

HGA100

Hinged Armature Auxiliary



15

To perform auxiliary functions in AC and DC circuits.

DESCRIPTION

HGA Century Series auxiliary relays are designed to provide additional contacts, higher contact carrying and interrupting ratings, timing, interlocking, electrical separation, or other auxiliary functions.

The Century Series coil design provides longer operating life than previous designs as a result of changes in the entire coil insulation system.

Where more than two circuits are to be controlled, the coils of two or more relays may be connected either in parallel on ac or in series or parallel on dc to obtain the desired results.

The contact arrangement for each relay (or unit) is double-pole, double-throw (2 normally open, 2 normally closed).



Long-Life Coil Design

Basic design features of HGA Century Series coils are as follows:

Spool - the spool on which the coil is wound is made of high thermal strength, glass-filled polymer to obtain long life at elevated temperatures. This material shows no signs of cracking or brittleness under accelerated life testing.

Wire Insulation - the wire insulation is a polyamide-imide wire coating (180 C rating) which retains insulation integrity and mechanical strength at continuous elevated temperatures and which is also non-hydroscopic and fungus resistant. Tefzel insulation is used where required, such as on leads.

Impregnation - Polybutadiene solventless impregnant.

Process

The polyamide-imide insulated coils, wound on high-temperature spools, are prebaked to drive off all volatile materials, vacuum-pressure impregnated with the solventless varnish, and then post-baked. The impregnation material is also non-hydroscopic and has temperature expansion coefficients compatible with the spool and with the wire, so that stress does not develop under temperature cycling.

Nameplates for Century Series relays are green to provide for easy visual differentiation from standard life relays.

Accelerated life tests - conducted at elevated temperature and maximum voltage - have established a projected service life of

40 years to 1 percent failure (that is when 1 percent of all such relays have failed) at 55 C and 110 percent rated voltage. Under nominal conditions - that is, at an ambient temperature averaging 20 C and at 100 percent voltage - that translated to a median life of 100 years (when 50 percent of all such relays could be expected to have failed) even for ac coils continuously energized.

Contact Rating

The current-closing rating of the contacts is 30 amperes. The current-carrying rating is 12 amperes continuously or 30 amperes for one minute.

The interrupting ratings for the various voltage are as follows:

Contact-circuit Volts		Single Break	Double Break
AC	DC		

Non-Inductive Circuits

	6-32 48 125 250	Single Break		Double Break	
		15 8 2 0.3	30 20	30 16 3 0.4	30 30
115 230					

Inductive Circuits

	6.0 3.5 1.0 0.3	Single Break		Double Break	
		5 3 1 0.25	10 6	10 6 1.5 0.3	20 10
115 230					

Application

Standard Pickup: the HGA 111 is the standard auxiliary relay which is instantaneous in operation and is used for auxiliary functions where intentional delays of over 1 1/4 to 3 cycles are not required and where standard pickup values, as listed in the table, are satisfactory.

Relay Characteristics

Voltage or Current Pickup Values. The values listed in the table below apply is indicated:

Field Conversion Kit

Kits are available with all parts required for retrofitting type HGA relays now in service to achieve increased service life. Contact your sales office to order.

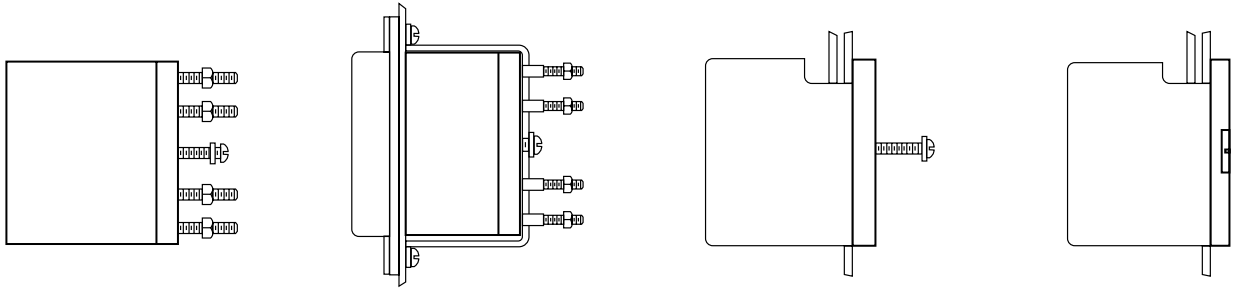
Relay Types	Percentage of Rated Volts or Amperes		
	Pickup Value AC/DC Hot Coil	Dropout Value	
		AC	DC
HGA111	80%	40 to 50%	2 to 10%

BC surface mounting with cover

BC semi-flush mounting with cover

FC surface mounting with cover

FC surface mounting with cover with provisions for front mounting



HGA 100 Selection Guide

Standard Pickup

Coil Rating (V)	DC Res Ohms at 25°C ①	AC Ohms ②	Contact	Pickup Time (Cycles)	Model Number				Approx. Wt. in lbs. (kg)	
					Surface Mounted Back Connected with Studs and Solid Cover	Semi-flush Mounted Back Connected with Studs and Cover with Glass Window	Surface Mounted Front Connected with Solid Cover	Surface Mounted Front Connected with Solid Cover and Provision for Front Mounting	Net	Ship.

DC

6	11		2 N.O. 2 N.C. 	Approx 2	HGA111A7	HGA111A7F	HGA111J7	HGA111S7	2 (0.9)	3 (1.4)
12	41	A6			A6F	J6	S6			
24	160	A5			A5F	J5	S5			
32	270	A13			A13F	J13	S13			
48	585	A4			A4F	J4	S4			
62.5	1029	A3			A3F	J3	S3			
110	3035	A12			A12F	J12	S12			
125	3850	A2			A2F	J2	S2			
250	15320	A1			A1F	J1	S1			

AC – 60 Hz

120	99	915	Same as DC	Approx 2	HGA111A9	HGA111A9F	HGA111J9	HGA111S9	2 (0.9)	3 (1.4)
240	372	3590			A8	A8F	J8	S8		

AC – 50 Hz

120	136	985	Same as DC	Approx 2	HGA111A19	HGA111A19F	HGA111J19	HGA111S19	2 (0.9)	3 (1.4)
240	567	3940			A18	A18F	J18	S18		

① Within plus or minus 10 percent.

② The AC impedance for the standard gap relays with armature in dropped position is 1/2 of listed value.