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 PTB 05.0008X**	Page 1 of 5	Certificate history:
Status:	**Current**	Issue No: 2	Issue 1 (2016-11-30) Issue 0 (2005-02-21)
Date of Issue:	2024-05-27		
Applicant:	**SAMSON AG Mess- und Regeltechnik** Weismuellerstrasse 3 D-60314 Frankfurt am Main **Germany**		
Equipment:	**HART capable positioner type 3730-31.., 3730-35.. and 3730-38..**		
Optional accessory:			
Type of Protection:	**General Requirements, Intrinsic Safety, Type of Protection "n", Dust Ignition Protection by Enclosure**		
Marking:	Ex ia IIC T6...T4 Gb and Ex ia IIIC T80°C Db or Ex tb IIIC T80°C Db or Ex nA IIC T6 Gc and Ex tc IIIC T80°C Dc		

Approved for issue on behalf of the IECEx Certification Body: **Dr.-Ing. Martin Thedens**

Position: **Head of Department "Explosion Protection in Sensor Technology and Instrumentation"**

Signature:
(for printed version)

Date:
(for printed version)

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:

Physikalisch-Technische Bundesanstalt (PTB)
Bundesallee 100
38116 Braunschweig
Germany

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

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Manufacturer: **SAMSON AG Mess- und Regeltechnik**
Weismuellerstrasse 3
D-60314 Frankfurt am Main
Germany

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 60079-0:2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

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

IEC 60079-15:2010 Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:4

IEC 60079-31:2022 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
Edition:3.0

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:

DE/PTB/ExTR16.0043/01

Quality Assessment Report:

DE/TUN/QAR06.0011/12

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

General description
The Model 3730-3... HART® capable positioner is a single- or double-acting positioner with communication capability intended for the attachment to pneumatic control valves or rotary actuators. The positioner is of a self-balancing type and adapts itself automatically to the attached valve or actuator respectively. The positioner server matches valve stem positions with the control signal in the 4-20mA range. Nominal travels of 3.6 to 200 mm are possible with linear actuators, or angles of rotation of 24 ° to 100 ° with rotary actuators.

Options:
Position indicator, software proximity switch, inductive proximity switch, forced routing function, fault alarm output, external displacement transducer and serial interface.

SPECIFIC CONDITIONS OF USE: YES as shown below:
For specific conditions of use reference is made to the attachment.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Modifications to the internal structure in the non-safety-related part

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Additional information:
For thermal and electrical specifications reference is made to the attachment.

Annex:

Attachment IECEx PTB 05.0008X issue 02_1.pdf

Applicant: **SAMSON AG Mess- und Regeltechnik**
Weismuellerstrasse 3
60314 Frankfurt am Main
Germany

Electrical Apparatus: HART capable positioner
Type 3730-31.., 3730-35.. and 3730-38..

Electrical and thermal data for type 3730-31:

For relationship between temperature class and permissible ranges of the ambient temperature, reference is made to the following table:

Gas- or dust group	Temperature class	Permissible range of the ambient temperature
IIC	T6	-55 °C ... 60 °C
	T5	-55 °C ... 70 °C
	T4	-55 °C ... 80 °C
IIIC	Not applicable	-55 °C ... 80 °C

For relationship between temperature class, permissible ranges of the ambient temperature, maximum short-circuit currents and maximum power for analyzing units with limit contacts (terminals 41/42), reference is made to the following table:

Temperature class	Permissible range of the ambient temperature	I_0 / P_o
T6	-55 °C ... 45 °C	52 mA / 169 mW
T5	-55 °C ... 60 °C	
T4	-55 °C .. 75 °C	
T6	-55 °C ... 60 °C	25 mA / 64 mW
T5	-55 °C ... 80 °C	
T4	-55 °C ... 80 °C	

Depending on the variant of the positioner type 3730-31… the different connection possibilities lead to the following electrical values.

Signal circuit (terminals 11/12) type of protection Intrinsic Safety Ex ia IIC/IIIC
only for connection to a certified intrinsically safe circuit

Maximum values:

U_i = 28 V
I_i = 115 mA
P_i = 1 W

L_i negligibly low
C_i = 35 nF

Position indicator (terminals 31/32) ..... type of protection Intrinsic Safety Ex ia IIC/IIIC
only for connection to a certified intrinsically safe circuit

Maximum values:

U_i = 28 V
I_i = 115 mA
P_i = 1 W

L_i negligibly low
C_i = 5.3 nF

Type 3730-31....1

Structure-borne sound sensor (terminals 31/32) ..... type of protection Intrinsic Safety Ex ia IIC/IIIC
only for connection to a certified intrinsically safe circuit

Maximum values:

U_i = 30 V
I_i = 100 mA

L_i negligibly low
C_i = 5.3 nF

Type 3730-31…..1

Binary sensor (terminals 31/32) ..... type of protection Intrinsic Safety Ex ia IIC/IIIC
only for connection to a certified intrinsically safe circuit

Maximum values:

U_i = 30 V
I_i = 100 mA
P_i = 250 mW

L_i negligibly low
C_i = 56.3 nF

Limit contacts, software ..... type of protection Intrinsic Safety Ex ia IIC/IIIC
(terminals 41/42, 51/52) only for connection to a certified intrinsically safe circuit

Maximum values:

U_i = 20 V
I_i = 60 mA
P_i = 250 mW

L_i negligibly low
C_i = 5.3 nF

Limit contact, inductive ..... type of protection Intrinsic Safety Ex ia IIC/IIIC
(terminals 41/42) only for connection to a certified intrinsically safe circuit

Maximum values:

U_i = 16 V
I_i = 52 mA
P_i = 169 mW

L_i = 100 µH
C_i = 60 nF

resp.

U_i = 16 V
I_i = 25 mA
P_i = 64 mW

L_i = 100 µH
C_i = 60 nF

Forced venting ..... type of protection Intrinsic Safety Ex ia IIC/IIIC
(terminals 81/82) only for connection to a certified intrinsically safe circuit

Maximum values:

U_i = 28 V
I_i = 115 mA
P_i = 1 W

L_i negligibly low
C_i = 5.3 nF

Fault signal output (terminals 83/84) ..... type of protection Intrinsic Safety Ex ia IIC/IIIC only for connection to a certified intrinsically safe circuit

Maximum values:

U_i = 20 V
I_i = 60 mA
P_i = 250 mW

L_i negligibly low
C_i = 5.3 nF

Serial Interface (Programming socket) ..... type of protection Intrinsic Safety Ex ia IIC/IIIC

Maximum values:

U_o = 7.88 V
I_o = 61.8 mA
P_o = 120 mW
linear characteristic

L_o = 10 mH
C_o = 0.65 µF

resp.

only for connection to a certified intrinsically safe circuit

Maximum values:

U_i = 16 V
I_i = 25 mA
P_i = 64 mW

L_i negligibly low
C_i negligibly low

External position sensor (Analog-PCB, pins p9, p10, p11) ..... type of protection Intrinsic Safety Ex ia IIC/IIIC

Maximum values:

U_o = 7.88 V
I_o = 61 mA
P_o = 120 mW
linear characteristic

L_o = 10 mH
C_o = 0.66 µF

L_i = 370 µH
C_i = 730 nF

resp.

External position sensor with type 3712 . type of protection Intrinsic Safety Ex ia IIC/IIIC
(terminals VREF, WIPER, GND, GND)

Maximum values:

U_o = 7.88 V
I_o = 61 mA
P_o = 120 mW
linear characteristic

L_o = 10 mH
C_o = 0.66 µF

L_i = 370 µH
C_i = 730 nF

When intrinsically safe circuits are interconnected the rules for the interconnection of intrinsically safe circuits shall be observed.

Electrical and thermal data for type 3730-35 and 3730-38:

For relationship between temperature class and permissible ranges of the ambient temperature, reference is made to the following table:

Gas- or dust group	Temperature class	Permissible range of the ambient temperature
IIC	T6	-55 °C ... 60 °C
	T5	-55 °C ... 70 °C
	T4	-55 °C ... 80 °C
IIIC	Not applicable	-55 °C ... 80 °C

Electrical data

Signal circuit	Rated Voltage:	28 V
(Terminals 11/12)	Nominal signal:	4 … 20 mA
Position indicator	Rated Voltage:	28 V
(Terminals 31/32)	Output signal:	4 … 20 mA
Sensor connection (Leakage-Sensor)	Rated Voltage:	30 V
(Terminals 31/32)	inner capacitance	1,4 nF
Binary input	Rated Voltage:	30 V
(Terminals 31/32)	Nominal signal:	6 … 30 V DC

Limit contact, inductive	Rated Voltage:	16 V
(Terminals 41/42)	Nominal signal:	8 V DC, 8 mA
Limit contacts, software	Rated Voltage:	20 V
(Terminals 41/42)	Nominal signal:	8 V DC, 8 mA
Forced venting	Rated Voltage:	28 V
(Terminals 81/82)	Nominal signal:	6 … 24 V DC
Fault signal output	Rated Voltage:	20 V
(Terminals 83/84)	Nominal signal:	8 V DC, 8 mA

Specific condtions of use:

For the HART capable positioner **type 3730-38** in type of protection “nA” the following applies:

1. A fuse according to IEC 60127-2/II, 250 V F respectively IEC 60127-2/VI, 250 V T with a maximum nominal fuse current of $I_N \leq 63$ mA shall be connected in series to the signal circuit (terminals 11/12).
2. The position indicator circuit shall be connected to a fuse according to IEC 60127-2/VI, 250 V T with a maximum nominal fuse current of $I_N \leq 40$ mA in series. This fuse shall be arranged outside of the hazardous area.
3. A fuse according to IEC 60127-2/II, 250 V F respectively IEC 60127-2/VI, 250 V T with a maximum nominal fuse current of $I_N \leq 40$ mA shall be connected in series to the program interface adapter in the connection of Vcc.
4. The program interface adapter shall be arranged outside the hazardous area.
5. The connection of the wires has to be made in a way that the connection is free of tensile and torsional stress.

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