

Betriebsanleitung
Instruction manual
Notice d'instructions

Pulscon

LTC51

4 mA ... 20 mA HART, 2-wire

ATEX: II 1/3G Ex ic [ia] IIC T6-T1 Ga/Gc

IECEX: Ex ic [ia] IIC T6-T1 Ga/Gc



SI004970-C

DE – Sicherheitshinweise für elektrische Betriebsmittel für explosionsgefährdete Bereiche, siehe Seite 5

EN – Safety instructions for electrical apparatus for explosion-hazardous areas, see page 11

FR – Conseils de sécurité pour matériels électriques destinés aux zones explosibles, regardez à la page 17

bg - Правила за техниката на безопасност за електрически средства за производство във взривоопасни зони. Ако не разбирате езика на това ръководство има възможност да си поръчате при нас едно ръководство, преведено на езика на Вашата страна

Заявление за съответствие с EG

Производителят Pepperl+Fuchs 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.

Prohlášení o shodě s ES

Společnost Pepperl+Fuchs prohlašuje prostřednictvím tohoto prohlášení a použitím značky CE, že tento výrobek vyhovuje příslušným evropským směrnici. 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.

EF-overensstemmelseserklæring

Med denne overensstemmelseserklæring og tilføjelsen af CE-mærket sikrer producenten Pepperl+Fuchs, 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 αντίστοιχο μεταφρασμένο στη γλώσσα σας.

Δήλωση πιστότητας ΕΚ

Με αυτή τη δήλωση πιστότητας και την τοποθέτηση του σήματος CE ο κατασκευαστής Pepperl+Fuchs δηλώνει, ότι αυτό το προϊόν συμμορφώνεται με τις ευρωπαϊκές οδηγίες που πρέπει να εφαρμοστούν. Οι οδηγίες, τα πορότυπα 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 de conformidad CE

Por la presente declaración y la inclusión de la marca CE, el fabricante Pepperl+Fuchs, 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 vastavusdeklaratsioon

Tootja Pepperl+Fuchs kinnitab juurdelisatud vastavusdeklaratsiooniga esitamise ja CE-märgise kandmise 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-vaatimustenmukaisuustodistus

Valmistaja Pepperl+Fuchs vakuuttaa täällä vaatimustenmukaisuustodistuksella ja CE-merkin kiinnittämisellä, että tämä tuote täyttää sovellettavien EU-direktiivien määräykset. Sovellettavat direktiivit, normit ja dokumentit on merkitty vaatimustenmukaisuustodistukseen.

hu - Biztonsági információk robbanásveszélyes területre való elektromos eszközökhöz. Amennyiben nem tudja elolvasni ezt az útmutatót, akkor megrendelheti az Ön anyanyelvére lefordítva is.

EK-megfelelőségi nyilatkozat

Az Pepperl+Fuchs mint gyártó jelen megfeleléségi nyilatkozattal és a CE-jelzés felhelyezésével kijelenti, hogy ez a termék megfelel az alkalmazandó európai irányelveknek. Az alkalmazott irányelvek, szabványok és dokumentumok a megfeleléségi 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 ordinarne una copia tradotta nella vostra lingua.

Dichiarazione di conformità CE

Con questa dichiarazione e con l'applicazione del marchio CE, il costruttore Pepperl+Fuchs, 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 sprogdimo zonomis. Jeigu negalite perskaityti šios instrukcijos, kreipkitės į mus, kad užsisakytumėte į jūsų gimtąją kalbą išverstą instrukciją.

EB atitikties deklaracija

Gamintojas Pepperl+Fuchs šia atitikties deklaracija ir CE ženkliniu 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 sprādzienbīstamai. Ja Jums nav iespēju izlasīt šos norādījumus, Jūs varat pasūtīt pie mums tulkojumu Jūsu valsts valodā.

ES atbilstības apliecinājums

Ražotājs Pepperl+Fuchs ar šo atbilstības apliecinājumu un CE zīmola lietojumu apstiprina, ka produkts izgatavots saskaņā ar atbilstošajām Eiropas vadlīnijām. Piemērotās vadlīnijas, normas un dokumentātrunāt 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.

EG Conformiteitsverklaring

De leverancier Pepperl+Fuchs 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 WE

Producent Pepperl+Fuchs w niniejszej deklaracji zgodności wraz z nadaniem znaku CE oświadcza, że produkt ten jest zgodny z obowiązującą Europejską Dyrektywą. Zastosowane wytyczne, normy oraz dokumenty 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 de conformidade CE

Com esta declaração de conformidade e a aplicação da marca CE, o fabricante Pepperl+Fuchs, 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 periclitare de explozie. Dacă nu puteți citi aceste instrucțiuni, atunci puteți comanda la noi instrucțiunile traduse în limba țării dumneavoastră.

Declarație de conformitate CE

Producătorul Pepperl+Fuchs declară prin declarația de conformitate alăturată și prin aplicarea semnului CE că acest produs corespunde directivelor europene aplicabile. Directivele, normele aplicate și documentele sunt menționate în declarația de conformitate.

sk - Bezpečnostné pokyny pre elektrické zariadenie prevádzkované v priestoroch nebezpečenstvom výbuchu. Ak nemáte možnosť prečítať si tento návod, môžete si u nás objednať návod preložený do svojho jazyka.

Vyhlasenie o konformite s ES

Spoločnosť Pepperl+Fuchs 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 Vyhlasení o konformite.

sl - Varnostni napotki glede električne opreme, namenjene za uporabo v eksplozivnih območjih. Če teh navodil ne morete razumeti, lahko pri nas naročite prevod v vaš jezik.

Pojasnilo glede potrdila o skladnosti EU

Proizvajalec Pepperl+Fuchs s to izjavo o skladnosti in navedbo oznake CE izjavlja, da je ta izdelek skladen s predpisanimi evropskimi smernicami. Upoštewane 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.

EG-försäkran om överensstämmelse

Pepperl+Fuchs försäkras 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.

**EU-Konformitätserklärung/EC Declaration of Conformity/
Déclaration CE de Conformité**

EU-Declaration of conformity

en/de

EU-Konformitätserklärung

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Declaration of conformity / Konformitätserklärung

We, Pepperl+Fuchs GmbH declare under our sole responsibility that the products listed below are in conformity with the listed European Directives and standards.

Die Pepperl+Fuchs GmbH erklärt hiermit in alleiniger Verantwortung, dass die unten gelisteten Produkte den genannten Europäischen Richtlinien und Normen entsprechen.

Productfamily / Produktfamilie

| Productfamily / Produktfamilie | Description / Beschreibung |
|--------------------------------|----------------------------|
| LTC50-X-XXXXX-XXXXX-XX | Pulscan Guided Microwave |
| LTC51-X-XXXXX-XXXXX-XX | Pulscan Guided Microwave |
| LTC57-X-XXXXX-XXXXX-XX | Pulscan Guided Microwave |

The „X“ marked letters of the type code are placeholders and can be replaced by the code described in ANNEX TYPE CODE.
Die mit „X“ markierten Stellen im Typenschlüssel sind Platzhalter und können durch den Schlüssel ersetzt werden der in ANNEX TYPE CODE beschrieben ist.

ANNEX TYPE CODE

The „X“ marked letters of the type code are placeholders and can be replaced by the following code:
Die mit „X“ markierten Stellen im Typenschlüssel sind Platzhalter und können durch folgenden Schlüssel ersetzt werden:

| LTC50-X-XXXXX-XXXXX-XX | | | | | | | | |
|------------------------|---------------|--------------------|-----------------------|---------|---------|--------------------------------------|---------|---|
| LTC50 | -X | -XXX | X | X | -XX | XX | X | -XX |
| Product family | Probe version | Process Connection | Electrical connection | Sealing | Housing | Electrical Output IH, ID, IE, PA, DH | Display | Certificates Options E1, EX, ED, SX, EG, EW |
| LTC51-X-XXXXX-XXXXX-XX | | | | | | | | |
| LTC51 | -X | -XXX | X | X | -XX | XX | X | -XX |
| Product family | Probe version | Process Connection | Electrical connection | Sealing | Housing | Electrical Output IH, ID, IE, PA, DH | Display | Certificates Options E1, EX, ED, E2, SX, EG, EW |
| LTC57-X-XXXXX-XXXXX-XX | | | | | | | | |
| LTC57 | -X | -XXX | X | X | -XX | XX | X | -XX |
| Product family | Probe version | Process Connection | Electrical connection | Sealing | Housing | Electrical Output IH, ID, IE, PA, DH | Display | Certificates Options E1, EX, S3, S4, SX, EG |

Directives and Standards / Richtlinien und Normen

| EU-Directive EU-Richtlinie | Standards Normen |
|-------------------------------|--|
| 2004/108/EC (EMC) | EN 61326-1:2006 EN 61326-2-3:2006 |
| 94/9/EC (ATEX) | EN 60079-0:2012 EN 60079-1:2007 EN 60079-11:2012 EN 60079-26:2007 EN 60079-31:2009 |

Affixed CE Marking / Angebrachte CE-Kennzeichnung



Signatures / Unterschriften

Mannheim, 2015-03-26

ppa. Lutz Liebers
Vice President Sales

i.V. Martin Holdefer
Business Development Manager

ANNEX 94/9/EC (ATEX)

Notified Body QM-System / Notifizierte Stelle des QM-Systems:
Physikalisch Technische Bundesanstalt (0102)
Bundesallee 100
38116 Braunschweig, Germany

Marking and Certificates / Kennzeichnung und Zertifikate

| Products / Produkte | All products listed above (depending on ordering option) / Alle oben gelisteten Produkte (abhängig von Bestelloption) | |
|--|---|----------------------------|
| Marking Kennzeichnung | Certificate Zertifikat | Issuer ID Aussteller ID |
| Ⓜ II 1 G Ⓜ II 1/2 G Ⓜ II 1/3 G Ⓜ II 1 D Ⓜ II 1/2 D | DEKRA 14 ATEX 0117 X | 0344 |

Key for Issuer ID / Schlüssel zur Aussteller ID

| ID | Issuer / Aussteller |
|------|---|
| 0344 | DEKRA Certification B.V. Meander 1051 6825 MJ Arnhem Netherlands |





Pulscon **LTC51**

2-wire, 4 mA ... 20 mA, HART

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EN

Associated documentation

This document is an integral part of the following Operating Instructions:
BA01001O
The Operating Instructions pertaining to the device apply.

Supplementary documentation

Explosion-protection manual

Manufacturer's certificates

EC Declaration of Conformity

see page 3

EC type-examination certificate

Certificate number:
DEKRA 14 ATEX 0117X

IEC Declaration of Conformity

Certificate number:
IECEX DEK 14.0066X

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

- IEC 60079-0:2011
- IEC 60079-11:2011
- IEC 60079-26:2006

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

| Device type | | Basic specifications | | Optional specifications |
|--------------------|---|-----------------------------|---|--------------------------------|
| LTC51 | - | X-XXXXX-XXXXX-XX XXXXX | + | XXXXXXXXXX |

X = Placeholder

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

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.

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.

Basic specifications

| Selected Option | Position | Description |
|--------------------|---|--|
| Approval | LTC51-X-XXXXX-XXXXX- XX XXXXX E2 ID | ATEX II 1/3G Ex ic [ia] IIC T6-T1 Ga/Gc IECEx Ex ic [ia] IIC T6-T1 Ga/Gc |
| Electrical output | LTC51-X-XXXXX-XX XX X-XX XXXXX IH | 2-wire, 4 mA ... 20 mA, HART |
| Display, operation | LTC51-X-XXXXX-XXXX X -XX XXXXX B D E | without display, via communication SD02, 4-line, push-buttons and data backup function SD03, 4-line, illuminated, touch control and data backup function |
| Housing | LTC51-X-XXXXX- XX XXX-XX XXXXX A3 A2 | GT18 dual compartment, 316L GT20 dual compartment, alu coated |
| Seal | LTC51-X-XXXX X -XXXXX-XX XXXXX 3 4 5 | EPDM, -40 °C ... 120 °C Kalrez, -20 °C ... 200 °C Viton, -30 °C ... 150 °C |

Optional specifications

| Selected Option | Position | Description |
|-----------------|-----------------------|---|
| Probe design | XXXXXX X XXX B | Sensor remote, 3 m cable, detachable, with mounting bracket |

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 (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.
- Only use the device in media to which the wetted materials have sufficient durability.
- 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 class.
- Modifications to the device can affect the explosion protection and must be carried out by staff authorized to perform such work by Pepperl+Fuchs.
- When replacing the probe electronics or opening the connection between the remote cable and the probe, a jumper plug must be used or a short-circuit must be established between the probe contact and the potential equalization conductor to avoid electrostatically charging the probe.

Safety instructions: Special conditions

Permitted ambient temperature range at the electronics housing: $-40\text{ °C} \leq T_{\text{amb}} \leq +80\text{ °C}$.
Observe the information in the temperature tables.

- The device can be set up in the partition that separates hazardous areas for Category 1 and Category 3 equipment.
- With regard to the process connection, it is essential to ensure ingress protection of at least IP67 in accordance with IEC/EN 60529.
- In the area of the process connection outside the device, implement suitable measures to ensure that the hazardous area meets Zone 2 requirements (e. g. natural venting).

**Safety instructions:
Installation**

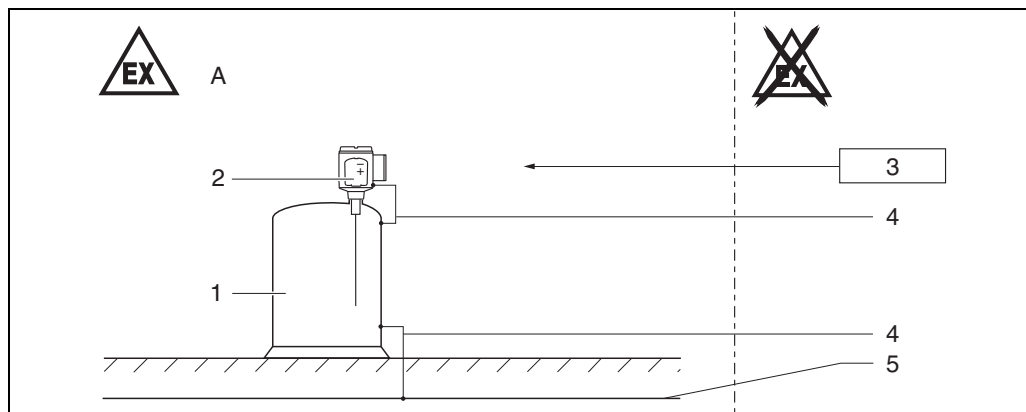


Figure 1

A Zone 2

- 1 Tank; Zone 0, Zone 2
- 2 Electronic insert
- 3 Certified associated apparatus
- 4 Potential equalization line
- 5 Potential equalization

- After aligning (rotating) the housing, retighten the fixing screw (see Operating Instructions).
- When mounting the device:
 - Exclude any mechanical damage or friction during the application.
 - Pay particular attention to flow conditions and tank fittings.
- Continuous service temperature of the connecting cable: $-40\text{ °C} \dots \geq +85\text{ °C}$; in accordance with the range of service temperature taking into account additional influences of the process conditions ($T_{\text{amb, min}}$), ($T_{\text{amb, max}} + 20\text{ K}$).

Intrinsic safety

Ex ic

Basic specification, position "Approval" = E2, ID

- The device is only suitable for connection to certified, intrinsically safe equipment with explosion protection Ex ic.
- If the conditions $U_i > U_o$, ($I_i > I_o$), $C_a > C_i + C_{\text{cable}}$ and $L_a > L_i + L_{\text{cable}}$ are met, the energy-limited installation concept (Ex ic) allows energy-limited devices or associated energy-limited devices to be connected according to the entity concept.
- The intrinsically safe input power circuit of the device is isolated from ground. If the device is only equipped with one input, the dielectric strength of the input is at least $500\text{ V}_{\text{rms}}$. If the device is equipped with more than one input, the dielectric strength of each individual input to ground is at least $500\text{ V}_{\text{rms}}$, and the dielectric strength of the inputs vis-à-vis one another is also at least $500\text{ V}_{\text{rms}}$.
- Observe the pertinent guidelines when interconnecting intrinsically safe circuits (e. g. IEC/EN 60079-14, Proof of Intrinsic Safety).
- The device can be connected to the Pepperl+Fuchs service interface: refer to the Operating Instructions and specifications in the "Overvoltage protection" chapter.

Potential equalization

- Integrate the device into the local potential equalization.

Overvoltage protection

- If an overvoltage protection according to IEC/EN 60079-14 against atmospheric over voltages is required: no other circuits may leave the housing during normal operation without additional measures.
- For installations which require overvoltage protection to comply with national regulations or standards (e. g. IEC/EN 60079-14), install the device using overvoltage protection.
- Observe the safety instructions of the overvoltage protection.

Safety instructions:
Zone 0

- In the event of potentially explosive vapor/air mixtures, only operate the device under atmospheric conditions.
 - Temperature: -20 °C ... +60 °C
 - Pressure: 80 kPa ... 110 kPa (0,8 bar ... 1,1 bar)
 - Air with normal oxygen content, usually 21 % (V/V)
- If no potentially explosive mixtures are present, or if additional protective measures have been taken according to EN 1127-1, the device may also be operated under non-atmospheric conditions in accordance with the manufacturer's specifications.
- Associated devices with galvanic isolation between the intrinsically safe and non-intrinsically safe circuits are preferred.
- If there is a risk of dangerous potential differences within Zone 0 (e. g. through the occurrence of atmospheric electricity), implement suitable measures for intrinsically safe circuits in Zone 0 (e. g. in accordance with the requirements of IEC/EN 60079-14).

Temperature tables see page 23

Connection data Basic specification, option "Approval" = E2, ID

Ex ic

- Power supply and signal circuit with protection type: intrinsic safety Ex ic IIC or IIB.

Basic specification, option "Electrical output" = IH (TRC [02])

| Terminal 1 (+), 2 (-) |
|--|
| Power supply |
| $U_i = 35\text{ V}$ |
| $I_i = \text{not applicable (current-controlled circuit)}$ |
| $P_i = \text{not applicable}$ |
| effective inner inductance $L_i = 0\ \mu\text{H}$ |
| effective inner capacitance $C_i = 5\ \text{nF}$ |

Service interface (CDI)

Taking the following values into consideration, the device can be connected to the certified service tool or a similar interface:

| Service interface | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|-------|-------|-------|--|
| $U_i = 7.3\text{ V}$ | | | | | | | | | | | | | |
| effective inner inductance $L_i = \text{negligible}$ | | | | | | | | | | | | | |
| effective inner capacitance $C_i = \text{negligible}$ | | | | | | | | | | | | | |
| $U_o = 7.3\text{ V}$ | | | | | | | | | | | | | |
| $I_o = 100\ \text{mA}$ | | | | | | | | | | | | | |
| $P_o = 160\ \text{mW}$ | | | | | | | | | | | | | |
| $L_o\ (\text{mH}) =$ | 5.00 | 2.00 | 1.00 | 0.50 | 0.20 | 0.10 | 0.05 | 0.02 | 0.01 | 0.005 | 0.002 | 0.001 | |
| $C_o\ (\mu\text{F}) =$ | 0.73 | 1.20 | 1.60 | 2.00 | 2.60 | 3.20 | 4.00 | 5.50 | 7.30 | 10.00 | 12.70 | 12.70 | |

Electronics compartment Ex i

Service interface (CDI)

Taking the following values into consideration, the device can be connected to the certified service tool or a similar interface:

| Service interface | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|-------|-------|-------|--|
| $U_i = 7.3\text{ V}$ | | | | | | | | | | | | | |
| effective inner inductance $L_i = \text{negligible}$ | | | | | | | | | | | | | |
| effective inner capacitance $C_i = \text{negligible}$ | | | | | | | | | | | | | |
| $U_o = 7.3\text{ V}$ | | | | | | | | | | | | | |
| $I_o = 100\ \text{mA}$ | | | | | | | | | | | | | |
| $P_o = 160\ \text{mW}$ | | | | | | | | | | | | | |
| $L_o\ (\text{mH}) =$ | 5.00 | 2.00 | 1.00 | 0.50 | 0.20 | 0.10 | 0.05 | 0.02 | 0.01 | 0.005 | 0.002 | 0.001 | |
| $C_o\ (\mu\text{F}) =$ | 0.73 | 1.20 | 1.60 | 2.00 | 2.60 | 3.20 | 4.00 | 5.50 | 7.30 | 10.00 | 12.70 | 12.70 | |

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Temperaturtabellen/Temperature tables/ Tableaux des températures

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Allgemeine Hinweise

Wenn nicht anders angegeben, beziehen sich die Positionen immer auf die Grundspezifikation.

Hinweis!

Zulässigen Temperaturbereich an der Sonde beachten.

Auswahltablelle

| Zulassung | | Gehäuse | |
|-----------|---|---------|----------------------------------|
| E2 | ATEX II 1/3G Ex ic [ia] IIC T6-T1 Ga/Gc | A3 | GT18 Zweikammer, 316L |
| ID | IECEX Ex ic [ia] IIC T6-T1 Ga/Gc | A2 | GT20 Zweikammer, Alu beschichtet |

| Elektrischer Anschluss | | Transmission code des Anschlussklemmenmoduls | |
|------------------------|------------------------------|--|--|
| IH | 2-Draht, 4 mA ... 20 mA HART | TRC [02]; TRC [04] ¹ | |

¹ siehe Typenschild

General notes

Unless otherwise indicated, the positions always refer to the basic specification.

Note!

Observe the permitted temperature range at the probe.

Selection table

| Approval | | Housing | |
|----------|---|---------|-----------------------------------|
| E2 | ATEX II 1/3G Ex ic [ia] IIC T6-T1 Ga/Gc | A3 | GT18 dual compartment, 316L |
| ID | IECEX Ex ic [ia] IIC T6-T1 Ga/Gc | A2 | GT20 dual compartment, Alu coated |

| Elektrical connection | | Transmission code of the terminal module | |
|-----------------------|-----------------------------|--|--|
| IH | 2-wire, 4 mA ... 20 mA HART | TRC [02]; TRC [04] ¹ | |

¹ see nameplate

Généralités

Sauf indication contraire, les positions se réfèrent toujours aux spécifications de base.

Note!

Tenir compte de la gamme de température admissible à la sonde.

Tableau de sélection

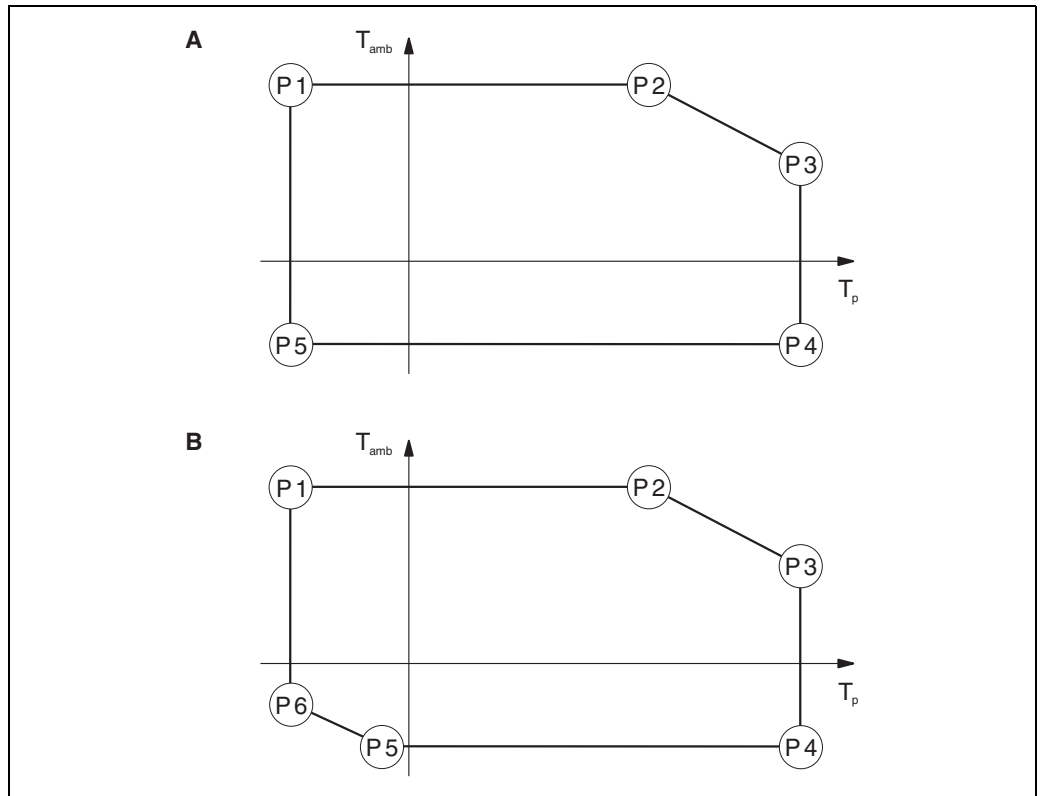
| Agrément | | Boîtier | |
|----------|---|---------|--------------------------------------|
| E2 | ATEX II 1/3G Ex ic [ia] IIC T6-T1 Ga/Gc | A3 | GT18 double compartiment, 316L |
| ID | IECEX Ex ic [ia] IIC T6-T1 Ga/Gc | A2 | GT20 double compartiment, alu revêtu |

| Raccordement électrique | | Code de transmission du module de raccordement | |
|-------------------------|-----------------------------|--|--|
| IH | 2-fils, 4 mA ... 20 mA HART | TRC [02]; TRC [04] ¹ | |

¹ voir plaque signalétique

Diagramm/Diagram/
Diagramme

Beispieldiagramme zu den Temperatortabellen/Example diagrams to the temperature tables/
Diagrammes d'exemple aux tableaux des températures



Abbildung/Figure/Figure 1

- A Version 1
- B Version 2

T_{amb} Umgebungstemperatur/Ambient temperature/Température ambiante
 T_p Prozesstemperatur/Process temperature/Température de process

Sonden-Design: kompakt/Probe design: compact/Construction de sonde: compacte

Ex ic

Sonde und Elektronikgehäuse/Probe and electronics housing/Sonde et boîtier de l'électronique:
Zone 2

LTC51

Elektrischer Ausgang/Electrical output/Sortie électrique = IH (TRC [02])

| Gehäuse/Housing/Boîtier = A2 | | | | | | | | | | | | |
|---|----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|
| Temperaturklasse/ Temperature class/ Classe de température | P 1 | | P 2 | | P 3 | | P 4 | | P 5 | | P 6 | |
| | T _p | T _{amb} | T _p | T _{amb} | T _p | T _{amb} | T _p | T _{amb} | T _p | T _{amb} | T _p | T _{amb} |
| T6 (85 °C) | -40 °C | 60 °C | 60 °C | 60 °C | 85 °C | 54 °C | 85 °C | -40 °C | -40 °C | -40 °C | - | - |
| T5 (100 °C) | -40 °C | 75 °C | 75 °C | 75 °C | 100 °C | 69 °C | 100 °C | -40 °C | -40 °C | -40 °C | - | - |
| T4 (135 °C) | -40 °C | 80 °C | 80 °C | 80 °C | 135 °C | 69 °C | 135 °C | -40 °C | -40 °C | -40 °C | - | - |
| T3 (200 °C) | -40 °C | 80 °C | 80 °C | 80 °C | 200 °C | 56 °C | 200 °C | -40 °C | -40 °C | -40 °C | - | - |

| Gehäuse/Housing/Boîtier = A3 | | | | | | | | | | | | |
|---|----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|
| Temperaturklasse/ Temperature class/ Classe de température | P 1 | | P 2 | | P 3 | | P 4 | | P 5 | | P 6 | |
| | T _p | T _{amb} | T _p | T _{amb} | T _p | T _{amb} | T _p | T _{amb} | T _p | T _{amb} | T _p | T _{amb} |
| T6 (85 °C) | -40 °C | 60 °C | 60 °C | 60 °C | 85 °C | 52 °C | 85 °C | -40 °C | -40 °C | -40 °C | - | - |
| T5 (100 °C) | -40 °C | 75 °C | 75 °C | 75 °C | 100 °C | 67 °C | 100 °C | -40 °C | -40 °C | -40 °C | - | - |
| T4 (135 °C) | -40 °C | 80 °C | 80 °C | 80 °C | 135 °C | 67 °C | 135 °C | -40 °C | -40 °C | -40 °C | - | - |
| T3 (200 °C) | -40 °C | 80 °C | 80 °C | 80 °C | 200 °C | 49 °C | 200 °C | -40 °C | -40 °C | -40 °C | - | - |

Ex ic

- Sonde/Probe/Sonde: Zone 0
- Elektronikgehäuse/Electronics housing/Boîtier de l'électronique: Zone 2

LTC51

Elektrischer Ausgang/Electrical output/Sortie électrique = IH (TRC [21])

| Gehäuse/Housing/Boîtier = A2, A3 | | | | | | | | | | | | |
|---|----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|
| Temperaturklasse/ Temperature class/ Classe de température | P 1 | | P 2 | | P 3 | | P 4 | | P 5 | | P 6 | |
| | T _p | T _{amb} | T _p | T _{amb} | T _p | T _{amb} | T _p | T _{amb} | T _p | T _{amb} | T _p | T _{amb} |
| T6 (85 °C) | -20 °C | 60 °C | 60 °C | 60 °C | 60 °C | 60 °C | 60 °C | -40 °C | -20 °C | -40 °C | - | - |

Sonden-Design: abgesetzt/Probe design: remote/Construction de sonde: séparée

Ex ic

- Sonde/Probe/Sonde: Zone 0, Zone 2
- Elektronikgehäuse/Electronics housing/Boîtier de l'électronique: Zone 2

LTC51

optionale Spezifikation, Kennung B (Sonden-Design)/optional specification, ID B (Probe design)/spécifications optionnelles, Identifiant B (Construction de la sonde)

Elektrischer Ausgang/Electrical output/Sortie électrique = IH (TRC [02])

| Gehäuse/Housing/Boîtier = A2, A3 | | | | | | | | | | | | |
|---|----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|
| Temperaturklasse/ Temperature class/ Classe de température | P 1 | | P 2 | | P 3 | | P 4 | | P 5 | | P 6 | |
| | T _p | T _{amb} | T _p | T _{amb} | T _p | T _{amb} | T _p | T _{amb} | T _p | T _{amb} | T _p | T _{amb} |
| T6 (85 °C) | - | 60 °C | - | 60 °C | - | 60 °C | - | -40 °C | - | -40 °C | - | - |
| T5 (100 °C) | - | 75 °C | - | 75 °C | - | 75 °C | - | -40 °C | - | -40 °C | - | - |

T_p = abhängig vom Sensor/dependent on the sensor/dépend du capteur

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