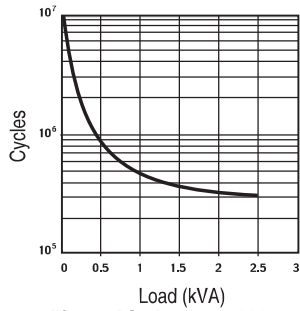


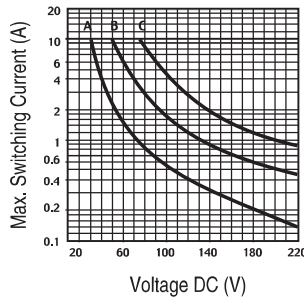
Cat. No. 700-HA...			
Electrical Ratings			
Pilot Duty Rating‡		NEMA B300	
Rated Thermal Current (I _{th})		HA = 10 A – 120V, 240V HAX = 6 A – 120V, 240V	
Rated Insulation Voltage (U)		250V IEC – 300V UL/CSA	
Contacts	Inductive	Make	Break
		▶ ◀	◀ ▶
	120V AC	30 A	3 A
	240V AC	15 A	1.5 A
	General Purpose	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*

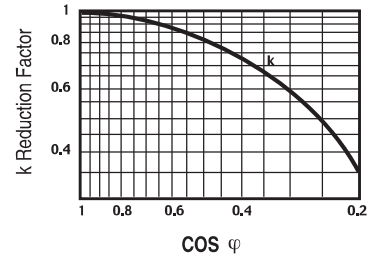
700-HA Relay Performance Graphs



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.

Timing Charts, Cat. No. 700-HT3 Multi-Function Time Module (t = Time Range 0.05 s...100 h)

Terms:

- U** is Power Input
- R** is Relay Output
- S** Signal, **+A1** Socket, **B1** Timer
- t** is the resulting Time Delay (Red LED)

1. Power On-Delay

Apply power (U) to timer. Relay contacts (R) change state after time delay (t) is complete. Contacts return to their shelf state when power is removed. Terminal B1 is not used in this mode.



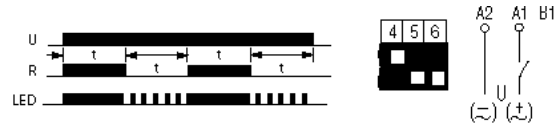
2. Power On One-Shot

Apply power (U) to timer. Relay contacts (R) change state immediately and the time delay begins. When the time delay (t) is complete, contacts return to their shelf state. Contacts return to their shelf state when power is removed. Terminal B1 is not used in this mode.



3. Power On Repeat Cycle, On Start

Apply power (U) to timer. Relay contacts (R) change state immediately and the time delay (t) begins. When the time delay is complete, the contacts return to their shelf state for time delay (t) (time on = time off). This cycle will repeat until the power is removed. Terminal B1 is not used in this mode.



4. Signal On-Delay and Signal Off-Delay

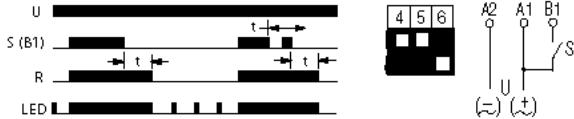
Apply power (U) to timer. When the signal (S) is closed the time delay (t) begins, after the time delay is complete the relay contacts (R) change state. Opening the signal starts the time delay, after the time delay is complete the contacts return to their shelf state. If the signal is closed or opened before the time delay is complete, the time delay is reset. Contacts return to their shelf state when power is removed.



Cat. No. 700-HT3 Timing Modes, Time Description, Timing Charts, and DIP Switch Selections

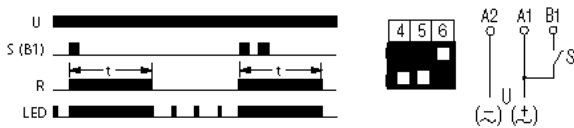
5. Signal Off-Delay

Apply power (U) to timer. When the signal (S) is closed, the relay contacts (R) change state immediately. When the signal is opened, the time delay (t) begins. If the signal is closed before the time delay is complete, the time delay is reset and the relay remains energized. When the time delay is complete, the contacts return to their shelf state. Contacts return to their shelf state when power is removed.



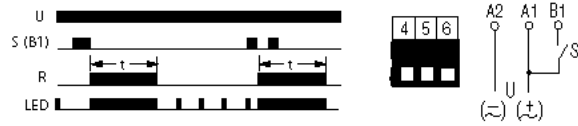
6. Signal On One-Shot

Apply power (U) to timer. When the signal (S) is closed, the relay contacts (R) change state immediately and the time delay (t) begins. After the time delay begins, opening or closing the signal will not reset the time delay. When the time delay is complete, the contacts return to their shelf state. Contacts return to their shelf state when power is removed.



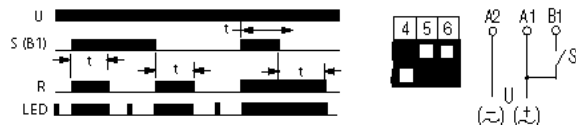
7. Signal Off One-Shot

Apply power (U) to timer. When the signal (S) is closed and then opened, the relay contacts (R) change state immediately and the time delay (t) begins. After the time delay begins, opening or closing the signal will not reset the time delay. When the time delay is complete, the contacts return to their shelf state. Contacts return to their shelf state when power is removed.



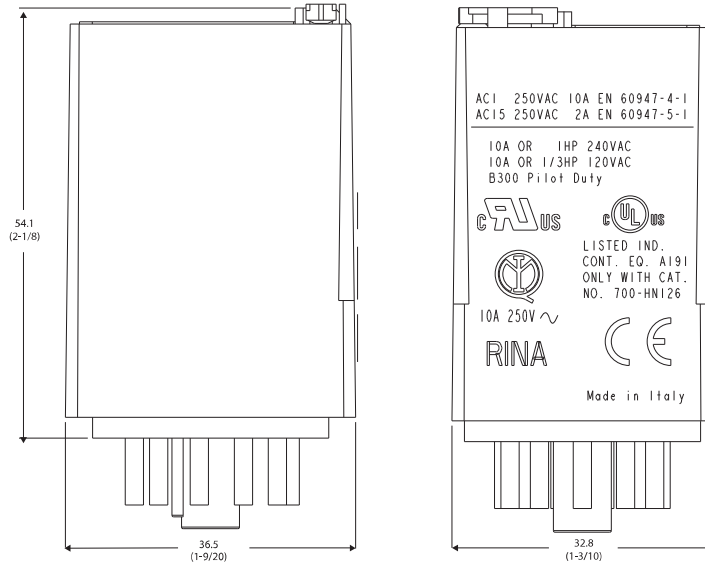
8. Signal On and Signal Off Watchdog Monitor

Apply power (U) to timer. When the signal (S) is closed, the relay contacts (R) energize immediately and the time delay (t) begins. If the signal is opened before the time delay is complete, the relay remains energized and the time delay is reset. When the time delay is complete the contacts return to their shelf state. If the signal is opened after the time delay is complete, the relay contacts energize immediately and the same time delay begins. Continuous cycling of the signal at a rate that is faster than the time delay will cause the relay contacts to remain energized. Contacts return to their shelf state when power is removed.

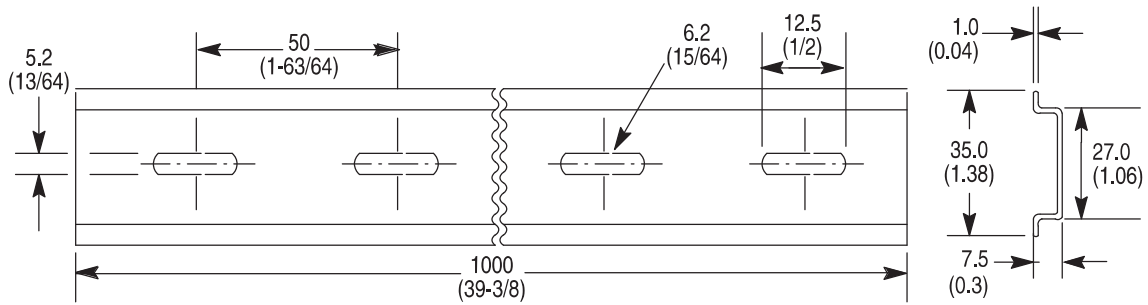


Approximate Dimensions

Approximate Dimensions are shown in millimeters (inches). Approximate Dimensions are not intended to be used for manufacturing purposes.



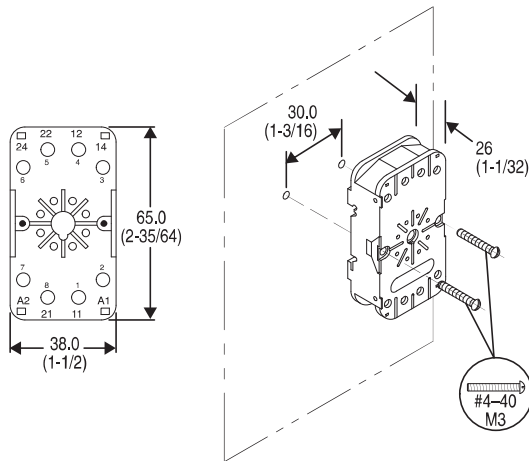
Bulletin 700-HA Relay



Cat. No. 199-DR1 DIN Mounting Rail Series B
Cat. No. 199-DR4 DIN Mounting Rail Series B Has No Mounting Holes

Cat. No.	A	B	C	D	Approx. Shipping Wt.
199-DR1	35 (1-3/8)	27 (1-1/16)	7.5 (19/64)	1.02 (1/64)	1.85 kg (4.07 lb) (10/pkg)
199-DR4	35 (1-3/8)	27 (1-1/16)	15 (19/32)	2.3 (3/32)	3.68 kg (8 lb) (5/pkg)

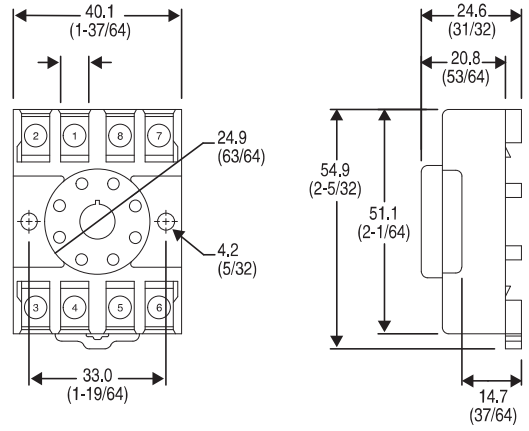
Approximate Dimensions are shown in millimeters (inches). Approximate Dimensions are not intended to be used for manufacturing purposes.



Cat. No. 700-HN100

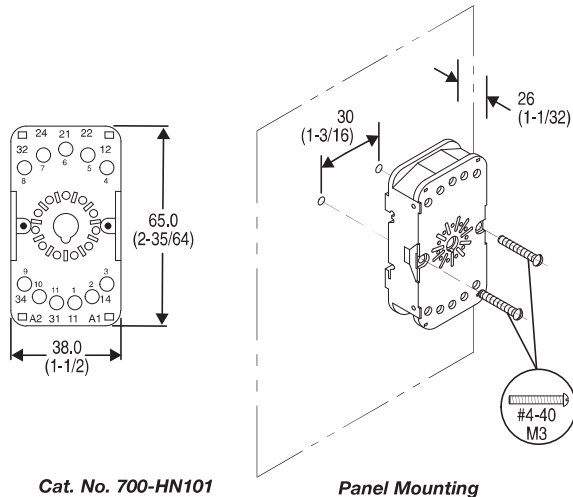
Panel Mounting

Wire Size: $2 \times 2.5 \text{ mm}^2$
 Single Wire – Up to #12 AWG
 Double Wire – $2 \times 2.5 \text{ mm}^2$ (#2-14 AWG... #2-20 AWG)
 (Either Solid or Stranded)
 Strip Length: 9 mm (3/8 in.) – Torque: 0.8 N•m (7 lb•in)



Cat. No. 700-HN125

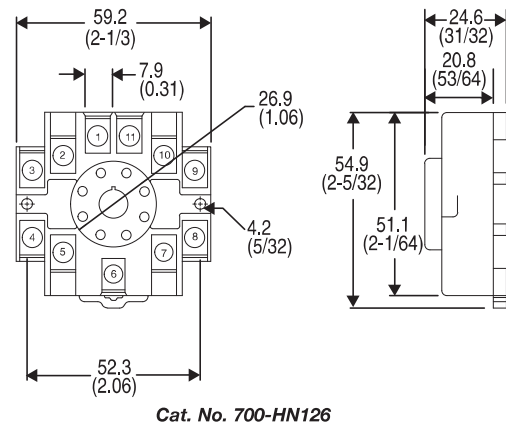
Wire Size: $2 \times 2.5 \text{ mm}^2$
 Single Wire – Up to #12 AWG
 Double Wire – $2 \times 2.5 \text{ mm}^2$ (#2-14 AWG... #2-20 AWG)
 (Either Solid or Stranded)
 Strip Length: 9 mm (3/8 in.) – Torque: 0.8 N•m (7 lb•in)



Cat. No. 700-HN101

Panel Mounting

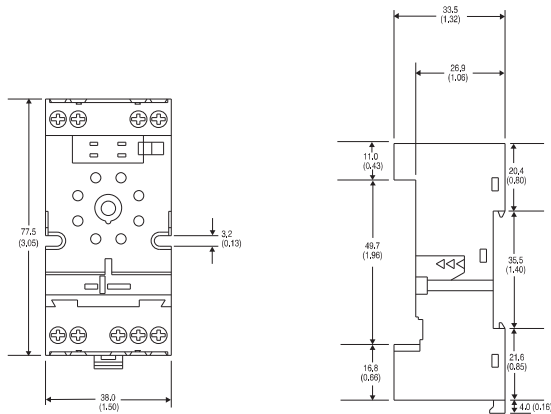
Wire Size: $2 \times 2.5 \text{ mm}^2$
 Single Wire – Up to #12 AWG
 Double Wire – $2 \times 2.5 \text{ mm}^2$ (#2-14 AWG... #2-20 AWG)
 (Either Solid or Stranded)
 Strip Length: 9 mm (3/8 in.) – Torque: 0.8 N•m (7 lb•in)



Cat. No. 700-HN126

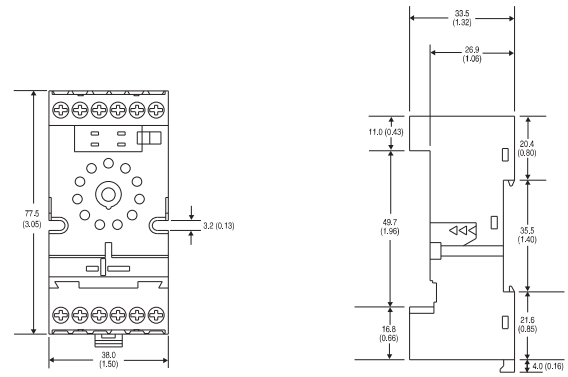
Wire Size: $2 \times 2.5 \text{ mm}^2$
 Single Wire – Up to #12 AWG
 Double Wire – $2 \times 2.5 \text{ mm}^2$ (#2-14 AWG... #2-20 AWG)
 (Either Solid or Stranded)
 Strip Length: 9 mm (3/8 in.) – Torque: 0.8 N•m (7 lb•in)

Approximate Dimensions are shown in millimeters (inches). Approximate Dimensions are not intended to be used for manufacturing purposes.



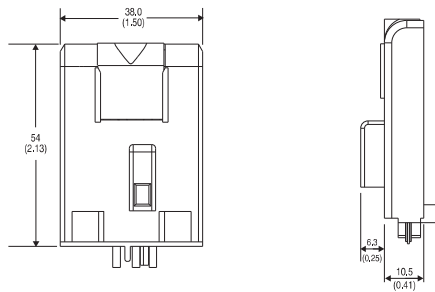
Cat. No. 700-HN204

Wire Size: $2 \times 2.5 \text{ mm}^2$
 Single Wire – Up to #12 AWG
 Double Wire – $2 \times 2.5 \text{ mm}^2$ (#2–14 AWG... #2–20 AWG)
 (Either Solid or Stranded)
 Strip Length: 9 mm (3/8 in.) – Torque: 0.8 N•m (7 lb•in)



Cat. No. 700-HN205

Wire Size: $2 \times 2.5 \text{ mm}^2$
 Single Wire – Up to #12 AWG
 Double Wire – $2 \times 2.5 \text{ mm}^2$ (#2–14 AWG ... #2–20 AWG)
 (Either Solid or Stranded)
 Strip Length: 9 mm (3/8 in.) – Torque: 0.8 N•m (7 lb•in)



Cat. No. 700-HT3

Wire Size: $2 \times 1.5 \text{ mm}^2$ (#2 – 16 AWG... #1–20 AWG)
 (Either Solid or Stranded)
 Strip Length: 9 mm (3/8 in.) – Torque: 0.8 N•m (7 lb•in)