**Board configuration**

*1 The maximum number of input channels on an analysis board (vibration/process signal input) or a phase marker board is 4.

NA: No board is installed in this slot. (Enter "0" to specify vacant slot.)
Vib: Analysis board (vibration/process signal input) is installed in this slot. (Enter "1" to specify.)
PM: Phase marker board is installed in this slot. (Enter "8" to specify.)
−: This slot does not support phase marker board.

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**Custom setup**

- IP address setup
  - Customize work 1ch to 12ch
  - Customize work 25ch to 36ch
  - Customize work 37ch to 48ch
**INPUT**

**ANALYSIS BOARD (VIBRATION SIGNAL INPUT)**

- Number of inputs: 4 channels
- Installation: 12 boards max.
- Input voltage range: 
  - Accuracy guaranteed: -20 V to +20 V
  - 1 V to 5 V, 0 V to 5 V, 0 V to 10 V
- Input impedance: 50 kΩ (approx.)
- Signal input connector: FCN connector (40 pin)
- Data collection interval: 10 seconds (min.)
- Number of analysis boards: Number of phase marker boards ≤ 12

**PHASE MARKER BOARD (PHASE MARKER SIGNAL INPUT)**

- Number of inputs: 4 channels
- Installation: 4 boards max.
- Input voltage range: 
  - -25 V to +25 V
- Min. pulse width: 50μsec
- Input impedance: 50 kΩ (approx.)
- Practical rotation speed range: 60 rpm to 60,000 rpm
- Signal input connector: FCN connector (40 pin)
- Matching plug: FCN-361J040-AU (Fujitsu Component Ltd.)
- Matching hood: FCN-360C040-B (Fujitsu Component Ltd.)

**SYNCHRONOUS WAVEFORM DATA ACQUISITION**

- Number of FFT lines: 400/800/1600 lines
- Number of sampling: 32/64/128 samples per revolution
- Sampling frequency: 51.2 kHz (max.)
- Data collection interval: 10 seconds (min.)

**ASYNCHRONOUS WAVEFORM DATA ACQUISITION**

- Number of FFT lines: 400/800/1600 lines
- Sampling frequency: 51.2 kHz (max.)
- Data collection interval: 10 seconds (min.)

**TREND DATA ACQUISITION**

- Item (vibration signal input): Please refer to the below.
- Item (process signal input): Measurement value
- Collection interval: 1 second (min. under normal condition), or 0.1 second (for 20 seconds before alarm, for 10 seconds after alarm under high-speed acquisition mode)

**OUTPUT**

- Transducer power supply: Piezoelectric transducer: +24VDC/4mA (constant current)

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*2 By changing the setting, it can enter the mode to measure process (voltage) signals.
*3 Total inputs and number of boards installed: Total inputs (vibration) = Number of analysis boards X 4
Note: Number of analysis boards + Number of phase marker boards ≤ 12
*4 When you are using current input (4 to 20 mA), use a reference resistor to convert it to voltage before inputting.
*5 Always disable OK alarm when using integrator in critical mode.
*6 Slot description: Slots for phase marker boards: Slots to which the phase marker signals can be allocated.
<table>
<thead>
<tr>
<th>Slots for phase marker boards</th>
<th>Slots to which the phase marker signals can be allocated</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1, 2</td>
</tr>
<tr>
<td>6</td>
<td>4, 5</td>
</tr>
<tr>
<td>9</td>
<td>7, 8</td>
</tr>
<tr>
<td>12</td>
<td>1 to 11</td>
</tr>
</tbody>
</table>

*7 Transient can be measured up to 15,000 rpm.

※ As this input circuit is not single-ended type, isolation between the channels is not provided.

**ANALYSIS MODE**

Each analysis board can be set to “Critical” mode or “BOP” mode, depending on the application. Available data varies depending on the mode.

<table>
<thead>
<tr>
<th>Critical mode</th>
<th>BOP mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>For analysis of transient operation of large rotating machinery.</td>
</tr>
<tr>
<td>Phase Marker</td>
<td>Required for synchronous sampling of input signal waveform.</td>
</tr>
<tr>
<td>Trend data calculation method</td>
<td>Calculated from synchronous waveform.</td>
</tr>
<tr>
<td>Available trend data.</td>
<td>Rotor speed</td>
</tr>
<tr>
<td></td>
<td>GAP Amplitude</td>
</tr>
<tr>
<td></td>
<td>(Overall, 0.5X, 1X, 2X, Not-1X, nx1 to nx4)</td>
</tr>
<tr>
<td></td>
<td>(fX1, fX2, Sₚₚ max)</td>
</tr>
<tr>
<td></td>
<td>Phase</td>
</tr>
<tr>
<td></td>
<td>(0.5X, 1X, 2X, nx1 to nx4)</td>
</tr>
<tr>
<td>Available wave data</td>
<td>synchronous waveform, asynchronous waveform</td>
</tr>
</tbody>
</table>

*9 Vibration amplitude and phase angle at n times rotation synchronous frequency. (n = 0.01 to 10.00 in 0.01 increments)
*10 Vibration amplitude at specified frequency component (f). (f = 0.01 to 20,000.00 Hz in 0.01 Hz increments)
*11 Phase mark is available only during displacement vibration measurement.
*12 Rotor speed is provided only when phase mark input is available.

**ANALYSIS ACCURACY**

- Vibration amplitude accuracy: Overall, 0.5X, 1X, 2X, nx(n=0.01 to 10.00), Not-1X
  - ±3% Max. of F.S. at 25°C
  - ±5% Max. of F.S. at 0°C to 65°C
  - (for machine speed less than 30,000 r/min)
  - ±5% Max. of F.S. at 25°C
  - ±7% Max. of F.S. at 0°C to 65°C
- Phase accuracy: 0.5X, 1X, 2X
  - ±3 deg of rdg at 25°C
  - ±6 deg of rdg at 0°C to 65°C
- Process signal accuracy: ±1% of F.S. at 25°C ±2% of F.S. at 0°C-65°C

*13 With current input, the accuracy of the standard resistor is not included.
## Specifications

### Status Indication Light (Front Panel)

<table>
<thead>
<tr>
<th>LED Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm LED</td>
<td>ON, when alarming.</td>
</tr>
<tr>
<td>Comm LED</td>
<td>ON, when connecting.</td>
</tr>
<tr>
<td>P-OK1 (green)</td>
<td>ON while power is supplied from the primary</td>
</tr>
<tr>
<td>P-OK2 (green)</td>
<td>ON while power is supplied from the secondary*14</td>
</tr>
</tbody>
</table>

*14 Always off if code “0 (not available)” is specified for secondary power supply.

### Communication with infsys Analysis View

- **Network**: Ethernet 100BASE-TX
- **Protocol**: TCP/IP
- **Connector**: RJ-45

### Power

- **Rated Voltage**: 100-240VAC/50-60Hz
- **Power Supply Voltage Range**: 85-264VAC
- **Input Terminal Block**: Terminal block (M3 screw)

### Power Consumption

- **Power Consumption**: 80 VA (max.)

### Environmental Condition

- **Operating Temperature**: 0 to +65°C
- **Storage Temperature**: -30 to +85°C
- **Relative Humidity**: 20 to 95% RH (Non-condensing, Non-submerged)

### Insulation Resistance

- **Between Power Supply and GND**: 100 MΩ at 500 VDC

### Dielectric Strength

- **Between Power Supply and GND**: 2000 VAC one minute

### Dimensions

- **Dimensions**: 482 (W) x 132.5 (H) x 444 (D) mm (approx.)
- **Panel-mount Size**: EIA 3U height

### Weight

- **At Full Load**: Max. 11 kg (24.31lb)

### Related Software

- **VM-772B Device Config**: For configuration of AP-2000
- **VM-773B infsys Analysis View**: For vibration analysis, display
- **VM-774B infsys Remote View**: For vibration analysis, remote display

### Default Value

<table>
<thead>
<tr>
<th>Default Value</th>
</tr>
</thead>
</table>

### Input (Vibration)

- **Monitoring**: Displacement vibration input
- **Monitor Range**: 0 to 100µm p-p
- **Input Transducer**: FK-202F (non-intrinsic safety)

### Input (Phase Marker)

- **Input Signal**: RD-05A
- **Trigger Mode**: Manual
- **Trigger Level**: -18.0 V
- **Hysteresis**: 1.0 V

### Alarm

- **OK Set Point**: Vibration: Disable, Phase Marker: Disable

### Communication

- **IP Address**: 192.168.8.200
- **Subnet Mask**: 255.255.255.0
- **IP Port No.**: 8882

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### I/O Connector Location

- **Power Supply Input Terminal Block (Primary)**
- **Power Supply Input Terminal Block (Secondary)**

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*15 The unit has terminal blocks at both ends, even when code “0 (not available)” is specified for secondary power supply; however, the terminal block for secondary power supply cannot be used. Also, do not use the terminal block for other purposes including signal relay, etc.

*16 No. of input connector corresponds to the slot no. of the analysis board (or phase marker board).
System Configuration

- **infiSYS View Station**
  - Installed software: VM-773B
  - infiSYS Analysis View
  - Ethernet 100BASE-TX

- **infiSYS Remote Station**
  - Installed software: VM-774B
  - infiSYS Remote View

**DAQpod AP-2000D**
- infiSYS Data Acquisition Unit

**Switching hub**

**Monitor output signals**

**VM-5 or other commercial monitor**

**Sensor, Transducer**

**Other**

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**SHINKAWA Sensor Technology, Inc.**