



## 1600/1700 Series Delay On Operate Timers Fixed/Adjustable Timing, Relay Output



### Product Facts

- AC/DC input delay on operate timer offered in fixed (1600) and adjustable (1700) types
- Up to 10A loads
- CMOS digital design
- Hermetic package
- Built to MIL-R-83726 environmental
- Many customizing options
  - Extended timing ranges
  - Tighter timing tolerances
  - Header and mounting
  - 115Vac, 60 Hz. input types



CII 1600/1700 series delay on operate timers combine solid state timing circuits with electromechanical output relays in robust hermetically

sealed enclosures. The 1600 types are fixed timers, while the 1700 models are adjustable via an external resistor. Numerous output options include 4A rated

contacts in 1-4 form C (SPDT - 4PDT) arrangements and 10A rated contacts in 1-2 form C (SPDT-DPDT) arrangements.

### Electrical Specifications

#### Timing Range:

**1600 series (fixed):** 50 ms to 600 s.  
**1700 series (adjustable):** 50 ms to 240 s.

**Tolerance:** ±10% or 10 ms, whichever is greater.

**Recycle Time:** 10 ms (DC input), 50ms (AC input).

**Recovery Time:** 10 ms (DC input), 50ms (AC input).

**Input Voltage:** 18 to 31Vdc, 105 to 125Vac, 400 Hz.

**Current Drain (at 25°C, 28Vdc):**  
**DC Coil, 10A contacts:**

**1- and 2-pole:** 135mA maximum.

**AC or DC Coil, 4A contacts:**

**1-pole:** 100mA maximum.

**2-pole:** 150mA maximum.

**3- and 4-pole:** 200mA maximum.

#### Contact Ratings:

**DC Coil, 10A contacts:**

10A resistive @ 30Vdc.

5A inductive @ 30Vdc.

5A resistive @ 115 Vrms, 400 Hz

3A inductive @ 115 Vrms, 400 Hz

**AC or DC Coil, 4A contacts:**

4A resistive @ 30Vdc.

1A inductive @ 30Vdc.

2A resistive @ 115 Vrms, 400 Hz

1A inductive @ 115 Vrms, 400 Hz

### Environmental Specifications

#### Temperature Range:

-55°C to +85°C or -55°C to +125°C.

**Vibration:** 20 G's, 10 - 2,000 Hz.

**Shock:** 50 G's, 11 ± 1ms duration.

**Insulation Resistance:** 1,000 megohms, min., at 500Vdc, all terminals to case.

**Dielectric Strength:** 1,000Vrms, 60 Hz., at sea level, all terminals to case.

**Sealing:** Hermetic, 1.3 in. (33.0mm) of mercury.

**Life:** 100,000 operations, min.

#### Weight:

**4A units:** 4.5 oz (127.6g) max.

**10A units:** 8.5 oz (240g) max.

### Specifications by Model Number – 4 Amp Contact Versions

Fixed Timer Model Number	Adjustable Timer Model Number	Input Voltage	Temperature Range	Housing Length (Dim. "A")	Contact Arrangement
1601	1701	DC	-55°C to +85°C	1.656 [42.06]	1 Form C (SPDT)
1602	1702	DC	-55°C to +85°C	1.656 [42.06]	2 Form C (DPDT)
1603	1703	DC	-55°C to +85°C	2.0 [50.8]	3 Form C (3PDT)
1604	1704	DC	-55°C to +85°C	2.0 [50.8]	4 Form C (4PDT)
1621	1721	DC	-55°C to +125°C	1.656 [42.06]	1 Form C (SPDT)
1622	1722	DC	-55°C to +125°C	1.656 [42.06]	2 Form C (DPDT)
1623	1723	DC	-55°C to +125°C	2.0 [50.8]	3 Form C (3PDT)
1624	1724	DC	-55°C to +125°C	2.0 [50.8]	4 Form C (4PDT)
1651	1751	AC	-55°C to +85°C	2.0 [50.8]	1 Form C (SPDT)
1652	1752	AC	-55°C to +85°C	2.0 [50.8]	2 Form C (DPDT)
1653	1753	AC	-55°C to +85°C	2.375 [60.33]	3 Form C (3PDT)
1654	1754	AC	-55°C to +85°C	2.375 [60.33]	4 Form C (4PDT)
1671	1771	AC	-55°C to +125°C	2.0 [50.8]	1 Form C (SPDT)
1672	1772	AC	-55°C to +125°C	2.0 [50.8]	2 Form C (DPDT)
1673	1773	AC	-55°C to +125°C	2.375 [60.33]	3 Form C (3PDT)
1674	1774	AC	-55°C to +125°C	2.375 [60.33]	4 Form C (4PDT)

### Specifications by Model Number – 10 Amp Contact Versions

Fixed Timer Model Number	Adjustable Timer Model Number	Input Voltage	Temperature Range	Housing Length (Dim. "A")	Contact Arrangement
1610	1710	DC	-55°C to +85°C	2.419 [61.44]	1 Form C (SPDT)
1620	1720	DC	-55°C to +85°C	2.419 [61.44]	2 Form C (DPDT)

### Adjustable Timing Formula (1700 types)

The resistance required to obtain timing within this range is determined by using the formula:

$$R_x = 400K (T/T_{max}) - 40K, \text{ where}$$

$R_x$  = External Resistance in Ohms,

$T$  = Desired Time in Seconds, and

$T_{max}$  = Maximum Time (Code).

A high quality deposited carbon ±1%, 0.1W (min.) resistor is recommended for external resistance.

### Part Numbering System

#### Typical Part Number

1722

-C

-1102

#### Model Number:

Four digit code from table above.

#### Mounting (see outline dimension drawings):

A = Studs on bottom B = Studs on top C = Studs on side

#### Timing Code:

Four-digit code for any value between 50ms and 600s for fixed (1600) timers, and 50ms and 240s for adjustable (1700) timers.

The timing code consists of four digits and gives the time in ms. The first three digits are the significant figures and the last digit is the number of zeros following the significant figures; thus 50 ms would be coded 0500, 1.1 s would read 1101, and 1 m (60 s) would be 6002.

Adjustable timers cover one decade, e.g., 62 ms to 620 ms. The upper decade limit is  $T_{max}$  in the timing formula and is the value defined by the timing code in the part number.

A typical part number for an adjustable timer would be 1722-C-1102. This is a DC unit in the -55°C to +125°C temperature range with a 2 form C (DPDT) contact arrangement in a style "C" mounting, with a maximum time delay of 11s.

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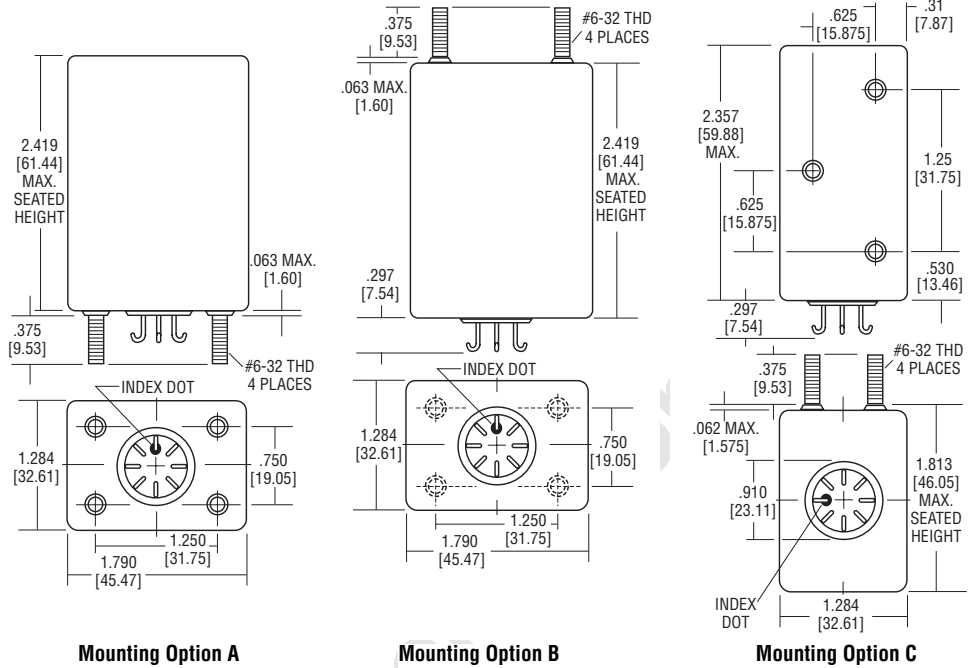
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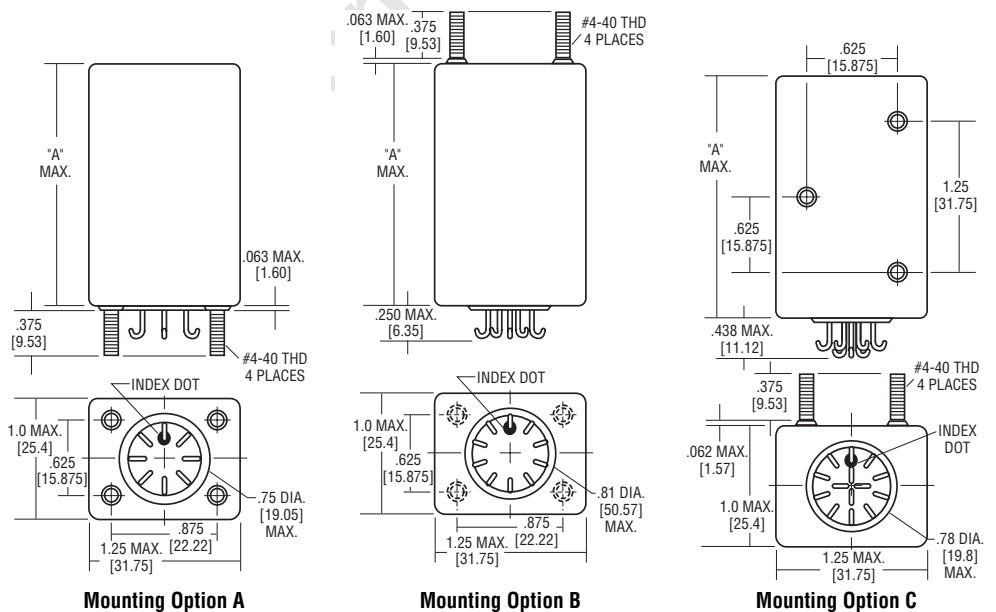
**1600/1700 Series Delay On Operate Timers (Continued)**

**Outline Dimensions**

**10 Amp Units**

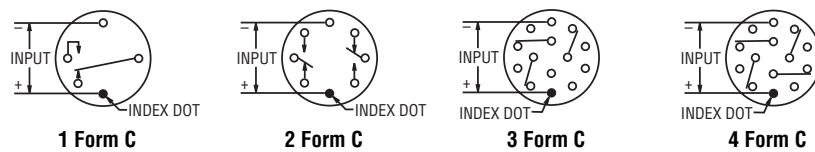


**4 Amp Units**



**Wiring Diagrams**

**1600 Series (Fixed)**



**1700 Series (Adjustable)**

