



**IECEX Certificate
of Conformity**

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx SIR 06.0007Xissue No.:3
Certificate history:
[Issue No. 3 \(2011-3-14\)](#)
[Issue No. 2 \(2010-3-19\)](#)
[Issue No. 1 \(2008-3-25\)](#)
[Issue No. 0 \(2007-12-14\)](#)

Status: **Current**

Date of Issue: **2011-03-14** Page 1 of 4

Applicant: **Palmstierna International AB (part of the Flowserve Group)**
Korta Gatan 9
SE-171 54 Solna
Sweden

Electrical Apparatus: **Range of Switch On/Off Valve Indicator**
Optional accessory:

Type of Protection: **Flameproof**

Marking: Ex d IIB T5 Tamb -20°C to +55°C, Ex tD A21 IP65

Approved for issue on behalf of the IECEx Certification Body: D R Stubbings BA MIET

Position: Certification Manager

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](#).

Certificate issued by:
SIRA Certification Service
Rake Lane
Eccleston
Chester
CH4 9JN
United Kingdom





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Manufacturer:

Palmstierna International AB (part of the Flowserve Group)
Korta Gatan 9
SE-171 54 Solna
Sweden

Manufacturing location(s):

**Palmstierna
International AB**
Korta Gatan 9
SE-171 54 Solna
Sweden

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2004 Edition: 4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-1 : 2003 Edition: 5	Electrical apparatus for explosive gas atmospheres - Part 1: Flameproof enclosure 'd'
IEC 61241-0 : 2004 Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements
IEC 61241-1 : 2004 Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures "tD"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS: *A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

[GB/SIR/ExTR07.0140/00](#)

[GB/SIR/ExTR08.0033/00](#)

[GB/SIR/ExTR10.0043/00](#)

[GB/SIR/ExTR11.0021/00](#)

Quality Assessment Report:

[GB/SIR/QAR07.0005/00](#)

[GB/SIR/QAR09.0007/00](#)

[NO/NEM/QAR08.0008/03](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

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.

For Switch Element Code Electrical Ratings see Annexe

CONDITIONS OF CERTIFICATION: YES as shown below:

1. The maximum constructional gap (ic) is less than that required by Table 1 of IEC 60079-1:2003 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



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Issue 1 this Issue introduced the following changes	
1.	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.
2.	The product nomenclature tables were updated and include alternative customer specific model "DCA- series" reference numbers.
Issue 2 – this Issue introduced the following changes:	
1.	The option to permit different fixing holes as shown on drawing XM0407
2.	The product nomenclature tables were updated to include an alternative customer specific model, "DCA3EW1N28L".
3.	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.
Issue 3 – this Issue introduced the following changes:	
1	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.

Annexe to: IECEx SIR 06.0007X Issue 3
 Applicant: Flowserve Corporation
 Apparatus: Range of Rotary Switch On/Off
 Valve Indicators



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

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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
vii (b)	Area Selection (Customer specific Model Ref.)	1 – ATEX approved
Viii (a)	Options Standard Model Ref.	Single Alphanumeric Character

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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”(Flouorocarbon) 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