



Mining And Surface Certification (Pty) Ltd

2015/021934/07

THIS CERTIFICATE IS ISSUED AS AN I.A. CERTIFICATE IN TERMS OF THE MINE HEALTH AND SAFETY ACT, ACT NO 29 OF 1996 (AND REGULATIONS), THE OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993) AND REGULATION 17 OF THE ELECTRICAL MACHINERY REGULATIONS

IA CERTIFICATE	MASC M/26-8242X	Issue	0
Issue Date	22 September 2026	Expiry Date	03 June 2029
** Based on Certificate No	Sira 99ATEX2136X	Issue / Variations / Amendment	13
Requested by	Troxel Ltd. Hazel Grove, Stockport, Cheshire, SK7 5DY, United Kingdom		
Manufacturer	Troxel Limited Newby Road, Hazel Grove, Stockport, Cheshire SK7 5DY, UK		
Description	The TX913x Programmable Trip Amplifiers are intended to accept signals from a range of external sensors (e.g. 4-20 mA signals, 0.4-2 V signals, temperature sensors, flammable gas sensors, accelerometers, etc.). They are housed in an ABS enclosure and contain a standard Control PCB that is connected to one of a range of I/O PCBs depending on the application. The different versions of the Trip Amplifiers listed below each contain the control PCB connected to a different I/O PCB: TX9131.xx.xx.SV 4-20 mA Input Trip Amplifiers TX9131 4-20 mA Input Trip Amplifiers TX9132 Voltage Input Trip Amplifiers TX9133 Thermocouple Input Trip Amplifiers TX9134 PT100 Temperature Sensor Input Trip Amplifiers TX9135 Semiconductor Temperature Sensor Input Trip Amplifiers TX9136 Bridge Input Trip Amplifiers TX9137 A.C. (Peak) Input Trip Amplifiers TX9137 A.C. (RMS) Input Trip Amplifiers TX9139 Interposing Relay Trip Amplifier. See Base Certificate** for further description.		
Equipment	Trip Amplifiers	Type	TX91xx
MARKING: Original marking as per certificate ** remains applicable. IA number must be added.	Type: Ex Marking: IA Number: Warnings:	TX91xx Trip Amplifiers Ex ia I Ma Ta = -20 °C to +70 °C MASC M/26-8242X (To be additionally marked on equipment) See Base Certificate ** (original marking must be applied)	
Quality Assurance report (QAR) / Notification (QAN):		"It is a requirement under ATEX that all equipment for category 1 and 2 areas must have 3rd party quality assurance from a notified body. This is accepted to cover the equipment's quality requirements."	
Compliance: The equipment as described above has been allocated the rating <u>Explosion Protected 'as above'</u> utilizing the SANS/IEC Standards: • SANS (IEC) 60079-0: 2019 Equipment - General requirements • SANS (IEC) 60079-11: 2024 Equipment protection by intrinsic safety "i" <i>Note: This certificate covers only the listed standards and does not imply compliance to any other standard, related or inferred. It is up to the manufacturer to ensure that the product complies to all relevant standards for the application.</i>			
Specific conditions of use "X": • Refer to Annex A below for more details.			
Conditions of manufacture: • Refer to Annex A below for more details.			
 S. JORDAAN TECHNICAL SPECIALIST		 N. VILOJEN TECHNICAL OFFICER	
This certificate covers all units sold as long as the QAR/QAN remains valid. According to the relevant requirements of the MHS Act and the OHS Act, production units of explosion protected equipment are required to comply with third party quality assurance (an approved mark scheme or batch testing by an accredited test laboratory).			

Apparatus in hazardous locations is subject to the following provisions as applicable, which shall be adhered to:

- SANS 10086 requirements;
- Any conditions mentioned in the above certificate;
- Any relevant requirements of the MHS Act;

Any restrictions and conditions enforced by the chief inspector of mines, principal inspector (Group I equipment) or chief inspector of factories (Group II equipment).

This certificate may only be reproduced in full
The certificate is not transferable and remains the property of the issuing body.

IA CERTIFICATE: MASC M/26-8242X

Equipment: TX91xx Trip Amplifiers

(Expiry date: 03 June 2029)

Page 2 of 2

ANNEX A

This document is based on and must be read in conjunction with certificate Sira 99ATEX2136X.	
Description (According to Base Certificate) **	
"Refer to description in Base Certificate ** (and any applicable schedules/issues/variants)."	
Standard compliance	See Base Certificate **
Specific conditions of use ("X")	- The TX913x Trip Amplifiers shall be installed in an outer enclosure that provides an ingress protection of at least IP54 to EN 60529. Metallic enclosures shall also comply with clause 8.2 of EN IEC 60079-0:2018. - The outer enclosure shall be marked in a visible, external location with an additional label that displays at least the following information: Contains Trolex TX91xx Programmable Trip Amplifiers Ex ia I Ma (Ta = -20 °C to +70 °C) Sira 99ATEX2136X if the enclosure is manufactured from plastics or incorporates a plastics component with a surface area in excess of 100 cm², then it shall also be marked with a static warning label: "STATIC HAZARD! DO NOT RUB WITH A DRY CLOTH" - If the outer enclosure carries a static warning label, then it shall not be installed in a location where it is likely to be subjected to conditions that may induce static charges, e.g. high velocity dust laden air. - This certificate only relates to the TX91xx Trip Amplifiers and does not cover the function of any other electrical apparatus installed in the outer enclosure. - The internal temperature of this apparatus may rise above 150 °C under normal or fault conditions; therefore, care shall be taken when the enclosure is opened to ensure that no dust enters the apparatus. - Connection to any external supply at terminals T9/T10 for the TX9131 Trip Amplifier shall be done in a parallel configuration only.
Conditions of manufacture	- The products covered by this certificate incorporate previously certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices, and the manufacturer shall inform CSA of any modifications of the devices that may impinge upon the explosion safety design of their products. - It is the manufacturer's responsibility to take all reasonable steps to ensure that the user or installer complies with the requirements detailed in Special Conditions for Safe Use 1.9 and retains evidence to this effect. - In accordance with IEC 60079-11:2023 clause 10.4, each manufactured item shall be subjected to an inspection for encapsulation and conformal coating. No damage shall be evident, such as cracks in the compound, exposure of the encapsulated/coated parts, flaking, inadmissible shrinkage, swelling, decomposition, failure of adhesion or softening
Conditions of Certification	- This IA Certificate covers all units sold from the date of this document to the expiry date of this certificate. - As per ARP 0108: 2018 / NCoP 2398: 2022 (as applicable) a maximum three yearly review is required on this IA Certificate (expiry is determined as per the QAR/QAN/QMS expiry date). - The apparatus must be additionally marked with the MASC marking details above. - This approval only covers the equipment as certified above and does not include any scheduled additions or variations / amendments / new issues to the certificate(s), made after the above date. - The equipment does not need to be re-tested when used on the conditions and with such restrictions as prescribed by the certificate on which this IA Certificate is based and any other conditions in this IA Certificate. - The certification on which this IA Certificate is based must remain valid. - The extent of the requirements in the ARP 0108:2018 / NCoP 2398: 2022 (as applicable), SANS 10108 and any other applicable regulations on the certification of the equipment must remain unchanged. - The Ex-quality assurance notification/report for the equipment must remain valid.
Conclusion:	- From the above and the selective examination of the documentation, nothing contrary to the requirements of the applicable standards was found, provided that the equipment / component is used as described in the above document / certificate and according to the MASC conditions below. A MASC IA certificate is issued based on the work done as per the Base Certificate **. - The routine tests for production units according to the Base Certificate ** must be complied with (if applicable).
Supplement	Issue 0: Supplemented for new IA number.

This document is issued based on Mining And Surface Certification's Standard Contract terms and conditions available on request.

While every endeavour is made to ensure that a test / assessment / inspection is representative and accurately performed, and that a report / certificate is accurate in the quoted results and conclusions drawn from the test / assessment / inspection, MASC or its directors/employees shall in no way be liable for any error made in carrying out the test / assessment or for any erroneous statement, whether in fact or in opinion, contained in a report / certificate issued pursuant to a test / assessment / inspection.

MASC takes no responsibility for any non-conformances, exclusions, or any results / assessments / inspections not in compliance with the standards. By marking the equipment in accordance with the documentation / standard, the manufacturer / applicant attests on his own responsibility that the equipment / installation has been designed and constructed in accordance with the applicable requirements of the relevant standards and documentation, that the routine verifications / routine tests have been correctly completed and the equipment / installation complies with the documentation and standard(s).

This document is only for use and application in South Africa. It is issued based on National interpretations and accepted practices.

This document may only be reproduced in full.

This certificate is not transferable and remains the property of the issuing body.

This document will not be supported by MASC for certification purposes outside the borders of South Africa.

Mining And Surface Certification (Pty) Ltd Reg No: 2015/021934/07
Directors: Roelof Viljoen & Francois du Toit
Unit #5, Lelyta Park, 45 Jurg Avenue, Hennospark Ext 87, Centurion, 0157
P.O. Box 14344, Clubview, 0014
Tel: 012 653 2959 ♦ Fax: 086 605 8568
e-mail: info@masc-ex.co.za



EU-TYPE EXAMINATION CERTIFICATE

Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014

EU-Type Examination Certificate Number: **Sira 99ATEX2136X** Issue: **13**

Equipment: **TX91xx Trip Amplifiers**

Manufacturer: **Trolex Limited**

Address: Newby Road
Hazel Grove
Stockport
Cheshire
SK7 5DY, UK

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

CSA Group Netherlands B.V., Notified Body No. 2813 in accordance with Article 17 of the 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 reports listed in item 16.2.

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

EN IEC 60079-0:2018 EN 60079-11:2012 IEC 60079-11:2023 Edition 7*

* IEC 60079-11:2023 Ed.7 is listed on the ATEX certification as the equipment is assessed to the latest technical requirements and is deemed 'State of Art'. EN 60079-11:2012 remains listed as the harmonised standard and continued compliance to the Essential Health & Safety Requirements (EHSR's) is covered by this standard.

Where additional criteria beyond those given here have been used, they are listed in item 18 in the Schedule.

If the sign "X" is placed after the certificate number, it indicates that the product is subject to the "Specific Conditions of Use" listed in item 17 of this certificate.

This EU-Type Examination Certificate relates only to the technical design of the specified product in accordance with the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product, these are not covered by this certificate.

The marking of the product shall include the following (additional marking is provided in the Schedule as a part of item 15, if applicable):



I M1

Ex ia I Ma

Ta = -20 °C to +70 °C

Signed: M Halliwell
Title: Senior Director of Operations
Date: 17 July 2025



This certificate and its schedule may only be reproduced in its entirety and without change.
CSA Group Netherlands B.V. Utrechtseweg 310, Building B42, 6812AR Arnhem, The Netherlands.



SCHEDULE

EU-Type Examination Certificate Number: Sira 99ATEX2136X **Issue:** 13

Description:

Description of TX913x

The TX913x Programmable Trip Amplifiers are intended to accept signals from a range of external sensors (e.g. 4-20 mA signals, 0.4-2 V signals, temperature sensors, flammable gas sensors, accelerometers, etc.). They are housed in an ABS enclosure and contain a standard Control PCB that is connected to one of a range of I/O PCBs depending on the application. The different versions of the Trip Amplifiers listed below each contain the control PCB connected to a different I/O PCB:

TX9131.xx.xx.SV 4-20 mA Input Trip Amplifiers
TX9131 4-20 mA Input Trip Amplifiers
TX9132 Voltage Input Trip Amplifiers
TX9133 Thermocouple Input Trip Amplifiers
TX9134 PT100 Temperature Sensor Input Trip Amplifiers
TX9135 Semiconductor Temperature Sensor Input Trip Amplifiers
TX9136 Bridge Input Trip Amplifiers
TX9137 A.C. (Peak) Input Trip Amplifiers
TX9137 A.C. (RMS) Input Trip Amplifiers
TX9139 Interposing Relay Trip Amplifier

Apart from the TX9139, each version of the Trip Amplifier has 3 variants:
Dual relay output; 4-20 mA output; 0.4-2 V output.

The Control PCB remains the same for all versions and contains a micro-controller, EPROM and EEPROM memories, other logic circuits and an alpha-numeric LCD module, which is mounted directly onto the PCB. A keypad is fitted to the front panel of the Trip Amplifier and is connected to the Control PCB via a flexible ribbon cable.

The I/O PCBs contain some common circuitry as well as circuitry specific to the application. Some versions are based on the same artwork but with different builds to achieve the desired configuration; other versions use different artwork and builds. The safety description of the equipment is shown overleaf.

Terminals T1-T8, T11-T12

TX9131/2/5 and TX9131.xx.xx.SV

T1-T2 (sensor power)	T1-T2 (sensor signal)	T5-T6 (supply)	T7-T8 (relay)	T11-T12 (relay reset/power on delay)
Uo = 16.5 V Ci = 3.6 nF Li = 0	Uo = 16.5 V Io = 33 mA Po = 135 mW Ci = 1.2 nF Li = 0	Ui = 16.5 V Ci = 3.6 nF Li = 0	Uo = 0 Ui = 20 V Ci = 0 Li = 0	Uo = 16.5 V Ui = 0 Ci = 0 Li = 0

Note: Terminals T1 and T2 are connected directly to the supply terminals T5-6, so have the same output parameters as the mining power supply.

TX9133

T1-T4 (sensor)	T5-T6 (supply)	T7-T8 (relay)	T11-T12 (relay reset/power on delay)
Uo = 16.5 V Ci = 2.4 nF Li = 0	Ui = 16.5 V Ci = 2.4 nF Li = 0	Uo = 0 Ui = 20 V Ci = 0	Uo = 16.5 V Ui = 0 Ci = 0



This certificate and its schedule may only be reproduced in its entirety and without change.
CSA Group Netherlands B.V. Utrechtseweg 310, Building B42, 6812AR Arnhem, The Netherlands.



T1-T4 (sensor)	T5-T6 (supply)	T7-T8 (relay)	T11-T12 (relay reset/power on delay)
		Li = 0	Li = 0

Note: Terminals T1 and T2 are connected directly to the supply terminals T5-6, so have the same output parameters as the mining power supply.

TX9134

T1-T4 (sensor)	T5-T6 (supply)	T7-T8 (relay)	T11-T12 (relay reset/power on delay)
Uo = 16.5 V Io = 1.163 A Po = 1.75 W Co = 80 nF Lo/Ro = 52 μ H/ Ω Ci = 3.6 nF Li = 0	Ui = 16.5 V Ci = 1.2 nF Li = 0	Uo = 0 Ui = 20 V Ci = 0 Li = 0	Uo = 16.5 V Ui = 0 Ci = 0 Li = 0

TX9136

T1-T4 (sensor)	T5-T6 (supply)	T7-T8 (relay)	T11-T12 (relay reset/power on delay)
Uo = 16.5 V Io = 1.163 A Co = 300 nF Lo = 80 μ H Ci = 12.48 μ F Li = 165 μ H	Ui = 16.5 V Ci = 1.2 nF Li = 245 μ H*	Uo = 0 Ui = 20 V Ci = 0 Li = 0	Uo = 16.5 V Co = 12 μ F Lo/Ro = 52 μ H/ Ω Ui = 0 Ci = 0 Li = 0

*Note: The internal inductance is in series with a resistance of at least 14.25 Ω . This is inductively non-incendive when the apparatus is used in conjunction with a power supply having a peak output voltage (Uo) not exceeding 16.5 V.

TX9137

T1-T4 (sensor)	T5-T6 (supply)	T7-T8 (relay)	T11-T12 (relay reset/power on delay)
Uo = 16.5 V Io = 183 mA Po = 752 mW Co = 80 nF Lo/Ro = 52 μ H/ Ω Ci = 1.2 nF Li = 0	Ui = 16.5 V Ci = 1.2 nF Li = 0	Uo = 0 Ui = 20 V Ci = 0 Li = 0	Uo = 16.5 V Co = 12 μ F Lo/Ro = 52 μ H/ Ω Ui = 0 Ci = 0 Li = 0

TX9139

T4 & T6 (signal)	T5-T6 (supply)	T1-T3, T7-T12 (relay)
Uo = 16.5 V Io = 8 mA Po = 33 mW Co = 11 μ F Lo/Ro $\leq$ 52 μ H/ Ω Ci = 0 Li = 0	Ui = 16.5 V Ci = 1.2 nF Li = 0	Uo = 0 Ui = 20 V Ci = 0 Li = 0

Terminals T9-T10 (excluding the TX9139 and the TX9131 and TX9131.xx.xx.SV)



This certificate and its schedule may only be reproduced in its entirety and without change.
CSA Group Netherlands B.V. Utrechtseweg 310, Building B42, 6812AR Arnhem, The Netherlands.



The parameters depend on the variant as follows:

Dual relay	4-20 mA	0.4-2 V
Uo = 0 Ui = 20 V Ci = 0 Li = 0	Uo = 16.5 V Ci = 0 Li = 0	Uo = 16.5 V Ci = 0 Li = 0

Terminals T9-T10 (TX9131 only)

Dual relay	4-20 mA	0.4-2 V
Uo = 0 Ui = 20 V Ci = 0 Li = 0	Uo = 16.5 V Io = 0.8 A Po = 1.632 W Ci = 0 Li = 0 Ui = 5.4 V Ii = 0.9 mA Pi = 1.2 mW	Uo = 16.5 V Ci = 0 Li = 0

Terminals T9-T10 (TX9131.xx.xx.SV only)

4-20 mA
Uo = 16.5 V Io = 0.1 A Po = 0.413 W Ci = 0 Li = 0 Ui = 5.4V Ii = 0.9 mA Pi = 1.2 mW

Description of TX9151

The TX9151 Liquid Flow Trip Amplifier is typically designed to interface with a Liquid Flow Sensor (LFS) via a sensor measuring the differential pressure inside the LFS, this parameter is then used to calculate the flow rate. This gives a voltage output up to 5 V at 10 mA maximum. In conjunction with this, a second sensor measures the line pressure. The Control PCB, which is the same for all Trip Amplifiers, contains a micro-controller, EPROM & EEPROM memories, other logic circuits and an alpha-numeric LCD module that is mounted directly onto the PCB. A keypad is fitted to the front panel of the Trip Amplifier and is connected to the Control PCB via a flexible ribbon cable.

The TX9151 has 4 variants, depending on the output at terminals T9-10:

Dual relay output; 4-20 mA output; 0.4-2 V output – standard; 0.4-2 V output – PD543.

The TX9151 has the following safety description:

Terminals T1-T8, T11-T12

T1 (sensor 1 supply), T2 (sensor 1 signal in) & T6 (zero volts)	T4 (sensor 2 signal in) & T3 (signal out) [See note1]	T5-T6 (supply)	T7-T8 (relay)	T11 (relay reset) & T6	T12 (power on delay) & T6
Uo = 7.14 V Io = 75 mA Po = 0.31 W	Ui = 16.5 V Ci = 1.2 nF Li = 0	Ui = 16.5 V Ci = 1.2 nF Li = 0	Uo = 0 Ui = 20 V Pi = 2.3W	Uo = 16.5 V Io = 5 mA Po = 20 mW	Uo = 16.5 V Io = 5 mA Po = 20 mW



T1 (sensor 1 supply), T2 (sensor 1 signal in) & T6 (zero volts)	T4 (sensor 2 signal in) & T3 (signal out) [See note1]	T5-T6 (supply)	T7-T8 (relay)	T11 (relay reset) & T6	T12 (power on delay) & T6
Co = 5 μ F Lo = 100 μ H	Uo = 16.5 V Io = 5 mA Po = 20 mW Co = 120 nF Lo/Ro = 50 μ H/ Ω		Ci = 0 Li = 0	Co = 120 nF Lo/Ro = 50 μ H/ Ω Ui = 0 Ci = 0 Li = 0	Co = 120 nF Lo/Ro = 50 μ H/ Ω Ui = 0 Ci = 0 Li = 0

Note 1: For the purpose of system assessment, it should be noted that cable connected to terminal T5 from the supply also feeds sensor 2 (typically a line pressure sensor).

Terminals T9/T10: the parameters depend on the variant as follows:

Dual relay (TX9151.31)	4-20 mA (TX9151.32)	0.4-2 V (TX9151.33) [standard version]	0.4-2 V (TX9151.33.PD543)
Uo = 0 Ui = 20 V Pi = 2.3W Ci = 0 Li = 0	Uo = 16.5 V Io = 472 mA Po = 1.95 W Co = 120 nF Lo/Ro = 50 μ H/ Ω	Uo = 16.5 V Io = 50 mA Po = 0.21 W Co = 120 nF Lo/Ro = 50 μ H/ Ω	Uo = 7.14 V Io = 50 mA Po = 0.21 W Co = 56 μ F Lo/Ro = 20 μ H/ Ω

Variation 1 - This variation introduced the following change:

- The use of pad printing as an alternative method of marking was recognised.

Variation 2 - This variation introduced the following change:

- The addition of the TX9151 Liquid Flow Trip Amplifier to the existing range of Trip Amplifiers was allowed, the description being amended accordingly.

Variation 3 - This variation introduced the following changes:

- The recognition of minor drawing modifications; these amendments are administrative or involve changes to the design that do not affect the aspects of the product that are relevant to explosion safety.
- The removal of the input voltage from the marking drawing.
- The name of the equipment was changed to become the TX91xx Series Trip Amplifiers, thereby encompassing the type TX9151.

Variation 4 - This variation introduced the following change:

- A more detailed safety description for the TX9131/2/5 was specified.

Terminals T1-T8, T11-T12

T1-T2 (sensor power)	T3-4 (sensor signal)	T5-T6 (supply)	T7-T8 (relay)	T11-T12 (relay reset/power on delay)
Uo = 16.5 V Ci = 2.4 nF Li = 0	Uo = 16.5 V Io = 33 mA Po = 135 mW Ci = 1.2 nF Li = 0	Ui = 16.5 V Ci = 3.6 nF Li = 0	Uo = 0 Ui = 20 V Ci = 0 Li = 0	Uo = 16.5 V Ui = 0 Ci = 0 Li = 0

Note: terminals T1 and T2 are connected directly to the supply terminals T5-6, so have the same output parameters as the mining power supply.



Terminals T9-T10

Dual relay	4-20 mA	0.4-2 V	5-15 Hz
Uo = 0 Ui = 20 V Ci = 0 Li = 0	Uo = 16.5 V Ci = 0 Li = 0	Uo = 16.5 V Ci = 0 Li = 0	Uo = 0 Ui = 20 V Pi = 2.5 W Ci = 0 Li = 0

Variation 5 - This variation introduced the following changes:

- To recognise that the value of the output voltage of any terminal that has a previously designated Uo of 16.5 V to be equal to the Uo of the equipment connected to the supply terminals T5-T6 up to a maximum of 16.5 V.

Variation 6 - This variation introduced the following change:

- To allow a modification to the TX9136 Programmable Trip Amplifier circuit so as to remove the fuse and replace it with resistive current limitation. Other minor circuit changes will enable the TX9136 to provide sensor cable fault diagnosis.

Variation 7 - This variation introduced the following change:

- The control PCB was redesigned.

Variation 8 - This variation introduced the following change:

- Assessment of the existing parameters for the TX9131 Trip amplifier (defining Io and Po parameters at terminal T9/T10 for the existing 4-20 mA output), the Product Description being amended.
- Assessment of the addition of input parameters for the TX9131 Trip Amplifier at terminal T9/T10 for connection with a certified barrier, as a result the Product Description was amended and a Specific Condition Of Use was introduced.

Variation 9 - This variation introduced the following change:

- Recognise the new version, TX9131.xx.xx.SV Trip amplifier with reduced Io and Po parameters at the 40-20mA output terminals T9/T10 and subsequently the product description was amended.
- Recognise modification of the safety components for the TX9131.xx.xx.SV Trip amplifier model for providing the reduced parameters for Io and Po at terminals T9/T10.

New set of parameters for Terminals T9-T10 for the model TX9131.xx.xx.SV

Terminals T9-T10 (TX9131.xx.xx.SV only)

4-20 mA

Uo = 16.5 V	Io = 0.1 A	Po = 0.413 W	Ci = 0	Li = 0
Ui = 5.4V	Ii = 0.9 mA	Pi = 1.2 mW		

Refer to Certificate Annexe.

Variation 10 - This variation introduced the following change:

- To permit the use of an alternative LCD module and the corresponding Control PCB layout changes.
- To permit minor BOM modifications of the Control PCB.

Variation 11 - This variation introduced the following change:

- Add an alternative compound for the reed relay.



Variation 12 - This variation introduced the following change:

- i. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, EN 50014:1997 and EN 50020:1994 were updated to EN IEC 60079-0:2018, EN 60079-11:2012 and IEC 60079-11:2023 Edition 7.
- ii. 5-15 Hz output option removed due to component obsolescence.
- iii. Equipment name corrected on the certificate.

16 Drawings and documents:

16.1 Technical documents:

Refer to Certificate Annex.

16.2 Associated reports and certificate history:

Issue	Date	Report number	Comment
0	2 December 1999	R52X6308A	The release of the prime certificate.
1	16 November 2000	52V6983	The introduction of Variation 1.
2	4 July 2001	R52A6519A	The introduction of Variation 2. (Re issued 15 March 2002 to correct the safety parameters, report R52A8478A refers)
3	5 March 2002	R52A8478A	The introduction of Variation 3.
4	9 August 2002	52V9206	The introduction of Variation 4.
5	14 March 2005	R52V13167A	The introduction of Variation 5.
6	25 February 2010	R20650A/00	This Issue covers the following changes: • All previously issued certification was rationalised into a single certificate, Issue 6, Issues 0 to 5 referenced above are only intended to reflect the history of the previous certification and have not been issued as documents in this format. • The introduction of Variation 6.
7	17 August 2017	R70135369A	This Issue covers the following changes: • EC Type-Examination Certificate in accordance with 94/9/EC updated to EU Type-Examination Certificate in accordance with Directive 2014/34/EU. (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. Variations to such EC Type-Examination Certificates may continue to bear the original certificate number issued prior to 20 April 2016.) • The introduction of Variation 7.
8	26 June 2018	R70176480A	The introduction of Variation 8.
9	22 March 2019	R70216373A	The introduction of Variation 9.
10	31 October 2019	0433	Transfer of certificate Sira 99ATEX2136X from Sira Certification Service to CSA Group Netherlands B.V.
11	06 January 2020	R80025892A	The introduction of Variation 10.



This certificate and its schedule may only be reproduced in its entirety and without change.
CSA Group Netherlands B.V. Utrechtseweg 310, Building B42, 6812AR Arnhem, The Netherlands.



Issue	Date	Report number	Comment
12	31 January 2025	R80237337A	The introduction of Variation 11.
13	17 July 2025	R80237344A	The introduction of Variation 12.

17 **Specific conditions of use** (denoted by "X" after the certificate number):

- 17.1 The TX913x Trip Amplifiers shall be installed in an outer enclosure that provides an ingress protection of at least IP54 to EN 60529. Metallic enclosures shall also comply with clause 8.2 of EN IEC 60079-0:2018.
- 17.2 The outer enclosure shall be marked in a visible, external location with an additional label that displays at least the following information:
Contains Trolex TX91xx Programmable Trip Amplifiers
Ex ia I Ma (Ta = -20 °C to +70 °C)
Sira 99ATEX2136X
if the enclosure is manufactured from plastics or incorporates a plastics component with a surface area in excess of 100 cm², then it shall also be marked with a static warning label:
"STATIC HAZARD! DO NOT RUB WITH A DRY CLOTH"
- 17.3 If the outer enclosure carries a static warning label, then it shall not be installed in a location where it is likely to be subjected to conditions that may induce static charges, e.g. high velocity dust laden air.
- 17.4 This certificate only relates to the TX91xx Trip Amplifiers and does not cover the function of any other electrical apparatus installed in the outer enclosure.
- 17.5 The internal temperature of this apparatus may rise above 150 °C under normal or fault conditions; therefore, care shall be taken when the enclosure is opened to ensure that no dust enters the apparatus.
- 17.6 Connection to any external supply at terminals T9/T10 for the TX9131 Trip Amplifier shall be done in a parallel configuration only.

18 **Essential health and safety requirements of Annex II** (EHSRs):

The relevant EHSRs that are not addressed by the standards listed in item 9 of this certificate have been identified and conformity of the product demonstrated in the reports listed in item 16.2.

19 **Remarks and additional information:**

The use of this certificate is subject to the regulations applicable to holders of CSA Group Netherlands B.V. certificates.

Compliance of the product with the applicable safety requirements of the relevant industrial standards has not been verified and is not covered by this certificate.

19.1 **Conditions of manufacture:**

- 19.1.1 The products covered by this certificate incorporate previously certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices, and the manufacturer shall inform CSA of any modifications of the devices that may impinge upon the explosion safety design of their products.
- 19.1.2 It is the manufacturer's responsibility to take all reasonable steps to ensure that the user or installer complies with the requirements detailed in Special Conditions for Safe Use 1.9 and retains evidence to this effect.



This certificate and its schedule may only be reproduced in its entirety and without change.
CSA Group Netherlands B.V. Utrechtseweg 310, Building B42, 6812AR Arnhem, The Netherlands.



- 19.1.3 In accordance with IEC 60079-11:2023 clause 10.4, each manufactured item shall be subjected to an inspection for encapsulation and conformal coating. No damage shall be evident, such as cracks in the compound, exposure of the encapsulated/coated parts, flaking, inadmissible shrinkage, swelling, decomposition, failure of adhesion or softening.



This certificate and its schedule may only be reproduced in its entirety and without change.
CSA Group Netherlands B.V. Utrechtseweg 310, Building B42, 6812AR Arnhem, The Netherlands.



Certificate Annexe

Document History

Issue 0

Drawing	Sheet	Rev.	Date	Title
P5093.27	1 of 1	C	21 Jan 97	Reed Relay
P5460.01	1 of 1	A	07 Jul 97	Circuit Diagram Control P.C.B.
P5460.07	1 of 2	B	25 Feb 99	General Assembly
P5460.07	2 of 2	B	25 Feb 99	General Arrangement of Enclosure
P5460.45	1 of 1	A	21 Jan 98	Interconnection Block Diagram
P5460.109	1 of 1	A	18 May 98	Circuit Diagram 5-15 Hz Module P.C.B.
P5460.111	1 of 1	A	25 Sep 98	Circuit Diagram Modifications for 5-15 Hz Modules Output P.C.B.
P5460.127	1 of 1	A	25 Nov 99	Label Details
P5460.29	1 to 7	A	09 Jan 98	Output PCB
P5460.38	1 to 3	A	09 Jan 98	Circuit Diagram Output P.C.B. (V, I, KTY81 Input)
P5460.40	1 to 7	A	09 Jan 98	Output PCB
P5460.100	1 to 3	A	09 Jan 98	Circuit Diagram Output P.C.B. (Thermocouple Input)
P5460.41	1 to 3	A	09 Jan 98	Circuit Diagram Output P.C.B. (PT100 Input)
P5460.82	1 to 7	A	09 Jan 98	Output PCB
P5460.28	1 to 7	A	09 Jan 98	Output PCB
P5460.37	1 to 3	A	09 Jan 98	Circuit Diagram Output P.C.B. (Bridge Input)
P5460.02	1 of 3	A	09 Jan 98	Circuit Diagram Output P.C.B. (A.C. RMS Input)
P5460.02	2 of 3	A	09 Jan 98	Circuit Diagram Output P.C.B. (A.C. RMS Input)
P5460.02	3 of 3	B	26 Nov 99	Circuit Diagram Output P.C.B. (A.C. RMS Input)
P5460.5	1 to 7	A	09 Jan 98	Output PCB
P5460.23	1 to 7	A	09 Jan 98	Output PCB
P5460.26	1 to 3	A	09 Jan 98	Circuit Diagram Output P.C.B. (A.C. Peak Input)
P5460.113	1 to 4 of 5	A	25 Feb 99	Output PCB
P5460.114	1 of 1	A	26 Feb 99	Certified Circuit Diagram

Issue 1

Drawing	Sheet	Rev	Date	Title
P5460.07	1 of 1	C	13 Jun 00	General Assembly

Issue 2

Drawing	Sheets	Rev.	Date	Title
P5460.07	1 of 1	C	13 Jun 00	General Assembly
P5514.01	1 to 3	B	04 Feb 02	Certified Circuit Diagram Output PCB (Flow Sensor Input)
P5514.03	1 of 1	B	04 Feb 02	Output PCB, Flow Sensor Input [artwork]

Issue 3

Drawing	Sheets	Rev.	Date	Title
P5460.07	1 of 2	D	20 Feb 02	All versions: general assembly
P5460.02	3 of 3	C	06 Feb 02	TX9137 (RMS) output board parts list
P5460.26	3 of 3	B	06 Feb 02	TX9137 (Peak) output board parts list
P5460.37	3 of 3	B	06 Feb 02	TX9136 output board parts list
P5460.38	3 of 3	B	06 Feb 02	TX9131/2/5 output board parts list
P5460.41	3 of 3	B	06 Feb 02	TX9134 output board parts list
P5460.100	3 of 3	B	06 Feb 02	TX9133 output board parts list

This annexe may only be reproduced in its entirety and without change.
CSA Group Netherlands B.V. Utrechtseweg 310, Building B42, 6812AR Arnhem, The Netherlands.



Drawing	Sheets	Rev.	Date	Title
P5460.127	1 of 1	B	26 Feb 02	Label details
P5514.01	3 of 3	B	06 Feb 02	TX9151 output board parts list

Issues 4 and 5 - No new drawings were introduced.

Issue 6

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
P5460.142	1 of 3	A	16 Feb 10	TX9136 Circuit Diagram – Strain Gauge Output PCB

Issue 7

Drawing	Sheets	Rev.	Date(Sira stamp)	Title
P5460-01.ATEX.IECEx	1 to 2	A	07 Aug 17	ATEX/IECEx Certification Schematic Control PCB
P5460-03.ATEX.IECEx	1 to 3	A	16 Aug 17	Control PCB ATEX/IECEx Certification PCB Layout

Issue 8 - No new drawings were introduced.

Issue 9

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
P5460.38.SV	2	A	18 Mar 19	Circuit Diagram Output P.C.B (4 to 20mA Input)
P5460.1800	2	A	18 Mar 19	Certification Information for User Manual (ATEX)

Issue 10. No new drawings were introduced.

Issue 11

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
P5460.200.ATEX.IECEx	1 to 2	A	16 Dec 19	Control PCB – Revised Display Schematic and BOM
P5460.201.ATEX.IECEx	1 to 3	A	16 Dec 19	Control PCB- Revised Display PCB layout

Issue 12

Drawing	Sheets	Rev.	Date (Stamp)	Title
P5093.27	1 of 1	D	8 Jan 25	Reed Relay

Issue 13

Documents Introduced

Drawing	Sheets	Rev.	Date (Stamp)	Title
P5093.1000	1 of 1	A	27 Jun 25	Additional encapsulation details for Reed Relay P5093.27
P5460.1000	1 of 1	A	27 Jun 25	PCB coating details for TX913x/TX9151 Trip Amplifier
P5460.1802	1 of 1	A	27 Jun 25	Label details
P5460.45	1 of 1	B	27 Jun 25	Interconnection Block Diagram
P5460.38	1 to 3	C	27 Jun 25	Circuit Diagram Output P.C.B. (V, I, KTY81 Input)
P5460.38.SV	1 to 2	B	27 Jun 25	Circuit Diagram Output P.C.B (4 to 20mA Input)
P5460.100	1 to 3	C	27 Jun 25	Circuit Diagram Output P.C.B. (Thermocouple Input)
P5460.41	1 to 3	C	27 Jun 25	Circuit Diagram Output P.C.B. (PT100 Input)
P5460.37	1 to 3	C	27 Jun 25	Circuit Diagram Output P.C.B. (Bridge Input)
P5460.02	1 to 3	D	27 Jun 25	Circuit Diagram Output P.C.B. (A.C. RMS Input)
P5460.26	1 to 3	C	27 Jun 25	Circuit Diagram Output P.C.B. (A.C. Peak Input)
P5460.114	1 of 1	B	27 Jun 25	Certified Circuit Diagram
P5514.01	1 to 3	C	27 Jun 25	Certified Circuit Diagram Output PCB (Flow Sensor Input)
P5460.142	1 to 3	B	27 Jun 25	TX9136 Circuit Diagram – Strain Gauge Output PCB

This annexe may only be reproduced in its entirety and without change.
CSA Group Netherlands B.V. Utrechtseweg 310, Building B42, 6812AR Arnhem, The Netherlands.



Documents Removed

Drawing	Sheets	Rev.	Date (Stamp)	Title
P5460.109	1 of 1	A	18 May 98	Circuit Diagram 5-15 Hz ModulebP.C.B.
P5460.111	1 of 1	A	25 Sep 98	Circuit Diagram Modifications for 5-15 Hz Modules Output P.C.B.
P5460.127	1 of 1	B	26 Feb 02	Label details
P5460.1800	1 to 2	A	18 Mar 19	Certification Information for User Manual

This annexe may only be reproduced in its entirety and without change.
CSA Group Netherlands B.V. Utrechtseweg 310, Building B42, 6812AR Arnhem, The Netherlands.