



Panasonic Electric Works
Corporation of America

Precision Component Sales Division
<http://pewa.panasonic.com/pcsd>

New Product Introduction

March 28, 2012

Automotive [Low Noise] Power Relay (AEVS series)



1. Features:

- Reduced operating noise during ON/OFF switching.
- Vertical and horizontal models offer greater flexibility when available space is an issue.
- Compact and lightweight.
- Contact area filled with Hydrogen gas for arc cooling.
- Capsule contact design prevents arc leaking and seals against contact oxidation.

2. Applications:

- Hybrid, PHEV and EV vehicles
- High DC voltage battery charge/discharge systems and accessories

3. Release Schedule: March 2012

4. Ordering Information:

AEVS Contact arrangement / Installation type 1: 1 Form A (Screw terminal, Vertical type) 9: 1 Form A (Screw terminal, Horizontal type) Contact rating 6: 60 A Coil voltage 12: 12V DC Coil terminal structure Nil: Lead wire 2: Faston terminal	0
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5. Technical Information: Please refer to attached datasheet for details.

TYPES

Contact rating	Nominal coil voltage	Contact arrangement	Installation type	Part No.
60 A	12 V DC	1 Form A	Vertical type	AEVS16012
			Horizontal type	AEVS960122

Standard packing; Carton: 1pc. Case: 20pcs

RATING

1. Coil data

Type	Nominal coil voltage	Pick-up voltage (at 20°C 68°F)	Drop-out voltage (at 20°C 68°F)	Nominal operating current [±10%] (at 20°C 68°F)	Nominal operating power (at 20°C 68°F)	Max. allowable voltage*1
60 A	12 V DC	Max. 9 V DC	Min. 1 V DC	0.375A	4.5 W	16 V DC

Note: *1. When continually powered, the maximum allowable voltage is 14 V DC (at 65°C 149°F).

2. Specifications

Characteristics	Item	Specifications	
		Vertical type	Horizontal type
Contact rating	Contact arrangement	1 Form A	
	Nominal switching capacity (resistive load)	60A 400V DC	
	Short term carrying current	100A 10 min., 180A 1 min. (15mm ² Wire)	
	Min. switching capacity (resistive load)	1A 12V DC*1	
	Max. shutoff current	600A 300V DC (Min. 5 cycles)*2, *3	
	Overload opening/closing rating	120A 400V DC (Min. 50 cycles)*2, *3	
	Reverse direction shutoff	-120A 200V DC (Min. 50 cycles)*2, *3	
	Contact voltage drop (Initial)	Max. 0.067 V (By voltage drop 6 V DC 20A)	
Electrical characteristics	Insulation resistance (Initial)	Min. 100MΩ (at 500 V DC, Measurement at same location as "Initial breakdown voltage" section.)	
	Breakdown voltage (Initial)	Between open contacts	2,500Vrms/min. (Detection current: 10mA)
		Between contact and coil	2,500Vrms/min. (Detection current: 10mA)
	Operate time (at 20°C 68°F)	Max. 50ms (Nominal coil voltage applied to the coil, excluding contact bounce time)	
	Release time (at 20°C 68°F)	Max. 50ms (Nominal coil voltage applied to the coil, without diode)	
Mechanical characteristics	Shock resistance	Functional	For ON: Min. 196m/s ² [20 G] (Half-wave pulse of sine wave: 11ms; detection time: 10μs) For OFF: Min. 98m/s ² [10 G] (Half-wave pulse of sine wave: 11ms; detection time: 10μs)
		Destructive	Min. 490 m/s ² [50 G] (Half-wave pulse of sine wave: 6ms)
	Vibration resistance	Functional	10 to 100 Hz, acceleration: 43 m/s ² [4.4 G] 100 to 200 Hz, acceleration: 19.6 m/s ² [2 G] (Detection time: 10μs)
		Destructive	10 to 100 Hz, acceleration: 43 m/s ² [4.4 G] 100 to 200 Hz, acceleration: 19.6 m/s ² [2 G]
			(Time of vibration for each direction; X, Y, Z direction: 4 hours)
Expected life	Mechanical	Min. 2×10 ⁵ (at 60 cpm)	
	Electrical (resistive load)	60A 400V DC Min. 800 cycles	
Conditions	Conditions for operation	Ambient temperature: -40 to +80°C -40 to +176°F (-40 to +65°C -40 to +149°F when continually powered at 14 V DC.) Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)	
	Conditions for transport and storage	Ambient temperature: -40 to +80°C -40 to +176°F Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)	
Mass (Approx.)		250 g 8.82 oz	240 g 8.47 oz

Notes: *1. This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load.

*2. The electrical performance value applies when a varistor is connected in parallel to the coil. Please be warned that working life will be reduced when a diode is used.

*3. At L/R ≤ 1ms

Any questions, please contact your local Panasonic Electric Works Sales representatives.

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