

Protech DVR – MPG Series

Hardware Installation Guide

Rev. 1.1

Digital Video Security System
Digital Video Recorder

Protech

*All contents of this document may change without prior notice.

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Preface

This is a guide book that explains the hardware components and provides you the step by step installation of DVR board.

For the software explanation, please refer to “Installation and User’s Guide”.

This guide book is applicable to, among Protech products, Protech MPG12004, Protech MPG24008, and Protech MPG48016 board.

The pictures and names of the products are subject to change depending on hardware upgrade. However, the usages may be similar.

1. Specification of Protech

- **1~16 Camera Inputs / Output**

Up to 16 camera inputs are available on screen for digital handling.

Normal input condition: 75 Ohm, 1 Volt (p-p)

- **1~16 Sensor Inputs**

Up to 16 sensors can be linked to the system.

External DC 12 Volt power must be provided to the sensor input from outside.

- **1~8 Digital Outputs (Relay Outputs)**

Digital Outputs can be used to activate things like shutters and sirens, and activation can be linked to sensor and motion detection.

- **Sound Recording and Two-Way Communication Capabilities**

Sound can be recorded with video images. Two-way communication is possible between Protech main and DVR Net.

- **Display Features (w/ Multi-Viewing)**

Multi-Viewing allows 1, 4, 6, 9, or 16 different camera shots to be displayed onscreen at the same time.

Other display features include enlarging all displayed cameras or just one.

- **PAN/TILT/ZOOM/FOCUS Capabilities**

Each connected camera can be manipulated through the DVR main program as long as each camera supports such capabilities.

- **Motion Detection and Sensor Trigger**

Detection features make it possible to record images only when movement is detected, preserving volume space and maximizing the use of physical storage space.

▪ Scheduled Recording

Scheduling allows the administrator to record images only during designated time periods, if so desired. Every combination of scheduling is available in the DVR program.

▪ Manual and Auto Backup

Data can be preserved through various formats (DAT, CD, or DVD) and data from specific cameras and/or time periods can be specifically isolated for backup as well. Much like scheduled recording, backup of data can be scheduled as well.

▪ Digitalized Video Search

Recorded data features digital playback for each camera simultaneously or one at a time. Playback features include advanced search features and image extracting, which allows portions of existing video to be extracted and saved as a separate file.

▪ Network Support (PSTN, TCP/IP, LAN , Modem Protocol Support)

Protech supports network access, which allows administrators to login to DVR main and remotely access all the features provided locally.

▪ POS, Access Control, ATM Support

Data from external devices (POS, Access Control, ATM, etc) can be recorded with DVR video images. Text Search allows to search data from external devices with DVR video image when event occurs. This will raise the level of integrity and security.

Feature	MPG Series
Camera Input	1~16Port(NTSC/PAL)
Sound Input	1~16 Port
Sensor Input	1~16 Port
Relay Output	1~8Port
Composite Output	1 Port (NTSC/PAL, 1 Channel Switching)
Image Format	Hardware MPEG-4
Recording Mode	Watch, Normal, Motion Detection, Sensor, Scheduled Recording
Remote Control	Full remote control PSTN, ISDN,ADSL, LAN and TCP/IP
Back-up	DAT, CD, DVD
PAN/TILT/ZOOM/FOCUS	RS-232/422/485 Interface

* Note: MPG48016 consists of 2 of MPG24008 boards.

2. Products and Components

2.1 Protech MPG Series Board



Protech MPG12004



Protech MPG24008



Protech MPG48016
(2 of MPG24008)

2.2 Accessories



Video Pigtail Cable



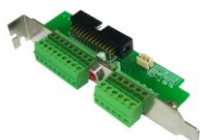
Audio Pigtail Cable



RS-485 Board



RS-232C Cable



Sensor Port



Sensor Cable



Back Panel (Optional)



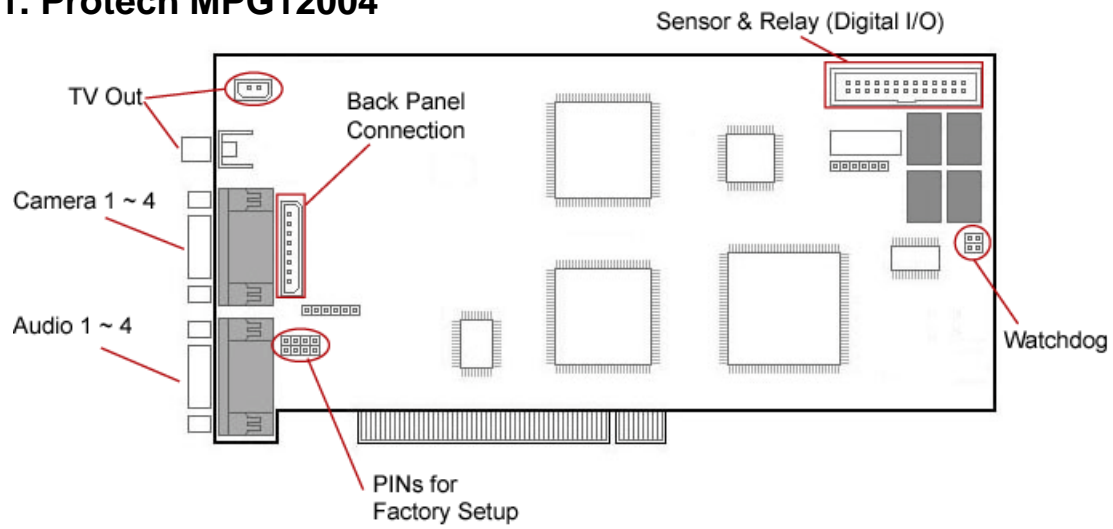
Video Cable (Optional)



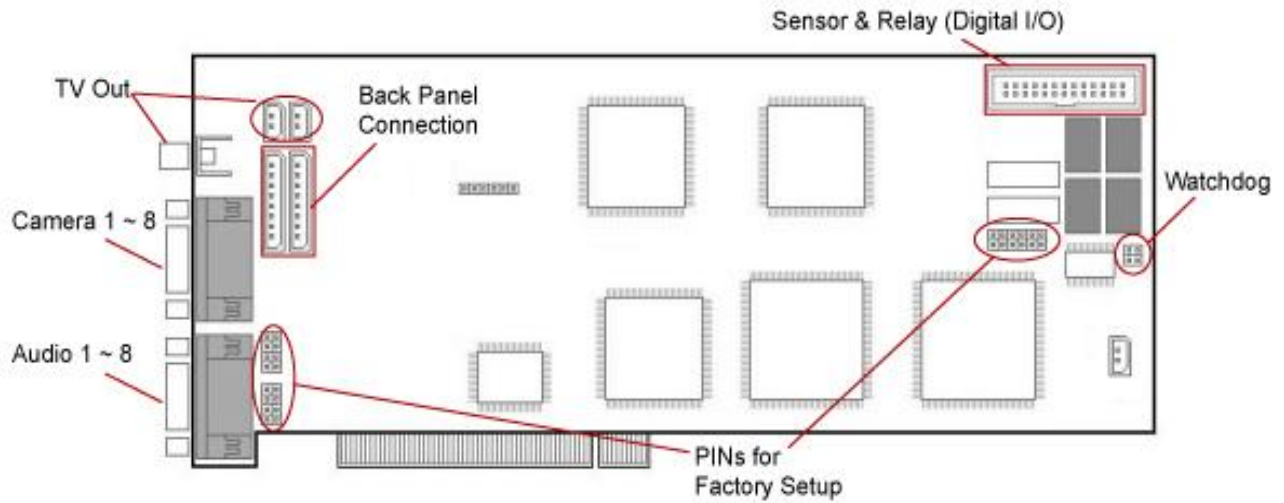
Reset Cable

3. Board Description

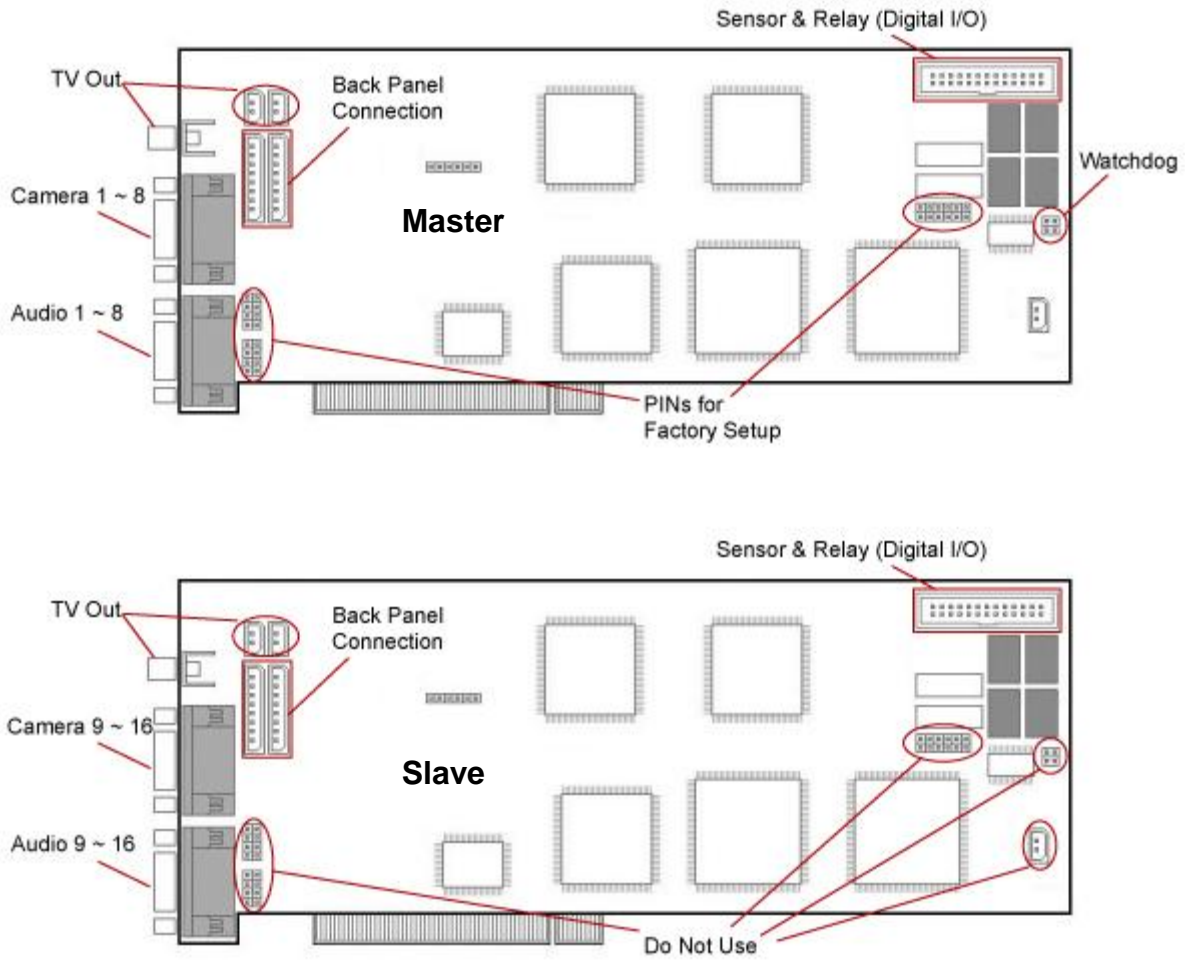
3-1. Protech MPG12004



3-2. Protech MPG24008

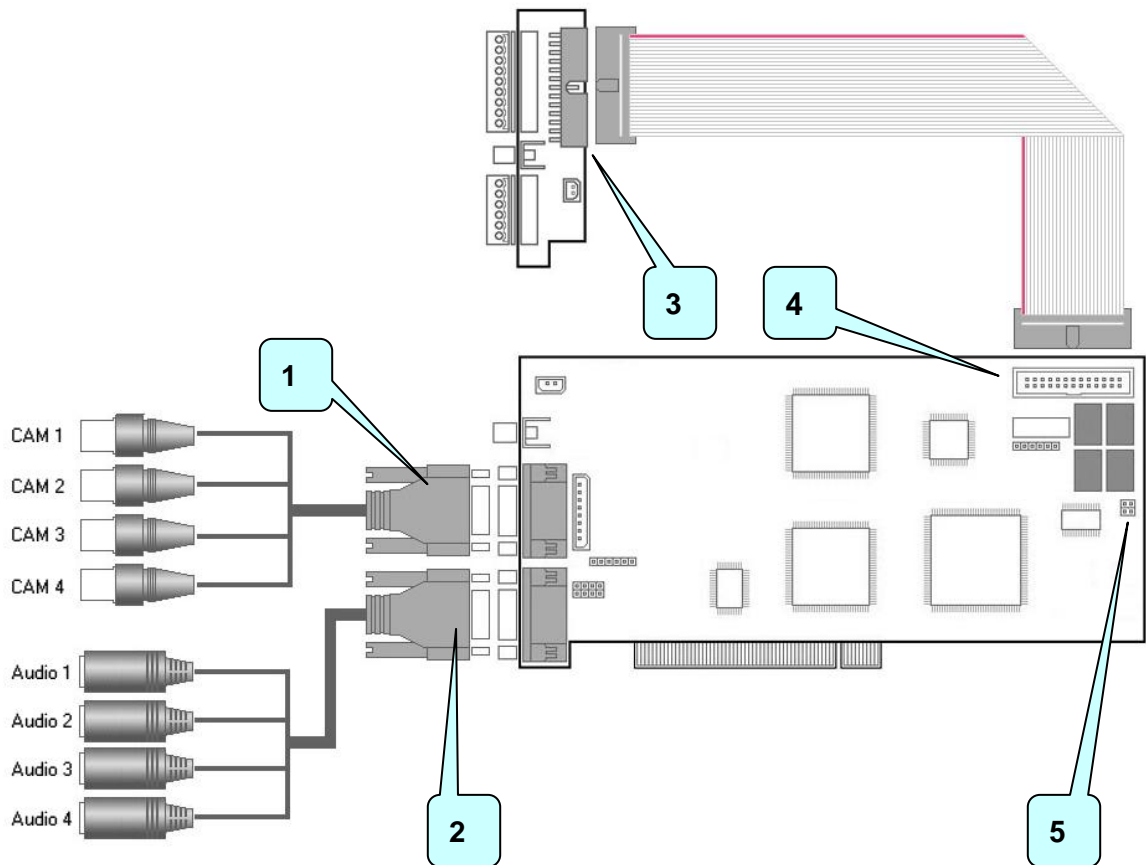


3-3. Protech MPG48016

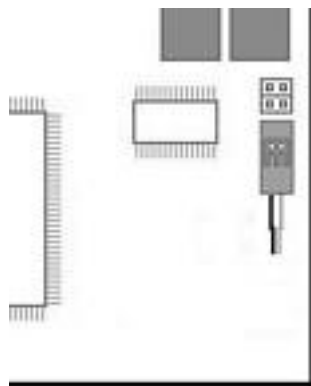


4. Installation

4-1. Protech MPG12004

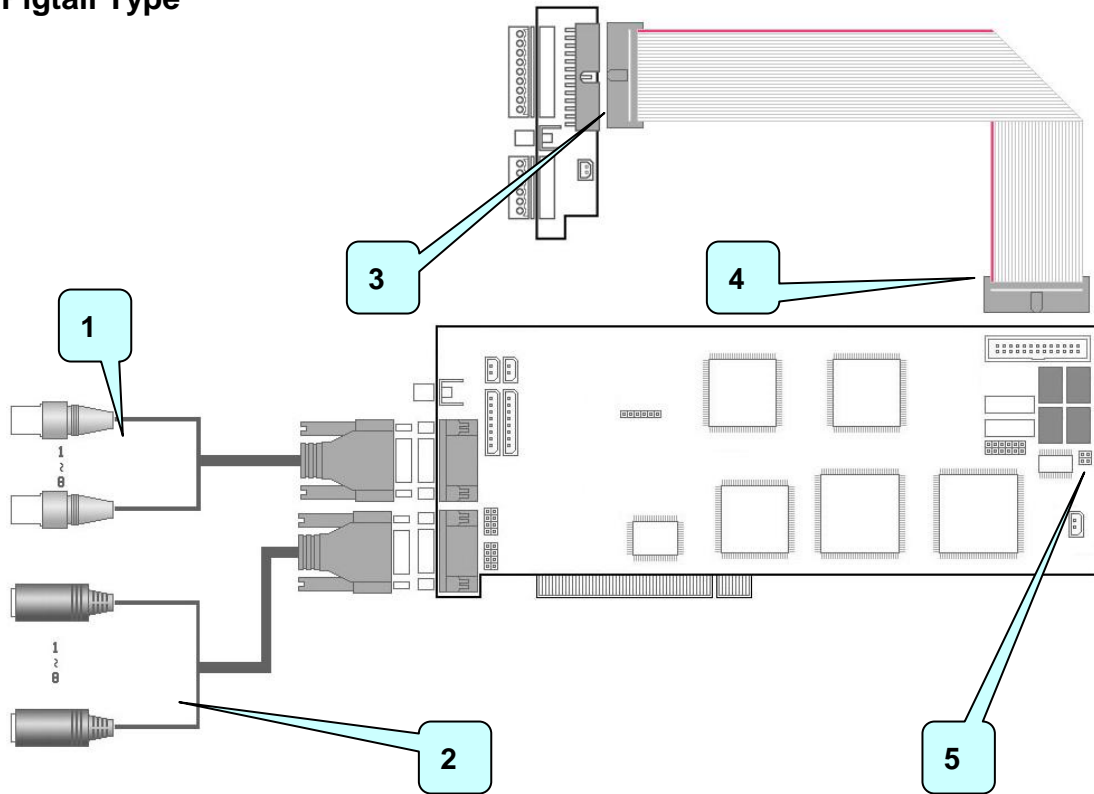


- 1) Connect video pigtail cable to the port.
- 2) Connect audio pigtail cable to the port.
- 3) Sensor cable connects to Sensor port.
- 4) The other side of sensor cable connects to IO socket on the DVR board.
- 5) Connect Watchdog cable. Make Watchdog cable connection as shown below

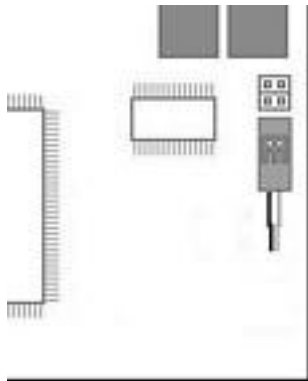


4-2. Protech MPG24008

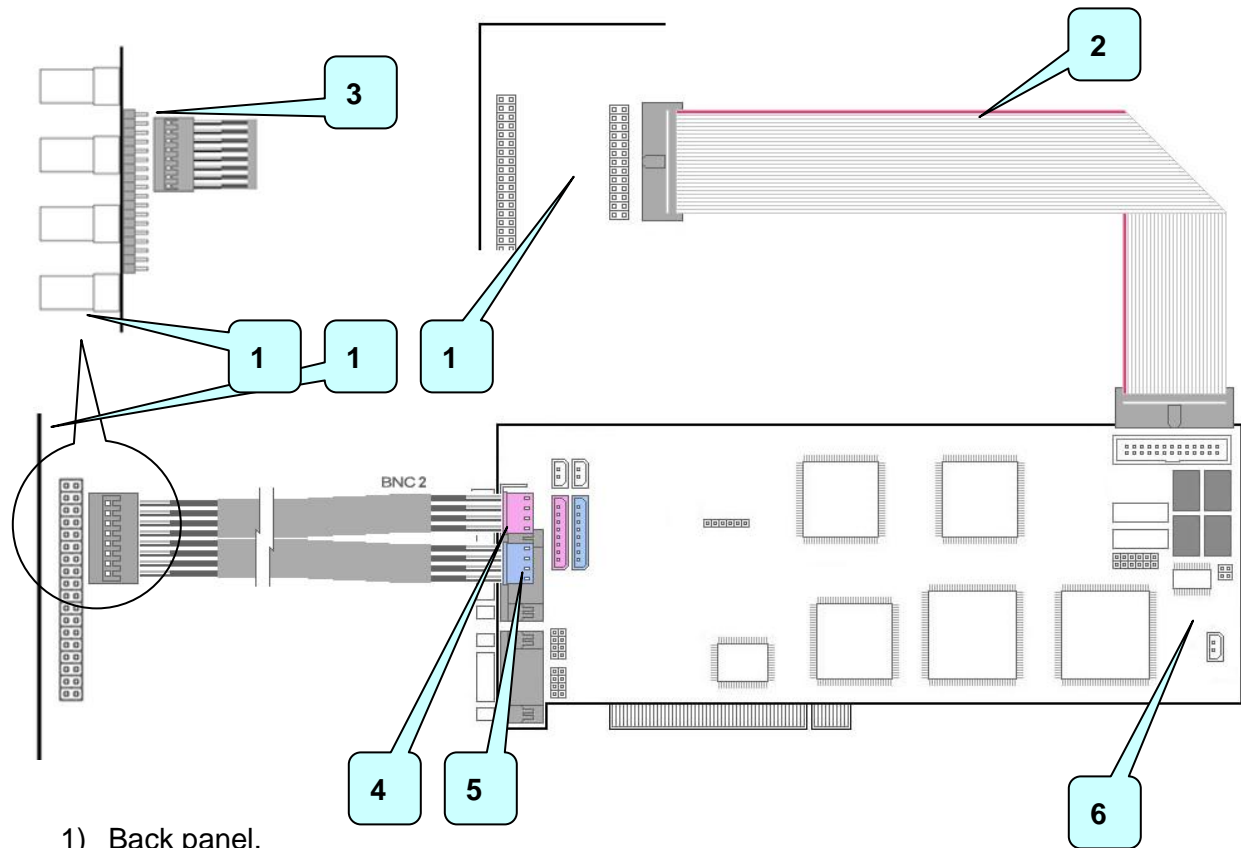
4-2-1. Pigtail Type



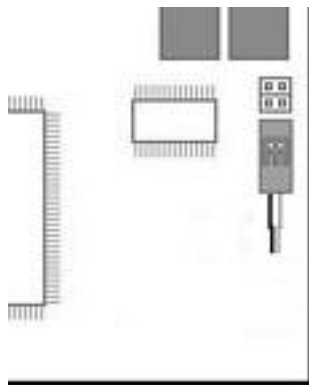
- 1) Connect video pigtail cable to the port.
- 2) Connect audio pigtail cable to the port.
- 3) Sensor cable connects to Sensor port.
- 4) The other side of sensor cable connects to IO socket on the DVR board.
- 5) Connect Watchdog cable. Make Watchdog cable connection as shown below



4-2-2. Back Panel Type

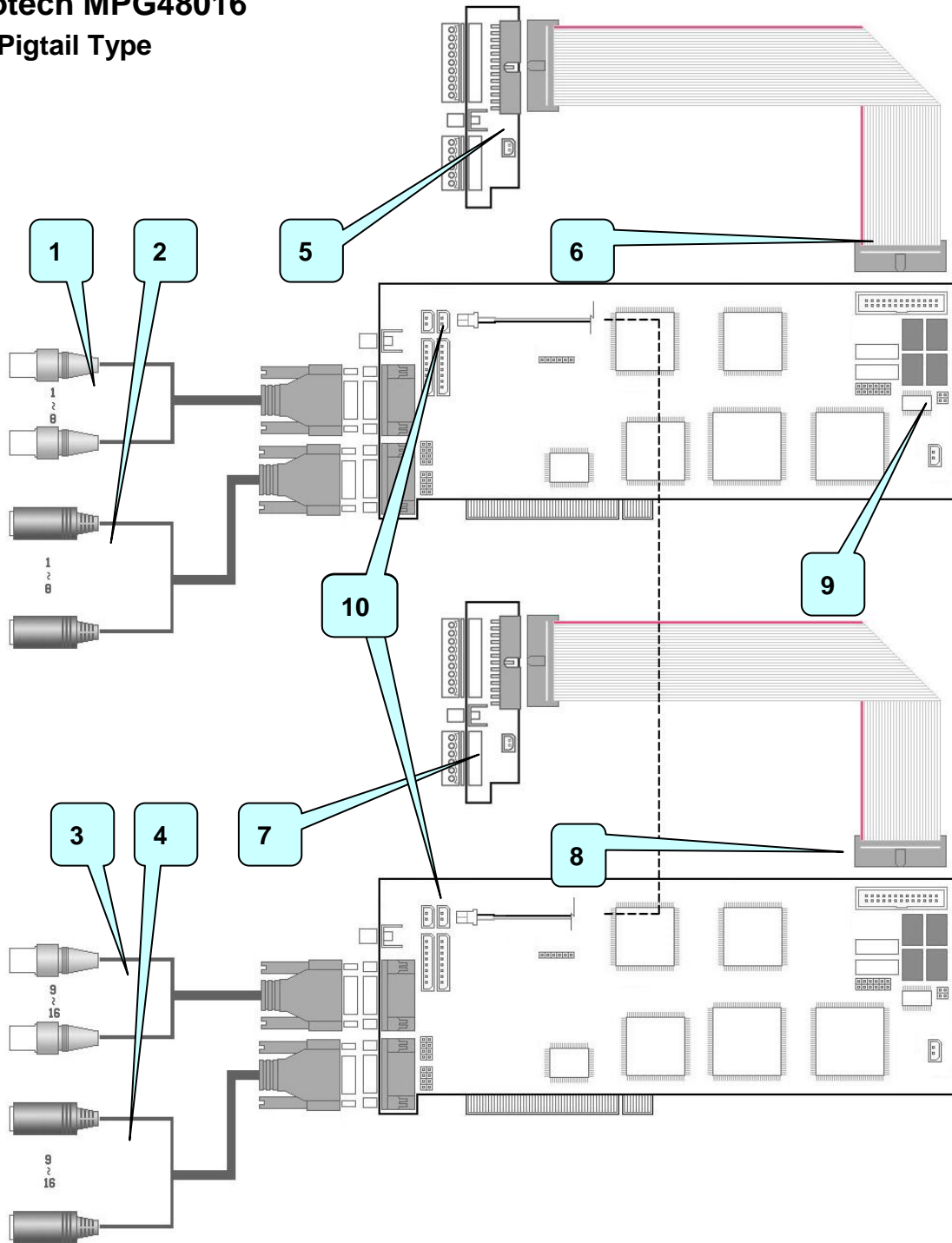


- 1) Back panel.
- 2) Sensor Cable.
- 3) When connect cable to back panel make sure to leave one pin from right end. White cable should be facing up.
- 4) Connect video cable with BNC2 label.
- 5) Connect another group of cable from video cable with BNC2 label.
- 6) Connect Watchdog cable. Make Watchdog cable connection as shown below



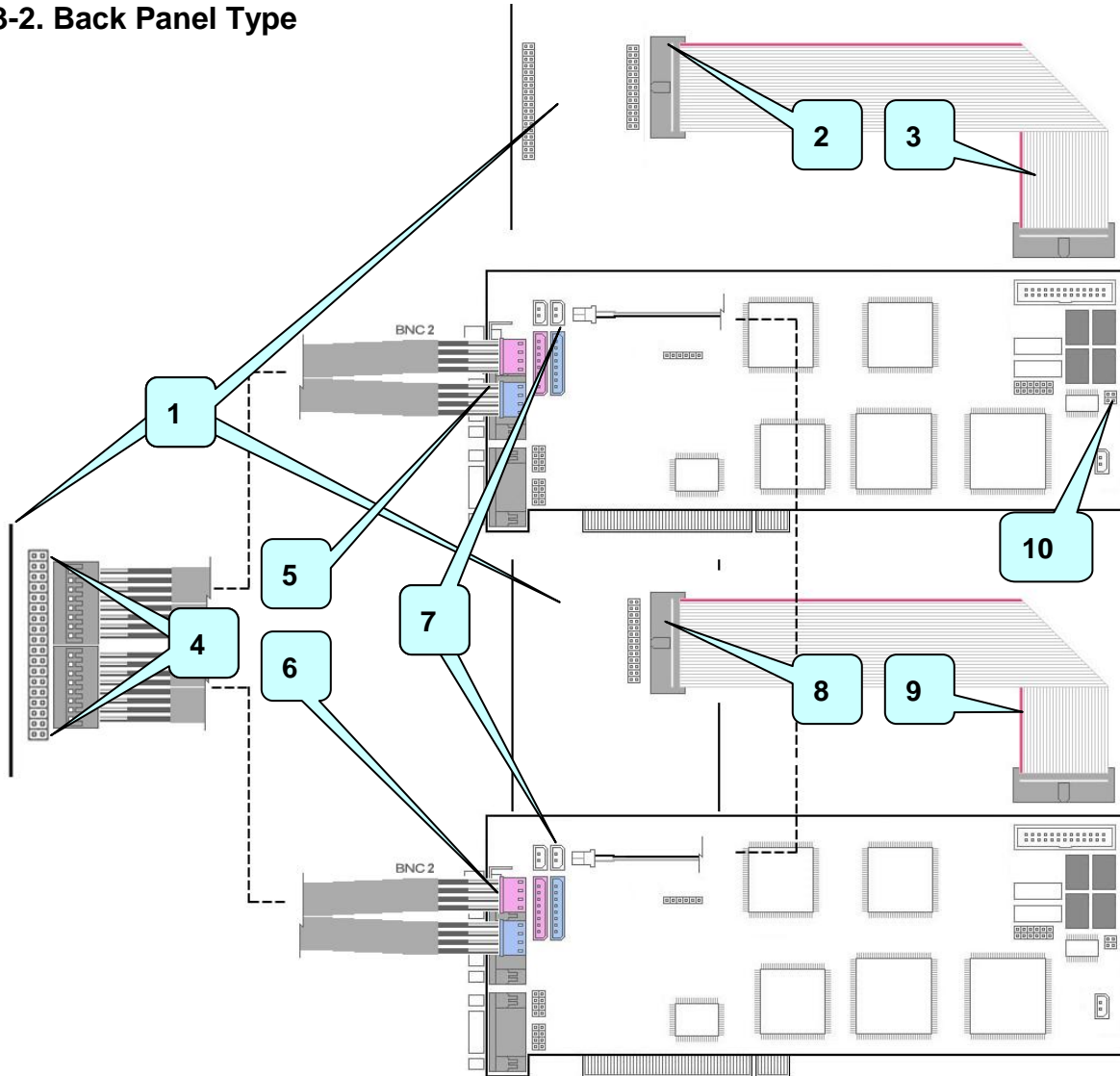
4-3. Protech MPG48016

4-3-1. Pigtail Type



- 1) ~ 4) Connect video & audio pigtail cable to the port.
- 5) ~ 8) Sensor cables connect between Sensor boards and IO socket on the DVR boards.
- 9) Connect Watchdog cable.
- 10) Connect between Master and Slave. Without this connection, only master gives TV-out.

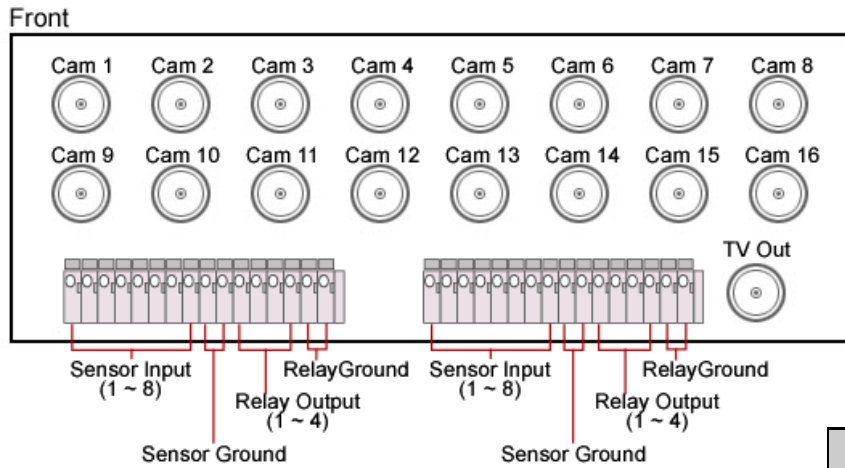
4-3-2. Back Panel Type



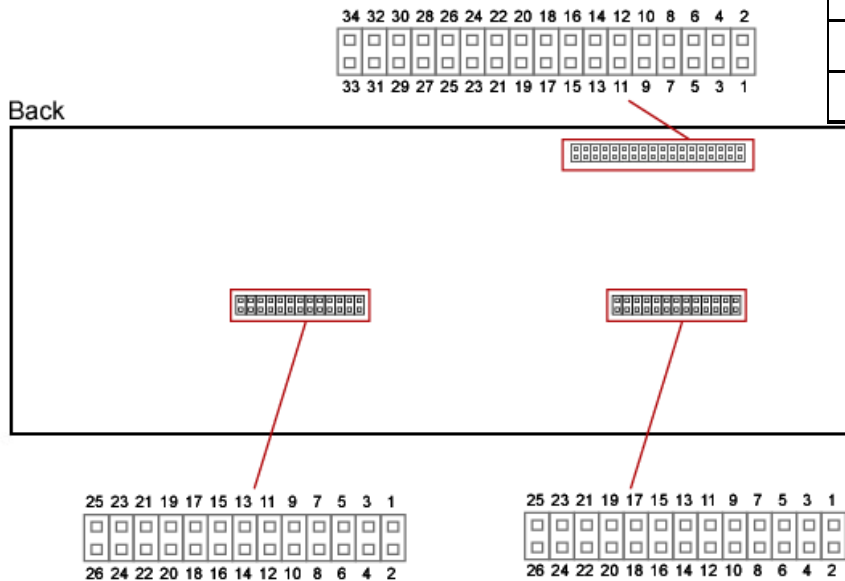
- 1) Back panel.
- 2) Sensor Cable connects to the back panel. (right below video connection)
- 3) The other side of sensor cable connects to IO socket on the DVR board.
- 4) When connect cable to back panel make sure to leave one pin from each end.
White cable should be facing up.
- 5) Connect video cable with BNC2 label.
- 6) Connect video cable with BNC9 label.
- 7) Connect between Master and Slave. Without this connection, only master gives TV-out.
- 8) Sensor Cable connects to the back panel. (left side of the other connection)
- 9) The other side of sensor cable connects to IO socket on the DVR board.
- 10) Connect Watchdog cable.

5. Accessories

5-1. Back Panel



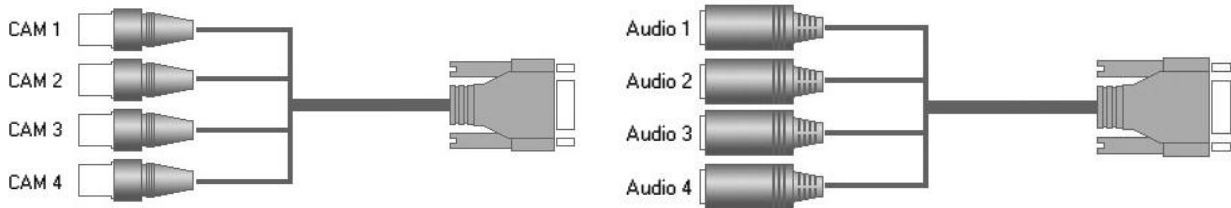
Camera I/O	
Camera Ground	3, 5, ~ 31, 33
Camera Signal	4, 6, ~ 32, 34
TV Out Ground	1
TV Out Signal	2



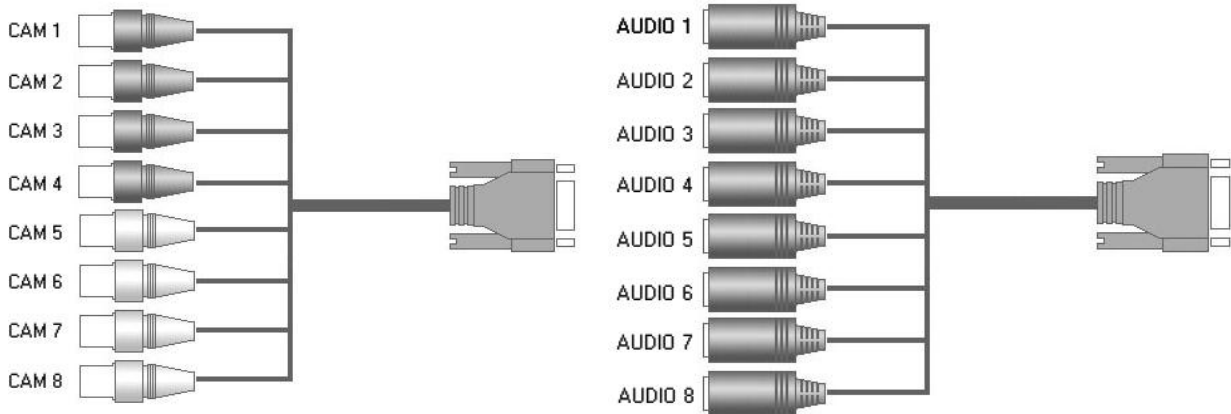
Sensor & Relay (Digital I/O)	
Sensor Input 9 ~ 16	1 ~ 8
Input Common 1, 2	17, 18
Relay Output 1 ~ 4	19 ~ 22
Output Common 1, 2	23, 24

Sensor & Relay (Digital I/O)	
Sensor Input 1 ~ 8	1 ~ 8
Input Common 1, 2	17, 18
Relay Output 5 ~ 8	19 ~ 22
Output Common 1, 2	23, 24

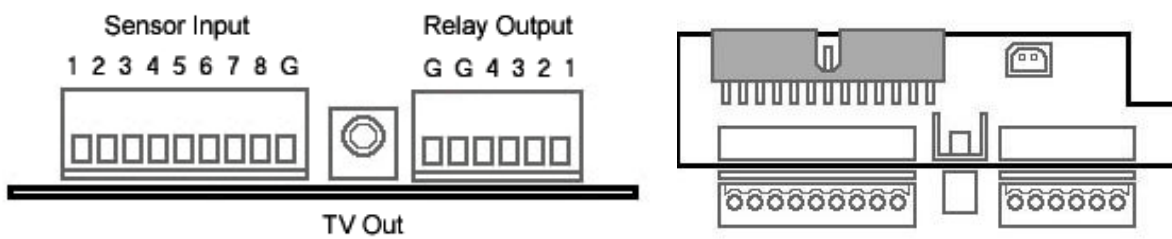
5-2. Pigtail for MPG12004



5-3. Pigtail for MPG24008



5-4. Sensor Board (8 channel)



Sensor port pin number

1 ~ 8: Signal input

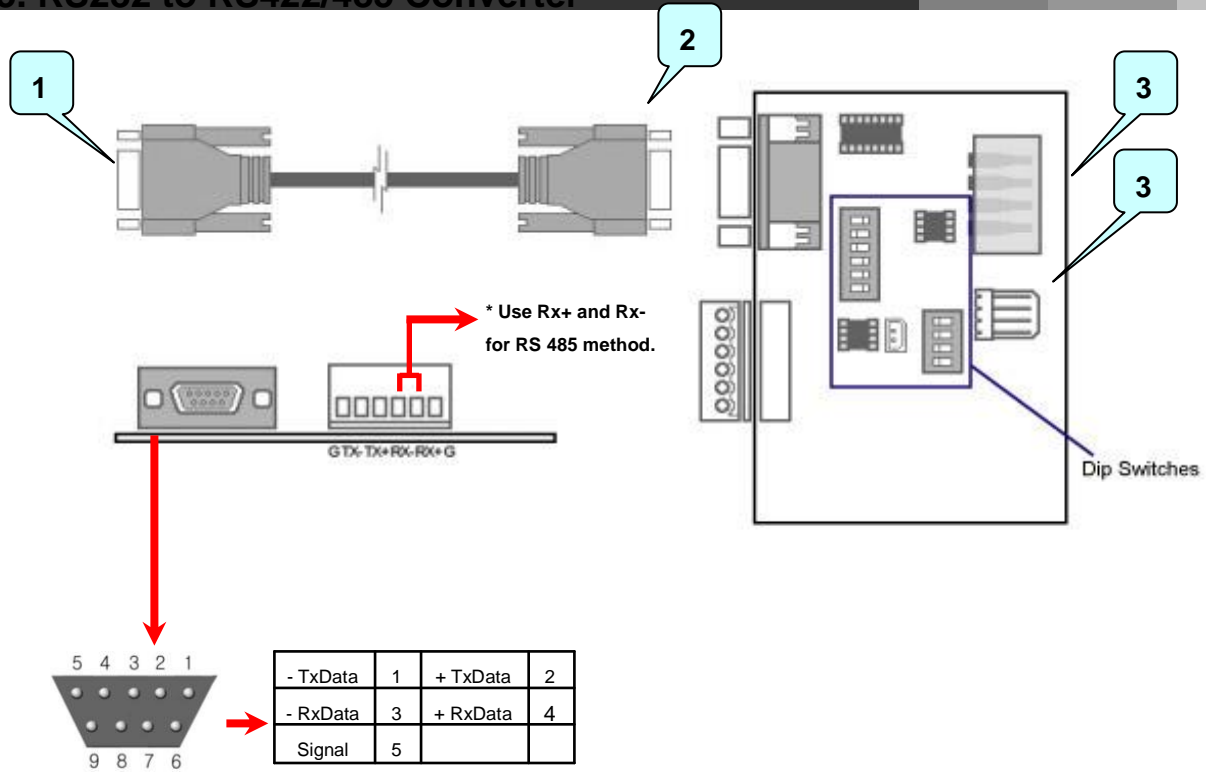
G: Ground

4, 3, 2, 1: Relay output

Note: For MPG12004, signal input only available 1 ~ 4.

For MPG48016, use 2 sensor boards. Refer to the connection diagram on section 4-3.

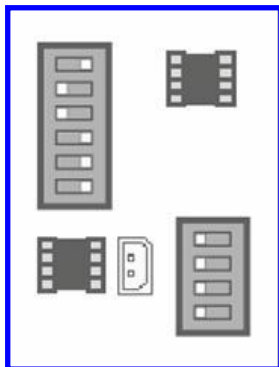
5-5. RS232 to RS422/485 Converter



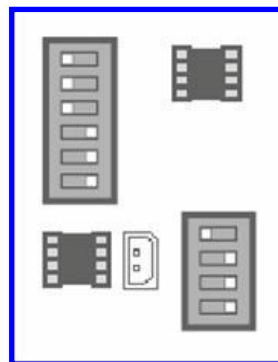
- 1) Connect to system's Com port.
- 2) Connect to PTZ port converterRS-485.
- 3) These are power supply sockets. Need to connect only one of them.

Dip Switches

RS-485 Mode



RS-422 Mode

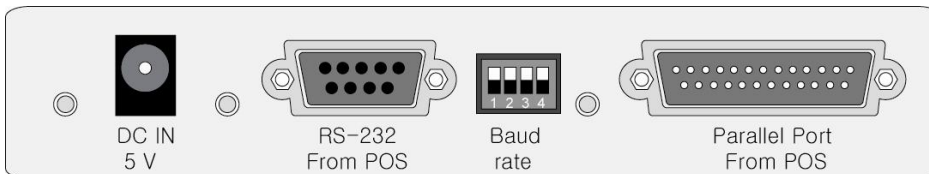


5-6. PORT Converter

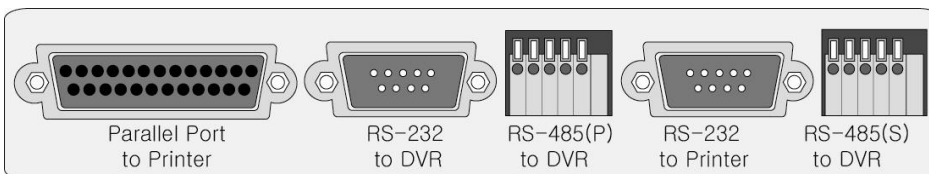
5-6-1. Specification

Input		RS-232 from POS	DB9 Female
		Parallel Port from POS	DB25 Male
Output	Serial	RS-232 to Printer	DB9 Male
		RS-485(S) to DVR	TX(+)(-), RX(+)(-), GND
	Parallel	Parallel Port to Printer	DB25 Female
		RS-232 to DVR	DB9 Male
		RS-485(P) to DVR	TX(+)(-), RX(+)(-), GND
Power		DC 5V	
Cable	Serial	RS-232 from POS	DB9 Female to DB9 Male Direct
		RS-485(S) to DVR	DB9 Female to DB9 Female Cross
		RS-485(P) to DVR	DB9 Female to DB9 Female Cross
	Parallel	Parallel Port from POS	DB25 Male to DB25 Female Direct
		Parallel Port to Printer	DB25 Female to IEEE 1284

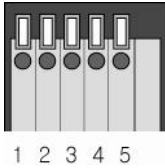
5-6-2. Layout Description



- 1, DC IN 5V
- 2, Rs-232 From POS : Connect to the serial port in POS
- 3, Baud rate : Select the Baud rate
- 4, Parallel Port from POS : Connect to the parallel port in POS

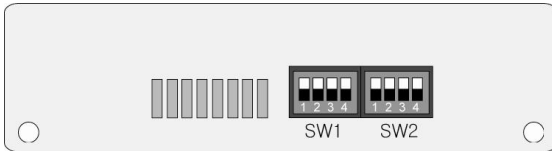


- 5, Parallel Port to Printer : Used by Parallel printer
- 6, RS-232 to DVR : Used by Serial port in DVR
- 7, RS-485(P) to DVR : Used by RS-485 board in DVR
- 8, Rs-232 to Printer : Used by Serial Printer
- 9, Rs-485(S) to DVR : Used by RS-485 board in DVR

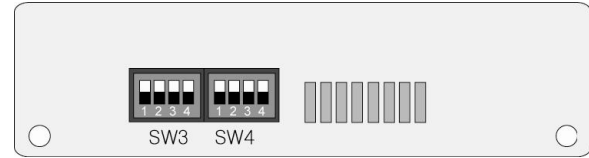


10, Terminal Block

- TxData	1	+ TxData	2
- RxData	3	+ RxData	4
Signal	5		

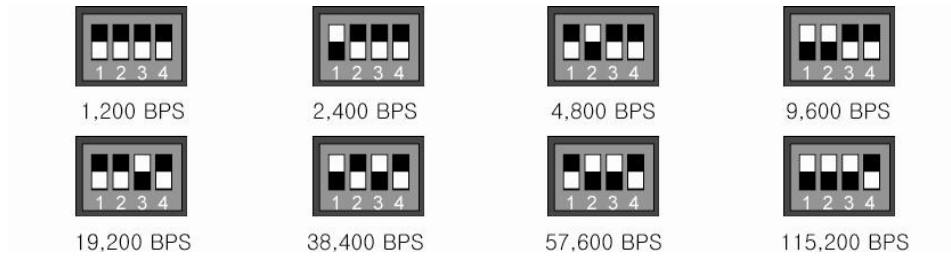


11, SW1, SW2: Used in output of Parallel port



12, SW3, SW4: Used in output of Serial

5-6-3. Baud Rate



5-6-4. Jumper Selection

Output of parallel port	Output of serial port
<p>RS-232</p> <p>SW1 SW2</p>	<p>RS-232</p> <p>SW3 SW4</p>
<p>RS-422</p> <p>SW1 SW2</p>	<p>RS-422</p> <p>SW3 SW4</p>
<p>RS-485</p> <p>SW1 SW2</p>	<p>RS-485</p> <p>SW3 SW4</p>