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ADVANTEST®

ADVANTEST CORPORATION

INSTRUCTION MANUAL

Q8172

OPTICAL CHANNEL SELECTOR

MANUAL NUMBER 8172 OEC 802

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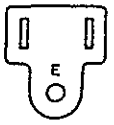
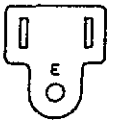
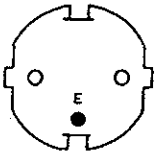
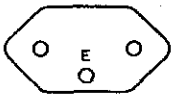
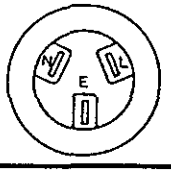
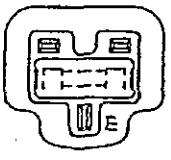
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NOTICE

ADVANTEST provides the following power cables for each country. If there was any inconvenience on your use, please contact our subsidiaries or ADVANTEST representatives.

	Plugs	Standards/Countries	Ratings/Color/ Length	Accessory Codes
1		JIS : JAPAN	Rating :125V 7A Color :Black Length :2m	A01402 A01412
2		UL : USA CSA : CANADA	Rating :125V 7A Color :Black Length :2m	A01403 (Opt.95) A01413
3		CEE : EUROPE VDE : FRG OVE : AUSTRIA SEMKO : SWEDEN DEMKO : DENMARK KEMA : NETHERLANDS FIMKO : FINLAND NEMKO : NORWAY CEBEC : BELGIUM	Rating :250V 6A Color :Gray Length :2m	A01404 (Opt.96) A01414
4		SEV : SWITZERLAND	Rating :250V 6A Color :Gray Length :2m	A01405 (Opt.97) A01415
5		SAA : AUSTRALIA NEWZELAND	Rating :250V 6A Color :Gray Length :2m	A01406 (Opt.98)
6		BS : UK	Rating :250V 6A Color :Black Length :2m	A01407 (Opt.99) A01417

Note : "E" shows earth (ground).

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02	Feb 17/88	

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1. GENERAL

1.1 Outline of Product

Q8172 optical channel selector is the 2 x 5 optical switch for the single mode (SM10/125 µm) fiber of 1.3 µm and 1.55 µm bands. The switch can be changed over by operating the front panel keys or by changing over the optical path from channel 1 to channel 5 for COMMON A or COMMON B using, the GPIB command.

Generally, since Q8172 is equipped with GPIB, it can be operated externally by only connecting to the controller.

1.2 Inspection

When Q8172 is delivered to you, check that no breakage occurred during transportation.

The standard accessories of this unit are shown below. Check specifications and numbers.

Table 1-1 Standard Accessories

Name of article	Type name	Specification	Quantity
Power supply cable	MP-43B	PCB-DD2428X01	1
Conversion adapter	KPR-18	JCD-AL003EX03	1
Fuse for AC power supply		DFT-AHR15A	2
Operation manual		EQ8172	1

If the product is damaged or if the standard accessories are short or do not operate as specified, contact our CE Division (in CE center) or our nearest business office, business branch or agency.

Their addresses and Tel. Nos. are listed at the end of this manual.

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1.5 Replacement of Fuse

When the unit does not work even if the power switch is turned on, fusing of the power supply fuse is assumed. When the fuse is blown, replace the fuse.

AC100 V/120 V: Time lag 0.30 A
AC220 V/240 V: Time lag 0.15 A

Replacing method:
When replacing the power supply fuse, turn off the power switch first, and remove the power supply cable from the power supply connector.

Next, slide leftwards the plastic cover of the fuse box on the right of the power supply connector. When the lever where FUSE PULL is written is pulled forward, the fuse can be removed. (See Figure 1-2.)

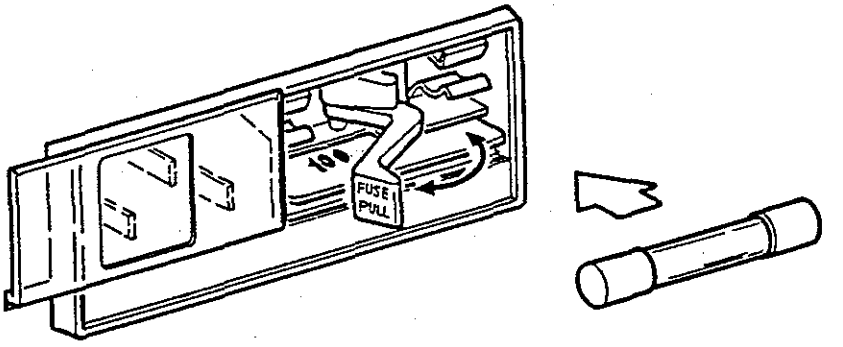


Figure 1-2 Replacement of Power Fuse

CAUTION

When fuses are replaced, be sure to check the above specifications because specifications deffer depending on the supply voltage. Fuses shall be replaced after turning off the power switch and pulling out the power supply cable from the play socket.

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2. EXPLANATION OF PANEL SIDE

Refer to (Figure 2-1 and Figure 2-2). Explanations for each unit function are given here in the sequence of the numbers in the drawing.

2.1 Front Panel

(1) Power Supply Switch

When this switch is pressed, it becomes ON and power is supplied to all circuits. When this switch is pressed again, the switch returns to the original position to become OFF, and the power goes off.

(2) Power Supply Indicator

When the power supply switch is ON, the indicator lights.

(3) REMOTE Indicator (GPIB)

This indicator lights when controlled from the outside using GPIB.

(4) LOCAL Key

When controlled from the outside using GPIB, input using the panel keys becomes effective.

(5) COMMON I/O Connector

This is the I/O connector on the COMMON side. Connect the fiber connector to A or B to use.

(6) CHANNEL I/O Connector

This is the I/O connector on the CHANNEL side. Connect the fiber connector to 1 through 5 to use.

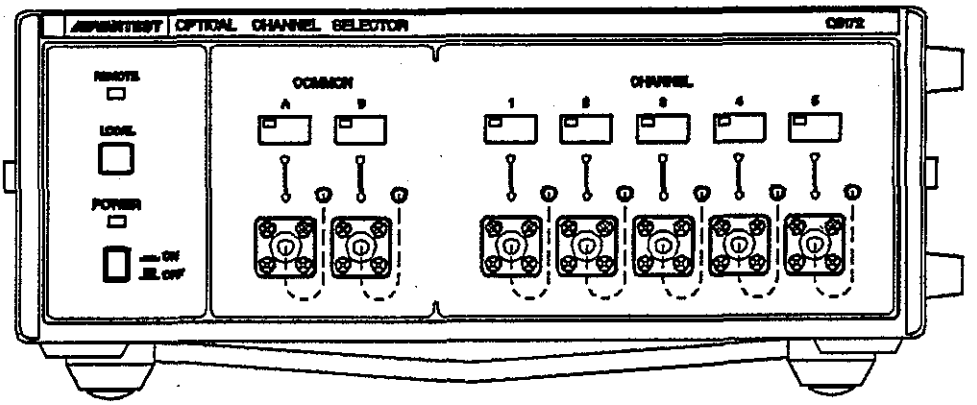
(7) COMMON Selection Key

This is the key switch to select COMMON A or B. The side where the indicator in the key switch lights is connected to the CHANNEL side.

(8) CHANNEL Selection Key

This is the key switch to select CHANNEL 1 through 5. The side where the indicator in the key switch lights is connected to the COMMON side.

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FRONT VIEW

Figure 2-1 Explanation of Front Panel

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2.2 Rear Panel

(9) GPIB Connector

(10) GPIB Address Switch

(11) Power Supply Connector

This is the connector to connect AC power supply. Connect the attached power supply cable (MP-43B).

(12) Power Supply Fuse

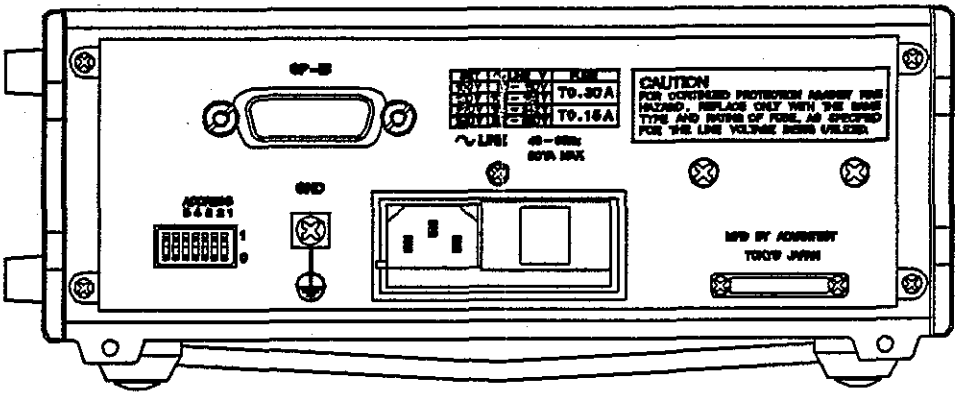
Before replacing the fuse, remove the power supply cable.

(13) Supply Voltage Changing Card

When the supply voltage is changed, replace the card and set to the specified value. In this case, change the fuse capacity.

(14) Ground Terminal

This is the terminal to ground the chassis of Q8172.



REAR VIEW

Figure 2-2 Explanation of Rear Panel

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3. BASIC OPERATION

3.1 Procedure for Start and Stop

(1) Start procedure

① Check that the power supply switch is OFF, and connect the power supply cable.

② Turn on the power supply switch. This unit is in the condition of COMMON A and CHANNEL 1.

(2) Stop Procedure

① Turn off the power supply switch.

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4. GPIB

4.1 Performance

Based on IEEE std, 488-1978.

4.2 Function

Table 4-1 GPIB Code List

Code	Function
SHO	No source handshake function
AHI	Acceptor handshake function
TO	No talker function
LI	Listener function
SRO	No service demand function
RLI	Remote/local changeover function
DTO	No device trigger function
DCI	Device clear function (SDC, DLC command usable)
PPO	No parallel poll function

Code used: ASCII code

Logic Level: Logic 0 (High state) + 2.4 V or more
Logic 1 (Low state) + 0.4 V or less

Driver specification: Tristate
Low state output voltage: 0.4 V or less 48 mA
High state output voltage: 2.4 V or more -5.2 mA

Receiver specification: Low state +0.6 V or less
High state +2.0 V or more

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4.3 Command

Table 4-2 GPIB Command List

Code	Operation
OSA	COMMON A
OSB	COMMON B
OS1	CHANNEL 1
OS2	CHANNEL 2
OS3	CHANNEL 3
OS4	CHANNEL 4
OS5	CHANNEL 5

4.4 Address Switch

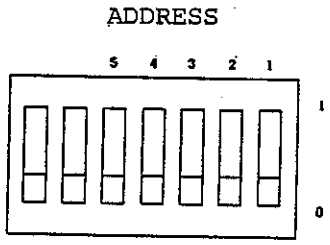


Figure 4-1 Address Switch

The address switch is used to set the address using the 5 lower bits. (from 0 to 31)

The 6 bit and 7 bit are not used.

NOTE
Set the address switches before turning on the power switch.

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5. METHOD OF CLEANING CONNECTOR, AND STORAGE OF THIS UNIT

5.1 Cleaning Fiber Connector

Wipe off any stains from the top and side of the connector ferule using lens cleaning paper or a degreased gauze dampened with alcohol.

5.2 Method of Cleaning Inside of Optical Output Connector

Blow off the dust using the inert gas spray for lens cleaning.

CAUTION

To prevent accidents, be sure to turn off the power supply beforehand.

5.3 Storing this Unit

When Q8172 has not been used for a long time, pack the unit using a vinyl cover or similar, place in a carton, and keep in a dry place direct sunlight.

The range for storage temperature is $-20^{\circ}C$ to $+55^{\circ}C$.

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6. PERFORMANCE ITEMS

6.1 Optical Specification

Applied wave length	1.3/1.55 μm
Applied fiber	Single mode fiber (SM10/125 μm)
Applied connector	FC/PC type
Insertion loss	3.0/3.5 dB or less
Changeover repeatability	0.02 dB or less
Isolation	65 dB or more
Changeover time	0.1 sec. or less
Life	10^6 times or more

6.2 General Specification

Range of use environment: Circumference temperature 0 to 50°C
Relative numicity 90% or less

Range of storage temperature: Circumference temperature -20°C to 55°C

Power supply:
Supply voltage: 90 to 110 VAC, 48 to 66 Hz
Change of supply voltage:

Option No.	Standard	32	42	44
Supply voltage	90 to 110 V	103 to 132 V	198 to 242 V	207 to 250 V

Power consumption: 30 VA or less

Outline dimension: Approx. 240 (W) x 88 (H) x 310 (D) mm

Weight: 4.5 kg or less

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7. BEFORE REQUESTING REPAIR

7.1 Inspection

If there is any irregularity when using Q8172, contact our CE Division (in CE center), nearest business office, branch office, or agency after checking the following inspection items. The address and Tel. Nos. are listed at in the end of this manual.

Even if the repair only covers the the check items below, our company charges a repair fee; so be sure to check the operation manual and these checking items before requesting repair.

Table 7-1 Inspection Items Before Requesting Repair

Symptoms	Causes	Treatment
Power supply indicator does not light	Blown power supply fuse Just a visual inspection of the fuse is not enough. Be sure to check if the fuse capacity is less than 20 Ω using the digital voltmeter.	Replace the blown fuse with the attached fuse, referring to (Clause 1.5).
Optical output is not output, or the output is small.	Mistaken selection of COMMON or CHANNEL	Select again
	Disconnection of the connecting fiber cable	Replace the optical fiber cable.
	Stain on the fiber connector edge	See item (5.2) Method of cleaning inside of optical output connector.
Large fluctuation of optical output level	Stain on the fiber connector edge	See item (5.2) Method of cleaning inside of optical connector.
	Used in a place subject to large changes in ambient temperature.	Use the unit in a place where the changes in ambient temperature are small.

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8. OPERATION

8.1 Basic Operation

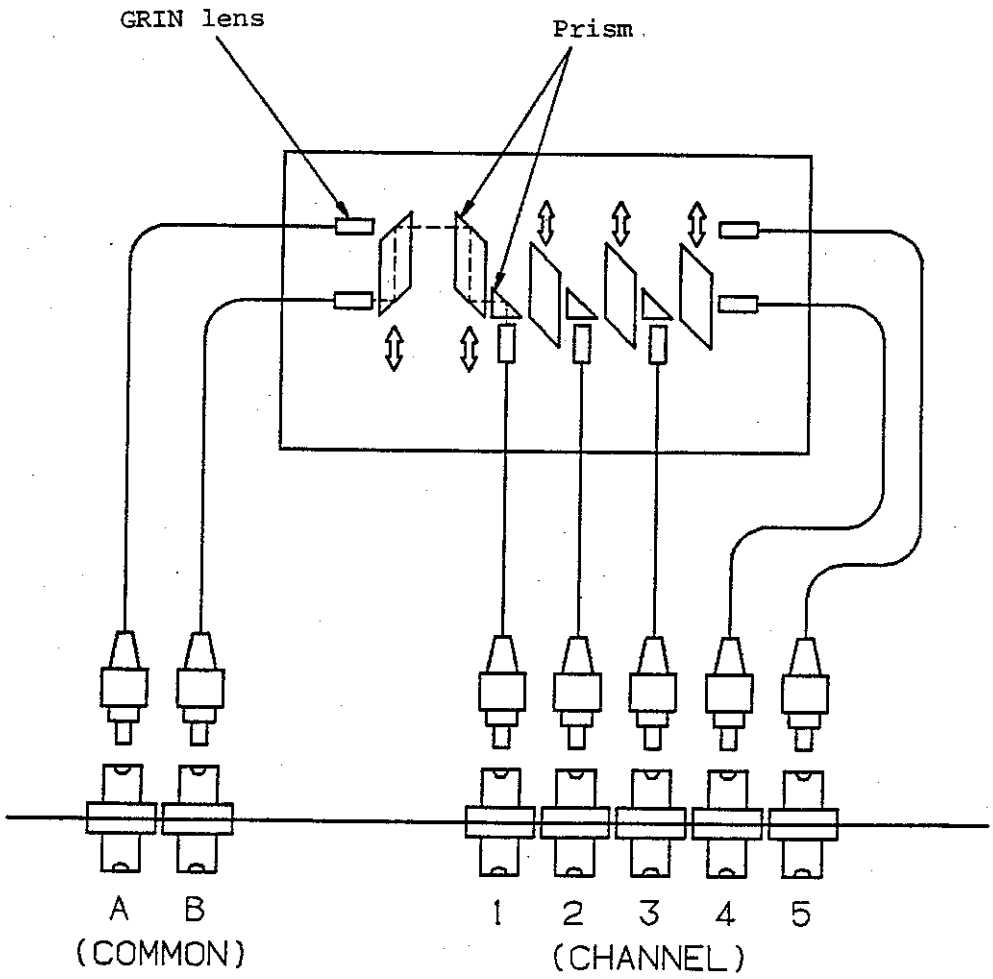


Figure 8-1 Internal Structure

Q8172 changes over a light path mechanically using the prism. Figure 8-1 shows the condition where COMMON B is connected to CHANNEL 1.

The distance between the changeover portion and the front panel is connected by a 1 m fiber cable. The connector located in the panel inside is a FC type connector with PC polished edge.

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