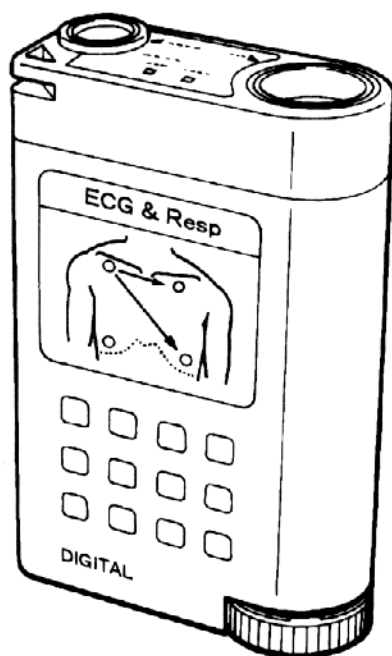


ECG & Respiration Transmitter

LX-5120

Operation Manual



CE 0086

- Before using the LX-5120, you must first thoroughly read this manual.
- Remember to keep this operation manual in an easily accessible place near the unit for future reference.

CE 0086

This device bears the CE label in accordance with the provisions of Medical Device Directive 93/42/EEC.

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.

Important Information

- Only a physician or a person under the guidance of a physician can use this product.
- The information contained in this document is subject to change without notice due to improvement in the equipment.

CAUTION

Federal law restricts this device to sale by or on the order of a physician.

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Telemetry Precautions

For proper management of the telemetry installation, consult your Fukuda Denshi representative concerning the following:

- Plan the installation of your telemetry system taking into account your entire medical facility needs and plant requirements.
- Be sure the antenna system installed meets the facility and plant requirements.

WARNING

This Radio Frequency device is susceptible interference from Television station and other outside sources. Interference may prevent the monitoring of patients connected to this devices. If problems exist contact your local service representative.

NOTE : This device operates in the 400MHz UHF band. The exact frequency of operation depends on designation, has been present for your facility and may be identified by cross-referencing the channel designator on the device with the Telemetry Channel-Frequency Table in this manual.

To assure safe and reliable operation, observe the following precautions:

- Be sure that no other devices are using the frequency assigned to this transmitter.
- This device is susceptible to interference from electrosurgical knives and other computerized equipment. If problems occur contact your local Fukuda Denshi service representative.
- Any obstruction such as reinforced concrete or large metallic surfaces between the receiver and the transmitter can affect reception. If problems occur contact your local Fukuda Denshi service representative.
- When the low battery alarm is present replace the battery.

CAUTION

Users are advised to periodically contact the FCC and local TV station to determine television transmission and other transmitter frequencies that may be used in their geographic area.
~~Users are advised to periodically contact the FCC and local TV~~

⚠ CAUTION

Some pacemaker pulses are difficult or not possible to detect.

This is dependent on the amplitude and width of the pacemaker pulse in addition to the type of pacemaker and lead type used (unipolar, bipolar, etc.)

⚠ CAUTION

QRS detection allows for detection of low amplitude ECG. But if excessive artifact is present on the ECG waveform, the noise may be detected as QRS in error.

⚠ CAUTION

Make sure each receiving telemetry channel corresponds to that of the transmitter worn by the patient or by the transmission module connected to a bedside monitor.

Instruct the patient wearing a telemetry transmitter to remain within the range of the antenna system.

To avoid interference from other transmitters in the adjacent area or hospital, make sure the proper channel identification and group codes are used.

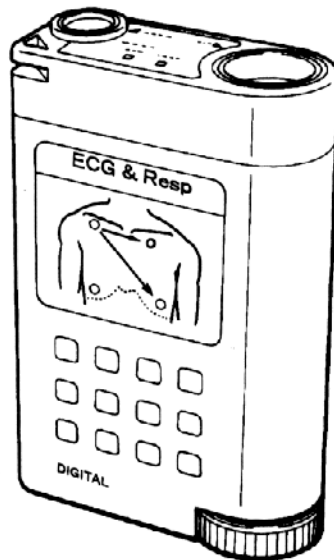
Refer system settings to your Fukuda Denshi service representative..

1. GENERAL DESCRIPTION

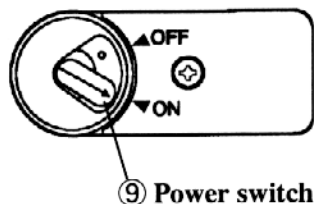
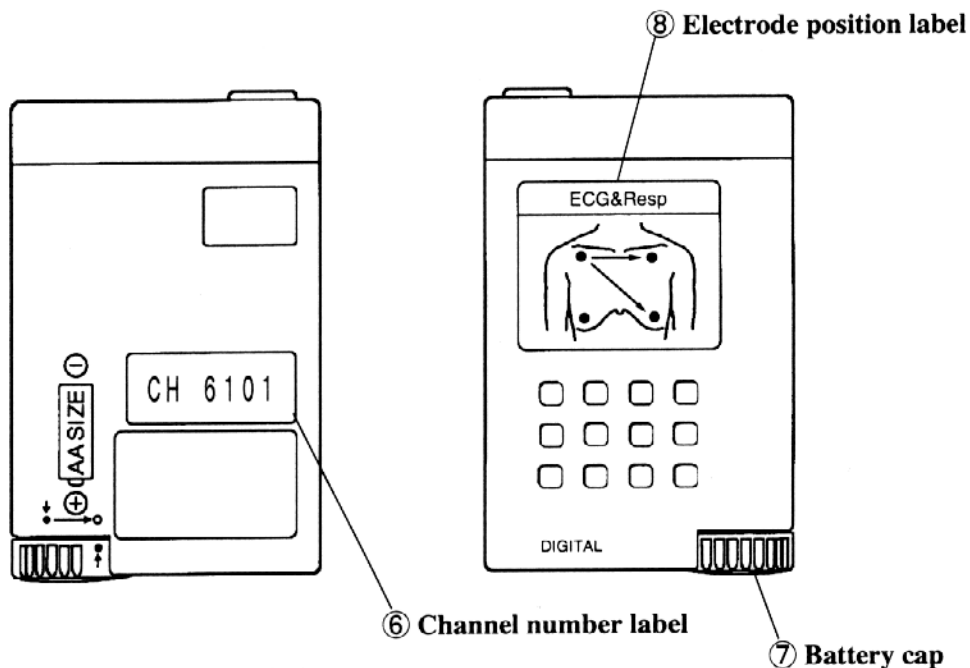
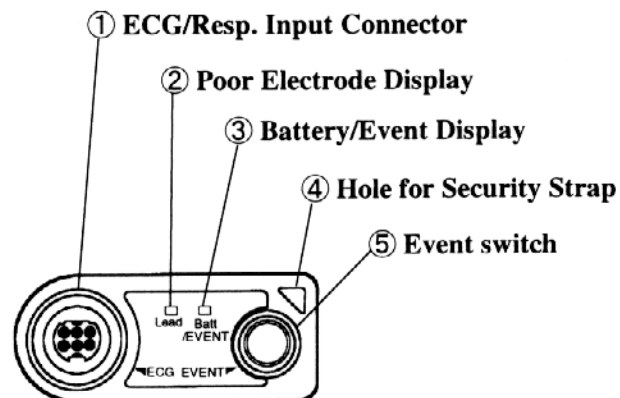
The LX-5120 is a radio telemetry transmitter designed for monitoring the ECG and Respiration. The transmitter will operate 5 continuous days from one "AA" size alkaline battery. On the top panel, Battery & Electrodes status displays are provided.

The LX-5120 is transmitting a digitized code that includes the transmitting channel number and group codes to prevent the interference by other radio apparatus. Read the receiver and display units operation manual before using this transmitter.

EXTERNAL APPEARANCE



2. CONTROLS AND INDICATORS



① ECG/Resp. Input Connector

Connect the accessory patient cable.

② Poor Electrode Display

This lamp will light for two minutes when the electrodes are making poor contact or the patient cables are broken or disconnected.

③ Battery/Event Display

When the power switch is turned on, the battery check lamp will light for about 10 seconds. If the battery is low, the lamp will not light after turning on the power switch. The battery should be replaced with a new one.

Also, when the Event switch is pressed, this lamp will light.

④ Hole for Security Strap.

Attach the accessory security strap to prevent dropping of the transmitter.

Adjust the length of the strap to the appropriate length for the patient.

④ Hole for Security Strap.

⑤ Event switch

When this switch is pressed, this function will be activated at the receiver. This can be designated on or off at the receiver.

⑥ Channel number label

The transmitter channel number is printed on this label. Select the receiver channel to correspond to this channel number.

⑦ Battery cap

This is the battery compartment cap. To close the battery compartment, align the mark on the cap and arrow mark on the lower part of the transmitter, then push and turn the cap clockwise to align the dot-marks with each other.

⑧ Electrode position label

Typical electrode positions are shown on this label.

⑨ Power switch

This is the power switch. When the switch is turned to the ON position, the "Batt" lamp will be lit for about 10 seconds.

If the battery is weak or has no power, the "Batt" lamp will not light even when the switch is turned to the ON position.

4. SET THE GROUP CODE

The LX-5120 transmits a digitized code which includes the transmitting channel number and group code to prevent interference from other radio apparatus or a neighboring hospital's transmitter.

There are 64 group codes. Zero ("0") is set for factory adjustment.

The receiver is required to set the group code to match the transmitter's group code (The receiver group code's factory adjustment is "0").

The receiver is continuously checking the incoming channel number and group code versus the number and code programmed to the receiver. If the transmitter's group code is required to be changed, please contact your nearest Fukuda representative.

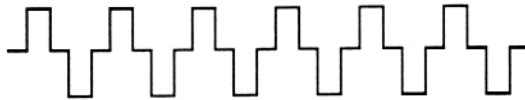
NOTE : The system function to prevent interference will not work

5. SELECT THE CORRESPONDING RECEIVER CHANNEL

Select the receiver channel at the patient monitor to correspond to the telemetry transmitter. The channel number will be displayed on the screen display. If the receiver channel and transmitter channel do not match, the monitor will display a caution and the unique waveform shown below. This function will prevent telemetry channel interference from other transmitters or external sources.

NOTE : This function will only be active if this has been incorporated into the receiver.

Example of DS-5800N telemetry patient's display when interference is present.



This unique waveform will also be displayed when a group or channel number mismatch occurs.

8. SPECIFICATIONS

Parameters	: 1 or 2 channel ECG and respiration
ECG input impedance	: More than 50 Meg-ohms
ECG max. input range	: ± 5 mV
ECG freq. response	: 40 Hz (refer receiver filter also)
ECG time constant	: 0.8 seconds (1.5 seconds for option)
Resp. measurement	: Impedance pneumography
Resp. max. input range	: ± 5 ohms
Resp. meas. electrodes	: RA & LL, ECG channel 1
Resp. freq. response	: 0.3 to 3 Hz (refer receiver filter also)
Defibrillator protection	: By protection circuit in the patient cable
Status information	: Electrode fail, Low battery (below 1 volt), Event switch, Pacemaker detection, Channel ID, 64 kinds of Group code.
Transmission freq.	: 400 MHz Band. Exact freq. depend on the destination
RF Output power	: $1.0 \text{ mW} \pm 2 \text{ dB}$
Channel spacing	: 12.5 kHz
Occupied band width	: 8.5 kHz
Modulation mode	: Digital, Frequency shift keying
Power source	: One 1.5 V AA size alkaline battery
Battery polarity protection	: Mechanical reverse polarity protection
Battery life	: 5 days min.
Water immersion degree	: IP-66
Weight	: Approx. 110 g (including battery)
Dimensions	: 54(W) x 86(H) x 22(D) mm
Operating temperature	: 10 to 40 $^{\circ}\text{C}$
Operating humidity	: 30 to 85 % RH (no dew condition)
Storage temperature	: -10 to 60 $^{\circ}\text{C}$
Storage humidity	: 10 to 95 % RH



CAUTION : Specifications are subject to change without prior notice.