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 KTL 19.0042X**	Page 1 of 3	Certificate history:
Status:	**Current**	Issue No: 0	
Date of Issue:	2020-01-10		
Applicant:	**SHIN HWA ENG Co., LTD.** 242, Cheongneung-daero (Gojan-dong 80B 2L), Namdong-gu, Incheon, 21695 **Korea, Republic of**		
Equipment:	**Smart Positioner, SP740 series**		
Optional accessory:			
Type of Protection:	**Intrinsic safety "i"**		
Marking:	Ex ia IIC T5/T6 Ga		

Approved for issue on behalf of the IECEx Certification Body: **Park, Jong-koo**

Position: **Certification Manager**

Signature: (for printed version)

Date: 2020-01-10

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:

Korea Testing Laboratory
87, Digital-ro, 26-gil, Guro-gu
Seoul
Korea, Republic of

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Manufacturer: **SHIN HWA ENG Co., LTD.**
242, Cheongneung-daero (Gojan-dong 80B 2L),
Namdong-gu,
Incheon, 21695
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 Edition:7.0 — Explosive atmospheres - Part 0: Equipment - General requirements

IEC 60079-11:2011 Edition:6.0 — Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

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:

KR/KTL/ExTR19.0037/00

Quality Assessment Report:

KR/KTL/QAR19.0009/00

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

The SP740 series smart positioner is an intrinsically safe equipment that is used for control of linear and rotary pneumatic valve position.

The equipment comprises a pilot valve assembly, a position feedback assembly (shaft & potentiometer), a torque motor assembly, a pressure gauge adaptor (optional pressure gauges are not included in this certification scope), a main control board, a sub control board and so on. All the parts except the pressure gauge adaptor above are housed in an aluminium alloy enclosure. The pressure gauge adaptor is attached to the side of the enclosure. Terminal blocks inside the enclosure are used for external connections of the equipment. Internal wiring is used for connections between the main control board and the torque motor, and between the main control board and the potentiometer.

The pneumatic valve is controlled by the control boards and the torque motor assembly through a 4~20mA input signal and a position feedback signal from a potentiometer. The optional output signal for valve position feedback to external systems is provided by one of a 4~20mA position transmitter, two SPDT limit switches, a superimposed hart communication and their possible combinations.

All the external connection ports shall be supplied within maximum allowable electrical input parameters (U_i, I_i, P_i) of the ports each by connecting to certified intrinsically safe circuits or associated apparatus such as safety barriers. The electrical parameters of the equipment for intrinsic safety are as follows;

- Main power port (BT1:1-2): U_i = 28 V, I_i = 93 mA, P_i = 651 mW, C_i = 3 nF, L_i = 35 µH
- Feedback signal power ports (BT1:4-5): U_i = 28 V, I_i = 93 mA, P_i = 651 mW, C_i = 3 nF, L_i = 35 µH
- 2 x SPDT limit switches (BT2: 1-2 or 3-2, BT3: 1-2 or 3-2): U_i = 28 V, I_i = 93 mA, P_i = 651 mW, C_i = 0, L_i = 0

Temperature class T5 or T6 is depending on ambient temperature. The ambient temperature for T5 is -30 °C to +60 °C, and the ambient temperature for T6 is -30 °C to +40 °C.

The configuration of SP740 series approved in this certificate is as follows;

SP740abcdefgh
*a = Acting type : S, D
*b = Lever type : L1, L2, R0, R1, R2
c = Output signal : 0, 1
*d = Lock condition : 1, 2
e = Explosion proof : 2
*f = Connection : G, N
g = Position limit switch : 0, 1
h = Hart communication : 0, 1
* : Options which do not affect intrinsic safety

For the detailed information, refer to the manual.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. WARNING-POTENTIAL ELECTROSTATIC CHARGING HAZARD-SEE INSTRUCTIONS.

If the enclosures of the equipment incorporates the non-metallic parts which may generate an ignition capable level of electrostatic charge, the equipment shall be installed in a location where the external conditions cannot result in the build-up of electrostatic charge on such surfaces. For example, the equipment shall be installed in the location protected from direct airflow causing a charge transfer. Additionally, the equipment shall only be cleaned with a damp cloth and caution should be used when being handled.

2. The enclosure made of aluminium alloy is considered to present a potential risk of ignition by impact or friction. Particularly, care must be taken during installation and use to prevent impact or friction for applications that specifically require EPL Ga equipment.

3. WARNING - DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT.

The equipment shall not be opened for installation, repair or overhaul in hazardous area. The user shall consult the manufacturer if there is any problem during the usage.