






Protocol Converter

PIH-7000SP

INSTRUCTION MANUAL

IMPORTANT SAFEGUARDS

	<p style="text-align: center;">CAUTION</p> <p style="text-align: center;">RISK OF ELECTRIC SHOCK DO NOT OPEN</p>	
<p>CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK) NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>		

GRAPHIC SYMBOL EXPLANATION

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the Literature accompanying the unit.



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Preface

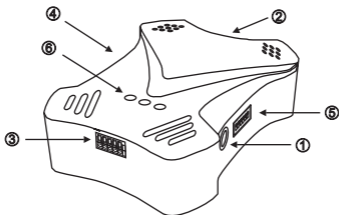
When different brand control keyboard is used to operate LI LIN's Fast Dome Camera, this protocol converter must be used to convert the protocol, so that LI LIN's Fast Dome can recognize control signals from keyboard and be controlled.

Use the switch as showed below to select keyboard brand.
(8 Different Brands Protocol Provided)

Precaution

- Please read this operation manual thoroughly before operating.
- Put in dry place only. Humidity or splash may cause the internal components damage.
- In order to operate properly, please connect all cables correctly and avoid short-circuit.

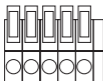
Illustration



- ① Power Input Jack
- ② RS-485 Input Connector :
To Keyboard Controller
- ③ RS-485 Output Connector :
To Fast Dome Camera
- ④ Brand Selecting Rotation Switch
- ⑤ Baud Rate Selecting Dip Switch
- ⑥ Signal Indicator

Connectors

Signal Controlling Connector is on the bottom of the Protocol Converter.



IN

G R R T T
N I I I I
D - + - +

IN : Signal Input

(Connect System Terminal)

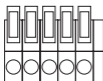
TI + : RS-485 + Input (Red)

TI - : RS-485 - Input (White)

RI + : Reserved

RI - : Reserved

GND : Ground



OUT

G R R T T
N O O O O
D - + - +

OUT : Signal Output

(Connect LILIN PTZ)

TO + : RS-485 + Output (Red)

TO - : RS-485 - Output (White)


RO + : Reserved

RO - : Reserved

GND : Ground

Brand Selecting Rotation Switch

Use the switch as showed below to select keyboard brand.
(8 Different Brands Protocol Provided)

	Code	Brand	Model Number	Factory Default Baud
	0	Lilin	Fast Dome Series	9600
	1	Pelco-P	Spectra- II / III	2400
	2	Pelco-D	Spectra- II / III	2400/4800/9600
	3	KALATELKY	CyberDome	4800
	4	KALATELPC	CyberDome	2400/9600
	5	SONY	EVI-D100	9600
	6	PANASONIC	WV-CS850(A)(B) WV-CS860A	2400/4800 /9600/19200
	7	PHILIPS	CSS	2400/9600
	8	SAE	DR-5319 DR-5388	2400/4800 /9600/19200
	9	VCL	Orbiter Gold/Lite	9600
	A	SAMSUNG	SCC-641	9600
	B	SAMSUNG	SPD-1600	9600
	Other	Reserve	—	—

Note :When using [PANASONIC] keyboard, any one of the 4 (2400/4800/9600/19200bps) baud rates can be used.

Use any one of the 3 (2400/4800/9600bps) baud rates when using other brands keyboard.

Baud Rate Selecting Dip Switch



2400bps



4800bps



9600bps



19200bps

Note : When number 5 and 6 are switched to ON position, the matched impedance is 150Ω .
When number 5 and 6 are switched to OFF position, the matched impedance is 620Ω .

Switch 5 → to adjust output impedance.

Switch 6 → to adjust input impedance.

LED Indicator

➤ Green : Power Indicator.

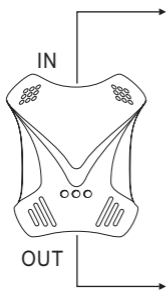
➤ Red : Data Transmission Indicator.

Flashing on and off when data transferring to Fast Dome Camera.

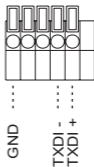
➤ Yellow : Data Receiving Indicator.

Flashing on and off when Protocol Converter receiving data.

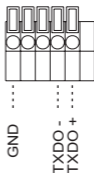
Wiring Diagram



Controlling Signal Input
(Front View)



Controlling Signal Output
(Front View)



Operation Instruction

1. Please set the Brand Selecting Rotation Switch and Baud Rate to the intended positions before power on.
2. Connect signal input and output cables following instruction on page 6.
3. Power indicator will be on after the input of 12Vdc power.
4. When entering control command, data transmission indicator (Red) will flash on and off.
5. When receiving reply signal from fast dome, data receiving indicator (Yellow) will flash on and off.

Note : Switching the Brand Selecting Rotation Switch power is on will cause malfunction of Fast Dome. Always turn off the power before switching the Brand Selecting Rotation Switch.

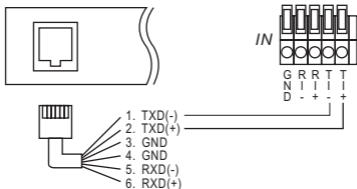
System Setup

● Pelco MPT9500 Series

(Default Baud Rate:2400bps)

WIRING INSTRUCTION

Connect TXD(-),TXD(+) to IN connector of the convertor.



PREPARATION

① Select Standard Mode then press

[Number Key]+[^{COAX}RECV]

Ex: [1]+[^{COAX}RECV]

the keyboard LCD will show the following:

STD CXTRN

② Select RS485 Mode, then press [Number Key]

+ [^{RECV}ADDRS], and select the Address to be controlled.

Keyboard LCD displays the following:

SET COM

Monitor will show the following

SET COM TYPE
JOYSTICK ↑↓
SIMPLEX? *
DUPLEX?

Using the joystick to select "SIMPLEX" and then press [F1]

Keyboard LCD will show the following

RX ADDRS 1



RS-485 MODE

- ③ To control P/T/Z, press control keys on the keyboard directly.

SYSTEM SETUP

1. Recall Preset

Press [Number Key]+[$\overset{\text{PRESET}}{\text{GO}}$]

Ex: To Recall Preset 1 — Press [1]+[$\overset{\text{PRESET}}{\text{GO}}$]

2. Store Preset

➤ Recall the intended Preset ID [Number Key] + [$\overset{\text{PRESET}}{\text{GO}}$], then control P/T/Z to the target position.

➤ Press [Number Key]+[$\overset{\text{PRESET}}{\text{SET}}$]

Ex: [1]+[$\overset{\text{PRESET}}{\text{SET}}$],

Monitor displays the following:

EDIT PRESET LABEL

—

CLEAR TO EXIT

USE JOYSTICK

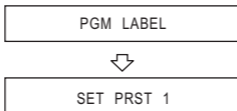
↑ ↓ UP DOWN CHAR SET

← → CHAR POSITION

F2 TO SEND LABEL

Press [F2] to store or [CLEAR] to exit.

When stored successfully, the keyboard LCD displays the following:



3. Corresponding to LILIN Auto Pan function.

☛ Recall Preset "70" to execute Auto Pan

Ex: [7, 0]+[$\begin{matrix} \text{PRESET} \\ \text{GO} \end{matrix}$]

☛ Press [9, 6]+[$\begin{matrix} \text{PRESET} \\ \text{GO} \end{matrix}$] to cancel Auto Pan.

SPECIAL FUNCTION KEY INSTRUCTION

☛ [7, 0]+[$\begin{matrix} \text{PRESET} \\ \text{GO} \end{matrix}$] → to execute Auto Pan

☛ [9, 9]+[$\begin{matrix} \text{PRESET} \\ \text{GO} \end{matrix}$] → to execute Horizontal Scanning

☛ [9, 6]+[$\begin{matrix} \text{PRESET} \\ \text{GO} \end{matrix}$] → to cancel Auto Pan and Horizontal Scanning.

☛ [9, 0]+[$\begin{matrix} \text{PRESET} \\ \text{GO} \end{matrix}$] → to execute Auto Iris

☛ [9, 1]+[$\begin{matrix} \text{PRESET} \\ \text{GO} \end{matrix}$] → to execute Auto Focus

☛ [3, 3]+[$\begin{matrix} \text{PRESET} \\ \text{GO} \end{matrix}$] → to flip 180°

☛ run Pattern → to execute Auto Pan

● Kalatel Keyboard KDT-404

1. Recall Presets

Press [Set]+[Number Key]

Ex: To recall Preset 1 — Press [Set]+[1]

2. Store Presets

➤ Set the intended ID for Preset position.

➤ Hold [Set] for 3 seconds, and the keyboard LCD displays the following, and then key in [9, 5, 1]+[Seq] to store.

ENTER PROGRAMMING CODE : <u>9</u> <u>5</u> <u>1</u> ← [9, 5, 1]+[Seq]
--

➤ Select [4], and enter Fast Dome ID, LCD displays show as below:

1=SWTCHR	2=RCVR	3=ALARMS
4=CYBERDOME	SEQ=EXIT	



ENTER RECEIVER SITE NUMBER _ _ _ ← Ex: 001

- ☛ Select [0] and then select [2], to enter preset menu as below:

DOES THE MONITOR DISPLAY SITE 001? ___ 1=YES 0=NO
--



1=SETUP 2=PRESETS 3=TITLES SEQ=EXIT
--

- ☛ Enter the Preset position ID selected at step 1.

CAM 001 POSITION? ___ CHOOSE(00-09) SEQ=EXIT

- ☛ There will be a "Beep" sound after completion.
Press [Seq] to return to main menu.
- ☛ Repeat above steps to store other presets.

3. Corresponding to LILIN Preset Grouping function.
Press [Set]+[Auto]+[Number 1~4].
To execute Auto Pan function, press [Auto].

- [Set]+[Auto]+[1] (+[Auto]), to correspond to LILIN group 1
 [Set]+[Auto]+[2] (+[Auto]), to correspond to LILIN group 2
 [Set]+[Auto]+[3] (+[Auto]), to correspond to LILIN group 3
 [Set]+[Auto]+[4] (+[Auto]), to correspond to LILIN group 4
- [Set]+[Auto]+[1] , [Set]+[Auto]+[2] (+[Auto]), to correspond to LILIN group 1, 2
 [Set]+[Auto]+[1] , [Set]+[Auto]+[3] (+[Auto]), to correspond to LILIN group 1, 3
 [Set]+[Auto]+[1] , [Set]+[Auto]+[2] ,
 [Set]+[Auto]+[3] (+[Auto])
 , to correspond to LILIN group 1, 2, 3
 , etc.

● Kalatel Keyboard KDT-405

1. Recall Preset

Press [Find]+[Number Key]

Ex: To recall Preset 1 — Press [Find]+[1]

2. Store Preset

➤ Select the desired camera.

➤ Press [Store] and entering the desired Preset position ID, press [Store] to complete.

3. Execute Auto Pan Function

Hold [Tour] for 3 seconds to execute Auto Pan.

4. Corresponding to LILIN Preset Group function.

Press [Tour]+[Number 1~4]

➤ [Tour]+[1] (+[Tour] for 3 seconds), to correspond to LILIN group 1.

➤ [Tour]+[2] (+[Tour] for 3 seconds), to correspond to LILIN group 2.

➤ [Tour]+[3] (+[Tour] for 3 seconds), to correspond to LILIN group 3.

➤ [Tour]+[4] (+[Tour] for 3 seconds), to correspond to LILIN group 4.

- [Tour]+[1], [Tour]+[2] (+[Tour] for 3 seconds), to correspond to LILIN group 1,2.
- [Tour]+[1], [Tour]+[3] (+[Tour] for 3 seconds), to correspond to LILIN group 1,3.
- [Tour]+[1], [Tour]+[2], [Tour]+[3] (+[Tour] for 3 seconds), to correspond to LILIN group 1, 2, 3.
- , etc.

● SAE

1. Camera ID starts from "01H".
2. Corresponding to LILIN Preset Grouping function
 - Entering "Start Sequence" command.
 - Start Sequence 0 to correspond to LILIN group1.
 - Start Sequence 1 to correspond to LILIN group1, 2.
 - Start Sequence 2 to correspond to LILIN group1, 2, 3.
 - Start Sequence 3 to correspond to LILIN group1, 2, 3, 4.
 - To activate Auto Pan, please send Auto Pan command.

3. Corresponding to LILIN Store Preset function.
To store preset, please recall Preset Position ID first and then send the store preset command.
The preset position data will be stored at the ID.

4. Corresponding to LILIN Preset Speed Storing function
Entering "Save Preset With Speed" command to set preset speed. If only "Save Preset" has been sent, the system will use default value.
(dwell: 3 seconds, speed: 255° /sec.)

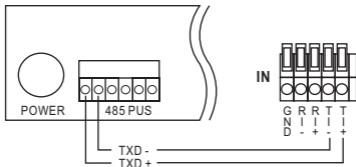
5. Corresponding to LILIN 25X Camera IR Filter function
Entering "Camera Setup IR Filter ON Gate" command to switch IR Filter; Entering the same command again to switch IR Filter again.

● VCL

A \ Using DM (Dedicate Micros) - Digital Sprite2

WIRING INSTRUCTION

Connect TXD(-), TXD(+) to the IN connector of the converter



PEPARATION

① Set control signal to VCL mode:

Hold [MENU] key until the screen shows

"Alarm & Camera Status"; then press [MENU] key 10 times to switch to "System Options".

Using the joystick to move the cursor to

"Serial telemetry type" and THEN select VCL mode.

After finishing, press [MENU] key to escape.

- ② Press [Number Key] to select the corresponding camera.

Ex: [1] to select the camera [1].

- ③ To control P/T/Z and Iris, using the control keys on the keyboard directly.

SYSTEM SETUP

1. Recall Preset

Press [Preset] key to show the following on the keyboard LCD and then press [Number Key] to select.

Ex: To recall Preset 1 — Press [Preset]+[0]+[1].

Goto Preset Enter Preset Number

2. Store Preset

- Press [Preset]+[Number Key] to recall the desired Preset ID and then control P/T/Z to the target position.

- Hold [Preset] until keyboard LCD shows "Save Preset" (as below) and then press [Number Key].



Note: To correspond to LILIN Store Preset function, please recall the desired preset first and then send store preset command.

Making sure that the recalled and stored presets should be the same.

Ex: To store Preset 2

Recall first — [Preset]+[0]+[2]

then store — Hold [Preset]+[0]+[2]

3. To Execute LILIN Auto Pan function.

- Double click on [Patrol] to execute Auto Pan.
- Double click on [Patrol] again to cancel Auto Pan.

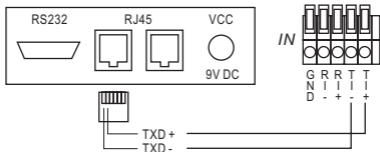
Note: Camera will start to pan after double clicking on [Auto Pan].

To cancel, please move the joystick.

B、Using PIH-2150 Keyboard

WIRING INSTRUCTION

Connect TXD(-), TXD(+) to the IN connector of the converter



PREPARATION

① After turning on the power, the keyboard LCD displays as below:

MAT : 1	NG-SYS1
CAM : 1	VCL - 001
MON : 1	
>	

Note: If the LCD does not show the same as above, please check if "CAM" is set to the corresponding ID and Camera Model is set to VCL-001.

② Setup Camera ID

Press [Number Key]+[ENT].

Ex: Select a camera and then press [1]+[ENT]
to set the camera ID to 1.

③ Setup Camera Model

➡ Press [SHIFT]+[MON] to enter setup menu.

SETUP	
1 : SYSTEM	2 : CAM
3 : MPX	4 : VCR
5 : MATRIX	

➡ Select [1] and then [2] to enter camera setup.

Keyboard LCD display the following:

SYSTEM SET UP	
1 : RETURN	2 : CAM
3 : MPX	4 : VCR
5 : MATRIX	6 : KBO



SYSTEM SET UP	
CAM : 1	
T : VCL-001	N : 1

➤ Press [2] or [5] to select Brand Name.

Please select VCL-001

➤ Press [4] or [6] to select connection status.

If the connection on page 22 is used, please select N:1.

Note: Prior to setting up ② and ③, please set the "Program Key" to "on" on the keyboard

④ To control P/T/Z and Iris, please use control keys on the keyboard directly.

SYSTEM SETUP

1. Recall Preset

➤ To recall presets 1~4, press [P1/n]、[P2]、[P3]、[P4] on the keyboard directly.

➤ To recall presets 5~8, press [SHIFT]+[P1/n] ([P2]、[P3]、[P4])

Ex: To recall Preset 7 — Press [SHIFT]+[P3]

➤ To recall presets after 9, press [Number Key] +[P1/n]

Ex: To recall Preset 12 — Press [1]+[2]+[P1/n]

2. Store Preset

- Recall the intended Preset ID and then control P/T/Z to move the camera to target position.
- Press [SHIFT]+[MON] to enter setup menu.

SET UP	
1 : SYSTEM	2 : CAM
3 : MPX	4 : VCR
5 : MATRIX	

- Select [2] and [2] again to enter Store Preset menu.
The keyboard LCD display the following:

SET UP	CAM : 1
VCL-001	
Function ?	



SET UP	CAM : 1
VCL-001	
Set Preset	

- Key in the desired Preset ID and then press [P1/n] to store the preset.
Ex: [1]+[P1/n] to store Preset 1.

3. To activate LILIN Auto Pan function.
Press [TOUR] key on the keyboard directly.
4. Corresponding to LILIN Lens180 flipping.
Press [SHIFT]+[PAN] to execute Lens 180° flipping.

● Samsung SCC-641

A、Using DM (Dedicate Micros) - Digital Sprite2

PEPARATION

- ① Please set "Serial telemetry type" to Samsung.
- ② Press [Number Key] to select the corresponding camera.
- ③ To control P/T/Z and Iris, please use control keys on the keyboard directly.

SYSTEM SETUP

1. Recall Preset

Press [Preset]+[Number Key]

Ex. To recall Preset 1 — Press [Press]+[1]

2. Store Preset

☛ Press [Preset]+[Number Key] to recall the desired Preset ID and then control P/T/Z to the target position.

☛ Hold [Preset] for about 3 sec+[Number Key]

Note: Default dwell time:3sec; speed: 255°/sec.

Ex: To store Preset 1

① Press [Preset]+[0]+[1]

② Control P/T/Z to move camera to the target position.

③ Hold [Preset] for 3 sec+[0]+[1]

3. To activate Auto Pan Function

☛ Press [Auto Pan] and the camera will be panning continuous. Move Joystick to stop.

☛ Press [Partro] Key, to activate or cancel Auto Pan function.

● Samsung SPD-1600

A \ Using Samsung keyboard - SCL-16

PEPARATION

- ① Press [Number Key]+[CAM] to recall camera.
- ② To control P/T/Z and Iris, please use control keys on the keyboard directly.

SYSTEM SETUP

1. Recall Preset

Press [Number Key]+[P-SET]

Ex. To recall Preset 1 — Press [1]+[P-SET]

2. Store Preset

➤ Press [Number Key]+[P-SET] to recall the desired Preset ID and then control P/T/Z to the target position.

➤ Press [Set]+[Number Key]+[P-SET]

Note: Default dwell time: 3sec; speed: 255°/sec.

Ex: To store Preset 1

- ① Press [1]+[P-SET]
- ② Control P/T/Z to move camera to the target position.
- ③ Press [Set]+[1]+[P-SET]

3. Clear all Presets

Hold [CLR] for 3 sec+[P-SET]+[ENT]

4. Corresponding to LILIN 25X Camera OSD menu function

- Press [OSD] to enter; again to exit.
- After entered OSD menu, shift the joystick up & down to select item; left & right to chang status.

Note: Please do not press [OSD] when using LILIN 17X or 22X Cameras, to avoid camera malfunction.

5. Activate / Cancel Auto Pan Function

Press [Tour] once to activate Auto Pan and press again to cancel.

6. Preset Group Function

Press [Set]+[Group], [Number 1~4]+[ENT],
[Set] (+[Tour])

- [Set]+[Group], [1]+[ENT], [Set] (+[Tour]), group 1 ;
correspond to Preset 1~4.
- [Set]+[Group], [2]+[ENT], [Set] (+[Tour]), group 2 ;
correspond to Preset 5~8.
- [Set]+[Group], [3]+[ENT], [Set] (+[Tour]), group 3 ;
correspond to Preset 9~12.
- [Set]+[Group], [4]+[ENT], [Set] (+[Tour]), group 4 ;
correspond to Preset 13~16.
- [Set]+[Group], [1]+[ENT], [Set]
[Set]+[Group], [2]+[ENT], [Set] (+[Tour])
, group 1,2; correspond to Preset 1~8. (8 Presets)
- [Set]+[Group], [1]+[ENT], [Set]
[Set]+[Group], [3]+[ENT], [Set] (+[Tour]), group 1, 3 ;
correspond to Preset 1~4, 9~12. (8 Presets)
- , etc.

Note: To set Group 1 after Group 1,2 have been set,
please perform group setting again after
executing [Tour].



MERIT LI-LIN ENT. CO., LTD
<http://www.meritlilin.com>

66-7000SPCSE