

ENFORCER[®] VIDEO

MANUAL

EVT-PB1-H05Q

Video, Power and Data Balun
with Voltage Booster



The ENFORCER EVT-PB1-H05Q Video, Power and Data (VPD) Balun with Voltage Booster combines the flexibility of a VPD Balun with the ability to boost insufficient voltage for use in CCTV applications. Boosted DC power is regulated to provide stable power suitable for voltage sensitive cameras.

- Transmit video up to 2000' over Cat5
- Selectable 12/24VDC output via jumper
- Regulated and filtered output.
- Output current protection – 500mA
- Small size for easy installation.
- Dual-colored LED power output indicator:
Red: 12VDC
Blue: 24VDC
- Green power input LED indicator.
- Built-in overload and short-circuit protection.

SECO-LARM[®] SLI[®]



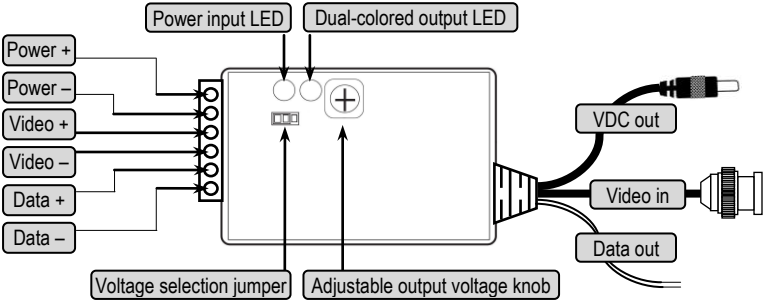
NOTE: Products with a model number that ends with "Q" or have a round green "Q" sticker represent RoHs compliant products.

Specifications:

		EVT-PB1-H05Q			
Voltage Booster	Output voltage	5/12/24VDC selectable by jumper (default 12VDC)			
	Operating voltages	Input voltage	Regulated output voltage		
		7~12VDC/VAC	12VDC		
		12~24VDC/VAC	24VDC		
	Output current	500mA @ 5/12/24 VDC			
	Voltage input LED indicator	Green			
	Voltage output LED indicator	Red	5/12VDC		
Blue		24VDC			
Current protection	PTC 500mA				
Video	Range	2,000' (610m) B/W, 1,300' Color (400m)			
	Video format	RS170, NTSC, PAL, SECAM, CCIR			
	Maximum input	1vp~p			
	Insertion loss	< 2dB per pair from DC ~ 5 Mhz			
	Return loss	>-15dB from DC ~ 5 Mhz			
	Common mode rejection	60dB, 15KHz~5MHz			
	Frequency response	DC ~ 5 Mhz			
	Power	No power required for video			
Connections	Wire type	UTP (unshielded twisted pair)			
	Wire category	20 - 24 AWG @ screwless terminal blocks			
		CAT2 or better, CAT5 ideal, CAT6 improves range			
	Connectors	In	Removable terminal block		
		Out	Video	Pigtail BNC	
			Power	Pigtail DC plug (center pin positive)	
			Data	Wire	
	Attenuation	DC ~ 5 Mhz, 1.5 dB max			
Impedance	Coax, male BNC: 75 Ohms@ 1 MHz				
	Terminal block: 100 Ohms @ 1 MHz				
Other	Dimensions	3 1/4" x 2 9/16" x 3/4" (81 x 65 x 20mm)			
	Humidity range	0 ~ 95%			
	Temperature Range	14°~165°F (-10°~74°C)			
	Case	ABS Plastic			

NOTE: The VPD balun with voltage booster's efficiency rating is 85%. For more information see "Voltage Booster Efficiency Rate" on page 3.

Figure 1: Video, Power and Data Balun with Voltage Booster Detail



Installation:

- 1. Run UTP cable to the camera where the VPD balun is being installed.
- 2. Remove the cover by simultaneously pressing down on the top cover, and lifting up on the side mounting tabs. This will release the tight seal between the top and bottom covers.
- 3. Set the desired output voltage using the selection jumper according to table 1 below.
- 4. Connect output wires from the power supply to the power input terminal blocks on the balun. Observe correct polarity
- 5. Apply power and use table 2 and 3 below to check the status of the input and output voltages.
NOTE: To avoid potential damage, use a voltage meter to ensure proper voltage is present at the input and output terminal blocks. Observe correct polarity.
- 6. Connect the camera to the DC plug on the balun. If the output voltage is too low, then turn the rotary knob clockwise to increase the voltage or counter-clockwise to decrease the voltage.
- 7. Connect the video input male BNC input in from the VPD Balun to the camera.
- 8. If using a RS-485 controlled camera, connect the data in wires to the camera.
- 9. Using the input terminal blocks, connect data and video wires to the balun according to Figure 1.
IMPORTANT: Correct polarity must be observed on all connections.
- 10. Replace the cover on the voltage booster.

Table 1: Adjustable Output Voltage

Input Voltage	Output Voltage	Adjustable voltage range	Jumper Settings
7~12VDC	12VDC	12.5 ± 5%VDC	
12~24VDC	24VDC	24.0 ± 10%VDC	

Table 2: Wiring Distance 12 VDC Voltage Drop

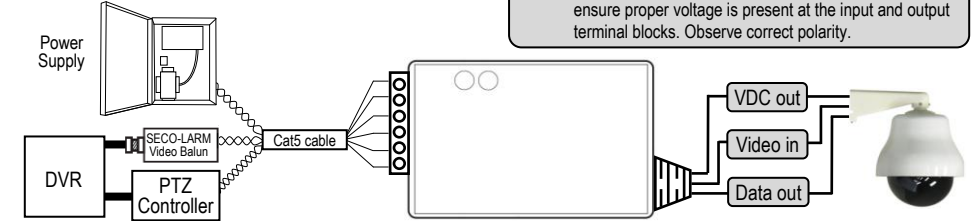
24 AWG Wire	1 Pair	2 Pairs	3 Pairs
250mA	90'	220'	550'
500mA	45'	110'	285'
750mA	30'	75'	190'
1A	20'	55'	140'

Table 3: LED Indicators

LED colors	Status
Green	Power is connected
Red	Output is 12VDC
Blue	Output is 24VDC

NOTE: Chart is based on standard Cat5 24AWG wire and an allowable 10% voltage drop.

Figure 1: Sample Application



Also Available from SECO-LARM:

Passive VGA Balun

EVT-SBP-GQ

Passive & Active Video Baluns

EVT-PB1Q
(shown)

BNC-to-VGA Converter

VC-1BAQ

VPD Balun with Voltage Booster

EVT-PB1-H05Q

Voltage Booster Efficiency Rate:

The EVT-PB1-H05Q has a power efficiency rating of 85%. Under typical conditions, the booster will provide sufficient power to compensate for long cable runs. The following formulas can be used to determine if enough power is present at the power input of the voltage booster:

1. Calculate the amount of power measured in Watts:
 $\text{Voltage} \times \text{Current} = \text{Power}$
2. For example, if the voltage is 12VDC, and the current is 750mA:
 $12\text{VDC} \times .75 = 9 \text{ Watts}$
3. Then calculate the amount of power using the voltage booster with the following formula:
 $\text{Power Input} \times \text{Efficiency Rate} = \text{Power Output}$
4. Using the 9 Watts in the previous example, calculate power input of the booster:
 $9 \text{ Watts} \times .85 = 7.65 \text{ Watts}$
5. After the power has been calculated, the output current is calculated from the following formula:
 $\text{Power} / \text{Voltage} = \text{Current}$
6. Using the example of 9 watts present at the power input, and 7.65 Watts at the power output:
 $7.65 \text{ Watts} / 12\text{VDC} = 640\text{mA}$ of available current

Use Table 3 to determine if additional pairs of Cat5 cable will be needed to transmit power.
For more information see the Technical Bulletin for the ST-HB105-TTQ at www.seco-larm.com

Troubleshooting:

Output voltage is low/high	• Check voltage jumper settings • Check output voltage adjustment. • Check input voltage to make sure it meets the input requirements
Green input LED not on	• Check input power connections with multimeter to verify correct input voltage
Blue/red output LED not on	• Check to see if the load exceeds the maximum limit • Temporarily disconnect power input and output wires for 30 seconds before connecting

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