EU & UK DECLARATION OF CONFORMITY

This declaration is issued under the sole responsibility of the manufacturer.

2014/34/EU 2016/1107 EN60079-0: 2012+A11:2013 Ex. Atmospheres general	2014/34/EU 2016/1107 EN60079-11: 2012 Ex. Atmospheres intrinsic safety
2014/35/EU 2016/1101 EN61010-1:2010+A1:2019 Electrical Safety	2014/30/EU 2016/1091 EN61326-1:2013 EMC regulations
2014//34/EU 2016/1107 EN60079-18: 2015+A1:2017 Ex. Atmospheres, encapsulation	2011/65/EU 2012/3032 RoHS directive
2014/53/EU 2017/1206 EN300 440 v2.1.1 Radio equipment directive	2014/53/EU 2017/1206 EN300 440 v1.6.1 Radio equipment directive

Manufacturers

Name:	Pulsar Process Measurement Ltd
Address:	Cardinal Building, Enigma Commercial Centre, Sandy's Road, Malvern, Worcestershire, WR14 1JJ, UK
Apparatus:	DC powered velocity measurement sensor utilising microwave technology.
Models:	MicroFlow (Exmb) & MicroFlow-I (Exia)
Notified body:	CML B.V. Hoogoorddreef 15, 1101 BA, Amsterdam, Netherlands. Notified Body No. 2776
(ATEX)	CML 16ATEX2331X (Ex ia) CML 16ATEX5332X (Ex mb)

Signature	
Name	Tim Brown
Function	Electronics engineer
Location	Pulsar Process Measurement Ltd, WR14 1JJ, UK.
Issue date:	17th May 2021

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:

PULSAR MEASUREMENT CONTACT DETAILS

UK Office

Cardinal Building
Enigma Commercial Centre
Sandy's Road
Malvern
WR14 1JJ
United Kingdom

Tel: +44 (0)1684 891371
Fax: +44 (0)1684 575985

Canada Office

16456 Sixsmith Drive
Long Sault
ON
K0C 1PO
Canada

Tel: 613-938-8956
Toll Free: 855-300-9151

USA Office

11451 Belcher Road South
Largo
FL 33773
USA

Tel: 315-788-9500
Toll Free: 888-473-9546

Pulsar Website: www.pulsarmeasurement.com

Technical Support:

Europe:
supporteurope@pulsarmeasurement.com

Outside Europe:
supportnprthamerica@pulsarmeasurement.com

pulsar MEASUREMENT

MicroFlow (Ex mb) ATEX/IECEx

MicroFlow-i (Ex ia) ATEX/IECEx

INSTALLATION MANUAL

Full manuals available at:
www.pulsarmeasurement/downloads.com

CE

M-MFI-0-002-1P

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.

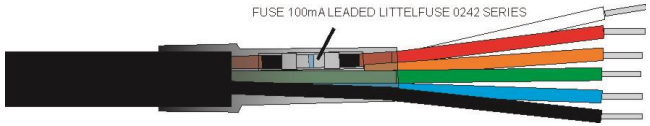
The 2 wire version can either be used in digital HART mode or as 4-20mA loop powered device. The Microflow loop powered version can be set up using a hart modem with either proprietary HART software such as Pact ware or Pulsar Microflow HART PC software.

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 lengths10, 20 or 30m. Process Connection: 1" BSP
A range of mounting brackets are available.
Operating Temperature: -20 to +60°C, Ingress Protection: IP68

HAZARD AREA INSTALLATION

Not all MicroFlow models are hazardous area certified, check label for approval details. There are two different versions:
One certified to II 1 G Ex ia IIC T4 Ga & II 1 D Ex ia IIIC T135ºC 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 T135ºC 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.



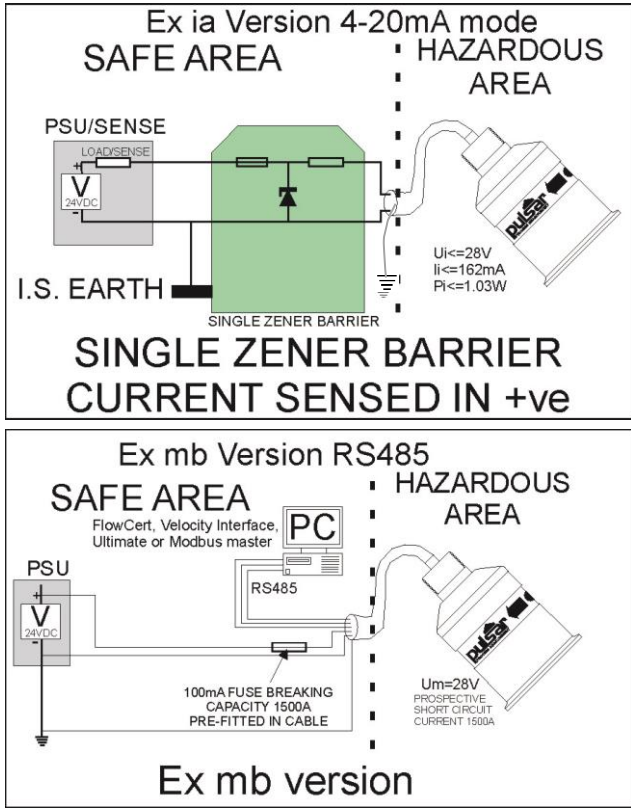
Wiring Detail for EX mb version

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°C to +60°C
Ui=28V Ii=162mA Pi=1.03W IECEx CML16.0105X
II 1 G Ex ia IIC T4 Ga CML 21UKEX2283X
II 1 D Ex ia IIIC T135°C Da CML 16ATEX2331X

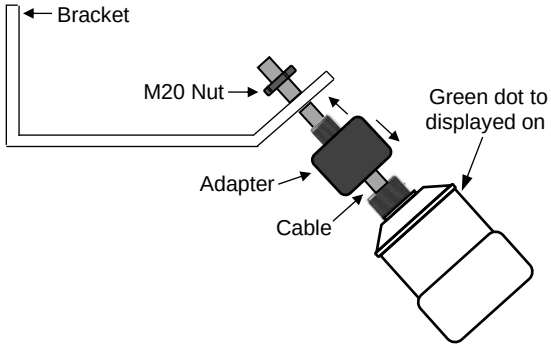
Electrostatic Hazard - clean only with a damp cloth T_{amb}= -20°C to +60°C
Um= 28V. Prospective short circuit current 1500A IECEx CML16.0106X
II 2 G Ex mb IIC T4 Gb CML 21UKEX5284X
II 2 D Ex mb IIIC T135°C Db CML 16ATEX5332X



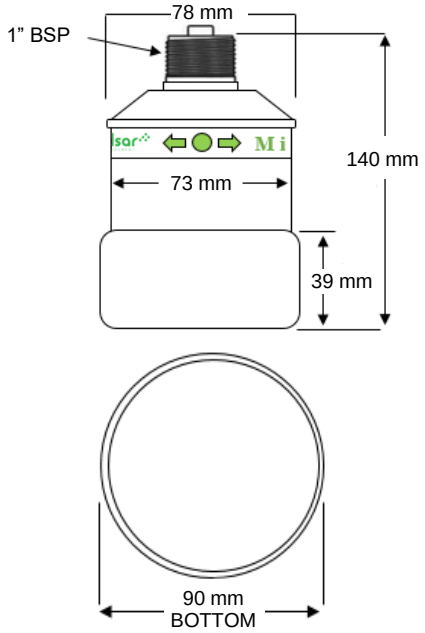
DESCRIPTION

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 45º 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 and in the UK SI 2013/3113.