



Bearing Temperature Sensor MDB8 series

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.) 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



4B Components Limited. Bearing Temperature Sensor MDB8 series.

The MDB8 series is a range of bearing sensors manufactured to screw directly into a bearing housing. Each sensor is fitted with a grease nipple to allow lubrication of the bearing without the need for removal of the sensor. The sensor is fitted with a M12 connector for use with a separately supplied three-metre cable and socket assembly which can be attached ready for connection either directly to a monitoring device or to a junction box. The cable has four cores and the table below shows the connections. The connections are not polarity sensitive therefore special connection requirements are eliminated. It is advisable however to connect all sensors in an identical manner, this will reduce the risk of shorting. Please refer to the relevant device manual for detailed connection information.

The '*' at the end of the Part No. is used to indicate the type of approval: e.g. C=CSA, A=ATEX, I=IECEX.

Part No.	Type	Temperature	Cable Cores	M12 pins
MDB810V3*	NTC	90°C/194°F	Brown - Blue	1 - 3
MDB812V3*	PTC	60°C/140°F	Brown - Blue	1 - 3
MDB813V3*	PTC	70°C/158°F	Brown - Blue	1 - 3
MDB814V3*	PTC	80°C/176°F	Brown - Blue	1 - 3
MDB832V3*	Contact	60°C/140°F	Brown - Blue	1 - 3
MDB833V3*	Contact	70°C/158°F	Brown - Blue	1 - 3
MDB834V3*	Contact	80°C/176°F	Brown - Blue	1 - 3
MDB819V3*	Pt100	90°C/194°F	Brown+White Blue+Black	1 + 2 3 + 4

Special Conditions for Safe Use:

If not used with the ATEX approved Braime temperature monitors the power supply to the sensor shall be rated for a prospective short circuit current of 10KA.

The supply to the equipment MUST NOT exceed +24VDC

If the supply leads are terminated in a hazardous area, the termination arrangement must comply with the Zone/Category/EPL of the hazardous area that it is to be installed.

Suitable certified connectors must be used with the sensors incorporating the Optional M12 connector.

NTC sensors

Each sensor typically has the following electrical specification (using the MDB810V3A version).

Resistance at +25°C	-	10,000 Ohms typical
Resistance at +60°C	-	3,043 Ohms typical
Resistance at +90°C	-	1,264 Ohms typical
Maximum Current	-	1mA (See Special Conditions of Safe Use) * Self heating has to be taken into consideration

PTC sensors

Each sensor typically has the following electrical specification (using the MDB814V3A version).

Resistance at +25°C	-	250 Ohms typical.
Resistance at -5°C below trip	-	550 Ohms
Resistance at +5°C above trip	-	1300 Ohms

CONTACT sensors

Each sensor typically has the following electrical specification (using the MDB834V3A version).

Resistance at 60°C	-	<i>Closed circuit</i>
Resistance at trip (80°C)	-	<i>Open circuit</i>
Sensing Voltage	-	24v DC Typical. (See Special Conditions of Safe Use)
Maximum Current.	-	1.5 amps. (See Special Conditions of Safe Use)

Pt100 Sensors

Resistance at -25°C	-	90.91 Ohms
Resistance at 0°C	-	100.00 Ohms
Resistance at +60°C	-	123.24 Ohms
Resistance at +90°C	-	134.71 Ohms
Maximum Current	-	1mA (See Special Conditions of Safe Use) * Self heating has to be taken into consideration

ALL MDB8 sensors

Fixing Thread.	-	1/4" BSPT.
Cable	-	As detailed in the following table
Minimum temperature	-	-25°C
Maximum temperature	-	+90°C

Part Number	Description
CA4SW03*	4 CORE CABLE M12 SOCKET ONE END BARE WIRES OTHER END 3 MTR LONG
CA4SW05*	4 CORE CABLE M12 SOCKET ONE END BARE WIRES OTHER END 5 MTR LONG
CA4SW10*	4 CORE CABLE M12 SOCKET ONE END BARE WIRES OTHER END 10 MTR LONG
CA4SW30*	4 CORE CABLE M12 SOCKET ONE END BARE WIRES OTHER END 30 MTR LONG
CA4SP03*	4 CORE CABLE M12 SOCKET ONE END M12 PLUG OTHER END 3 MTR LONG
CA4SP05*	4 CORE CABLE M12 SOCKET ONE END M12 PLUG OTHER END 5 MTR LONG
CA4SP10*	4 CORE CABLE M12 SOCKET ONE END M12 PLUG OTHER END 10 MTR LONG
CA4SP30*	4 CORE CABLE M12 SOCKET ONE END M12 PLUG OTHER END 30 MTR LONG

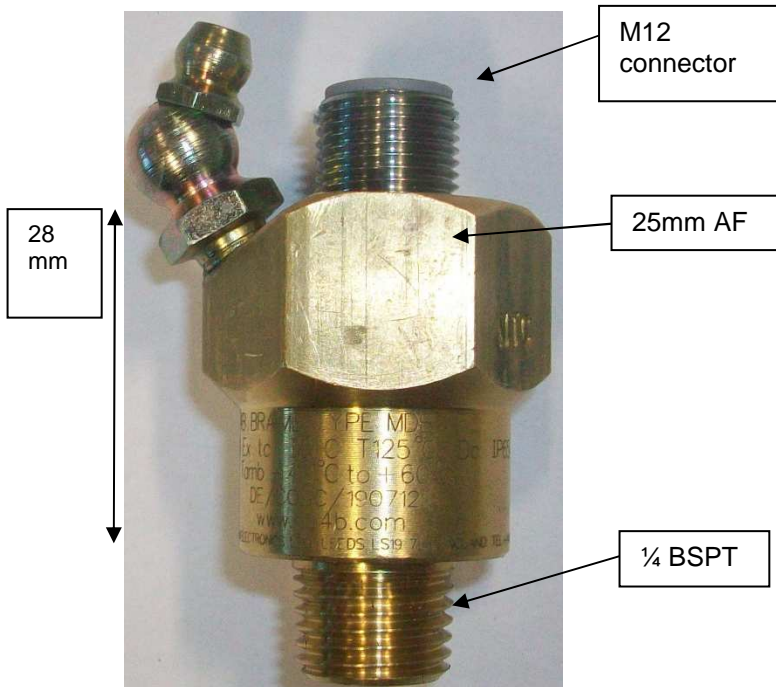
The ‘*’ at the end of the Part No. is used to indicate the type of approval: e.g. C=CSA, A=ATEX, I=IECEX.

Maximum Temperature Conditions.

Designed to work in ignitable dust temperature class T125°C (sensor body)
 Free air ambient temperature of -40°C to +40°C
 Maximum continuous cable temperature is 80°C

Protection Coding.

DE/COSC/190712
 Ex II 3D Ex tc IIIC T125°C Dc IP65 Tamb -40°C to +40°C



For further information: www.go4b.com



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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. Sarl) 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	July 2009	Initial ATEX release
R2	Sept 2009	Added legal and warranty information Adjusted text alignment and added DofC on the last page
R3	Sept 2009	Changed the Pt100 example temperatures to be the same as other manuals. Change sensor number on DofC to avoid confusion.
R4	Dec 2009	Removed some entries from the list of sensors
R5	Feb 2010	Added revised legal and warranty information
R6	May 2011	Removal of DofC (supplied separately)
R7	Nov 2011	Updated Specification
R8	Jan 2013	Conversion to Zone22 and so removal of IECEx.
R9	Feb 2015	Altered Bead Values, Changed photo.