

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.



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"SHAKER" Rotary Level Indicator



INSTALLATION INSTRUCTIONS

www.go4b.com

OPERATION MANUAL

ROTARY LEVEL INDICATOR
Part No. RLIS1V46 - General Purpose
Part No. RLIS1V46A - ATEX Approved

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

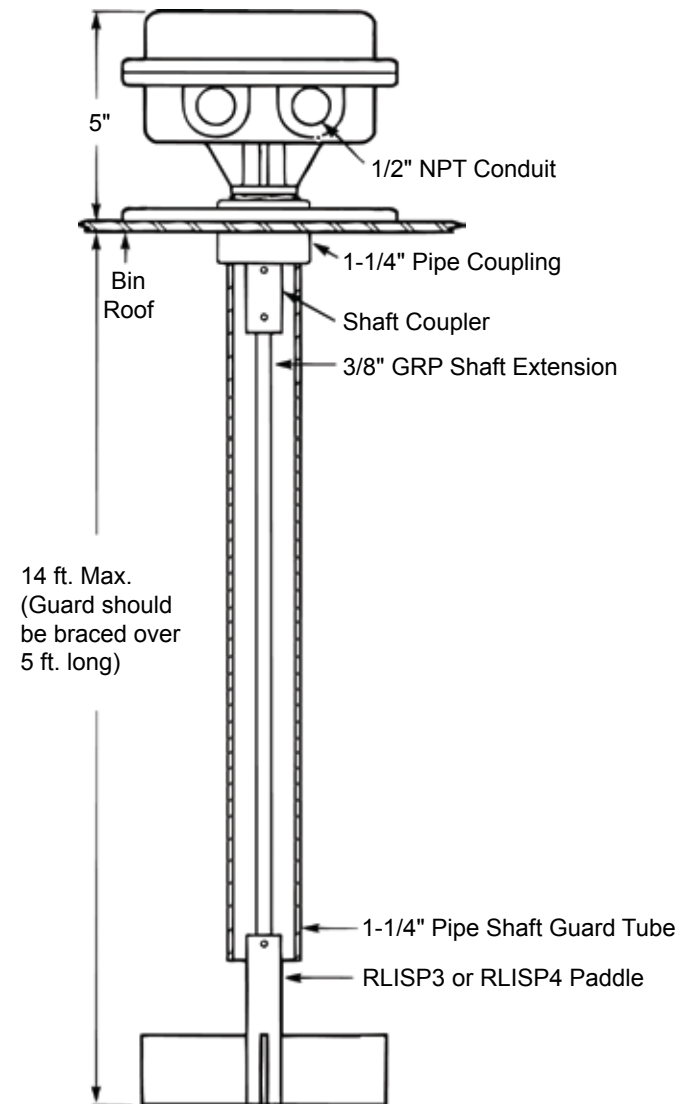
1. READ ALL LITERATURE PROVIDED WITH YOUR PRODUCT

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.

SHAFT EXTENSION DIAGRAM



SPECIFICATIONS

Power Supply:	120/240 VAC or 24 VDC (Universal Supply)
Supply Tolerance:	+/- 10%
Power Consumption:	6 VA Max. AC - 50 mA Max. DC
Fuse:	5 Amp
Operating Temperature:	- 4° F to +130° F
Output:	Voltage Free Relay
Contact Rating:	Rated at 2.5 Amps/240 Volts
Time Delay:	0 - 30 Seconds (Adjustable)
Output Mode:	Hi/Low Level (Selectable)
Calibration:	Electronic Torque Control (Adjustable)
Conduit Entry:	Two, 1/2" NPT
Mounting:	1-1/4" NPT
Connections:	Screw Terminal Block
LED Indicators:	Output
Enclosure:	Flame Retardant Glass Reinforced Nylon
Approval:	ATEX Approved Versions Available
Weight:	4.4 lb. (Power Pack Only)

PART NUMBERS & ACCESSORIES

RLIS1V46	RLI 'Shaker' - General Purpose
RLIS1V46A	RLI 'Shaker' - ATEX Approved
RLISP1	Insertable Paddle
RLISP2	Insertable Paddle
RLISP3	Three Vane 5" Diameter Paddle
RLISP4	Three Vane 7" Diameter Paddle
SMP	Side Mounting Plate
SMPS	Side Mounting Plate - Stainless Steel
TMP	Top Mounting Plate
TMPS	Top Mounting Plate - Stainless Steel

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

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.

GENERAL

The RLIS1V46 'Shaker' series are rotary paddle level indicators that use a unique stepper motor drive, resulting in highly reliable operation in most powders and granular solids. The unit will operate on 24 VDC; 90-260 VAC supplies, has a relay output and can be configured for high or low fail safe operation. An adjustable electronic torque control allows a single paddle to be used for most types of material, and an adjustable time delay allows the unit to ignore cyclic fluctuations in the material to be detected.

The unit is suitable for side or top entry and extensions are available, up to 14 feet long.

⚠ WARNINGS

- A. CONFINED ENTRY HAZARD PRESENT IN BINS / SILOS, ALWAYS FOLLOW CONFINED ENTRY RULES AND REGULATIONS.
- B. ROTATING MACHINERY CAN CAUSE SERIOUS INJURY OR DEATH, ALWAYS LOCKOUT AND TAGOUT THE MACHINE PRIOR TO INSTALLATION.
- C. DO NOT ENTER SILO / BIN WHILE IT IS BEING FILLED OR EMPTIED, LOCKOUT AND TAGOUT ALL UNLOADING MECHANISMS PRIOR TO INSTALLATION.

INSTALLATION

Install the unit into the vessel via a 1-1/4" NPT fitting or using the optional mounting plate. (Note: **Hand tighten only**, do not use excessive force).

IMPORTANT: For vertically installed probes with extensions, ensure that the fitting is vertical plus/minus 5 degrees. For side entry probes without extensions, mounting angle is unimportant.

IMPORTANT: In applications where direct impact from heavy objects may occur, a deflector plate must be fitted above the paddle, for protection.

CONNECTIONS

Connect in accordance with Fig. 1 below. Ensure that all connections are tight and that the system is correctly grounded.

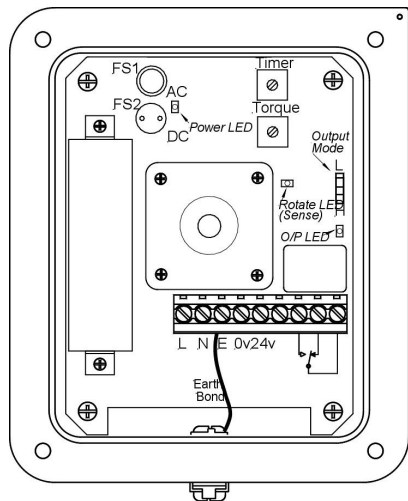


Fig. 1

THE UNIT MUST BE GROUNDED!

▶ IMPORTANT NOTE:

The 'Shaker' is supplied with a fuse fitted in the AC fuseholder, fit into the DC position for 24 VDC operation.

The fuse rating for this unit is 250 mA anti-surge, IEC.

NO OTHER RATING MAY BE USED

Set the fail safe switch to desired high or low position. In *high level mode*, the output relay is energized (ON) with no material present. In *low level mode* the output relay is energized (ON) with material present.

COMMISSIONING

The 'Shaker' motor will run clockwise and counterclockwise and will also stop for a period. This is normal and does not indicate a fault. The motor will 'tick' in normal operation, both when rotating and stalled.

Turn the torque control fully clockwise, and the timer fully counterclockwise and apply power. In most applications the unit will now function correctly and no further adjustment will be necessary.

NOTE: Ensure that the unit will detect material when the paddle is fully covered, adjust torque control as necessary.

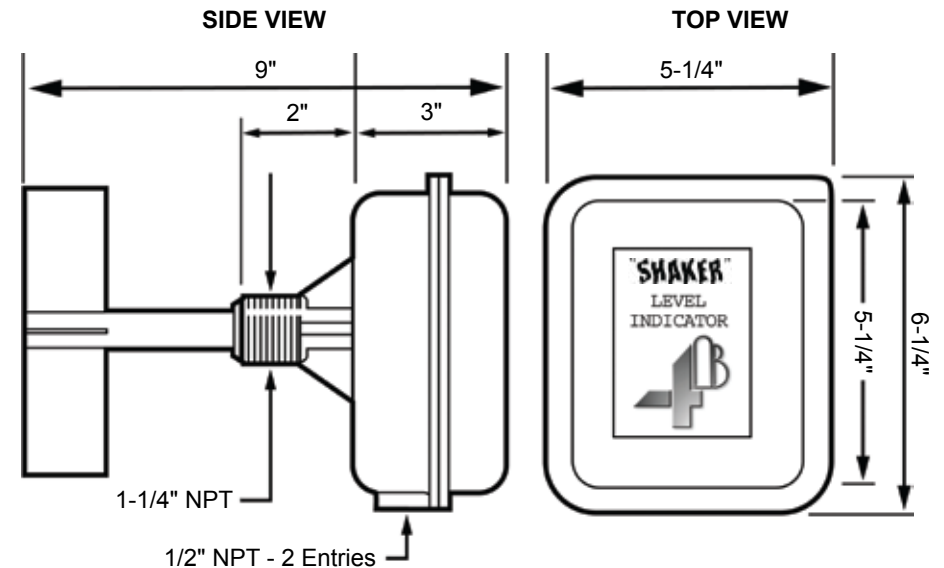
Torque Control

In very light material, the paddle may continue to rotate when covered. In this event, with the paddle covered, turn the torque control 'slowly' counterclockwise until the motor stops. Check operation setting by uncovering and re-covering the paddle.

Time Delay

In applications where surging material may give spurious operation, or where a time delay is needed to reduce wear on feed mechanisms, the timer control may be turned clockwise to give the required delay up to a maximum of 30 seconds.

DIMENSIONS



*See page 7 for shaft extension diagram.