

Ex-Certificates ATEX

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TRANSLATION

(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 CERTIFICATE 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
By order

Braunschweig, 8. August 2001

(Signature)

(Seal)

Dr. Ing. U. Johannsmeyer
Regierungsdirktor

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 (UN)	6V	12V	24V
Temperaturclass T6 T5 T4	60°C -45°C ≤ T _a ≤ 70°C 80°C		
Characteristic linear or rectangular Pi	#	##	
Ci negligible, Li negligible			

The permissible maximum power dissipation P_i 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

U _i	25V	27V	28V	30V	32V
I _i	150mA	125mA	115mA	100mA	85mA
P _i	no limitation				
C _i negligible, L _i 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



TRANSLATION

(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 98 ATEX 2072

(4) Equipment: Model 3776-1 Limit Switch

(5) Manufacturer: Samson AG

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

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

(8) The Physikalisch-Technische Bundesanstalt, notified body number 0102 in accordance with 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 given in Annex II to the Directive.

The examination and test results are recorded in confidential report
No. PTB Ex 98-28049.

(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) This EC TYPE EXAMINATION CERTIFICATE 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
By order

Braunschweig, 07.07.1998

(Signature)

(Seal)

Dr. Ing. U. Johannsmeyer
Regierungsdirketor

EC Type Examination Certificates without signature and seal are invalid.

This EC Type Examination Certificate may only be reproduced in its entirety and without any changes, schedule included.
Extracts or changes shall require the prior approval of the Physikalisch-Technische Bundesanstalt.

Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig



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

(14) **EC TYPE EXAMINATION CERTIFICATE No. PTB 98 ATEX 2072**

(15) **Description of Equipment**

The Model 3776-1... Limit Switches are intended for attachment to rotary actuators according to VDE/DIN 3845 and for integral attachment to Model 3277 Linear Actuators with concealed lever system. Depending on the version, they are equipped with various types of limit contacts and solenoid valves of low electrical power.

The Model 3776-1... Limit Switches are passive two-terminal networks that may be connected to all certified intrinsically safe circuits, provided the permissible maximum values of U_i , I_i and P_i are not exceeded.

Electrical connection is made across plugs and sockets or cable entries.

The relation between temperature classification and the permissible maximum ambient temperature range is specified in the table below:

In the Model 3776-17 Limit Switches, the relation between temperature classification and the permissible maximum ambient temperature range is as follows:

T6	-20 °C... +55 °C
T5	-20 °C... +55 °C
T4	-20 °C... +80 °C

Electrical data

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

Model 3776-11., Model 3776-12., Model 3776-14 with inductive two-wire sensor:

Maximum values:

(terminals 41/42, 45/46 and 51/52)	$U_i =$	16 V
	$I_i =$	52 mA
	$P_i =$	169 mW

Effective internal capacitance: $C_i =$ 80 nF

Effective internal inductance: $L_i =$ 500 μ H

Model 3776-17., with double inductive proximity switch:



(terminals 41/42,
45/46 and 51/52)

$U_i = 15 \text{ V}$
 $I_i = 52 \text{ mA}$
 $P_i = 169 \text{ mW}$

Effective internal capacitance: $C_i = 100 \text{ nF}$
Effective internal inductance: $L_i = 100 \mu\text{H}$

Model 3776-15., Model 3776-16. with electric microswitch:

(terminals 41/42/43,
44/45/46 and
51/52/53)

$U_i = 45 \text{ V}$
 $P_i = 2 \text{ W}$

The effective internal capacitances and inductances are negligible.

Model 3776-1...1, Model 3776-1...2, Model 3776-1...3 with solenoid valve

Input circuit:
(terminals 81/82
and 83/84)

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

Maximum values:

U_i	25 V	27 V	28 V	30 V	32 V
I_i	150 mA	125 mA	115 mA	100 mA	90 mA

The effective internal capacitances and inductances are negligible.

(16) **Report PTB Ex 98-28049**

(17) **Special conditions for safe use**

Not applicable

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

In compliance with the Standards mentioned above.

Zertifizierungsstelle Explosionsschutz
By order

Braunschweig, 07.07.98

(Signature) (seal)

Dr. Ing. U. Johannsmeyer



TRANSLATION

(1) **EC TYPE EXAMINATION CERTIFICATE**

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

(3) EC Type Examination Certificate Number

PTB 98 ATEX 2114

(4) Equipment: Model 4746-2 and 4746-3 Limit Switches

(5) Manufacturer: Samson AG

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

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

(8) The Physikalisch-Technische Bundesanstalt, certified body number 0102 in accordance with 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
No. PTB Ex 98-28184.

(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/EX, this EX TYPE EXAMINATION CERTIFICATE 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:



Zertifizierungsstelle Explosionsschutz
By order

Braunschweig, 03.09.1998

(Signature)

(Seal)

EC Type Examination Certificates without signature and seal are invalid. This EC Type Examination Certificate may only be reproduced in its entirety and without any changes, schedule included.
Extracts or changes shall require the prior approval of the Physikalisch-Technische Bundesanstalt.

Physikalisch-Technische Bundesanstalt, Bundesallee 100 D-38116 Braunschweig

(13) **Schedule**

(14) **EC TYPE EXAMINATION CERTIFICATE No. PTB 98 ATEX 2114**

(15) **Description of Equipment**

The Model 4746-2 and 4746-3... Limit Switches serve for converting mechanical manipulated variables into electrical signals. Depending on the version, they are equipped with various types of limit contacts. They are intended for attachment to pneumatic, electrical or hydraulic actuators installed inside and outside of hazardous areas.

The Model 4746-2... and 4746-3... Limit Switches are passive two-terminal networks that may be connected to all certified intrinsically safe circuits, provided the permissible maximum values of U_i , I_i and P_i are not exceeded.

Electrical connection is made by means of plugs and sockets or cable entries.

The relation between temperature classification and the permissible maximum ambient temperature range is specified in the table below:

Temperature class	Ambient temperature range
T6	-45 °C ... +60 °C
T5	-45 °C ... +70 °C
T4	-45 °C ... +80 °C

Electrical data

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

(Terminals 41/42 Models 4746-2.0., Model 4746-2.1., Model 4746-2.5. with inductive proximity switch.

Maximum values:

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

Effective internal capacitance:	C_i = 60 nF
Effective internal inductance:	L_i = 250 μ H



(Terminals 41/42/43
and 51/52/53

Model 4746-3.2, Model 4746-3.6 with electric
microswitch

Maximum values:

$U_i = 45 \text{ V}$
 $P_i = 2 \text{ W}$

The effective internal capacitances and inductances
are negligible.

(16) Report PTB Ex 98-28184

(17) Special conditions for safe use

Not applicable

(18) Essential Health and Safety Requirements

In compliance with standards

Zertifizierungsstelle Explosionsschutz
By order

Braunschweig, 03.09.98

(Signature)

(seal)

Dr. Ing. U. Johannsmeyer
Regierungsdirektor

Index of Revisions

Rev.	Sheet	Prepared, revised		Checked	Approved			Remark, kind of revision
		Name	Date		Name	Date	Status	
00	15	V12/sro	2005-06-01	V12/lf	V12/di	2005-06-10		First issue /FINAL ISSUE

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