



Translation

(1) **EC TYPE-EXAMINATION CERTIFICATE**

(2) Equipment or protective system intended for use in potentially explosive atmospheres - **Directive 94/9/EC**



(3) EC-Type Examination Certificate Number

TÜV 99 ATEX 1414 X

- (4) Equipment: Pressure Transmitter type Cl...1 S..6.
(5) Manufacturer: LABOM Mess- und Regeltechnik GmbH
(6) Address: Im Gewerbepark 13
D-27798 Hude

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

(8) The TÜV NORD CERT GmbH & Co. KG, TÜV CERT-Certification Body, notified body number N° 0032 in accordance with Article 9 of the Council Directive of the EC of March 23, 1994 (94/9/EC), certifies that this equipment or protective system 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 N° 99/PX19980.

(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 or protective system 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 or protective system. Further requirements of this Directive apply to the manufacture and placing on the market of this equipment or protective system

(12) The marking of the equipment or protective system must include the following:

II 2 G EEx ia IIC T6

TÜV NORD CERT GmbH & Co. KG
TÜV CERT-Certification Body
Am TÜV 1
D-30519 Hannover
Tel.: 0511 986-1470
Fax: 0511 986-2555

Head of the
Certification Body



Hanover, 2003-11-12

TÜV NORD CERT GmbH & Co. KG
legal successor of the notified body of
TÜV Hannover/Sachsen-Anhalt e.V.
German original certificate
issued on 1999-04-22



SCHEDULE

(13)

(14) **EC-TYPE EXAMINATION CERTIFICATE N° TÜV 99 ATEX 1414 X**

(15) Description of equipment

The pressure transmitter type CI...1 S..6. consists of a piezo resistive pressure sensor and an integrated temperature detector, which is used for temperature compensation.

Electrical data

Input circuit in type of protection „Intrinsic safety“ EEx ia IIC
(Terminals 1+, 2- and GND) resp. EEx ib IIC
only for connection to a certified intrinsically safe circuit

The maximum permissible ambient temperature, the marking and the „electrical data“ in dependence of the type have to be taken from the following table:

Type	Marking	Maximum permissible ambient temperature	U _i	I _i	P _i
S..61	EEx ib IIC T4	70 °C	30 V	150 mA	1 W
S..62	EEx ia IIC T4	70 °C	20 V	100 mA	0,6 W
S..63	EEx ib IIC T5	60 °C	30 V	150 mA	1 W
S..64	EEx ia IIC T5	60 °C	20 V	100 mA	0,6 W
S..65	EEx ib IIC T6	40 °C	30 V	150 mA	1 W
S..66	EEx ia IIC T6	40 °C	20 V	100 mA	0,6 W

The effective internal capacitance and inductance are negligibly small.

Test output only for short time connection to not earthed
test devices without own energy source

(16) Test documents are listed in the test report No. 99/PX19980.

(17) Special condition for safe use

It has to be ensured, that potential compensation exists in the complete course of the wiring.

(18) Essential Health and Safety Requirements

no additional ones



Translation

1. SUPPLEMENT to

EC TYPE-EXAMINATION CERTIFICATE No. TÜV 99 ATEX 1414 X

of the company: labom Mess- und Regeltechnik GmbH
Im Gewerbepark 13
D-27798 Hude

In the future, the pressure transmitter type Cl...1 S..6. may also be manufactured according to the test documents listed in the test report. The changes refer to the construction of the pressure sensor and the sensor circuit board as well as to the electrical data.

The pressure port may be erected in explosion hazardous areas that require apparatus of the category 1.

The maximum permissible ambient temperature on the housing T_a the maximum permissible medium temperature on the pressure port T_M and the temperature class then have to be taken from the following table:

T_a [°C]	T_M [°C]	Temperature class
40°C	40°C	T6
60°C	50°C	T5
70°C	60°C	T4

Extension of the temperature range: see "Special conditions for safe use"

Electrical data

Input circuit in type of protection „Intrinsic safety“ EEx ia IIC
(Terminals 1+, 2- and GND)

only for connection to a certified intrinsically safe circuit

Maximum values:

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

$$I_i = 150 \text{ mA}$$

$$P_i = 1 \text{ W}$$

The effective internal inductances and capacitances are negligibly small.

The pressure transmitter type Cl...1 S..6. also meets the requirements of
EN 50 020:2002 and
EN 50 284:1999 .

The marking of the pressure transmitter
according to this 1. supplement reads II 1/2 G EEx ia II C T6.



1. Supplement to EC Type-Examination Certificate No. TÜV 99 ATEX 1414 X

Special conditions for safe use

1. The pressure port of the pressure transmitter type CI...1 S..6. is allowed to be operated in an explosion hazardous atmosphere, which requires apparatus of the category 1, only if atmospheric conditions exist (Temperature from -20°C to 60°C, pressure from 0,8 bar to 1,1 bar).

If the explosion hazardous atmosphere does not require apparatus of the category 1, the maximum permissible ambient temperature in the area of the pressure port T_M may be taken from the following table:

T_a [°C]	T_M [°C]	Temperaturklasse
40°C	40°C	T6
60°C	60°C	T5
70°C	70°C	T4

Operating temperatures and -pressures have to be taken from the regarding data of the manufacturer (manual), if no explosion hazardous gas mixtures exist.

2. It has to be ensured, that potential compensation exists in the complete course of the wiring.

Test documents are listed in the test report N° 03YEX550256.

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Head of the
Certification Body

Hannover, 2003-11-12

Zertifikat

Certificate

Registrier-Nr.

Registration No.

44 207 09 555694

Zeichen des Auftraggebers
Customer's reference

Auftragsdatum
Date of order
27.10.2009

Aktenzeichen
File reference
8000555694

Prüfbericht Nr.
Test report no.
09 207 555694

**Name und Anschrift
des Auftraggebers**

LABOM
Mess- und Regeltechnik GmbH
Im Gewerbepark 13
27798 Hude

Customer's name
and address

Geprüft nach

**EN 61508:2001 Funktionale Sicherheit sicherheitsbezogener
elektrischer/elektronischer/
programmierbarer elektronischer Systeme
Anforderungen an SIL2**
*Functional safety of electrical/electronic/programmable
electronic safety-related systems
Requirements according to SIL2*

Tested in accordance with

**Beschreibung des
Produktes und
Typenbezeichnung
(Details siehe Anhang 1)**

**Druckmessumformer / Pressure transmitter PASCAL Ci
Typenreihe / Type CI101**
**Differenzdruck-Messumformer / Differential pressure transmitter
PASCAL DELTA P
Typenreihe / Type CI130 und / and CI133**

*Description of product and
Type Description
(Details see Annex 1)*

Bemerkung

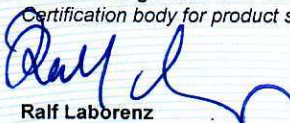
**Der SIL2 bezieht sich auf die sichere Funktion Druckmessung. Die Werte
gelten für den HART Kommunikation und den Stromausgang.**
*The SIL2 belongs to the safety function for pressure measuring. The values are for
HART communication and for current output.*

Remark

Dieses Zertifikat bescheinigt das Ergebnis der Prüfung an dem vorgestellten Prüfgegenstand. Eine allgemein gültige Aussage über die Qualität der Produkte aus der laufenden Fertigung kann hieraus nicht abgeleitet werden.
This certifies the result of the examination of the product sample submitted by the manufacturer. A general statement concerning the quality of the products from the series manufacture cannot be derived there from.

TÜV NORD CERT GmbH
Zertifizierungsstelle für Produktsicherheit
Certification body for product safety

Gültig bis / Valid to: 02.12.2014


Ralf Laborenz

Hannover, 03.12.2009

Bitte beachten sie auch die umseitigen Hinweise
Please also pay attention to the information stated overleaf

Anlage 1 zum Zertifikat Nr.:

Annex 1 to Certificate no.:

44 207 09 555694



Rev. 1

Aktenzeichen: 8000555694

File reference

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Allgemeine Angaben

General information

Siehe Seite 1 des Zertifikates

See also page 1 of the Certificate

Typenbezeichnung

Type Description

Druckmessumformer / Pressure transmitter PASCAL Ci

Typenreihe / Type CI101

Differenzdruck-Messumformer / Differential pressure transmitter PASCAL DELTA P

Typenreihe / Type CI130

Differenzdruck-Messumformer volumenreduziert für Druckmittler / Differential pressure transmitter, reduced volume for diaphragm seal operation PASCAL DELTA P

Typenreihe / Type CI133

Nennspannung:

Nominal Voltage

12 ... 50V_{DC} (Standard)

12 ... 30V_{DC} (EX-Bereich)

Umgebungstemperatur:

Environment temperature

-20 ... +55°C

Schutzgrad:

Protection degree

IP65/IP67

Parameter nach EN 61508

Parameter according to EN 61508

PFD = $1,57 \cdot 10^{-4}$

PFH = $3,54 \cdot 10^{-8}$ 1/h

SFF = 94,1%

$\lambda_{DU} = 3,54 \cdot 10^{-8}$ 1/h

$\lambda_{DD} = 2,12 \cdot 10^{-7}$ 1/h

$\lambda_{SD} = 2,05 \cdot 10^{-7}$ 1/h

$\lambda_{SU} = 1,43 \cdot 10^{-7}$ 1/h

HFT = 0

T1 = 1 Jahr

MTTR = 8h

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