IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.:	IECEx PTB 05.0007X	Issue No: 1	Certificate history:
			Issue No. 1 (2016-08-22)
Status:	**Current**	Page 1 of 5	Issue No. 0 (2005-02-21)
Date of Issue:	**2016-08-22**		

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

Equipment: **e/p-positioner type 3730-21, 3730-25, 3730-28**

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 T 80°C Db

or

Ex tb IIIC T 80°C Db

or

Ex nA IIC T6...T4 Gc and Ex tc IIIC T 80°C Dc

Approved for issue on behalf of the IECEx Certification Body: Dr.-Ing. Frank Lienesch

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

Signature:
(for printed version)

Date: 29.11.2016

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 the Official IECEx Website.

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
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Additional Manufacturing location(s):

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 electrical apparatus 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 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-15 : 2010 Edition:4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
IEC 60079-31 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

*This Certificate **does not** indicate compliance with electrical 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/ExTR16.0033/00

Quality Assessment Report:

DE/TUN/QAR06.0011/07

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

General description:

The e/p-positioner type 3730-21, 3730-25 and 3730-28 is a communication capable, single respectively double operating positioner for the attachment to all common lift or slewing-motion actuators. It is intended to assign the valve position to an actuating signal and it is a passive two-terminal network.
The attachment to pneumatic control valves respectively butterfly valves takes place directly to the actuator of type series 3277.
Non-combustible media are used as a pneumatic auxiliary power.

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

CONDITIONS OF CERTIFICATION: YES as shown below:

For e/p-positioner type 3730-28 the following applies:

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 <= 63 mA shall be connected in series to the signal circuit (terminals 11/12).

The position indicator circuit (terminals 31/32) shall be connected to a fuse according to IEC 60127-2/VI, 250 V T with a maximum nominal fuse current of I_N <= 40 mA shall be connected in series. This fuse shall be arranged outside of the hazardous area.

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 <= 40 mA shall be connected in series to the program interface adapter in the connection of Vcc.

The program interface adapter shall be arranged outside the hazardous area.
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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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

The changes concern the
- update of the applied Standards
- the application of alternative gasket material of the enclosure
- the adding of an enclosure with windows
- the increase of the internal capacitance of the inductive limit contact (terminals 41/42) to C_i = 60 nF (type 3730-21)
- the adding of type notation 3730-25 for dust ignition protection by enclosure for EPL Db
- the implementation of dust ignition protection by Intrinsic Safety for EPL Db (type 3730-21)
- the implementation of dust ignition protection by enclosure for EPL Dc (type 3730-28)
- the implementation of Type of Protection "nA" for EPL Gc (type 3730-28)

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Additional information:

For thermal and electrical specifications reference is made to the Attachement.

Annex:

Attachment IECEx PTB 05.0007-01_v2-1.pdf

Applicant: **SAMSON AG Mess- und Regeltechnik**
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Electrical Apparatus: **e/p-positioner type 3730-21, 3730-25, 3730-28**

Electrical and thermal data for type 3730-21:

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	-40 °C ... 60 °C
	T5	-40 °C ... 70 °C
	T4	-40 °C ... 80 °C
IIIC	Not applicable	-40 °C ... 80 °C

The relationship between temperature class, the permissible range of the ambient temperature and the maximum short circuit currents for analyzing units with limit contact (terminals 41/42) applies according to the following table:

Temperature class	Permissible range of the ambient temperature	Maximum short circuit current
T6	-45 °C ... 45 °C	52 mA
T5	-45 °C ... 60 °C	
T4	-45 °C ... 75 °C	
T6	-40 °C ... 60 °C	25 mA
T5	-40 °C ... 80 °C	
T4	-40 °C ... 80 °C	

Electrical data

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

Maximum values:

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

C_i = 5,3 nF

L_i negligibly low

Type **3730-21..1 und 3730-25..1**
Position indicator ..... type of protection Intrinsic Safety Ex ia IIC/IIIC
(Terminals 31/32) only for connection to a certified intrinsically safe circuit

Maximum values:

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

C_i = 5,3 nF
L_i negligibly low

resp.

Type **3730-21....1 und 3730-25....1**
Structure-borne sound sensor ..... type of protection Intrinsic Safety Ex ia IIC/IIIC
(Terminals 31/32) only for connection to a certified intrinsically safe circuit

Maximum values:

U_i = 28 V
I_i = 115 mA

C_i = 5,3 nF
L_i negligibly low

resp.

Type **3730-21.....2 und 3730-25.....2**
Binary sensor ..... type of protection Intrinsic Safety Ex ia IIC/IIIC
(Terminals 31/32) only for connection to a certified intrinsically safe circuit

Maximum values:

U_i = 28 V
I_i = 115 mA

C_i = 56,3 nF
L_i negligibly low

Type **3730-211 und 3730-251**
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

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Postfach 33 45, 38023 Braunschweig, Germany
Telephone +49 531 592-0, Telefax +49 531 592-3605

P_i = 250 mW

C_i = 5,3 nF
L_i negligibly low

resp.

Limit contact, induktive ..... 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

C_i = 60 nF
L_i = 100 µH

resp.

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

C_i = 60 nF
L_i = 100 µH

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

C_i = 5,3 nF
L_i negligibly low

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

Maximum values:

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

C_i = 5,3 nF
L_i negligibly low

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Programming interface ..... type of protection Intrinsic Safety Ex ia IIC/IIIC

Maximum values:

U_o = 6,51 V
I_o = 57,5 mA
P_o = 94 mW
Linear characteristic

C_o = 22 µF
L_o = 10 mH

resp.

only for connection to a certified intrinsically safe circuit

Maximum values:

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

C_i negligibly low
L_i negligibly low

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

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

Maximum values:

U_o = 6,51 V
I_o = 56 mA
P_o = 91 mW
Linear characteristic

C_o = 11,2 µF
L_o = 11,6 mH

C_i = 730 nF
L_i = 370 µH

Electrical and thermal data for type 3730-25 and 3730-28:

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	-40 °C ... 60 °C
	T5	-40 °C ... 70 °C
	T4	-40 °C ... 80 °C
IIIC	Not applicable	-40 °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
Programming plug	Rated Voltage	10 V DC

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