

# Inquiry No. ( F1610041 )

OUR REFERENCE

INQUIRY SERIAL : 3

ITEM NUMBER	REQ. NUMBER	REQ. SERIAL	
S-FUT12MA1201-3171	R16T3S0044	5	
QUANTITY	UNIT PRICE	CURRENCY	AMOUNT
1.00 PC	.....	.....	.....

**ITEM DESCRIPTION**

VIBRATION SWITCH FOR COOLING

مفتاح بيان الاهتزازات خاص تبريد  
التبريد حسب المواصفات المرفقة

VIB. TYPE: 3171 MFG : FIRST

TOWER

INERTIA SWITCH



## FIRST INERTIA SWITCH LTD.

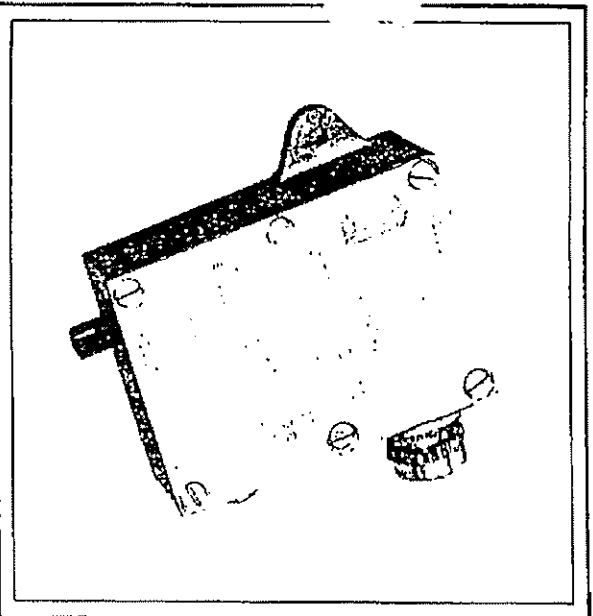
A MEMBER OF FIRST TECHNOLOGY PLC

PRODUCT INFORMATION  
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PRODUCT INFORMATION

## VIBRATION LIMIT SWITCHES

Non-Hazardous Areas

### PROTECTION OF PLANT AND MACHINERY IN THE EVENT OF EXCESSIVE VIBRATION. TYPE 3171



#### FEATURES

- \* Ease of installation on new or existing plant and machinery.
- \* Robust for industrial environments.
- \* S.P.C.O. or D.P. microswitch output.
- \* Sensitive in horizontal and vertical planes.
- \* Manual or electric reset.
- \* Electrical connections through sealed cable gland.
- \* No maintenance after installation.
- \* Models for operation in hazardous areas, see appropriate data sheet.

#### GENERAL DESCRIPTION

The 3171 is a low cost vibration sensitive switch for protection of rotating plant and reciprocating machinery. It is adjustable to operate above the normal running levels of vibration, activating alarm signals or machinery shut-down circuits.

The 3171 vibration switch, with its low frequency vibration response, makes it ideal for detection of mass unbalance on most machinery. It is inherently insensitive to high frequency components and those caused by external knocks, etc. Responsive to vibrations in any direction (dominantly in a horizontal plane) installation problems are minimised.

Vibration switches operate by balancing the force of attraction of a permanent magnet against the force generated on a seismic mass (metal sphere) when subjected to an applied acceleration. The switch is mounted in a vertical plane with the ball restrained in a conical seat. When the ball is subjected to acceleration produced by vibration of the machine, it eventually breaks free from the magnetic restraint, falls under the action of gravity and operates a microswitch. The microswitch mechanism includes a magnetic latch to ensure positive and continuous operation even if the ball returns to its seat.

The 3171 vibration switch is reset by returning the ball to the control of the permanent magnet at the same time unlatching the microswitch mechanism either manually or electrically. The operate point of the vibration switch is controlled by the distance between the ball and magnet; this is adjustable by rotating the set screw on top of the switch.

Number Fm 117 Issue 5 BS 5750 Part 1 1987/ISO 9001:1987/EN 29001 - 1987 and OAS 34/61



The switch will respond to vibrations in any axis (Predominantly in a horizontal plane) and should be fitted on the structure so that good transmission is ensured from the likely source of excess vibrations.

MOUNTING DETAILS

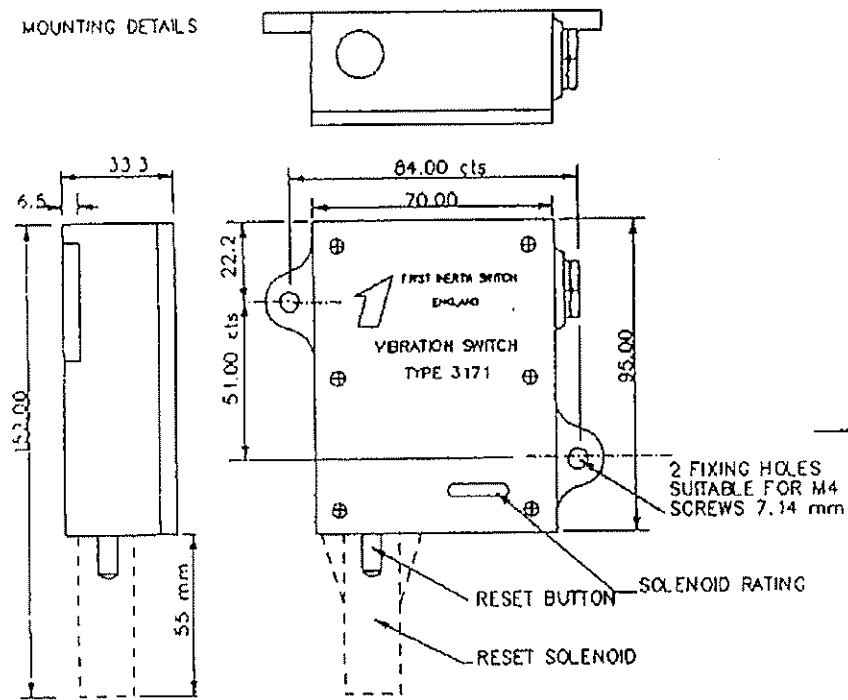


FIG. 1.

ELECTRICAL CONNECTIONS

See Fig 2 for Circuit Connections  
 Standard Cable Entry tapped to M20 x 1.5, I.S.O.  
 Max Connector Core size - 2.5 sqmm  
 Internal earth connection - 2.5 sqmm maximum Core diameter  
 Ensure cables are correctly fitted into terminal block and earth terminals and comply to relevant Code of Practice.

SOLENOID RESET

WARNING: Check Reset Voltage and Duty Rating (stamped on lid)  
 AC Solenoids:- Continuous Rated  
 DC Solenoids:- Intermittent Rated  
 e.g. 25% = 1 minute ON (Maximum)+3 minutes OFF (Minimum)  
 6% = 6 Seconds ON (Maximum)+94 Seconds OFF (Minimum)

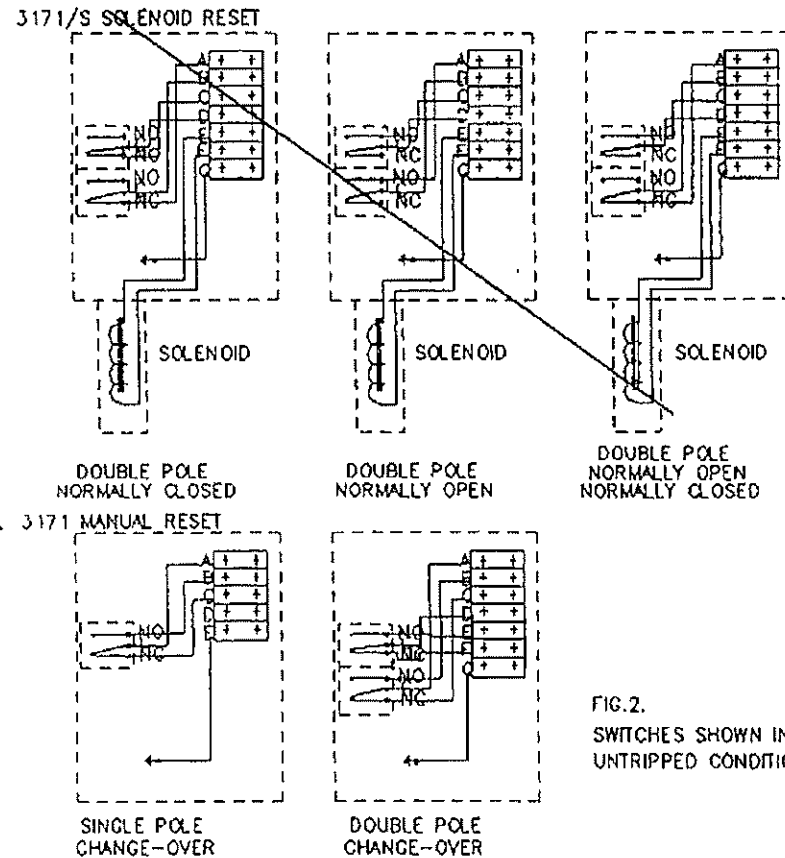


FIG. 2.  
 SWITCHES SHOWN IN UNTRIPPED CONDITION.

(Marking on Internal Solenoid Body shows continuous rating only eg 12v DC = 24v DC 25%, rated)

ADJUSTMENTS AND CALIBRATION

To set switch, rotate set level screw on top of switch fully clockwise, approximately 6 turns from flush (See Fig 4). Reset switch. Check electrical connections show "Safe Condition" - if vibration switch is used for machine shut-down, link-out switch separately during next operation. With machine running normally, rotate set level screw anti-clockwise until switch just trips. Reset carefully, re-adjust screw until switch no longer trips. This determines setting for NORMAL or AMBIENT machine vibration level. Vibrations above this level will now cause Vibration Switch to operate.