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 V2)**

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 0891, 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:

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, Certification Manager

Issue date: 2017-03-01

Unit 1, Pendle Place, Skelmersdale, West Lancashire, WN8 9PN, United Kingdom
Element Materials Technology Warwick Ltd.
Registered in England and Wales. Registered Office: 5 Fleet Place, London, EC4M 7RD
Company Reg No. 02536659

13 SCHEDULE TO EU - TYPE EXAMINATION CERTIFICATE

14 TRAC09ATEX11232X (incorporating variations V1 to V2)

15 Description of Product

The TTR200X and TTC200X temperature transmitters are designed to accept inputs from a range of temperature sensors and convert these to standard industrial 4-20 mA 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 Special Conditions for Safe 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 mother 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 duplicate TTC200X or TTR200X mounted on a motherboard PCB.

Table of entity parameters				
	TTR200X		TTC200X	
Parameter	+/-	1 / 2 / 3	+/-	1 / 2 / 3
Ui	30 V	1.5 V	30 V	1.5 V
Ii	100 mA	-	100 mA	-
Pi	750 mW	-	750 mW	-
Ci	0	1.5 µF	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				
	SEM1801XTC		SEM1802XTC	
Parameter	104, 105	101, 102	204, 205	201, 202
Ui	30 V	1.5 V	30 V	1.5 V
Ii	100 mA	-	100 mA	-
Pi	750 mW	-	750 mW	-
Ci	0	10nF	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				
	SEM1801XR		SEM1802XR	
Parameter	104, 105	101, 102, 103	204, 205	201, 202, 203
Ui	30 V	1.5 V	30 V	1.5 V
Ii	100 mA	-	100 mA	-
Pi	750 mW	-	750 mW	-
Ci	0	1.5 µF	0	1.5 µF
Li	0	0	0	0
Uo	-	5 V	-	5 V
Io	-	2 mA	-	2 mA
Po	-	65 mW	-	65 mW

16 Test report No. (associated with this certificate issue): TRA-030696-33-00A.

17 Specific Conditions of Use

For TTC200X and TTR200X:

1. For gas applications, the TTR200X and TTC200X temperature transmitters must be mounted in a metallic 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 TTC200X and 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 the hazardous area, certificate IECEx EMT 16.0013X (ATEX EMT16ATEX0024X).
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. TTC200X - Only for connection to suitable thermocouples. These shall conform to the requirements for simple apparatus as defined in IEC 60079-0 clause 5.7 and shall pass a dielectric strength test in accordance with IEC 60079-11 Clause 6.3.12.
6. TTR200X - Only suitable for connection to RTD temperature sensors or slide wire resistance devices. They shall conform to the requirements for simple apparatus as defined in EN 60079-0 clause 5.7 and shall pass a dielectric strength test in accordance with IEC 60079-11 Clause 6.3.12.
7. The ambient temperature range of the enclosure will limit the permitted ambient range of the overall equipment. Refer to enclosure certification.

For SEM1801XTC and SEM1802XTC:

1. For gas applications, the SEM1801XTC and SEM1802XTC temperature transmitters must be mounted in a metallic 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 SEM1801XTC and SEM1802XTC 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 the hazardous area, certificate IECEx EMT 16.0013X (ATEX EMT16ATEX0024X).
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 for connection to suitable thermocouples or a simple apparatus. These 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.

For SEM1801XR and SEM1802XR:

1. For gas applications, the SEM1801XR and SEM1802XR temperature transmitters must be mounted in a metallic 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 SEM1801XR and SEM1802XR 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 the hazardous area, certificate IECEx EMT 16.0013X (ATEX EMT16ATEX0024X).
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.

For all models:

1. The equipment shall only be configured by means of the separately certified USBTTX Config device outside the hazardous area; certificate IECEx EMT 16.0030X (ATEX EMT16ATEX0050X).The temperature sensor must be located in the safe area when being used with the USBTTX Config device.

18 Essential Health and Safety Requirements (Directive Annex II)

In addition to the Essential Health and Safety Requirements covered by the standards listed at item 9, the following are considered relevant to this product, and conformity is demonstrated in the report:

Clause	Subject
None	None

19 Drawings and Documents

The list of controlled technical documentation is given in Appendix A to this schedule.

20 Routine Tests

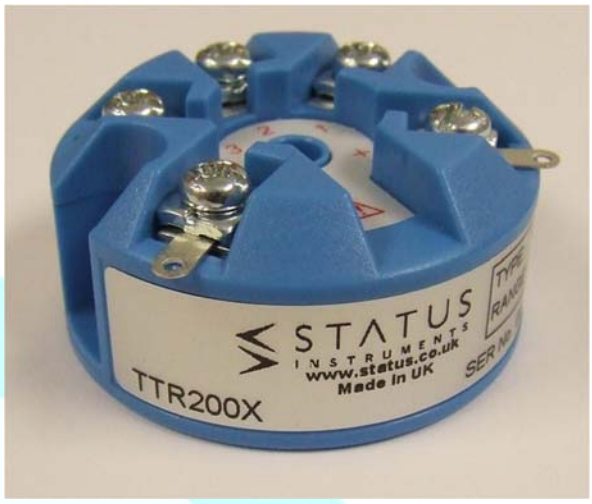
21 Specific Conditions for Manufacture

None.

22 Photographs

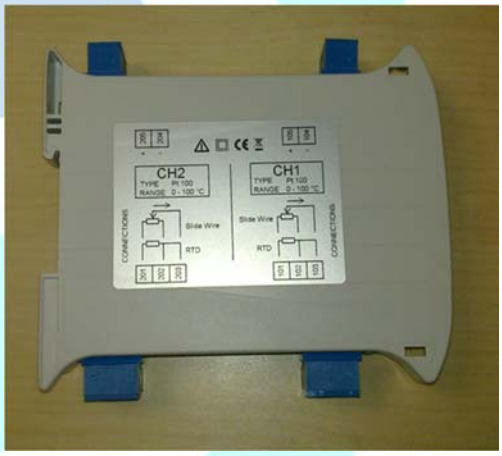
TTC200X

TTR200X



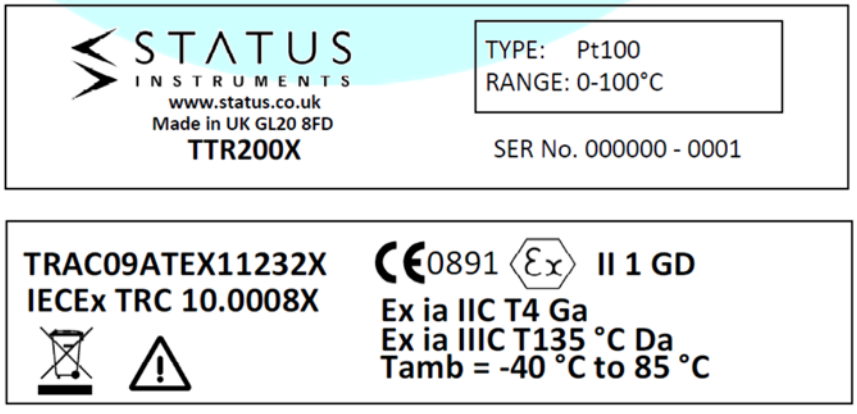
SEM1801 series

SEM1802 series

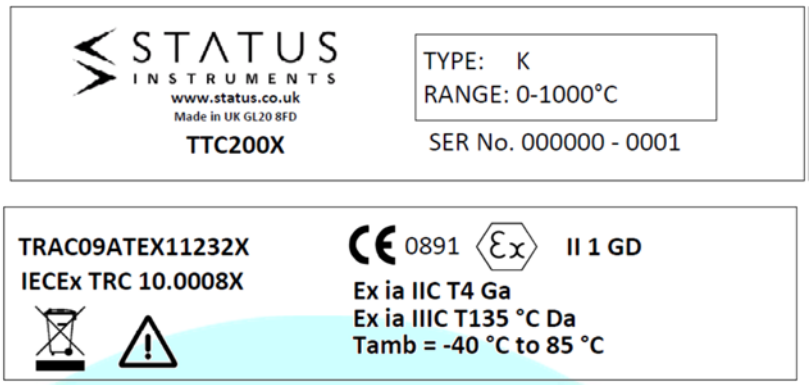


23 Details of Markings

TTR200X:



TTC200X:



SEM180n XTC series:

SEM180n XR series:

Thermocouple / RTD types and serial number / year marked according to type.

24 Details of Variations to this Certificate

This certificate is a consolidated certificate and reflects the latest status of the certification, including the following variations:

- Variation V1 -- Ambient temperature range modified and technical changes to transistor components. Introduction of SEM1801 (SEM1801XTC and SEM1801XR) and SEM1802 (SEM1802XTC and the SEM1802XR) products series, together called the SEM1800 series.
- Variation V2 -- Upgrade to the latest standards EN 60079-0 series and removal of EN 61241 series. Add interface for connection to associated equipment USBTTX Config device.

25 Notes to CE marking

In respect of CE Marking, Element Materials Technology accepts no responsibility for the compliance of the product against all applicable Directives in all applications.

26 Notes to this certificate

Element Materials Technology certification reference: TRA-030696-32-00.

Throughout this certificate, the date format yyyy-mm-dd (year-month-day) is used.

Notified Body 0891 is the designation for Element Materials Technology Warwick Ltd (formerly known as TRaC Global Ltd).

In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Variation certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

27 Conditions for the validity of this certificate

This certificate remains valid for so long as:

(i) The equipment listed in section 4 is manufactured in accordance with the documents listed in Appendix A of this certificate.

(ii) The standards listed in section 9 of this certificate continue to satisfy the Essential Health and Safety Requirements of Annex II of Directive 2014/34/EU and the generally acknowledged state of the art (e.g. as determined by the publishers of those standards).

APPENDIX A - TECHNICAL DOCUMENTS

Title:	Drawing No.:	Rev. Level:	Date:
TTC200X and TTR200X:			
TTC200X Bill of materials	S4759_01_06	06	*
TTC200X Schematic Diagram	S4760_01_05	05	2010-12-07
TTC200X PCB detail	S4764_03_01	01	2010-11-18
TTC200X SM assembly	S4789_02_01	01	2010-06-01
TTC200X Sub assembly	S4790_01_01	01	2010-02-16
TTC200X GENERAL ASSEMBLY CERTIFICATION DRAWING	S4791-01-09	09	2016-12-14
TTC200X Module sub assembly	S4803_01_01	01	2010-02-16
TTC200X Cap sub assembly	S4805_01_01	01	2010-02-16
TTC200X User Guide (3 sheets)	D2505_01_10	10	*
TTR200X Bill of Materials	S4762_01_05	05	*
TTR200X Schematic	S4763_01_02	02	2010-04-29
TTR200X PCB detail	S4765_02_02	02	2010-11-15
TTR200X SM assembly	S4792_02_01	01	2010-06-01
TTR200X Sub assembly	S4793_01_01	01	2010-02-15
TTR200X GENERAL ASSEMBLY CERTIFICATION DRAWING	S4794-01-09	09	2016-12-14
TTR200X User Guide (3 sheets)	D2504_01_11	11	*
TTC200X TTR200X Potted module assembly	S4804_01_01	01	2010-11-25
SEM1800 Series:			
SEM1801_2XTC User Guide (2 sheets)	D2556-01-04	04	*
SEM1801_2XR User Guide (2 sheets)	D2558-01-04	04	*
SEM1801/02XR CIRCUIT DIAGRAM	S4940-01-01	01	2012-09-12
SEM1800XR SERIES POTTED MODULE ASSY CERTIFICATION DRAWING	S4941-01-01	01	2012-09-12
SEM1801XR GENERAL ASSY (3 sheets)	S4942-01-04	04	2016-12-15
SEM1802XR GENERAL ASSY (3 sheets)	S4943-01-04	04	2016-12-15
SEM1801/02XTC CIRCUIT DIAGRAM	S4944-01-01	01	2012-09-12
SEM1800XTC SERIES POTTED MODULE ASSY CERTIFICATION DRAWING (2 sheets)	S4945-01-01	01	2012-09-12
SEM1801XTC GENERAL ASSY (3 sheets)	S4946-01-04	04	2016-12-14
SEM1802XTC GENERAL ASSY (3 sheets)	S4947-01-04	04	2016-12-15
SEM1801/02 SERIES MOTHERBOARD PCB DRAWING	S4948-01-01	01	2012-09-12

Note: * Denotes information not provided by manufacturer