



Certificate of Compliance

Certificate: 80004751

Master Contract: 160220

Project: 80004751

Date Issued: 2019-09-06

Issued To: Draeger Safety AG & Co. KGaA
Revalstrasse 1
Luebeck, Schleswig-Holstein, 23560
Germany

Attention: Jens Aeverbeck

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Issued by: *Konstantin Rybalko*
Konstantin Rybalko



PRODUCTS

CLASS - C482801 - SIGNAL APPLIANCES - Combustible Gas Detection Instruments-For Hazardous Locations

CLASS - C482881 - SIGNAL APPLIANCES-Combustible Gas Detection Instruments For Hazardous Location-Certified to U.S. Standards

Class I, Div. 1, Groups C & D, T6...T5;

Class II, Div. 1, Groups E, F & G;

Ex db [ia Ga] IIC T6...T5 Gb;

Class I, Zone 1, AEx db [ia Ga] IIC T6...T5 Gb;

Ex tb [ia Da] IIIC T80°C/ T95°C Db;

Zone 21, AEx tb [ia Da] IIIC T80°C/ T95°C Db;

Type 4X, IP 66/67:

Open Path Gas Detector, type OTR 00**, referred to as Pulsar III, housed in stainless steel explosion proof enclosure, intrinsically safe associated apparatus when used in combination with Interface Adapter type Model HAC 00** listed below and installed according to control drawing SE26114.



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Electrical ratings: 24 V dc nominal, 18 – 32 V dc max., 9 W max. transmitter and 5 W max. receiver.

Temperature Codes:

Gas Detector, type OTR 00**:
T6 at Tamb: = -40°C to +40°C;
T5 at Tamb: = -40°C to +60°C

Product Nomenclature:

OTR 0 0 * * Transmitter and Receiver
1 2 3 4

1: 0

2: 0

3: Type of Construction

- 0 = Transmitter very short range
- 1 = Transmitter short range
- 2 = Transmitter long range
- 3 = Receiver very short, Methane & Propane
- 4 = Receiver very short, Ethylene
- 5 = Receiver short range, Methane & Propane
- 6 = Receiver short range, Ethylene
- 7 = Receiver long range, Methane & Propane
- 8 = Receiver long range, Ethylene

4: Interface + Approval

- 0 = No Interface, ATEX & IECEX
- 1 = 4 – 20 mA, ATEX & IECEX
- 2 = ICOM, ATEX & IECEX
- 3 = No Interface, cULus
- 4 = 4 – 20 mA, cULus
- 5 = ICOM, cULus

Variations:

Series OTR 00** open path gas detector; model(s) OTR, followed by 00, followed by 0, 1, 2, 3, 4, 5, 6, 7 or 8, followed by 3, 4 or 5.

Conditions of Acceptability:

1. Shall be supplied from Class 2 limited energy supply according to C22.2 No 61010-1-12 and UL 61010-1 3rd Ed.
2. Um = 250 V rms.



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3. Repairs of the flameproof joints must be made in compliance with the structural specifications provided by the manufacturer. Repairs must not be made on the basis of values specified in tables 2 and 3 of IEC 60079-1.
4. Fastening screws with strength class of minimum A*-70 or with a minimum yield stress of 450 MPa must be used for securement of the lid of the flameproof enclosure.
5. OTR 00** gas detector shall be installed in such a way that it is sufficiently protected from light (for example daylight or light from luminaires). Protective accessories, such as protective covers are available from Dräger as accessories. These or equivalent means are to be used.
6. Combustible gas detection performance compliance to C22.2 No. 60079-29-4: 2016 and UL 60079-29-4: 2018 do not cover environment with dust and fibers in suspension in air.
7. Maximum cable length for connection to Pulsar Interface Adapter type HAC 00** is limited to 20 m.

Class I, Div. 1, Groups A, B, C & D, T4, Ex ia;

Ex ia IIC T4 Ga;

Class I, Zone 1, AEx ia IIC T4 Ga;

Ex ia IIIB T135°C Db;

Zone 21, AEx ia IIIB T135°C Db;

Interface Adapter type HAC 00**, intrinsically safe when installed according to control drawing SE26114.
Battery powered by 3 cells type Renata CR2450N.
Tamb: = -20°C to +50°C

Entity parameters:

HART Port (sockets X2 and X3):

$U_i = 30 \text{ V}$, $I_i = 200 \text{ mA}$, $P_i = 1 \text{ W}$, $L_i = 0$, $C_i = 0$;

$U_o = 1.9 \text{ V}$, $I_o = 32 \text{ }\mu\text{A}$, $P_o = 0$, $C_o = 100 \text{ }\mu\text{F}$, $L_o = 10 \text{ mH}$

Variations:

Series HAC 00** open path gas detector; model(s) HAC, followed by 00, followed by 00.

Conditions of Acceptability:

1. Shall be used with Renata CR2450N batteries only
2. Shall be protected against static electricity by grounding before and during use in the gas or dust explosion hazardous area.



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APPLICABLE REQUIREMENTS

- CAN/CSA-C22.2 No. 61010-1-12 (R2016) - Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements
- ANSI/UL-61010-1 3rd Edition (R2016) - Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use - Part 1: General Requirements
- CAN/CSA- C22.2 No. 94.1-2015 Edition 2 - Enclosures for electrical equipment, non-environmental considerations
- CAN/CSA- C22.2 No. 94.2-2015 Edition 2 - Enclosures for electrical equipment, environmental considerations
- UL 50-2015, Edition 2 - Enclosures for electrical equipment, non-environmental considerations
- UL 50E-2015, Edition 2 - Enclosures for electrical equipment, environmental considerations
- UL 913: 2013 Ed. 8 - Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous (Classified) Locations
- UL 1203: 2013 Ed. 5 - Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations
- CAN/CSA-C22.2 No. 25-1966 (R2017) - Enclosures for Use in Class II Groups E, F, and G Hazardous Locations
- CAN/CSA-C22.2 No. 30-M1986 - Explosion-proof enclosures for use in class I hazardous locations
- CAN/CSA-C22.2 No. 60079-0: 2015 Ed. 6 - Explosive atmospheres — Part 0: Equipment — General requirements
- ANSI/UL 60079-0:2013 Ed 6 - Explosive atmospheres — Part 0: Equipment — General requirements
- CAN/CSA-C22.2 No. 60079-1: 2016 Ed. 7 - Explosive atmospheres — Part 1: Equipment protection by flameproof enclosures “d”
- ANSI/UL 60079-1: 2015 Ed 7 - Explosive atmospheres — Part 1: Equipment protection by flameproof enclosures “d”
- CAN/CSA-C22.2 No. 60079-11: 2014 Ed. 6 - Explosive atmospheres — Part 11: Equipment protection by intrinsic safety “i”
- ANSI/UL 60079-11: 2014 Ed 6 - Explosive atmospheres — Part 11: Equipment protection by intrinsic safety “i”
- CAN/CSA-C22.2 No. 60079-31: 2015 Ed. 2 - Explosive atmospheres — Part 31: Equipment dust ignition protection by enclosure “t”
- ANSI/UL 60079-31: 2015 Ed 2 - Explosive atmospheres — Part 31: Equipment dust ignition protection by enclosure “t”



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| CAN/CSA-C22.2 No. 60079-29-4: 2016 | - Explosive atmospheres – Part 29-4: Gas detectors – Performance requirements of open path detectors for flammable gases |
| UL 60079-29-4: 2018 | - Explosive atmospheres – Part 29-4: Gas detectors – Performance requirements of open path detectors for flammable gases |



Supplement to Certificate of Compliance

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The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
80004751	2019-09-06	Certification of the Dräger Pulsar 7000 series for the following markings: Model OTR 00**: Class I, Div. 1, Groups C & D, T6...T5; Class II, Div. 1, Groups E, F & G; Ex db [ia Ga] IIC T6...T5 Gb; Class I, Zone 1, AEx db [ia Ga] IIC T6...T5 Gb; Ex tb [ia Da] IIIC T80°C/ T95°C Db; Zone 21, AEx tb [ia Da] IIIC T80°C/ T95°C Db; Type 4X, IP 66/67; Model HAC 00**: Class I, Div. 1, Groups A, B, C & D, T4, Ex ia; Ex ia IIC T4 Ga; Class I, Zone 1, AEx ia IIC T4 Ga; Ex ia IIIB T135°C Db; Zone 21, AEx ia IIIB T135°C Db