IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx KSCP 21.0022X**

Certificate history:

Status: **Current**

Issue No: 0

Date of Issue: 2021-12-20

Applicant: **Line Tech Inc.**
806, Daedeok-daero, Yuseong-gu,
Daejeon 34055
Korea, Republic of

Equipment: **Explosion-proof MFC/MFM EX Series**

Optional accessory:

Type of Protection: **Increased safety "ec"**

Marking: Ex ec IIC T4 Gc

Approved for issue on behalf of the IECEx Certification Body: **Sang He Kim**

Position: **President of the Board**

Signature: (for printed version)

Digitally signed by Sang He Kim; KSC Poland Sp. z o.o.
Date: 2021.12.20 19:23:46 KST

Date:

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:

KSC POLAND Sp. z o.o.
Chorzowska 150 Street
Katowice 40-101
Poland

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Date of issue: 2021-12-20 Issue No: 0

Manufacturer: **Line Tech Inc.**
806, Daedeok-daero, Yuseong-gu,
Daejeon 34055
Korea, Republic of

Additional manufacturing locations:

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

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

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

PL/KSCP/ExTR21.0022/00

Quality Assessment Report:

PL/KSCP/QAR21.0029/00

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Mass flow controller/meter EX Series (0~5 Vdc or 4~20mA) uses signal to allow safe and accurate flow of gas. Ex series makes use of thermal sensors, and it includes MFC model capable of controlling mass flow with great reliability and MFM model capable of measuring mass flow with precision and accuracy. Two temperature sensors are placed in opposite ends of a bypass route and heated uniformly to be at the same temperature. When gas flows through a product, a part of it gets rerouted and travels through the bypass, this results in a difference in temperature between the two thermal sensors that is proportional to the mass flow rate. For further information see certificate addendum.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- The equipment shall be supplied by an appropriately rated transient protective device that is set to a level not exceeding 140% of the peak rated voltage.
- The equipment enclosure shall not be opened when an explosive atmosphere is present and shall be used in an area of at least Pollution degree 2 as defined in IEC 60664-1.
- Incorporated cable glands are tested intended to be used in fixed installation. The user shall ensure the adequate clamping of the cable after equipment installation.

Annex:

IECEx_KSCP_21.00022X_Addendum.pdf

Addendum to IECEx Certificate

Reference Number..... :	**IECEx KSCP 21.0022X**
Issue..... :	Issue 0

Description

Mass flow controller/meter EX Series (0~5 Vdc or 4~20mA) uses signal to allow safe and accurate flow of gas. Ex series makes use of thermal sensors, and it includes MFC model capable of controlling mass flow with great reliability and MFM model capable of measuring mass flow with precision and accuracy. Two temperature sensors are placed in opposite ends of a bypass route and heated uniformly to be at the same temperature. When gas flows through a product, a part of it gets rerouted and travels through the bypass. The upstream temperature sensor, placed at the entering portion of the bypass, loses heat as the gas molecules carry heat away from this point. As these molecules reach the end of the bypass to exit, the downstream temperature sensor becomes heated up by the heat carried over. This results in a difference in temperature between the two thermal sensors that is proportional to the mass flow rate. Equipment is made up form two main parts, meter body made from stainless steel and control electronic part box made form aluminium joined to main body by fixing bolts. Inside the electronic box there is a PCB with control and measurement electronics. Power and signal IO/OUT cables are connected by cable entry located in top right side of control box enclosure. Mass flow controller allows to use fittings of 3/8", 1/2", 3/4" LOK Type.

Ratings:
15 - 24 V d.c. / Max. 5.25 W
IP65
Ta: 0°C to +50°C

The equipment comprises the following previously certified parts:

Item and manufacturer	**Certificate numbers**	**Standards applied**	**Marking**
Cable gland HSM-Ex-P7\ Shanghai Weyer Electric Co., Ltd.	IECEx TUR 17.0009X	EC 60079-0:2011 IEC 60079-31:2013 Edition:2 IEC 60079-7:2015 Edition:5.0	Ex eb IIC Gb / Ex tb IIIC Db IP66/IP68

Conditions of manufacture:

i. Where the product incorporates certified parts or safety critical components the manufacturer shall ensure that any changes to those parts or component do not affect the compliance of the certified product is the subject of this certificate.

ii. The dielectric strength test according to IEC 60079-7:2015 Clause 6.1 shall be applied for at least 1 minute, the test voltage shall be 500 V d.c..