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 02 ATEX 2077

(4) Equipment: Model 3768-1... Limit Switch

(5) Manufacturer: SAMSON AG, Mess- und Regeltechnik

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

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

(8) The Physikalisch-Technische Bundesanstalt, notified 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 Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres as specified in Annex II to the Directive.

The examination and test results are recorded in confidential report **PTB-Ex 02-22053.**

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

EN 50014: 1997+A1+A2 **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,19. July 2002
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 02 ATEX 2077**

(15) **Description of Equipment**

There are various versions of the Model 3768-1... Limit Switch with limit contacts and a low-power solenoid valve.

The Limit Switch is suitable for attachment to rotary actuators according to VDE/VDI 3845 and for integral attachment to Model 3277 Linear Actuators with concealed lever system.

The Limit Switch is a passive two-terminal network that may be connected to any certified intrinsically safe circuit, provided the permissible maximum values of Ui, Ii and Pi are not exceeded.

The device is intended for use inside and outside of hazardous locations.

Inductive limit contact (terminals 41/42 and 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	=	30	nF
L_i	=	100	μH
or			
U_i	=	16	V
I_i	=	25	mA
P_i	=	64	mW
C_i	=	30	nF
L_i	=	100	

The correlation between version, temperature classification, permissible ambient temperature ranges, maximum short-circuit currents and power for analysers is shown in the table below:

Temperature class	Permissible ambient temperature range	I_o / P_o
T6	-45 °C ... 45 °C	52 mA / 169 mW
T5	-45 °C ... 60 °C	
T4	-45 °C ... 75 °C	
T6	-45 °C ... 65 °C	25 mA / 64 mW
T5	-45 °C ... 80 °C	
T4	-45 °C ... 100 °C	

Versions 3768-1.2./-1.3/-1.4. with solenoid valve

Signal circuit, nominal signal (terminals 81/82)

Type of protection: Intrinsic safety EEx ia IIC

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

Version	U_N	**6V**	**12V**	**24V**
Temperaturclass	T6 T5 T4	60°C -45°C....70°C 80°C		
Characterristic linear or rectangular		#	##	

C_i negligible, L_i negligible

\# The maximum permissible power dissipation Pi of the 6 V version is 250 mW.

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

U_i	25 V	27 V	28 V	30 V	32 V
I_i	150 mA	125 mA	115 mA	100 mA	85 mA
P_i	no limitation				
C_i negligible L_i negligible					

(16) **Test Report PTB Ex 02-22053**

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

None

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

In compliance with the standards specified above.

Zertifizierungsstelle Explosionsschutz Braunschweig, 19. July 2002
By order

(Signature) (seal)

Dr. Ing. U. Johannsmeyer
Regierungsdirektor