

EU-TYPE EXAMINATION CERTIFICATE



Equipment or Protective System intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

EU-Type Examination Certificate Number: **DEMKO 19 ATEX 2278X Rev. 2**

Product: **Flow Switch**

Manufacturer: **Malema Engineering Corp.**

Address: **1060 S. Rogers Circle, Boca Raton, FL 33487 USA**

This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

UL International Demko A/S, notified body number 0539 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products 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. **US/UL/ExTR13.0070/04.**

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

EN IEC 60079-0:2018

EN 60079-18:2015/A1:2017

If the sign "X" is placed after the certificate number, it indicates that the product is subject to the "Specific Conditions of Use" listed under item 17 of this certificate.

This EU-Type Examination Certificate relates only to the technical design of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by the certificate.

The marking of the product shall include the following (marking is provided in the Schedule as a part of item 15, if applicable):

II 2 G Ex mb IIC T3 Gb

II 2 D Ex mb IIIC T150°C Db

Certification Manager
Thomas Wilson

This is to certify that the sample(s) of the Product described herein ("Certified Product") has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the ATEX Product Certification Program Requirements. This certificate and test results obtained apply only to the product sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all product to all applicable Standards, specifications, requirements or Directives. The test results may not be used, in whole or in part, in any other document without UL's prior written approval.

Date of issue: 2019-11-14

Re-issued: 2024-02-02

Notified Body UL International Demko A/S, Borupvang 5A, 2750 Ballerup, Denmark
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Accredited by DANAK under registration number 7011 to certification of products.

Form-ULID-000217 (DCS:00-IC-F0056-1) – Issue 29.0

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[13]

[14]

Schedule

EU-TYPE EXAMINATION CERTIFICATE No.

DEMKO 19 ATEX 2278X Rev. 2

[15]

Description of Product

The Flow Switch Type M-50X, M-60X, M-100X, and M-200X is composed of a reed relay encapsulated in a non-metallic capsule inside an enclosure. When fluid flows through the unit, it causes a magnetic piston to move against the spring force. As soon as the piston travels beyond the flow set point, the magnet piston actuates the encapsulated hermetically sealed reed switch. Decreasing the flow below the set point causes the reed switch to de-actuate. The reed switch can be either SPDT or SPST. The enclosure can be stainless steel 316, brass, Monel, or Hastelloy.

Nomenclature

<u>M</u>	<u>50X</u>	<u>S</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>
I	II	III	IV	V	VI	VII	VIII	IX

I. Series

M – M Series

II. Model Number

50X
55X
60X
65X
70X
75X
100X
200X

III. Material Code (Body Material)

S – 316SS

B – Brass

M – Monel

H – Hastelloy

IV. Port Size

Not critical to the protection method

V. Contact Configuration (Switch)

1 – SPST N.O.

2 – SPST N.C.

3 – SPDT

VI. Flow Range

Not critical to the protection method

VII. Mounting (Optional)

Not critical to the protection method

VIII. Pistons (Optional)

Not critical to the protection method

IX. Seals (Optional)

Not critical to the protection method

Temperature range

The ambient temperature range is -40°C to +145°C.

Electrical data

For SPDT:

Voltage switching/breakdown = 175VDC/200VDC

Current switching/carrying = 0.25A/1.5A

For SPST:

Voltage switching/breakdown = 200VDC/250VDC

Current switching/carrying = 0.5A/1.2A

Routine tests

- Visual inspections - Each piece of “m” equipment shall be subjected to a visual inspection. No damage shall be evident, such as cracks in the compound, exposure of the encapsulated parts, flaking, inadmissible shrinkage, swelling, decomposition, failure of adhesion or softening.
- Dielectric strength test – The test shall be conducted between the reed switch and the equipment enclosure at minimum 1500 V r.m.s. at 48 Hz to 62 Hz or 2100 V d.c. for at least 1 second. Alternatively, 1.2 x test voltage may be applied and maintained for at least 100 ms. The test shall be deemed as passed if no breakdown or arcing occurs during testing.



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[16]

Descriptive Documents

The scheduled drawings are listed in the report no. provided under item no. [8] on page 1 of this EU-Type Examination Certificate.

[17]

Specific conditions of use:

- The field wire leads shall only be installed with metallic conduit with the termination suitability protected with an Ex type of protection as appropriate.
- A fuse rated not less than 1A, 250 VDC/VAC with a breaking capacity not less than 1500A shall be connected externally and suitability protected with an Ex type of protection as appropriate.

[18]

Essential Health and Safety Requirements

The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.

Additional information

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in Annex III to Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014.