



**Prüf- und Zertifizierungsstelle**  
**ZELM Ex**



(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:

**ZELM 08 ATEX 0361 X**

(4) Equipment: **Safety 2600T Series Pressure Transmitter**

(5) Manufacturer: **ABB SpA**

(6) Address: **Via Statale 113, 22016 Lenno (Como), Italy**

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

(8) The Prüf- und Zertifizierungsstelle ZELM Ex, notified body No. 0820 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, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report ZELM Ex 1560517528.

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

**EN 60079-0:2006    EN 60079-1:2007    EN 60079-11:2007    EN 60079-26:2004**  
**EN 61241-0:2006    EN 61241-1:2004    EN 61241-11:2006    EN 1127-1:2007**

(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, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this Certificate.

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



**II 1G Ex ia IIC T6 and II 1/2G Ex ia IIC T6 and**  
**II 1D Ex iaD 20 T95°C and II 1/2D Ex iaD 21 T95°C**  
**resp. II 1/2G Ex d IIC T6 and II 1/2D Ex tD A21 IP67 T85°C**

Zertifizierungsstelle **ZELM Ex**

  
Dipl.-Ing. Harald Zelm



Braunschweig, May 06, 2008

Sheet 1/4



Prüf- und Zertifizierungsstelle

ZELM Ex



## SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE ZELM 08 ATEX 0361 X**

(15) Description of equipment

The Safety Pressure Transmitter Model 268 is an integral part of the 2600T Series and is used for measurement and conversion of physical quantities as pressure and differential pressure into an analogous electrical standard signal of a 4 ... 20 mA current loop and digital communication according to the HART protocol in hazardous locations.

The Pressure Transmitter is equipped with an inductive type pressure sensor, which contains a mechanical separation element and is equipped with a flameproof device.

The equipment is intrinsically safe and has a flameproof enclosure. From this fact results the possibility to apply this device either in accordance with type of protection Intrinsic Safety "ia" and "iaD" respectively or with Protection by Flameproof enclosures "d" and Protection by enclosures "tD" respectively in hazardous locations.

A customer decides on application of the Transmitters as a device with type of protection Intrinsic Safety "ia" and "iaD" respectively or with Protection by Flameproof enclosures "d" and Protection by enclosures "tD" respectively and marks his decision on a safety marking plate.

The Pressure Transmitters 2600T Series Model 268 is also intended for installation into a separation wall between hazardous locations that require category 1 and category 2 respectively. In this case the Transmitter itself is installed into hazardous locations that require category 2.

The equipment may be optionally fitted with digital or analogue meters for which a separate EC-type Examination Certificate is available. A surge protection unit is intended as a further option.

For Transmitters used in accordance with type of protection Intrinsic Safety "ia" and "iaD" respectively the maximum permissible ambient temperature range is - 50°C to + 85°C.

For Transmitters used in accordance with Protection by Flameproof enclosures "d" and Protection by enclosures "tD" respectively, the maximum permissible ambient temperature range is - 50°C to + 75°C.

The housing of the device provides a degree of protection IP67 according to EN 60529.

### Model code

Safety 2600T Series Pressure Transmitter

**Model 268... EX...**

where instead of the "EX" code and of dots another letter or digit combinations will be stated, that relate to different versions of the equipment.

### Electrical data

1. **Use in accordance with type of protection Intrinsic Safety "ia" and "iaD" respectively**

Supply and  
signal circuit

(terminals signal +,-)

only for connection to approved intrinsically safe circuits

maximum values:

$$U_i = 30 \text{ V}$$

Sheet 2/4



Prüf- und Zertifizierungsstelle

ZELM Ex



Schedule to EC-TYPE-EXAMINATION CERTIFICATE ZELM 08 ATEX 0361 X

$I_i$ ,  $P_i$ , the max. ambient temperature range, the temperature class and the max. surface temperature of the enclosure for "Dust" atmosphere, these values are to be taken from the subsequent table:

Temperature class	lower limit of ambient temperature	upper limit of ambient temperature	max. surface temperature for Dust atmosphere	max. $I_i$ [mA]	max. $P_i$ [W]
T4	- 50°C	+ 85°C	95°C	100	0.75
T4	- 50°C	+ 70°C	95°C	160	1
T5	- 50°C	+ 40°C	50°C	100	0.75
T6	- 50°C	+ 40°C	50°C	50	0.4

effective internal capacitance is negligibly small  
resp.  $C_i = 13$  nF with output meter  
effective internal inductance is negligibly small  
resp.  $L_i = 0.22$  mH with output meter

For use of the equipment in hazardous locations that require category 1G following reduced ambient temperature ranges are valid, depending on maximum values ( $I_i$ ,  $P_i$ ) of the connected intrinsic safety circuits:

Temperature class	lower limit of ambient temperature	upper limit of ambient temperature	max. $I_i$ [mA]	max. $P_i$ [W]
T4	- 50°C	+ 68°C	100	0.75
T4	- 50°C	+ 56°C	160	1

or

2. Use in accordance with Protection by Flameproof enclosures "d" and Protection by enclosures "tD" respectively

Rated values:  $U = 42$  V  
 $P = 2$  W

- (16) Report No.

ZELM Ex 1560517528

- (17) Special conditions for safe use

1. The Pressure Transmitter meets requirements of several alternative protection concepts like Intrinsic Safety "ia" and "iaD" respectively, Protection by Flameproof enclosures "d" and Protection by enclosures "tD" respectively, therefore electrical parameters, applications and arrangement conditions applying for each of these types of protection have to be considered.

Sheet 3/4



# Prüf- und Zertifizierungsstelle ZELM Ex



## Schedule to EC-TYPE-EXAMINATION CERTIFICATE ZELM 08 ATEX 0361 X

2. Before final installation of the Transmitter a customer decides on its use either in accordance with Intrinsic Safety "ia" and "iaD" respectively or with Protection by Flameproof enclosures "d" and Protection by enclosures "tD" respectively and signs his choice on the safety label. This marking should be made permanent (e.g. with the letter embossing tool) and it should consider specific ambient conditions, e.g. chemical corrosion. The selected protection concept is allowed to be changed only by manufacturer after a new satisfactory evaluation.
3. The connection of cables and conduits to the Transmitter as well as the blind stops of unused openings shall be made in accordance with requirements of selected type of protection and must be certified for this protection concept. Additionally, for use in accordance with type of protection Intrinsic Safety "ia" and "iaD" respectively these components have to fulfil requirements of standards EN 60079-0, EN 61241-0 and EN 61241-11. For using in accordance with Protection by Flameproof enclosures "d" and Protection by enclosures "tD" respectively they must additionally fulfil requirements of standard EN 60079-1 and EN 61241-1.
4. The instruction manual has to be considered, in particular the maximum thickness of dust layers permitted for hazardous locations of category 1D and sufficient equipotential bonding and grounding and the overvoltage protection.  
For application in dust atmosphere the degree of protection IP67 must be ensured in regard to the enclosure and cable entry fittings.
5. The Pressure Transmitter may only be installed in such chemical atmosphere where sufficient permanence of its isolating diaphragm is guaranteed (consider operating instruction).
6. The instruction manual has to be observed in particular in case of application in hazardous locations, which require category 1, concerning reduction of the upper limit of the ambient temperature (1G) and permissible ignition temperature (1D) according to EN 1127-1.

### (18) Essential Health and Safety Requirements


The examination occurred on basis of the standards performed under point 9 of the EC-type examination certificate. The evaluation of the flameproof protection concepts occurred extensively on basis of the valid EC-type examination certificate CESI 02 ATEX 027 including the 1st and the 2nd supplement.

Specification of permissible ambient temperature ranges for the category 1G has been made under consideration of the standard EN 1127-1:2007.

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Braunschweig, May 06, 2008

  
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Sheet 4/4