Low Signal Relay

- Subminiature 7.87 H x 9.91 W x 16 L mm (0.31 H x 0.39 W x 0.63 L in).
- High sensitivity with pick-up coil power of 98 mW.
- Surge withstand voltage meets FCC Part 68 rule and Telcordia 2.5 kV Specifications.
- Packaged for automatic insertion.
- Unique moving loop armature reduces relay size, magnetic interference, and contact bounce time.
- Bifurcated crossbar contact assures high reliability.
- Minimal loss of latching capability due to highly efficient magnetic circuit; also, highly resistant to shock and vibration.
- Sealed construction allows automatic solder and cleaning; assures high reliability even in adverse environments.
- RoHS Compliant.





Ordering Information

To Order: Select the part number and add the desired coil voltage rating, (e.g., G6E-134P-ST-US-DC6).

■ Non-latching

Туре	Contact form	Model			
		Standard	Low sensitivity		
PCB	SPDT	G6E-134P-ST-US	G6E-134PL-ST-US		

■ Latching

Туре	Contact form	Model				
		Single coil latching		Dual coil latching		
		Standard	Low sensitivity	Standard	Low sensitivity	
PCB	SPDT	G6EU-134P-ST-US		G6EK-134P-ST-US	G6EK-134PL-ST-US	

Specifications

■ Contact Data

Load	Resistive load (p.f. = 1)	Inductive load (p.f. = 0.4) (L/R = 7 ms)
Rated load	0.40 A at 125 VAC, 2 A at 30 VDC	0.20 A at 125 VAC, 1 A at 30 VDC
Contact material	Ag (Au clad)	
Carry current	3 A	
Max. operating voltage	250 VAC, 220 VDC	
Max. operating current	3 A (AC), 3 A (DC)	1.50 A (AC), 1.50 A (DC)
Max. switching capacity	50 VA, 60 W	25 VA, 30 W
Min. permissible load	10 μA, 10 mVDC	

■ Coil Data

Standard Non-latching Type (G6E-134P-ST-US)

Rated voltage	Rated current	current resistance	Coil inductance (ref. value) (H)		Pick-up voltage	Dropout voltage	Maximum voltage	Power consumption
(VDC)	C) (mA) (Ω)		Armature OFF	Armature ON	% of rated voltage			(mW)
3	66.70	45	0.08	0.06	70% max.	10% min.	190% max.	Approx. 200
5	40	125	0.18	0.17			at 23°C	
6	33.30	180	0.31	0.24			(73°F)	
9	22.20	405	0.62	0.50			115% max. at 70°C (158°F)	
12	16.70	720	1.20	0.99				
24	8.30	2,880	4.70	3.90				
48	8.30	5,760	5.35	5.12				Approx. 400

Low-sensitivity Non-latching Type (G6E-134PL-ST-US)

Rated Rated voltage current	Coil resistance	Coil inductance (ref. value) (H)		Pick-up voltage	Dropout voltage	Maximum voltage	Power consumption	
(VDC)	(mA)	(Ω)	Armature OFF	Armature ON	% of rated voltage		ge	(mW)
3	133	22.50	0.03	0.03	70% max.	10% min.	190% max.	Approx. 400
5	79.40	63	0.08	0.07			at 23°C	
6	66.60	90	0.12	0.10			(73°F)	
9	44.30	203	0.21	0.19			115% max.	
12	33.30	360	0.45	0.42	7		at 70°C (158°F)	
24	16.70	1,440	1.77	1.65	1			

Standard Single Coil Latching Type (G6EU-134P-ST-US)

Rated voltage	voltage current		Coil inductance (ref. value) (H)		Set pick-up voltage	Reset pick-up voltage	Maximum voltage	Power consumption
(VDC)	(mA)	(Ω)	Armature OFF	Armature ON	9/	% of rated voltage		(mW)
3	66.70	45	0.05	0.04	70% max.	70% min.	190% max.	Approx. 200
5	40	125	0.13	0.12			at 23°C (73°F)	
6	33.30	180	0.19	0.17				
9	22.20	405	0.45	0.40			130% max. at 70°C (158°F)	
12	16.70	720	0.84	0.79]			
24	8.30	2,880	3.56	3.10				

Note: 1. The rated current and coil resistance are measured at a coil temperature of 23° C (73° F) with a tolerance of $\pm 10\%$.

Standard Dual Coil Latching Type (G6EK-134P-ST-US)

Rated voltage	Rated current	Coil resistance	Coil inductance (ref. value) (H)		Set pick-up voltage	Reset pick-up voltage	Maximum voltage	Power consumption
(VDC)	(mA)	(Ω)	Armature OFF	Armature ON	9	% of rated voltage		(mW)
3	66.70	45	0.05	0.04	70% max.	70% min.	190% max.	Approx. 200
5	40	125	0.09	0.08			at 23°C (73°F)	
6	33.30	180	0.12	0.11	1			
7	22.20	405	0.25	0.22	1	130% ma at 70°C (158°F)	130% max.	
12	16.70	720	0.44	0.41			at 70°C	
24	8.30	2,880	1.66	1.62	1			

^{2.} The operating characteristics are measured at a coil temperature of 23°C (73°F).

Low-sensitivity Dual Coil Latching Type (G6EK-134PL-ST-US)

Rated voltage	oltage current		Coil inductance (ref. value) (H)		Set pick-up voltage	Reset pick-up voltage	Maximum voltage	Power consumption
(VDC)	(mA)	(Ω)	Armature OFF	Armature ON	% of rated voltage		je	(mW)
3	133	22.50	0.02	0.01	70% max.	70% min.	170% max.	Approx. 400
5	79.40	63	0.04	0.03			at 23°C	
6	66.60	90	0.06	0.04		(73°F) 115% max. at 70°C (158°F)	(73 F)	
9	44.30	203	0.12	0.09			115% max	
12	33.30	360	0.21	0.15			at 70°C	
24	16.70	1,440	0.80	0.58	1			

Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C (73°F) with a tolerance of ±10%.

■ Characteristics

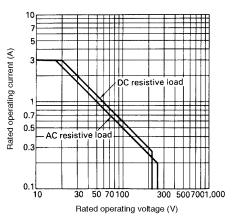
Contact resistance (initial)		50 mΩmax.			
Operate time (set time)		5 ms max. (mean value approx. 2.90 ms, 48 VDC type, approx. 2.40 ms)			
Release time (reset time)		5 ms max. (mean value approx. 1.30 ms)			
Bounce time Operate		Approx. 3 ms (mean value 0.37 ms)			
	Release	Approx. 3 ms (mean value 1.12 ms)			
Operating frequency	Mechanical	36,000 operations/hour			
	Electrical	1,800 operations/hour (under rated load)			
Insulation resistance		1,000 MΩ min. (at 500 VDC)			
Dielectric strength		1,500 VAC, 50/60 Hz for 1 minute between coil contacts			
		1,000 VAC, 50/60 Hz for 1 minute between contacts of same pole			
Surge withstand voltag	е	1,500 V 10x160 μs (conforms to FCC Part 68)			
		2,500 V 2 x 10 μs (Telcordia Requirement)			
Vibration	Mechanical durability	10 to 55 Hz; 5 mm (0.20 in) double amplitude			
	Malfunction durability	10 to 55 Hz; 3.3 mm (0.13 in) double amplitude			
Shock	Mechanical durability	1,000 m/s ² , approx. 100G			
	Malfunction durability	300 m/x², approx. 30G			
Ambient temperature	•	-40° C to 70° C (-40° F to 158° F)			
Humidity		10% to 85% RH			
Service life	Mechanical	1 million operations min. (at 36,000 operations/hour)			
	Electrical	See "Characteristic Data"			
Weight	•	Approx. 2.7 g (0.10 oz.)			

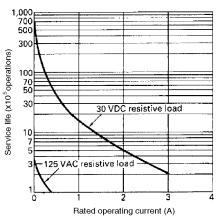
Note: Data shown are of initial value.

^{2.} The operating characteristics are measured at a coil temperature of 23°C (73°F).

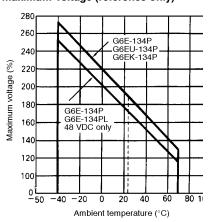
■ Characteristic Data

Maximum Switching CapacityElectrical Service Life





Ambient Temperature vs. maximum Voltage (reference only)

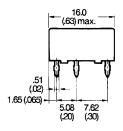


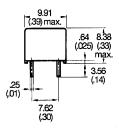
Dimensions

Unit: mm (inch)

■ Non-latching

G6E-134P-ST-US, G6E-134PL-ST-US



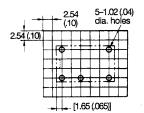


Terminal arrangement/ Internal connections (Bottom view)



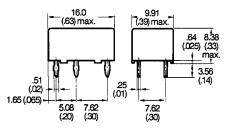
Mounting holes

(Bottom view, tolerance: ±10 (0.004)



■ Latching

G6EU-134P-ST-US

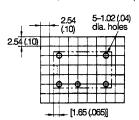


Terminal arrangement/ Internal connections (Bottom view)



Mounting holes

(Bottom view, tolerance: ±10 (0.004)



Note: 1. [] ate mounting orientation marks.

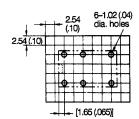
2. Pay attention to the polarity of the coil.

G6EK-134P-ST-US, G6EK-134PL-ST-US

16.0 (63) max. (39) max. (39) max. (39) max. (39) max. (39) max. (31) max. (31) max. (32) (33) max. (33) max. (34) max. (35) (33) max. (37) max. (38) (39) max. (39) max. (30) max. (30) max. (30) max. Terminal arrangement/ Internal connections (Bottom view)



Mounting holes (Bottom view, tolerance: ±10 (0.004)



Not indicate mounting orientation marks.

2. Pay attention to the polarity of the coil.

■ Approvals

UL (File No. E41515)/CSA (File No. LR31928)

Туре	Contact form	Coil ratings	Contact ratings
G6E-134P-ST-US	SPDT	1.5 to 48 VDC	0.2 A, 250 VAC (General purpose)
G6E-134PL-ST-US			0.6 A, 125 VAC (General purpose)
G6EU-134P-ST-US			2 A, 30 VDC (Resistive)
G6EK-134P-ST-US			0.6 A, 125 VDC (Resistive)
G6EK-134PL-ST-US			

- Note: 1. The rated values approved by each of the safety standards (e.g., UL, CSA, TUV) may be different from the performance characteristics individually defined in this catalog.
 - 2. In the interest of product improvement, specifications are subject to change.
 - 3. Complies with UL1950 Basic Insulation at 125 V (pollution degree 1 for internal spacings, pollution degree 2 for external spacings).

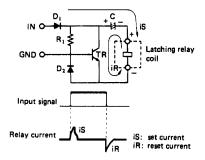
Hints on Correct Use

Avoid ultrasonic cleaning at 28 kHz, 13 mW/cm³ for a period of more than 30 seconds.

Single-winding type (G6EU)

Example of low-power consumption driver circuit

- This is an example of a driver circuit that allows Model G6E to function as a normal relay with a normal switching pulse input.
- 2. The relay is set by an abrupt current charged to capacity C. This current flows in the relay via diode D, and C and out via diode D₂.
- 3. The relay is reset by the discharge current of C flowing in the relay via transistor TR and C.



- **Note: 1.** Give adequate consideration to the circuit constant when actually using this circuit, confirming the set and reset status of the relay.
 - 2. OMRON owns the patent on this circuit. Consult OMRON when using this circuit.

Omron Electronic Components, LLC

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Products: (d)

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