

Betriebsanleitung  
Instruction Manual  
Manuel d'instructions

## ***Pressure Transmitter***

### **LHCR-51**

**4 mA to 20 mA HART, PROFIBUS PA**

**ATEX II 1/2D Ex ta/tb IIIC T75°C Da/Db**

**IECEX Ex ta IIIC T75°C Da/Ex tb IIIC T75°C Db**



**SI00475O-D**

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

**EN** – Safety instructions for electrical apparatus for explosion-hazardous areas, see page 9

**FR** – Conseils de sécurité pour matériels électriques destinés aux zones explosibles, regardez à la page 13

## 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 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 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 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 käännetyn 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

Gaminio 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.

## Deklaracja 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.

## EÚ vyhlásenie o zhode

Spoločnosť Pepperl+Fuchs vyhlasuje prostredníctvom tohto vyhlásenia o konformite a použitím značky CE, že tento výrobok vyhovuje príslušným európskym smericiam. 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 smernicami. Upošteevane 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-försäkrän om överensstämmelse

Pepperl+Fuchs försäkrar med vidstående försäkrän om överensstämmelse och med CE-märkningen att denna produkt överensstämmer med de tillämpbara europeiska riktlinjerna. De tillämpade riktlinjerna, normerna och dokumenten anges i försäkrän om överensstämmelse.

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

EU-Declaration of conformity

en/de

EU-Konformitätserklärung

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No. / Nr.: DOC-0213E  
Date / Datum: 2019-01-11

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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
LHC-M51XXXXXXXX-XXXXXXXX-XX	Pressure transmitter
PPC-M51XXXXXXXX-XXXXXXXX-XX	Pressure transmitter
LHCR-51XXXXXXXX-XXXXXXXXXX-XX	Hydrostatic pressure sensor
LHCS-51XXXXXXXX-XXXXXXXXXX-XX	Hydrostatic pressure sensor

The „X“ marked letters of the type code are placeholders and 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 60079-11:2012 EN 60079-26:2015 EN 60079-31:2014
2014/35/EU (LV) (L96/357-374)	EN 61010-1:2010
2011/65/EU (RoHS) (L174/88-110)	EN 50581:2012-09

Affixed CE Marking / Angebrachte CE-Kennzeichnung



Signatures / Unterschriften

Mannheim, 11. Januar 2019

*ppa. Lutz Liebers*

ppa. Lutz Liebers  
President Division PA

*Martin Holdefer*

i.V. Martin Holdefer  
Continuation Manager

ANNEX 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 / Alle oben gelisteten Produkte	
Marking Kennzeichnung	Certificate Zertifikat	Issuer ID Aussteller ID
II 1/2 G or II 2 G II 1/2 D	DEKRA 13 ATEX 0142	0344

Key for Issuer ID / Schlüssel zur Aussteller ID

ID	Issuer / Aussteller
0344	Dekra Certification B.V Meander 1051 6825 MJ Arnheim Netherlands

**■ ANNEX TYPE CODE**

The „X“ marked letters of the type code are placeholders and replaced by the following code:

Die mit „X“ markierten Stellen im Typenschlüssel sind Platzhalter und können durch folgenden Schlüssel ersetzt werden:

<b>LHC-M51XXXXXXXX-XXXXXX-XX</b>												
<b>LHC-M51</b>	<b>XXX</b>	<b>X</b>	<b>X</b>	<b>XXX-</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>XX</b>	<b>X</b>	<b>X-</b>	<b>XX</b>	
Product family	Sensor Range	Calibration and Units	Reference Accuracy	Process Connection	Material of Diaphragm	Fill Fluid	Housing	Output	Electr. Connection	Display, Operation	Certificates Options are: EX, ES, E1, SX	

<b>PPC-M51XXXXXXXX-XXXXXX-XX</b>											
<b>PPC-M51</b>	<b>XXX</b>	<b>X</b>	<b>X</b>	<b>XXX-</b>	<b>X</b>	<b>X</b>	<b>XX</b>	<b>X</b>	<b>X-</b>	<b>XX</b>	
Product family	Sensor Range	Calibration and Units	Reference Accuracy	Process Connection	Seal	Housing	Output	Electr. Connection	Display, Operation	Certificates Options are: EX, ES, E1, EM, SX	

<b>LHCR-51XXXXXXXX-XXXXXXXX-XX and LHCS-51XXXXXXXX-XXXXXXXX-XX</b>														
<b>LHCR-51</b>	<b>LHCS-51</b>	<b>XXX</b>	<b>X</b>	<b>X</b>	<b>XXX-</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>XX</b>	<b>X</b>	<b>X-</b>	<b>XX</b>
Product family	Sensor Range	Cal. and Units	Ref. Accuracy	Process Connection	Probe Connection, Material	Material of Diaphragm	Fill Fluid	Seal	Housing	Output	Electr. Connection	Display, Operation	Certificates Options are: EX, ES, E1, SX	



# Pressure Transmitter LHCR-51

4 mA to 20 mA HART, PROFIBUS PA

## Table of Contents

Associated documentation . . . . .	10
Supplementary documentation . . . . .	10
Manufacturer's certificates . . . . .	10
Manufacturer address . . . . .	10
Other standards . . . . .	10
Extended order code . . . . .	10
Safety instructions: General . . . . .	11
Safety instructions: Special conditions . . . . .	11
Safety instructions: Installation . . . . .	11
Temperature tables . . . . .	12
Connection data . . . . .	12

EN

**Associated documentation**

This document is an integral part of the following documents:

- BA00382O (HART)
- BA00383O (PROFIBUS PA)

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: DEKRA 13 ATEX 0142

List of applied standards: see page 3

**IEC certificate**

Certificate number: IECEx DEK 13.0056

Affixing the certificate number certifies conformity with the following standards (depending on the device version).

- IEC 60079-0:2011
- IEC 60079-31:2013
- IEC 60079-26:2014

**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 for proper installation:

- IEC/EN 60079-14:2012: "Explosive atmospheres - Part 14: Electrical installations design, selection and erection"
- EN 1127-1:2011: "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

<b>Device type</b>		<b>Basic specifications</b>		<b>Optional specifications</b>
LHCR-51	-	XXXXXXXXXXXX-XX	+	X.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**

Output		
Position	Option	Description
LHCR-51-XXXXXXXXXX	H	4 mA to 20 mA HART
	P	PROFIBUS-PA

Approval		
Position	Option	Description
LHCR-51-XXXXXXXXXX-XX	ES	ATEX II 1/2D Ex ta/tb IIIC T75°C Da/Db
	ID	IEx ta IIIC T75°C Da/Ex tb IIIC T75°C Db

EN

**Optional specifications**

No options specific to hazardous locations are available.

**Safety instructions:**

**General**

- Comply with the installation and safety instructions in the manual.
- 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
- Install the device according to the manufacturer's instructions and national regulations.
- Only use the device in media to which the wetted materials have sufficient durability.
- Avoid electrostatic charging:
  - Of plastic surfaces (e. g. housing, sensor element, special varnishing, attached additional plates, ...)
  - Of isolated capacities (e. g. isolated metallic plates)

**Safety instructions:**

**Special conditions**

- 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.

**Safety instructions:**

**Installation**

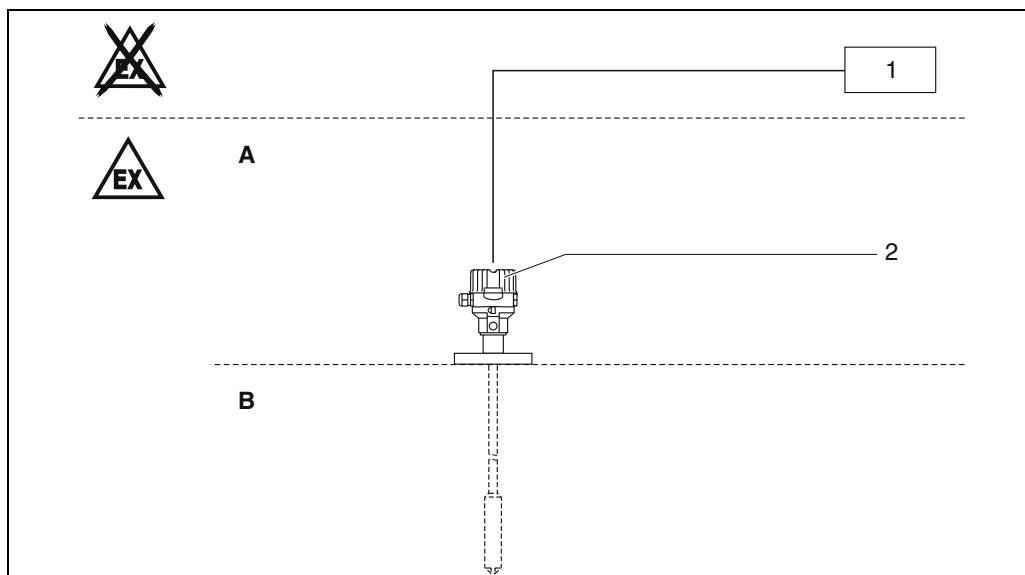


Figure 1

- A Zone 21, Electronic
- B Zone 20, Process
- 1 Power supply U
- 2 LHCR-51

- Do not open in a potentially explosive dust atmosphere.
- Seal the cable entry or piping tight (see ingress protection of housing in the "Temperature tables" chapter).
- Connect the device using suitable cable and wire entries of protection type "Equipment dust ignition protection by enclosure (Ex t)" or "Increased safety (Ex e)" (ingress protection of at least IP65). Lay connecting cable and secure.
- Mechanically fix probes which are more than 3 m (e. g. using guy ropes).

EN

Temperature tables

Type of protection	Ingress protection of housing	Max. surface temperature at max. ambient temperature	Ambient temperature T <sub>amb</sub> (housing)
Ex ta/tb IIIC T75°C Da/Db	IP66/67	+75 °C <sup>1</sup>	-40 °C to +70 °C

<sup>1</sup> measured at max. ambient temperature of +70 °C

Connection data

Basic specification, feature output, option H

Power supply	
U	≤ 45 V DC

Basic specification, feature output, option P

Power supply	
U	≤ 32 V DC



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".

# PROCESS AUTOMATION – PROTECTING YOUR PROCESS



## Worldwide Headquarters

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