

General Purpose Relays and Timing Relays

Bulletin 700-HA



- 10 A Contact Rating
- DPDT
- 3PDT
- Pin Style Terminals
- Standard ON/OFF Flag Indicator
- Finger Grips for Easy Installation and Removal
- Optional Manual Operator
- Optional Pilot Light
- Optional Surge Suppressor Module
- Optional Multi-Function Timing Module
- Type HAB Bifurcated Contacts
- Type HAX Gold Bifurcated Contacts

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Description

The Bulletin 700-HA General Purpose Relays have pin style terminals and are available in 2-pole (DPDT) or 3-pole (3PDT). They feature a standard ON/OFF flag indicator, and can be ordered with an optional manual operator, a pilot light, and bifurcated or gold bifurcated contacts. Coils are available in a wide range of AC and DC voltages. Contacts are rated up to 10 A.

Conformity to Standards:

EN 60947-4-1
 EN 60947-5-1
 IEC 947
 CSA 22.2
 UL 508

Approvals:

CSA Certified, File LR47569
 UL Recognized, File E3125
 Guide NLDX 2
 UL Listed, with Allen-Bradley socket
 CE Marked (per EU Low Voltage
 Directive 73/23 EEC 93/68 EEC)

Your order must include:

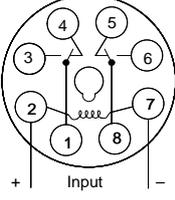
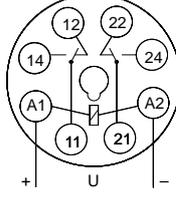
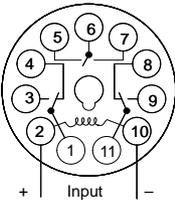
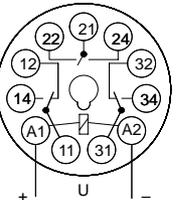
- Cat. No. of the plug-in relay plus suffixes of selection options.
- Cat. No. of socket required.
- If required, Cat. No. of any accessories.

General Purpose Relays and Timing Relays

Product Selection

Bulletin 700-HA Tube Base Relay with PIN Terminals (Single Contact) —

Mechanical ON/OFF Indicator included ❶

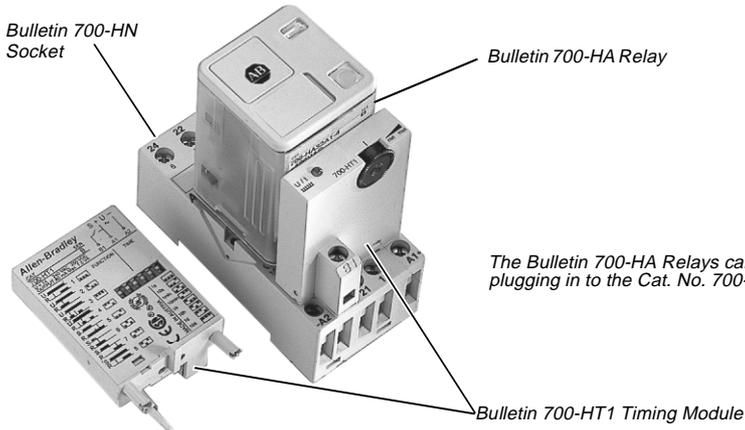
| | Description | Contact Rating | Wiring Diagrams | | Coil Voltage | Cat. No. ❷❸ |
|--|--|----------------|---|--|--------------|---------------|
| | | | U.S./Canada | International | | |
|  | DPDT 2-Pole 2 Form C Single AgNi Contact | 10 A B300 |  <p>700-HN125</p> |  <p>700-HN100 700-HN202</p> | 6V AC | 700-HA32A06 |
| | | | | | 12V AC | 700-HA32A12 |
| | | | | | 24V AC | 700-HA32A24 ❹ |
| | | | | | 120V AC | 700-HA32A1 ❹ |
| | | | | | 240V AC | 700-HA32A2 ❹ |
| | | | | | 277V AC | 700-HA32A27 |
| | | | | | 6V DC | 700-HA32Z06 |
| | | | | | 12V DC | 700-HA32Z12 ❹ |
| | | | | | 24V DC | 700-HA32Z24 ❹ |
| | | | | | 36V DC | 700-HA32Z36 |
| | | | | | 48V DC | 700-HA32Z48 |
| | | | | | 110V DC | 700-HA32Z1 |
| | | | | | 125V DC | 700-HA32Z01 |
| | | | | | 140V DC | 700-HA32Z3 |
|  | 3PDT 3-Pole 3 Form C Single AgNi Contact | 10 A B300 |  <p>700-HN126</p> |  <p>700-HN101 700-HN203</p> | 6V AC | 700-HA33A06 |
| | | | | | 12V AC | 700-HA33A12 |
| | | | | | 24V AC | 700-HA33A24 ❹ |
| | | | | | 120V AC | 700-HA33A1 ❹ |
| | | | | | 240V AC | 700-HA33A2 |
| | | | | | 6V DC | 700-HA33Z06 |
| | | | | | 12V DC | 700-HA33Z12 |
| | | | | | 24V DC | 700-HA33Z24 ❹ |
| | | | | | 48V DC | 700-HA33Z48 |
| | | | | | 110V DC | 700-HA33Z1 |
| | | | | | 125V DC | 700-HA33Z01 |
| | | | | | 140V DC | 700-HA33Z3 |

❶ For Time Module and Surge Suppressor Module, see page 9-24.

❷ Pilot Light Option: Add suffix (-4) to the selected Bulletin 700-HA Relay Cat. No., except for the 240V AC Units, add (-4L).

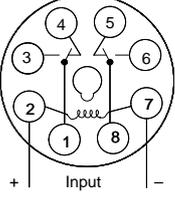
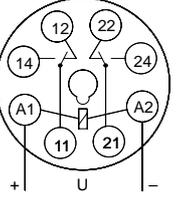
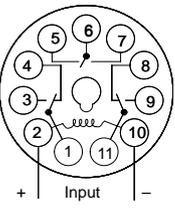
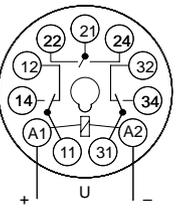
❸ Manual Operator and Pilot Light Option: Add suffix (-1-4) to the selected Bulletin 700-HA Relay Cat. No., except for the 240V AC units, add (-1-4L).

❹ Bulk Package Option: Relay can be purchased at discounted prices in bulk quantities of 10. Add suffix (-99) to the selected relay catalog number. The following relays are also available in the Bulk Package Option: Cat. Nos. 700-HA32A1-4, 700-HA32A1-1-4, 700-HA33A1-4, and 700-HA33A1-1-4.



The Bulletin 700-HA Relays can be used together with Timing or Surge Suppressor Modules by plugging in to the Cat. No. 700-HN202 8-Pin Socket, or the Cat. No. 700-HN203 11-Pin Socket.

**Bulletin 700-HAB Tube Base Relay with PIN Terminals (Bifurcated Contacts) —
 Mechanical ON/OFF Indicator included ❶**

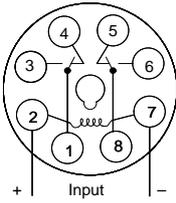
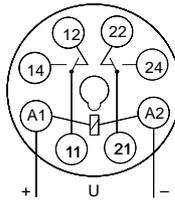
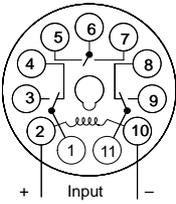
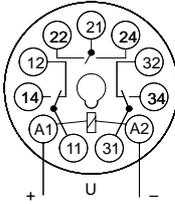
| | Description | Contact Rating | Wiring Diagrams | | Coil Voltage | Cat. No. ❷❸ | | | | | |
|--|---|----------------|--|---|--------------|----------------|--|-----------|------------------------|--|--|
| | | | U.S./Canada | International | | | | | | | |
|  | DPDT 2-Pole 2 Form C Bifurcated AgNi Contacts | 4 A B300 |  |  | 6V AC | 700-HAB2A06 | | | | | |
| | | | | | 12V AC | 700-HAB2A12 | | | | | |
| | | | | | 24V AC | 700-HAB2A24 | | | | | |
| | | | | | 120V AC | 700-HAB2A1 | | | | | |
| | | | | | 240V AC | 700-HAB2A2 | | | | | |
| | | | | | 277V AC | 700-HAB2A27 | | | | | |
| | | | | | 6V DC | 700-HAB2Z06 | | | | | |
| | | | | | 12V DC | 700-HAB2Z12 | | | | | |
| | | | | | 24V DC | 700-HAB2Z24 | | | | | |
| | | | | | 36V DC | 700-HAB2Z36 | | | | | |
| | | | | | 48V DC | 700-HAB2Z48 | | | | | |
| | | | | | 110V DC | 700-HAB2Z1 | | | | | |
| | | | | | 125V DC | 700-HAB2Z01 | | | | | |
| | | | | | 140V DC | 700-HAB2Z3 | | | | | |
| | | | | | Sockets | | | 700-HN125 | 700-HN100 700-HN202 | | |
|  | 3PDT 3-Pole 3 Form C Bifurcated AgNi Contacts | 4 A B300 |  |  | 6V AC | 700-HAB3A06 | | | | | |
| | | | | | 12V AC | 700-HAB3A12 | | | | | |
| | | | | | 24V AC | 700-HAB3A24 | | | | | |
| | | | | | 120V AC | 700-HAB3A1 | | | | | |
| | | | | | 240V AC | 700-HAB3A2 | | | | | |
| | | | | | 6V DC | 700-HAB3Z06 | | | | | |
| | | | | | 12V DC | 700-HAB3Z12 | | | | | |
| | | | | | 24V DC | 700-HAB3Z24 | | | | | |
| | | | | | 48V DC | 700-HAB3Z48 | | | | | |
| | | | | | 110V DC | 700-HAB3Z1 | | | | | |
| | | | | | 125V DC | 700-HAB3Z01 | | | | | |
| | | | | | 140V DC | 700-HAB3Z3 | | | | | |
| | | | | | Sockets | | | 700-HN126 | 700-HN101 700-HN203 | | |

- ❶ For Time Module and Surge Suppressor Module, see page 9-24.
- ❷ Pilot Light Option: Add suffix **(-4)** to the selected Bulletin 700-HAB Relay Cat. No., except for the 240V AC Units, add **(-4L)**.
- ❸ Manual Operator & Pilot Light Option: Add suffix **(-1-4)** to the selected Bulletin 700-HAB Relay Cat. No., except for the 240V AC units, add **(-1-4L)**.

General Purpose Relays and Timing Relays

Product Selection, Continued

Bulletin 700-HAX Tube Base Relay with PIN Terminals (Bifurcated Contacts with Gold Overlay) — Mechanical ON/OFF Indicator Included ❶

| | Description | Contact Rating | Wiring Diagrams | | Coil Voltage | Cat. No. ●● |
|--|---|----------------|--|---|--------------|----------------|
| | | | U.S./Canada | International | | |
|  | DPDT 2-Pole 2 Form C Bifurcated AgNi Contacts with Gold Overlay Sockets | 4 A B300 |  <p style="text-align: center;">+ Input -</p> <p style="text-align: center;">700-HN125</p> |  <p style="text-align: center;">+ U -</p> <p style="text-align: center;">700-HN100 700-HN202</p> | 6V AC | 700-HAX2A06 |
| | | | | | 12V AC | 700-HAX2A12 |
| | | | | | 24V AC | 700-HAX2A24 |
| | | | | | 120V AC | 700-HAX2A1 |
| | | | | | 240V AC | 700-HAX2A2 |
| | | | | | 277V AC | 700-HAX2A27 |
| | | | | | 6V DC | 700-HAX2Z06 |
| | | | | | 12V DC | 700-HAX2Z12 |
| | | | | | 24V DC | 700-HAX2Z24 |
| | | | | | 36V DC | 700-HAX2Z36 |
| | | | | | 48V DC | 700-HAX2Z48 |
| | | | | | 110V DC | 700-HAX2Z1 |
| | | | | | 125V DC | 700-HAX2Z01 |
| | | | | | 140V DC | 700-HAX2Z3 |
|  | 3PDT 3-Pole 3 Form C Bifurcated AgNi Contacts with Gold Overlay Sockets | 4 A B300 |  <p style="text-align: center;">+ Input -</p> <p style="text-align: center;">700-HN126</p> |  <p style="text-align: center;">+ U -</p> <p style="text-align: center;">700-HN101 700-HN203</p> | 6V AC | 700-HAX3A06 |
| | | | | | 12V AC | 700-HAX3A12 |
| | | | | | 24V AC | 700-HAX3A24 |
| | | | | | 120V AC | 700-HAX3A1 |
| | | | | | 240V AC | 700-HAX3A2 |
| | | | | | 6V DC | 700-HAX3Z06 |
| | | | | | 12V DC | 700-HAX3Z12 |
| | | | | | 24V DC | 700-HAX3Z24 |
| | | | | | 48V DC | 700-HAX3Z48 |
| | | | | | 110V DC | 700-HAX3Z1 |
| | | | | | 125V DC | 700-HAX3Z01 |
| | | | | | 140V DC | 700-HAX3Z3 |

❶ For Time Module and Surge Suppressor Module, see page 9-24.

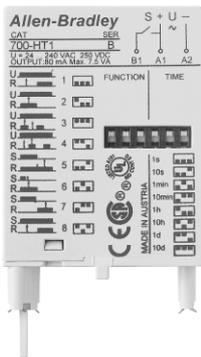
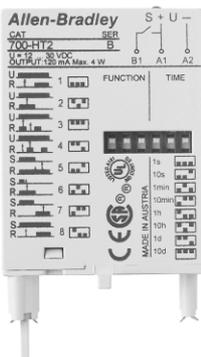
❷ Pilot Light Option: Add suffix (-4) to the selected Bulletin 700-HAX Relay Cat. No., except for the 240V AC Units, add (-4L).

❸ Manual Operator & Pilot Light Option: Add suffix (-1-4) to the selected Bulletin 700-HAX Relay Cat. No., except for the 240V AC units, add (-1-4L).

| | Description | Pkg. Qty. | Cat. No. |
|--|--|-----------|-----------|
|  Cat. No. 700-HN100 | Screw Terminal Tube Base Sockets – Panel or DIN Rail Mounting. Guarded Terminal Construction 8-pin for use with DPDT Bulletin 700-HA relays, -HX digital timing relays, -HT (ON-Delay) and -HRM, -HRC and -HV (Repeat Cycle) timing relays. Order must be for 10 sockets or multiples of 10. | 10 | 700-HN100 |
|  Cat. No. 700-HN125 | Screw Terminal Tube Base Sockets – Panel or DIN Rail Mounting Open Style Construction 8-pin for use with DPDT Bulletin 700-HA relays, -HT (ON-Delay) and -HRM, -HRC and -HV (Repeat Cycle) timing relays. Order must be for 10 sockets or multiples of 10. No retainer clip required. | 10 | 700-HN125 |
|  Cat. No. 700-HN101 | Screw Terminal Tube Base Sockets – Panel or DIN Rail Mounting. Guarded Terminal Construction 11-pin for use with 3PDT Bulletin 700-HA relays, -HR and -HT (OFF-Delay) timing relays. Order must be for 10 sockets or multiples of 10. | 10 | 700-HN101 |
|  Cat. No. 700-HN126 | Screw Terminal Tube Base Sockets – Panel or DIN Rail Mounting. Guarded Terminal Construction 11-pin for use with 3PDT Bulletin 700-HA relays, -HR and -HT (OFF-Delay) timing relays. Order must be for 10 sockets or multiples of 10. | 10 | 700-HN126 |
|  Cat. No. 700-HN203 | 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 Bulletin 700-HA relays. Order must be for 10 sockets or multiples of 10. | 10 | 700-HN202 |
| | 11-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 3PDT Bulletin 700-HA relays. Order must be for 10 sockets or multiples of 10. | 10 | 700-HN203 |
|  Cat. No. 199-DR1 | DIN Rail Mounting Pack Standard 35 x 7.5 mm DIN Rail, 1 meter long, 10 rails per package. Order must be for 10 rails or multiples of 10. | 10 | 199-DR1 |

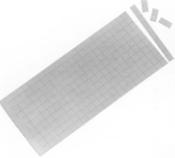
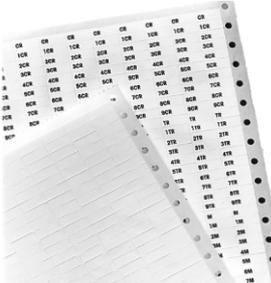
General Purpose Relays and Timing Relays

Accessories, Continued

| | Description | Pkg. Qty. | Cat. No. | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|---|----------|---|----|------|---|----|--------|---|----|---------|---|----|--------|---|----|----------|---|----|------------------|---|----|---------------------|---|---|---------|
|  <p>Cat. No. 700-HSV1</p> | <p>MOV Suppressor Module ① Voltage Range: 24V AC 24...30V DC Order must be for 20 modules or multiples of 20.</p> | 20 | 700-HSV1 | | | | | | | | | | | | | | | | | | | | | | | | |
| | <p>MOV Suppressor Module ① Voltage Range: 220...240V AC 220...300V DC Order must be for 20 modules or multiples of 20.</p> | 20 | 700-HSV2 | | | | | | | | | | | | | | | | | | | | | | | | |
| | <p>MOV Suppressor Module ① Voltage Range: 110...120V AC 110...150V DC Order must be for 20 modules or multiples of 20.</p> | 20 | 700-HSV3 | | | | | | | | | | | | | | | | | | | | | | | | |
|  <p>Cat. No. 700-HSMD</p> | <p>Diode Surge Suppressor ① Voltage Range: 6...250V DC Order must be for 20 modules or multiples of 20.</p> | 20 | 700-HSMD | | | | | | | | | | | | | | | | | | | | | | | | |
|  <p>Cat. No. 700-HT1</p> | <p>Multi-Function Multi-Range Time Module ① Voltage range 24...240V AC 50/60 Hz and 24...250V DC, with a voltage variation of 85...110%. Repeat accuracy of <0.5%. Reset time 150 ms. Refer to page 9-27 for Specifications. Eight (8) Timing Modes (See page 9-28 for further details.) Eight (8) Timing Ranges:</p> <table border="0"> <tr> <td>1.</td> <td>1 s</td> <td></td> </tr> <tr> <td>2.</td> <td>10 s</td> <td></td> </tr> <tr> <td>3.</td> <td>1 min.</td> <td></td> </tr> <tr> <td>4.</td> <td>10 min.</td> <td></td> </tr> <tr> <td>5.</td> <td>1 hour</td> <td></td> </tr> <tr> <td>6.</td> <td>10 hours</td> <td></td> </tr> <tr> <td>7.</td> <td>1 day (24 hours)</td> <td></td> </tr> <tr> <td>8.</td> <td>10 days (240 hours)</td> <td></td> </tr> </table> <p>LED Indicator: 1. Steady Green (G) for power on, flashing during timing.</p> | 1. | 1 s |  | 2. | 10 s |  | 3. | 1 min. |  | 4. | 10 min. |  | 5. | 1 hour |  | 6. | 10 hours |  | 7. | 1 day (24 hours) |  | 8. | 10 days (240 hours) |  | 1 | 700-HT1 |
| 1. | 1 s |  | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | 10 s |  | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | 1 min. |  | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. | 10 min. |  | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. | 1 hour |  | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | 10 hours |  | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. | 1 day (24 hours) |  | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. | 10 days (240 hours) |  | | | | | | | | | | | | | | | | | | | | | | | | | |
|  <p>Cat. No. 700-HT2</p> | <p>Multi-Function Multi-Range Time Module ① Voltage range 12...30V DC, with a voltage variation of 90...110%. Repeat accuracy of <0.5%. Reset time 150 ms. Refer to page 9-27 for Specifications. Eight (8) Timing Modes (See page 9-28 for further details.) Eight (8) Timing Ranges:</p> <table border="0"> <tr> <td>1.</td> <td>1 s</td> <td></td> </tr> <tr> <td>2.</td> <td>10 s</td> <td></td> </tr> <tr> <td>3.</td> <td>1 min.</td> <td></td> </tr> <tr> <td>4.</td> <td>10 min.</td> <td></td> </tr> <tr> <td>5.</td> <td>1 hour</td> <td></td> </tr> <tr> <td>6.</td> <td>10 hours</td> <td></td> </tr> <tr> <td>7.</td> <td>1 day (24 hours)</td> <td></td> </tr> <tr> <td>8.</td> <td>10 days (240 hours)</td> <td></td> </tr> </table> <p>LED Indicator: 1. Steady Green (G) for power on, flashing during timing</p> | 1. | 1 s |  | 2. | 10 s |  | 3. | 1 min. |  | 4. | 10 min. |  | 5. | 1 hour |  | 6. | 10 hours |  | 7. | 1 day (24 hours) |  | 8. | 10 days (240 hours) |  | 1 | 700-HT2 |
| 1. | 1 s |  | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | 10 s |  | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | 1 min. |  | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. | 10 min. |  | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. | 1 hour |  | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | 10 hours |  | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. | 1 day (24 hours) |  | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. | 10 days (240 hours) |  | | | | | | | | | | | | | | | | | | | | | | | | | |

① Suppressors and Time Modules easily plug into sockets (Cat. Nos. 700-HN202 and 700-HN203). For use with Bulletin 700-HA relays.

ATTENTION: Cat. No. 700-HT1 Series A is wired with switch “S” connected to “A2”, but 700-HT1 Series B is wired with switch “S” connected to “A1”. The Time Modules must be wired correctly. Check the front of the Time Modules for the correct wiring diagrams.

| | Description | Pkg. Qty. | Cat. No. |
|--|--|-----------|-----------|
|  Sample Retainer Clips | Retainer Clip for Cat. Nos. 700-HN100, -HN101, -HN200, -HN201, -HN202, and -HN203 Sockets with Bulletin 700-HA Relays ❶ Secures relay in socket. Order must be for 10 clips or multiples of 10. | 10 | 700-HN151 |
|  Cat. No. 700-HN120 | Type 1 Enclosure For use with any of the listed relays. Knockouts for 1/2" and 3/4" conduit connections. The enclosure exceeds the minimum clearances required by U.S. Standards, resulting in generous wiring space. | 1 | 700-HN120 |
|  Cat. No. 700-HN106 | Relay Identification Marker Kit Kit consists of perforated sheet with 250 blank squares. Two squares required per relay. Squares slip into molded slot on top of Bulletin 700-HA or 700-HB relay cover. | 1 | 700-HN106 |
|  | Pre-printed identification tags – contains 10 sheets of pre-printed and blank tags. Each sheet contains 13 sets of the markings CR...9CR, TR...9TR, M...9M, F, R, 1S, and 117 blank tags. Tags are peel-off with sticky backing for easy placement on relays. | 10 | 700-N40 |
| | Blank identification tags – contains 10 sheets of blank identification tags for customer specialized printing. Each sheet contains 546 blank tags. Tags are peel-off with sticky backing for easy placement on relays. | 10 | 700-N41 |

❶ Bulletin 700-HA Relay, Socket, and Retainer Clip Reference Chart

| Relay Type | Socket | Retainer Clip |
|------------|-----------|----------------|
| 700-HA32 | 700-HN100 | 700-HN151 |
| 700-HAB2 | 700-HN125 | Not Required ❷ |
| 700-HAX2 | 700-HN202 | 700-HN151 |
| | 700-HN200 | 700-HN151 |
| 700-HA33 | 700-HN201 | 700-HN151 |
| 700-HAB3 | 700-HN101 | 700-HN151 |
| 700-HAX3 | 700-HN126 | Not Required ❷ |
| | 700-HN203 | 700-HN151 |

❷ Design of these sockets holds the relays securely and does not require retainer clips.

General Purpose Relays and Timing Relays

Specifications ①

| | | Cat. No. 700-HA... | | |
|--|--------------|--|--------------------------------|-----------|
| Electrical Ratings | | | | |
| Pilot Duty Rating ② | | NEMA B300 | | |
| Rated Thermal Current (I_{th}) | | HA = 10 A ③ – 120V, 240V HAB/HAX = 4 A ④ – 120V, 240V | | |
| Rated Insulation Voltage (U_i) | | 250V IEC – 300V UL/CSA | | |
| Contacts | Inductive | Make | Break | HP |
| | 120V AC | ▶ ◀ | ◀ ▶ | 1/4 |
| | 240V AC | 30 A | 3 A | 1/2 |
| | DC | 15 A | 1.5 A | |
| Permissible Coil Voltage Variation | | 24V DC, 10 A | | |
| Coil Consumption ±10% | | 80...110% of Nominal Voltage at 50 Hz 85...110% of Nominal Voltage at 60 Hz 80...110% of Nominal Voltage at DC | | |
| AC Coils | Inrush | 50 Hz | 60 Hz | |
| | Sealed | 3.0 VA | 2.63 VA | |
| DC Coils | | 2.0 VA | 1.75 VA | |
| Max. Allowable Leakage | | 1.2 W | | |
| | | 25% of VA | | |
| | | 10% of W | | |
| Design Specification/Test Requirements | | | | |
| Electrical | | | | |
| Dielectric Withstand Voltage | | 2500V | | |
| Pole-to-Pole | | 2500V | | |
| Contact to Coil | | 2500V | | |
| Contact to Frame | | 2500V | | |
| Mechanical | | | | |
| Degree of Protection (Open Type) IEC 529 | | IP 20 (Guarded Terminal Sockets) | | |
| Mechanical Life Operations | | > 20 x 10 ⁶ | | |
| Switching Frequency Operations | | 3600/HR | | |
| Coil Voltages | | See Product Selection | | |
| Operating Time | Max. Pickup | 12 ms AC; 15 ms DC | | |
| | Max. Dropout | 15 ms AC; 13 ms DC | | |
| Maximum Operating Rate | | 4 Ops/s | | |
| Environmental | | | | |
| Temperature | Operating | AC | -5...+40°C (+23...+104°F) | |
| | | DC | -5...+60°C (+23...+140°F) | |
| | Storage | AC/DC | -45...+120°C (-49...+248°F) | |
| Altitude | | 2000 m (6560 ft) | | |
| Construction | | | | |
| Insulating Material | | Molded High Dielectric Material | | |
| Enclosure | | Transparent Dust Cover | | |
| Contact Material | | 700-HA: 10 A– AgNi 700-HAB: 4 A–Bifurcated AgNi 700-HAX: 4 A–Bifurcated/Gold Overlay AgNi | | |
| Terminal Markings on Socket | | In accordance with EN50 0005 | | |
| Sockets | | 8-Pin Socket — 700-HN100, -HN125, -HN202 11-Pin Socket — 700-HN101, -HN126, -HN203 | | |
| Certifications | | CE, UL listed, CSA | | |

① Performance Data – See page Important-2.

② NEMA Rating Chart is on page 9-12.

③ 3-pole relays have a 20 A maximum total current rating for all three poles.

④ 3-pole relays have a 10 A maximum total current rating for all three poles.

General Purpose Relays and Timing Relays

Specifications, Continued ①

| | | Time Module Cat. No. 700-HT1 | Time Module Cat. No. 700-HT2 |
|---|--------------------------------|---|---|
| Electrical Ratings | | | |
| Operating Voltage Range | | 24...240V AC at 50/60 Hz 24...250V DC | 12...30V DC |
| Power Consumption | | 24V AC/DC 70 mW 240V AC/DC 700 mW | 12V DC 40 mW 30V DC 100 mW |
| Maximum Output Current | | 80 mA (2 W at 24V DC) | 120 mA (2 W at 24V DC) |
| Maximum Output Voltage | | 265V AC, 275V DC | 33V DC |
| Maximum Output Power | | 7.5 VA (30 mA at 240V AC) | 4 W |
| Mechanical | | | |
| Degree of Protection of Input (B1) Terminal | | IP 20 (Guarded Terminal) | |
| Input Terminal Wire Range | | 2 x 1.5 mm ² (2 No. 16 AWG...1 No. 20 AWG) | |
| Input Terminal Torque Range | | 0.45...0.8 Nm (4...7 lb-in.) | |
| LED Indicator | | Steady when Power On and Flashing during Timing Period | |
| Repeat Accuracy ② | | <0.5% or 5 ms | |
| Timing Change | Voltage Effect Temp. Effect | ≤0.001%/V ≤0.01%/°C | ≤0.001%/V ≤0.01%/°C |
| Reset Time | | Power Reset: 150 ms Signal Reset: 50 ms AC, 30 ms DC | Power Reset: 150 ms Signal Reset: 10 ms DC |
| Selectable Timing Ranges | | 3 DIP Switches, 8 Ranges (set from 10...100% of range): 1 s, 10 s, 1 min., 10 min., 1 hr., 10 hr., 24 hr., 240 hr. | |
| Selectable Timing Modes | | 3 DIP Switches, 8 Modes: Power ON-Delay Single Shot – Power On Repeat Cycle – Starting with OFF-Delay Repeat Cycle – Starting with ON-Delay Signal OFF-Delay Single Shot – Signal is a Pulse Single Shot – Signal Off Signal ON-Delay | |
| Thumbwheel Scale Accuracy | | ≤5% of Time Range | |
| Environmental | | | |
| Temperature | Operating Storage | -25...+55°C (-13...+131°F) -55...+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-HN202 (8-Pin with Plug) 700-HN203 (11-Pin with Plug) | |
| Certifications | | CE, UL listed, CSA | |

① Performance Data - See page Important-2.

② At constant voltage and temperature.

General Purpose Relays and Timing Relays

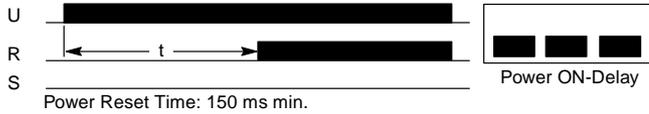
Specifications, Continued

Timing Charts, Cat. Nos. 700-HT1 and 700-HT2 Multi-Function Time Module (t = Time Range 0.10s...240hr) Cat. Nos. 700-HT1 and -HT2 Timing Modes, Time Description, Timing Charts, and DIP Switch Selections

Terms:
U is Power Input (Steady Green LED)
R is Relay Output
S Control, **+A1** Socket, **B1** Timer
t is the resulting Time Delay (Flashing Green LED)

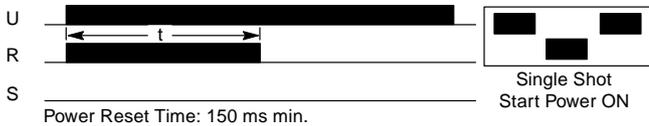
1. Power On-Delay

When the input voltage U is applied, the timing delay t begins. The relay contacts R change state after the time delay is complete. The contacts will return to their shelf state when the power U is removed. The terminal B1 is not used in this mode.



2. Single Shot — Power On

When the input voltage U is applied, the relay contacts R change state immediately and the timing cycle begins. When the time delay t is complete, the contacts return to shelf state. When the input voltage U is removed, the contacts return to their shelf state. The terminal B1 is not used in this mode.



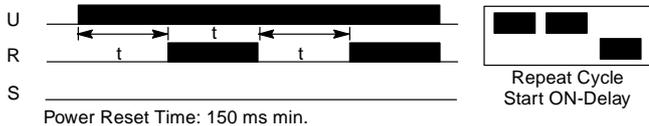
3. Repeat Cycle — Starting with Relay Energized

When the input voltage U is applied, the relay contacts R change state immediately and time delay t begins. When the time delay t is complete, the contacts return to their shelf state for time delay t. This cycle will repeat until the input voltage U is removed. The terminal B1 is not used in this mode.



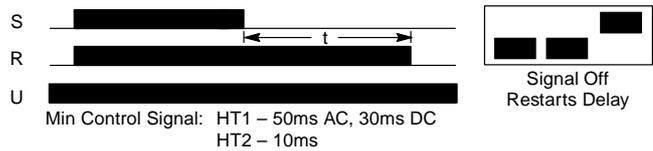
4. Repeat Cycle — Starting with On-Delay

When the input voltage U is applied, the time delay t begins. When the time delay t is complete, the relay contacts R change state for the time delay t. This cycle will repeat until the input voltage U is removed. The terminal B1 is not used in this mode.



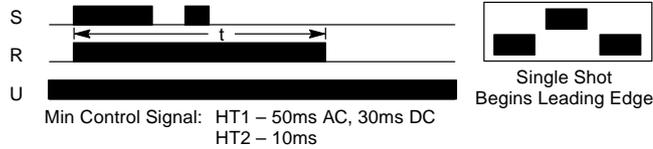
5. Signal Off-Delay

The input voltage U must be applied continuously. When the control S (wired at B1) is energized, the relay contacts R change state. When the control S is de-energized, the delay t begins. When delay t is complete, the contacts R return to their shelf state. If signal S is energized before the time delay t is complete, then the Time Module is reset, the delay begins again, and the relay contacts remain in their energized state. If the input voltage U is removed, the relay contacts R return to their shelf state.



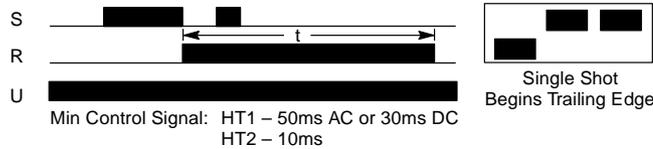
6. Single Shot — Signal Is a Pulse

The input U must be applied continuously. When the Control S (wired to B1 terminal) is energized, the relay contacts R change state and the time delay t begins. When the time delay t is completed, the contacts return to their shelf state. If signal S is de-energized before time t is completed, contacts R still stay in their changed state. The input signal S has control again when delay is completed or power reset. If the input voltage U is removed, the relay contacts R return to their shelf state.



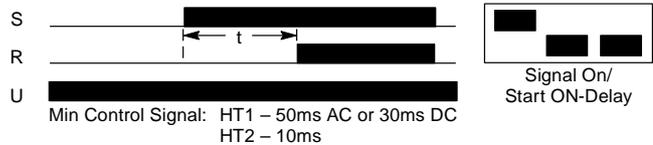
7. Single Shot — Signal Off

The input voltage U must be applied continuously. When the control S (wired at B1) is energized and then de-energized, the relay contacts R change state for the time delay t. If the control S is pulsed during the time period t, the relay contacts R will not be affected. If the input power is removed, the relay contacts R return to their shelf state.



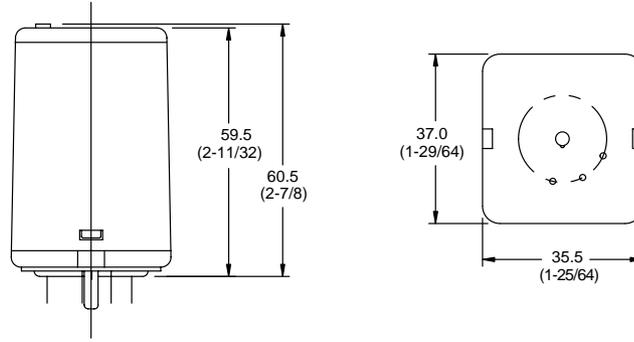
8. On Delay — Pulse Controlled

The input voltage U must be applied continuously. When the control S (wired at B1) is energized, the time delay t begins. When the time delay t is complete, the relay contacts R change state and remain energized until the control S is de-energized. If the input power U is removed the relay contacts R return to their shelf state.

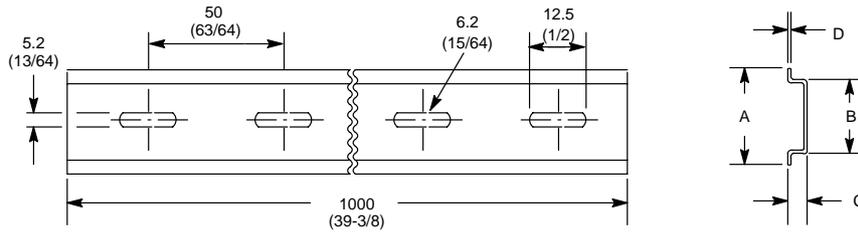


Bulletin 700-HA
General Purpose Relays and Timing Relays
Approximate Dimensions

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

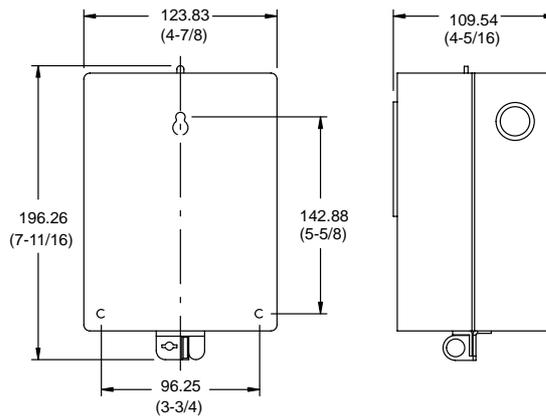


Bulletin 700-HA Relay



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 lbs.) (10/pkg) |
| 199-DR4 | 35 (1-3/8) | 27 (1-1/16) | 15 (19/32) | 2.3 (3/32) | 3.68 kg (8 lbs.) (5/pkg) |

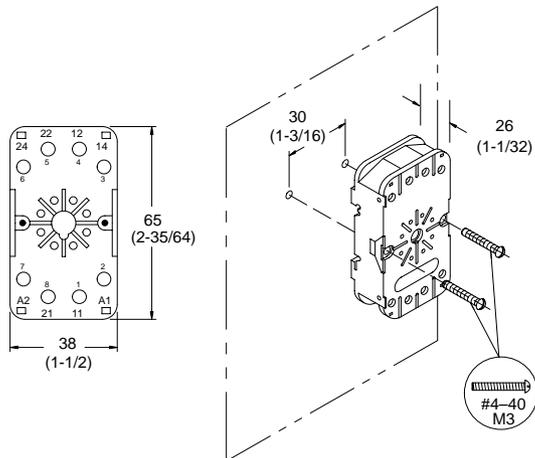


NEMA Type 1 Enclosure
Cat. No. 700-HN120

General Purpose Relays and Timing Relays

Approximate Dimensions, Continued

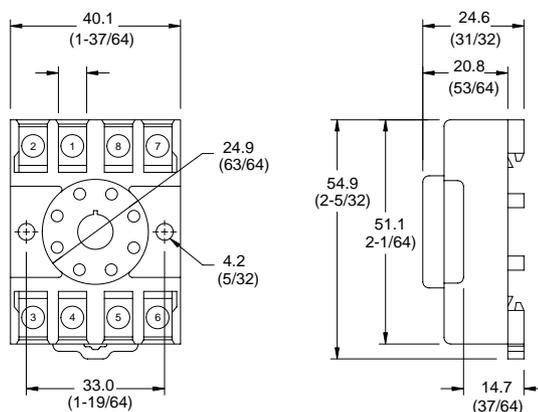
Dimensions are shown in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.



Cat. No. 700-HN100

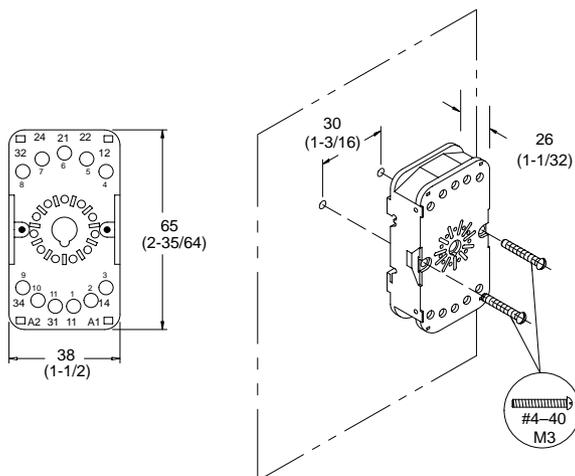
Panel Mounting

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) – Torque: 0.8 Nm (7 lb.-in.)



Cat. No. 700-HN125

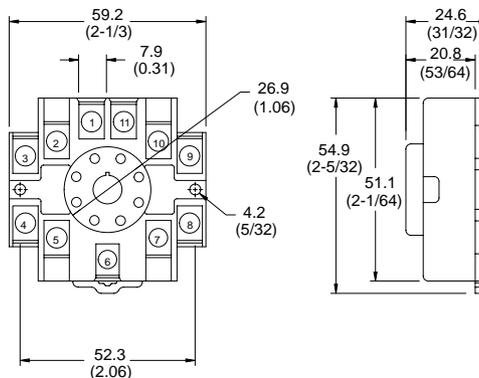
Wire Size: 2 x 2.5 mm²
 Single Wire – Up to 12 AWG
 Double Wire – 2 x 2.5 mm² (2–14 AWG... 2–20 AWG)
 (Either Solid or Stranded)
 Strip Length: 9 mm (3/8) – Torque: 0.8 Nm (7 lb.-in.)



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) – Torque: 0.8 Nm (7 lb.-in.)

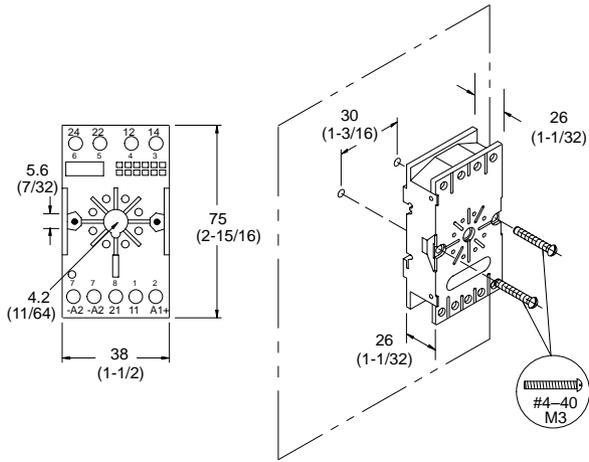


Cat. No. 700-HN126

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) – Torque: 0.8 Nm (7 lb.-in.)

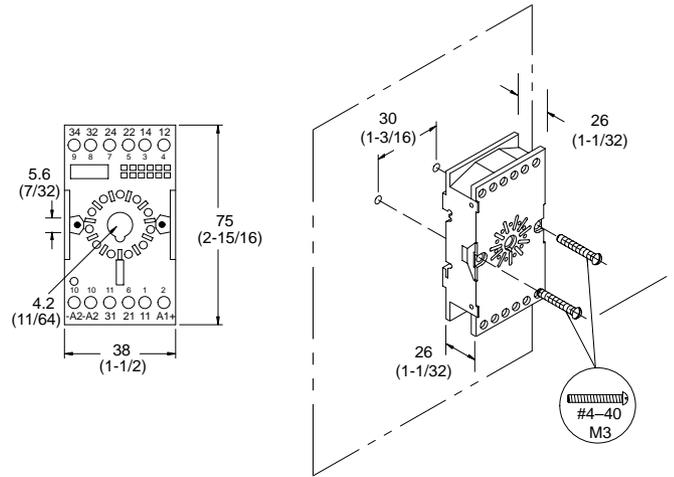
• Cat. No. 199-FSM Surge Suppressors fit on the coil terminals. See page 9-133.

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



Cat. No. 700-HN202

Panel Mounting

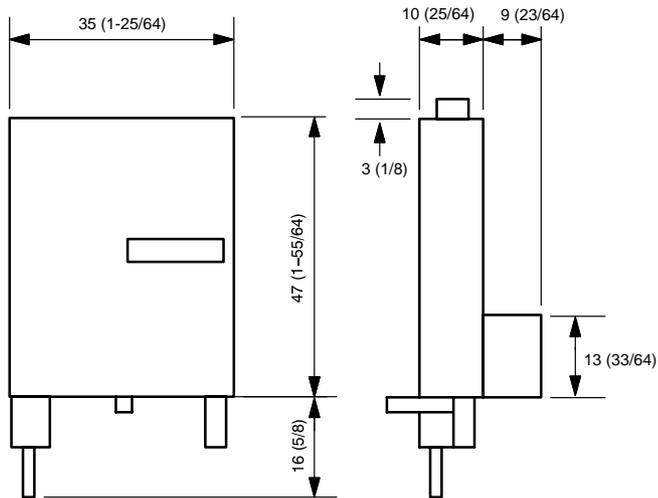


Cat. No. 700-HN203

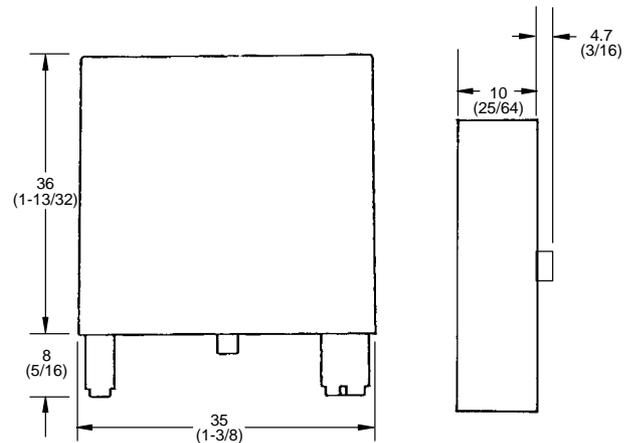
Panel Mounting

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) – Torque: 0.8 Nm (7 lb.-in.)

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) – Torque: 0.8 Nm (7 lb.-in.)



Cat. Nos. 700-HT1 and 700-HT2



Cat. Nos. 700-HSV1, 700-HSV2, 700-HSV3, and 700-HSMD

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) – Torque: 0.8 Nm (7 lb.-in.)