



IECEx Certificate of Conformity

EX

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.: IECEx BVS 13.0111X issue No.:1

Status: Current

Certificate history:
Issue No. 1 (2018-3-28)
Issue No. 0 (2013-11-18)

Date of Issue: 2018-03-28 Page 1 of 5

Applicant: SICK AG
Erwin-Sick-Str. 1
79183 Waldkirch
Germany

Equipment: Measuring unit, Power supply and transmitter type Transic 151LP-*** und TSA151
Optional accessory:

Type of Protection: Equipment protection by intrinsic safety "i", Equipment protection by encapsulation "m", Equipment with equipment protection level (EPL) Ga, Equipment dust ignition protection by enclosure "t", Equipment protection by increased safety "e"

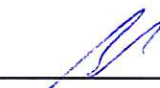
Marking: Group II Power supply Ex eb mb [ib] IIB T4 Gb
Transmitter Ex op is / ib IIB T4 Ga/Gb
Group III Power supply Ex tb [ib] IIIC T85°C Db
Transmitter Ex ib tb op is IIIC T85°C Db

Approved for issue on behalf of the IECEx Certification Body: Jörg Koch

Position: Head of Certification Body

Signature:
(for printed version)

Date:


28.3.18

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

 **DEKRA**
On the safe side.



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Manufacturer: **SICK AG**
Nimburger Straße 11
79276 Reute
Germany

Additional Manufacturing location(s):

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 apparatus 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 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-18 : 2014 Edition: 4.0	Explosive atmospheres - Part 18: Equipment protection by encapsulation "m"
IEC 60079-26 : 2014-10 Edition: 3.0	Explosive atmospheres - Part 26: Equipment with Equipment Protection Level (EPL) Ga
IEC 60079-28 : 2015 Edition: 2	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
IEC 60079-31 : 2013 Edition: 2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7 : 2015 Edition: 5.0	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

*This Certificate **does not** indicate compliance with electrical 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:

DE/BVS/ExTR13.0122/01

Quality Assessment Report:

DE/TUN/QAR13.0008/05



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

General product information:

Description

The measuring unit type TRANSIC151LP is an optical device for measuring oxygen concentration in gases by absorption of light from a laser diode (Tunable Diode Laser Absorption Spectroscopy TDLAS). The measurement takes place in a probe made of stainless steel by injection of a laser beam through a lens and reflection on a mirror surface.

The measuring unit consists of a power supply type TSA151 which will be installed in an area requiring EPL Gb or EPL Db equipment and a transmitter type Transic151LP-***, which will be mounted into a boundary wall between areas EPL Gb and EPL Ga or in areas requiring EPL Db equipment; instead of the *** in the complete denomination of the transmitter letters or numerals will be inserted which have no influence on explosion protection.

The power supply consists of a light metal enclosure, inside fastened a totally encapsulated electronic device and terminals for the connection of the non-intrinsically safe supply circuit and for the connection of the intrinsically safe circuits.

The transmitter consists of a light metal enclosure and an optical measuring device.

Inside the enclosure the electronic for measuring and evaluation is fastened. The optical measuring device can be mounted into a boundary wall between areas EPL Gb and EPL Ga; a temperature measuring element extends into the area EPL Ga and the optical signal will be led into this area.

The connection between power supply and transmitter is done via an up to 5m long cable. At the service interface connection only an USB Service Interface type 2066710 may be connected outside the hazardous area.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- 1 The non-intrinsically safe power supply circuit of the power supply type TSA151 has been specified with a maximum voltage $U_m=60$ VDC and therefore only a PELV power supply may be connected.
- 2 The wall of the temperature measuring element of the transmitter type Transic151LP-*** going into Zone 0 is made of steel (1.4571) and has a thickness of $0.2 < d < 1$ mm. The material shall not be subject to environmental conditions which might adversely affect the partition wall.
- 3 At the service interface connection only an USB Service Interface type 2066710 may be connected outside the hazardous area.



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EQUIPMENT(continued):

Parameters

1 Power supply type TSA151

1.1 Supply circuit (connection U_{in})

Nominal voltage U_N DC 24 V $\pm 10\%$

Max. voltage (by a PELV supply) U_m DC 60 V

1.2 Intrinsically safe power output (connection "to TRANSIC151LP")

Voltage U_o DC 8.25 V

Current I_o 650 mA

Power P_o 5.37 W

1.3 Intrinsically safe analog output (connection Analog Out)

Voltage U_o DC 8.25 V

Current I_o 121 mA

Power P_o 250 mW

Linear output characteristic

Max. external inductance L_o 5 mH

Max. external capacitance C_o 1 μF

1.4 Floating switching contact (connection Digital Out)

Voltage U_i DC 10 V

Current I_i 10 mA

Power P_i 100 mW

Effective internal capacitance C_i 132 nF

Effective internal inductance negligible

1.5 Ambient temperature range T_a -20 °C up to +60 °C

2 Transmitter type 151LP

Ambient temperature range T_a -20 °C up to +60 °C

Process temperature range -20 °C up to +80 °C



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

- updating to current standards
- new laser diode for op is
- new mirror
- op is marking for dust atmospheres
- small adjustments