700-HA General-purpose Relay

- 10 A contact rating
- DPDT, 3PDT
- Pin-style terminals
- Standard ON/OFF flag indicator
- Options: LED, push-to-test and manual override, socket-mounted surge suppressor module, or multi-function timer
- Contact choices: standard silver nickel, or bifurcated silver nickel with gold plating

Tube Base Relay with PIN Terminals (Single Contact) — Mechanical ON/OFF Indicator Included⁽¹⁾



Description	Contact Rating	Wiring Dia	grams	Coil Voltago	Cat. No. ⁽¹⁾
Description		U.S./Canada	International	Convoltage	
				6V AC	700-HA32A06
				12V AC	700-HA32A12
				24V AC	700-HA32A24
				120V AC	700-HA32A1
				240V AC	700-HA32A2
		(4) (5)	12 22	277V AC	700-HA32A27
DPDT		(3-4-6)	14-4-24	6V DC	700-HA32Z06
2-pole 2 Form C	10.4			12V DC	700-HA32Z12
Single AgNi Contact	B300		11 21	24V DC	700-HA32Z24
			+ -	36V DC	700-HA32Z36
		+ i input i		48V DC	700-HA32Z48
				60V DC	700-HA32Z60
				80V DC	700-HA32Z80
				110V DC	700-HA32Z1
				125V DC	700-HA32Z01
Sockets		700-HN125	700-HN100 700-HN204	140V DC	700-HA32Z3
JUCKEIS				220V DC	700-HA32Z2
				6V AC	700-HA33A06
		567	22 21 24 12 32 14 33 (14 33) (11 31) + U -	12V AC	700-HA33A12
				24V AC	700-HA33A24
				120V AC	700-HA33A1
				240V AC	700-HA33A2
3PDT 2 polo				6V DC	700-HA33Z06
3 Form C	10 4	3-4 () -9		12V DC	700-HA33Z12
Single AgNi Contact	10 A B300	2 10		24V DC	700-HA33Z24
				48V DC	700-HA33Z48
		+ Input -		60V DC	700-HA33Z60
				80V DC	700-HA33Z80
				110V DC	700-HA33Z1
				125V DC	700-HA33Z01
Sockets		700-HN126	700-HN101 700-HN205	140V DC	700-HA33Z3
Sockets				220V DC	700-HA33Z2

(1) LED Option: Add suffix (-4) to the selected 700-HA Relay Cat. No., except for the 240V AC Units, add (-4L). Push-to-test, Manual Override, and LED Option: Add suffix (-3-4) to the selected 700-HA Relay Cat. No., except for the 240V AC units, add (-3-4L). Push-to-test and Manual Override option: Add suffix (-3) to the selected 700-HA Relay Cat. No., except for the 240V AC units, add (-3-4L). Push-to-test and Manual Override option: Add suffix (-3) to the selected 700-HA Relay Cat. No., except for the 240V AC units, add (-3-4L). Push-to-test and Manual Override option: Add suffix (-3) to the selected 700-HA relay. LED not available for 220V DC and 277V AC coils.

(1) For Time Modules and Surge Suppressor Modules, see Accessories.

Description	Contact Bating	Wiring Diagrams		Coil Voltago	Cat No.
vescription	contact nating	U.S./Canada	International	convoltage	Cat. NO
				6V AC	700-HAX2A06
				12V AC	700-HAX2A12
				24V AC	700-HAX2A24
				120V AC	700-HAX2A1
		(4) (5)	13 22	240V AC	700-HAX2A2
DPDT 2-Pole		3-6-6	14-24	277V AC	700-HAX2A27Δ
2 Form C Bifurcated AgNi Contacts with Gold Plating	6 1	2 7	A1 A2	6V DC	700-HAX2Z06
	0 A	+ Input -		12V DC	700-HAX2Z12
			÷ 0 1-	24V DC	700-HAX2Z24
				36V DC	700-HAX2Z36
				48V DC	700-HAX2Z48
				110V DC	700-HAX2Z1
Cockate		700 HN125	700-HN100	125V DC	700-HAX2Z01
JOCKELS		700-110125	700-HN204	140V DC	700-HAX2Z3
				6V AC	700-HAX3A06
				12V AC	700-HAX3A12
				24V AC	700-HAX3A24
				120V AC	700-HAX3A1
3PDI 3-Pole		4 8		240V AC	700-HAX3A2
3 Form C Bifurcated AgNi Contacts with Gold Plating	6.1	2 10		6V DC	700-HAX3Z06
	0 A	+ Input -		12V DC	700-HAX3Z12
		- input j	+, , , , , , , , , , , , , , , , , , ,	24V DC	700-HAX3Z24
				48V DC	700-HAX3Z48
				110V DC	700-HAX3Z1
Cockate		700 HN126	700-HN101	125V DC	700-HAX3Z01
כוועבו?		/ 00-1111120	700-HN205	140V DC	700-HAX3Z3

Tube Base Relay with PIN Terminals (Bifurcated Contacts with Gold Overlay) — Mechanical ON/OFF Indicator Included

Accessories - 700-HA Relays

Photo	Description	Pkg. Qty.	Cat. No.
	Screw Terminal Tube Base Socket — Panel or DIN Rail Mounting; Guarded Terminal Construction. 8-Pin for use with DPDT 700-HA Relays, -HX Timing Relays, -HT (On-Delay), and -HRM, -HRC and -HV (Repeat Cycle) Timing Relays.	10	700-HN100
	Screw Terminal Tube Base Socket — Panel or DIN Rail Mounting; Open Style Construction. 8-Pin for use with DPDT 700-HA Relays, -HT (On-Delay) and -HRM, -HRC, and -HV (Repeat Cycle) Timing Relays. No retainer clip required.	10	700-HN125
	Screw Terminal Tube Base Sockets — Panel or DIN Rail Mounting; Guarded Terminal Construction. 11-pin for use with 3PDT 700-HA relays.	10	700-HN101
	Screw Terminal Tube Base Sockets — Panel or DIN Rail Mounting; Open Style Terminal Construction. 11-pin for use with 3PDT 700-HA relays. No retainer clip required.	10	700-HN126
	8-Pin Socket — Can Be Used With or Without Timing Attachment or Surge Suppressor Screw Terminal Tube Base Sockets — panel or DIN Rail mounting. Guarded terminal construction. Used with DPDT 700-HA Relays.		700-HN204
	11-Pin Socket — Can Be Used With or Without Timing Module or Surge Suppressor. Screw Terminal Tube Base Sockets — panel or DIN Rail mounting. Guarded terminal construction. Used with 3PDT 700-HA relays.	10	700-HN205
	DIN (#3) symmetrical hat rail 35 x 7.5 x 1 m	10	199-DR1

Photo	Description	Pkg. Qty.	Cat. No.
	Diode Surge Suppressor Voltage Range: 6220V DC used with 700-HN204 and 700-HN205 socket	10	700-ADR
	Diode with LED Surge Suppressor Voltage Range: 624V DC used with 700-HN204 and 700-HN205 socket	10	700-ADL1R
CAT POLANCE SAR B VORENCE - UDI MODULE VORENCE - UDI MODULE - UDI MODULE 	Diode with LED Surge Suppressor Voltage Range: 2860V DC used with 700-HN204 and 700-HN205 socket		700-ADL2R
	Diode with LED Surge Suppressor Voltage Range: 110220V DC used with 700-HN204 and 700-HN205 socket	10	700-ADL3R
	Varistor with LED Surge Suppressor Voltage Range: 624V AC used with 700-HN204 and 700-HN205 socket	10	700-AV1R
	Varistor with LED Surge Suppressor Voltage Range: 110240V AC used with 700-HN204 and 700-HN205 socket	10	700-AV3R
	RC Surge Suppressor Voltage Range: 624V AC/DC used with 700-HN204 and 700-HN205 socket	10	700-AR1
	RC Surge Suppressor Voltage Range: 110240V AC/DC used with 700-HN204 and 700-HN205 socket	10	700-AR2

Photo	Description	Pkg. Qty.	Cat. No.	
TODATS A CC C STUME Mode in Not W44	Timing Module On-Delay or One-Shot selectable voltage range: 1224V AC/DC used with sockets that accept plug-in accessory modules.	On-Delay	1	700-AT3
	Timing Module On-Delay or One-Shot selectable voltage range: 110125V AC used with sockets that accept plug-in accessory modules.	Iming Module $U (A1/A2)$ n-Delay or One-Shot selectable voltage range:LED & R10125V AC used with sockets that accept plug-inOne-Shotiming ModuleU (A1/A2)n-Delay or One-Shot selectable voltage range:U (A1/A2)30240V AC used with sockets that accept plug-inLED & Rccessory modules.LED & R		700-AT3A1
	Timing Module On-Delay or One-Shot selectable voltage range: 230240V AC used with sockets that accept plug-in accessory modules.			700-AT3A2
	1.1s	0.051 s		
	2. 10 s	0.510 s		
	3. 100 s	5100 s		
	4. 10 min	0.510 min	1	700-HT3
	5. 100 min	5100 min		
	6. 10 hours	0.510 h		
	7. 100 hours	5100 h		
	8. LED Indicator	1 1	-	

Socket and Retainer Clip Reference

Relay Type	Socket	Retainer Clip
700-HA32 700-HAX2	700-HN100 700-HN125 700-HN204	700-HN157 Not Required 700-HN157
700-HA33 700-HAX3	700-HN101 700-HN126 700-HN205	700-HN157 Not Required 700-HN157

Specifications - 700-HA Relays

Attribute	Attribute 700-HA				
		Electrical Rating	s		
Pilot Duty Rating ⁽¹⁾		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		
	Inductivo	Make	Break	Нр	
	inductive	▶][◄	◄][►		
Contacto	120VAC	30 A	3 A	1/3	
contacts	240VAC	15 A	1.5 A	1	
	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: 80110% of nom voltage	e at 50 Hz, 80110% of nom voltage at 60 H	lz, 80110% of nom voltage at DC	
	AC Coils	50 Hz	60	Hz	
CollConcumption + 100/	Inrush	3.3VA	2.8	5VA	
Conconsumption±10%	Sealed	2.2VA	1.9	AVA	
	DC Coils		1.3 W		
Must Dropout Voltage	•		20% of nom V AC; 10% of nom V DC		
Max. Contact Resistance			50 MΩ (700-HA), 30 MΩ (700-HAX)		
Design Specification/Test Requirem	ents	•			
		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 Lifecycles (AC/DC)			> 20 x 10 ⁶ / 50 x 10 ⁶		
Switching Frequency Operations			3600/HR		
Coil Voltages			See Product Selection		
Approxima Time	Pickup		12 ms		
operating time	Dropout		12 ms		
Maximum Operating Rate			4 Ops/s		
Vibration	Endurance		5 G		
VIDIALION	Operational		2.5 G		
Shock	Endurance		50 G		
SHOCK	Operational	96			
		Environmental			
Temperature	Operating	AC/DC	−40…+70 °C (-40+158 °F)	
	Storage	AC/DC	−40…+100 °C	(-40+212 °F)	
Altitude		2000 m (6560 ft)			
		Construction			
Insulating Material	nsulating 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 700-HN sockets noted (File No. E3125, Guide NLDX/NLDX7), CE Marked, CSA Certified, UR Certified (File 229473)			
Standards		UL508, CSA C22.2 No. 14. EN 61810-1			

(1) See <u>NEMA Ratings and Test Values on page 5</u>

Relay Performance Graphs



Specifications - 700-HT3 Time Module

Attribute		700-H	700-HT3			
Electrical Ratings						
Operating Voltage Range		12240V AC (50/60	Hz) 12240V DC			
Power Consumption		0.1W(1.0W(2	0.1 W (12V) 1.0 W (230V)			
		Mechanical				
Degree of Protection of Input (B1) Terminal		IP 20 (Guarde	d Terminal)			
Input Terminal Wire Range		1.0 x 0.2 mm ² 2.5 m 2.0 x 0.2 mm ² 1.5 m	m ² (2414 AWG) m ² (2416 AWG)			
Input Terminal Torque Range		0.450.8 N•m	(47 lb•in)			
Status Indicator		Rec	I			
Repeat Accuracy ⁽¹⁾		±19	6			
RecoveryTime		<50	ms			
Selectable Timing Ranges		Three DIP switches, seven ranges 1 s, 10 s, 100 s, 10 min,	Three DIP switches, seven ranges (set from 5100% of range): 1 s, 10 s, 10 s, 10 min, 100 min, 10 h, 100 h			
Selectable Timing Modes		Three DIP switches, eight modes: 1. PowerOn-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 Accu	racy	±5% of Tin	±5% of Time Range			
Environmental		•				
Tommorotuno	Operating	−20…+50 °C (−	4+122 °F)			
remperature	Storage	−55…+85 °C (−	67+185 °F)			
Altitude		2000 m (6	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), 7	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				

(1) At constant voltage and temperature.

Timing Charts - 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 light-emitting diode)

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 repeats 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 completed the relay contacts (R) change state. Opening the signal starts the time delay, after the time delay is completed 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.



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

Terms:

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

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 relay contacts return to their shelf state. If the signal is opened after the time delay is complete, the relay contacts renergize immediately and the same time delay begins. Continuous cycling of the signal at a rate that is faster than the time delay causes the relay contacts to remain energized. Contacts return to their shelf state when power is removed.



Dimensions -700-HA Relays

Approximate dimensions are shown in millimeters (inches). Dimensions are not intended for manufacturing purposes.



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.	Α	В	C	D	Approx. Shipping Wt.
199-DR1	35	27	7.5	1.02	1.85 kg
	(1-3/8)	(1-1/16)	(19/64)	(1/64)	(4.07 lb) (10/pkg)
199-DR4	35	27	15	2.3	3.68 kg
	(1-3/8)	(1-1/16)	(19/32)	(3/32)	(8 lb) (5/pkg)

Approximate dimensions are shown in millimeters (inches). Dimensions are not intended for manufacturing purposes.



Wire Size: 2 x 2.5 mm²

Single Wire – Up to #12 AWG Double Wire – 2 x 2.5 mm² (#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 x 2.5 mm² Single Wire – Up to 12 AWG Double Wire – 2 x 2.5 mm² (#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 x 2.5 mm² Single Wire – Up to #12 AWG Double Wire – 2 x 2.5 mm² (#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 x 2.5 mm² Single Wire – Up to #12 AWG Double Wire – 2 x 2.5 mm² (#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). Dimensions are not intended for manufacturing purposes.



Cat. No. 700-HN204





Cat. No. 700-HN205

Wire Size: 2 x 2.5 mm² Single Wire – Up to #12 AWG Double Wire – 2 x 2.5 mm² (14 AWG ...20 AWG) Qty. 2 wires (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 x 1.5 mm² (#2 – 16 AWG...#1–20 AWG) (Either Solid or Stranded) Strip Length: 9 mm (3/8 in.) – Torque: 0.8 N•m (7 Ib•in)