1 # EU-TYPE EXAMINATION CERTIFICATE

2 Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014

3 EU-Type Examination Certificate Number: **CSANe 26ATEX1076X** Issue: **0**

4 Equipment: **P146-2-1 – Alarm 2 – LoRaWAN & P147-2-1 – Alarm 2 - CELLULAR Liquid Level Monitors**

5 Manufacturer: **Detectronic Ltd**

6 Address: Ground Floor Office Suite
16 Lindred Road
Brierfield, Nelson
Lancashire
BB9 5SR
United Kingdom

7 This product and any acceptable variation thereto, is specified in the schedule to this certificate and the documents therein referred to.

8 CSA Group Netherlands B.V., Notified Body No. 2813 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 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 reports listed in item 16.2.

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

EN IEC 60079-0:2018/AC:2020 EN IEC 60079-11:2024

Where additional criteria beyond those given here have been used, they are listed in item 18 in the Schedule.

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the "Specific Conditions of Use" listed in item 17 of this certificate.

11 This EU-Type Examination Certificate relates only to the technical design of the specified product in accordance with the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product, these are not covered by this certificate.

12 The marking of the product shall include the following (additional marking is provided in the Schedule as a part of item 15, if applicable):

II 1G
Ex ia IIB T4 Ga
-20°C ≤ Tamb ≤ +50°C

Signed: M Halliwell
Title: Senior Director of Operations
Date 13 August 2026

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13 # SCHEDULE

14 **EU-Type Examination Certificate Number:** **CSANe 26ATEX1076X** Issue: **0**

15 **Description:**

The P146-2-1 Alarm 2 - LoRaWAN & P147-2-1 Alarm 2 - CELLULAR Liquid Level Monitors are designed to monitor liquid levels in tanks and sewer manholes. The equipment is a battery-powered IoT (Internet ofThings) device that uses low power radar to measure the liquid level and communicate the information via either the LoRaWAN radio network (P146-2-1 Alarm 2 - LoRaWAN) or cellular modem (P147-2-1 - Alarm 2 - CELLULAR) communications.

The equipment is housed in a custom moulded plastic housing containing a partially encapsulated printed circuit board (PCB) with only the radar, and connections for an external antenna and battery pack protruding the encapsulation. The P146-2-1 and P147-2-1 variants of the equipment contain the same PCB, but are populated with different components.

Both variants of the equipment are powered by either the P160-1 2-Cell or P162-1 1-Cell 3.6V Lithium Thionyl Chloride (LiSOCI2) primary battery packs that fits inside the equipment and must only be changed in the non-hazardous area.

The only external connection to the equipment is the external antenna, which has the following output parameters:

External Antenna Port – Coax Connector

The external antenna connection is designed for the connection of a suitably certified antenna or antenna assessed as simple apparatus, and has the following port parameters:

U_o = 4.1V, I_o = 0.9mA, P_o = 1mW, C_o = 1,000µF, L_o = 1mH

16 **Drawings and documents:**

16.1 **Technical documents:**

Refer to Certificate Annex.

16.2 **Associated reports and certificate history:**

Issue	Date	Report number	Comment
0	13 August 2026	R80292558A	The release of the prime certificate.

17 **Specific conditions of use** (denoted by "X" after the certificate number):

17.1 The enclosure of the device is made from non-metallic materials that under certain conditions may accumulate ignition-capable electrostatic charges. It shall not be installed in areas with external conditions which allow the accumulation of electrostatic charges. Additionally, the equipment may only be cleaned with a damp cloth.

17.2 The equipment's P160-1 2-Cell or P162-1 1-Cell Battery Packs must only be replaced in the non-hazardous area.

17.3 Only suitably certified antennas that meet the following port parameters or antennas that have been defined as Simple Apparatus can be connected to the optional external antenna port:

$U_i \geq$ 4.1V
$I_i \geq$ 0.9mA
$P_i \geq$ 1mW
$C_i <$ 1,000µF
$L_i <$ 1mH

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18 **Essential health and safety requirements of Annex II** (EHSRs):

The relevant EHSRs that are not addressed by the standards listed in item 9 of this certificate have been identified and conformity of the product demonstrated in the reports listed in item 16.2.

19 **Remarks and additional information:**

The use of this certificate is subject to the regulations applicable to holders of CSA Group Netherlands B.V. certificates.

Compliance of the product with the applicable safety requirements of the relevant industrial standards has not been verified and is not covered by this certificate.

19.1 **Conditions of manufacture:**

19.1.1 After the PCB assembly has been encapsulated, the encapsulated areas of the PCB shall be inspected to ensure the minimum depth of encapsulation of at least 1mm is met, and the encapsulant is free from bubbles in accordance with IEC 60079-11:2023 / EN IEC 60079-11:2024 clause 10.4.

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Certificate Annexe

Document History

Issue – 0

Documents Introduced or Revised

Drawing	Sheets	Rev.	Date (Stamp)	Title
C146-PN001-1-SCH-1.3	1 to 8	1.3	07 Aug 26	Alarm II Circuit Diagram
C146-PN001-1-PCB-1.3	1 to 10	1.3	07 Aug 26	Alarm 2 PCB Rev 1.2
C146-PN001-1-LORA-1.2-ATEX-BOM-6	1 to 4	6	07 Aug 26	Detectronic Alarm 2 – LoRaWAN PCB Bill of Materials
C147-PN001-1-CELL-1.2-ATEX-BOM-6	1 to 5	6	07 Aug 26	Detectronic Alarm 2 – CELLULAR PCB Bill of Materials
HDW25054-3	1 to 5	3	07 Aug 26	Alarm 2 General Assy
HDW25049-2	1 of 1	2	07 Aug 26	P146-2-1 LoRaWAN Alarm 2 IECEx, ATEX & UKCA
HDW26009-2	1 of 1	2	07 Aug 26	P147-2-1 Cellular Alarm 2 IECEx, ATEX & UKCA
P160-1	1 to 4	3	07 Aug 26	Battery Pack Lithium TCL 3.6V 34Ah 1S2P
P162-1	1 to 4	2	07 Aug 26	Battery Pack Lithium TCL 3.6V 17Ah 1S1P
C00597	1 & 2	3	07 Aug 26	P160 Label
C00618	1 & 2	2	07 Aug 26	P162-1 Label

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