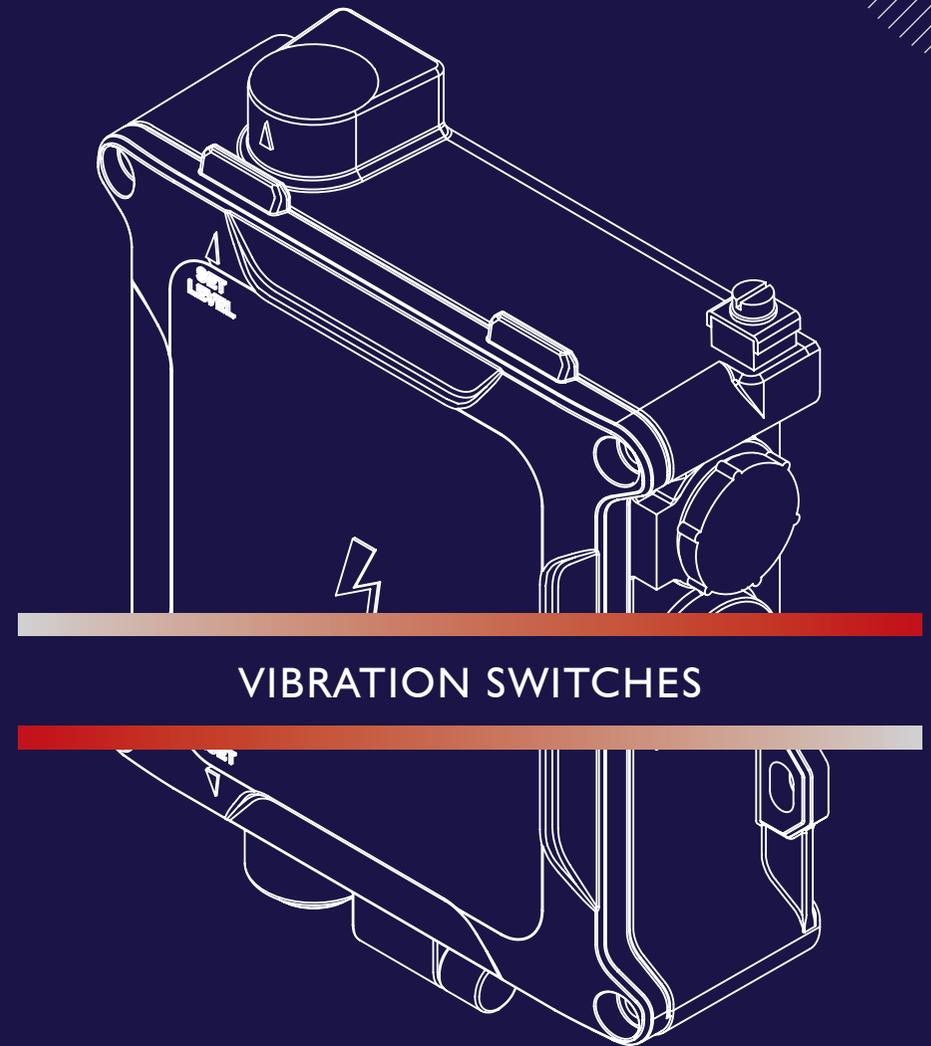


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# WHY USE A VIBRATION SWITCH?

Vibration sensitive switches are used to protect rotating plant and reciprocating machinery. They are adjustable to operate above the normal running levels of vibration, activating alarm or machine shut-down circuits.

The vibration switches have a low frequency response, which makes them ideal for detection of mass unbalance on most machines. They are inherently insensitive to high frequency components and those caused by external knocks, etc.

The FFE vibration switch has a strong heritage of providing the best protection of high value machinery in the most demanding of environments. All our vibration switches are built to our highest standards with every device being tested before being shipped.

## How do they work?

Vibration switches sense the level of vibration coming from a machine and when it exceeds the threshold the switch is triggered. Vibration switches are able to detect movement through faults such as imbalance, misalignment, looseness, worn bearings, cracked gears or lack of lubrication.

Vibration switches can either be single or double poled. A single pole vibration switch uses one internal micro switch which turns off machinery when an increase in peak acceleration is detected.

A double pole vibration switch has an additional internal micro switch that operations simultaneously with the first one. A benefit of this is that the additional pole allows two functions, such as machine shutdown and audible warning.

## APPLICATIONS

The weatherproof and explosion proof vibration switch is ideal for use on rotating and reciprocating machinery (below 3000rpm) such as fans, centrifuges, compressors, pumps, turbines, motors and generators, vibrating conveyors, vertical and horizontal crushers and shakers.

## FEATURES

Ease of installation on new or existing plant and machinery

Robust for industrial environments

Manual or remote electrical reset

SPCO or DPCO (manual reset) or DPST (with remote reset)

Must be vertically mounted as in diagram below - sensitive in horizontal, lateral and vertical planes

Electrical connections via M20x1.5mm cable entry (Models can be adapted for two cable entries)

Maintenance free operation

Models for operation in hazardous areas, see page 4

Captive lid and fasteners

Two year warranty

Blanking plug accessory for corrosion protection when mounted into the field un-wired. PN: 0051-002-01



## Weatherproof Vibration Switches

The type 317I vibration switch is a low-cost, vibration-sensitive switch for the protection of rotating and reciprocating machinery. It is adjustable to operate above the machine's normal running levels of vibration, activating machine shut-down circuits and/or alarms. Once operated the internal micro switch remains latched until reset.

The type 317I vibration switch, with its low frequency response is ideal for detection of mass imbalance on most machines. It is inherently insensitive to high frequency components and those caused by external knocks, etc. The 317I vibration switch is responsive to vibrations in all directions.

The type 317I vibration switch is reset by depressing a button on the bottom face (see diagram below) and for the 317IS model, also by temporarily energising an internal solenoid.

Adjustment of the vibration trip level is made externally at the top of the unit by rotating a sealed control.

A single pole vibration switch uses one internal micro switch for switching off machinery when an increase in peak acceleration is detected. A double pole vibration switch has an additional internal micro switch which operates simultaneously with the first one. Two micro switches give the use of redundancy for increased safety and can also be used for monitoring the state of the vibration switch.



### Manual Reset type

- 8000-000 Single Pole Silver Contacts
- 8010-000 Single Pole Gold Contacts
- 8001-000 Double Pole Silver Contacts
- 8011-000 Double Pole Gold Contacts

### Remote Reset Type

- 8001-010 Double Pole Silver Contacts with 24V Solenoid
- 8001-020 Double Pole Silver Contacts with 110V Solenoid
- 8001-030 Double Pole Silver Contacts with 240V Solenoid

### 317IMR ELECTRO-MECHANICAL VIBRATION SWITCH WITH MANUAL RESET

Drop and free fall	BS EN60079-0 section 26.4
Performance	Set level range 0.5 to 9g peak acceleration
Rated operating voltage	AC 250 V 50/60 Hz
Utilisation category	AC-15 3A 250Vac, DC-13 0.15A 250Vdc, DC-13 3A 30Vdc
Switch rating	Resistive load - AC 5A 250V, DC 5A, 30V
Enclosure material	Die-cast zinc alloy Mazak III
Enclosure finish	Iron passivation with goose grey polyester powder coat
Temperature range	-45°C to +85°C
Weight	1.5kg typical
Connections	Internal terminal block via M20x1.5mm threaded cable entry
Mounting	Mount vertically with reset button at bottom using fixings size M5 and anti-vibration washers or similar
Contact arrangements	SPCO or DPCO

### 317IS ELECTRO-MECHANICAL VIBRATION SWITCH WITH REMOTE RESET (AS ABOVE UNLESS STATED)

Contact arrangements	DP ST NC+NO
Remote reset	Mains solenoids continuously rated for 115V a.c. or 240V a.c. 24-28V DC solenoid rated for intermittent use with 25% duty e.g. 30s on and 90s off

### OPTIONS

Alternative switch contacts	Gold-plated contacts for low energy switching and/or monitoring. Rating 0.1A 125V AC, 0.1A 10V DC. Option available with 317IMR only
Second cable entry	317I can be supplied with a second M20x1.5mm threaded cable entry
Pre-sets	Where the rotating machine has a dominant frequency at 25Hz, FFE Ltd. can provide a pre-set switch between 1g & 9g

Please see datasheets online for electrical arrangements.



### Ingress protection rating

IP66/IP67 to BS EN 60529

Visit [ffeu.com](http://ffeu.com) for more approval information.

## Explosion Proof Vibration Switches

The type 3171 Ex vibration switch is a low-cost, vibration-sensitive switch for the protection of rotating and reciprocating machinery in hazardous areas.

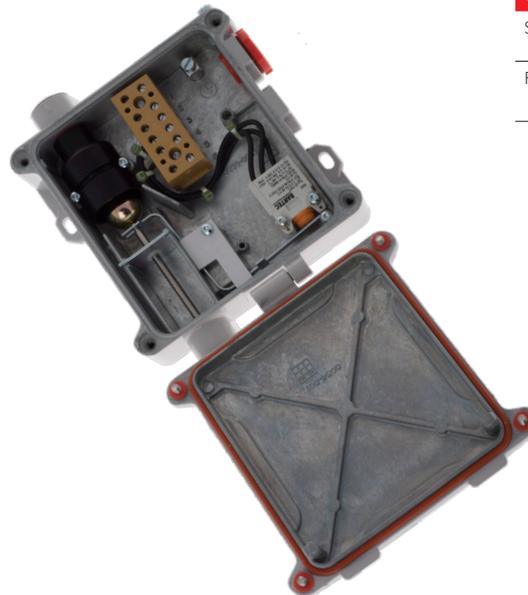
It is adjustable to operate above the machine's normal running levels of vibration, activating machine shut-down circuits and/or alarms. Once operated the internal micro switch remains latched until reset.

The type 3171 Ex vibration switch, with its low frequency response is ideal for detection of mass imbalance on most machines. It is inherently insensitive to high frequency components and those caused by external knocks, etc.

The type 3171 Ex vibration switch is responsive to vibrations in all directions. The type 3171 Ex vibration switch is reset by depressing a button on the bottom face (see diagram below). Adjustment of the vibration trip level is made externally at the top of the unit by rotating a sealed control.

### Manual Reset type

- 8110-000 Single Pole Gold Contacts
- 8111-000 Double Pole Gold Contacts
- 8100-000 Single Pole Silver Contacts
- 8101-000 Double Pole Silver Contacts



### 3171 EX D E ELECTRO-MECHANICAL VIBRATION SWITCH WITH MANUAL RESET

ATEX Classification	II 2G Ex d e IIC T6 Gb Tamb* II 2D Ex tb IIIC T85°C Db
NEPSI Classification	Ex de IIC T6 Gb Ex tb IIIC T85°C
Drop and free fall	BS EN60079-0 section 26.4
Performance	Set level range 0.5 to 9g peak acceleration
Rated operating voltage	AC 250 V 50/60 Hz
Utilisation category	AC-I5 3A 250Vac, DC-I3 0.15A 250Vdc, DC-I3 3A 30Vdc
Switch rating	Ohmic/resistive load - AC 5 A 250 V, DC 5 A 30 V Inductive/motor load - AC 3 A 250 V, DC 3 A 30 V
Enclosure material	Die-cast zinc alloy Mazak III
Enclosure finish	Iron passivation with goose grey polyester powder coat
Temperature range	-50°C to +80°C
Weight	1.5kg typical
Connections	Internal terminal block via M20x1.5mm threaded cable entry
Mounting	Mount vertically with reset button at bottom using fixings size M5 and anti-vibration washers or similar
Contact arrangements	SPCO or DPCO
Alternative switch contacts	Gold-plated contacts for low energy switching and/or monitoring. DC or Peak AC Ratings: Voltage: 5 V to 30 V, Current: 4 mA to 400 mA Max VA = 0.12 (Current × Voltage)

### OPTIONS

Second cable entry	3171 can be supplied with a second M20x1.5mm threaded cable entry
Pre-sets	Where the rotating machine has a dominant frequency at 25Hz, FFE Ltd. can provide a pre-set switch between 1g & 9g

Please see datasheets online for electrical arrangements.



**Ingress protection rating**  
IP66/IP67 to BS EN 60529

Visit [ffeuk.com](http://ffeuk.com) for more approval information.

## TECHNICAL SUPPORT

FFE Ltd is proud to be able to offer a high level of Technical Support to all our customers, from distributors to end-users. We can advise with any aspect of our Vibration switches, Fireray® Optical Beam Smoke Detectors and Talentum® Flame Detectors.

### Our Technical Support includes:

Reviewing and advising on correct installation and alignment of FFE Vibration Switches, Beam Detectors and Flame Detectors. Troubleshooting problems during the operation of our products after correct installation and alignment. Advising the attributes of various types of Vibration Switches, Beam and Flame Detectors to suit different applications. Explaining good installation and operation practice for these products.

On a proactive level, Fireray® or Talentum® product training is available to any FFE customer including installers, distributors and end users and can be arranged with your FFE Sales Manager or by contacting FFE directly. Each training course is modular and the duration can be agreed according to the customer's requirements.

These personalised training courses can be targeted to all levels; Directors, Sales & Marketing or Technical, and are tailored for mixed audiences too. They include information on Technical Support as well as Troubleshooting for advanced users.

In the UK, courses are typically delivered at the FFE Headquarters in Hitchin, Herts. For other venues, including overseas, please discuss with your Sales Manager.

### Certificates



OHSAS 18001:2017 OHS 580021

RMA Request

Should you need to return a product to us, please email [warranty@ffeuk.com](mailto:warranty@ffeuk.com)



A Halma company

### Worldwide Technical Support

e [technical@ffeuk.com](mailto:technical@ffeuk.com)

### US Sales and Distribution

FFE Limited  
1455 Jamike Ave Ste 200  
Erlanger  
KY 41018-3147  
USA

t +1 859 957 1570

e [america@ffeuk.com](mailto:america@ffeuk.com)  
[www.ffeuk.com](http://www.ffeuk.com)

### Head Office HQ

FFE Limited  
9 Hunting Gate  
Hitchin, Hertfordshire  
SG4 0TJ  
England

t +44 (0) 1462 444 740

e [sales@ffeuk.com](mailto:sales@ffeuk.com)  
[www.ffeuk.com](http://www.ffeuk.com)

## WORLDWIDE OFFICES



### Middle East Sales Office

Dubai  
UAE

e [middleeast@ffeuk.com](mailto:middleeast@ffeuk.com)  
[www.ffeuk.com](http://www.ffeuk.com)

### India Sales Office

Bangalore  
India

e [india@ffeuk.com](mailto:india@ffeuk.com)  
[www.ffeuk.com](http://www.ffeuk.com)