

Breathing and Draining Device

 **MC95A**

Instruction Manual
Version 1.02.02



**Dear customer,**

Thank you for buying our product. In this manual you will find all necessary information about this M&C product. The information in the manual is fast and easy to find, so you can start using your M&C product right after you have read the manual.

If you have any question regarding the product or the application, please don't hesitate to contact M&C or the M&C authorized distributor. You will find all the addresses in the appendix of this manual.

For additional information about our products and our company, please go to M&C's website www.mc-techgroup.com. There you can find the data sheets and manuals of our products in German and English.

Disclaimer

This manual does not claim to be complete and it may be subject to technical modifications.

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Version: 1.02.02



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1 GENERAL INFORMATION

This product from the M&C TechGroup has been built and tested in compliance with all relevant regulations and safety standards and has left our factory in proper safety conditions. This manual includes all information regarding the proper transportation, storage, installation and operation of this product by specialized personnel.

Please read this manual carefully and follow the directions and instructions to maintain the safety conditions and ensure the safe operation of the product.

All necessary information for the intended use of this product by qualified personnel is included in this operating manual.

2 DECLARATION OF CONFORMITY



The product described in this operating manual complies with the following EU directives:

ATEX-Directive

The product described in this manual is produced in accordance with the EU directive for devices and protection systems for appropriate use in hazardous areas 2014/34/EU appendix II.

Declaration of conformity

The EU Declaration of conformity can be downloaded from the **M&C** homepage or directly requested from **M&C**.

3 STANDARDS

The breathing and draining device MC95A corresponds to the safety requirements of the European standards for **EN 60079-0:2014+A11, EN 60079-1:2014** und der **IEC 60079-0:Ed-6, IEC 60079-1:Ed-7** use in hazardous areas **Group II Category 2G**. Attention must be paid to the Certificate of Conformity IBExU 15 ATEX 1028 U und IECEx IBE 15.0013 U (see appendix).

4 SAFETY INSTRUCTIONS

Follow these safety directions and instructions regarding installation, commissioning and operation of the MC95A:

Read this manual before commissioning and operating the product. Please make sure to follow all safety instructions.

Attention must be paid to the requirements of the certificate of conformity (see appendix): IBExU 15 ATEX 1028 U and IECEx IBE 15.0013 U

Installation and commissioning of electrical devices must be carried out only by qualified skilled personnel in compliance with the current regulations.

For use in hazardous area observe the relevant national and international instructions and regulations.

The equipment is only to be set within the permitted range of temperatures and pressures.

Install the device only in protected areas, sheltered from rain and moisture. The product should not be exposure to the elements.

Installation, maintenance, inspections and any repairs of the devices must be carried out only by qualified skilled personnel in compliance with the current regulations.



5 INFORMATION AND SAFETY INSTRUCTIONS FOR USING THE MC95A IN HAZARDOUS AREAS

The breathing and draining device MC95A is suitable for use in hazardous areas **Group II Category 2G** according to IBEU 15 ATEX 1028 U and IECEx IBE 15.0013 U

Installation and operating of the breathing and draining device has to be done according to the conditions defined in the Ex-Certificate (see appendix). Only in this case, the reliability of operation in hazardous areas can be guaranteed.

Every modification of the standard configuration with parts which are not specified or approved by M&C or any repair and service work without specified parts means the loss of the Ex-certificate.

In case of doubt, please contact directly M&C or your M&C franchised dealer.

6 WARRANTY

In case of a device failure, please contact immediately M&C or your M&C authorized distributor. We have a warranty period of 12 months starting from the delivery date. The warranty covers only appropriately used products and does not cover the consumable parts. Please find the complete warranty conditions in our terms and conditions.

The warranty includes a free-of-charge repair in our production facility or the free replacement of the device. If you return a device to M&C, you have to make sure that it is properly packaged and shipped with protective packaging. The repaired or replaced device will be shipped free of delivery charges to the point of use.

7 USED TERMS AND SIGNAL INDICATIONS



DANGER!

The 'Danger' warning sign indicates that death, serious injury and/or significant material damage will be the consequence, if the appropriate precautions should not be taken.



WARNING!

The 'Warning' warning sign indicates that death, serious injury or damage to property may occur if the relevant precautionary measures are not observed.



CAUTION!

The 'Caution' warning sign indicates that slight personal injury can occur if the appropriate safety precautions are not observed.

CAUTION!

'Caution' indicates that damage to property can occur if the appropriate safety precautions are not observed.

ATTENTION!

'Attention' indicates that an unintended result or situation can occur if the corresponding information is not taken into account.



NOTE!

'Note' indicates important information relating to the product or highlights parts of the documentation for special attention.

QUALIFIED PERSONNEL

'Qualified personnel' are experts who are familiar with the installation, mounting, commissioning and operation of these types of products.




These are important information about the product or parts of the instruction manual referring to operating in hazardous areas.

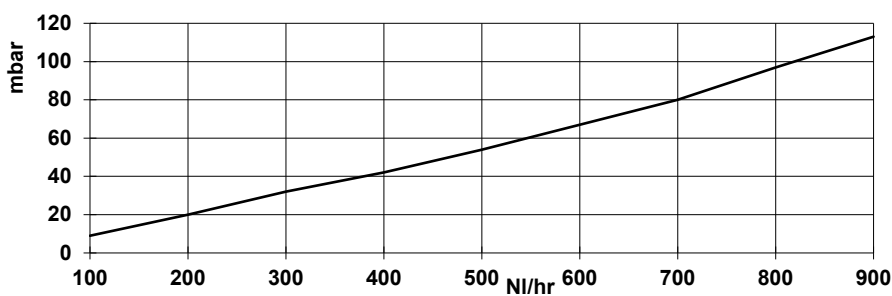
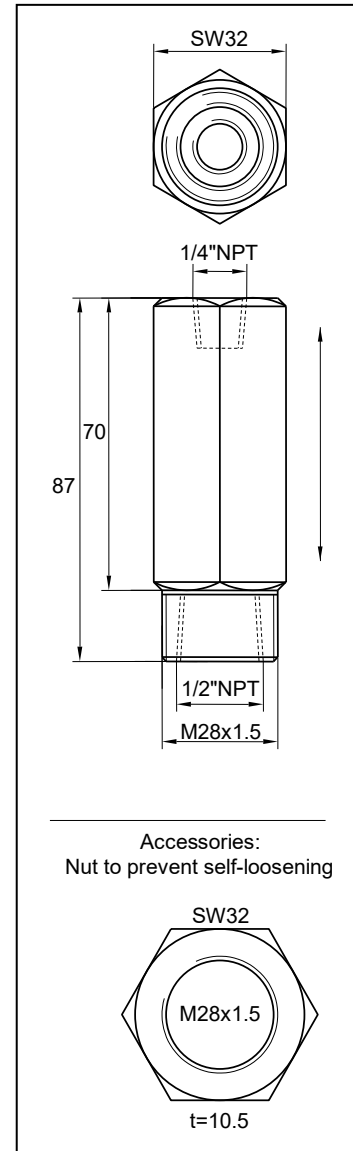
8 OPERATING OF THE MC95A

The breathing and draining device MC95A contains permeable elements which are able to resist the pressure occurring in case of explosion inside the housing they are fixed to. They prevent sparks from escaping from the inside of the housing to an explosive atmosphere outside the housing.

Furthermore, the breathing and draining device MC95A resists the dynamic stresses of explosions inside the housing without being deformed or damaged, so that the type of protection is not impaired. It is, however, not designed to withstand continuous combustion on its surfaces.

9 TECHNICAL DATA

Technical Data	MC95A
Part No.	90A5150
Measuring gas connections	1 x 1/2" NPT i, 1 x 1/4" NPT i
Enclosure thread	M28 x 1.5 a
Temperature of sample gas	-20 to +80 °C [-4 to 176 °F]
Ambient temperature	-20 to +80 °C [-4 to 176 °F]
Max. operating pressure	0.8 -1.1 bar abs
Suitable for enclosures shaped in a simple geometric form, according to EN60079-1 appendix D, up to a volume of	10 dm ³
Stagnant volume	Approx. 2.5 ml
Equipment standard	EN 60079-0:2012+A11; IEC 60079-1 Ed-6 EN 60079-1:2014 IEC 60079-1:Ed-7 Protection  II 2 G Ex db IIC Gb Verification No. IBExU 15 ATEX 1028 U IECEX IBE 15.0013 U
Weight	490 g [≈ 1.1 lb]
Mounting	Installation, tube, mounting position freely selectable Independent of the flow direction
Material of sample contacting parts	Stainless Steel 1.4571
Accessories:	Nut to prevent self-loosening M28 x 1.5, Part No. 90A5151



Flow in NI/h air and differential pressure in mbar for new breathing and draining devices

10 RECEPTION AND STORAGE

Inspect the merchandise for possible damages caused by transportation and, if necessary, inform your transportation insurer immediately about the damage occurred!

11 INSTALLATION INSTRUCTIONS




The breathing and draining device MC95A is suitable for the use in hazardous areas Group II Category 2. Attention must be paid to the Certificate of Conformity IBExU 15 ATEX 1028 U (see appendix)!

In case of installation in Ex d housings, the breathing and draining device must be mounted with at least six bearing threads and must be secured against distortion.



NOTE!

 Prevent corrosion because this may impair the Ex protection.
The gas connections should be made out of stainless steel if possible.

12 MAINTENANCE

Please check regularly the breathing and draining device for cleanliness and corrosion.

13 APPENDIX

- EC-Type Examination Certificate IBExU 15 ATEX 1028 U und IECEx. IBE 15.0013 U



For additional manuals and data sheets please have a look at our home page

www.mc-techgroup.com

IBExU Institut für Sicherheitstechnik GmbH
An-Institut der TU Bergakademie Freiberg

[1] **EC-TYPE EXAMINATION CERTIFICATE**

according to Directive 94/9/EC, Annex III

(Translation)



- [2] Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres, Directive 94/9/EC
- [3] EC-Type Examination Certificate Number: **IBExU15ATEX1028 U**
- [4] Component: **Breathing and draining device**
Type MC95A
- [5] Manufacturer: M&C TechGroup Germany GmbH
- [6] Address: Rehhecke 79
40885 Ratingen
GERMANY
- [7] The design of the component mentioned under [4] and any acceptable variations thereto are specified in the annex to this EC-Type Examination Certificate.
- [8] IBExU Institut für Sicherheitstechnik GmbH, Notified Body number 0637 in accordance with article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that the component mentioned under [4] has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of components intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The test results are recorded in the test report IB-14-3-159 of 04 May 2015.
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2012+A11:2013 and EN 60079-1:2014.
- [10] The sign „U“ placed after the certificate number indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This certificate may only be used as a basis for the certification of an equipment or protective system.
- [11] This EC-Type Examination Certificate relates only to the design and construction of the specified component. If applicable, further requirements of this directive apply to the manufacture and supply of this component.
- [12] The marking of the component mentioned under [4] shall include the following:

 **II 2G Ex db IIC Gb**

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Authorised for certifications
-Explosion protection-

By order



(Dr. Wagner)

Annex



- Seal -
(ID no. 0637)

Freiberg, 04 May 2015

Certificates without signature
and seal are not valid.
Certificates may only be
duplicated completely and
unchanged. In case of dispute,
the German text shall prevail.

IBExU Institut für Sicherheitstechnik GmbH
An-Institut der TU Bergakademie Freiberg

[13] **Annex**

[14] **to the EC-TYPE EXAMINATION CERTIFICATE IBExU15ATEX1028 U**

[15] **Description of the component**

The Breathing and draining device type MC95A serves for the ventilation of flameproof enclosures and it can also be used to feed measuring gas in an Ex d enclosure. It consists of a flameproof enclosure of stainless steel with cylindrical bulb.

Technical data:

- Screwed thread in the enclosure: M28x1.5
- Maximum reference pressure: 20 bar

- Ambient temperature range: -20 °C up to +80 °C
- Operating temperature range: -20 °C up to +80 °C

[16] **Test report**

The test results are recorded in the test report IB-14-3-159 of 04 May 2015.
The test and information documents are part of the test report and listed there.

Summary of the test results

The Breathing and draining device type MC95A fulfils as component the requirements of explosion protection for equipment of Group II, Category 2G, type of protection flameproof enclosure „db“.

[17] **Special conditions for safe use**

- The installation of the Breathing and draining device type MC95A in enclosure walls of flameproof equipment of Category 2G must be tested and certified separately.
- The Breathing and draining device can be used in flameproof enclosures with simple geometry according to EN 60079-1, Annex D with a volume up to 10 dm³ without any additional experimental tests. At use in other enclosures the Breathing and draining device is to be included in the test for non-transmission of an internal explosion according to EN 60079-1, Paragraph 15.2.
- The thermal test was not carried out because of the constructive design. The maximum surface temperature has to be tested or evaluated with the appropriate enclosure.

[18] **Essential Health and Safety Requirements**

Confirmed by compliance with standards (see [9]).



By order

Freiberg, 04 May 2015



(Dr. Wagner)

		<h2>IECEX Certificate of Conformity</h2>	
INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres <small>for rules and details of the IECEx Scheme visit www.iecex.com</small> Ex COMPONENT CERTIFICATE			
Certificate No.:	IECEX IBE 15.0013U	Page 1 of 4	<u>Certificate history:</u> Issue 0 (2015-08-11)
Status:	Current	Issue No: 1	
Date of Issue:	2020-03-24		
Applicant:	M&C TechGroup Germany GmbH Rehhecke 79 40885 Ratingen Germany		
Ex Component:	Breathing and draining device MC95A		
<i>This component is NOT intended to be used alone and requires additional consideration when incorporated into other equipment or systems for use in explosive atmospheres (refer to IEC 60079-0).</i>			
Type of Protection:	flameproof enclosure 'd'		
Marking:	Ex db IIC Gb		
Approved for issue on behalf of the IECEx Certification Body:		Alexander Henker	
Position:		Deputy Head of department Certification Body	
Signature: (for printed version)			
Date:			
<ol style="list-style-type: none"> 1. This certificate and schedule may only be reproduced in full. 2. This certificate is not transferable and remains the property of the issuing body. 3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code. 			
Certificate issued by:			
IBEXU Institut für Sicherheitstechnik GmbH Fuchsmühlenweg 7 09599 Freiberg Germany			

 		<h2 style="text-align: center;">IECEX Certificate of Conformity</h2>	
Certificate No.:	IECEX IBE 15.0013U	Page 2 of 4	
Date of issue:	2020-03-24	Issue No: 1	
Manufacturer:	M&C TechGroup Germany GmbH Rehhecke 79 40885 Ratingen Germany		
Additional manufacturing locations:			
<p>This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEX Quality system requirements. This certificate is granted subject to the conditions as set out in IECEX Scheme Rules, IECEX 02 and Operational Documents as amended</p>			
<p>STANDARDS : The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards</p>			
<p>IEC 60079-0:2011 Explosive atmospheres - Part 0: General requirements Edition:6.0</p>			
<p>IEC 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d" Edition:7.0</p>			
<p>This Certificate does not indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.</p>			
<p>TEST & ASSESSMENT REPORTS: A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:</p>			
<p>Test Report: DE/IBE/ExTR15.0005/00</p>			
<p>Quality Assessment Reports: DE/BVS/QAR17.0009/02 NL/DEK/QAR11.0040/03</p>			



IECEx Certificate of Conformity

Certificate No.: IECEx IBE 15.0013U

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Date of issue: 2020-03-24

Issue No: 1

Ex Component(s) covered by this certificate is described below:

The Breathing and draining device type MC95A serves for the ventilation of flameproof enclosures. It can also be used to feed measuring gas in an Ex d enclosure. The Breathing and draining device consists of a flameproof enclosure made of stainless steel with a cylindrical bulb.

Technical data:

Screwed thread in the enclosure: M28 x 1.5



Maximum reference pressure: 20 bar

Ambient temperature range: -20 °C up to +80 °C

Operating temperature range: -20 °C up to +80 °C

SCHEDULE OF LIMITATIONS:

- The installation of the Breathing and draining device type MC95A in enclosure walls of flameproof equipment protection level EPL Gb must be tested and certified separately.
- The Breathing and draining device can be used in flameproof enclosures with simple geometry according to IEC 60079-1, Annex D with a volume up to 10 dm³ without any additional experimental tests. When using the Breathing and draining device in other enclosures the test for non-transmission of an internal explosion according to IEC 60079-1, Clause 15.2 has to be passed for enclosure including the Breathing and draining device.
- The thermal test was not carried out due to the constructive design. The maximum surface temperature has to be tested or evaluated with the appropriate enclosure.

 	<h2>IECEX Certificate of Conformity</h2>
Certificate No.: IECEX IBE 15.0013U	Page 4 of 4
Date of issue: 2020-03-24	Issue No: 1
DETAILS OF CERTIFICATE CHANGES (for issues 1 and above) New QAR	