

EU DECLARATION OF CONFORMITY

This declaration of conformity is issued under the sole responsibility of the manufacturer
We, the undersigned:

Name of Manufacturer /
Authorised representative

Pulsar Process Measurement Ltd.

Address: Pulsar Process Measurement Ltd
Cardinal Building
Enigma Commercial Centre
Sandy's Road
Malvern
Worcestershire
WR14 1JJ

Country: UK

Telephone 01684 891371

Declare under our sole responsibility that the following apparatus:

Product description: MicroFlow Velocity sensor

Model or Type No.: Ex ia & Ex mb versions

Brand name: MicroFlow (Exmb) & MicroFlow-I (Exia)

Are in conformity with the following relevant EU legislation:

ATEX directive 2014/34/EU

EMC directive 2014/30/EU

RoHS directive 2011/65/EU

RTTE directive 2014/53/EU

Based on the following harmonised standards:

EN60079-0 EN60079-11 (Ex ia)

EN60079-18 (Exmb) EN60079-26 (Ex ia)

EN61326-1:2013

EN300440-1 EN300440-2

And therefore complies with all of the relevant essential requirements of those directives.

The following Notified Body has been involved in the conformity assessment process:



Notified Body Certification Management Ltd
Notified Body No. 2503
Role: Issue of ATEX/IECEX EU Type Examination certificate
Certificate No. **ATEX/IECEX (Ex ia)**
CML 16ATEX2331X
IECEX CML 16.0105X
ATEX/IECEX (Ex mb)
CML 16ATEX5332X
IECEX CML 16.0106X

ATEX coding II 1 G Ex ia IIC T4 Ga & II 1 D Ex ia IIIC
T135°C Da Tamb -20°C to +60°C
II 2 G Ex mb IIC T4 Gb & II 2 D Ex mb IIIC
T135°C Db Tamb -20°C to +60°C

X Limitations on use

1. The MicroFlow must be routinely inspected to avoid the build up of dust layers when installed in Zone 20, 21 & 22 (Exia) and Zone 21 & 22 (Exmb).
2. Electrostatic hazard – The equipment shall not be installed in a location where the external conditions are conducive to the build up of electrostatic charge. In addition the MicroFlow must only be wiped with a damp or antistatic cloth.
3. Only the fuses listed on drawing D-804-1205 are permitted to be used with the Ex mb approved MicroFlow.
4. The outer enclosure is made from Valox357U, a polyester / polycarbonate blend; consider the performance of this material with respect to chemicals that are present in the hazardous area.
5. The equipment should not be used if there are any cracks or damage to any part of the enclosure.
6. The installer shall consider the total length of cable attached to the equipment. The cable shall be considered to have parameters of 200pF/m, 1µH/m OR 30µH/Ω.

Name and position of person binding the manufacturer or authorised representative:

Signature  
Name Tim Brown
Function Electronics engineer
Location Pulsar Process Measurement Ltd,
WR14 1JJ, UK.
Issue date: 11th September 2018.

Pulsar Process Measurement Limited

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MicroFlow (Ex mb) ATEX/IECEX MicroFlow-i (Ex ia) ATEX/IECEX INSTALLATION MANUAL

Full manuals available at:
www.pulsar-pm.com/support/downloads/manuals.aspx

M-MFI-0-001-6P

DESCRIPTION

The MicroFlow range has been specified and designed to meet the demanding requirements of today's process flow measurement applications. The unit is positioned above and at 45 degrees to the flow and measures flow velocity.

Two ATEX approved versions are available:

1. 2 wire loop-powered version with HART protocol and is intrinsically safe (Ex ia) for Zone 0.
2. RS485 version that is the same as the standard version but with Ex mb certification for Zone 1 use.

The 2 wire version can either be used in digital HART mode or as 4-20mA loop powered device. The Microflow loop powered version can be set up using a hart modem with either proprietary HART software such as Pact ware or Pulsar Microflow HART PC software.

The RS485 version can be used on a Pulsar FlowCert, velocity interface or Ultimate controller. The sensor can also be used on any Modbus system. Pulsar MicroFlow PC software can be used for set up and diagnostics.

Standard cable lengths 10, 20 or 30m. Process Connection: 1" BSP
A range of mounting brackets are available.

Operating Temperature: -20 to +60°C, Ingress Protection: IP68

Hazardous Area Installation

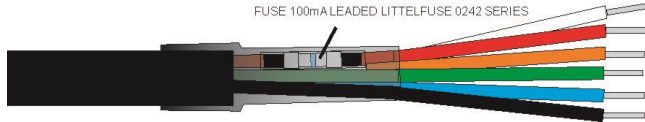
Not all MicroFlow models are ATEX certified, check label for approval details. There are two different ATEX versions: One certified to II 1 G Ex ia IIC T4 Ga & II 1 D Ex ia IIIC T135°C Da for use in zone 0, 1 & 2 applications (Zener or Galvanic safety barrier required), and another certified to II 2 G Ex mb IIC T4 Gb & II 2 D Ex mb IIIC T135°C Db suitable for use in zones 1 & 2 (no barriers required).

The 'X' in the certification No.'s indicates that certain special conditions apply: see EU declaration of conformity on the flip side of this document.

Ex ia version – This model has a 2 core screened cable, Red (+) and Black (-) and is loop powered 4-20mA HART compatible.

Ex mb version – This model must be supplied from apparatus that provides protection from prospective short circuit currents up to 1500A. This fuse is fitted in the safe area end of the cable.

FUSE 100mA LEADED LITTELFUSE 0242 SERIES



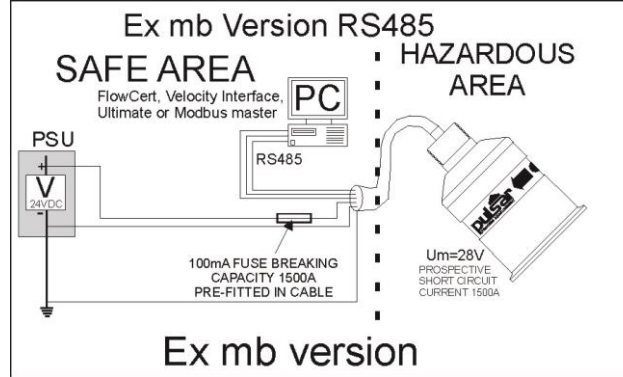
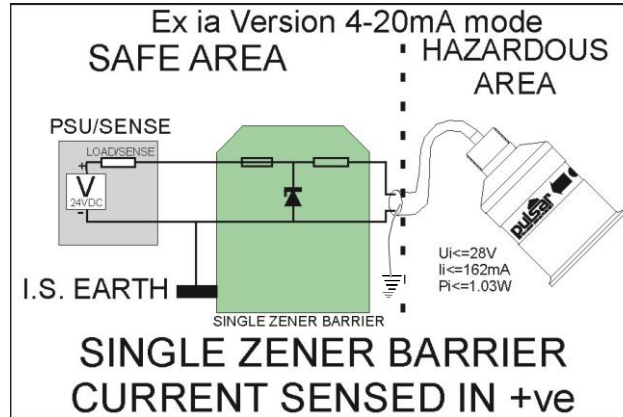
Wiring Detail for EX mb version

Colour	Description	Limits
RED	DC Power +ve	28V DC max.
BLACK	DC 0V	
ORANGE	RS485+	
WHITE	RS485-	
BLUE	RS485 COMMON	
GREEN	Cable Screen	

ATEX labelling for the two versions of protection Ex ia & Ex mb

Electrostatic Hazard - clean only with a damp cloth $T_{amb} = -20^{\circ}\text{C}$ to $+60^{\circ}\text{C}$
CML 16ATEX2331X IECEx **CML 16.0105X**
 Ex ia II 1 G Ex ia IIC T4 Ga $U_i=28\text{V}$ $I_i=162\text{mA}$
 Ex ia II 1 D Ex ia IIIC T135°C Da $P_i=1.03\text{W}$

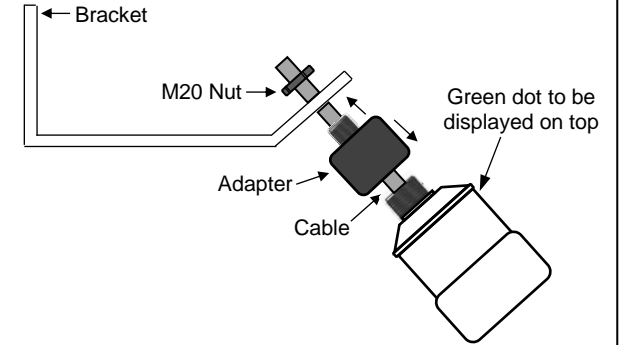
Electrostatic Hazard - clean only with a damp cloth $T_{amb} = -20^{\circ}\text{C}$ to $+60^{\circ}\text{C}$
CML 16ATEX5332X IECEx **CML 16.0106X**
 Ex mb II 2 G Ex mb IIC T4 Gb PROSPECTIVE SHORT CIRCUIT CURRENT 1500A
 Ex mb II 2 D Ex mb IIIC T135°C Db $U_m=28\text{V}$



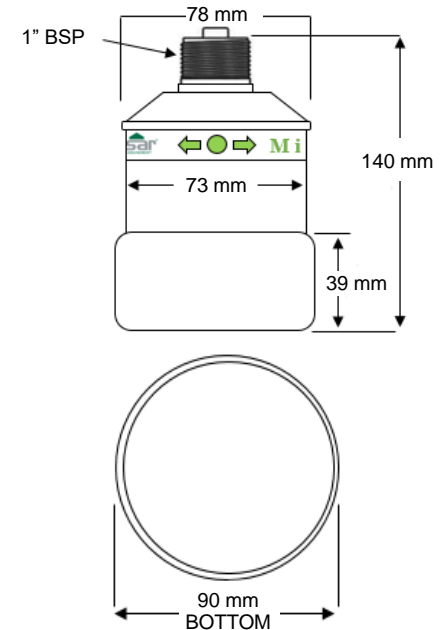
GENERAL INSTALLATION

The MicroFlow should be installed directly above the flow with the axis at 45 degrees to the flow to be measured. It should be on a clear straight section. Mount at a height of 250mm above maximum liquid level or up to two times the channel width from minimum liquid level, whichever is greater, but less than 3m. For further details on Microflow or MicroFlow-i installation and setup, please refer to the relevant sensors instruction manual.

The MicroFlow is mounted by the 1" BSP thread on the cap, using a 45° angled bracket via and adapter and M20 nut as shown in the picture below:



MicroFlow Dimensions



End of Life

Dispose of the MicroFlow and cable in accordance with regional environmental regulations for electronic equipment e.g. WEEE regulations apply within the EU to Directive 2012/19/EU