

STRYDE



NEST CASE V1

INSTRUCTIONS FOR USE

Document Number: 0000000104

Date: 3rd November 2020

Revision: A

Copyright © 2020 STRYDE. All rights reserved.

INTELLECTUAL PROPERTY

No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language in any form or by any means, electronic, mechanical, magnetic, optical, chemical, manual, or otherwise, without prior written permission of STRYDE. Copyright violators also may be subject to civil penalties. If any copy of the document or portion thereof is made, it must include the copyright notice and other proprietary notices contained herein.

Each individual document published by STRYDE may contain other proprietary notices and copyright notices and other information relating to that individual document. Nothing contained herein shall be construed as conferring by implication, estoppel, or otherwise any license or right under any patent, trademark, or other intellectual property right of STRYDE or any third party.

The STRYDE publications herein may include typographic inaccuracies or errors. Changes may be made periodically to these publications and such changes will be incorporated in new editions of the publications. STRYDE may make improvements and/or changes in the products and/or the services described in these publications at any time without notice. All documents are provided “as is” without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement.

Table of Contents

1.	Safety Information _____	2
2.	Certification _____	2
3.	Introduction and Intended Use _____	3
4.	Product Overview _____	3
5.	Technical Specification _____	4
6.	STRYDE Contact Details _____	4
7.	Equipment Ratings _____	5
8.	Equipment Installation _____	5
9.	Equipment Operation _____	6
9.1.	Explanation of Safety Symbols _____	7
10.	Lifting and Carrying _____	7
11.	Storage and Maintenance _____	7
12.	Transportation _____	7
13.	Equipment Maintenance and Service _____	8
13.1.	Replacing mains connection lead _____	8
13.2.	Replacing fuse _____	8
14.	End of Life _____	8
15.	Regulatory Markings _____	9
16.	Compliance Statement _____	9
17.	IC (Canadian Industry) Notice _____	10

1. Safety Information

The following general safety precautions must be observed during all phases of operation of this product.

WARNING	Do not use the device if it appears damaged or defective. Do not dismantle or try to repair a broken unit. Do not perform any unauthorized modification or change to the device. Do not expose to excessive heat or flames. Do not use main power cords that are inadequately rated.
CAUTION	Dropping the device and other mechanical abuse may cause damage to sensor, electronics and mechanical parts.

Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the product. STRYDE assumes no liability for the customer's failure to comply with these requirements.

For further information on safety, please refer to the STRYDE Operation Support Product File.

2. Certification

This product is designed for use in compliance with, and is certified according to, the following certification rules:

LVD (2014/35/EU)	EN 61010-1+A1:2019
EMC (2014/30/EU)	EN 61000-6-2:2005 EN 61000-6-4:2007 + A1:2011 EN 61000-3-2:2014 EN 61000-3-3:2013
RED (2014/53/EU)	EN 303 417 V1.1.1 (2017-09) EN 303 446-2:V1.2.0 (draft – 2019-03)
RoHS (2011/65/EU)	N/A
IECEE CB	EN 61010-1+A1:2019

FCC Part 15, subpart B: Derived from the tests listed above
Other Class B Digital
Device

Industry Canada ICES- Derived from the test listed above
003, Issue 6:
Information Technology
Equipment (ITE)

EAC Derived from the test listed above

3. Introduction and Intended Use

This manual describes the necessary safety precautions and gives a brief overview of the functionality of the Nest Case, which is a part of the STRYDE Nimble System. The STRYDE Nimble system is a seismic acquisition system for professional use, and the Nest Case is used to recharge the batteries of the Nodes and Initialisation Device in this system. For operation and detailed description of the entire system, please refer to the STRYDE Operation Support Product File.

4. Product Overview

The Nest Case is a charging and data harvesting device that is used to charge up to 90 Nodes simultaneously (or a reduced number of nodes and some Initialisation Devices). Nest Cases can be combined to charge additional nodes, the Nest Case should only ever be operated indoors. The rack is powered by a single-phase supply.

Recharging of the Node battery and harvesting of the seismic data is performed by loading the Nest Case Shelf with 90 Nodes. The Nodes are then charged wirelessly using the Qi charging standard. The rate of charge is regulated by an Integrated Circuit on the Node and will automatically cease once the battery charge reaches a pre-determined level.

Data harvesting is performed by a 1 Gbit Ethernet connection, which is initiated by using the monitor and peripherals connected to the STRYDE System Case, loaded with the appropriate STRYDE software, and connected via ethernet to the Nimble System.

The Nest Case are not available for consumers to purchase and are only sold to limited number of industrial customers who will have to sign confidentiality agreements before gaining access to the product and documents.

5. Technical Specification

Dimensions (length, width, depth)	116.3 x 68.6 x 42.2 cm
Weight	85kg
Operating temperature	0 to 40°C
Power supply input	100-240VAC / 50/60Hz / 10A
Mains supply tolerance	Full Power from 90V to 264V
Power supply output	48V
Overvoltage category	Overvoltage category II
Charging positions	90 Nodes or 70 Nodes plus 4 Initialisation Devices
Equipment mobility	Indoor use, movable
Altitude of operation	<2000m
Relative humidity	<50%
IP protection class	n/a
Pollution degree	PD2

6. STRYDE Contact Details

Technical assistance for this product can be sought from STRYDE using the contact information below.

info@strydefurther.com

Stryde Limited,
Halkin Building, Ground Floor,
1/2 Paris Gardens,
London,
SE1 7ND
UK

7. Equipment Ratings

PSU Voltage Range	Full Power from 90V to 264V
PSU Frequency Range	50 to 60Hz
PSU Current Rating	max 10A
List of Inputs	Mains power 90 x Node Optical Inputs
List of Outputs	1Gb Ethernet 90 x Node Optical Outputs
External Circuit Insulation Rating	The detachable mains supply cords shall be rated for the maximum current of the equipment.
Ingress Protection Rating	n/a

8. Equipment Installation

Protective earthing	Provided by the main plug connection.
Connections to the supply	Always plug your charger into a main electrical outlet that is easily accessible and unplug from the mains electrical outlet when not in use. Only use a suitably rated mains cable to connect to a mains electrical outlet.
Disconnection from the supply	Do not position the equipment so that it is difficult to disconnect the main supply cable. The rear side of equipment with AC Inlet shall be reachable for disconnecting equipment.
Ventilation requirements	Equipment shall be placed to allow unimpeded ventilation to the cooling fans.
Special services	n/a
Sound levels	No hazards identified.

9. Equipment Operation

Operation of the Nest Case shall be carried out by trained personnel that are familiar with the STRYDE system.

The Nest Case shall be operated indoors within the temperature range described in the technical specification. The Nest Case is a part of the STRYDE Nimble System and can be scaled to suit the customer's needs by adding additional Nest Cases. The Nest Case will typically be located at the local operations hub for the duration of a seismic survey.

The Nest Case shall be powered by a single-phase mains supply as described in the technical specification section.

The primary purpose of the Nest Case is to harvest data from and recharge the lithium ion batteries in the Nodes (and/or recharge the lithium ion batteries in the Initialisation Device) that are used for the seismic survey. The Nest Case shall only be used to recharge and harvest data from: Nodes that have been inspected for damage; and are clean and dry. Damaged Nodes shall not be used with the Nest Case and instead they should be decommissioned when returned to the local operations hub.

The Nest Case can recharge and harvest data from up to 90 Nodes simultaneously, accepting a tray of 90 Nodes (or up to 70 Nodes with 4 Initialisation Devices that are placed on a bespoke jig). The Nodes are placed into the magazine with the optical port facing upwards and the magazine are placed on to a Shelf and raised into the charging position by pushing down the level of the scissor lift. The STRYDE System Case connected to the Nimble System can then be used to monitor the state of charge and view diagnostics for each optical link.

Recharging of the Nodes is done using the wireless Qi standard, with each Node having its own battery management circuit that is used to regulate the rate of charge and terminating charging once the battery reaches a pre-determined level. The data harvesting is performed using a bespoke bi-directional optical link, the data from the Node is then packetized by the Nest board and sent over ethernet. The charging and harvesting time will take no more than 4 hours.




There are 90 Nest boards (corresponding to 90 Nodes), each with its own 100Mb ethernet link, these are routed to a switch where they are combined and then output over 1Gb ethernet.

Charging shall be done away from flammable materials, and a fire extinguisher shall be within reach for emergency use.

The outer case of the Nest Case shall only be cleaned when the outer water-tight lid is fitted. The outer case shall only be cleaned by hand with warm soapy water.

All other parts of the Nest Case shall only be cleaned with a dry soft cloth. Don't use alcohol or other cleaning solutions.

10. Explanation of Safety Symbols

	Caution, risk of danger (refer to this manual for specific Warning or Caution information)
	A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met
	A CAUTION notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

11. Lifting and Carrying

Care shall be taken when lifting the Nest Case as the estimated weight is around 75kg. Manual handling should be performed in accordance with local guidance.

The Nest Case shall only be lifted or carried using the four handles integrated into the outer case of the product.

12. Storage and Maintenance

When placed into long term storage, a Nest Case shall be stored in suitable protective crates and stored in a temperature and humidity-controlled environment.

Regular maintenance of the Nest Case in storage is not necessary.

13. Transportation

When transported, Nest Cases shall be shipped in suitable protective crates with protective packing material to prevent damage in transit

14. Equipment Maintenance and Service

Fault finding and repairs to the Nest Case shall only be performed by trained personnel who are familiar with the STRYDE system.

14.1. Replacing mains connection lead

The operator shall take care to prevent replacement of the mains connection lead with an inadequately rated cord.

The recommended replacement part is: Schurter 6004.0215

14.2. Replacing fuse

The operator shall only replace the fuse with a T10AH 250V type.




The recommended replacement part is: Schurter 0001.2514

15. End of Life

This product shall be safely disposed of as electronic waste. The owner of the system is responsible for disposal in accordance with local laws and regulations at the time it is disposed of. The unit contains recyclable materials and they should be recycled where facilities are available. Ultimate disposal of this product should be handled according to all national laws and official regulations. For detailed instructions for end of life disassembly, please refer to STRYDE Operation Support Product File.

Recycling of materials helps to conserving natural resources. By proper waste handling of this product the user ensures it has no negative consequences for the environment and human health, which could otherwise be caused if this product is disposed of as general waste.

16. Regulatory Markings

	<p>The CE mark is a registered trademark of the European Community. This CE mark shows that the product complies with all the relevant European Legal Directives.</p>
<p>ICES/NMB-003(B)</p>	<p>This product complies with the Canadian ICES-003(B). Cet appareil est conforme a la norme NMB-003(B) du Canada.</p>
	<p>This product is tested and certified by Nemko and complies with IEC/EN 61010-1, UL 61010-1 and CSA C22.2 No. 61010-1</p>
	<p>This product complies with the WEEE Directive (2012/19/EU) marking requirement. This product label indicates that you must not discard this electrical or electronic product in general waste.</p>

17. Compliance Statement

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.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult STRYDE for help

Changes or modifications to the equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

18. IC (Canadian Industry) Notice

This Class B digital apparatus complies with Canadian ICES-003.

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.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

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.