### DAQpod AP-2000H

#### inﬁSYS DATA ACQUISITION UNIT

**Model Code / Additional Spec. Code** (*Specify only when additional spec. is required.*)

<table>
<thead>
<tr>
<th>Code</th>
<th>Slot 1</th>
<th>Slot 2</th>
<th>Slot 3</th>
<th>Slot 4</th>
<th>Slot 5</th>
<th>Slot 6</th>
<th>Slot 7</th>
<th>Slot 8</th>
<th>Slot 9</th>
<th>Slot 10</th>
<th>Slot 11</th>
<th>Slot 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>1</td>
<td>Vib</td>
<td>Vib</td>
<td>Vib</td>
<td>Vib</td>
<td>Vib</td>
<td>Vib</td>
<td>Vib</td>
<td>Vib</td>
<td>Vib</td>
<td>Vib</td>
<td>Vib</td>
<td>Vib</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PM</td>
<td>PM</td>
<td>PM</td>
</tr>
</tbody>
</table>

**Board configuration (System A)**

- **Model Code**
  - Specify only when additional spec. is required.

- **IP address setup**
  - Customize work 1ch to 12ch
  - Customize work 25ch to 36ch
  - Customize work 49ch to 60ch
  - Customize work 73ch to 84ch

- **Communication board**
  - Analysis board or phase marker board

- **System B**
  - System A

- **Back**
  - Communication board

- **Front**
  - Analysis board

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

2. NA: No board is installed in this slot. (Enter "0" to specify vacant slot.)

3. Vib: Analysis board (vibration/process signal input) is installed in this slot. (Enter "1" to specify.)

4. PM: Phase marker board is installed in this slot. (Enter "8" to specify.)

5. -: This slot does not support phase marker board.
**Specifications**

**INPUT**

**ANALYSIS BOARD (VIBRATION SIGNAL INPUT)**

- Number of inputs: 4 channels
- Installation: 24 boards max.
- Input voltage range: -25V to +25V
  (Accuracy guaranteed: -20 V to +20 V)
- Trigger mode: Auto/Manual
- Input impedance: 50 kΩ (approx.)
- Signal input connector: FCN connector (40pin)
- Matching plug: FCN-361J040-AU (Fujitsu Component Ltd.)
- Matching hood: FCN-360C040-B (Fujitsu Component Ltd.)
- **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 of system A + Total inputs of system B)
  * Number of analysis boards of each system x 4
  Condition for each system is:
  Number of analysis boards + Number of phase marker boards ≤ 12
- **4** When you are using current input (4 to 20mA), use a reference resistor to convert it to voltage before inputting.
- **5** Always disable OK alarm when using integrator in critical mode.

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

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

**OUTPUT**

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

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**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 table 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)

**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.

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<thead>
<tr>
<th>Critical mode</th>
<th>BOP mode</th>
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<tr>
<td>Application</td>
<td>For analysis of transient operation of large rotating machinery. For analysis of rated rotation of balance of plant equipment.</td>
</tr>
<tr>
<td>Phase Marker</td>
<td>Required for synchronous sampling of input signal waveform. Not required.</td>
</tr>
<tr>
<td>Trend data calculation method</td>
<td>Calculated from synchronous waveform. Calculated from asynchronous waveform.</td>
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<tr>
<td>Available trend data.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rotor speed</td>
</tr>
<tr>
<td></td>
<td>GAP Amplitude (Overall, 0.5X, 1X, 2X, Not-1X, nX1 to nx4^9, fX1(fX2)(max)</td>
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<td>synchronous waveform, asynchronous waveform</td>
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- **8** Under process signal measurement mode, the data is processed by a moving average of 0.1 sec, which is equivalent to frequency response of 5 Hz (-3dB).

**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 rpm)
- 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 to 65°C

- **9** Vibration amplitude and phase angle at n times rotation synchronous frequency.
- **10** Vibration amplitude at specified frequency component (f).
- **11** Phase mark is available only during displacement vibration measurement.
- **12** Rotor speed is provided only when phase mark input is available.

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Specifications

**STATUS INDICATION LIGHT (FRONT PANEL)**
- ALARM LED (red): ON, when alarming.
- COMM LED (green): ON, when connecting.
- P-OK1 (green): ON while power is supplied from the primary.
- P-OK2 (green): ON while power is supplied from the secondary.*14

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

**COMMUNICATION with infiSYS ANALYSIS VIEW**
- Network: Ethernet 100BASE-TX
- Protocol: TCP/IP
- Connector: RJ-45

*15 One each of I/O connector is provided for system A and B. An external switching hub is required.

**POWER**
- Rated voltage: 100-240 VAC/50-60Hz
- Power supply voltage range: 85-264 VAC
- Power supply input terminal block (primary)*16
- Power supply input terminal block (secondary)*16

**POWER CONSUMPTION**
- Power consumption: 120 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**
- Panel-mount size: EIA 3U height

**WEIGHT**
- At full load: Max. 12kg (26.51lb)

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

**INPUT (VIBRATION)**
- Monitoring: Displacement vibration input
- Monitor range: 0 to 100 µm 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 (SYSTEM A)**
- IP Adress: 192.168.8.200
- Subnet mask: 255.255.255.0
- Port No.: 8882

**COMMUNICATION (SYSTEM B)**
- IP Adress: 192.168.8.201
- Subnet mask: 255.255.255.0
- Port No.: 8882

**I/O Connector Location**

- 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.

- No. of input connector corresponds to the slot no. of the analysis board (or phase marker board).

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**WARNING**
Some functions may not be available with old version. For details, please refer to “infiSYS Family Improvement Information” (6H16-011).
OTHERS


SHINKAWA Sensor Technology, Inc.