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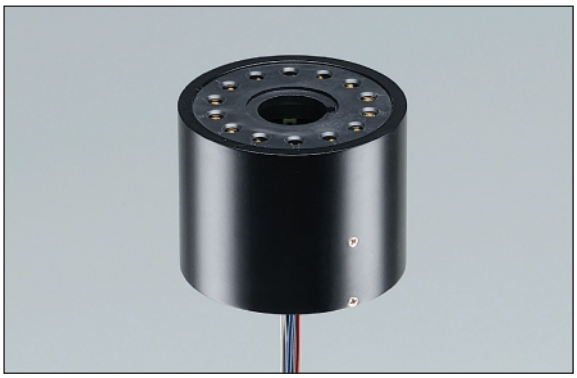
HIGH VOLTAGE POWER SUPPLY SOCKET ASSEMBLY (DP TYPE)
C12842 SERIES

The C12842 series is a high voltage power supply socket assembly for head-on photomultiplier tubes (PMT). It uses a Cockcroft-Walton type high voltage power supply that ensures high output linearity of photomultiplier tube while maintaining low power consumption.



FEATURES

- **Low Power Consumption**
- **Superior DC Output Linearity**
- **Low Ripple/Noise**
- **Shutter Function (-01S, -02S)**

SPECIFICATIONS

Parameter			C12842-01	C12842-01S	C12842-02	C12842-02S	Unit
Shutter Function			No	Yes	No	Yes	—
Applicable Photomultiplier Tubes			8-stage dynode, Head-on type R6231, R6232, R6233, R6234 R6235, R6236, R6237, etc.		10-stage dynode, Head-on type R878, R550, R594, R877 R1512, R1513, etc.		—
Input Voltage			+5 ± 0.5				V
Max. Input Voltage			+6				V
Max. Input Current ①			3				mA
PMT	Linear DC Output Current of PMT ②③	Min.	100				μA
	Anode Ripple Noise ④ (peak to peak)	Max.	0.6				mV
High Voltage Power Supply	Output Voltage Range		0 to -1500				V
	Recommended Output Voltage Range		-500 to -1450				V
	Line Regulation Against ±1 V Input Voltage Change ②		±0.01				%
	Output Voltage Control		Control voltage (0 V to +1.5 V) or potentiometer (10 kΩ)				—
	Recommended Controlling Voltage Range		+0.5 to +1.45				V
	Controlling Voltage Input Impedance		1				MΩ
	Setting Time ⑤	Max.	10				s
	Temperature Coefficient ②	Typ.	±0.01				%/°C
Operating Ambient Temperature / Humidity ⑥			0 °C to +50 °C / Below 85 %				—
Storage Temperature / Humidity ⑥			-15 °C to +60 °C / Below 85 %				—
Weight		Typ.	176	178	176	178	g

NOTE: ①Without PMT ②Input voltage = +5 V, Control voltage = +1.0 V ③Within: ±0.5 % linearity
④Cable RG-174/U, Cable length 450 mm, Load resistance = 1 MΩ, Load capacitance = 22 pF
⑤The time required for the output to reach a stable level following a change in the control voltage from +1.0 V to +0.5 V.
⑥No condensation

Figure 1: Linearity Characteristics

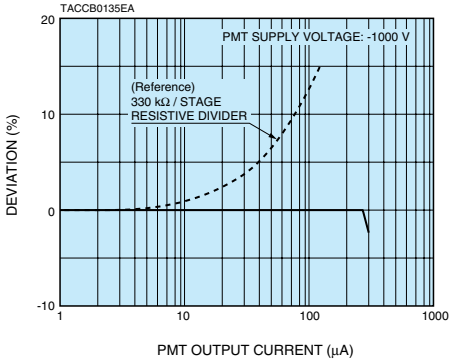
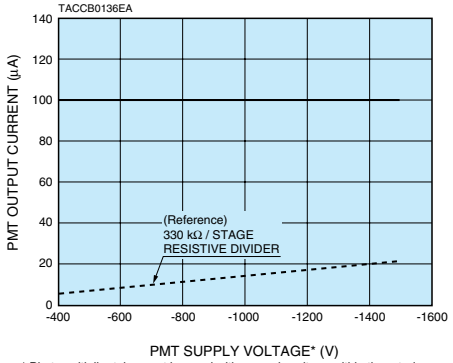


Figure 2: Practical PMT DC Output Limits



* Photomultiplier tube must be used with a supply voltage within the rated range.

Figure 3: High Voltage Controlling Characteristic

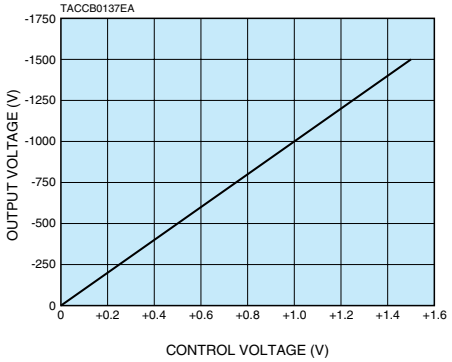


Figure 4: Shutter Characteristic

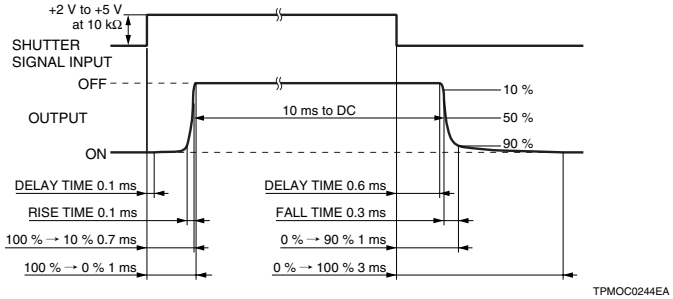
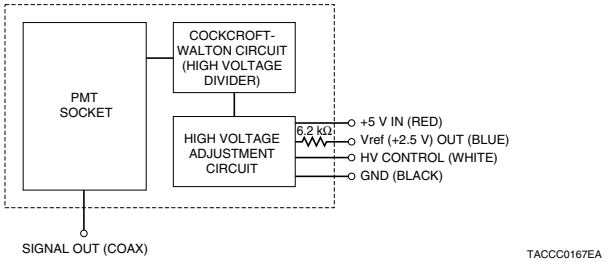


Figure 5: Schematic Diagram

C12842-01/-02



C12842-01S/-02S

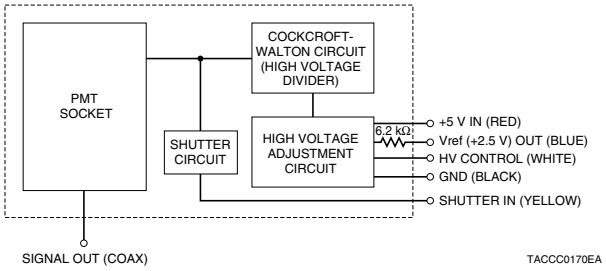
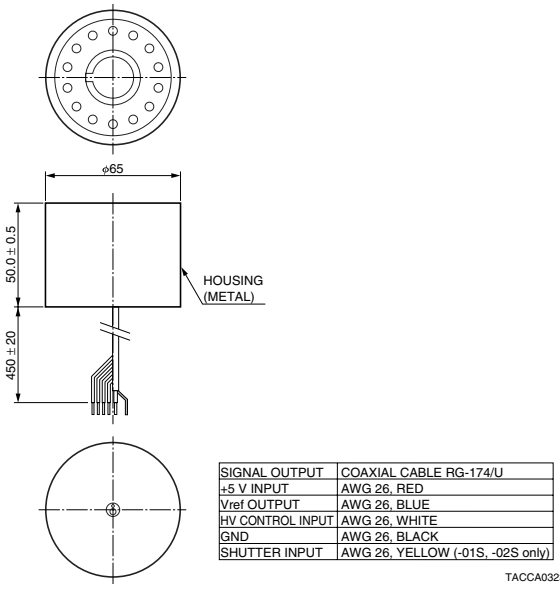


Figure 7: Dimensional Outline (Unit: mm)



SIGNAL OUTPUT	COAXIAL CABLE RG-174/U
+5 V INPUT	AWG 26, RED
Vref OUTPUT	AWG 26, BLUE
HV CONTROL INPUT	AWG 26, WHITE
GND	AWG 26, BLACK
SHUTTER INPUT	AWG 26, YELLOW (-01S, -02S only)

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Shutter Specifications

Parameter			Description / Value	Unit
Shutter Mode	Mode		Normaly ON	—
	Shutter Width (FWHM)		10 ms to DC	—
	Rise Time	Typ.	0.1	ms
	Fall Time	Typ.	0.3	ms
	Repetition Rate	Max.	70 Hz (Shutter Width 10 ms) 9 Hz (Shutter Width 100 ms)	—
	Switching Ratio	Typ.	10^3	—
	Delay Time	Typ.	0.1 (At Rise), 0.6 (At Fall)	ms
Shutter Signal Input	Level		TTL Level (High Level: +2 V to +5 V)	—
	Input Impedance		10	kΩ

Figure 6: Switching Noise Characteristic

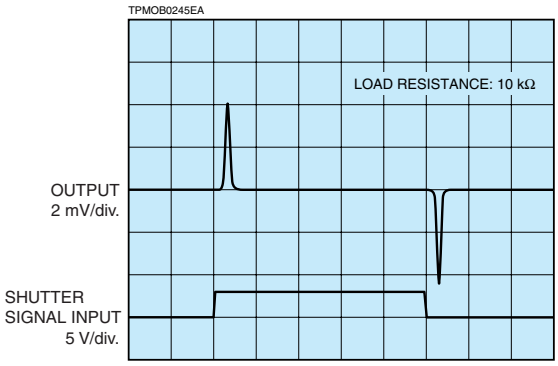
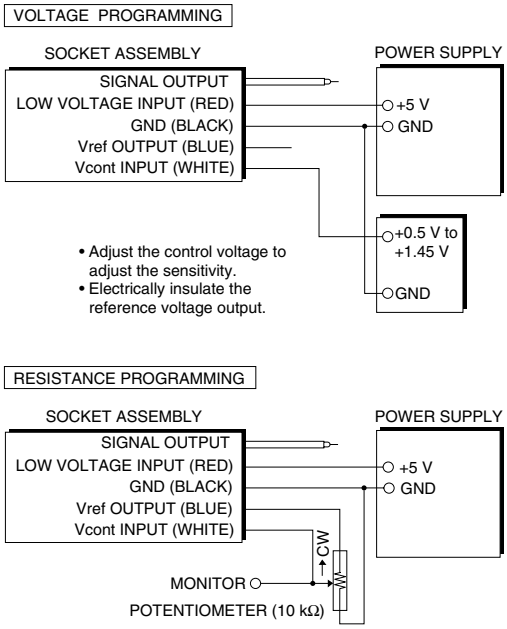


Figure 8: Adjustment Method of High Voltage



* When using a potentiometer, adjust sensitivity while monitoring the control voltage so it does not exceed +1.5 V.

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