

1 EC-TYPE EXAMINATION CERTIFICATE



2 Equipment or Protective systems intended for use in Potentially
Explosive Atmospheres - Directive 94/9/EC

3 EC-Type Examination Certificate No: FM09ATEX0020X

4 Equipment or protective system: Sentinel S3 Valve Position Transmitter
(Type Reference and Name)

5 Name of Applicant: Moniteur Devices, Inc.

6 Address of Applicant: 36 Commerce Road
Cedar Grove, NJ 07009
USA

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

8 FM Approvals Ltd, notified body number 1725 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 confidential report number:

3034114EC dated 24 April 2012

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN60079-0:2009, EN60079-1:2007, EN60079-31:2009, EN60529:1991 + A1:2000

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, 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 this certificate.

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



II 2 G Ex d IIB+H₂ T6 Gb Ta = -40°C to +79°C; IP66/67

II 2 D Ex tb IIIC T85°C Db Ta = -40°C to +79°C; IP66/67

Andrew Was
Certification Manager, FM Approvals Ltd.

Issue date: 28th August 2012

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SCHEDULE

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13 Description of Equipment or Protective System:

General - The Sentinel S3 Valve Position Transmitter is a mechanical device that graphically displays the angular displacement of a quarter turn valve or any other device operating between 0 and 90 degrees. The equipment is coupled to a quarter turn valve by a shaft that passes through the enclosure body. The same shaft also passes through the enclosure cover and is used for visual indication of the valve's position on models equipped with a visual indicator. The visual indicators are available in several colors. The Sentinel S3 Valve Position Transmitter is available with various mechanical switches, reed switches or inductive sensors for valve status output indication to remote devices. The enclosure is available with one to three NPT or metric conduit openings for customer connections.

Construction - The Sentinel S3 Series Valve Position Transmitter enclosure is constructed of A360 or A380 aluminum alloy. The housing is available with a flat cover or an indicator cover with a plastic window for viewing the position of valve (i.e. open, closed). The aluminum alloy enclosure contains one to three wiring entries available as 1/2 inch – 14 NPT, 3/4 inch -14 NPT, M20 or M25 openings. The enclosure cover is secured to the enclosure base by eight M5 x 0.8 stainless steel captive screws. A stainless steel shaft protruding from the bottom of the enclosure forms a cylindrical joint. The same stainless steel shaft forms another cylindrical joint on the cover of the enclosure for models with a shaft position indicator. The equipment is provided with internal and external grounding facilities. O-rings are provided between the enclosure base and cover, the shaft and enclosure base and the shaft and enclosure cover for environmental and dust protection. The maximum free internal volume of the housing is approximately 720 cm³.

Ratings - The Sentinel S3 Series Valve Position Transmitter can be configured with a range of various switches and/or sensors. The product is marked with various combinations of the following electrical ratings depending on the switches and/or sensors installed: 2A, 24Vdc; 0.5A, 125Vdc; 0.25A, 250Vdc; 3A, 120Vac; 15A, 250Vac.

axxb-xcde-xxxxffxx-Mg..g-Uxxx-Vx-Wxxxx-Xhhh-Yi-Zjjj. Sentinel S3 Valve Position Transmitter.

a = Series S or A.

b = Bearing type B, S, 6 or C.

c = Switch type 0, 1, 2, 3, 4, 5, 7, 8, C, E, K, L, M, N, S, T or X.

d = Switch quantity 0, 1, 2, 3, 4, 5, 6, 7 or 8.

e = Conduit connection type 0, 1, 2, 5, 6, 8, 9, A, B, C, E or F.

f = Housing configuration B1, B5 or BLANK.

g = Options M1, M2, M3, M4, M5, M6, M7 or M9. [Can have multiple entries listed sequentially. M9 option for A Series only.]

h = Custom conduit configuration 1, 3, 4, 5, N or M.

i = Custom switch configuration 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 30, 31, 32, 33, 34, 70, 71, 80, 81, 82, 83, 91, T0, T1, K0, K1, Q0, Q1, Q2, P1, P2, M0, M1, M2, M3, N0, N1, N2, N3, B1, B2, B3, B4, B5, B6, B7, B8, B9, BA, BB, BC, BD, BE, BF, BG, BH, C1, C2, C3, C4, D2, D3, D4, E1, E2, E3, E4 or EA.

j = Custom solenoid configuration 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D or BLANK.

x = Options not affecting equipment safety

14 Specific Conditions of Use:

1. Consult the manufacturer if dimensional information on the flameproof joints is necessary.
2. Follow the manufacturer's instructions to reduce the potential of an electrostatic charging hazard.
3. Consult the manufacturer for genuine replacement flange cover bolts. Captive M5x0.8 bolts with an overall length of 21 mm and a threaded length of 9 mm constructed of 316SS quality or better with a minimum yield strength of 91,000 psi are acceptable alternatives.

15 Essential Health and Safety Requirements:

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

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Member of the FM Global Group

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16 Test and Assessment Procedure and Conditions:

This EC-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Ltd's ATEX Certification Scheme.

17 Schedule Drawings

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body.

18 Certificate History

Details of the supplements to this certificate are described below:

Date	Description
1 st May 2012	Original Issue.
28 th August 2012	<u>Supplement 1:</u> Report Reference: 3046871 dated 17 th August 2012. Description of the Change: Addition of IP66 rating.

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