



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 06.0007X issue No.:5

Status: **Current**

Date of Issue: **2015-06-03** Page 1 of 4

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

Certificate history:
Issue No. 5 (2015-6-3)
Issue No. 4 (2012-11-15)
Issue No. 3 (2011-3-14)
Issue No. 2 (2010-3-19)
Issue No. 1 (2008-3-25)
Issue No. 0 (2007-12-14)

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 IP66/IP67

Approved for issue on behalf of the IECEx Certification Body: C Ellaby

Position: Deputy Certification Manager

Signature:
(for printed version)



2015-06-03

Date:

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](http://www.iecex.com).

Certificate issued by:

SIRA Certification Service
CSA Group
Unit 6, Hawarden Industrial Park
Hawarden
Deeside
CH5 3US
United Kingdom

sira
CERTIFICATION





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

Additional 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/ExTR11.0021/00

GB/SIR/ExTR08.0033/00
GB/SIR/ExTR12.0262/00

GB/SIR/ExTR10.0043/00
GB/SIR/ExTR15.0143/00

Quality Assessment Report:

GB/SIR/QAR07.0005/00
NO/NEM/QAR08.0008/05

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 change:	
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.
Issue 4 – this Issue introduced the following changes:	
1.	The recognition of minor modifications both administrative and technical; these amendments do not affect the aspects of the product that are relevant to explosion safety.
2.	The addition of an O-ring groove between the cover and body of the product, this addition resulted in a decrease to the length of a flanged flamepath.
3.	The introduction of a stainless steel shaft for use in the listed range of rotary switches and valve indicators; this shaft is detailed on drawing XC1414C.
4.	Due to a previous change to the Company name and address, drawing number XO1219 is a duplication of XO1329 therefore it has been removed.
Issue 5 – this Issue introduced the following changes:	
1.	The IP rating was changed from IP65 to IP66/IP67 following acceptance of test data for IPX6 and IPX7 in accordance with IEC 60529.
2.	The current rating for switch designation suffix "PE" was changed from 2 A to 1 A.
3.	Switch options R1, P1 and FN were introduced and switch options NU, PX and PL were removed
4.	The model order code was updated.
5.	The description was amended to reflect the change, where appropriate.
6.	Nameplate drawing X01285 was introduced.

Annexe to: IECEx SIR 06.0007X Issue 5
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
- 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
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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
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]
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, R1 and [M]
10-60 VDC, 100 mA	P1
24 VDC, 0.12A	FN

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Applicant: Flowserve Corporation
Apparatus: Range of Rotary Switch On/Off Valve Indicators



"Ultraswitch" Model Types

Standard Model Ref.	A	N	XCL	U	2	M1	-	14	-	0	0	2	0	0
Nomenclature Example	A	B	C	D	E	F		G		H	I	J	K	L

A	Brand sticker	Single Alphanumeric Character
B	Shaft Type	Single Alphanumeric Character
C	Housing	XCL – Aluminum Housing with ¾ NPT (North American Std) XML – Aluminum Housing with M25 (European Std)
D	Position Indicator	Single Alphanumeric Character
E	Qty of Switch Elements	Single Alphanumeric Character
F	Switch Element Type	M1 – SPDT mechanical M3 – DPDT Mechanical MA – M1 switch with cams for 3 position control MB – DPDB mechanical – Licon MC – SPDT mechanical with terminal block rated for 250°F MD – DPDT mechanical with Cams for DA 3 position control MG – SPDT mechanical – gold plated MS – DPDT mechanical with Cams for SR 3 position control N8 – Proximity P+F NJ2-V3-N (DOW = S) N9 – Proximity P+F NBB3-V3-Z4 NP – Proximity P+F SJ3-5N (Namur) NQ – Proximity P+F NJ4-12GK-N (Namur) NR – Proximity P+F NJ4-12GM40-E1 NS – Proximity P+F NJ4-12GM40-E2 NT – Proximity P+F NJ4-12GK40-E2 R1 – Proximity P+F NBB3-V3-Z4-3G-3D (DOW = M) P1 – Proximity P+F NCB2-12GM40-Z0 P4 – SPST proximity ALEPH PS-6132 P5 – SPDT proximity Hamlin 59 135-030 PE – SPDT proximity Sabre PP – SPDT proximity Phaser (DOW = P, K) PT – SPDT proximity Phaser BRS (DOW = T, B) FN – Device net controller card. (2) type P4 switches FZ – As-I card with (2) type 4-(P4) switches
G	Certification Type	14 – General Purpose 18 – CSA and ATEX approved 19 – ATEX approved 25 – IECEx approved M3 – ATEX and IECEx approved
H	Analogue options	Single Alphanumeric Character
I	Wiring Options	Single Alpha-Numeric Character
J	Minimum Open Terminals	Single Alphanumeric Character
K	Accessories	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
L	Coating Options (Not on FLP surfaces)	Single Alpha-Numeric Character

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Applicant: Flowserve Corporation
Apparatus: Range of Rotary Switch On/Off Valve Indicators



Dow Customer Specific

Standard Model Ref.	D	N	A	3	E	B	1	N
Nomenclature Example	A	B	C	D	E	F	G	H

A	Brand	D	Dow		
B	Rating Selection	N	North American Standards, Special Marker Strip 3/4" NPT.		
		C	European Standards, Special Marker Strip 1/2" NPT.		
C	Housing Selection	A	Explosion Proof, Aluminum		
D	Indicator Section	1	Flat Top Cover, no indicator		
		3	Ultradome, Black/Yellow		
		5	Ultradome for 155 Deg. Diverter Valves		
		6	Ultradome for 135 Deg. Diverter Valves		
E	Language Selection	0	No indications		
		D	Dutch		
		G	German		
		P	Portuguese		
		S	Spanish		
I		I	Italian		
		F	Switch Selection	B	2 x Phazer III BRS
		K		2 x Phazer III	
		T		2 x Phazer II BRS	
		P		2 x Phazer II	
M	2 x P+F NBB3-V3-Z4-3G-3D				
S	2 x NJ2-V3-N				
G	Area Selection	1	Standard		
		2	12-Position Terminal for North America		
H	Mounting Selection	N	NAMUR Configuration, NAMUR Shaft		
		STD	Non NAMUR Configuration, Standard Shaft		