

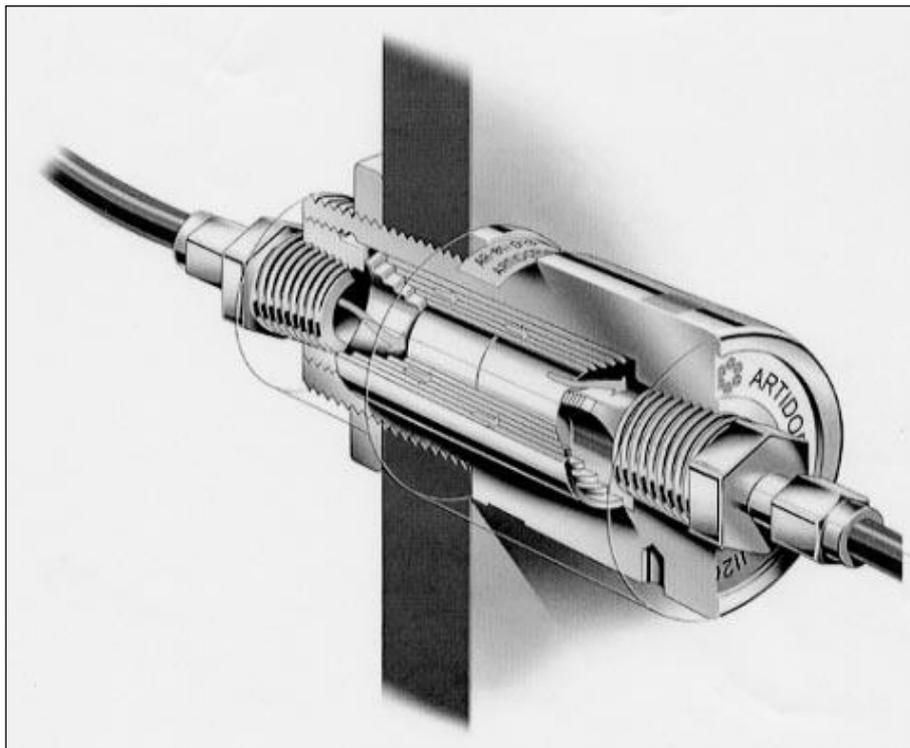
User Manual

Explosion-safe bulkhead fitting Type AR-081



II 2 G EEx d IIC

EU Type Examination Certificate KEMA 01ATEX2136 U





1. Safety Instructions

- The explosion-safe bulkhead fitting AR-081 is certified as a 'Component'.
- The bulkhead fitting AR-081 should be screwed into the flameproof housing with at least five full threads engaged. See also section 6 'Mounting'.
- The product may only be used for the purpose for which it is designed. See also section 2 'Description'.
- The temperature class depends on the enclosure volume and the type of gas and therefore has to be determined after final tests of the completed product (final product of the buyer).
- Mounting should only be carried out with threaded holes that have been mechanically drilled and conform to tolerance quality 6H.
- Before mounting, check that threading of both the bulkhead fitting and the drilled hole are in good condition and are of the same type of thread.
- It is not permitted to modify the bulkhead fitting or alter its design.
- The product may only be applied in a good and clean condition.
- The national safety regulations should be adhered to, as well as the safety instructions printed in italics in this manual.

2. Description

The AR-081 type bulkhead fitting provides an explosion-safe open channel but with extremely low flow resistance for gases and liquids.

The bulkhead fitting acts as a flame arrester and is specially designed for mounting in walls of flameproof enclosures with protection degree - d -, gas group IIA, IIB or IIC". In the event of an explosion inside the explosion-proof enclosure in which the bulkhead fitting has been mounted, it will prevent flames from breaching through to the surrounding atmosphere.

The bulkhead fitting AR-081 offering an unimpeded flow may be desirable in cases where a sampling line must be lead into an Ex d enclosure, or where over or under pressure inside the enclosure must be equalized with the surrounding atmosphere ("breather"), or for draining condensation ("drain").

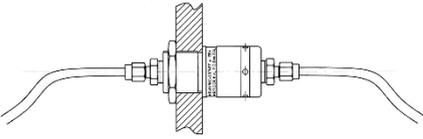
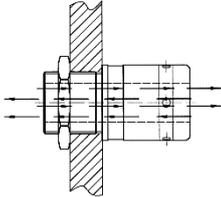
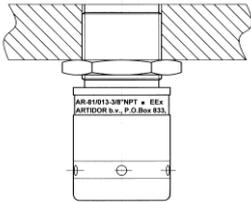
When used as a sampling line transit the female threaded (NPT) on both ends can be used for installation of a tubing connector. The quality of this connector and its hose or tubing does not affect the flame arresting function of the AR-081.

The features of the bulkhead fitting are:

- Flame arresting properties combined with extreme low resistance to flow of gases and liquids
- To be mounted in the wall of flameproof 'Ex d' enclosures
- Stainless steel AISI 316
- The external thread allows direct mounting in a flameproof housing

- Both ends are provided with female thread for installation of pipe line or tubing connectors
- Standard type of thread (NPT)
- Can be cleaned
- Modern industrial design

The functions for which the bulkhead fitting can ideally be used are listed in the table below.

	Function	Picture	Explanation
A	Sample line transit		For flameproof 'Ex d' transit of a pipe line through the wall of a flameproof 'Ex d' enclosure.
B	"Breather"		Creating an open connection between the inside of an 'Ex d' enclosure and the outside atmosphere e.g. to prevent pressure raise inside the enclosure involved.
C	"Drain"		For draining condensation water from an 'Ex d' enclosure.

Note

Explosion pressures taken into account on Ex d enclosures are based on atmospheric conditions. Therefore European and International standards do not allow flameproof type 'd' enclosures to be exposed to housing conditions higher than 110% of atmospheric pressure.

It is therefore important that manufacturers of completed products include measures for cases where pressures higher than atmospheric pressure could occur in the free volume of the housing. This could occur especially with products such as Ex d gas analyzing equipment, because of leakage of the pipe lines must be taken into account.

A possible solution to this would be to attach an additional flameproof Ex d "breather" to the flameproof housing, with at least the same flow rating as that of the inlet. The ARTIDOR bulkhead fitting AR-081 also provides the ideal solution to this problem!

Extremely low resistance to flow

The flameproof bulkhead fitting AR-081 has a characteristically low resistance to flow, which means that a drop in pressure is kept to an absolute minimum. The values are expressed in the diagram below.

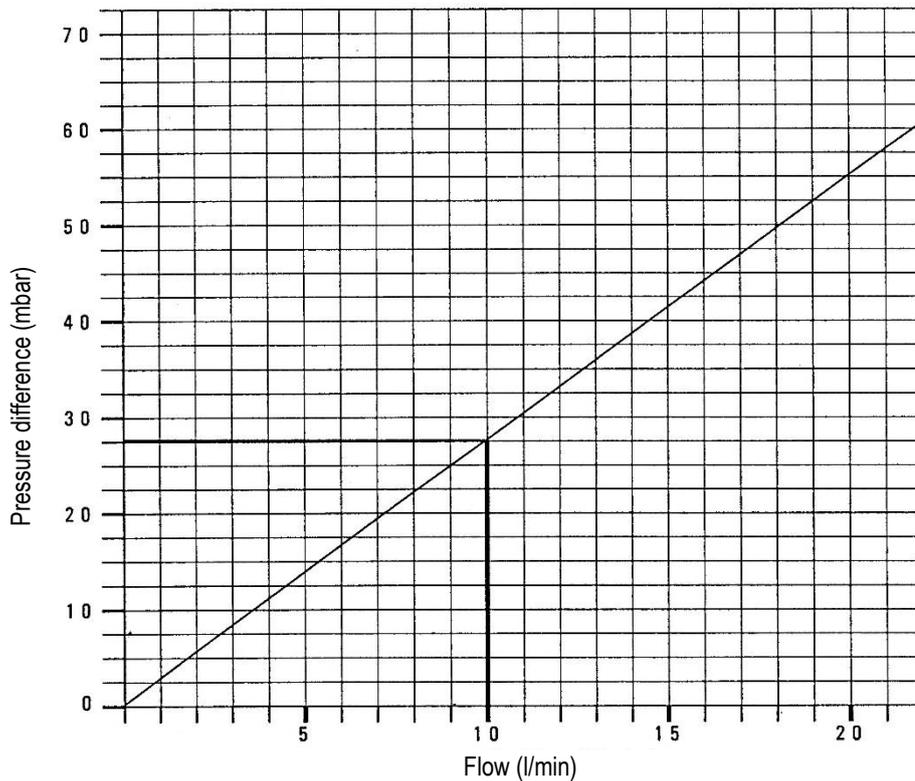


Diagram pressure loss AR-081 bulkhead fitting

3. Conformity to EU Directives and standards

Bulkhead fitting AR-081 complies with European Directive 2014/34/EU (ATEX) and fulfils EN 50014:1997 and EN 50018:2000 (equivalent to international standard EN 60079-0 and EN 60079-1). The bulkhead fitting is therefore suitable for mounting in the wall of enclosures with protection degree against ignition flameproof 'd', ATEX Group II, Category 2 G.

The design, production and testing of bulkhead fitting AR-081 conforms to the actual state of the art and with recognized quality standards.

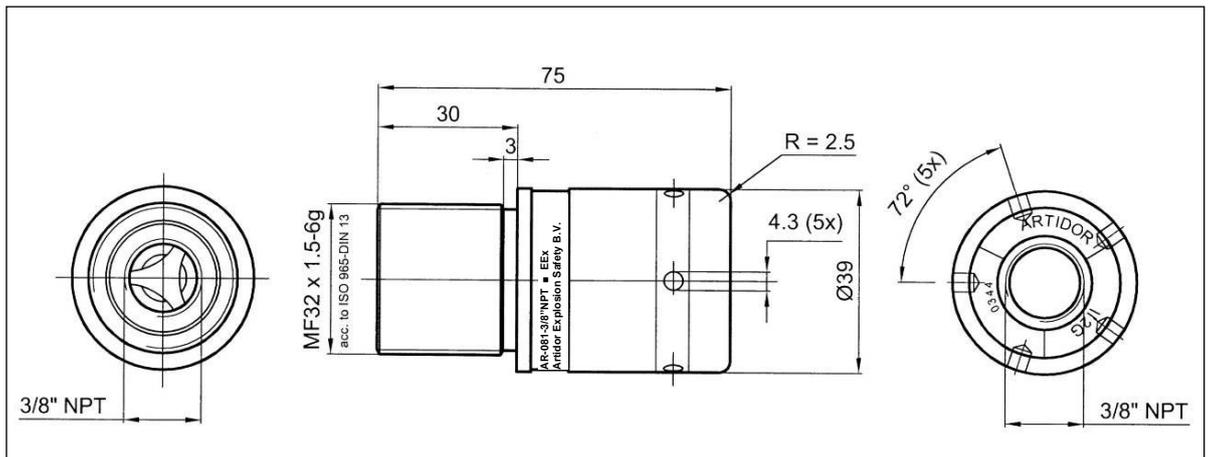
4. Applicability

The flameproof bulkhead fitting is suitable for use in hazardous locations classified as zone 1 and 2 in accordance with EN 60079-10.

All parts of the fitting are manufactured out of AISI 316 stainless steel with guaranteed corrosion resistance, as it is proof against the effects of the most common chemicals. In the case of unusual chemicals, please contact the manufacturer.

5. Technical data

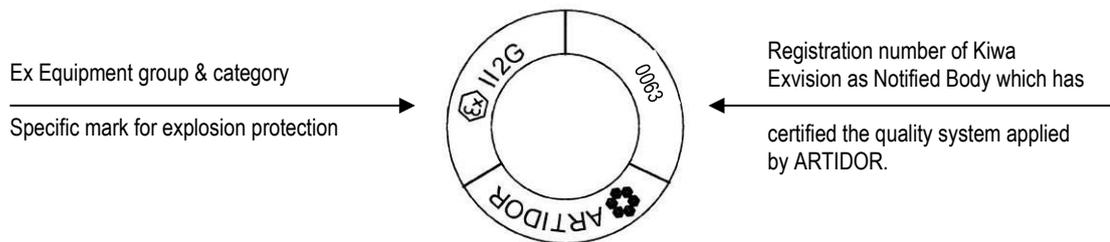
Explosion safety:	⊕ II 2 G EEx d IIC
Temperature class:	Depends on the volume of the applied flameproof enclosure
Conformity:	EU-directive for explosion safe products 2014/34/EU (ATEX 114) and construction standards EN 50014 and EN 50018
EU Type Examination Certificate:	KEMA 01ATEX2136 U component certificate
Ingress Protection level:	IP65 according to EN 60529
Free transmission area:	28 mm ²
Transmission ratio:	10 liter / minute at 28 mBar pressure differential (gas); refer to the diagram for other pressures.
Ambient temperature:	-20 °C to +40 °C
Weight:	510 gram
Material:	Stainless steel AISI 316
Dimensions:	See drawing below



Dimensions in mm

6. Marking

To the bulkhead fitting AR-081 the following labels are attached



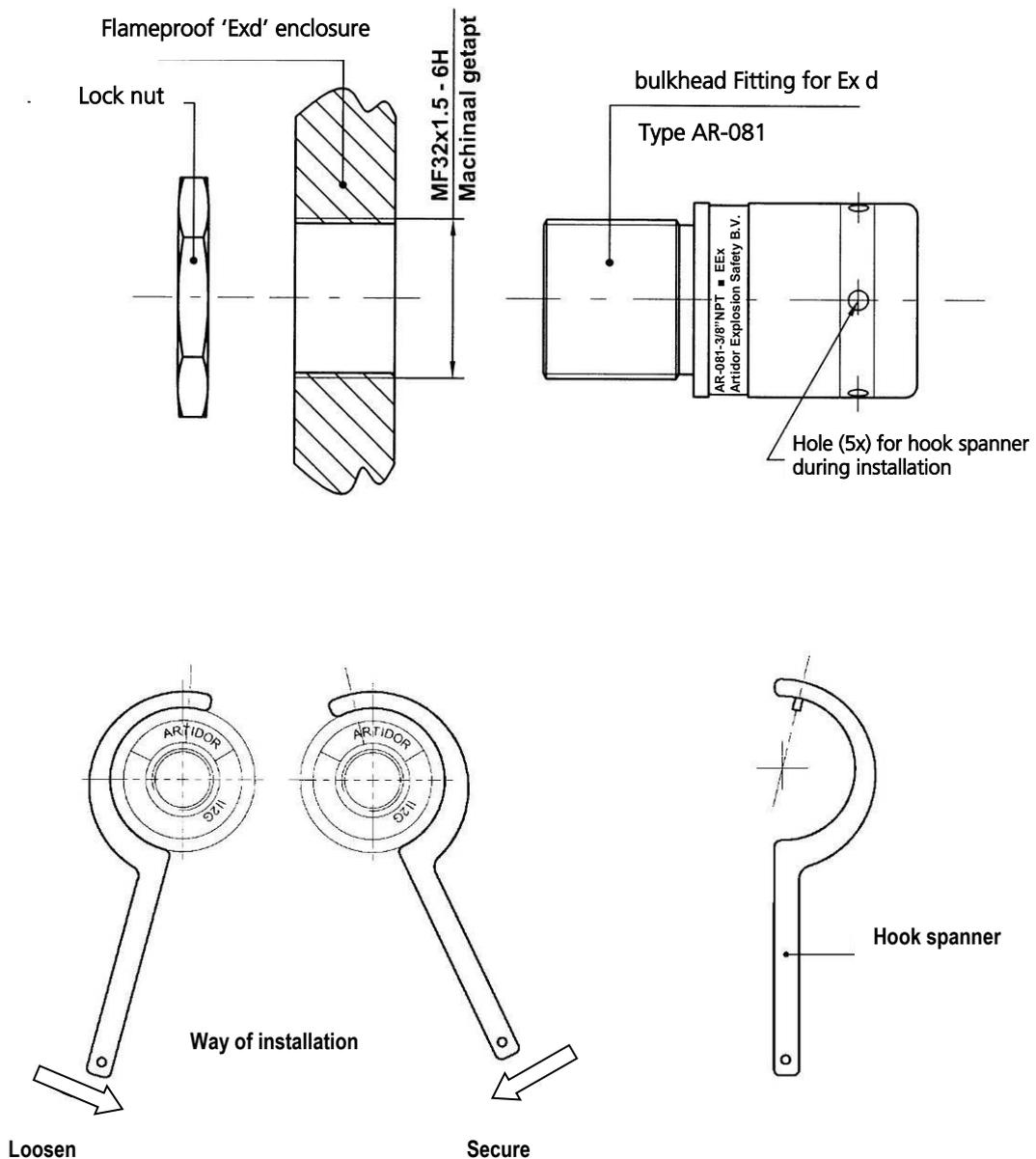
AR-081 - 3/8"NPT - EEx d IIC - KEMA 01ATEX2136 U - Serial No. (Year / batch No.)
 ARTIDOR Explosion Safety B.V., Emopad 38, 5663 PB Geldrop, The Netherlands

7. Mounting (see drawing below)

- The relevant national safety regulations and general technical standards apply to its use.
- bulkhead fitting AR-081 can be directly screwed into a flameproof 'Ex d' enclosure, with at least five full threads engaged.
- During installation a hook spanner can be used for tightening the bulkhead fitting. For this purpose the body has been provided with five small holes (\varnothing 4.3 mm).
- The bulkhead fitting should be solidly secured with sealant, a lock nut, or otherwise.

ATTENTION:

Before mounting, it must be determined that the thread in the enclosure wall corresponds with the size, type and quality of the thread of the bulkhead fitting.



8. Maintenance

National regulations including EN 60079-17 apply to the maintenance of electrical equipment in areas where there is danger of gas explosions.

The maintenance period for this bulkhead fitting depend on the particular application and should therefore be adapted to the specific application by the user.

During maintenance, bulkhead fitting AR-081 should be checked for internal dirt (pollution) or damage. When it is found that the bulkhead fitting has been polluted it must be cleaned properly which may be carried out by rinsing, by ultrasonic process, or otherwise.

In the case of damage, the entire bulkhead fitting must be replaced.

ATTENTION:

The bulkhead fitting must be considered as an entire unit and may therefore not be dismantled.

9. Repair

Repairs may only be carried out with the use of original parts made by Artidor Explosion Safety B.V.

Repairs that might affect the explosion safety may only be carried out by qualified Artidor Explosion Safety B.V. personnel in accordance with national regulations.

10. Disposal / Re-use

When disposing of the product and its packaging, the relevant national disposal and environmental regulations must be observed.

Attestation of Conformity

We

ARTIDOR Explosion Safety B.V.
Emopad 38, 5663 PB Geldrop, The Netherlands

herewith declare that the component
Explosion-safe Bulkhead Fitting type series

AR-081

 II 2 G EEx d IIC

covered by EC-Type Examination Certificate No. KEMA 01ATEX2136 U issued by Dekra Certification B.V.,
Notified Body identification No. 0344, Meander 1051, 6825 MJ Arnhem, The Netherlands,
and produced under Product Quality Assurance Notification KIWA 17ATEXQ0049, issued by Kiwa Nederland B.V.,
Notified Body identification No. 0063, Wilmershof 50, 7327 AC Apeldoorn, The Netherlands

is in conformity with the provisions of the following EC directives, including the
latest amendments, and with national legislation implementing this directive:

2014/34/EU

Concerning equipment and protective systems intended
for use in potentially explosive atmospheres

and that the following harmonised standards have been applied:

EN 50014:1997

EN 50018:2000

Although the editions of the standards indicated above are no longer harmonised, a review by the Ex Authorized Person
against the latest editions listed below identified no significant changes relevant to this equipment. The previously applied
standards continue to represent the 'state of the art'.

EN 60079-0:2018

EN 60079-1:2014

For information about the characteristics and incorporation of the product into equipment, we refer to the Instruction Manual
supplied with the apparatus.

Geldrop, 23 April 2020

Signed



M. Moolenaar
Managing Director and Ex Authorized Person

This document can be subject to change without notice.