FOR.A
INNOVATIONS IN VIDEO
and AUDIO TECHNOLOGY

OPERATION MANUAL

HVS-AUX8

Auxiliary Unit

HVS-AUX16

S/N 9000191-Higher

HVS-AUX32

S/N 9090073-Higher

9th Edition

(Version 4.26 or Higher)

FOR-A COMPANY LIMITED

Precautions

Important Safety Warnings

[Power]

 Caution	Operate unit **only** on the specified supply voltage.
	Disconnect power cord by connector only. **Do not** pull on cable portion.
 Stop	**Do not** place or drop heavy or sharp-edged objects on power cord. A damaged cord can cause fire or electrical shock hazards. Regularly check power cord for excessive wear or damage to avoid possible fire / electrical hazards.

[Grounding]

 Caution	**Ensure** unit is properly grounded at all times to prevent electrical shock hazard.
 Hazard	**Do not** ground the unit to gas lines, units, or fixtures of an explosive or dangerous nature.
 Caution	**Ensure** power cord is firmly plugged into AC outlet.

[Operation]

 Hazard	**Do not** operate unit under hazardous or potentially explosive atmosphere conditions. Doing so could result in fire, explosion, or other dangerous results.
 Hazard	**Do not** allow liquids, metal pieces, or other foreign materials to enter the unit. Doing so could result in fire, other hazards, or unit malfunction.
	If a foreign material does enter the unit, turn the power off and **immediately** disconnect the power cord **.** Remove the material and contact an authorized service representative if damage has occurred.

[Transportation]

 Caution	**Handle** with care to avoid impact shock in transit, which may cause malfunction. When you need to transport the unit, use the original or adequate packing material.

[Circuitry Access]

	**Do not** remove covers, panels, casing, or access the circuitry with power applied to the unit! Turn the power off and disconnect the power cord prior to removal. Internal servicing / adjustment of unit should only be performed by qualified personnel.
 Stop	**Do not** touch any parts / circuitry with a high heat factor. Capacitors can retain enough electric charge to cause mild to serious shock, even after the power has been disconnected. Capacitors associated with the power supply are especially hazardous. Avoid contact with any capacitors.
 Hazard	Unit **should not** be operated or stored with cover, panels, and / or casing removed. Operating unit with circuitry exposed could result in electric shock / fire hazards or unit malfunction.

[Potential Hazards]

 Caution	If abnormal odors or noises are noticed coming from the unit, immediately turn the power off and disconnect the power cord to avoid potentially hazardous conditions. If problems similar to the above occur, contact an authorized service representative **before** attempting to operate the unit again.

[Rack Mount Brackets, Ground Terminal, and Rubber Feet]

 Caution	To rack-mount or ground the unit, or to install rubber feet, **do not** use screws or materials other than those supplied. Otherwise, doing so may cause damage to the internal circuitry or components of the unit. If you remove the rubber feet that are attached to the unit, **do not** reinsert the screws securing the rubber feet.

[Consumables]

 Caution	Consumable items that are used in the unit must be periodically replaced. For further details on which parts are consumables and when they should be replaced, refer to the specifications at the end of the Operation Manual. Since the service life of consumables varies greatly depending on the environment in which they are used, such items should be replaced at an early date. For details on replacing consumable items, contact your dealer.

Unpacking

The Hanabi series Auxiliary Units are fully inspected and adjusted prior to shipment and can be operated immediately upon completing all required connections and operational settings. Check your received items against the packing lists below.

◆ **HVS-AUX8 Box**

ITEM	QTY	REMARKS
HVS-AUX8	1	16 signal select type
BNC cable	1	For control connection (Arcnet, 10m) (BNC, 5C2V, 75ohm)
AC adaptor with AC cable	1	For DC power supply
Operation manual	1	
HVS-AUX8RK (option)	1 set	(See the table below.)
Rack mount bracket sets (2 types) (option)	1 set	For 1-unit mounting to EIA1RU rack space For 2-unit mounting to EIA1RU rack space
Control cable (option)	1	For VPS-700 series switcher connection (10m) (PC-3168-1)

The HVS-AUX8RK Option Box

Blank Panel	1	For attaching to the frame instead of front panel.
Control cable	1	For front panel and frame connection (5m)
D-sub connector	1 set	
Rubber feet	1 set	
Installation Guide	1	

CAUTION
Use the supplied control cable when configuring the optional HVS-AUX8RK. Otherwise, malfunction may result. Do not use other cables.

◆ **HVS-AUX16/32 Box**

ITEM	QTY	REMARKS
HVS-AUX16 or HVS-AUX32	1	38 signal select type
BNC cable	1	For control connection (10m)
AC cable	1	
Rack mount brackets	1 set	EIA standard type
Operation manual	1	
HVS-AUXRK (option)	1 set	(See the table below.)
Control cable (option)	1	For VPS-700 series switcher connection (10m) (PC-3168-1)

The HVS-AUXRK Option Box

Blank Panel	1	For attaching to the frame instead of front panel.
Control cable	1	For front panel and frame connection (5m)
D-sub connector	1 set	
Rack mount brackets	1 set	EIA standard type
Installation Guide	1	

CAUTION
Use the supplied control cable when configuring the optional HVS-AUXRK. Otherwise, malfunction may result. Do not use other cables.

Check

Check to ensure no damage has occurred during shipment. If damage has occurred, or items are missing, inform your supplier immediately.

Rack Mounting

The HVS-AUX16/32 units can be mounted to EIA standard rack units. When rack mounting a unit, use the accessory rack mount brackets (rack ears).

Table of Contents

1. Prior to Starting

1-1. Welcome

Congratulations! By purchasing a Hanabi series Auxiliary Unit you have entered the world of FOR.A and its many innovative products. Thank you for your patronage and we hope you will turn to FOR.A products again and again to satisfy your video and audio production needs.

FOR.A provides a wide range of products, from basic support units to complex system controllers, which have been increasingly joined by products for computer video based systems. Whatever your needs, talk to your FOR.A representative. We will do our best to be of continuing service to you.

1-2. About Hanabi Auxiliary Units

The Auxiliary Unit options (HVS-AUX8, HVS-AUX16 and HVS-AUX32) are designed for selecting signals for HVS-4000 series M/E (PGM/PST) as well as Hanabi and VPS-700 series auxiliary outputs. Configure multiple Auxiliary Units to further expand signal selection capability.

Features

- Up to 16 Auxiliary Units can be cascade configured via ARCNET connection in the Hanabi system and up to 12 Auxiliary Units in the VPS-700 system. (An Arcnet hub is required depending on the number of the units.)
- Front panel LED menu display at each unit for making operation and communication settings.
- HVS-AUX8 units are a 16-signal selection type
  HVS-AUX16/32 units are a 38-signal selection type (HVS-AUX32 has 32 single signal selection buttons.)
- Remote mount available with an optional front panel separation kit (HVS-AUX8RK or HVS-AUXRK)

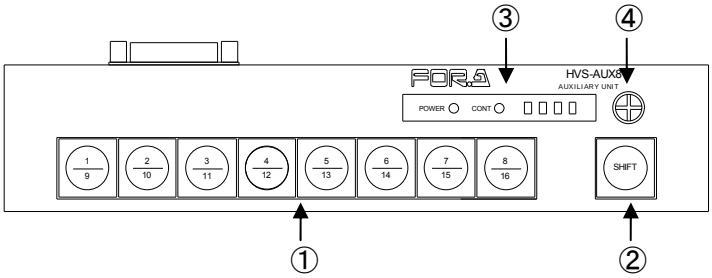
1-3. About This Manual

This manual is intended to help the user easily operate Hanabi series Auxiliary Units and make full use of all their functions during Hanabi Live Switcher operations. Before connecting or operating your Auxiliary Unit, read this operation manual thoroughly to ensure you understand the product. After reading, it is important to keep this manual in a safe place and available for reference.

2. Panel Descriptions

2-1. Front Panels

2-1-1. HVS-AUX8



① Signal Select Buttons
Used to select signal for switcher AUX outputs as well as HVS-4000 series M/E buses. Note that each button is marked with two signal indications and is used to select one of the two. SHIFT button ② determines which one of the two signals appearing at any of the above buttons is selected when button is pressed. M/E bus signal 1–8 / 9-16 (Primary inputs, stills, etc) can be selected (factory settings).

NOTE
Any signal available in the switcher can be freely assigned to these bus buttons. See section 5-3. “Free Assign” for more details.

② SHIFT (TAKE) Button
Used in conjunction with buttons ① above to select output signal appearing as output at switcher. SHIFT has three operation mode; **Normal**, **Non-shifted** and **Take**. (See section 6. "Operations".)

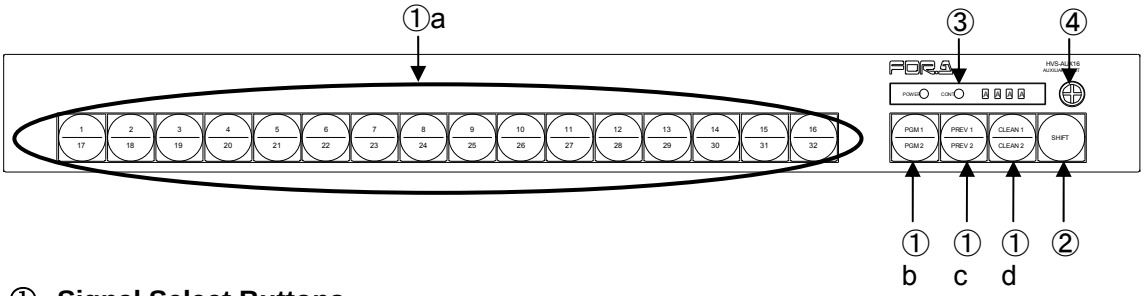
Normal mode	SHIFT is used in conjunction with buttons ① above to select output signal appearing as output at switcher.
Non-shifted mode	SHIFT is not used in conjunction with buttons ① above. Therefore, shifted buttons are disabled and only 8 signals can be selected in this mode.
Take mode	SHIFT is used in conjunction with buttons ① above to confirm the signal selection. To select output signal, press buttons ① above and press SHIFT. Therefore, shifted buttons are disabled and only 8 signals can be selected in this mode.

③ Indicators

POWER Indicator	**Lit green** when power is applied to the unit.
CONT Indicator	**Lit green** when control communication is occurring correctly between the Auxiliary Unit and the switcher. **Unlit** when control communication is not occurring or has failed due to error. In this case check the displayed message and take an appropriate action. See section 4-1. "Warning Messages" for details. **Flashing** during setting the Setup menu.
LED Menu Display	Used to make settings for Auxiliary Unit setup and operation.

④ Menu Control
Used to select setting to be made / changed at LED display.

2-1-2. HVS-AUX16



① Signal Select Buttons
Used to select signal for switcher AUX outputs as well as HVS-4000 series M/E buses. Note that each button is marked with two signal indications and is used to select one of the two. SHIFT button ② determines which one of the two signals appearing at any of the above buttons is selected when button is pressed. The output signal can be selected as any one of the signals described below (factory settings).

Select (a) M/E signal 1–16 / 16–32 (Primary inputs, stills, etc.)
Or (b) Program outputs
Or (c) Preview outputs
Or (d) Clean outputs

If controlling an **AUX bus**:	Available buttons: ① **a, b, c** and **d** above
If controlling an **M/E bus** (HVS-4000 only):	Available buttons: ① **a** above

NOTE
Any signal available in the switcher can be freely assigned to these bus buttons. See section 5-3. “Free Assign” for more details.

② SHIFT (TAKE) Button
Used in conjunction with buttons ① a–d above to select output signal appearing as output at switcher. SHIFT has three operation mode; **Normal**, **Non-shifted** and **Take**. (See section 6. "Operations.")

Normal mode	SHIFT is enabled. (Press SHIFT then buttons ① a–d above.) Selectable signals are **1-32, PGM1-2, PREV1-2** and **CLEAN1-2.**
Non-shifted mode	SHIFT is disabled. Selectable signals are **1-16, PGM1, PREV1** and **CLEAN1**.
Take mode	SHIFT is used in conjunction with buttons ① a–d above to confirm the signal selection. (Press buttons ① a–d above then SHIFT.) Selectable signals are **1-16, PGM1, PREV1** and **CLEAN1**.

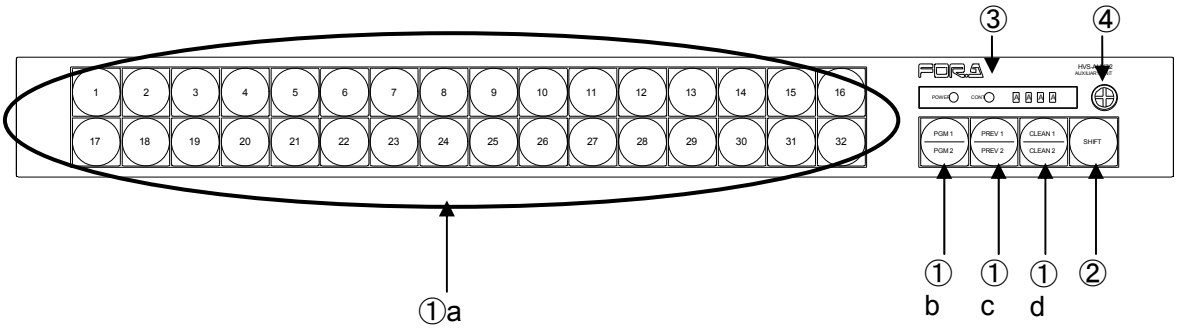
* When controlling an HVS-4000 M/E bus, only **1-32** are selectable in **Normal** mode.

③ Indicators

POWER Indicator	**Lit green** when power is applied to the unit.
CONT Indicator	**Lit green** when control communication is occurring correctly between the Auxiliary Unit and the switcher. **Unlit** when control communication is not occurring or has failed due to error. In this case check the displayed message and take an appropriate action. See section 4-1."Warning Messages". **Flashing** during setting the Setup menu.
LED Menu Display	Used to make settings for Auxiliary Unit setup and operation.

④ Menu Control
Used to select setting to be made / changed at LED display.

2-1-3. HVS-AUX32



① Signal Select Buttons
Used to select signal for switcher AUX outputs as well as HVS-4000 series M/E buses. The output signal can be selected as any one of the signals described below (factory settings).

Select (a) M/E signal 1–32 (Primary inputs, stills, etc.)
Or (b) Program outputs
Or (c) Preview outputs
Or (d) Clean outputs

If controlling an **AUX bus**:	Available buttons: ① **a, b, c** and **d** above
If controlling an **M/E bus** (HVS-4000 only):	Available buttons: ① **a** above

NOTE
Any signal available in the switcher can be freely assigned to these bus buttons. See section 5-3. “Free Assign” for more details.

② SHIFT (TAKE) Button
Used in conjunction with buttons ① b–d above to select output signal appearing as output at switcher. SHIFT has three operation mode; **Normal**, **Non-shifted** and **Take**. (See section 6. "Operations.")

Normal mode	SHIFT is enabled. (Press SHIFT then buttons ① b–d above.) Selectable signals are **1-32, PGM1-2, PREV1-2** and **CLEAN1-2**.
Non-shifted mode	SHIFT is disabled. Selectable signals are **1-32, PGM1, PREV1** and **CLEAN1**.
Take mode	SHIFT is used in conjunction with buttons ① a–d above to confirm the signal selection. (Press buttons ① a–d above then SHIFT.) Selectable signals are **1-32, PGM1, PREV1** and **CLEAN1**.

* When controlling an HVS-4000 M/E bus, only **1-32** are selectable in **Normal** mode.

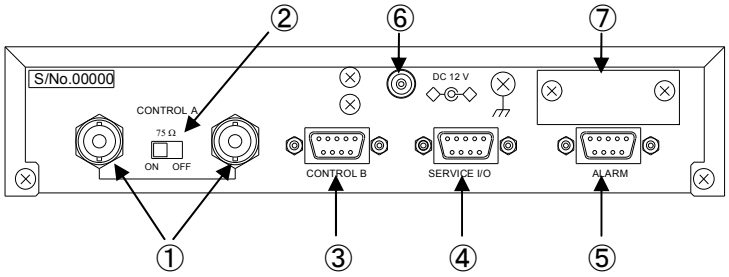
③ Indicators

POWER Indicator	**Lit green** when power is applied to the unit.
CONT Indicator	**Lit green** when control communication is occurring correctly between the Auxiliary Unit and the switcher. **Unlit** when control communication is not occurring or has failed due to error. In this case check the displayed message and take an appropriate action. See section 4-1. "Warning Messages." **Flashing** during setting the Setup menu.
LED Menu Display	Used to make settings for Auxiliary Unit setup and operation.

④ Menu Control
Used to select setting to be made / changed at LED display.

2-2. Rear Panels

2-2-1. HVS-AUX8



① CONTROL A
Used for cascade control connection between Hanabi series switchers and Auxiliary Units. Note that if cascade control connection is made here, 75Ω termination switch ② must be set to ON or OFF based on where the unit is positioned in the cascade configuration. (See section 3. "Connection" following for details.) BNC connectors.

② 75Ω Termination Switch
Used to set 75Ω termination of CONTROL A connector ① ON / OFF. ON or OFF setting here must be made based on where the unit is positioned in the cascade configuration. (See section 3. "Connection" following for details.) BNC connectors.

③ CONTROL B
Used for VPS-700 connection. (Use RS-422 (1) or (2) connector on VPS-700). 9-pin D-sub connector (female).

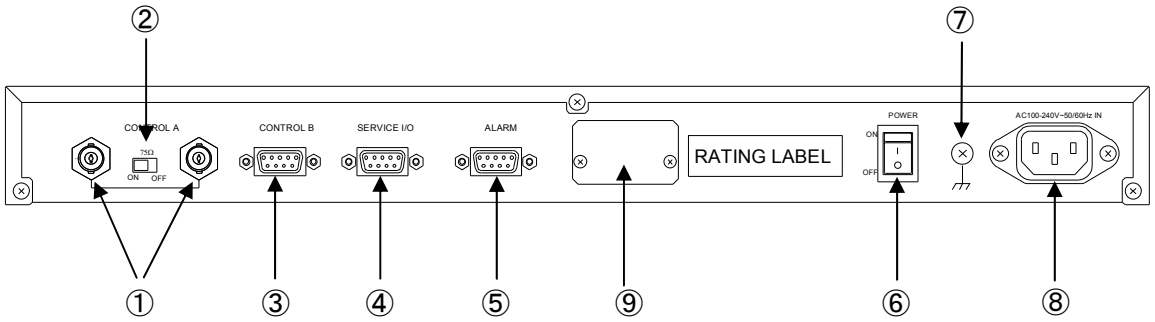
④ SERVICE I/O
For maintenance use only. Do not use during normal operation. 9-pin D-sub connector (female).

⑤ ALARM
Used for power supply alarm output (if unit power fails) and external reset signal input. 9-pin D-sub connector (female). See section 3-6. "Alarm Connection" for more information.

⑥ DC IN (12VDC)
Used for connection to the supplied AC adapter.

⑦ Blank Panel (Do not remove blank panel if HVS-AUX8RK is not used.)
Used for remote mount with an optional front panel separation kit (HVS-AUX8RK)

2-2-2. HVS-AUX16/32



① CONTROL A
Used for cascade control connection between Hanabi series switchers and Auxiliary Units. Note that if cascade control connection is made here, 75Ω termination switch ② must be set to ON or OFF based on where the unit is positioned in the cascade configuration. (See section 3. "Connection" following for details.) BNC connectors.

② 75Ω Termination Switch
Used to set 75Ω termination of CONTROL A connector ① ON / OFF. ON or OFF setting here must be made based on where the unit is positioned in the cascade configuration. (See section 3. "Connection" following for details.) BNC connectors.

IMPORTANT
Termination connection at Hanabi series OUs and MUs is not 75Ω termination switch made. User supplied termination connector must be connected to one side of U connector supplied with OU / MU units. See Hanabi series switcher Operation manual for details.

③ CONTROL B
Used for VPS-700 connection. (Use RS-422 (1) or (2) connector on VPS-700). 9-pin D-sub connector (female).

④ SERVICE I/O
For maintenance use only. Do not use during normal operation. 9-pin D-sub connector (female).

⑤ ALARM
Used for power supply alarm output (if unit power fails) and external reset signal input. 9-pin D-sub connector (female). See section 3-6. "Alarm Connection" for more information.

⑥ Power Switch
Used to turn unit power ON / OFF. Front panel power indicator will be lit green whenever this switch is to ON and power is applied to the unit.

⑦ Ground
Used to ground unit to protect operators against static electricity and electrical shock.

⑧ AC Connector
Used for connection to AC power source via supplied accessory cord.

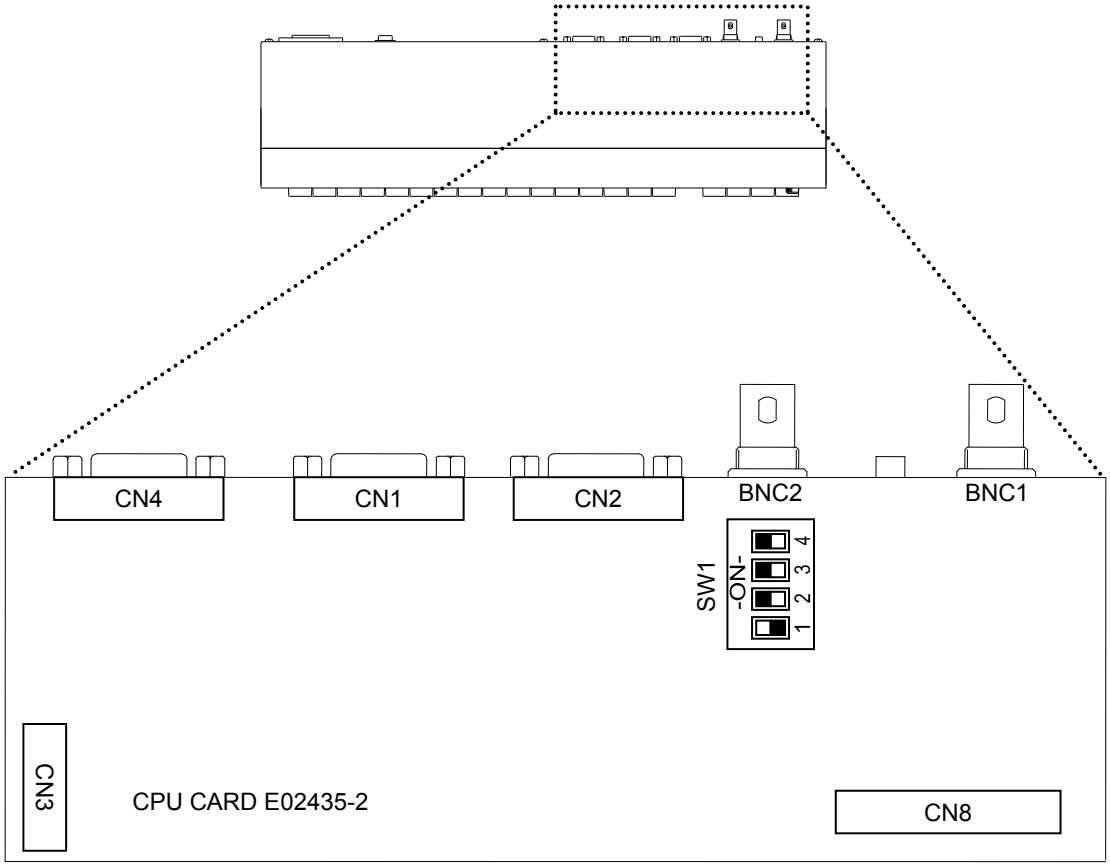
⑨ Blank Panel (Do not remove blank panel if HVS-AUXRK is not used.)
Used for remote mount with an optional front panel separation kit (HVS-AUXRK)

2-3. Internal Settings

The switch on the CPU board is service use. Do not change these settings. The figure below shows the factory default settings of the SW1. If you have changed the settings by mistake, refer to the figure below to return them to the factory defaults.

CAUTION
The switch on the CPU board is service use. Only qualified technical personnel should be allowed to use them. To protect boards from electrostatic damage, do not touch the components on the boards.

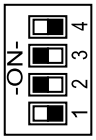
HVS-AUX top view



CPU CARD（E02435-2）Default Settings

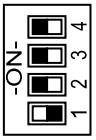
◆ **SW1 Setting (service use)**

HVS-AUX8



1, 4: ON(Do not change.)
2, 3: OFF (Do not change.)

HVS-AUX16/32



1: ON (Do not change.)
2-4: OFF (Do not change.)

3. Connection

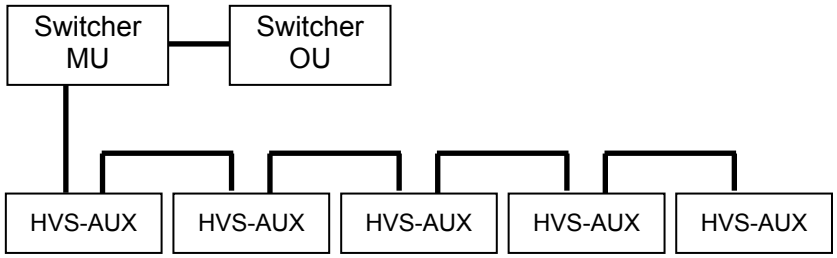
3-1. Arcnet Connection Requirements

Connection cable	BNC (5C2V or equivalent)
Total cable length within one segment	Less than 100m
Cable length between Arcnet devices (terminals)	More than 1 m
Available number of Arcnet hub in a system	2
Maximum number of units within one segment	7 units
End terminals in a network system	75Ω termination required

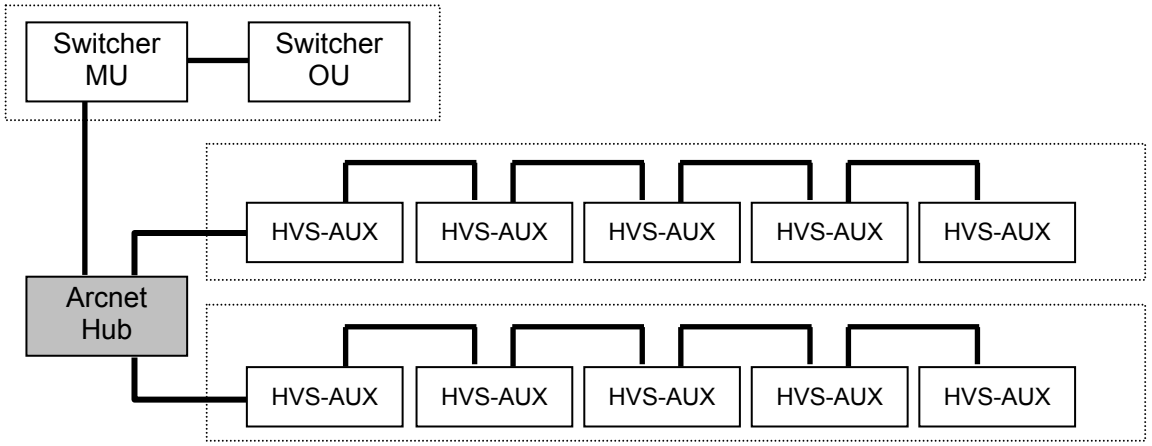
These figures are provided only as a guide. They vary depending on the environments of the system.

IMPORTANT
To control all of auxiliary outputs in the same time, the same number of Auxiliary Units must be configured in the system. If eight or more Auxiliary Units are configured in a system, an Arcnet hub is required. Consult your For-A resellers for more details.

◆ **Connection Example 1 (One Segment)**



◆ **Connection Example 2 (Three Segments)**

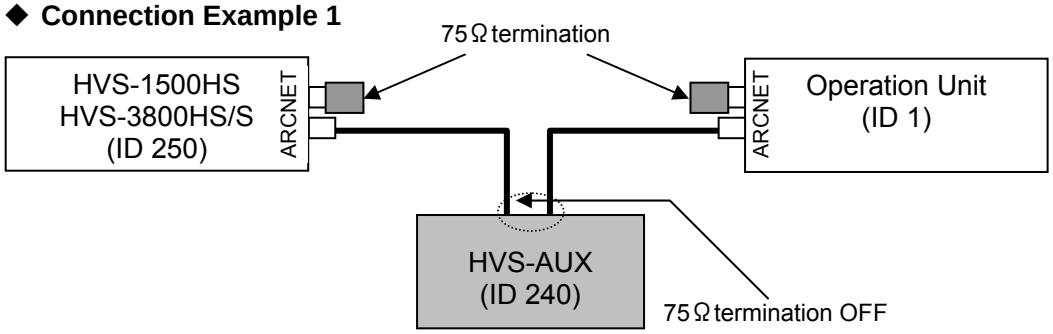


3-2. Connecting to Hanabi Series Switchers

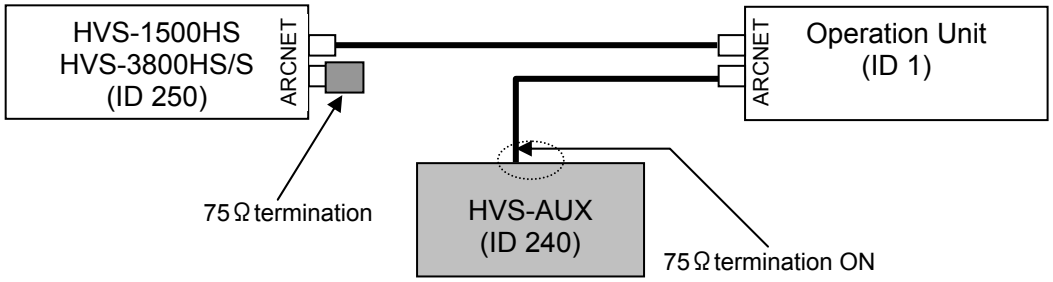
The examples of ARCNET connection between the Auxiliary Units and Hanabi series switchers are given in the following. The devices at the both ends of the connection must be terminated by 75 ohms. On the Auxiliary Units 75 ohm termination switch must be set to ON.

3-2-1. Connection Example (HVS-1500/3800)

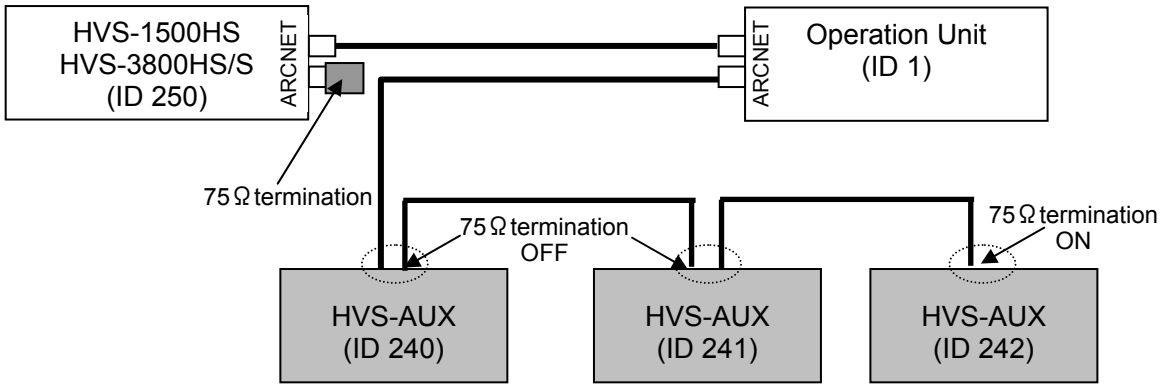
◆ **Connection Example 1**



◆ **Connection Example 2**



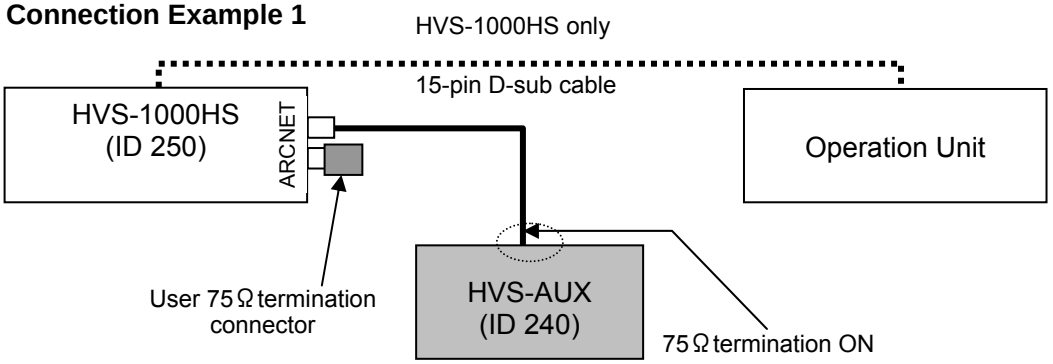
◆ **Connection Example 3**



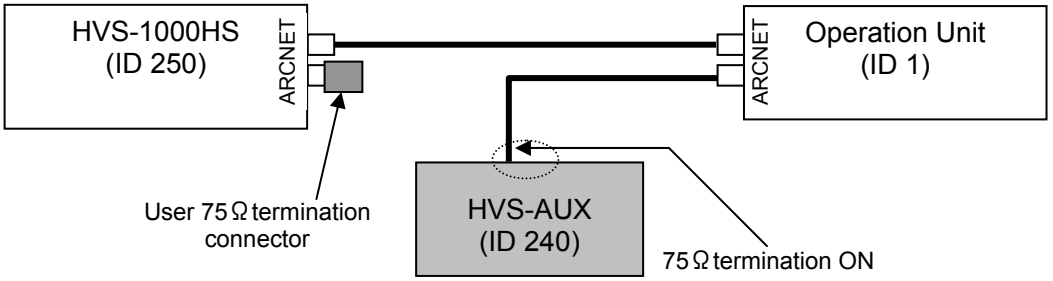
3-2-2. Connection Example (HVS-300/350/390/XT100/XT110/500/600/650/1000HS)

IMPORTANT
If the Auxiliary Units are configured in the HVS-300/XT100/XT110/500/600/1000 system, an HVS-ARCNET option is required for connection.

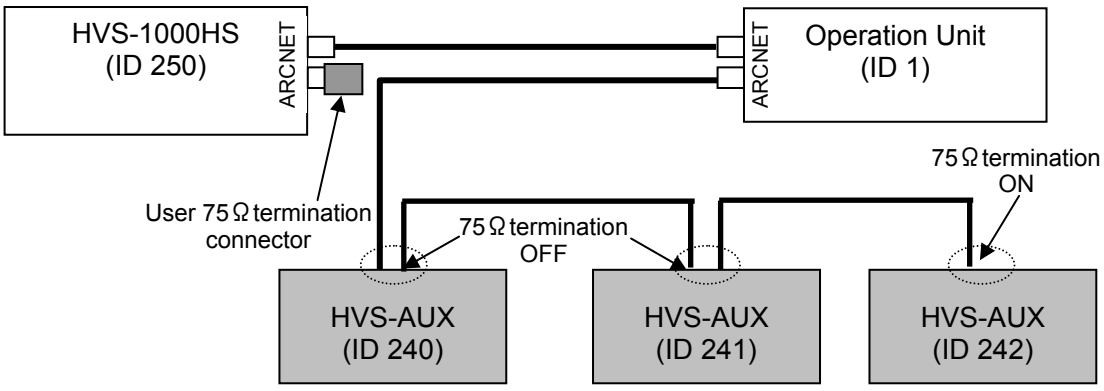
◆ **Connection Example 1**



◆ **Connection Example 2**

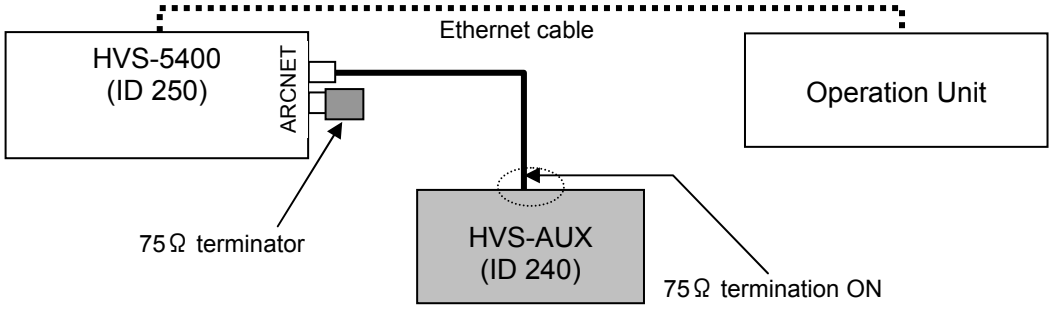


◆ **Connection Example 3**

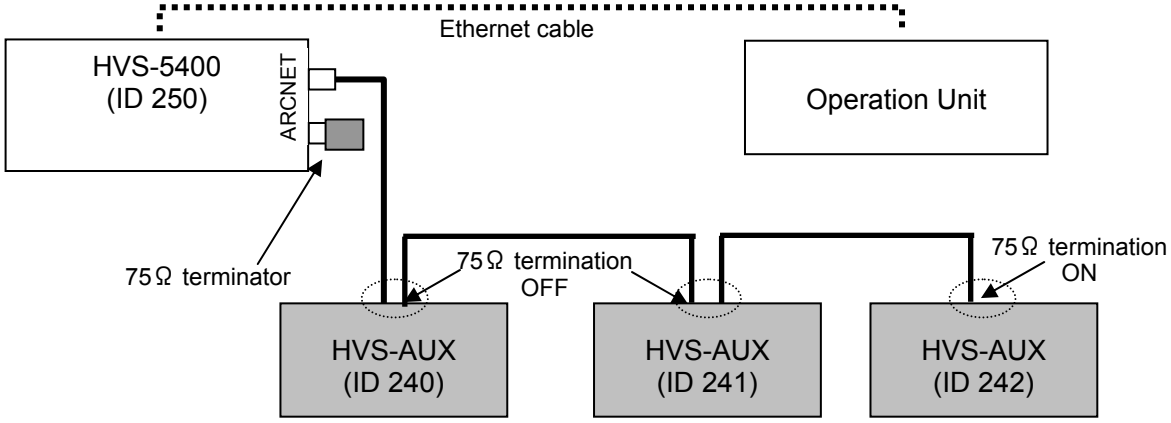


3-2-3. Connection Example (HVS-5000 Series)

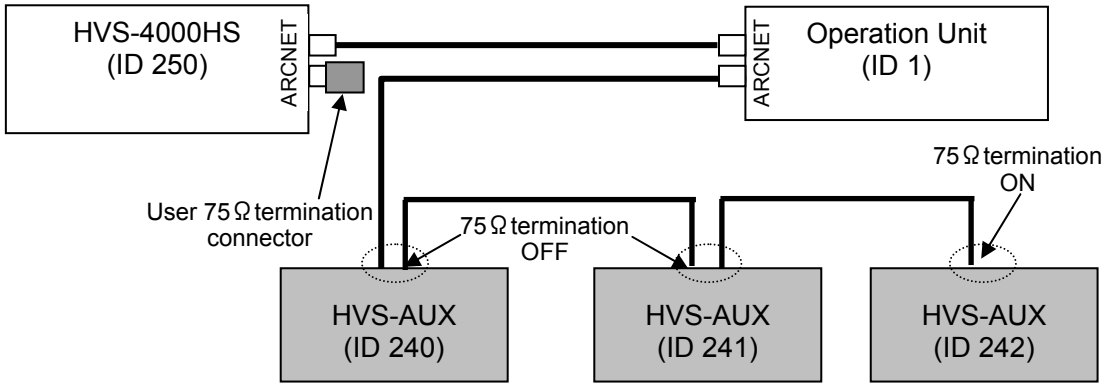
◆ **Connection Example 1**



◆ **Connection Example 2**



3-2-4. Connection Example (HVS-4000HS)



3-3. Connecting to VPS-700 Series Switchers

IMPORTANT
To control auxiliary outputs for the VPS-700 series switchers (VPS-700, VPS-700RPS, and VPS-715) the Auxiliary Units with firmware version 3.00 or higher are required.

First, designate one of the Auxiliary Units as a master and others as slaves. Connect the master unit to the VPS-700 via the supplied control cable as shown in the connection example below. Use the Arcnet to connect the master and slaves with the cables supplied with the Auxiliary Units. The both ends of the Arcnet must be 75 ohm terminated.

◆ **Connecting between VPS-700 and the master Auxiliary Unit:**

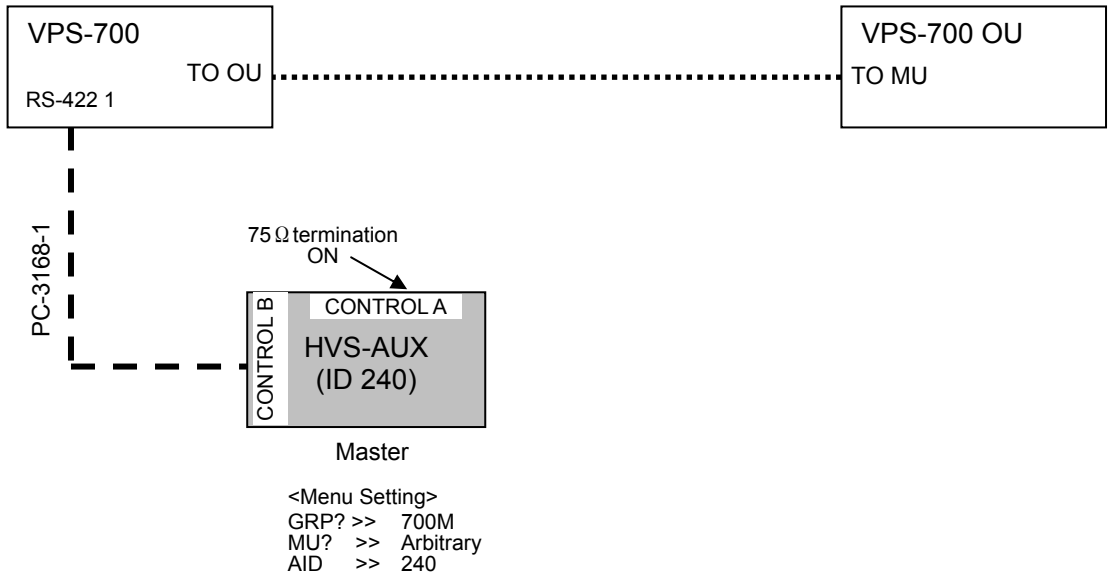
Connector used on VPS-700: RS-422 (1) or (2) (9 pin D-sub 9, female)
Connector used on HVS-AUX: CONTROL B (9 pin D-sub 9, female)
Connection cable: Optional control cable (PC-3168-1, Separate purchase)

◆ **Connecting the master and slave Auxiliary Units:**

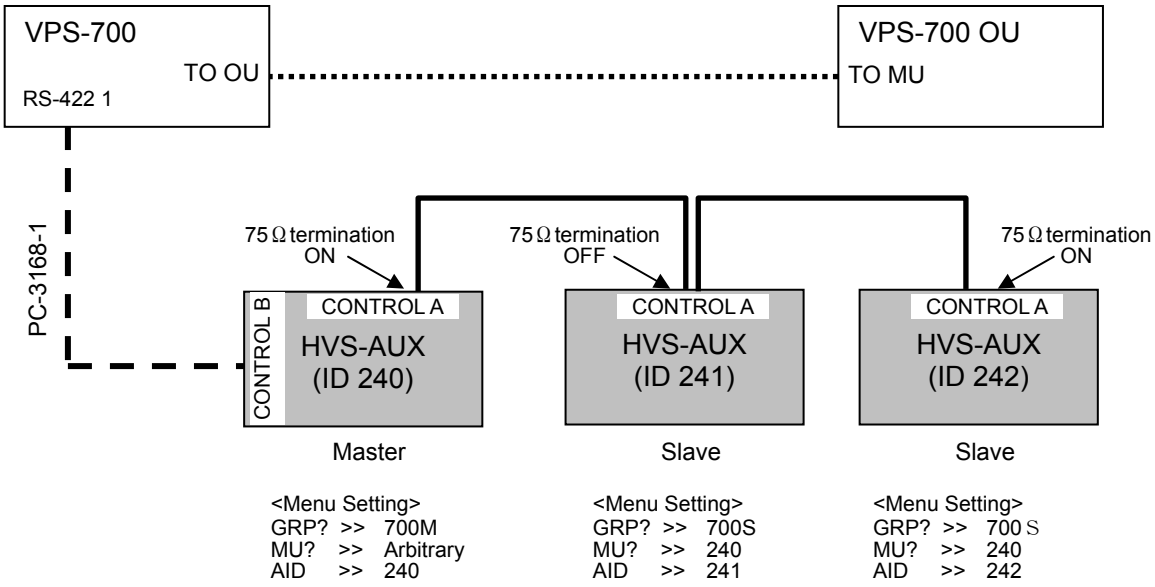
Used connector: BNC with loopthrough (75Ω termination switch embedded)
Connection cable: BNC cable supplied with the Auxiliary Unit

3-3-1. Connection Examples

◆ **Example 1**



◆ **Connection Example2**



3-3-2. Arcnet ID and Menu Settings

◆ **Arcnet ID**

Note that when more than one unit is configured, different ID numbers (1-255) must be assigned to each unit configured within the ARCNET for control communication to be possible. If ID numbers are overlapped in the Arcnet, communication cannot be properly established. (See section 5. "Menu Operation" following for details.)

The Arcnet ID number can be changed in the AID item in the Setup menu. See section 5-1 “Making Settings" and section 5-2 "Setup Menu."

NOTE
The Arcnet ID for HVS-AUX is set to 240 at factory default. The different ID numbers must be set for each units.

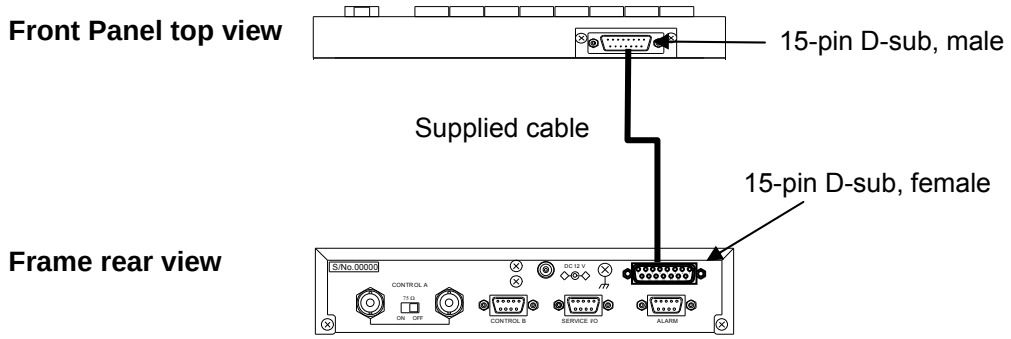
◆ **Menu Settings**

The GRP and MU settings in the menu are different between master and slave units. Refer to the table below for proper settings for your Auxiliary Units. See section 5-1 “Making Settings" and section 5-2 "Setup Menu" for other menu settings.

Menu Item	Setting	
	Master	Slave
GRP?	700M	700S
MU?	Any value from 1 to 255 (This value is neglected.)	Arcnet ID of Master

3-4. Remote Mount with HVS-AUX8RK

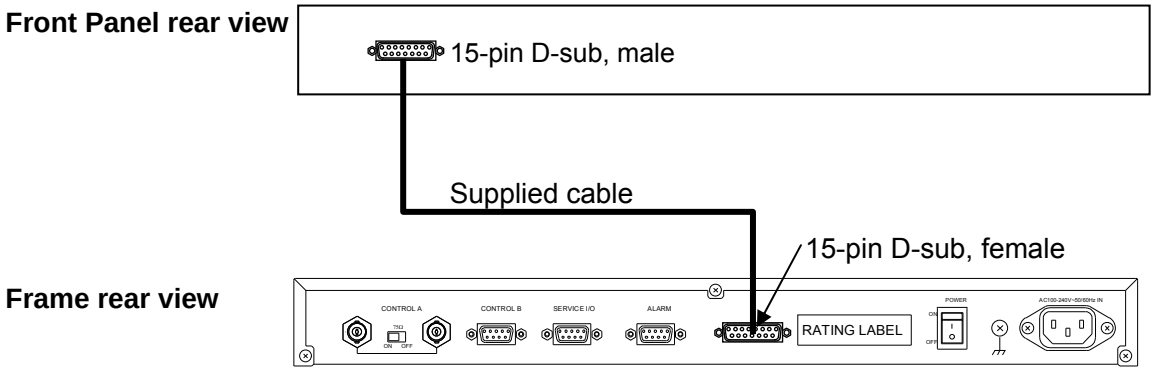
If the front panel and frame of the HVS-AUX8 units are separated using the optional HVS-AUX8RK, connect between the D-sub connector (15-pin D-sub, male) on the rear side of the front panel and the TO PANEL connector (15-pin D-sub, female) with the supplied control cable.



CAUTION
Use the supplied control cable when configuring the optional HVS-AUX8RK and do not disconnect the cable (power supply included) from when the unit is in operation. Otherwise, malfunction may result. Do not use other cables.

3-5. Remote Mount with HVS-AUXRK

If the front panel and frame of the HVS-AUX16/32 units are separated using the optional HVS-AUXRK, connect between the D-sub connector (15-pin D-sub, male) on the rear side of the front panel and the TO PANEL connector (15-pin D-sub, female) with the supplied control cable.

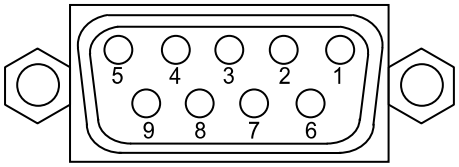


CAUTION
Use the supplied control cable when configuring the optional HVS-AUXRK and do not disconnect the cable (power supply included) from when the unit is in operation. Otherwise, malfunction may result. Do not use other cables.

3-6. Alarm Connection

The pin assignments of the ALARM connector are as shown in the table below. Refer to the table to make alarm connections.

◆ **Alarm Connector Appearance**



9-pin D-sub (female)

◆ **Pin Assignment Table**

Pin No	Signal	Description
1	Communication ALARM OUT *	Communication failure alarm, normally open
2	Power ALARM OUT *	Power supply failure alarm, normally open
3	Not used	Not used
4	Not used	Not used
5	Reset IN	External reset input. Active low initiate.
6	Communication ALARM Common	Communication alarm signal common.
7	Power ALARM Common	Power alarm signal common.
8	GND	Common ground
9	GND	Common ground

* Relay contacts: Max. load current 0.5A at 24VDC.

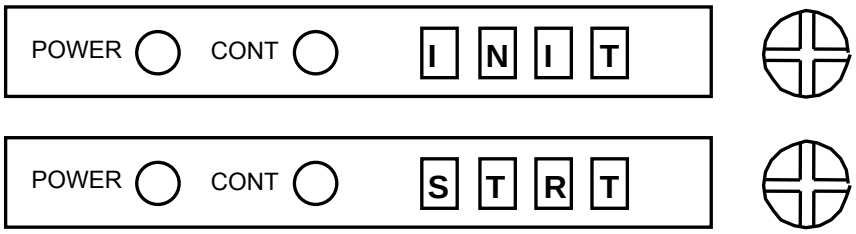
Communication failure alarm
Pins 1 and 6 remain OPEN during normal operation. If communication failure occurs, pins 1 and 6 will short and fan alarm signal output occurs.

Power supply alarm
Pins 2 and 7 remain OPEN during normal operation. If a power supply failure occurs, pins 2 and 7 will short and power supply alarm signal output occurs. (Pins 2 and 7 will short when turning the unit's power off.)

External reset
An external reset signal shorts pin 5 to GND (pin 8 or pin 9) to reset the unit.

4. Power ON

Power on all devices connected to the system after all system connections are complete. When powering on the Auxiliary Units , the message "INIT", which indicates that the unit is starting up, and then the message "STRT", which indicates that the startup is fully complete, will be displayed.



To setup the Auxiliary Units, go to section 5. "Menu Operation."
To operate the Auxiliary Units immediately, go to section 6. "Operations."

4-1. Warning Messages

If a warning message is displayed, take an appropriate action following the tables below.

Warning Messages when connecting to the Hanabi switcher.

Message	Error	Action	Refer to
ERR1	System error	Power off and then on HVS-AUX.	
A NG	Arcnet connection failure	Check the Arcnet connection (cable connection and 75ohm terminal switch) at HVS-AUX.	3-2
M NG	MU communication failure	Check if the power is ON at MU. Check the Arcnet connection (cable connection, etc.) at MU.	3-2
G NG	Group setting failure	Group setting is not properly made. Change the Group setting at GRP? menu.	5-2
DUID	Arcnet ID error	The same Arcnet ID as HVS-AUX already exists. Change the Arcnet ID at AID menu.	5-2
MUID	Arcnet ID error (MU)	The MU specified by Arcnet ID is missing. Check the MU ID number and change the ID at MU? menu.	5-2
O NG	OU connection failure (HVS-1500HS/ HVS-3800HS only)	Check if the power is ON at OU. Check the Arcnet connection (cable connection and terminator.) at OU.	3-2

Warning Messages when connecting to the VPS-700 switcher as a Master

Message	Error	Action	Refer to
ERR1	System error	Power off and then on HVS-AUX.	
A NG	Arcnet connection failure	Check the connection with MU (cable connection) at Master unit.	3-2
M NG	MU communication failure	Check if the power is ON at MU. Check the connection with Master unit at MU (RS-422).	3-2
G NG			

Warning Messages when connecting to the VPS-700 switcher as a Slave

Message	Error	Action	Refer to
ERR1	System error	Power off and then on HVS-AUX.	
A NG	Arcnet connection failure	Check the Arcnet connection with Master unit (cable connection and 75ohm terminal switch).	3-3-1
M NG	Communication failure with MU or Master unit	Check if the power is ON at Master unit Check the Arcnet connection with Master unit (cable connection and 75ohm terminal switch). Check if the power is ON at MU. Check the connection between Master unit and MU (cable connection)	3-3-1
DUID	Arcnet ID error	The same Arcnet ID as HVS-AUX already exists. Change the Arcnet ID at AID menu.	3-3-2 5-2

5. Menu Operation

There are several operational settings which need to be made using the front panel LED menu display and the menu control. Explanations on making settings and what settings can be made at the front panel are contained in the following sub sections.

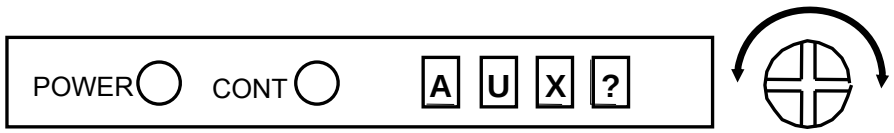
5-1. Making Settings

The general procedure for making settings using the LED display and the display control are as follows. Note that the LED display can only display 4 characters at a time, so the names for each setting are given in abbreviated form at the display. (See the following pages for settings table and names.)

■ **To make settings:**

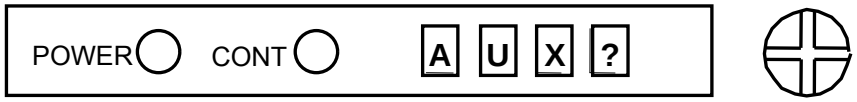
1) To enter the Setup menu, press and hold down menu control for 2 seconds. If the front panel is locked, press and hold down menu control for more than 10 seconds to enter the setup menu.
   When entering the Setup menu, the CONT indicator and LED Menu Display should blinks.

2) Turn menu control (CONT indicator will flash) until needed setting is visible in menu display. (See the following pages for a list of settings available and display order.)



Turn menu control

3) Once required menu item is displayed, press menu control as indicated below to select that item for change.



Press menu control

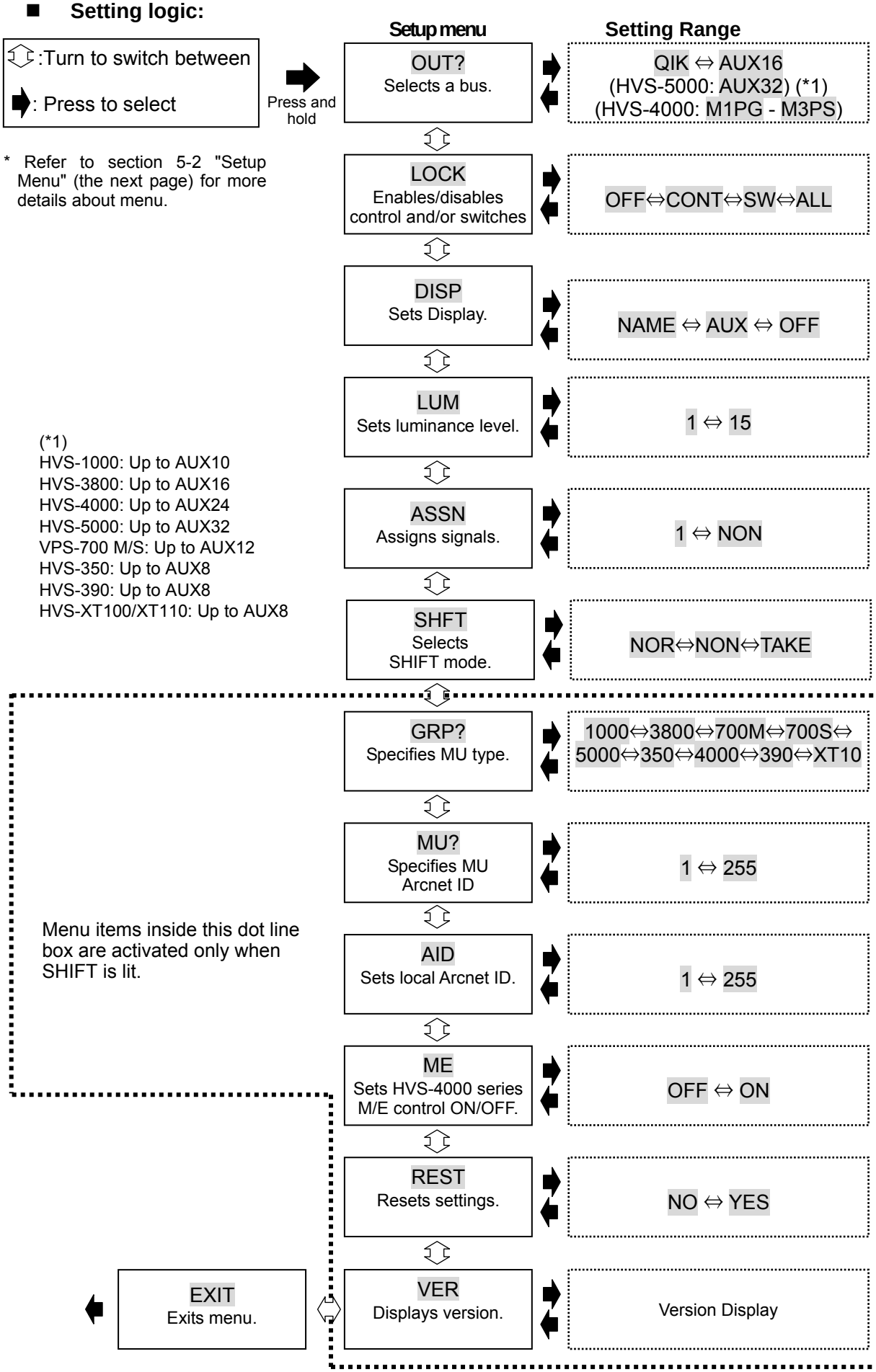
4) Setting currently made for selected item will appear in menu display. Turn menu control again to change currently displayed setting.

5) When correct setting is visible in display, press menu control again to input and store the new setting.

6) Turn menu control until EXIT is displayed then press menu control to exit menu setup.

IMPORTANT
Press and hold menu control for 2 seconds at anytime during this procedure to restore the previous settings. Press and hold menu control for more than 3 seconds to exit the menu list and to not apply new settings. Note that if no operation is performed (control pressed/turned, etc.) for 30 seconds during following procedure, unit will automatically exit setup menus.

■ Setting logic:



* Refer to section 5-2 "Setup Menu" (the next page) for more details about menu.

(*1)
HVS-1000: Up to AUX10
HVS-3800: Up to AUX16
HVS-4000: Up to AUX24
HVS-5000: Up to AUX32
VPS-700 M/S: Up to AUX12
HVS-350: Up to AUX8
HVS-390: Up to AUX8
HVS-XT100/XT110: Up to AUX8

5-2. Setup Menu

Item	Default	Setting Range	Description
OUT?	AUX1	QIK	Enables the user to select a bus to be controlled without opening the menu (Bus Quick Select mode). See section 6-4 for details.
		AUX1-32 (*1)	Selects an auxiliary bus to control.
		M1PG, M1PS M2PG, M2PS M3PG, M3PS	Selects a program or preset bus to control. (HVS-4000 series only)
LOCK	OFF	OFF, CONT, SW, ALL	Enables/Disables the control and/or switches (*2) OFF: The control and switches can be used CONT: The control cannot be used. (Bus Quick Select is possible. See Sec. 6-4) SW: The switches (buttons) cannot be used ALL: Both control and switches cannot be used.
DISP	NAME	NAME, AUX, OFF	Sets what appears at LED display during operation. NAME: Displays the selected signal name. AUX: Displays the AUX bus being controlled. OFF: No character displayed (LEDs off.)
LUM	10	1-15	Sets LED luminance level.
ASSN	(*1)	(*1)	Lets user free assign signal selections (See section 5-3. "Free Assign"). If NON is selected, any selection is not made by pressing the button.
SHFT	NOR	NOR, NON, TAKE	Selects SHIFT mode. NOR: Enables shifted button selection. NON: Disables shifted button selection. TAKE: SHIFT is used to confirm selection. See section 6 “Operations.”
GRP? (*3)	1000	1000	If controlling HVS-300 / 500 / 600 / 650 / 1000HS.
		3800	If controlling HVS-1500HS or HVS-3800HS/S.
		700M	If controlling VPS-700 as a master.
		700S	If controlling VPS-700 as a slave.
		5000	If controlling HVS-5000 series.
		350	If controlling HVS-350HS.
		4000	If controlling HVS-4000 series.
		390	If controlling HVS-390HS.
		XT10	If controlling HVS-XT100/XT110.
MU? (*3)	(*1)	1-255	Hanabi control: Sets which MU communicates with local Auxiliary Unit.
			VPS control: Arcnet ID of master (*4)
AID (*3)	240	1-255	Sets Arcnet ID for local Auxiliary Unit.
ME	OFF	OFF / ON	Enables/disables M/E bus control.(HVS-4000 series only) Before controlling a bus, set to ON.
REST (*3)	-	NO, YES	Resets unit to factory default settings. (See section 5-4. "Reinitialize".)
VER (*3)	-	-	Displays firmware version.

(*1) Available options vary depending on the switcher model.

(*2) When set to CONT, SW or ALL, press any lock button or switch on the panel displays "LOCK" flashing alarm in the LED Menu Display. To enter the menu, press and hold down menu control for more than 10 seconds when in LOCK mode.

(*3) These menu items are activated only when SHIFT is lit.

(*4) The MU setting in the master unit is neglected.

5-3. Free Assign

The user can free assign source signal designation at the Auxiliary Unit if they need to be changed to match your switcher setup. Note that the procedure to make assignment settings is different from the general procedure given in section 5-1 previous.

To make assign settings:

1) Turn menu control until to "ASSN" appears in the LED display, then press menu control once.
2) The assignment setting for the current button selected signal should appear in the LED display.
3) If you want to change the assignment for the current button selected signal, turn the control until the desired signal setting is displayed.
4) Press the control to make the assignment setting for that button selection.
5) If you wish to make another signal assignment, press menu control then press the button for a different signal selection. Repeat steps 2) through 4) above.
6) When you are finished making assignments, with "ASSN" displayed turn menu control until EXIT is displayed. Press menu control to escape menu setting operation.

IMPORTANT
Note that each button is marked with two signal indications and is used to select one of the two in the HVS-AUX8/16. SHIFT button determines which one of the two signals appearing at any of the above buttons is selected when button is pressed. Upper indications are active when SHIFT is unlit and lower indications are active when SHIFT is lit.

Factory Default Settings

Model	Button	Assigned Bus	Available Settings
HVS-300HS	1-12	IN01-IN12	BLAK, IN01-IN12 STL1-STL2, MATT, CB, PGM, PVW, CLN, MV, KEY, NON
	27	CB	
	29-30	STL1-STL2	
	PGM1	PGM	
	PGM2	KEY	
	PREV1	PREV	
	PREV2	MV	
	CLEAN1	CLN	
	CLEAN2	-	

Model	Button	Assigned Bus	Available Settings
HVS-350HS	1-24	IN01-IN24	BLK (BLACK), IN01-IN24, STL1-STL4, MATT1-2, CLBR, MEPG, PGM, MEPV, PREV, MECL, CLN MV1 - MV2, NON
	25-28	STL1-STL4	
	29	CLBR	
	30-31	MV1-MV2	
	32	BLK	
	PGM1	MEPG	
	PGM2	PGM	
	PREV1	MEPV	
	PREV2	PREV	
	CLEAN1	MECL	
	CLEAN2	CLN	

Model	Button	Assigned Bus	Available Settings
HVS-390HS	1-24	IN01-IN24	BLK (BLACK), IN01 - IN24, STL1 - STL4, STK1 – STK4, CLBR, MATT1 - 2, M1PG, M2PG *1, M1PV, M2PV *1, M1CL, M2CL *1, MV1 - MV2, NON
	25-28	STL1-STL4	
	29	STK1	
	30-31	CLBR	
	32	MV1-MV2	
	PGM1	M1PG	
	PGM2	M2PG	
	PREV1	M1PV	
	PREV2	M2PV	
	CLEAN1	M1CL	
	CLEAN2	M2CL	

*1 Selectable only when HVS-390HS is in 2M/E mode.

Model	Button	Assigned Bus	Available Settings
HVS-XT100 HVS-XT110	1-14	IN01-IN14	BLK (BLACK), IN01 - IN14, STL1 - STL2, STK1 – STK2, MATT1 - 2, CKFL, CKKY, EFF1 - 2, CLBR, PGM, PVW, CLN, MEKY, MV1, NON
	15-16	STL1-STL2	
	17-18	STK1-STK2	
	19-20	CKFL-CKKY	
	21-22	EFF1-2	
	23	CLBR	
	24	MV1	
	PGM1	PGM	
	PGM2	-	
	PREV1	PVW	
	PREV2	-	
	CLEAN1	CLN	
	CLEAN2	-	

Model	Button	Assigned Bus	Available Settings
HVS-1000	1-16	IN01-IN16	BLAK, IN01-IN16 STL1-STL4, MATT, PGM, PVW, CLN, UTL, CB, WHIT, NON
	17	UTL	
	29-32	STL1-STL4	
	PGM1	PGM	
	PGM2	-	
	PREV1	PREV	
	PREV2	-	
	CLEAN1	CLN	
	CLEAN2	-	

Model	Button	Assigned Bus	Available Settings
HVS-1500HS HVS-3800HS	1-28	IN01-IN28	BLAK, IN01-IN28, STL1-STL6, MATT1-2, CB, WHIT M1PG, M2PG, M1PV, M2PV, M1CL, M2CL, MV1 - MV2, UTL1-UTL2, KEY_A, KEY_B, NON
	29-32	STL1-STL4	
	PGM1	M1PG	
	PGM2	M2PG	
	PREV1	M1PV	
	PREV2	M2PV	
	CLEAN1	M1CL	
	CLEAN2	M2CL	

Model	Button	Assigned Bus	Available Settings
VPS-700	1-16	IN01-IN16	BLAK, IN01-IN16, STL1-STL2, MAT1-MAT4, COMA, COMB COAK, COBK PGM1, PRV1, CLN1, NON
	17-18	STL1-STL2	
	19-22	MAT1-MAT4	
	23, 24	COMA, COMB	
	25, 26	COAK, COBK	
	27, 28, 29	PGM1, PRV1, CLN2	
	PGM1	PGM1	
	PGM2	PGM1	
	PREV1	PRV1	
	PREV2	PRV1	
	CLEAN1	CLN1	
	CLEAN2	CLN1	

Model	Button	Assigned Bus	Available Settings
HVS-5000	1-32	IN01-IN32	BLAK, IN01-IN96 ST01-ST16, CB, WHIT, GMT1-GMT2, MAT1-MAT2, M1PG/PV/CL/OU, M2PG/PV/CL/OU, M3PG/PV/CL/OU, M4PG/PV/CL/OU, NON
	PGM1	M1PG	
	PGM2	M2PG	
	PREV1	M1PV	
	PREV2	M2PV	
	CLEAN1	M1CL	
	CLEAN2	M2CL	

Model	Button	Assigned Bus	Available Settings
HVS-4000 (AUX bus control)	1-32	IN01-IN32	BLAK, IN01 - IN48 STL1 - STL8, CB, WHIT, MAT1, MAT2, GMAT, M1O1 - M1O3, M2O1 - M2O3, M3O1 - M3O3, MV1 - MV2 (*1), MV3 - MV4, UD1V, UD1K, UD2V, UD2K, UD3V, UD3K, UD4V, UD4K, OOT1 - OOT4 CB1V, CB1K CB2V, CB2K NON
	PGM1	M1O1	
	PREV1	M1O2	
	CLEAN1	M1O3	
	PGM2	M2O1	
	PREV2	M2O2	
	CLEAN2	M2O3	

(*1) MV1 and MV2 cannot be selected when controlling AUX1-12 or 17-24.

Model	Button	Assigned Bus	Available Settings
HVS-4000 (M/E bus control)	1-32	IN01-IN32	BLAK, IN01 - IN48 STL1 - STL8, LSL1 - LSL4 CB, WHIT, MAT1, MAT2, GMAT, UD1V, UD1K, UD2V, UD2K, UD3V, UD3K, UD4V, UD4K, OOT1 - OOT4 CB1V, CB1K CB2V, CB2K NON

5-4. Reinitialize

If you need to reset your unit to factory set default settings, the procedure is as given below.

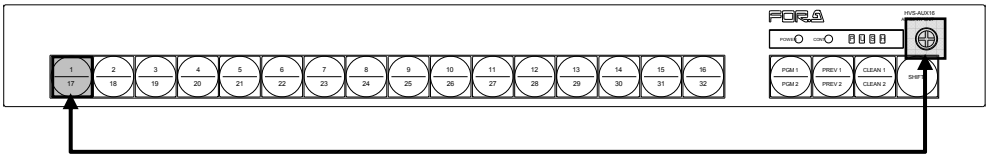
1) Press and hold down menu control for 2 seconds to enter the Setup menu.
2) Press SHIFT. The button should light up green.
3) Turn control to select REST. Once REST is displayed in the menu, press menu control to select that item.

4) YES or NO will appear in menu display. You can change between YES and NO by turning menu control.

If NO, turn menu control to NO and press menu control once to return to menu item list.

5) If YES, press menu control. With holding down menu control press a lit button on the panel. This returns the unit to factory default settings. After displaying "YES" for about one second, it returns to menu item list.

HVS-AUX8: With holding down menu control, press "1/9"
HVS-AUX16: With holding down menu control, press "1/17"
HVS-AUX32: With holding down menu control, press "17"



6) Turn control to select EXIT. Once EXIT is displayed in the menu, press menu control to exit menu.

6. Operations

This section explains how to select output signal in the Auxiliary Unit. Depending on the SHIFT mode, select operations differ as shown in the tables below. Refer to section 5. "Menu Operation" for changing SHIFT mode.

If the HVS-AUX8:

SHFT mode	Selectable Button	Signal Selection
NOR (Normal)	SHIFT not lit: 1-8 SHIFTlit: 9-16	Press signal select buttons.
NON (Non-shifted)	1-8	Press signal select buttons.
TAKE	1-8	Press signal select buttons and then press SHIFT.

If the HVS-AUX16:

SHFT mode	Selectable Button	Signal Selection
NOR (Normal)	SHIFT not lit: 1-16, PGM1, PREV1, CLEAN1 SHIFTlit: 17-32, PGM2, PREV2, CLEAN2	Press signal select buttons.
NON (Non-shifted)	1-16, PGM1, PREV1 and CLEAN1	Press signal select buttons.
TAKE	1-16, PGM1, PREV1 and CLEAN1	Press signal select buttons and then press SHIFT.

If the HVS-AUX32:

SHFT mode	Selectable Button	Signal Selection
NOR (Normal)	SHIFT not lit: 1-32, PGM1, PREV1, CLEAN1 SHIFT lit: 1-32, PGM2, PREV2, CLEAN2	Press signal select buttons.
NON (Non-shifted)	1-32, PGM1, PREV1 and CLEAN1	Press signal select buttons.
TAKE	1-32, PGM1, PREV1 and CLEAN1	Press signal select buttons and then press SHIFT.

6-1. NOR Mode（Default）

- Output signal is switched immediately after a signal selection button is pressed.
- Top labels of the signal selection buttons are activated when SHIFT is not lit. (See tables above).
- Bottom labels of the signal selection buttons are activated when SHIFT is lit. (See tables above).

6-2. NON Mode

- Output signal is switched immediately after a signal selection button is pressed.
- SHIFT is disabled and the button light never turn on.

Only top labels of the signal selection buttons are available.
You may change signal assignments for these buttons using free assign function. (See section 5-3. "Free Assign.")

6-3. TAKE Mode

TAKE mode will help you to avoid accidental signal selection. About bus assignments, see " section 5-3 "Free Assign".

- Output signal is switched when SHIFT is pressed after a signal selection.

  SHIFT should be flashing after a signal selection button is pressed. During flashing press SHIFT. SHIFT will automatically turn off if SHIFT is not pressed for 5 seconds during selection.
  If you want to verify the selected signal, set "NAME" for the "DISP" item in the Setup menu.

- Shifted buttons cannot be used for the signal selection.

  Only top labels of the signal selection buttons are available.
  You may change signal assignments for these buttons using free assign function. (See section 5-3. "Free Assign.")

6-4. Bus Quick Select

The **Quick Select** mode allows the user to select a bus to control without opening the Setup menu. In addition, selectable buses can be set up for Quick Select mode. (See section 6-4-1. "Setting Quick Select.")

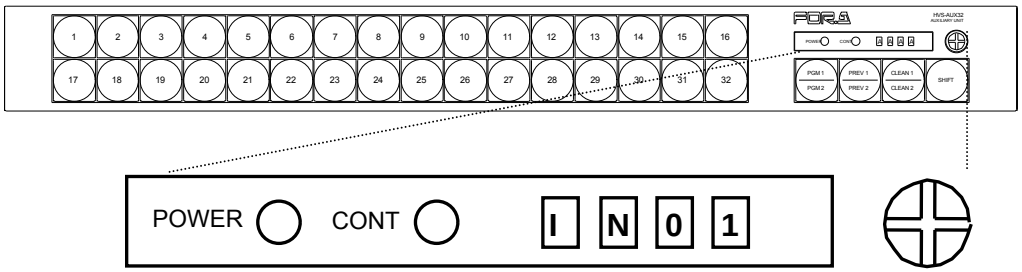
◆ **Switching to Quick Select Mode**

1) Press and hold down the menu control for two seconds to enter the Setup menu.
2) The "OUT?" item will appear in the menu display. Press the menu control.
3) Turn the menu control counter-clockwise to display "QIK."
4) Press the menu control to confirm the setting.
5) Press SHIFT to display EXIT then press menu control to exit menu setup.

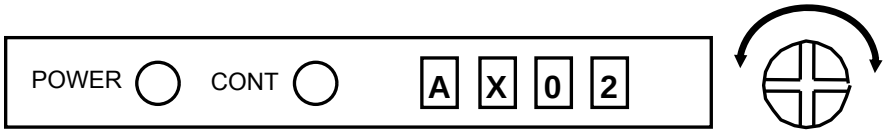
◆ **Changing the Control Bus in Quick Select Mode**

The operational example below shows how to change the control bus from AUX1 to AUX2.

1) The following display shows the signal name (IN01 in the following figure example) currently selected in AUX1.



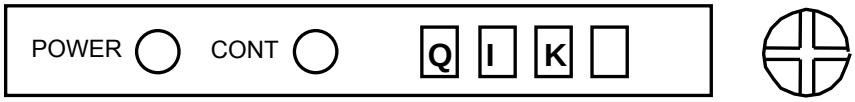
2) Turn menu control to display AX02.



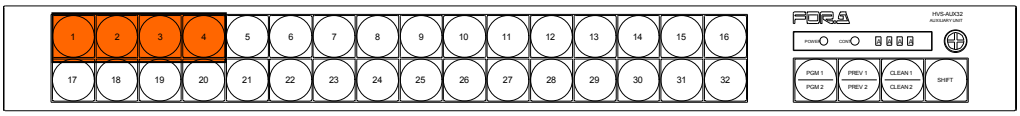
Two seconds later, the display changes from AUX bus to Signal and the AUX unit starts to control AUX2.

6-4-1. Setting Quick Select

1) Press and hold down the menu control for two seconds to enter the Setup menu.
2) The "OUT?" item will appear in the menu display. Press the menu control.
3) Turn the menu control counter-clockwise to display "QIK."



4) Number buttons on the front panel turn on. These buttons represent the controllable buses. Now you can select the buses that you want to control from the AUX unit. Turn off the buttons (buses) that you don't want to control and keep light on the buttons (buses) that you want to control.
   For example, Button1-16 (AUX1-16) will light up if HVS-3800HS is connected. To control AUX1-4, keep Button1-4 light on and press other number buttons to turn off their button light as shown below.

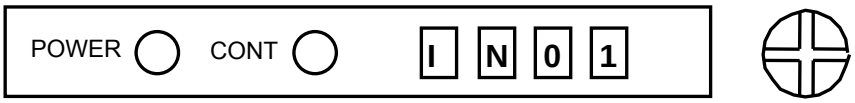


To control only AUX1-4 , turn off other number buttons.

   If the number of the AUX buses exceeds that of the buttons on the AUX unit:
   For example in the case when HVS-AUX8 has eight buttons and 32 auxiliary buses have to be set on it: Eight buttons on the HVS-AUX8 represent AUX1-8. Pressing SHIFT (lit indication) changes the buttons to AUX9-16. And then turning menu control changes the buttons to AUX17-24, then AUX25-32.
   To set M1PG to M3PS (HVS-4000 only), select 25 to 30.

5) Press the menu control to confirm the setting.
6) Press SHIFT to display EXIT then press menu control to exit menu setup.

◆ **Checking AUX bus and Signal**
The currently selected signal name for the AUX bus is displayed in the ordinary operations.



Shortly pressing the menu control displays the AUX bus controlled from the AUX unit in two seconds.

Press shortly

IMPORTANT
To display the AUX bus number, do not press and hold down the menu control but press the menu control briefly (less than half a second). The Setup menu will open if pressing and holding down the menu control for a while.

7. Specifications & Dimensions

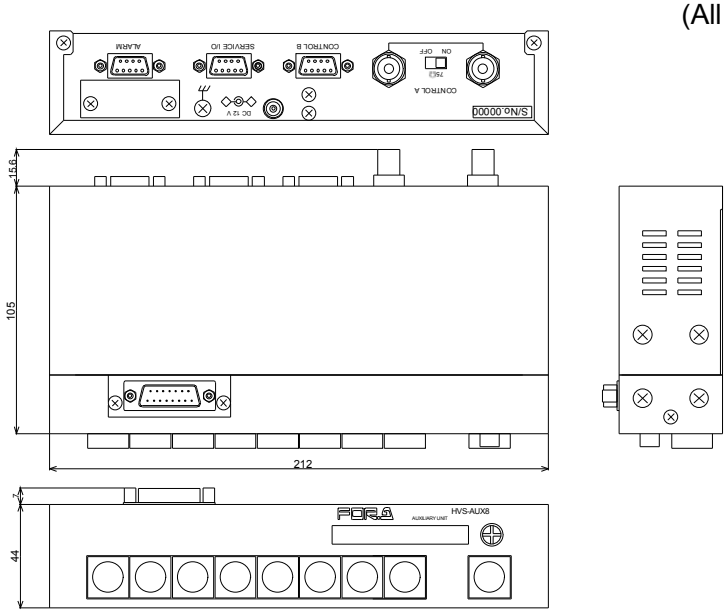
7-1. Unit Specifications

Interfaces	Control A:	ARCNET, 10 Mbps, 75Ω BNC x 1, loop-through
	Control B:	RS-422: 9-pin D-sub (female) x 1 (inch screws)
	Service I/O	RS-232C, For service and maintenance use only, 9-pin D-sub (female) x 1 (inch screws)
	Alarm	9-pin D-sub (female) x 1 (inch screws)
	To Panel (option)	For remote mount use only, On the frame rear panel: 15-pin D-sub (female) x 1 (inch screws) On the frame rear panel: 15-pin D-sub (male) x 1 (inch screws)
Power		
HVS-AUX8	12 V DC (supplied via accessory AC adapter)	
HVS-AUX16/32	100 V AC to 240 V AC ±10%, 50/ 60 Hz	
Consumption		
HVS-AUX8	3.6 W at 12 V DC	
HVS-AUX16/32	10 VA (5 W) at 100 to 120 V AC 15 VA (6 W) at 220 to 240 V AC	
Temperature	0°C to 40°C	
Humidity	30% to 90% (no condensation)	
Dimensions		
HVS-AUX8	212 (W) x 105 (D) x 44 (H) mm	
HVS-AUX16/32	424 (W) x 110 (D) x 44 (H) mm	
Weight		
HVS-AUX8	1.0 kg	
HVS-AUX16/32	1.9 kg	
Consumables	None	

7-2. Dimensions

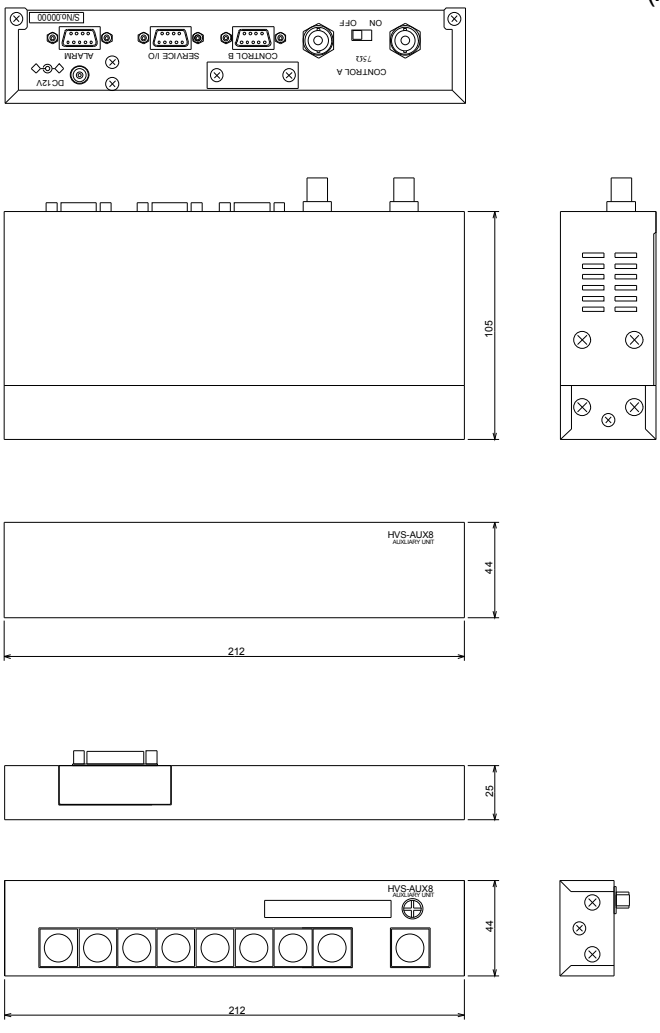
7-2-1. HVS-AUX8

(All dimensions in mm.)



7-2-2. HVS-AUX8 (Optional HVS-AUX8RK Configured)

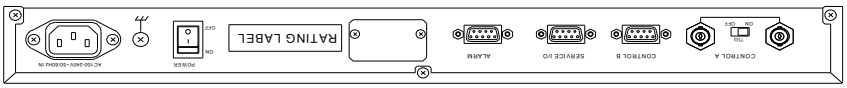
(All dimensions in mm.)

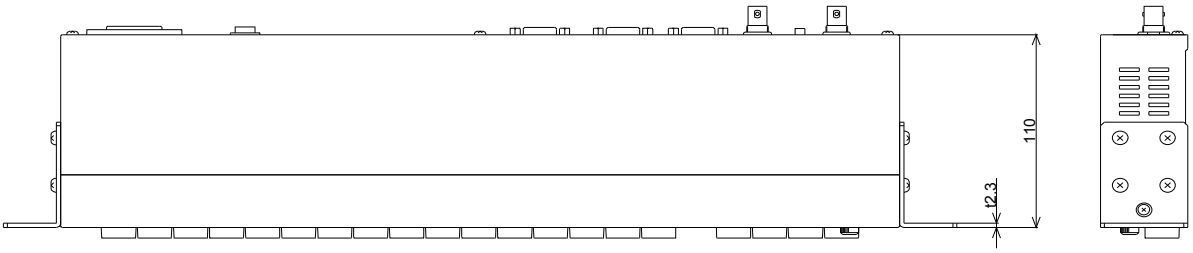


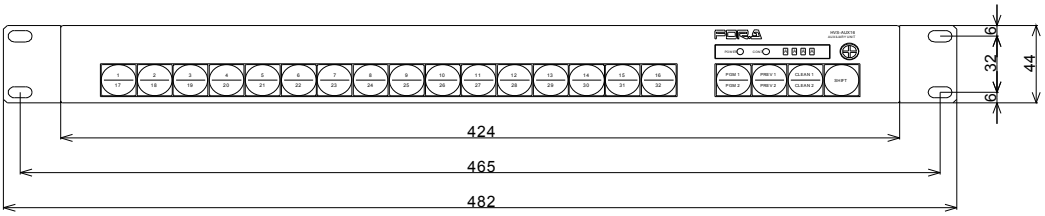
7-2-3. HVS-AUX16

(All dimensions in mm.)

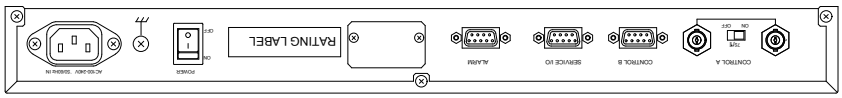
◆ **S/N 9000191 to S/N 9000834**

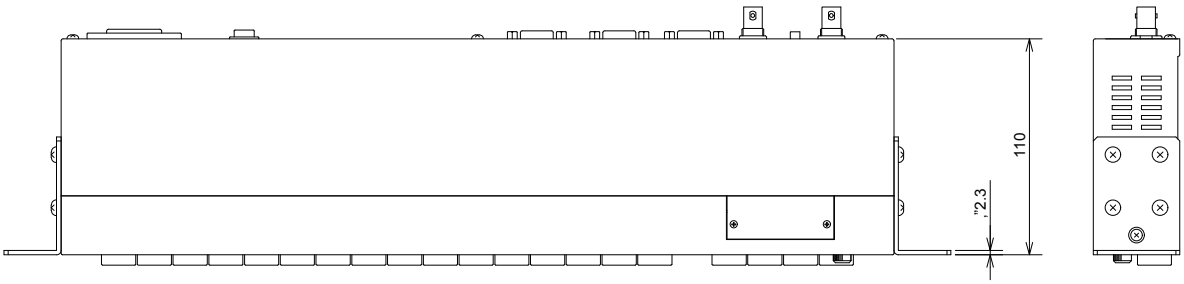


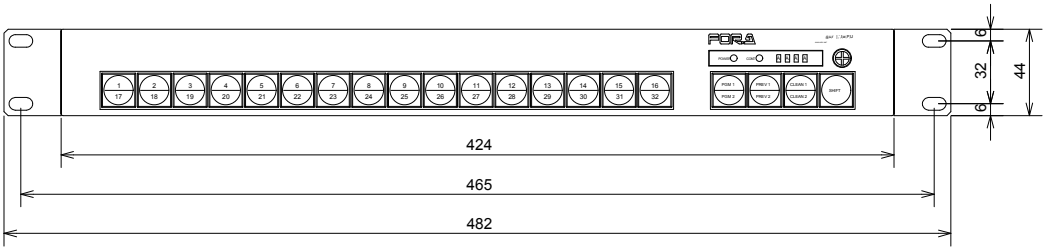




◆ **S/N 9000835 or higher**



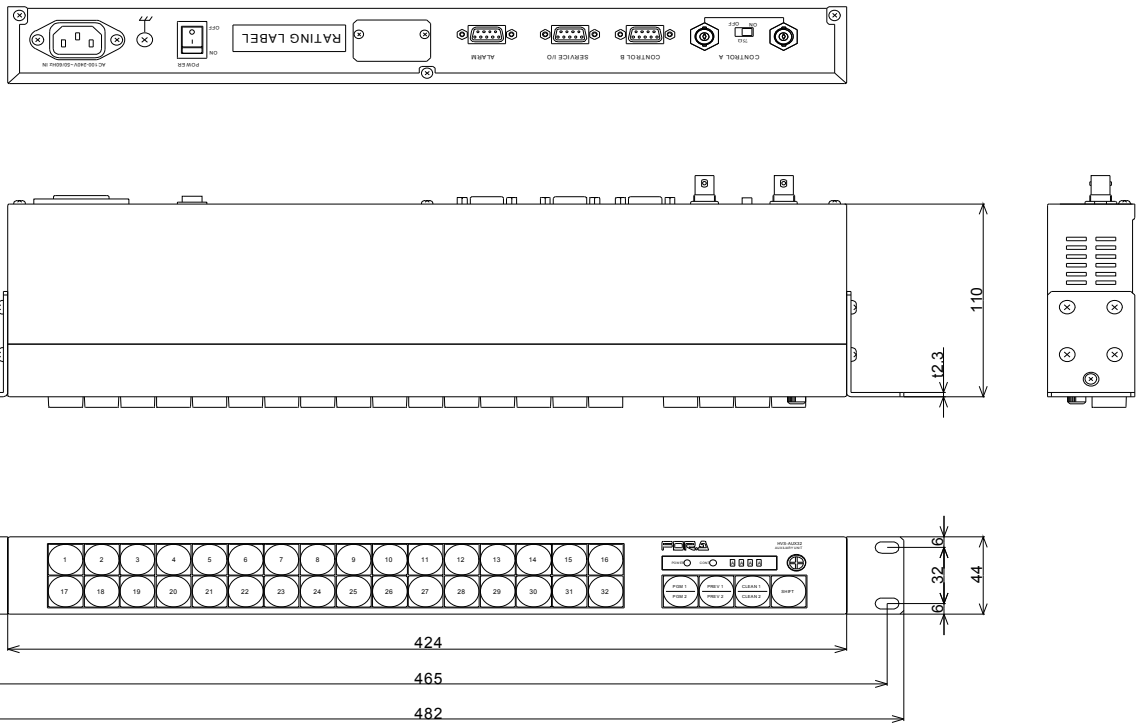




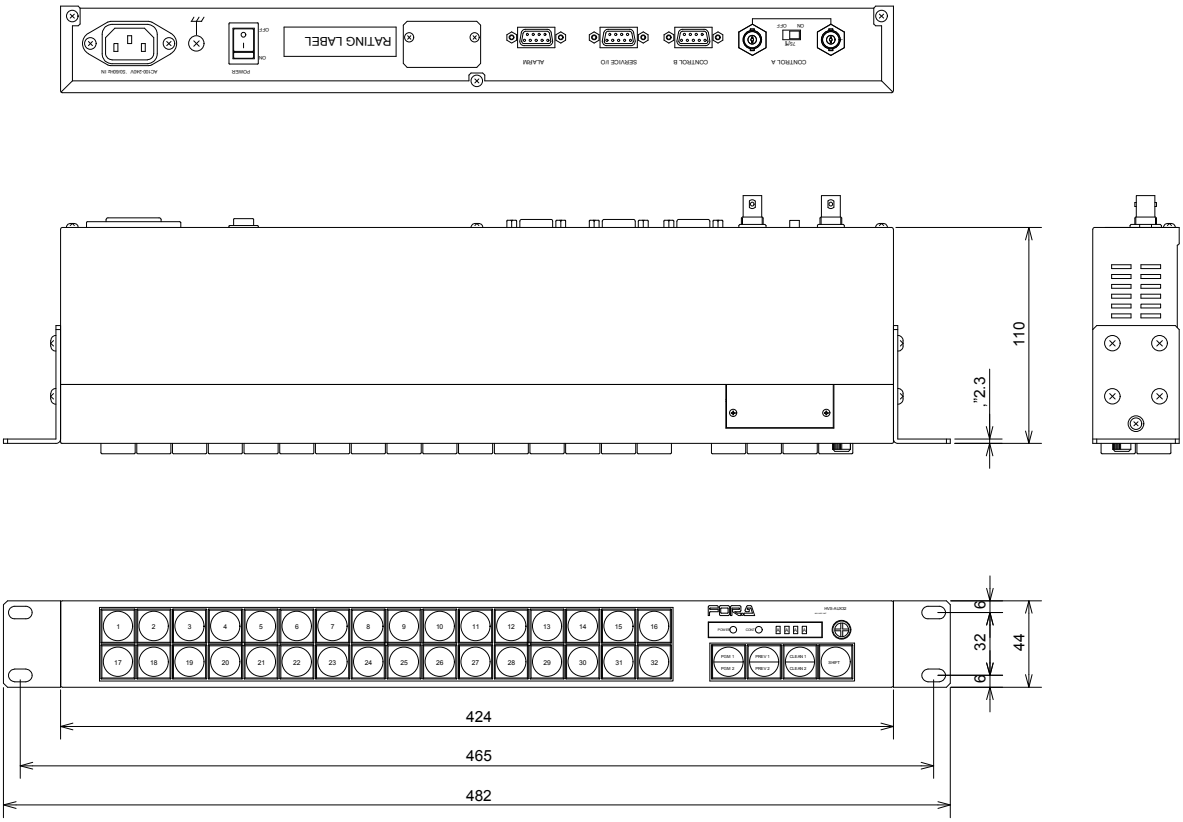
7-2-4. HVS-AUX32

(All dimensions in mm.)

◆ **S/N 9090073 to S/N 9090257**

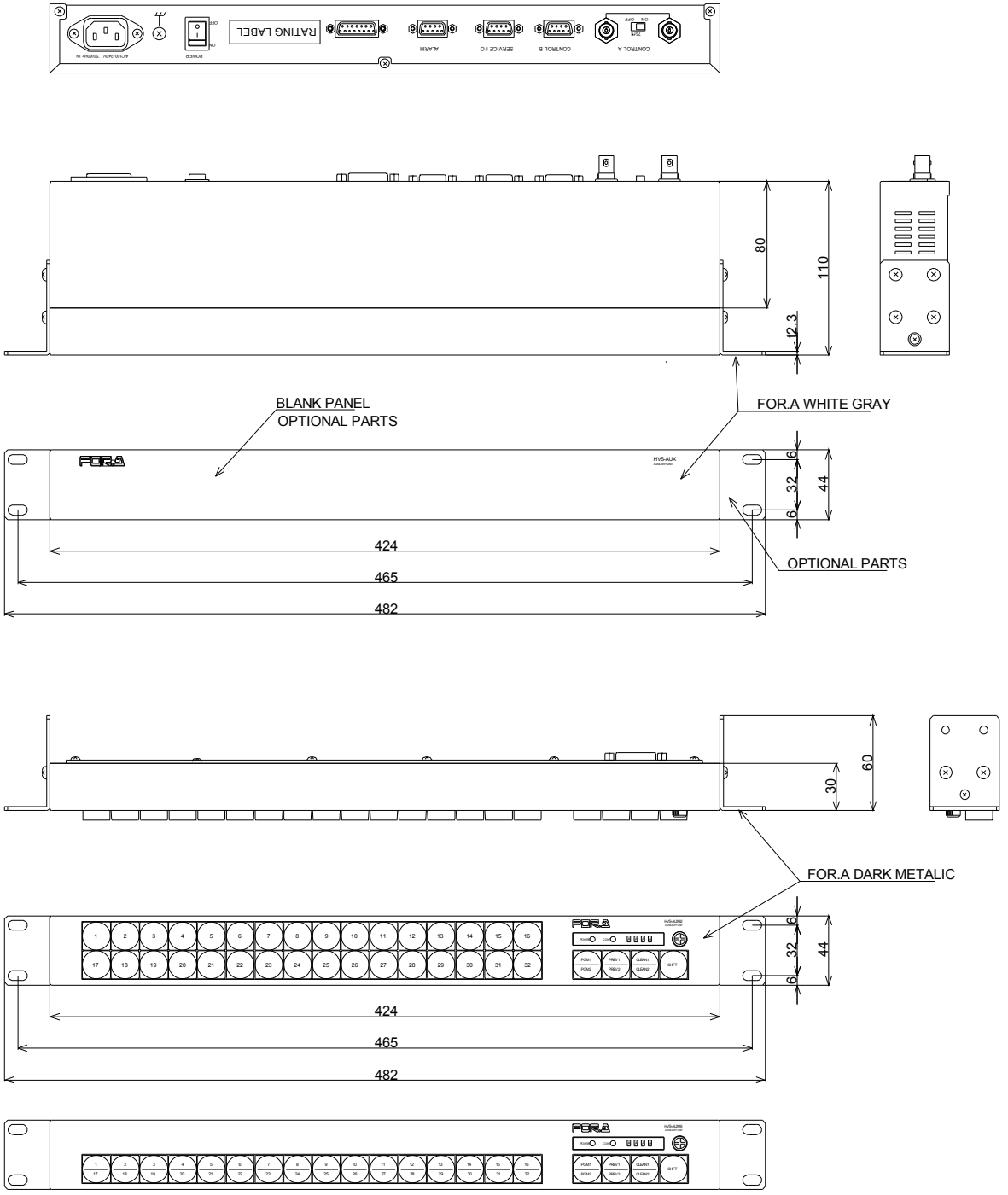


◆ **S/N 9090258 or higher**



7-2-5. HVS-AUX16/32 (Optional HVS-AUXRK Configured)

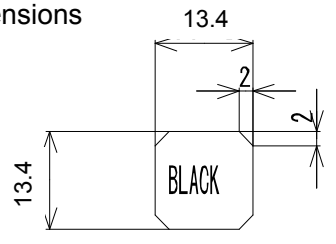
(All dimensions in mm.)



Appendix: HVS-AUX8 Button Labels

CAM 1	VTR 1	C1	V1	R1	T1 OR	T1 N	T1 K
CAM 2	VTR 2	C2	V2	R2	T2 OR	T2 N	T2 K
CAM 3	VTR 3	C3	V3	R3	T3 OR	T3 N	T3 K
CAM 4	VTR 4	C4	V4	R4	T4 OR	T4 N	T4 K
CAM 5	VTR 5	C5	V5	R5	T5 OR	T5 N	T5 K
BC	T1	ME1	ME1 PGM	ME2 PGM	REC	1	4
CB	T2	ME2	ME1 PREV	ME2 PREV	TAKE	2	5
REL	T3	PGM	ME1 CLEAN	ME1 CLEAN	ON AIR	3	
BB	T4	PREV	BLACK				
SHIFT	T5	LINE	MATT				

Dimensions

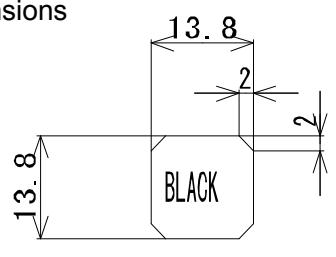


Appendix: HVS-AUX16/32 Button Labels

◆ **HVS-AUX16: S/N 9000191 to S/N 9000834、HVS-AUX32: S/N 9090073 to S/N 9090257**

CAM 1	VTR 1	C1	V1	R1	T1 OR	T1 N	T1 K
CAM 2	VTR 2	C2	V2	R2	T2 OR	T2 N	T2 K
CAM 3	VTR 3	C3	V3	R3	T3 OR	T3 N	T3 K
CAM 4	VTR 4	C4	V4	R4	T4 OR	T4 N	T4 K
CAM 5	VTR 5	C5	V5	R5	T5 OR	T5 N	T5 K
BC	T1	ME1	ME1 PGM	ME2 PGM	REC	1	4
CB	T2	ME2	ME1 PREV	ME2 PREV	TAKE	2	5
REL	T3	PGM	ME1 CLEAN	ME1 CLEAN	ON AIR	3	
BB	T4	PREV	BLACK				
SHIFT	T5	LINE	MATT				

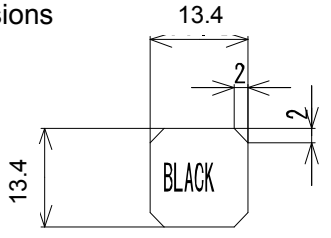
Dimensions



◆ **HVS-AUX16: S/N 9000835 or higher、HVS-AUX32: S/N 9090258 or higher**

CAM 1	VTR 1	C1	V1	R1	T1 OR	T1 N	T1 K	
CAM 2	VTR 2	C2	V2	R2	T2 OR	T2 N	T2 K	
CAM 3	VTR 3	C3	V3	R3	T3 OR	T3 N	T3 K	
CAM 4	VTR 4	C4	V4	R4	T4 OR	T4 N	T4 K	
CAM 5	VTR 5	C5	V5	R5	T5 OR	T5 N	T5 K	
BC	T1	ME1	ME1 PGM	ME2 PGM	REC	1	4	
CB	T2	ME2	ME1 PREV	ME2 PREV	TAKE	2	5	
REL	T3	PGM	ME1 CLEAN	ME1 CLEAN	ON AIR	3		
BB	T4	PREV	BLACK					
SHIFT	T5	LINE	MATT					

Dimensions



Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

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