Multipoint resistance thermometer

Type series GA8140, GA2180

EX Instructions

Pt100 measuring inserts in resistance thermometers are considered simple apparatus in accordance with section 5.7 of EN 60079-11:2012 / section 5.5 of IEC 60079-11:2023. They are not covered by the EU Directive 2014/34/EU (ATEX). The requirements of EN 60079-11 / IEC 60079-11 are fulfilled.

Marking

Ex ia IIC T1…T6 Gb

Ex ia IIIC T135 °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 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 înţelegeţi aceste instrucţiuni de siguranţă puteţi 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.

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

2 Requirements for intrinsically safe supply

Connect the Pt100 measuring inserts to certified, intrinsically safe power circuit.

The following maximum connection values apply per Pt100 measuring insert:

$U_i \leq 30$ V

$I_i \leq 100$ mA

$P_i \leq 200$ mW

Depending on the length of the measuring insert added to the length of the connecting cable, the following effective internal capacitances and inductances result according to EN 60079 14: 2014 section 16.2.2.2:

$C_i \leq 200$ pF/m

$L_i \leq 1$ µH/m

For example:

Total length of measuring insert and connecting cable	C_i	L_i
6 m	1.2 nF	6 µH
8 m	1.6 nF	8 µH
10 m	2.0 nF	10 µH
16 m	3.2 nF	16 µH
25 m	5.0 nF	25 µH

3 Permissible medium 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 Use in potentially explosive gas atmospheres

Temperature class	**Permissible max. media temperature depending on the electrical power supplied to the Pt100 [°C]**						**Permissible ambient temperature [°C]**
	10 mW	20 mW	50 mW	100 mW	150 mW	200 mW	
T1	437	435	429	419	408	398	-40…60
T2	287	285	279	269	258	248	
T3	192	190	184	174	163	153	
T4	127	125	119	109	98	88	
T5	92	90	84	74	63	53	
T6	77	75	69	59	48	38	-40…55

3.3 Use in explosive dust atmospheres

Surface temperature	**Permissible ambient temperature**
T135 °C	-40...100 °C

The Pt100 measuring elements are suitable for complete dust covering or for any dust layer if the continuous short-circuit current is below 250 mA.

4 Additional requirements

When measuring at medium temperatures that deviate from the ambient temperature, suitable measures must be taken to ensure that the temperature of the connection point or the connecting parts is decoupled from the medium temperature, e.g. by selecting the appropriate pipe length.

For safety reasons, the Pt100 measuring inserts with a length ≥ 8 m must be connected to the potential equalisation of the system along the entire intrinsically safe circuit.

The sensor tubes of the Pt100 measuring inserts must be connected to the potential equalisation of the system to prevent electrostatic charging.

In accordance with EN 60079-14:2014 / IEC 60079-14:2013 section 6.4.1, metallic enclosures and enclosure parts that have fixed and secured metallic contact with structural parts or pipes that are themselves connected to the equipotential bonding system do not have to be connected separately to the equipotential bonding system.

5 Installing the Pt100 measuring inserts in the housing

The installation of the Pt100 measuring inserts in the housing is an installation in accordance with the ATEX guideline. Observe the conditions of use and safety instructions of the housing for use in potentially explosive atmospheres.