

# NON-HAZARDOUS AREA

**MALEMA FLOW SENSORS**  
**CONFIDENTIAL**

SPDT reed switch has 3 wires  
SPST reed switch has 2 wires

**Operation:**  
When fluid flows through the unit it causes the magnetic piston to move against the spring force. As soon as the piston travels beyond the flow set point, the magnet piston actuates an encapsulated hermetically sealed reed switch. Decreasing the flow below the set point causes the reed switch to de-actuate.

**Mounting:**  
The flow switch can be mounted in any position. Spring option may limit mounting position. Install the units in piping system using standard pipe fitting procedures. Install so that flow direction is consistent with the IN and OUT port direction. We recommend use of a 100 micron filtration.

**End fittings:**  
Inlet and Outlet fittings range from 1/8" to 3/4" SAE8 or FNPT. (Review data sheet for applicable sizes for each flow switch series.)

**Set point adjustment:**  
M-200X Series: May be adjusted by turning top adjustable screw.  
M-100X Series: May be adjusted by turning front adjustable screw.  
M-50X & M-60X Series: Are not adjustable.

For more detail refer to the data sheet.

Reed Switch Data (Electrical Ratings)	SPDT	SPST
Reed Switch	3-10 Watts (Hermetically Sealed) UL Recognized Operating Temperature -40C to 125 C	UL
Switching Voltage	170 VDC	200 VDC
Break Down Voltage	200 VDC	250 Vdc
DC Resistive	3 Watts	10 Watts
AC Resistive	3 VA	10 VA
Switching Current	0.25 Amps	0.5 Amps
Carrying Current	0.5 Amps	1.2 Amps

**Standards:**  
IEC 60079-0 Ed.6  
IEC 60079-18 Ed.3

**Markings:**  
Ex mb IIC T6 Gb  
Ex mb IIIC T80°C Db

**Certificate:**  
IECEX UL 13.0067X

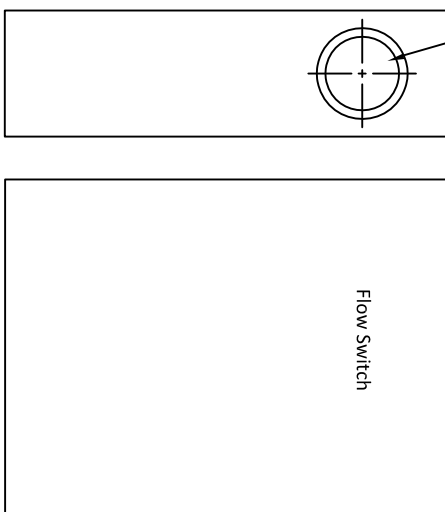
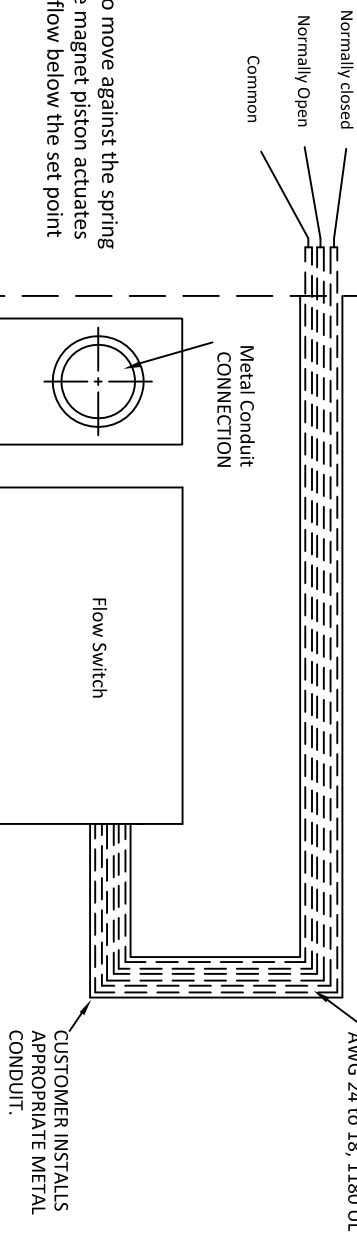
**Temperature Range:**  
-40°C ≤ T-Amb. ≤ +75°C

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**Note:**  
The prospective short circuit current of the external electric supply source shall be greater than 1,500A.

# HAZARDOUS AREA

SPDT and SPST reed switch  
Hermetically Sealed



M-50X Series, M-60X Series, M-100X Series and M-200X Series

Only the SS316, Brass 360, Monel K500, and Hasteloy C276 are IEC certified.

**Recommendations:**

1. The field wire leads shall only be installed with metallic conduit with the termination suitability/protected with an Ex type of protection as appropriate.
2. Customer should always provide full details on their application to Malema.
3. The device should always be grounded using the metal conduit.
4. Wiring method should be in accordance with electrical code requirements of the country of end use based on class/group classification.
5. Do not Parallel Associate Apparatus unless Permitted by associated apparatus approval.
6. A fuse rated not less than 1A, 250 VDC/VAC with a breaking capacity not less than 1500 A shall be connected externally and suitability protected with an Ex type of protection as appropriate.

<b>PART NAME</b> EX-PROOF FLOW SWITCHES		<b>SCALE</b> --	<b>SHEET</b> 1 OF 1
<b>PART NO. &amp; DWG. NO.</b>	<b>REV.</b>	<b>MATERIAL</b>	
Explosion Guidelines	000	NA	
<b>DRN</b>	<b>DATE</b>	<b>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES UN</b>	
J.Z.	02/20/14	.X ±0.3	
<b>CHKD.</b>	<b>DATE</b>	.XX ±0.1	
U.S.	02/20/14	.XXX ±0.005	
<b>APPD.</b>	<b>DATE</b>	<b>ANGLES ± 1°</b>	
S.L.	02/20/14		
<b>Malema Engineering Corporation</b>		<b>Malema</b>	
1060 S. ROGERS CIRCLE,		BOCA RATON, FL 33487	