

Betriebsanleitung
Instruction Manual
Manuel d'instructions

Vibration Limit Switch **Vibracon LVL-M*(H), LVL-M2C**

ATEX: **II 3G Ex nA IIC T6 Gc**
 II 3G Ex nC IIC T6 Gc
 II 3D Ex tc IIIC T85°C Dc



SI001820-G

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

EN – Safety instructions for electrical apparatus for explosion-hazardous areas, see page 13

FR – Conseils de sécurité pour matériels électriques destinés aux zones explosibles, regardez à la page 21

SI001820-G/98/A3/16.17
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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 има езика на Вашата страна.

ЕС декларация за съответствие

Производителът 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.

EU prohlášení o shodě

Společnost Pepperl+Fuchs 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 tilføjjelsen 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 συμμόρφωσης ΕΕ

Με αυτή τη δήλωση ποιότητας 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 UE de conformidad

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.

ELI vastavusdeklaratsioon

Tootja Pepperl+Fuchs kinnitab juurdelisatud vastavusdeklaratsiooni esitamise 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 käännoksen omalla kansallisella kielelläsi.

EU-vaatimustenmukaisuusvakuutus

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.

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 skladnosti

Dobavljajući Pepperl+Fuchs 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 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 UE

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 sprogimo zonomis. Jeigu negalite perskaityti šios instrukcijos, kreipkitės į mus, kad užsisakytumėte į jus gimąją kalbą išverstą instrukciją.

ES atitikties deklaracija

Gaminiojas Pepperl+Fuchs šia atitikties deklaracija ir CE ženkliniu patvirtina, kad gaminyš 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 Pepperl+Fuchs ar šo atbilstības apliecinājumu un CE zīmola lietojumu apstiprina, ka produkts izgatavots saskaņā 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 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.

Declaracja zgodności UE

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 UE de conformidade

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.

Declarația UE de conformitate

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 s nebezpečenstvom výbuchu. Ak nemáte možnosť 'prečítať' si tento návod, môžete si u nás objednať návod preložený do svojho jazyka.

EU vyhlásenie o zhode

Spoločnosť Pepperl+Fuchs vyhlasuje prostredníctvom tohto vyhlásenia o konformite a použitím značky CE, že tento výrobok vyhovuje príslušným európskym směrniciam. Zmienené smernice, normy a dokumenty sú uvedené vo Vyhlásení 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.

Izjava EU o skladnosti

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

Pepperl+Fuchs 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.

EU-Konformitätserklärung/EU-Declaration of conformity/
Déclaration UE de conformité

EU-Declaration of conformity

en/de

EU-Konformitätserklärung

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www.pepperl-fuchs.com



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
LVL-MX-XXXXX-XXXXXX-XX	Vibration Fork
LVL-MXH-XXXXX-XXXXXX-XX	Vibration Fork, hygienic design
LVL-M2C-XXXXX-XXXXXX-XX	Vibration Fork, coated version

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.

Directives and Standards / Richtlinien und Normen

EU-Directive EU-Richtlinie	Standards Normen
2014/30/EU (EMC) (L96/79-106)	EN 61326-1:2006 EN 61326-2-3:2006
2014/34/EU (ATEX) (L96/309-356)	EN 60079-0:2012 + A11 :2013 EN 60079-15 :2010
2011/65/EU (RoHS) (L174/88-110)	EN 50581:2012-09

Affixed CE Marking / Angebrachte CE-Kennzeichnung



Signatures / Unterschriften

Mannheim, 2018-01-24

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ANNEX ATEX

We, Pepperl+Fuchs GmbH declare that the products are only affected by minor or formal changes in respect to the new edition of the standards. These changes are not relevant for compliance with the EHSRs and consequently the products still comply with the ATEX Directive.

Die Pepperl+Fuchs GmbH erklärt hiermit, dass die Produkte nur von kleineren oder formalen Änderungen in Bezug auf die neue Ausgabe der Normen betroffen sind. Diese Änderungen sind nicht relevant für die Konformität mit den EHSRs, weshalb die Produkte nach wie vor die ATEX-Richtlinie erfüllen.

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 3 G/D	PF18CERT4471	PF

Key for Issuer ID / Schlüssel zur Aussteller ID

ID	Issuer / Aussteller
PF	Pepperl + Fuchs GmbH Lilienthalstraße 200 68307 Mannheim Germany

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:

LVL-MX-XXXXX-XXXXXX-XX						
LVL-MX-	XXX	XX	-XX	XX	XX	-XX
Product Family	Process Connection	Probe version, Length	Housing	Electrical output PA, E5, SI, N1, N2	Additional option	Certificate -EN
Product Family	Process Connection	Probe version, Length	Housing	Electrical output WA	Additional option	Certificate -EM
LVL-MXH-XXXXX-XXXXXX-XX						
LVL-MXH-	XXX	XX	-XX	XX	XX	-XX
Product Family	Process Connection	Probe version, Length	Housing	Electrical output PA, E5, SI, N1, N2	Additional option	Certificate -EN
Product Family	Process Connection	Probe version, Length	Housing	Electrical output WA	Additional option	Certificate -EM
LVL-M2C-XXXXXX-XXXXXX-XX						
LVL-M2C-	XXX	XX	X	-XX	XX	-XX
Product Family	Process Connection	Probe version, Length	Bushings	Housing	Electrical output PA, E5, SI, N1, N2	Additional option
Product Family	Process Connection	Probe version, Length	Bushings	Housing	Electrical output WA	Additional option
						Certificate -EN
						Certificate -EM

Vibration Limit Switch **Vibracon LVL-M*(H), LVL-M2C**

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EN

Associated documentation

This document is an integral part of the following documents:

- KA00143O (LVL-M1, LVL-M2)
- KA00144O (LVL-M1H, LVL-M2H)
- KA00162O (LVL-M2C)

The documents which are supplied and correspond to the device type apply.

Supplementary documentation

Explosion protection compendium

Manufacturer's certificates

EU-Declaration of conformity

see page 3

ATEX certificate

Certificate number: PF 18 CERT 4471

List of applied standards: see page 3

Manufacturer address

Pepperl+Fuchs GmbH
Lilienthalstraße 200, 68307 Mannheim, Germany
Internet: www.pepperl-fuchs.com

Other standards

Among other things, the following standards shall be observed in their current version for proper installation:

- IEC/EN 60079-14: "Explosive atmospheres - Part 14: Electrical installations design, selection and erection"
- EN 1127-1: "Explosive atmospheres - Explosion prevention and protection - Part 1: Basic concepts and methodology"

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 manual.

Structure of the extended order code

Device type	Basic specifications	Probe length
LVL-M1	- XXXXX-XXXXXX-XX	-
LVL-M1H	- XXXXX-XXXXXX-XX	-
LVL-M2	- XXXXX-XXXXXX-XX	. XXXX
LVL-M2H	- XXXXX-XXXXXX-XX	. XXXX
LVL-M2C	- XXXXX-XXXXXX-XX	. XXXX

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

EN

Probe version, probe length		
Position	Option	Description
LVL-M1-XXX XX -XXXXXX-XX	AA IA QA	Compact Compact, with temperature spacer Compact, with flameproof bushing
LVL-M1H-XXX XX -XXXXXX-XX	AX IX QX XC XD	Compact Compact, with temperature spacer Compact, with flameproof bushing $R_a < 1.5 \mu\text{m}/120 \text{ grit}$ $R_a < 0.3 \mu\text{m}/320 \text{ grit}$
LVL-M2-XXX XX -XXXXXX-XX.XXXX	BB, CB, DB BE, CE, DE JB, KB, LB JE, KE, LE RB, SB, TB RE, SE, TE	Length in mm/inch, 1.4435/316L Length in mm/inch, 2.4610/Alloy C4 Length in mm/inch, 1.4435/316L, with temperature spacer Length in mm/inch, 2.4610/Alloy C4, with temperature spacer Length in mm/inch, 1.4435/316L, with flameproof bushing Length in mm/inch, 2.4610/Alloy C4, with flameproof bushing
LVL-M2H-XXX XX -XXXXXX-XX.XXXXX	BX, CX, DX JX, KX, LX RX, SX, TX XC XD	Length in mm/inch Length in mm/inch, with temperature spacer Length in mm/inch, with flameproof bushing $R_a < 1.5 \mu\text{m}/120\text{grit}$ $R_a < 0.3 \mu\text{m}/320 \text{ grit}/A3$
LVL-M2C-XXX XX -XXXXXX-XX.XXXXX	BK, CK, DK	with ECTFE coating

Temperature spacer, flameproof bushing		
Position	Option	Description
LVL-M2C-XXXXXX X -XXXXXX-XX.XXXXX	A B C	without Temperature spacer Flameproof bushing

Housing		
Position	Option	Description
LVL-MX-XXXXX- XX XXXX-XX LVL-MXH-XXXXX- XX XXXX-XX.XXXXX	AX C4 EX	Aluminium housing Compact housing, IP66, plug M12 x 1, 1.4435/316L Stainless steel housing
LVL-M2C-XXXXXX- XX XXXX-XX.XXXXX	AX EX	Aluminium housing Stainless steel housing

Electrical connection		
Position	Option	Description
LVL-MX-XXXXX-XX XX XX-XX LVL-MXH-XXXXX-XX XX XX-XX.XXXXX LVL-M2C-XXXXXX-XX XX XX-XX.XXXXX	PA AC E5 WA SI N1 N2	FEL50A, PROFIBUS PA FEL51, contactless, 2-wire switch, 19 V to 253 V AC FEL52, PNP 3-wire, 10 V to 55 V DC FEL54, potential-free change-over contact, DPDT, 19 V to 253 V AC, 19 V to 55 V DC FEL55, 8/16 mA, 11 V to 36 V DC FEL56, NAMUR, L-H edge FEL58, NAMUR with push button, H-L edge

Approval		
Position	Option	Description
LVL-MX-XXXXX-XXXXXX- XX LVL-MXH-XXXXX-XXXXXX- XX .XXXXX	EN ¹ EM	ATEX II 3G Ex nC IIC T6...T3 Gc ATEX II 3D Ex tc IIIC T85°C Dc ATEX II 3G Ex nA IIC T6...T3 Gc ATEX II 3D Ex tc IIIC T85°C Dc
LVL-M2C-XXXXXX-XXXXXX- XX .XXXXX	EN ¹ EM	ATEX II 3G Ex nC IIC T6...T3 Gc ATEX II 3G Ex nA IIC T6...T3 Gc

¹ Basic specification, feature approval, option EN: only in combination with feature electrical connection, option WA

Optional specifications

No options specific to hazardous locations are available.

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.
- Avoid electrostatic charging:
 - Of plastic surfaces (e. g. housing, sensor element, special varnishing, attached additional plates, ...)
 - Of isolated capacities (e. g. isolated metallic plates)
- Modifications to the device can affect the explosion protection and must be carried out by staff authorized to perform such work by Pepperl+Fuchs.

Safety instructions:
Special conditions

Permitted ambient temperature range at the electronics housing: Observe the information in the temperature tables.

- In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surfaces.
- In the event of additional or alternative special varnishing on the housing or other metal parts:
 - Observe the danger of electrostatic charging and discharge.
 - Do not rub surfaces with a dry cloth.

Device type LVL-MX, LVL-MXH, LVL-M2C

Basic specification, feature housing, options AX, EX: Avoid sparks caused by impact and friction.

Device type LVL-MX, LVL-MXH

Basic specification, feature housing, option C4:

The housings don't have any external potential equalization terminal. Therefore, the safe bonding of the devices must be ensured via the metallic process connection of the device.

Device type LVL-M2C

Basic specification, feature probe version, probe length, option BK, CK, DK (isolating plastic coating): Do not use as a category II 3 D device.

- Gas group IIC
If electrostatic charging of the probe can be avoided (e. g. through friction, cleaning, maintenance, strong medium flow), a probe coated with non-conductive material can be used.
- Gas group IIB
A probe coated with non-conductive material can be used.

Safety instructions:
Installation

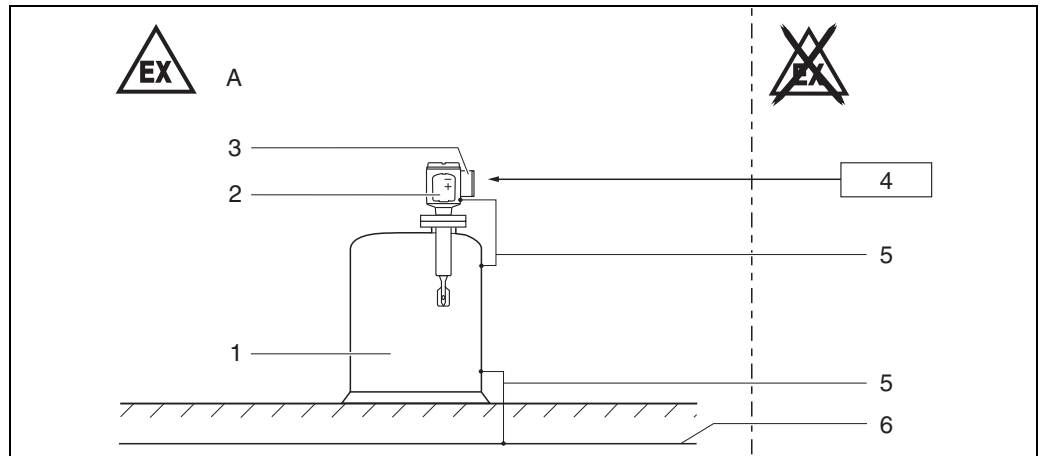


Figure 1

- A Zone 2, Zone 22
- 1 Tank; Zone 2, Zone 22
- 2 Electronic insert, electronics compartment
- 3 Connection compartment
- 4 Power supply or power supply unit
- 5 Potential equalization line
- 6 Potential equalization

- Perform the following to achieve the degree of protection IP66/67 or IP66/68:
 - Screw the cover tight.
 - Mount the cable entry correctly.
- Observe the maximum process conditions according to the manufacturer's documentation.
- At high medium temperatures, note flange pressure load capacity as a factor of temperature.
- Install the device to exclude any mechanical damage or friction during the application. Pay particular attention to flow conditions and tank fittings.
- Support extension tube of the device if a dynamic load is expected.
- Only use certified cable entries suitable for the application. Observe national regulations and standards.
- When operating the transmitter housing at an ambient temperature under -20 °C, use appropriate cables and cable entries permitted for this application.
- Seal unused entry glands with approved sealing plugs that correspond to the type of protection. The plastic transport sealing plug does not meet this requirement and must therefore be replaced during installation.
- Before operation:
 - Screw in the cover all the way.
 - Tighten the securing clamp on the cover.

Basic specification, feature approval, option EN

- Continuous service temperature of the connecting cable: -50 to $\geq +115$ °C; in accordance with the range of service temperature taking into account additional influences of the process conditions ($T_{amb,min}$), ($T_{amb,max} +45$ K).

Basic specification, feature approval, option EM (only Ex nA)

- Continuous service temperature of the connecting cable: -50 to $\geq +85$ °C; in accordance with the range of service temperature taking into account additional influences of the process conditions ($T_{amb,min}$), ($T_{amb,max} +15$ K).

In potentially explosive atmospheres:

- Do not disconnect the electrical connection of the power supply circuit when energized.
- Do not open the connection compartment cover and the electronics compartment cover when energized.

Accessory high pressure sliding sleeve

- The high pressure sliding sleeve can be used for a continuous setting of the switch point and is suited for zone division if mounted properly (see manual).

Non-sparking

In potentially explosive atmospheres: Do not disconnect electrical connections when energized.

Potential equalization

Integrate the device into the local potential equalization.

Temperature tables

Ambient temperature electronics

Temperature class	Electrical connection	Ambient temperature T _{amb}
T6	AC, E5	-50 °C to +60 °C
T5 ...T3		-50 °C to +70 °C
T6	WA	-50 °C to +40 °C
T5		-50 °C to +55 °C
T4 ...T3		-50 °C to +70 °C
T6 ...T3	SI, N1, N2	-50 °C to +70 °C
T6	PA	-50 °C to +60 °C
T5 ...T3		-50 °C to +70 °C

Process temperature sensor

Device type LVL-M1, LVL-M1H, LVL-M2, LVL-M2H

Used in Zone 2, Zone 22
-50 °C to +150 °C

Device type LVL-M2C

Used in Zone 2, Zone 22
-50 °C to +120 °C

The dependency of the ambient and process temperatures upon the temperature class

Device type LVL-M1, LVL-M1H, LVL-M2, LVL-M2H

Temperature class	Electrical connection	Process temperature T _p : sensor	Ambient temperature T _{amb} : electronics
T6	WA	-50 °C to +85 °C	-50 °C to +40 °C
	PA, AC, E5, SI, N1, N2		-50 °C to +60 °C
T5	WA	-50 °C to +100 °C	-50 °C to +55 °C
	PA, AC, E5, SI, N1, N2 ¹		-50 °C to +70 °C
T4	PA, AC, E5, WA, SI, N1, N2 ¹	-50 °C to +135 °C	-50 °C to +70 °C
T3	PA, AC, E5, WA, SI, N1, N2 ¹	-50 °C to +150 °C	-50 °C to +70 °C

¹ Additional temperature range for sensors for basic specification, feature probe version, probe length, option
LVL-M1(H) = IX, QX
LVL-M2(H) = JX, KX, LX, RX, SX, TX

Device type LVL-M2C

Temperature class	Electrical connection	Process temperature T _p : sensor	Ambient temperature T _{amb} : electronics
T6	WA	-50 °C to +85 °C	-50 °C to +40 °C
	PA, AC, E5, SI, N1, N2		-50 °C to +60 °C
T5	WA	-50 °C to +100 °C	-50 °C to +55 °C
	PA, AC, E5, SI, N1, N2		-50 °C to +70 °C
T4	PA, AC, E5, WA, SI, N1, N2	-50 °C to +120 °C	-50 °C to +70 °C

Device type LVL-M1, LVL-M1H, LVL-M2, LVL-M2H, LVL-M2C

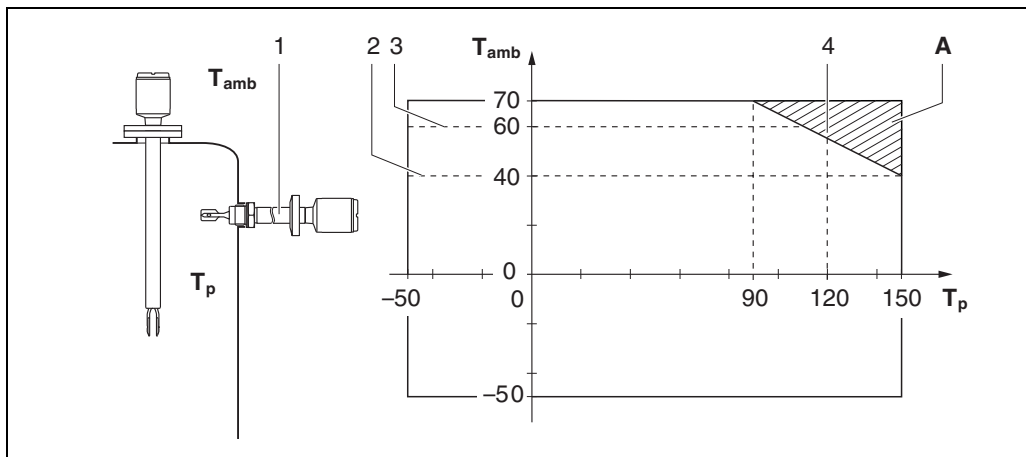


Figure 2

- A Additional temperature range for sensors for basic specification, feature probe version, probe length, options
LVL-M1(H) = IX, QX
LVL-M2(H) = JX, KX, LX, RX, SX, TX
- 1 Temperature separator or pressure tight feed through
- 2 Basic specification, feature electrical connection, option WA: T_{amb} -50 °C to +40 °C (T6)
- 3 Basic specification, feature electrical connection, option PA: T_{amb} -50 °C to +60 °C (T6)
- 4 ECTFE
- T_{amb} Ambient temperature in °C
- T_p Process temperature in °C

Connection data

Basic specification, feature approval, option EN

Electrical connection	Supply
WA	<p>U = 19 V DC to 253 V AC, 50/60 Hz; $P_{max} \leq 1.3$ W</p> <p>or</p> <p>U = 19 V DC to 55 V DC</p> <p>Relay:</p> <p>$I_{max} \sim 6.0$ A \rightarrow $U_{max} = 253$ V AC; $P_{max} = 1500$ VA, $\cos \varphi = 1$ $P_{max} = 750$ VA, $\cos \varphi > 0.7$</p> <p>$I_{max} \sim 6.0$ A \rightarrow $U_{max} = 30$ V DC</p> <p>$I_{max} \sim 0.2$ A \rightarrow $U_{max} \leq 125$ V DC</p>

Basic specification, feature approval, option EM

Electrical connection	Supply
AC	<p>U = 19 V AC to 253 V AC, 50/60 Hz; $P_{max} \leq 0.83$ W</p> <p>$I_{max} \leq 350$ mA</p>
E5	<p>U = 10 V DC to 55 V DC; $P_{max} \leq 0.83$ W</p> <p>$I_{max} \leq 350$ mA</p>
SI	<p>U = 11 V DC to 36 V DC; $P_{max} \leq 0.6$ W</p> <p>$I_{max} < 22$ mA</p>
N1	<p>U = 4 V DC to 12,5 V DC; $P_{max} \leq 23$ mW</p> <p>$I_{max} < 3.5$ mA</p>
N2	<p>U = 4 V DC to 12,5 V DC; $P_{max} \leq 23$ mW</p> <p>$I_{max} < 3.5$ mA</p>
PA	<p>U = 9 V DC to 32 V DC; connection only to PROFIBUS PA</p> <p>$I_{max} \leq 13.5$ mA</p>



EN

With regard to the supply of products, the current issue of the following document is applicable: The General Terms of Delivery for Products and Services of the Electrical Industry, published by the Central Association of the "Elektrotechnik und Elektroindustrie (ZVEI) e.V." including the supplementary clause: "Erweiterter Eigentumsvorbehalt".

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