

## EX-instructions

### Number of EC type-examination certificate

TÜV 08 ATEX 554093 X


### UKEX


A Pt100-sensor in a resistance thermometer is a simple electrical equipment per section 5.7 of EN 60079-11:2012. The requirements of EN 60079-11 are fulfilled.

### Amendment to operating instructions for these type series

<u>Type</u>	<u>Description</u>	<u>Instructions</u>
GA2611	Resistance thermometer clamp-on	BA_049
GA2651	Resistance thermometer for measuring surface temperature	BA_054
GA27xx	Resistance thermometer MiniTherm	BA_053
GA8101	Indoor and outdoor resistance thermometer	BA_069
GA8111	Resistance thermometer vibration proof	BA_071
GA2151	Measuring insert for resistance thermometer	<i>see operating instructions for complete device</i>

### ATEX-Marking

 II 1G Ex ia IIC T6/T5/T4

 II 2G Ex ib IIC T6/T5/T4

 II 1D Ex iaD 20 T89 °C

 II 2D Ex ibD 21 T129 °C

### UKEX-Marking

Ex ia IIC T6/T5/T4 Ga

Ex ib IIC T6/T5/T4 Gb

Ex ia IIIC T89 °C Da

Ex ib IIIC T129 °C 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 sikkerhedshenvisningerne, 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 érte 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 šiu saugos reikalavimų, galite užsisakyti jų vertimą į Jūsų kalbą.
- LV: Ja jūs nesaprotāt 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 vyžiadať 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 Pt100 measuring insert to a certified intrinsically safe power circuit with safe galvanic isolation.

The following configurations apply to the power circuit depending on the category / EPL of Pt100 measuring insert required for the application:

Category / EPL	Configuration of power circuit with intrinsically safe ignition protection type			
1G / Ga	Ex ia IIC	-	-	-
2G / Gb	Ex ia IIC	Ex ib IIC	-	-
1D / Da	Ex ia IIC	-	Ex ia IIB	-
2D / Db	Ex ia IIC	Ex ib IIC	Ex ia IIB	Ex ib IIB

Permissible maximum values:

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

$$P_i \leq 200 \text{ mW}$$

There is no fixed limit value for the maximum current. The device can be operated safely as long as the limits for voltage and power are complied with simultaneously. For Ex calculations, any value for the maximum current can be used, e.g. 1000 mA.

The inner capacity  $C_i$  and inductance  $L_i$  are negligible small.

The connection cable is not part of the EC 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

#### 3.1 General

The maximum permissible media and ambient temperatures for the specific application depend on the device type and its configuration as documented in the data sheet, as well as on the temperature limits specified below and, if applicable, supplementary information in our order confirmation. Please pay attention to all mentioned aspects! The permissible range lies between the lowest value of the upper limit and the highest value of the lower limit.

#### 3.2 Applications in explosive gas atmospheres

Category / EPL	Temperature class	Medium	Ambient
1G / Ga	T6	-20...35 °C	-20...35 °C
	T5	-20...60 °C	-20...60 °C
	T4	-20...60 °C	-20...60 °C
2G / Gb	T6	-20...51 °C	-20...51 °C
	T5	-20...95 °C	-20...95 °C
	T4°C	-20...130 °C	-20...130°C

For temperature classes T1, T2 and T3 the temperature limits for T4 apply.

#### 3.3 Applications in explosive dust atmospheres

Category / EPL	max. surface temperature	Medium	Ambient
1D/ Da	89 °C	-20...60 °C	-20...60 °C
2D / Db	129 C	-20...100 °C	-20...100 °C

#### **4 Additional requirements**

For units with plastic components, avoid electrostatic charging of the plastic surfaces through manual rubbing or particles in flowing media.

If category 1 / EPL Ga or Da requirements apply the Pt100 measuring insert must only be operated at atmospheric conditions (0.8 to 1.1 bar).

If category 1D or 2D / EPL Da or Db Pt100 measuring inserts are required, ensure that dust has a minimum smouldering temperature of 210°C with a layer thickness of 5 mm.

Devices with an aluminium housing need to be secured against strikes to avoid sparking.

#### **5 Resistance thermometer with transmitter**

Combining a transmitter with a resistance thermometer is an installation per ATEX-guideline. Adhere to the limits and safety instructions of the transmitter when using this combination in an explosion-protected environment.

**EU-Konformitätserklärung**  
**EU Declaration of Conformity**

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

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.  
*This declaration of conformity is issued under the sole responsibility of the manufacturer.*

Gegenstand der Erklärung Typenreihen  
 Object of the declaration *type series*  
**GA2180, GA261x, GA27xx, GA81xx, GA265x, GA215x, GA219x**

Der oben beschriebene Gegenstand der Erklärung erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Europäischen Union:  
*The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:*

<b>für Messgeräte ...</b> <b>for devices ...</b>	<b>EU-Richtlinie</b> <b>EU directive</b>	<b>Harmonisierte Norm</b> <b>harmonised standard</b>
in allen Ausführungen <i>in all versions</i>	RoHS 2011/65/EU 2015/863/EU	EN IEC 63000:2018
mit Messumformer <i>with transmitter</i>	EMV EMC 2014/30/EU	EN 61326-1:2013
mit EG-Baumusterprüfbescheinigung <i>with EC-type examination certificate</i> <b>TÜV 08 ATEX 554093 X</b> Pt100-Temperaturfühler Typ / <i>Pt100 temperature sensor typ</i> Pt1-xx, Pt2-xx, Pt3-xx ausgestellt von / <i>issued by</i> 0044 TÜV NORD CERT	ATEX 2014/34/EU	EN IEC 60079-0:2018 EN 60079-11:2012 EN 60079-26:2015

LABOM Mess- und Regeltechnik GmbH  
 Hude, 21.07.2025



i.V P. Molke  
 Leiter Bereich Entwicklung / *R & D Director*

notifizierte Stelle für Auditierung des QS-Systems nach  
*notified body for auditing the QS-system according to*  
 ATEX **0044 TÜV NORD CERT**  
 Zertifikat / *certificate* **TÜV 00 ATEX 1582 Q**