



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 1025 X

(4) Equipment: Model 3770-1 Ex d / Ex i Field Barrier

(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: **PTB Ex 98-17005**.

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

EN 50014: 1997

EN 50018: 1995

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.

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.

- 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 d [ia] IIC T6

Zertifizierungsstelle Explosionsschutz
By order

Braunschweig, 18.06.1998

(Signature)

(Seal)

Dr. Ing. U. Klausmeyer
Oberregierungsrat

(13) **Schedule**

(14) **EC TYPE EXAMINATION CERTIFICATE No. PTB 98 ATEX 1025 X**

(15) **Description of Equipment**

The Model 3770-1 Ex d / Ex i Field Barrier is intended for direct attachment to positioners which are constructed and certified to be intrinsically safe (type of protection “intrinsic safety”).

The field barrier consists of the Model SC 16.1 Connection Box made by Cortem and a 3-channel safety barrier assembly encapsulated inseparably inside the enclosure. The intrinsically safe output circuits of the safety barriers are connected to the intrinsically safe positioner input circuits through bushings.

Technical Data

Signal Circuits
(terminals Ch 2+/-; Ch 3+/-)

Circuits parameters: (0)4 to 20 mA or U_N up to 10 V, or NAMUR proximity switches

Input: $U_m = 250$ V
Fuse current rating: $I_N = 80$ mA

Output circuits: Type of protection “Intrinsic Safety EEx ia IIC”
(terminals Ch 2+/-; Ch 3+/-)

Maximum values: $U_0 \leq 12.6$ V
 $I_0 \leq 49$ mA
 $P_0 \leq 154$ mW
Output characteristic linear

EEx ia	IIC	IIB
C_0	1.15 μ F	7.4 μ F
L_0	15 mH	56 mH

Signal circuit
(terminals Ch1 +/-)

Circuits parameters: 4 to 20 mA
Input: $U_m = 250$ V
Fuse current rating: $I_N = 80$ mA

Output circuit: Type of protection “Intrinsic Safety EEx ia IIC”
(terminals Ch1 +/-)

Maximum values: $U_0 \leq 17.2$ V
 $I_0 \leq 110$ mA
 $P_0 \leq 473$ mW
Output characteristic linear

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EEx ia	IIC	IIB
Co	360 nF	2.1 µF
Lo	3 mH	12 mH

(16) **Report**

PTB Ex 98-17005 comprising description (18 sheets), drawings (5 sheets),
Three PTB text records.

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

Connection

1. The Model 3770-1 Ex d / Ex i Field Barrier shall be connected by suitable cable or conduit entries complying with the requirements of EN 50018 clauses 13.1 and 13.2 and for which a separate test certificate has been issued.
2. Cable entries (Pg glands) and plugs of plain construction must not be used. Where the field barrier is connected by means of a conduit entry approved for this application, the associated sealing device shall be provided immediately at the enclosure.
3. Apertures not used shall be closed in accordance with EN 50018 clause 11.9.

These notes shall be added to each apparatus in appropriate form.

Ambient temperature

The ambient temperature range for the application of the Model 3770-1
Ex d/Ex i Filed Barrier is -45 °C to 60 °C.

Routine tests

The routine tests specified in EN 50018 clause 16.1 are not required according to clause 16.2 because the type test has been made successfully at a pressure of four times the reference pressure.

Potential equalization

A bonding conductor shall be provided along the intrinsically safe output circuits.

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

Not applicable.

Zertifizierungsstelle Explosionsschutz
By order

Braunschweig, 08.06.1998

(Signature)

(Seal)

Dr.-Ing. K. Klausmeyer
Oberregierungsrat

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 1025 X**

Equipment: Model 3770-1 Ex d/Ex i Field Barrier
Manufacturer: SAMSON AG Mess- und Regeltechnik
Address: Weismüllerstr. 3, D-60314 Frankfurt

Description of the additions and modifications

The Model 3770-1 Ex d/Ex i Field Barrier series is expanded by the versions 3770-12 and 3770-14 and in future may be manufactured in compliance with the certification documents identified in the associated test report.

The modifications relate to the design and construction for the type of protection Intrinsic Safety “i”

The electrical data and all the other data apply without change also to this Addendum No. 1

Test report: PTB Ex 00-20259

Zertifizierungsstelle Explosionsschutz
By order

Braunschweig, 10 October 2000

(Signature)

(Seal)

Dr. Ing. U. Johannsmeyer
Regierungsdirektor

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