



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 08ATEX1046X** Issue: **3**

4 Equipment: **6**** Series Temperature and Pressure Switches Utilising the
46-XXXXXXX Electrical Assembly**

5 Applicant: **Custom Control Sensors Inc.**

6 Address: 21111 Plummer Street
Chatsworth
CA 91311
USA

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

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, 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 Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2009 EN 60079-1:2007 EN 60079-31:2009

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:



II 2 G D

Ex d IIC T5

Ex d IIC T6

Ex tb IIIC T100°C Db IP66/7

Ex tb IIIC T85°C Db IP66/7

Tamb -40°C to +86°C

Tamb -40°C to +71°C

Project Number 27930

C. Ellaby
Deputy Certification Manager

This certificate and its schedules may only be reproduced in its entirety and without change.



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13 DESCRIPTION OF EQUIPMENT

The 46-XXXXXXX Series Electrical Assembly as detailed in Figure 1, is a range of hermetically sealed switching devices that are activated by a belleville disc-spring that snaps over centre at a predetermined force. They are of basic cylindrical shape with a hexagonal section in the middle. One end of the equipment contains a diaphragm actuator assembly, the other end is 1/2"-14NPT or M20 x 1.5 male threaded portion that contains a potting compound through which the equipment wiring passes. The internal switch may be either single pole double throw or double pole double throw with the electrical ratings of 1 A, 5 A or 11 A.

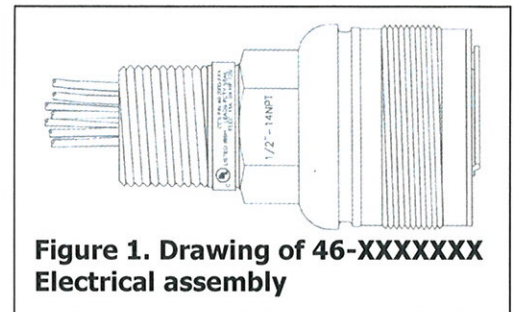


Figure 1. Drawing of 46-XXXXXXX Electrical assembly

Design options and model references

Electrical assembly can be a solid cap machined construction.

46-1EFA11P

- ↑ Internal wiring diagrams: P = Pressure/Temperature; V = Vacuum
- ↑ Electrical schematic – Colour code: 1 = Free leads; 2 = Cable
- ↑ Cable/Wire length: 1 = 18"; 2 = 72"; 3 = 120", 4 = 1m; 5 = 2m; 6 = 6m; 7 = 60"; 8 = 3m
- ↑ Electrical connection: A = 1/2"-14 NPT; B = M20 x 1.5
- ↑ C = Cable; F = Free Leads; H = Halogen Free Cable; T = Teflon Wires.
- ↑ Type: E = Single Pole Double Throw; M = Double Pole Double Throw
- ↑ Electrical rating: 1 = 1 Amp; 2 = 5 Amps; 3 = 11 Amps

Variation 1 - This variation introduced the following change:

- i. The recognition of minor drawing modifications; these changes are administrative and do not affect the aspects of the product that are relevant to explosion safety.

Variation 2 - This variation introduced the following changes:

- i. Following appropriate re-assessment to demonstrate compliance with the requirements of the latest EN 60079 series of standards, the documents originally listed, EN 60079-0:2006, EN 60079-1:2007, EN 61241-0:2004 and EN 61241-1:2004, were replaced by those currently listed in section 1.7, the markings in section 12 were updated accordingly to recognise the requirements of the latest standards.
- ii. The lower ambient temperature limit was increased from -34°C to -40°C.
- iii. The use of an alternative putty compound was endorsed.



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Variation 3 - This variation introduced the following changes:

- i. An increase in overall length for the 46-XE – single pole double throw version of the equipment by 5.9 mm [0.232"] was endorsed.
- ii. A change to the position and dimensions of the O ring groove was acknowledged.
- iii. Removal of the Turck connection arrangement and the subsequent removal of the Turck cabling option were approved.
- iv. Correction and clarification of drawing information with respect to the marking which now becomes;
Ex d IIC T6 Gb Ex tb IIIC T100°C Db IP66/67 T_{amb} -40°C to 71°C
Ex d IIC T5 Gb Ex tb IIIC T85°C Db IP66/67 T_{amb} -40°C to 86°C
- v. For completeness, the routine overpressure test requirements that are defined in the previously certified drawings have now been included in the Conditions of Certification.
- vi. The addition of the optional length of 3 metres for the cabling.
- vii. Correction of drawing information to add the optional length of 60" for the cabling.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report No.	Comment
0	4 August 2008	R51A12196A	The release of the prime certificate.
1	6 October 2008	R51A18968A R51A12196B	This Issue covers the following changes: <ul style="list-style-type: none">• The introduction of Variation 1.• Report number R51A12196B replaced R51A12196A.
2	25 May 2011	R22319A/00	The introduction of Variation 2.
3	20 November 2013	R27930A/00	The introduction of Variation 3.

15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

- 15.1 The 6**** Series Temperature and Pressure Switches utilising the 46-XXXXXXX Electrical Assembly shall be installed such that the field wiring is protected from mechanical damage and is not be subjected to tension or torque. If the field wiring is terminated in an explosive atmosphere, then a suitably certified termination facility shall be used.

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.



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**Sira 08ATEX1046X
Issue 3**

17 CONDITIONS OF CERTIFICATION

- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.
- 17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.
- 17.3 Each and every enclosure shall be subjected to an overpressure test at a minimum value of 12.95 bar for a minimum of 10 seconds with no damage or permanent deformation.



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Certificate Annexe

Certificate No.: Sira 08ATEX1046X

Equipment: 6**** Series Temperature and Pressure Switches
Utilising the 46-XXXXXXX Electrical Assembly

Applicant: Custom Control Sensors International



Issue 0

Drawing	Sheets	Rev.	Date (Sira stamp)	Description
46-XEXXXXX	1 of 5	A	24 Jul 08	Electrical Assy
46-XDXXXXX	2 of 5	A	24 Jul 08	Electrical Assy
46-XEXXXXX	3 of 5	A	24 Jul 08	Electrical Assy
46-XDXXXXX	4 of 5	A	24 Jul 08	Electrical Assy
46-XXXXXXX	5 of 5	A	24 Jul 08	Electrical Assy

Issue 1

Drawing	Sheets	Rev.	Date (Sira stamp)	Description
46-XXXXXXX	1 of 5	B	01 Oct 08	Electrical Assy
46-XXXXXXX	2 of 5	B	01 Oct 08	Electrical Assy
46-XXXXXXX	3 of 5	B	01 Oct 08	Electrical Assy
46-XXXXXXX	4 of 5	B	01 Oct 08	Electrical Assy
46-XXXXXXX	5 of 5	B	01 Oct 08	Electrical Assy

Issue 2

Drawing	Sheets	Rev.	Date (Sira Stamp)	Title
46-XXXXXXX	1 of 5	D	16 May 11	Electrical Assy
46-XXXXXXX	2 of 5	D	16 May 11	Electrical Assy
46-XXXXXXX	3 of 5	D	16 May 11	Electrical Assy
46-XXXXXXX	4 of 5	D	16 May 11	Electrical Assy
46-XXXXXXX	5 of 5	D	16 May 11	Electrical Assy

Issue 3

Drawing	Sheets	Rev	Date (Sira stamp)	Title
46-XXXXXXX	1 of 5	E	28 Oct 13	Electrical Assy
46-XXXXXXX	2 of 5	E	28 Oct 13	Electrical Assy
46-XXXXXXX	3 of 5	E	28 Oct 13	Electrical Assy
46-XXXXXXX	4 of 5	E	28 Oct 13	Electrical Assy
46-XXXXXXX	5 of 5	E	28 Oct 13	Electrical Assy

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Applicant: Custom Control Sensors International

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Drawing	Sheets	Rev.	Date (Sira stamp)	Description
46-XEXXXXX	1 of 5	A	24 Jul 08	Electrical Assy
46-XDXXXXX	2 of 5	A	24 Jul 08	Electrical Assy
46-XEXXXXX	3 of 5	A	24 Jul 08	Electrical Assy
46-XDXXXXX	4 of 5	A	24 Jul 08	Electrical Assy
46-XXXXXXX	5 of 5	A	24 Jul 08	Electrical Assy

Issue 1

Drawing	Sheets	Rev.	Date (Sira stamp)	Description
46-XXXXXXX	1 of 5	B	01 Oct 08	Electrical Assy
46-XXXXXXX	2 of 5	B	01 Oct 08	Electrical Assy
46-XXXXXXX	3 of 5	B	01 Oct 08	Electrical Assy
46-XXXXXXX	4 of 5	B	01 Oct 08	Electrical Assy
46-XXXXXXX	5 of 5	B	01 Oct 08	Electrical Assy

Issue 2

Drawing	Sheets	Rev.	Date (Sira Stamp)	Title
46-XXXXXXX	1 of 5	D	16 May 11	Electrical Assy
46-XXXXXXX	2 of 5	D	16 May 11	Electrical Assy
46-XXXXXXX	3 of 5	D	16 May 11	Electrical Assy
46-XXXXXXX	4 of 5	D	16 May 11	Electrical Assy
46-XXXXXXX	5 of 5	D	16 May 11	Electrical Assy

Issue 3

Drawing	Sheets	Rev	Date (Sira stamp)	Title
46-XXXXXXX	1 of 5	E	28 Oct 13	Electrical Assy
46-XXXXXXX	2 of 5	E	28 Oct 13	Electrical Assy
46-XXXXXXX	3 of 5	E	28 Oct 13	Electrical Assy
46-XXXXXXX	4 of 5	E	28 Oct 13	Electrical Assy
46-XXXXXXX	5 of 5	E	28 Oct 13	Electrical Assy