



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 06ATEX3392X** Issue: **4**

4 Equipment: **Range of Rotary Switch On/Off Valve Indicators**

5 Applicant: **Palmstierna International AB (part of the Flowserve Group)**

6 Address: **Korta Gatan 9  
SE-171 54 Solna  
Sweden**

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: 2004      EN 60079-1: 2004      EN 61241-0:2006      EN 61241-1:2004

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 GD  
Ex d IIB T5  
Ex tD A21 IP65  
(Ta -20°C to +55°C)

D R Stubbings BA MIET  
Certification Manager

Project Number 24204  
C. Index 03

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#### 13 DESCRIPTION OF EQUIPMENT

The UltraSwitch™ Limit Switches provide local and remote position indication for automated valves. They are fitted with a range of pre-wired, switch limit options that suit a variety of electrical applications, refer to product nomenclature, and are constructed from the following major parts:

- Main housing base
- Main housing cover (Either flat or Ultradome)
- Bronze bearing inserts and limit switch shaft
- Associated O-ring seals

The UltraSwitch™ Limit Switches rely on the following aspects for explosion protection and have no welded joints:

- Threaded flamepaths
- Cylindrical flamepaths
- O-ring seals
- Overall mechanical strength

All user connections are made at a numbered terminal strip and both external bonding and internal grounding locations are provided for installation. Certain UltraSwitch™ Limit Switches feature the option to have a visual indicator with “red=closed” and “green=open” for intuitive local position determination.

#### Switch Element Code Electrical Ratings

Electrical Ratings (Model DCA- series options denoted with [ ])	Switch Element Type
15.1 A, ½ hp, 125/250, VAC; 0.5 A, 125 VDC; 0.25 A, 250 VDC; 5 A, 120 VAC	M1 and MA
15.1 A, ½ hp, 125/250, VAC; 0.5 A, 125 VDC; 0.25 A, 250 VDC; 5 A, 120 VAC	MC
10 A, ½ hp, 125 VAC	MD and MS
1 A, 125 VAC; 50 mA, 24 VDC	MG
15 A, 125/250 VAC; 3/5 hp, 125 VAC ½ hp, 250 VAC	M3
0.25 A, 200 VDC; 0.5 A, 100 VDC; 1 A, 50 VDC; 0.35 A, 140 VAC, 50 W	P4
0.25 A, 120 VAC, 60 Hz; 28 VDC, 3 W	P5
4 A, 120 VAC; 2 A 240 VAC	NU
10 A, ½ hp, 125 VAC	MB
24 VDC, 2 A; 120 VAC, 1 A	PE
3 A, 120 VAC; 2 A, 24 VDC	PP and [P]
3 A, 120 VAC; 0.5 A, 24 VDC	PT and [T]
0.5 A, 120 VAC; 0.3 A 24 VDC	PX
0.5 A, 120 VAC; 0.3 A 24 VDC	PL
5-25 VDC	N8, NP, NQ
10-60 VDC, 200 mA	NR, NS, NT
31 VDC, 26 mA	FZ
5-60 VDC, 100 mA	N9 and [M]

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“Ultraswitch” Model Types

Customer specific Model Ref.			DCA	3	E	W	1	N	28L			
Customer specific Model Ref.			DCA	1	E	T	1	N	28A			
Standard Model Ref.	A	N	XCL	U	2	M1	14	0	0	2	0	0
Nomenclature Example	i	ii	iii	iv	v	vi	vii	viii	ix	x	xi	xii

i	Manufacturer Label	Single Alphanumeric Character
ii	Shaft Type	Single Alphanumeric Character
iii	Housing	DCA- Aluminum Housing with ¾ NPT Conduit XCL- Aluminum Housing with ¾ NPT Conduit XML – Aluminum Housing with M25 Conduit
iv	Position Indicator	Single Alphanumeric Character
v	Qty of Switch Elements	Single Alphanumeric Character
vi	Switch Element Type	M– P+F NBB3-V3-Z4 (Customer specific Model Ref.) M1 – SPDT mechanical MA – M1 switch with cams for 3 position control MD – DPDT mechanical with Cams for DA 3 position control MS – DPDT mechanical with Cams for SR 3 position control MC – SPDT mechanical with terminal block rated for 250F MG – SPDT mechanical- gold plated M3 - DPDT Mechanical MB – DPDB mechanical – Licon P4 – SPST proximity P5 – SPDT proximity PE – Sabre SPDT proximity PP – Phazer SPDT proximity P – Phazer SPDT proximity (Customer specific Model Ref.) PL – Phazer SPDT proximity w/LED PT – BRS SPDT proximity T – BRS SPDT proximity (Customer specific Model Ref.) PX – BRS SPDT proximity w/LED N8 – P+F NJ2-V3-N N9– P+F NBB3-V3-Z4 NQ – P+F NJ4-12GK-N (Namur) NR – P+F NJ4-12GM40-E1 NS – P+F NJ4-12GM40-E2 NT – P+F NJ4-12GK40-E2 NP – P+F SJ3-5N (Namur) NU – GO SWITCH proximity p# 35-13319-A1A FZ – As-I card with (2) type 4 (P4) switches
vii (a)	Certification Type Standard Model Ref.	14 – General Purpose 18 – CSA approved 19 – ATEX approved 25 – IECEx approved

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**Sira Certification Service**

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vii (b)	Area Selection (Customer specific Model Ref.)	1 – ATEX approved
Viii (a)	Options Standard Model Ref.	Single Alphanumeric Character
Viii (b)	Mounting Options (shaft) (Customer specific Model Ref.)	N – Namur STD - Non Namur
ix (a)	Wiring Options Standard Model Ref.	Single Alpha-Numeric Character
ix (b)	Bracket Options (Customer specific Model Ref.)	Single Alphanumeric Character
x	Minimum Open Terminals	Single Alphanumeric Character
xi (a)	Special Options Standard Model Ref.	0 – No special options (denotes standard "Buna"(Nitrile) O-rings temp range of –15 F to +250 F V – "Viton"(Flourocarbon) O-rings - temp range of –15 F to +400 F All other Single Alphanumeric Characters do not affect Certification
xi (b)	Special Options (Customer specific Model Ref.)	Blank – No special options (denotes standard "Buna"(Nitrile) O-rings temp. range of –15 F to +250 F
xii	Coating Options (Not on FLP surfaces)	Single Alpha-Numeric Character

**Variation 1** - This variation introduced the following changes:

- i. The product switch element table of types was updated to include types P and T references together with the introduction of the new type N9 and type M switch elements.
- ii. The product nomenclature tables were updated and include alternative customer specific model "DCA- series" reference numbers.

**Variation 2** - This variation introduced the following change:

- i. The option to permit different fixing holes as shown on drawing XM0407.

**Variation 3** - This variation introduced the following changes:

- i. The product nomenclature tables were updated to include an alternative customer specific model, "DCA3EW1N28L".
- ii. The company name and address, previously Flowserve Corporation, 1350 North Mountain Springs Parkway, PO Box 2200, Springville, Utah 84663 – 9003, USA, was changed to Flowserve US Inc., 1978 Foreman Drive, Cookeville, TN 38501, USA.

**Variation 4** - This variation introduced the following change:

- i. The company name and address, previously Flowserve US Inc., 1978 Foreman Drive, Cookeville, TN 38501, USA was changed to Flowserve Corporation, Korta Gatan 9 SE-171 54 Solna Sweden.



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#### 14 DESCRIPTIVE DOCUMENTS

##### 14.1 Drawings

Refer to Certificate Annexe.

##### 14.2 Associated Sira Reports and Certificate History

Issue	Date	Report No.	Comment
0	10 December 2007	R51A14448A	The release of the prime certificate.
1	25 March 2008	R51L17918A	The introduction of Variation 1.
2	20 July 2009	R51A20611A	This Issue covers the following changes: <ul style="list-style-type: none"><li>All previously issued certification was rationalised into a single certificate, Issue 2, Issues 0 to 2 referenced above are only intended to reflect the history of the previous certification and have not been issued as documents in this format.</li><li>The introduction of Variation 2.</li></ul>
3	9 March 2010	R21889A_00	The introduction of Variation 3.
4	07 March 2011	R24204A/00	The introduction of Variation 4.

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

##### 15.1 The maximum constructional gap ( $i_c$ ) is less than that required by Table 1 of EN 60079-1:2004 as detailed below:

Flamepath	Maximum Gap (mm)	Comment
Cover and base	0.058	Flanged joint
Operating rod and cover bushing	0.088	Cylindrical spigot joint
Cover and bushing	0.00	Interference fit
Operating rod and base bushing	0.088	Cylindrical spigot joint
Base and bushing	0.00	Interference fit

#### 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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# Certificate Annexe

Certificate Number: Sira 06ATEX3392X  
Equipment: Range of Rotary Switch On/Off  
Valve Indicators  
Applicant: Palmstierna International AB



## Issue 0

Drawing No.	Sheets	Rev	Date (Sira Stamp)	Description
X01329*	1 of 1	0	03 Dec 07	Name Plate
X01219*	1 of 1	0	03 Dec 07	Name Plate – Assembly in Sweden
L02812	1 of 1	5	30 Nov 07	Layout, Switch, XCL, Flamepath certification
X01142	1 of 1	1	30 Nov 07	Casting, Cover, Switch, XCL Ultradome
XM0401	1 of 2	0	30 Nov 07	Cover, Switch, XCL, Ultradome machining
XM0401	2 of 2	0	30 Nov 07	Cover, Switch, XCL, Ultradome machining
X01143	1 of 2	1	30 Nov 07	Casting, Base, Switch, XCL
X01143	2 of 2	1	30 Nov 07	Casting, Base, Switch, XCL
XM0398	1 of 2	0	30 Nov 07	Base, switch, XCL ¾" Conduit
XM0398	2 of 2	0	30 Nov 07	Base, switch, XCL ¾" Conduit
XM0399	1 of 2	A	30 Nov 07	Base, switch, XCL M25
XM0399	2 of 2	A	30 Nov 07	Base, switch, XCL M25
X01141	1 of 1	1	30 Nov 07	Casting, Cover, Switch, XCL Flattop
XM0400	1 of 2	0	30 Nov 07	Cover, Switch, XCL, Flattop machining
XM0400	2 of 2	0	30 Nov 07	Cover, Switch, XCL, Flattop machining
103682-B	1 of 1	D	30 Nov 07	Limit Switch shaft W/O position indicator - Flat top
105761-A	1 of 1	B	30 Nov 07	Limit Switch shaft W/O position indicator (NAMUR) - Dome top
105762-B	1 of 1	A	30 Nov 07	Limit Switch shaft W/O position indicator (NAMUR) - Flat top
XM0339	1 of 1	0	30 Nov 07	Limit Switch shaft - Dome top (NAMUR) Flat top
XM0340	1 of 1	0	30 Nov 07	Limit Switch shaft W/O position indicator (NAMUR) - Dome top

\* These drawings were amended by Sira and the client on 12 December 2007.

## Issue 1

Drawing No.	Sheets	Rev	Date (Sira Stamp)	Description
X01329	1 to 2	A	14 Mar 08	Name Plate
X01219	1 to 2	D	14 Mar 08	Name Plate – Assembly in Sweden

## Issue 2

Drawing No.	Sheets	Rev	Date (Sira Stamp)	Description
XM0407	1 to 2	0	20 Jul 09	Base switch XML cover thread M8 x 1

## Issue 3

Drawing No.	Sheets	Rev	Date (Sira Stamp)	Description
X01329	1 of 2	B	10 Mar 10	Nameplate, Switch XCL, ATEX Rating Cookeville Manufacture
X01195	1 of 1	H	10 Mar 10	Nameplate, Switch XCL, Dual Rating

## Issue 4

Drawing No.	Sheets	Rev.	Date (Sira stamp)	Title
X01329	1 to 2	C	09 Feb 11	Nameplate Switch XCL, ATEX Rating

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