

PE174/3

EU DECLARATION OF CONFORMITY

The object of this declaration, pressure device: pressure transmitters: **PYRP-2000ALW**, Differential pressure transmitters: **PYRD-2000ALW**, **PYRD-2200ALW**, **PYRD-2000GALW**, Level probe: **PYRD-2000YALW**

Manufacturer: **Pyropress Limited, Bell Close, Plympton, Plymouth, Devon, England, PL7 4JH.**

We hereby declare under the sole responsibility, that the object of the declaration defined above comply with relevant Union harmonization legislation.

Pressure transmitters type **PYRP-2000ALW**, Level probe: **PYRD-2000YALW**, Differential pressure transmitters **PYRD-2000ALW**, **PYRD-2000ALW Safety**, **PYRD-2200ALW**, **PYRD-2000GALW** in all versions comply with directives:

- **EMC - 2014/30/EU** dated 26 February 2014

Conformity assessment procedure: module A.

The following standards were applied EN 61326-1:2013, EN 61326-2-3:2013.

- **RoHS - 2011/65/EU** dated 08 June 2011

Conformity assessment procedure: module A, according to Decision No 768/2008/EC of the European Parliament and of the Council. The following standard was applied: EN 50581:2012.

Pressure transmitters type **PYRP-2000ALW**, Differential pressure transmitters **PYRD-2000ALW** in PED version comply with directive:

- **PED - 2014/68/EU** dated 15 May 2014

Transmitters in PED version acc. to module A, have specified on the nameplate parameters PS>200bar, PT..., TS... The following standards were applied: EN 13445-3:2014, EN ISO 14732:2013, WUDT-UC/2003.

Transmitters without specified parameters values PS, PT, TS were manufactured based on article 4 p.3 Directive 2014/68/UE in accordance with the sound engineering practice. In this case, PED Directive does not require CE marking, however transmitter is marked CE due to requirement of other regulations of EU harmonization legislation.

Pressure transmitters type **PYRP-2000ALW**, Differential pressure transmitters **PYRD-2000ALW**, **PYRD-2200ALW**, **PYRD-2000GALW**, Level probe **PYRD-2000YALW** in Ex versions comply with directive:

- **ATEX - 2014/34/EU** dated 26 February 2014

Intrinsically safe versions of transmitters are marked with the following certificate marking:

II 1/2G Ex ia IIC T5/T4 Ga/Gb

II 1D Ex ia IIIC T105°C Da

I M1 Ex ia I Ma (version with enclosure ss316)

KDB 20ATEX0016X 0 edition

The following standards were applied: EN 60079-0:2018, EN 60079-11:2012, EN 50303:2000.

Conformity assessment procedure: module B. Notified Body no.1453, Central Mining Institute, 40-166 Katowice, Plac Gwarkow 1, Poland.

Pressure transmitters **PYRP-2000ALW Safety**, differential pressure transmitters **PYRD-2000ALW Safety** in explosion-proof versions are marked with the following certificate marking:

I M2 Ex db ia I Mb (version with enclosure ss316)

II 1/2G Ex ia/db IIC T6/T5 Ga/Gb

II 1/2D Ex ia/tb IIIC T105°C Da/Db

KDB 20ATEX0016X 0 edition

I M2 Ex db ia I Mb (version with enclosure ss316)

or II 2G Ex ia/db IIC T6/T5 Gb

II 2D Ex ia/tb IIIC T105°C Db

KDB 20ATEX0016X edition 0

The following standards were applied: EN 60079-0:2018, EN 60079-1:2014, EN 60079-11:2012, EN 60079-26:2015, EN 60079-31:2014.

Conformity assessment procedure: module B. NB no.1453, Central Mining Institute, Plac Gwarkow 1, 40-166 Katowice.

Conformity assessment procedure: module D. NB no.2575, Intertek Italia Spa, Via Guido Miglioli, 2/A, 20063 Cernusco sul Naviglio (MI), Italy.

Stephen Burns, Managing Director, On Behalf of Pyropress Limited

Signed..........Dated...17th December 2020.



- [1] **EU TYPE EXAMINATION CERTIFICATE**
- [2] Protective equipment and systems intended for use in potentially explosive atmospheres. Directive 2014/34/EU (Rozporządzenie Ministra Rozwoju z dnia 06.06.2016r. Dz.U. z dnia 09.06.2016r. Poz. 817)
- [3] EU type examination certificate (module B):
KDB 20ATEX0016X **0 edition**
- [4] Equipment:
**Smart pressure transmitters type
PYRP-2000ALW, PYRP-2000ALW Safety;**
**Smart differential pressure transmitters type
PYRD-2000ALW, PYRD-2200ALW, PYRD-2000ALW Safety,
PYRD-2000GALW;**
Smart level probes type PYRD-2000YALW
- [5] Manufacturer:
Pyropress Engineering
- [6] Address:
**Bell Close, Plympton, Plymouth, Devon PL7 4JH,
United Kingdom**
- [7] The protective equipment or system and any acceptable variations thereto are specified in the schedule to this certificate.
- [8] Central Mining Institute, Notified Body no 1453 according to Directive 2014/34/EU of February 26, 2014, approves that the protective equipment or system specified in this certificate has been found to comply with the essential health and safety requirements for the design and construction of protective equipment and systems intended for use in potentially explosive atmosphere given in Annex II to Directive 2014/34 /EU (Załącznik nr 2 Rozporządzenia Ministra Rozwoju z dnia 06.06.2016r. Dz.U. z dnia 09.06.2016r. Poz. 817). The results of the assessment and examinations as well as the list of agreed documentation are recorded in the confidential Report **KDB No 20.023 [T-7630]**
- [9] The essential health and safety requirements have been met by compliance with the requirements of the following standards:
**EN IEC 60079-0:2018; EN 60079-1:2014;
EN 60079-11:2012; EN 60079-26:2015; EN 60079-31:2014;
EN 50303:2000**
- [10] If sign "X" is placed after the certificate number, this means the specific conditions of use set out in the schedule to this certificate.
- [11] This EU type examination certificate relates only to the construction, assessment and testing of the specified product in accordance with Directive 2014/34 /EU (Rozporządzenie Ministra Rozwoju z dnia 06.06.2016r. Dz.U. z dnia 09.06.2016r. Poz. 817). The certificate shall not cover the remaining requirements of the Directive regarding the manufacturing process and placing the protective equipment or system on the market.
- [12] The marking of the equipment is included in the descriptive part of the certificate.

inż. Andrzej Trębaczewski
ATEX Certification
Expert



Główny Instytut Górnictwa
Jednostka Oceny Zgodności
P.O. KIEROWNIKA
dr inż. Dariusz Stefaniak

Date of issue: **30.03.2020**

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SCHEDULE
EU type examination certificate
KDB 20ATEX0016X 0 edition



[15] Description:

Pressure transmitters type PYRP-2000ALW, PYRP-2000ALW Safety; differential pressure transmitters type PYRD-2000ALW, PYRD-2200ALW, PYRD-2000ALW Safety, PYRD-2000GALW and level probes type PYRD-2000YALW convert resistance changes proportional to the measured pressure of piezoresistive bridge, located in the single crystal of silicon diaphragm, into a standard current signal $4 \div 20$ mA with HART communications signal. Transmitters can be used for measurement of dense and aggressive media, at high and low temperatures.

The basic unit of the transmitter and the probe is a measuring head with a silicon diaphragm sensor, working in the intrinsically safe circuit (Ex ia), mounted in transmitter enclosure. Measuring heads can be equipped with different pressure connections. Inside the head there is the "pressure chamber" filled with manometer liquid. It is limited by a diaphragm welded tightly to the head's body, on the side of measured medium. Differential pressure transmitters have two separated diaphragms for the inputs: "+" and "-". Inside the head there is a bushing in which a measuring silicon diaphragm with piezoresistors is installed. The parts of the diaphragm seals can be coated with teflon.

Enclosures of transmitters are made of die-cast aluminium alloy or stainless steel. Enclosure consists of a body and two screwed covers (display cover and electrical connection cover). The cable is introduced into the enclosure by cable gland with thread M20x1,5 or 1/2NPT depending on the version of the enclosure body. In the non-used opening there is mounted plug (cap).

The device version including the flameproof enclosure requires use of flameproof cable gland and plug. Cable entries and plugs should also meet the requirements for dust-proof covers (Ex tb). The device in the flameproof and dustproof version includes plug.

The measuring head working in the intrinsically safe circuit (Ex ia), in the version of the device including the flameproof enclosure, is separated from the rest of the equipment by the bushing.

In the transmitter enclosure, is also installed a terminal strip allowing additional connection of the communicator and measurement of the output current, without interrupting the circuit.




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SCHEDULE
EU type examination certificate
KDB 20ATEX0016X 0 edition




Marking:

 I M2 Ex db ia I Mb *
II 1/2G Ex ia/db IIC T6/T5 Ga/Gb
II 1/2D Ex ia/tb IIIC T105°C Da/Db

or

 I M2 Ex db ia I Mb *
II 2G Ex ia/db IIC T6/T5 Gb
II 2D Ex ia/tb IIIC T105°C Db

or

 I M1 Ex ia I Ma *
II 1/2G Ex ia IIC T5/T4 Ga/Gb
II 1D Ex ia IIIC T105°C Da

* - only stainless steel version of enclosure

Technical parameters:

Range of the measured pressure:

-100kPa ÷ 100MPa (PYRP-2000ALW, PYRP-2000ALW Safety)
-50kPa ÷ 7MPa (PYRD-2000ALW, PYRD-2000ALW Safety)
-160kPa ÷ 1,6MPa (PYRD-2200ALW)
-10 kPa ÷ 10 kPa (PYRD-2000GALW)

Range of the measured liquid level:

0 ÷ -6mH₂O (PYRD-2000YALW)

Output signal:

4 ÷ 20mA in a two-wire system + HART

Device version Ex ia/db and Ex ia/tb:

Supply voltage:

U_{max} = 55V DC (PYRP-2000ALW, PYRD-2000ALW, PYRD-2200ALW,
PYRD-2000GALW, PYRD-2000YALW)
U_{max} = 36V DC (PYRP-2000ALW Safety, PYRD-2000ALW Safety)

Ambient temperature: -40 ÷ 40°C

Temperature class: T6

Ambient temperature: -40 ÷ 75°C

Temperature class: T5

Maximum surface
temperature - version Ex ia/tb: 105°C

Degree of protection: IP66 / IP67



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EU type examination certificate
KDB 20ATEX0016X 0 edition



Device version Ex ia:

Supply voltage: $U_{max} = 30V$ DC
Ambient temperature: $-40 \div 80^{\circ}C$
Temperature class: T5/T4
Maximum surface temperature: $105^{\circ}C$
Degree of protection: IP66 / IP67

Intrinsically safe parameters:

Supply from a power source with linear output characteristic:

$U_i = 30V$	$L_i = 18\mu H$	Temperature class: T5
$I_i = 100mA$	$C_i = 2,5nF$	
$P_i = 0,75W$		

Supply from a power source with trapezoidal output characteristic:

$U_i = 24V$	$L_i = 18\mu H$	Temperature class: T5
$I_i = 50mA$	$C_i = 2,5nF$	
$P_i = 0,7W$		

Supply from a power source with rectangular output characteristic:

$U_i = 24V$	$L_i = 18\mu H$	Temperature class: T5
$I_i = 25mA$	$C_i = 2,5nF$	
$P_i = 0,6W$		
$U_i = 24V$	$L_i = 18\mu H$	Temperature class: T4
$I_i = 50mA$	$C_i = 2,5nF$	
$P_i = 1,2W$		

[16] Test Report:

"ATEX assessment report" KDB No 20.023

[17] Special conditions of use:

- The maximum temperature of the external heating source cannot heat the transmitter above the maximum declared ambient temperature.
- Some gaps of flameproof joints are smaller and longer than those required in table 3 of standard EN 60079-1. Relevant information for the user are included in the instruction.
- In hazardous zones of dust explosion, transmitters with painted aluminum enclosures, as well as transmitters equipped with plastic marking plates and diaphragm separator elements covered with a teflon layer, should be installed in a way that prevents electrostatic charging, in accordance with the instructions.



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EU type examination certificate
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- The diaphragm separator containing titanium elements must be protected against mechanical impacts.
- An intrinsically safe transmitter version with surge arrester, marked on the nameplate as "SA" does not meet the requirements of clause 10.3 of EN 60079-11 (500Vrms). The device should be installed in accordance with the instructions.
- In the case of use a transmitter with a nameplate containing various types of explosion-proof execution, the type of protection must be permanently marked on the nameplate before installation, according to the instructions.
- In the device version including the flameproof enclosure, the diaphragm should not be subject on damage during installation and exploitation of the transmitter. The transmitter diaphragm is made of stainless steel, Hastelloy alloy or tantalum and must not be exposed to medium that could cause its damage.

[18] Essential health and safety requirements:

Met by fulfilling the requirements of the following standards:

EN IEC 60079-0:2018 (PN-EN IEC 60079-0:2018-09)
EN 60079-1:2014 (PN-EN 60079-1:2014-12)
EN 60079-11:2012 (PN-EN 60079-11:2012)
EN 60079-26:2015 (PN-EN 60079-26:2015-04)
EN 60079-31:2014 (PN-EN 60079-31:2014-10)
EN 50303:2000 (PN-EN 50303:2004)

Document history:

- EU type examination certificate KDB 20ATEX0016X, 0 edition of 30.03.2020, initial certification





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 KDB 20.0004X** Page 1 of 5 [Certificate history](#)

Status: **Current** Issue No: 0

Date of Issue: 2020-03-30

Applicant: **Pyropress Engineering**
Bell Close, Plympton, Plymouth, Devon PL7 4JH
United Kingdom

Equipment: **Smart pressure transmitters type PYRP-2000ALW, PYRP-2000ALW Safety; Smart differential pressure transmitters type PYRD-2000ALW, PYRD-2200ALW, PYRD-2000ALW Safety, PYRD-2000GALW; Smart level probes type PYRD-2000YALW**

Optional accessory:

Type of Protection: **Equipment protection by flamaeproof enclosure "d", intrinsic safety "ia", equipment dust ignition protection by enclosure "t".**

Marking:

Ex db ia I Mb *	or	Ex db ia I Mb *	or	Ex ia I Ma *
Ex ia/db IIC T6/T5 Ga/Gb		Ex ia/db IIC T6/T5 Gb		Ex ia IIC T5/T4 Ga/Gb
Ex ia/tb IIIC T105°C Da/Db		Ex ia/tb IIIC T105°C Db		Ex ia IIC T105°C Da

* - only stainless steel version of enclosure

Approved for issue on behalf of the IECEx
Certification Body:

Andrzej Trębaczewski

Position:

Deputy Head of ExCB

Signature:
(for printed version)

Date:

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 www.iecex.com or use of this QR Code.



Certificate issued by:

Główny Instytut Górnicztwa, Kopalnia Doświadczalna "BARBARA"
(Central Mining Institute Experimental Mine "Barbara")
ul. Podleska 72
43-190 Mikołów
Poland





IECEX Certificate of Conformity

Certificate No.: **IECEX KDB 20.0004X**

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Date of issue: 2020-03-30

Issue No: 0

Manufacturer: **Pyropress Engineering**
Bell Close, Plympton, Plymouth, Devon PL7 4JH
United Kingdom

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 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

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

IEC 60079-26:2014-10 Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
Edition:3.0

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

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:

[PL/KDB/EXTR20.0004/00](#)

Quality Assessment Report:

[GB/ITS/QAR11.0004/06](#)



IECEX Certificate of Conformity

Certificate No.: **IECEX KDB 20.0004X**

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Date of issue: 2020-03-30

Issue No: 0

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Pressure transmitters type PYRP-2000ALW, PYRP-2000ALW Safety differential pressure transmitters type PYRD-2000ALW, PYRD-2200ALW, PYRD-2000ALW Safety, PYRD-2000GALW and level probes type PYRD-2000YALW convert resistance changes proportional to the measured pressure of piezoresistive bridge, located in the single crystal of silicon diaphragm, into a standard current signal $4 \div 20$ mA with HART communications signal. Transmitters can be used for measurement of dense and aggressive media, at high and low temperatures.

The basic unit of the transmitter and the probe is a measuring head with a silicon diaphragm sensor, working in the intrinsically safe circuit (Ex ia), mounted in transmitter enclosure. Measuring heads can be equipped with different pressure connections. Inside the head there is the "pressure chamber" filled with manometer liquid. It is limited by a diaphragm welded tightly to the head's body, on the side of measured medium. Differential pressure transmitters have two separated diaphragms for the inputs: "+" and "-". Inside the head there is a bushing in which a measuring silicon diaphragm with piezoresistors is installed. The parts of the diaphragm seals can be coated with teflon.

Enclosures of transmitters are made of die-cast aluminium alloy or stainless steel. Enclosure consists of a body and two screwed covers (display cover and electrical connection cover). The cable is introduced into the enclosure by cable gland with thread M20x1,5 or 1/2NPT depending on the version of the enclosure body. In the non-used opening there is mounted plug (cap).

The device version including the flameproof enclosure requires use of flameproof cable gland and plug. Cable entries and plugs should also meet the requirements for dust-proof covers (Ex tb). The device in the flameproof and dustproof version includes plug.

The measuring head working in the intrinsically safe circuit (Ex ia), in the version of the device including the flameproof enclosure, is separated from the rest of the equipment by the bushing.

In the transmitter enclosure, is also installed a terminal strip allowing additional connection of the communicator and measurement of the output current, without interrupting the circuit.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- The maximum temperature of the external heating source cannot heat the transmitter above the maximum declared ambient temperature.
- Some gaps of flameproof joints are smaller and longer than those required in table 3 of standard IEC 60079-1. Relevant information for the user are included in the instruction.
- In hazardous zones of dust explosion, transmitters with painted aluminum enclosures, as well as transmitters equipped with plastic marking plates and diaphragm separator elements covered with a teflon layer, should be installed in a way that prevents electrostatic charging, in accordance with the instructions.
- The diaphragm separator containing titanium elements must be protected against mechanical impacts.
- An intrinsically safe transmitter version with surge arrester, marked on the nameplate as "SA" does not meet the requirements of clause 10.3 of IEC 60079-11 (500Vrms). The device should be installed in accordance with the instructions.
- In the case of use a transmitter with a nameplate containing various types of explosion-proof execution, the type of protection must be permanently marked on the nameplate before installation, according to the instructions.
- In the device version including the flameproof enclosure, the diaphragm should not be subject on damage during installation and exploitation of the transmitter. The transmitter diaphragm is made of stainless steel, Hastelloy alloy or tantalum and must not be exposed to medium that could cause its damage.



IECEX Certificate of Conformity

Certificate No.: **IECEX KDB 20.0004X**

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Date of issue: 2020-03-30

Issue No: 0

Equipment (continued):

Technical parameters:

Range of the measured pressure:

-100kPa ÷ 100MPa	(PYRP-2000ALW, PYRP-2000ALW Safety)
-50kPa ÷ 7MPa	(PYRD-2000ALW, PYRD-2000ALW Safety)
-160kPa ÷ 1,6MPa	(PYRD-2200ALW)
-10 kPa ÷ 10 kPa	(PYRD-2000GALW)

Range of the measured liquid level:

0 ÷ -6mH ₂ O	(PYRD-2000YALW)
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Output signal:

4 ÷ 20mA	in a two-wire system + HART
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Device version Ex ia/db and Ex ia/tb:

Supply voltage:

U _{max} = 55V DC	(PYRP-2000ALW, PYRD-2000ALW, PYRD-2200ALW, PYRD-2000GALW, PYRD-2000YALW)
U _{max} = 36V DC	(PYRP-2000ALW Safety, PYRD-2000ALW Safety)

Ambient temperature: -40 ÷ 40°C

Temperature class: T6

Ambient temperature: -40 ÷ 75°C

Temperature class: T5

Maximum surface temperature - version Ex ia/tb: 105°C

Degree of protection: IP66 / IP67

Device version Ex ia:

Supply voltage: U_{max} = 30V DC

Ambient temperature: -40 ÷ 80°C

Temperature class: T5/T4

Maximum surface temperature: 105°C

Degree of protection: IP66 / IP67

Intrinsically safe parameters:

Supply from a power source with linear output characteristic:

U _i = 30V	L _i = 18μH	Temperature class: T5
I _i = 100mA	C _i = 2,5nF	
P _i = 0,75W		



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Supply from a power source with trapezoidal output characteristic:

U _i = 24V	L _i = 18μH	Temperature class: T5
I _i = 50mA	C _i = 2,5nF	
P _i = 0,7W		

Supply from a power source with rectangular output characteristic:

U _i = 24V	L _i = 18μH	Temperature class: T5
I _i = 25mA	C _i = 2,5nF	
P _i = 0,6W		

U _i = 24V	L _i = 18μH	Temperature class: T4
I _i = 50mA	C _i = 2,5nF	
P _i = 1,2W		