

Spectrex SharpEye™ 40/40 Series

Flame Detectors



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1 Hazardous area

Manufacturer

Rosemount
6021 Innovation Blvd
Shakopee, MN 55379

⚠ WARNING

Electrical shock

Keep covers tight while circuits are alive.

⚠ WARNING

Attention

Garder le couvercle bien fermé tant que les circuits sont sous tension.

Or the equivalent.

⚠ WARNING

Install a shield within 18-in. (457.2 mm) of the enclosure.

⚠ WARNING



Attention

Un scellement doit être installé à moins de 457.2 mm du boîtier.

1.1 ATEX/IECEX/UKCA

The flame detector series is labeled with the CE mark in accordance with the ATEX Directive 2014/34/EU and has been assessed and rated in accordance with UKCA Directive UKSI 2016: 1107.

Table 1-1: ATEX/IECEX/UKCA

Classification		Standards
SharpEye 40/40C Series	SharpEye 40/40D Series	
 II 2GD Ex db eb IIC T6...T4 Gb Ex tb IIIC T85 °C...T110 °C Db T6 (Tamb = -40 °C to +45 °C) T5 (Tamb = -40 °C to +60 °C) T4 (Tamb = -40 °C to +75 °C)	 II 2GD Ex db eb IIC T6...T4 Gb Ex tb IIIC T85 °C...T120 °C Db T6 (Tamb = -60 °C to +45 °C) T5 (Tamb = -60 °C to +60 °C) T4 (Tamb = -60 °C to +85 °C)	ATEX EN IEC 60079-0: 2018/AC: 2020 General Requirements EN 60079-1: 2014/AC: 2018 Flameproof Enclosure EN 60079-7: 2015/A1: 2018 Increased Safety EN 60079-31: 2014 Dust Protection By Enclosure IECEX IEC 60079-0: 2017 Ed.7 + COR1: 2020 General Requirements IEC 60079-1: 2014 + INT1/2020 Flameproof Enclosure IEC 60079-7: 2015 Ed.5.1 Increased Safety IEC 60079-31: 2022 Ed.3 Dust Protection By Enclosure UKCA EN IEC 60079-0: 2018 General Requirements EN 60079-1: 2014 Flameproof Enclosure EN 60079-7: 2015+A1: 2018 Increased Safety EN 60079-31: 2014 Dust Protection by Enclosure

ATEX Certificate number

CSANe 20ATEX1249X

IECEX Certificate number

IECEX SIR 20.0042X

UKCA Certificate number

CSAE 21UKEX1177X

1.2 FM/FMC

Table 1-2: FM/FMC

SharpEye 40/40C Series	SharpEye 40/40D Series
Class I, Division 1, Groups B, C, and D, T4A Class II, III, Division 1, Groups E, F, and G, T4A Class I, Division 2, Groups A, B, C, and D, T4 Ta = -40 °C to +75 °C Type 6P; IP 66/68 2 m for 45 minutes	Class I, Division 1, Groups B, C, and D, T4A Class II, III, Division 1, Groups E, F, and G, T4A Class I, Division 2, Groups A, B, C, and D, T4 Ta = -50 °C to +85 °C Type 6P; IP 66/68 2 m for 45 minutes

Table 1-3: United States and Canadian standards

United States standards		Canadian standards	
Class number	Date	Class number	Date
FM Class 3600	2018	CSA C22.2 No. 0.4	2013
FM Class 3615	2018	CSA C22.2 No. 0.5	R2012
FM Class 3616	2011	CSA C22.2 No. 25	R2009
NEMA [®] 250	2014	CSA C22.2 No. 30	R2012
ANSI/IEC 60529	2004	CSA C22.2 No. 94	R2011
ANSI/FM Class 3260	2015	CSA C22.2 No. 60529	R2010
N/A	N/A	ULC/ORD-C386-15	September 2015

FM Certificate number

PR450365

FM Report number

PR458388

1.3 CSA

For CSA C/US, only stainless steel enclosure is available.

Table 1-4: CSA C/US

Classification		Applicable requirements
SharpEye 40/40C Series	SharpEye 40/40D Series	
Class I, Division 1, Groups B, C, and D, T4A Class II, III, Division 1, Groups E, F, and G, T4A Class I, Division 2, Groups A, B, C, and D, T4 Ta = -40 °C to +75 °C IP66/68 Type 6P; IP 66/68 2 m for 45 minutes	Class I, Division 1, Groups B, C, and D, T4 Class II, III, Division 1, Groups E, F, and G, T4 Class I, Division 2, Groups A, B, C, and D, T4 Ta = -50 °C to +85 °C IP66/68 Type 6P; IP 66/68 2 m for 45 minutes	CSA C22.2 No. 0-20, 11th edition CSA C22.2 No. 61010-1-12 (R2017), 3rd edition CSA C22.2 No. 25-17, 4th edition CSA C22.2 No. 30: 20, 4th edition CSA C22.2 No. 213-17, 3rd edition CSA C22.2 No. 94.2-15, 2nd edition CSA C22.2 60529: 16, 2nd edition UL 61010-1, 3rd edition UL 121201, 9th edition UL 50E, 2nd edition FM Class 3600: 2018 FM Class 3611: 2018 FM Class 3615: 2018 FM Class 3616: 2011

CSA C/US Report number

70205025

1.4 Inmetro

Table 1-5: Marking

SharpEye 40/40C Series Flame Detector	SharpEye 40/40D Series Flame Detector
Ex db eb IIC T6...T4 Gb Ex tb IIIC T85 °C...T110 °C Db T6 (Tamb = -40 °C to +45 °C) T5 (Tamb = -40 °C to +60 °C) T4 (Tamb = -40 °C to +75 °C)	Ex db eb IIC T6...T4 Gb Ex tb IIIC T85 °C...T120 °C Db T6 (Tamb = -60 °C to +45 °C) T5 (Tamb = -60 °C to +60 °C) T4 (Tamb = -60 °C to +85 °C)

Applicable standards

ABNT NBR IEC 60079-0

ABNT NBR IEC 60079-1

ABNT NBR IEC 60079-7

ABNT NBR IEC 60079-31

Inmetro Certificate number

UL-BR 21.0165X (Rosemount)

UL-BR 22.4049X (Spectronix)

2 Performance

2.1 EN54-10

EN54-10: 2002+A1: 2005

The SharpEye 40/40 Flame Detector Series is approved per EN54-10 and CPR.

- The detector is approved per EN54-10 by FM.
- This test includes a functional test, environmental test, EMI/EMC test, and software check.

The detector classes' sensitivity settings are as follows:

Model	Sensitivity settings - Class I
SharpEye 40/40C Series	
SharpEye 40/40C-I	15, 30, 45, 65
SharpEye 40/40C-M	
SharpEye 40/40C-LB	15
SharpEye 40/40C-L4B	15, 28
SharpEye 40/40D Series	
SharpEye 40/40D-I	15, 30, 45, 65, 90
SharpEye 40/40D-M	
SharpEye 40/40D-LB	15, 28
SharpEye 40/40D-L4B	

EN54-10 Certificate number

2809-CPR-E0014

EN54-10 Report number

PR455049

3 Marine

3.1 DNV

Note

The DNV approval is applicable only to the SharpEye 40/40D models.

Table 3-1: Approval standards

	Type approval	MED B	MED D
Complies with:	DNV GL rules for classification: ships, offshore units, and high speed and light craft	Amended by implementing regulation "2022/1157" MED/ 3.51e EN 54-10:2002 incl. A1: 2005 IEC 60092-504: 2016, IEC 60533: 2015 SOLAS 74 Reg. II-2/7 IMO Res.MSC.36(63)-(199 4 HSC Code) 7 IMO Res.MSC.97(73)-(200 0 HSC Code) 7 IMO Res.MSC.98(73)-(FSS Code) 9 IMO MSC.1/ Circ.1242 IMO Res.MSC. 391(95)-(IGF Code) 11	Annex II, Module D in the directive 2014/90/EU and regulation (EU) 2017/306
SharpEye 40/40D-I	Classes:	<ul style="list-style-type: none"> • IEC 60092-504 (2001) inc Corr 1: (2011) • IEC 60533 (1999) • IEC 60945 (2002) • EN54-10: (2002) / A1(2005) 	<ul style="list-style-type: none"> • 2014/90/EU • (EU) 2017/306
SharpEye 40/40D-M	Temperature D		
SharpEye 40/40D-LB	Humidity B		
SharpEye 40/40D-L4B	Vibration B		
	EMC B		
	Enclosure C		
	Tests carried out		
	<ul style="list-style-type: none"> • DNVGL-CG-0339 • EN54-10:2002+A1: 2005 		

EC Type Examination Model B Certification No. MEDB000078F plus EC Type D Certification of Conformity No. MEDD00001WT issued by the Notification Body: DNV Notification Body No.: 0098.

We hereby declare that the following specified equipment complies with the Marine Equipment Directive 2014/90/EU amended by implementing regulation "2022/1157".

NOTICE

This device is not field repairable due to the meticulous alignment and calibration of the sensors and the respective circuits. Modifying or repairing the internal circuits may impair the system's performance and void the Emerson product warranty. Do not attempt to modify or repair the internal circuits or change their settings.

3.2 Marine Equipment Regulations (MER)

Marine Equipment Regulations (2016 SI 2016/1025)

MSN 1874 Amendment 6, item No. UK/3.51e.

SOLAS 74 as amended, Reg. II-2/7 & X/3 1994 HSC Code 7

2000 HSC Code 7

FSS Code 9

IGF Code 11

IMO MSC.1/Circ.1242

Type Examination Model B Certification No. MERB000078F plus
Model D QS-Certificate of Assessment No. MERD00001WT issued by
the Approved Body No.: 0097

4 Reliability

4.1 Safety Integrity Level (SIL)

The detectors of the flame detector series are suitable for safety-related applications in accordance with IEC 61508 up to SIL 2 in a single-channel configuration or up to SIL 3 in a redundant configuration.

Standards

IEC 61508 Parts 1-7: 2010

EN54-10: 2002 + A1: 2005



Certification Information
00925-0500-4975, Rev. AG
March 2024

For more information: [Emerson.com/global](https://emerson.com/global)

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