

User's Guide 0086

Option Unit for DS-7000 Patient Monitor

HU-71 BP/TEMP Unit
HU-72 BP Unit
HU-73 BP/TEMP/CO Unit

 **FUKUDA DENSHI CO., LTD.**

39-4, Hongo, 3-chome, Bunkyo-ku, Tokyo, Japan
Phone: +81-3-3815-2121 Fax: +81-3-3814-1222

Printed in Japan 4L0039780 200801
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 0086

This unit conforms with the provisions of Medical Device Directive 93/42/EEC in connecting with the Fukuda Denshi monitoring equipment, labeled "CE0086".

THE PERSONS RESPONSIBLE FOR PLACING DEVICES ON THE EC MARKET UNDER MDD 93/42/EEC
NAME : FUKUDA DENSHI UK
ADDRESS : 13 WESTMINSTER COURT, HIPLEY STREET
OLD WOKING, SURREY GU22 9LG, U.K.

Thank you for purchasing this product.
Before using this product, read the following precautions to make sure the product is used correctly and safely.
For procedures of patient cable connection and monitoring setup, please refer to the "DS-7000 Patient Monitor Operation Manual".

Safety Precautions

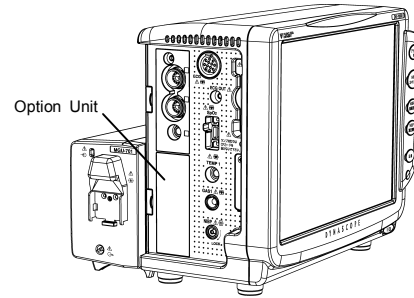
Be sure to follow the precautions given below. These are important matters related to safety. Indications and their meanings are as follows:



Failure to follow this message may result in death or serious injury, or complete failure of the equipment.

General Description

By inserting the HU-71/HU-72/HU-73 Option unit to the DS-7000 Patient Monitor, monitoring of additional parameters (BP, TEMP, CO) will be enabled.



<DS-7000 Patient Monitor>

Lineup of Option Unit and Combination

The following 3 types of option unit (maximum of 2 units) can be inserted to the DS-7000 simultaneously. (However, only one unit for the HU-73.)

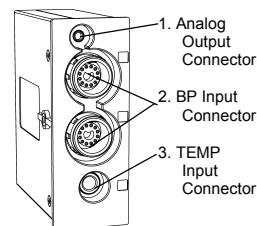
| Model Type | Measurement Parameter | | |
|------------|-----------------------|------|----------------|
| | BP | TEMP | Cardiac Output |
| HU-71 | 2ch | 1ch | × |
| HU-72 | 3ch | × | × |
| HU-73 | 1ch | 1ch | ○ |

Depending on the combination of the Option Unit, the number of measurement parameters will differ.

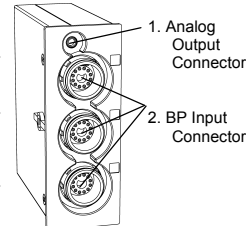
| Option Unit 1 | Option Unit 2 | BP (No. of Channels) | TEMP (No. of Channels) | Cardiac Output |
|---------------|---------------|----------------------|------------------------|----------------|
| HU-71 | None | 2 | 1 | — |
| HU-72 | None | 3 | — | — |
| HU-73 | None | 1 | — | ○ |
| HU-72 | HU-72 | 6 | — | — |
| HU-72 | HU-71 | 5 | 1 | — |
| HU-72 | HU-73 | 4 | 1 | ○ |
| HU-71 | HU-71 | 4 | 2 | — |
| HU-71 | HU-73 | 3 | 2 | ○ |

Names of Parts and Their Functions

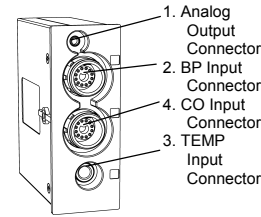
HU-71 Front Side



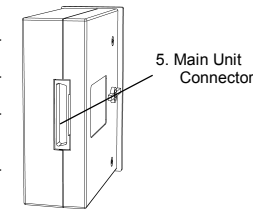
HU-72 Front Side



HU-73 Front Side



HU-71/72/73 Rear Side



1. Analog Output Connector:
Outputs the analog waveform (BP channel 1 of each option unit).
2. BP Input Connector:
Connects the BP interface cable.
3. TEMP Input Connector:
Connects the TEMP sensor cable.
4. Cardiac Output Input Connector :
Connects the catheter relay cable.
5. Main Unit Connector:
Connects the main unit (DS-7000)

Connection to the Patient Monitor

WARNING

The installation of this product will be performed by our service representative. The users should not attempt the procedure as electric shock or malfunction may be caused.

Accessories

| No. | Item | Quantity |
|-----|-----------------------|----------|
| 1 | This Operation Manual | 1 |

Specification

Size/Weight

33 (W)×90 (D)×90 (H) mm

*Not including the protrusion

180g

Environmental Condition

Operating Temperature : 10–40°C
Operating Humidity : 30–85% (non-condensing)
Transport/Storage Temperature : –10–60°C
Transport/Storage Humidity : 10–95% (at 60°C) (non-condensing)

Power Requirement

±8V/±150mA or below
+5V/100mA or below

Measurement Specification

Blood Pressure
Transducer
Sensitivity : 5 μ V/V/mmHg
Measurement Range : –50–300mmHg
Frequency
Characteristic : DC–6Hz/8Hz/12Hz/40Hz
Accuracy : ±2% of full scale or within ±1mmHg/0.1kPa
Zero Balance Range : within ±150mmHg
PR Measurement
Range : Adult 20–300bpm±3%
Neonate 30–300bpm±3%

Temperature
Method : Thermistor Method
Probe : only YSI-400 series
Measurement Range : 0–50°C/32.0–122.0°F
No. of Channels : 1 channel

Cardiac Output
Measurement Method : Thermodilution Method
Measurement Range : 0.1–20L/min
Measurement Temperature Range and Accuracy
Blood Temperature : 17–45°C ± 0.3°C
Injectate Temperature : –1–35°C ± 0.5°C

Analog Output
Output Waveform : BP Channel 1 of Option Unit
Output Voltage : 1V/100mmHg (fixed)
Accuracy of Sensitivity : within ±10%
Analog Output
Frequency Range : 0.05Hz–30Hz
Output Range : –0.5 to +3V (0mmHg = 0V)
Delay Time : 35ms and below
Output Impedance : 100Ω±5%
Load Impedance : 1kΩ to ∞

WARNING

- Analog signal has a delay output. (about 35ms). When connecting to a device using vital signs as trigger signals (ex. IABP), make sure the delay time fulfills the specifications of the connected device.
- The delay time may differ depending on the waveform shape or artifact interference.