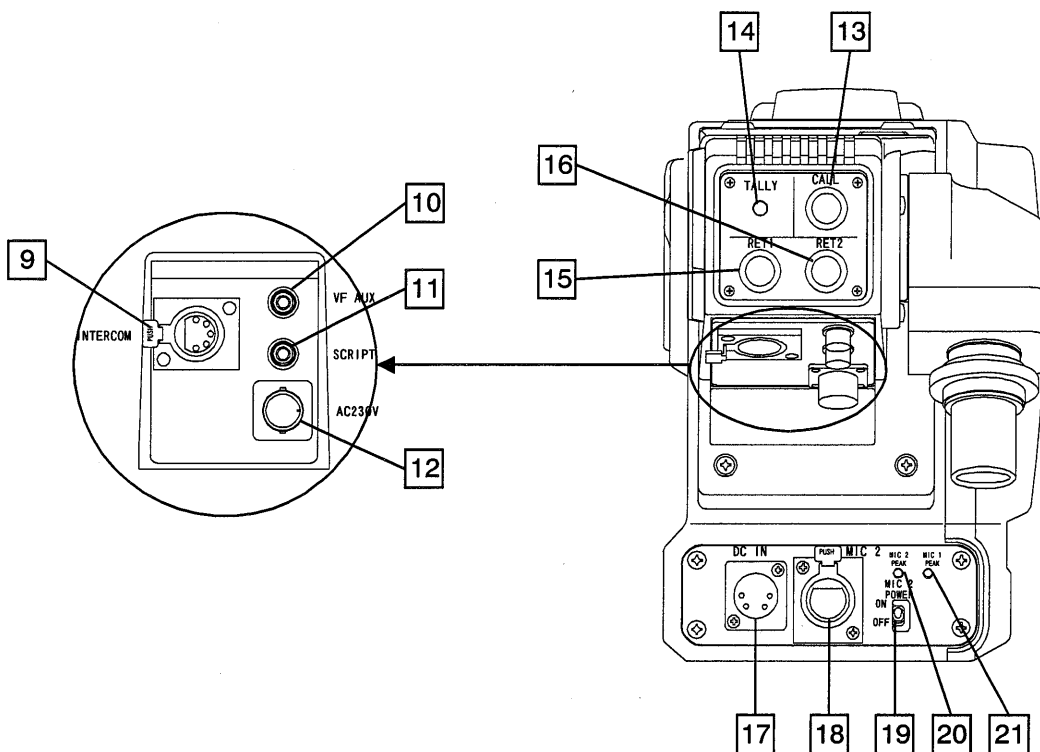


Facility names and functions



9 INTERCOM connector (XLR 5 pin)

The optional MT-12BF headset can be connected.

10 VF AUX connector

Remote control for the TALK ON/OFF switch **8**, RET1 switch **15** and RET2 switch **16**.

11 SCRIPT connector

Lights the 12V/0.3Amax script lamp.

12 AC230V connector

Output connection for AC230V/50VAmx.

13 CALL button

Press to call the CCU.

14 TALLY LED

Lights at external R tally input or call signal from CCU.

15 RET1 switch

Selects CCU RET-1 input. Shown on camera viewfinder only while button is pressed.

16 RET2 switch

Selects CCU RET-2 input. Shown on camera viewfinder only while button is pressed.

17 DC IN connector (XLR 4 pin)

Use in the camera COAX* or self-contained mode.

***Note:** Connect a BNC conversion adapter to the triax connector **1**.

18 MIC2 connector (XLR 3 pin)

Connection for separately sold microphone. Microphone power can also be supplied.

19 MIC2 POWER switch

On/off switch for phantom power supplied to the MIC2 connector **18**.

20 MIC2 PEAK LED

Lights when the MIC2 input volume exceeds the rated level by about 10dB.

21 MIC1 PEAK LED

Lights when the MIC1 connector (camera head) input volume exceeds the rating by about 10dB.

System configuration

Attach the CX-Z3A triax adaptor to the camera. Then connect the camera control panel and setup control unit to the TU-Z3A.

Note: The incorporated RC-Z3, CP-7 can no longer be used when the camera control panel or setup control unit is connected to the TU-Z3A REMOTE2 connector (REMOTE2 has priority).

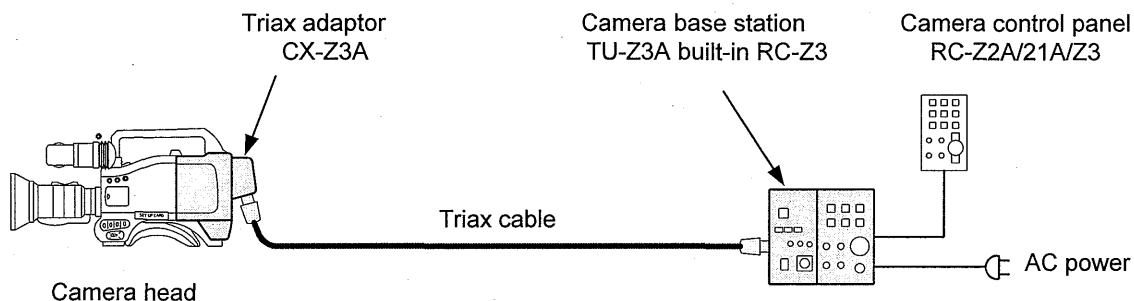
1. TRIAX mode (AC) operation

When the TU-Z3A CCU POWER switch is set to ON, the triax cable connection is checked automatically (about 10seconds), then power can be supplied to the camera by pressing the CAMERA POWER button to produce a video output signal.

The CABLE CHECK LED lights OK when the triax cable is normal.

The intercom can be used when the CCU POWER switch is ON.

Note: Camera power is not supplied in the following situations.



2. COAX mode (DC) operation

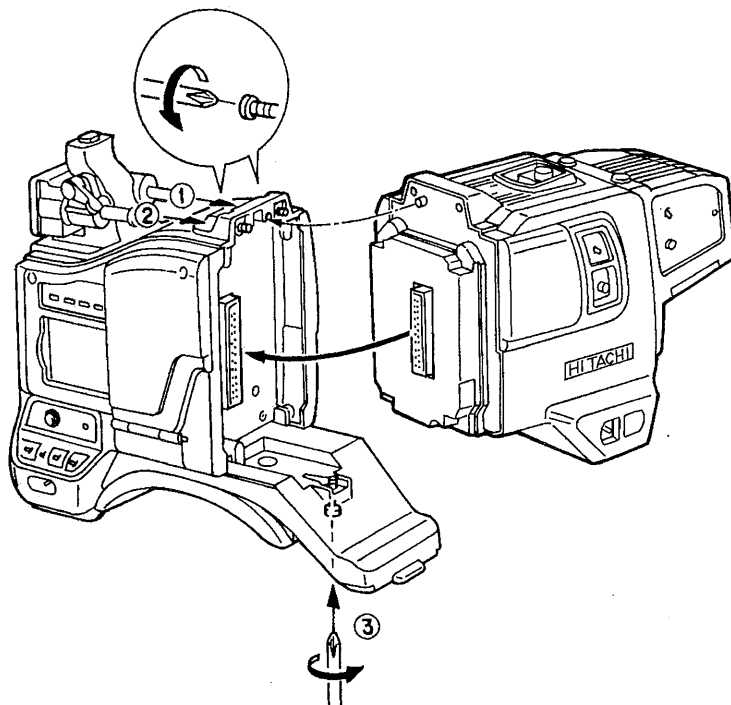
The CX-Z3A can operate with 12VDC power supply and coax cable connection (conversion connector required). Set the CX-Z3A POWER switch to EXT. Set the CCU POWER switch of the TU-Z3A to ON to obtain a video signal output.

Note: During the cable check process, the LED may briefly indicate OPEN. This is not due to fault or defect. During the coax mode, the TU-Z3A can also be operated from 12VDC.

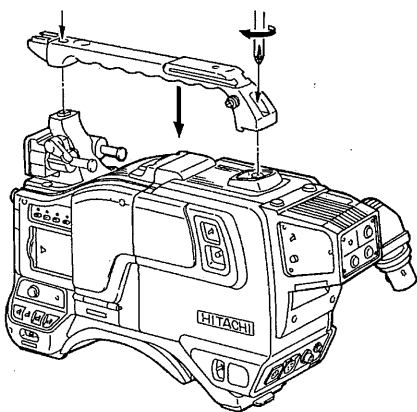
3. Camera stand alone operation

Supply 12VDC to the CX-Z3A, but do not connect either triax or coax cable. The camera can be operated in stand-alone mode. The video signal appears at the camera VIDEO OUT and MONI OUT connectors.

Traix adapter attachment



1. Align the adapter with the camera guide and guide pin. Attach the adapter and engage the connector.
2. Tighten the screws provided with the handle to secure the camera adapter to the camera.



3. Install the handle with two screws.

CAUTION

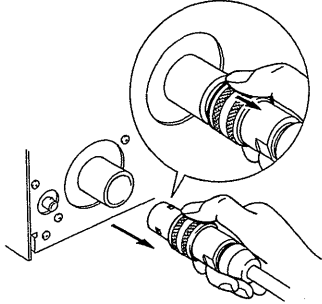
Tighten the screws completely. Check for absence of wobble between the camera and adapter.

Triax cable connection

The triax cable connector has a locking mechanism. Release the lock to disengage the connector.

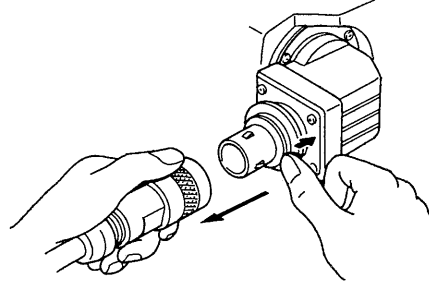
1. Kings connector

TU-Z3A



Slide the plug connector ring outward when disengaging the connector.

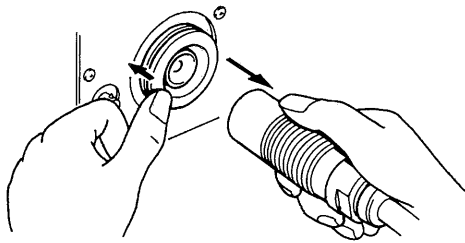
CX-Z3A



Press the socket connector ring downward when disengaging the connector.

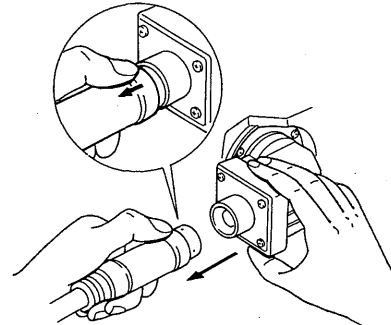
2. Fischer connector

TU-Z3A



Press the socket connector ring downward when disengaging the connector.

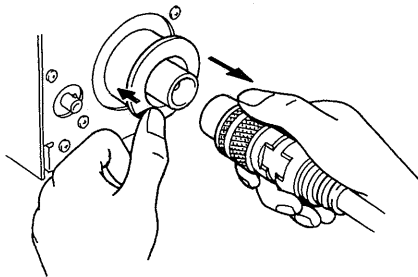
CX-Z3A



Slide the plug connector ring outward when disengaging the connector.

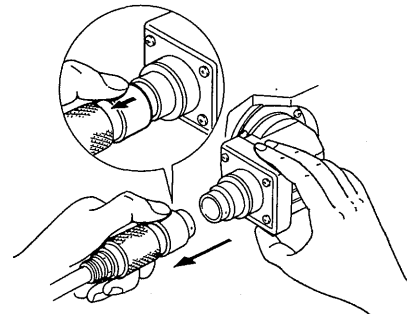
3. Tajimi connector

TU-Z3A



Press the socket connector ring downward when disengaging the connector.

CX-Z3A



Slide the plug connector ring outward when disengaging the connector.

Function menu

Function menu

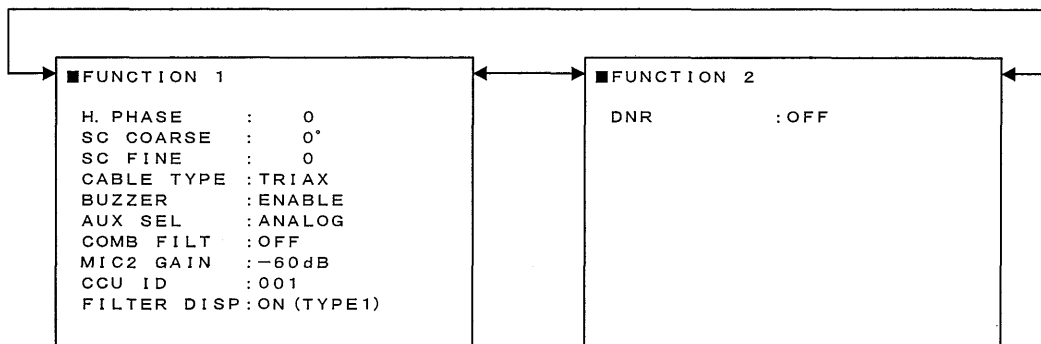
Function menus for setting the CCU and camera are shown on the camera control panel or setup control unit (when connected).

Menu operation

Menu operation differs with the equipment. Refer to the remote controller operating instructions for details.

CCU menu

The CCU menu appears when the color bar is on.



Camera menu

The camera menu appears when the color bar is off. Contents differ with the camera. Refer to the camera operating instructions.

Function menu

FUNCTION1 menu

| | |
|-------------|--------------|
| ■FUNCTION 1 | |
| H. PHASE | : 0 |
| SC COARSE | : 0° |
| SC FINE | : 0 |
| CABLE TYPE | : TRIAX |
| BUZZER | : ENABLE |
| AUX SEL | : ANALOG |
| COMB FILT | : OFF |
| MIC2 GAIN | : -60dB |
| CCU ID | : 001 |
| FILTER DISP | : ON (TYPE1) |

| Item | Setting | Factory setting | Description |
|-------------|--|-----------------|--|
| H.PHASE | -128 to 127 | 55 | Set during genlock operation. Genlock adjustment (horizontal phase). |
| SC COARSE | 0°, 90°, 180°, 270° | 0° | Set during genlock operation. Subcarrier phase coarse adjustment. |
| SC FINE | -128 to 127 | 0 | Set during genlock operation. Subcarrier phase fine adjustment. |
| CABLE TYPE | TRIAX, COAX | TRIAX | Set according to the cable being used. TRIAX: When using triax cable COAX: When using coaxial cable |
| BUZZER | ENABLE, DISABLE | ENABLE | Sets buzzer operation during call input. ENABLE: Buzzer sounds. DISABLE: Buzzer does not sound. |
| AUX SEL | ANALOG, DIGITAL | ANALOG | Selects auxiliary input. ANALOG: RET-1 and RET-2 DIGITAL: DRET1 and DRET2 Digital setting is effective only when the optional DI-Z3 is connected. |
| COMB FILT | OFF, ON | OFF | Comb filter on/off |
| MIC2 GAIN | -70dB, -60dB, -50dB, -40dB, -30dB, -20dB, -10dB, +4dB | -60dB | Set according to MIC2 (CX-Z3A) input level. |
| CCU ID | 001 to 012 | 001 | Set CCU ID. When using the SU-2100, required to distinguish the SU-2100 CCU. |
| FILTER DISP | OFF, ON(TYPE1), ON(TYPE2-A), ON(TYPE2-B) | ON(TYPE1) | Set Pix out filter indication type. Refer to details below. |

Filter indication

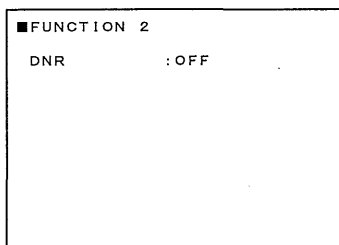
FUNCTION1 FILTER DISP selects indication at bottom left of screen.

| FILTER DISP setting | Filter1 display | Filter2 display | Filter3 display | Filter4 display |
|---------------------|-----------------|-----------------|-----------------|-----------------|
| OFF | None | None | None | None |
| ON(TYPE1) | 1 | 2 | 3 | 4 |
| ON(TYPE2-A) | 1. 3200K | 2. 5600K+1/16ND | 3. 5600K | 4. 5600K+1/64ND |
| ON(TYPE2-B) | 1. 3200K | 2. 5600K+1/16ND | 3. 5600K | 4. EFFECT |

Note: Set TYPE2-A and TYPE2-B according to the filters.

Function menu

FUNCTION2 menu



| Item | Setting | Factory setting | Description |
|------|---------|-----------------|--|
| DNR | OFF, ON | OFF | DNR on/off. Noise is reduced at ON setting. |

Cable check

Cable check

LED lights when cable is connected. For safety, the camera power defaults to off according to the result.

| Indication | Content |
|---|---|
| Screen: No display LED: OK flashes | Cable being checked. Camera power on inhibited. |
| Screen: CABLE LENGTH:****M LED: OK lights | Cable anomaly absent Camera power on/off enabled. (CAMERA POWER switch operable.) |
| Camera power off Screen: CHECK CAMERA CABLE (INNER-OUTER SHORT?) LED: NG flashes Camera power on Screen: None LED: NG flashes | Cable inner and outer shield possibly shorted. Camera power on/off enabled. (CAMERA POWER switch operable.) |
| Screen: CHECK CAMERA CABLE (OUTER SHIELD OPEN?) LED: NG lights | Cable outer shield possibly open. Camera power defaults to off and camera power switch is rendered inoperative. |
| Screen: INCOM LINE NG LED: NG lights | Cable conductor possibly open. Camera power defaults to off and camera power switch is rendered inoperative. |
| Screen: INCOM LINE NG LED: NG lights | Cable inner shield possibly open. Camera power defaults to off and camera power switch is rendered inoperative. |
| Camera power off Screen: CHECK CAMERA CABLE (CENTER SHORT?) LED: NG lights Camera power on Screen: OVER CURRENT LED: OVER CURRENT lights (Held after 230VAC off) | Cable conductor and shield possibly shorted. Camera power defaults to off and camera power switch is rendered inoperative. |
| Screen: CAMERA CABLE OPEN LED: OPEN lights | Cable is not connected. Camera power defaults to off and camera power switch is rendered inoperative. |
| Screen: COAX MODE NOW !!! PUSH BAR AND FUNC SW, CHANGE TO TRIAX MODE | Triax cable is connected, but CABLE TYPE (FUNCTION1 menu) is set to COAX. |

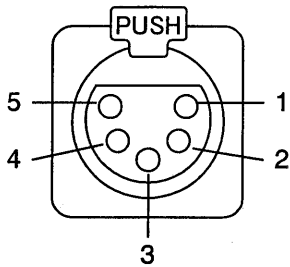
When coax cable is connected, the cable check Open LED always lights. The camera power switch defaults to off (LED extinguished) and is inoperative.

Service information

Connector pin diagrams

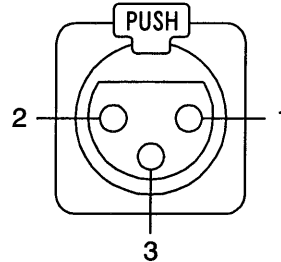
TU-Z3A

INTERCOM (5 pin XLR female:HA16PRH-5S)



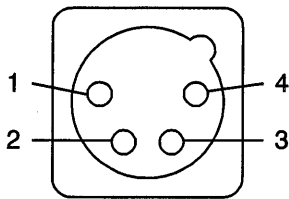
| Pin | Signal |
|-----|-------------|
| 1 | MIC IN(C) |
| 2 | MIC IN(H) |
| 3 | RECEIVE(C) |
| 4 | RECEIVE1(H) |
| 5 | RECEIVE2(H) |

MIC OUT 1,2 (3 pin XLR female:HR16PRM-3SE)



| Pin | Signal |
|-----|-----------|
| 1 | MIC GND |
| 2 | MIC(H) IN |
| 3 | MIC(C) IN |

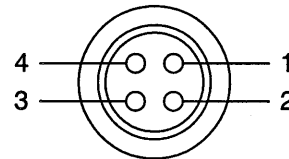
DC IN (4 pin XLR male:HA16RA-4P)



| Pin | Signal |
|-----|------------|
| 1 | GND |
| 2 | NC |
| 3 | NC |
| 4 | +12V input |

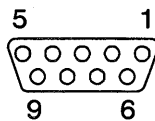
Remote 1,2 (4 pin female:HR10A-7R-4S(01))

Mating connector:HR10A-7P-4P

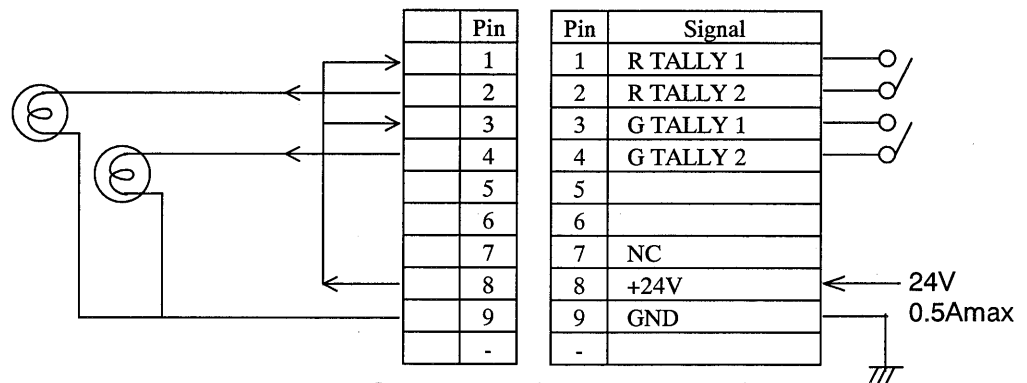


| Pin | Signal |
|-----|------------|
| 1 | +9V output |
| 2 | SD input |
| 3 | SD output |
| 4 | SD ground |

TALLY OUT(9pin D-sub female:CDS3109-0123)



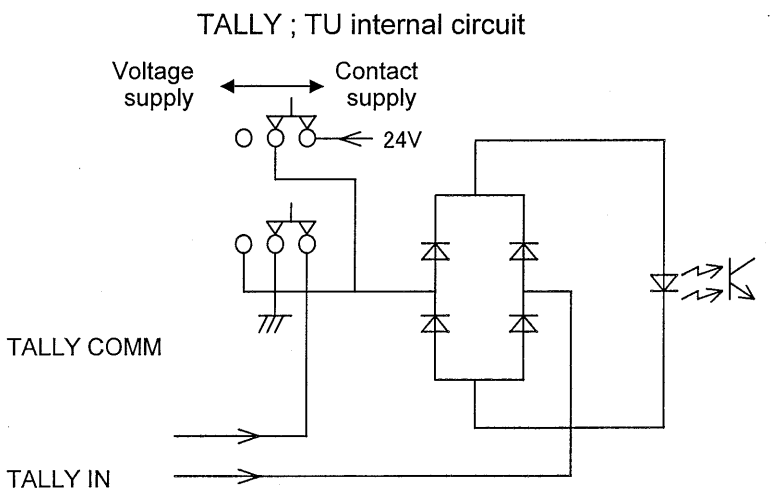
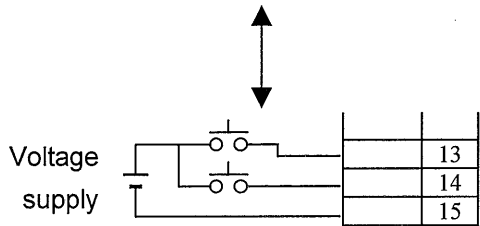
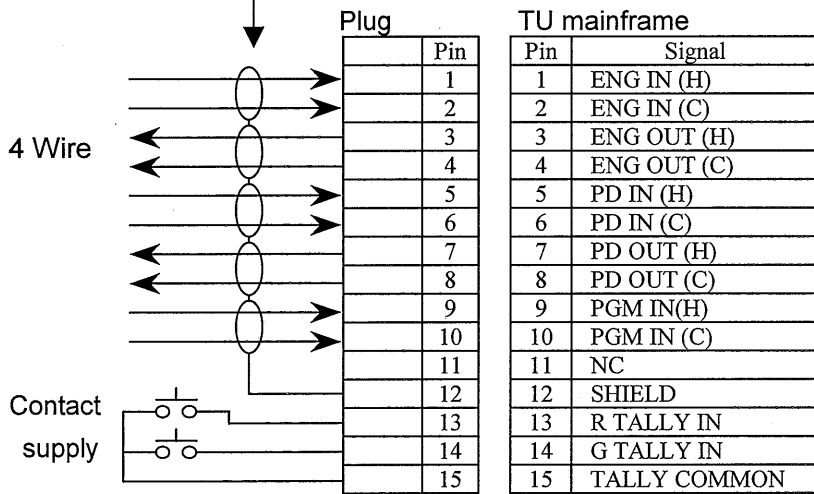
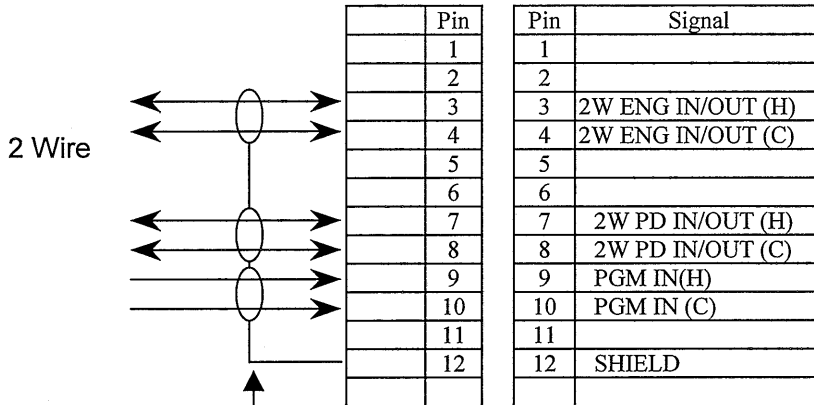
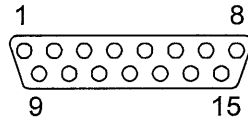
Operating circuit example



Current limit of 8pin is max0.5A/24V.

Service information

COMMUNICATION(15pin D-sub male: CDC3115-0123)



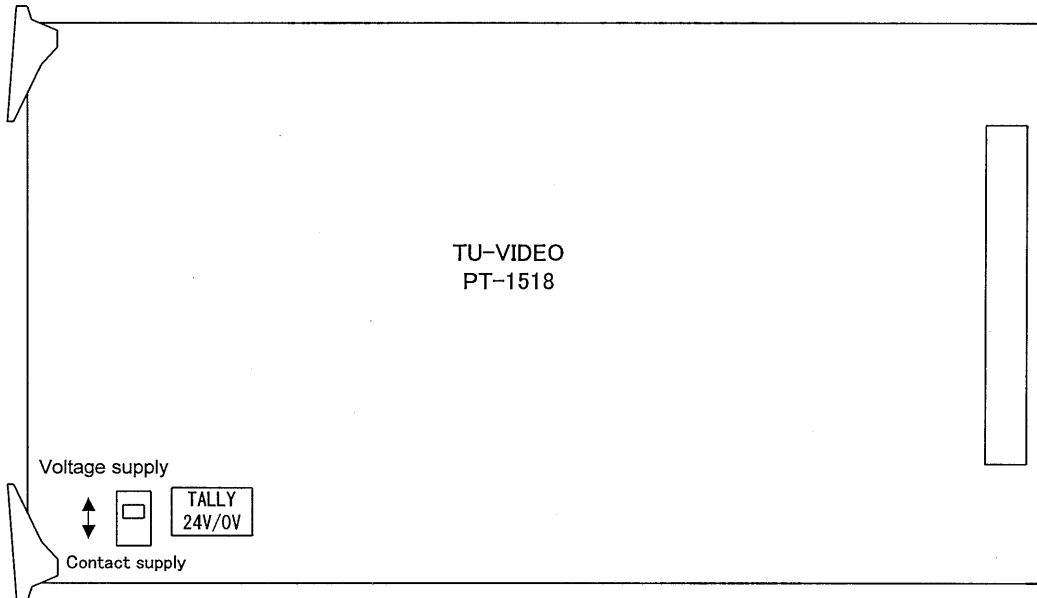
Service information

Internal switch setting

Set the TALLY and INTERCOM switches according to the systems connected to the TU-Z3A rear panel COMMUNICATION connector.

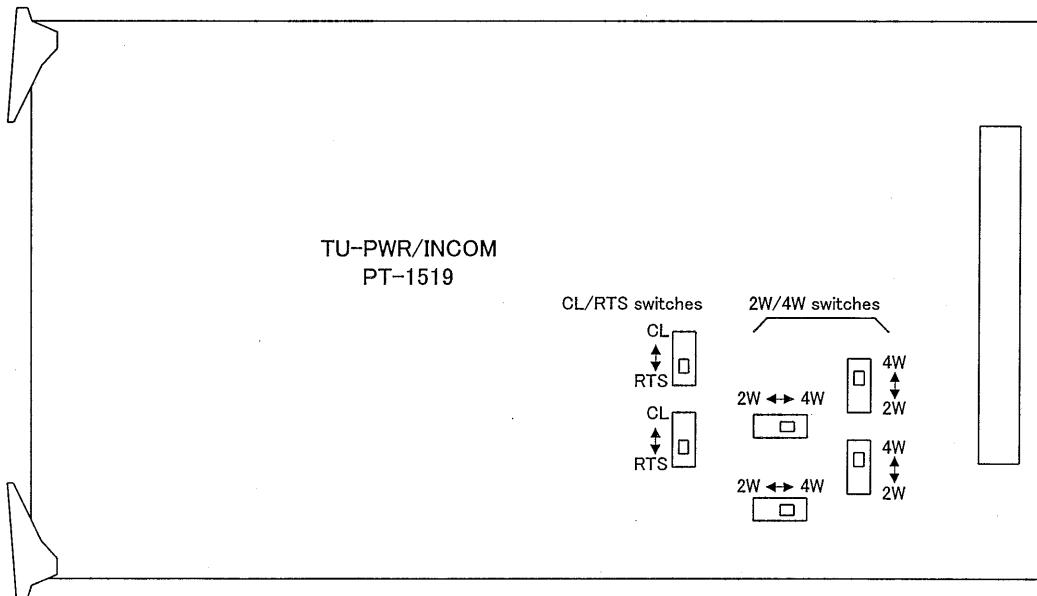
The tally input can be contact or voltage supply.

When changing, set the TU-Z3A internal TV-VIDEO board switch accordingly.



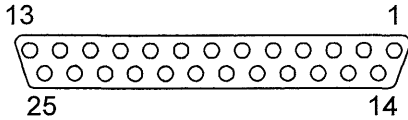
The intercom can be 4 wire or 2 wire (Clearcom, RTS).

When changing, set the TU-Z3A internal TV-PWR/INCOM board switches accordingly.



Service information

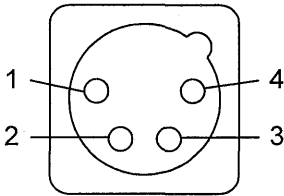
RS-232C(25pin D-sub
female:CDS3125-0123)



| Pin | Signal | Pin | Signal |
|-----|----------------|-----|--------|
| 1 | GND | 14 | NC |
| 2 | TD | 15 | NC |
| 3 | RD | 16 | NC |
| 4 | RTS | 17 | NC |
| 5 | CTS | 18 | NC |
| 6 | NC | 19 | NC |
| 7 | GND | 20 | NC |
| 8 | NC | 21 | NC |
| 9 | NC (STAIR CTL) | 22 | NC |
| 10 | NC (STAIR OUT) | 23 | NC |
| 11 | NC (SHIELD) | 24 | NC |
| 12 | NC | 25 | NC |
| 13 | NC | - | |

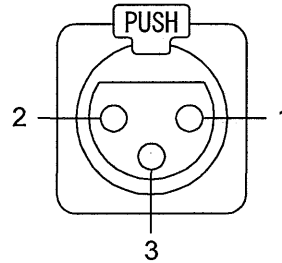
CX-Z3A

DC IN (4 pin XLR male:HA16RA-4P)



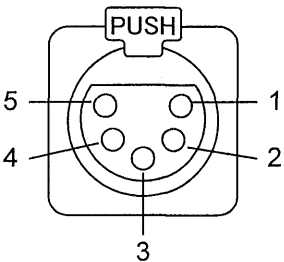
| Pin | Signal |
|-----|------------|
| 1 | GND |
| 2 | NC |
| 3 | NC |
| 4 | +12V input |

MIC 2 IN(3 pin XLR female:HR16PRQ-3SE(05))



| Pin | Signal |
|-----|-----------|
| 1 | MIC GND |
| 2 | MIC(H) IN |
| 3 | MIC(C) IN |

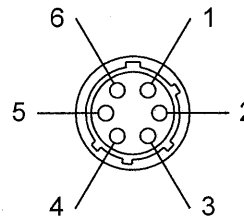
INTERCOM (5 pin XLR female:HA16PRH-5S)



| Pin | Signal |
|-----|-------------|
| 1 | MIC IN(C) |
| 2 | MIC IN(H) |
| 3 | RECEIVE(C) |
| 4 | RECIEVE1(H) |
| 5 | RECIEVE2(H) |

VF AUX(6 pin female:HR10A-7R-6SB(01))

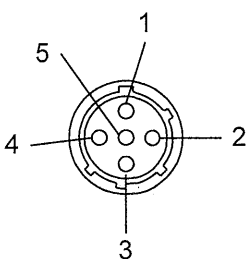
Mating connector:HR10A-7P-6P



| Pin | Signal |
|-----|------------|
| 1 | AUX 1 CTL |
| 2 | AUX 2 CTL |
| 3 | NC |
| 4 | GND |
| 5 | MIC ON/OFF |
| 6 | GND |

SCRIPT (5 pin female:HR10A-7R-5SB(01))

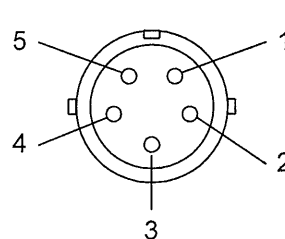
Mating connector:HR10A-7P-5P



| Pin | Signal |
|-----|-------------|
| 1 | SCRIPT +12V |
| 2 | GND |
| 3 | NC |
| 4 | NC |
| 5 | NC |

AC230 V OUT (5 pin female:RM12BRB-5S)

Mating connector:RM12BPG-5PH



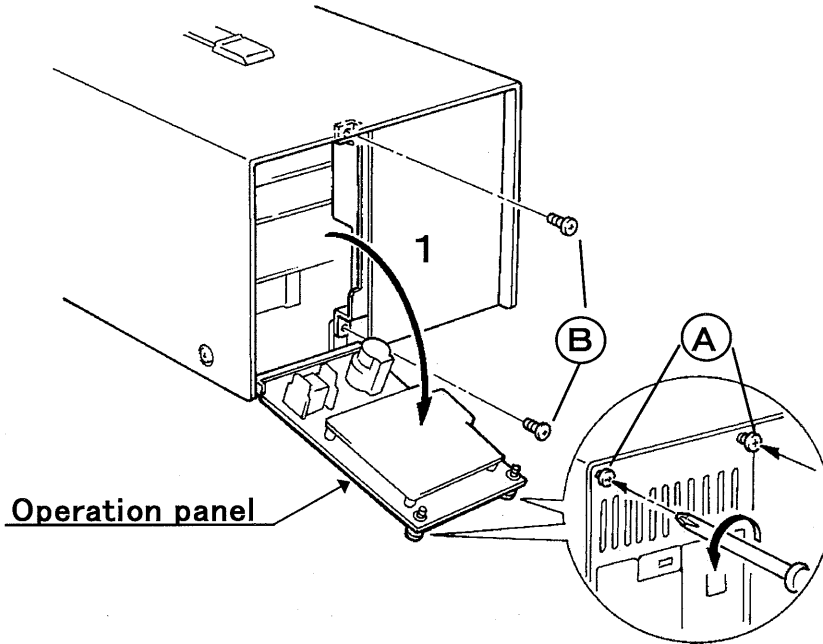
| Pin | Signal |
|-----|--------------|
| 1 | AC 230V |
| 2 | AC 0V |
| 3 | GND |
| 4 | TALLY OUT(*) |
| 5 | AC CTL |

(*) open collector

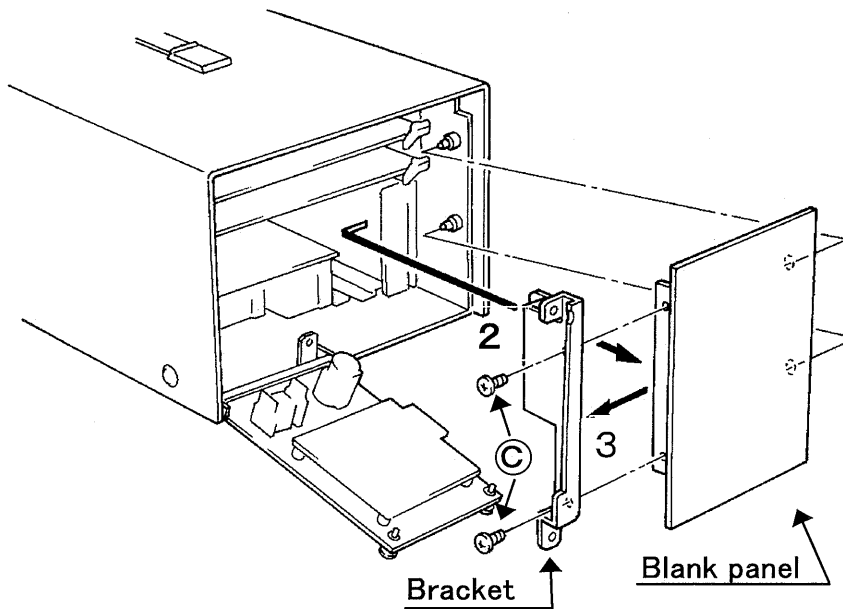
Service information

Camera control panel installation

1. Take out 2 screws A and open the operation panel.



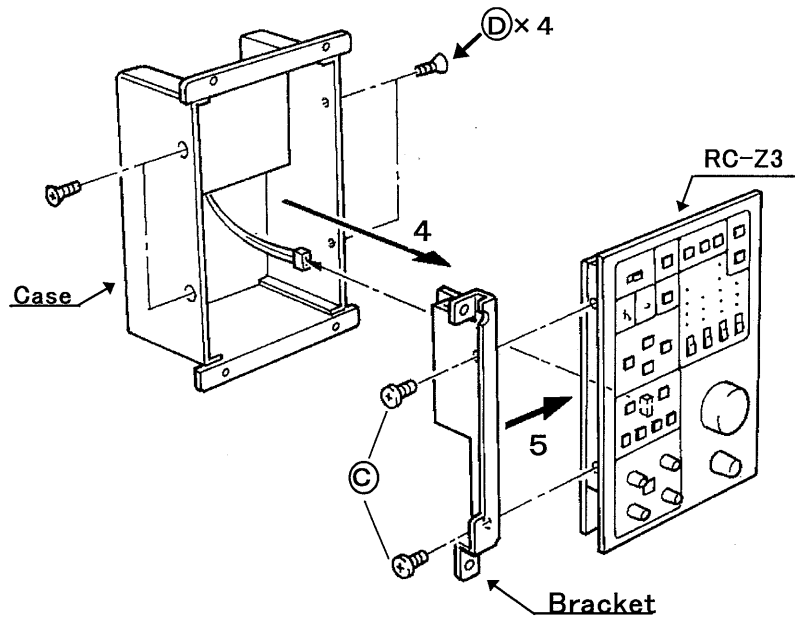
2. Take out 2 screws B and disengage the blank panel and bracket.
3. Take out 2 screws C and disengage the bracket from the blank panel.



Caution: These steps must be conducted only by a qualified technician. There is risk of both electrical shock and equipment damage.

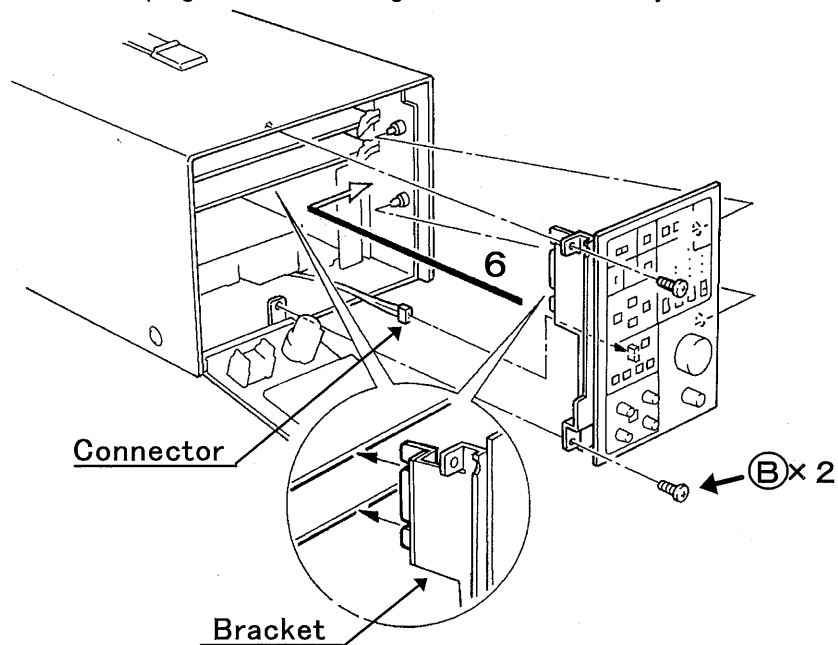
Service information

4. Take out 4 screws D from the camera control panel. Disconnect the connector and disengage the case from the camera control panel.
5. Attach the bracket to the camera control panel with 2 screws C.



6. Connect the TU-Z3A internal conductor to the camera control panel.
Align the camera control panel mounting holes with the TU-Z3A guide pins.
Align the 2 notches of the bracket with the TU-Z3A units and secure the camera control panel with 2 screws B.
- Secure the operation panel with 2 screws A.

Note: Use care to avoid crimping the cables during mechanical assembly.



Specifications

■ Specification of Direction

| Direction | Model | | Triax connector | Intercom headset | Audio output | ENCR OUT setup |
|-----------|--------------|---------|-----------------|------------------|------------------|----------------|
| | Base station | Adapter | | | | |
| J | TU-Z3AJ | CX-Z3AJ | Tajimi | XLR-5pin | XLR-3pin(Male) | 0mV |
| U | TU-Z3A | CX-Z3A | Kings | XLR-5pin | XLR-3pin(Female) | 50mV |
| P | TU-Z3AP | CX-Z3AP | Fischer | XLR-5pin | XLR-3pin(Female) | 0mV |

■ General

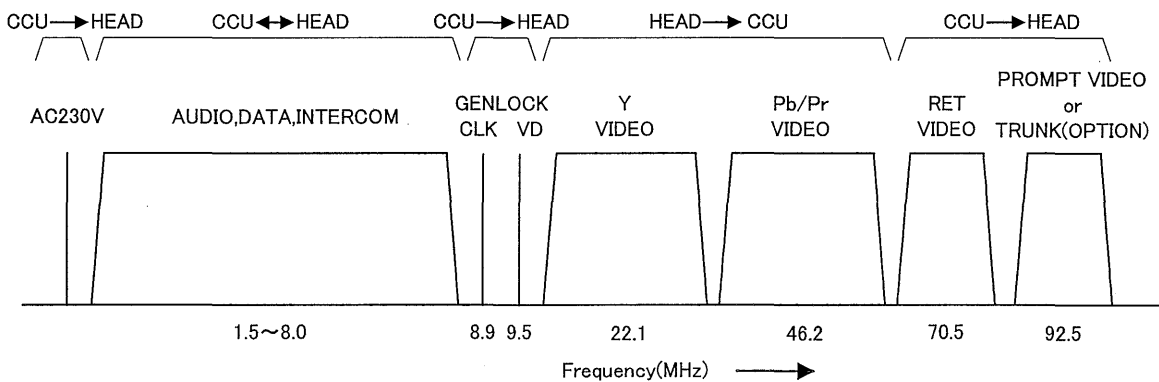
• Video band width(Base band)

| | |
|----------------|-------|
| Y signal: | 10MHz |
| Pb,Pr signal: | 5MHz |
| RET signal: | 5MHz |
| PROMPT signal: | 5MHz |

• Maximum cable length

| Cable type | Diameter (mm) | Maker | Maximum cable length(m) | |
|----------------|---------------|----------|-------------------------|----------------|
| | | | W/ PROMPT | Cable type |
| Triaxial Cable | | | | Triaxial Cable |
| 4.8/1.0 EFTXF | 8.6 | FUJIKURA | | 4.8/1.0 EFTXF |
| 9.6/2.2 EFTXF | 14.5 | FUJIKURA | | 9.6/2.2 EFTXF |
| 9267 | 9.1 | BELDEN | | 9267 |
| 9232 | 13.2 | BELDEN | | 9232 |
| 1.0S/4.5S | 8.5 | FELTEN | | 1.0S/4.5S |
| 1.4S/6.6S | 11.0 | FELTEN | | 1.4S/6.6S |
| Coaxial Cable | | | | Coaxial Cable |
| 5C-2V | 7.5 | ---- | | 5C-2V |
| 7C-2V | 10.2 | ---- | | 7C-2V |
| 10C-2V | 13.1 | ---- | | 10C-2V |

• Frequency allocation



Specifications

| | | |
|-----------------------|---|---|
| •Power supply voltage | TU-Z3AJ/CX-Z3AJ | AC100V 50/60Hz |
| | TU-Z3A/CX-Z3A | AC117V 60Hz |
| | TU-Z3AP/CX-Z3AP | AC230V 50Hz |
| •Power consumption | 130W approx. (AC operation,including Z-3000W/GM-51 and AUX POWER OUT 50W) | |
| | TU-Z3A | :25W approx. (DC operation) |
| | CX-Z3A | :33W approx. (DC operation,including Z-3000W/GM-51) |
| •Ambient Temperature | Operating: TU-Z3A | 0 to +40°C |
| | CX-Z3A | -10 to +45°C |
| | Storage: | -20 to +60°C |
| •Dimensions | TU-Z3A | 212(W)×163(H)×381(D)mm |
| | CX-Z3A | 135(W)×196(H)×215(D)mm |
| •Mass | TU-Z3A | 9.0kg approx. |
| | CX-Z3A | 3.0kg approx. |

Specifications

■ Input output signals(TU-Z3A)

Input signals

| | | |
|------------------------------|--|---------------------|
| INTERCOM | -70dBm | XLR-5pin |
| B BST (GEN LOCK) | B-BST 0.45Vp-p/750(loop through) | BNC |
| RET-1 | VS or VBS 1Vp-p/750(loop through) | BNC |
| RET-2 | VS or VBS 1Vp-p/750(loop through) | BNC |
| PROMPT | VS or VBS 1Vp-p/750(loop through) | BNC |
| D RET1 IN [Factory option] | D1(active through)/750 | BNC |
| D RET2 IN [Factory option] | D1(active through)/750 | BNC |
| COMMUNICATION | | D-sub 15pin |
| INTERCOM | 4wire: 0dBm HIGH 2wire: 0dBs or -15dBs 2000 at 2W | |
| PGM | 0dBm HIGH | |
| R/G TALLY | 24V DC or Contact | |
| REMOTE1/RS-232C (switchable) | 1.5Vp-p RS-232C | 4pin D-sub 25pin |
| REMOTE2 | 1.5Vp-p | 4pin |
| DC IN | DC 12V (DC +10.5V~+17V) | XLR-4pin |

Output signals

| | | |
|---------------------------------|---|---------------------|
| INTERCOM | 0dBs MAX+15dB 以上 | XLR-5pin |
| ENCR OUT | VBS 1Vp-p/750 | BNC(×3) |
| COMPONENT/RGB (switchable) | | BNC |
| R/Pr | R: 0.7Vp-p/750 Pr: 0.7Vp-p/750 (NTSC) 0.525Vp-p/750 (PAL) | |
| G/Y | G: 0.7Vp-p/750 Y: VS 1Vp-p/750 | |
| B/Pb | B: 0.7Vp-p/750 Pb: 0.7Vp-p/750 (NTSC) 0.525Vp-p/750 (PAL) | |
| DIGITAL OUT [Factory option] | D1/750 | BNC(×2) |
| D RET1 OUT [Factory option] | D1/750 | BNC |
| D RET2 OUT [Factory option] | D1/750 | BNC |
| PIX OUT (R, G, B, ENCR) | VS or VBS 1.0Vp-p/750 | BNC |
| WF OUT (R, G, B, ENC, SUP, SEQ) | VS or VBS 1.0Vp-p/750 | BNC |
| MIC OUT 1 | 0dBm/6000 | XLR-3pin |
| MIC OUT 2 | 0dBm/6000 | XLR-3pin |
| COMMUNICATION | | D-sub 15pin |
| INTERCOM | 4wire: 0dBm/6000 2wire: 0dBs or -15dBs/2000 | |
| TALLY OUT | | D-sub 9pin |
| R/G TALLY | Contact | |
| DC24V | DC24V/0.5Amax | |
| REMOTE1/RS-232C (switchable) | 1.5Vp-p RS-232C | 4pin D-sub 25pin |
| REMOTE 2 | 1.5Vp-p | 4pin |

Specifications

■ Input output signals(CX-Z3A)

Input signals

| | | |
|---------------------------|------------------------------------|-------------------|
| Camera head | | |
| Video signals (Y, Pb, Pr) | each 10bit digital | |
| Control signals | 1.5Vp-p | |
| MIC-1 | -20dBm | |
| DC IN | DC 12V (DC +10.5V to +17V) | XLR-4pin (Male) |
| MIC-2 | -70, 60, 50, 40, 30, 20, 10, +4dBm | XLR-3pin (Female) |
| INTERCOM (HEAD SET) | -70dBm | XLR-5pin (Female) |
| VF AUX | 6pin | |

Output signals

| | | |
|---------------------|-----------------------|-------------------|
| Camera head | | |
| AUX VIDEO | VS or VBS 1Vp-p/75Ω | |
| GEN LOCK | B-BST 0.45Vp-p/75Ω | |
| Control signals | 1.5Vp-p | |
| RET VIDEO | VS or VBS 1.0Vp-p/75Ω | BNC |
| PROMPT VIDEO | VS or VBS 1.0Vp-p/75Ω | BNC |
| INTERCOM (HEAD SET) | 0dBs MAX+15dB | XLR-5pin (Female) |
| SCRIPT | DC 12V/0.3Amax | |
| AC 230V | AC 230V/50VAmax | 5pin |

■ Accessories

- Camera control panel
 - Base station internal/external dual type
 - External base station dedicated type
- Setup control unit
- D1 Digital interface
 - DI-Z3

HITACHI KOKUSAI ELECTRIC

P'S Higashi-nakano Bldg.,
3-14-20 Higashi-nakano, Nakano-ku, Tokyo 164-8511, Japan
Phone : (03) 3368-6111, Fax : (03) 3365-9119

HITACHI DENSHI AMERICA, LTD.

Headquarters and Northeast Office

150 Crossways Park Drive, Woodbury, New York 11797, U. S. A.
Phone : (516) 921-7200, Fax : (516) 496-3718

Parts Center

Phone : (516) 682-4435, Fax : (516) 921-0993

Latin Sales

Phone : (516) 682-4420, Fax : (516) 496-3718

West Office

371 Van Ness Way, Suite 120 Torrance, CA. 90501, U. S. A.
Phone : (310) 328-6116, Fax : (310) 328-6252

Midwest Sales

Phone : (330) 334-4115, Fax : (516) 496-3718
Service (734) 721-6180

South Sales

Phone : (770) 972-4742, Fax : (516) 496-3718
Service (678) 937-0201

HITACHI DENSHI CANADA, LTD.

Head Office

1 Select Avenue Unit#11 Scarborough, Ontario M1V 5J3, Canada.
Phone : (416) 299-5900, Fax : (416) 299-0450

Eastern Office

5795 Chemin St. Francois St. Laurent, Quebec H4S 1B6, Canada
Phone : (514) 332-6687, Fax : (514) 335-1664

Ottawa Office

9 Antares Drive, Nepean, Ontario, K2E 7V5, Canada
Phone : (613) 727-3930, Fax : (613) 825-4253

HITACHI DENSHI (EUROPA) GmbH

Head Office

Wesikircher Straße 88, Jügesheim D-63110 Rodgau, Germany
Phone : (6106) 6992-0, Fax : (6106) 1690-6

HITACHI DENSHI (U. K.) LTD.

Head Office

Windsor House, Britannia Road, Waltham Cross Hertfordshire EN8 7NX,
United Kingdom

Phone : (44) 845-1212-177, Fax : (44) 845-1212-180

Leeds Office

Brookfield House, Selby Road, Garforth, Leeds LS25 1NB United Kingdom
Phone : (113) 287-4400, Fax : (113) 287-4260

HITACHI KOKUSAI ELECTRIC INC. BEIJING OFFICE

Beijing Fortune Building

5, Dong San Huan Bei-lu, Chao Yang District, Beijing, 100029 China
Phone : (010) 6590-8755/8756, Fax : (010) 6590-8757

Beijing Service Center

A25, Bei San Huan Zhong Road Beijing China
Phone : (010) 6204-3901/3903, Fax : (010) 6204-3902

HITACHI KOKUSAI ELECTRIC INC. SINGAPORE BRANCH

NO. 123, Genting Lane #03-01 Yenom Industrial Building
Singapore 349574

Phone : (65) 6223-0030, Fax : (65) 6223-0206

Hitachi Kokusai Electric