CERTIFICATE

(1) EU-Type Examination

(2) **Equipment or protective systems intended for use in potentially explosive atmospheres - Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number: **DEKRA 21ATEX0070 X** Issue Number: **0**

(4) Product: **Smart Positioner, SP740 series**

(5) Manufacturer: **SHIN HWA ENG. CO., LTD.**

(6) Address: **242, Cheongneung-daero, Namdong-gu, Incheon, Republic of Korea**

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) DEKRA Certification B.V., Notified Body number 0344 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential test report number 510057100, issue 0.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0 : 2018 **EN 60079-11 : 2012**

except in respect of those requirements listed at item 18 of the Schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:

II 1 G Ex ia IIC T5/T6 Ga

Date of certification: 5 August 2021

DEKRA Certification B.V.

R. Schuller
Certification Manager

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(13) # SCHEDULE

(14) **to EU-Type Examination Certificate DEKRA 21ATEX0070 X** Issue No. **0**

(15) **Description**

The Smart Positioner, SP740 series 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 out of this certification scope), a main control board, a sub control board and etc.. All the parts except for the pressure gauge adaptor are housed in an aluminium alloy enclosure, and 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 to 20 mA 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 to 20 mA 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.

Ambient temperature range:
-30 °C ≤ T_a ≤ +60 °C for T5
-30 °C ≤ T_a ≤ +40 °C for T6

(13) # SCHEDULE

(14) **to EU-Type Examination Certificate DEKRA 21ATEX0070 X** Issue No. **0**

Electrical data

- 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 port (BT1: 4-5):
U_i = 28 V, I_i = 93 mA, P_i = 651 mW, C_i = 3 nF, L_i = 35 µH
- Two 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

Nomenclature

SP740	*	**	*	*	*	*	*	*
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)

Code	Subject	Value
(A)*	Acting type	S or D
(B)*	Lever type	L1, L2, R0, R1 or R2
(C)	Output signal	0 or 1
(D)*	Lock condition	1 or 2
(E)	Explosion proof	1 or 2
(F)*	Connection	G or N
(G)	Position limit switch	0 or 1
(H)	Hart communication	0 or 1

*: This option does not affect intrinsic safety.

Installation instructions

The instructions provided with the product shall be followed in detail to assure safe operation.

(16) **Report Number**

No. 510057100, Issue 0.

(17) **Specific conditions of use**

Precautions shall be taken such that electrostatic charges on the non-metallic parts of the equipment are avoided.

Because the enclosure of the Smart Positioner is made of aluminium, if it is mounted in an area where the use of category 1 G apparatus is required, it must be installed such, that, even in the event of rare incidents, ignition sources due to impact and friction sparks are excluded.

The equipment shall not be opened for installation, repair or overhaul in hazardous area.

(13) # SCHEDULE

(14) **to EU-Type Examination Certificate DEKRA 21ATEX0070 X** Issue No. **0**

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at item (9).

(19) **Test documentation**

As listed in Report No. 510057100, Issue 0.

(20) **Certificate history**

Issue 0 - 510057100 initial certificate