

[1]

EC-TYPE EXAMINATION CERTIFICATE



[2]

**Equipment or Protective System intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC**

[3]

EC-Type Examination Certificate Number: **DEMKO 06 ATEX 0425693X**

[4]

Equipment or Protective System: **Visual Signaling Devices Series WV450XD and WV450XE**

[5]

Manufacturer: **Federal Signal Corporation Signal Division**

[6]

Address: **2645 Federal Signal Drive, University Park, IL 60466 USA**

[7]

This equipment or protective system and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

[8]

UL International Demko A/S, notified body number 0539 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report no. **10CA29648**

[9]

Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2006

EN 60079-1:2007

EN 60079-7:2007

[10]

If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system 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, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by the certificate.

[12]

The marking of the equipment or protective system shall include the following:

II 2 G **Ex d IIB + H₂ T3 - T4 -55°C ≤ Tamb ≤ 55°C**

II 2 G **Ex de IIB + H₂ T3 - T4 -20°C ≤ Tamb ≤ 55°C**

Certification Manager

Jan-Erik Storgaard

Date of issue: 2006-08-11

Re-issued: 2011-02-07

Notified Body

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the standard in safety

**Underwriters
Laboratories**

[14]

[15]

The flameproof visual indicators consist of a cylindrical black polymeric body ending with a glass Dome of different possible colors. The glass dome is mechanically secured to a dome cover and forms a cemented joint between the two parts. The dome cover forms a threaded joint with the body and is also mechanically secured against moving. The body end of series WV450XD is completed with a plug forming a threaded joint with the body, and a threaded opening for suitable field wiring means. The body end of series WV450XE also has an increased safety terminal wiring box attached to the bottom of the body accessed via a flameproof bushing in the threaded opening of the body.

Form Nos. WV450XD 05 - 024 R
I II III IV

WV450XD – Flameproof 'd' model only
WV450XE – Flameproof with additional Increased Safety 'e' terminal wiring box

- 05 – 5 Joules
- 10 – 10 Joules
- 15 – 15 Joules
- 21 – 21 Joules

024 – 24-48VDC
110 – 110VAC, 50/60 Hz
220 – 220-248VAC, 50/60 Hz
220 – 220 VAC, 50/60 Hz, 21 Joule Version Only

A-Z - Colors

WV450XD: $-55^{\circ}\text{C} \leq T_a \leq 55^{\circ}\text{C}$
WV450XE: $-20^{\circ}\text{C} < T_a < 55^{\circ}\text{C}$

EEEx d IIB+H₂ T4

Model WV450XD05-024X, rated 24-48VDC, 0.87/0.48A, 5 Joule
Model WV450XD10-024X, rated 24-48VDC, 0.91/0.46A, 10 Joule
Model WV450XD15-024X, rated 24-48VDC, 0.94/0.48A, 15 Joule

EEEx d IIB+H₂ T3

Model WV450XD-5-110X, rated 110VAC, 0.17A, 5 Joule
Model WV450XD10-110X, rated 110VAC, 0.27A, 10 Joule
Model WV450XD15-110X, rated 110VAC, 0.57A, 15 Joule
Model WV450XD21-110X, rated 110VAC, 0.75A, 21 Joule

EEEx d IIB+H₂ T3

Model WV450XD05-220X,	rated 220-248VAC,	0.12A,	5 Joule
Model WV450XD10-220X,	rated 220-248VAC,	0.23A,	10 Joule
Model WV450XD15-220X,	rated 220-248VAC,	0.33A,	15 Joule
Model WV450XD21-220X,	rated 220VAC,	0.50A,	21 Joule

[13]

[14]

Schedule
EC-TYPE EXAMINATION CERTIFICATE No.
DEMKO 06 ATEX 0425693X
Report: 10CA29648

EEx de IIB+H₂ T4

Model WV450XE05-024X, rated 24-48VDC, 0.87/0.48A, 5 Joule
 Model WV450XE10-024X, rated 24-48VDC, 0.91/0.46A, 10 Joule
 Model WV450XE15-024X, rated 24-48VDC, 0.94/0.48A, 15 Joule

EEx de IIB+H₂ T3

Model WV450XE05-110X, rated 110VAC, 0.17A, 5 Joule
 Model WV450XE10-110X, rated 110VAC, 0.27A, 10 Joule
 Model WV450XE15-110X, rated 110VAC, 0.57A, 15 Joule
 Model WV450XE21-110X, rated 110VAC, 0.75A, 21 Joule

EEx de IIB+H₂ T3

Model WV450XE05-220X, rated 220-248VAC, 0.12A, 5 Joule
 Model WV450XE10-220X, rated 220-248VAC, 0.23A, 10 Joule
 Model WV450XE15-220X, rated 220-248VAC, 0.33A, 15 Joule
 Model WV450XE21-220X, rated 220VAC, 0.50A, 21 Joule

Installation instructions

See Instructions Manual and Special conditions for safe use.

Routine tests

12.4 Bar (180 psi) enclosure overpressure test at room ambient is to be conducted upon every sample and then visually inspected for any signs of deformity.

[16]

Report No.

Project Report No.: 04NK25693 (Hazardous Location Testing)
 07CA63309 (Hazardous Location Testing)
 10CA29648 (Hazardous Location Testing)

Documents:**Description:****Drawing No.:****Rev. Level:****Date:**

WV450XD Assembly	AT8595104A	A3	2011-01-18
WV450XE Assembly	AT8595105A	A3	2011-01-18
110/240 Vac Schematic	AT2581921B	B1	2010-06-03
110 Vac, 5 J Layout and Parts List	AT2001921B-01	B	2007-12-06
110 Vac, 10 J Layout and Parts List	AT2001921B-02	B	2007-12-06
110 Vac, 15 J Layout and Parts List	AT2001921B-03	B	2007-12-06
110 Vac, 21 J Layout and Parts List	AT2001921B-07	B	2010-06-03
240 Vac, 5 J Layout and Parts List	AT2001921B-04	B	2007-12-06
240 Vac, 10 J Layout and Parts List	AT2001921B-05	B	2007-12-06
240 Vac, 15 J Layout and Parts List	AT2001921B-06	B	2007-12-06
220 Vac, 21 J Layout and Parts List	AT2001921B-08	B	2010-06-03
24-48 Vdc, 5 J Schematic	AT2581926A	A	2005-09-30
24-48 Vdc, 5 J Layout and Parts List	AT2001926A-01	A	2005-09-30
24-48 Vdc, 10 J Layout and Parts List	AT2001926A-02	A	2005-09-30
24-48 Vdc, 15 J Layout and Parts List	AT2001926A-03	A	2005-09-30
Flash Tube Assembly	AT8107177A	A3	2005-09-30
Transformer 1 Assembly	AT120518A	A	2005-09-30
Transformer 2 Assembly	AT120C501A (2 pages)	A3	2005-09-30
WV450X Manual	2562015D (16 pages)	D	-

[13]

[14]

Schedule
EC-TYPE EXAMINATION CERTIFICATE No.
DEMKO 06 ATEX 0425693X
Report: 10CA29648

[17] Special conditions for safe use:

- WARNING - POTENTIAL ELECTROSTATIC CHARGING HAZARD - This device must only be cleaned with a damp cloth.
- When installing use wire rated 85°C or higher.
- Contact the manufacturer for information on the dimensions of the flameproof joints.

[18] Essential Health and Safety Requirements

Concerning ESR this Schedule verifies compliance with the ATEX directive only. The manufacturer's Declaration of Conformity declares compliance with other relevant Directives.

Additional information

The Series WV450XD and WV450XE has in addition passed the tests for Ingress Protection to IP66 in accordance with EN60529: 1991/A1 2001.

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in ANNEX III to Directive 94/9/EC of the European Parliament and the Council of 23 March 1994.