

## **Relays and Timers Specifications**

Bulletin Number 700

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## **Additional Resources**

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

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

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





## 700-HA General Purpose Relay

|   |  | Cat. No. 700-HA   |  |     |  |
|---|--|---|--|-----|--|
| Electrical Batinos                          |  |   |  |     |  |
| Pilot Duty Rating                           |  | NEMA B300   |  |     |  |
| Rated Thermal                               |  | HA = 10 A - 120V, 240V  |  |     |  |
| Bated Insulation Voltage (LL)               |  | HAX = 6 A - 120V, 240V  |  |     |  |
|   | Inductivo  |   |  |     |  |
|   |  |   |  | пр  |  |
|   | 1201/ AC   | 30.4  | 3.4  | 1/3 |  |
| Contacts                                    | 240V AC  | 15 A  | 15.4   | 1   |  |
|   | General Purpose  | 10 A. 240V AC   |  |     |  |
|   | Resistive  | 10 A, 30V DC  |  |     |  |
| Min. Low Energy Permissible Load            |  | HA = 10V, 5 mA  |  |     |  |
| Permissible Coil Voltage Variation          |  | HAX = 5V, 2 IIIA  |  |     |  |
|   |  | 80110% of Nominal Voltage at 60 Hz<br>80110% of Nominal Voltage at DC                 |  |     |  |
|   | AC Coils   | 50 Hz   | 60 Hz  |     |  |
| Coll Consumption 100/                       | Inrush   | 3.3 VA  | 2.85 VA  |     |  |
| Coll Consumption ±10%                       | Sealed   | 2.2 VA  | 1.9 VA   |     |  |
|   | DC Coils   | 1.3 W   |  |     |  |
| Must Dropout Voltage                        |  | 20% of nominal V AC   |  |     |  |
| wust Dropout voltage                        |  | 10% of nominal V DC   |  |     |  |
| Max. Contact Resistance                     |  | 50 MΩ (700-HA and 700-HAB)<br>30 MΩ (700-HAX)   |  |     |  |
|   | Desi   | gn Specification/Test Requirem  | ients  |     |  |
|   |  | Electrical  |  |     |  |
| Pole-to-Pole                                |  | 2000V   |  |     |  |
| Contact to Coil                             |  | 2000V   |  |     |  |
| Electrical Life (Operating)                 |  | 100 000 min.  |  |     |  |
|   |  | Mechanical  |  |     |  |
| Degree of Protection<br>(Open Type) IEC 529 |  | IP 40   |  |     |  |
| Mechanical Life Cycles (AC/DC)              |  | > 20 x 10 <sup>6</sup> / 50 x 10 <sup>6</sup>   |  |     |  |
| Switching Frequency Operation               | IS   | 3600/HR   |  |     |  |
| Coil Voltages                               |  | See Product Selection   |  |     |  |
|   | Max. Pickup  | 10 ms   |  |     |  |
| Operating Time                              | Max. Dropout   | 10 ms   |  |     |  |
| Maximum Operating Rate                      |  | 4 Ops/s   |  |     |  |
|   | Endurance  | 5 G   |  |     |  |
| VIDration                                   | Operational  | 2.5 G   |  |     |  |
| Check                                       | Endurance  | 50 G  |  |     |  |
| SHOCK                                       | Operational  | 9 G   |  |     |  |
|   | ·  | Environmental   |  |     |  |
| Tamparatura                                 | Operating  | AC/DC   | -40+70 °C  |     |  |
| lemperature                                 | 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:   | 0-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<br>11-Pin Socket — 700-HN101, -HN126, -HN205 |  |     |  |
| Certifications                              | ertifications cURus Recognized (File No. E3125, Guide NLDX2/NLDX8), cULus Listed v<br>Bulletin 700-HN sockets noted above (File No. E3125, Guide NLDX/NLDX7<br>Certified. UR Certified (File 229473) |   | us Listed when used with<br>.DX/NLDX7), CE Marked, CSA |     |  |
| Standards                                   |  | UL508. CSA C22.2 No. 14. EN 61810-1   |  |     |  |

‡ NEMA Rating Chart is in publication 700-SG003\*

## 700-HA Relay Performance Graphs



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  |           | 12240V AC (50/60 Hz) 12240V DC   |  |  |  |  |  |
| Power Consumption  |           | 0.1 W (12V)<br>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 <sup>2</sup> 2.5 mm <sup>2</sup> (24 AWG14 AWG)<br>2.0 x 0.2 mm <sup>2</sup> 1.5 mm <sup>2</sup> (24 AWG16 AWG)   |  |  |  |  |  |
| Input Terminal Torque Range                                    |           | 0.450. <mark>8 Nm</mark> (47 Ib-in.)   |  |  |  |  |  |
| LED Indicator  |           | Red  |  |  |  |  |  |
| Repeat Accuracy‡   |           | ±1%  |  |  |  |  |  |
| Recovery Time  |           | <50 ms   |  |  |  |  |  |
| Selectable Timing Ranges                                       |           | Three DIP switches, seven ranges (set from 5100% of range):<br>1 s, 10 s, 100 s, 10 min, 100 min, 10 h, 100 h  |  |  |  |  |  |
| Selectable Timing Modes  |           | Three DIP switches, eight modes:<br>1. Power On-Delay<br>2. Power On One-Shot<br>3. Power On Repeat Cycle, On Start<br>4. Signal On-Delay and Signal Off-Delay<br>5. Signal Off-Delay<br>6. Signal On-One-Shot<br>7. Signal Off-One-Shot<br>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)  |  |  |  |  |  |
| Temperature  | 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)<br>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.