Ex-Certificates ATEX

Table of Contents

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

PTB

T R A N S L A T I O N

(1) **EC TYPE EXAMINATION CERTIFICATION**

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres – **Directive 94/9/EC**

(3) EC Type Examination Certificate Number

PTB 00 ATEX 2038

(4) Equipment: Model 3780-1... Positioner

(5) Manufacturer: SAMSON AG

(6) Address: Weismüllerstr. 3, D-60314 Frankfurt, Germany

(7) This equipment and any acceptable variations thereof are specified in the schedule to this certificate and the documents referred to therein.

(8) The Physikalisch-Technische Bundesanstalt, certified body number 0102 in according to Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirement relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres specified in Annex II to the Directive.

The examination and test results are recorded in confidential report

PTB Ex 00-20009.

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

EN 50014: 1997 **EN 50020: 1994**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) According to the Directive 94/9/EC, this EC TYPE EXAMINATION CERTFICATE relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of the equipment.

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

 **II 2 G EEx ia IIC T6**

Zertifizierungsstelle Explosionsschutz Braunschweig, ...
By order

(Signature) (Seal)

Dr. Ing. U. Johannsmeyer
Regierungsdirketor

(13) **S c h e d u l e**

(14) **EC TYPE EXAMINATION CERTIFICATE No. PTB 00 ATEX 2038**

(15) **Description of Equipment**

The Model 3780-1... Positioner serves for converting a load-independent current into a pneumatic control signal. Pneumatic power is supplied by noncumbustible media.

The Model 3780-... Positoner is a passive two-pole network which may be connected to any certified intrinsically safe circuit, provided the permissible maximum values of Ui, Ii and Pi are not exceeded.

The Positioner is permitted to be installed inside and outside hazardous areas.

The correlation between temperature classification and permissible ambient temperature ranges is shown in the table below:

Temperature class	Permissible ambient temperature range
T6	-40 °C ... 60 °C
T5	-40 °C ... 70 °C
T4	-40 °C ... 80 °C

For the Model **3780-12...** Positioners the correlation between temperature classification, permissible ambient temperature ranges and maximum short-circuit current is shown in the table below

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

Electrical data

Signal circuit
(terminals 11/12)

Type of protection. Intrinsic safety EEx ia IIC
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 = negligible

Position indicator
(terminals 31/32)

Type of protection: Intrinsic safety EEx ia IIC
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 = negligible

Version **3780-12...**
Llimit switches
(terminals 41/42and 51/52)

Type of protection: Intrinsic safety EEx ia IIC
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 = 200 μH, or

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

C_i = 60 nF, L_i = 200 μH

Type of protection: Intrinsic safety EEx ia IIC
only for connection to a certified intrinsically safe
circuit

Limit switches, software (terminals 41/42 and 51/52)	**Maximum values:** U_i = 20 V I_i = 60 mA P_i = 250 mW C_i = 5.3 nF, L_i = negligible
Forced venting function (terminals 81/82)	Type of protection: Intrinsic safety EEx ia IIC only for connection to a certified intrinsically safe circuit **Maximum values:** U_i = 28 V I_i = 115 mA P_i = 500 mW C_i = 5.3 nF, L_i = negligible
Fault alarm output (terminals 83/84)	Type of protection: Intrinsic safety EEx ia IIC 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 = negligible

(16) <u>Test Report PTB Ex 00-20009</u>

(17) <u>Special conditions for safe use</u>

Not applicable

(18) <u>Special Health and Safety Requirements</u>

In compliance with the standards specified above

Zertifizierungsstelle Explosionsschutz
By order
(Signature) (seal)

Dr. Ing. U. Johannsmeyer
Regierungsdirektor

Braunschweig, 03 May 2000

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

PTB

T R A N S L A T I O N

A D D E N D U M N o.: 1

**in compliance with Directive 94/9/EC Annex III Clause 6
to the EC Type Examination Certificate PTB 98 ATEX 2038**

Equipment:	Model 3780-1... Positioner
Marking:	**II 2 G EEx ia IIC T6**
Manufacturer:	SAMSON AG
Address:	Weismüllerstr. 3, D-60314 Frankfurt, Germany

Description of the additions and modifications

In future the Model 3780-1... Positioner may be manufactured in compliance with the certification documents identified in the associated test report.

The coupling circuit, the wiring of the logic board and the wiring of the displacement transducer were modified because of changed EMC limit values.

The modifications relate to the design and construction.

The electrical data are changed as follows:

Electrical data:

Signal circuit (terminals 11/12)	Type of protection. Intrinsic safety EEx ia IIC 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 = 45 μH

All the other data apply without change also to this Addendum No. 1

Test report: **PTB Ex 00-20260**

Zertifizierungsstelle Explosionsschutz
By order

Braunschweig, 10. October 2000

(Signature) (Seal)

Dr. Ing. U. Johannsmeyer
Regierungsdirektor

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

PTB

T R A N S L A T I O N

A D D E N D U M N o.: 2

in compliance with Directive 94/9/EC Annex III Clause 6
to the EC Type Examination Certificate PTB 00 ATEX 2038

Equipment: Model 3780-1...I/P Positioner

Marking: **II 2G EEx ia IIC T6**

Manufacturer: SAMSON AG Mess- und Regeltechnik

Address: Weismüllerstr. 3, D-60314 Frankfurt, Germany

Description of the additions and modifications

The Model 3780-1...I/P Positioner satisfy the requirements of EN 50281-1-1: 1998 relating to electrical apparatus with protection provided by the enclosure.

The positioners are attached to pneumatic control valves or butterfly valves either directly across actuators of the 3277 Series or to conventional actuators via NAMUR adapter plates.

The Model 3780-1.. I/P Positioners shall be provided in addition with the following marking:

II 2D IP 65 T80 °C

all the other data apply without change also to this Addendum No. 2.

Test report: **PTB Ex 03-23395**

Zertifizierungsstelle Explosionsschutz Braunschweig, 14 January 2004
By order

(Signature) (Seal)

Dr. Ing. U. Johannsmeyer
Regierungsdirektor

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

PTB

T R A N S L A T I O N

(1) **EC TYPE EXAMINATION CERTIFICATION**

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres – **Directive 94/9/EC**

(3) EC Type Examination Certificate Number

PTB 00 ATEX 2085

(4) Equipment: Model 3963-1.. Solenoid Valve

(5) Manufacturer: SAMSON AG

(6) Address: Weismüllerstr. 3, D-60314 Frankfurt, Germany

(7) The equipment and any acceptable variations thereof are specified in the schedule to this certificate.

(8) The Physikalisch-Technische Bundesanstalt, notified body number 0102 according to Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres specified in Annex II to the Directive.

The examination and test results are recorded in confidential report

PTB Ex 01-21061

(9) The Essential Health and Safety Requirements are satisfied by compliance with

EN 50014: 1997 **EN 50020: 1994**

Test Report PTB Ex 01-21061

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use as specified in the schedule to this certificate.

(11) According to the Directive 94/9/EC, this EC TYPE EXAMINATION CERTFICATE relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

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

 **II 2 G EEx ia IIC T6**

Zertifizierungsstelle Explosionsschutz Braunschweig, 8. August 2001
By order

(Signature) (Seal)

Dr. Ing. U. Johannsmeyer
Regierungsdirketor

Test Report PTB Ex 01-21061

(13) **S c h e d u l e**

(14) **EC TYPE EXAMINATION CERTIFICATE No. PTB 00 ATEX 2038**

(15) **Description of Equipment**

The Model 3963-1.. Solenoid Valve converts electrical binary signals in the input circuit into pneumatic output signals. It is intended for attachment to actuators and for constructing control systems.

It may be installed inside and outside of hazardous areas.

The Model 3963-1.. Solenoid Valve is a passive two-terminal network that may be connected to any certified intrinsically safe circuit, provided the permissible maximum values of U_i, I_i and P_i are not exceeded.

By connection of suitable series dropping resistors the Model 3963-1.. Solenoid Valve can accommodate nominal voltages of 6, V, 12 V and 24 V.

Electrical data

Signal circuit normal signal ... Type of protection: Intrinsic Safety EEx ia IIC

The correlation between version, temperature classification, permissible maximum ambient temperature ranges and maximum power dissipation is shown in the table below:

Version (U_N)		**6V**	**12V**	**24V**
Temperaturclass	T6 T5 T4	60°C -45°C ≤ T_a ≤ 70°C 80°C		
Characteristic linear or rectangular	Pi	#	##	
C_i negligible, L_i negligible				

The permissible maximum power dissipation Pi in the 6 V version is 250 mW.

The maximum values for connection to a certified intrinsically safe circuit are shown in the table below:

Test Report PTB Ex 01-21061

Ui	25V	27V	28V	30V	32V
Ii	150mA	125mA	115mA	100mA	85mA
Pi	no limitation				
Ci negligible, Li negligible					

(16) Test Report PTB Ex 01-21061

(17) Special conditions for safe use

None

(18) Special Health and Safety Requirements

In compliance with the standards specified above.

Zertifizierungsstelle Explosionsschutz
By order

Braunschweig, 8 August 2001

(Signature) (seal)

Dr. Ing. U. Johannsmeyer
Regierungsdirektor

Index of Revisions

Rev.	Sheet	Prepared, revised		Checked	Approved			Remark, kind of revision
		Name	Date	Name	Name	Date	Status	
00	**1 - 16**	**V12/sro**	**2005-06-01**	**V12/lf**	**V12/di**	**2005-06-10**	**IFR**	**FIRST ISSUE / FINAL ISSUE**