



## Model 566 Velocity-Acceleration Vibration Monitor

### General Description

The Robertshaw Model 566 Vibration Monitor is a solid state instrument that encompasses a variety of functions all in one unit.

Vibration can be monitored in either velocity or acceleration. The standard ranges are 0 to 1.5 inches/second or 0 to 3 inches/second when sensing velocity and 0 to 5 g's or 0 to 10 g's when sensing acceleration.

A 4 – 20 mADC output is provided to drive a 750 ohm maximum load.

The Model 566 includes two solid state Triacs (2 amp @ 120/240 VAC) which can be operated in a N.O. or N.C. configuration. Alarms are capable of being latched or non-latched (ON-OFF). Alarm # 1 has a monitor time delay adjustable from 0.5 to 15 seconds. LED set point indicators are provided to indicate the alarm condition.

The Model 566 vibration instrument and optional remote mounted sensor are housed in a weather proof and explosion proof enclosure.

**NOTE** that on the remote sensor unit the connection from the Model 566 to the remote sensor need only be an ungrounded pair of twisted wire.



### Features and Benefits:

- **Explosion Proof**  
CSA Certified & FM Approved
- **Weather Proof**  
CSA Certified Type 4  
(Equivalent to NEMA 4)
- **Two Trip Points**  
Field Selectable
- **Two Measuring Modes**  
Field Selectable Acceleration or  
Velocity without loss of accuracy
- **Monitor (Time) Delay**  
On Alarm #1
- **Analog Output**  
4 – 20 mADC output

## Principle of Operation

The Model 566 employs totally solid state circuitry. Velocity or acceleration sensing mode of operation is field selectable without loss of accuracy. The unit is factory calibrated in all ranges. Two alarm set points and a 4 – 20 mADC output are standard.

A machine power monitor input, such as 120 or 240 VAC is used to enable the monitor delay and analog output circuitry when the monitored machine is turned on. The time delay period can be set in the field up to 15 seconds.

The indicators (LED) will illuminate when the set points are reached. They are electrically connected in the circuit prior to the time delay to allow for field calibration of the alarm set points without shutting down the machine being monitored.

- **Alarm #1** – Operates with adjustable time delay (0.5-15 Sec.). When a vibration signal continues to exceed the set point for as long as the time delay setting, the alarm actuates.
- **Alarm #2** – Actuates when vibration signal exceeds set point. No time delay function is available.
- **Latch Disable** - Disables alarm latches. Alarms reset automatically when vibration level returns to normal from an alarm condition.

## AVOID CATASTROPHIC FAILURE

Vibration is an excellent early warning of machine deterioration. The Robertshaw Model 566 Vibration Switch senses the causes of excessive machine vibration before failure. The major causes of excessive machine vibration are: imbalance of a rotating member, misalignment, defective bearings and defective belts. The Robertshaw Vibration Switch responds to destructive vibration by shutting down your machine when the vibration trip level is exceeded, preventing catastrophic damage and extensive repairs and down time.

In most cases, vibration monitoring can detect a problem long before damage is done. For example, vibration monitoring provides a much earlier warning of machine deterioration than temperature monitoring.

Small and gradual machine deterioration shows up as significantly increased vibration. Early detection usually permits continued operation until a scheduled shutdown.

## Specifications

### Environmental

**Enclosure** ..... Aluminum, unpainted (standard)  
Aluminum, epoxy painted (optional)

**Enclosure Gasket** ..... Neoprene

**Enclosure Cover Hardware** ..... Stainless steel

**Enclosure Rating:**

**CSA Certification:**

**Model 566:**

Class I, Div. 1, Group C & D;

Class II, Div. 1, Group E, F & G;

Enclosure Type 4 (weather tight)

**Remote Sensor:**

Class I, Div. 1, Group C & D;

Class II, Div. 1, Group E, F & G;

Enclosure Type 4 (weather tight)

**FM Approval:**

**Model 566:**

Class I, Div. 1, Group C & D;

Class II, Div. 1, Group E, F & G;

**Remote Sensor:**

Class I, Div. 1, Group B, C & D;

Class II, Div. 1, Group E, F & G;

Enclosure Type 4 (weather tight)

**Operating Temperature Range** ..... -40° +176° F  
(-40° +80° C)

**Storage Temperature** ..... -65° +200° F  
(-54° +93° C)

**Humidity** ..... 95% RH @ +100° F (+37° C)

**Shock** ..... 75 G's for 11 ms

### Electrical

**Supply Voltage** 120 VAC ±10%, 50/60 Hz (standard)  
240 VAC ±10%, 50/60 Hz (optional)  
6 VA Maximum @ 120/240 VAC

**Input Signal:**

**Velocity:**

**Low Range** ..... 0 – 1.5 in./sec. RMS

**High Range** ..... 0 – 3 in./sec. RMS

**Acceleration:**

**Low Range** ..... 0 – 5 G's RMS

**High Range** ..... 0 – 10 G's RMS

**Output Signal** ..... 4 – 20 mADC (not isolated)

**Output Signal Load Limit** ..... 750 Ohms maximum

**Solid State Relay Rating** ..... Triac, AC current only  
120 or 240 VAC Inductive,  
2 amp max., 50 mA min.,  
Leak rate 1 mA maximum

**Time Delay** ..... Field Adjustable 0.5 to 15 Seconds  
(Alarm #1 only)

## Performance

### Accuracy:

**Relay Set Point** ..... ±10% of setting with a repeatability of 2%

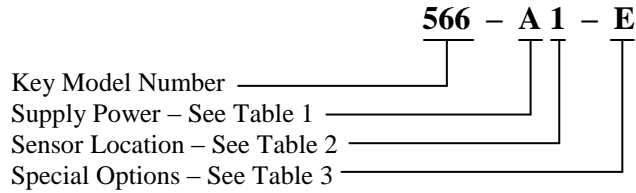
**Analog Output** ±5% of span (4 – 20 mA DC)

**Supply and Load Variation** ..... Less than +0.1

**Frequency Response** ... Flat response 8 Hz to 1 kHz

**Output Current Limit** ..... 22 mA maximum

## Ordering Information



### Key Model Number

Designation	Description
566	Velocity–Acceleration Monitor. Velocity range 0-1.5, 0-3 inches/second. Acceleration range 0-5 G, 0-10 G. Explosion proof & weather proof enclosure

**Table 1 – Supply Power**

Designation	Description
A	120 VAC, 50/60 Hz
B	240 VAC, 50/60 Hz

**Table 2 – Sensor Location**

Designation	Description
1	Internal
2	Remote mounted. Can be mounted up to 1000 feet (300 m) from Model 566 using ungrounded twisted pair wires (not supplied).

**Table 3 – Special Options**

Designation	Description
Omit	No special options.
E	Enclosure exterior painted with gray epoxy enamel for added corrosion protection.

## Net Weight

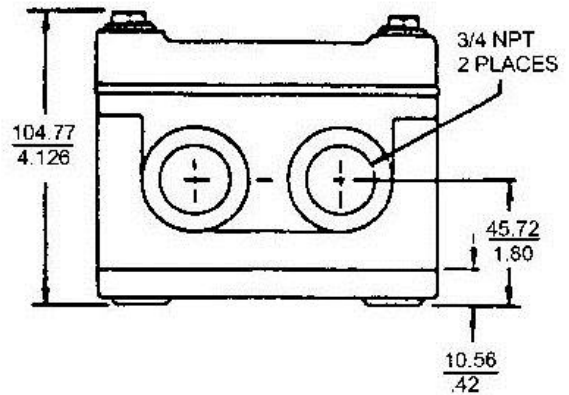
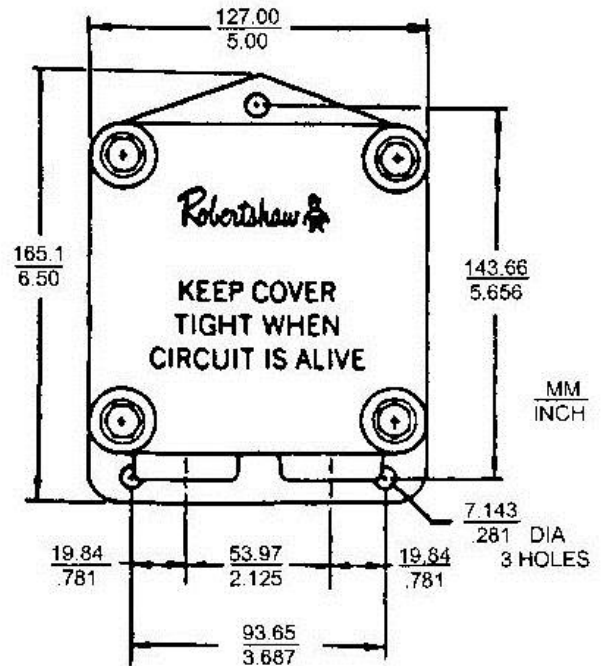
**566-( )1** ..... 5.6 lb (2.5 kg)  
**566-( )2** ..... 6.6 lb (3 kg)

## Shipping Weight

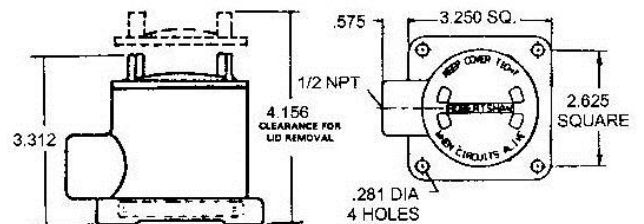
**566-( )1** ..... 8 lb (3.6 kg)  
**566-( )2** ..... 10 lb (4.5 kg)

## Dimensions

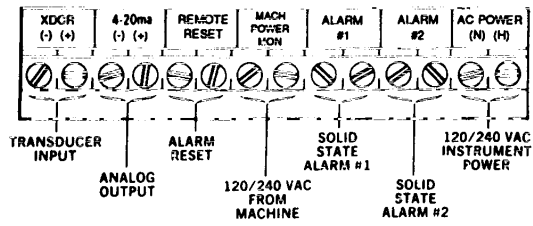
### Model 566



### Optional Remote Sensor



# Customer Connections



Robertshaw Industrial Products  
1602 Mustang Drive  
Maryville, Tennessee 37801  
Phone: (865) 981-3100 Fax: (865) 981-3168  
<http://www.robertshawindustrial.com>