



(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 06 ATEX 0302 X

(4) Equipment: **2600T Series Pressure Transmitter Model 364 HART**

(5) Manufacturer: **ABB SACE 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 1470517464

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

**EN 60079-0:2004
EN 60079-15:2005**

**EN 50020:2002
EN 60079-26:2004**

**EN 60079-1:2004
EN 50281-1-1:1998**

(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:



or **II 1 GD T50°C Ex ia IIC T6 resp. II 1 GD T95°C Ex ia IIC T4**
or **II 1/2 GD T50°C Ex ia IIC T6 resp. II 1/2 GD T95°C Ex ia IIC T4**
or **II 1/2 GD Ex d IIC T6 IP67 T85°C**
or **II 3 GD T50°C Ex nL IIC T6 resp. II 3 GD T95°C Ex nL IIC T4**

Zertifizierungsstelle ZELM Ex

Braunschweig, August 09, 2006

Dipl.-Ing. Harald Zelm



Sheet 1/4



Prüf- und Zertifizierungsstelle

ZELM Ex



SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE ZELM 06 ATEX 0302 X**

(15) Description of equipment

The Model 364 of the 2600T Series Pressure Transmitters is used for measurement and conversion of the physical quantities pressure above atmospheric and differential pressure absolute pressure into an analogous electrical standard signal of a 4 ... 20 mA current loop and digital communication according to the HART protocol in the hazardous area.

The equipment is Intrinsically Safe, its enclosure is Flameproof and the Transmitter meets requirements for Limited Energy equipment. From this fact results the possibility to apply these devices either in accordance with the intrinsic safety or with the flameproof type of protection in the hazardous area.

The customer chooses the protection concept "ia", "d" or "nL" of the Transmitters and according to this decision the marking on the safety marking plate should be done.

The Pressure Transmitter is also allowed to be installing into the separation wall between the hazardous areas of the category 1 and the category 2. In this case the Transmitter itself is installed into the hazardous area of the category 2.

The Model 364 of the Pressure Transmitters is equipped with an inductive sensor and contains mechanical separation element and a flameproof device.

The standard version of the 364 Model operates at ambient temperature from -50°C up to $+85^{\circ}\text{C}$.

The optional version with an Integral Display is designed to operate at ambient temperature of -20°C up to $+70^{\circ}\text{C}$.

For Transmitters used in accordance with the flameproof type of protection the maximum permissible ambient temperature is: -50°C up to $+75^{\circ}\text{C}$.

The Transmitter housing provides a degree of protection IP67 according to EN 60529:1991.

Model code

2600T Series Pressure Transmitter HART

Model 364...

whereas instead of the dots in the model code, another letters or digits combinations will be stated, which describe several variations and versions of the equipment.

Electrical data

1. Use in accordance with Intrinsic Safety protection concept "ia"

Supply and

only for connection to approved intrinsically safe circuits with following maximum values:

signal circuit

(terminals signal +, -)

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

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

Sheet 2/4

EC-type-examination Certificates without signature and stamp are not valid. The certificates may only be circulated without alteration. Extracts or alterations are subject to approval by the Prüf- und Zertifizierungsstelle ZELM Ex. This English version is based on the German text. In the case of dispute, the German text shall prevail.



Schedule to EC-TYPE-EXAMINATION CERTIFICATE ZELM 06 ATEX 0302 X

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. Ci = 13 nF with output meter
 effective internal inductance is negligibly small
 resp. Li = 0,22 mH with output meter

or

2. Use in accordance with Flameproof protection concept „d“

Rated values: U = 42 Vdc
 P = 2 W

The ambient temperature range: -50°C up to +75°C for temperature class T6.

The max. surface temperature for Dust atmosphere T = 85°C

or

3. Use in accordance with Limited Energy protection concept „nL“

Rated values: U_i = 42 Vdc
 I_i = 25 mA

Temperature class	lower limit of ambient temperature	upper limit of ambient temperature	max. surface temperature for Dust atmosphere
T4	- 50 °C	+ 85 °C	95 °C
T4	- 50 °C	+ 70 °C	95 °C
T5	- 50 °C	+ 40 °C	50 °C
T6	- 50 °C	+ 40 °C	50 °C

effective internal capacitance is negligibly small
 resp. Ci = 13 nF with output meter
 effective internal inductance is negligibly small
 resp. Li = 0,22 mH with output meter



Prüf- und Zertifizierungsstelle

ZELM Ex



Schedule to EC-TYPE-EXAMINATION CERTIFICATE ZELM 06 ATEX 0302 X

(16) Report No.

ZELM Ex 1470517464

(17) Special conditions for safe use


1. The equipment meets requirements of three alternative protection concepts: Intrinsic Safety, Flameproof and requirements for Limited Energy equipment, therefore the electrical parameters, applications and arrangement conditions applying for each of these three types of protection have to be considered.
2. Before installation of the Transmitter, a customer decides on its use either in accordance with Intrinsic Safety "ia", Flameproof "d" or with Limited Energy "nL" protection concept and signs his choose 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 anew 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 the selected type of protection and must be certified for this protection concept. Additionally, for use in accordance with the intrinsic safety type of protection these components have to fulfilled requirements of the standards EN 60079-0 and EN 50281-1-1 and for use in accordance with the flameproof type of protection also requirements of the standard EN 60079-1.
4. The instruction manual has to be considered, in particular the maximum thickness of dust layers permitted for the hazardous area of category 1D and the sufficient equipotential bonding and grounding and the overvoltage protection.
For the use in dust atmosphere the degree of protection IP67 must be ensured in regard to the enclosure and the cable entry fitting.
5. The Pressure Transmitter is allowed to be installing in such chemical atmosphere where sufficient permanence of its isolating diaphragm is guaranteed (consider operating instruction).

(18) Essential Health and Safety Requirements

met by standards

Zertifizierungsstelle ZELM Ex

Braunschweig, August 09, 2006


Dipl.-Ing. Harald Zelm



Sheet 4/4

EC-type-examination Certificates without signature and stamp are not valid. The certificates may only be circulated without alteration. Extracts or alterations are subject to approval by the Prüf- und Zertifizierungsstelle ZELM Ex. This English version is based on the German text. In the case of dispute, the German text shall prevail.