



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX DEK 20.0059X** Page 1 of 3 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2021-04-14

Applicant: **PR electronics A/S**
Lerbakken 10
8410 Rønne
Denmark

Equipment: **2-Wire Programmable Transmitter, Type 5331***, 5332*, 5334*** and Type 6331***, 6334*****

Optional accessory:

Type of Protection: **Ex i, Ex nA, Ex ec**

Marking: Ex ia IIC T6...T4 Ga
Ex ia IIIC Db
Ex ia I Ma

Ex nA [ic] IIC T6...T4 Gc
Ex ec [ic] IIC T6...T4 Gc
Ex ic IIC T6...T4 Gc
Ex ic IIIC Dc

Approved for issue on behalf of the IECEx
Certification Body:

R. Schuller

Position:

Certification Manager

Signature:
(for printed version)

Date:

2021-04-14

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2. This certificate is not transferable and remains the property of the issuing body.
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Certificate issued by:

DEKRA Certification B.V.
Meander 1051
6825 MJ Arnhem
Netherlands





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Manufacturer: **PR electronics A/S**
Lerbakken 10
8410 Rønne
Denmark

Additional
manufacturing
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-15:2010 Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:4

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[NL/DEK/ExTR20.0063/00](#)

Quality Assessment Report:

[NL/DEK/QAR13.0017/04](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The 2-wire Programmable Transmitter, head mounted Type 5331***, 5332*, 5334*** and rail mounted Type 6331***, 6334***, is used to convert the temperature measurement signal of a temperature sensor or a mV signal into a 4 ... 20 mA current signal.

For more information see Annex 1.

SPECIFIC CONDITIONS OF USE: YES as shown below:

For ambient temperature range see Annex 1.

If the enclosure is made of non-metallic plastic materials, electrostatic charges on the transmitter enclosure shall be avoided.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Ga or Ma, and if the enclosure is made of aluminium, it must be installed such, that ignition sources due to impact and friction sparks are excluded.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Ga or Gc and applied in type of protection Ex ia or Ex ic, the transmitter shall be mounted in a separately certified enclosure that provides a degree of protection of at least IP20 according to IEC 60259, and that is suitable for the application and correctly installed.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Db or Dc and applied in type of protection Ex ia or Ex ic, the transmitter shall be mounted in a separately certified enclosure that provides a degree of protection of at least IP5X according to IEC 60079-0, and that is suitable for the application and correctly installed.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Ma, the transmitter shall be mounted in a separately certified enclosure that provides a degree of protection of at least IP54 according to IEC 60529, and that is suitable for the application and correctly installed.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Gc and applied in type of protection Ex nA or Ex ec, the transmitter shall be mounted in a separately certified enclosure that provides a degree of protection of at least IP54 according to IEC 60079-0, and that is suitable for the application and correctly installed.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Gc and applied in type of protection Ex nA or Ex ec, the equipment shall only be used in an area of not more than pollution degree 2, as defined in IEC 60664-1.

Annex:

[224097400-ExTR20.0063.00-Annex1_1.pdf](#)

**Annex 1 to: Certificate of Conformity IECEx DEK 20.0059X
Report NL/DEK/ExTR20.0063/00**

Description

The 2-wire Programmable Transmitter, head mounted Type 5331***, 5332*, 5334*** and rail mounted Type 6331***, 6334***, is used to convert the temperature measurement signal of a temperature sensor or a mV signal into a 4 ... 20 mA current signal.

Type 5331 is designed to convert thermocouple or a RTD sensor signals.

Type 5332 is designed to convert RTD sensors signals.

Type 5334 is designed to convert thermocouples signals.

The 5000 series transmitter is suitable for mounting in a metal enclosure form B according to DIN 43729 and consists of one channel.

The 6000 transmitter is suitable for rail mounting, with one or two independent channels.

Type designation

Following models numbers are applicable depending on the Equipment Protection Level (EPL), mounting type and number of channels:

EPL	Head mounted	Rail mounted	
	1 channel	1 channel	2 channels
Ga, Db, Ma	5331D** 5332D 5334B**	6331B*A 6334B*A	6331B*B 6334B*B
Gc, Dc	5331A** 5332A 5334A**	6331A*A 6334A*A	6331A*B 6334A*B

Thermal data

For EPL Ga (head mounted Types 5331***, 5332***, 5334***):

The relation between ambient temperature range and temperature class:

Temperature class	$P_i = 0.84 \text{ W}$	$P_i = 0.75 \text{ W}$
	Ambient temperature range	Ambient temperature range
T6	-40 °C to +47 °C	-40 °C to +50 °C
T5	-40 °C to +62 °C	-40 °C to +65 °C
T4	-40 °C to +85 °C	-40 °C to +85 °C

For EPL Ga (rail mounted Types 6331***, 6334***):

The relation between ambient temperature range and temperature class:

Temperature class	$P_i = 0.84 \text{ W}$	$P_i = 0.75 \text{ W}$
	Ambient temperature range	Ambient temperature range
T6	-40 °C to +40 °C	-40 °C to +45 °C
T5	-40 °C to +55 °C	-40 °C to +60 °C
T4	-40 °C to +85 °C	-40 °C to +85 °C

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For EPL Gc (Ex ic):

The relation between ambient temperature range and temperature class:

Temperature class	$U_i = 35 \text{ V}$	$U_i = 24 \text{ V}$
	Ambient temperature range	Ambient temperature range
T6	-40 °C to +54 °C	-40 °C to +63 °C
T5	-40 °C to +69 °C	-40 °C to +78 °C
T4	-40 °C to +85 °C	-40 °C to +85 °C

For EPL Gc (Ex ec, Ex nA):

The relation between ambient temperature range and temperature class:

Temperature class	$U_{\max} = 35 \text{ V}$	$U_{\max} = 24 \text{ V}$
	Ambient temperature range	Ambient temperature range
T6	-40 °C to +43 °C	-40 °C to +55 °C
T5	-40 °C to +85 °C	-40 °C to +85 °C
T4	-40 °C to +85 °C	-40 °C to +85 °C

For EPL Db, EPL Dc:

The surface temperature of the outer enclosure is +20 K above the ambient temperature, determined without a dust layer.

Ambient temperature range: -40 °C to +85 °C

For EPL Ma:

Ambient temperature range: -40 °C to +85 °C

Electrical data

Type of protection Ex ia

Supply / output circuit (terminals 1 and 2, for head mounted):

Supply and output circuit (terminals 11 - 13, respectively 21 - 23, for rail mounted):

in type of protection intrinsic safety Ex ia IIC, Ex ia IIIC or Ex ia I, only for connection to a certified intrinsically safe circuit, with the following maximum values (per circuit):

$U_i = 30 \text{ V}$; $I_i = 120 \text{ mA}$; $P_i = 0.84 \text{ W}$ or $P_i = 0.75 \text{ W}$; $C_i = 1 \text{ nF}$; $L_i = 10 \text{ }\mu\text{H}$.

Sensor circuit (terminals 3, 4, 5 and 6, for head mounted):

Sensor circuit (terminals 41 ... 44, respectively 51 ... 54, for rail mounted):

in type of protection intrinsic safety Ex ia IIC, Ex ia IIIC or Ex ia I, with following maximum values (per circuit):

$U_o = 9.6 \text{ V}$; $I_o = 25 \text{ mA}$; $P_o = 60 \text{ mW}$; $C_o = 2.4 \text{ }\mu\text{F}$; $L_o = 33 \text{ mH}$.

Type of protection Ex ic

Supply / output circuit (terminals 1 and 2, for head mounted):

Supply and output circuit (terminals 11 - 13, respectively 21 - 23, for rail mounted):

in type of protection intrinsic safety Ex ic IIC or Ex ic IIIC, with the following maximum values (per circuit):

$U_i = 35 \text{ V}$; $I_i = 110 \text{ mA}$; $C_i = 1 \text{ nF}$; $L_i = 10 \text{ }\mu\text{H}$.

or

$U_i = 24 \text{ V}$; $I_i = 260 \text{ mA}$; $C_i = 1 \text{ nF}$; $L_i = 10 \text{ }\mu\text{H}$.

Sensor circuit (terminals 3, 4, 5 and 6, for head mounted):

Sensor circuit (terminals 41 ... 44, respectively 51 ... 54, for rail mounted):

in type of protection intrinsic safety Ex ic IIC or Ex ic IIIC, with the following maximum values (per circuit):

$U_o = 9.6 \text{ V}$; $I_o = 25 \text{ mA}$; $P_o = 60 \text{ mW}$; $C_o = 2.4 \text{ }\mu\text{F}$; $L_o = 33 \text{ mH}$.

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Type of protection Ex nA, Ex ec

Supply / output circuit (terminals 1 and 2, for head mounted):

Supply and output circuit (terminals 11 - 13, respectively 21 - 23, for rail mounted):

in in type of protection non sparking Ex nA or Ex ec:

$U_{\max} \leq 35 \text{ Vdc}$

or

$U_{\max} \leq 24 \text{ Vdc}$

Sensor circuit (terminals 3, 4, 5 and 6, for head mounted):

Sensor circuit (terminals 41 ... 44, respectively 51 ... 54, for rail mounted):

in type of protection intrinsic safety Ex ic IIC or Ex ic IIC, with the following maximum values (per circuit):

$U_o = 9.6 \text{ V}$; $I_o = 25 \text{ mA}$; $P_o = 60 \text{ mW}$; $C_o = 2.4 \text{ }\mu\text{F}$; $L_o = 33 \text{ mH}$.

The sensor circuit is not infallibly galvanic isolated from the supply / output circuit. However, the galvanic isolation between the circuits is capable of withstanding a test voltage of 500Vac during 1 minute.