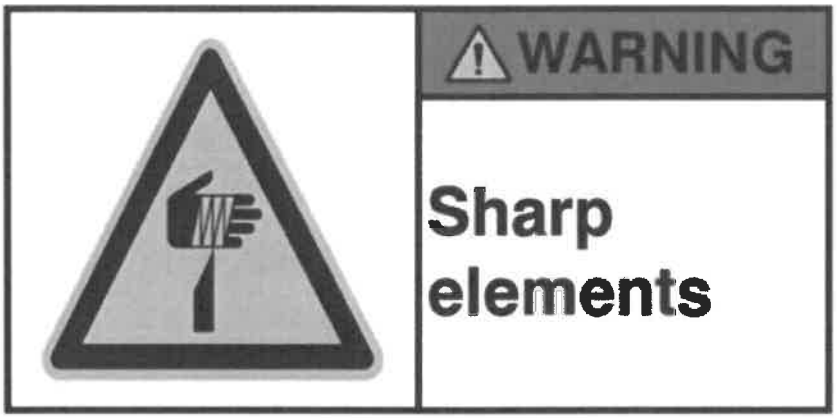
User Manual

Rootzone Sensor

GS21RZ03

Rockwool BV – Grodan is part of the Rockwool Group.
Industrieweg 15, 6045 JG Roermond, the Netherlands
www.grodan.com

Safety warning



English:
Be careful, this product contains six sharp measurement pins that can cause cutting or puncture. Do not touch!

French:
Attention, ce produit contient six broches de mesure tranchantes qui peuvent provoquer des coupures ou des perforations. Ne pas toucher!

Spanish:
Tenga cuidado, este producto contiene seis clavijas de medición afiladas que pueden causar cortes o perforaciones. ¡No tocar!

German:
Seien Sie vorsichtig, dieses Produkt enthält sechs scharfe Messstifte, die zu Schnitten oder Durchschlägen führen können. Nicht Tasten!

Dutch:
Wees voorzichtig, dit product bevat zes scherpe meetpennen die snijwonden of perforaties kunnen veroorzaken. Niet aanraken!

Introduction

The GS21RZ03 (Rootzone sensor) is part of the Grodan GroSens sensor platform. This sensor enables growers to read out root zone information from their substrate and view this data on a mobile app, desktop or laptop.
The GS21RZ03 has been certified for the European (including Turkey), USA, UK, Australia, New Zealand and Canadian markets.

Onboarding

For onboarding the sensor in the platform, please download the "e-Gro Companion" App from the Apple App Store or Google Play Store.

e-Gro Companion

2.3.2 by ROCKWOOL International A/S

Jun 12, 2023

Follow the instructions in the app to configure and connect the sensor.

Placement

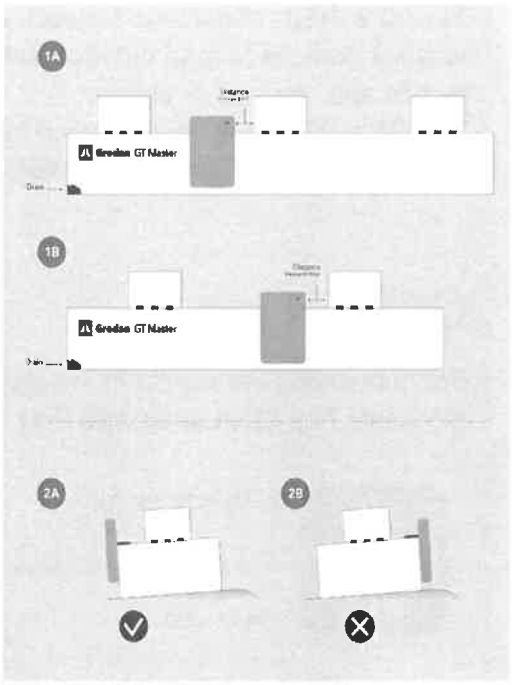
Position in the substrate

Picture 1A and 1B show the correct placement of the sensors in the substrates:

- Place the sensor 8-10 cm to the left of the 2nd block from the water drain hole
- Sensor should be positioned closer to 2nd than to 1st block, ideally at 2/3 of distance towards second block. If blocks are close to each other, the minimum distance is 5 cm between sensor and block.

Picture 2A and 2B show placement of the sensors, in case the substrates is on a slope

- Place the sensor at the lower side of the slope in the substrate



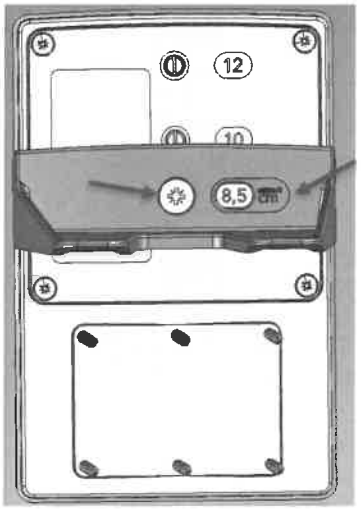
Adjustment for different substrate thicknesses

The support plate at the back of the sensor can be adjusted with the screw to one of the four different positions.

Each position is optimized for the indicated substrate thickness: 7.5, 8.5, 10 and 12 cm.

The substrate thickness can be read through the window in the support plate.

Note: the 7.5 cm position is not visible in the picture as it is behind the alignment plate.



2 Radio Frequency - Declaration of Conformity

European Union

This device complies with RED articles 3.1.a, 3.1.b and 3.2.

North America

FCC Declaration of Conformity (for USA)
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC ID: 2AUKP-RZ001

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense

The provided antenna must be used with this unit to ensure compliance.

Canada

Industry Canada Declaration of Conformity
This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement

IC ID: 25447-RZ001

3 Product Details

Applicable Product Number:	RZ21GS13 - Rootzone sensor
LoRa	
Operating Frequency Range:	863 – 870 MHz (EU) 902 – 928 MHz (USA, CAN) 915 – 928 MHZ (Australia, New Zealand)
Maximum Output Power:	14 dBm (EU) 22 dBm (USA, CAN) 15 dBm (Australia, New Zealand)
BLE	
Operating Frequency Range:	2402-2480 MHz
Maximum Output Power:	4 dBm
Power	
Operating voltage:	3V DC (4 Alkaline batteries 1.5V)
Standby current:	0.1 mA Maximum
Operating current:	120 mA Maximum

4 Warranty

For Warranty information, please contact our Customer Service Departments.

Europe
Rockwool B.V. - Grodan
Industrieweg 15
6045 JG Roermond
The Netherlands
+31 475 353 020

USA, Canada
Roxul Inc. - Grodan
8024 Esquesing Line
Milton ON L9T 6W3
Canada
+1 905 636 0611

EU Declaration of Conformity (DoC)

Hereby we,

Name of manufacturer:	**Rockwool b.v. – Grodan**
Address:	**Industrieweg 15**
Zip code & City:	**6045 JG Roermond**
Country:	**The Netherlands**
Telephone number:	**+31 475 353 020**

declare that this DoC is issued under our sole responsibility and that this product:

Product description:	**Root zone sensor**
Type designation(s):	**GS21RZ03**
Trademark:	**Grodan GroSens**

is in conformity with the relevant Union harmonization legislation:

- 2014/53/EU - Radio Equipment Directive
- 2011/65/EU - RoHS Directive
- 1907/2006/EC - REACH Regulation
- 2012/19/EC - WEEE Directive

with reference to the following standards applied:

- Safety - EN/IEC 62368-1:2014/A11:2017
- EMF assessment - EN 62479:2010
- EMC - EN 301 489 V2.2.3, part 1 & 3 (V2.1.1), 17 (V3.2.4)
- Radio - EN 300 328 v2.2.2
- Radio - EN 300 220-1 V3.1.1, EN 300 220-2 v3.2.1

Where applicable:
The issued EU-type examination certificate:

- CB test certificate: NL2-020163

Description of accessories and components, including software, which allow the radio equipment to operate as intended and covered by the DoC:

- set of 4 AA batteries

Signed for and on behalf of:

Roermond, 4-6-2021 — Edwin Dilling, project manager

Place and date of issue — Name, Function, signature

FCC

FEDERAL COMMUNICATIONS COMMISSION

DECLARATION OF CONFORMITY (DoC)

Equipment:	**Rootzone sensor**
Trademark(s) and Model(s):	**Grodan GroSens GS21RZ03**
Manufacturer:	**Rockwool b.v. - Grodan**
FCC ID in case other parts of this equipment are subject to certification:	**2AUKP-RZ002**

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

The following test reports are subject to this declaration:

Test report number:	Issue date:
200701990 004 ver 1.00	**04-06-2021**
200701990 005 ver 1.00	**04-06-2021**
200701990 007 ver 1.00	**28-05-2021**

The following manufacturer/importer/entity (located in the USA) is responsible for this declaration:

Company name:	**Rockwool b.v. – Grodan**
Name/Title (legal representative):	**Edwin Dilling / Project manager**
Address:	**Industrieweg 15, 6045 JG Roermond**
Phone:	**+31 472 353 020**
E-mail:	**edwin.dilling@grodan.com**
Date:	**22-06-2021**
Signature:	

Supplier's declaration of conformity

Australian Government | acma Australian Communications and Media Authority

As required by the following Notices:

- *Radiocommunications (Compliance Labelling - Devices) Notice 2014* made under section 182 of the *Radiocommunications Act 1992*;
- *Radiocommunications Labelling (Electromagnetic Compatibility) Notice 2017* made under section 182 of the *Radiocommunications Act 1992;*
- *Radiocommunications (Compliance Labelling – Electromagnetic Radiation) Notice 2014* made under section 182 of the *Radiocommunications Act 1992;* and
- *Telecommunications (Labelling Notice for Customer Equipment and Customer Cabling) Instrument 2015* made under section 407 of the *Telecommunications Act 1997.*

Instructions for completion

Do not return this form to the ACMA. This completed form must be retained by the supplier as part of the documentation required for the compliance records and must be made available for inspection by the ACMA when requested.

Supplier's details

Company Name (OR INDIVIDUAL)

Braco Compliance Pty Ltd

RCM Responsible Supplier Number

E304

Street Address (Australian)

Unit 308, 469-481 High St

Northcote, VIC 3070

OR

ACN/ARBN

84156023504

Product details

Product description – brand name, type, current model, lot, batch or serial number (if available), software/firmware version (if applicable)

Grodan®

Root Zone Sensor, Model GS21RZ03.

Compliance – applicable standards and other supporting documents

Evidence of compliance with applicable standards may be demonstrated by test reports, endorsed/accredited test reports, certification/competent body statements. Having had regard to these documents, I am satisfied the above mentioned product complies with the requirements of the relevant ACMA Standards made under the Radiocommunications Act 1992 and the Telecommunications Act 1997.

List the details of the documents the above statement was made, including the standard title, number and, if applicable, number of the test report/endorsed test report or certification/competent body statement.

Radiocommunications (Short Range Devices) Standard 2014, refer telefication bv EN 300 328 v2.2.2 test report No 200701990 006 Ver 1.00, ETSI EN 300 220-1 v3.1.1 / EN 300 220-2 v3.2.1 test report No 200701990 002 Ver 1.00, both dated 28 May 2021, and Rockwool B.V. Frequency Declaration dated 22 June 2021.

Radiocommunications (Electromagnetic Radiation – Human Exposure) Standard 2014, refer power levels measured in telefication bv EN 300 328 v2.2.2 test report No 200701990 006 Ver 1.00 and ETSI EN 300 220-1 v3.1.1 / EN 300 220-2 v3.2.1 test report No 200701990 002 Ver 1.00, both dated 28 May 2021.

Declaration

I hereby declare that:

1. I am authorised to make this declaration on behalf of the Company mentioned above,
2. the contents of this form are true and correct, and
3. the product mentioned above complies with the applicable above mentioned standards and all products supplied under this declaration will be identical to the product identified above.

Note: Under section 137.1 of the *Criminal Code Act 1995*, it is an offence to knowingly provide false or misleading information to a Commonwealth entity. Penalty: 12 months imprisonment

Bruce Maule

Director

23 June 2021

The *Privacy Act 1988* (Cth) (the Privacy Act) imposes obligations on the ACMA in relation to the collection, security, quality, access, use and disclosure of personal information. These obligations are detailed in the Australian Privacy Principles.
The ACMA may only collect personal information if it is reasonably necessary for, or directly related to, one or more of the ACMA's functions or activities.
The purpose of collecting the personal information in this form is to ensure the supplier is identified in the 'Declaration of conformity'. If this Declaration of Conformity is not completed and the requested information is not provided, a compliance label cannot be applied.
Further information on the Privacy Act and the ACMA's Privacy Policy is available at www.acma.gov.au/privacypolicy. The Privacy Policy contains details about how you may access personal information about you that is held by the ACMA, and seek the correction of such information. It also explains how you may complain about a breach of the Privacy Act and how we will deal with such a complaint.
Should you have any questions in this regard, please contact the ACMA's privacy contact officer on telephone on 1800 226 667 or by email at privacy@acma.gov.au.

RADIO SPECTRUM MANAGEMENT

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HIKINA WHAKATUTUKI

Supplier's declaration of conformity

As required by notices under:

- *Section 134 (1) (g) of the New Zealand Radiocommunications Act 1989.*

Supplier's details

Name (name of manufacturer, importer or agent), Company number	ERAC Responsible Supplier registration number
Braco Compliance Limited, # 2157405	E178

Address (address of agent)	Contact Information
9 Braco Place, Ilam Christchurch 8041	Telephone: +64 21 208 4303 Email: admin@bracocompliance.com

Product details

Product description – brand name, type, model, lot, batch or serial number (if available)

Grodan®

Root Zone Sensor, Model GS21RZ03.

Applicable standards

Standard title, number and, if applicable, number of the test report

EN 300 328 v2.2.2, refer telefication bv test report No 200701990 006 Ver 1.00 dated 28 May 2021.
ETSI EN 300 220-1 v3.1.1 / EN 300 220-2 v3.2.1, refer telefication bv test report No 200701990 002 Ver 1.00 dated 28 May 2021.
900MHz LoRA frequency limits and Special Condition 23 limits specified in Radiocommunications Regulations (General User Radio Licence for Short Range Devices) Notice 2020, refer Rockwool B.V. Frequency Declaration dated 22 June 2021.

Declaration

I hereby declare that the product mentioned above complies with the above mentioned standards, and all products supplied under this declaration will be identical to the sample identified above.

	Bruce Maule Director 23 June 2021

CERTIFICATE

Number: 212340003/AA/00

Issue Date: 17 May 2022

Expiration Date: -

Page 1 of 5

UKCA TYPE EXAMINATION CERTIFICATE (Module B)

In compliance with the procedure specified in M009, Kiwa Ltd. declares as approved body for UKCA 0558 for the Radio Equipment Regulation 2017, that the stated product, complies with the essential requirements, in accordance with part 2 (chapter 1) of Radio Equipment Regulation, as indicated under Annex 1 of this certificate, based on the applicable Technical Standards and Specifications as listed under Annex 2 of this Certificate.

Product description:	**Rootzone Sensor**
Trademark:	**ROCKWOOL, Grodan, GroSens**
Type designation:	**GS21RZ03**

This certificate is granted to manufacturer:

Name:	**Rockwool BV**
Address:	**Industrieweg 15**
City:	**6045 JG Roermond**
Country:	**The Netherlands**

This certificate remains valid as long as the stated product stays in compliance with the essential requirements of the Radio Equipment Regulation 2017.

This certificate has THREE Annexes.

Signed on behalf of Kiwa Ltd.
(UK Approved Body Number 0558)

Geesje Geers
Product Assessor

Kiwa Gastec
Kiwa House
Malvern View Business Park
Stella Way
Bishops Cleeve
Cheltenham
GL52 7DQ
United Kingdom
T +44 (0)1242 677877
F +44 (0)1242 676506
www.kiwa.co.uk

UKCA

UKAS PRODUCT CERTIFICATION
0217

Annex 1 to certificate 212340003/AA/00

General Conditions

For each product to which this type examination relates, it has complied to the essential requirements as follows:

Article 6.1

Radio equipment shall be constructed so as to ensure:

C	(a)	The protection of health and safety of persons and of domestic animals and the protection of property, including the objectives with respect to safety requirements set out in Directive 2014/35/EU, but with no voltage limit applying;
C	(b)	An adequate level of electromagnetic compatibility as set out in Directive 2014/30/EU.

Article 6.2

C	Radio equipment shall be so constructed that it both effectively uses and supports the efficient use of radio spectrum in order to avoid harmful interference.

Legend

C	=	Conform
NC	=	Not Conform
NA	=	Not applicable (for this equipment)
NP	=	Not performed (in this statement)

Annex 1 to certificate 212340003/AA/00

- This UKCA-type examination certificate is limited to the Radio Equipment Regulation.
- This UKCA-type examination certificate is part of the Conformity Assessment procedure Module B, as described in annex III of the Radio Equipment Regulation.
- The validity of this UKCA type examination certificate is limited to products, which are equal to the one(s) assessed for this type Examination.
- The manufacturer has to draw up and issue a self Declaration of Conformity, declaring that the product(s) described in this UKCA-type examination certificate, are in compliance with Radio Equipment Regulation 2017 and any other applicable harmonization legislation.
- Each product shall be identified by means of type, batch and/or serial numbers and the name of the manufacturer and/or importer.
- If the equipment is to be modified, Kiwa Ltd. shall be notified immediately. Depending on the modifications, Kiwa Ltd. may have additional examinations carried out in consultation with the applicant.
- Enforcement of a new amending directive voids the validity of this UKCA-type examination certificate.
- In case any referenced standard in this UKCA-type examination certificate is withdrawn or superseded and the presumption of conformity with the essential requirements has ceased, investigation by Kiwa Ltd. is needed to determine the validity of this type examination.

Remarks and observations

The following conditions are applicable:

None.

Annex 2 to certificate 212340003/AA/00

Documentation lodged for this type examination

Test Reports:

- Kiwa Telefication BV: 200701990 006 Ver 1.00, 31 May 2021
- Kiwa Telefication BV: 200701990 002 Ver 2.00, 25 January 2022
- Kiwa Telefication BV: 200701990 001 Ver 1.00, 28 May 2021
- Kiwa Telefication BV: 200701990 003 Ver 2.00, 25 January 2022
- Kiwa Telefication BV: 200701990, 25 March 2021

Product Documentation:

- Assembly drawings
- Bill of materials
- Block diagram
- Electrical diagrams
- Internal photos
- External photos
- Manual
- Label and label placement
- Test setup photos

Technical Standards and Specifications

The product is compliant with:

EN 301 489-17	September , 2020	V3.2.4
EN 300 220-1	February, 2017	V3.1.1
EN 300 220-2	June, 2018	V3.2.1
EN 300 328	July, 2019	V2.2.2
EN 301 489-1	November, 2019	V2.2.3
EN 301 489-3	March, 2019	V2.1.1
EN 62311	January, 2020	
EN 62368-1	August, 2014	
EN 62368-1/A11:2017	January, 2017	

Technical features and characteristics

The product includes the following features and characteristics:

868 MHz equipment
- Operating frequency range: 868.0-868.6 MHz
- Maximum output power: 13.09 dBm ERP
- Maximum antenna gain: -4.9 dBi

Bluetooth LE
- Operating frequency range: 2402-2480 MHz (40 channels)
- Maximum output power: 4.9 dBm EIRP average (calculated)
- Maximum antenna gain: 0 dBi

Annex 3 to certificate 212340003/AA/00

The product as described in this type examination includes the following type designations:

- Product description: Rootzone Sensor
- Trademark: ROCKWOOL, Grodan, GroSens
- Type designation: GS21RZ03