



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEX UL 13.0065X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 3	Issue 2 (2019-11-14)
Date of Issue:	2023-03-21		Issue 1 (2015-10-02)
Applicant:	Malema Engineering Corp. 1060 S. Rogers Circle Boca Raton, FL 33487 United States of America		Issue 0 (2013-10-24)
Equipment:	Intrinsically Safe Flow Switches, Type M-50X, M-60X, M-100X, M-200X		
Optional accessory:			
Type of Protection:	Intrinsic Safety "ia"		
Marking:	Ex ia IIC T6...T3 Ex ia III C T80...T150°C Da		

Approved for issue on behalf of the IECEx
Certification Body:

Katy A. Holdredge

Position:

Senior Staff Engineer

Signature:
(for printed version)

Date:
(for printed version)

2023-03-21

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 www.iecex.com or use of this QR Code.



Certificate issued by:

UL LLC
333 Pfingsten Road
Northbrook IL 60062-2096
United States of America





IECEX Certificate of Conformity

Certificate No.: **IECEX UL 13.0065X**

Page 2 of 4

Date of issue: 2023-03-21

Issue No: 3

Manufacturer: **Malema Engineering Corp.**
1060 S. Rogers Circle
Boca Raton, FL 33487
United States of America

Manufacturing locations: **Malema Engineering Corp.**
1060 S. Rogers Circle
Boca Raton, FL 33487
United States of America

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 equipment 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 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

This Certificate **does not** indicate compliance with 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 Reports:

[US/UL/ExTR13.0068/00](#)
[US/UL/ExTR13.0068/03](#)

[US/UL/ExTR13.0068/01](#)

[US/UL/ExTR13.0068/02](#)

Quality Assessment Report:

[US/UL/QAR13.0006/06](#)



IECEX Certificate of Conformity

Certificate No.: **IECEX UL 13.0065X**

Page 3 of 4

Date of issue: 2023-03-21

Issue No: 3

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The M-50X, M-60X, M-100X and M-200X Series flow switches are used to monitor increasing and decreasing flow. They utilize a single moving part which responds to fluid (liquid or gas) flowing within a system.

Please see Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- To ensure suitability for Group III, these switches shall be used with a cable fitting having an IECEx Certificate with a minimum IP5X rating.
- Warning - Enclosure contains aluminum. Care must be taken to avoid ignition due to impact or friction.



IECEX Certificate of Conformity

Certificate No.: **IECEX UL 13.0065X**

Page 4 of 4

Date of issue: 2023-03-21

Issue No: 3

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1: Manufacturer is adding an additional encapsulation epoxy. The rated temperature for the new epoxy is -40°C to +145°C. This only affects the "mb" installation/certificates associated with this product. Encapsulation is not relied upon for "i".

Issue 2: Documentation updates; removed the use of Epoxy Stycast 3050; and removed IEC 60079-26.

Issue 3: Minor revisions to the labels and documentation. Additionally, IEC 60079-0 was updated to the latest edition.

Annex:

[Annex to IECEx UL 13.0065X Issue 3.pdf](#)



IECEX Certificate of Conformity

Certificate No.: IECEX UL 13.0065X

Issue No.: 3

Page 1 of 2

PARAMETERS RELATING TO THE SAFETY

$U_i = 30 \text{ V}$, $I_i = 0.5 \text{ A}$, $C_i = 40 \text{ pF}$, $L_i = 4 \text{ } \mu\text{H}$, $P_i = 0.7 \text{ W}$

MARKING

Marking has to be readable and indelible; it has to include the following indications:

Model M-100X:

		MALEMA SENSORS 1-800-637-6418							
MALEMA ENGINEERING CORPORATION 1060 South Rogers Circle, Boca Raton, FL USA 33487									
PART #		EXPLOSION PROOF ADJ. FLOW SWITCH (IP65)		tRULIS CE 0539					
PRESSURE		300 psig max.		YR. OF MFG					
ATEX-INTRINSIC SAFETY - DEMKO 19 ATEX 2270X ENCAPSULATION- DEMKO 19 ATEX 2278X									
Ex ia IIC T6...T3 Ga		Ex ia IIIC T80°C...T150°C Da		Ex mb IIC T3 Gb		Ex mb IIIC T150°C Db			
INTRINSIC SAFETY: IECEX UL 13.0065X ENCAPSULATION: IECEX UL 13.0067X $U_m=280 \text{ VDC OR AC}$ In=1A Temp. Range -40°C ≤ Tamb+145°C									
For Gases: Ex ia IIC T6...T3 Ga		For Gases: Ex mb IIC T3 Gb							
For Dusts: Ex ia IIIC T80°C...150°C Da		For Dusts: Ex mb IIIC T150 °C Db							
$U_i \leq 30 \text{ V}$ $C_i=40 \text{ pF}$ SPDT switching I/carrying I=0.25/1.5A		SPDT switching Vdc/Breakdown=175/200							
$P_i \leq 0.7 \text{ W}$ $L_i=4 \mu\text{H}$ $I_i=0.5 \text{ A}$ SPST switching I/carrying I=0.5/1.2A		SPST switching Vdc/Breakdown=200/250							
UL RATING 120Vac, 0.1A or 240Vac, 0.208A									
RANGE		sccm Air/		ccm Liquid					
SERIAL #		Set @							

Model M-200X:

		MALEMA SENSORS 1-800-637-6418							
MALEMA ENGINEERING CORPORATION 1060 South Rogers Circle, Boca Raton, FL USA 33487									
PART #		EXPLOSION PROOF ADJ. FLOW SWITCH (IP65)		tRULIS CE 0539					
PRESSURE		300 psig max.		YR. OF MFG					
ATEX-INTRINSIC SAFETY - DEMKO 19 ATEX 2270X ENCAPSULATION- DEMKO 19 ATEX 2278X									
Ex ia IIC T6...T3 Ga		Ex ia IIIC T80°C...T150°C Da		Ex mb IIC T3 Gb		Ex mb IIIC T150°C Db			
INTRINSIC SAFETY: IECEX UL 13.0065X ENCAPSULATION: IECEX UL 13.0067X $U_m=280 \text{ VDC OR AC}$ In=1A Temp. Range -40°C ≤ Tamb+145°C									
For Gases: Ex ia IIC T6...T3 Ga		For Gases: Ex mb IIC T3 Gb							
For Dusts: Ex ia IIIC T80°C...150°C Da		For Dusts: Ex mb IIIC T150 °C Db							
$U_i \leq 30 \text{ V}$ $C_i=40 \text{ pF}$ SPDT switching I/carrying I=0.25/1.5A		SPDT switching Vdc/Breakdown=175/200							
$P_i \leq 0.7 \text{ W}$ $L_i=4 \mu\text{H}$ $I_i=0.5 \text{ A}$ SPST switching I/carrying I=0.5/1.2A		SPST switching Vdc/Breakdown=200/250							
UL RATING 120Vac, 0.1A or 240Vac, 0.208A									
RANGE		SCFM Air/		GPM Liquid					
SERIAL #		Set @							



IECEX Certificate of Conformity

Certificate No.: IECEX UL 13.0065X

Issue No.: 3

Page 2 of 2

Model M-50X/60X:

MALEMA SENSORS 1-800-637-6418		
MALEMA ENGINEERING CORPORATION 1060 South Rogers Circle, Boca Raton, FL USA 33487		
PART #		 0539
TYPE	EXPLOSION PROOF FLOW SWITCH (IP65)	
YR. OF MFG		
	PRESSURE	3000 psig max.
	Set @	sccm
		INCREASING DECREASING
ATEX-INTRINSIC SAFETY - DEMKO 19 ATEX 2270X		ENCAPSULATION - DEMKO 19 ATEX 2278X
II 1 G Ex ia IIC T6...T3 Ga	II 2 G Ex mb IIC T3 Gb	
II 1 D Ex ia IIIC T80°C...T150°C Da	II 2 D Ex mb IIIC T150°C Db	
INTRINSIC SAFETY: IECEX UL 13.0065X		ENCAPSULATION: IECEX UL 13.0067X
For Gases: Ex ia IIC T6...T3 Ga		Um=250 VDC OR AC Im=1A
For Dusts: Ex ia IIIC T80°C...T150°C Da		Temp. Rang -40°C ≤ Tamb ≤ 145°C
UI < 30V CI=40pF	SPDT switching I/carrying IM0.25/1.5A	SPDT switching Vdc/Breakdown= 175/200
PI<0.7W LI=4uH LI=0.5A	SPST switching I/carrying IM0.5/1.2A	SPST switching Vdc/Breakdown=200/250
UL RATING	120Vac, 0.1A	SERIAL #
FLOW DIRECTION		