CP5H Protocol Converter

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Part No. 81-9059-0440-0 Revision C
November, 2004

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Printed in the United States of America.

Introduction

The CP5H protocol converter is designed to allow for PESA Series H matrices to be controlled by PESA control systems using the PRC matrix protocol. The CP5H box inputs PRC commands from the controller via the PRC RS-422 connection and interprets them into Series H commands via the 37 pin Series H communications interface.

Connections

The CP5H is connected to the PESA controller and Series H matrices as follows:

1. Set Strobe/Confidence mappings to match mappings for existing Series H matrices.
2. Connect Power to the CP5H from a standard PESA video power supply. This may be accessible through the auxiliary power connectors on other video frames or from an external PS140 video power supply.
3. Connect the PRC control cable to the bottom right hand 9 pin D connector (COM1). This is a pin to pin connection from the PESA controller's 9-pin PRC control port. NOTE: Do not use the connector labeled COM3/PRC for this connection.
4. Connect a 37 pin parallel cable from the Series H interface connector to the 37 pin communications cable on the Series H routers.

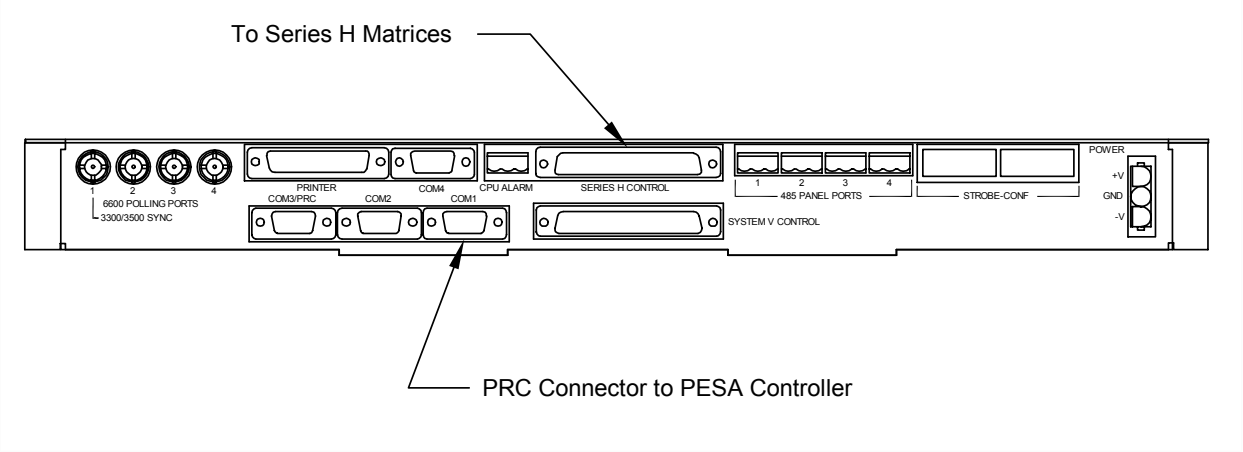


Figure 1. CP5H Rear View

Programming

The CP5H has the ability to control Series H matrices on two strobes with up to 192 inputs and outputs on each strobe. The information indicating which strobes are active and the size of the matrices is determined by setting the DIP switch on the CP5H CPU.

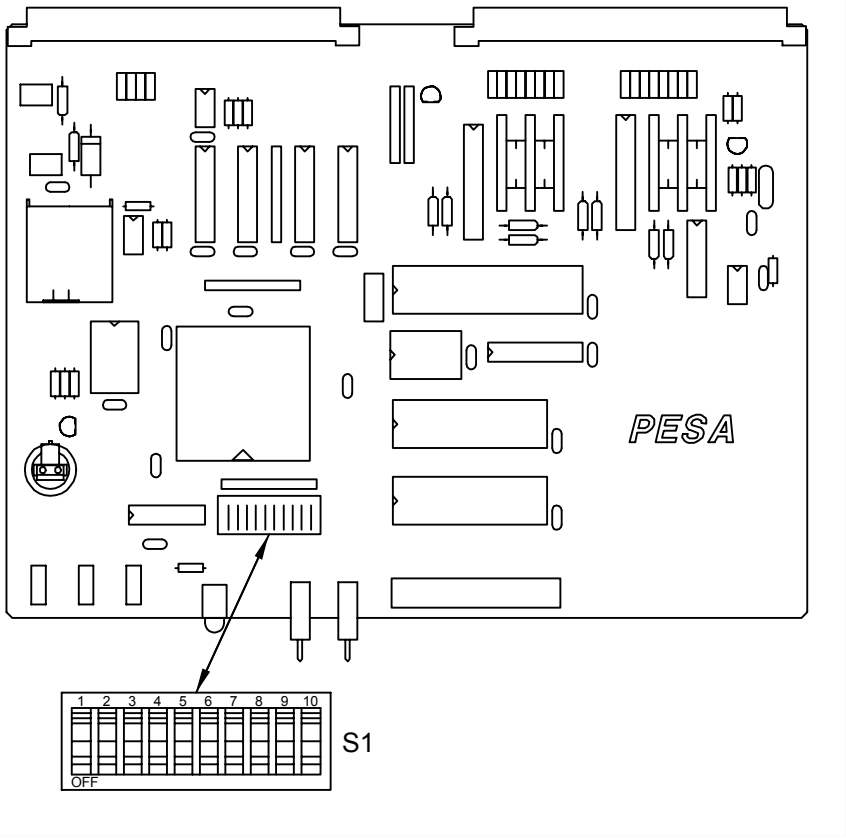


Figure 2. DIP Switch S1 Location

Strobe Enable/Disable

A maximum of two strobes may be enabled at the same time. If an attempt is made to enable more than two strobes, only the two strobes with the lowest number will be enabled.

Table 1. Motherboard S1-1 through S1-5

Strobe Enable/Disable	Switch S1-1	Switch S1-2	Switch S1-3	Switch S1-4	Switch S1-5
Strobe 1 Enabled	OFF				
Strobe 1 Disabled	ON				
Strobe 2 Enabled		OFF			
Strobe 2 Disabled		ON			
Strobe 3 Enabled			OFF		
Strobe 3 Disabled			ON		
Strobe 4 Enabled				OFF	
Strobe 4 Disabled				ON	
Strobe 5 Enabled					OFF
Strobe 5 Disabled					ON

Matrix size

Matrix size DIP switches indicate to the CP5H the maximum size of the matrices being controlled. However, it does not restrict the smallest size of the matrix. It is used to indicate to the CP5H where it should look for matrix cards and allows it to optimize its performance on smaller systems.

Table 2. Motherboard S1-6 through S1-10

Matrix Size (Number of Inputs and Outputs)	Switch S1-6	Switch S1-7	Switch S1-8	Switch S1-9	Switch S1-10
Matrix No. 1 - 48 Max	OFF	OFF			
Matrix No. 1 - 96 Max	ON	OFF			
Matrix No. 1 - 144 Max	OFF	ON			
Matrix No. 1 - 192 Max	ON	ON			
Matrix No. 2 - 48 Max			OFF	OFF	
Matrix No. 2 - 96 Max			ON	OFF	
Matrix No. 2 - 144 Max			OFF	ON	
Matrix No. 2 - 192 Max			ON	ON	
Reserved - Set S1-10 to ON					ON

Address Space Mapping

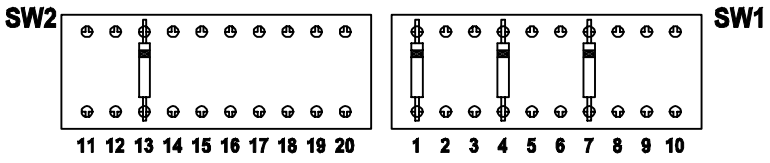
The CP5H maps the Series H strobes directly to the PRC strobes. For example, when Strobe 2 is active on the CP5H, PRC commands to strobe 2 are converted to Series H commands on Strobe 2.

The Series H matrix input and outputs are all based at offset 0 in the PRC address space. Input 1 on the Series H address space is address input 1 in the PRC address space. Output 1 on the Series H address space is address output 1 in the PRC address space.

Series H Confidence Mapping

The Series H family of frames is equipped with 5 strobes and up to 4 confidence lines. Each Series H matrix has a strobe and confidence selection to allow the controller to uniquely control and status each crosspoint. The relation between confidence lines and strobes must be set on the CP5H to match the existing Series H matrices for proper execution of confidence checking and matrix writes. This relation is set on the component carriers located on the back of the CP5H frame.

The mapping between strobe and confidence is made by adding a diode to the carrier in the correct mapping position as shown below:



DIODE POSITION				
STROBE	CONFIDENCE 1	CONFIDENCE 2	CONFIDENCE 3	CONFIDENCE 4
1	1	6	11	16
2	2	7	12	17
3	3	8	13	18
4	4	9	14	19
5	5	10	15	20

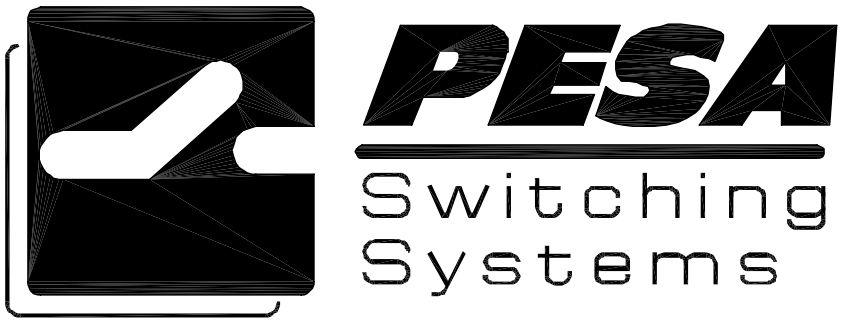
Figure 3. Confidence Mapping

In the example shown above,

- Diode 1 = Strobe 1, Confidence 1
- Diode 4 = Strobe 4, Confidence 1
- Diode 7 = Strobe 2, Confidence 2
- Diode 13 = Strobe 3, Confidence 3

Revision History

Rev.	Date	Description	By
A	08-12-99	Initial Release per ECO 3393.	G. Tarlton
B	03-06-01	Deleted Printing Specification per ECO CE00113.	G. Tarlton
C	11-29-04	Changed S1-10 Dipswitch Setting to “ON”	D. Brock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