

## EX Instructions

### Number of EU-Type Examination Certificate

TÜV 13 ATEX 120264 X


### Number of IECEx-Certificate

IECEx TUN 13.0018X

### Amendment to operating instructions for these type series

Type	Description	Instructions
CI4xxx - Option S62	Pressure transmitter PASCAL Ci4	BA_072, BA_078
CI4xxx - Option S77		

### ATEX-Marking – Option S62

 II 1/2G, II 2G Ex ia IIC TX Ga/Gb, Gb

 II 1/2D, II 2D Ex ia IIIC Txx °C Da/Db, Db

### IECEx-Marking – Option S77

Ex ia IIC TX Ga/Gb, Gb

Ex ia IIIC Txx °C Da/Db, Db

- BG: Ако не разбирате указанията за безопасност, можете да изискате превод на вашия език.
- CZ: Pokud těmto bezpečnostním pokynům nerozumíte, můžete si vyžádat jejich překlad do vašeho jazyka.
- DA: Hvis du ikke forstår sikkerhedshensvisningerne, kan du forespørge en oversættelse i dit sprog.
- DE: Wenn Sie diese Sicherheitshinweise nicht verstehen, können Sie eine Übersetzung in Ihrer Landessprache anfordern.
- EL: Εάν δεν καταλαβαίνετε αυτές τις υποδείξεις ασφαλείας, μπορείτε να ζητήσετε μια μετάφραση στη μητρική σας γλώσσα
- ES: Si no entiende estas indicaciones de seguridad, puede solicitar una traducción en su idioma.
- ET: Kui need ohutusnõuded ei ole teile arusaadavad, võite tellida meilt tõlke oma keelde.
- FI: Jos et ymmärrä näitä turvaohjeita, voi pyytää ne lähetettäväksi omalle kielellesi käännettynä.
- FR: Si vous ne comprenez pas les consignes de sécurité, vous pouvez faire la demande d'une traduction dans votre langue.
- HU: Amennyiben nem érti ezeket a biztonsági utasításokat, akkor kérheti ezeknek az Ön nyelvére lefordított változatát.
- IT: Nel caso non capite queste avvertenze di sicurezza, ne potete richiedere una traduzione nella vs. lingua.
- LT: Jei nesuprantate šių saugos reikalavimų, galite užsisakyti jų vertimą į Jūsų kalbą.
- LV: Ja jūs nesaprotat šos drošības norādījumus, jūs varat pieprasīt tulkojumu jūsu valodā.
- NL: Indien u deze veiligheidsinstructies niet begrijpt, kunt u een vertaling in uw eigen taal aanvragen.
- PL: Jeżeli niniejsze przepisy bezpieczeństwa są niezrozumiałe, można poprosić o tłumaczenie we własnym języku.
- PT: Se não compreender os avisos de segurança, pode solicitar uma tradução no seu idioma.
- RO: Dacă nu înțelegeți aceste instrucțiuni de siguranță puteți cere traducerea acestora în limba dvs.
- SK: Ak ste nepochopili bezpečnostné pokyny, môžete si vyžádať preklad do svojho jazyka.
- SL: Če teh navodil ne razumete, lahko zahtevate prevod v Vaš jezik.
- SV: Om du inte förstår den här säkerhetsanvisningen kan du begära att få en översättning till ditt språk.

## 1 General Safety Notes

The installation, set up, service or disassembly of this device must only be done by trained, qualified personnel using suitable equipment and authorized to do so.



### Warning

Media can escape if unsuitable devices are used or if the installation is not correct.

Danger of severe injury or damage

- Ensure that the device is suitable for the process and undamaged.

Measuring devices in explosive environments must be installed and commissioned by competent personnel that are familiar with the specialties of explosion protection. Modifications or damage of devices or electrical connections might negatively influence the operating safety or the ex-proofing.

Observe the regulations and standards for erection and operation of electrical installations in explosive atmospheres as well as the installation and safety notes in the corresponding operation instructions.

## 2 Requirements for intrinsically safe supply

Connect the pressure transmitter to a certified intrinsically safe power circuit.

Since the intrinsically safe signal circuit is connected with earth potential for safety reasons, potential equalisation has to exist in the complete course of the erection of the intrinsically safe circuit.

The following requirements apply to the intrinsically safe power circuit, depending on the device safety level required for the application:

EPL of pressure transmitter	Permissible configurations of power circuit with intrinsically safe ignition protection type			
Ga/Gb	Ex ia IIC	-	-	-
Gb	Ex ia IIC	Ex ib IIC	-	-
Da/Db	Ex ia IIIC	-	Ex ia IIIB	-
Db	Ex ia IIIC	Ex ib IIIC	Ex ia IIIB	Ex ib IIIB

The overall safety level changes to Ex ib when the measuring device is connected to an intrinsically safe Ex ib power circuit.

Permissible maximum values:

$$U_i \leq 30 \text{ V}$$

$$I_i \leq 150 \text{ mA}$$

$$P_i \leq 1000 \text{ mW}$$

Type series

CI4xx0

CI4xx3

Effective internal inductance:

$$L_i \leq 32 \text{ } \mu\text{H}$$

$$L_i \leq 32 \text{ } \mu\text{H}$$

Effective internal capacity:

$$C_i \leq 9,6 \text{ nF}$$

$$C_i \leq 16 \text{ nF}$$

The operator is permitted to connect a passive or other suitably certified test device to the test terminals of the pressure transmitter. Ensure that the  $U_0$ ,  $I_0$  and  $P_0$  values of the supply and signal power circuit and the test power circuit are added together and that the above  $U_i$ ,  $I_i$  and  $P_i$  values may not be exceeded. Alternatively, you must ensure that at the time of testing, there is no explosive atmosphere. Take into account the  $C_i$  and  $L_i$  values of the test device's power circuit when calculating the overall safety levels.

The connection cable is not part of the EU type examination certificate and must be considered separately per EN 60079-14:2014 section 16.2.2.2. According to that standard you can assume the following values:

$$C_c \leq 200 \text{ pF/m}$$

$$L_c \leq 1 \text{ } \mu\text{H/m}$$

### 3 Permissible media and ambient temperatures

EPL	gas temperature class	permissible media temperature		permissible ambient temperature
		standard	with Pt100	
Ga/Gb	T1	-20...60 °C	-20...60 °C	-40...85 °C
	T2	-20...60 °C	-20...60 °C	-40...85 °C
	T3	-20...60 °C	-20...60 °C	-40...85 °C
	T4	-20...60 °C	-20...60 °C	-40...85 °C
	T5	-20...49 °C	-20...49 °C	-40...61 °C
	T6	-20...37 °C	-20...37 °C	-40...46 °C
Gb	T1	-40...400 °C	-40...200 °C	-40...85 °C
	T2	-40...268 °C	-40...200 °C	-40...85 °C
	T3	-40...168 °C	-40...168 °C	-40...85 °C
	T4	-40...103 °C	-40...103 °C	-40...85 °C
	T5	-40...68 °C	-40...68 °C	-40...61 °C
	T6	-40...53 °C	-40...53 °C	-40...46 °C

EPL	max. surface temperature	permissible media temperature		permissible ambient temperature
		standard	with Pt100	
Da/Db Db	450 °C	-40...400 °C	-40...200 °C	-40...85 °C
	300 °C	-40...273 °C	-40...200 °C	-40...85 °C
	200 °C	-40...173 °C	-40...173 °C	-40...85 °C
	135 °C	-40...108 °C	-40...108 °C	-40...85 °C
	100 °C	-40...73 °C	-40...73 °C	-40...66 °C
	85 °C	-40...58 °C	-40...58 °C	-40...51 °C

The permissible media and ambient temperatures depend on the device type and its configuration as documented in the data sheet as well as the ignition temperature of the explosive atmosphere. Consider both aspects! The permissible range lies between the lowest value of the upper limit and the highest value of the lower limit.

#### **4 Additional Requirements**

If category 1 requirements apply the pressure transmitter measuring insert must only be operated at atmospheric conditions (Temperature from -20 °C to 60 °C, pressure from 0,8 bar to 1,1 bar).

Devices with EPL Da/Db or Db (Ex for dust) must not be operated continuously while the case is open. During installation and operation it must be ensured that no dust is entering the case.

When using the pressure transmitter with EPL Ga/Gb, ensure that all wetted parts are compatible with the media, taking all process conditions into account.

#### **5 General information**

Connecting and disconnecting of the display and control unit is fully permitted in hazardous areas.

The installation and operation of the remote display and control unit (option MC1140) is fully permitted in hazardous areas 1 and 21. The length of the connecting cable for the remote display and control unit must not exceed 20 m.

Measuring devices with Ex protection level Ga/Gb are suitable for connection to Zone 0. This means that the process connection may be located within Zone 0. The process connection meets the EPL Ga requirements. The case of the transmitter is suitable for operation in Zone 1. It meets the EPL Gb requirements.

Measuring devices with Ex protection level Da/Db are suitable for connection to Zone 20. This means that the process connection may be located within Zone 20. The process connection meets the EPL Da requirements. The case of the transmitter is suitable for operation in Zone 21. It meets the EPL Db requirements.



Lösungen nach Maß für industrielle Druck- und Temperaturmessungen in den Bereichen Food, Pharma, Biotechnik, Chemie, Petrochemie, Energie, Umweltschutz und Seeschifffahrt.  
 "Made to Measure" Process Instrumentation for Pressure and Temperature Measurement in the Food, Pharmaceutical, Bio-Technology, Chemical, Petro-Chemical, Power, Environmental and Maritime Industries.

## EU-Konformitätserklärung EU Declaration of Conformity

KE\_042

Hersteller / Manufacturer

**LABOM Mess- und Regeltechnik GmbH**  
 Im Gewerbepark 13, 27798 Hude

Die CE-Kennzeichnung der Geräte	<i>The CE symbol on the devices</i>
<b>Druckmessumformer PASCAL Ci4</b> der Typenreihen	<b>Pressure transmitter PASCAL Ci4, type series</b>

**Ci4xxx**

weist auf die Übereinstimmung mit den relevanten Richtlinien hin.	<i>indicates their compliance with the relevant directives.</i>
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Folgende Richtlinien werden angewandt:	<i>The following directives are applied:</i>
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2014/68/EU	DGRL PED	PS > 200 bar: Modul A, druckhaltendes Ausrüstungsteil PS > 200 bar: Module A, pressure accessory	
2011/65/EU	RoHS	EN 50581:2012	
2014/30/EU	EMV EMC	EN 61326-1:2013	
2014/34/EU	ATEX	EN 60079-0:2012+ A11:2013 EN 60079-11:2012 EN 60079-26:2015	Nr. der EG-Baumusterprüfbescheinigung <i>EC-type examination certificate</i> <b>TÜV 13 ATEX 120264 X</b> Ausgestellt von / <i>issued by</i> 0044 TÜV NORD CERT

Hude, 28.12.2017

ppa. T. Köster  
 Leiter Bereich Entwicklung / *R & D Manager*

benannte Stellen für Auditierung des QS-Systems nach  
*notified bodies for auditing the QS-system according to*

ATEX  
 Zertifikat / *certificate*

**0044 TÜV NORD CERT**  
**TÜV 00 ATEX 1582 Q**

DGRL / PED  
 Zertifikat / *certificate*

**0045 TÜV NORD Systems**  
**07 202 1321 Z 0042/12/02**