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Safety Instructions
Proline Promag 500

ATEX: II3G (Zone 2)
IECEx: EPL Gc (Zone 2)

Endress+Hauser
People for Process Automation

BG - Правила за техниката на безопасност за електрически средства за производство във взривоопасни зони. Ако не разбирате езика на това ръководство има възможност да спорьчате при нас едно ръководство, преведено на езика на Вашата страна.
ЕС декларация за съответствие
Производителят Endress+Hauser декларира с това заявление за съответствие и с предявяването на сертификата CE, че този продукт отговаря на изискванията на съответните европейски директиви. Прилаганите директиви, норми и документи са указани в заявлението за съответствие.

CS - Bezpečnostní pokyny pro elektrické přístroje v místech s nebezpečím výbuchu. Pokud nemáte možnost přečíst si tento návod, můžete si u nás objednat návod přeložený do svého jazyka.
EU prohlášení o shodě
Společnost Endress+Hauser prohlašuje prostřednictvím tohoto prohlášení a použitím značky CE, že tento výrobek vyhovuje příslušným evropským směrnicím. Zmíněné směrnice, normy a dokumenty jsou uvedeny v Prohlášení o shodě.

DA - Sikkerhedsforskrifter for elektriske apparater certificeret til brug I eksplosionsfarlige områder. Hvis du ikke forstår denne manual, kan en oversat kopi af den på dit eget sprog bestilles fra os.
EU-overensstemmelseserklæring
Med denne overensstemmelseserklæring og tilføjelsen af CE-mærket sikrer producenten Endress+Hauser, at produktet er I overensstemmelse med relevante europæiske direktiver. Dokumentation for overensstemmelsen gives i de anførte direktiver, standarder og dokumenter.

EL - Οδηγίες ασφαλείας ηλεκτρικών συσκευών για επικίνδυνες για έκρηξη περιοχές. Σε περίπτωση που δεν μπορείτε να διαβάσετε αυτές τις οδηγίες, τότε μπορείτε να παραγγείλετε ένα αντίτυπο μεταφρασμένο στη γλώσσα σας.
Δήλωση συμμόρφωσης ΕΕ
Με αυτή τη δήλωση πιστότητας και την τοποθέτηση του σήματος CE ο κατασκευαστής Endress+Hauser δηλώνει, ότι αυτό το προϊόν συμμορφώνεται με τις ευρωπαϊκές οδηγίες που πρέπει να εφαρμοστούν. Οι οδηγίες, τα πρότυπα και τα έγγραφα που εφαρμόστηκαν αναφέρονται στη δήλωση πιστότητας.

ES - Instrucciones de seguridad de aparatos eléctricos homologados para su utilización en áreas expuestas a riesgos de deflagración. Si no entiende este manual, puede pedir un ejemplar en su idioma.
Declaración UE de conformidad
Por la presente declaración y la inclusión de la marca CE, el fabricante Endress+Hauser, declara que el producto cumple con las directivas europeas pertinentes. Las directivas, normas y documentos de aplicación se indican en la declaración de conformidad.

ET - Ohutusjuhised plahvatusohtlikus keskkonnas kasutatavate elektriseadmete kohta. Kui Te ei saa käesolevast juhendist aru, võite meilt tellida Teie riigikeelde tõlgitud juhendi.
EL i vastavusdeklaratsioon
Tootja Endress+Hauser kinnitab juurdelisatud vastavusdeklaratsiooni esitamisega ja CE-märgise kandmisega tootele, et käesolev toode vastab kohaldatavate Euroopa Liidu direktiivide nõuetele. Kohaldatavad direktiivid, standardid ja dokumendid on ära toodud vastavusdeklaratsioonis.

FI - Turvallisuusohjeita sähkölaitteille, jotka on vahvistettu käytettäväksi räjähdysvaarallisilla alueilla. Jos et ymmärrä tätä käsikirjaa, voit tilata meiltä käännöksen omalla kansallisella kielelläsi.
EU-vaatimustenmukaisuusvakuutus
Valmistaja Endress+Hauser vakuuttaa tällä vaatimustenmukaisuustodistuksella ja CE-merkin kiinnittämisellä, että tämä tuote täyttää sovellettavien EU-direktiivien määräykset. Sovellettavat direktiivit, normit ja dokumentit on merkitty vaatimustenmukaisuustodistukseen.

HR - Sigurnosni naputci za elektromaterijal u sredini u kojoj prijeti opasnost od eksplozije. Ako Vam nije moguće čitati ovaj naputak, onda imate mogućnost da kod nas naručite naputak sastavljen na Vašem materinskom jeziku.
EU izjava o sukladnosti
Dobavljač Endress+Hauser jamči ovom izjavom i stavljanjem oznake CE da ovaj proizvod udovoljava zahtjevima europskih direktiva koje su na snazi. U izjavi o usuglašenosti se navode direktive, norme i dokumenti koji su na snazi.

HU - Biztonsági információk robbanásveszélyes területre való elektromos eszközökhöz. Amennyiben nem tudja elolvasni ezt az útmutatót, akkor megrendelheti az Ön anyanyelvére lefordítva is.
EU-megfelelőségi nyilatkozat
Az Endress+Hauser mint gyártó jelen megfelelőségi nyilatkozattal és a CE-jelzés felhelyezésével kijelenti, hogy ez a termék megfelel az alkalmazandó európai irányelveknek. Az alkalmazott irányelvek, szabványok és dokumentumok a megfelelőségi nyilatkozatban fel vannak tüntetve.

IT - Istruzioni di sicurezza per apparecchiature elettriche certificate per l'utilizzo in aree con pericolo di esplosione. Se il presente manuale non risulta comprensibile potete ordinarcene una copia tradotta nella vostra lingua.
Dichiarazione di conformità UE
Con questa dichiarazione e con l'applicazione del marchio CE, il costruttore Endress+Hauser, assicura che il prodotto è conforme alle direttive europee vigenti. Prova della conformità è fornita dall'osservanza delle direttive, delle norme e dei documenti elencati.

LT - Elektros įrenginio saugumo nurodymai, susiję su sprogimo zonomis. Jeigu negalite perskaityti šios instrukcijos, kreipkitės į mus, kad užsisakytumėte į jūsų gimtąją kalbą išverstą instrukciją.
ES atitikties deklaracija
Gamintojas Endress+Hauser šia atitikties deklaracija ir CE ženklinimu patvirtina, kad gaminys atitinka taikytinas ES direktyvas. Taikomos direktyvos, normos ir dokumentai yra pateikiami atitikties deklaracijoje.

LV - Drošības norādījumi elektrisko darba instrumentu lietošanai apgabalos, kas pakļauti sprādzienbīstamībai. Ja Jums nav iespēju izlasīt šos norādījumus, Jūs varat pasūtīt pie mums tulkojumu Jūsu valsts valodā.
ES atbilstības deklarācija
Ražotājs Endress+Hauser ar šo atbilstības apliecinājumu un CE zīmola lietojumu apstiprina, ka produkts izgatavots sakaņā ar atbilstošajām Eiropas vadlīnijām. Piemērotās vadlīnijas, normas un dokumenti atrunāti atbilstības apliecinājumā.

NL - Veiligheidsinstructies voor elektrisch materieel in explosiegevaarlijke omgeving. Wanneer u deze handleiding niet kunt lezen, kunt u een in uw landstaal vertaalde handleiding bij ons bestellen.
EU-conformiteitsverklaring
De leverancier Endress+Hauser waarborgt met deze verklaring en het aanbrengen van het CE-teken, dat dit product overeenstemt met de geldende Europese richtlijnen. De geldende richtlijnen, normen en documenten zijn aangegeven in de conformiteitsverklaring.

PL - Wskazówki dot. bezpieczeństwa dla urządzeń elektrycznych stosowanych w obszarze zagrożonym wybuchem. Jeśli niniejsza instrukcja napisana jest w języku, którym się nie posługujesz, możesz zamówić u nas przetłumaczony dokument.
Deklaracja zgodności UE
Producent Endress+Hauser w niniejszej deklaracji zgodności wraz z nadaniem znaku CE oświadcza, że produkt ten jest zgodny z obowiązującą Europejską Dyrektywą. Zastosowane wytyczne, normy oraz dukumenty podane są w deklaracji zgodności.

PT - Instruções de segurança para dispositivos eléctricos certificados para utilização em áreas de risco de incêndio. Se não compreender este manual, pode encomendar-nos directamente uma cópia na sua língua.
Declaração UE de conformidade
Com esta declaração de conformidade e a aplicação da marca CE, o fabricante Endress+Hauser, garante que o produto obedece às directivas europeias a aplicar. As directivas, normas e documentos são apresentadas na declaração de conformidade.

RO - Indicații de siguranță pentru mijloacele de producție electrice pentru zonele periclitate de explozie. Dacă nu puteți citi aceste instrucțiuni, atunci puteți comanda la noi instrucțiunile traduse în limba țării dumneavoastră.
Declarația UE de conformitate
Producătorul Endress+Hauser declară prin declarația de conformitate alăturată şi prin aplicarea semnului CE că acest produs corespunde directivelor europene aplicabile. Directivele, normele aplicate şi documentele sunt menționate în declarația de conformitate.

SK - Bezpečnostné pokyny pre elektrické zariadenie prevádzkované v priestoroch s nebezpečenstvom výbuchu. Ak nemáte možnost' prečítat' si tento návod, môžete si u nás objednat' návod preložený do svojho jazyka.
EÚ vyhlásenie o zhode
Spoločnosť Endress+Hauser vyhlasuje prostredníctvom tohto vyhlásenia o konformite a použitím značky CE, že tento výrobok vyhovuje príslušným európskym smerniciam. Zmieňované smernice, normy a dokumenty sú uvedené vo Vyhlásení o konformite.

SL - Varnostni napotki glede električne opreme, namenjene za uporabo veksplozivnih območjih. Če teh navodil ne morete razumeti, lahko pri nas naročite prevod v vaš jezik.
Izjava EU o skladnosti
Proizvajalec Endress+Hauser s to izjavo o skladnosti in navedbo oznake CE izjavlja, da je ta izdelek skladen s predpisanimi evropskimi smernicami. Upoštevane smernice, standardi in dokumenti so navedeni v izjavi o skladnosti.

SV - Säkerhetsföreskrifter för elektrisk utrustning certifierad för användning i explosionsfarliga områden. Om du inte förstår denna manual, kan en översatt kopia på ditt eget språk beställas från oss.
EU-försäkran om överensstämmelse
Endress+Hauser försäkrar med vidstående försäkran om överensstämmelse och med CE-märkningen att denna produkt överensstämmer med de tillämpbara europeiska riktlinjerna. De tillämpade riktlinjerna, normerna och dokumenten anges i försäkran om överensstämmelse.

Proline Promag 500

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About this document

The document number of these Safety Instructions (XA) must match the information on the nameplate.

Associated documentation

For an overview of the scope of the associated Technical Documentation, refer to the following:

- *Device Viewer* (www.endress.com/deviceviewer): Enter serial number from nameplate.
- *Endress+Hauser Operations app*: Enter serial number from nameplate or scan matrix code on nameplate.

To commission the device, please observe the Operating Instructions pertaining to the device:

Measuring instrument	Documentation code				
	HART	FOUNDATION Fieldbus	PROFIBUS PA	PROFIBUS DP	Modbus RS485
Promag H 500	BA01398D	BA01479D	BA01404D	BA01866D	BA01401D
Promag P 500	BA01399D	BA01480D	BA01405D	BA01867D	BA01402D
Promag W 500	BA01400D	BA01481D	BA01406D	BA01868D	BA01403D

Measuring instrument	Documentation code			
	EtherNet/IP	PROFINET	PROFINET over Ethernet-APL	Modbus TCP over Ethernet-APL
Promag H 500	BA01720D	BA01723D	BA02106D	BA02394D
Promag P 500	BA01721D	BA01724D	BA02105D	BA02395D
Promag W 500	BA01722D	BA01725D	BA02104D	BA02396D

Additional documentation

Contents	Document type	Documentation code
Explosion Protection	Brochure	CP00021Z/11
Ethernet-APL Installation Drawing	Installation Drawing	HE_01622

Please note the documentation associated with the device.

Certificates and declarations

EU Declaration of conformity

Documentation code: EC_00410

IEC Certificate of Conformity

Certificate number:

IECEx CSA 16.0034X

Affixing the certificate number certifies conformity with the standards under www.IECEx.com (depending on the device version).

- IEC 60079-0: 2017
- IEC 60079-7: 2017
- IEC 60079-11: 2011
- IEC 60079-15: 2017
- IEC TS 60079-47: 2021

Manufacturer address

Endress+Hauser Flowtec AG
Kägenstrasse 7
4153 Reinach BL
Switzerland

Extended order code

The extended order code is indicated on the nameplate, which is affixed to the device in such a way that it is clearly visible. Additional information about the nameplate is provided in the associated Operating Instructions.

Structure of the extended order code

******	–	***** ... *****	+	A*B*C*D*E*F*G*...
(Device type)		*(Basic specifications)*		*(Optional specifications)*

* = Placeholder
At this position, an option (number or letter) selected from the specification is displayed instead of the placeholders.

Device type

The device and the device design is defined in the "Device type" section (Product root).

Basic specifications

The features that are absolutely essential for the device (mandatory features) are specified in the basic specifications. The number of positions depends on the number of features available.
The selected option of a feature can consist of several positions.

Optional specifications

The optional specifications describe additional features for the device (optional features). The number of positions depends on the number of features available. The features have a 2-digit structure to aid identification (e.g. JA). The first digit (ID) stands for the feature group

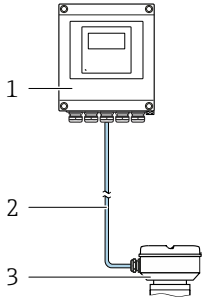
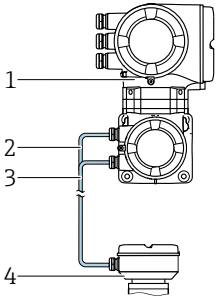
and consists of a number or a letter (e.g. J = Test, Certificate). The second digit constitutes the value that stands for the feature within the group (e.g. A = 3.1 material (wetted parts), inspection certificate).

More detailed information about the device is provided in the following tables. These tables describe the individual positions and IDs in the extended order code which are relevant to hazardous locations.

Device type

Position	Order code for	Selected option	Description
1	Instrument family	5	Electromagnetic flowmeter
2	Sensor	H, P, W [1)]	Sensor type
3	Transmitter	5	Transmitter type: 4-wire, remote version
4	Generation index	B	Platform generation
5, 6	Nominal diameter	Examples: 02, 04, 40, 50, 1H, 1Z, T0, E4 [2) 3)]	Nominal diameter of sensor

1) For replacement transmitter only: X
2) For the exact specification of the nominal diameter, see nameplate
3) For replacement transmitter only: XX

Proline 500 – digital	Proline 500
Order code for "Integrated ISEM Electronic", option **A** "Sensor"	Order code for "Integrated ISEM Electronic", option **B** "Transmitter"
	
1 Transmitter *2 Connecting cable* *3 Sensor connection housing with integrated ISEM*	*1 Transmitter with integrated ISEM* *2 Coil current cable* *3 Signal cable* *4 Sensor connection housing*

Basic specifications

Position 1, 2 Order code for "Approval" Selected option	Position 10 [1] Order code for "Integrated ISEM electronics" Selected option	Type of protection	
		Transmitter	Sensor
BL	A	Non-hazardous area [2]	Ex ec ic IIC T6...T1 Gc
BS	A, B	Ex ec nC IIC T5...T4 Gc	Ex ec ic IIC T6...T1 Gc

1) Promag W 500: Position 11
2) The transmitter is located in the non-hazardous area

Position [1]	Order code for	Selected option	Description
4, 5 (5,6)	Output; input 1	BA	4-20mA HART
		GA	PROFIBUS PA
		HA	PROFIBUS PA Ex-i
		LA	PROFIBUS DP
		MA	Modbus RS485
		MB	Modbus TCP over Ethernet-APL/SPE, 10Mbit/s
		MC	Modbus TCP over Ethernet-APL, Ex-i, 10Mbit/s
		NA	EtherNet/IP 2-port switch integrated
		RA	PROFINET IO 2-port switch integrated
		RB	PROFINET over Ethernet-APL/SPE, 10Mbit/s
		RC	PROFINET over Ethernet-APL, Ex-i, 10Mbit/s
		SA	FOUNDATION Fieldbus
		TA	FOUNDATION Fieldbus Ex-i
6 (7)	Output; input 2	A	W/o
		B	4-20mA
		C	4-20mA Ex-i passive
		D	Configurable I/O initial setting off
		E	Pulse/frequency/switch output
		F	Pulse output, phase-shifted
		G	Pulse/frequency/switch output Ex-i passive
		H	Relay
		I	4-20mA input
		J	Status input

Position [1]	Order code for	Selected option	Description
7 (8)	Output; input 3	A	W/o
		B	4-20mA
		C	4-20mA Ex-i passive
		D	Configurable I/O initial setting off
		E	Pulse/frequency/switch output
		F	Pulse output, phase-shifted
		G	Pulse/frequency/switch output Ex-i passive
		H	Relay
		I	4-20mA input
		J	Status input
8 (9)	Output; input 4 [2]	A	W/o
		B	4-20mA
		C	4-20mA Ex-i passive
		D	Configurable I/O initial setting off
		E	Pulse/frequency/switch output
		G	Pulse/frequency/switch output Ex-i passive
		H	Relay
		I	4-20mA input
		J	Status input
9 (10)	Display; Operation	F	4-line, illuminated; touch control
		G	4-line, illuminated; touch control + WLAN
10 (11)	Integrated ISEM Electronic	A	Sensor
		B	Transmitter
11 (12)	Transmitter Housing	A	Alu, coated
		D	Polycarbonate
		L	Cast, stainless
12 (13)	Sensor junction Housing	A	Alu, coated
		B	Stainless
		D	Polycarbonate
		L	Cast, stainless
14 (15)	Liner	A	PFA
		B	PFA High-temperature
		E	PTFE

Position [1]	Order code for	Selected option	Description
		H	Hard rubber
		Q	PTFE 90°C
		U	Polyurethane
21, 22 (22, 23)	Device Model	A1	1
		A2	2

1) Position in brackets: Promag W 500
2) The order code "Output; input 4" is only available for the Proline 500 – digital transmitter.

Optional specifications

ID	Order code for	Selected option	Description
Cx	Sensor option	CG	Extended neck for insulation [1]
Cx	Sensor option	CI	Fluid Temperature Probe [2]
Jx	Test, certificate	JN	Ambient temperature transmitter −50 °C
Px	Enclosed accessories	P8	Wireless antenna, wide area (external WLAN antenna) [3]

1) Only for Promag W and Promag P available
2) Only for Promag H available
3) The external WLAN antenna is available with the order code for "Accessory Enclosed", option P8.

Safety instructions: General

- Staff must meet the following conditions for mounting, electrical installation, commissioning and maintenance of the device:
  - Be suitably qualified for their role and the tasks they perform
  - Be trained in explosion protection
  - Be familiar with national regulations or guidelines (e.g. IEC/EN 60079-14)
- Install the device according to the manufacturer's instructions and national regulations.
- Do not operate the device outside the specified electrical, thermal and mechanical parameters.
- Use the device only in media where the wetted materials are known to be suitable.
- Refer to the temperature tables for the relationship between the permitted ambient temperature for the sensor and/or transmitter, depending on the range of application, and the temperature classes.

- Alterations to the device can affect the explosion protection and must be carried out by staff authorized to perform such work by Endress+Hauser.
- Observe all the technical data of the device (see nameplate).
- Avoid electrostatic charges which could result in electrostatic discharges while installing, operating, cleaning or maintaining:
  - For external non-metallic surfaces, e.g. housing, attached additional plates, RFID tag.
  - For attached external metallic parts that are not integrated into the local potential equalization system, e.g. nameplate tag, RFID tag.
  - Do not use in areas where the devices/electronic housing are exposed to highly charge-generating processes, pneumatically conveyed dusts and/or charge spraying in an electrostatic coating process.
  - Do no rub surfaces dry. Clean only with moist cloth.
  - Information on electrostatic hazards and how to minimize the generation of static electricity can be found in the technical specification IEC/TS 60079-32-1.

Safety instructions: Installation

General installation instructions

- Continuous service temperature of the connecting cable: −40 to +85 °C (−50 to +85 °C for optional specification, ID Jx (Test, certificate) = JN); but at least according to the operating temperature range of the application plus allowance for process conditions ($T_{a, min}$ and $T_{a, max}$ + 20 K).
- When the measuring device is connected, attention must be paid to the type of protection at the transmitter.
- For devices with order code "Sensor connection housing", option B: To maintain the required degree of ingress protection, ensure that the cover seal of the sensor connection housing is flat and free of bends or distortions before securing the cover. Replace any damaged or non-flat seals prior to reassembly.

Installation in potentially explosive atmospheres

- Do not disconnect the electrical connection of the power supply circuit when energized.
- Do not open the connection compartment cover when the device is energized.
- Connection to or operation with Service interface (Port 2) is not permitted.

Use of cable glands, sealing plugs and thread adapters

- Only use Ex certified cable glands, sealing plugs and thread adapters that are suitable for the intended application (see nameplates).
- Plastic sealing plugs are mounted to cable entries and metallic thread extensions for temporary protection during transport and storage. These must be replaced with suitable Ex certified cable entry devices for permanent use.
- The mounted metallic thread extensions and sealing plugs are tested and certified as part of the device. These meet the device's specific requirements.
- Supplied Ex cable glands are separately certified and meet the device's specific requirements.
- All unused cable entries must be closed with suitable Ex certified sealing plugs.
- Observe selection criteria for Ex cable entry devices as per IEC/EN 60079-14.

Ex ec type of protection

- Only use separately certified cable glands, sealing plugs and thread adapters (Ex ec IIC) which are suitable for operating temperatures from -40 °C to +85 °C and for IP 66/67.
- The mounted metallic thread extensions and sealing plugs are tested and certified as part of the devices for the type of protection Ex ec IIC.
- The cables must be routed such that they are securely seated, and sufficient strain relief must be ensured.

Optional external WLAN antenna

- Use only the external antenna (with or without extension cable) and the antenna feedthrough supplied by Endress+Hauser.
- The antenna feedthrough must be mounted to the transmitter with a tightening torque of 4 Nm.
  Tightening torques for Polycarbonate transmitter housing: 2.5 Nm
- Use only an external antenna (with or without extension cable) equipped with a Type-N male connector (MIL-STD-348).
- The coupling nut of the Type-N male connector must be tightened by hand only.

Optional RFID TAG

- Do not use in areas with high electromagnetic field intensities.
- Avoid electrostatic charging.
- Ensure sufficient distance from processes generating high charges.

Intrinsic safety

- Observe the guidelines for interconnecting intrinsically safe circuits (e.g. IEC/EN 60079-14, IEC/EN 60079-25 , proof of intrinsic safety).
- Proline 500 (order code for "Integrated ISEM electronics", option B) Connecting cables between the transmitter and sensor with a maximum length of 200 m must meet the following requirements:
  - Maximum cable capacitance C_{cable}: 1 nF/m
  - Maximum cable inductance L_{cable}: 1 µH/m
- The supplied connecting cable meets all the above requirements.

Potential equalization

- The device must be connected to the potential equalization system using designated protective ground terminals.
- It is also possible to integrate the device into the potential equalization system through a pipe system, provided that the pipe system meets the grounding requirements of applicable national regulations.

Temperaturtabellen Proline 500 - digital

Order code for "Integrated ISEM electronics", option A

Minimum ambient temperature

- $T_{a, min}$ = −40 °C depending on the selected device version (see nameplate!).
- *Optional specification, ID Jx (Test, Certificate) = JN*
  $T_{a, min}$ = −50 °C depending on the selected device variant (see nameplate)

Maximum ambient temperature

$T_{a, max}$ = +60 °C depending on temperature class, maximum medium temperature and device-specific features. See the corresponding temperature tables.

Transmitter: Non-hazardous area, Zone 2

	$T_{a, max}$ [°C]			
Transmitter housing material	**Non-hazardous area** [1]	**T6 [85 °C]**	**T5 [100 °C]**	**T4 [135 °C]**
Aluminum	60	–	45	60
Polycarbonate	60	–	–	–

1) The transmitter is located in the non-hazardous area

Minimum medium temperature

$T_{m, min}$ = −40 to 0 °C depending on the selected device version (see nameplate!)

Maximum medium temperature for devices without thermal insulation or with thermal insulation in accordance with Endress +Hauser specifications

Promag H

DN	$T_{a, max}$ [°C]	$T_{m, max}$ [°C]					
		T6 [85 °C]	T5 [100 °C]	T4 [135 °C]	T3 [200 °C]	T2 [300 °C]	T1 [450 °C]
Without thermal insulation							
2...150	40	50	95	130	150	150	150
	45	50	95	130	145	145	145
	55	–	95	115	115	115	115
	60	–	–	115	115	115	115

Promag P

DN	Liner	$T_{a, max}$ [°C]	$T_{m, max}$ [°C]					
			T6 [85 °C]	T5 [100 °C]	T4 [135 °C]	T3 [200 °C]	T2 [300 °C]	T1 [450 °C]
Without thermal insulation								
15...600	PTFE	50	50	95	130	130	130	130
		60	–	95	130	130	130	130
25...200	PFA	50	50	95	130	150	150	150
		60	–	95	130	130	130	130
Extended neck for insulation (Optional specification, ID Cx (Sensor Option) = CG), with or without thermal insulation								
15...300	PTFE	50	50	95	130	130	130	130
		60	–	95	130	130	130	130
25...200	PFA	50	50	95	130	150	150	150
		60	–	95	130	130	130	130
High-temperature version (Order code for "Liner", option B) without thermal insulation								
25...200	PFA	50	40	95	130	180	180	180
		60	–	95	130	150	150	150

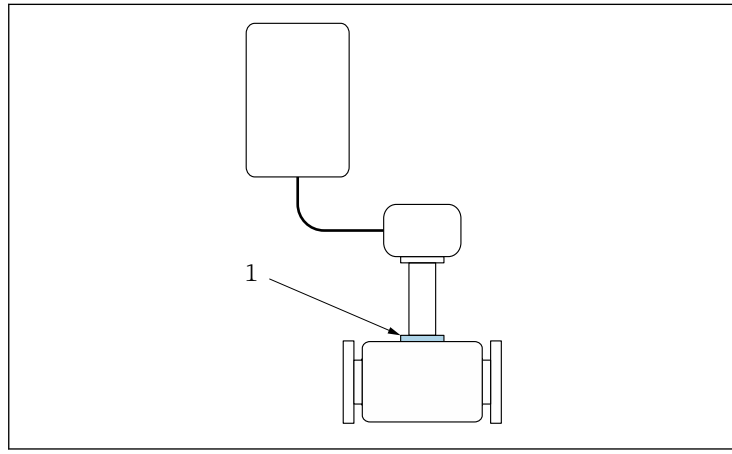
DN	Liner	$T_{a, max}$ [°C]	$T_{m, max}$ [°C]					
			T6 [85 °C]	T5 [100 °C]	T4 [135 °C]	T3 [200 °C]	T2 [300 °C]	T1 [450 °C]
High-temperature version (Order code for "Liner", option B) with thermal insulation								
25...200	PFA	35	40	95	130	180	180	180
		50	40	95	130	175	175	175
		60	–	95	130	150	150	150

Promag W

DN	Liner	$T_{a, max}$ [°C]	$T_{m, max}$ [°C]					
			T6 [85 °C]	T5 [100 °C]	T4 [135 °C]	T3 [200 °C]	T2 [300 °C]	T1 [450 °C]
Without thermal insulation								
25...300	PTFE	50	50	90	90	90	90	90
		60	–	90	90	90	90	90
50...3000	Hard rubber	50	80	80	80	80	80	80
		60	–	80	80	80	80	80
25...1200	PU	45	50	50	50	50	50	50
		50	–	50	50	50	50	50
Extended neck for insulation (Optional specification, ID Cx (Sensor Option) = CG), with or without thermal insulation								
25...300	PTFE	50	50	90	90	90	90	90
		60	–	90	90	90	90	90
50...300	Hard rubber	50	80	80	80	80	80	80
		60	–	80	80	80	80	80
25...300	PU	45	50	50	50	50	50	50
		50	–	50	50	50	50	50

Maximum medium temperature for devices with thermal insulation NOT in accordance with Endress+Hauser specifications

The specified reference temperature T_{ref} and the maximum medium temperature $T_{m, max}$ for each temperature class must not be exceeded → 15.



1 High-temperature version or extension neck for insulation: position of reference point for temperature measurement

1 Reference point (T_{ref})

Reference temperature T_{ref}

T6 [85 °C]	T5 [100 °C]	T4 [135 °C]	T3 [200 °C]	T2 [300 °C]	T1 [450 °C]
51.4	65.7	69.0	70.9	70.9	70.9

Temperaturtabellen Proline 500

Order code for "Integrated ISEM electronics", option B

Minimum ambient temperature

- $T_{a, min}$ = −40 °C depending on the selected device version (see nameplate!).
- *Optional specification, ID Jx (Test, Certificate) = JN*
  $T_{a, min}$ = −50 °C depending on the selected device variant (see nameplate)

Maximum ambient temperature

$T_{a, max}$ = +60 °C depending on temperature class, maximum medium temperature and device-specific features. See the corresponding temperature tables.

Transmitter: Zone 2

$T_{a, max}$ [°C]		
T6 [85 °C]	**T5 [100 °C]**	**T4 [135 °C]**
–	45	60

Minimum medium temperature

$T_{m, min}$ = −40 to 0 °C depending on the selected device version (see nameplate!)

Maximum medium temperature for devices without thermal insulation or with thermal insulation in accordance with Endress +Hauser specifications

Promag H

DN	$T_{a, max}$ [°C]	$T_{m, max}$ [°C]					
		T6 [85 °C]	**T5 [100 °C]**	**T4 [135 °C]**	**T3 [200 °C]**	**T2 [300 °C]**	**T1 [450 °C]**
Without thermal insulation							
2...150	45	80 [1]	95	130	150	150	150
	55	80 [1]	95	130	130	130	130
	60 [2]	80 [1]	95	110	110	110	110

1) $T_{m, max}$ = 50 °C for optional specification, ID Cx (Sensor option) = CI (Fluid Temperature Probe)
2) $T_{a, max}$ = 50 °C for optional specification, ID Cx (Sensor option) = CI (Fluid Temperature Probe)

Promag P

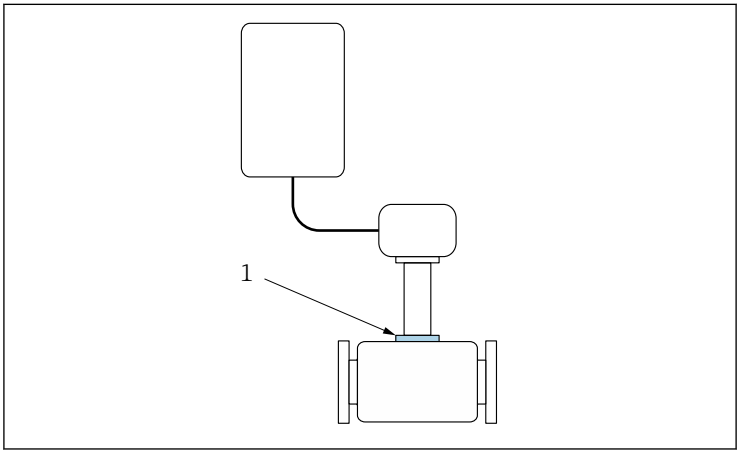
DN	Liner	$T_{a, max}$ [°C]	$T_{m, max}$ [°C]					
			T6 [85 °C]	T5 [100 °C]	T4 [135 °C]	T3 [200 °C]	T2 [300 °C]	T1 [450 °C]
Without thermal insulation								
15...600	PTFE	60	80	95	130	130	130	130
25...200	PFA	50	80	95	130	150	150	150
		60	80	95	130	130	130	130
Extended neck for insulation (Optional specification, ID Cx (Sensor Option) = CG), with or without thermal insulation								
15...300	PTFE	60	80	95	130	130	130	130
25...200	PFA	50	80	95	130	150	150	150
		60	80	95	130	130	130	130
High-temperature version (Order code for "Liner", option B) without thermal insulation								
25...200	PFA	50	80	95	130	180	180	180
		60	80	95	130	150	150	150
High-temperature version (Order code for "Liner", option B) with thermal insulation								
25...200	PFA	35	80	95	130	180	180	180
		40	80	95	130	170	170	170
		60	75	95	130	150	150	150

Promag W

DN	Liner	$T_{a, max}$ [°C]	$T_{m, max}$ [°C]					
			T6 [85 °C]	T5 [100 °C]	T4 [135 °C]	T3 [200 °C]	T2 [300 °C]	T1 [450 °C]
Without thermal insulation								
25...300	PTFE	60	80	90	90	90	90	90
50...3000	Hard rubber	60	80	80	80	80	80	80
25...1200	PU	50	50	50	50	50	50	50
Extended neck for insulation (Optional specification, ID Cx (Sensor Option) = CG), with or without thermal insulation								
15...300	PTFE	60	80	90	90	90	90	90
50...300	Hard rubber	60	80	80	80	80	80	80
25...300	PU	50	50	50	50	50	50	50

Maximum medium temperature for devices with thermal insulation NOT in accordance with Endress+Hauser specifications

The specified reference temperature T_{ref} and the maximum medium temperature $T_{m, max}$ for each temperature class must not be exceeded.
→ 18



2 *High-temperature version or extension neck for insulation: position of reference point for temperature measurement*

1 Reference point (T_{ref})

Reference temperature T_{ref}

T6 [85 °C]	T5 [100 °C]	T4 [135 °C]	T3 [200 °C]	T2 [300 °C]	T1 [450 °C]
63.8	65.7	69.0	70.9	70.9	70.9

Connection values: Signal circuits

The following tables contain specifications which are dependent on the transmitter type and its input and output assignment. Compare the following specifications with those on the nameplate of the transmitter.

Terminal assignment

Transmitter: supply voltage, input/outputs

HART

Supply voltage		Input/output 1 (port 1)		Input/output 2		Input/output 3		Input/output 4 [1]		Service interface (Port 2)
1 (+)	2 (–)	26 (+)	27 (–)	24 (+)	25 (–)	22 (+)	23 (–)	20 (+)	21 (–)	CDI-RJ45
				Device-specific terminal assignment: adhesive label in terminal cover.						

1) Input/output only available for Proline 500 - digital.

FOUNDATION fieldbus

Supply voltage		Input/output 1 (port 1)		Input/output 2		Input/output 3		Input/output 4 [1]		Service interface (Port 2)
1 (+)	2 (–)	26 (A)	27 (B)	24 (+)	25 (–)	22 (+)	23 (–)	20 (+)	21 (–)	CDI-RJ45
				Device-specific terminal assignment: adhesive label in terminal cover.						

1) Input/output only available for Proline 500 - digital.

PROFIBUS DP

Supply voltage		Input/output 1 (port 1)		Input/output 2		Input/output 3		Input/output 4 [1]		Service interface (Port 2)
1 (+)	2 (–)	26 (B)	27 (A)	24 (+)	25 (–)	22 (+)	23 (–)	20 (+)	21 (–)	CDI-RJ45
				Device-specific terminal assignment: adhesive label in terminal cover.						

1) Input/output only available for Proline 500 - digital.

PROFIBUS PA

Supply voltage		Input/output 1 (port 1)		Input/output 2		Input/output 3		Input/output 4 [1]		Service interface (Port 2)
1 (+)	2 (–)	26 (B)	27 (A)	24 (+)	25 (–)	22 (+)	23 (–)	20 (+)	21 (–)	CDI-RJ45
				Device-specific terminal assignment: adhesive label in terminal cover.						

1) Input/output only available for Proline 500 - digital.

Modbus RS485

Supply voltage		Input/output 1 (port 1)		Input/output 2		Input/output 3		Input/output 4 [1]		Service interface (Port 2)
1 (+)	2 (–)	26 (B)	27 (A)	24 (+)	25 (–)	22 (+)	23 (–)	20 (+)	21 (–)	CDI-RJ45
				Device-specific terminal assignment: adhesive label in terminal cover.						

1) Input/output only available for Proline 500 - digital.

Modbus TCP

Supply voltage		Input/output 1 (Port 1 [1])		Input/output 2		Input/output 3		Input/output 4 [2]		Service interface (Port 2) [1]
1 (+)	2 (–)	26 (+)	27 (-)	24 (+)	25 (–)	22 (+)	23 (–)	20 (+)	21 (-)	CDI-RJ45
				Device-specific terminal assignment: adhesive label in terminal cover.						

1) For Modbus TCP communication, either port 1 OR port 2 can be used.
2) Input/output only available for Proline 500 - digital.

PROFINET

Supply voltage		Input/output 1 (Port 1) [1]	Input/output 2		Input/output 3		Input/output 4 [2]		Service interface (Port 2) [1]
1 (+)	2 (–)	RJ45	24 (+)	25 (–)	22 (+)	23 (–)	20 (+)	21 (–)	CDI-RJ45
			Device-specific terminal assignment: adhesive label in terminal cover.						

1) Port can be used for communication or as a service interface (CDI-RJ45).
2) Input/output only available for Proline 500 - digital.

PROFINET over Ethernet-APL

Supply voltage		Input/output 1 (Port 1)		Input/output 2		Input/output 3		Input/output 4 [1]		Service interface (Port 2 [2])
1 (+)	2 (–)	26 (+)	27 (–)	24 (+)	25 (–)	22 (+)	23 (–)	20 (+)	21 (–)	CDI-RJ45
				Device-specific terminal assignment: adhesive label in terminal cover.						

1) Input/output only available for Proline 500 - digital.
2) No PROFINET communication available on port 2

Ethernet/IP

Supply voltage		Input/output 1 (Port 1) [1]	Input/output 2		Input/output 3		Input/output 4 [2]		Service interface (Port 2) [1]
1 (+)	2 (–)	RJ45	24 (+)	25 (–)	22 (+)	23 (–)	20 (+)	21 (–)	CDI-RJ45
			Device-specific terminal assignment: adhesive label in terminal cover.						

1) Port can be used for communication or as a service interface (CDI-RJ45).
2) Input/output only available for Proline 500 - digital.

Safety-related values

Order code for "Output; input 1"	Output type	Safety-related values	
		Output; input 1 (Port 1)	Service interface (Port 2)
Option **BA**	Current output 4-20 mA HART	U_N = 30 V_{DC} U_M = 250 V_{AC}	U_N = 3.3 V_{AC} U_M = 250 V_{AC}
Option **GA**	PROFIBUS PA	U_N = 32 V_{DC} U_M = 250 V_{AC}	U_N = 3.3 V_{AC} U_M = 250 V_{AC}
Option **LA**	PROFIBUS DP	U_N = 5 V U_M = 250 V_{AC}	U_N = 3.3 V_{AC} U_M = 250 V_{AC}
Option **MA**	Modbus RS485	U_N = 5 V U_M = 250 V_{AC}	U_N = 3.3 V_{AC} U_M = 250 V_{AC}
Option **MB**	Modbus TCP over Ethernet-APL 10 Mbit/s, SPE 10 Mbit/s, Ethernet 100 Mbit/s	APL port profile SLAX SPE PoDL classes 10, 11, 12 U_N = 30 V_{DC} U_M = 250 V_{AC}	U_N = 3.3 V_{AC} U_M = 250 V_{AC}
Option **NA**	EtherNet/IP	U_N = 3.3 V_{AC} U_M = 250 V_{AC}	U_N = 3.3 V_{AC} U_M = 250 V_{AC}
Option **RA**	PROFINET	U_N = 3.3 V_{AC} U_M = 250 V_{AC}	U_N = 3.3 V_{AC} U_M = 250 V_{AC}

Order code for "Output; input 1"	Output type	Safety-related values	
		Output; input 1 (Port 1)	Service interface (Port 2)
Option **RB**	PROFINET over Ethernet-APL/SPE, 10Mbit/s	APL port profile SLAX SPE PoDL classes 10, 11, 12 U_N = 30 V_{DC} U_M = 250 V_{AC}	U_N = 3.3 V_{AC} U_M = 250 V_{AC}
Option **SA**	FOUNDATION Fieldbus	U_N = 32 V_{DC} U_M = 250 V_{AC}	U_N = 3.3 V_{AC} U_M = 250 V_{AC}

Order code for "Output; input 2" "Output; input 3" "Output; input 4"	Output type	Safety-related values		
		Output; input 2	Output; input 3	Output; input 4
Option **B**	Current output 4-20 mA	U_N = 30 V_{DC} U_M = 250 V_{AC}		
Option **D**	Configurable I/O initial setting off	U_N = 30 V_{DC} U_M = 250 V_{AC}		
Option **E**	Pulse/frequency/switch output	U_N = 30 V_{DC} U_M = 250 V_{AC}		
Option **F**	Double pulse output	U_N = 30 V_{DC} U_M = 250 V_{AC}		
Option **H**	Relay output	U_N = 30 V_{DC} I_N =100 mA_{DC}/500 mA_{AC} U_M = 250 V_{AC}		
Option **I**	Current input 4-20 mA	U_N = 30 V_{DC} U_M = 250 V_{AC}		
Option **J**	Status input	U_N = 30 V_{DC} U_M = 250 V_{AC}		

Intrinsically safe values

Order code for "Output; input 1"	Output type	Intrinsically safe values Output; input 1 (Port 1)
Option HA	PROFIBUS PA Ex i (STANDARD + FISCO)	**Ex ic** U_i = 32 V I_i = 570 mA P_i = 8.5 W L_i = 10 µH C_i = 5 nF
Option MC	Modbus TCP over Ethernet-APL, Ex-i, 10Mbit/s	**2-WISE power load, APL port profile SLAC** [1] **Ex ic** U_i = 17.5 V I_i = 380 mA P_i = 5.32 W L_i = 10 µH C_i = 5 nF **Cable specifications according to 2-WISE:** R_c = 15 to 150 Ω/km L_c = 0.4 to 1 mH/km C_c = 45 to 200 nF/km C_c = C_c line/line + 0,5 C_c line/screen, if both lines are floating, or C_c = C_c line/line + C_c line/screen, if the screen is connected to one line Length of cable (not including cable stubs): ≤ 200 m (656.2 ft) Length of cable stubs: ≤1 m (3.3 ft)
Option RC	PROFINET over Ethernet-APL, Ex-i, 10Mbit/s	
Option TA	FOUNDATION Fieldbus Ex i (STANDARD + FISCO)	**Ex ic** U_i = 32 V I_i = 570 mA P_i = 8.5 W L_i = 10 µH C_i = 5 nF

1) For further options see Ethernet-APL Installation Drawing HE_01622.

Order code for "Output; input 2" "Output; input 3" "Output; input 4"	Output type	Intrinsically safe values		
		Output; input 2	Output; input 3	Output; input 4
Option C	Current output 4-20mA Ex-i passive	**Ex ic** U_i = 30 V I_i = 100 mA P_i = 1.25 W L_i = 0 C_i = 0		
Option G	Pulse/frequency/switch output Ex-i passive	**Ex ic** U_i = 30 V I_i = 100 mA P_i = 1.25 W L_i = 0 C_i = 0		

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