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ROTOSAFE LEVEL INDICATOR
Liability and Indemnity

- 1) In respect of installation of the goods as parts or components of other goods or machinery, the buyer shall be solely responsible for the compliance and the installation with safety regulations issued by competent authorities and in force at the place of operation and/or for its compliance with any terms of insurance notified by the Buyer's insurance for personal injury or damage to property or loss of profit through fire, explosion, gas or otherwise.
- 2) Neither the Company nor its suppliers shall in any circumstance whatsoever be liable for any loss or damage suffered by the Buyer or by any third party howsoever caused involving any person, property or interest, suffered by the Buyer or any third party directly or indirectly in connection with the use, functioning or state of the goods, unless the same shall arise out of the Company's negligence.
- 3) The Buyer shall indemnify the Company against all actions, claims or demands by third parties, whether in tort or otherwise, howsoever arising, directly or indirectly, in connection with the use, functioning or state of the goods or in connection with the performance of service.

Limitation of Liability

Without prejudice to the foregoing, the Company shall in no circumstances be liable:-

- a) For any accident or consequential loss or damage suffered by the buyer, including, without limitation, detention, loss of production, loss of profit or liability to third parties except liability for personal injury arising out of negligence by the Company.
- b) For any loss or damage covered by insurance or which would ordinarily be covered by insurance.

Warranty

The equipment is covered by a 12 month warranty from date of despatch. Any faults arising due to faulty workmanship in the original equipment within the warranty period will be corrected free of charge providing the equipment is returned to us freight/carriage paid.



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.

ROTOSAFE LEVEL INDICATOR



Part No: **RTS1V0A**



INSTALLATION INSTRUCTIONS

TECHNICAL INFORMATION

RTS ROTOSAFE INDICATOR

The ROTOSAFE Indicator is designed to detect the presence or absence of bulk materials such as chemicals, grain, chips, granules and powders. It is ideal for indicating levels in bins and silos and as a blockage detector in spouts.

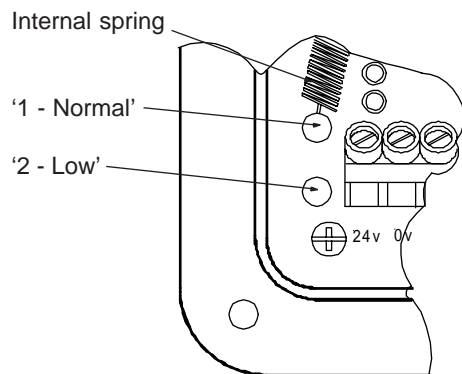
The detection of material is achieved by a rotating paddle. If the rotation of the paddle is impeded, the relay changes position and the paddle motor circuit is switched off.

The ROTOSAFE has an in-built rotation detection circuit. The output operates within 10 seconds if the motor stops rotating under a fault condition. Users can test this facility to ensure correct operation, (see 'TEST FEATURE' below).

A user selectable, make/break output timer can also be set from 0-120 seconds. This will delay output operation from when the motor is stalled due to detecting a level, and also when it starts rotating again.

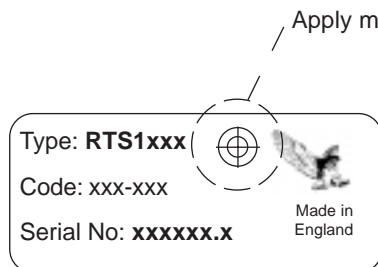
ROTATION SENSITIVITY

The ROTOSAFE unit has 2 sensitivity settings, '1 - Normal' and '2 - Low', the factory preset is set at '1 - Normal'. If, after fitting and whilst filling vessel, output operates too soon, remove the lid to the ROTOSAFE and fit the internal spring into position '2 - Low', shown below.



TEST FEATURE

The ROTOSAFE unit has a built in test feature which is operated by a magnet. With motor rotating and output 'ON', apply a magnet to the Code/Target label on the outside of the case. This will cause the motor to stall and the output to go off after a maximum time period of 10 seconds.

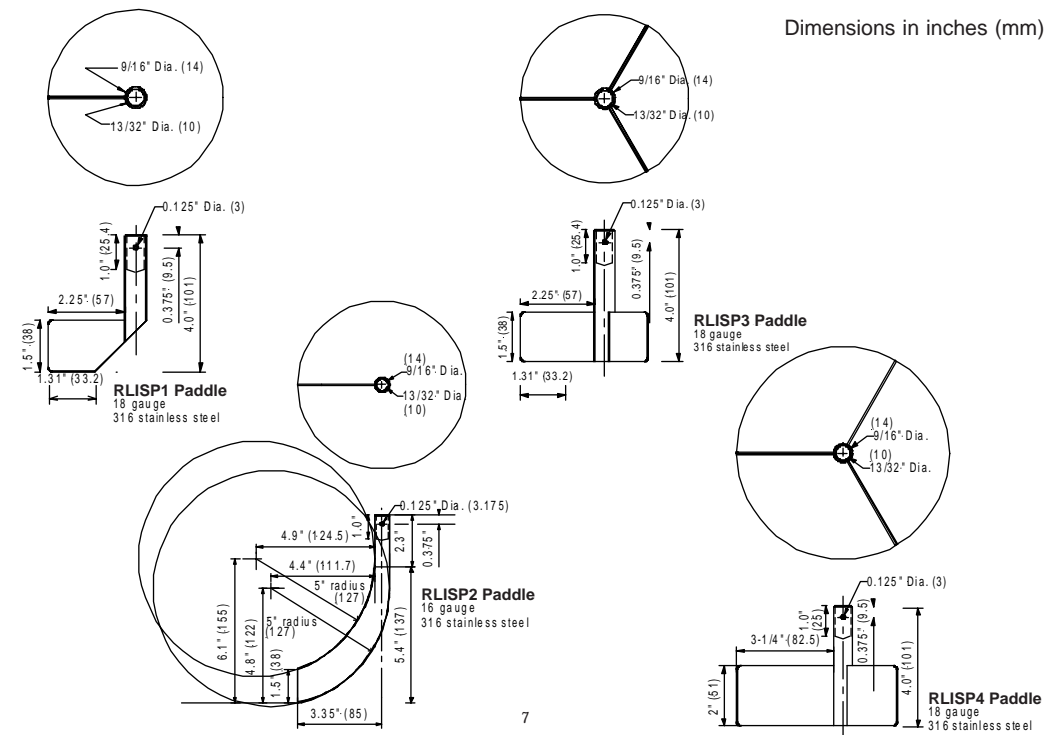


GENERAL SPECIFICATION

Approval:	M310391A Baseefa03ATEX0190 EXII 1D T100°C Tamb -20°C to +50°C IP65
Supply:	24 V dc, 110/230 V ac 50/60 Hz. ±10%
Consumption:	1.8VA
Temperature:	-20°C to + 50°C (-4°F to + 122°F)
Output:	1 single pole, single throw relay rated at 3 Amps 250 Volts resistive.
Output Mode:	Selectable for High or Low mode (relay operation reversed) via switch setting on PCB.
Enclosure:	Flame retardant, glass fibre, reinforced nylon
Protection:	IP65 Nema 4, ATEX and CSA applied for
Conduit Entry:	2 conduit entries ½" NPT or PG11 option
Motor speed:	1 RPM.
Weight (less paddle):	0.95 kg (2.1 lbs)
Indication:	LED indication of Power ON, Motion, Output ON.
Sensitivity:	2 ranges selected via internal spring position. (Factory set at 'High').
Output Delay Time:	User selectable, 0-120 seconds on both make and break.

PADDLE SELECTION

Type RLISP1	Single vane paddle. For coal, stones and very high density materials over 1T/M³. Can be inserted through the 1 ¼" NPT half coupling (over 70 PCF)
Type RLISP2	Single vane paddle "Scimitar". For light materials such as powders, light grain or seed 0.4 to 0.8 T/M³. Can be inserted through the 1 ¼" NPT half coupling (30-70 PCF)
Type RLISP3	3 vane paddle. For grain, beans, oil seeds and meals 0.4 T/M³ to 0.8 T/M³ (30-70 PCF)
Type RLISP4	Large 3 vane paddle. For flour screening and very light materials 0.3 T/M³ to 0.5 T/M³ (under 30 PCF)



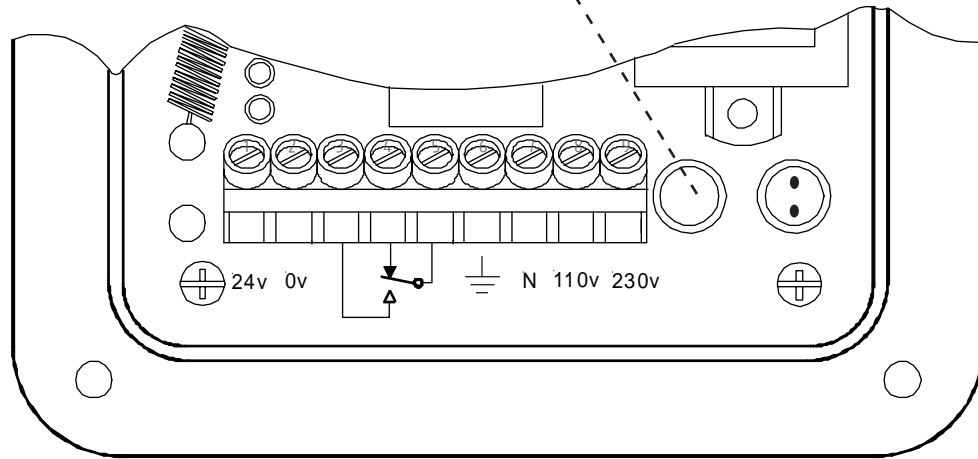
ELECTRICAL CONNECTION

IMPORTANT NOTE:

The ROTOSAFE is supplied with a fuse fitted in the AC fuseholder, fit into the DC position for 24V dc operation.

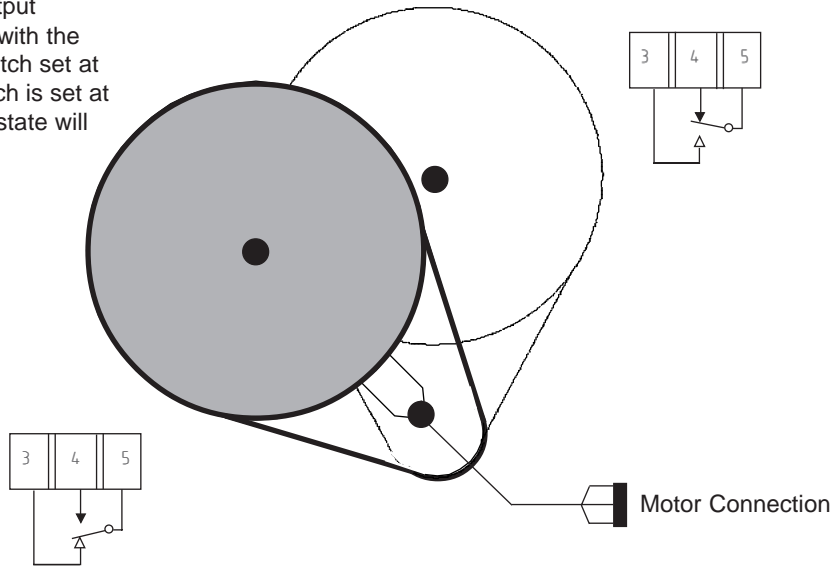
The fuse rating for this unit is 80mA anti-surge, IEC.

NO OTHER RATING MAY BE USED



Warning: All wiring must be in accordance with local and national electrical codes and should be undertaken by a qualified electrician.

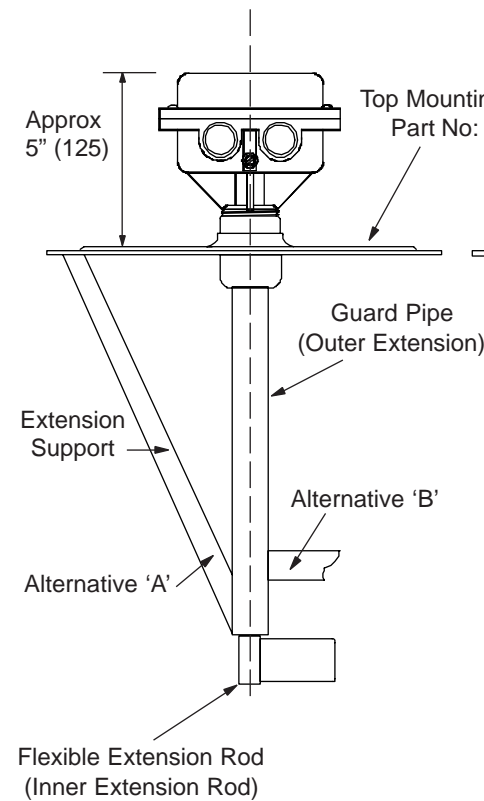
The following output connections are with the Output mode switch set at 'High', if the switch is set at 'Low' the output state will be reversed.



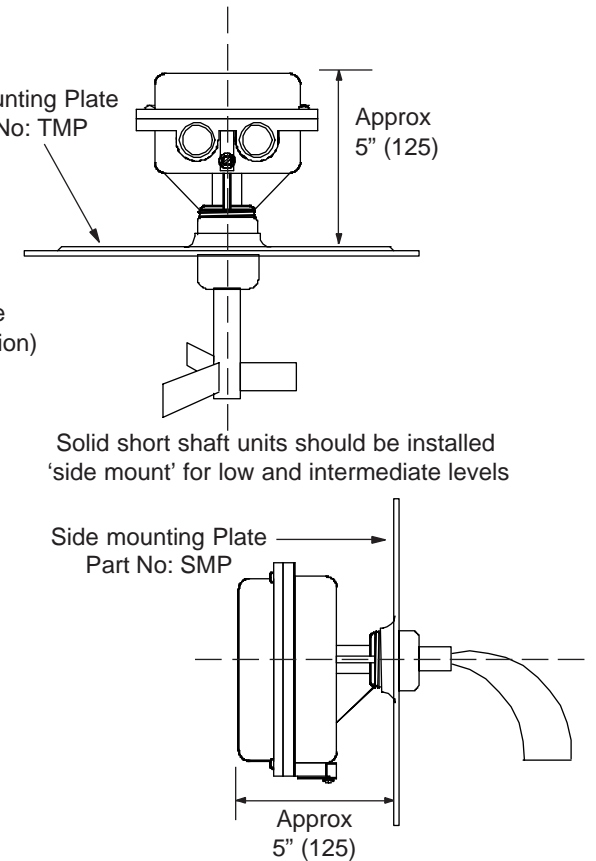
TYPICAL MOUNTING ARRANGEMENTS

Dimensions in inches (mm)

TOP MOUNT WITH EXTENSION



TOP MOUNT



Extension Rods and Guard Pipes can be provided for low level or when RTS's are mounted high in bin/silo roof

Extensions can be provided to a max. length of 4.2 mtrs (14 ft)

SIDE MOUNT WITH 'SCIMITAR'
(IMPORTANT NOTE: ALWAYS INSTALL WITH CONDUIT ENTRIES AT THE BOTTOM)

MOUNTING AND INSTALLATION

- 1) Install the ROTOSAFE where there is free flow of material both to and from the paddle, but out of the direct line of incoming material.
- 2) Install mounting plate or weld in 1 ¼" NPT coupling.
- 3) Fit a baffle above a side mounted paddle unit where the material bulk density exceeds 1000 kg/cu mtrl (60 lbs/cu.ft) or where the material tends to pack, bridge or has other detrimental flow characteristics.
- 4) When using extension pipes in excess of 2.5 mtrs (8 ft) support the guard pipe from the top or side of the bin. (See diagram page3).
- 5) If the bin is subject to frequent shock or vibration, select the area of least interference.
- 6) Do not congest the interior of the power pack with wiring. Ensure the motor assembly moves freely.
- 7) If fitting a ROTOSAFE facing upwards (in paddle direction) towards an inlet, then it would be advisable to fit a deflector plate over the paddle —drawing available on request.
- 8) When installing the ROTOSAFE please remember to remove protective polystyrene packing from by the gearbox.

MOUNTING PLATES

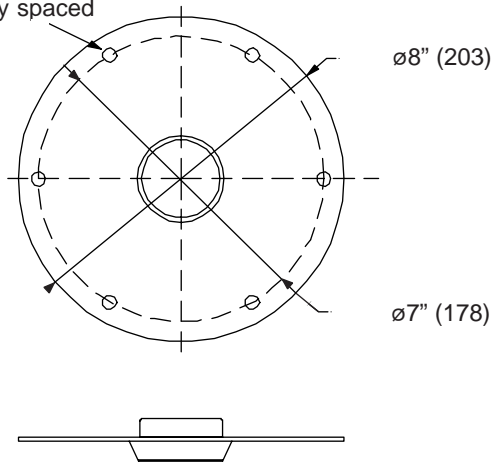
Dimension shown in inches (mm)

Epoxy coated mild steel or stainless steel

This style should be used for 'Side Mount'.

Part No: SMP

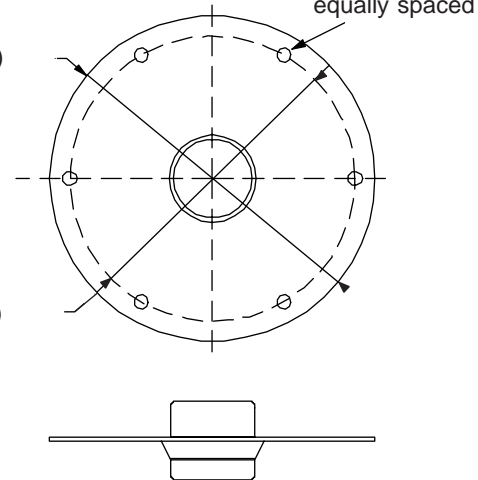
6 x ø11/32" (9) holes
equally spaced



This style should be used for 'Top Mount'.

Part No: TMP

6 x ø11/32" (9) holes
equally spaced



TOP MOUNT WITHOUT MOUNTING PLATE

- 1) Locate and cut hole in top of bin to fit outside diameter of 1 ¼" pipe coupling.
- 2) Position coupling halfway into bin and weld.
- 3) Screw ROTOSAFE unit into 1 ¼" coupling.
- 4) Cut a 10mm (3/8" dia.) shaft extension to the desired length and drill a 3mm (1/8" dia.) hole for the pin in each end.
- 5) Fit shaft coupler (RLISC1) and extension rod (RLIEX11-15) using stainless steel pins (RLISCP1) or screws with Nylock nuts.
- 6) Cut a 1 ¼" standard pipe shaft guard tube (RLIEX21-25) approximately 100mm (4") shorter than the overall length of the 10mm (3/8" dia.) rod extension.
- 7) Insert the shaft guard tube into the pipe coupling and tighten.
- 8) Pin the paddle to the shaft extension.

Extended paddle ROTOSAFE can be provided pre-assembled.

SIDE MOUNTING WITHOUT MOUNTING PLATE

- 1) Locate and cut hole into side of the bin to fit outside diameter 1 ¼" pipe coupling.
- 2) Weld one half of standard 1 ¼" pipe coupling to bin wall flush with inside of bin.
- 3) Screw ROTOSAFE unit into coupling.
- 4) Pin paddle onto the shaft.
- 5) Shaft and paddle should be shielded with a baffle in low and intermediate level positions.
- 6) A short shaft is recommended for side mounting, and if material is extremely heavy, only top mountings are recommended.

FLEXIBLE MOUNTING PLATE

Flexible mounting plates are necessary when a completely assembled unit is mounted on a curved or flat bin wall or roof from the outside. Cut a 140mm (6" dia.) hole in the bin then drill 6 holes around this to match the mounting plate. Bolt the plate in place with the unit attached. Plates are available in mild and stainless steel.