



The Digital Matrix Platform for Intercom, Audio & IP-Routing

Installation Guide



Thank you for choosing the Artist S digital matrix platform.

This manual provides detailed information about Artist S installation and interfacing information for easy system integration. For additional information please contact our support.

We are always happy to assist you with system design and application of our products..

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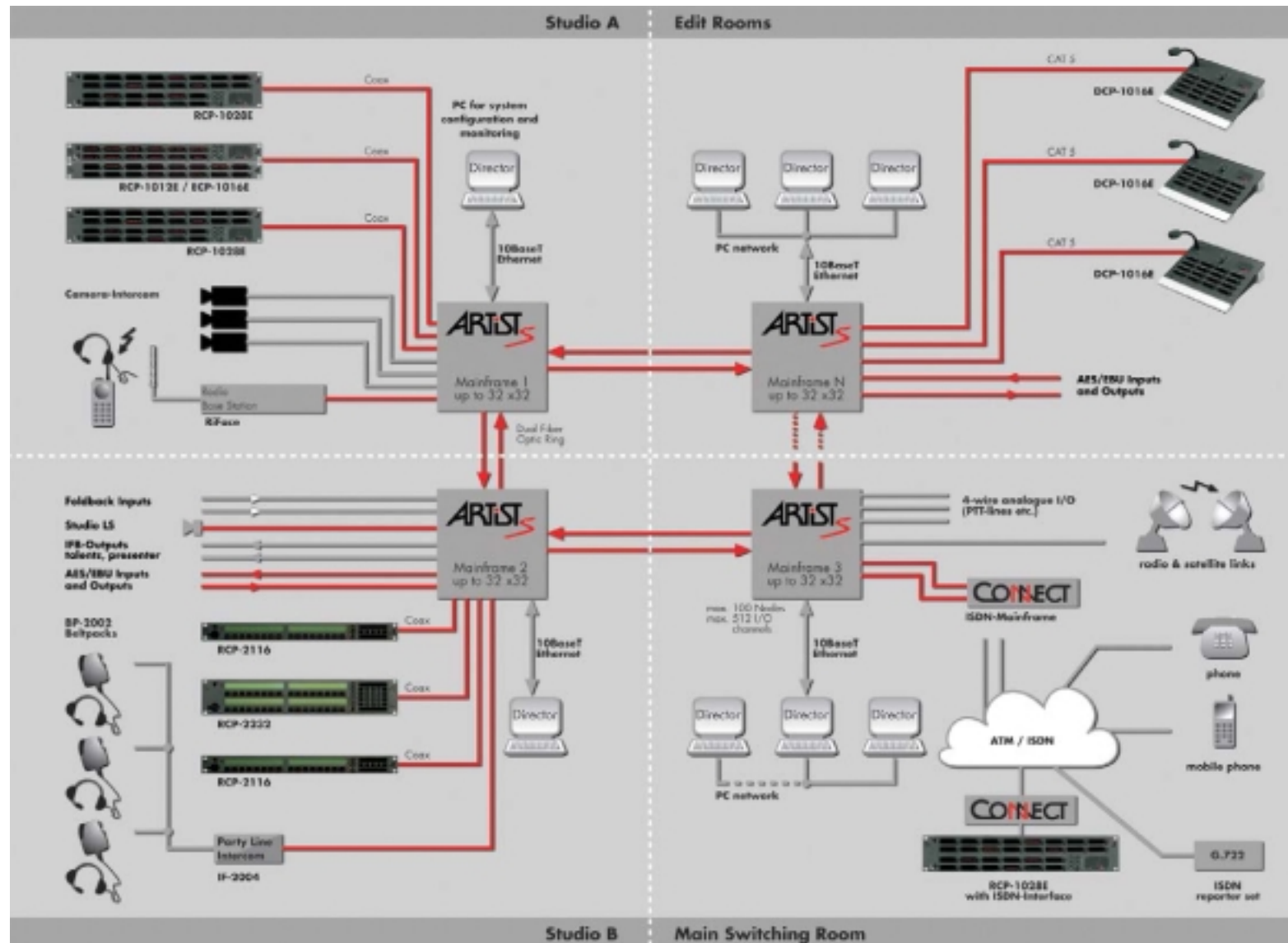
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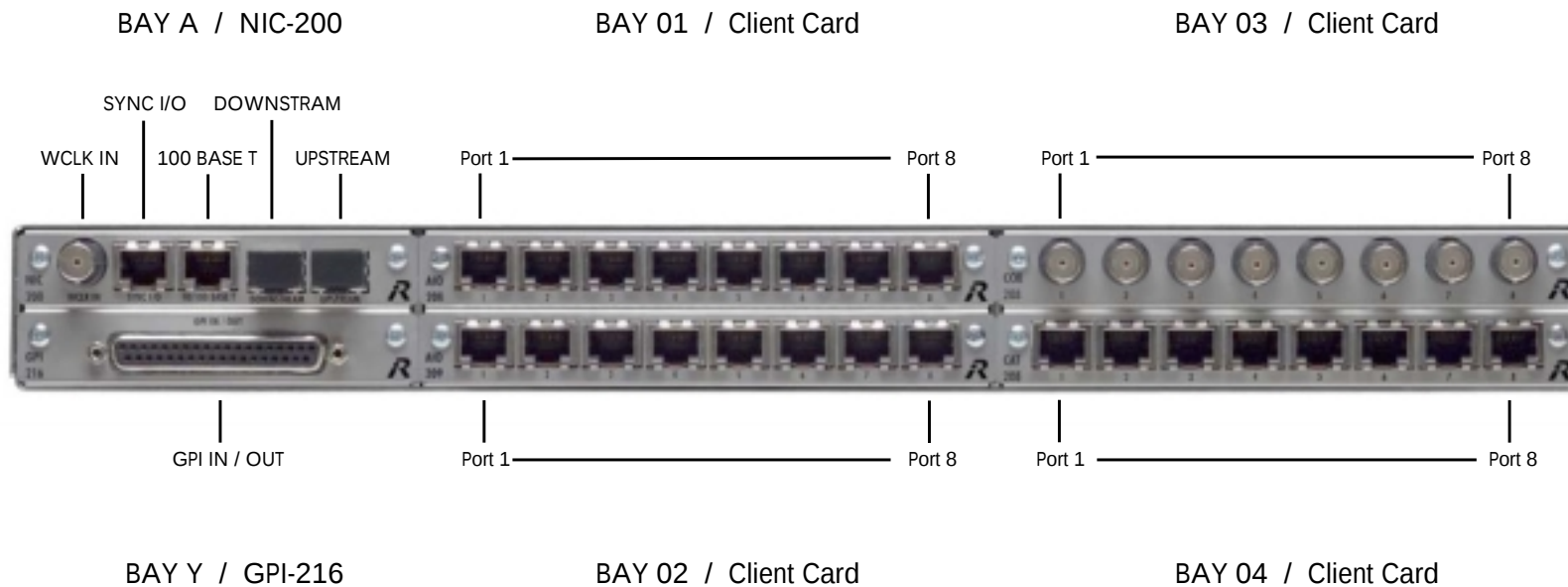
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Decentralized Matrix Structure



Artist S Mainframe: Bay Arrangement and Card Types

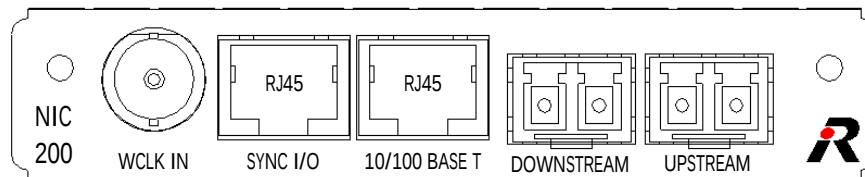


Note:

The Client Card bays BAY01 to 04 support operation of the card types listed below:

- COX-208
- CAT-208
- AIO-208
- AIO-209
- AES-208

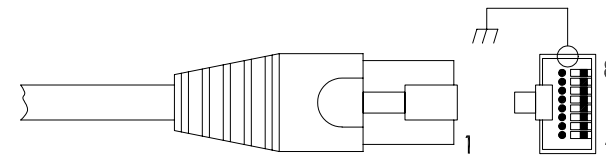
Artist S Mainframe: NIC-200 Sync I/O & Alarm Connector



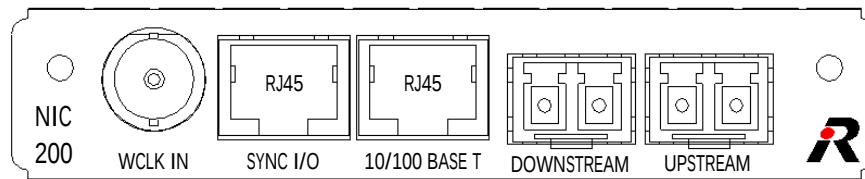
"NIC-200" "SYNC I/O" RJ-45	
Pin	Signal
1	Sync In +
2	Sync In -
3	Sync Out +
4	Alarm normally open
5	Alarm common
6	Sync Out -
7	Alarm normally closed
8	Alarm common

Note:
Alarm Out contact rating: 60V / 500mA

Connector: RJ 45

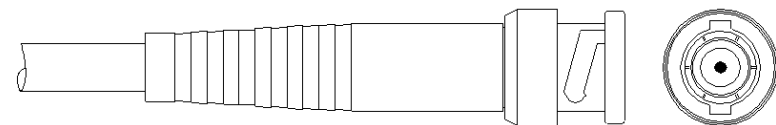


Artist S Mainframe: NIC-200 Wordclock Input

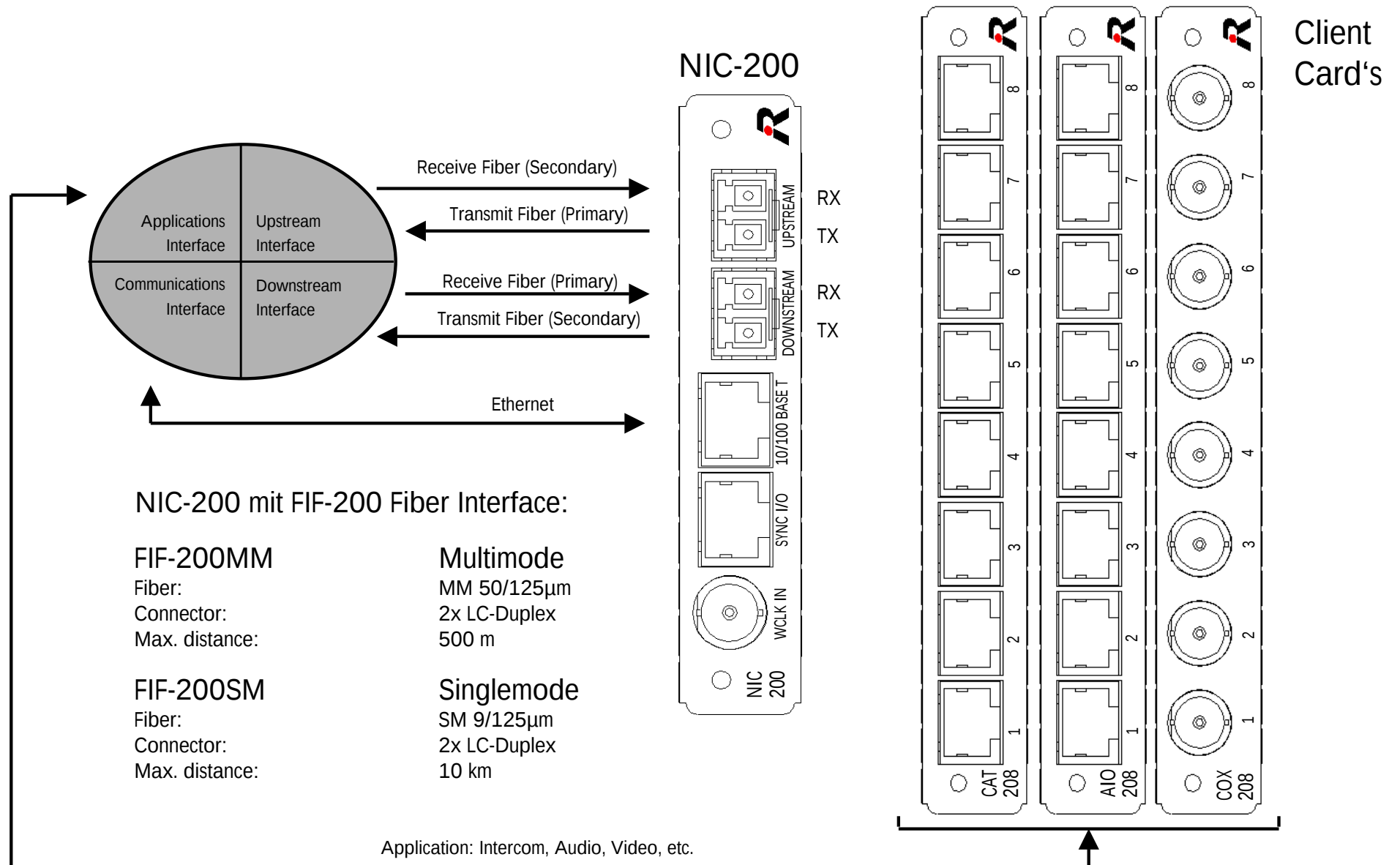


"NIC-200" "WORDCLK IN" BNC	
Pin	Signal
1	WCLK In
2	Shield

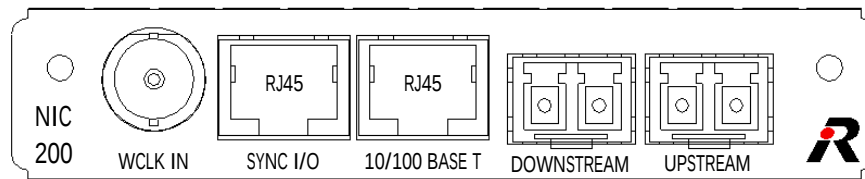
Connector: BNC



Artist S Mainframe: NIC-200 Fiber Connection Up/Downstream



Artist S Mainframe: NIC-200 10/100BaseT Ethernet Connector

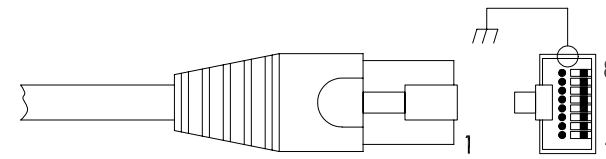


"NIC-200" "10/100BT" RJ-45	
Pin	Signal
1	TxD +
2	TxD -
3	RxD +
4	n.c.
5	n.c.
6	RxD -
7	n.c.
8	n.c.

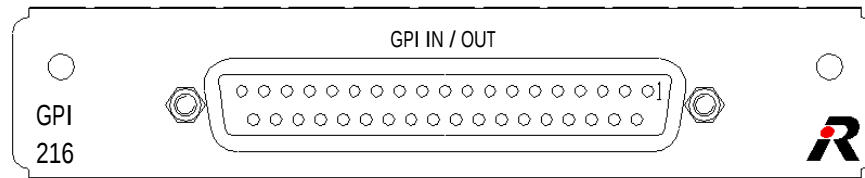
Note:

Ethernet connector uses PC-type pinout. For direct connection to a PC use X-over cable. For connection to a hub or switch use 1:1 cable.

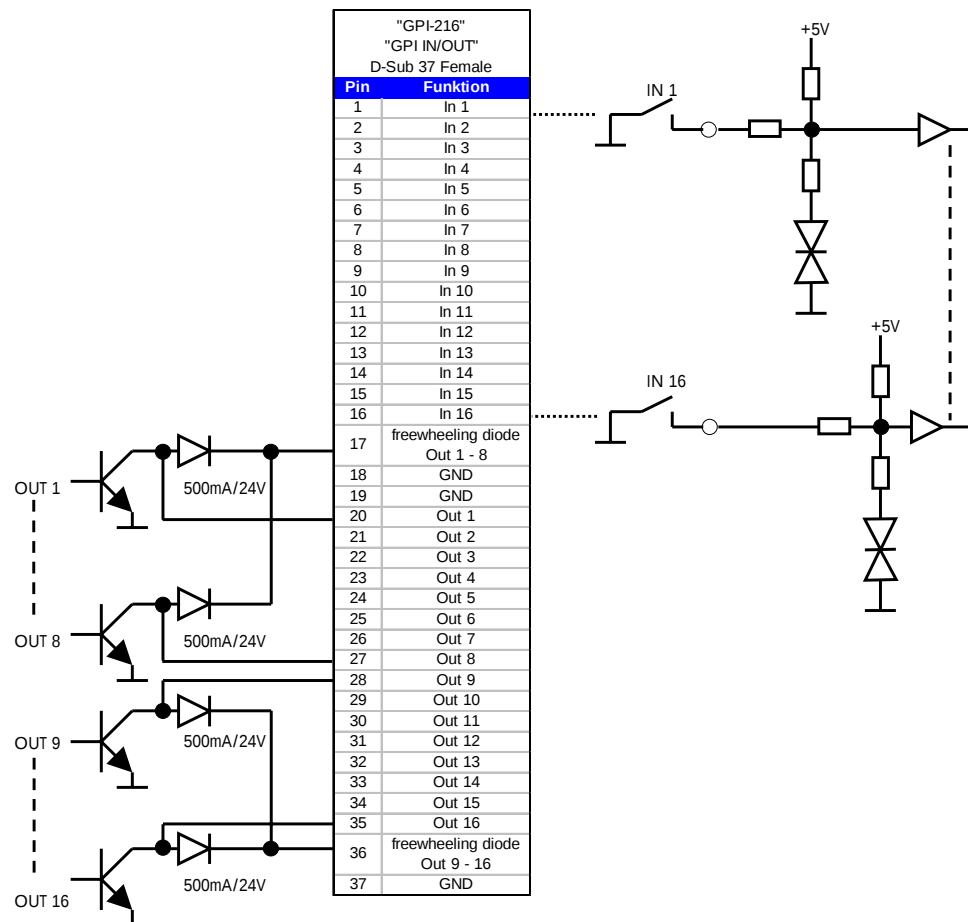
Connector: RJ 45



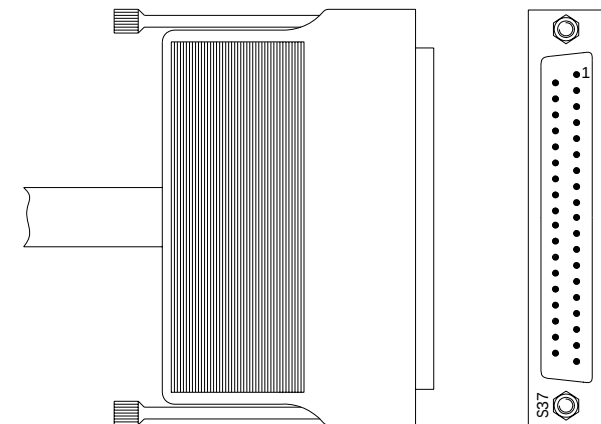
Artist S Mainframe: GPI-216 Connection of GPI Inputs and Outputs



Note:
Open Collector Output rated at: 24V / 500 mA



Cable Connector: D-SUB 37 Male



Artist S Mainframe: NIC and Client Card connector pinouts

"NIC-200" "SYNC I/O" RJ-45	
Pin	Signal
1	Sync In +
2	Sync In –
3	Sync Out +
4	Alarm normally open
5	Alarm common
6	Sync Out –
7	Alarm normally closed
8	Alarm common

Note:
Alarm Out contact rating: 60V/500mA

"NIC-200" "10/100BT" RJ-45	
Pin	Signal
1	TxD +
2	TxD –
3	RxD +
4	n.c.
5	n.c.
6	RxD –
7	n.c.
8	n.c.

Note:
Ethernet connector uses PC-type pinout. For direct connection to a PC use X-over cable. For connection to a hub use 1:1 cable.

"CAT-208" "Port 1-8" RJ-45	
Pin	Signal
1	RxD +
2	RxD –
3	TxD +
4	n.c.
5	n.c.
6	TxD –
7	n.c.
8	n.c.

"AIO-208" "Port 1-8" RJ-45	
Pin	Signal
1	RxD +
2	RxD –
3	TxD +
4	Audio In +
5	Audio In –
6	TxD –
7	Audio Out +
8	Audio Out –

"AES-208" "Port 1-8" RJ-45	
Pin	Signal
1	RxD +
2	RxD –
3	TxD +
4	n.c.
5	n.c.
6	TxD –
7	n.c.
8	n.c.

"COX-208" "Port 1-8" BNC	
Pin	Signal
1	RxD / TxD
2	Shield

"AIO-209" "Port 1-8" RJ-45	
Pin	Signal
1	RxD +
2	RxD –
3	TxD +
4	Audio In +
5	Audio In –
6	TxD –
7	Audio Out +
8	Audio Out –

"NIC-200" "WORDCLK IN" BNC	
Pin	Signal
1	WCLK In
2	Shield

Artist S Mainframe: GPI Card connector pinout

"GPI-216" "GPI IN / OUT" D-Sub 37 Female			
Pin	Signal	Pin	Signal
1	In 1	20	Out 1
2	In 2	21	Out 2
3	In 3	22	Out 3
4	In 4	23	Out 4
5	In 5	24	Out 5
6	In 6	25	Out 6
7	In 7	26	Out 7
8	In 8	27	Out 8
9	In 9	28	Out 9
10	In 10	29	Out 10
11	In 11	30	Out 11
12	In 12	31	Out 12
13	In 13	32	Out 13
14	In 14	33	Out 14
15	In 15	34	Out 15
16	In 16	35	Out 16
17	Freewheeling diode Out 1 - 8	36	Freewheeling diode Out 9 - 16
18	GND	37	GND
19	GND		

Note:
Open Collector output rating: 24V / 500 mA

Control Panels 1000 Series

Expansion Control Panel
ECP1016E

Rackmount Control Panels
RCP1012E
RCP1028E

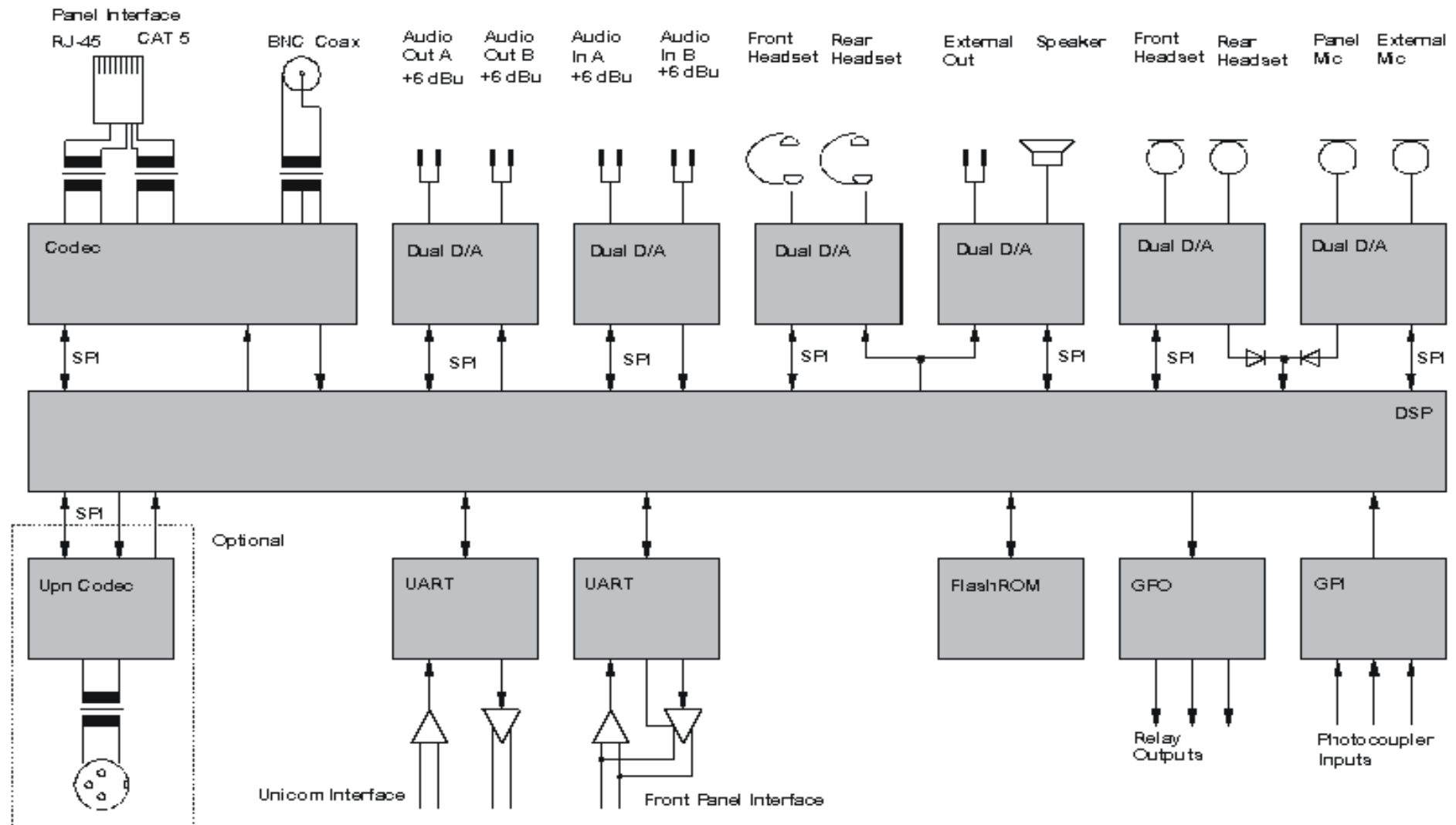


Desktop Control Panel
DCP1016E



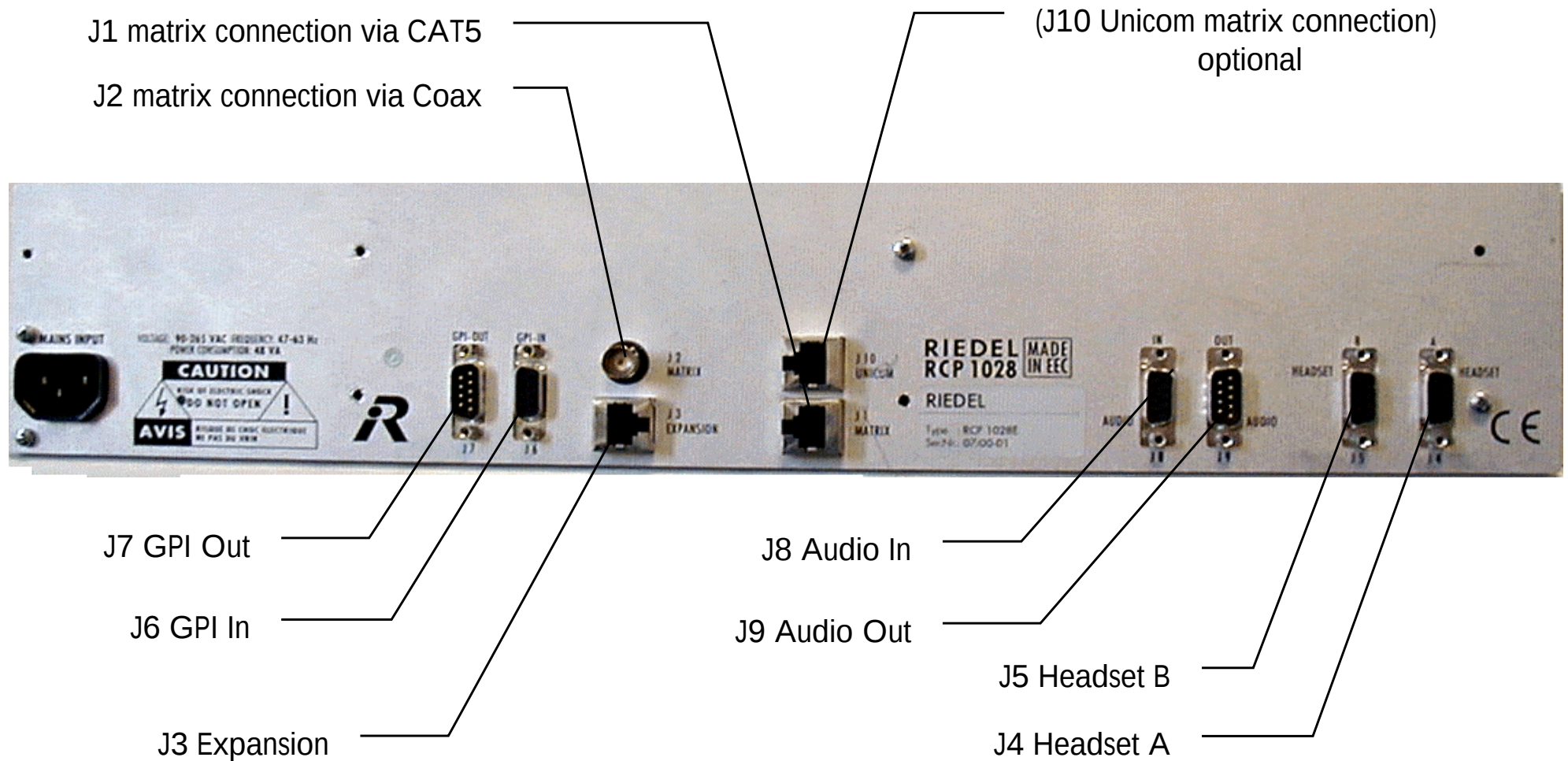
Control Panels 1000 Series

Block Diagram



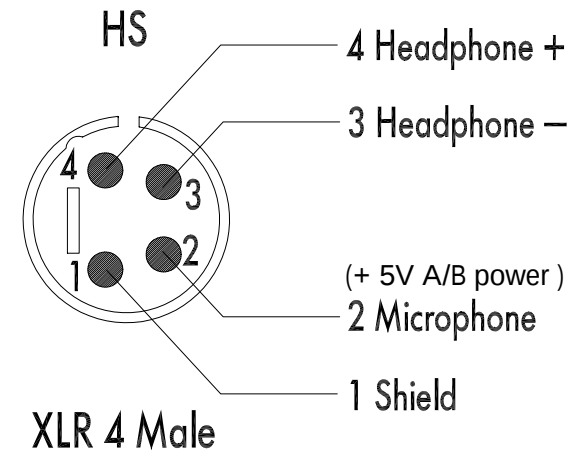
Control Panels 1000 Series

Rear Connectors



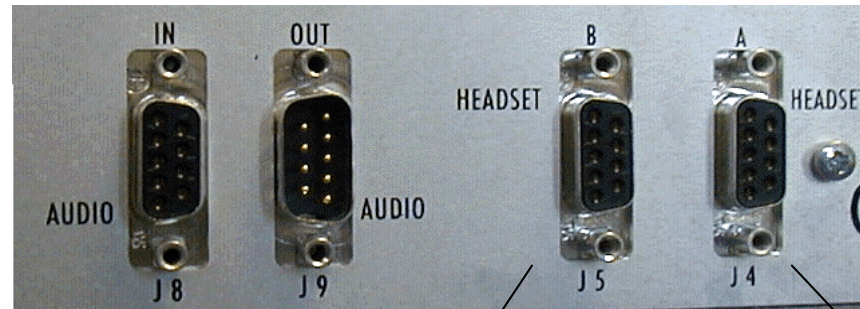
Control Panels 1000 Series

Front Headset Connector



Control Panels 1000 Series

Rear Headset Connector

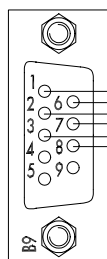


For unbalanced connection of electret microphones connect Mic+ to PIN 1 and Mic shield to PIN 6 and PIN 2 to provide AB power to the electret microphone.

+ 5V Phantom power

Headset B

Headset B J5



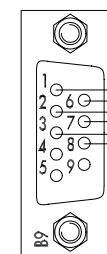
D-SUB 9 Female

- 1 HS Mic +
- 6 HS Mic -
- 2 A-GND
- 7 HS Phones +
- 3 HS Phones -
- 8 HS Phones shield

+ 5V Phantom power

Headset A

Headset A J4



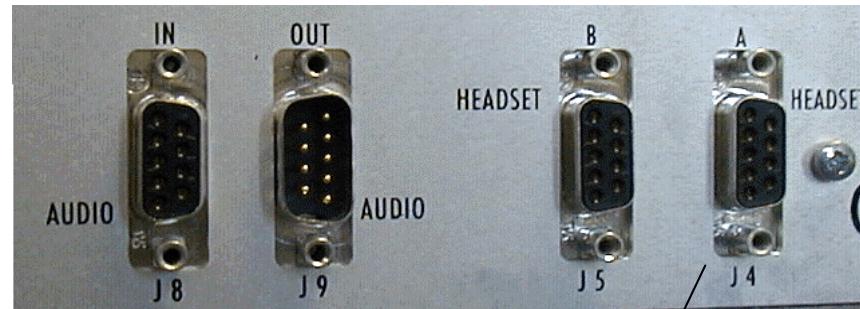
D-SUB 9 Female

- 1 HS Mic +
- 6 HS Mic -
- 2 A-GND
- 7 HS Phones +
- 3 HS Phones -
- 8 HS Phones shield

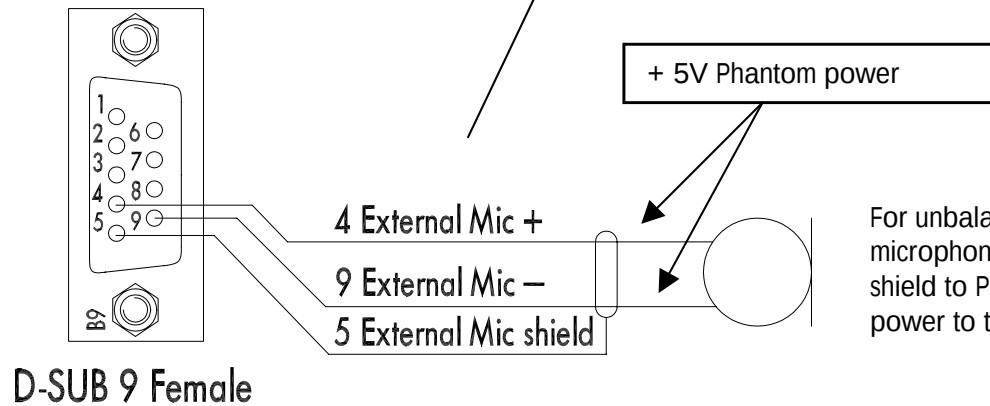
connector front view

Control Panels 1000 Series

External Microphone Connection



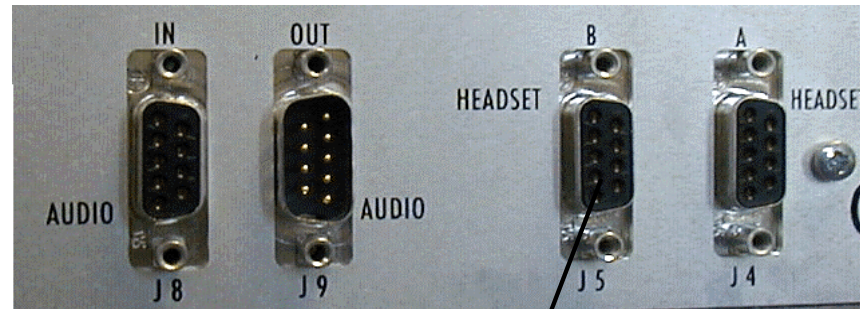
Headset A J4



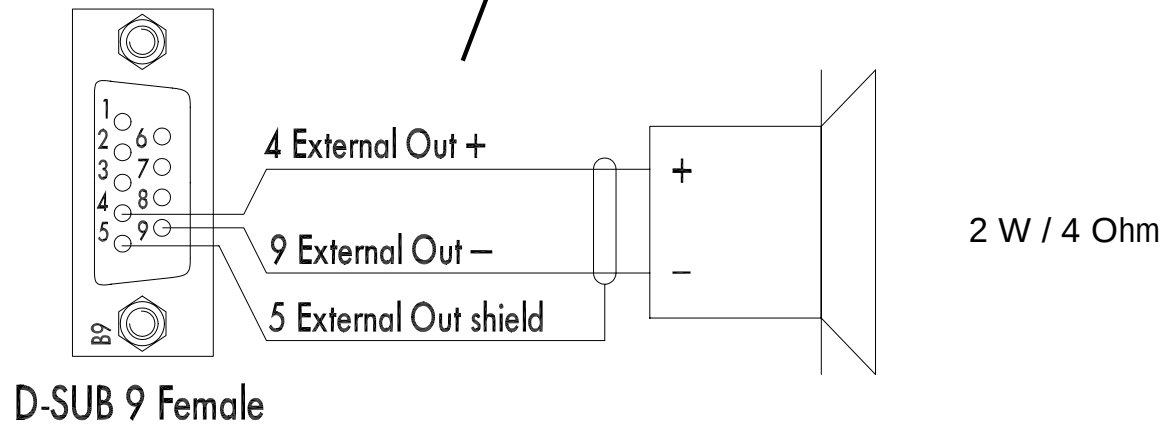
connector front view

Control Panels 1000 Series

External Speaker Connection



Headset B J5

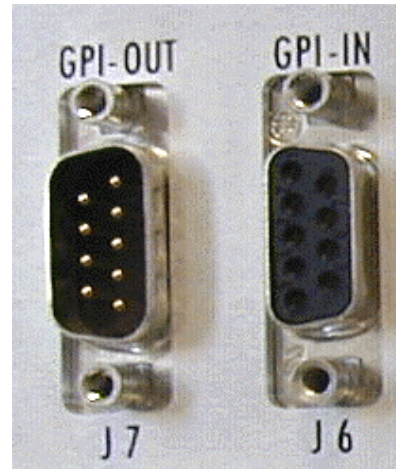
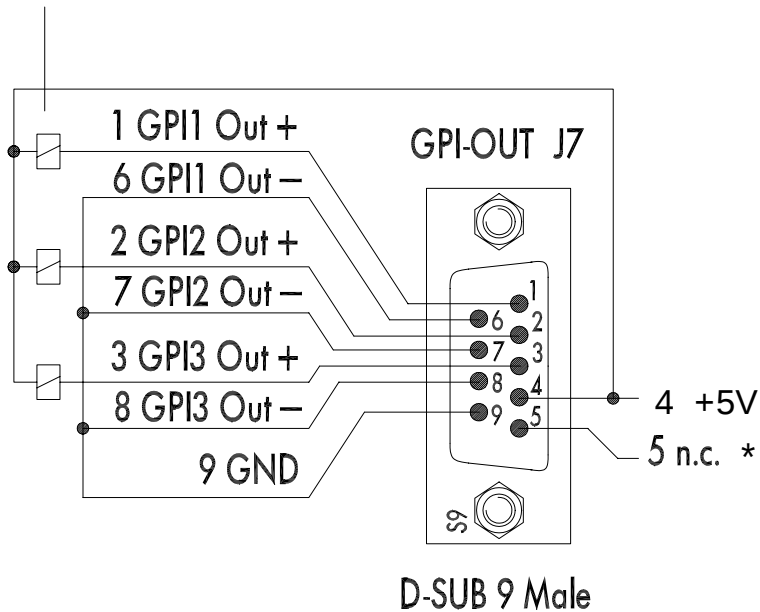


connector front view

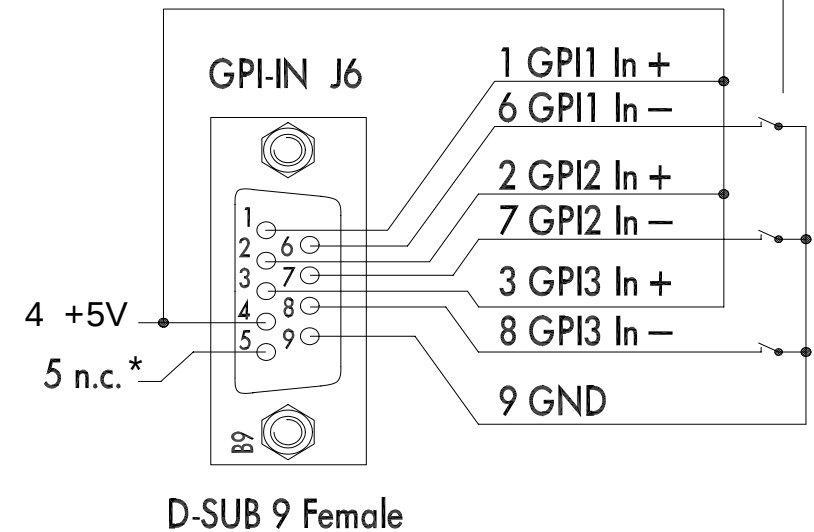
Control Panels 1000 Series

Local GPI Inputs and Outputs

e.g. external 5V relay



e.g. contact closure



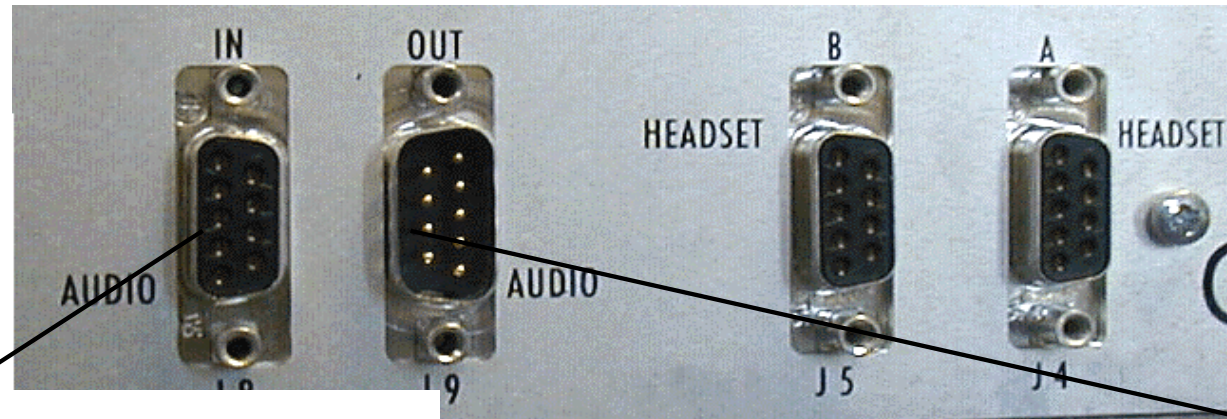
connector front view

Notes:

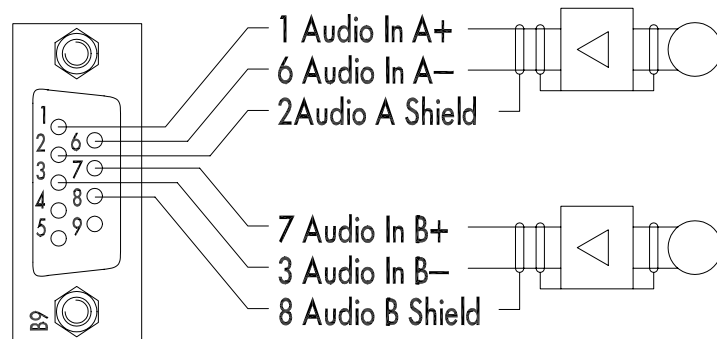
- +5V supply (Pin 4) rated for max.: 50 mA
- GPI input voltage range: +5 ... +48V
- GPI output contact rating: 60V/300mA (protected by self-healing fuse)
- * n.c. = not connected

Control Panels 1000 Series

Local Audio Inputs and Outputs



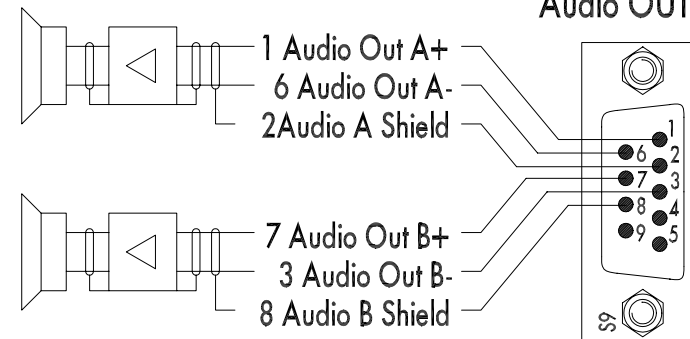
Audio IN J8



D-SUB 9 Female

Level: +6dBu / +18dBu max.
Input Impedance: >20kOhm

Audio OUT J9



D-SUB 9 Male

Level: +6dBu / +18dBu max.
Output Impedance: < 10Ohm

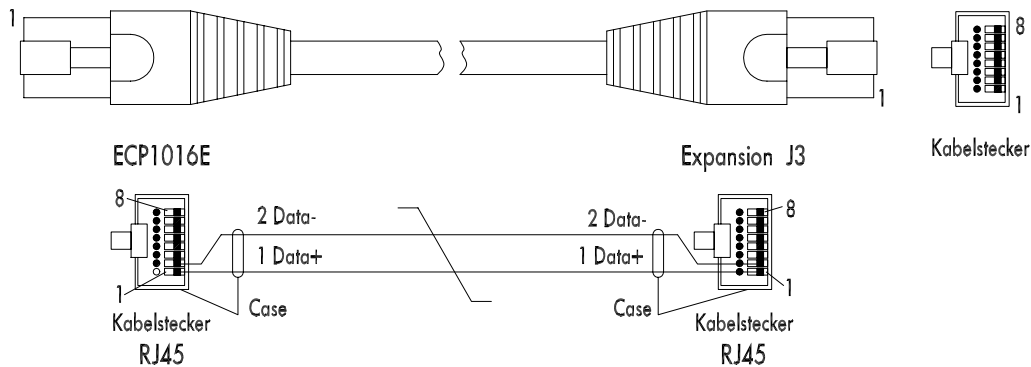
connector front view

Control Panels 1000 Series

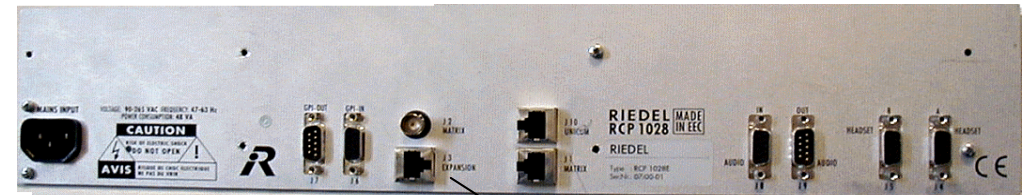
Connection of Expansion Control Panels

Cable Specifications

- Type: Cat5 UTP (4x2 AWG24)
overall shielded twisted pair
- Connector: RJ 45
- Cable length: max. 2 Meter



Rackmount Panel, i.e. RCP1028E



Expansion Panel –1, ECP1016E



Expansion Panel –2, ECP1016E



Expansion Panel –6, ECP1016E

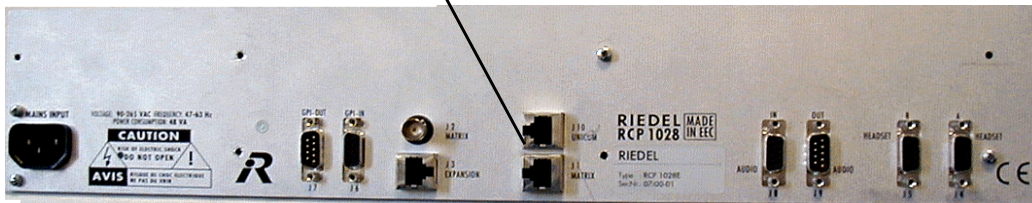


Note: ID switch settings must be unique

Control Panels 1000 Series

Matrix connection using CAT5

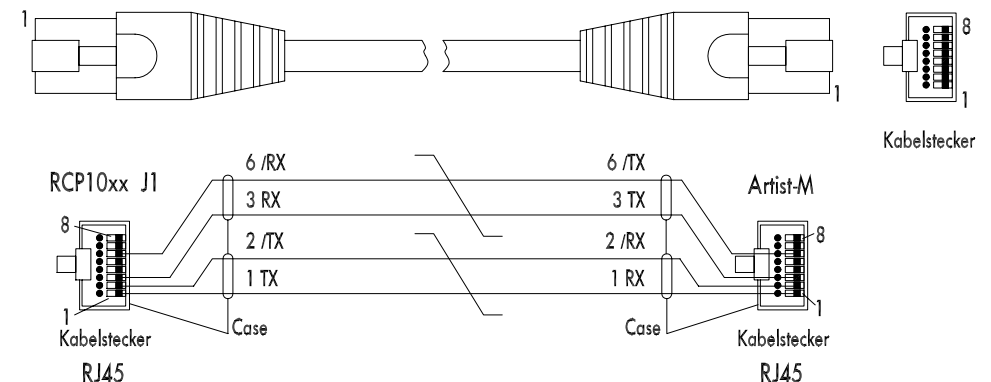
Artist S Mainframe (rear view)



Control Panel, i.e. RCP-1028E (rear view)

Cable-Specifications

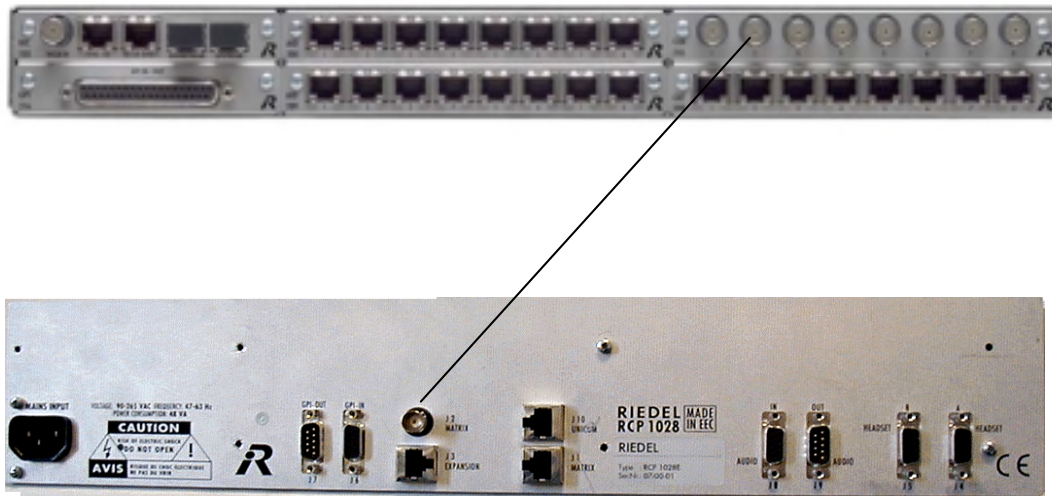
- Type: Cat5 UTP (4x2 AWG24) overall shielded twisted pair
- Connector: RJ 45
- Cable length: max. 350 Meter



Control Panels 1000 Series

Matrix connection using Coax

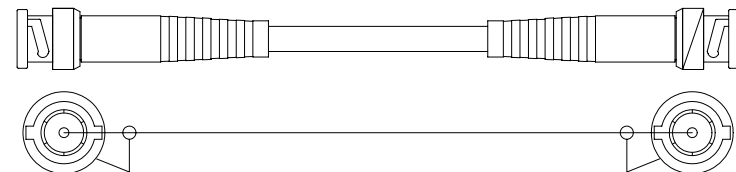
Artist S Mainframe (rear view)



Control Panel, i.e. RCP-1028E (rear view)

Cable-Specifications

- Type: RG59 – 20 AWG
75 T / 0,8 / 4,9DZ
- Cable length: max. 650 m
- Type: 75 T / 0,6 / 3,7
- Cable length: max. 350 m
- Connector: BNC 75 T



Control Panels 1000 Series

RCP-10xx: Rackmount Panel connector pinouts

"Matrix" RJ45	
Pin	Signal
1	TxD +
2	TxD –
3	RxD +
4	n.c.
5	n.c.
6	RxD –
7	n.c.
8	n.c.

"Matrix" BNC	
Pin	Signal
1	RxD, TxD
2	Shield

"Expansion" RJ45	
Pin	Signal
1	Data +
2	Data –
3	GND
4	GND
5	GND
6	GND
7	GND
8	GND

„GPI-Input“ D-Sub 9 Female	
Pin	Signal
1	GPI 1 In +
2	GPI 2 In +
3	GPI 3 In +
4	5V
5	n.c.
6	GPI 1 In –
7	GPI 2 In –
8	GPI 3 In –
9	GND

"GPI-Output" D-Sub 9 Male	
Pin	Signal
1	GPI 1 Out A
2	GPI 2 Out A
3	GPI 3 Out A
4	5V
5	n.c.
6	GPI 1 Out B
7	GPI 2 Out B
8	GPI 3 Out B
9	GND

Note:

- a) 5V supply (Pin4) rated at 50mA
(protected by self-healing fuse)
- b) Output contact rated at 60V / 300mA
(protected by self-healing fuse)
- c) GPI input voltage range: +5 ... +48V

„Headset A“ D-Sub 9 Female	
Pin	Signal
1	HS Mic +
2	A GND
3	HS Phones –
4	External Mic +
5	Ext. Mic Shield
6	HS Mic –
7	HS Phones +
8	HS Phones Shield
9	External Mic –

„Headset B“ D-Sub 9 Female	
Pin	Signal
1	HS Mic +
2	A-GND
3	HS Phones –
4	External Out +
5	Ext. Out Shield
6	HS Mic –
7	HS Phones +
8	HS Phones Shield
9	External Out –

"Headset A" XLR 4 Male (front)	
Pin	Signal
1	Shield
2	Microphone
3	Headphone –
4	Headphone +

"Unicom" RJ45	
Pin	Signal
1	TxD +
2	TxD –
3	RxD +
4	Audio A Out +
5	Audio A Out –
6	RxD –
7	Audio A In +
8	Audio A In –

Note:

"Unicom" connector is available as an option and must be specified with order.

„Audio In“ D-Sub 9 Female	
Pin	Signal
1	Audio In A +
2	Audio A Shield
3	Audio In B –
4	External Mic +
5	Ext. Mic Shield
6	Audio In A –
7	Audio In B +
8	Audio B Shield
9	External Mic –

„Audio Out“ D-Sub 9 Male	
Pin	Signal
1	Audio Out A +
2	Audio A Shield
3	Audio Out B –
4	External Out +
5	Ext. Out Shield
6	Audio Out A –
7	Audio Out B +
8	Audio B Shield
9	External Out –

Control Panels 1000 Series

ECP-10xx: Expansion Panel connector pinouts

"EXP IN RJ45	
Pin	Signal
1	Data +
2	Data –
3	GND
4	GND
5	GND
6	GND
7	GND
8	GND
"EXP OUT RJ45	
Pin	Signal
1	Data +
2	Data –
3	n.c.
4	n.c.
5	n.c.
6	n.c.
7	n.c.
8	n.c.

Control Panels 1000 Series

DCP-10xx: Desktop Panel connector pinouts

"Matrix" RJ45	
Pin	Signal
1	TxD +
2	TxD –
3	RxD +
4	n.c.
5	n.c.
6	RxD –
7	n.c.
8	n.c.
"Matrix" BNC	
Pin	Signal
1	RxD, TxD
2	Shield

„GPI-Input“ D-Sub 9 Female	
Pin	Signal
1	GPI 1 In +
2	GPI 2 In +
3	GPI 3 In +
4	5V
5	n.c.
6	GPI 1 In –
7	GPI 2 In –
8	GPI 3 In –
9	GND
"GPI-Output" D-Sub 9 Male	
Pin	Signal
1	GPI 1 Out A
2	GPI 2 Out A
3	GPI 3 Out A
4	5V
5	n.c.
6	GPI 1 Out B
7	GPI 2 Out B
8	GPI 3 Out B
9	GND

"Headset A" XLR 4 Male	
Pin	Signal
1	Shield
2	Microphone
3	Headphone –
4	Headphone +
"Headset B" XLR 4 Male	
Pin	Signal
1	Shield
2	Microphone
3	Headphone –
4	Headphone +

„Audio In“ D-Sub 9 Female	
Pin	Signal
1	Audio In A +
2	Audio A Shield
3	Audio In B –
4	External Mic +
5	Ext. Mic Shield
6	Audio In A –
7	Audio In B +
8	Audio B Shield
9	External Mic –
„Audio Out“ D-Sub 9 Male	
Pin	Signal
1	Audio Out A +
2	Audio A Shield
3	Audio Out B –
4	External Out +
5	Ext. Out Shield
6	Audio Out A –
7	Audio Out B +
8	Audio B Shield
9	External Out –

"Unicom" *) D-Sub 15 Female	
Pin	Signal
1	TxD –
2	RxD –
3	n.c.
4	Audio A Out +
5	n.c.
6	Shield
7	n.c.
8	Audio A In +
9	TxD +
10	RxD +
11	Audio A Out –
12	n.c.
13	n.c.
14	n.c.
15	Audio A In –

Note:
*) "Unicom" connector is available as an option and must be specified with order.

- Note:
- a) 5V supply (Pin4) rated at 50mA
(protected by self-healing fuse)
 - b) Output contact rated at 60V / 300mA
(protected by self-healing fuse)
 - c) GPI input voltage range: +5 ... +48V

In-Key Displays

The 8-digit displays are part of the keys: pressing the display activates the key. The encoder next to the display (right hand side) adjusts the individual crosspoint volume. Turn left to reduce the listen level from this destination, turn right to increase the listen level. A short press of the encoder („click“) mutes the crosspoint. Click again to return to the previous listen level. The mute-function of the encoder can be disabled using the Director configuration software. To reset the crosspoint volume to the default value press & hold NORM and press the display/key. Doubleclick on the master volume encoder resets all crosspoint volumes of the panel to the default value.

Signalising / Key status indication (system default)

To indicate an outgoing call (active talk) the LED-bar above the key shines green while the volume LED shines red. An incoming call is indicated by a green LED-bar again but the volume LED shines amber. „Busy“ and „in use“ indications are also supported (if configured). All command-related LED-bar indications can be edited using the configuration software. This enables the user to adapt to custom requirements or keep existing signaling habits.

Answer-back key (REPLY)

There is no dedicated answer-back key on the panel. Instead, any key, on both main and shift page can be configured as the REPLY key. An incoming call shows up on the Reply key including the label of the caller. Pressing the Reply key answers the call regardless if the caller is configured to a key of the panel or not. The Reply key label displays the last caller and times out to „Reply“ after 10 seconds. The Reply function remains assigned to the last caller and pressing the reply key after the timeout calls up the last callers display label again. The timeout can be adjusted using the configuration software.

Doubleclick on the encoder of the Reply key calls up the answer back stack which holds the 10 most recent callers. Turning the encoder scrolls through the list and pressing the encoder for approx.1 seconds confirms the selection, hence re-assigning the Reply key to the selected destination.

SHIFT

The Shift page virtually doubles the number of keys on the panel. Pressing SHIFT toggles between the main page and the shift page not only on the control panel but also on all expansion panels which are connected to the control panel.

HS (Headset)

This function key toggles between speaker mode and headset mode. By default, the built-in loudspeaker and the gooseneck microphone are switched off while headset mic and headset speaker are activated in headset mode. Panel behaviour in speaker and headset mode can be edited using the Director configuration software on a panel by panel basis. To indicate headset mode the master volume LED indication is switched from amber to green and the HS function key LED is switched on.

OPT (Option)

Use this function key to enter the option menu. Please see details on next page.

BEEP

This function key causes an audible call (beep) at the selected destination panel. Press & hold BEEP and press destination key. The beep volume can be adjusted (and switched off) using the Director configuration software on a panel by panel basis.

NORM

Resets the individual crosspoint level (listen level) for a selected destination to the default value. Press & hold NORM and press destination key.

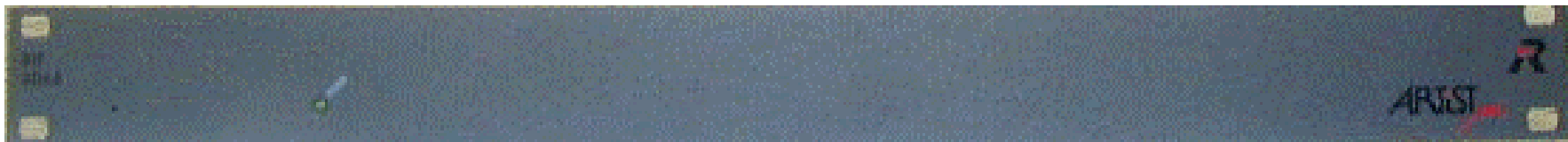
OPT (Option)

Press & hold OPT to enter the option menu. The keys/displays are relabeled to display firmware version, IP address of the node controller etc. The option menu is primarily used for system administration and maintenance, although the user might be interested in the following information:

- PORT ADDRESS and PANEL DISPLAY NAME

The two right hand side display/keys show the systems display-label of this panel and the physical matrix port, to which this panel is connected to.

RIF-2064 Front View

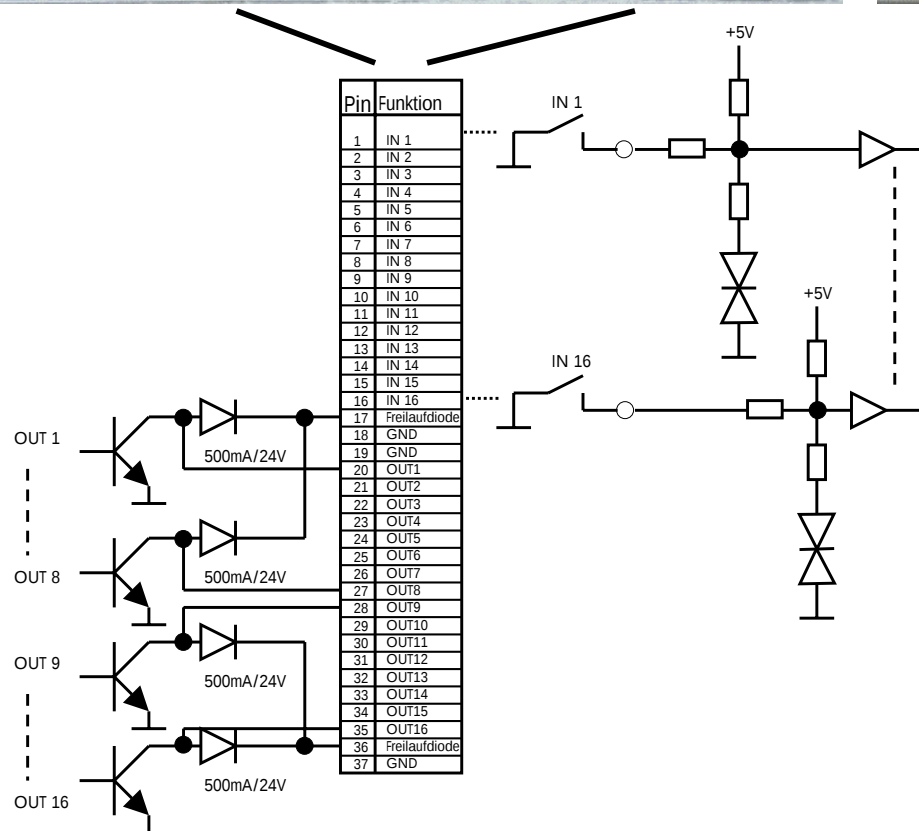
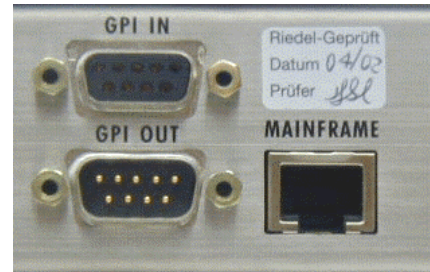
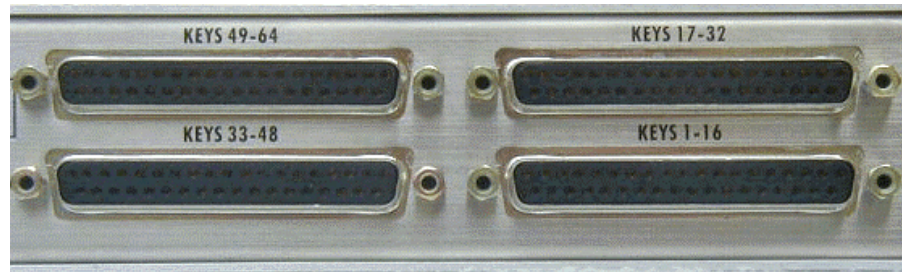


RIF-2064 Rear View



Custom Control Panel Interface RIF-2064

Connectors and pinouts



"GPI-Input" *
D-Sub 9 Female

Pin	Signal
1	GPI 1 In +
2	GPI 2 In +
3	GPI 3 In +
4	5V
5	n.c.
6	GPI 1 In -
7	GPI 2 In -
8	GPI 3 In -
9	GND

"GPI-Output" *
D-Sub 9 Male

Pin	Signal
1	GPI 1 Out A
2	GPI 2 Out A
3	GPI 3 Out A
4	5V
5	n.c.
6	GPI 1 Out B
7	GPI 2 Out B
8	GPI 3 Out B
9	GND

Note:

- a) 5V supply (Pin4) rated at 50mA (protected by self-healing fuse)
- b) Output contact rated at 60V / 300mA (protected by self-healing fuse)
- c) GPI input voltage range: +5 ... +48V

"Mainframe"
RJ45

Pin	Signal
1	TxD +
2	TxD -
3	RxD +
4	5V Out
5	5V Out
6	RxD -
7	GND
8	GND

"Audio Out"
3 pol XLR Male

Pin	Signal
1	Shield
2	OUT +
3	OUT -

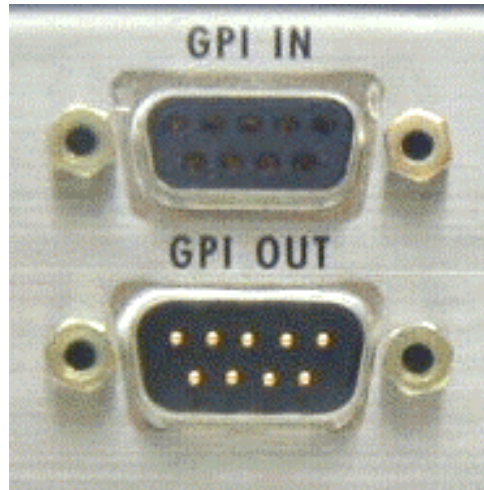
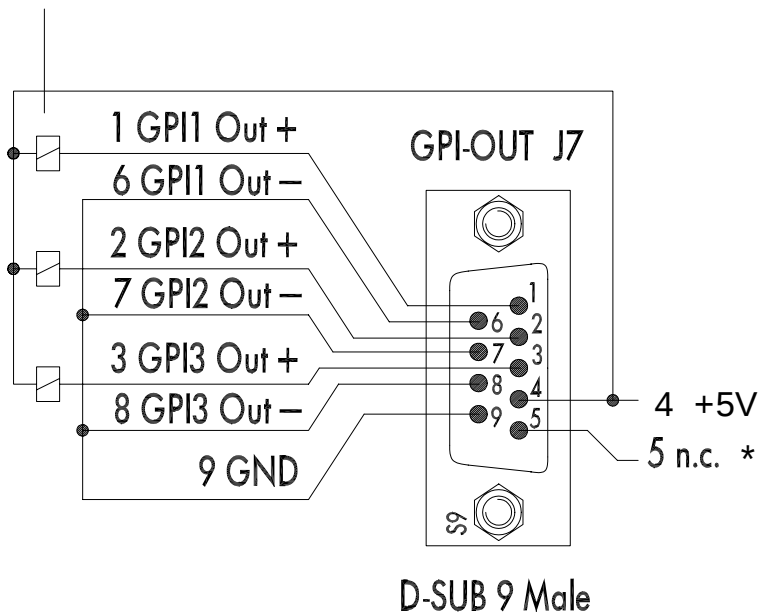
"Audio IN"
3 pol XLR Female

Pin	Signal
1	Shield
2	IN +
3	IN -

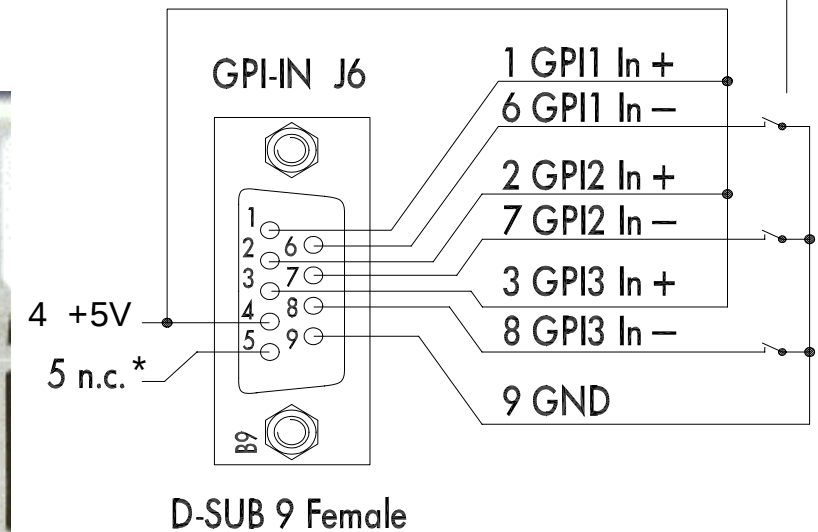
Custom Control Panel Interface RIF-2064

Local GPI Inputs and Outputs

e.g. external 5V relay



e.g. contact closure



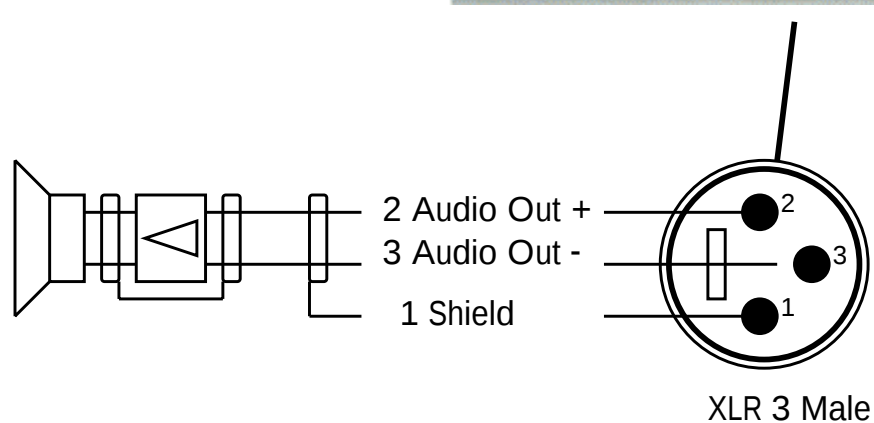
connector front view

Notes:

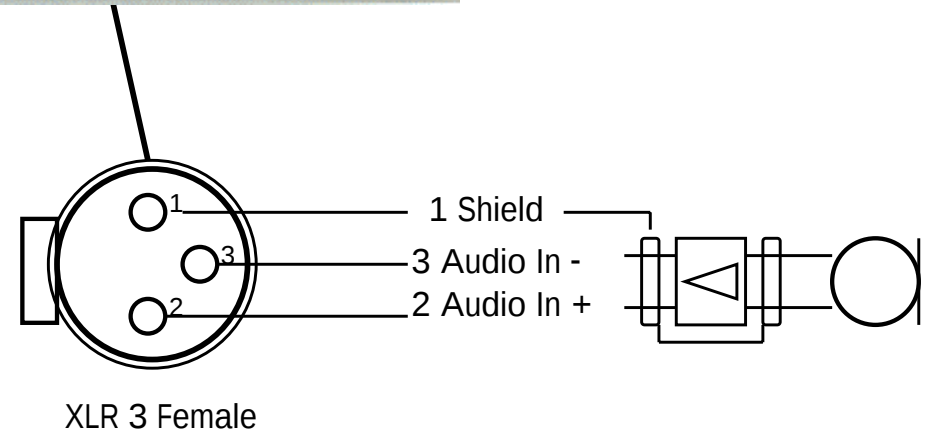
- +5V supply (Pin 4) rated for max.: 50 mA
- GPI input voltage range: +5 ... +48V
- GPI output contact rating: 60V/300mA (protected by self-healing fuse)
- * n.c. = not connected

Custom Control Panel Interface RIF-2064

Local Audio Inputs and Outputs



Level: +6dBu / +18dBu max.
Output Impedance: < 10Ohm



Level: +6dBu / +18dBu max.
Input Impedance: >20kOhm

Custom Control Panel Interface RIF-2064

Matrix connection using CAT5

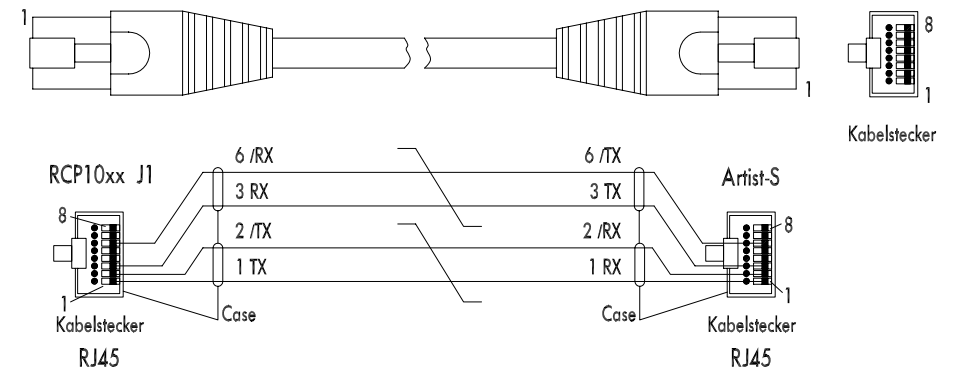
Artist S Mainframe (rear view)



RIF-2064 (rear view)

Cable-Specifications

- Type: Cat5 UTP (4x2 AWG24) overall shielded twisted pair
- Connector: RJ 45
- Cable length: max. 350 Meter



General Specifications

Control Panels

RCP-1012E	Dimensions (B x H x T):	19"/1RU x 56mm
	Weight:	1,0 kg
	Power consumption:	30 VA
RCP-1028E	Dimensions (B x H x T):	19"/2RU x 56mm
	Weight :	1,8 kg
	Power consumption :	48 VA
ECP-1016E	Dimensions (B x H x T):	19"/1RU x 56mm
	Weight :	1,0 kg
	Power consumption :	30 VA
DCP-1016E	Dimensions (B x H x T):	255 x 77 x 235 mm
	Weight :	1,6 kg
	Power consumption :	30 VA
RIF2064	Dimensions (B x H x T):	19"/1RU x 160mm
	Weight :	1,0 kg
	Power consumption :	18 VA

AC input voltage : 85-265V / 47-63Hz

Artist S Mainframe

Dimensions (B x H x T):	19" x 1HE x 393 mm
Power consumption:	max. 80 VA
AC input voltage:	85-265V / 47-63Hz
Weight:	ca. 6,5 kg
Total matrix size:	8 x 8 up to 512 x 512
Ports per Mainframe:	8 to 32
Mainframes in fiber ring:	1 to 100
Fiber connection:	
FIF-200MM:	500m (Multimode) 50/125µm
FIF-200SM:	10km (Singlemode) 9/125µm
Connector:	LC Duplex
Alarm detection:	PSU failure CPU failure Client Card failure
Bootup time:	Cold start ca. 30 sec. Warm start ca. 15 sec.

