ROTH+CO. AG
Temperatursensorik
Mess- und Regeltechnik

Zusatzhinweise für Planung und Einsatz von 4-20 mA Temperatur-Transmitter

Art.-Nr. 103001

Version 1.0 (RL 2014/34/EU)

August 2023

Indications complémentaires pour la planification et l'utilisation de transmetteurs de température 4-20 mA

Additional information for planning and use of 4-20 mA temperature transmitters

Inhaltsverzeichnis

Herstellerinformationen zum eigensicheren Messumformer und Konformitätsbestätigungen finden Sie am Ende des Dokuments

1 Gegenstand und Verwendungszweck

Temperatur-Transmitter der 600-er und 800-er Typenreihe von ROTH+CO.AG werden als eigensichere Betriebsmittel für Temperaturmessungen in flüssigen und gasförmigen Medien sowie bei Stäuben eingesetzt.
Die Temperatur-Transmitter basieren auf den jeweiligen Ex-Temperatur-Transducer, in welche zusätzlich ein eigensicherer 4-20 mA Messumformer eingebaut wird, der die ATEX-, UKEX- sowie IECEX- Vorgaben erfüllt.
Da es sich bei den Messumformern um elektronische Komponenten handelt, muss die maximale Betriebstemperatur des Messumformers berücksichtigt werden.
Die Temperatur-Transmitter erfüllen die Anforderungen nach RL 2014/34/EU (ATEX 114) und die gesetzlichen Bestimmungen des Vereinigten Königreichs SI 2016 Nr. 1107 (in der jeweils gültigen Fassung) für die Gruppe II der Kategorien 1 G und 1 D, sowie 2 G und 2 D. Sie eignen sich daher für den Einsatz im explosionsgefährdeten Bereich der Zone 1 und 2 bei Gas (Gas) und Zone 21 und 22 bei Staub (Dust). Das Fühlerrohr darf dabei unter Umständen auch in die Zone 0 bzw. 20 ragen (Zonentrennung).
Die Temperatur-Transmitter sind für den Anschluss an eigensichere Stromkreise mit Schutzniveau "ib" (für Anwendungen in der Zone 1 und 2, mit Trennelement in Zone 0) sowie mit Schutzniveau "ia" (zum Einsatz des Fühlerrohrs in der Zone 0, 1 und 2) bescheinigt.

2 Speziell zu beachten

- Es müssen alle Vorgaben der ‘Betriebsanleitung Explosionsgeschützter Temperatursensor’ der ROTH+CO. AG berücksichtigt werden.
- Der im Anschlussgehäuse eingebaute eigensichere Ex-Messumformer darf ausschliesslich innerhalb des spezifizierten Temperaturbereichs von -40°C bis +85°C betrieben werden. Dabei ist zu beachten, dass je nach Anwendungsfall und Gehäuseausführung neben der Umgebungstemperatur womöglich auch Energie über den Prozessanschluss ans Anschlussgehäuse zu- oder abgeführt (Wärme / Kälte) wird.
- Der eigensichere 4-20 mA Temperatur-Transmitter darf nur zusammen mit einer eigensicheren Sicherheitsbarriere, die sich ausserhalb der explosionsgefährdeten Bereiche befindet, betrieben werden. Die maximal zulässigen Grenzwerte sind:
  U = < 30 VDC
  I = < 100 mA
  P = < 750 mW
- Der Deckel des Anschlussgehäuses und die Kabelverschraubung müssen bestimmungsgemäss montiert sein, sodass die Dichtfunktion gegenüber der Umgebung gewährleistet ist (IP65). Dies muss vor Inbetriebnahme der Anlage oder ausserhalb der Ex-Zone gewährleistet werden.
- Die Temperaturklassen-Angaben auf der Ex-Etikette des Temperatur-Transmitters (T6…T1, für Gase) beziehen sich ausschliesslich auf den Temperatur-Transducer. Der eingebaute eigensichere Ex-Messumformer ist für die Temperaturklassen T4…T1 spezifiziert. Das bedeutet: Wenn im Bereich des Anschlussgehäuses explosionsfähige Gasgemische auftreten, muss sichergestellt sein, dass diese Gase nicht der Klasse T6 oder T5 zugeordnet sind. Ansonsten sind weitere Schutzvorkehrungen zu treffen, die es verunmöglichen, dass explosionsfähige Gasgemische in das Anschlussgehäuse dringen können.

Table des matières

Vous trouverez les informations du fabricant sur l'amplificateur de mesure de sécurité intrinsèque et les attestations de conformité à la fin du document.

1 Description et utilisation

Les transmetteurs de température de la série 600 et 800 de ROTH+CO.AG, composants d'exploitation à sécurité intrinsèque, sont destinées à être utilisées pour mesurer les températures dans des milieux liquides, gazeux et dans les environnements poussiéreux. Les transmetteurs de température sont basés sur les transducteurs de température Ex correspondants, dans lesquels un amplificateur de mesure 4-20 mA à sécurité intrinsèque est également intégré, répondant aux directives ATEX, UKEX et IECEX.
Comme les amplificateurs de mesure sont des composants électroniques, il faut tenir compte de la température de fonctionnement maximale de l'amplificateur de mesure.

Les sondes de température remplissent les exigences selon RL 2014/34/EU (ATEX 114) et aux dispositions légales du Royaume-Uni SI 2016 n° 1107 (telles que modifiées) de la groupe II, catégories 1 G et 1 D, ainsi que 2 G et 2 D. Elles sont donc utilisables dans les zones à risque d'explosion 1 et 2 pour gaz (G) et dans les zones 21 et 22 pour poussières (D). Sous certaines conditions, le tube de sonde peut émerger dans la zone 0 resp. 20 (séparation de zones).
Les sondes sont attestées pour être branchées à des circuits électriques à sécurité intrinsèque, au niveau de protection "ib" (pour utilisation dans les zones 1 et 2, avec élément de séparation en zone 0) et au niveau de protection "ia" (pour utilisation du tube de sonde dans les zones 0, 1 et 2).

2 A respecter en particulier

- Toutes les prescriptions du 'Mode d'emploi Sonde de température EX' de ROTH+CO. AG doivent être prises en compte.
- L'amplificateur de mesure Ex à sécurité intrinsèque monté dans le boîtier de raccordement ne doit être utilisé que dans la plage de température spécifiée de -40°C à +85°C.
- Notez que selon l'application et le type de boîtier du capteur, outre la température ambiante, de l'énergie (chaleur / froid) peut être amenée ou évacuée par le raccord process à la boîte de raccordement.
- Le transmetteur de température 4-20 mA à sécurité intrinsèque ne doit être utilisé qu'avec une barrière de sécurité intrinsèque située en dehors des zones à risque d'explosion. Les valeurs limites maximales autorisées sont les suivantes
  U = < 30 VDC
  I = < 100 mA
  P = < 750 mW
- Le couvercle du boîtier de raccordement et le presse-étoupe doivent être montés conformément à leur destination, de sorte que la fonction d'étanchéité par rapport à l'environnement soit garantie (IP65). Cela doit être garanti avant la mise en service de l'installation ou en dehors de la zone Ex.
- Les indications des classes de température sur l'étiquette Ex du transmetteur de température (T6...T1, pour les gaz) se rapportent exclusivement au transtucteur de température (sans amplificateur de mesure). L'amplificateur de mesure Ex à sécurité intrinsèque intégré est spécifié pour les classes de température T4...T1. Cela signifie que si des mélanges de gaz explosifs apparaissent dans la zone du boîtier de raccordement, il faut s'assurer que ces gaz n'appartiennent pas à la classe T6 ou T5. Dans le cas contraire, d'autres mesures de protection doivent être prises pour éviter que les mélanges de gaz explosifs ne pénètrent dans le boîtier de raccordement.

Contents

Manufacturer information on the intrinsically safe measuring amplifier and conformity confirmations can be found at the end of the document.

1 Topic and scope of use

Temperature transmitters of the 600 and 800 type series from ROTH+CO.AG are used as intrinsically safe actuators for temperature measurements in liquid and gaseous media as well as in dusts.
The temperature transmitters are based on the respective Ex temperature transducers, in which an intrinsically safe 4-20 mA measuring amplifier is additionally installed, which fulfils the ATEX, UKEX and IECEX specifications.
Since the measuring amplifiers are electronic components, the maximum operating temperature of the transmitter must be taken into account.
The temperature sensors meet the requirements according to RL 2014/34/EU (ATEX 114) and UK statutory requirements SI2016 No. 1107 (as amended) for group II of categories 1 G and 1 D, as well as 2 G and 2 D and may therefore be used for measurements in the hazardous area of zones 1 and 2 for gases (G) and zones 21 and 22 for dust (D). In such installations the sensor tube may possibly protrude into zones 0 or 20, respectively (zone separation).
The sensors are certified for connection to intrinsically safe circuits with protection level "ib" (for applications in zones 1 and 2, with separator element in zone 0) or with protection level "ia" (for using the sensor tube in zones 0, 1 and 2).

2 Special note

- All specifications of the ‘Instruction manual EX-proof temperature sensor' of ROTH+CO. AG must be observed.
- The intrinsically safe Ex measuring amplifiers installed in the connection housing may only be operated within the specified temperature range of -40°C to +85°C. It should be noted that, depending on the application and enclosure design, energy may be supplied or dissipated (heat/cold) via the process connection to the connection housing in addition to the ambient temperature.
- The intrinsically safe 4-20 mA temperature transmitter may only be operated together with an intrinsically safe safety barrier that must be located outside the hazardous areas. The maximum permissible limit values are:
  U = < 30 VDC
  I = < 100 mA
  P = < 750 mW
- The cover of the connection housing and the cable gland must be mounted as intended so that the sealing function against the environment is guaranteed (IP65). This must be ensured before commissioning the system or outside the Ex zone.
- The temperature class specifications on the Ex label of the temperature transmitter (T6...T1, for gases) refer exclusively to the temperature transducer. The built-in intrinsically safe Ex measuring amplifier is specified for temperature classes T4...T1. This means: If explosive gas mixtures occur in the area of the connection housing, it must be ensured that these gases are not assigned to class T6 or T5. Otherwise, further protective measures must be taken to prevent explosive gas mixtures from entering the connection housing.

Anhang / Annexe / Appendix

User instruction for TTR200X electrical apparatus for use in explosion-hazardous area. Important read and understand this document before any installation.

ATEX / UKEX Instructions

For safe installation of the TTR200X in hazardous areas the following instructions must be observed. The transmitter must be installed by competent personnel, who are familiar with national and international laws, directives and standards that apply to their region. For installation in European Economic Area (EEA) member countries users must follow requirements for electrical equipment for use in potentially explosive atmospheres, e.g. EN60079_14 & EN60079_17. This instruction sheet describes installation, which conforms with BS EN60079_14 & BS EN60079-17. Important - Particular attention must be paid to the section titled "Special conditions for safe use", failure to comply to this requirement will result in a unsafe system.
The TTR200X has been issued with a EU-type examination certificate, confirming compliance with European ATEX directive 2014/34/EU, and SI2016 No.1107 for the following specification :-

Product Information

Following Information is printed on the product label

Manufacturer	Status Instruments Ltd
Type Number	TTR200X
Certificate Ref	TRAC09ATEX11232X
Certificate Ref	CML21UKEX2528X

Zones

Area Classification		Zone Criteria for Application Atmosphere
Gases	Dusts	
Zone 0	Zone 20	Present continuously or for long periods (> 1000 hrs per annum)
Zone 1	Zone 21	Likely to occur in normal operation occasionally (> 10 to < 1000 hrs per annum)
Zone 2	Zone 22	Unlikely to occur in normal operation (< 10 hrs per annum)

Classification

STATUS INSTRUMENTS
www.status.co.uk
Made in UK GL20 8FD
TTR200X

TYPE: Pt100
RANGE: 0 - 100°C
SER.No.123456 - 0001

II 1 GD Tamb = -40 °C to 85 °C
TRAC09ATEX11232X Ex ia IIC T4 Ga
IECEx TRC 10.0008X
CML21UKEX2528X Ex ia IIIC T135°C Da

Working Parameters

		Terminals	
		+ / -	1 / 2 / 3
Ui	=	30 V	1.5 V
Ii	=	100 mA	-
Pi	=	750 mW	-
Ci	=	0	1.5 uF
Li	=	0	0
Uo	=	-	5 V
Io	=	-	2 mA
Po	=	-	65 mW

Additional Information

EMC	BS EN 61326-1 (Sensor wires max 3Metres to comply.)
Enclosure	Colour Blue

Every effort has been taken to ensure the accuracy of this document, however we do not accept responsibility for damage, injury, loss or expense resulting from errors and omissions, and we reserve the right of amendment without notice.

STATUS INSTRUMENTS
Status Instruments Ltd, Status Business Park, Gannaway Lane, Tewkesbury, Gloucestershire, UK, GL20 8FD
Web Page: www.status.co.uk Tel : +44 (0) 1684 296818 Fax: +44 (0) 1684 293746

D2504-01-13 CN6841 TTR200X User_Guide Page 1 of 3

Special conditions for safe use

1. For gas applications, the TTR200X temperature transmitter must be mounted in an ATEX/IECEx approved enclosure appropriate for the zone of end use, rated for IP54 and located in an area where the enclosure will not be subject to impact or friction.

2. For dust applications, the TTR200X temperature transmitters must be mounted in a suitably ATEX or IECEx certified enclosure appropriate for the zone of end use.

3. The equipment shall only be configured by means of the separately certified USBTTX Config device outside of the hazardous area, certificate IECEx EMT 16.0030X (ATEX EMT16ATEX0050X, UKEX CML21UKEX2527X).

4. If the equipment is mounted in an enclosure with separate IS circuits, appropriate segregation shall be provided in accordance with IEC 60079-11 Clause 6.2.1.

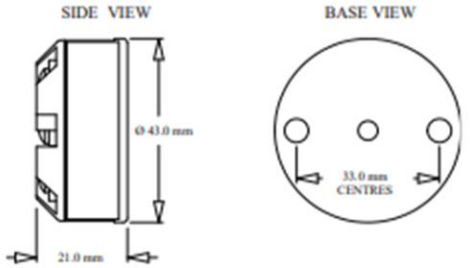
5. Only suitable for connection to RTD temperature sensors or slide wire resistance devices or a simple apparatus. They shall conform to the requirements for simple apparatus as defined in IEC 60079-11 Clause 5.7 and shall pass a dielectric strength test in accordance with IEC 60079-11 Clause 6.3.12.

6. The ambient temperature range of the enclosure will limit the permitted ambient range of the overall equipment. Refer to enclosure certification.

Maintenance

The appropriate regulations concerning maintenance, repair and testing must be observed. In particular, all parts on which explosion protection depends must be checked during maintenance. The transmitter must never be configured in the hazardous area, the device must be removed and taken to a non hazardous area for configuration.
No dust layers are expected to form the enclosure used to house the TTR200X must be cleaned regularly to prevent build up of any dust layers.
The TTR200X apparatus contains no user serviceable adjustable, replaceable parts. No attempt should be made to repair a TTR200X device, all units must be returned to the manufacturer for repair or replacement. Attempted service or replacement of parts may invalidate the explosive protection features of the TTR200X.

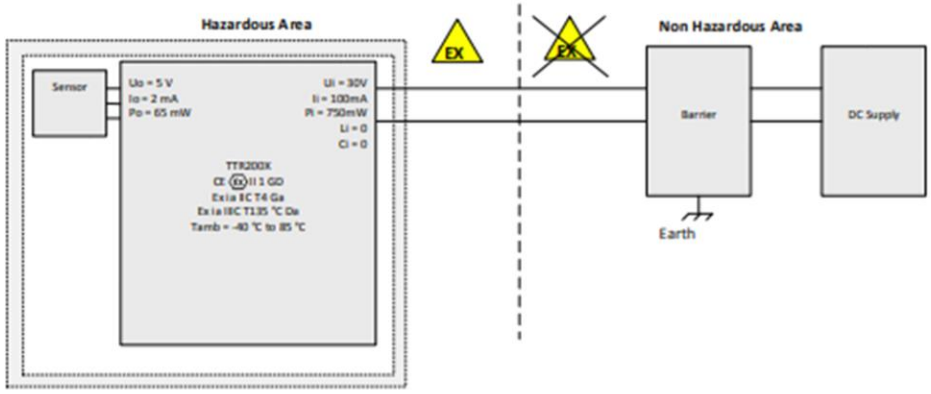
Mechanical Detail



The TTR200X is mounted using two 5.5 mm holes, on standard 33 mm fixing centres and will fit a DIN standard termination head. The TTR200X must be installed with adequate protection from moisture and corrosive atmospheres. Refer to "special conditions for safe use" section of this user guide for information on enclosure IP rating.
Care must be taken to ensure the TTR200X is located to ensure the ambient temperature does not exceed the specified operating temperature as specified in the "TEMPERATURE CLASS" table.

Electrical Detail

REFER TO CONDITIONS FOR SAFE USE



Sensor wires must be isolated from earth breakdown voltage 500 V dc

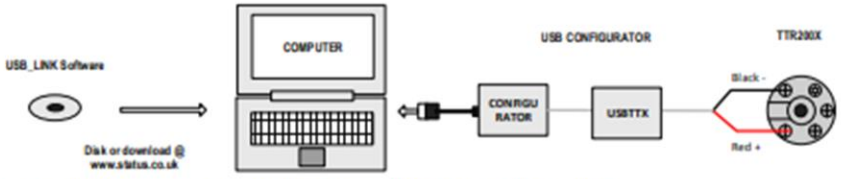
Installation

REFER TO CONDITIONS FOR SAFE USE

For TTR200X specification please refer to product data sheet. Installation is normally performed in the following order. If the TTR200X has been purchases as part of a probe assembly ,steps (1 to 3) will have been completed. The user may wish to reconfigure the transmitter range, in this instance the TTR200X range can be changed on a completed probe assembly by following step 1.

1. Configuration
2. Mount Transmitter into head
3. Wire Sensor
4. Install Assembly
5. Wire (4-20) mA Loop

1. Configuration



Follow the instructions provided by software menus, refer to TTR200X data sheet for list of configurable parameters.
Factory default PT100 range (0 to 100) °C upscale burnout

2. Mount Transmitter into Head

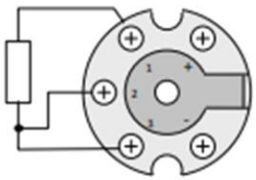
The TTR200X is mounted using two 5.5 mm holes, on standard 33 mm fixing centres and will fit a DIN standard termination head. The TTR200X must be installed with adequate protection from moisture and corrosive atmospheres. Refer to "special conditions for safe use" section of this user guide for information on enclosure IP rating. A centre hole is provided in the TTR200X case, this allows for sensor wire to enter wiring section through the TTR200X body. Observe the "special conditions for safe use " instruction.

3. Wire sensor.

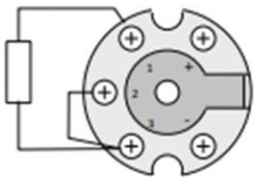
Sensor connections are as follows, to maintain BS EN61326 compliance sensor wires must be less than 3 metres. All sensor connections must be isolated from ground.

Sensor RTD or Resistance (0 to 10) Kohm

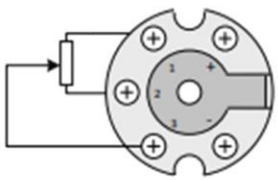
3 wire



2 wire



Slide Wire (1 to 100) Kohm

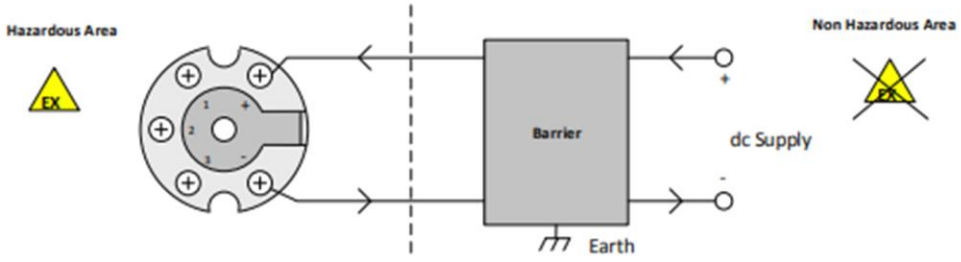


4. Install assembly

Care must be taken to ensure the TTR200X is located to ensure the ambient temperature does not exceed the specified operating temperature as specified in the "TEMPERATURE CLASS" table.

5. Wire (4 to 20) mA Loop

Ensure all other aspects of the installation comply with the requirements of this document, paying particular attention to the loop barrier. The (4 to 20) mA loop is connected as follows:-



eurofins

cml Ex

UK Type Examination Certificate CML 21UKEX2528X Issue 0

United Kingdom Conformity Assessment

1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended) – Schedule 3A, Part 1

2 Equipment **Loop Powered Temperature Transmitter – TTC200X, TTR200X, SEM1801XTC – SEM1802XTC, SEM1801XR-SEM1802XR**

3 Manufacturer **Status Instruments Ltd.**

4 Address Status Business Park
Gannaway Lane
Tewkesbury
Gloucestershire
GL20 8FD, UK

5 The equipment is specified in the description of this certificate and the documents to which it refers.

6 Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ, United Kingdom, Approved Body Number 2503, in accordance with Regulation 43 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

The examination and test results are recorded in the confidential reports listed in Section 12.

7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to specific conditions of use (affecting correct installation or safe use). These are specified in Section 14.

8 This UK Type Examination certificate relates only to the design and construction of the specified equipment. Further requirements of the Regulations apply to the manufacturing process and supply of the product. These are not covered by this certificate.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN 60079-0:2012+A11:2013 EN 60079-11:2012

10 The equipment shall be marked with the following:

Ex II 1 G D
Ex ia IIC T4 Ga
Ex ia IIIC T135°C Da
Tamb = TTC200X/TTR200X: -40°C to +85°C, SEM1800 series: -40°C to +70°C

R C Marshall
Operations Manager

CML 21UKEX2528X
Issue 0

11 Description

The TTR200X and TTC200Xtemperature transmitters are designed to accept inputs from a range of temperature sensors and convert these to standard industrial 4-20mA output signal. The TTR200X accepts inputs from resistance devices (RTD or slide wire type) and the TTC200X accepts inputs from thermocouple devices. These devices must conform to the requirements for simple apparatus (refer to Specific Conditions for Use). The equipment comprises a single PCB within a small plastic circular enclosure with external screw type terminal connections for signal and sensor connections. The enclosure is fully encapsulated after assembly. The transmitters are to be fitted inside an industrial standard thermocouple probe head enclosure.

The SEM1801XTC and SEM1801XR are DIN rail mounted versions of single channel transmitters. Based on the TTR200X or TTC200X electronics mounted on a motherboard pcb housed in a rectangular plastic enclosure. Signal and sensor connections are made to screw terminal blocks

The SEM1802XTC and the SEM1802XR are dual channel versions based on duplicated TTC200X or TTR200X mounted on a motherboard PCB.

Table of entity parameters				
Parameter	**TTR200X**		**TTC200X**	
	+/-	**1 / 2/ 3**	**+/-**	**1 / 2/ 3**
Ui	30V	1.5 V	30V	1.5 V
Ii	100 mA	-	100 mA	-
Pi	750 mW	-	750 mW	-
Ci	0	1.5 uF	0	10 nF
Li	0	0	0	0
Uo	-	5 V	-	5 V
Io	-	2 mA	-	55 mA
Po	-	65 mW	-	0.62 mW

Table of entity parameters				
Parameter	**SEM1801XTC**		**SEM1802XTC**	
	104, 105	**101, 102**	**204, 205**	**201, 202**
Ui	30V	1.5 V	30V	1.5 V
Ii	100 mA	-	100 mA	-
Pi	750 mW	-	750 mW	-
Ci	0	10 nF	0	10 nF
Li	0	0	0	0
Uo	-	5 V	-	5 V
Io	-	55 mA	-	55 mA
Po	-	0.62 mW	-	0.62 mW

Table of entity parameters				
Parameter	**SEM1801XR**		**SEM1802XR**	
	104, 105	**101, 102, 103**	**204, 205**	**201, 202, 203**
Ui	30V	1.5 V	30V	1.5 V
Ii	100 mA	-	100 mA	-

Table of entity parameters				
Parameter	SEM1801XR		SEM1802XR	
	104, 105	101, 102, 103	204, 205	201, 202, 203
Pi	750 mW	-	750 mW	-
Ci	0	1.5 uF	0	1.5 uF
Li	0	0	0	0
Uo	-	5 V	-	5 V
Io	-	2 mA	-	2 mA
Po	-	65 mW	-	65 mW

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	10/05/2021	R14134D/00	Issue of the prime certificate.

Note: Drawings that describe the equipment are listed or referred to in the Appendix of TRAC09ATEX11232X V3.

13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

i. Where the product incorporates certified parts or safety critical components, the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.

ii. Any previously certified parts incorporated in the equipment shall be UKCA compliant by the 1st January 2022.

14 Specific Conditions of Use

The following conditions relate to safe installation and/or use of the equipment.

For all models

i. For gas applications, the temperature transmitters must be mounted in an appropriately approved metallic enclosure suitable for the Zone of end use, rated for IP54 and located in an area where the enclosure will not be subjected to impact or friction.

ii. For dust applications, the temperature transmitters must be mounted in an appropriately approved enclosure rated for the Zone of end use.

iii. The equipment shall only be configured by means of the separately certified USBTTX Config device outside the hazardous area, covered under CML 21UKEX2527X.

iv. If the equipment is mounted in an enclosure with separate IS circuits, appropriate segregation shall be provided in accordance with EN 60079-11, clause 6.2.1

v. The ambient temperature range of the enclosure will limit the permitted ambient range of the overall equipment. Refer to enclosure certification.

For TTC200X, SEM1801XTC and SEM1802XTC

i. Only suitable for connection to suitable thermocouples or simple apparatus devices. They shall meet the requirements for simple apparatus as per EN 60079-11, clause 5.7 and shall meet the dielectric withstand requirements of EN 60079-11, clause 6.3.13.

For TTR200X, SEM1801XR and SEM1802XR

i. Only suitable for connection to RTD temperature sensors or slide wire resistance devices. They shall meet the requirements for simple apparatus as per EN 60079-11, clause 5.7 and shall meet the dielectric withstand requirements of EN 60079-11, clause 6.3.13.

element

1 EU - TYPE EXAMINATION CERTIFICATE

2 **Product or Protective System Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU – Annex III**

3 EU - Type Examination Certificate No.: **TRAC09ATEX11232X (incorporating variations V1 to V3)**

4 Product: **Loop Powered Temperature Transmitters - TTC200X, TTR200X, SEM1801XTC – SEM1802XTC, SEM1801XR – SEM1802XR**

5 Manufacturer: **Status Instruments Ltd.,**

6 Address: **Status Business Park, Gannaway Lane, Tewkesbury, Gloucestershire, GL20 8FD, United Kingdom**

7 This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Element Materials Technology, Notified Body number 2812, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential report **TRA-030696-33-00A.**

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2012+A11:2013 EN 60079-11:2012

Except in respect of those requirements listed at section 18 of the schedule.

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to specific conditions of use specified in the schedule to this certificate.

11 This EU - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of this product shall include the following:

Ex II 1 G D

Ex ia IIC T4 Ga **Tamb = TTC200X/TTR200X: -40 °C to +85 °C**

Ex ia IIIC T135°C Da **SEM1800 series: -40 °C to +70 °C**

This certificate and its schedules may only be reproduced in its entirety and without change. This certificate is issued in accordance with the Element Materials Technology Ex Certification Scheme.

S.P. Winsor

S P Winsor, Certification Manager

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Voorerf 18, 4824 GN Breda, Netherlands
Element Materials Technology Rotterdam B.V.
Registered in the Netherlands. Registered Office: PO Box 6854, 4802 HW, Breda, Netherlands
Company Reg No. 24170257

ROTH+CO.AG
Wiesentalstrasse 20 | CH-9242 Oberuzwil | T +41 71 955 02 02 | info@rothcoag.ch | www.rothcoag.ch

UK Declaration of Conformity

TTR200X

Status Instruments Ltd, located at Status Business Park, Gannaway Lane, Tewkesbury, Gloucestershire GL20 8FD, United Kingdom, hereby declares, under the sole responsibility of the manufacturer, that our **TTR200X** product complies, by application of the standards and regulations below:

Electromagnetic Compatibility Regulations 2016
BS EN 61326-1:2013 Table 2 industrial environments

The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres Regulations 2016 'SI 2016 No. 1107'
BS EN 60079-0:2012/A11:2013
BS EN 60079-11:2012
Approved Body No. 2503 Eurofins E&E CML Ltd
Certificate CML21UKEX2528X

Class II 1 G D
Ex ia IIC T4 Ga
Ex ia IIIC T135 °C Da

These standards have been compared with BS EN 60079-0:2018 (currently harmonised) and no significant changes have occurred which are applicable to this equipment.

Signed: Title: COMPLIANCE ENGINEER

Signed: Title: MANAGING DIRECTOR
(For and on behalf of *Status Instruments Ltd*)
Date: 6TH JUNE 2022
Place: Tewkesbury, UK

EU Declaration of Conformity

TTR200X

Status Instruments Ltd, located at Status Business Park, Gannaway Lane, Tewkesbury, Gloucestershire GL20 8FD, United Kingdom, hereby declares, under the sole responsibility of the manufacturer, that our **TTR200X** product complies, by application of the standards and directives below:

EMC Directive 2014/30/EU
EN 61326-1:2013 Table 2 industrial environments

RoHS 2 Directive 2011/65/EU incorporating RoHS 3 Amendment Directive EU 2015/863

ATEX Directive 2014/34/EU
EN 60079-0:2012/A11:2013
EN 60079-11:2012
Notified Body No. 2812 Element Rotterdam BV
Certificate TRAC09ATEX11232X
QAN: NB 2776 CML BV

Class II 1 G D
Ex ia IIC T4 Ga
Ex ia IIIC T135 °C Da

These standards have been compared with EN 60079-0:2018 (currently harmonised) and no significant changes have occurred which are applicable to this equipment.

Signed: Title: COMPLIANCE ENGINEER

Signed: Title: MANAGING DIRECTOR

(For and on behalf of *Status Instruments Ltd*)

Date: 6TH JUNE 2022 Place: Tewkesbury, UK