



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 05ATEX1300X** Issue: **9**

4 Equipment: **CCTV Camera System Type: MIC440**

5 Applicant: **Bosch Security Systems**

6 Address: **Glasslaan 2
5616 LW Eindhoven
Netherlands**

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 60079-0:2006 EN 60079-1:2007
IEC 60079-0:2007-10, Ed 5 (With regards to marking only)

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
Ex d IIC T6 (Ta -20°C to +60°C) Gb

Project Number 23602
C. Index 23

C Ellaby
Certification Officer

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Sira Certification Service

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13 DESCRIPTION OF EQUIPMENT

The Type MIC440 is an integrated, fully functional, CCTV, camera head system designed as a plug and play device that can be remotely operated by a control system.

The unit requires a steady state power source of 15 V AC providing an initial peak power consumption of 20 W Max, all functions operating simultaneously at full power start up, with a nominal operating power of 6 W Max. The unit is powered from one of the various dedicated 230 V AC power supply units (PSU) and positioned up to 25 m from the camera head system. The PSU is further connected to an external mains or battery power supply. The MIC1-440 also provides a video output signal. The video signal and the control data are normally routed through the power supply unit.

The external components are manufactured from either aluminium with alocrom and paint surface coated or stainless steel. The unit comprises a main body with two arms located 180 degrees from each other. These arms hold a spherical enclosure with a cylindrical, circular window. From the base of the main body, a support shaft is mounted on an industrial standard 4" (101.6mm) PCD mounting base.

Internally, the main body housing is fitted with a mounted motor and gear mechanism, which will rotate it and the arms holding the spherical enclosure via a slip ring system in continuous 360° rotation in the vertical plane. The spherical enclosure contains a module zoom lens camera system together with the control electronics for operating the camera head functions and a further motor gear mechanism allowing spherical enclosure to pivot in the horizontal plane. The enclosure also contains a motorised mechanism to drive an external wiper. The base provides an integral terminal compartment and is fitted with either an M25 x 1.5 - 6H or M20 x 1.5 - 6H cable entry that accommodates a suitably certified, cable gland. The base has 4 x M8 clearance holes to enable the unit to be mounted to a range of industrial standard CCTV mounting brackets or a series of bespoke mounting bracket.

Design option: When stainless steel is used, it may be painted, all flamepath surfaces remaining uncoated.

Variation 1 - This variation introduced the following changes:

- i. The use of the following, alternative cameras was permitted:
Sony FCB – Ex 1000
- ii. The thread adhesive was changed.
- iii. The existing camera references were clarified.

Variation 2 - This variation introduced the following change:

- i. The addition of a clarifying note on drawing 440-300 sheet 2 of 2.

Variation 3 - This variation introduced the following changes:

- i. The company address was changed, formerly Unit 1 & 2, Taplins Court, Church Lane, Hartley Wintney, RG27 8XU.
- ii. Minor drawing changes were acknowledged.





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Variation 4 - This variation introduced the following change:

- i. The inclusion of two cylindrical ferrite beads around the conductors within the pan shaft assembly immediately behind the connector.

Variation 5 - This variation introduced the following changes:

- i. A further re-assessment of the equipment for compliance with the latest European Standards. The marking in section 12 has been amended accordingly.
- ii. 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 6 - This variation introduced the following changes:

- i. The company name was changed from Forward Vision CCTV to Bosch Security Systems Limited; the address remains unchanged.
- ii. The name of the equipment was changed from Type MIC1-440 to Type MIC440.
- iii. The recognition of minor drawing modifications; these changes do not affect the aspects of the product that are relevant to explosion safety.
- iv. The addition of wiper assembly was endorsed.

Variation 7 - This variation introduced the following changes:

- i. The dimensions of flamepath numbers 4 and 5 were modified, as shown on drawing 440-300 sheet 2 of 2.
- ii. Minor tolerance changes of dimensions associated with the wiper arm were recognised.

Variation 8 - This variation introduced the following changes:

- i. The applicant's name and address was changed:

From:	To:
Bosch Security Systems Limited	Bosch Security Systems
Unit 4, Fleet Business Park	Glasslaan 2
Sandy Lane	5616 LW Eindhoven
Church Crookham	Netherlands
Hampshire	
GU52 8BF	
UK	
- ii. The recognition of minor design modifications; (minor dimensional changes and the addition of two jacking points); these modifications involve changes to the design that do not affect the aspects of the product that are relevant to explosion safety.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

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14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	10 October 2006	R51A11346A	The release of prime certificate.
1	28 February 2007	R51A16328A	Re-issued to introduce the changes covered by report number R51A16328A.
2	18 May 2007	R51A16697A	This Issue covers the following changes: <ul style="list-style-type: none">All previously issued certification was rationalised into a single certificate, Issue 2, Issues 0 and 1 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 1.
3	2 November 2007	R51A17434A	The introduction of Variation 2.
4	23 April 2008	R51A18153A	The introduction of Variation 3.
5	25 July 2008	R51A18650A	The introduction of Variation 4.
6	11 September 2008	R51A18846A	The introduction of Variation 5.
7	26 June 2009	R51A20375A	The introduction of Variation 6.
8	16 July 2010	R22700A/00	The introduction of Variation 7.
9	23 November 2010	R23602A/00	The introduction of Variation 8.

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

- 15.1 The maximum constructional gap (I_c) of the cylindrical flamepaths are less than that required by Table 2 of EN 60079-1:2004, as detailed below:

Flamepath	Maximum Gap (mm)
Between the tilt centre bore and tilt bearing housing shaft (x2)	0.089
Between the yoke arm bore and tilt resolver shaft	0.061
Between the yoke arm bore and yoke arm blanking cap shaft	0.061
Between the yoke arm bore and yoke spigot shaft	0.061
Between the pan body top bore and yoke spigot shaft (x2)	0.061
Between the upper cover bore and wiper motor mount shaft	0.060
Between the wiper motor mount bore and base flange shaft	0.100

- 15.2 The pan body to pan body top are to be secured with hexagonal cap head, M5 - 0.8 x 10 mm long, S316 stainless steel grade, A4/70 special fasteners.

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.

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.

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Sira Certification Service

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Certificate Annexe

Certificate Number: Sira 05ATEX1300X
Equipment: CCTV Camera System Type: MIC1-440
Applicant: Bosch Security Systems



Issue 0 (The drawings associated with this Issue were replaced by those listed in Issue 1.)

Issue 1

Drawing No.	Sheet	Rev.	Date (Sira stamp)	Description
230-004	1 of 1	1	28 Feb 07	M25 Locknut
410-013	1 of 1	1	28 Feb 07	Wiper Blade
410-014	1 of 1	1	28 Feb 07	Wiper Arm
410-301	1 of 1	1	28 Feb 07	Wiper Arm Assy
440-001	1 of 1	1	28 Feb 07	Base Adaptor
440-002	1 of 1	1	28 Feb 07	Base Flange
440-003	1 of 1	1	28 Feb 07	Pan Shaft
440-004	1 of 1	1	28 Feb 07	Pan Body
440-005	1 of 1	1	28 Feb 07	Pan Body Top
440-007	1 of 1	1	28 Feb 07	Yoke Spigot
440-008	1 of 1	1	28 Feb 07	Yoke Arm
440-009	1 of 1	1	28 Feb 07	Yoke Arm Blanking Cap
440-010	1 of 1	1	28 Feb 07	Tilt Resolver Shaft
440-011	1 of 1	1	28 Feb 07	Tilt Drive Shaft
440-014	1 of 1	1	28 Feb 07	Lower Cover
440-015	1 of 1	1	28 Feb 07	Upper Cover
440-020	1 of 1	1	28 Feb 07	Tilt Centre
440-022	1 of 1	1	28 Feb 07	Wiper Shaft
440-024	1 of 1	1	28 Feb 07	Wiper Motor Mount
440-026	1 of 1	1	28 Feb 07	Glass Lens
440-027	1 of 1	1	28 Feb 07	Window Locking Ring
440-029	1 of 1	1	28 Feb 07	Product Label
440-030	1 of 1	1	28 Feb 07	Tilt Bearing Housing
440-031	1 of 1	1	28 Feb 07	Entry Thread Label
440-300	1 of 2	1	28 Feb 07	General Arrangement Drawing
440-300	2 of 2	1	28 Feb 07	General Notes/Flamepath Details
440-301	1 of 1	1	28 Feb 07	Pan Base Assy
440-302	1 of 1	1	28 Feb 07	Exd Wiper Shell Assy
440-303	1 of 1	1	28 Feb 07	Tilt Centre Assy
440-304	1 of 1	1	28 Feb 07	Pan Shaft Assy
440-305	1 of 1	1	28 Feb 07	Pan Bearing/Motor Plate Assy
440-306	1 of 1	1	28 Feb 07	Tilt Motor Plate Assy
440-307	1 of 1	1	28 Feb 07	Camera Plate Assy
440-308	1 of 1	1	28 Feb 07	Camera Assy
440-309	1 of 1	1	28 Feb 07	Tilt Resolver Assy
440-310	1 of 1	1	28 Feb 07	Yoke Arm 'A' Potting Assy
440-311	1 of 1	1	28 Feb 07	Yoke Arm 'B' Potting Assy
440-312	1 of 1	1	28 Feb 07	Glazed Tilt Centre Assembly

Issue 2

Drawing No.	Sheet	Rev.	Date (Sira stamp)	Description
440-305	1 of 1	2	18 May 07	Pan Bearing/Motor Plate Assy
440-306	1 of 1	2	18 May 07	Tilt Motor Plate Assy
440-308	1 of 1	2	18 May 07	Camera Assy

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Certificate Annexe

Certificate Number: Sira 05ATEX1300X
Equipment: CCTV Camera System Type: MIC1-440
Applicant: Bosch Security Systems



Issue 3

Drawing No.	Sheet	Rev.	Date (Sira stamp)	Description
440-300	2 of 2	2	01 Nov 07	General Notes/Flamepath Details

Issue 4

Drawing No.	Sheet	Rev.	Date (Sira stamp)	Description
440-020	1 of 1	2	22 Apr 08	Tilt Centre
440-029	1 of 1	2	22 Apr 08	Product Label
440-302	1 of 1	2	22 Apr 08	Exd Wiper Shell Assy

Issue 5

Drawing No.	Sheet	Rev.	Date	Description
440-304	1 of 1	2	07 Jul 08	Pan Shaft Assy

Issue 6

Drawing No	Sheet	Rev.	Date	Description
440-029	1 of 1	3	05 Sep 08	Product Label
440-300	2 of 2	3	10 Sep 08	General Arrangement Drawing

Issue 7

Drawing No.	Sheet	Rev.	Date (Sira stamp)	Description
230-004	1 of 1	2	24 June 09	M25 Locknut
412-010	1 of 1	1	24 June 09	Wiper Blade
440-008	1 of 1	2	24 June 09	Yoke Arm
440-029	1 of 1	4	24 June 09	Product Label
440-032	1 of 1	1	24 June 09	Wiper Arm
440-300	1 of 2	2	24 June 09	General Arrangement Drawing
440-313	1 of 1	1	24 June 09	Wiper Arm Assy

Issue 8

Drawing No.	Sheets	Rev.	Date (Sira stamp)	Title
440-004	1 of 1	2	08 Jul 10	Pan Body
440-005	1 of 1	2	08 Jul 10	Pan Body Top
440-032	1 of 1	2	08 Jul 10	Wiper Arm
440-300	2 of 2	4	08 Jul 10	General Notes/Flamepath Details
440-301	1 of 1	2	08 Jul 10	Pan Base Assy
440-303	1 of 1	2	08 Jul 10	Tilt Centre Assy
440-314	1 of 1	A	08 Jul 10	Flamepath 5 Additional Sealing Modification

Issue 9

Drawing No.	Sheets	Rev.	Date (Sira stamp)	Title
440-008	1 of 1	3	14 Nov 10	Yoke Arm
440-014	1 of 1	2	14 Nov 10	Lower Cover
440-015	1 of 1	2	14 Nov 10	Upper Cover
440-026	1 of 1	2	14 Nov 10	Glass Lens
440-029	1 of 1	5	14 Nov 10	Product/Serial No Label

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