

The C8991 series is a high voltage power supply socket assembly for $\phi 28$ mm side-on photomultiplier tubes (PMTs). It uses a Cockcroft-Walton type high voltage power supply that ensures high output linearity of photomultiplier tube while maintaining low power consumption.



FEATURES

- Superior DC output linearity
- Low power consumption
- Low ripple/noise

SPECIFICATIONS

Parameter		C8991	C8991-01	C8991-05	Unit	
Applicable photomultiplier tubes		$\phi 28$ mm side-on type			—	
Input voltage		+11.5 to +15.5	+13.5 to +15.5	+5 \pm 0.5	V	
Max. input voltage		+18			V	
Max. input current ^(A)		8	10	7	mA	
PMT	Linear DC output current ^{(B)(C)}	Min.			100	μ A
	Anode ripple / noise ^(D)	Max.			1	mV p-p
High voltage power supply	Output voltage range		0 to -1200	0 to -1500	0 to -1200	V
	Specification guaranteed output voltage range		-200 to -1200	-200 to -1500	-200 to -1200	V
	Line regulation ^{(B)(E)}		± 0.01			%
	Output voltage control		C8991, C8991-05: Control voltage (0 V to +1.2 V) or potentiometer (10 k Ω) C8991-01: Control voltage (0 V to +1.5 V) or potentiometer (10 k Ω)			—
	Control voltage input impedance		1			M Ω
	Settling time ^(F)		10			s
Temperature coefficient ^(B)		Typ.			± 0.005	%/ $^{\circ}$ C
Operating ambient temperature / humidity ^(G)		0 $^{\circ}$ C to +50 $^{\circ}$ C / Below 85 %			—	
Storage temperature / humidity ^(G)		-15 $^{\circ}$ C to +60 $^{\circ}$ C / Below 85 %			—	
Weight		Typ.	57	59	45	g

NOTE: (A) Without PMT

(B) C8991, C8991-01: input voltage = +15 V, control voltage = +1.0 V C8991-05: input voltage = +5 V, control voltage = +1.0 V

(C) Within ± 0.5 % linearity (D) Cable RG-174/U, cable length 450 mm, load resistance = 1 M Ω , load capacitance = 22 pF

(E) C8991, C8991-01: against ± 1 V input voltage change C8991-05: against ± 0.5 V input voltage change

(F) The 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.

(G) No condensation

Figure 1: DC linearity characteristics

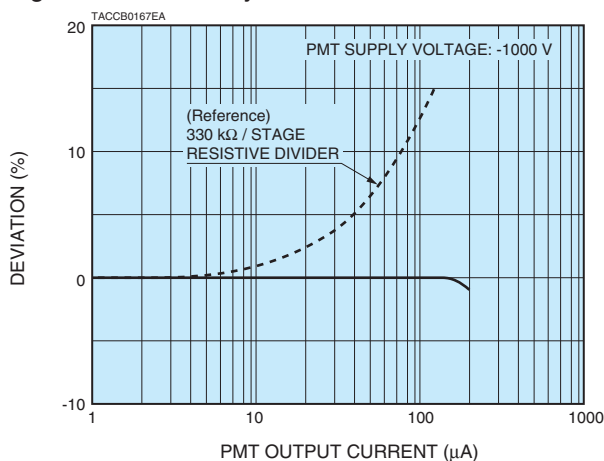
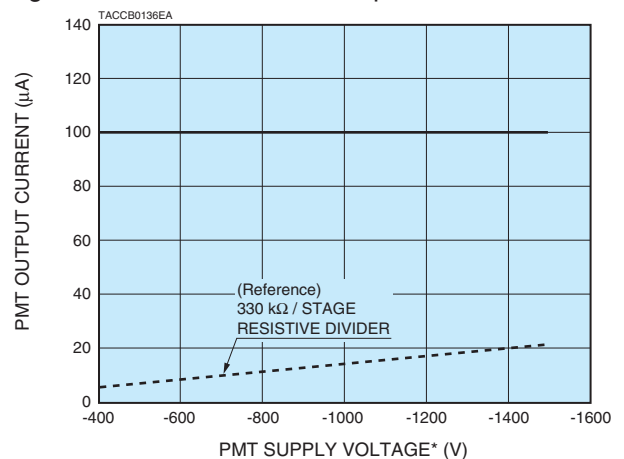


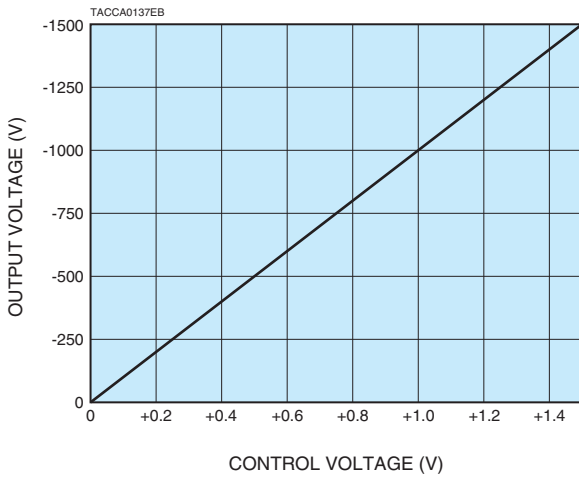
Figure 2: Practical PMT DC output limits



* Photomultiplier tube must be used with a supply voltage within the rated range. C8991, C8991-05 can be controlled up to -1200 V.

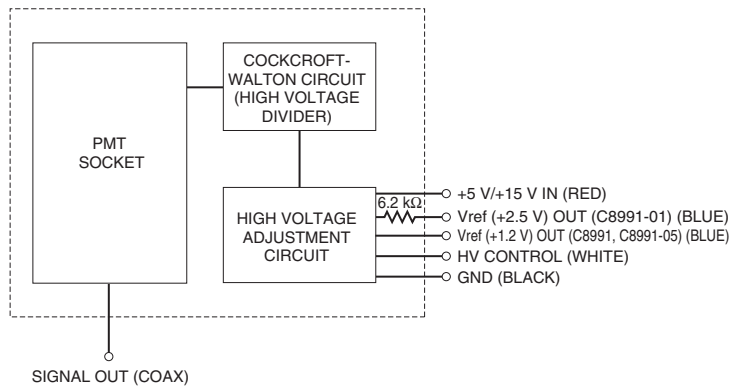
HIGH VOLTAGE POWER SUPPLY SOCKET ASSEMBLY (DP TYPE) C8991 SERIES

Figure 3: High voltage controlling characteristics



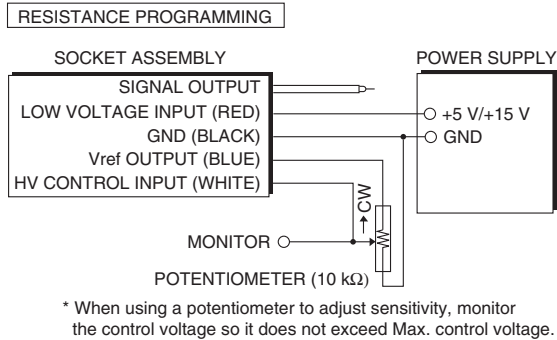
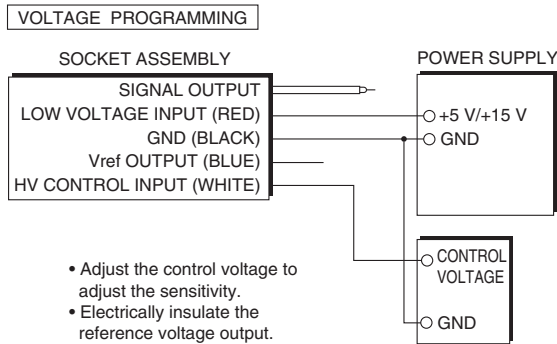
* C8991, C8991-05 can be controlled up to +1.2 V (output voltage -1200 V).

Figure 4: Schematic diagram



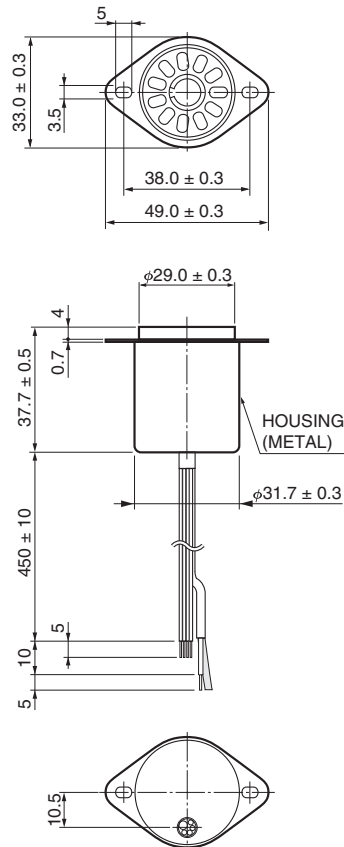
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Figure 5: Adjustment method of high voltage



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Figure 6: Dimensional outline (Unit: mm)



SIGNAL OUTPUT	COAXIAL CABLE RG-174/U*
+5 V/+15 V INPUT	AWG 24, RED
Vref OUTPUT	AWG 24, BLUE
HV CONTROL INPUT	AWG 24, WHITE
GND	AWG 24, BLACK

* Please contact us for the connector requirement.
The connector can be attached to the cable upon request.

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