

FM Approvals
1151 Boston Providence Turnpike
P.O. Box 9102 Norwood, MA 02062 USA

T: **781 762 4300** F: 781-762-9375 www.fmapprovals.com

# **CERTIFICATE OF COMPLIANCE**

# **ELECTRICAL EQUIPMENT**

This certificate is issued for the following equipment:

# 4228abc1def00FM. P1.1 Sample Gas Pump.

a = Motor Voltage: 1, 2, 3 or 4.

b = Pump head position: 1 or 2. c = Pump head material: 1, 2, 3 or 4.

Carettine connections / nine fitting: 0.4

d = Screw-in connections / pipe fitting: 0, 1, 2, 3, 5 or 6.

e = Mounting accessories: 0, 1 or 2.

f = Housing: 0, 1 or 2.

# **Equipment Ratings:**

Electrical Equipment for use indoor unclassified or Ordinary locations.

# FM Approved for:

Bühler Technologies GmbH Ratingen, Germany



This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

FM3810 2005

Original Project ID: 3057155GP Approval Granted: April 11, 2016

Subsequent Revision Reports / Date Approval Amended

Report Number Date Report Number Date

FM Approvals LLC

J/E. Marquedant

Manager, Electrical Systems

E. Marqueshint

11 April 2016

Date

# **CERTIFICATE OF CONFORMITY**



1. ELECTRICAL EQUIPMENT PER US REQUIREMENTS

2. Certificate No:

FM16NUS0017

3. Equipment: (Type Reference and Name)

P1.1 Sample Gas Pumps

4. Name of Listing Company:

**Bühler Technologies GmbH** 

5. Address of Listing Company:

Harkortstraße 29 40880, Ratingen, Germany

6. The examination and test results are recorded in confidential report number:

3057155 dated 11th April 2016

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

FM Class 3810:2005

- 8. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.
- 9. Equipment Ratings:

Electrical equipment for use indoor unclassified or Ordinary locations.

Certificate issued by:

9 December 2016

J&E. Marguedant

Manager, Electrical Systems

Date

To verify the availability of the Approved product, please refer to <a href="www.approvalguide.com">www.approvalguide.com</a>

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

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# **SCHEDULE**



Member of the FM Global Group

to US Certificate Of Conformity No: FM16NUS0017

# 10. Description of Equipment:

The P1 sample gas pumps carry gases from various processes to analyzers. The gas circuit typically has additional analysis components such as sample gas probe, filter, flow meter, cooler, etc. The sample gas pump P1 consists of the main components, the pump head and motor. An eccentric converts the rotation of the motor into an up and down motion using a connecting rod, thus producing the pump mechanism. Inside the so-called pump body, above the bellows, which facilitates the pump motion, are inlet and outlet valves. The user connects the gas circuits to the sample gas pump through screw-in connections.

The P1 sample gas pumps are available as 12Vdc, 24Vdc, 115Vac, 60Hz or 230Vac, 50Hz. The 115Vac and 230Vac sample gas pumps are available with or without a cover over the electronics and motor. The 115Vac and 230Vac sample gas pumps have internal self resetting thermal protection built into the motor. The P1.1 sample gas pump is for general pupose non-hazardous locations.

# Model Code Structure:

4228abc1def00FM. P1.1 Sample Gas Pump.

a = Motor voltage: 1, 2, 3 or 4. b = Pump head position: 1 or 2.

c = Pump head material: 1, 2, 3 or 4.

d = Screw-in connections / pipe fitting: 0, 1, 2, 3, 5 or 6.

e = Mounting accessories: 0, 1 or 2.

f = Housing: 0 or 1

# 11. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

### 12. Schedule Drawings

A copy of the technical documentation has been kept by FM Approvals.

### 13. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
11 <sup>th</sup> April 2016	Original Issue.
9 <sup>th</sup> December 2016	Supplement 1: Report Reference: – RR207245 dated 9 <sup>th</sup> December 2016 Description of the Change: Changes per this revision request are for the NI version of the product and don't affect this certificate. This certificate has been put into the new format.

## THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

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Certificate issued by:

2 April 2020

Date

Jl E. Marquedant

VP, Manager - Electrical Systems

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# **SCHEDULE**



Member of the FM Global Group

to US Certificate Of Conformity No: FM16NUS0017

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2 <sup>nd</sup> April 2020	Supplement 2: Report Reference: – PR455937 dated 2 <sup>nd</sup> April 2020

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# **SCHEDULE**



to US Certificate Of Conformity No: FM16NUS0017

Date	Description
	Description of the Change: Add option for gas pump cover DC motors.

# FM Approvals

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