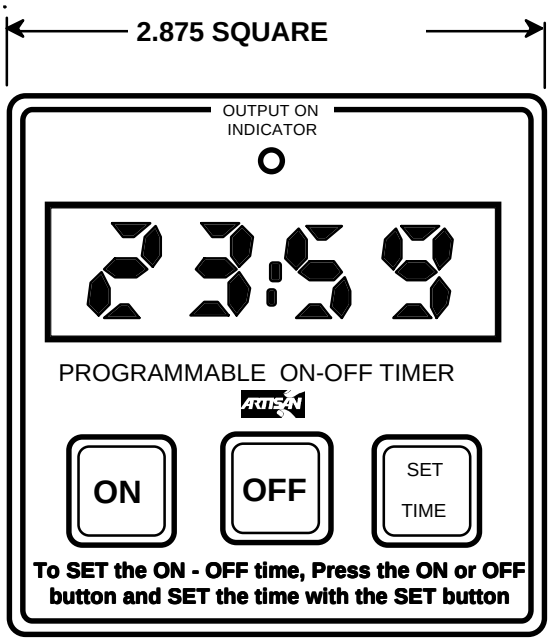
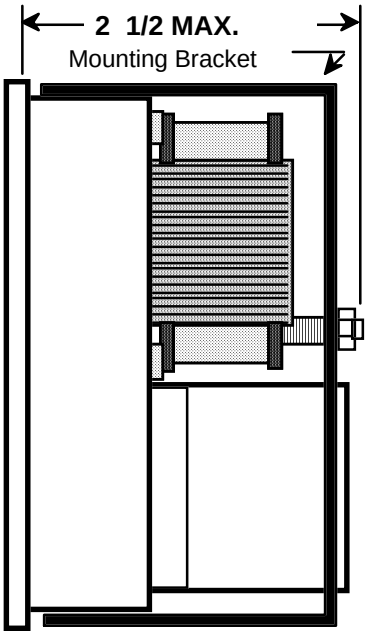
4980 Programmable Repeat Cycle ON - OFF Timer

The model 4980 is a microcontroller based ON - OFF timer with digital display of timing. The 4980 controls a set of high current output contacts in accordance with a pre-programmed ON-OFF schedule which continues for as long as power is applied. During an ON cycle the output relay is energized and the display will countdown to zero, at which time the output relay de-energizes and the OFF period begins. The ON and the OFF time can be programmed to be any time from 1 second to 99 minutes and 59 seconds in 1 second increments. When operating in the ON portion of the ON - OFF cycle, an LED INDICATOR on the front panel will be ON, turning OFF when operating in the OFF portion of the cycle. When the timer is operating in both the ON and OFF portion of the timing cycle the digital display will count down in minutes and seconds. When the time reaches 0 0 : 0 0 the next cycle is automatically displayed and the countdown proceeds. At 0 0 : 0 0 the output contacts reverse their state corresponding to whether an ON or an OFF portion of the cycle is scheduled next. When a timing cycle is in progress, pressing the ON or OFF switch will display the time that was originally programmed. This action in no way interferes with the timing cycle that is in progress. To program a new ON or OFF time the SET TIME switch may be pressed while holding down the ON or OFF switch. The SET TIME switch advances the time only. By holding the SET SWITCH down the speed of the timing change increases permitting rapid programming. As the desired time is approached the SET TIME switch may be tapped to advance the time by increments of 1 second. At 9 9 : 5 9 the time rolls over to 0 0 : 0 0. When finished programming the model 4980 will keep the new time in memory without the aid of batteries. The new programmed time will always begin with the next cycle. Upon powerup, the 4980 can be programmed to complete the last cycle in progress before a power interruption or reset to the beginning of the ON cycle.

Mechanical . . . . . .





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Specifications . . . . . .

Operating Voltage: 12V DC (10V - 18V DC) (-1),
115V AC 50/60Hz. (105V - 135V AC) (-2),
230V AC 50/60Hz. (208V - 250V AC) (-3) See *Ordering Information.*

Operating Current: 300mA maximum for 12V DC model, 3 watts for AC models.

Timing Mode: Programmable Repeat Cycle ON - OFF.

ON - OFF Time Base: Four (4) time base selections can be changed by the user:
000.1 - 999.9 seconds (Code 0 or 4),
00:01 - 99:59 minutes : seconds (Code 1 or 5)
0001 - 9999 seconds (Code 2 or 6),
00:01 - 99:59 hours : minutes (Code 3 or 7).

Time Base Memory: Time base programmed remains as the operating time base even after operating voltage has been interrupted.

Timing Accuracy: ±.5% of ON - OFF setting.

Digital Display: Four (4) digit red LED, 0.5 inch high characters displays the time remaining in both the ON and OFF cycle when in progress.

Timing Cycle Memory: Preset ON - OFF times kept in non-volatile memory, When the timer is programmed with codes 0 - 3, the timing cycle is backed up to the last five (5) second tick for restoration on recovery from a power failure, which can last indefinitely. When the timer is programmed with codes 4 - 7, the timer will always powerup at the beginning of the ON cycle.

Front Panel Indicator: An LED INDICATOR is ON when the ON timing period is in progress and the output contacts energized.

Front Panel Switches: Three (3) momentary push-buttons behind front panel label overlay. Two (2) for selecting the ON or OFF period. One (1) for setting the time.

Output: SPDT Power relay contacts.

Output Contact Rating: Normally Open Contacts: Rated for 20 amperes inductive or resistive at 125 or 240 VAC and 30V DC, 6 amps inductive or resistive at 277 VAC. 2 HP motor load at 240 VAC, 1 HP motor load at 125 VAC, 6 amperes ballast load at 125 or 277 VAC, 60 amps LRA at 240 VAC, 20 amperes FLA at 240 VAC. Normally Closed Contacts: rated for 10 amperes inductive or resistive at 125 or 240 VAC, 3 amps inductive or resistive at 277 VAC, 10 amps inductive or resistive at 30 VDC, 1/2 HP motor load at 240 VAC, 1/4 HP motor load at 125 VAC, 3 amperes ballast load at 125 or 277 VAC, 33 LRA at 240 VAC, 10 amperes FLA at 240 VAC. per UL file #E44211.

Timing Indication: When Min:Sec, or Hrs:Min are selected, the ':' in the display blinks to indicate timing in progress.

Operating Temperature: 0°C to 70° C.

Mounting: 2.62 sq. cutout accepts timer. Timer secured with rear attached bracket & nut. (hardware supplied)

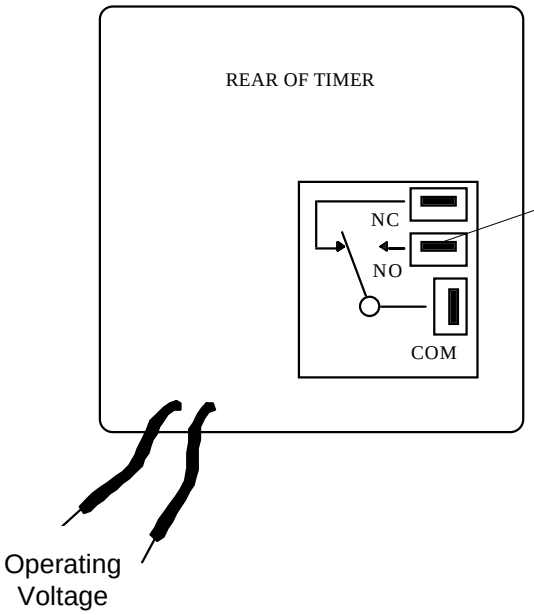
Wiring: Three (3) .25" Quick Connect terminals for power relay connections, two (2) #18 AWG wires, 12 inches long for operating voltage.

Transient Protection: Operating voltage input circuit protected by silicon transient suppressors responding to transients within 1×10^{-12} seconds to a peak pulse power dissipation of 1500 watts, with transient surge currents to 200 amperes for durations up to 1/120 second at 25°C. Maximum transient voltage protection is 6000 volts as delivered through a source resistance of 30 ohms with a maximum duration of 8.3ms.

Data Sheet Revision Date: November 12, 2002

Wiring

Two wires that are already connected to the model 4980 are the operating voltage wires. When operating from DC voltages, there is no need to observe polarity of the plus and minus voltage, merely connect the AC or DC operating voltage to the two wires supplied. The relay contact wiring is found atop the power relay, providing three .25 quick connect terminals for the SPDT contacts. There is no electrical connection between the three relay contacts and the two operating voltage wires.



Changing The Time Base

The model 4980 is shipped from the factory preset to the Code 3 time base of 99:59 Hours : Minutes. To program another time base perform the following steps:

1. Turn OFF the power.
2. Press the OFF button while turning the power ON.
3. Release the button after the display turns ON.
4. A number from 0 to 7 will appear. This number corresponds to:
   - 0 = 000.1 - 999.9 sec, Continue last cycle on powerup.
   - 1 = 00:01 - 99:59 min : sec, Continue last cycle on powerup.
   - 2 = 0001 - 9999 sec, Continue last cycle on powerup.
   - 3 = 00:01 - 99:59 hr : min, Continue last cycle on powerup.
   - 4 = 000.1 - 999.9 sec, Restart to the ON cycle on powerup.
   - 5 = 00:01 - 99:59 min : sec, Restart to the ON cycle on powerup.
   - 6 = 0001 - 9999 sec, Restart to the ON cycle on powerup.
   - 7 = 00:01 - 99:59 hr : min, Restart to the ON cycle on powerup.
5. Use the ON button to select the desired time base code 0 - 7.
6. Turn OFF the power.
7. Wait 2 seconds.
8. Turn ON the power. The model 4980 will remain in the new time base programmed until reprogrammed as above.

Ordering Information

Part Number —	Operating Voltage	Timing Range
4980 -	-1 (12V DC) -2 (120V AC) -3 (230V AC)	All versions of the model 4980 can be programmed with one of four time bases. See *Changing The Time Base* above.

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