н

L J

Κ

L

Х

А В

С

D

Е

F

G

Н

1

J

Κ

L

Х

А В

С

D

Е

F

J

Κ

L

k

- = without Input/Output 2
- = 4-20mA
 - = 4-20mA Ex i (passive)
 - = Configurable IO
 - = Pulse/Frequency/Switch output
- = Pulse output phase-shifted
- = Pulse/Frequency/Switch output Ex i
- = Relay
 - = 4-20mA input
- = Status input
- = Pulse output Ex i
- = Pulse output
- = sensor only

h Input / Output 3 =

- = without Input/Output 3
- = 4-20mA
 - = 4-20mA Ex i (passive)
 - = Configurable IO
 - = Pulse/Frequency/Switch output
 - = Pulse output phase-shifted
 - = Pulse/Frequency/Switch output Ex i
- = Relay
 - = 4-20mA input
- = Status input
- = Pulse output Ex i
- = Pulse output
- = sensor only
- i. = Input / Output 4 (Proline 500 only)
 - = without Input/Output 4
 - = 4-20mA
 - = 4-20mA Ex i (passive)
 - = Configurable IO
 - = Pulse/Frequency/Switch output
 - = Pulse output phase-shifted
 - = Pulse/Frequency/Switch output Ex i
 - G Н = Relay
 - = 4-20mA input
 - = Status input
 - = Pulse output Ex i
 - = Pulse output
 - = sensor only
- Х j = Display / Operation
 - with remote Display : O

without remote Display : any single number or letter except O = Integrated ISEM electronic (Proline 500 only)

- = Sensor А
 - В
 - = Transmitter
- L = Housing (Proline 300 only)
 - any single number or letter





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- **m** = **Transmitter Housing** (Proline 500 only) any single number or letter
- n = Sensor Housing (Proline 500 only) any single number or letter
- **Cable Sensor Connection** (Proline 500 only) any single number or letter
- = Cable Entry р any single number or letter qq = Upgrade Kid any double digits with combination of number or letter s = Liner material any single number or letter = Process connection ttt any triple digits with combination of number or letter u = Electrode any number or letter = Calibration V any single number or letter = Device Model (two digit) (refer to assignment of flowmeter to replacement transmitter) ww A1 = product version 1 A2 = product version 2 = Customer version (two digits) уу 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 flowm	eters		Replacement transmitter type			
Order code		Generation code b =	device model code ww =	Order code	Generation code b =	device model code ww =
5H*b**ww, 5P*b**ww, 5W*b**ww,	O5H*b**ww O5P*b**ww O5W*b**ww	В	A1 / A2	5x*bxxww, O5x*bxxww	В	A1 / A2





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3. Parameters

3.1. Electrical Parameters

Power Supply		
Order Code	terminal no.	values
e =		
D ¹⁾	No. 1(L+/L), 2(L-/N)	$U_N = 19.228.8V_{DC}$
		$U_{M} = 250 V_{AC}$
E ¹⁾	No. 1(L+/L), 2(L-/N)	$U_{N} = 85264V_{AC}$
		$U_M = 250 V_{AC}$
2)	No. 1(L+/L), 2(L-/N)	U _N = 19.228.8V _{DC} /85264V _{AC}
		$U_{M} = 250 V_{AC}$

applicable for products with approval code dd = BB, BD, B7, B8
 applicable for products with approval code dd = BS, BJ, BL, BN

Input/Output 1			
Order Code	terminal no.	Values	
ff =			
BA, BB, MA	No. 26, 27	$U_N = 30V_{DC}$	
		$U_{M} = 250V_{AC}$	
LA, GA, SA	No. 26, 27	$U_N = 32V_{DC}$	
		$U_{M} = 250 V_{AC}$	
CA, CB	No. 26, 27	$U_i = 30V$	
		$I_i = 100 \text{mA}$	
		$P_i = 1.25W$	
		$L_i = 0$	
00.00	No. 00. 07	$C_i = 6nF$	
CC, CD	No. 26, 27	1) Uo = 21.8V	2) Uo = 21.8V
		$I_0 = 90mA$ $P_0 = 491mW$	$I_0 = 90 \text{mA}$ $P_0 = 491 \text{mW}$
		$L_0 = 49 \text{ mW}$	$L_0 = 9mH (IIC) /$
		15mH (IIB)	39mH (IIB)
		$C_0 = 160 \text{nF} (\text{IIC}) /$	$C_0 = 600 \text{nF} (\text{IIC}) /$
		1160nF (IIB)	4000nF (IIB)
		Ui = 30V	Ui = 30V
		II = 10 mA	Ii = 10mA
		Pi = 0.3W	Pi = 0.3W
		Ci = 6nF	Ci = 6nF
		Li = 5µH	Li = 5µH
HA, TA	No. 26, 27	1)	2)
		Profibus PA (Fisco Field	Profibus PA (Fisco Field
		<u>Device) /</u>	<u>Device) /</u>
		Foundation Fieldbus	Foundation Fieldbus
		$U_i = 30V$	$U_i = 32V$
		$I_i = 570 \text{mA}$	$I_i = 570 \text{mA}$
		$P_i = 8.5W$	$P_i = 8.5W$
		$L_i = 10\mu H$	$L_i = 10 \mu H$





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		$C_i = 5nF$	$C_i = 5nF$
MB, RB	No. 26, 27		PE PoDL classes 10, 11, 12
		$U_N = 30V_{DC}$	
		$U_M = 250V_{AC}$	-
MC, RC	No. 26, 27	<u>1), 3)</u>	<u>2), 3)</u>
		2-WISE power load	2-WISE power load
		APL port profile SLAA	APL port profile SLAC
		$U_i = 17.5V$	U _i = 17.5V
		$I_i = 380 \text{mA}$	li = 380mA
		$P_i = 5.32W$	P _i = 5.32W
		L _i ≤ 10µH	L _i ≤ 10µH
		Ci ≤ 5nF	C _i ≤ 5nF
NA, RA	IO1 / RJ45	$U_N = 30V_{DC}$	
		$U_M = 250 V_{AC}$	

1)

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

Input/Output 2		
Order Code	terminal no.	values
g =		
C, G, K	No. 24, 25	$U_i = 30V$
		$I_i = 100 \text{mA}$
		$P_i = 1.25W$
		$L_i = 0$
		$C_i = 0$
B, D, E, F, I, J, L	No. 24, 25	$U_N = 30V_{DC}$
		$U_{M} = 250 V_{AC}$
Н	No. 24, 25	$U_N = 30V_{DC}$
		$I_{\rm N} = 100 \text{mA}_{\rm DC} / 500 \text{mA}_{\rm AC}$
		$U_M = 250 V_{AC}$

Input/Output 3		
Order Code h =	terminal no.	values
С, G, К	No. 22, 23	$\begin{array}{llllllllllllllllllllllllllllllllllll$
B, D, E, F, I, J, L	No. 22, 23	$ \begin{array}{l} U_{N} &= 30 V_{DC} \\ U_{M} &= 250 V_{AC} \end{array} $
Н	No. 22, 23	$\begin{array}{ll} U_N &= 30 V_{DC} \\ I_N &= 100 m A_{DC} / 500 m A_{AC} \\ U_M &= 250 V_{AC} \end{array}$





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

Service Interface		
Order Code dd =	terminal no.	values
BB, B7	Service Interface	 Service Interface shall only be installed 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: Ui = 10V, Ii = n.a., Pi = n.a., Ci = 200nF, Li = 0
BD, B8	Service Interface	 Service Interface shall only be installed to an non intrinsically safe circuit with: U_N = 3.3V, U_M = 250V_{AC} or to an intrinsically safe circuit with: Ui = 10V, Ii = n.a., Pi = n.a., Ci = 200nF, Li = 0
BS, BJ, BL, BN	Service Interface	$U_{\rm N} = 3.3 V$

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	terminal no.	values
dd =		
BB, BD, B7, B8	No. 81, 82, 83, 84	Uo = 3.9V
		lo = 1.5A (spark)
		200mA (power)
		Po = 600 mW
		Ri = 2.6Ω
		Co = 670µF
		Lo = 0
BS	No. 81, 82, 83, 84	$U_{\rm N} = 3.3 V$
		$I_N = 150 \text{mA}$

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 = ≤ 0.024 mH/Ω shall be used.





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> 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:

<u>5*****</u> and O5***	** with order code d	ld = BB	B, BD, B7, B8 in combination with k = B (ISEM in transmitter):
Transmitter term	ninal board:		
Terminals	4, 5, 6, 7, 8, 32, 33,	->	Uo = 26.6V, Io = 19.2mA, Po = 128mW, Lo = 20mH, Co = 94nF
	34, 35, 36, 37		and
			Uo = 13.3V, Io = 39.2mA, Po = 131mW, Lo = 20mH, Co = 94nF
Terminals	41, 42	->	$U_{N} = 60V, I_{N} = 90mA$
Sensor terminal	board:		
Terminals	4, 5, 6, 7, 8, 32, 33,	->	Ui = 26.6V, li = n.a., Pi = n.a., Li = 0, Ci = 0
	34, 35, 36, 37		
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 term	inal board:		
Terminals	4, 5, 6, 7, 8, 32, 33,	->	Uo = 26.6V, Io = 19.2mA, Po = 128mW, Lo = 50mH, Co = 325nF
	34, 35, 36, 37		and
			Uo = 13.3V, Io = 39.2mA, Po = 131mW, Lo = 50mH, Co = 325nF
Terminals	41, 42	->	$U_N = 60V$
Sensor terminal	board :		
	4, 5, 6, 7, 8, 32, 33,	->	Ui = 26.6V, li = 19.2mA, Pi = n.a., Li = 0, Ci = 0 (+13.3V to -13.3V)
	34, 35, 36, 37		Or
	- , , ,		Ui = 13.3V, li = 39.2mA, Pi = n.a., Li = 0, Ci = 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 $\leq 1 \ \mu$ F/km

5^{*****} and $O5^{*****}$ with order code dd = B.	I, 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 ->	$U_N = 3.3V$





3.2. Thermal Parameters (Zone 1)

<u>otes:</u> his page aj	pplies to ve	rsions v	vith exte	nded orc	ler code (covering:		5Ŵ	H/P)3B** /3B** - do h approv	d	cCSAus :		l/P)3B** - d /3B** - dd… ⊱, C2, C4		ECEx / AT	5x3B	cx - dd cx - dd = BB, BD			O5x3Bx O5x3Bx				
				Standa	rd version	n with sen	sor not in	sulated:											with sense I of E+H F		ed			
Sensor	Size / DN	Liner	T _{med.min} (°C)	T _{a.max} (°C)	т6	T5	T _{med.max} T4	(°C) (2) T3	T2	T1		Sensor	Size / DN	Liner	T _{med.min} (°C)	T _{a.max} (°C)	T6	T5	T4	°C) (2) T3	T2	T1		
Promag P	15600	PTFE	-40	(1) 45 50	(85°C) 80 60	(100°C 90 90	(135°C) 130 130	(200°C) 130 130	(300°C) 130 130	(450°C) 130 130		Promag P Promag W	15600	PTFE	-40	(1) 50 55	(85°C) 60	(100°C 95 95	(135°C) 130 130	(200°C) 130 130	(300°C) 130 130	(450°C) 130 130		
Promag W				50 55 60			130 130 100	130 130 100	130 130 100	130 130 100		Promay W	25200	PFA	-40	60 45	 80	 95	100 130	100 150	100 150	100 150		
	25200	PFA	-40	40 45 50	80 80 60	95 95 90	130 130 130	150 130 130	150 130 130	150 130 130			503000	HG	-20	50 60 50	60 60	95 80	130 100 80	150 100 80	150 100 80	150 100 80	-	
	503000	HG	-20	60 50	 60	 80	100 80	100 80	100 80	100 80			251000	PU	-20	60 50	 50	80 50	80 50	80 50	80 50	80 50		
	251000 253000	PU ETFE	-20 -40	60 50 45	 50 80	 50 95	80 50 120	80 50 120	80 50 120	80 50 120			253000	ETFE (3)	-40	45 55 60	80 	95 95 95	120 120 100	120 120 100	120 120 100	120 120 100	-	
Promag H	2150	(4) PFA	-40	55 60 50	 80 (3)	95 95 95	120 100 130	120 100 150	120 100 150	120 100 150		(2)	Ta,min = -4(T _{med.max} may Limitation of	be reduc	ed by vers	ions. For	limitation	of range f	for T _{med} se e (see nan	e name pla eplate)	ate			
Fiolinay II	2130	FIA	-40	55 (3)	65 (3)	80	130	150	150															
Notes: (1)	Ta min = -4(0°C (for I	imitation	60 (3)			115	115	115	150 115								ure version n complia	on with se nce with m			tec):		
(2) (3)	Ta,min = -4(T _{med.max} may Promag H li versions ava Limitation of	y be redu imited to ailable w	iced by ve Ta,max = ith mediu	60 (3) see name rsions. Fo 50°C @ m temper	 plate) or limitation class T6 a ature meas	 n of range nd Tmed,r surement	115 for T _{med} se max = 50°(115 e name p C @ class	115 late	115		Sensor	Size / DN	Liner	T _{med.mi} (°C)	(insul T _{a.ma} (°C) (1)	ation not in x T _{med.me} @T1 (°C)	T6 (85°C	Tmax to T5 (100°	anual of E be measu senso T4 C (135°C	+H Flow red at ret or neck (° T3 C) (200°	ference pr C) C) C) (300	2 T °C) (450	
(2) (3)	T _{med.max} may Promag H li versions ava	y be redu imited to ailable w	iced by ve Ta,max = ith mediu	60 (3) see name rsions. Fo 50°C @ m temper depending	 plate) or limitation class T6 a ature meas	 n of range nd Tmed,i surement ss pressu	115 for T _{med} se max = 50°(re (see nai	115 ee name p C @ class meplate)	115 Ilate T6 for opt	115		Sensor Promag P Promag W	Size / DN all	Liner PTFE PFA HG	(°C) -40 -20	(insul	ation not in (°C) 130 150 80	n complian	Tmax to T5 (100°(71.3 71.3	anual of E be measu senso T4 C (135°C 72.0 72.0 72.0 72.0	+H Flown red at ref or neck (° T3 (200° 72. 72. 72.	ference pr C) C) (300 0 72 0 72 0 72	2 T °C) (450 .0 72 .0 72 .0 72	0°C 2.0 2.0 2.0
(2) (3)	T _{med.max} may Promag H li versions ava	y be redu imited to ailable w	iced by ve Ta,max = ith mediu	60 (3) see name srsions. Fo 50°C @ m temper depending High te T _{a.max} (°C)	 plate) or limitation class T6 a ature meas g on proce mperature T6	 n of range nd Tmed,1 surement ss pressu e version T5	115 for T _{med} se nax = 50°(re (see nar with sens T _{med max} T4	115 ee name p C @ class meplate) or not ins (°C) (2) T3	115 Ilate T6 for opt sulated: T2	115 ional		Promag P Promag W		PTFE	(°C) -40 -20 -20	(insul T _{a.ma} (°C) (1) 60 60	ation not in Tmed.ma (°C) 130 150	T6 (85°C) 56.4 56.4 56.4 56.4 56.4	The with m Tmax to T5 (100°(71.3 71.3 71.3 71.3 71.3	anual of E be measu senso (135°C 72.0 72.0 72.0 72.0 72.0	+H Flown red at rei pr neck (° T3 C) (200° (200° 72. 72. 72. 72. 72.	ference pr C) C) (300 0 72 0 72 0 72 0 72 0 72	2 T °C) (450 .0 72 .0 72 .0 72 .0 72	0°C 2.0 2.0
(2) (3) (4) Sensor Promag P	T _{med.max} may Promag H ii versions avz Limitation of Size / DN 15600	y be redu imited to ailable w f T _{med.max}	Ta,max = ith mediuu = 120°C	60 (3) see name rsions. F(50°C @ m temper- depending High te T _{a.max} (°C) (1) 55 60	 plate) or limitation class T6 a ature meas g on proce mperature T6 (85°C) 60 	 n of range nd Tmed, surement ss pressu e version t 5 (100°C 95 95 	115 for T _{med} se max = 50°(re (see name with sens T _{med max} T4 (135°C) 130 130	115 ee name p C @ class meplate) or not ins (°C) (2) T3 (200°C) 130 130 100	115 late T6 for opt sulated: (300°C) 130 130 100	115 ional (450°C) 130 100		Promag P Promag W Notes: (1) Ta,min = (2) Location		PTFE PFA HG PU ETFE mitation s	(°C) -40 -20 -20 -40 ee name p	(insul Tama (°C) (1) 60 60 60 60 60 100 100 100 100	ation not in (°C) 130 150 80 50 120 (3	T6 (85°C 56.4 56.4 56.4 56.3	nce with m Tmax to T5 (100°(71.3 71.3 71.3 71.3 71.3 71.3	anual of E be measu senso (135°C 72.0 72.0 72.0 72.0 72.0	+H Flown rred at ref or neck (° T3 (200° 72. 72. 72. 72. 72. 72.	ference pr C) C) (300 0 72 0 72 0 72 0 72 0 72	2 T °C) (450 .0 72 .0 72 .0 72 .0 72	0°C 2.0 2.0 2.0 2.0
(2) (3) (4) Sensor Promag P	T _{med.max} may Promag H li versions ava Limitation of Size / DN	y be redu imited to ailable w f T _{med.max}	teed by ve Ta,max = ith medium = 120°C	60 (3) see name ersions. Fe 50°C @ m temper- depending High te T _{a.max} (°C) (1) 50 55	 plate) or limitation class T6 a dure meas g on proce mperature T6 (85°C) 60 	 n of range surement ss pressu e version T5 (100°C 95 95	115 for T _{med} se nax = 50°(re (see nai with sens Tmed max T4 (135°C) 130 130	115 ee name p C @ class neplate) or not ins (°C) (2) T3 (200°C) 130 130	115 Iate T6 for opt sulated: (300°C) 130 130	115 ional (450°C) 130 130	Aenderunge	Promag P Promag W Notes: (1) Ta,min = (2) Location (3) Limitatio	all = -40°C (for lin o of reference on of T _{med.max} -	PTFE PFA HG PU ETFE mitation s point = 120°C c	(°C) -40 -20 -20 -40 ee name p	(insul Ta.ma (°C) (1) 60 60 60 60 60 1ate) Alle ge	ation not ii x T _{med mx} @T1 (*C) 130 150 80 50 120 (3 ss pressur	x T6 (85°C (nce with m Tmax to T5 (100°(71.3 71.3 71.3 71.3 71.3 71.3 71.3	anual of E be measu senso (135°C 72.0 72.0 72.0 72.0 72.0	+H Flow/ irred at rei or neck (°) (200°) 72. <t< td=""><td>ference pr C) C) (300 0 72 0 72 0 72 0 72 0 72 0 72</td><td>2 T °C) (450 .0 72 .0 72 .0 72 .0 72</td><td>0°C 2.0 2.0 2.0 2.0</td></t<>	ference pr C) C) (300 0 72 0 72 0 72 0 72 0 72 0 72	2 T °C) (450 .0 72 .0 72 .0 72 .0 72	0°C 2.0 2.0 2.0 2.0
(2) (3) (4) Sensor Promag P	T _{med.max} may Promag H li versions ava Limitation of 15600 25200 503000	y be redu imited to ailable w f Tmed.max Liner PTFE PFA HG	teed by ver Ta,max = ith medium = 120°C Tmed.min (°C) -40 -40 -20	60 (3) see name ersions. Fr 50°C @ m temper depending High te T_a max (°C) (1) 50 50 60 55 60 50 60 50 60 60 60 60 60	 plate) primitation class T6 a ature meas a on proce mperature (85°C) 60 80 60 60 60 60 	 n of range nd Tmed, surement ss pressu e version 95 95 95 95 80 80	115 for T _{med} se nax = 50° (re (see nai with sens T _{med max} (135°C) 130 130 130 130 130 130 130 80	115 te name p C @ class meplate) or not ins (°C) (2) T3 (200°C) 130 130 130 150 150 150 150 150 80	115 Hate T6 for opt sulated: T2 (300°C) 130 130 130 150 150 150 100 80	115 ional T1 (450°C) 130 130 150 150 150 150 100 80	Aenderunge	Promag P Promag W Notes: (1) Ta,min = (2) Location (3) Limitatio	all = -40°C (for lin of reference on of T _{med.max} :	PTFE PFA HG PU ETFE mitation s point = 120°C c	(°C) -40 -20 -20 -20 -40 ee name p	(insul (insul (°C) (1) 60 60 60 60 60 1ate) and a second and	ation not ii x T _{med my} @T1 (*C) 130 150 80 50 120 (3 ss pressur	x T6 (85°C	Image Time Tmax to T (100° 1 71.3 71.3 71.3 71.3 71.3 71.3 xbehalten. xxbehalten.	anual of E be measu senso 74 (135°C 72.0 72.0 72.0 72.0	+H Flow/ rred at reior neck (° (2007 72. <t< td=""><td>ference pr C) C) (300 0 72 0 72 0 72 0 72 0 72 0 72</td><td>2 T °C) (450 .0 72 .0 72 .0 72 .0 72</td><td>0°C 2.0 2.0 2.0 2.0 2.0</td></t<>	ference pr C) C) (300 0 72 0 72 0 72 0 72 0 72 0 72	2 T °C) (450 .0 72 .0 72 .0 72 .0 72	0°C 2.0 2.0 2.0 2.0 2.0
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(2) (3) (4) Sensor Promag P Promag W	T _{med.max} may Promag H li versions ava Limitation of Size / DN 15600 25200 503000 251000	y be redu imited to ailable w f T _{med.max} F T _{med.max} PTFE PFA HG HG ETFE (3) 0°C (for I	reed by ve Ta,max = ith medium = 120°C Tmed.min (°C) -40 -40 -20 -20 -40 -20 -40	60 (3) see name resions. F. 50°C @ m temper- dependin. High te T _{a.max} (°C) (1) 55 50 60 45 50 60 60 50 55 55 50 60 55 50 60 55 50 55 55 50 55 55 55 55 5	 plate) plate) plate) mperature measure measure measure measure for measure for measure for measure for measure for measure for measure for measure for measure for measure for for for for for for for for for for	 n of range nd Tmed, surement ss pressu e version 95 95 95 80 80 80 50 95 95 95 95 95 95 95	115 for T _{med} se nax = 50°C re (see nat with sens T _{met max} 130 130 130 130 130 130 130 130 130 130	115 ee name p C @ class meplate) or not ins (20°C) 130 130 150 150 150 150 150 150 100 80 80 80 50 50 120 120 120	115 ilate T6 for opt sulated: (300°C) 130 130 150 150 150 100 80 50 120 120 100	115 ional (450°C) 130 150 150 150 150 80 80 50 50 120	Control	Promag P Promag W Notes: (1) Ta.min = (2) Location (3) Limitatio (3) Lim	all = -40°C (for lin of reference in of T _{med.max} 5.2016 / Bn 10.2016 / Bn 12.2018 / Bn 6.2021 / Bn 1ECEX, A	PTFE PFA HG PU ETFE mitation s point = 120°C c F 12.11 G H J K TEX, ((°C) -40 -20 -20 -20 -20 -20 -20 -20 -20 -20 -2	(insul ("c) (1) 60 60 60 60 60 60 1ate) Disse 2 Genehu dritten zugän CSAUS	Ation not if Timed mark (CT) (°C) 130 150 80 50 120 (3) SS pressur SS pressur SS pressur SS pressur	r complian T6 (85°C 56.4 56.4 56.4 56.3 e (see nan eberrechte. ve chne unseter vervielfältigt v Konkurrenzfir	Image Time Tmax to T (100° 1 71.3 71.3 71.3 71.3 71.3 71.3 xbehalten. xxbehalten.	anual of E be measu sensc 14 1(135°C 72.0 72.0 72.0 72.0 72.0 Frsetzt du Ersetzt du Ersetzt für: Ersteller: f	+H Flow/ red at rei or neck (° T3) (200° 72. 72. 72. 72. 72. (2) re point (2) re point FES / Bn chng/FES02	ference pr C) i T1 C) (300 0 72 0 72 0 72 0 72 0 72 0 72 0 72	2 T C (450 0 72 0 72 0 72 0 72 0 72 0 72	50°C 2.0 2.0 2.0 2.0 2.0
(2) (3) (4) Sensor Promag P Promag W Notes: (1) (2)	T _{inetnex} may Promag H li versions ava Limitation of Size / DN 15600 25200 503000 251000 253000 Ta,min = -40	y be redu imited to ailable w fTmedmax TTmedmax PTFE PFA PFA HG PTFE (3) 0°C (for I y be redu	reed by ve Ta,max = ith medium = 120°C Tmed.min (°C) -40 -40 -20 -20 -40 -20 -40 -20 -40	60 (3) see name prisions. F. 50°C @ m temperations m temperations depending High te Ta.max (°C) (1) 50 60 60 60 50 50 60 50 60 50 60 50 60 50 60 50 60 50 60 50 60 50 60 55 60 see name resions. F.*	 plate) or limitation class T6 a ature mease on procee mperature T6 (85°C) 60 80 60 50 80 60 50 80 60 50 80 60 50 70 80 60 50 80 60 50 80 70 70 80 80 70 70 80 80 70 70 80 80 70 70 80 80 80 70 70 80 80 70 70 80 80 70 70 70 80 70 70 70 70 70 70 70 70 70 70 70 70 70	 n of range nd Tmed, surement ss pressu e version 75 (100°C 95 95 95 95 80 80 80 50 50 95 95 95 95 95 95	115 for T _{med} semax = 50°C re (see nal with sens T _{med max} T4 (135°C) 130 130 130 130 130 100 130 120 120 120 120 120 120 120 120 120 120 120 120 120 120	115 ee name p C @ class neplate) or not ins (*C) (2) T3 (200°C) 130 130 130 150 150 150 150 150 150 150 100 80 80 80 50 120 120 100 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	115 ilate T6 for opt sulated: (300°C) 130 130 150 150 150 100 80 50 120 120 100	115 ional T1 (450°C) 130 130 150 150 150 150 150 150 200 80 50 120	Control Zone 1,	Promag P Promag W Notes: (1) Ta,min = (2) Location (3) Limitatio (3) Lim	all = -40°C (for lin of reference on of T _{met.max} + 5:2018 / Bn 0:2016 / Bn 5:2017 / Bn 12:2018 / Bn 16:2021 / Bn 16:2021 / Dn 1ECEX, A , CI.I Div.	PTFE PFA HG PU ETFE mitation s point = 120°C c G H J K TEX, ((°C) -40 -20 -20 -20 -20 -20 -20 -20 -20 -20 -2	(insul ("c) (1) 60 60 60 60 60 60 1ate) Disse 2 Genehu dritten zugän CSAUS	Ation not if Timed mark (CT) (°C) 130 150 80 50 120 (3) SS pressur SS pressur SS pressur SS pressur	r complian T6 (85°C 56.4 56.4 56.4 56.3 e (see nan eberrechte. ve chne unseter vervielfältigt v Konkurrenzfir	Image Time Tmax to T (100° 1 71.3 71.3 71.3 71.3 71.3 71.3 xbehalten. xxbehalten.	anual of E be measu senso T4 (135°C 72.0 72.0 72.0 72.0 72.0 72.0 72.0 72.0	+H Flow/ red at rei r neck (* 72.) 72.	60/F/FES026	2 T C) (45(0 72) 0 72 0 7	60°C 2.0 2.0 2.0 2.0 2.0
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				Sensor	of Standa	ard versio	n with se	nsor not i	insulated	I				[ersion with f E+H Flowte	sensor insulate	d		
Sensor	Size / DN	Liner	T _{med.min} (°C)	T _{a.max} (°C)	T6	T5	T4	(°C) (2) T3	T2	T1	Sensor	Size / DN	Liner	T _{med.min} (°C)	T _{a.max} (°C)		T5	med.max (°C) (T4 T3	3 T2	T1		
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				60	80	95	130	130	130	130		503000	HG	-20	60		80	80 80		80		
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	251000	PU	-20	50	50	50	50	50	50	50		253000	ETFE	-40	55			120 12		120		
	253000	ETFE (4)	-40	60	80	95	120	120	120	120	Notoo: /1) Ta,min = -4	(3)	nitation of	60		95	120 12	0 120	120		
Promag H	2150	PFA	-40	45	80	95	130	150	150	150) Ta, min =) T _{med.max} ma					range for	T see nar	ne plate			
-				55 (3)	80 (3)	95	130	130	130	130) Limitation										
1-4 (4)	Ta asia 44	0 /f I		60 (3)	80 (3)	95	110	110	110	110	-				Conco	r of High te	maaratu	o vorsion u	vith sensor insul	atad		
	Ta,min = -40 T _{med.max} may					n of range	for T se	e name n	olate										al of E+H Flowtec			
(3)	Promag H li	mited to	Ta,max =	50°C @ 0	class T6 a	ind Trned,r	nax = 50°(C @ class	T6 for op	tional			1			-	-					
(4)	versions ava Limitation of										Sensor	Size / DN	Liner	T _{med.n}	nin T _{a.max}	T _{med.max} @T1			easured at refere sensor neck (°C)	nce point at		
(4)	Limitation of	med.max	= 120°C (repending	g on proce	ss pressu	e (see na	neplate)			1			(°C)	(°C)	(°C)	T6	T5	T4 T3	T2	T1	
				Sensor	of High te	emperatu	re version	with sen	nsor not i	nsulated					(1)		(85°C)	(100°C ((135°C) (200°C)	(300°C) (45	50°C)	
											Promag P		PTFE	-40		130	63.8	65.7	69 69		69	
Sensor	Size / DN	Liner	т	т	1		т	(°C) (2)			Promag W	'	PFA HG	-40		150 80	63.8 63.8	65.7 65.7	69 69 69 69		69 69	
Selisor	SIZE / DIN	Linei	T _{med.min}	T _{a.max}			T _{med.max}	(0)(2)		-											0.9	
			(°C)		T6	T5	T4	T3	T2	T1	1		PU	-20							69	
			(°C)	(°C) (1)	T6 (85°C)	T5 (100°C	T4 (135°C)	T3 (200°C)	T2 (300°C)						50	50 120 (3)	63.8 63.8	65.7 65.7	69 69 68 68	69	69 68	
	15600	PTFE	-40	(°C) (1) 60	(85°C) 80	(100°C 95	T4 (135°C) 130	(200°C) 130	(300°C) 130	(450°C) 130	Notes:	1010 //	PU ETFE	-20 -40	50 60	50	63.8	65.7	69 69	69		
	25200	PFA	-40 -40	(°C) (1) 60 60	(85°C) 80 80	(100°C 95 95	T4 (135°C) 130 130	(200°C) 130 150	(300°C) 130 150	(450°C) 130 150	(1) Ta,min	= -40°C (for	PU ETFE	-20 -40	50 60	50	63.8	65.7	69 69	69		
		PFA HG	-40	(°C) (1) 60	(85°C) 80	(100°C 95	T4 (135°C) 130	(200°C) 130	(300°C) 130	(450°C) 130	(1) Ta,min (2) Locatio	= -40°C (for on of referenc ion of T _{med.max}	PU ETFE limitation so e point	-20 -40 ee name	50 60 plate)	50 120 (3)	63.8 63.8	65.7 65.7	69 69	69		
	25200 503000	PFA HG PU ETFE	-40 -40 -20	(°C) (1) 60 60 60	(85°C) 80 80 80	(100°C 95 95 80	T4 (135°C) 130 130 80	(200°C) 130 150 80	(300°C) 130 150 80	(450°C) 130 150 80	(1) Ta,min (2) Locatio	on of referenc	PU ETFE limitation so e point	-20 -40 ee name	50 60 plate)	50 120 (3)	63.8 63.8	65.7 65.7	69 69			
Promag W	25200 503000 251000 253000	PFA HG PU ETFE (3)	-40 -40 -20 -20 -40	(°C) (1) 60 60 60 50 60	(85°C) 80 80 80 50 80	(100°C 95 95 80 50	T4 (135°C) 130 130 80 50	(200°C) 130 150 80 50	(300°C) 130 150 80 50	(450°C) 130 150 80 50	(1) Ta,min (2) Locatio	on of referenc	PU ETFE limitation so e point	-20 -40 ee name	50 60 plate)	50 120 (3)	63.8 63.8	65.7 65.7	69 69 68 68			
Promag W Notes: (1)	25200 503000 251000 253000 Ta,min = -40	PFA HG PU ETFE (3))°C (for I	-40 -40 -20 -20 -40	(°C) (1) 60 60 60 50 60 60	(85°C) 80 80 50 80 plate)	(100°C 95 95 80 50 95	T4 (135°C) 130 130 80 50 120	(200°C) 130 150 80 50 120	(300°C) 130 150 80 50 120	(450°C) 130 150 80 50	(1) Ta,min (2) Locatio	on of referenc	PU ETFE limitation so e point	-20 -40 ee name	50 60 plate)	50 120 (3)	63.8 63.8	65.7 65.7	69 69 68 68 (2) reference			
Promag W Notes: (1) (2)	25200 503000 251000 253000	PFA HG PU ETFE (3) °C (for I be redu	-40 -20 -20 -40 -40 imitation s ced by ve	(°C) (1) 60 60 50 60 60 ee name rsions. Fo	(85°C) 80 80 50 80 plate) plate) or limitation	(100°C 95 95 80 50 95 95	T4 (135°C) 130 130 80 50 120 for T _{med} se	(200°C) 130 150 80 50 120 ee name p	(300°C) 130 150 80 50 120	(450°C) 130 150 80 50	(1) Ta,min (2) Locatio	on of referenc	PU ETFE limitation so e point	-20 -40 ee name	50 60 plate)	50 120 (3)	63.8 63.8	65.7 65.7	69 69 68 68 (2) reference			
Promag W Notes: (1) (2)	25200 503000 251000 253000 Ta,min = -40 T _{med.max} may	PFA HG PU ETFE (3) °C (for I be redu	-40 -20 -20 -40 -40 imitation s ced by ve	(°C) (1) 60 60 50 60 60 ee name rsions. Fo	(85°C) 80 80 50 80 plate) plate) or limitation	(100°C 95 95 80 50 95 95	T4 (135°C) 130 130 80 50 120 for T _{med} se	(200°C) 130 150 80 50 120 ee name p	(300°C) 130 150 80 50 120	(450°C) 130 150 80 50	(1) Ta,min (2) Locatic (3) Limitat	on of referenc ion of T _{med.max}	PU ETFE limitation se e point = 120°C d	-20 -40 ee name epending	50 60 plate) on process	50 120 (3) s pressure (63.8 63.8 see name	65.7 65.7 plate)	69 69 68 68 (2) reference point			
Promag W Notes: (1) (2)	25200 503000 251000 253000 Ta,min = -40 T _{med.max} may	PFA HG PU ETFE (3) °C (for I be redu	-40 -20 -20 -40 -40 imitation s ced by ve	(°C) (1) 60 60 50 60 60 ee name rsions. Fo	(85°C) 80 80 50 80 plate) plate) or limitation	(100°C 95 95 80 50 95 95	T4 (135°C) 130 130 80 50 120 for T _{med} se	(200°C) 130 150 80 50 120 ee name p	(300°C) 130 150 80 50 120	(450°C) 130 150 80 50	(1) Ta,min (2) Locatio	on of referenc ion of T _{med.max}	PU ETFE e point = 120°C d	-20 -40 ee name	50 60 plate) on process	50 120 (3)	63.8 63.8 See name	65.7 65.7 plate)	69 69 68 68 (2) reference			
Promag W Notes: (1) (2)	25200 503000 251000 253000 Ta,min = -40 T _{med.max} may	PFA HG PU ETFE (3) °C (for I be redu	-40 -20 -20 -40 -40 imitation s ced by ve	(°C) (1) 60 60 50 60 60 ee name rsions. Fo	(85°C) 80 80 50 80 plate) plate) or limitation	(100°C 95 95 80 50 95 95	T4 (135°C) 130 130 80 50 120 for T _{med} se	(200°C) 130 150 80 50 120 ee name p	(300°C) 130 150 80 50 120	(450°C) 130 150 80 50	(1) Ta,min (2) Locatic (3) Limitat	on of referenc ion of T _{med.max} A 10.05.2010 3 24.10.2010	PU ETFE e point = 120°C d	-20 -40 ee name epending	50 60 plate) on process	50 120 (3) s pressure (Alle gesetzlicher Diese Zeichnung	63.8 63.8 see name	65.7 65.7 plate)	69 69 68 68 (2) reference point Ersetzt durch:			
Promag W Notes: (1) (2)	25200 503000 251000 253000 Ta,min = -40 T _{med.max} may	PFA HG PU ETFE (3) °C (for I be redu	-40 -20 -20 -40 -40 imitation s ced by ve	(°C) (1) 60 60 50 60 60 ee name rsions. Fo	(85°C) 80 80 50 80 plate) plate) or limitation	(100°C 95 95 80 50 95 95	T4 (135°C) 130 130 80 50 120 for T _{med} se	(200°C) 130 150 80 50 120 ee name p	(300°C) 130 150 80 50 120	(450°C) 130 150 80 50	(1) Ta,min (2) Locatic (3) Limitat	on of referenc ion of T _{med.max}	PU ETFE limitation se e point = 120°C d	-20 -40 ee name epending	50 60 plate) on process 22 / Bn	50 120 (3) s pressure (Alle gesetzlicher Diese Zeichnung	63.8 63.8 isee name	65.7 65.7 plate) te. vorbehalten. sere tigt werden noch	69 69 68 68 (2) reference point Ersetzt durch:			
Promag W Notes: (1) (2) (3)	25200 503000 251000 253000 Ta,min = -40 T _{med.max} may Limitation of	PFA HG PU ETFE (3) °C (for I be redu T _{med.max}	-40 -40 -20 -40 imitation s ced by ve = 120°C ((°C) (1) 60 60 50 60 60 ee name rsions. Fo	(85°C) 80 80 50 80 plate) plate) or limitation	(100°C 95 95 80 50 95 95	T4 (135°C) 130 130 80 50 120 for T _{med} se	(200°C) 130 150 80 50 120 ee name p	(300°C) 130 150 80 50 120	(450°C) 130 150 80 50	(1) Ta,min (2) Locatic (3) Limitat	A 10.05.2010 3 24.10.2014 C 03.05.2017	PU ETFE limitation se e point = 120°C d 3/Bn F 3/Bn G 7/Bn H 3/Bn J	-20 -40 ee name epending	50 60 plate) on process	50 120 (3) s pressure (Alle gesetzlicher Diese Zeichnung Genehmigung w	63.8 63.8 see name	65.7 65.7 plate) te. vorbehalten. sere tigt werden noch	69 69 68 68 (2) reference point Ersetzt durch: Ersetz für: Ersetz für: Ersteller: FES /			s.de
Promag W lotes: (1) (2) (3)	25200 503000 251000 253000 Ta,min = -40 T _{med.max} may	PFA HG PU ETFE (3) 0°C (for I be redu T _{med.max}	-40 -40 -20 -20 -40 imitation s ced by ve = 120°C ((°C) (1) 60 60 50 60 60 ee name rsions. Fo	(85°C) 80 80 50 80 plate) plate) or limitation	(100°C 95 95 80 50 95 95	T4 (135°C) 130 130 80 50 120 for T _{med} se	(200°C) 130 150 80 50 120 ee name p	(300°C) 130 150 80 50 120	(450°C) 130 150 80 50	(1) Ta,min (2) Locatic (3) Limitat	A 10.05.2014 3 24.10.2016 C 03.05.2017 5 15.02.2018 5 10.06.2021	PU ETFE limitation s: e point = 120°C d 3/Bn F 3/Bn G 7/Bn H 8/Bn J 1/Bn K	-20 -40 ee name epending	50 60 plate) on process	50 120 (3) s pressure (Alle gesetzliche Diese Zeichnung Genehmigung w dritten Personer zugängig gema	63.8 63.8 see name	65.7 65.7 plate) te. vorbehalten. sere tigt werden noch	69 69 68 68 (2) reference point Ersetzt durch: Ersetzt für: Ersteller: FES / FLE: M-Zeichng/FE	69 68 80 80		s.di
Promag W lotes: (1) (2) (3)	25200 503000 251000 253000 Ta,min = -4C T _{med.max} may Limitation of	PFA HG PU ETFE (3) 0°C (for I be redu T _{med.max}	-40 -40 -20 -40 imitation s ced by ve = 120°C ((*C) (1) 60 60 60 60 60 60 60 60 60 60 60 60 60	(85°C) 80 80 80 50 80 plate) or limitation g on proce	(100°C 95 95 80 50 95 95	T4 (135°C) 130 130 80 50 120 for T _{med} se	(200°C) 130 150 80 50 120 ee name p	(300°C) 130 150 80 50 120	(450°C) 130 150 80 50	Aenderungen: Aenderungen: E	A 10.05.2011 3 24.10.2016 C 03.05.2011 5 15.02.2018 E 10.06.2021 Wing IEC	PU ETFE limitation se e point = 120°C d 3/Bn F 3/Bn G 7/Bn H 3/Bn J 1/Bn K Ex, ATE	-20 -40 ee name eepending	50 60 plate) on process 22 / Bn A, cCS/	50 120 (3) s pressure (Alle gesetzlichen Genehmigung w dritten Personen zugängig gema	63.8 63.8 see name g darf ohne un eefer vervielfå e und Konkurre cht werden.	65.7 65.7 plate) te. vorbehalten. sere tigt werden noch	69 69 68 68 (2) reference point Ersetzt durch: Ersetzt für: Ersetzt für: Ersetzt für: Ersetzt für: Gezeichnet	69 68 80 80 90 90 90 90 90 90 90 90 90 90 90 90 90	- changes	s.d
Promag W lotes: (1) (2) (3)	25200 503000 251000 253000 Ta,min = -4(T _{med.max} may Limitation of er for all ve T6 (85°C)	PFA HG PU ETFE (3) 0°C (for I be redu T _{med.max}	-40 -40 -20 -20 -40 imitation s ced by ve = 120°C ((*C) (1) 60 60 60 60 60 60 60 60 60 60 60 60 60	(85°C) 80 80 80 50 80 50 80 9 9 9 9 9 10 10 10 10 10 10 10 10 10 10	(100°C 95 95 80 50 95 95	T4 (135°C) 130 130 80 50 120 for T _{med} se	(200°C) 130 150 80 50 120 ee name p	(300°C) 130 150 80 50 120	(450°C) 130 150 80 50	Aenderungen: // Control Dra Zone 1, Zoi	A 10.05.2010 3 24.10.2010 C 03.05.2011 C 03.05.2011 E 10.06.2022 Wing IEC ne 21, CI.	PU ETFE limitation se e point = 120°C d 3/Bn F 3/Bn G 7/Bn H 3/Bn J 1/Bn K Ex, ATE	-20 -40 ee name eepending	50 60 plate) on process 22 / Bn A, cCS/	50 120 (3) s pressure (Alle gesetzlichen Genehmigung w dritten Personen zugängig gema	63.8 63.8 see name g darf ohne un eefer vervielfå e und Konkurre cht werden.	65.7 65.7 plate) te. vorbehalten. sere tigt werden noch	69 69 68 68 (2) reference point Ersetzt durch: Ersetzt für: Ersteller: FES / FLE: M-Zeichng/FE	69 68 80 80 90 90 90 90 90 90 90 90 90 90 90 90 90	- changes	s.de
Promag W (2) (3)	25200 503000 251000 253000 Ta,min = -4C T _{med.max} may Limitation of	PFA HG PU ETFE (3))°C (for I be redu Tmed.max	-40 -40 -20 -20 -40 imitation s ced by ve = 120°C (: :	(*C) (1) 60 60 50 60 60 ee name rsions. Fo depending	(85°C) 80 80 50 80 50 80 80 80 90 80 90 80 80 80 80 80 80 80 80 80 8	(100°C 95 95 80 50 95 95	T4 (135°C) 130 130 80 50 120 for T _{med} se	(200°C) 130 150 80 50 120 ee name p	(300°C) 130 150 80 50 120	(450°C) 130 150 80 50	Aenderungen: Aenderungen: E	A 10.05.2010 3 24.10.2010 C 03.05.2011 C 03.05.2011 E 10.06.2022 Wing IEC ne 21, CI.	PU ETFE limitation se e point = 120°C d 3/Bn F 3/Bn G 7/Bn H 3/Bn J 1/Bn K Ex, ATE	-20 -40 ee name eepending	50 60 plate) on process 22 / Bn A, cCS/	50 120 (3) s pressure (Alle gesetzlichen Genehmigung w dritten Personen zugängig gema	63.8 63.8 see name g darf ohne un eefer vervielfå e und Konkurre cht werden.	65.7 65.7 plate) te. vorbehalten. sere tigt werden noch	69 69 68 68 (2) reference point Ersetzt durch: Ersetzt für: Ersetzt für: Ersetzt für: Ersetzt für: Gezeichnet	69 68 80 80 90 90 90 90 90 90 90 90 90 90 90 90 90	- changes	s.de
Promag W (2) (3)	25200 503000 253000 253000 Ta,min = -4C Tmeatmax may Limitation of er for all vec T6 (85°C) 55	PFA HG PU ETFE (3))°C (for I be redu Tmed.max	-40 -40 -20 -20 -40 imitation s ced by ve = 120°C (: :	(*C) (1) 60 60 50 60 60 ee name rsions. Fo depending	(85°C) 80 80 50 80 50 80 80 80 90 80 90 80 80 80 80 80 80 80 80 80 8	(100°C 95 95 80 50 95 95	T4 (135°C) 130 130 80 50 120 for T _{med} se	(200°C) 130 150 80 50 120 ee name p	(300°C) 130 150 80 50 120	(450°C) 130 150 80 50	Aenderungen: // Control Dra Zone 1, Zoi	A 10.05.2011 3 24.10.2014 3 24.10.2014 5 15.02.2013 5 15.02.2013 5 10.06.2022 Wing IEC ne 21, CI. arameter	PU ETFE limitation se e point = 120°C d 3/Bn F 3/Bn F 3/Bn J 1/Bn K Ex, ATE I Div. 1,	-20 -40 ee name eepending	50 60 plate) on process 22 / Bn A, cCS/	50 120 (3) s pressure (Alle gesetzlichen Genehmigung w dritten Personen zugängig gema	63.8 63.8 see name g darf ohne un eefer vervielfå e und Konkurre cht werden.	65.7 65.7 plate) te. vorbehalten. sere tigt werden noch	69 69 68 68 (2) reference point Ersetzt durch: Ersetzt durch: Ersetzt für: Ersteller: FES / FLE: M-Zeichng/FE Gezeichnet Geprüft	69 68 Bn 10.05.2016	- changes	s.do
(2) (3) Transmitt	25200 503000 253000 253000 Ta,min = -4C Tmeatmax may Limitation of er for all vec T6 (85°C) 55	PFA HG PU ETFE (3))°C (for I be redu Tmed.max	-40 -40 -20 -20 -40 imitation s ced by ve = 120°C (: :	(*C) (1) 60 60 50 60 60 ee name rsions. Fo depending	(85°C) 80 80 50 80 50 80 80 80 90 80 90 80 80 80 80 80 80 80 80 80 8	(100°C 95 95 80 50 95 95	T4 (135°C) 130 130 80 50 120 for T _{med} se	(200°C) 130 150 80 50 120 ee name p	(300°C) 130 150 80 50 120	(450°C) 130 150 80 50	Aenderungen: Control Dra Zone 1, Zon Thermal Pa	A 10.05.2011 3 24.10.2014 3 24.10.2014 5 15.02.2013 5 15.02.2013 5 10.06.2022 Wing IEC ne 21, CI. arameter	PU ETFE limitation se e point = 120°C d 3/Bn F 3/Bn F 3/Bn J 1/Bn K Ex, ATE I Div. 1,	-20 -40 ee name eepending	50 60 plate) on process 22 / Bn A, cCS/	50 120 (3) s pressure (Alle gesetzlichen Genehmigung w dritten Personen zugängig gema	63.8 63.8 see name g darf ohne un eefer vervielfå e und Konkurre cht werden.	65.7 65.7 plate) te. vorbehalten. sere tigt werden noch	69 69 68 68 (2) reference point Ersetzt durch: Ersetz für: Ersteller: FES / FLE: M-2eichng/FE Gezeichnet Geprüft Ex-geprüft	69 68 Bn 10.05.2016	- changes	s.do





Proline Promag H/P/W 500 Notes: 5(H/P)5B** - dd******A... O5(H/P)5B** - dd******A... O5x5Bxx - dd******A.. This page applies to versions with extended order code covering: 5x5Bxx - dd******A. 5W5B** - dd*******A... O5W5B** - dd******A... 5x5Bxx - dd******A... O5x5Bxx - dd******A... cCSAus: dd = CN, C6 with approval option IECEx / ATEX: dd = BJ, BN Sensor of Standard version with sensor not insulated Sensor of High temperature version with sensor insulated (for insulation refer to manual of E+H Flowtec) Sensor Size / DN Liner T_{a.mar} x (°C) (2) T_{med min} Tmed ma Sensor Size / DN Liner T_{med.mit} T_{med.max} (°C) (2) (°C) (°C) T6 T5 Τ4 T3 T2 T1 T4 (°C) (°C) T6 T5 T3 T2 T1 (1) (85°C) (100°C (135°C) (200°C) (300°C) (450°C) (1) (85°C) (100°C (135°C) (200°C) (300°C) (450°C) 15 600 PTFF -40 Promag P 60 80 95 130 130 130 130 Promag P -40 15...600 PTFF 60 70 95 130 130 130 130 Promag W 25...200 PFA -40 50 80 95 130 150 150 150 Promag W 25...200 PFA -40 60 75 95 130 150 150 150 95 130 130 60 80 130 130 50...3000 HG -20 60 75 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...1000 PU -20 50 50 50 50 50 50 50 25...3000 ETFE -40 60 70 95 120 120 120 120 25...3000 ETFE -40 60 80 95 120 120 120 120 (3) (4)Notes: (1) Ta.min = -40°C (for limitation see name plate) Promag H 2...150 PFA -40 35 80 95 130 150 150 150 (2) T_{med.max} may be reduced by versions. For limitation of range for T_{med} see name plate 45 80 95 135 135 135 135 (3) Limitation of T_{med.max} = 120°C depending on process pressure (see nameplate) 115 115 60 80 95 115 115 Notes: (1) Ta,min = -40°C (for limitation see name plate) Sensor of High temperature version with sensor insulated (2) Tmed.max may be reduced by versions. For limitation of range for Tmet see name plate (insulation not in compliance with manual of E+H Flowtec): (3) Promag H limited to Ta,max = 50°C @ class T6 and Tmed,max = 50°C @ class T6 for optional T_{max} to be measured at reference point at versions available with medium temperature measurement Liner Sensor Size / DN T_{med.mir} T_{a.max} (4) Limitation of T_{med.max} = 120°C depending on process pressure (see nameplate) @T1 sensor neck (°C) (°C) (°C) Τ6 Т3 (°C) T5 T4 T2 T1 Sensor of High temperature version with sensor not insulated: (1)(85°C) (100°C (135°C) (200°C) (300°C) (450°C) Promag P PTFE -40 130 70.9 all 60 63.8 65.7 69 70.9 70.9 Promag W PFA -40 60 150 63.8 65.7 69 70.9 70.9 70.9 Sensor Size / DN Liner T_{a.max} (°C) T_{med.max} (°C) (2) Tmodimi -20 60 80 63.8 65.7 69 70.9 70.9 70.9 HG (°C) T6 T5 Τ4 T3 T2 T1 50 50 70.9 PU -20 63.8 65.7 69 70.9 70.9 (1) (85°C) (100°C (135°C) (200°C) (300°C) (450°C) FTFF -40 60 120 (3) 15...600 Promag P PTFE -40 60 80 95 130 130 130 130 Notes: Promag W 25...200 PFA -40 60 80 95 130 150 150 150 (1) Ta,min = -40°C (for limitation see name plate) 60 50...3000 HG -20 80 80 80 80 80 80 (2) Location of reference point
 (3) Limitation of T_{med.max} = 120°C depending on process pressure (see nameplate) 25...1000 PU -20 50 50 50 50 50 50 50 25...3000 ETFE -40 60 80 95 120 120 120 120 (3) (2) reference Notes: (1) Ta.min = -40°C (for limitation see name plate) point (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) Aenderungen Alle gesetzlichen Urheberrechte, vorbehalter Ersetzt durch: 10.05.2016 / Bn F 12.10.2022 / Bn Diese Zeichnung darf ohne unsere 24.10.2016 / Bn G Genehmigung weder vervielfältigt werden noch Ersatz für: 03.05.2017 / Bn H dritten Personen und Konkurrenzfirmen 15.02.2018 / Bn J Ersteller: FES / Bn zugängig gemacht werder 10.06.2021 / Bn K FILE: M:\Zeichng\FES0260\F\FES0260F -- changes.doc Control Drawing IECEx, ATEX, CSA, cCSAus Transmitter for all versions: 10.05.2016 Вп Gezeichnet Type of T_{a max} (°C) (1) Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1 Georüft Ordinary location T6 T5 Τ4 enclosure (°C) (85°C) (100°C (135°C) Thermal Parameter 12.10.2022 Ex-georüft Bn aluminium 60 45 60 plastic 60 Proline Promag 300/500 Notes: (1) aluminium enclosure: Ta,min = -50°C (for limitation see name plate) Gesehen plastic enclosure: Ta,min = -40°C FES0260F 3/3 Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach





3.3. Thermal Parameters (Zone 2)

<u>Notes:</u> This page :	applies to v	rersions	with exte	ended or	rder code	covering	j:	5	W3B ^{**} -	** - dd dd oval optior	n cCSA	O5(H/ O5W3 us: dd = CS,	P)3B** - dd. B** - dd CZ		ECEx / A1	5	x3Bxx – (x3Bxx – (I = BS				x3Bxx - dd x3Bxx - dd		
				Standa	rd version	with sen	sor not in	sulated							[mperatur Ilation refe			sor insulat Flowtec)	ed		
												Sensor	Size / DN	Liner	T _{med.min}	T _{a.max}			T _{med.ma}	(°C) (2)			
Sensor	Size / DN	Liner	T _{med.min} (°C)	T _{a.max} (°C)	Т6	T5	T _{med.max} T4	(°C) (2) T3	T2	T1					(°C) (2)	(°C) (1)	T6 (85°C)	T5 (100°C	T4 (135°C)	T3 (200°C)	T2 (300°C) (T1 (450°C)	
	45 000		(2)	(1)	(85°C)	(100°C	(135°C)	(200°C)	(300°C)	(450°C)		Promag P Promag W	15600	PTFE	-40	50 55		90	130 130	130 130	130 130	130 130	-
Promag P Promag W	15600	PTFE	-40	50 55		90	130 130	130 130	130 130	130 130		1 tomag tr				60			100	100	100	100	
				60			100	100	100	100			25200	PFA	-40	45 50		95 90	130 130	170	170	170 160	-
	25200	PFA	-40	40 45		 95	130	150 (3) 130	150 (3) 130	150 (3) 130						60			100	100	100	100	
				50		90	130	130	130	130			503000	HG	-20	50		80	80	80	80	80	1
				60			100	100	100	100			251000	PU	-20	60 50			80 50	80 50	80 50	80 50	-
	503000	HG	-20	50 60		80	80 80	80 80	80 80	80 80			253000	ETFE	-40	50		90	120	120	120	120	1
	251000	PU	-20	50		50	50	50	50	50		Notes: (1)	Ta min - 40	(3)	mitation	60			100	100	100	100	-
	253000	ETFE (7)	-40	50 60		90	120 100	120 100	120 100	120 100			Ta,min = -40 T _{med.max} and/					For limita	tion of rai	nge for Tmer	see name	plate	
Promag H	2150	PFA	-40	50		95 (4)	130	150	150	150		(3)	Limitation of	T _{med.max}	= 120°C d	epending	g on proce	ss pressu	re (see na	meplate)		-	
(5), (6)				55 (4) 60 (4)		80 (4)	130 100	150 100	150 100	150 100										sor insulat nual of E+H			
(4) (5) (6)	Sensor Pror Tmed=180° Promag H li versions aviv versions wit is not install Versions wit degree of 3° Limitation of	C@Ta=5 imited to ailable wi h transm ed above th transm °C for an	0°C for a Ta,max = th medium itter enclo the sens itter enclo bient tem	short peri 50°C @ c n tempera sure stair or sure stair perature s C depend	iod of time class T6 ar ature meas nless steel nless steel shall be tal	(max. 10 nd Tmed,r surement (hygienic) I (hygienic ken into a cess press	min.) nax = 50°(only for ir) installed ccount sure (see)	C @ class hstallation in tempera nameplate	where tra ature clas	insmitter		(2) Location	all = -40°C (for lin of reference on of T _{med.max} =	point			@T1 (°C) 130 150 80 50 120 (3) ess press	T6 (85°C) ure (see n	T5 (100°C 62.2 62.2 62.2 62.2 62.2 62.2 62.2	T4 (135°C) 74.0 74.0 74.0 74.0 74.0	reck (°C) T3 (200°C) 75.6 75.6 75.6 75.6 74.0 (2) referen point	T2 (300°C) 75.6 75.6 75.6 75.6 75.6 74.0	T1 (450°C) 75.6 75.6 75.6 75.6 75.6 74.0
Sensor	Size / DN	Liner	T _{med.min} (°C)	T _{a.max} (°C)	т6	Т5	T4	(°C) (2) T3	T2	T1	Aenderungen		2016 / Bn F 2017 / Bn G		2022 / Bn		etzlichen Urhe eichnung darf		behalten.	Ersetzt duro	h:		
Promag P Promag W	15600	PTFE	(2) -40	(1) 50 55	(85°C) 	(100°C 90 	(135°C) 130 130	(200°C) 130 130	(300°C) 130 130	(450°C) 130 130		D 15.02.	2017 / Bn H 2018 / Bn J 2021 / Bn K			dritten F	higung weder v Personen und H	Conkurrenzfim		Ersatz für: Ersteller: F8	ES / Bn mg\FES0261\FV	EES0264E	changes doo
	25200	PFA	-40	60 45 50		95 90	100 130 130	100 180 160	100 180 160	100 180 160	Control	Drawing IE		EX, C	SA, cC		-			Gezeichnet	-	.2016	Bn
	1	HG	-20	60 50		 80	100	100 80	100 80	100 80	í í	CI.I Div. 2	·	e 2						Geprüft			
	503000			60		50	80 50	80 50	80 50	80 50	Therma	Paramete	er							Ex-geprüft	12.10	.2022	Bn
	503000 251000 253000	PU ETFE	-20 -40	50 50		90	120	120	120	120	Drolin - I	Jeanna Of	0/500										
Votes: (1)	251000	ETFE (3) 0°C (for I	-40 imitation s	50 60 ee name	 plate)	90	120 100	100	100	100	Proline I	Promag 30	00/500							Gesehen			





lotes: This	page applie	es to ve	rsions wi	th exten	ded orde	er code co	overing:	5Ŵ		dd******B ******B			5B** - dd*** ** - dd****** 7	*В		5x58	Bxx - dd** Bxx - dd** Id - BS				Bxx - dd Bxx - dd		
				Sensor	of Standa	ard versio	n with se			ropuon	CUSAUS	. uu – CS, C	Z		ILCEX /	Sensor	of High te lation refer				isor insul	ated	1
																(IOF INSU	lation relet	r to manua		Flowlec)			
Sensor	Size / DN	Liner	T _{med.min} (°C) (2)	T _{a.max} (°C) (1)	T6 (85°C)	T5 (100°C	T _{med.max} T4 (135°C)	(°C) (2) T3 (200°C)	T2 (300°C)	T1 (450°C)		Sensor	Size / DN	Liner	T _{med.min} (°C) (2)	T _{a.max} (°C) (1)	T6 (85°C)	T5 (100°C	T _{med.mat} T4 (135°C)	(°C) (2) T3 (200°C)	T2 (300°C)	T1 (450°C)
Promag P	15600	PTFE	-40	60	80	95	130	130	130	130		Promag P	15600	PTFE	-40	60	75	95	130	130	130	130	
Promag W	25200	PFA	-40	50 60	80 80	95 95	130 130	180 130	180 130	180 130		Promag W	25200	PFA	-40	35 40	60 80	95 95	130 130	180 170	180 170	180	-
	503000	HG	-20	60	80	80	80	80	80	80						40	75	95	130	170	170	170	-
	251000	PU	-20	50	50	50	50	50	50	50			503000	HG	-20	60	75	80	80	80	80	80	1
	253000	ETFE	-40	60	80	95	120	120	120	120			251000	PU	-20	50	50	50	50	50	50	50	-
Promag H	2150	(4) PFA	-40	45	80 (3)	95	130	150	150	150			253000	ETFE (3)	-40	55 60	80 75	95 95	120 120	120 120	120	120 120	-
				55 (3)	80 (3)	95	130	130	130	130		Notes: (1)	Ta,min = -4		imitation s			00	120	120	120	120	1
				60 (3)	80 (3)	95	110	110	110	110		(2)	Tmed.max and	/or Tmed.m	in may be	limited by	versions.	For limitat	tion of ran	nge for T _{me}	d see nam	e plate	
	Ta,min = -40 T _{med max} and/					For limita	tion of ran	ne for T	see name	nlate		(3)	Limitation of	TI med.max	= 120°C (iepending	on proces	ss pressur	re (see na	meplate)			
(3)	Promag H lin versions ava	mited to ailable w	Ta,max = ith mediun	50°C @ o n tempera	class T6 a ature meas	nd Tmed,r surement	nax = 50°0	C @ class									of High te on not in c						
(4)	Limitation of	I med max	= 120°C d	rebeugiuc	a on proce	ss pressur	e (see nai	neplate)				Conner	Size / DN	Liner	т	T	T _{med.max}	1	T _{max} to be	measured	i at referer	nce point	at
				Sensor	of High te	emperatu	re version	with sen	sor not ins	ulated		Sensor	Size / DN	Liner	T _{med.min}	T _{a.max}	@T1				neck (°C)		
															(°C)	(°C) (1)	(°C)	T6 (85°C)	T5 (100°C	T4 (135°C)	T3 (200°C)	T2 (300°C	(450°C
Sensor	Size / DN	Liner	Tmed.min	T _{a.max}			T _{med.max}	(°C) (2)				Promag P	all	PTFE	-40	60	130	63.8	65.7	69	70.9	70.9	70.9
	0.201 0.11	2	(°C)	(°C)	Т6	T5	T4	T3	T2	T1		Promag W		PFA	-40	60	150	63.8	65.7	69	70.9	70.9	70.9
	45 000	DTEE	(2)	(1)	(85°C)	(100°C	(135°C)	(200°C)	(300°C)	(450°C)				HG	-20	60	80	63.8	65.7	69	70.9	70.9	70.9
Promag P Promag W	15600	PTFE PFA	-40 -40	60 50	80 80	95 95	130 130	130 180	130 180	130 180				PU ETFE	-20 -40	50 60	50 120 (3)	63.8 63.8	65.7 65.7	69 68	70.9 68	70.9 68	70.9
r totnag tr	25200	1.1.2	-40	60	80	95	130	150	150	150		Notes:		22	10	00	120 (0)	00.0	00.1	1 00			
	503000	HG	-20	60	80	80	80	80	80	80			= -40°C (for I		see name	plate)							
	251000	PU	-20	50	50	50	50	50	50	50			of reference on of Tmed max		enendina	on proces	s pressure	e (see nan	nenlate)			爲	
	253000	ETFE (3)	-40	60	80	95	120	120	120	120		(5) Elimate	med.max	- 20 0 0	opending	on proces	is pressure	- (300 man	nopiatoj			8	
	Ta,min = -40	°C (for							I												(2) refere	nce 🦯	~ <u> </u>
(2)	Tmed.max and/	or T _{med.r}	in may be	limited by	versions.	. For limita	tion of ran	ge for T _{med}	see name	plate											point		
(3)	Limitation of	I med max	= 120°C 0	epending	on proce	ss pressur	e (see nar	neplate)															
										1	Aenderungen:	A 10.05.20)16/Bn F	12.10.20)22 / Bn		ichen Urheber		halten. E	rsetzt durch	1:		
												B 03.05.20					nnung darf ohn						
												C 30.10.20				-	ing weder verv	-		rsatz für:			
Tranemitte	r for all versi	ione										D 15.02.20					onen und Koni emacht werde			rsteller: FE			
manamitte				1)						– F		E 10.06.20					emacin werde	11.	F	ILE: M:\Zeichr	g\FES0261\F	FES0261F -	- changes.do
T6	;		T5			T4				(Control D	rawing IE	CEX, ATE	EX, CS	SA, cCS	Aus			G	Gezeichnet	10.05	.2016	Bn
(85°)			(100°C) 45			35°C) 60				ž	Zone 2, C	CI.I Div. 2,	CI.I Zone	2					G	Seprüft			
NOTES: (1)	Ta,min = -50	o C (tor	imitation s	see name	plate)]					^D arameter							E	Ex-geprüft	12.10	.2022	Bn
										F	Proline P	romag 300)/500						G	Gesehen			
											E		rtec AG, Kä							FES	026 [,]	1F	2



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

plastic enclosure: Ta,min = -40°C



Proline Promag H/P/W 500 5(H/P)5B** - dd******A... O5(H/P)5B** - dd******A... O5x5Bxx - dd******A... Notes: This page applies to versions with extended order code covering: 5x5Bxx - dd******A... 5W5B** - dd*******A.. O5W5B** - dd******A... 5x5Bxx - dd******A.... O5x5Bxx - dd******A.... with approval option cCSA: dd = CS, CZ IECEx / ATEX: dd = BL, BS Sensor of High temperature version with sensor insulated Sensor of Standard version with sensor not insulated (for insulation refer to manual of E+H Flowtec) Sensor Size / DN Liner (°C) (2) Sensor Size / DN Liner T_{med.mi} T_ama T_{med.max} (°C) (2) (°C) T4 (°C) $(^{\circ}C)$ T6 T5 Τ4 T3 T2 T1 (°C) Τ6 T3 Τ5 T2 T1 (85°C) (100°C (300°C) (450°C) (135°C) (200°C (100°C (135°C) (300°C) (450°C) (2)(1)(85°C) (200°C 15...600 Promag P PTFE -40 45 70 95 130 130 130 130 15...600 PTFE Promag P -40 50 50 95 130 130 130 130 Promag W 60 95 130 130 130 130 Promag W 60 95 130 130 130 130 25...200 PFA -40 35 40 95 130 180 180 180 25...200 PFA -40 50 50 95 130 150 (3) 150 (3) 150 (3) 60 95 130 130 130 130 50 40 95 130 175 175 175 60 95 130 150 150 150 50...3000 HG -20 50 80 80 80 80 80 80 50 3000 HG -20 45 45 80 80 80 80 80 60 80 80 80 80 80 60 80 80 80 80 80 25 1000 PU 50 -20 45 50 50 50 50 50 25...1000 PU -20 45 50 50 50 50 50 50 50 50 50 50 50 50 50 50 25...3000 ETFE -40 50 40 95 120 120 120 120 50 50 50 50 40 25 3000 FTFF -40 50 95 120 120 120 120 (5) 60 95 120 120 120 120 (3) 60 95 120 120 120 120 Promag H 2 150 PFA -40 50 40 95 130 150 150 150 Notes: (1) Ta,min = -40°C (for limitation see name plate) 45 50 (4) 95 130 145 145 145 $T_{med,max}$ and/or $T_{med,min}$ may be limited by versions. For limitation of range for T_{med} see name plate 55 (4) 95 115 115 115 115 (3)Limitation of Tmed.max = 120°C depending on process pressure (see nameplate) 60 (4) 115 115 115 115 Notes: (1) Ta,min = -40°C (for limitation see name plate) Sensor of High temperature version with sensor insulated (2) Tmedmax and/or Tmedmin may be limited by versions. For limitation of range for Tmed see name plate (insulation not in compliance with manual of E+H Flowtec) (3) Sensor Promag P with liner type PFA may be used for condition of process with Tmed=180°C@Ta=50°C for a short period of time (max, 10 min.) Tmax to be measured at reference point at media Sensor Size / DN Liner T_{med.m} T_{a.max} (4) Promag H limited to Ta,max = 50°C @ class T6 and Tmed,max = 50°C @ class T6 for optional @T1 sensor neck (°C) versions available with medium temperature measurement (°C) (°C) (°C) T6 T5 Τ4 Т3 T2 T1 (5) Limitation of T_{med.max} = 120°C depending on process pressure (see nameplate) (1) (85°C) (100°C (135°C) (200°C) (300°C) (450°C) Promag P all PTFF -40 60 130 51.4 69 70.9 70.9 70.9 65.7 Sensor of High temperature version with sensor not insulated Promag W PFA -40 60 150 51.4 65.7 70.9 70.9 70.9 69 HG -20 60 80 51.4 65.7 69 70.9 70.9 70.9 PU -20 50 50 51.4 65.7 69 70.9 70.9 70.9 Sensor Size / DN Liner T_{med.max} (°C) (2) T_{med.min} T_{a.max} 70.9 ETFE -40 60 120 (3) 49.6 65.7 69 70.9 70.9 (°C) (°C) Τ4 Τ6 Т5 Т3 T2 T1 Notes (2) (1) (85°C) (100°C (135°C) (200°C) (300°C) (450°C) (1) Ta,min = -40°C (for limitation see name plate) PTFE 130 130 Promag P 15...600 -40 45 70 95 130 130 (2) Location of reference point Promag W 60 95 130 130 130 130 (3) Limitation of T_{med max} = 120°C depending on process pressure (see nameplate) 25...200 PFA -40 50 40 95 130 180 180 180 60 95 130 150 150 150 (2) reference 50...3000 HG -20 45 50 80 80 80 80 80 point 60 80 80 80 80 80 25...1000 PU -20 45 50 50 50 50 50 50 Aenderungen Alle gesetzlichen Urheberrechte, vorbehalt Ersetzt durch: 10.05.2016 / Bn 12.10.2022 / Bn 50 50 50 50 50 50 Diese Zeichnung darf ohne unsere 03.05.2017 / Bn 25...3000 ETFE -40 50 40 95 120 120 120 120 С Genehmigung weder vervielfältigt werden noch Ersatz für (3) 60 95 120 120 120 120 30.10.2017 / Bn HH. dritten Personen und Konkurrenzfirmen 15.02.2018 / Bn Ersteller: FES / Bn Notes: (1) Ta,min = -40°C (for limitation see name plate) D (2) Tmedmax and/or Tmedmin may be limited by versions. For limitation of range for Tmed see name plate zugängig gemacht werde 10.06.2021 / Bn FILE: M:\Zeichng\FES0261\F\FES0261F -- changes.doc (3) Limitation of T_{med max} = 120°C depending on process pressure (see nameplate) Control Drawing IECEx, ATEX, CSA, cCSAus 10.05.2016 Bn Gezeichne Zone 2, Cl.I Div. 2, Cl.I Zone 2 Transmitter for all versions Georüft T_{a max} (°C) (1) Type of Thermal Parameter 12.10.2022 Bn Ex-aeorüft Ordinary location T6 T5 Τ4 enclosure (°C) (85°C (100°C (135°C) Proline Promag 300/500 Gesehen aluminium 60 45 60 plastic 60

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

FES0261F

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4. Marking

Proline Pr	omag 300							
Order Coo								
	d*ff***********++							
O5*3*** –	O5*3*** - dd*ff***********+#**#							
dd =	ff =	Marking of Ex protection						
approval	I/O							
BB	CA, CB, CC, CD, HA, TA, MC, RC	Ex db eb ia [ia Ga] IIC T6T1 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 T6T1 Gb and/or Ex tb IIIC T** °C Db						
BD	CA, CB, CC, CD, HA, TA, MC, RC	Ex db eb ia [ia Ga] IIC T6T1 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 T6T1 Gb and/or Ex tb IIIC T** °C Db						
BS	CA, CB, CC, CD, HA, TA, MC, RC	Ex ec nC ic [ic] IIC T5T1 Gc						
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Ex ec nC ic IIC T5T1 Gc						

Informat	ion: Marking of protection
	ntative for
	electronic compartment
	•
eo ->	terminal compartment, sensor,
•-	electronic for sensor circuit Ex eb
	sensor, display
	transmitter enclosure and 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
eb ->	sensor, electronic for sensor circuit
	Ex eb
tb ->	transmitter enclosure and sensor
[ia Ga] ->	electronic with input/output Ex ia
[ia Da] ->	electronic with input/output Ex ia
ec ->	transmitter enclosure, sensor,
	electronic, display
nC ->	electronicic -> sensor
[ic] ->	electronic with input/output Ex ic

Proline Pr	omag 500 Anal	og (with ISEM	integrated in transmitter)							
Order Coo	Order Code:									
5*5*** – d	5*5*** - dd*ff****B**********+#**#									
O5*5*** –	O5*5*** – dd*ff****B***************									
dd =	ff =	Device	Marking of Ex protection							
approval	I/O		0							
BB	CA, CB, CC,	Transmitter	Ex db eb [ia Ga] IIC T6…T5 Gb							
	CD, HA, TA,		and/or							
	BA, BB, GA,		Ex tb [ia Da] IIIC T85°C Db							
	LA, NA, RA,	Sensor	Ex eb ia IIC T6T1 Gb and/or							
	RB, RC, SA,		Ex ia the IIIC T** °C Db							
BD	CA, CB, CC,	Transmitter	Ex db eb [ia Ga] IIC T6…T5 Gb							
	CD, HA, TA,		and/or							
			Ex tb lia Dal IIIC T85°C Db							
BD		Transmitter								

Informatio	on: Marking of protection							
represent	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							
[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							
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 T6T1 Gb and/or Ex ia tb IIIC T** °C Db
BS	CA, CB, CC, CD, HA, TA, BA, BB, GA,	Transmitter	Ex ec nC [ic] IIC T5T4 Gc
	LA, NA, RA, RB, RC, SA, MA, MB, MC	Sensor	Ex ec ic IIC T6T1 Gc
B7	CA, CB, CC, CD, HA, TA,	Transmitter	Ex db eb [ia Ga] IIC T6… T5 Gb
	BA, BB, GA, LA, NA, RA, RB, RC, SA, MA, MB, MC	Sensor	Ex eb ia IIC T6T1 Gb
B8	CA, CB, CC, CD, HA, TA,	Transmitter	Ex db eb [ia Ga] IIC T6… T5 Gb
	BA, BB, GA, LA, NA, RA, RB, RC, SA, MA, MB, MC	Sensor	Ex eb ia IIC T6T1 Gb

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

		al (with ISEM i	ntegrated in sensor)
Order Coo			
5*5*** – d	d*ff****A*******	*****+#**#	
O5*5*** –	dd*ff****A******	********+#**#	
dd =	ff =	Device	Marking of Ex protection
approval	I/O		
BJ	CA, CB, CC,	Transmitter	n.a.
	CD, HA, TA,		(non-Ex)
	BA, BB, GA,	Sensor	Ex db ia IIC T6T1 Gb and/or
	LA, NA, RA,		Ex ia the IIIC T** °C Db
	RB, RC, SA,		
	MA, MB, MC		
BL	HA, TA, CA,	Transmitter	[Ex ic] IIC
	CB, CC, CD,		
	MC, RC	Sensor	Ex ec ic IIC T6T1 Gc
	BA, BB, GA,	Transmitter	n.a.
	LA, NA, RA,		(non-Ex)
	SA, MA,	Sensor	Ex ec ic IIC T6T1 Gc
	MB, RB		
BN	HA, TA, CA,	Transmitter	Ex ec nC [ic] IIC T5T4 Gc
	CB, CC, CD,		
	MC, RC	Sensor	Ex db ia IIC T6T1 Gb and/or
			Ex ia the IIIC T** °C Db

		on:Marking of protection tative for …
db tb		sensor terminal box 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,	Transmitter	Ex ec nC IIC T5T4 Gc	ia tb	-> sensor-> sensor, sensor terminal box
	SA, MA, MB, RB	Sensor	Ex db ia IIC T6T1 Gb and/or Ex ia tb IIIC T** °C Db	[ic]	-> electronic with input/output Ex ic
BS	HA, TA, CA, CB, CC, CD,	Transmitter	Ex ec nC [ic] IIC T5…T4 Gc	ес	 transmitter enclosures, electronic, display, sensor terminal box
	MC, RC	Sensor	Ex ec ic IIC T6T1 Gc	nC ic	-> electronic -> sensor
	BA, BB, GA, LA, NA, RA,	Transmitter	Ex ec nC IIC T5T4 Gc	[ic]	 electronic with input/output Ex ic and/or output for sensor circuit
	SA, MA, MB, RB	Sensor	Ex ec ic IIC T6T1 Gc		

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:
 - 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.





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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

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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).





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2. Order Code

2.1. Proline Prosonic Flow G 300/500

Extended order code Proline Prosonic Flow G 300: 9G3bcc - ddeffghjlpsstuuuvww + #**# O9G3bcc - ddeffghjlpsstuuuvwwyy + #**# for OEM-version 9x3bxx - ddeffghilprrssww + #**# for replacement transmitter O9x3bxx – ddeffghjlprrsswwyy + #**# for replacement transmitter OEM Extended order code Proline Prosonic Flow G 500: 9G5bcc – ddeffahiikmnopsstuuuvww + #**# O9G5bcc - ddeffghijkmnopsstuuuvwwyy + #**# for OEM-version 9x5bxx – ddeffghijkmopggrrssww + #**# for replacement transmitter O9x5bxx – ddeffghijkmopqqrrsswwyy + #**# for replacement transmitter OEM b Generation = B = Generation of Flowmeter СС = 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 = Ex db [ia] IIC T6...T1 Gb BD Ex tb IIIC T** Db = Ex ec IIC T6...T1 Gc BS Proline Prosonic Flow G 500: = Non-Ex (transmitter) BJ Ex ia IIC T6...T1 Gb (sensor) Ex tb IIIC T** Db (sensor) ΒL = non-Ex (transmitter) Ex ec IIC T6...T1 Gc (sensor) ΒN = Ex ec [ia Ga] IIC T6...T1 Gc (transmitter) Ex ia IIC T6...T1 Gb (sensor) Ex tb IIIC T** Db (sensor) = Ex ec IIC T6...T1 Gc BS (transmitter + sensor) **Power Supply** е = = 24 V dcD Е = 100-230Vac

- I = 100-230 Vac / 24 Vdc
- 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
- 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 = 4-20 mA 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 = 4-20 mA 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





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L

t

v

- 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 = 4-20 mA 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
 - = **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
 - = Process component
 - any single number or letter
- uuu = Process connection
 - any triple digits with combination of number or letter
 - = 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. Proline Prosonic Flow P 500

9P 09 9x	5bc P5b 5bx:	c – ddeff occ – dde x – ddeff	e Proline Prosonic Flow P 500: jkmosstuuvvww + #**# hjkmosstuuvvwwy + #**# for OEM-version for replacement transmitte hijkmnopprrsswwy + #**# for replacement transmitte	
b	=	Genera B	n Generation of Flowmeter	
CC	=	Mountin		
			e digits with combination of number and/or letter	
dd	=		Transmitter	
		BB	Ex db eb [ia] IIC T6T5 Gb (transmitter) Ex tb IIIC T** Db (transmitter)	
			Ex ia IIC T6T1 Gb (Sensor) Ex ia IIIC T** Db (Sensor)	
		BD	Ex db [ia] IIC T6T5 Gb (transmitter)	
			Ex tb IIIC T** Db (transmitter)	
			Ex ia IIC T6T1 Gb (Sensor)	
			Ex ia IIIC T** Db (Sensor)	
		BS	Ex ec IIC T5T4 Gc (transmitter)	
			Ex ic IIC T6T1 Gc (Sensor)	
е	=	Power \$		
		D	24Vdc	
		Е	100-230Vac	
		I	100-230Vac / 24Vdc	
ff	=	Input / (•	
		BA	4-20mA HART	
		BB	4-20mA WHART	
		CA	4-20mA HART Ex i (passive)	
		CB	4-20mA WHART Ex i (passive)	
		CC CD	4-20mA HART Ex i (active) 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	





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= Input / Output 2 g А

D

Е

F

G

Н

L J

Κ

L

Х

А В

С

D

Е

F

G

L

Х

Х

- = without Input/Output 2
- В = 4-20mA С
 - = 4-20mA Ex i (passive)
 - = Configurable IO
 - = Pulse/Frequency/Switch output
 - = Pulse output phase-shifted
 - = Pulse/Frequency/Switch output Ex i
 - = Relay
 - = 4-20mA input
 - = Status input
 - = Pulse output Ex i
 - = Pulse output
 - = Sensor only
- h = Input / Output 3
 - = without Input/Output 3
 - = 4-20mA
 - = 4-20mA Ex i (passive)
 - = Configurable IO
 - = Pulse/Frequency/Switch output
 - = Pulse output phase-shifted
 - = Pulse/Frequency/Switch output Ex i
 - Н = Relay L
 - = 4-20mA input
 - J = Status input Κ
 - = Pulse output Ex i
 - = Pulse output
 - = Sensor only
- i = Input / Output 4
 - А = without Input/Output 4
 - = Sensor only
- = Display / Operation j
 - any single number or letter
- = Integrated ISEM electronic k
 - А = Sensor
 - В = Transmitter
- = Transmitter Housing m
 - any single number or letter
 - = Cable Sensor Connection any single number or letter
- = Cable Entry ο

n

- any single number or letter
- = Upgrade Kit рр
 - AA = not used
- = **Existing Product** (see assignment of flowmeter to replacement transmitter) rr
 - = Prosonic Flow P PA
 - 00 = not used
- = Sensor type SS any double digits with combination of number and/or letter





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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 T6T1 Gb Ex ia IIIC T** Db BD = Ex ia IIC T6T1 Gb Ex ia IIIC T** Db BS = Ex ic IIC T6T1 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 	
уу	 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 extention of Prosonic Flow P500 types 9P5B and O9P5B from one sensor set to two sensor sets





2.3. Assignment of Flowmeter to Replacement Transmitter

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

Product flowm	eters			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	В	A1 / A2	9x*bxxrr…ww, O9x*bxxrr…ww	В	GA	A1 / A2
9P* b ** ww ,	O9P* b ** ww	В	A1 / A2	9x* b xx rr … ww , O9x* b xx rr … ww	В	PA	A1 / A2





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3. Parameters

3.1. Electrical Parameters

Power Supply		
Order Code	terminal no.	values
e =		
D ¹⁾	No. 1(L+/L), 2(L-/N)	$U_N = 19.228.8V_{DC}$
		$U_{M} = 250 V_{AC}$
E ¹⁾	No. 1(L+/L), 2(L-/N)	$U_{N} = 85264V_{AC}$
		$U_M = 250V_{AC}$
 ²⁾	No. 1(L+/L), 2(L-/N)	U _N = 19.228.8V _{DC} /85264V _{AC}
		$U_M = 250 V_{AC}$

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	$\begin{array}{llllllllllllllllllllllllllllllllllll$	
CC, CD	No. 26, 27	1) $U_0 = 21.8V$ $I_0 = 90MA$ $P_0 = 491mW$ $L_0 = 4.1mH (IIC) / 15mH (IIB)$ $C_0 = 160nF (IIC) / 1160nF (IIB)$ $U_i = 30V$ $I_i = 10mA$ $P_i = 0.3W$ $C_i = 6nF$ $L_i = 5\mu H$	2) $U_0 = 21.8V$ $I_0 = 90mA$ $P_0 = 491mW$ $L_0 = 9mH (IIC) /$ 39mH (IIB) $C_0 = 600nF (IIC) /$ 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) Profibus PA (Fisco Field Device) / Foundation Fieldbus $U_i = 30V$ $I_i = 570mA$ $P_i = 8.5W$ $L_i = 10\mu H$	2) <u>Profibus PA (Fisco Field</u> <u>Device) /</u> <u>Foundation Fieldbus</u> $U_i = 32V$ $I_i = 570mA$ $P_i = 8.5W$ $L_i = 10\mu H$





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		$C_i = 5nF$	$C_i = 5nF$
MB, RB	No. 26, 27	$\frac{APL \text{ port profile SLAX / SPE}}{U_N = 30V_{DC}}$ $U_M = 250V_{AC}$	PoDL classes 10, 11, 12
MC, RC	No. 26, 27	$\begin{array}{l} \underline{1),3)}\\ \underline{2\text{-WISE power load}}\\ \underline{APL \ port \ profile \ SLAA}\\ U_i &= 17.5 V\\ I_i &= 380 \text{mA}\\ P_i &= 5.32 W\\ L_i &\leq 10 \mu \text{H}\\ C_i &\leq 5 \text{nF} \end{array}$	$\begin{array}{llllllllllllllllllllllllllllllllllll$
NA, RA	IO1 / RJ45	$U_{N} = 30V_{DC}$ $U_{M} = 250V_{AC}$	

 applicable for products with approval code dd = BB, BD
 applicable for products with approval code dd = BS, BL, BN
 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 =		
C, G, K	No. 24, 25	$U_i = 30V$
		$I_i = 100 \text{mA}$
		$P_i = 1.25W$
		$L_i = 0$
		$C_i = 0$
B, D, E, F, I, J, L	No. 24, 25	$U_N = 30V_{DC}$
		$U_{M} = 250 V_{AC}$
Н	No. 24, 25	$U_N = 30V_{DC}$
		$I_N = 100 \text{mA}_{DC} / 500 \text{mA}_{AC}$
		$U_{M} = 250 V_{AC}$

Input/Output 3		
Order Code	terminal no.	values
h =		
C, G, K	No. 22, 23	$U_i = 30V$
		$I_i = 100 \text{mA}$
		$P_i = 1.25W$
		$L_i = 0$
		$C_i = 0$
B, D, E, F, I, J, L	No. 22, 23	$U_N = 30V_{DC}$
		$U_{M} = 250 V_{AC}$
Н	No. 22, 23	$U_N = 30V_{DC}$
		$I_{\rm N} = 100 \text{mA}_{\rm DC} / 500 \text{mA}_{\rm AC}$
		$U_M = 250 V_{AC}$





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Input/Output 4		
Order Code i =	terminal no.	values
С, G, К	No. 20, 21	$\begin{array}{llllllllllllllllllllllllllllllllllll$
B, D, E, F, I, J, L	No. 20, 21	$U_{N} = 30V_{DC}$ $U_{M} = 250V_{AC}$
Н	No. 20, 21	$\begin{array}{l} U_N &= 30 V_{DC} \\ I_N &= 100 m A_{DC} \ / \ 500 m A_{AC} \\ U_M &= 250 V_{AC} \end{array}$

Service Interface		
Order Code dd =	terminal no.	values
BB	Service Interface	 Service Interface shall only be installed 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: Ui = 10V, Ii = n.a., Pi = n.a., Ci = 200nF, Li = 0
BD	Service Interface	 Service Interface shall only be installed to an non intrinsically safe circuit with: U_N = 3.3V, U_M = 250V_{AC} or to an intrinsically safe circuit with: Ui = 10V, Ii = n.a., Pi = n.a., Ci = 200nF, Li = 0
BS, BJ, BL, BN	Service Interface	$U_{\rm N} = 3.3 V$

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

Remote Display		
Order Code	terminal no.	values
dd =		
BB, BD	No. 81, 82, 83, 84	Uo = 3.9V
		lo = 1.5A (spark)
		200mA (power)
		Po = 600 mW
		Ri = 2.6Ω
		Co = 670µF
		Lo = 0
BS	No. 81, 82, 83, 84	$U_{\rm N} = 3.3 V$
		$I_N = 150 \text{mA}$

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 $L/R = \le 0.024 \text{ mH}/\Omega$ 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

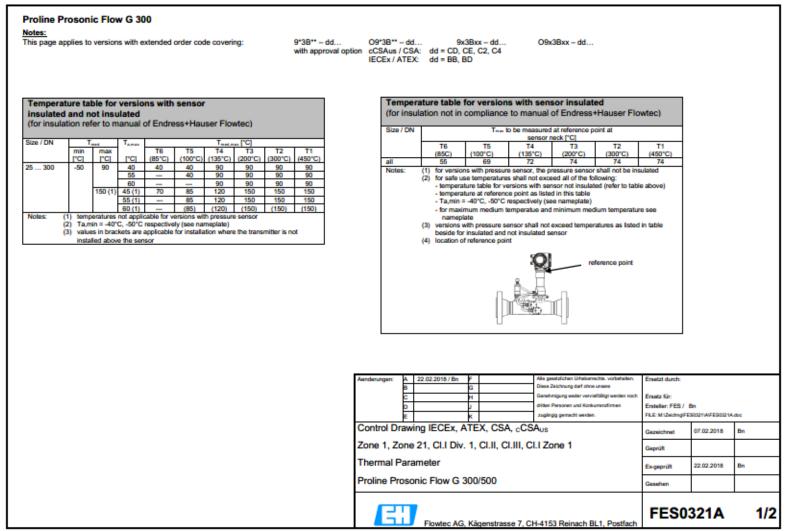
Prosonic Flow G Remote Transmitter and Remote Sensor:

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 Re	emote Sensor:
	BB, BD, in combination with k = B (ISEM in transmitter):
Transmitter terminal board: CH1, CH2	-> Uo = 40V, Io = 36.7mA, Po =459mW, Li = n.a., Ci = n.a.
CHT, CHZ	$-> 00 = 40^{\circ}, 10 = 30.711^{\circ}, P0 = 43911^{\circ}, E1 = 11.a., C1 = 11.a.$
Sensor terminal board:	
Connector	-> Ui = 40V, li = n.a., Pi =n.a., Li = n.a., Ci = n.a.
	BS in combination with k = B (ISEM in transmitter):
Transmitter terminal board:	
CH1, CH2	-> Uo = 50V, Io = 45.9mA, Po = 459mW, Li = n.a., Ci = n.a.
Sensor terminal board:	
Connector	-> Ui = 50V, Ii = n.a., Pi =n.a., Li = n.a., Ci = n.a.



3.2. Thermal Parameters (Zone 1)

3.2.1. Proline Prosonic Flow G 300/500



GROUP™ GROUP™





Notes: This page appli	ies to versions with	extended order o	code covering:		dd ^{******} A roval option cC IEC		- dd - CN, C dd = CN, C dd = BJ, B	6	9x5Bxx – dd	·····A	O9x5E	ixx – dd*****	"A	
insulated an	nperature table f nd not insulated n refer to manual							re table for compliance]	
Size / DN mir [***] 25 300 -50 Notes: (1) (2) (3)	Tend Tends	T6 T5 (85°C) (100°C) 40 40 40 40 cable for versions v respectively (see r with maximum med plate	Testes ["C] T4 T3 (135°C) (200°C) 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 91 150 with pressure sensor nameplate)				 for safe us temperal temperal Ta,min = for maximination mample versions versions versi	T5 (100°C) 71 is with pressure te temperature: ure table for ve ure at reference -40°C, -50°C r num medium te	s shall not exce risions with ser e point as liste respectively (se emperatue and ansor shall not not insulated se	eck ["C] T3 (200°C) 77 ressure senso ed all of the fi isor not insula d in this table e nameplate) minimum me exceed tempe	T2 (300°C) 77 r shall not be i bilowing: ted (refer to ta dium temperat	ble above) ture see ed in table		
	minium enclosure: Ta, išc enclosure: Ta,	min = -50°C (tor lin min = -40°C	nuoon see name pi	1467 3	Zone Therm	en: A 22.022 B C D E D D Trawing IE 1, Zone 21, C Nal Paramete Prosonic FI	0.1 Div. 1, r	CI.II, CI.III	Diese Zeichn Genehmigun dritten Perso zugängig ge CSAUS	hen Liftelberrachte ung darf ohne unse gweder vervietlikt en und Könkeuren macht werden.	re gi wenden noch j firmen j ((Gezeichnet Geprüft Ex-geprüft	Bn 50001WFE50001 07.02.2018 22.02.2018	R.doc Bn Bn
					From	a mosonic Fi	ow G 300	300				Gesehen		





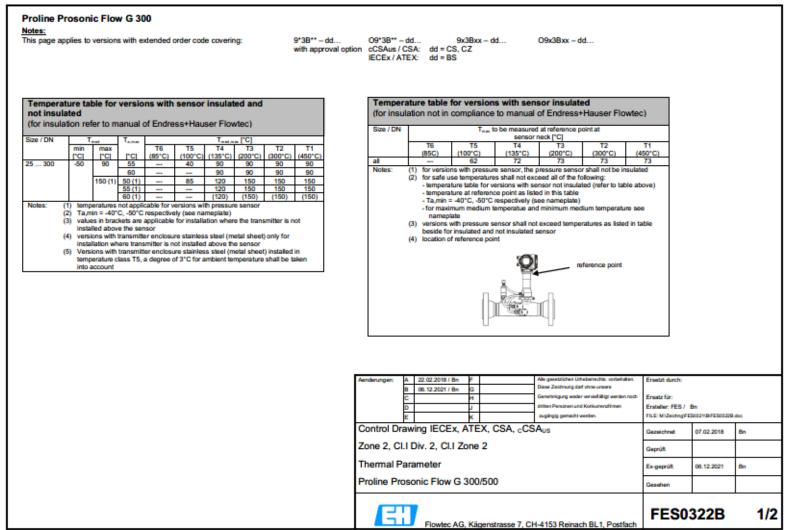
3.2.2. Proline Prosonic Flow P500

e <u>s:</u> s page applies to versions with exte	ended order code covering:	9*5*** – dd***** DK9013-dd with approval o		OD cCS	K9013 Aus /	GSA:	dd =	CD, C2 BB, BC	2, C4	x – dd**	•••••В	09	x5Bxx – dd*	•••••B		
Transmitter: Temperature ta	ble for all versions		ensor: Tem Isulated and				or vers	lions w	ith ser	isor						
T.,	Tube	Ту	pe of	Tm	ed .	1	r <u>a</u>			Tree	Lenas [°C]					
T6 (85°C)	T5 (100°C)			[°C]	max [°C]	min [°C]	max ["C]	T6 (85°C)	T5 (100°C			T2 300°C)	T1 (450°C)			
55	60			50	120	-50	80	80	95	120	120	120	120			
	imitation see name plate)			40	80	-40	50 80	50 	80 80	80 80	80 80	80 80	80 80			
L				0	170		50 80	50 	95 95	130 130	170 170	170 170	170 170			
		C	200-В -	40	80	-40	65 80	65	80 80	80 80	80 80	80 80	80 80			
		C-	200-C	0	170	-40	65 80	65	95 95	130 130	170 170	170 170	170 170			
		C	500-A ·	40	150	-40	75 80	75	95 95	130 130	150	150 150	150 150			
		CH	1-050-A ·	50	435	-50	75	75	95 95	130	190	285	435			
		CH	H-100-A ·	50	435	-50	75	75	95 95	130	190	285	435			
		No	otes: (1) f	or typ	e of se	nsor, t					Group see					
		[Aenderungen:	8 3 C 3 D E	7.08.201 0.07.202 0.09.202	0 / Bn 1 / Bn	F G H J K		Dies Gen drits 249	e Zeichnung di ehmigung wed en Personen ur singig gemacht	ihebemschle, vort af dins unsere er vervieltitigt we ud Konkumerzfirm werden.	rden noch	Ersetzt durch: Ersetz für: Ersteller: FES / FLE: M:Zeichng/FE		dac	-
			Control Dr		-								Gezeichnet	07.08.2019	Bn	_
			Zone 1, Zo			I Div	1, CI.	II, CI.II	I, CI.I :	Zone 1			Geprüft			
			Thermal P										Ex-geprüft	30.09.2021	Bn	_
			Proline Pro	osoni	ic Flo	w P 5	00						Gesehen			_
			E		Flowt	ec AG.	Kägens	strasse 7	7. CH-41	153 Reina	ich BL1, Po	stfach	FES0	351C		,



3.3. Thermal Parameters (Zone 2)

3.3.1. Proline Prosonic Flow G 300/500









al of Endress+Ha T6 T5 (85°C) (100°C) 40 85 plicable for versions v C respectively (see f 5 T6 (85°C) 	Testee [°C] T4 T3 (135°C) (200°C) (3 90 90 90 90 120 150 with pressure sensor	T2 T1 300°C) (450°C) 90 90 90 90 150 150 150 150 T4 (135°C) 60 		(for insulat Size / DN al Notes: (1 (2	T6 (80°C) 	Tree to Tree to (100°C) 71 s with pressure to the for ve ure table for ve ure at reference .40°C, -50°C r hum medium to te	to manual be measured sensor (T4 (135°C) 75 e sensor, the p s shall not exc resions with se e point as liste espectively (s imperatue and ensor shall not insulated s	with senso of Endress* a treference p neck ("CI T3 (200°C) 77 pressure senso cod all of the f misor not insula d in this table see nameplate) t exceed tempe sensor	Hauser Flo oint at T2 (300°C) 77 e shall not be i ollowing: ited (refer to ta dium temperat	T1 (450°C) 77 nsulated ble above) ure see ed in table		
(85°C) (100°C) 40 85 	T4 T3 (135°C) (200°C) (3) 90 90 90 90 90 150 with prosure sensor nameplate) 150 150	300°C) (450°C) 90 90 90 90 150 150 T50 150 T4 (135°C) 60 	-	all Notes: (1 (2	(80°C) 	T5 (100°C) 71 s with pressure te temperature ure at reference 40°C, -50°C r num medium te the the fith pressure set insulated and i	sensor r T4 (135°C) 75 e sensor, the p s shall not exc risions with se e point as liste espectively (s imperatue and insor shall not not insulated s	reck [°C] T3 (200°C) 77 pressure senso ceed all of the fr ansor not insula ee nameplate) d minimum mee t exceed tempe	T2 (300°C) 77 r shall not be i ollowing: ited (refer to ta dium temperat	(450°C) 77 nsulated ble above) ure see ed in table		
(85°C) (100°C) 40 85 	T4 T3 (135°C) (200°C) (3) 90 90 90 90 90 150 with prosure sensor nameplate) 150 150	300°C) (450°C) 90 90 90 90 150 150 T50 150 T4 (135°C) 60 		Notes: (1 (2	(80°C) 	(100°C) 71 s with pressure the temperature: ure table for ver- ure at reference 40°C, -50°C r num medium to the (th pressure set insulated and to	T4 (135°C) 75 e sensor, the p is shall not exo risions with se e point as liste espectively (s imperatue and insor shall not not insulated s	T3 (200°C) 77 pressure senso ceed all of the fi ensor not insula ed in this table see nameplate) d minimum med t exceed tempe	(300°C) 77 rshall not be i ollowing: ited (refer to ta dium temperat	(450°C) 77 nsulated ble above) ure see ed in table		
	90 90 90 90 90 150 120 150 with pressure sensor nameplate)	90 90 90 90 90 150 150 T4 (135°C) 60 		Notes: (1 (2		71 s with pressure to temperature: ure table for ve ure at reference -40°C, -50°C r num medium te de de dth pressure se insulated and	75 e sensor, the p s shall not exo risions with se e point as liste espectively (s imperatue and ensor shall not not insulated s	77 pressure senso ceed all of the fe ansor not insula ed in this table see nameplate) d minimum mee t exceed tempe	77 r shall not be is ollowing: ited (refer to ta dium temperat eratures as liste	77 Insulated ble above) ure see ed in table		
85 85 85 85	90 90 120 150 with pressure sensor nameplate)	90 90 150 150 T4 (135°C) 60 		Notes: (1 (2	 for safe us temperat temperat Ta,min = for maxim namepla versions w beside for 	s with pressure te temperature: ure table for ve ure at reference -40°C, -50°C r num medium te de (th pressure se insulated and i	e sensor, the p s shall not exc risions with se e point as liste espectively (s imperatue and ensor shall not not insulated s	pressure senso ceed all of the fr ensor not insula ed in this table cee nameplate) d minimum med t exceed tempe	ollowing: ited (refer to ta dium temperat eratures as liste	ble above) ure see ed in table		
S Ta,min = -50°C (for line	T5 (100°C) 45	T4 (135°C) 60		Ģ	 temperation temperation Ta,min = for maximic namepla versions with beside for 	ure table for ve ure at reference -40°C, -50°C r tum medium te tte ith pressure se insulated and r	ersions with se e point as liste espectively (s emperatue and ensor shall not not insulated s	ensor not insula ed in this table ee nameplate) d minimum mee t exceed tempe	ited (refer to ta dium temperat anatures as liste	ure see ad in table		
*C respectively (see r 5 Tr (85°C) Ta,min = -50°C (for lin	T5 (100°C) 45 	(135°C) 60			- Ta,min = - for maxim namepla 3) versions w beside for	-40°C, -50°C r turn medium te ite ith pressure se insulated and r	espectively (s imperatue and insor shall not not insulated s	ee nameplate) d minimum mee	dium temperat eratures as liste	ed in table		
T. 1 T6 (85°C) Ta,min = -50°C (for lin	T5 (100°C) 45 	(135°C) 60			- for maxim namepla 3) versions w beside for	tum medium te the ith pressure se insulated and i	imperatue and insor shall not not insulated s	d minimum mea	dium temperat eratures as liste	ed in table		
T. 1 T6 (85°C) Ta,min = -50°C (for lin	T5 (100°C) 45 	(135°C) 60			 versions w beside for 	ith pressure se insulated and	not insulated s					
T. 1 T6 (85°C) Ta,min = -50°C (for lin	T5 (100°C) 45 	(135°C) 60		(4				sensor	reference	point		
T6 (85°C) Ta,min = -50°C (for lin	T5 (100°C) 45 	(135°C) 60					à.		reference	point		
(85°C) Ta,min = -50°C (for lin	(100°C) 45 	(135°C) 60					à .	-	reference	point		
 Ta,min = -50°C (for lin	45	60				1 Bas		-	reference	port		
 Ta,min = -50°C (for lin												
	mitation see name plate)	a)										
							þÈ	5d				
			Aenderungen				Diese Zek Genehmig dritten Per	chnung darf ohne uns gung weder vervieß B regnen und Konkurre	igt werden noch rufirmen	Ersatz für: Ersteller: FES / E		áoc
				-			CSAus			Gezeichnet	07.02.2018	Bn
						92				Geprüft		
										Ex-geprüft	06.12.2021	Bn
			Prolíne Prolín	Prosonic F	low G 300	0/500				Gesehen		
				Control Zone 2, Therma	B 06.12. C D D E Control Drawing IB Zone 2, Cl.I Div. 2 Thermal Parameter Proline Prosonic F	B 06.12.2021 / Bn A C H D J E K Control Drawing IECEx, ATI Zone 2, Cl.I Div. 2, Cl.I Zone Thermal Parameter Proline Prosonic Flow G 300	B 06.12.2021 / Bn G C H J D J J E k Control Drawing IECEx, ATEX, CSA, G Zone 2, Cl.I Div. 2, Cl.I Zone 2 Thermal Parameter Proline Prosonic Flow G 300/500	B 06.12.2021 / Bn G Dess 2a C H Genetres D J detain Pa E K roginge Control Drawing IECEx, ATEX, CSA, cCSAus zoginge Zone 2, Cl.I Div. 2, Cl.I Zone 2 Thermal Parameter Proline Prosonic Flow G 300/500 CONTON CONTROL Flow G 300/500	B 06.12.2021 / Bn C D C H C C D J C C E K C C Control Drawing IECEx, ATEX, CSA, cCSAUS Control Drawing IECEx, ATEX, CSA, cCSAUS Cone 2, Cl.I Div. 2, Cl.I Zone 2 Thermal Parameter Proline Prosonic Flow G 300/500	B 06.12.2021 / Bn C Disse Zeichnung daf ohne unsere C H Genehmigung weder vervießling weder noch D J ditten Personen und Konkurrenzimmen E K zugängig personen und Konkurrenzimmen Zone 2, CI.I Div. 2, CI.I Zone 2 Thermal Parameter	B 06.12.2021 / Bn C Dess Zeichnung daf ohne unsers C H Genethnigung weider verleft äligt werden noch Ersatz für: D J ditten Persanen und Konkurnenzimen Ersatz für: E k zuglingig persakt werden. FES / J Control Drawing IECEx, ATEX, CSA, cCSAus Gezeichnet Zone 2, Cl.I Div. 2, Cl.I Zone 2 Geprült Thermal Parameter Ex-geprült Proline Prosonic Flow G 300/500 Gesehen	B 06.12.2021 / Bn Dess Zeichnung daff ohne unsere Ersatz für: C H Genehmigung weider vervief ätigt werden noch Ersatz für: D J ditten Personen und Konkurrend/man Ersatz für: E K auglingig gemacht werden. Eist Mitzliching/FES0228. Control Drawing IECEx, ATEX, CSA, cCSAUS Gezeichnet 07.02.2018 Zone 2, Cl.I Div. 2, Cl.I Zone 2 Gepritt Ex-gepritt 06.12.2021 Proline Prosonic Flow G 300/500 Gesehen FES0322B





3.3.2. Proline Prosonic Flow P500

otes: his page applies to versi	ions with extended o	order code covering:	9*5*** - dd DK9013-dd with approv		OD cCS	K9013 SAus /	B-dd CSA:		CS, C		(– dd***	••••в	09	x5Bxx – dd	р ******В	
Transmitter: Temp	erature table for al	l versions		Sensor: Te Insulated a				or vers	sions w	ith sen	sor					
	Taras			Type of	T.	ned	1	r.			T					
T6	T5	T4		sensor	min	max	min	max	T6	T5	T4	T3	T2	T1		
(85°C)	(100°C)	(135°C)			[°C]	[°C]	["C]	[°C]	(85°C)	(100°C						
Notes: (1) Ta min = 4	45 50°C (for limitation see	60		C-030-A C-050-A	-50	120	-50 -20	80	80 80	95 80	120	120	120	120		
Notes. (1) Ta,min - S	oo c (ior initiation see	name plate)		C-0304A	-20	00	-20	80		80	80	80	80	80		
				C-100-A	-20	80	-20	75	75	80	80	80	80	80		
								80		80	80	80	80	80		
				C-100-B	-40	80	-40	70	70	80	80	80	80	80		
				C-100-C	0	170	-40	80	70	80 95	80	80	80	80		
								80		95	130	170	170	170		
				C-200-B	-40	80	-40	75	75	80	80	80	80	80		
				0.000.0	40		40	80		80	80	80	80	80		
				C-200-B	-40	80	-40	75	75	80 80	80 80	80 80	80 80	80 80		
				C-200-C	0	170	-40	75	75	95	130	170	170	170		
								80		95	130	170	170	170		
				C-500-A	-40	150	-40	75	75	95	130	150	150	150		
				1 400 4	40		40	80		95	130	150	150	150		
				I-100-A	-40	80	-40	75	75	80 80	80 80	80 80	80 80	80 80		
				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		
				Notes: (1)	for hope	-		80		95	130	190 roup see	285	435		
				Notes: (1)	for type	e or ser	isor, ter	mperati	are range	e ano app	plicable G	roup see	name pi	ate		
				Aenderungen:	A O	7.08.201	9/Bn	F		Alle g	eestzlichen Urh	eberrechte, vor	behallen.	Ersetzt durch:		
						0.07.202		G			Zeichnung dar					
					C 3	0.09.202	1/Bn	н				vervieltiltigt w Konkurrenzfim		Ersatz für: Ersteller: FES /		
					D F			<u> </u>			igig gemacht w				En FESOISZIC/FESOISZI	C dec
				Control [Drawin	g IEC	Ex, A	TEX,	CSA, c					Gezeichnet	07.08.2019	Bn
				Zone 2, 0	CI.I Di	v. 2, C	CI.I Zo	ne 2						Geprüft		
				Thermal	Paran	neter								Ex-geprüft	30.09.2021	Bn
				Proline P	roson	ic Flo	w P 5	00						Gesehen		
						Flow	er AG	Kigen	strasse 7	CH-41	53 Reinac	h BL1. Po	stfach	FESO)352C	1



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4. Marking

Proline Prosonic Flow G 300								
Order Coo								
9*3*** – d	d*ff*************	+#**#						
O9*3*** –	dd*ff*********	****+#**#						
dd =	ff =	Marking of Ex protection						
approval	I/O							
BB	HA, TA, CA,	Ex db eb ia [ia Ga] IIC T6T1 Gb and/or						
	CB, CC, CD,	Ex tb [ia Da] IIIC T** °C Db						
	MC, RC							
	BA, BB, GA,	Ex db eb ia IIC T6T1 Gb and/or						
	LA, NA, RA,	Ex tb IIIC T** °C Db						
	SA, MA,							
	MB, RB							
BD	HA, TA, CA,	Ex db ia [ia Ga] IIC T6T1 Gb and/or						
	CB, CC, CD,	Ex tb [ia Da] IIIC T** °C Db						
	MC, RC							
	BA, BB, GA,	Ex db ia IIC T6T1 Gb and/or						
	LA, NA, RA,	Ex tb IIIC T** °C Db						
	SA, MA,							
	MB, RB							
BS	HA, TA, CA,	Ex ec nC ic [ic] IIC T5T1 Gc						
	CB, CC, CD,							
	MC, RC							
	BA, BB, GA,	Ex ec nC ic IIC T5T1 Gc						
	LA, NA, RA,							
	SA, MA,							
	MB, RB							

Informati	on: Marking of protection
represen	tative 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
	comparments
ia ->	sensor, display
tb ->	transmitter enclosure
	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 Pr	osonic Flow G 5	500 Digital (wit	h ISEM integrated in sensor)
Order Coo		0 (
9*5*** – d	d*ff****A*******	*****+#**#	
O9*5*** –	dd*ff****A******	*********+#**#	
dd =	ff =	Device	Marking of Ex protection
approval	I/O		
BJ	BA, BB, GA,	Transmitter	n.a.
	LA, NA, RA,		(non-Ex)
	SA, MA,	Sensor	Ex db ia IIC T6T1 Gb and/or
	MB, RB		Ex ia tb IIIC T** °C Db
BL	HA, TA, CA, CB, CC, CD,	Transmitter	[Ex ic] IIC
	MC, RC	Sensor	Ex ec ic IIC T5T1 Gc
	BA, BB, GA,	Transmitter	n.a.
	LA, NA, RA,		(non-Ex)
	SA, MA,	Sensor	Ex ec ic IIC T5T1 Gc
	MB, RB		
BN	HA, TA, CA,	Transmitter	Ex ec nC [ic] IIC T5T4 Gc
	CB, CC, CD,	Sensor	Ex db ia IIC T6T1 Gb and/or
	MC, RC		Ex ia tb IIIC T** °C Db

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





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	de.	500 Digital (wit		
Order Co 9*5*** – c	de. d*ff****A********	*****+#**#		
	- dd*ff****A*****			
000	BA, BB, GA, LA, NA, RA, SA, MA,	Transmitter Sensor	Ex ec nC IIC T5T4 Gc Ex db ia IIC T6T1 Gb and/or	db -> sensor terminal box ia -> sensor tb -> sensor, sensor terminal box
	MB, RB		Ex ia the IIIC T** °C Dh	[ic] -> electronic with input/output Ex ic
BS	HA, TA, CA, CB, CC, CD,	Transmitter	Ex ec nC [ic] IIC T5T4 Gc	ec -> sensor terminal box, transmitter enclosures, electronic, display
	MC, RC	Sensor	Ex ec ic IIC T5T1 Gc	nC -> electronic ic -> sensor
	BA, BB, GA, LA, NA, RA,	Transmitter	Ex ec nC IIC T5T4 Gc	[ic] -> electronic with input/output Ex ic and/or output for sensor circuit
	SA, MA, MB, RB	Sensor	Ex ec ic IIC T5T1 Gc	
Proline P	rosonic Flow P 5	500 Analog (wi	th ISEM integrated in transmitter)	
O9P5*** - DK9013 -	dd*ff***B******** – dd*ff***B****** – dd******* 3 – dd*******	***+#**# *******+#**#		
dd = approval	ff = I/O	Device	Marking of Ex protection	Information: Marking of protection representative for
BB	CA, CB, CC, CD, HA, TA, BA, BB, GA,	Transmitter	Ex db eb ia [ia Ga] IIC T6… T5 Gb and/or Ex tb [ia Da] IIIC T85°C Db	db -> electronic compartment eb -> terminal compartment ia -> sensor, display
	LA, NA, RA, RB, RC, SA,	Sensor	Ex ia IIC T6T1 Gb and/or Ex ia IIIC T** °C Db	tb -> transmitter enclosures [ia Ga] -> electronic with input/output Ex ia
	MA, MB, MC			and/or output for sensor circuit [ia Da] -> electronic with input/output Ex ia and/or output for sensor circuit
BD	MA, MB, MC CA, CB, CC, CD, HA, TA,	Transmitter	Ex db ia [ia Ga] IIC T6 T5 Gb and/or	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
BD	MA, MB, MC	Transmitter Sensor	Ex db ia [ia Ga] IIC T6 T5 Gb	and/or output for sensor circuit[ia Da] ->electronic with input/output Ex iaand/or output for sensor circuitdb->electronic and terminal
BD	MA, MB, MC CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, RB, RC, SA,	Sensor	Ex db ia [ia Ga] IIC T6 T5 Gb and/or Ex tb [ia Da] IIIC T85°C Db Ex ia IIC T6T1 Gb and/or	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
	MA, MB, MC CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, RB, RC, SA, MA, MB, MC HA, TA, CA,	Sensor	Ex db ia [ia Ga] IIC T6 T5 Gb and/or Ex tb [ia Da] IIIC T85°C Db Ex ia IIC T6T1 Gb and/or Ex ia IIIC T** °C Db	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
	MA, MB, MC CA, CB, CC, CD, HA, TA, BA, BB, GA, LA, NA, RA, RB, RC, SA, MA, MB, MC HA, TA, CA, CB, CC, CD,	Sensor Transmitter	Ex db ia [ia Ga] IIC T6 T5 Gb and/or Ex tb [ia Da] IIIC T85°C Db Ex ia IIC T6T1 Gb and/or Ex ia IIIC T** °C Db Ex ec nC ic [ic] IIC T5T4 Gc Ex ic IIC T6T1 Gc or	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

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.



GROUP"

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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.



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2. Order Code

2.1. Proline t-mass 300/500

Extended order code Proline t-mass 300: 6F3bcc – ddeffghjlpsstttvww + #**# 6l3bcc – ddeffghjlpsstttuuvww + #**# O6F3bcc – ddeffghjlpsstttuuvwwyy + #**# O6l3bcc – ddeffghjlpsstttuuvwwyy + #**# 6x3bxx – ddeffghjlpssww + #**#

Extended order code Proline t-mass 500:

6F5bcc – ddeffghijkmnopsstttvww + #**# 6l5bcc – ddeffghijkmnopsstttuuvww + #**# O6F5cc – ddeffghijkmnopsstttvwwyy + #**# O6l5cc – ddeffghijkmopsstttuuvwwyy + #**# 6x5bxx – ddeffghijkmopssww + #**# O6x5bxx – ddeffghijkmopsswwyy + #**# for OEM-version for OEM-version for replacement transmitter for replacement transmitter OEM

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 T4T1 Gc
		Proline t-mass 500:
		BJ = [Ex ia] IIC (transmitter)
		Ex ia IIC T4T1 Gb (sensor)
		Ex tb IIIC T** Db (sensor)
		BL = non-Ex (transmitter)
		Ex ec IIC T4T1 Gc (sensor)
		BN = Ex ec [ia Ga] IIC T5T4 Gc (transmitter)
		Ex ia IIC T4T1 Gb (sensor)
		Ex tb IIIC T** Db (sensor)
		BS = Ex ec IIC T4T1 Gc (transmitter + sensor)
е	=	Power Supply
C	-	D = 24 V dc
		E = 100-230Vac
		I = 100-230 Vac / 24 Vdc

X = sensor only





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g

ff Input / Output 1 =

- ΒÅ = 4-20mA HART
- BΒ = 4-20mA WHART
- = 4-20mA HART Ex i (passive) CA
- CB = 4-20mA WHART Ex i (passive)
- CC = 4-20mA HART Ex i (active)
- CD = 4-20mA WHART Ex i (active)
- GΑ = Profibus PA
- HA = Profibus PA Ex i
- LA = Profibus DP
- MA = Modbus RS485
- MB = Modbus TCP
- MC = Modbus TCP Ex i
- NA = EtherNet/IP
- = Profinet IO RA
- = Profinet RB
- = Profinet Ex i RC
- = Foundation Fieldbus SA
- ΤA = Foundation Fieldbus Ex i
- XX = sensor only
- Input / Output 2
- = А
 - = without Input/Output 2
 - В = 4-20mA С
 - = 4-20mA Ex i (passive)
 - D = Configurable IO Е
 - = Pulse/Frequency/Switch output
 - = Pulse output phase-shifted
 - G = Pulse/Frequency/Switch output Ex i
 - Н = Relay
 - = 4-20mA input
 - J = Status input
 - Κ = Pulse output Ex i
 - L = Pulse output
 - Х = sensor only
- h Input / Output 3 = А

F

- = without Input/Output 3
- В = 4-20mA
- С = 4-20mA Ex i (passive)
- D = Configurable IO
- Е = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- Н = Relay L
 - = 4-20mA input
- J = Status input
- Κ = Pulse output Ex i
- L = Pulse output
- Х = sensor only





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L

р

SS

v

- i. Input / Output 4 (Proline 500 only) =
 - = without Input/Output 4 А
 - В = 4-20mA
 - С = 4-20mA Ex i (passive)
 - D = Configurable IO Е
 - = Pulse/Frequency/Switch output
 - F = Pulse output phase-shifted
 - G = Pulse/Frequency/Switch output Ex i
 - Н = Relay
 - L = 4-20mA input
 - J = Status input
 - Κ = Pulse output Ex i L
 - = Pulse output
 - Х = sensor only
- j **Display / Operation** =
 - with remote Display : O
 - without remote Display : any single number or letter except O
- Integrated ISEM electronic (Proline 500 only) k =
 - = Sensor А
 - Housing (Proline 300 only) = any single number or letter
- Transmitter Housing (Proline 500 only) m = any single number or letter
- **Sensor Housing** (Proline 500 only) n = any single number or letter
- = Cable Sensor Connection (Proline 500 only) 0 any single number or letter
 - Cable Entry =
 - any single number or letter
 - Material sensor = any double digits with combination of number or letter
- Process connection ttt =
 - any triple digits with combination of number or letter
- Gasket uu =
 - any double number or letter
 - Calibration =
 - any single number or letter
- Device model (two digit) (refer to assignment of flowmeter to replacement transmitter) ww = A1 = product version 1
 - A2 = product version 2
- Customer version (two digits) уу = 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 t-mass 300/500 as follows:

Product flowm	eters			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	В	A1 / A2	6x* b xx… ww , O6x* b xx ww	В	n.a.	A1 / A2
6l* b ** ww ,	06l* b ** ww	В	A1 / A2	6x* b xx ww , O6x* b xx ww	В	n.a.	A1 / A2

3. Parameters

3.1. Electrical Parameters

Power Supply		
Order Code	terminal no.	values
e =		
D ¹⁾	No. 1(L+/L), 2(L-/N)	$U_N = 19.228.8V_{DC}$
		$U_{M} = 250 V_{AC}$
E ¹⁾	No. 1(L+/L), 2(L-/N)	$U_N = 85264V_{AC}$
		$U_M = 250 V_{AC}$
2)	No. 1(L+/L), 2(L-/N)	U _N = 19.228.8V _{DC} /85264V _{AC}
		$U_M = 250 V_{AC}$

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	$\begin{array}{llllllllllllllllllllllllllllllllllll$	
CC, CD	No. 26, 27	1) $U_0 = 21.8V$ $I_0 = 90mA$ $P_0 = 491mW$ $L_0 = 4.1mH (IIC) / 15mH (IIB)$ $C_0 = 160nF (IIC) / 1160nF (IIB)$	2) Uo = 21.8V Io = 90mA Po = 491mW Lo = 9mH (IIC) / 39mH (IIB) Co = 600nF (IIC) / 4000nF (IIB)
		$\begin{array}{llllllllllllllllllllllllllllllllllll$	$\begin{array}{llllllllllllllllllllllllllllllllllll$
HA, TA	No. 26, 27	1) <u>Profibus PA (Fisco Field</u> <u>Device) /</u> <u>Foundation Fieldbus</u> U _i = 30V I _i = 570mA P _i = 8.5W L _i = 10 μ H C _i = 5nF	2) <u>Profibus PA (Fisco Field</u> <u>Device) /</u> <u>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		PE PoDL classes 10, 11, 12
MC, RC	No. 26, 27	$\begin{array}{l} \underline{1),3)}\\ \underline{2\text{-WISE power load}}\\ \underline{APL \ port \ profile \ SLAA}\\ U_i &= 17.5 V\\ I_i &= 380 mA\\ P_i &= 5.32 W\\ L_i &\leq 10 \mu H\\ C_i &\leq 5nF \end{array}$	$\begin{array}{l} \underline{2),3)}\\ \underline{2\text{-WISE power load}}\\ \underline{APL \text{ port profile SLAC}}\\ U_i &= 17.5 \lor\\ I_i &= 380 \text{mA}\\ P_i &= 5.32 \circlearrowright\\ L_i &\leq 10 \mu \text{H}\\ C_i &\leq 5 \text{nF} \end{array}$
NA, RA	IO1 / RJ45	$\begin{array}{rcl} U_{N} &= 30 V_{DC} \\ U_{M} &= 250 V_{AC} \end{array}$	

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

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

 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	terminal no.	values
g =		
C, G, K	No. 24, 25	$U_i = 30V$
		$I_i = 100 \text{mA}$
		$P_i = 1.25W$
		$L_i = 0$
		$C_i = 0$
B, D, E, F, I, J, L	No. 24, 25	$U_N = 30V_{DC}$
		$U_M = 250 V_{AC}$
Н	No. 24, 25	$U_N = 30V_{DC}$
		$I_N = 100 \text{mA}_{DC} / 500 \text{mA}_{AC}$
		$U_M = 250 V_{AC}$

Input/Output 3		
Order Code h =	terminal no.	values
С, G, К	No. 22, 23	$\begin{array}{llllllllllllllllllllllllllllllllllll$
B, D, E, F, I, J, L	No. 22, 23	$U_{N} = 30V_{DC}$ $U_{M} = 250V_{AC}$
Н	No. 22, 23	$\begin{array}{l} U_N &= 30 V_{DC} \\ I_N &= 100 m A_{DC} / 500 m A_{AC} \\ U_M &= 250 V_{AC} \end{array}$

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





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Service Interface		
Order Code dd =	terminal no.	values
BB	Service Interface	Service Interface shall only be installed
		 in areas which are known to be non hazardous with a non intrinsically safe circuit:
		$U_N = 3.3 \text{ V}, U_M = 250 \text{ V}_{AC} \text{ or}$
		to an intrinsically safe circuit with:
		Ui = 10V, Ii = n.a., Pi = na., Ci = 200nF, Li = 0
BD	Service Interface	Service Interface shall only be installed
		 to an non intrinsically safe circuit with:
		$U_N = 3.3V, U_M = 250V_{AC}$ or
		 to an intrinsically safe circuit with:
		Ui = 10V, li = n.a., Pi = na., Ci = 200nF, Li = 0
BS, BJ, BL, BN	Service Interface	$U_{\rm N} = 3.3 V$

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	$U_{0} = 3.9V$ $I_{0} = 1.5A (spark)$ $200mA (power)$ $P_{0} = 600mW$ $R_{i} = 2.6\Omega$ $C_{0} = 670\mu F$ $L_{0} = 0$
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 $L/R = \le 0.024 \text{ mH}/\Omega$ 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:

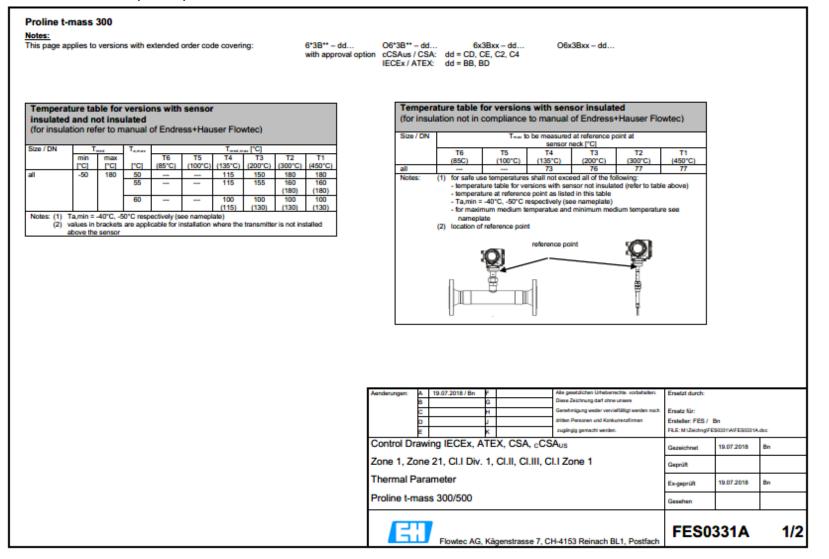
6***** and O6***** with order code dd = BJ, BN	I in combination with k = A (ISEM in sensor):
Transmitter terminal board:	
Terminals 61, 62, 63, 64 ->	Uo = 13.8V, Io = 1.156A, Po = 3.3W
Sensor terminal board:	
Terminals 61, 62, 63, 64 ->	Ui = 14V, li = 1.2A, Pi = 3.4W
For interconnection of transmitter to senso	r any cable may be used with the following requirements:
• L/R \leq 0.0089 mH/ Ω and C _{cable} \leq 7	760nF for group IIC, L/R ≤ 0.0356 mH/Ω and C _{cable} ≤ 4.2µF
for group IIB	
or	
• $L_{cable} \le 26 \mu H$ and $C_{cable} \le 760 n F$ f	for group IIC, $L_{cable} \le 104 \mu H$ and $C_{cable} \le 4.2 \mu F$ for group IIB
<u>6***** and O6**** with order code dd = BL, I</u>	<u> 3S in combination with k = A (ISEM in sensor):</u>
Transmitter terminal board:	
	$U_N = 32V$
Terminals 63, 64 ->	$U_N = 3.3V$
Sensor terminal board:	

Sensor terminal board:	
Terminals 61, 62	-> U _N = 32V
Terminals 63, 64	-> U _N = 3.3V





3.2. Thermal Parameters (Zone 1)







19.07.2018

FES0331A

Bn

2/2

Geprüft

Ex-geprüft

Gesehen

$ \frac{\min \max x}{ C } \frac{r_{C}}{r_{C}} \frac{r_{C}}{r_{C$	
Size / DN Text to be measured at reference point at sensor neck (°C) Size / DN Text to be measured at reference point at sensor neck (°C) Size / DN Text to be measured at reference point at sensor neck (°C) Bit in max Text to be measured at reference point at sensor neck (°C) all -50 180 55 115 155 180 180 180 Notes: (1) Ta,min = -40°C, -50°C respectively (see nameplate) 130 130 130 130 130 Type of enclosure Tamax Tamax Tamax Tamax Text to be measured at reference point at sensor neck (°C) Type of enclosure Tamax Tamax Tamax Tamax Text to be measured at reference point at sensor neck (°C) Imax Tamax Tamax Tamax Tamax Tamax Tamax Type of enclosure Tamax Tamax Tamax Tamax Text to be above) Text to be to the to table above) Text to to the	
Solution The max in max in the max in	
all 101 103 103 103 100 103 100 1	
aiii 100 00 100 100 100 100 100 Notes: (1) Ta,min = -40°C, -50°C respectively (see nameplate) 130 130 130 130 Notes: (1) Ta,min = -40°C, -50°C respectively (see nameplate)	
I state I state enclosure Ordinary location T6 T5 T4 (°C) (85°C) (100°C) (135°C) aluminium 60 45 60 plastic 60 Notes: (1) aluminium enclosure: Ta,min = -50°C (for limitation see name plate)	
Ordinary location T6 T5 T4 (°C) (85°C) (100°C) (135°C) aluminium 60 45 60 plastic 60 Notes: (1) aluminium enclosure: Ta,min = -50°C (for limitation see name plate) Image: Control of the set of the se	
aluminium 60 45 60 plastic 60 Notes: (1) aluminium enclosure: Ta,min = -50°C (for limitation see name plate)	
Notes: (1) aluminium enclosure: Ta,min = -50°C (for limitation see name plate)	
Aenderungen: A 19.07.2018 / Bn F Alle gesetzlichen Urbeberrechte. vorbehalten. Ersetzt durch	
B G Diese Zeichnung darf ohne unsere	
D J ditten Personen und Konkurrenzimmen Ersteller: FES	

Control Drawing IECEx, ATEX, CSA, cCSAus Zone 1, Zone 21, Cl.I Div. 1, Cl.II, Cl.III, Cl.I Zone 1 Thermal Parameter

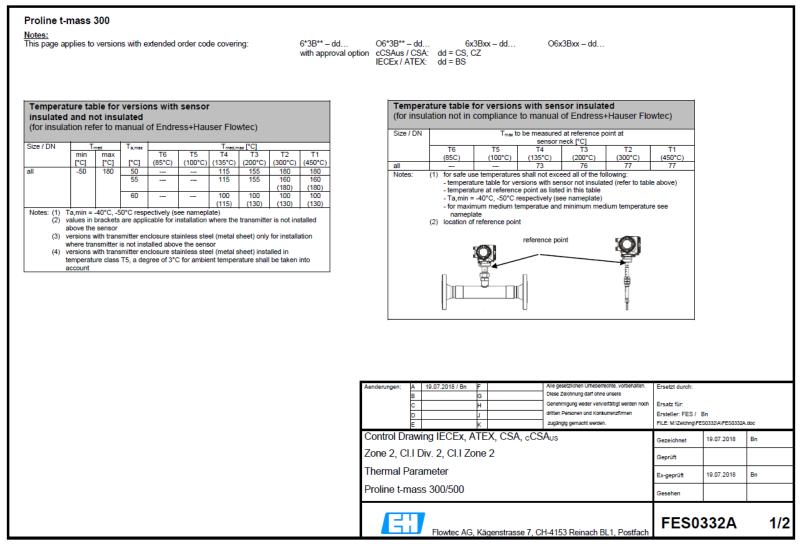
Proline t-mass 300/500

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





3.3. Thermal Parameters (Zone 2)







$\frac{1}{100} \frac{1}{100} \frac{1}$	5 11	to versions with	h extended order	code covering:	6*5*** – d with appro	d******A oval option cCSA IECE:	06*5*** us / CSA: x / ATEX:	- dd******A. dd = CS, C dd = BL, B	Z	6x5Bxx – dd	******A	O6x5	Bxx – dd*****	**A	
$\frac{ Size / DN }{ I } \frac{T_{new}}{I_{non}} \frac{T_{non}}{I_{non}} T$	ilated and r	not insulated	d												
$\frac{1}{10000000000000000000000000000000000$							Size / DN		T _{max} to			point at		1	
$\frac{alt}{100} \frac{100}{100} \frac{100}{100}{100} \frac{100}{100} \frac{100}{100}$	min	max		T4 T3						T4	Т3			-	
Notes: (1) Transmitter for all versions Transmitter for all versions Taxma (1) Taxmin = -40°C, -50°C respectively (see nameplate) Type of enclosure Txxma (1) Txxma (1) Txxma Indication of the transmitter for all versions (1) Txxma (1) Txxma (1) Indication of the transmitter for all versions Txxma (1) Txxma (1) <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>all</td> <td></td> <td>· · ·</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							all		· · ·						
Type of enclosure Transe Ordinary location T6 T5 T4 (°C) (85°C) (100°C) (135°C) aluminium 60 45 60 plastic 60 Notes: (1) aluminium enclosure: Tamin = -40°C Notes: (1) Aluminium enclosure: Tamin = -40°C Notes: (1) aluminium enclosure: Tamin = -40°C Notes: (1) Aluminium enclosure: Tamin = -40°C Notes: (1) Aluminium enclosure: Tamin = -40°C Enclosure				nameplate)			(- temperati - Ta,min = - for maxin namepla	ure at reference -40°C, -50°C re num medium te ate	point as liste spectively (se mperatue and	d in this table e nameplate)				
enclosure Ordinary location T6 T5 T4 (°C) (85°C) (100°C) (135°C) aluminium 60 45 60 plastic 60 Notes: (1) aluminium enclosure: Ta,min = -50°C (for limitation see name plate) plastic enclosure: Ta,min = -40°C Ta,min = -40°C Motes: (1) aluminium enclosure: Ta,min = -40°C (1) aluminium enclosure: Ta,min = -40°C (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2)		an versions						~							
Ordinary location T6 T5 T4 (°C) ((85°C) (100°C) (135°C) plastic 60 45 60 Notes: (1) aluminium enclosure: Ta,min = -50°C (for limitation see name plate) plastic enclosure: Ta,min = -40°C Motes: (1) aluminium enclosure: Ta,min = -40°C Mathematic enclosure: Ta,min = -40°C Control Drawing IECEx, ATEX, CSA, cCSAus Gezeinhert Brack 10.07.201 Brue 10.07.201 Control Drawing IECEx, ATEX, CSA, cCSAus Gezeinhert 10.07.201 Gezeinhert 10.07.201		Та, так					1			reference poi	nt 🦷	202070	CD.		
aluminium 60 45 60 plastic 60 Notes: (1) aluminium enclosure: Ta,min = -50°C (for limitation see name plate) plastic enclosure: Ta,min = -40°C Motes: (1) aluminium enclosure: Ta,min = -40°C Mainteencommente: Mainteencommente: Mainteencommente: <	C	-					U U	00000							
plastic 60 Notes: (1) aluminium enclosure: Ta,min = -50°C (for limitation see name plate) plastic enclosure: Ta,min = -40°C plastic enclosure: Ta,min = -40°C Aenderungen: A 19.07.2018 / Bn F Alle gesetzlohen Unbeerrechte, vorbehaten. Ersetzt durch: B G H Genetmigung weder verviertaligt werden noch ganging gemacht werden. Ersatz für: Ersatz für: Ersatz für: Ersatz für: Ersatz für: Ersetzl durch: Ersetzl durch: Ersetzt für: Ersatz für: Ersatz für: Ersatz für: Ersetzle: FES / Bn Bn Ersetzt für: Ersetzle: Ersetzle: Ersetzt für: Ersetzelistigt werden noch durten personen und konkurrenztimmen zugning gemacht werden. Ersetz für: Ersetzelist: FES / Bn Bn File. K. k. zugning gemacht werden. Ersetzt für: Ersetzle: FES / Bn Bn File. K. v.2elong/FE00332/AI/EES Gezeichnet 19.07.201 Control Drawing IECEx, ATEX, CSA, cCSAus Gezeichnet 19.07.201 Gezeichnet 19.07.201			(85°C)					3				-			
plastic 60 Notes: (1) aluminium enclosure: Ta,min = -50°C (for limitation see name plate) plastic enclosure: Ta,min = -40°C Aenderungen: A 19.07.2018 / Bn F Alle gesetzlichen Urheberrechte. vorbehalten. Ersetzt durch: B G B G C H Genehmigurg weder vervierlatigt weden noch Ersetzt durch: Ersatz für: E k zugängig gemacht werden. Ersetzt durch: Ersatz für: Control Drawing IECEx, ATEX, CSA, cCSAus Gezeichnet 19.07.201 Zono 2 CIL Div. 2 CIL Zono 2				+				П	8	П			曽		
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B G Diese Zeichnung darf öhne unsere C H Genehmigung weder vervieltätigt werden noch D Ersatz für: unten Persone und Konkurrenztimen D J antiten Persone und Konkurrenztimen Ersatz für: Fill: M: Zeichng/FE0332(A/FES Control Drawing IECEx, ATEX, CSA, cCSAUs Gezeichnet 19.07.201 Zono 2 CI L Div. 2 CI L Zono 2 Gezeichnet 19.07.201														-	
C H Genehmigung weder vervielfättigt werden noch Ersatz für: D J ditten Personen und Konkurrenzfirmen Ersatz für: E K zugängig gemacht werden. FILE: M: ZeichngiFE00332/AIFE0 Control Drawing IECEx, ATEX, CSA, cCSAUs Gezeichnet 19.07.201								2018 / Bn F				. vorbehalten.	Ersetzt durch:		
Control Drawing IECEx, ATEX, CSA, cCSAus Gezeichnet 19.07.201						Aenderungen	: A 19.07.2			Diese Zeicht					
Zone 2, CI.I Div. 2, CI.I Zone 2						Aenderungen		G H J		Genehmigun dritten Perso	ng weder vervleifält nen und Konkurren	igt werden noch	Ersteller: FES /		.doc
							B C D E	G H J K	X, CSA, cC	Genehmigun dritten Perso zugängig ge	ng weder vervleifält nen und Konkurren	igt werden noch	Ersteller: FES / FILE: M:\Zeichng\FE		Bn
Thermal Parameter Exception 19.07.201						Control	B C D E Drawing IE	в н J CEx, ATE		Genehmigun dritten Perso zugängig ge	ng weder vervleifält nen und Konkurren	igt werden noch	Ersteller: FES / FILE: M:\Zelchng\F8 Gezeichnet	ES0332\A\FES0332A	

Proline t-mass 300/500

ET.

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

Gesehen

2/2



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4. Marking

Proline t-mass 300							
Order Code:							
0.0	6F3*** – dd*ff*********+#**#						
	d*ff***************						
••••	· dd*ff************						
O6I3*** –	dd*ff***********	****+#**#					
dd =	ff = I/O	Marking of Ex protection					
approval							
BB	CA, CB, CC,	Ex db eb ia [ia Ga] IIC T4T1 Gb or					
	CD, HA, TA,	Ex db eb ia [ia Ga] IIC T4T1 Ga/Gb and/or					
	MC, RC	Ex tb [ia Da] IIIC T** °C Db					
	BA, BB, GA,	Ex db eb ia IIC T4T1 Gb or					
	LA, NA, RA,	Ex db eb ia IIC T4T1 Ga/Gb and/or					
	SA, MA,	Ex tb IIIC T** °C Db					
	MB, RB						
BD	CA, CB, CC,	Ex db ia [ia Ga] IIC T4T1 Gb or					
	CD, HA, TA,	Ex db ia [ia Ga] IIC T4T1 Ga/Gb and/or					
	MC, RC	Ex tb [ia Da] IIIC T** °C Db					
	BA, BB, GA,	Ex db ia IIC T4T1 Gb or					
	LA, NA, RA,	Ex db ia IIC T4T1 Ga/Gb and/or					
	SA, MA,	Ex tb IIIC T** °C Db					
	MB, RB						
BS	CA, CB, CC,	Ex ec nC [ic] IIC T4T1 Gc					
	CD, HA, TA,						
	MC, RC						
	BA, BB, GA,	Ex ec nC IIC T4T1 Gc					
	LA, NA, RA,						
	SA, MA,						
	MB, RB						

Inform	nati	on: Marking of protection
repres	sen	tative for
db	->	electronic compartment
eb	->	terminal compartment
ia		sensor, display
		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
ес	->	transmitter enclosure, sensor,
		electronic, display
nC	->	electronic
[ic]	->	electronic with input/output Ex ic

Proline t-n	Proline t-mass 500 Digital (with ISEM integrated in sensor)				
Order Coo	Order Code:				
6F5*** – d	ld*ff****A*******	*****+#**#			
6l5*** – do	d*ff****A********	^{(*****} +#**#			
	· dd*ff****A*****				
O6I5*** –	dd*ff****A******	***********			
dd =	ff =	Device	Marking of Ex protection		
approval	I/O				
BJ	CA, CB, CC,	Transmitter	[Ex ia] IIC and/pr		
	CD, HA, TA,		[Ex ia] IIIC		
	BA, BB, GA,	Sensor	Ex db ia IIC T4T1 Gb or		
	LA, NA, RA,		Ex db ia IIC T4T1 Ga/Gb and/or		
	RB, RC, SA,		Ex ia tb IIIC T** °C Db		
	MA, MB, MC				
BL	CA, CB, CC,	Transmitter	[Ex ic] IIC		
	CD, HA, TA,				
	MC, RC	Sensor	Ex ec IIC T4T1 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			
r .1					





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	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	Transmitter Sensor	n.a. (non-Ex) Ex ec IIC T4T1 Gc	
BN	CA, CB, CC, CD, HA, TA, MC, RC	Transmitter	Ex ec nC [ic] [ia Ga] IIC T5T4 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
		Sensor	Ex db ia IIC T4T1 Gb or Ex db ia IIC T4T1 Ga/Gb and/or Ex ia tb IIIC T** °C Db	circuit ec -> transmitter enclosure, electronic boards, display nC -> electronic [ic] -> electronic with input/output Ex ic tb -> sensor terminal box
	BA, BB, GA, LA, NA, RA, SA, MA, MB, RB	_A, NA, RA, SA, MA,	Ex ec nC [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
		Sensor	Ex db ia IIC T4T1 Gb or Ex db ia IIC T4T1 Ga/Gb and/or Ex ia tb IIIC T** °C Db	[Ex ia] -> electronic with output for sensor circuitec-> transmitter enclosurenC-> electronic[ic]-> electronic with input/output Ex ictb-> sensor terminal box
BS	CA, CB, CC, CD, HA, TA,	Transmitter	Ex ec nC [ic] IIC T5T4 Gc	ec -> transmitter enclosure, sensor terminal box, electronic, display
	MC, RC	Sensor	Ex ec IIC T4T1 Gc	nC -> electronic [ic] -> electronic with input/output Ex ic
	BA, BB, GA, LA, NA, RA,	Transmitter	Ex ec nC IIC T5T4 Gc	
	SA, MA, MB, RB	Sensor	Ex ec IIC T4T1 Gc	

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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Certificate No.:



• 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.

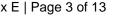
Different electronics are used for the flowmeters where the sensor is installed in a Zone 2 location and where the transmitter can be installed in a safe area or Zone 2 locations. All versions of electronics are designed either with intrinsically safe IO's (Ex ic for Zone 2) or with non-intrinsically 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 + #**# 4x3bxx – ddeffghjlpww + #**# O4x3bxx – ddeffghjlpwwyy + #**#

for OEM-version for replacement transmitter for replacement transmitter OEM

Extended order code Proline Teqwave M 500: 4a5bcc – ddeffghijkmnopstttww + #**# O4a5cc – ddeffghijkmnopstttwwyy + #**# 4x5bxx – ddeffghijkmopww + #**# O4x5bxx – ddeffghijkmopwwyy + #**#

for OEM-version for replacement transmitter for replacement transmitter OEM

2	_	Type of sensor
a	-	••
		W = Teqwave MW
b	=	Generation
		B = Generation of Flowmeter
сс	=	Size
		any combination of number and/or letter up to size = DN300
		Americal

dd = Approval <u>Proline Teqwave M 300:</u> BS = Ex ec IIC T5...T1 Gc

> Proline Teqwave M 500: BL = non-Ex

= non-Ex	(transmitter)
Ex ec IIC T6…T1 Gc	(sensor)
= Ex ec IIC T5T4 Gc	(transmitter)
Ex ec IIC T6T1 Gc	(sensor)
	Ex ec IIC T6T1 Gc = Ex ec IIC T5T4 Gc

- e = Power Supply
 - I = 100-230Vac / 24Vdc
 - X = sensor only







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ff =	Input / O	utput 1	

- = 4-20mA HART ΒA
- BB = 4-20mA WHART
- = 4-20mA HART Ex i (passive) CA
- CB = 4-20mA WHART Ex i (passive)
- CC = 4-20mA HART Ex i (active)
- CD = 4-20mA WHART Ex i (active)
- = Profibus PA GA
- = Profibus PA Ex i HA
- LA = Profibus DP
- = Modbus RS485 MA
- MB = Modbus TCP
- MC = Modbus TCP Ex i
- NA = EtherNet/IP
- = Profinet IO RA
- RB = Profinet
- = Profinet Ex i RC
- = Foundation Fieldbus SA
- ΤA = Foundation Fieldbus Ex i
- XX = sensor only
- Input / Output 2 g =

А

Е

F

- = without Input/Output 2
- В = 4-20mA С
 - = 4-20mA Ex i (passive)
- D = Configurable IO
 - = Pulse/Frequency/Switch output
 - = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- Н = Relay
 - = 4-20mA input
- L J = Status input
- Κ = Pulse output Ex i
- L = Pulse output
- Х = sensor only
- h Input / Output 3 =

А В

С

D

Е

- = without Input/Output 3
- = 4-20mA
- = 4-20mA Ex i (passive)
- = Configurable IO
- = Pulse/Frequency/Switch output
- F = Pulse output phase-shifted
- G = Pulse/Frequency/Switch output Ex i
- Н = Relay
- L = 4-20mA input
- = Status input J
- Κ = Pulse output Ex i
- L = Pulse output
- Х = sensor only





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i	=	Input / Output 4 (Proline 500 only)
•		A = without Input/Output 4
		B = 4-20 mA
		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 = 4-20 mA 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
I	=	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
ο	=	Cable Sensor Connection (Proline 500 only)
		any single number or letter
р	=	Cable Entry
_		any single number or letter
S	=	Design
		any single number or letter
ttt	=	Process connection
14/14/	_	any triple digits with combination of number or letter Device Model (two digits) (see assignment of flowmeter to replacement transmitter)
ww	=	A2 = product version 2
W	_	Customer version (two digits)
уу	-	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
п, т	_	





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	В	A2	4x* b xx ww ,	O4x* b xx ww	В	A2

3. Parameters

3.1. Electrical Parameters

Power Supply		
Order Code	Terminal No.	Values
e =		
	No. 1(L+/L), 2(L-/N)	U _N = 19.228.8V _{DC} /85264V _{AC}
		$U_{M} = 250 V_{AC}$

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	$ \begin{array}{llllllllllllllllllllllllllllllllllll$
CC, CD	No. 26, 27	$\begin{array}{llllllllllllllllllllllllllllllllllll$
		Ci = 6nF Li = 5µH





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

 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 =		
C, G, K	No. 24, 25	$U_i = 30V$
		$I_i = 100 \text{mA}$
		$P_i = 1.25W$
		$L_i = 0$
		$C_i = 0$
B, D, E, F, I, J, L	No. 24, 25	$U_N = 30V_{DC}$
		$U_M = 250 V_{AC}$
Н	No. 24, 25	$U_N = 30V_{DC}$
		$I_N = 100 \text{mA}_{\text{DC}} / 500 \text{mA}_{\text{AC}}$
		$U_M = 250V_{AC}$





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Input/Output 3		
Order Code	Terminal No.	Values
h =		
C, G, K	No. 22, 23	$U_i = 30V$
		$I_i = 100 \text{mA}$
		$P_i = 1.25W$
		$L_i = 0$
		$C_i = 0$
B, D, E, F, I, J, L	No. 22, 23	$U_N = 30V_{DC}$
		$U_M = 250 V_{AC}$
Н	No. 22, 23	$U_N = 30V_{DC}$
		$I_N = 100 \text{mA}_{DC} / 500 \text{mA}_{AC}$
		$U_M = 250 V_{AC}$

Input/Output 4		
Order Code i =	Terminal No.	Values
С, G, К	No. 20, 21	$\begin{array}{llllllllllllllllllllllllllllllllllll$
B, D, E, F, I, J, L	No. 20, 21	$U_{N} = 30V_{DC}$ $U_{M} = 250V_{AC}$
Н	No. 20, 21	$\begin{array}{l} U_{N} &= 30 V_{DC} \\ I_{N} &= 100 m A_{DC} / 500 m A_{AC} \\ U_{M} &= 250 V_{AC} \end{array}$

Service Interface		
Order Code	Terminal No.	Values
dd =		
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	Terminal No.	Values
dd =		
BS	No. 81, 82, 83, 84	$U_{\rm N} = 3.3 V$
		$I_N = 150 \text{mA}$

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





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Teqwave M Remote Transmitter and Remote Sensor:

4***** and O4*****	with order code dd = BL,	BS ir	<u>combination with k = A (ISEM in sensor):</u>
Transmitter termi	<u>inal board:</u>		
Terminals	61, 62	->	$U_N = 32V$
Terminals	63, 64	->	$U_N = 3.3V$
<u>Sensor terminal I</u> Terminals Terminals	61, 62		$U_N = 32V$ (amplifier supply) $U_N = 3.3V$ (sensor supply)





3.2. Thermal Parameters (Zone 2)

Proline Teqwave M 300

 $\frac{\text{Notes:}}{\text{This page applies to versions with extended order code covering:}}$

4x3Bxx - dd...

O4x3Bxx - dd...

Temperature table for versions with sensor insulated and not insulated (for insulation refer to manual of Endress+Hauser Flowtec)									
Size / DN	T,	ned	T _{a,max}			T _{med,r}	_{max} (°C)		
	min	max]	T6	T5	T4	T3	T2	T1
	(°C)	(°C)	(°C)	(85°C)	(100°C)	(135°C)	(200°C)	(300°C)	(450°C)
50300	0	80	50		80	80	80	80	80
			55		70	80	80	80	80
60 60 80 80 80 80									
Notes: 7	fa,min =	-20°C							

Aenderungen:	A B C D E	12.08.2023 / DOMI	F G H J K		Alle gesetzlichen Urheberrechte, vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugängig gemacht werden.	Ersetzt durch: Ersatz für: Ersteller: RDES / FILE: M:\Zeichng\FES		doc
Control D	raw	ing IECEx, A	Gezeichnet	12.06.2023	DOMI			
Zone 2, C	I.I C	Div. 2, Cl.I Zo	Geprüft					
Thermal F	ara	ameter	Ex-geprüft	12.06.2023	DOMI			
Proline Te	eqw	ave M 300/5	Gesehen					
E	:	FES04	422A	1/2				





Proline To <u>Notes:</u> This page ar	-			nded order	r code covei	ing:	4*5B with a	** – dd***** approval op	tion cCSA	O4*5B** – (s / CSA: d / ATEX: d	ld******A d = CS, CZ d = BL, BS	4x	Bxx – dd******A C	4x5Bxx - dd****	***A	
Sensor: T (for insulation	-					or insulate	d and not	insulated	1							
Size / DN	Т	med	T _{a,max}			T _{med.n}	nax (°C)									
	min	max	-,	T6	T5	T4	T3	T2	T1							
	(°C)	(°C)	(°C)	(85°C)	(100°C)	(135°C)	(200°C)	(300°C)	(450°C)							
50300	0	80	40	55	80	80	80	80	80							
			45	50	80	80	80	80	80							
Notes: T	a,min =		60		80	80	80	80	80							
Type of enc		0		cation / Ha ation Div. 3 60		T _{a,max} (°C) T6 (85°C) 	(10	T5 10°C) 45	T4 (135°C) 60							
		m enclos nclosure:		60 nin = -20°C in = -20°C		on see name										
									Aenderungen:	A 12.08.2023 B C D E	/ DOMI F G H J K		Alle gesetzlichen Urheberrechte, vorbehalte Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden n dritten Personen und Konkurrenzlimen zugängig gemacht werden.	ch Ersatz für: Ersteller: RDES	/ DOMI ES0332/4/FES0422A	Ldoc
									Control [rawing IEC	Ex, ATEX, (CSA, cCS	Aus	Gezeichnet	12.06.2023	DON
										I.I Div. 2, C	I.I Zone 2			Geprüft		
										Parameter				Ex-geprüft	12.06.2023	DON
									Proline T	eqwave M 3	00/500			Gesehen		
													I-4153 Reinach BL1, Postfac	FESO	422A	





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4. Marking

Proline Te	eqwave M 300		
Order Coc 4*3*** – d	de: d*ff*********+#	**# 04*3*** - dd*ff*********+#**#	
dd = approval	ff = I/O	Marking of Ex protection	Information: Marking of protection representative for
BS	CA, CB, CC, CD, HA, TA, MC, RC	IECEx: Ex ec nC [ic] IIC T5T1 Gc ATEX:	ec -> transmitter enclosure, sensor electronic, display nC -> electronic
	BA, BB, GA, LA, NA, RA,	IECEx: Ex ec nC IIC T5T1 Gc	[ic] -> electronic input/output Ex ic
	SA, MA, MB, RB	ATEX:	

Proline Te	Proline Teqwave M 500 with ISEM integrated in sensor						
Order Code: 4*5*** - dd*ff****A*******+#**# 04*5*** - dd*ff****A********+#**#							
dd = approval	ff = I/O	Device	Marking of Ex protection				
BL	CA, CB, CC, CD, HA, TA,	Transmitter	IECEx: [Ex ic] IIC				
	MC, RC	Sensor	IECEx: Ex ec IIC T6T1 Gc				
	BA, BB, GA, LA, NA, RA,	Transmitter	n.a. (non-Ex)				
	SA, MA, MB, RB	Sensor	IECEx: Ex ec IIC T6T1 Gc				
BS	CA, CB, CC, CD, HA, TA,	Transmitter	IECEx: Ex ec nC [ic] IIC T5T4 Gc				
	MC, RC	Sensor	IECEx: Ex ec IIC T6T1 Gc				
	BA, BB, GA, LA, NA, RA,	Transmitter	IECEx: Ex ec nC IIC T5T4 Gc				
	SA, MA, MB, RB	Sensor	IECEx: Ex ec IIC T6T1 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