

Relays and Timers Specifications

Bulletin Number 700

Topic	Page
General Purpose Relays	2
Timing Relays	41
NEMA Industrial Relays	81
IEC Control Relays	93
Solid State Relays	109

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, http://www.ab.com	Provides declarations of conformity, certificates, and other certification details.

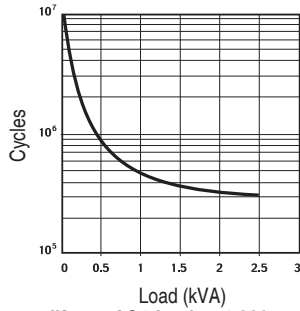
You can view or download publications at <http://www.rockwellautomation.com/literature/>. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.



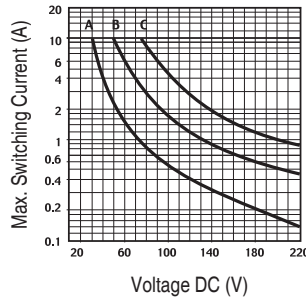
Cat. No. 700-HA...			
Electrical Ratings			
Pilot Duty Rating‡	NEMA B300		
Rated Thermal Current (I_{th})	HA = 10 A – 120V, 240V HAX = 6 A – 120V, 240V		
Rated Insulation Voltage (U_i)	250V IEC – 300V UL/CSA		
Contacts	Inductive	Make	Break
		▶ ◀	◀ ▶
	120V AC	30 A	3 A
	240V AC	15 A	1.5 A
	General Purpose	10 A, 240V AC	
	Resistive	10 A, 30V DC	
Min. Low Energy Permissible Load	HA = 10V, 5 mA HAX = 5V, 2 mA		
Permissible Coil Voltage Variation	Pickup: 80...110% of Nominal Voltage at 50 Hz 80...110% of Nominal Voltage at 60 Hz 80...110% of Nominal Voltage at DC		
Coil Consumption ±10%	AC Coils	50 Hz	60 Hz
	Inrush	3.3 VA	2.85 VA
	Sealed	2.2 VA	1.9 VA
	DC Coils	1.3 W	
Must Dropout Voltage	20% of nominal V AC 10% of nominal V DC		
Max. Contact Resistance	50 MΩ (700-HA and 700-HAB) 30 MΩ (700-HAX)		
Design Specification/Test Requirements			
Electrical			
Pole-to-Pole	2000V		
Contact to Coil	2000V		
Electrical Life (Operating)	100 000 min.		
Mechanical			
Degree of Protection (Open Type) IEC 529	IP 40		
Mechanical Life Cycles (AC/DC)	> 20 x 10 ⁶ / 50 x 10 ⁶		
Switching Frequency Operations	3600/HR		
Coil Voltages	See Product Selection		
Operating Time	Max. Pickup	10 ms	
	Max. Dropout	10 ms	
Maximum Operating Rate	4 Ops/s		
Vibration	Endurance	5 G	
	Operational	2.5 G	
Shock	Endurance	50 G	
	Operational	9 G	
Environmental			
Temperature	Operating	AC/DC	-40...+70 °C
	Storage	AC/DC	-40...+100 °C
Altitude	2000 m (6560 ft)		
Construction			
Insulating Material	Molded High-Dielectric Material		
Enclosure	Transparent Dust Cover		
Contact Material	700-HA:	10 A– AgNi	
	700-HAX:	6 A–Bifurcated/Gold Plating AgNi	
Terminal Markings on Socket	In accordance with EN50 0005		
Sockets	8-Pin Socket — 700-HN100, -HN125, -HN204 11-Pin Socket — 700-HN101, -HN126, -HN205		
Certifications	cURus Recognized (File No. E3125, Guide NLDX2/NLDX8), cULus Listed when used with Bulletin 700-HN sockets noted above (File No. E3125, Guide NLDX/NLDX7), CE Marked, CSA Certified, UR Certified (File 229473)		
Standards	UL508, CSA C22.2 No. 14, EN 61810-1		

‡ NEMA Rating Chart is in publication 700-SG003*

700-HA Relay Performance Graphs



Contact life vs. AC1 load at 1,800 cycles/h



Breaking capacity for DC1 load at 1,800 cycles/h.



Load reduction factor vs. $\cos \phi$

A = load applied to one contact
 B = load applied to two contacts in series
 C = load applied to three contacts in series

Time Module Cat. No. 700-HT3		
Electrical Ratings		
Operating Voltage Range	12...240V AC (50/60 Hz) 12...240V DC	
Power Consumption	0.1 W (12V) 1.0 W (230V)	
Mechanical		
Degree of Protection of Input (B1) Terminal	IP 20 (Guarded Terminal)	
Input Terminal Wire Range	1.0 x 0.2 mm ² ...2.5 mm ² (24 AWG...14 AWG) 2.0 x 0.2 mm ² ...1.5 mm ² (24 AWG...16 AWG)	
Input Terminal Torque Range	0.45...0.8 Nm (4...7 lb-in.)	
LED Indicator	Red	
Repeat Accuracy‡	±1%	
Recovery Time	<50 ms	
Selectable Timing Ranges	Three DIP switches, seven ranges (set from 5...100% of range): 1 s, 10 s, 100 s, 10 min, 100 min, 10 h, 100 h	
Selectable Timing Modes	Three DIP switches, eight modes: 1. Power On-Delay 2. Power On One-Shot 3. Power On Repeat Cycle, On Start 4. Signal On-Delay and Signal Off-Delay 5. Signal Off-Delay 6. Signal On-One-Shot 7. Signal Off-One-Shot 8. Signal On and Signal Off Watchdog Monitor	
Adjustable Trimmer Scale Accuracy	±5% of Time Range	
Environmental		
Temperature	Operating	-20 °C...+50 °C (-4 °F...+122 °F)
	Storage	-55 °C...+85 °C (-67...+185 °F)
Altitude	2000 m (6560 ft)	
Construction		
Enclosure	Gray Plastic Housing	
Mounting with Socket Only	8- or 11-Pin Socket with Module Plug	
Sockets	700-HN204 (8-Pin with Plug) 700-HN205 (11-Pin with Plug)	
Certifications	cURus Recognized (File No. E14843, Guide NRNT2/NRNT8), CE Marked	
Standards	UL508, CSA C22.2 No. 14, EN 61810-1	

‡ At constant voltage and temperature.