

# **CASIO OP-1 Adaptor**

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## **INSTRUCTION MANUAL**

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**CASIO®**

## PREFACE

Thank you very much for your purchase of the Adaptor "OP-1" for exclusive use with the CASIO FX-9000P.

This adaptor is specially designed for connecting the FX-9000P with the printer, mini-FDD, CMT units, etc.

This instruction manual covers how to connect the OP-1 with the computer and with various peripheral equipments. For information on interfacing for commands and operating procedures, see the reference manual on computer language and other applicable instruction manuals.

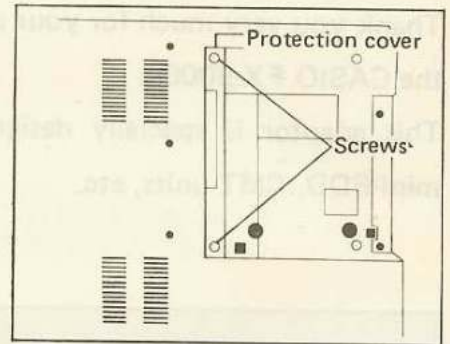
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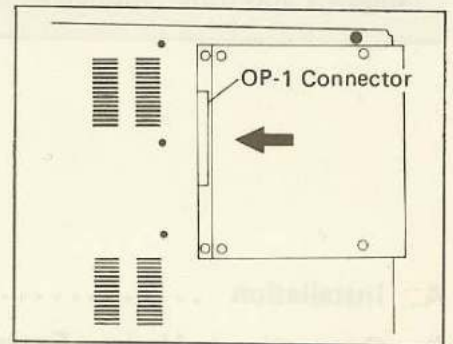


## A. Installation

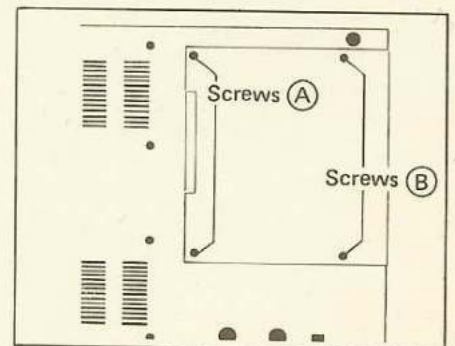
- (1) Turn off the power switch of the computer unit, remove the terminal protection cover on rear side by loosening the screws.



- (2) Align the OP-1 Adaptor with the depression on rear side of unit and then slide it in direction of arrow shown in the illustration. At this stage, be sure to squarely align the connector of the OP-1 with the terminals of the computer unit.

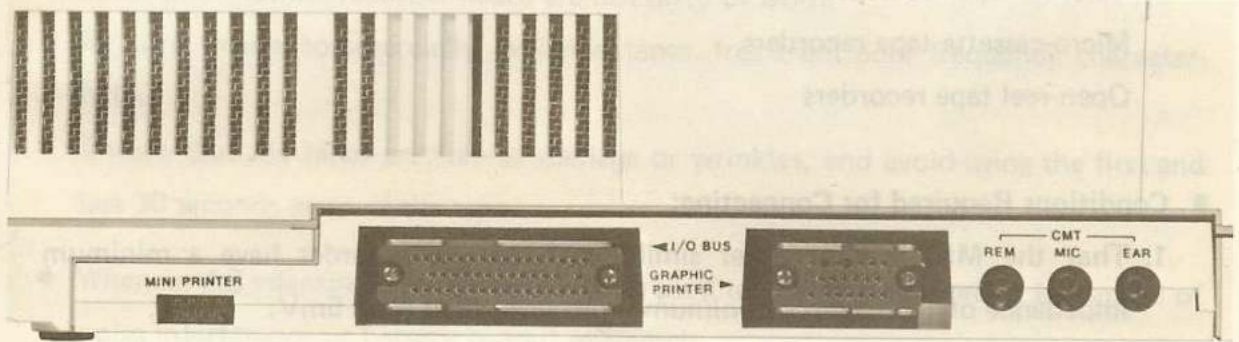


- (3) Use screws (A) to hold down the terminal protection cover, and screws (B), which are standard accessories of OP-1, to secure OP-1.



## B. Connecting to Various External Equipment

Use special purpose connecting cords or cables to hook up connectors on rear side of the OP-1 as shown in the illustration below.



- **MINI PRINTER:** For connecting serial printers such as the character printer.
  - **I/O BUS:** For connecting the OP-2 with built-in Mini-FDD and RS-232C.
  - **GRAPHIC PRINTER:** For connecting graphic printer.
  - **REM:** For connecting Remote control terminal of CMT recorder or other similar terminal.
  - **MIC:** For connecting Microphone terminal of CMT recorder or other similar terminal.
  - **EAR:** For connecting Earphone or Monitor jack of CMT recorder or other similar jack.
- ★ As for the graphic printer, it is recommended that the MX-82 Printer put out by the EPSON Co. be used as it is the most compatible with this computer. When using the MX-82, select the cable manufactured by the EPSON Co.
- ★ Should it not be possible to couple the graphic printer, run a self-check from the side of the printer unit.

## C. Concerning the MT

### Capable of Being Connected With Following Types of Tape

- **Recorders:**

- Cassette tape recorders

- Micro-cassette tape recorders

- Open-reel tape recorders

- **Conditions Required for Connecting:**

1. That the MIC jack or other similar jack on the recorder have a minimum impedance of  $10k\Omega$  and a minimum input level of at least 5mV.
2. That the EAR jack or MONITOR jack or other similar jack on the recorder have an output impedance of  $10\Omega$  or less and an output level of at least 2.5V.
3. That the REMOTE control jack or other similar jack on the recorder have a specification of 24V DC, 1A or less.
4. That overall distortion level be within 15%.

While one of the required conditions is that the components should have miniplugs for connecting purposes with regard to items 1 through 4 above, this should pose no problem as almost all of the radio/cassette recorders now on the market have jacks or plugs that will enable connecting to the computer unit. And even if there are recorders equipped with jacks of slightly different specifications, they generally will be accepted so physically check to see whether the connection can be made in such cases. Differences in jack specifications will not damage the recorder or the computer.

**CAUTION:** When the terminals will not fit, use a convertible jack available on the market.

Always be sure that the REMOTE jack of the right specifications is being used.

## Connecting Precautions

### (1) Tape Recorder and Tape

- See that the recorder jack is not rusty or cracked.
- Make sure that the recorder heads are not dirty or worn.
- Be sure to use commercially available tapes, free from poor frequency characteristics.
- Ensure that the tapes are free of damage or wrinkles, and avoid using the first and last 30 seconds or so of the tapes.
- When an AC adaptor or batteries are being used to power the recorder, be careful of noise interference or battery output mismatch.
- Be sure that the connecting cord is set securely, and do not disconnect while the unit is in operation together with the computer.
- Replay on the same recorder on which the tape had been recorded.

Note: When the tape is not recorded and replayed on the same recorder, the tape may not replay due to differences in tape travel speed involved.

- Use care in storage of recorded tapes.

Note: If the tapes are not stored properly, the tapes may stretch and result in replay malfunction.

### (2) Recording into the Tape

- On a recorder equipped with an automatic recording level control, set it to auto.
- On a recorder with level adjusting control, adjust the level to 0 VU meter reading while recording the program or set it as near as possible to the MAX level.

Note: Avoid recording when the level meter swings excessively.

- Set the tape in position and make a note of the counter reading.

### (3) Replaying from the Tape

- Set the output volume level somewhere between mid-range and MAX for good reception, setting it higher than when normally listening to music.
- When replaying tapes on stereo system, set the right and left balance controls to MAX on the side of the EAR connection.
- When using a recorder with mixing function, set the SOURCE side to MAX and the MIC side to MIN.
- When a Remote function is not available, operate the recorder in manual, starting it before the command execution.

### (4) Other Precautions

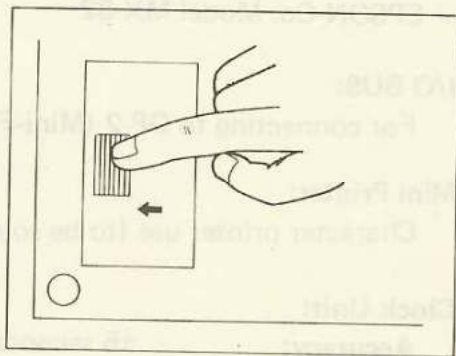
- On recorders with Tone, Bass and Treble controls, set the controls in mid-position.
- Set the tape selector to the type of tape being loaded.

## D. Batteries for the Clock Unit

- Batteries have been used to activate the clock logic built into the computer and to protect the data for controlling the "Time", "Date", and "Preset Alarm Time".
- Two "AA" size batteries are used to power the clock. It is recommended to use batteries which are of leak-proof construction.
- When the batteries weaken, replace them as soon as possible. Otherwise, there is a danger of not being able to protect against the loss of data for controlling clock functions.

### ■ Replacing Batteries

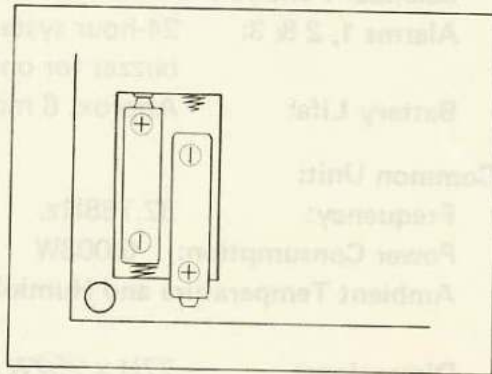
- (1) With your finger on the square inset on the battery compartment lid on the rear of the OP-1, press down and slide the cover in the direction of the arrow, and then remove the cover.



- (2) Remove dead batteries. Insert new batteries with the correct  $\oplus$  and  $\ominus$  polarity.
- (3) Replace the battery compartment lid, and push it in until you hear it snap into place.

Note: Be sure to replace both batteries.

Do not throw dead batteries into a fire. It could be very hazardous because of the danger of explosion.





## Specifications:

**Type:** OP-1 (for exclusive use with CASIO FX-9000P)

### CMT:

#### Output Terminal (MIC):

Output impedance: approx.  $3k\Omega$

Output level: 10 to 15mV

#### Input Terminal (EAR):

Input impedance: approx.  $10k\Omega$

Input level: 2.5 to 50V

#### Remote Terminal (REM):

Within 24V, 1A

#### Recording System:

Kansas City Standard 300 BPS

### Graphic Printer:

EPSON Co. Model MX-82

### I/O BUS:

For connecting to OP-2 (Mini-FDD, RS-232C) (to be sold at a later date)

### Mini Printer:

Character printer use (to be sold at a later date)

### Clock Unit:

**Accuracy:**  $\pm 5$  seconds per day

**Functions:** Year-month-date; hour-minute-second; three alarms

**Time Functions:** 24-hour system, set in units of seconds.

**Calendar Function:** Auto calendar.

**Alarms 1, 2 & 3:** 24-hour system, set in units of minutes, sounding of electronic buzzer for one minute.

**Battery Life:** Approx. 6 months with 2 "AA" size batteries (type: SUM-3)

### Common Unit:

**Frequency:** 32,768Hz.

**Power Consumption:** 0.003W

**Ambient Temperature and Humidity Range:**  $0^{\circ}\text{C}$  to  $40^{\circ}\text{C}$  ( $32^{\circ}\text{F}$  to  $104^{\circ}\text{F}$ );  
20% to 85% humidity.

**Dimensions:** 27H x 252W x 242mmD (1"H x 10"W x 9-1/2")

**Weight:** 735g (1.62 lb) including batteries.

Specifications

Type: 1/2 inch character printer, CASIO FC-2000P

Unit

Input Terminal (MI):

- Output connector: 4-pin, 20P
- Connector: 40 to 100P

Input Terminal (EAR):

- Input connector: approx. 100P
- Input line: 1.4 to 50V

Output Terminal (REAR):

- Width: 21V 1A

Recording System:

- Character: Dot Matrix 80 x 80

Printing Process:

Impact Co. MicroMAX 95

US BUS:

For compatibility to Q1 2 (sold as a base unit)



Head Printer:

Character printer unit (to be sold as a base unit)

Clock Unit:

- Accuracy: ±5 seconds per day
- Functions: Year (month/year) both independent, time of day
- Time Function: 24-hour system, 1/100 units of 2000
- Calendar Function: Auto calendar
- Alarm: 1, 2, 3 - 24-hour system, on the basis of minutes, sounding at each unit interval for one minute
- Alarm User: Alarm of 8 minutes with 2 "AA" size batteries (approx. 2000 hr)

Control Unit:

- Frequency: 32,768Hz
- Power Consumption: 0.002W
- Ambient Temperature and Humidity Range: 0°C to 40°C (32°F to 104°F)
- Relative Humidity: 20% to 80% (non-condensing)
- Dimensions: 27H x 252W x 74mm (10.9H x 10.7W x 2.9D)
- Weight: 735g (1.62 lbs) including battery