



FM Approvals
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CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

OPTIGAS 5050 C ab. Compact Mass Flowmeter.

XP-DIP-AIS / I, II, III / 1 / ABCDEFG / T4 Ta = 60°C — 885516.36, Type 4X;

NI / 1 / 2 / ABCD / T6 Ta = 60°C, Type 4X

a = Sensor size/ Flow area: 15 or 25.

b = Measuring tube material: S.

Special Condition of Use:

1. This flowmeter is the integration of the MFC 050F-AEx. Mass Flow Converter with the OPTIGAS 5000 series Mass Flow Sensor.

OPTIGAS 5051 C ab. Compact Mass Flowmeter.

XP-DIP-IS / I, II, III / 1 / ABCDEFG / T4 Ta = 60°C — 885516.37, Entity, Type 4X;

NI / 1 / 2 / ABCD / T6 Ta = 60°C, Type 4X

Entity Parameters*

* Entity parameters may vary depending on the output modules selection; see control drawing 885516.37 for specific parameters.

a = Sensor size/ Flow area: 15 or 25.

b = Measuring tube material: S.

Special Condition of Use:

1. This flowmeter is the integration of the MFC 051F-AEx. Mass Flow Converter with either the OPTIGAS 5000 series Mass Flow Sensor.

MFC 050F-AEx. VE504abcdefghi0jk Mass Flow Converter.

XP-DIP-AIS / I, II, III / 1 / ABCDEFG / T5 Ta = 60°C — 885516.36, Type 4X;

NI / 1 / 2 / ABCD / T6 Ta = 60°C, Type 4X

a = Converter configuration: A, B or C

b = Hazardous area approvals: 3.

c = Power supply: 1, 2, 3, 4 or 5

d = Outputs / communications: 1, 2, 3, 4, 5, 6, 7 or 8

e = Measuring functions: – not safety relevant

f = Remote option signal cable: 0, 1, 2 or 3

g = Remote cable glands: 0, 1 or 2

h = Output and power cable glands / adaptors: 0, 1, 2, 3 or 4

i = Custody transfer approvals: – not safety relevant

j = Operating language: – not safety relevant

k = Manuals: – not safety relevant

MFC 051F-AEx. VE514abcdefghi0jk Mass Flow Converter.

XP-DIP-IS / I, II, III / 1 / ABCDEFG / T5 Ta = 60°C — 885516.37, Entity, Type 4X;

NI / 1 / 2 / ABCD / T6 Ta = 60°C, Type 4X

a = Converter configuration: A, B or C

b = Hazardous area approvals: 3.

c = Power supply: 1, 2, 3, 4 or 5

d = Outputs / communications: 1, 2, 3, 4, 5, 6, 7 or 8

e = Measuring functions: – not safety relevant

f = Remote option signal cable: 0, 1, 2 or 3

g = Remote cable glands: 0, 1 or 2

h = Output and power cable glands / adaptors: 0, 1, 2, 3 or 4

i = Custody transfer approvals: – not safety relevant

j = Operating language: – not safety relevant

k = Manuals: – not safety relevant

OPTIGAS 5000 ab VE0c0defghijkl Mass Flow Sensor.

IS / I, II, III / 1 / ABCDEFG / T4 Ta = 60°C, Type 4X;

NI / 1 / 2 / ABCD / T6 Ta = 60°C, Type 4X

a = Sensor size / Flow area: 15 or 25.

b = Measuring tube material: S.

c = Sensor size: 7 or 8

d = Configuration: C, or F

e = Process connection size: – not safety relevant

f = Hazardous area approvals: 3.

g = Power supply: 1, 2, 3, 4 or 5

h = Outputs / communications: 2, 3

i = Remote option signal cable: 0 or 1

j = Remote cable glands: 0, 1 or 2

k = Custody transfer approval: – not safety relevant

l = Operating language: – not safety relevant



Equipment Ratings:

Explosionproof for use in Class I, Division 1, Group A, B, C and D; Dust-Ignitionproof for use in Class II, III, Division 1, Group E, F and G indoor/ outdoor hazardous (classified) locations, utilizing Type 4X enclosure with intrinsically safe connections to Class I, II, III, Division 1, Group A, B, C, D, E, F and G hazardous (classified) locations with a temperature class of T4 @ Ta = 60°C, in accordance with Control Drawing 885516.36.05 or 885516.37.03; and Nonincendive for service in Class I, Division 2, Groups A, B, C, & D with a temperature class of T6 @ Ta = 60°C.

Approved for:

Krohne Ltd.
Rutherford Drive
Park Farm South
Wellingborough, United Kingdom



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

Class 3600	1998
Class 3810	1989
Class 3610	1999
Class 3611	2004
Class 3615	1989


Original Project ID: 3020449

FM Approval Granted: *April 12, 2005*

Subsequent Revision Reports / Date FM Approval Amended

Report Number	Date	Report Number	Date
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FM Global Technologies LLC



Robert L. Martell, Jr.
Assistant Vice President
FM Approvals

April 12, 2005

Date