

# VM-16

## MONITORING SYSTEM



# VM-16 MONITORING SYSTEM

## SPECIFICATIONS 1 OF 2

### No. of Channels

No. of Channels : 8ch  
Field changeable from 1 to 8ch.

### Monitor Range

Disp. Vibration : 100\_μm pk-pk or 5mils pk-pk  
Field changeable from 100\_μm pk-pk to 300\_μm pk-pk,  
from 5mils pk-pk to 10mils pk-pk.

Vel. Vibration : 25mm/s pk or 1in/s pk  
Field changeable from 25mm/s pk to 50mm/s pk, or 1  
1in/s pk to 2in/s pk.

Acc. Vibration : 20m/s<sup>2</sup> pk or 2G pk  
Field changeable from 20m/s<sup>2</sup> pk to 50m/s<sup>2</sup> pk, or from  
2G pk to 5G pk.

Thrust position : "-1mm to 0 to +1mm" or "-40mils to 0 to +40mils"

(Select from Model Code each channels)

### Input Transducer

Disp. Vibration : Input from MODEL VK-202A  
Vel. Vibration : Input from MODEL CV-86  
Acc. Vibration : Input from MODEL CA-301 or CA-72  
Thrust position : Input from MODEL VK-202A or VK-302P

Input Impedance: Approx. 50kΩ

### Frequency Response

Disp. Vibration : 5Hz to 4kHz(-3dB), 2nd-Order Band-pass Filter  
Vel. Vibration : 10Hz to 10kHz(-3dB) 2nd-Order Band-pass Filter  
Acc. Vibration : 10Hz to 10kHz(-3dB) 2nd-Order Band-pass Filter  
Thrust position : 0.5Hz(-3dB) 1st-Order Low-pass Filter

### Sequence Function (for vibration monitoring only)

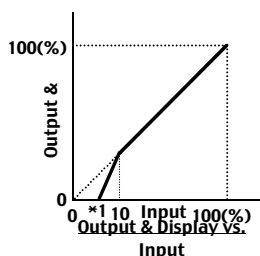
Used to prevent alarm output that is caused by excessive vibration during machine startup. Block off the DANGER/ALERT alarm, or switch the alarm setup value to another number magnified by setup number.

Sequence Setup : Field changeable to alarm blockade or magnification number from 1 to 5.

Factory Preset Value : 1 magnification

### Suppression Function (for vibration monitoring only)

If the vibration value is less than the setup value, this function is forced to suppress the measured vibration value and recorder output.



\*1 Suppression Setup Value :  
Field changeable from 0 to 5%.  
(in 0.1% Increments)

Factory Preset Value : 1.0%

### Conversion Accuracy

I/O Conversion Accuracy : ±2.0% of F.S at calibration frequency at 25°C  
±3.0% of F.S at calibration frequency at 0 to 50°C

### Output

Recorder Output : 1 to 5VDC (Output Impedance: 250Ω)  
4 to 20mADC (Max. Load Resistance: 600Ω)  
(Select from Model Code)

Monitor output : Input signal is output via buffer amplifier.  
Output Impedance : Approx. 1kΩ (Max.0.5mA)

Transducer Power Supply:VK series : -24VDC  
CV and CA series : +24VDC  
(4mA constant current)

### Alarm

Alarm Setup : Vibration monitoring:  
2 points (DANGER, ALERT), from 0 to 100% of  
monitor range, field changeable  
Thrust position monitoring:  
4 points (H-DANGER, H-ALERT, L-DANGER,  
L-ALERT), from 0 to 100% of monitor range, field  
changeable

Alarm Delay Time : 1, 2 or 3 sec. field changeable.

Alarm Reset : AUTO-RESET or SELF-HOLD field changeable.

Alarm Contact Output : DANGER 2 point  
ALERT 2 point  
OK 2 point

Alarm Contact Capacity : Resistance load 250VAC 2A, 110VDC 0.5A

Relay Mode : NORMALLY DE-ENERGIZED or  
NORMALLY ENERGIZED field changeable.

Alarm Contact Type : C contact

### Display

Display : 3 digits 7-segment

Display Accuracy : ±(2.0% of F.S.+1 digit) at 25°C

Measured Value : SCAN, FIX or AUTO Mode, field changeable.

Sensor Gap : Sensor gap voltage value or bias voltage value

Setup Value : DANGER Alarm setup value  
ALERT Alarm setup value

Alarm Indication : DANGER Alarm (DAN) (Red LED lighting)  
ALERT Alarm (ALT) (Red LED flashing)  
Input Abnormality Alarm (OK) (Green LED flashin)

Sequence Lamp : Yellow LED (SEQ.)



## SPECIFICATIONS 2 OF 2

### Operation Contact Input

Normally open.  
**Alarm Reset (RES) :** Reset the SELF-HOLD Alarm.  
**Sequence (SEQ) :** Prevent the alarm output during machine start  
 When sequence circuit is in progress, SEQ. lamp  
 front panel is lit.  
**Contact Type:** Dry contact

### Temperature Range

**Operating Temperature:** 0 to +50°C  
**Storage Temperature:** -30 to +85°C  
**Relative Humidity :** 20 to 90%RH (non-condensing)

### Insulation Resistance

**Input-Output-Power-Contact-GND :** 100MΩ at 500VDC

### Withstand Voltage

**Power-Contact-GND:** 1500VAC for 1 minute.  
**Input-Output-Power, Contact, GND :** 100VAC for 1 minute.

### Power Consumption

**When all channels are used :** Less than including 150VA

### Power Supply Voltage

**Rated Power Supply Voltage:** 100 to 240VAC (50/60Hz) or 24VDC  
**Power Supply Voltage Range:** 85 to 264VAC or 24VDC(10%)

### Materials and Finish

**Main Body :** SPCC Unichromated plating finish (white)  
**Face Plate :** Sheet on aluminum  
**Sheet :** Reinforced polyester top

### Weight

**Main Body :** Approx. 7kg

## MEMORY CARD (OPTION)

### Memory Contents

- \_ Vibration Value
- \_ Input Voltage (GAP voltage)
- \_ Alarm Status
- \_ Sampling Time
- \_ External Operation Contact Status (Reset, Sequence Contact)
- \_ Alarm Set Value
- \_ Alarm Relay Mode
- \_ Alarm Reset Mode
- \_ Alarm Delay Time
- \_ Sequence Set Value
- \_ Suppression Set Value
- \_ Input Abnormal Alarm Set Voltage Value

### Sampling Time

**30 sec. ~ 24 hrs. (Can be set up in 30 sec. increments)**

### File

**File Type** \_Text  
**File Name** \_log1.txt, log2.txt

### Recording Media

**Recommended Memory Card:** CompactFlash™ Manufactured by SanDisk  
**Recommended Memory Capacity :** 32MB, 64MB  
**Others :** Compact Flash Card Adapter is needed  
**Recording Time :** Approx. 30 days when 30 sec. sampling is set up  
 (Memory Capacity 32MB is used)

### Display

**Busy Status :** Yellow LED  
**Stand-by Status :** Green LED  
**Communication Error Status :** Green LED flashes  
**Card Not Inserted Status :** Red LED

### Others

---

---

---

---

---

---

---

---

CompactFlash™ is Trademark of SanDisk corporation.



### **VM-15 Monitoring System**

THE VM-15 is a 4-channel vibration monitor to realize a high cost performance of monitoring system for general-purpose machinery. It has Danger, Alert and Not-OK relay contact outputs (OR logic of each channel). digital display and alarm state lamps for each channel. To imple-

ment a memory card option, VM-15 can store the trend data with a removable memory card (CompactFlash™).

### **VM-5 Series Monitor**



The VM-5 series Monitors are designed in accordance with the API 670 4th Edition for use on acceleration and rotation machinery. Both 8 or 10-slot rack mount type and one-unit standalone type with a built-in power supply are available so the monitor can be applied for any system design from a few channels of vibration monitoring for small machinery to TSI for large turbines.



Contact to

Published In January 2004

## **SEC of America Incorporated**

110A Pine Street, Shallotte, NC 28470, USA  
Phone : 1-910-754-3220 Fax : 1-910-754-3238  
e-mail : [info@sec-america.com](mailto:info@sec-america.com)  
WEB : <http://www.sec-america.com>

## **SHINKAWA Electric Co., Ltd.**

3rd Fl. Shin-kojimachi Bldg. 3-3 Kojimachi 4-chome, Chiyoda-ku, Tokyo 102-0083, Japan  
Phone : 81-3-3263-4411 Fax : 81-3-3262-2171  
WEB : <http://www.shinkawa.co.jp/>

## **SHINKAWA Sensor Technology, Inc.**

4-22 Yoshikawa-kogyodanchi, Higashihiroshima 739-0153 Japan  
Phone : 81-824-29-1118 Fax : 81-824-29-0804  
WEB : <http://www.sst-shinkawa.co.jp>

\* Specifications, outline drawings and other written information can be changed without notice.

