
Hard Disk Unit for PC CPU Module Compatible with MELSEC-Q Series **PPC-HDD(MS) User's Guide** CONTEC CO.,LTD.

Thank you for purchasing the PPC-HDD(MS) hard disk unit for PC CPU Module. Follow the instructions in this guide to use the product.

Notes!

- *The hard disk drive can be easily damaged by electrostatic discharge (ESD). Use meticulous care in handling the hard disk unit for moving or assembling.*
- *When using the hard disk unit, be sure to satisfy the conditions listed as its general specifications. For use in a severe environment, use the silicon disk unit instead.*
- *For use in a place subject to vibration or shock, use a set of shock-proof brackets [PPC-HBR-01] available as an option.*
- *As the hard disk unit has a limited life, be sure to back up important data recorded on the unit. To back up the contents of the hard disk, including the OS, you should use a commercial backup tool (such as Symantec Ghost).*
- *Do not touch the interface connector of the hard disk unit.*
- *Before plugging to or unplugging from the connector on the hard disk unit, be sure to turn off the power unit.*
- *CONTEC assumes no liability for any loss or destruction of data recorded by this product regardless of the attribute of the causing fault or failure. Be sure to back up important data.*

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About the PPC-HDD(MS)

- This product is the hard disk unit dedicated to the PC CPU Module [PPC-CPU686(MS)] compatible with the Mitsubishi Programmable Logic Controller MELSEC-Q series.
- The drive in the hard disk unit is a 2.5-inch IDE hard disk with a storage capacity of 20 GB.
- For configuration of the system using the hard disk unit and its connection, refer to the PPC-CPU686(MS) user's manual.

Product Configuration

- Unit...1
- User's Guide (this booklet) ...1
- IDE connection cable...1
- Unit fixing screw...1 (M3 x 12mm)

Specifications

Function Specifications

Item	Specification
Capacity	20GB *1
Bus interface	IDE
Internal drive	2.5-inch hard disk drive
Transfer rate (Max.)	66.6MB/sec (Ultra DMA Mode 4), 16.6MB/sec (PIO Mode 4)
Reliability	1/10 ¹³ bits read
Connection to PC CPU Module	Dedicated 40-pin cable bundled
Extension	40-pin half-pitch connector for connecting slave IDE device Capable of connecting one IDE device with master/slave selector switch
Access indicator *2	Front-panel LED (red)
High-temperature detection	Ambient temperature detected:47[+/-]3°C or higher Warning method: High-temperature detection function of bus interface driver software
External dimensions (mm)	27.4 (W) x 130.0 (D) x 98.0 (H) (Excluding protrusions)
Power consumption	+5VDC 0.88A (Max.)
Weight	300g (450g with optional unit fixing brackets attached)
Average life *3	5 years or 20,000 hours of energized time, whichever reached first

*1 1GB = 1,000,000,000bytes

*2 When two disk units (hard disk and/or silicon disk units) are connected in a master/slave arrangement, they have common access indication. When either of the master and slave devices is accessed, therefore, both of their access lamps come on at the same time.

*3 Under the assumptions : Less than 333 power on hours per month. And Seeking/Writing/Reading operation is less than 20% of power on hours.

General Specifications

Item	Specification
Operating ambient temperature	5 to 50°C (at a temperature change rate of 20°C/h or less)
Storage ambient temperature	-25 to 65°C
Operating ambient humidity	8 to 90% RH (No condensation)
Storage ambient humidity	5 to 95% RH (No condensation)
Maximum wet-bulb temperature	29°C
Vibration resistance (during operation)	Tested 10 times (for 45 minutes) in each of the X, Y, and Z directions in conformance with JIS C0040. 10 to 55 Hz: 0.035 mm <With the optional hard disk unit fixing brackets attached> Tested 10 times (for 80 minutes) in each of the X, Y, and Z directions in conformance with JIS C0040. 10 to 57 Hz: 0.075 mm 57 to 150 Hz: 9.8 m/s ²
Shock resistance (during operation)	Tested 3 times in each of the X, Y, and Z directions in conformance with JIS C0041. 49 m/s ² , 11 ms
Operating ambience	No corrosive gas
Operating altitude	2000 m or less *3
Installation location	Inside the control panel (Do not install the base unit on the DIN rail when the hard disk unit is used.)
Over voltage category *1	II or lower
Pollution degree *2	2 or less

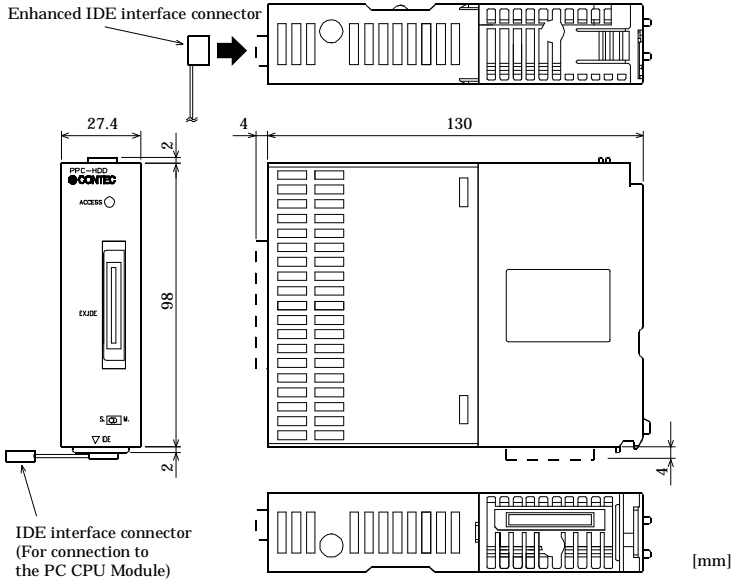
*1 The overvoltage category of a device indicates which distributor in the range from public distribution network to machinery the device is assumed to be connected to. Category II applies to devices to which power is supplied from fixed facilities. The surge voltage of those devices is 2500 V whose rated voltage is 300 V.

*2 The index indicating the degree to which conductive substances are generated in the operating environment.

Pollution level 2 indicates the environment that generates only nonconductive pollutants while allowing accidental condensation to cause temporary conduction.

*3 The hard disk unit may fail and cannot be used in an environment in which the air is compressed to over the atmospheric pressure generated at an altitude of around 0 m.

External Dimensions



Related Options

- PPC-SDD(MS) Series Silicon disk unit
- IPC-CDD-02 CD-ROM / DVD-ROM drive
- PPC-HBR-01 Hard disk unit shock-proof brackets
(A set of upper and lower brackets)
- PPC-CPU686(MS)-MU User's Manual
PC CPU Module User's Manual
Bus Interface Driver User's Manual

Installing the Hardware

Precautions

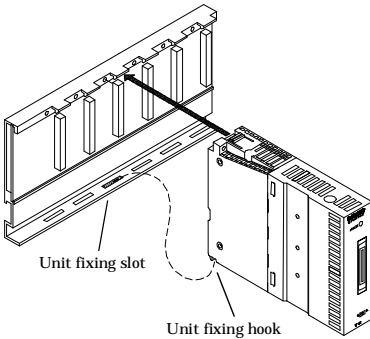
Install the hard disk unit on the MELSEC-Q Series base unit before it can be used.

Before using the hard disk unit, be sure to mount the MELSEC-Q Series base unit on the control panel using screws. Do not use the base unit mounted on the DIN rail.

For mounting the base unit, refer to the “Mitsubishi General-purpose Sequencer QCPU (Q Mode) User’s Manual (Hardware Design, Maintenance and Inspection)”.

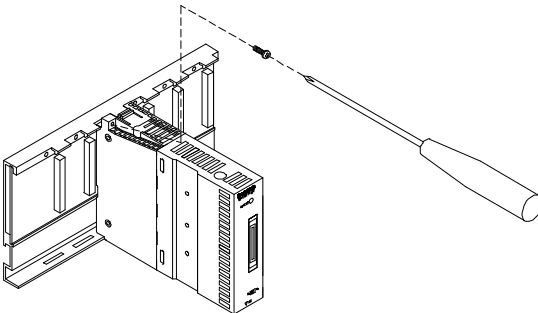
Fastening the Hard Disk Unit

- Fit the unit fixing hook in the unit fixing slot in the base unit, then push the hard disk unit in the direction of the arrow to set the hard disk unit on the base unit



- After setting the hard disk unit on the base unit, be sure to use the attached unit fixing screw to fasten the hard disk unit to the base unit.
- Tighten the screw within the following torque range.

Tightening torque range: 36 to 48N·cm

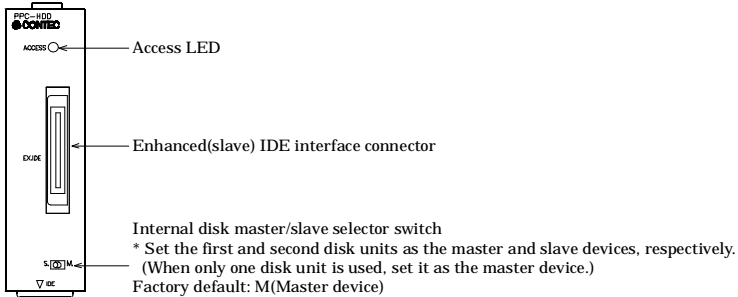


If the hard disk unit may be subject to vibration between 4.9 and 9.8 m/s², use a set of hard disk unit shock-proof brackets [PPC-HBR-01] available as an option. For installing the base unit with the hard disk unit on the control panel, refer to the manual for the shock-proof brackets.

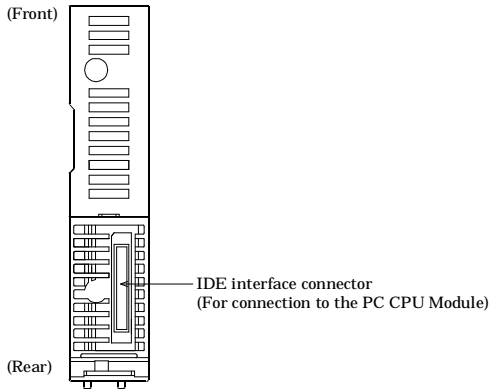
Functions of Components

Component Locations

Front panel

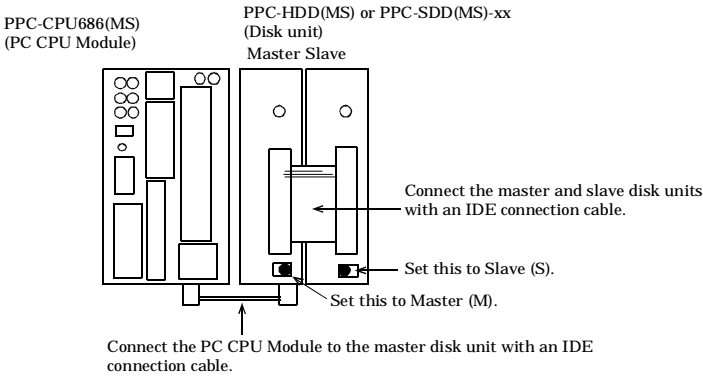


Bottom



For the pin assignments in the IDE interface and Enhanced IDE interface connectors, refer to the user's manual for the PC CPU Module.

Master/Slave Arrangement



Note!

- Setting the silicon disk unit as the master device involves a restrictions. For details, refer to the manual for the silicon disk unit.
- To use the hard disk unit along with the dedicated CD-ROM drive [IPC-CDD-02] in a master/slave arrangement, refer to the manual for the dedicated CD-ROM drive.

Average Life of the Hard Disk Drive

The average life of the hard disk drive is 5 years or 20,000 hours of energized time whichever reached first.

High-temperature Detection Feature

Using the hard disk unit in a high-temperature environment shortens the life of the hard disk. The hard disk unit has a high-temperature detection feature to detect an ambient operating temperature of $47\pm 3^{\circ}\text{C}$ or higher using the high-temperature detection function of bus interface driver software. Use this feature as a means of warning when the hard disk unit is being used at high temperature.

When high-temperature detection is not necessary, you can disable the high-temperature detection function by setting with the bus interface driver software. In that case, high-temperature detection is not performed.

For details on this function, refer to the Bus Interface Driver User's Manual [PPC-CPU686(MS)-MU, separately priced].

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