



# **HOTBOX TN4 CAI MANUAL**

**Important: This document should be read carefully before commencing installation**

**Rev 5 Jan 2021**



Dear 4B Customer:

Congratulations on your purchase. 4B appreciates your business and is pleased you have chosen our products to meet your needs.

Please read in its entirety and understand the literature accompanying the product before you place the product into service. Please read the safety precautions carefully before operating the product. With each product you purchase from 4B, there are some basic but important safety considerations you must follow to be sure your purchase is permitted to perform its design function and operate properly and safely, giving you many years of reliable service. Please read and understand the Customer Safety Responsibilities listed below. Failure to follow this safety directive and the Operation Manuals and other material furnished or referenced, may result in serious injury or death.

### ***SAFETY NOTICE TO OUR CUSTOMERS***

- A. In order to maximize efficiency and safety, selecting the right equipment for each operation is vital. The proper installation of the equipment, and regular maintenance and inspection is equally important in continuing the proper operation and safety of the product. The proper installation and maintenance of all our products is the responsibility of the user unless you have asked 4B to perform these tasks.
- B. All installation and wiring must be in accordance with Local and National Electrical Codes and other standards applicable to your industry. (Please see the article "Hazard Monitoring Equipment Selection, Installation and Maintenance" at [www.go4b.com](http://www.go4b.com).) The installation of the wiring should be undertaken by an experienced and qualified professional electrician. Failure to correctly wire any product and/or machinery can result in the product or machine failing to operate as intended, and can defeat its design function.
- C. Periodic inspection by a qualified person will help assure your 4B product is performing properly. 4B recommends a documented inspection at least annually and more frequently under high use conditions.
- D. Please see the last page of this manual for all warranty information regarding this product.

### ***CUSTOMER SAFETY RESPONSIBILITIES***

#### **1. READ ALL LITERATURE PROVIDED WITH YOUR PRODUCT**

Please read all user, instruction and safety manuals to ensure that you understand your product operation and are able to safely and effectively use this product.

#### **2. YOU BEST UNDERSTAND YOUR NEEDS**

Every customer and operation is unique, and only you best know the specific needs and capabilities of your operation. Please call the 24-hour hotline at 309-698-5611 for assistance with any questions about the performance of products purchased from 4B. 4B is happy to discuss product performance with you at any time.

#### **3. SELECT A QUALIFIED AND COMPETENT INSTALLER**

Correct installation of the product is important for safety and performance. If you have not asked 4B to perform the installation of the unit on your behalf, it is critical for the safety of your operation and those who may perform work on your operation that you select a qualified and competent electrical installer to undertake the installation. The product must be installed properly to perform its designed functions. The installer should be qualified, trained, and competent to perform the installation in accordance with Local and National Electrical Codes, all relevant OSHA Regulations, as well as any of your own standards

and preventive maintenance requirements, and other product installation information supplied with the product. You should be prepared to provide the installer with all necessary installation information to assist in the installation.

#### **4. ESTABLISH AND FOLLOW A REGULAR MAINTENANCE AND INSPECTION SCHEDULE FOR YOUR 4B PRODUCTS**

You should develop a proper maintenance and inspection program to confirm that your system is in good working order at all times. You will be in the best position to determine the appropriate frequency for inspection. Many different factors known to the user will assist you in deciding the frequency of inspection. These factors may include but are not limited to weather conditions; construction work at the facility; hours of operation; animal or insect infestation; and the real-world experience of knowing how your employees perform their jobs. The personnel or person you select to install, operate, maintain, inspect or perform any work whatsoever, should be trained and qualified to perform these important functions. Complete and accurate records of the maintenance and inspection process should be created and retained by you at all times.

#### **5. RETAIN AND REFER TO THE OPERATION MANUAL FOR 4B'S SUGGESTED MAINTENANCE AND INSPECTION RECOMMENDATIONS**

As all operations are different, please understand that your specific operation may require additional adjustments in the maintenance and inspection process essential to permit the monitoring device to perform its intended function. Retain the Operation Manual and other important maintenance and service documents provided by 4B and have them readily available for people servicing your 4B equipment. Should you have any questions, please call the 4B location who supplied the product or the 24-hour hotline number in the USA -309-698-5611.

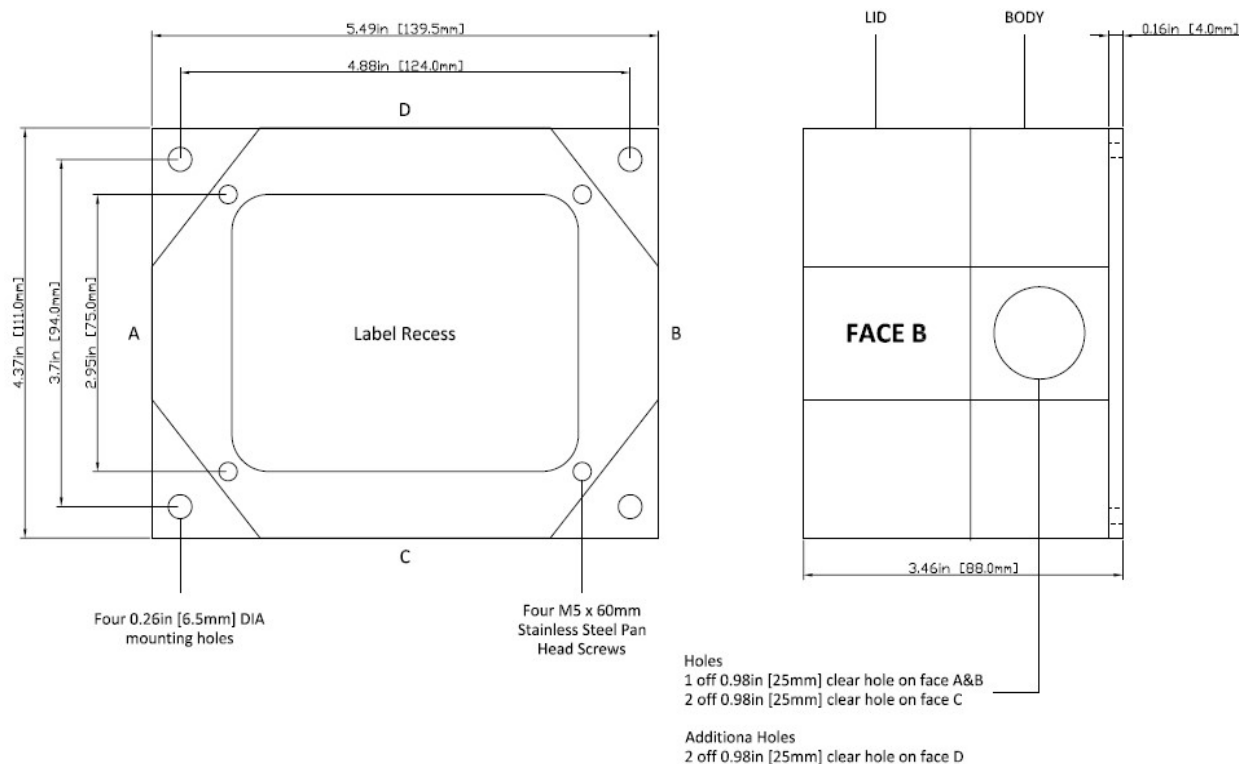
#### **6. SERVICE REQUEST AND ONLINE PRODUCT REGISTRATION**

If you have questions or comments about the operation of your unit or require the unit to be serviced please contact the 4B location who supplied the product or send your request via fax (309-698-5615), email (4b-usa@go4b.com), or call us via our 24-hour hotline number in the USA - 309-698-5611. Please have available product part numbers, serial numbers, and approximate date of installation. In order to assist you, after the product has been placed into service, complete the Online Product Registration section which is accessed via our website [www.go4b.com](http://www.go4b.com)



## 4B Elevator components limited. HOTBOX with TN4 sensor node.

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### HOTBOX Dimensions

#### Zones of use of HOTBOX:

Zone 21.  
Zone 22

Class II Division 2 Groups F & G (USA Only)  
Class II Division 1 Groups E, F & G (Canada Only)

#### Certification Markings:

CE 0598 Ex II 2D Ex tb IIC T125° Db -20°C to +50°C IP66  
Baseefa16ATEX0014X  
IECEX BAS 16.0016X

Class II Division 2 Groups F & G (USA Only)  
Class II Groups E, F & G (Canada Only)



#### Certification Power Rating

CSA : 12 Watts (MAX)  
ATEX/IECEX : 11.5 Watts (MAX)

**To Open the Lid:**

1. Disconnect power
2. Untighten the M5 lid securing screws
3. Carefully remove the lid ensuring that the gasket is not damaged and remains in place

**To Close the Lid:**

1. Check that the gasket is correctly fitted into the box groove and is undamaged. Ensure that you fit the correct lid.
2. Tighten the M5 screws into the box body.
3. Check that the lid and box are correctly mated.

**The end user shall make the manufacturer aware of hazards arising from external effects i.e. aggressive substances, environmental attack etc.**

In the United States, article 500 of the National Electrical Code (NFPA 70) defines the following divisions.

Division 1: Hazardous concentrations of flammable dusts in suspension - continuously, intermittently or periodically present under normal conditions. This class is equivalent to the European dust class for Zone 20 and Zone 21 (Category 1 & Category 2).

Division 2: Combustible dusts are not normally, nor likely, to be thrown into suspension. This class is equivalent to the European dust class for Zone 22 (Category 3)

Class II: Dust classification. This classification is equivalent to the European dust group 'D'.

**Dust Groups:**

- Group E Metals including aluminum, magnesium (Div 1 only)
- Group F Carbonaceous dusts including coal, carbon black, coke
- Group G Dusts not included in E and F including wood, plastics, flour, starch or grain dusts

### **Enclosure Installation for AI (EUROPE) – Conditions of Use**

1. Do not allow dust layers to build up on this equipment.
2. Warning: Potential electrostatic hazard, clean only with a damp cloth.
3. Do not open when energised.
4. Do not open when flammable dust is present.
5. The plain entry holes shall be no larger than 0.7mm above the major diameter of the equipment/accessory thread. See Installation Instructions for details of the entry hole sizes, quantity and location. The entry holes shall be fitted with suitable cable glands or other suitable accessories such as breather/drains having an equipment certificate, that maintain the Ingress Protection rating of the enclosure.
6. Unused entry holes shall be fitted with suitable stopping plugs having an equipment certificate, or having a component certificate subject to the confirmation by the end user/installer of the ingress protection rating and the permitted service temperature of the component. The operating temperature range and ingress protection rating of the enclosure is limited to that of the stopping plug fitted.
7. The enclosure is supplied with readymade cable entries (face A, B and C). Where the customer requires additional cable entries they may be drilled on face 'D', there must be no more than 2 off M25 clear hole on the face. To help with hole positioning there are two indentations which indicate the centre points for the two additional holes. In order to maintain the rated box strength, the user must not drill holes in the box other than where described in this document.
8. The enclosure must not be modified in any way without reference to Don Electronics, as this will invalidate the certification.
9. All wiring must be carried out in accordance with relevant codes of practice and / or instructions (BS EN 60079-14).
10. The voltage and current and maximum power dissipation shown on the box label must not be exceeded.
11. The wiring installation must extend to within 1 mm of the metal face of the terminal.
12. All leads must be insulated for the appropriate voltage.
13. Not more than 1 single or multiple strand cable is to be connected to any terminal unless multiple conductors have previously been joined in a suitable manner (e.g. boot lace ferrule) such that they present a single connection point to the terminal.
14. A parallel shaft screwdriver of the correct size should always be used when tightening terminals.

### **Enclosure Installation for CSA (USA and Canada):**

- a. The IP66 rating of the enclosure must be maintained when used in a Division 1 and Division 2 dust environment. You must use the correct cable, glands and sealing arrangement and in accordance with the national electrical codes.
- b. Where other certified components are used as part of the assembly or installation procedure, the user must take in to account any limitations which might be listed on the relevant certificates.
- c. The enclosure is supplied with readymade cable entries (face A, B and C). Where the customer requires additional cable entries they may be drilled on face 'D', there must be no more than 2 additional 1-1/8" clear holes added to the face. To help with hole positioning there are two indentations which indicate the centre points for the two additional holes. In order to maintain the rated box strength, the user must not drill holes in the box other than where marked.

- d. All unused entry holes must be sealed using certified stopping plugs. The end user must install the stopping plugs and cable glands in strict accordance with the manufacturer's instructions.
- e. The enclosure must not be modified in any way without reference to Don Electronics, as this will invalidate the certification.
- f. All wiring must be carried out in accordance with relevant codes of practice.
- g. The voltage and current and maximum power dissipation shown on the box label must not be exceeded.
- h. All leads must be insulated for the appropriate voltage.

### **Electrical connection**

Care should be taken when making connections to this board. The electrical supply must be between 12 VDC – 10% and 24VDC +10%. If the maximum supply rating is exceeded, the fuse F1 will fail and the TN4 will not work. The fuse is not designed to be replaced and therefore if a fuse fails the node is considered beyond repair.

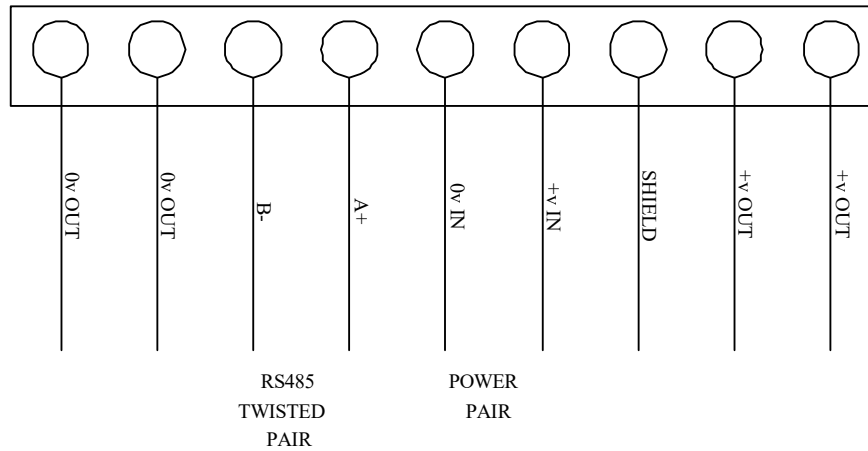
Terminals +VIN and 0VIN are the supply terminals to the HOTBOX-TN4.

Terminals +VOUT and 0VOUT are terminals designed to supply power to the external approved sensors (e.g. WDA series alignment sensors and Touchswitch sensors).

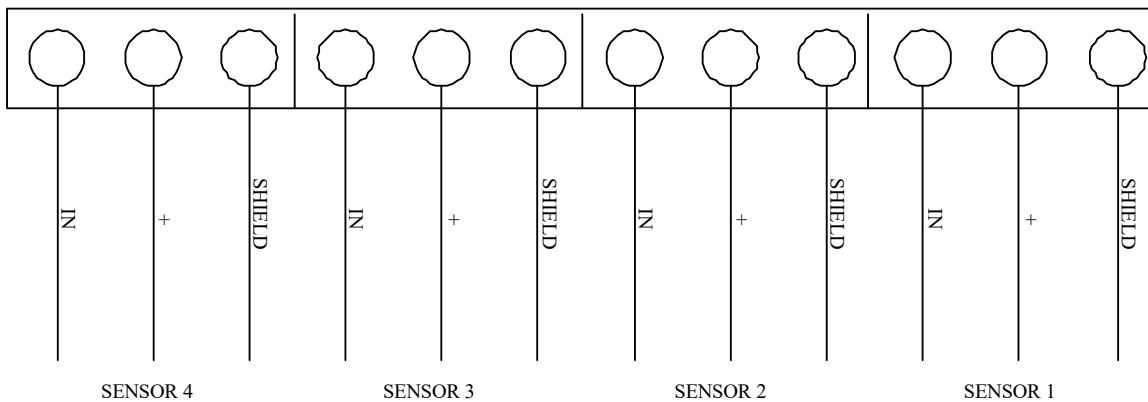
Terminals A+ and B- are used for the RS485 serial communications bus (HotBus). Care should be taken to ensure that the connections are observed. Incorrect connection can result in loss of communications between nodes. **WARNING:** under no circumstances must the power supply connection be allowed to come into contact with these terminals; to do so would result in the failure of the TN4 communications interface.

Terminals IN, + and SHIELD provide connections for the bearing temperature sensors. The + terminal is limited to 5VDC at 1ma and is used as an excitation voltage for the temperature sensors. Volt free contacts can also be connected across the + and IN terminals when used with a T500 sensor monitor.

## HOTBOX-TN4 HOTBUS CONNECTIONS



## HOTBOX-TN4 SENSOR CONNECTIONS



If you intend to make wiring changes to the HOTBOX-TN4 you **MUST** first disconnect power from the system to ensure that you eliminate the risk of electrical shorting on live conductors.



**MANUFACTURED BY :**  
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**For help and advice**  
[www.go4b.com](http://www.go4b.com)



## **WARRANTY INFORMATION**

### **1. EXCLUSIVE WRITTEN LIMITED WARRANTY**

ALL PRODUCTS SOLD ARE WARRANTED BY THE COMPANY (4B COMPONENTS LIMITED, (4B) BRAIME ELEVATOR COMPONENTS LIMITED, AND (4B) S.E.T.E.M. Srl) HEREIN AFTER REFERRED TO AS 4B TO THE ORIGINAL PURCHASER AGAINST DEFECTS IN WORKMANSHIP OR MATERIALS UNDER NORMAL USE FOR ONE (1) YEAR AFTER DATE OF PURCHASE FROM 4B. ANY PRODUCT DETERMINED BY 4B AT ITS SOLE DISCRETION TO BE DEFECTIVE IN MATERIAL OR WORKMANSHIP AND RETURNED TO A 4B BRANCH OR AUTHORIZED SERVICE LOCATION, AS 4B DESIGNATES, SHIPPING COSTS PREPAID, WILL BE, AS THE EXCLUSIVE REMEDY, REPAIRED OR REPLACED AT 4B'S OPTION.

### **2. DISCLAIMER OF IMPLIED WARRANTY**

NO WARRANTY OR AFFIRMATION OF FACT, EXPRESSED OR IMPLIED, OTHER THAN AS SET FORTH IN THE EXCLUSIVE WRITTEN LIMITED WARRANTY STATEMENT ABOVE IS MADE OR AUTHORIZED BY 4B. 4B SPECIFICALLY DISCLAIMS ANY LIABILITY FOR PRODUCT DEFECT CLAIMS THAT ARE DUE TO PRODUCT MISUSE, ABUSE OR MISAPPLICATIONS, AS AUTHORIZED BY LAW, 4B SPECIFICALLY DISCLAIMS ALL WARRANTIES THAT THE PRODUCT IS FIT OR MERCHANTABLE FOR A PARTICULAR PURPOSE.

### **3. NO WARRANTY "BY SAMPLE OR EXAMPLE"**

ALTHOUGH 4B HAS USED REASONABLE EFFORTS TO ACCURATELY ILLUSTRATE AND DESCRIBE THE PRODUCTS IN ITS CATALOGS, LITERATURE, AND WEBSITES, SUCH ILLUSTRATIONS AND DESCRIPTIONS ARE FOR THE SOLE PURPOSE OF PRODUCT IDENTIFICATION AND DO NOT EXPRESS OR IMPLY A WARRANTY AFFIRMATION OF FACT, OF ANY KIND OR A WARRANTY OR AFFIRMATION OF FACT THAT THE PRODUCTS WILL CONFORM TO THEIR RESPECTIVE ILLUSTRATIONS OR DESCRIPTIONS. 4B EXPRESSLY DISCLAIMS ANY WARRANTY OR AFFIRMATION OF FACT, EXPRESSED OR IMPLIED, OTHER THAN AS SET FORTH IN THE EXCLUSIVE WRITTEN LIMITED WARRANTY STATEMENT ABOVE, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

### **4. LIMITATION OF DAMAGES**

ANY LIABILITY FOR CONSEQUENTIAL, INCIDENTAL, SPECIAL, EXEMPLARY, OR PUNITIVE DAMAGES, OR FOR LOSS OF PROFIT WHETHER DIRECT OR INDIRECT, IS EXPRESSLY DISCLAIMED.

Document Revision	Date revised	Revisions made
R1	Mar 2013	Initial release
R2	July 2013	
R3	July 2014	Updated HOTBOX drawing page4
R4	Jan 2016	Updated for new ATEX/IECEX – checked by Baseefa
R5	Jan 2021	Updated Notified Body change 0598