

Translation

(1) **EU-Type Examination Certificate**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 2014/34/EU**



(3) **Certificate Number** TÜV 13 ATEX 120264 X **issue:** 00

(4) for the product: Pressure transmitter type PASCAL Ci4

(5) of the manufacturer: LABOM Mess- und Regeltechnik GmbH

(6) Address: Im Gewerbepark 13
27798 Hude

Order number: 8000454744

Date of issue: 2016-04-29

(7) The design of this product and any acceptable variation thereto are specified in the schedule to this EU-Type Examination Certificate and the documents therein referred to.

(8) The TÜV NORD CERT GmbH, Notified Body No. 0044, in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential ATEX Assessment Report No. 16 203 172074.

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


EN 60079-0:2012 + A11:2013 EN 60079-11:2012 EN 60079-26:2015

except in respect of those requirements listed at item 18 of the schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions for Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design, and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

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

 II 1/2 G Ex ia IIC TX Ga/Gb resp. II 2 G Ex ia IIC TX Gb
II 1/2 D Ex ia IIIC Txx°C Da/Db resp. II 2 D Ex ia IIIC Txx°C Db
(See description of product)

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, notified by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the notified body



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(13) **SCHEDULE**

(14) **EU-Type Examination Certificate No. TÜV 13 ATEX 120264 X issue 00**

(15) Description of product

The specifications in EC-Type Examination Certificate TÜV 13 ATEX 120264 according to the Test Report 14 203 120264 are also still valid.

The pressure transmitter type PASCAL Ci4 is used for the pressure measurement of gases, vapours and liquids in explosive gas atmospheres or for pressure measurement in explosive dust atmospheres.

The measuring signal is transmitted via a 4 ... 20 mA current loop with HART protocol.

Changes:

- New mechanical executions
- New execution with a separated pressure sensor
- Optional temperature sensor Pt100 in the pressure mediator, optionally connected to a M12 plug connector
- Optional separately installed temperature sensor Pt100 connected to a M12 plug connector for internal use
- New execution with a piezoresistive pressure sensor
- Cable length for separated display enlarged
- Changes of internal electrical components
- New electrical data
- New thermal data

Electrical data

Supply and signal circuit
(Terminals resp. plug connector;
+Loop, -Loop, GND)

in type of protection „Intrinsic Safety“ Ex ia IIC/IIIC
Only for connection to a certified intrinsically safe circuit
Maximum values:

$$U_i = 30 \quad V$$

$$I_i = 150 \quad mA$$

$$P_i = 1 \quad W$$

Type	CI4xx0	CI4xx3
Effective internal capacitance	9.6 nF	16 nF
Effective internal inductance	32 µH	32 µH

Test circuit, galvanically connected to the supply and signal circuit
(Terminals resp. plug connector;
+Test, -Test)

in type of protection „Intrinsic Safety“ Ex ia IIC/IIIC
Only for connection to a passive or a suitably certified test device

The values mentioned above for U_i , I_i and P_i must not be exceeded, if the values of the supply and signal circuit and of the test circuit are added up.

Schedule to EU-Type Examination Certificate No. TÜV 13 ATEX 120264 X issue 00

Type Ci4xxx

Pt100 sensor circuit
in the pressure mediator for external use
(Plug connector M12)

in type of protection „Intrinsic Safety“ Ex ia IIC/IIIC
Only for connection to a certified intrinsically safe circuit
Maximum values:

$U_i = 30 \text{ V}$
 $P_i = 77 \text{ mW}$
Effective internal capacitance: 4 nF
Effective internal inductance: 20 μH

Type Ci4xxx

Pt100 sensor circuit
external mounting for internal use
(Plug connector M12)

in type of protection „Intrinsic Safety“ Ex ia IIC/IIIC
Only for connection by the pressure transmitter Ci4
Maximum values:

$U_o = 5 \text{ V}$
 $I_o = 104 \text{ mA}$
 $P_o = 77 \text{ mW (long-term)}$
Characteristic line: linear

$C_o = 1.5 \mu\text{F}$
 $L_o = 4.9 \text{ mH}$

The connection of the separately mounted display of the manufacturer via a belonging cable of 20 m length is permissible.

If the pressure transmitter is used in explosion hazardous areas for EPL Ga/Gb applications, the permissible temperature range in the area of the electronics/at the measuring sensor dependent on the temperature class has to be taken from the following tables:

CI4xxx – Options S66 and S76

Temperature class	Ambient temperature range (electronics, zone 1)	Medium temperature range (measuring sensor, zone 0)
T1	-40 °C ... +85 °C	-20°C ... +60 °C
T2	-40 °C ... +85 °C	-20°C ... +60 °C
T3	-40 °C ... +85 °C	-20°C ... +60 °C
T4	-40 °C ... +85 °C	-20°C ... +60 °C
T5	-40 °C ... +61 °C	-20°C ... +60 °C
T6	-40 °C ... +46 °C	-20°C ... +55 °C

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CI4xxx– Options S66 and S76
with internal Pt100 in the pressure mediator

Temperature class	Ambient temperature range (electronics, zone 1)	Medium temperature range (measuring sensor, zone 0)
T1	-40 °C ... +85 °C	-20°C ... +60 °C
T2	-40 °C ... +85 °C	-20°C ... +60 °C
T3	-40 °C ... +85 °C	-20°C ... +60 °C
T4	-40 °C ... +85 °C	-20°C ... +60 °C
T5	-40 °C ... +61 °C	-20°C ... +55 °C
T6	-40 °C ... +46 °C	-20°C ... +43 °C

CI4xxx – Options S62 and S77

Temperature class	Ambient temperature range (electronics, zone 1)	Medium temperature range (measuring sensor, zone 0)
T1	-40 °C ... +85 °C	-20°C ... +60 °C
T2	-40 °C ... +85 °C	-20°C ... +60 °C
T3	-40 °C ... +85 °C	-20°C ... +60 °C
T4	-40 °C ... +85 °C	-20°C ... +60 °C
T5	-40 °C ... +61 °C	-20°C ... +49 °C
T6	-40 °C ... +46 °C	-20°C ... +37 °C

CI4xxx – Options S62 and S77
with internal Pt100 in the pressure mediator

Temperature class	Ambient temperature range (electronics, zone 1)	Medium temperature range (measuring sensor, zone 0)
T1	-40 °C ... +85 °C	-20°C ... +60 °C
T2	-40 °C ... +85 °C	-20°C ... +60 °C
T3	-40 °C ... +85 °C	-20°C ... +60 °C
T4	-40 °C ... +85 °C	-20°C ... +60 °C
T5	-40 °C ... +61 °C	-20°C ... +49 °C
T6	-40 °C ... +46 °C	-20°C ... +37 °C

The measuring sensors are allowed to be operated in an explosion hazardous area for EPL Ga applications, only if atmospheric conditions exist (pressure from 0.8 bar to 1.1 bar).

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If the pressure transmitter is used in explosion hazardous areas for EPL Gb applications, the permissible temperature range in the area of the electronics/at the measuring sensor dependent on the temperature class has to be taken from the following tables:

CI4xxx – Options S66 and S76

Temperature class	Ambient temperature range (electronics, zone 1)	Medium temperature range (measuring sensor, zone 1)
T1	-40 °C ... +85 °C	-40°C ... +400 °C
T2	-40 °C ... +85 °C	-40°C ... +286 °C
T3	-40 °C ... +85 °C	-40°C ... +186 °C
T4	-40 °C ... +85 °C	-40°C ... +121 °C
T5	-40 °C ... +61 °C	-40°C ... +86 °C
T6	-40 °C ... +46 °C	-40°C ... +71 °C

**CI4xxx – Options S66 and S76
with internal Pt100 in the pressure mediator**

Temperature class	Ambient temperature range (electronics, zone 1)	Medium temperature range (measuring sensor, zone 1)
T1	-40 °C ... +85 °C	-40°C ... +200 °C
T2	-40 °C ... +85 °C	-40°C ... +200 °C
T3	-40 °C ... +85 °C	-40°C ... +174 °C
T4	-40 °C ... +85 °C	-40°C ... +109 °C
T5	-40 °C ... +61 °C	-40°C ... +74 °C
T6	-40 °C ... +46 °C	-40°C ... +59 °C

CI4xxx – Options S62 and S77

Temperature class	Ambient temperature range (electronics, zone 1)	Medium temperature range (measuring sensor, zone 1)
T1	-40 °C ... +85 °C	-40°C ... +400 °C
T2	-40 °C ... +85 °C	-40°C ... +268 °C
T3	-40 °C ... +85 °C	-40°C ... +168 °C
T4	-40 °C ... +85 °C	-40°C ... +103 °C
T5	-40 °C ... +61 °C	-40°C ... +68 °C
T6	-40 °C ... +46 °C	-40°C ... +53 °C

**CI4xxx – Options S62 and S77
with internal Pt100 in the pressure mediator**

Temperature class	Ambient temperature range (electronics, zone 1)	Medium temperature range (measuring sensor, zone 1)
T1	-40 °C ... +85 °C	-40°C ... +200 °C
T2	-40 °C ... +85 °C	-40°C ... +200 °C
T3	-40 °C ... +85 °C	-40°C ... +168 °C
T4	-40 °C ... +85 °C	-40°C ... +103 °C
T5	-40 °C ... +61 °C	-40°C ... +68 °C
T6	-40 °C ... +46 °C	-40°C ... +53 °C

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If the pressure transmitter is used in explosion hazardous areas for EPL Da/Db or EPL Db applications, the permissible temperature range in the area of the electronics/at the measuring sensor dependent on the surface temperature has to be taken from the following tables:

CI4xxx – Options S66 and S76

Max. surface temperature without dust layer	Ambient temperature range (electronics, zone 21)	Medium temperature range (measuring sensor, zone 20 or zone 21)
450 °C	-40 °C ... +85 °C	-40°C ... +400 °C
300 °C	-40 °C ... +85 °C	-40°C ... +291 °C
200 °C	-40 °C ... +85 °C	-40°C ... +191 °C
135 °C	-40 °C ... +85 °C	-40°C ... +126 °C
100 °C	-40 °C ... +66 °C	-40°C ... +91 °C
85 °C	-40 °C ... +51 °C	-40°C ... +76 °C

**CI4xxx – Options S66 and S76
with internal Pt100 in the pressure mediator**

Max. surface temperature without dust layer	Ambient temperature range (electronics, zone 21)	Medium temperature range (measuring sensor, zone 20 or zone 21)
450 °C	-40 °C ... +85 °C	-40°C ... +200 °C
300 °C	-40 °C ... +85 °C	-40°C ... +200 °C
200 °C	-40 °C ... +85 °C	-40°C ... +179 °C
135 °C	-40 °C ... +85 °C	-40°C ... +114 °C
100 °C	-40 °C ... +66 °C	-40°C ... +79 °C
85 °C	-40 °C ... +51 °C	-40°C ... +64 °C

CI4xxx – Options S62 and S77

Max. surface temperature without dust layer	Ambient temperature range (electronics, zone 21)	Medium temperature range (measuring sensor, zone 20 or zone 21)
450 °C	-40 °C ... +85 °C	-40°C ... +400 °C
300 °C	-40 °C ... +85 °C	-40°C ... +273 °C
200 °C	-40 °C ... +85 °C	-40°C ... +173 °C
135 °C	-40 °C ... +85 °C	-40°C ... +108 °C
100 °C	-40 °C ... +66 °C	-40°C ... +73 °C
85 °C	-40 °C ... +51 °C	-40°C ... +58 °C

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CI4xxx – Options S62 and S77
with internal Pt100 in the pressure mediator

Max. surface temperature without dust layer	Ambient temperature range (electronics, zone 21)	Medium temperature range (measuring sensor, zone 20 or zone 21)
450 °C	-40 °C ... +85 °C	-40°C ... +200 °C
300 °C	-40 °C ... +85 °C	-40°C ... +200 °C
200 °C	-40 °C ... +85 °C	-40°C ... +173 °C
135 °C	-40 °C ... +85 °C	-40°C ... +108 °C
100 °C	-40 °C ... +66 °C	-40°C ... +73 °C
85 °C	-40 °C ... +51 °C	-40°C ... +58 °C

(16) Drawings and documents are listed in the ATEX Assessment Report No. 16 203 172074

(17) Specific Conditions for Use

1. Since the intrinsically safe circuit is connected with the earth potential for safety reasons, potential equalization has to exist in the complete course of the erection of the intrinsically safe circuit.
2. For EPL Ga/Gb applications the medium tangent materials have to be resistant to the media. Observe manual of the manufacturer.

(18) Essential Health and Safety Requirements

no additional ones

- End of Certificate -