



(1) **EU-TYPE-EXAMINATION CERTIFICATE**
(Translation)

(2) Equipment or Protective Systems Intended for Use in
 Potentially Explosive Atmospheres - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number:

PTB 04 ATEX 2109

Issue: 1

(4) Product: Positioner, type 3730-41..., 3730-51..., 3730-45..., 3730-55...

(5) Manufacturer: SAMSON AG Mess- und Regeltechnik

(6) Address: Weismüllerstraße 3, 60314 Frankfurt, Germany

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

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 17 of the 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 the confidential Test Report PTB Ex 17-25139.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0:2012/A11:2013 EN 60079-11:2012 EN 60079-31:2014

(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 in accordance to the Directive 2014/34/EU. 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 2 G Ex ia IIC T6...T4 Gb and II 2 D Ex ia IIIC T80 °C Db or**
II 2 D Ex tb IIIC T80 °C Db

Konformitätsbewertungsstelle, Sektor Explosionsschutz
 On behalf of PTB:

Braunschweig, May 11, 2017

Dr.-Ing. F. Lienesch
 Regierungsdirektor



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EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

(13)

SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 04 ATEX 2109, Issue: 1**

(15) Description of Product

The positioners of types 3730-41..., 3730-51..., 3730-45... and 3730-55... are communication-capable, bus-powered field devices which are used to assign a valve position to a control signal.

The bus interface connection (bus-coupling) can be performed according to the FISCO-concept for both specifications, Profibus PA and Foundation™ Fieldbus.

They are mounted onto levitation and slewing actuators. Non-flammable media are used as pneumatic auxiliary power. The equipment is intended for the application inside the hazardous area.

Thermal and electrical maximum values

Type 3730-41 and 3730-51:

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 ambient temperature range
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:

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Temperature class	Permissible ambient temperature range	I_0 / P_0
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	

BUS-connection-signal circuittype of protection Intrinsic Safety Ex ia IIC / IIB / IIIC
(terminals 11/12) only for connection to a certified intrinsically safe circuit

For relationship between type of protection and electrical data, reference is made to the following table:

Maximum values:

FISCO power supply	FIELDBUS power supply general	
Ex ia IIC / IIB / IIIC	Ex ia IIC / IIIC	Ex ia IIB / IIIC
$U_i = 17,5 \text{ V DC}$	$U_i = 24 \text{ V DC}$	$U_i = 24 \text{ V DC}$
$I_i = 380 \text{ mA}$	$I_i = 360 \text{ mA}$	$I_i = 380 \text{ mA}$
$P_i = 5,32 \text{ W}$	$P_i = 1,04 \text{ W}$	$P_i = 2,58 \text{ W}$

$C_i = 5 \text{ nF}$
 $L_i = 10 \text{ } \mu\text{H}$

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

Maximum values:

$U_i = 16 \text{ V}$
 $I_i = 52 \text{ mA}$
 $P_i = 169 \text{ mW}$

$C_i = 60 \text{ nF}$
 $L_i = 100 \text{ } \mu\text{H}$

resp.

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$U_i = 16 \text{ V}$
 $I_i = 25 \text{ mA}$
 $P_i = 64 \text{ mW}$
 $C_i = 60 \text{ nF}$
 $L_i = 100 \text{ } \mu\text{H}$

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

Maximum values:

$U_i = 28 \text{ V}$
 $I_i = 115 \text{ mA}$
 $C_i = 5.3 \text{ nF}$
 L_i negligibly low

Binary input 1.....type of protection Intrinsic Safety Ex ia IIC / IIIC
(terminals 87/88) for connection to an active contact circuit

Maximum values:

$U_i = 30 \text{ V}$
 $I_i = 100 \text{ mA}$
 C_i negligibly low
 L_i negligibly low

Binary input 2.....type of protection Intrinsic Safety Ex ia IIC / IIB / IIIC
(terminals 85/86) only for connection to a passive floating contact circuit

Maximum values:

$U_o = 5.88 \text{ V}$
 $I_o = 1 \text{ mA}$
 $P_o = 7.2 \text{ mW}$

For relationship between explosion group and permissible external capacitances and inductances, reference is made to the following table:

Ex ia IIC / IIIC	Ex ia IIB / IIIC
$C_o = 2 \text{ } \mu\text{F}$	$C_o = 16 \text{ } \mu\text{F}$
$L_o = 10 \text{ mH}$	$L_o = 1 \text{ H}$

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C_i negligibly low
 L_i negligibly low

Serial Interfacetype of protection Intrinsic Safety Ex ia IIC / IIB / IIIC
(programming socket BU)

Maximum values:

$U_o = 8.61 \text{ V}$
 $I_o = 55 \text{ mA}$
 $P_o = 250 \text{ mW}$

For relationship between type of protection and permissible external capacitances and inductances, reference is made to the following table:

Ex ia IIC / IIIC	Ex ia IIB / IIIC
$C_o = 0.61 \mu\text{F}$	$C_o = 4 \mu\text{F}$
$L_o = 9 \text{ mH}$	$L_o = 9 \text{ mH}$

resp.

only for connection to a certified intrinsically safe circuit

Maximum values:

$U_i = 16 \text{ V}$
 $I_i = 25 \text{ mA}$
 $P_i = 64 \text{ mW}$

C_i negligibly low
 L_i negligibly low

External position sensortype of protection Intrinsic Safety Ex ia IIC / IIIC
(analog circuit board, pins p9, p10, p11)

Maximum values:

$U_o = 8.61 \text{ V}$
 $I_o = 55 \text{ mA}$
 $P_o = 250 \text{ mW}$

For relationship between type of protection and permissible external capacitances and inductances, reference is made to the following table:

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Ex ia IIC / IIIC	Ex ia IIB / IIIC
$C_o = 0.61 \mu F$	$C_o = 4 \mu F$
$L_o = 9 mH$	$L_o = 9 mH$

$C_i = 730 \text{ nF}$
 $L_i = 370 \mu H$

Type 3730-45... und 3730-55...:

The permissible range of the ambient temperature for dust groupe IIIC is -55 °C ... 80 °C.

BUS-connection signal circuit (Terminals 11/12).....	Nominal signal: Rated voltage:	24 V DC 28 V
Binary input 1..... (Terminals 87/88)	Nominal signal: Rated voltage:	6 ... 30 V DC 30 V
Binary input 2..... (Terminals 85/86).....	only for connection to a passive floating contact circuit	
Limit contact, inductive (Terminals 41/42)	Nominal signal: Rated voltage:	8 V DC, 8 mA 16 V
Forced deaeration..... (Terminals 81/82)	Nominal signal: Rated voltage:	6 ... 24 V DC 28 V

Changes against previous issue:

The changes concern the update of the applied standards, the electrical data, the adding of another type notation for dust ignition protection by enclosure, the implementation of dust ignition protection by Intrinsic Safety, the application of alternative gasket material of the enclosure and alternative construction of the enclosure.

(16) Test Report PTB Ex17-25139

(17) Specific conditions of use

none

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(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

According to Article 41 of Directive 2014/34/EU, EC-type examination certificates which have been issued according to Directive 94/9/EC prior to the date of coming into force of Directive 2014/34/EU (April 20, 2016) may be considered as if they were issued already in compliance with Directive 2014/34/EU. By permission of the European Commission supplements to such EC-type examination certificates and new issues of such certificates may continue to hold the original certificate number issued before April 20, 2016.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, May 11, 2017


Dr.-Ing. F. Lienesch
Regierungsdirektor

