

HR-AMR

40A 1 Changeover power relay for automotive applications

Features

- Switching current 40A capability
- Designed for high in-rush load
- American and european foot print
- Sealed type available

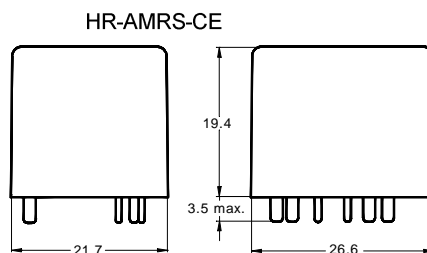
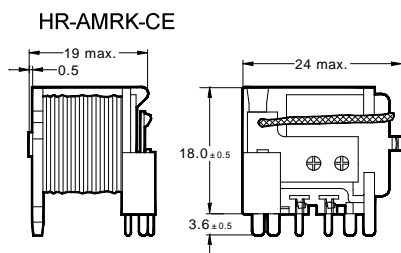
Applications

- Cars, Buses, Coin machines and control systems



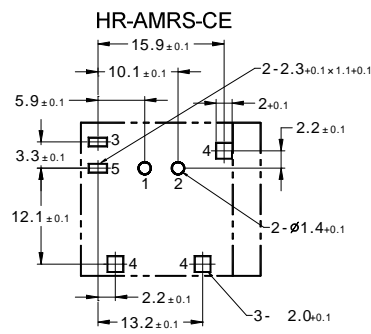
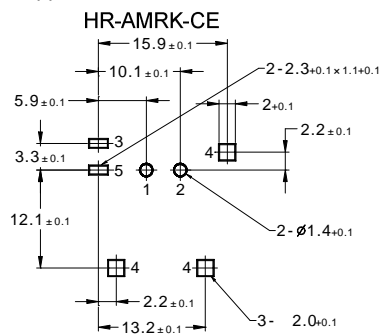
Dimensions (mm)

To convert into inches, multiply by 0.03937



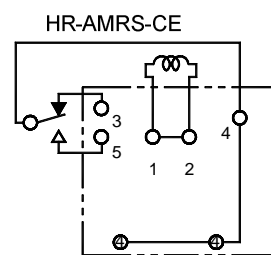
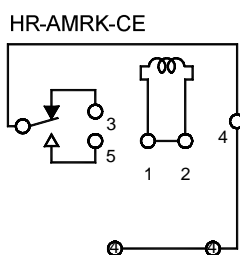
PC Board Layout

Copper-side view



Schematic

Copper-side view

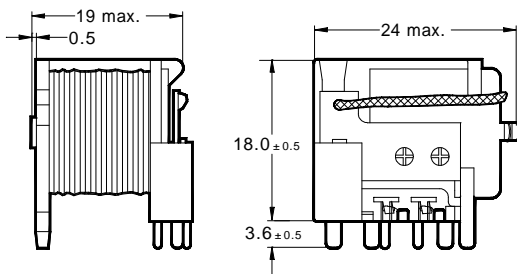


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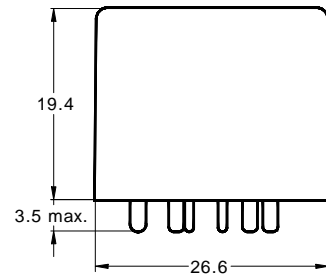
Dimensions (mm)

To convert into inches, multiply by 0.03937

HR-AMRK-CA



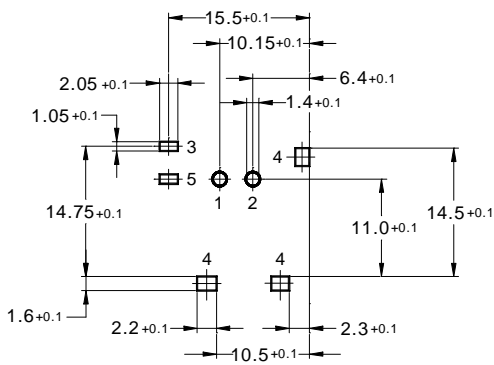
HR-AMRS-CA



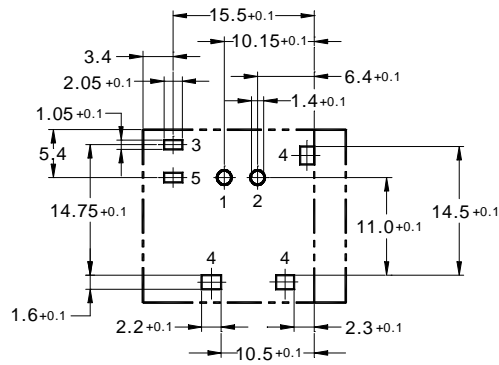
PC Board Layout

Copper-side view

HR-AMRK-CA



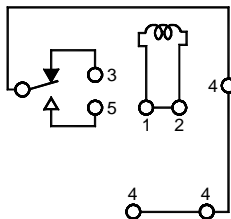
HR-AMRS-CA



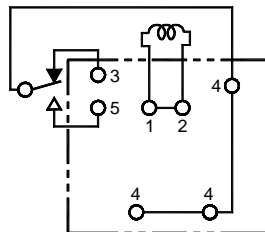
Schematic

Copper-side view

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Contact data

Arrangement	1 Form A (SPST) to 1 Form C (SPDT)		
Contact material	Ag Alloy		
Initial contact resistance	100m Ω		
Rated load, resistive	1 Form A	1 Form B	1 Form C
	40A	30A	NO: 40A NC: 30A
Maximum carry current	60A		
Maximum switching capacity	with DC voltage:	560W	420W NO: 560W NC: 420W
Maximum switching voltage ¹⁾	150VDC		
Minimum switching rating ²⁾	100mA 5VDC		

¹⁾ If switching voltage is greater than 30VDC, special precautions must be taken. Please contact HR

²⁾ Min. Switching Load mentioned above are reference values. Therefore it is recommended to perform the confirmation test with the actual load before production since reference values may vary according to switching frequencies, environmental conditions and expected reliability levels.

Coil data

Nominal voltage	6V to 24V	
Nominal power consumption ³⁾	1.0W to 1.9W	
Operate voltage ⁴⁾	Standard coil:	70% of nominal voltage
	High sensitive coil:	75% of nominal voltage
Release voltage ⁵⁾	5% of nominal voltage	

^{3), 4), 5)}The values depend on coil voltage, see Part selection chart

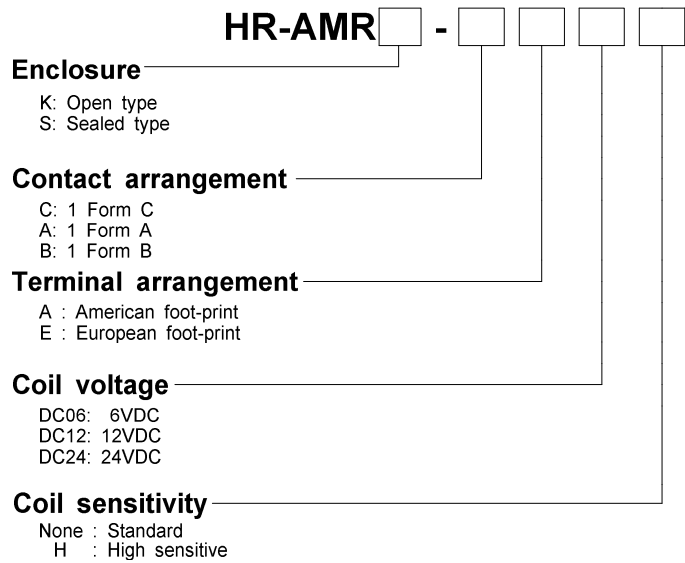
General data

Operate time	5ms max. at nominal voltage	
Release time	3ms max. at nominal voltage	
Initial insulation resistance	100 M Ω min. (500VDC)	
Dielectric strength	Between open contacts:	500VAC _{rms} for 1 minute
	Between contacts and coil:	500VAC _{rms} for 1 minute
Expected life	Mechanical:	More than 5,000,000 operations
	Electrical:	More than 100,000 operations at rated load
Vibration resistance	Functional:	10~55Hz dual amplitude: 1.5mm
	Destructive:	10~55Hz dual amplitude: 1.5mm
Shock resistance	Functional:	10G min.
	Destructive:	100G min.
Ambient temperature	-40°C to +85°C	
Humidity	45% to 85% RH	
Weight	open type:	17g approx.
	sealed type:	21g approx.

Note: The above figures are initial values

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Part number description



Part number description is provided for reference, part number can not be arbitrarily composed. Refer to the part numbers shown in the table below. Special designs to customer specifications are possible; please contact HR.

Part selection

Part number	Nominal voltage (VDC)	Coil resistance ($\Omega \pm 10\%$)	Nominal current (mA)	Must operate voltage (VDC)	Must release voltage (VDC)	Max voltage (VDC)	Nominal power (W)
Standard coil							
HR-AMR <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> DC06	6	19	316	4.2	0.3	7.8	1.9
HR-AMR <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> DC12	12	90	133.3	8.4	0.6	15.6	1.6
HR-AMR <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> DC24	24	360	66.3	16.8	1.2	31.2	1.6
High sensitive coil							
HR-AMR <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> DC12H	12	140	85.7	9.0	0.6	15.6	1.00
HR-AMR <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> DC24H	24	500	48.0	18.0	1.2	31.2	1.15

Note: All values in the chart are measured at 23°C