DAQpod AP-2000D
infiSYS DATA ACQUISITION UNIT

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

AP-2000D – 1 □

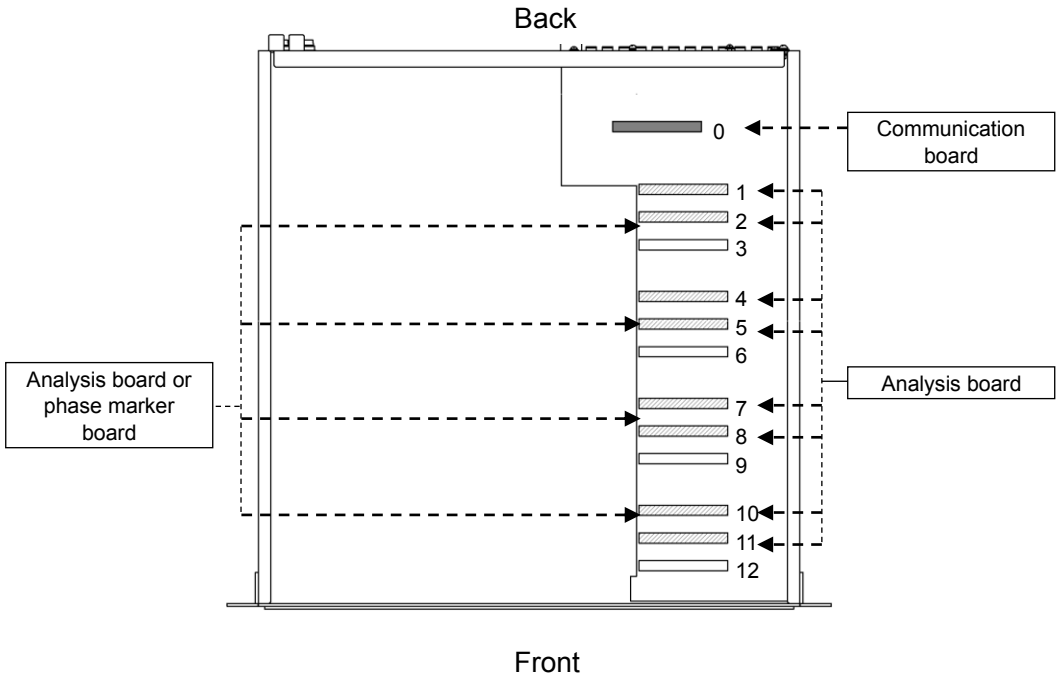
Case (Max. number of boards)		Power supply input (Primary)		Power supply input (Secondary)	
D	12 boards	1	AC100-240V	0	NA
				1	AC100-240V

-A□□□-□□□-□□□-□□□ / CS □

	Code	Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6	Slot 7	Slot 8	Slot 9	Slot 10	Slot 11	Slot 12
Board configuration *1	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1	Vib	Vib	Vib	Vib	Vib	Vib	Vib	Vib	Vib	Vib	Vib	Vib
	8	—	—	PM	—	—	PM	—	—	PM	—	—	PM

Custom setup					
0	・IP address setup	1	・IP address setup ・Customize work 1ch to 12ch	3	・IP address setup ・Customize work 25ch to 36ch
		2	・IP address setup ・Customize work 13ch to 24ch	4	・IP address setup ・Customize work 37ch to 48ch

*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.)
About Phase marker board implementation
A phase marker board cannot be installed in slot 3 if slots 1 and 2 are not installed.
A phase marker board cannot be installed in slot 6 if slots 4 and 5 are not installed.
A phase marker board cannot be installed in slot 9 if slots 7 and 8 are not installed.
— : This slot does not support phase marker board.



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Specifications

INPUT

ANALYSIS BOARD (VIBRATION SIGNAL INPUT)*2

Number of inputs : 4 channels
Installation : 12 boards max. *3
Input voltage range : -25 V to +25 V
(Accuracy guaranteed : -20 V to +20 V)
(vibration signal input)
1 V to 5 V, 0 V to 5 V, 0 V to 10 V
(process signal input)*4
Input impedance : 50 kΩ (approx.)
Signal input connector (40 pin)
Matching plug : N361J040AU (Otax)
Matching hood : N360C040B (Otax)
or
Matching plug and hood : 1473381-1 (TE)

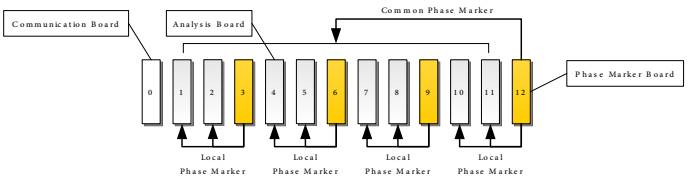
*2 By changing the setting, it can enter the mode to measure process (voltage) signals.
*3 Total inputs and number of boards installed
Total inputs (vibration) = Number of analysis boards X 4
Note;
Number of analysis boards + Number of phase marker boards ≤ 12
*4 When you are using current input (4 to 20 mA), use a reference resistor to convert it to voltage before inputting.
*5 Always disable OK alarm when using integrator in critical mode.

PHASE MARKER BOARD (PHASE MARKER SIGNAL INPUT)

Number of inputs : 4 channels
Installation : 4 boards max. *6
Input voltage range : -25 V to +25 V
Min. pulse width : 50µsec
Trigger mode : Auto/Manual
Input impedance : 50 kΩ (approx.)
Practical rotation speed range
: 60 rpm to 60,000 rpm *7
Signal input connector (40 pin)
Matching plug : N361J040AU (Otax)
Matching hood : N360C040B (Otax)
or
Matching plug and hood : 1473381-1 (TE)

*6 Slot description

Slots for phase marker boards	Slots to which the phase marker signals can be allocated
3	1, 2
6	4, 5
9	7, 8
12	1 to 11



*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 : +24VDC/4mA (constant current)

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) *8
: 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)

*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 (-3 dB).

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.

	Critical mode	BOP mode
Application	For analysis of transient operation of large rotating machinery.	For analysis of rated rotation of balance of plant equipment.
Phase Marker	Required for synchronous sampling of input signal waveform.	Not required.
Trend data calculation method	Calculated from synchronous waveform.	Calculated from asynchronous waveform.
Available trend data.	Rotor speed GAP Amplitude (Overall, 0.5X, 1X, 2X, Not-1X, nX1 to nX4*9, fX1, fX2*10, $S_{(p\text{-}p)\ max}$) Phase (0.5X, 1X, 2X, nX1 to nX4*9)*11	Rotor speed*12 GAP Amplitude (Overall, 0.5X, 1X, 2X, Not-1X, nX1 to nX4*9, fX1, fX2*10) Phase
Available waveform data	synchronous waveform, asynchronous waveform	asynchronous waveform

*9 Vibration amplitude and phase angle at n times rotation synchronous frequency. (n = 0.01 to 10.00 in 0.01 increments)
*10 ibration 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)
$S_{(p\text{-}p)\ max}$: ±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 *13 : ± 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.

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Specifications

STATUS INDICATION LIGHT (FRONT PANEL)

ALARM LED (red)	: ON, when alarming.
COMM LED (green)	: ON, when connecting. Flashing, when communicating
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

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 infiSYS Analysis View	: For vibration analysis, display
VM-774B infiSYS Remote View	: For vibration analysis, remote display

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

Default Value

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

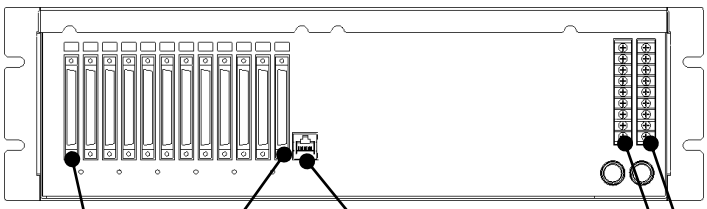
OK set point

Vibration	: Disable
Phase Marker	: Disable

COMMUNICATION

IP Adress	: 192.168.8.200
Subnet mask	: 255.255.255.0
IP Port No.	: 8882

I/O Connecotor Location



*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).

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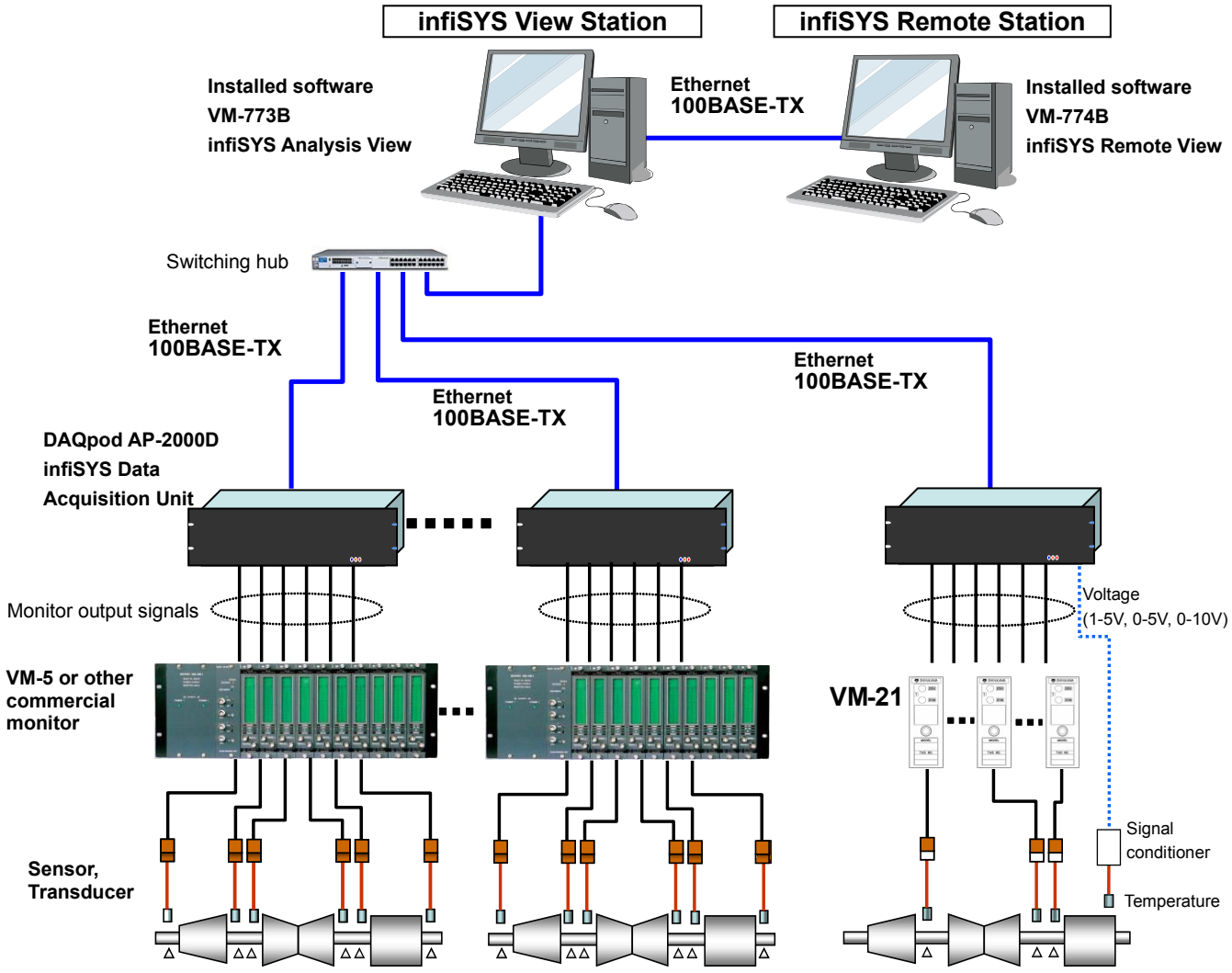
System Configuration



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