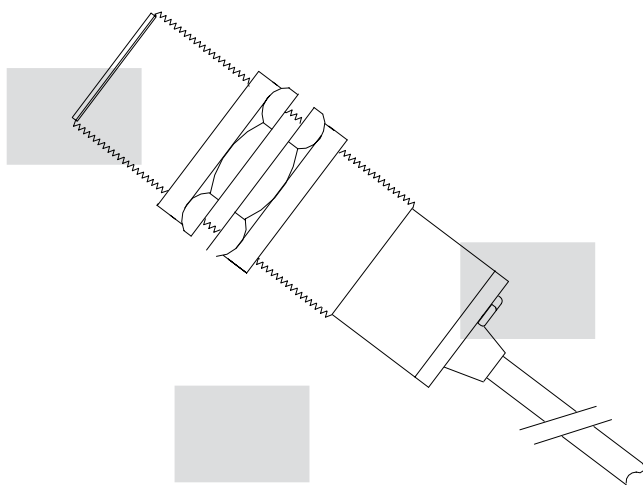


**M300 (CSA & ATEX Approved)**

**PROGRAMMABLE UNDERSPEED MONITOR**



## **SLIPSWITCH**

**Type M3005V10CA**

**CSA & ATEX APPROVED,**

**SELF CONTAINED**

**UNDERSPEED MONITOR**

**Manual No: M2479**

## **INSTALLATION INSTRUCTIONS**

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## **TECHNICAL INFORMATION**

**UNDERSPEED MONITOR - M3005V10CA**

**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](mailto: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)

## Introduction

The **SLIPSWITCH** series is designed to detect slippage or stoppage on elevators, conveyors, fans etc.

The units require no connection with the shaft, have no moving parts and a virtually unlimited life. They incorporate microcontroller circuitry which automatically calibrates to 20% under normal speed and provides a programmable 0-30 second start up delay.

## Installation

The Inductive sensor section detects a metal target on the shaft. The target can be an existing bolt head or similar.

Ideally, the target should be of ferrous metal but non ferrous metal will be detected at short range. Maximum range ferrous/non-ferrous materials is 12/5mm with a 30mm diameter circular target. Smaller targets may be used but operating distance will be reduced.

The **SLIPSWITCH** should be mounted adjacent to the target, ensuring that the distance to the target does not exceed the stated maximum. When mounted against a solid steel shaft, the target or bolt head should protrude from the shaft at least 15mm, otherwise the sensor will not be able to distinguish the target from the shaft and red input light would stay on permanently.

Wiring to the **SLIPSWITCH** can be any length as required, using ordinary unscreened cable. However, if long cable runs are to be used, the wiring should **not** be positioned adjacent to cables carrying high voltage or current.

Two locknuts are provided to mount the units in position. Mount securely to withstand vibration. Ensure that the unit and target are adequately guarded.

## Cabling

Connect the unit as shown in the connections diagram.

## Commissioning & Auto-calibration.

Two LED's are provided for information purposes, on the **SLIPSWITCH**. The input LED is red and flashes everytime a target passes the face of the sensor. The output LED is green. With normal running, the output LED is a static green and the output is on (energised).

With an underspeed condition both the LED and output will be off (de-energised). The **SLIPSWITCH** is factory set to a speed of 10PPM and a start up time of 5 seconds. If the time delay required is greater than 5 seconds, see 'Recalibration for a Different Setting', otherwise, proceed as follows-

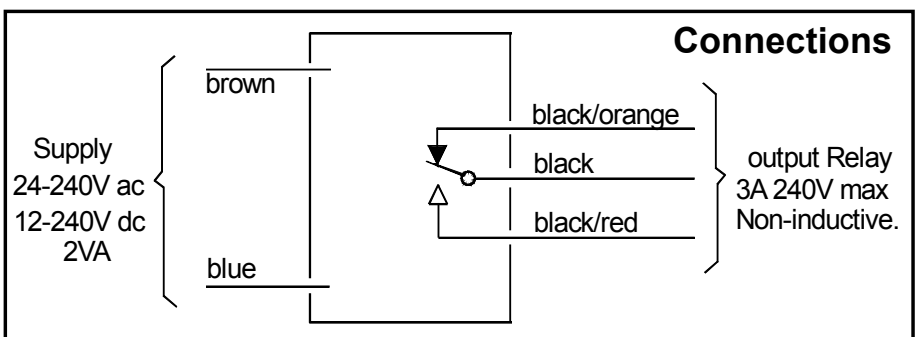
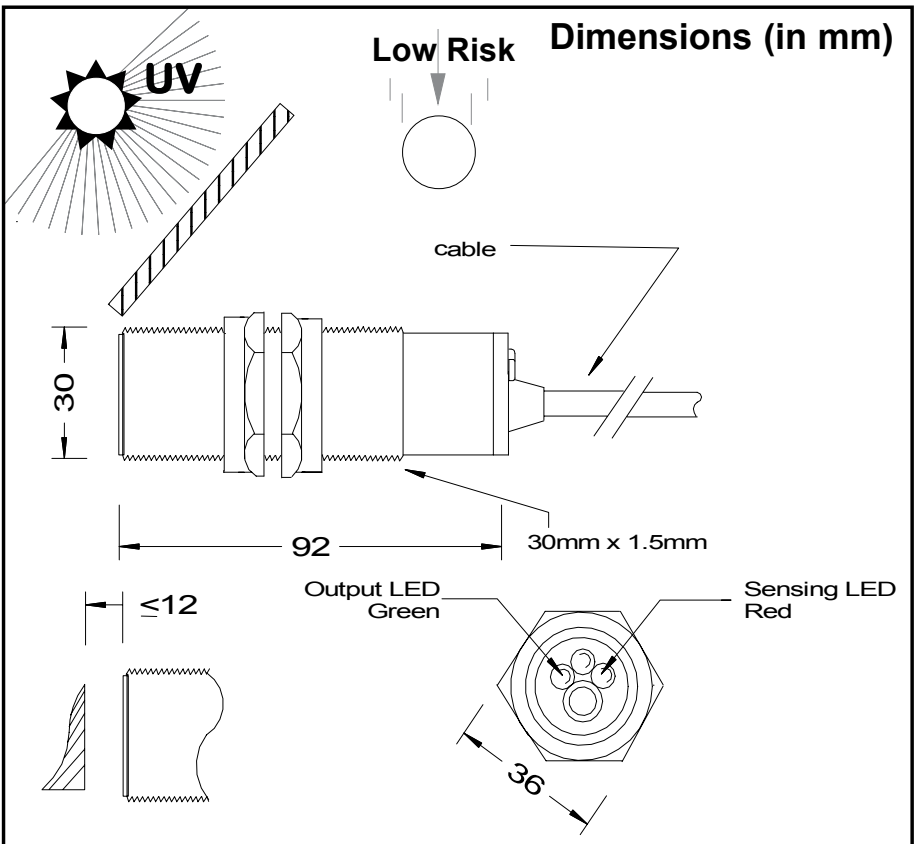
Apply power to the machine and **SLIPSWITCH**.

Ensure that the machine has reached normal running speed and then place the magnet on the 'Cal' point (located on label on rear of unit), Count flashes of the green LED to set the start delay required in seconds, then remove magnet.

The output LED will echo the setting in seconds, during which time, automatic calibration to 20% below normal speed will be carried out.

### Recalibration for a Different Setting

If the unit is to be used for a slower speed or with longer time delay than previously set, the unit may trip out before it can be calibrated. This can be avoided by applying power while holding the magnet on the Cal point and removing the magnet only when the machine has reached normal speed. Wait for the green LED to illuminate permanently and then recalibrate as above.



## **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.

## Specification

Supply:	12-240V dc or 24-240V ac.
Supply Rating	2VA.
Output	S.P.C.O. Relay
Switching Capacity:	3A 240V non-inductive maximum.
Ambient Temp:	-15°C to +50°C.
Output State:	Normally open. Closed above set speed.
Calibration:	Automatic. Initiated by magnet supplied.
Sensing Range:	Nominally 12mm on ferrous metal & 5mm on non-ferrous metal at 25°C.
Input Pulse Range:	10 to 3600 p.p.m.
Repeat Accuracy:	1%.
Start Up Delay:	Adjustable to 0 - 30 seconds.
Operation Setting	Automatic calibration by applying magnet to 'Cal' point. Relay de-energises at 20% under set speed.
Enclosure:	Moulded Nylon. DIN threaded 30mm by 1.5mm pitch.
Protection:	IP65.
Relative Humidity:	90% RH.
LED Indication:	Target Detected & Output.
Cable	Supplied with 2 metres 5 core 600/1000V flame retardant to EN60332-1.

## Baseefa Approval



When this product is incorporated into other machinery or apparatus, that apparatus must not then be put into service (in the E.C) until it has been declared in conformity with the appropriate E.C Directive/s.

## CSA Approval



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