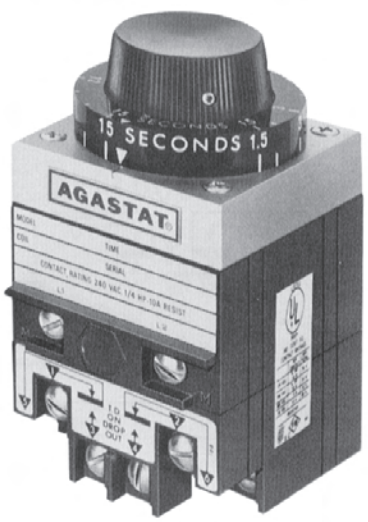
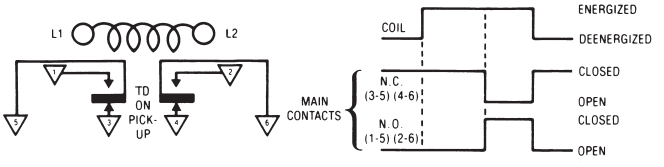
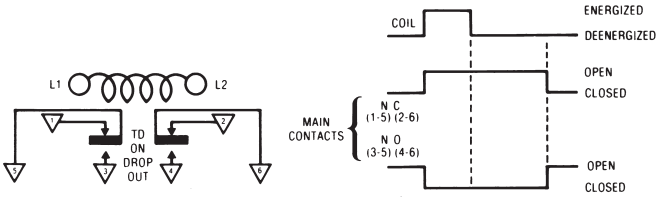
tyco / Electronics

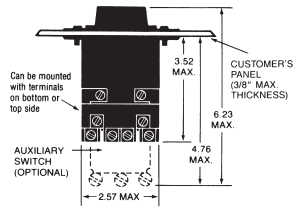




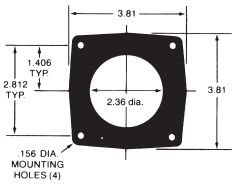
ON-DELAY MODEL 7012
(DELAY ON PICK-UP)



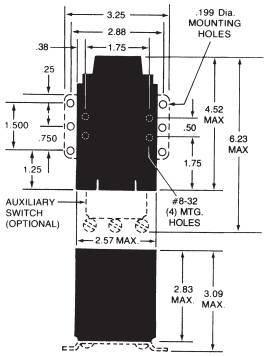
OFF-DELAY MODEL 7022
(DELAY ON DROP-OUT)



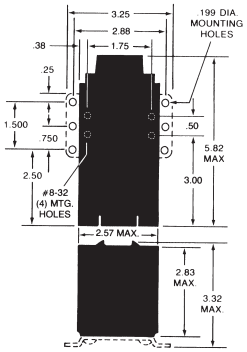
PANEL MOUNT
MODELS



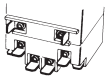
PANEL MOUNT
MODELS



STANDARD
MODELS

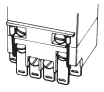


FOUR POLE
MODELS

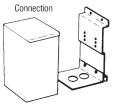


A1
SINGLE

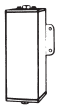
A2
DOUBLE QUICK CONNECT TERMINALS



B
PLUG-IN CONNECTORS

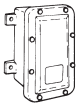


GZ
TOTAL ENCLOSURE



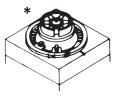
H
HERMETICALLY SEALED ENCLOSURE

I
TAMPER-PROOF COVER

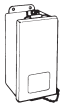


K
EXPLOSIONPROOF ENCLOSURE

P
OCTAL PLUG ADAPTER



S
DIAL STOPS



W
WATERTIGHT ENCLOSURE (NEMA-4)

MODEL CODE

70	1	2	A	D	T	A2
Series	Variation	Contact Arrangement	Coil Voltage	Time Range	Aux. Switch Options	Optional Features or Enclosures
70	**1** On-Delay **2** Off-Delay	**2** Double Pole Double Throw **4** Four Pole Double Throw	**A** 120V 60Hz **B** 240V 60Hz **C** 480V 60Hz **D** 550V 60Hz **E** 24V 60Hz **F** 127V 50Hz **G** 240V 50Hz **H** 12V 60Hz **I** 6V 60Hz **J** 208V 60Hz **K** Dual Voltage (combines A & B) **M** 28VDC **N** 48VDC **O** 24VDC **P** 120VDC	**Models 7012, 7022, 7024** **A** .1 to 1 sec **B** .5 to 5 sec **C** 1.5 to 15 sec **D** 5 to 50 sec **E** 20 to 200 sec **F** 1 to 10 min **H** 3 to 30 min **I** 6 to 60 min **J** 3 to 120 cyc **K** 1 to 300 sec	**L** 1 Form C** **LL** 2 Form C** **T** 1 Form C ** On-Delay Models Only	**A1** Single Quick-Connect Terminals **A2** Double Quick-Connect **B** Plug-in connectors **GZ** Total Enclosure with bottom KO's **H** Hermetically Sealed **I1** Tamper-Proof (Opaque) **I2** Tamper-Proof (Clear) **K** Explosion-Proof **M** Dust-Tight **P** Octal Plug Adapter **S** Dial Stops **W** Water-Tight **X** Panel Mount
		Q 12VDC **R** 60VDC **S** 250VDC **T** 550VDC **U** 16VDC **V** 32VDC **W** 96VDC **Y** 6VDC **Z** 220VDC		**Model 7014** **A** .2 to 2 sec **B** .7 to 7 sec **C** 2 to 20 sec	**D** 10 to 100 sec **E** 30 to 300 sec **F** 1.5 to 15 min **H** 3 to 30 min	

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electro sonic

AGASTAT 7000 SERIES TIME DELAY RELAYS

7000 Series offers distinct improvements over earlier models. The wide range of variations available, the oversize time-calibrated adjustment knobs, and modular assembly are but a few of the features designed into the 7000 Series. All components used in the manufacturing of these relays have been custom-designed for their specific role in the overall timing function—providing stability and repeat accuracy never before available in an electro-pneumatic timer.

The basic operating types are available—"On-Delay" models provide a delay period on energization, at the end of which the switch contacts transfer. De-energizing the unit during the delay period immediately recycles the unit, readying it for another full delay period on re-energization. In "Off-Delay" models, the switch transfers immediately upon energization, and the delay period does not begin until the unit is de-energized. At the end of the delay period the switch returns to its original position. Re-energizing the unit during the delay period immediately recycles the timer, readying it for another delay period on de-energization. No power is required during the timing period. Reset times (maximum): On-Delay models—.050 second; Off-Delay models—.050 second (AC); .100 second (DC).

The AGASTAT 7000 Series offers the ease of adjustment and resetting of the time period by means of a calibrated dial head. Timing is set simply by turning the dial (in either direction) to the desired time value. In the zone of approximately 25˚ separating the high and low ends of timing ranges A, D, E, and K, instantaneous operation (no time delay) will occur. All other ranges produce an infinite time delay when the dial is set in this zone.

Normal mounting of the unit is in a vertical position, from the back of the panel. Four tapped holes are provided in the back plate of the unit, making it interchangeable with earlier AGASTAT models. A front mounting bracket is also supplied with each basic unit, for installation from the front of the panel.

ON-DELAY MODEL 7012 (DELAY ON PICK-UP)

Applying continuous voltage to the coil (L1-L2) starts a time delay lasting for the preset time. During this period the normally closed contacts (3-5 and 4-6) remain closed. At the end of the delay period the normally closed contacts break and the normally open contacts (1-5 and 2-6) make. The contacts remain in this transferred position until the coil is de-energized, at which time the switch instantaneously returns to its original position. De-energizing the coil, either during or after the delay period, will recycle the unit within .050 second. It will then provide a full delay period upon re-energization, regardless of how often the coil voltage is interrupted before the unit has been permitted to "time-out" to its full delay setting.

OFF-DELAY MODEL 7022 (DELAY ON DROP-OUT)

Applying voltage to the coil (for at least .050 second) will instantaneously transfer the switch, breaking the normally closed contacts (1-5 and 2-6), and making the normally open contacts (3-5 and 4-6). Contacts remain in this transferred position as long as the coil is energized. The time delay begins immediately upon de-energization. At the end of the delay period the switch returns to its normal position. Reenergizing the coil during the delay period will immediately return the timing mechanism to a point where it will provide a full delay period upon subsequent de-energization. The switch remains in the transferred position.

FOUR POLE AGASTAT

With the addition of an extra switch block at the bottom of the basic unit, this version of the 7000 series offers four pole switching capacity with simultaneous timing or two step timing. The two step operation is achieved by adjustment to your specifications. In all other respects this 7000 series unit is identical to the other basic models of the series. This additional feature adds only 1¼″ to the height and ⅛″ to the depth.

PANEL MOUNT AGASTAT

Combines the proven performance and reliability of the 7000 series electropneumatic operation with the modern design and adjustability of a panel-mounted timer. All the time ranges are calibrated directly in linear increments. Simple single hole mounting. Specifications and operation identical to the standard 7000 series timers. To designate panel mount add "X" to part number when ordering.

AGASTAT 7000 SERIES TIME/DELAY/RELAY, FRONT PANEL MOUNT
8 Watts, DPDT contacts, 10 Amps (resistive)

Cat. No.	Input Voltage	Time Range	Option	Net Price
TIME DELAY ON PULL-IN				
7012-AA	120VAC	.1 to 1 Sec.	—	**$339.69**
7012-AB	120VAC	.5 to 5 Sec.	—	**344.57**
7012-AC	120VAC	1.5 to 15 Sec.	—	**301.48**
7012-AD	120VAC	5 to 50 Sec.	—	**344.57**
7012-AE	120VAC	20 to 200 Sec.	—	**344.57**
7012-AF	120VAC	1 to 10 Min.	—	**380.94**
7012-AH	120VAC	3 to 30 Min.	—	**393.07**
7012-AI	120VAC	6 to 60 Min.	—	**429.48**
7012-AK	120VAC	1 to 300 Sec.	—	**344.57**

AGASTAT 7000 SERIES TIME/DELAY/RELAY, FRONT PANEL MOUNT
8 Watts, DPDT contacts, 10 Amps (resistive)

Cat. No.	Input Voltage	Time Range	Option	Net Price
TIME DELAY ON PULL-IN (CONTINUED)				
7012ACL	120VAC	1.5 to 15 Sec.	Aux. Switch Instant Transfer	**$380.94**
7012BC	240VAC	1.5 to 15 Sec.	—	**344.57**
7012NC	48VAC	1.5 to 15 Sec.	—	**373.68**
7012PA	125VDC	.1 to 1 Sec.	—	**373.68**
7012PB	125VDC	.5 to 5 Sec.	—	**373.68**
7012PK	125VDC	1 to 300 Sec.	—	**373.68**
7012PC	125VDC	1.5 to 15 Sec.	—	**373.68**
7012PD	125VDC	5 to 50 Sec.	—	**373.68**
7012PF	125VDC	1 to 10 Min.	—	**410.09**
7012PJ	125VDC	3 to 120 Hz	—	**373.68**
7012PJX	125VDC	3 to 120 Hz	Panel Mount Horizontal	**414.93**

AGASTAT 7000 SERIES TIME/DELAY/RELAY, FRONT PANEL MOUNT
8 Watts, DPDT contacts, 10 Amps (resistive)

Cat. No.	Input Voltage	Time Range	Option	Net Price
TIME DELAY ON DROP-OUT				
7022-AA	120VAC	.1 to 1 Sec.	—	**$344.57**
7022-AB	120VAC	.5 to 5 Sec.	—	**344.57**
7022-AC	120VAC	1.5 to 15 Sec.	—	**301.48**
7022-AD	120VAC	5 to 50 Sec.	—	**344.57**
7022-AE	120VAC	20 to 200 Sec.	—	**344.57**
7022-AF	120VAC	1 to 10 Min.	—	**380.94**
7022-AH	120VAC	3 to 30 Min.	—	**393.07**
7022-AI	120VAC	6 to 60 Min.	—	**429.48**
7022-AK	120VAC	1 to 300 Sec.	—	**344.57**
7022BC	240VAC	1.5 to 15 Sec.	—	**344.57**
7022PB	125VDC	.5 to 5 Sec.	—	**373.68**
7022PK	125VDC	1 to 300 Sec.	—	**373.68**
7022PC	125VDC	1.5 to 15 Sec.	—	**373.68**

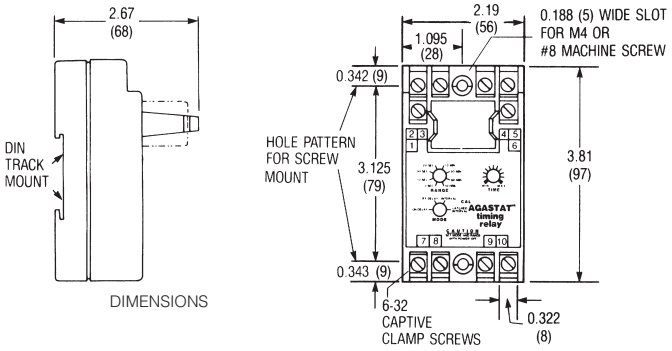
AUXILIARY SWITCH OPTIONS

Auxiliary switches may be added to switch additional circuits, provide two-step timing action or furnish electrical interlock for sustained coil energization from a momentary impulse, depending on the type selected and its adjustment. Because of their simple attachment and adjustment features, they can be installed at the factory or in the field. All auxiliary switches are SPDT with contact rated at 10 amperes at 125 volts, AC.

FOR 7012 & 7012-X MODELS (T.D. on pull-in); For instant transfer use model code **"L" Auxiliary switch kit.** This switch is non-adjustable. For two step timing, use model code **"T" Auxiliary switch kit.** The first delay is independently adjustable, up to 30% of the overall delay (recommended maximum 100 seconds).

FOR 7022 & 7022-X Models (T.D. on drop-out); For either instant transfer or two step timing, use model code **"T" Auxiliary switch kit.** The switch is factory adjusted to give instant transfer operation, but may be easily adjusted in the field to provide two step timing. The first delay is independently adjustable, up to 30% of the overall delay (recommended maximum 100 seconds).

FOR 7012 & 7012-X MODELS (T.D. on pull-in); This Auxiliary switch provides two form C contacts for instantaneous transfer, use model code **"LL" Auxiliary switch.**

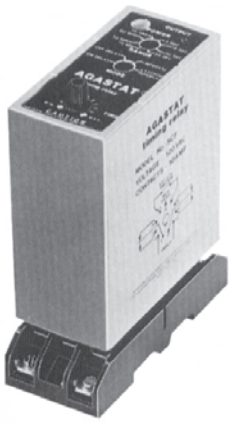


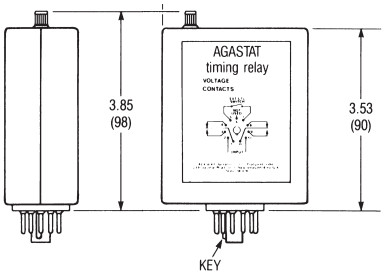
AGASTAT SERIES SSF UNIVERSAL TIMERS

The Series SSF heavy duty timer offers four user-selectable timing modes, and a choice of eight timing ranges. One universal unit accommodates seven standard operating voltages through the selection of the appropriate plug-in DPDT output relay. In addition, SSF timers offer high repeat accuracy, outstanding transient protection and reliable performance. Designed for surface, DIN rail or machine tool relay channel mounting, they feature front screw terminals and can be precisely set by the TC-1 calibrator. Operating Modes: 1 On-Delay, 2 Off-Delay, 3 Interval, 4 Latching Interval. Mode Selection: Screwdriver adjustment; Recessed 4-position selector switch. Range Selection: Screwdriver adjustment; Recessed 8-position selector switch. Timing Adjustment: Potentiometer adjustment with reference calibrations, with recessed screwdriver slot. Timing Ranges: .1-3 sec., .33-10 sec., 1-30 sec., 4-120 sec., 33-10 min., 1-30 min., 2-60 min., and .33-10 hrs. Accuracy Overall: ±3%. Reset Time (All Modes): 0.100 sec. Relay Release Time: Types 1 and 3, 0.030 sec. (with factory installed relay). Relay Operating Time: Types 2, 3, 4, 0.040 sec. (with factory installed relay). Mounting Terminals: Surface or DIN rail mounting case with screw terminals. Output: DPDT Relay 10 amps Resistive, 28VDC/120VAC 1/3 HP, 120/240VAC 345 VA.

Cat. No.	Operating Voltage/ Description	Net Price
SSFR90A	120VAC 50/60Hz., 10 amps	**$151.08**
SSFR90X*	Universal (Relay Dependent)	**144.88**

***NOTE:** The unit requires a user supplied P&B K10 series output relay with a coil voltage of 24, 48, 120 or 240 VAC or 24, 48 or 125VDC.

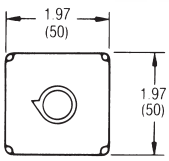


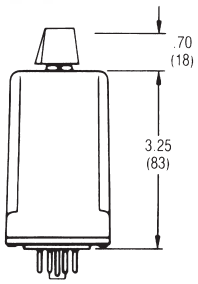


AGASTAT SERIES SCF MULTI-MODE MULTI-RANGE PLUG-IN TIMERS

The series SCF external plug-in timer provides a wide choice of operating voltages with a minimum of inventory—reducing maintenance and downtime costs. It offers four user-selectable timing modes and a span of 0.1 second to 10 hours through eight overlapping time ranges, plus easy screwdriver setting ±1% repeat accuracy. An external knob allows adjustment within each time range. An 11-pin octal socket is also available for surface or DIN rail mounting. The timer may be quickly and precisely set with the TC-1 calibrator. Operating Modes: 1 On-Delay, 2 Off-Delay, 3 Interval, 4 Latching Interval. Mode Selection: Screwdriver adjustment; Recessed 4-position selector switch. Time Selection: Screwdriver adjustment; Recessed 8-position selector switch. Timing Adjustment: Potentiometer adjustment with reference calibrations, with external knob. Timing Ranges: .1-3 sec., .33-10 sec., 1-30 sec., 4-120 sec., .33-10 min., 1-30 min., 2-60 min., and .33-10 hrs. Reset Time (All Modes): 0.035 sec. Mounting/Terminals: 11-Pin octal type plug for use with mating socket.

Cat. No.	Operating Voltage/ Description	Net Price
SCFRX902BA	120VAC 50/60Hz./125VDC, 5 amps.	**$180.46**
ACCESSORY		
BCSF11SC	11-Pin Octal Socket For SCF.	**21.01**





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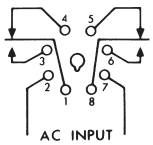
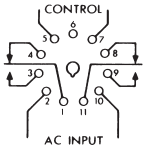
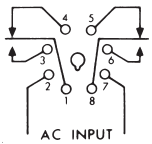


WIRING DIAGRAMS
MODEL SSC12



MODEL SSC22



MODEL SSC32

AGASTAT SSC SERIES TRANSIENT PROTECTED INDUSTRIAL SOLID STATE TIMING RELAYS

The AGASTAT SSC Series Timing Relays provide industrial control designers the accuracy and reliability of military grade solid state timers at industrial price levels. Through improved circuit design, they eliminate many of the problems associated with low cost R-C timers—a transistorized voltage sensing circuit does away with large-value dropping resistors, reducing the internal heat which destroys the accuracy and shortens the life of conventional design. Current drain is correspondingly minimized—25 mA maximum for 120 VAC units. The unique circuit also eliminates the need for supplementary temperature-compensation components, providing unusual stability over a broad operating temperature range of –30˚C to +65˚C. Under typical conditions, repeat accuracy falls within ±1% of set time. SSC Series timers from Electro Sonic's stocks have a nominal operating voltage of 120 VAC (50-60 Hz), with a voltage tolerance of +10%, –15%. Other operating voltages are available to special order. Standard models are transient protected. Contacts are DPDT, rated 10 amps resistive. Dielectric strength: 1000 VAC between terminals and case between mutually-isolated terminals. All models are housed in a nylon plug-in case, 1.97″ square × 3.95″ high (including adjustment knob).

MODEL SSC12—120 VAC 50-60 Hz & 120 VDC DELAY ON ENERGIZATION POTENTIOMETER ADJUST

Applying line voltage to pin #2 and #7 initiates the time delay. Contacts transfer at the end of the timing cycle. Output resets within .02 seconds (maximum) after removal of line voltage. Voltage must be removed and reapplied to recycle the timer. In contrast to conventional delay-on-energization units, this circuit incorporates **protection against premature output switching when power is removed prior to time out.** 8-pin octal base.

Cat. No.	Timing Range	Net Price
SSC12AAA	.1 to 3 Sec.	**$113.16**
SSC12ABA	.5 to 15 Sec.	**113.16**
SSC12ACA	1 to 30 Sec.	**113.16**
SSC12AFA	6 to 180 Sec.	**110.40**
SSC12AGA	10 to 300 Sec.	**113.16**
SSC12AIA	2 to 60 Min.	**113.16**
SSC12ALA	20 Sec. to 10 Min.	**113.16**

MODEL SSC22—120 VAC 50-60 Hz & 120 VDC DELAY ON DE-ENERGIZATION POTENTIOMETER ADJUST

Input voltage must be applied continuously or at least 0.050 second to pins #2 and #10 before Control Switch closure. Closure of a dry switch (not supplied) across pins #5 and #7 simultaneously transfers the output and resets the timer. Maximum rest time 0.025 seconds. Switch must remain closed for at least 25 milliseconds for timer to be within specifications. Operating switch initiates the time delay, after which the output drops out. Control (switch) may be reapplied immediately to begin a new cycle. If control is re-applied during the time delay, the timer will be reset to zero but the output will remain energized. 11-pin octal base.

Cat. No.	Timing Range	Net Price
SSC22ABA	.5 to 15 Sec.	**$139.28**
SSC22ACA	1 to 30 Sec.	**139.28**
SSC22AGA	10 to 300 Sec.	**139.28**

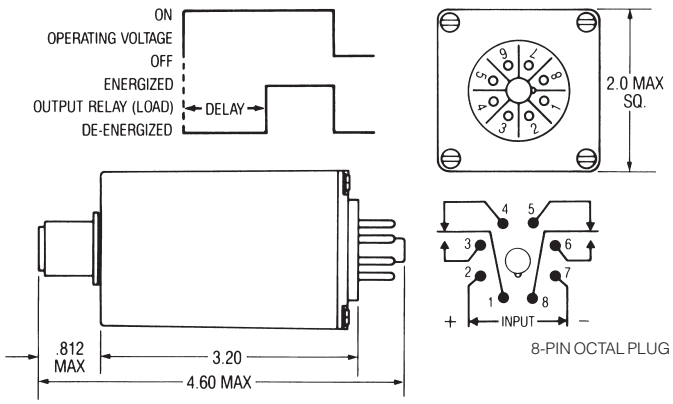
MODEL SSC32—120 VAC 50-60 Hz & 120 VDC DELAY ON ENERGIZATION WITH INSTANT TRANSFER POTENTIOMETER ADJUST

Applying line voltage to Pins #2 and #7 simultaneously transfers the output and initiates the time delay. At the end of the timing period the output returns to its original position. If line voltage is removed during or after the time delay, the output will reset within .025 seconds (maximum). To recycle the timer, line voltage must be removed and reapplied. 8-pin octal base.

Cat. No.	Timing Range	Net Price
SSC32ACA	1 to 30 Sec.	**$134.92**

AGASTAT SST SERIES TRANSIENT PROTECTED INDUSTRIAL SOLID STATE TIMING RELAYS

Fast, easy setting with time-calibrated knob is yours with these versatile timing controls. Digital timing circuitry assures high repeat accuracy. Time delays to 60 minutes. Superior transient protection. 8 or 11-pin plug-in. Rugged construction. Flame-retardant housing. Operating Voltage: 120VAC (50-60 Hz), with a voltage tolerance of ±10%. Standard models are transient protected. Dielectric: 1500 volts RMS min. @ 60 Hz between contacts and circuitry and between line inputs and control circuits.

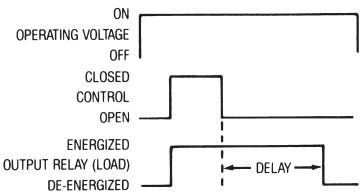


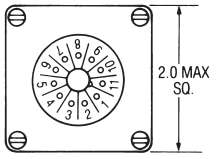
ALL DIMENSIONS IN INCHES

MODEL SST1—120 VAC 50-60 Hz. ON DELAY

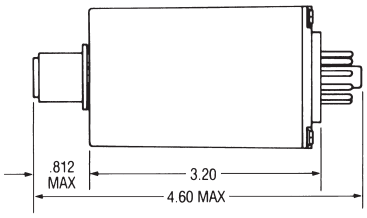
The preset time-delay begins when operating voltage is applied. At the end of the preset time delay, the output relay (load) is energized and remains energized until operating voltage is removed. To reset, remove operating voltage.

Cat. No.	Timing Range	Net Price
SST12AAA	0.1-10 Sec.	**$56.02**
SST12ADA	1.8-180 Sec.	**56.02**
SST12AEA	3-300 Sec.	**57.42**

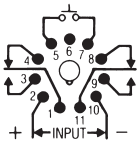




EXTERNAL CONTROL SWITCH (ZERO VOLTAGE)



ALL DIMENSIONS IN INCHES

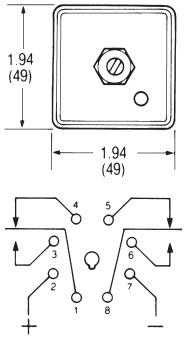


11-PIN OCTAL PLUG

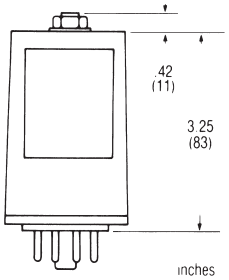
MODEL SST2—120 VAC 50-60 Hz. OFF DELAY

Operating voltage is applied continuously. The output relay (load) is energized when a normally-open control switch is closed (the load remains energized as long as the control switch is closed). When the control switch is re-opened, the preset time-delay begins. At the end of the preset time-delay, the output relay (load) de-energizes. If the control state is reversed during the time-delay period, the delay generating circuit automatically resets to zero. To reset, close the control switch.

Cat. No.	Timing Range	Net Price
SST22AAA	0.1-10 Sec.	**$63.04**
SST22ADA	1.8-180 Sec.	**63.04**
SST22AGA	18 Sec.-30 Min.	**63.04**



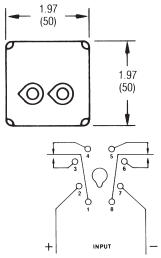
WIRING DIAGRAM
SOCKETS AVAILABLE
8-PIN OCTAL TYPE SOCKET:
BCSA08SC

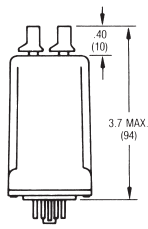


AGASTAT SERIES VMA UNDERVOLTAGE RELAY

The AGASTAT solid state undervoltage relays protect valuable equipment in DC or single phase AC systems. Two features assure operation only when adequate voltage is available: a calibrated adjustment for the drop out point and a fixed, rather than a floating, pick/up point. The solid state sensing circuit is coupled to an internal DPDT relay for positive load control, with an integral time delay to prevent nuisance tripping. A built in LED signals adequate voltage. Solid state circuitry accuracy and long life. Automatic reset minimizes equipment downtime. **PICK-UP:** VMAXAA 104 Volts. **DROP-OUT RANGE:** VMAXAA 78-99 Volts. **OPERATING TEMPERATURE RANGE:** –30˚C to +65˚C. **POWER CONSUMPTION:** 4 Watts max. **DIELECTRIC:** 1480 VOLTS. **OPERATING LIFE OPERATIONS:** Electrical 10,000,000; Mechanical 100,000.

Cat. No.	Description	Net Price
VMAXAA	120VAC	**$152.35**





WIRING DIAGRAM
SOCKETS AVAILABLE
8-PIN OCTAL TYPE SOCKET:
BCSA08SC

AGASTAT SRC SERIES DUAL FUNCTION REPEAT-CYCLE TIMER

The Series SRC Dual-Function Repeat-Cycle Timer permits the industrial-control designer to simplify and cost-reduce his systems by combining in one unit both ON and OFF control of a load. It is for applications requiring repetitive ON/OFF cycles of independently variable durations. Advanced circuitry uses high-rel IC's and premium discrete-component protective and timing circuits for high accuracy, stability, and long-term reliability. Its design also provides exceptional immunity to line transient, even in high-stress environments. A premium-quality timer at an industrial-grade price. Time Adjustment: Dual internal potentiometers with individual knobs. Nylon case with 8-pin phenolic base. Output: DPDT Relay 10 amps., resistive, 28 VDC/120 VAC. ⅓ HP, 120/240 VAC. Currect Drain: Output relay energized 0.015 amp, de-energized 0.005 amp.

120 VAC & DC

Cat. No.	Off-Time* Timing Range	Net Price
SRC72ABBA	.5 to 15 sec.	**$169.85**
SRC72ANNA	1 to 30 min.	**169.85**

*Insert code for desired On-Time Range as follows: A-.1 to 3 Sec.; B-.5 to 15 Sec.; C-1 to 30 Sec.; D-2 to 60 Sec.; E-4 to 120 Sec.; F-6 to 180 Sec.; G-10 to 300 Sec.; 1-2 to 60 Min.; K-6 to 180 Cycles.; L-20 Sec. to 10 Min.; M-30 Sec. to 15 Min.; N-1 to 30 Min.; P-.1 to 10 Sec.

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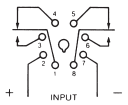
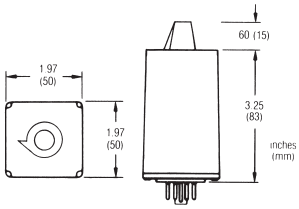
PRICES SUBJECT TO CHANGE WITHOUT NOTICE, APPLICABLE TAXES NOT INCLUDED

electro sonic





AGASTAT SCE SERIES TRUE OFF-DELAY TIMING RELAY

The AGASTAT SCE Series industrial timing relays provide true off-delay. Timing is initiated upon removal of power. These timers offer excellent transient immunity, and delays of up to 10 minutes. Repeat accuracy is typically better than ±1%.

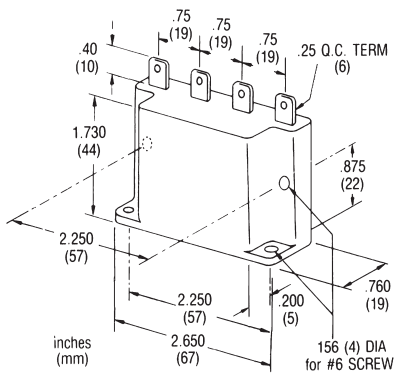
Upon application of operating voltage, output relay contacts transfer. When operating voltage is removed, after the time delay period, output relay contacts release. If operating voltage is re-applied prior to expiration of the delay period, the delay will be cancelled and output relay contacts will remain transferred.

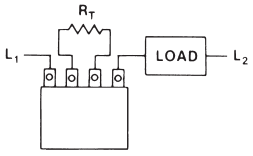
OPERATING VOLTAGE: 120V 50/60 Hz or 125 VDC (+10, –15%). **ACCURACY:** Repeat accuracy ±1%. **TIME ADJUSTMENT:** Knob adjustment. **MOUNTING/TERMINALS:** Eight pin octal type plug.

AGASTAT SCE SERIES TRUE OFF-DELAY TIMING RELAY

Cat. No.	Timing Range	Operating Range	Net Price
SCERX22AAA	0.1 to 3 sec.	120V 50/60 Hz or 125 VDC	**$163.22**
SCERX22ABA	0.5 to 15 sec.		**163.22**
SCERX22ACA	1 to 30 sec.		**163.22**
SCERX22AGA	10 to 300 sec.	120V 50/60 Hz or 125 VDC	**163.22**
SCERX22ALA	20 sec. to 10 min.		**163.22**

NOTE: Knob Adjust.



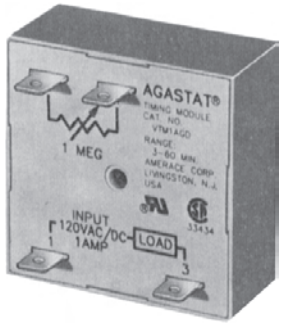


AGASTAT VTM IN-LINE TIMING MODULE

The **AGASTAT VTM** in-line Timing Module provides, in a simple, compact design, remarkable economy, exceptional simplicity, and unprecedented application flexibility. Wired in series with a load circuit, it will control inductive loads of up to 1 Amp, RMS AC or DC. Connecting a resistor of a predetermined value across the centre terminals provides tamperproof delay setting. The VTM will accommodate power-circuit voltages from 24V to 240V, RMS AC or DC. Cost is low compared with conventional TDR's. **OUTPUT:** Solid state SPNO, 1 ampere inductive at nominal operating voltage. **RESISTIVE RATING:** 166 mA AC, 250 mA DC. **INRUSH:** 10 amps for .010 sec. **TIMING ADJUSTMENT:** The time delay period is determined by the connection of a resistor across the centre two terminals. Add 10K ohms of resistance for every additional second of delay required. Maximum delay 1000 seconds. FOR EXAMPLE: 5 seconds = 40K ohms, 10 seconds = 90K ohms. When using variable resistance on centre terminals, lead length must not exceed 6˝. **CURRENT DRAIN:** .002 amp. (max.). **TERMINALS:** Four ¼˝ quick-connect terminals for input line, load output and timing resistor connection. **ACCURACY REPEAT OVERALL:** ±2%; **RESET TIME, SECONDS:** 0.1; **TEMPERATURE RANGE, OPERATING:** –30˚C to +65˚C.

AGASTAT VTM SERIES TIMING MODULES

Cat. No.	Input Voltage	Mode of Operation	Net Price
VTM-1	24-240V AC/DC	**ON DELAY**—VTM-1 in-line timing module is wired in series with the load circuit. Time delay is initiated when power is applied to the series network. Connecting a resistor across the centre terminals provides tamper-proof setting of time delay from 1-1000 seconds.	**$55.43**



AGASTAT VTM SERIES INDUSTRIAL GRADE SOLID STATE MINIATURE TIMING MODULES

The AGASTAT VTM Industrial Grade Solid State Miniature Timing Modules are designed for demanding industrial applications. Time delays to 10 hours. Reliable solid state timing circuitry. Superior transient protection. Compact design. Flame-retardant, solvent-resistant housing. **OUTPUT** VTM1, VTM2, VTM3, VTM4 and VTM7: Solid State, SPNO, 1 amp. @ nominal. **INRUSH:** Not to exceed 20 amps. for 1 cycle, non-repetitive. **TIMING ADJUSTMENT** VTM1, VTM2, VTM3, VTM4 and VTM7: External Potentiometer or Resistor. **CURRENT DRAIN** VTM1: 2mA max., VTM2, VTM3, VTM4 and VTM7: Less than 5mA. **MOUNTING/TERMINALS:** Surface mount with one #8 screw ¼˝ × 0.032˝ male quick-connect terminals. **REPEAT ACCURACY:** ±1% at constant temperature. **RESET TIME** VTM1: 100 milliseconds max. before time-out, 10 milliseconds max. after time-out, VTM2, VTM3 and VTM4: 50 milliseconds max., VTM7: 150 milliseconds max. **OPERATING TEMPERATURE:** –40˚F to +150˚F (–40˚C to +65.5˚C).

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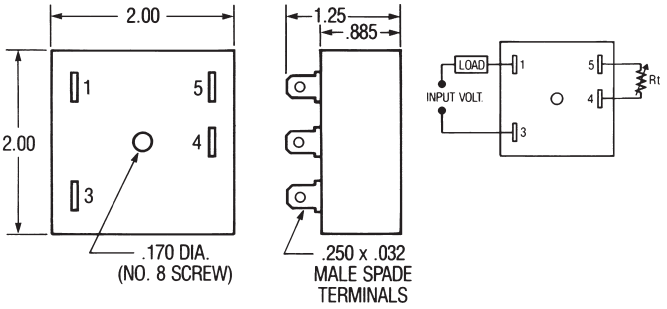
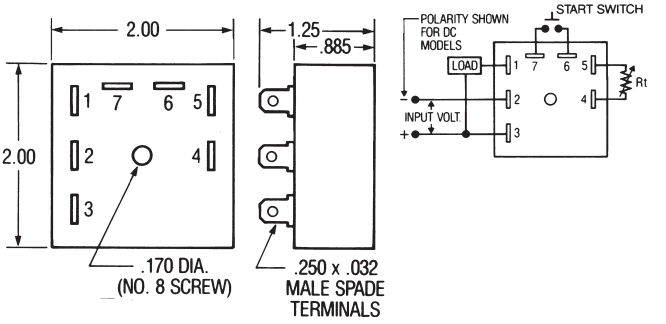


MODEL VTM1 ON-DELAY MINIATURE TIMING MODULES

The time-delay begins when input voltage is applied. At the end of the time-delay the load is energized and remains energized until voltage is removed. To reset, remove input voltage. 1 megohm external resistance is required to obtain the maximum time for all ranges.

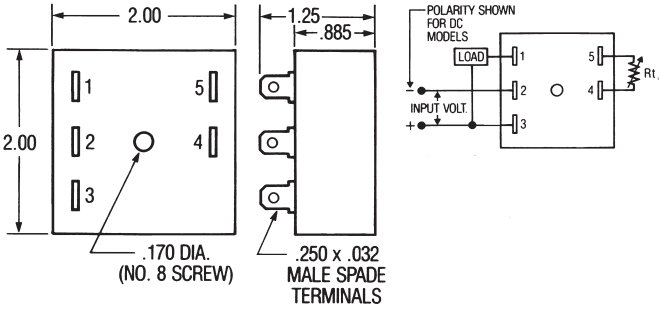
Cat. No.	Input Voltage	Time Range	Net Price
VTM1ACD	120VAC/VDC	0.5-10 sec.	**$29.77**
VTM1ECD	24VAC/VDC	0.5-10 sec.	**29.77**
VTM1EDD	24VAC/VDC	3-60 sec.	**29.77**
POT1MV	Accessory Potentiometer		**19.30**



MODEL VTM2 OFF-DELAY MINIATURE TIMING MODULES

Input voltage is applied continuously. The load is energized when a normally-open control switch is closed (the load remains energized as long as the control switch is closed). When the control switch is re-opened the time-delay begins. At the end of the time-delay the load de-energizes. If the control state is reversed during the time-delay period, the delay generating circuit automatically resets to zero. To reset, close the control switch. 1 megohm external resistance is required to obtain the maximum time for all ranges.

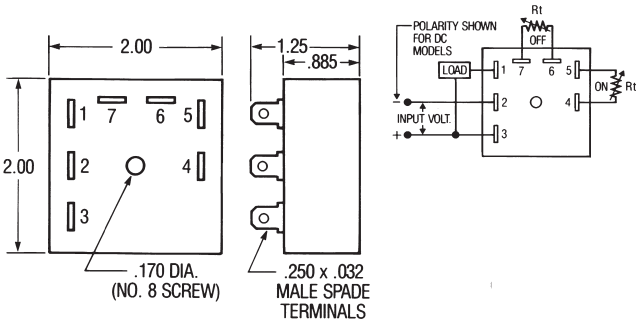
Cat. No.	Input Voltage	Time Range	Net Price
VTM2ADD	120VAC	3-60 sec.	**$33.28**
VTM2ECD	24VAC/VDC	0.5-10 sec.	**33.28**
POT1MV	Accessory Potentiometer		**19.30**



MODEL VTM3 INTERVAL MINIATURE TIMING MODULES

When input voltage is applied the time-delay begins and the load is energized simultaneously. At the end of the time-delay the load de-energizes. To re-set, remove input voltage. 1 megohm external resistance is required to obtain the maximum time for all ranges.

Cat. No.	Input Voltage	Time Range	Net Price
VTM3ADD	120VAC	3-60 sec.	**$29.77**
VTM3ECD	24VAC/VDC	0.5-10 sec.	**30.52**
POT1MV	Accessory Potentiometer		**19.30**

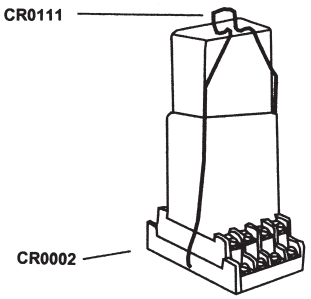


MODEL VTM7 REPEAT CYCLE MINIATURE TIMING MODULES

When input voltage is applied the off-time-delay begins. When the off-time-delay ends, both the load is energized and the on-time-delay begins. When the on-time-delay ends, both the load de-energizes and a new cycle (off-time-delay) begins. Off and On cycles will continue until input voltage is removed. To reset, remove input voltage. 1 megohm external resistance is required to obtain the maximum time for all ranges.

Cat. No.	Input Voltage	Time Range
VTM7ACD	120VAC	0.5-10 sec.
POT1MV	Accessory Potentiometer	

NOTE: Contact your Electro Sonic sales representative for pricing.



AGASTAT GP POWER RELAYS

Rating: 10 amps. Power rating: 6 watts. Contact arrangement: 4PDT. DC resistance in ohms: 2600. Input VDC: 125.

Cat. No.	Description	Net Price
SOCKET/CHASSIS MOUNT		
GPD	Power Relay	**$204.18**
SOCKET/CHASSIS MOUNT, W/MAGNETIC BLOW-OUT		
GPDN	Power Relay	**269.66**
SCREW TERMINAL SOCKET		
CR0002	Screw terminal socket for GP series relays has #6 binding head screw for connections	**47.28**
HOLD DOWN SPRING		
CR0111	Hold down spring for use with GP series relays and CR0002 screw terminal socket	**22.35**

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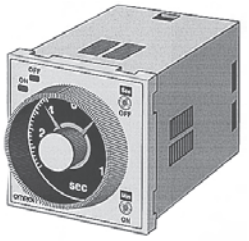
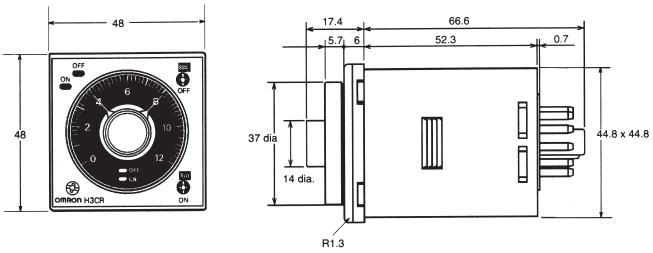


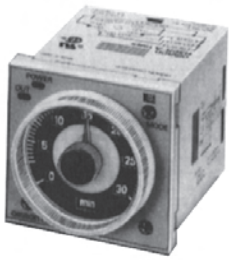


DIN 48 × 48-MM SOLID-STATE TWIN TIMERS

FEATURES:
- Wide power supply ranges of 100 to 240 VAC and 48 to 125 VDC respectively.
- Independent ON- and OFF-time settings. Furthermore, combinations of long ON- or OFF-time and short OFF- or ON-time settings are possible.
- Fourteen time ranges from 0.05 s to 30 h or from 1.2 s to 300 h depending on the model to be used.
- Models with a flicker ON start or flicker OFF start are available.
- Easy sequence checks through instantaneous outputs for a zero set value at any time range.
- Approved by UL and CSA.
- Only 80 mm long when panel-mounted with a socket.
- 11-pin and 8-pin models are available.

H3CR-F SOLID STATE TWIN TIMER

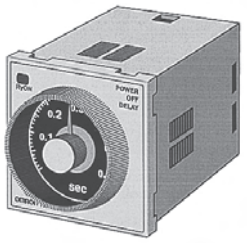
Cat. No.	Description	Net Price
H3CR-F—FLICKER OFF START		
H3CR-F AC/DC 24	Dial timer, repeat cycle, 0.05S-30H, 11 PIN	**$108.00**
H3CR-F AC100/240	Dial timer, repeat cycle, 0.05S-30H, 11 PIN	**108.00**
H3CR-F DC12	Dial timer, repeat cycle, 0.05S-30H, 11 PIN	**108.00**
H3CR-F-300 AC/DC24	Dial timer, repeat cycle, 1.2S-300H, 11 PIN	**108.00**
H3CR-F-300 AC100/240	Dial timer, repeat cycle, 1.2S-300H, 11 PIN	**108.00**
H3CR-F8 AC/DC24	Dial timer, repeat cycle, 0.05S-30H, 8 PIN	**108.00**
H3CR-F8 AC100/240	Dial timer, repeat cycle, 0.05S-30H, 8 PIN	**108.00**
H3CR-F8 DC12	Dial timer, repeat cycle, 0.05S-30H, 8 PIN	**108.00**
H3CR-F8-300 AC100/240	Dial timer, repeat cycle, 1.2S-300H, 8 PIN	**108.00**
H3CR-F—FLICKER ON START		
H3CR-FN AC100/240	Dial timer, repeat cycle, 0.05S-30H, 11 PIN	**108.00**
H3CR-F8N AC/DC24	Dial timer, repeat cycle, 0.05S-30H, 8 PIN	**108.00**
H3CR-F8N AC100/240	Dial timer, repeat cycle, 0.05S-30H, 8 PIN	**108.00**
H3CR-F8N DC12	Dial timer, repeat cycle, 0.05S-30H, 8 PIN	**108.00**
H3CR-F8N-300 AC100/240	Dial timer, repeat cycle, 1.2S-300H, 8 PIN	**108.00**

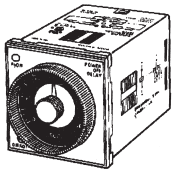


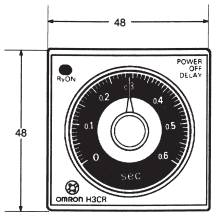
H3CR MULTIFUNCTIONAL TIMER
WITH MANY TIME RANGES AND OPERATING MODES AND A WIDE AC POWER SUPPLY RANGE

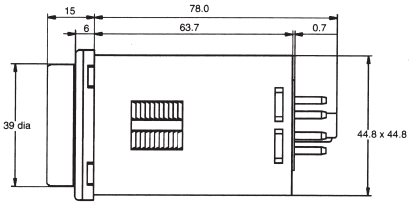
FEATURES:
- 48 x 48-mm DIN size.
- A wide AC power supply range (100 to 240 VAC) reduces the number of timer models kept in stock.
- Handles a wide range of applications through six operating modes.
- Enables easy sequence checks through instantaneous outputs for a zero set value.
- Only 80 mm long when panel-mounted with a Socket.

Cat. No.	Description	Net Price
H3CR-A AC24-48/DC12-48	Dial Timer Multimode 24 VDC/AC, Relay Output	**$84.00**
H3CR-A AC100-240/DC100-125	Dial Timer Multimode 100/240VAC, Relay Output	**84.00**
H3CR-A DC12	Dial Timer Multimode 12VDC, Relay Output	**84.00**
H3CR-A8 AC24-48/DC12-48	Dial Timer, On-Delay 24VDC/AC, Relay Output	**81.00**
H3CR0-A8 AC100-240/DC100-125	Dial Timer, On-Delay 100/240VAC, Relay Output	**81.00**
H3CR-A8 DC12	Dial Timer, On-Delay 12VDC, Relay Output	**81.00**







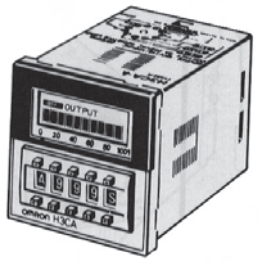


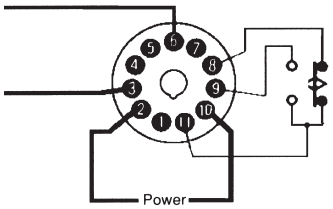
DIN 48 × 48-MM SOLID-STATE POWER OFF-DELAY TIMER

FEATURES:
- Long power OFF-delay times; S-series: up to 12 seconds, M-series: up to 12 minutes.
- Models with forced-reset input are available.
- 11-pin and 8-pin models are available.
- Approved by UL and CSA.

H3CR-H SOLID STATE OFF DELAY TIMER

Cat. No.	Description	Output	Net Price
H3CR-HRL-AC120-S	Dial timer 0.5S-12S, 11 pin	DPDT	**$108.00**
H3CR-H8LAC/DC24-M	Dial timer 0.5M-12M, 8 pin	DPDT	**108.00**
H3CR-H8LAC/DC24-S	Dial timer 0.5S-12S, 8 pin	DPDT	**108.00**
H3CR-H8L-AC120-M	Dial timer 0.5M-12M, 8 pin	DPDT	**108.00**
H3CR-H8L-AC120-S	Dial timer 0.5S-12S, 8 pin	DPDT	**108.00**
H3CR-H8L-AC240-M	Dial timer 0.5M-12M, 8 pin	DPDT	**108.00**
H3CR-H8L-AC240-S	Dial timer 0.5S-12S, 8 pin	DPDT	**108.00**
H3CR-H8RL-AC120-M	Dial timer 0.5M-12M, 8 pin	SPDT	**108.00**
H3CR-H8RL-AC120-S	Dial timer 0.5S-12S, 8 pin	SPDT	**108.00**





(AC/DC)

SOLID-STATE TIMERS
H3CA MULTI-FUNCTION DIGITAL-SET TIMER
WITH 0.1 SECOND TO 9,990 HOUR TIME RANGE

FEATURES:
- Eight field-selectable operation modes
- Universal AC/DC supply voltage timers available
- Operations include ON-delay, repeat cycle, signal interval/OFF-delay, signal-OFF delay, interval, cycle and signal ON-delay/Off-delay
- Selectable dry contact start, reset, gate and check inputs expand capabilities
- Time remaining LCD bar graph and LCD output status indicator

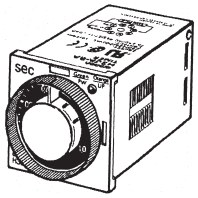
MULTI-FUNCTION, DIGITAL-SET TIMERS

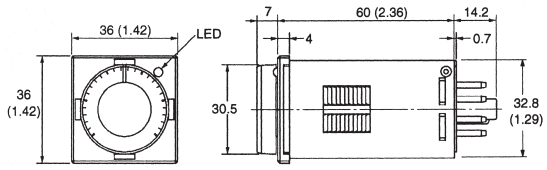
Cat. No.	Operating Voltage	Time Range	Contact Type	Net Price
H3CA-8H-AC100-110-120	100,110,120 VAC	0.1S to 9990 HR	3A-SPDT	**$133.00**
H3CA-8H-AC24	AC24	0.1S to 9990 HR	3A-SPDT	**133.00**
H3CA-8H-DC24	DC24	0.1S to 9990 HR	3A-SPDT	**133.00**
H3CA-8-AC100-110-120	100,110,120 VAC	0.1S to 9990HR	3A-DPDT	**133.00**
H3CA-8-AC24	AC24	0.1S to 9990HR	3A-DPDT	**133.00**
H3CA-8-DC24	DC24	0.1S to 9990HR	3A-DPDT	**133.00**
H3CA-A	24 to 240 VAC 12 to 240 VDC	0.1S to 9990 HR	3A-DPDT	**158.00**

TIMER ACCESSORIES

Cat. No.	Description	Net Price
PANEL MOUNTING ADAPTERS		
Y92F-30	Fits behind panel, ideal for side by side installation. Use P3G sockets	**$8.30**
Y92F-70	Installs through panel front: timer face fits bezel, rear of timer clips to adapter. Use P3G sockets. Fits 65-66 mm (2.56-2.59 in) x 52-53 mm (2.04-2.09 in) panel cutout. Charcoal gray face plate measures 88H x 58 W mm (3.46 x 2.28 in).	**9.90**
Y92F-71	Installs through panel front; timer face fits bezel, rear of timer clips to adapter. Use P3G sockets. Fits 55 x 45 mm (2.17 x 1.77 in) panel cutout. Charcoal gray face plate measures 58 H x 50 W mm (2.28 x 1.97 in). For use with H38 timers only.	**8.30**
TIME SETTING RING		
Y92A-Y1	Use one or two lock-in settings	**2.90**
PROTECTIVE COVER		
PFP-50N	DIN Rail, 50cm (1.64 ft) length	**9.30**
PFP-100N	DIN Rail, 1m (3.28 ft) length	**15.60**
PFP-M	End Plate	**2.00**
PFP-S	Spacer	**.84**

Cat. No.	Description	Net Price
8-PIN SOCKETS FOR H3BA-8, H3BA-8H, H3BBF-8, H3BH-8, H3BH-8R, 83CA-8, H3CA-8H TIMERS		
P2CF-08	Bottom surface or track mounting, top screw terminals	**$9.80**
P3G-08	Back mounting, for use with Y92F-30 mounting adapter, bottom screw terminals.	**14.90**
11-PIN SOCKETS FOR H3BA AND H3CA-A TIMERS		
P2CF-11	Bottom surface or track mounting, top screw terminals	**11.70**
P3GA-11	Back mounting, for use with Y92F-30 mounting adapter, bottom screw terminals.	**17.10**





H3JA SOLID STATE TIMER

FEATURES:
- Replacement timer for the H3G series
- Economical, compact, plug-in timer
- Time limit, ON-delay, operation with automatic resetting
- DIN size (36mm x 36mm), fits standard 8-pin sockets
- Wide choice of sully voltages: 24, 100 to 120, 200 to 240VAC, 12 24, VDC
- Dual LED indication for power and output status
- Large transparent setting knob

Cat. No.	Rated Time*	Time-Limit Contact	Operation Resetting System	Net Price
SURFACE, FLUSH, AND DIN TRACK MOUNTING				
H3JA-8A AC100-120	1s, 3s, 5s, 10s, 30s, 60s, 5 min, 10 min, 30 min, 60 min, 3 hrs	SPDT	Time-limit operation/ self-resetting	**$38.60**
H3JA-8A AC200-240	1s, 3s, 5s, 10s, 30s, 60s, 5 min, 10 min, 30 min, 60 min, 3 hrs	SPDT	Time-limit operation/ self-resetting	**38.60**
H3JA-8A AC24	1s, 3s, 5s, 10s, 30s, 60s, 5 min, 10 min, 30 min, 60 min, 3 hrs	SPDT	Time-limit operation/ self-resetting	**38.60**
H3JA-8A DC12	1s, 3s, 5s, 10s, 30s, 60s, 5 min, 10 min, 30 min, 60 min, 3 hrs	SPDT	Time-limit operation/ self-resetting	**38.60**
H3JA-8A DC24	1s, 3s, 5s, 10s, 30s, 60s, 5 min, 10 min, 30 min, 60 min, 3 hrs	SPDT	Time-limit operation/ self-resetting	**38.60**
H3JA-8C AC100-120	1s, 3s, 5s, 10s, 30s, 60s, 5 min, 10 min, 30 min, 60 min, 3 hrs	DPDT	Time-limit operation/ self-resetting	**42.60**
H3JA-8C AC200-240	1s, 3s, 5s, 10s, 30s, 60s, 5 min, 10 min, 30 min, 60 min, 3 hrs	DPDT	Time-limit operation/ self-resetting	**42.60**
H3JA-8C AC24	1s, 3s, 5s, 10s, 30s, 60s, 5 min, 10 min, 30 min, 60 min, 3 hrs	DPDT	Time-limit operation/ self-resetting	**42.60**
H3JA-8C DC24	1s, 3s, 5s, 10s, 30s, 60s, 5 min, 10 min, 30 min, 60 min, 3 hrs	DPDT	Time-limit operation/ self-resetting	**42.60**

*Add rated time to the end of the Cat. No., ex = **H3JA-8A AC100-12030S**.

RECOMMENDED EQUIVALENTS

From H3BA	To	H3CR
H3BA-	USE	H3CR-A-
H3BA-8-	USE	H3CR-A8
H3BA-8H-	USE	H3CR-A8EL

RECOMMENDED EQUIVALENTS

From H3BF	To	H3CR
H3BF-8-	USE	H3CR-F8

RECOMMENDED EQUIVALENTS

From H3BH	To	H3CR
H3BH-8-	USE	H3CR-H8L
H3BH-8R-	USE	H3CR-H8RL

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PRICES SUBJECT TO CHANGE WITHOUT NOTICE, APPLICABLE TAXES NOT INCLUDED

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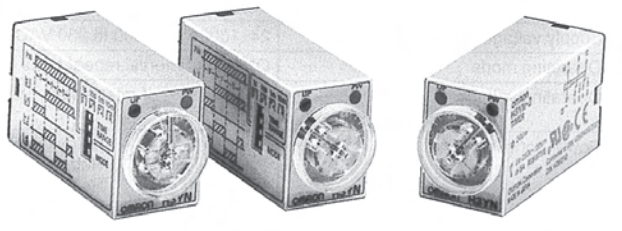
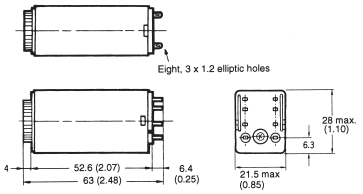
ACCESSORIES

Cat. No.	Description		Net Price
PF083A-E	Sockets	Bottom surface or track mounting, top screw terminals, molded standoff ring	**$7.10**
PF085A		Bottom surface or track mounting, top screw terminals	**10.10**
P3G-08		Back mounting for use with Y92F-31 mounting adapter, bottom screw terminals	**14.90**
Y92F-31	Panel Mounting Adapter	Fits behind panel. Use P3G-08 socket.	**5.50**
PFP-50N	Mounting Track	DIN rail, 50 cm (1.64 ft) length	**9.30**
PFP-100N		DIN rail, 1 m (3.28 ft)length	**15.60**
PFP-M		End plate	**2.00**
PFP-S		Spacer	**.84**

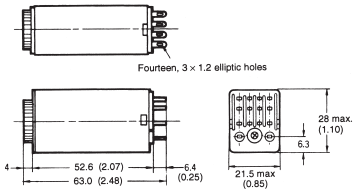
REPLACEMENT PARTS

Cat. No.	Description	Net Price
Y92H-6	Timer hold-down clips, one pair	**$1.50**





H3YN-2/-21 FRONT MOUNTING



H3YN-4/-41 FRONT MOUNTING

H3YN SOLID-STATE TIMERS

MINIATURE TIMER WITH MULTIPLE TIME RANGES AND MULTIPLE OPERATING MODES

FEATURES: Minimize inventory. Standard multiple operating models and multiple time ranges. 4PDT or DPDT control output. LED power-ON and time-UP indicators. Sockets, hold-down clips and mounting accessories may be ordered separately.

Cat. No.	Supply Voltage	Time Range	Contact Type	Net Price
H3YN-2-AC120 **H3YN-2-AC24** **H3YN-2-DC110** **H3YN-2-DC12** **H3YN-2-DC24**	120 VAC 24VAC 110VDC 12VDC 24VDC	Short (0.1 s to 10 min)	DPDT 5A	**$66.00** **66.00** **66.00** **66.00** **66.00**
H3YN-21-AC120 **H3YN-21-AC24** **H3YN-21-DC110** **H3YN-21-DC12** **H3YN-21-DC24**	120VAC 24VAC 110VDC 12VDC 24VDC	Long (0.1 min to 10 hr)	DPDT 5A	**66.00** **66.00** **66.00** **66.00** **66.00**
H3YN-4-AC120 **H3YN-4-AC24** **H3YN-4-DC110** **H3YN-4-DC12** **H3YN-4-DC24**	120VAC 24VAC 110VDC 12VDC 24VDC	Short (0.1 s to 10 min)	4PDT 3A	**72.00** **72.00** **72.00** **72.00** **72.00**
H3YN-41-AC120 **H3YN-41-AC24** **H3YN-41-DC12** **H3YN-41-DC24**	120VAC 24VAC 12VDC 24VDC	Long (0.1 min to 10 hr)	4PDT 3A	**72.00** **72.00** **72.00** **72.00**

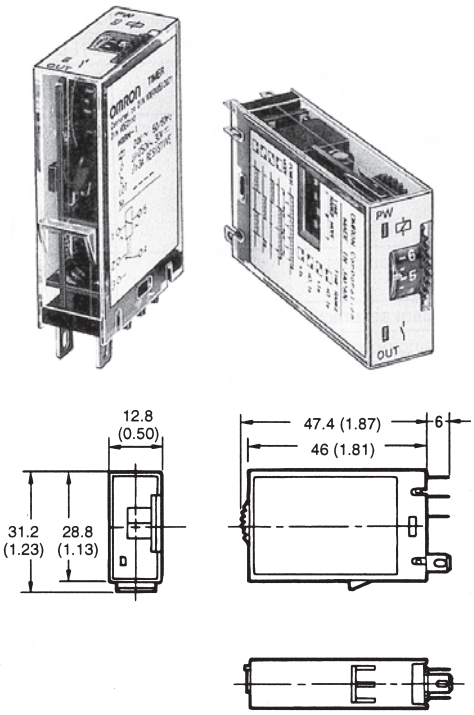
ACCESSORIES

CONNECTING SOCKET FOR H3YN TIMERS

Cat. No.	Use With Solid State Timer	Net Price
TRACK MOUNTING/FRONT CONNECTING SOCKET		
PYF08A	H3YN-2/-21	**$8.01**
PYF14A	H3YN-4/-41	**12.40**
BACK CONNECTING SOCKET, SOLDER TERMINAL		
PY08	H3YN-2/21	**2.50**
PY14	H3YN-4/-41	**2.90**
BACK CONNECTING SOCKET, WIRE-WRAP TERMINAL		
PY08-QN	H3YN-2/21	**7.60**
PY14-QN	H3YN-4/-41	**9.80**
BACK CONNECTING SOCKET, PC TERMINAL		
PY08-02	H3YN-2/21	**2.50**
PY14-02	H3YN-4/-41	**2.90**

HOLD-DOWNCLIPS FOR CONNECTING SOCKETS ABOVE

Cat. No.	Applicable Socket	Net Price
Y92H-3	PYF08A-E, PYF08A-N, PYF14A-E, PYF14A-N (Pair)	**$1.50**
Y92H-4	PY08, PY08QN(2), PY08-02, PY14, PY14QN(2), PY14-02	**1.50**



H3RN SOLID-STATE TIMERS

ULTRA-SLIM TIMER FOR G2R RELAY SOCKET

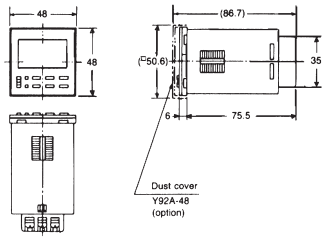
FEATURES: Multiple operating modes, DIP switch selectable, ON-delay, interval, Repeat cycle ON-start/OFF-start. Standard multiple time ranges: Short range (0.15 to 10 min.), Long range (0.1 min to 10 hrs.). Pin configuration compatible with G2R Relay and mounts to the P2R/P2RF Sockets.

Cat. No.	Supply Voltage	Time Range	Contact Type	Net Price
H3RN-1-AC24 **H3RN-1-DC24** **H3RN-1-DC12**	24VAC 24VDC 12VDC	Short (0.1 s to 10 min.)	SPDT 3A	**$66.00** **66.00** **66.00**
H3RN-11-AC24 **H3RN-11-DC12** **H3RN-11-DC24**	24VAC 12VDC 24VDC	Long (0.1 min to 10 hr.)	SPDT 3A	**66.00** **66.00** **66.00**
H3RN-2-AC24 **H3RN-2-DC12** **H3RN-2-DC24**	24VAC 12VDC 24VDC	Short (0.1 s to 10 min.)	DPST-NO 3A	**66.00** **66.00** **66.00**
H3RN-21-AC24 **H3RN-21-DC12** **H3RN-21-DC24**	24VAC 12VDC 24VDC	Long (0.1 min to 10 hr)	DPST-NO 3A	**66.00** **66.00** **66.00**

ACCESSORIES

CONNECTING SOCKET FOR H3RN TIMERS

Cat. No.	Use With Solid State Timer	Net Price
TRACK MOUNTING/FRONT CONNECTING SOCKET		
P2RF-05-E	H3RN-1/-11	**$6.10**
P2RF-08-E	H3RN-2/-21	**10.50**



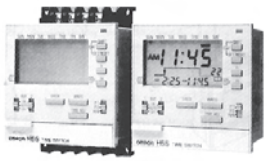
DIMENSION
(ALL UNITS IN MM)
H5F-B
(FLUSH MOUNTING TYPE)

H5F DAILY TIMER
FOR PRECISE TIMER CONTROL

FEATURES:
- Precise control of both regular and special (e.g., half-day operation) ON/OFF times.
- Can be set for timed or pulsed operation and for multiple-day operation
- Two mounting types available: flush or track mounting.
- Timing chart displayed for at-a-glance confirmation.
- DIN-sized 48 x 48 mm.
- Pulse duration from 1 s to 59 m.

DIGITAL DAILY TIME CLOCK

Cat. No.	Timing Function	Contact Type	Supply Voltage	Net Price
H5F-B	On/Off Daily Operation	15A-SPST-NO	100 to 240 VAC	**$185.00**
H5F-KB	On/Off Daily Operation	15A-SPST-NO	100 to 240 VAC	**185.00**



H5S TIMER
PROVIDES PROMPTED PROGRAMMING, FLEXIBILITY IN PROGRAMS WITHIN THE WEEK

FEATURES:
- AM/PM display
- 24 program steps with quartz accuracy.
- A different program possible each day. Backup battery protects memory for 5 years.
- Field-adjustable ON/OFF cycle and pulse output.
- Easy to use prompted programming
- Pulse duration from 1 s to 59 m
- Protective cover and other accessories may be ordered separately

DIGITAL WEEKLY TIME CLOCKS

Cat. No.	Timing Function	Contact Type	Supply Voltage	Net Price
H5S-B	On/Off, Cycle	15A-SPST-N.O.X2	100 to 240 VAC	**$287.00**
H5S-FB	Operations up to one week	15A-SPST-N.O.X2	100 to 240 VAC	**287.00**

ACCESSORIES

Cat. No.	Description	Net Price
Y92A-72C	Hard Plastic Cover	**$9.90**
Y92F-90	Track Mounting Adapter for H5S-FB	**9.90**
PFP-50N	Mounting Track 50 cm (1.64 ft) length	**9.30**
PFP-100N	1 m (3.28 ft) length	**15.60**
PFP-M	End plate	**2.00**

H5CN 1/16 DIN, QUARTZ TIMER
WITH FOUR-DIGIT LED DISPLAY

FEATURES:
- Five wide ranges to choose from
- Wide-range AC or DC supply voltages
- Elapsed time (UP) or time remaining (DOWN) display available
- Selectable no-voltage reset and gate inputs expand capabilities
- Memory protection circuit available on AC models; order back-up battery separately from accessories
- Easy-to-read 8 mm-high LED display
- Panel mounting adapter, sockets, and accessories may be ordered separately

Cat. No.	Timing Function	Display Type	Net Price
H5CN-XAN-AC100/240	ON-Delay	Elapsed time (up)	**$231.00**
H5CN-XBN-AC100/240	ON-Delay	Elapsed time (up)	**231.00**
H5CN-XCN-AC100/240	ON-Delay	Elapsed time (up)	**231.00**
H5CN-YAN-AC100/240	ON-Delay	Time Remaining (down)	**231.00**
H5CN-YBN-AC100/240	ON-Delay	Time Remaining (down)	**231.00**
H5CN-YCN-AC100/240	ON-Delay	Time Remaining (down)	**231.00**
H5CN-YDN-AC100/240	ON-Delay	Time Remaining (down)	**231.00**

Terminal Form = 8-pin Round Socket, Contact Type = SPDT Relay

TIMER SOCKETS

OMRON TIMER SOCKET SELECTION GUIDE

Cat. No.	Description	Net Price
SOCKETS FOR H3G-8A, H3G-8C		
PF083A-E	Track Mounting, Top Screw terminals (Molded stand-off ring)	**$7.10**
PF085A	Track Mounting, Top Screw terminals	**10.10**
SOCKETS FOR H3Y2		
PYF08A-E	Track Mounting, Top Screw terminals	**6.10**
PY08	Back Mounting, Solder Terminals	**2.50**
PY08-0	Back Mounting, PCB Terminals	**2.50**
SOCKETS FOR H3Y-4		
PYF14A-E	Track Mounting, Top Screw terminals	**9.80**
PY14	Back Mounting, Solder Terminals	**2.90**
PY14-0	Back Mounting, PCB Terminals	**2.90**
8-PIN SOCKETS FOR H3BF-8, H3BH-8, H3BH-8R, H3CA-8, H3CA-8H, H3C4-A8, H3CR-H8RL, H3CR-H8L, H3CR-F8, H3CR-F8N, H3CR-F8300, H3CR-		
P2CF-08	Bottom surface or track mounting, top screw terminals	**9.80**
P3G-08	Back mounting, for use with Y92F-30 mounting adapter, bottom screw terminals	**14.90**
11-PIN SOCKETS FOR H3CA-A, 83CR-A, H3CR-F, H3CR-FN TIMERS		
P2CF-11	Bottom surface or track mounting, top screw terminals	**11.70**
P3GA-11	Back mounting, for use with Y92F-30 mounting adapter, bottom screw terminals	**17.10**

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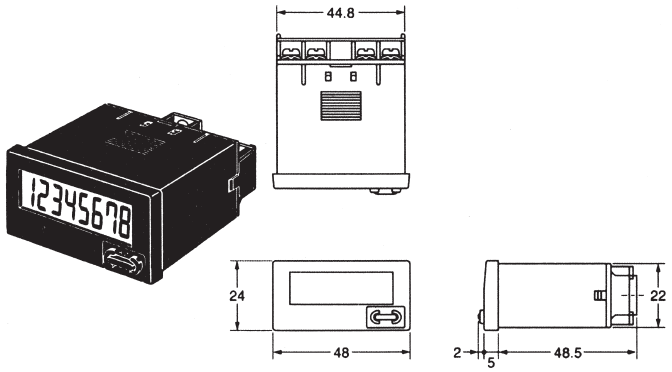


H7EC-N

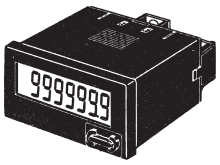
NOTE: All units are in millimeters unless otherwise indicated.

H7EC-N MINIATURE TOTALISING COUNTER

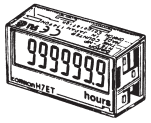
FEATURES:
- Sub-miniature (1/32 DIN size) 48 × 24mm
- Choose black or ivory body (front panel mounting models only)
- Large, 8-digit LCD (8.6mm digit height)
- AC, DC and No-voltage input types available
- Panel mount type has user-replaceable lithium cell
- Optional 28-pin socket for PCB mount type
- Backlight function on "-H" models (use separate 24VDC power)
- Front panel "Reset" key may be disabled

Cat. No.	Reset	Count Speed	Count Input	Net Price
PANEL MOUNT, SELF-POWERED				
H7EC-N	Electrical/Manual	30Hz/1kHz	No-voltage	**$82.00**
H7EC-NV	Electrical/Manual	30Hz/1kHz	DC-voltage	**82.00**
H7EC-NV-H	Electrical/Manual	30Hz/1kHz	DC-voltage	**88.00**
H7EC-NFV	Electrical/Manual	20Hz	AC/DC voltage	**102.00**
PCB MOUNT				
H7EC-NP	Electrical	30Hz/1kHz	No-voltage	**57.00**
H7EC-NLP	Electrical	30Hz/1kHz	No-voltage	**57.00**

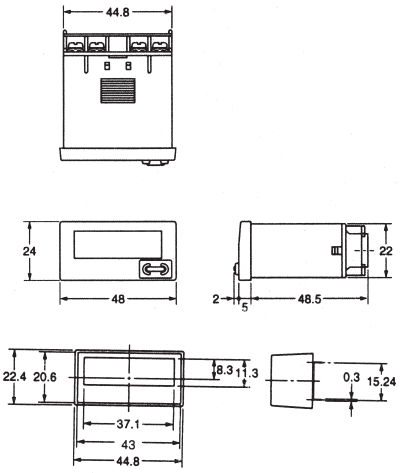
NOTE: For black body model, please add **"-B"** to the end of the Cat. No. (Panel Mount models only).



H7ET-N



FLUSH MOUNTING
H7ET-NP



NOTE: All units are in millimeters unless otherwise indicated.

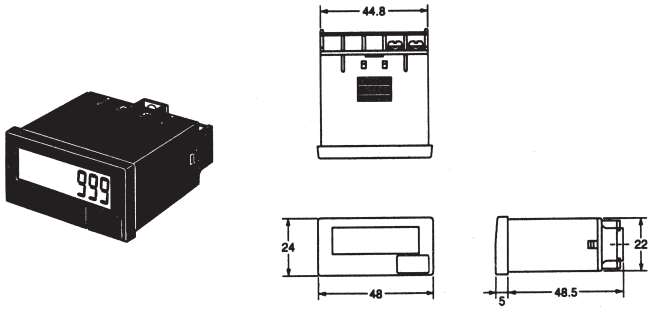
H7ET-N MINIATURE TIME TOTALISER

FEATURES:
- Sub-miniature (1/32 DIN size) 48 × 24mm
- Choose black or ivory body (front panel mounting models only)
- Large, 7-digit LCD (8.6mm digit height)
- AC, DC and No-voltage input types available
- Panel mount type has user-replaceable lithium cell
- Optional 28-pin socket for PCB mount type
- Backlight function on "-H" models (use separate 24VDC power)
- Front panel "Reset" key may be disabled

Cat. No.	Counter Input	Time Display	Net Price
PANEL MOUNT, SELF-POWERED			
H7ET-N	No-voltage	999.9h or 3999d23.9h	**$96.00**
H7ET-N1	No-voltage	999h59m59s or 9999h59.9m	**96.00**
H7ET-NV	DC-voltage	9999.9h or 3999d23.9h	**96.00**
H7ET-NV1	DC-voltage	999h59m59s or 9999h59.9m	**96.00**
H7ET-NV-H	DC-voltage	9999.9h or 3999d23.9h	**102.00**
H7ET-NV1-H	DC-voltage	999h59m59s or 9999h59.9m	**97.00**
H7ET-NFV	AC/DC voltage	9999.9h or 3999d23.9h	**111.00**
H7ET-NFV-1	AC/DC voltage	999h59m59s or 9999h59.9m	**111.00**

Cat. No.	Reset	Count Input	Time Display	Net Price
PCB MOUNT				
H7ET-NP	Electrical	No-voltage	999999.9h	**$63.00**

NOTE: For black body model, please add **"-B"** to the end of the Cat. No. (Panel Mount models only).



H7ER-N

NOTE: All units are in millimeters unless otherwise indicated.

H7ER-N MINIATURE TACHOMETER

FEATURES:
- Sub-miniature (1/32 DIN size) 48 × 24mm
- Choose black or ivory body
- Large, 4 or 5-digit LCD (8.6mm digit height)
- DC and No-voltage input types available
- Self-powered via a user-replaceable lithium cell
- Backlight function on "-H" models (use separate 24 VDC power)

Cat. No.	No. of Digits	Count Input	Max. Count Speed	Max. RPM Display (Applicable Encoder Resolution)	Net Price
H7ER-N	4	No-voltage	1kHz	100 rps (1 pulse/rev) or 1000 rpm (60 pulses/rev)	**$108.00**
H7ER-NV	4	DC-voltage	1kHz		**108.00**
H7ER-NV-H	4	DC-voltage	1kHz		**113.00**
H7ER-NV1	5	DC-voltage	10kHz	1000.Orps (10 pulses/rev) or 1000.0 rpm (600 pulses/rev) or 10000 rpm (60 pulses/rev)	**108.00**
H7ER-NV1-H	5	DC-voltage	10kHz		**113.00**

NOTE: For black body model, please add **"-B"** to the end of the Cat. No.

ACCESSORIES FOR H7ER-N SERIES

Cat. No.	Description	Net Price
Y92S-36	Lithium battery for H7ER-N	**$11.90**
Y92S-37	Wire-wrap terminal adapter (set of two)	**2.90**
Y92F-75	Flush mounting adapter (fits 26 × 45mm rectangular cut-out)	**5.80**
Y92F-77B	Flush mounting adapter (fits 24.8 × 48.8mm rectangular cut-out)	**5.80**

H7BR

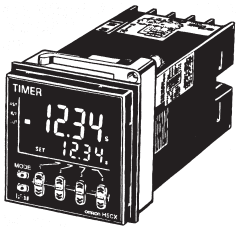
H7BR MULTI-FUNCTION DIGITAL COUNTERS

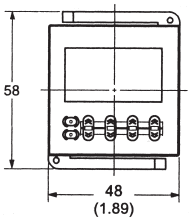
WITH BACKLIT LCD DISPLAY FOR HIGH-TECH PANELS

FEATURES:

- Backlit LCD display for high-tech panels
- Compact 72 mm (2.83 in.) square counters include single and double preset types, +/– range types
- Contact and transistor outputs available simultaneously.
- Selectable counting speeds help prevent counting errors
- User-specified scaling allows analog measurement in units such as distance
- Compensation setting with external input allows accurate position control
- Compensation count
- No. of digits 6
- Pre-scale range 0.001 to 99.999
- Sensor power supply 12 or 24 VDC SELECTABLE
- Count speed SELECT 30, 1K, 5K, 10K cps

Cat. No.	Operation	Input type	No. of presets	Batch count avail	Net Price
H7BR-B-AC100-240	UP, DOWN	NO VOLTAGE	1	YES	**$471.00**
H7BR-BV-AC24/DC12-24	UP, DOWN	VOLTAGE	1	YES	**471.00**
H7BR-BW-AC100-240	UP, DOWN	NO-VOLTAGE	2	YES	**501.00**
H7BR-BWV-AC24/DC12-24	UP, DOWN	VOLTAGE	2	YES	**501.00**
H7BR-C-AC100-240	REVERSIBLE	NO VOLTAGE	1	NO	**501.00**
H7BR-CWV-AC100-240	REVERSIBLE	VOLTAGE	2	NO	**530.00**



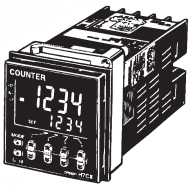


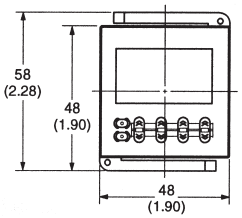
H5CX MULTIFUNCTION DIGITAL TIMER

FEATURES:

- Advanced 1/16 DIN digital timer with multiple functions in one unit
- 11 field selectable timing models for a wide variety of applications
- Twin-timer function included in one unit to meet a wide range of cyclic control applications
- Programmable display colour to alert any output status change
- Major parameters can be set via DIP switches
- PNP/NPN selectable input
- Wide time range from 0.001 second to 9999 hours
- Key protect function
- NEMA 4/IP66 front

Cat. No.	Classification	Output Type	Net Price
H5CX-A AC100-240	Standard type—screw terminals	Contact	**$220.00**
H5CX-AD AC24/DC12-24	Standard type—screw terminals	Contact	**220.00**
H5CX-AS AC100-240	Standard type—screw terminals	Transistor	**220.00**
H5CX-ASD AC24/DC12-24	Standard type—screw terminals	Transistor	**220.00**
H5CX-A11 AC100-240	Standard type—11-pin socket	Contact	**220.00**
H5CX-A11D AC24/DC12-24	Standard type—11-pin socket	Contact	**220.00**
H5CX-A11S AC100-240	Standard type—11-pin socket	Transistor	**220.00**
H5CX-A11SD AC24/DC12-24	Standard type—11-pin socket	Transistor	**220.00**
H5CX-L8 AC100-240	Economy type—8-pin socket	Contact	**180.00**
H5CX-L8 AC24/DC12-24	Economy type—8-pin socket	Contact	**180.00**
H5CX-L8S AC100-240	Economy type—8-pin socket	Transistor	**180.00**
H5CX-L8SD AC24/DC12-24	Economy type—8-pin socket	Transistor	**180.00**





H7CX MULTIFUNCTION DIGITAL COUNTER

FEATURES:

- Advanced 1/16 DIN preset counter with enhanced features
- Configure as a 1-stage, 2-stage, total, batch, or dual counter; or use as a tachometer
- High-speed response of up to 5 kHz
- Programmable display colour to alert any output status change
- PNP/NPN selectable input
- Key protection function
- NEMA 4/IP66 front

STANDARD COUNTERS

Cat. No.	Sensor Power Supply	No. of Digits	Net Price
CONTACT OUTPUT—11-PIN SOCKET			
H7CX-A11 AC100-240	12VDC	6	**$260.00**
H7CX-A11D1 DC12-24/AC24	12VDC	6	**260.00**
H7CX-A114 AC100-240	12VDC	6	**240.00**
H7CX-A11S AC100-240	12VDC	6	**260.00**
TRANSISTOR OUTPUT—11-PIN SOCKET			
H7CX-A11SD1 DC12-24/AC24	12VDC	6	**260.00**
H7CX-A114S AC100-240	12VDC	4	**240.00**
CONTACT OUTPUT—SCREW TERMINALS			
H7CX-A AC100-240	12VDC	6	**250.00**
H7CX-A4 AC100-240	12VDC	4	**230.00**
H7CX-AD DC12-24	None	6	**250.00**
H7CX-A4D DC12-24	None	6	**230.00**
TRANSISTOR OUTPUT—SCREW TERMINALS			
H7CX-AS AC100-240	12VDC	6	**250.00**
H7CX-ASD DC12-24	None	6	**250.00**
H7CX-A4SD DC12-24	None	4	**230.00**

NOTE: Models can be used as: 1-stage counter, 1-stage counter with totalizer.

ADVANCED COUNTERS

Cat. No.	Sensor Power Supply	Configurable Output	No. of Digits	Net Price
CONTACT OUTPUT—SCREW TERMINAL				
H7CX-AW AC100-240	12VDC	No	6	**$300.00**
H7CX-AWD1 DC12-24/AC24	12VDC	No	6	**300.00**
H7CX-A4W AC100-240	12VDC	—	4	**280.00**
CONTACT AND TRANSISTOR OUTPUT—SCREW TERMINAL				
H7CX-AU AC100-240	12VDC	Yes	6	**300.00**
TRANSISTOR OUTPUT—SCREW TERMINALS				
H7CX-AWS AC100-240	12VDC	No	6	**300.00**
H7CX-AWSD1 DC12-24/AC24	12VDC	No	6	**300.00**
H7CX-AWSD DC12-24	None	No	6	**300.00**

NOTE: Models can be used as: 1-stage counter, 2-stage counter, 1-stage counter with totalizer, 1-stage counter with batch counter, dual counter, tachometer.

ADVANCED COUNTERS—2-STAGE

Cat. No.	Sensor Power Supply	Configurable Output	No. of Digits	Net Price
CONTACT OUTPUT—SCREW TERMINAL				
H7CX-AW AC100-240	12VDC	No	6	**$300.00**
H7CX-AWD1 DC12-24/AC24	12VDC	No	6	**300.00**
H7CX-A4W AC100-240	12VDC	—	4	**280.00**
TRANSISTOR OUTPUT—SCREW TERMINAL				
H7CX-AWS AC100-240	12VDC	No	6	**300.00**
H7CX-AWSD1-DC12-24/AC24	12VDC	No	6	**300.00**

NOTE: Models can be used as: 1-stage counter, 2-stage counter, 1-stage counter with totalizer, 1-stage counter with batch counter, dual counter.

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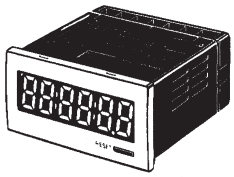
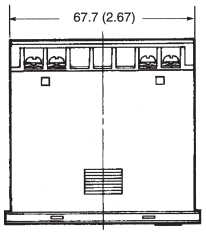
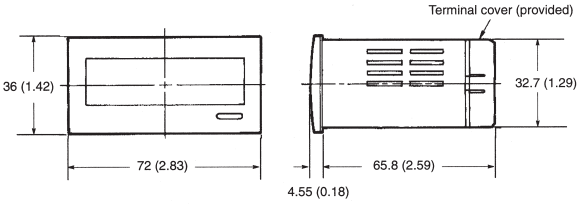
PRICES SUBJECT TO CHANGE WITHOUT NOTICE, APPLICABLE TAXES NOT INCLUDED

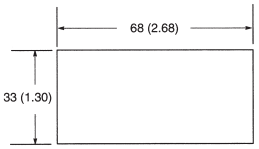
electro sonic







Panel Cutouts



Note: 1. Recommended panel thickness should be 1 to 6 mm (0.4 to 0.24 inch). Panel cutout conforms to DIN 43700.
2. NEMA 4 protection lost if mounted side by side.

H7HP COMPACT COUNT AND TIME TOTALIZERS WITH EASY-TO-READ DISPLAY AND NEMA 4 PROTECTION

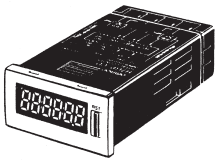
FEATURES:
- Large, easy-to-read displays: 15 mm, 6-digit models; 12 mm, 8-digit models.
- NEMA 4 protection when used in conjunction with Y92S-33 rubber gasket supplied with each unit.
- High-visibility, negative transmissive LCD display with built-in red LED backlight.
- Short (66 mm) body.
- Six-digit models switch between total count and time counter operation, 8-digit models count totalizer only.
- Switch between NPN and PNP operation.
- Both external and manual resets provided.
- Count speed: 30 CPS/5KCPS Selectable.

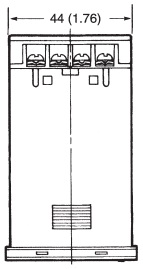
H7HP COUNT/TIME TOTALIZER, 6 DIGITS

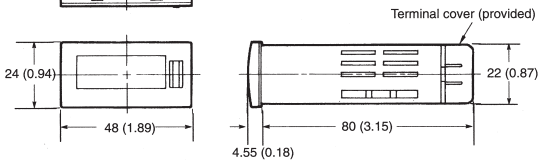
Cat. No.	Count Input	Colour	Net Price
H7HP-AAC100-240	No voltage (NPN) voltage (PNP) select	Light Grey	**$292.00**
H7HP-ABAC100-240	No voltage (NPN) voltage (PNP) select	Black	**292.00**
H7HP-ADDC12-24	No voltage (NPN) voltage (PNP) select	Light Grey	**239.00**
H7HP-ADBDC12-24	No voltage (NPN) voltage (PNP) select	Black	**239.00**

H7HP COUNTERS, 8 DIGITS

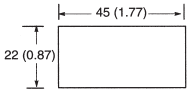
Cat. No.	Count Input	Colour	Net Price
H7HP-C8AC100-240	No voltage (NPN) voltage (PNP) select	Light Grey	**$318.00**
H7HP-C8BAC100-240	No voltage (NPN) voltage (PNP) select	Black	**318.00**
H7HP-C8DDC12-24	No voltage (NPN) voltage (PNP) select	Light Grey	**265.00**
H7HP-C8DBDC12-24	No voltage (NPN) voltage (PNP) select	Black	**265.00**



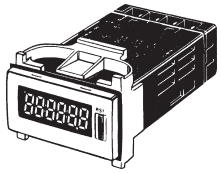


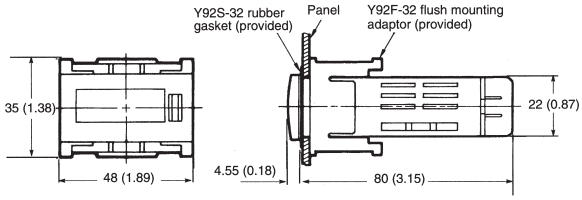


Panel Cutouts



Note: 1. Recommended panel thickness is 1 to 6 mm (0.4 to 0.24 inch) panel cutout conforms to DIN 43700.
2. NEMA 4 protection lost if mounted side by side.



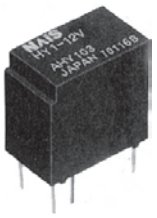


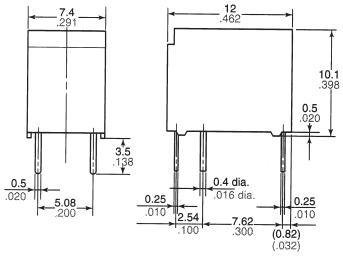
H7GP COMPACT COUNT OR TIME TOTALIZERS WITH EASY-TO-READ DISPLAY AND NEMA 4 PROTECTION

FEATURES:
- High-visibility, 8.5 mm negative transmissive LCD.
- NEMA 4 protection when used in conjunction with Y92S-32 rubber gasket supplied with each unit.
- Short (80 mm) body.
- Switch between NPN and PNP operation.
- Both external and manual resets provided.
- 6 Digits.
- Reset: Electrical/Manual.

H7GP COUNT/TIME TOTALIZER

Cat. No.	Count Speed	Colour	Net Price
COUNT/TRIGGER INPUT: NO VOLTAGE (NPN) VOLTAGE (PNP)			
H7GP-CAC100-240	30 CPS/5KCPS Selectable	Light Grey	**$213.00**
H7GP-CBAC100-240	30 CPS/5KCPS Selectable	Black	**213.00**
H7GP-TAC100-240	—	Light Grey	**213.00**
H7GP-TBAC100-240	—	Black	**213.00**
H7GP-CDDC12-24	30 CPS/5KCPS Selectable	Light Grey	**180.00**
H7GP-CDBDC12-24	30 CPS/5KCPS Selectable	Black	**180.00**
H7GP-TDDC12-24	—	Light Grey	**180.00**
H7GP-TDBDC12-24	—	Black	**180.00**



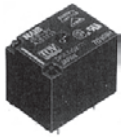


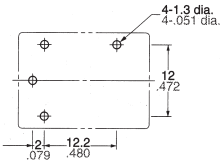
HY SERIES HIGH SENSITIVITY ULTRA SMALL RELAYS

FEATURES: Contact arrangement: 1 Form C. Max. switching power: 30W. Max. switching voltage: 60VDC. Max. switching current: 1A. Max. carrying current: 2A. High sensitivity: 150mW. A wide range of ambient temperature: –40˚C to +70˚C, –40˚C to +158˚F. Sealed construction. Contact material: Gold-clad silver. UL/CSA. **TYPICAL APPLICATIONS:** Automotive: Switching to small motor — Auto mirror controller, Retractable head light controller. Push button device: Dial pulsing. Low-voltage signal switching and motor control of small home appliances such as portable video tape recorders and audio devices. Operating of dish-control motors for PCs and word processors.

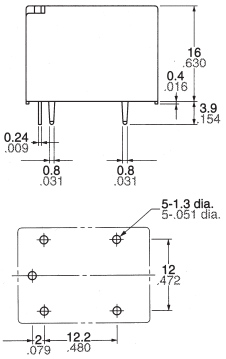
Cat. No.	Nominal Voltage VDC	Nominal Operating Current mA	Coil Resistance Ω (±10%)	Nominal Operating Power mW	Net Price
♁ **HY1-5V**	5	30.1	166	150mW	**$3.62**
♁ **HY1-12V**	12	12.5	960	150mW	**3.62**
♁ **HY1-24V**	24	6.25	3840	150mW	**3.62**

NOTE: Coil voltages from 1.5 - 24V.





1 FORM A



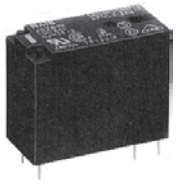
1 FORM C
PC BOARD PATTERN
(COPPER-SIDE VIEW)

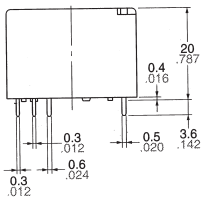
JS SERIES ULTRA-MINIATURE PCB POWER RELAYS

FEATURES: Ultra-miniature size with universal terminal footprint. High contact capacity: 10A. Sealed construction for automatic cleaning. Contact arrangement: 1 Form A, 1 Form C. Nominal switching capacity: 10A 125VAC, 6A 277 VAC. Max. switching power. 1662 VA. Max. switching voltage: 250 VAC, 100VDC. Max. switching current: 10A (AC), 5A (DC). Max. operating speed: 20cpm. Contact material: Silver alloy. Ambient temperature: –40˚C to +70˚C. UL/CSA.

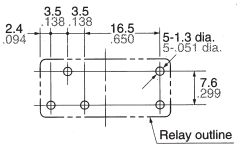
Cat. No.	Nominal Voltage, VDC	Nominal Operating Current mA (±10%)	Coil Resistance Ω (±10%)	Nominal Operating Power mW	Net Price
CONTACT ARRANGEMENT 1 FORM C					
JS1-12V-F	12	30	400	360	**$.60**
JS1-24V-F	24	15	1600	360	**.65**
CONTACT ARRANGEMENT 1 FORM A					
JS1A-5V-F	5	72	69.5	360	**.96**
JS1A-12V-F	12	30	400	360	**.74**

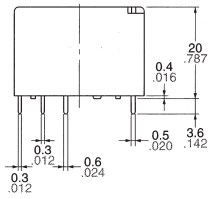
NOTE: Coil voltages from 5 to 48 VDC.



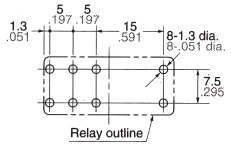


1 FORM C





2 FORM C



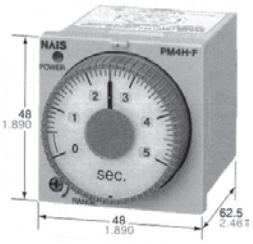
PC BOARD PATTERN
(COPPER-SIDE VIEW)

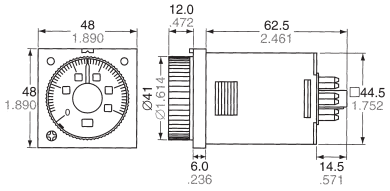
JW SERIES COMPACT PCB POWER RELAYS

FEATURES: Miniature package with universal terminal footprint. High dielectric withstanding for transient protection: 10,000V serge in ms between coil and contact. Sealed construction. VDE application standards. Contact arrangement: 1 Form C, 2 Form C, 1 Form A, 2 Form A. Max. switching power: Standard types 1250VA, 150W, High capacity types: 2500VA, 300W. Max. switching voltage: 250VAC, 30VDC. Max operating speed (at rated load): 20cpm. Contact material: Silver allow. Ambient temperature: –40˚C to ±60˚C. UL/CSA.

Cat. No.	Nominal Voltage, VDC	Nominal Operating Current mA (±10%)	Coil Resistance Ω (±10%)	Nominal Operating Power mW	Net Price
CONTACT ARRANGEMENT 2 FORM C, STANDARD 5A TYPE					
♁ **JW2SN-DC12V**	12	44	270	530	**$3.22**
♁ **JW2SN-DC24V**	24	22	1100	530	**3.22**
CONTACT ARRANGEMENT 1 FORM C, HIGH CAPACITY 10A TYPE					
♁ **JW1FSN-DC12V**	12	44	270	530	**2.58**
♁ **JW1FSN-DC24V**	24	22	1100	530	**2.71**

NOTE: Coil voltages from 5-48 VDC. Available in 1 Form A, 1 Form C, 2 Form A, 2 Form C.





PH4F SERIES MULTI-RANGE POWER OFF-DELAY ANALOG TIMERS

FEATURES: Six selectable time ranges (Three between 1 and 10s and three between 1 and 10 min.). The shorter body makes it easier to use. Contact arrangement: Relay Timed-out 2 Form C. Terminal type: 8-pin. Contact material: Au flash on silver alloy. Ambient temperature: –10 to +50˚C. Protective construction: IP50.

Cat. No.	Time Range	Rated Operating Voltage	Operating Modes	Net Price
PM4HF8-S-AC120V	3 Selectable Time Ranges Over 1s to 10s	100 to 120VAC	Power OFF-delay (without reset)	**$109.06**
PM4HF8-M-AC120V	3 Selectable Time Ranges Over 1 Min. to 10 Min.	100 to 120VAC		**109.06**
PM4HF8-M-DC-12V		12VDC		**162.83**

NOTE: 8 different operation modes (PM4H-A)

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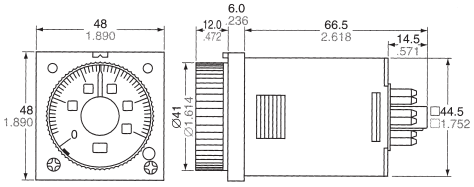
electro sonic

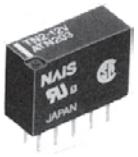


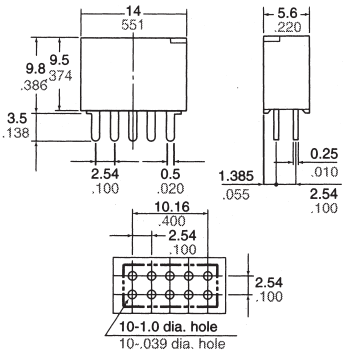
PH4H SERIES MULTI-RANGE ANALOG TIMERS

FEATURES: 100-240VAC free-voltage input. Tube base with pin-style terminals. Multiple time ranges: 1s to 500 h (max.). Contact arrangement: Relay Timed-out 2 Form C. Contact material: Silver alloy. Ambient temperature: –10 to +50˚C. Protective construction: IP50.

Cat. No.	Terminal Type	Rated Operating Voltage	Operating Modes	Net Price
PM4HA-H-AC240V	11 pin	100 to 240VAC	Pulse ON-delay Pulse Flicker Pulse On-flicker Differential On/OFF-delay (1)(2) Signal OFF-delay Pulse One-shot Pulse One-cycle	**$37.79**
PM4HA-H-24V		24V AC/DC		**64.52**
PM4HS-H-AC240V	8-pin	100 to 240VAC	Power-ON-delay	**72.20**
PM4HS-H-24V		24V AC/DC		**61.44**

NOTE: 8 different operation modes (PM4H-A).





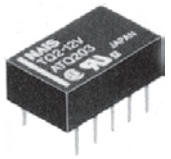
PC BOARD PATTERN
(COPPER-SIDE VIEW)

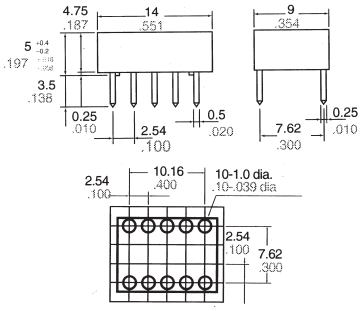
TN SERIES PCB ULTRA-SLIM POLARIZED RELAYS

FEATURES: Ultra-slim size for minimal PB board mounting requirements. Small header area makes higher density mounting possible. High sensitivity: 140mW nominal operating power (single side stable 3-12V type). Surge voltage withstand: 1500V FCC Part 68. Selaed construction allows automatic cleaning. Contact arrangement: 2 Form C. Nominal switching capacity: 1A 30VDC, 0.5A 125VAC. Max. switching power: 30W, 62.5VA. Max. switching voltage: 110VDC, 125VAC. Max. switching current: 1A. Contact material: Gold-clad silver. Ambient temperature: –40˚C to +70˚C. UL/CSA.

Cat. No.	Nominal Voltage, VDC	Nominal Operating Current mA (±10%)	Coil Resistance Ω (±10%)	Nominal Operating Power mW	Net Price
SINGLE SIDE STABLE					
◊ **TN2-5V**	5	28.1	178	140	**$5.75**
◊ **TN2-12V**	12	11.7	1028	140	**5.75**

NOTE: Available with coil voltages from 3-48 VDC. Also available with single and dual coil latching.





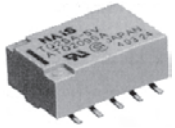
PC BOARD PATTERN
(COPPER-SIDE VIEW)

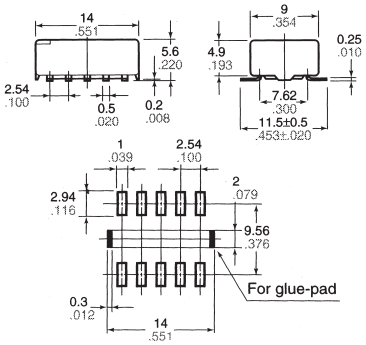
TQ SERIES HIGH SENSITIVITY ULTRA-SMALL POLARIZED RELAYS

FEATURES: Surge voltage withstanding: 1500V FCC. Sealed construction allows automatic washing. Contact arrangement: 2 Form C. Nominal switching capacity: 1A 30VDC, 0.5A 125. Max. switching power: 110VDC, 125VAC. Max. switching current: 1A. Contact material: Gold-clad silver. Ambient temperature: –40˚C to +70˚C. UL/CSA.

Cat. No.	Nominal Voltage, VDC	Nominal Operating Current mA (±10%)	Coil Resistance Ω (±10%)	Nominal Operating Power mW	Net Price
SINGLE SIDE STABLE					
◊ **TQ2-5V**	5	28.1	178	140	**$2.35**
◊ **TQ2-12V**	12	11.7	1028	140	**2.34**
◊ **TQ2-24V**	24	8.3	2880	200	**4.66**
2 COIL LATCHING					
◊ **TQ2-L2-5V**	5	40	125	200	**5.14**

NOTE: Available with coil voltages from 3 to 48 V. Also available with single coil latching.





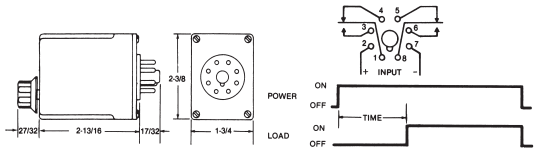
RECOMMENDED MOUNTING PAD
(TOP VIEW)

TQ SERIES HIGH SENSITIVITY LOW-PROFILE SURFACE MOUNT RELAYS

FEATURES: Surge withstanding between contacts and coil: 2500V (Bellcore). Breakdown voltage between contacts and coil: 1500. 2 amp high capacity. Surge voltage withstanding: 1500V FCC Part 68. Contact arrangement: 2 Form C. Nominal switching capacity: 2A 30 VDC, 0.5A 125 VAC. Max switching power: 60W, 62.5VA. Max switching voltage: 220VDC, 125VAC. Max switching current: 2A. Ambient temperature: –40˚C to +85˚C. Contact material: Gold-clad silver alloy. UL/CSA.

Cat. No.	Nominal Voltage, VDC	Nominal Operating Current mA (±10%)	Coil Resistance Ω (±10%)	Nominal Operating Power mW	Net Price
SINGLE SIDE STABLE					
◊ **TQ2SA-4.5V**	4.5	31	145	140	**$3.25**
◊ **TQ2SA-5V**	5	28.1	178	140	**3.25**
◊ **TQ2SA-12V**	12	11.7	1028	140	**3.25**
2 COIL LATCHING					
◊ **TQ2SA-L2-5V**	5	28.1	178	140	**4.88**

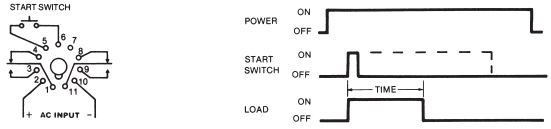
NOTE: Available with coil voltage from 1.5 to 48 VDC. Also available with single coil latching.



NCC SOLID STATE TIMERS SERIES T1

These units are designed for "ON" delay operation. Upon application of power to the input terminals, the time delay cycle starts. At the end of the preset time delay, the output contacts transfer either connecting or disconnecting the load. Reset is accomplished by the removal of the input power. Various time ranges are available from .05 to 7200 seconds. Time delay is adjustable by means of the graduated knob on the top of the unit. Repeat accuracy is ±2% with constant voltage, temperature and recycle time. Reset time is a fast 60 milliseconds. Power consumption is 3 watts. Operating temperature range is from –10˚F to +130˚F. Superior transient protection, plug in construction and on false operation are a few of the other features of these low cost reliable solid state timers. **Input voltage:** 12, 24 VDC and 24, 120 VAC. **Output:** DPDT Relay, 10 amp. contacts. Plug type: 8 Pin Octal.

Cat. No.	Time Range Seconds	Net Price
T1 SERIES "ON" DELAY, 120 VAC		
T1K-00002-461	.05 to 2	**$63.41**
T1K-00010-461	.1 to 10	**63.41**
T1K-00030-461	.3 to 30	**63.41**
T1K-00060-461	.6 to 60	**63.41**
T1K-00120-461	1.2 to 120	**63.14**
T1K-00180-461	1.8 to 180	**63.41**
T1K-00300-461	3 to 300	**63.41**
T1K-00600-461	6 to 600	**63.41**
T1 SERIES "ON" DELAY, 12 VDC		
T1K-00010-466	.1 to 10	**63.41**
T1K-00120-466	1.2 to 120	**63.41**
T1 SERIES "ON" DELAY, 24 VDC		
T1K-00030-462	.3 to 30	**63.41**
T1K-00300-462	3 to 300	**63.41**
T1 SERIES "ON" DELAY, 24 VAC		
T1K-00010-467	.1 to 10	**63.41**

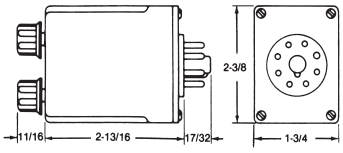


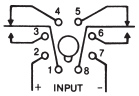
NCC SOLID STATE TIMERS SERIES T2

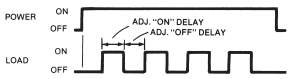
These units are designed for "One-shot" operation. Power is applied to the timer at all times. Upon a momentary or maintained closure of a normally open control switch the output contacts transfer and the time delay starts. At the end of the preset time delay, the output contacts transfer back to their original position and the unit is ready for a new cycle. Note: Turning power on and off should not be used to initiate timing. Various time ranges are available from .05 to 3600 seconds. Time delay adjustment is by means of a graduated knob on the top of the unit. Repeat accuracy is ±2% with constant voltage, temperature and recycle time. Power consumption 5 watts. Operating temperature range –10˚F to +130˚F. As with the T1 these units feature superior transient protection, plug-in construction and will not false operate. **Input voltage:** 120 VAC. **Output:** DPDT Relay, 10 amp contacts. Plug type: 11 Pin Octal.

Cat. No.	Time Range Seconds	Net Price
T2 SERIES "ONE SHOT" OPERATION, 120 VAC		
T2K-00002-461	.05 to 2	**$70.09**
T2K-00005-461	.05 to 5	**70.09**
T2K-00010-461	.1 to 10	**70.09**
T2K-00030-461	.3 to 30	**70.09**
T2K-00060-461	.6 to 60	**70.09**
T2K-00300-461	3 to 300	**70.09**
T2K-00600-461	6 to 600	**70.09**
T2K-01800-461	18 to 1800	**70.09**
T2K-03600-461	36 to 3600	**70.09**

NOTE: Other voltages and time ranges are available on special order.





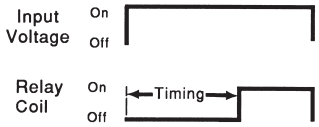


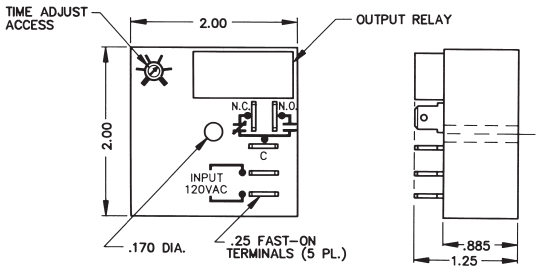
NCC SOLID STATE TIMER SERIES C

These units are designed for "Repeat cycle" operation. Upon application of power to the input terminals, the "OFF" delay is initiated. At the end of the "OFF" preset time, contacts transfer from the "OFF" to the "ON" position and the "ON" delay starts. At the end of the "ON" preset time the contacts transfer from the "ON" to the "OFF" position and a new cycle begins. The "ON" to the "OFF" cycles will continue to alternate until power is removed. Time delay ranges from .05 to 7200 seconds. Time delay adjustment is by means of a knob on top of the unit. Repeat accuracy ±2%. Operating temperature ranges –10˚F to +130˚F. These units also have standard features such as superior transient protection, plug-in construction and low cost. **Input voltage:** 12, 24 VDC and 24, 120 VAC. **Output:** DPDT Relay, 10 amp contacts. Plug type: 8 Pin Octal.

Cat. No.	Time Range Seconds	Net Price
C SERIES "REPEAT CYCLE" OPERATION, 120 VAC		
CKK-00002-461	.05 to 2 off .05 to 2 on	**$96.79**
CKK-00005-461	.05 to 5 off .05 to 5 on	**96.79**
CKK-00010-461	.1 to 10 off .1 to 10 on	**96.79**
CKK-00030-461	.3 to 30 off .3 to 30 on	**96.79**
CKK-00060-461	.6 to 60 off .6 to 60 on	**96.79**
CKK-00120-461	1.2 to 120 off 1.2 to 120 on	**96.79**
CKK-00180-461	1.8 to 180 off 1.8 to 180 on	**96.79**
CKK-00300-461	3 to 300 off 3 to 300 on	**96.79**
CKK-00600-461	6 to 600 off 6 to 600 on	**96.79**
CKK-01800-461	18 to 1800 off 18 to 1800 on	**96.79**
CKK-03600-461	36 to 3600 off 36 to 3600 on	**96.79**
CKK-07200-461	72 to 7200 off 72 to 7200 on	**103.47**

NOTE: Other time ranges are available on special order.
Replace—461 with 466 for 12 VDC, 462 for 24 VDC, 467 for 24 VAC.



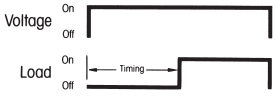


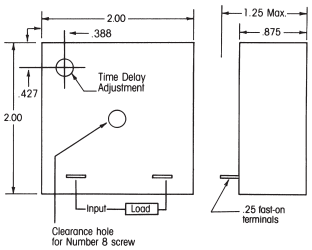
NCC SOLID STATE TIMERS SERIES Q1T

DELAY ON MAKE (8 AMP OUTPUT RELAY)

These units are designed for "ON" delay operation. Upon application of voltage to the input terminals, the time delay is initiated. At the end of the preset time delay, the relay coil is energized and the contacts transfer. Reset is accomplished by removing voltage from the input terminals. **FEATURES:** 8 amp load handling capability. Time delays to 10 hours. Solid-state digital timing. 20:1 maximum to minimum timing ratio. Sealed SPDT output contacts. Trimpot on-board with sealed cermet element. Epoxy encapsulated. Compact size. Transient protected. Flame-retardant and solvent-resistant polyester thermoplastic housing. Life: 10,000,000 cycles. Reset time: .25 sec. max. by removal of the input voltage. Repeatability: 10.5% max. (0.25% typical) under constant conditions. Power consumption: 3.5 VA max. **Input voltage:** 120 VAC ±10%. **Ouptut:** Relay, SPDT (1 form C). Plug type: Terminal. Mounting: Surface mount with one #8 screw. Operating temperature: –40˚F to 70˚F.

Cat. No.	Time Range	Net Price
Q1T SERIES "ON" DELAY 120 VAC		
Q1T-00005-341	.25 to 5 sec.	**$41.72**
Q1T-00010-341	.5 to 10 sec.	**41.72**
Q1T-00060-341	3 to 60 sec.	**41.72**
Q1T-00300-341	15 to 300 sec.	**41.72**
Q1T-00600-341	30 to 600 sec.	**41.72**
Q1T-03600-341	3 to 60 min.	**41.72**





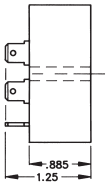
NCC SOLID STATE TIMERS SERIES Q1T

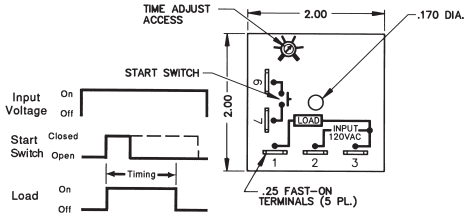
DELAY ON MAKE (1 AMP MAX. SERIES LOAD)

These units are designed for "ON" delay operation. Upon application of input voltage, the time delay starts. At the end of the time delay the load is energized. Reset is accomplished by removing input power. **FEATURES:** Time delays to 300 seconds. 20:1 max. to min. timing ratio. Flame-retardant and solvent resistant filled polyester thermoplastic housing. Superior transient protection. Compact size. Low cost. Adjustment: Potentiometer. Reset time: 125 milliseconds max. before time out, 10 milliseconds after time out. Repeatability: ±5% +8 ms max. with constant time. Power consumption: During timing 0.25 watts, after time out 3 watts max. 1 amp. **Input voltage:** 120 VAC/DC ±10%. **Output:** Solid-state, normally open series load, 1 amp. AC/DC (Resistive or Inductive). Plug type: Terminals. Mounting: Surface mount with one #8 screw. Life: 100,000,000 operations. Operating temperatures: –40˚F to 150˚F.

Cat. No.	Time Range (seconds)	Net Price
Q1T SERIES "ON" DELAY, 120 VAC/DC		
Q1T-00001-311	.05 to 1	**$35.04**
Q1T-00005-311	.25 to 5	**35.04**
Q1T-00010-311	.5 to 10	**35.04**
Q1T-00060-311	3 to 60	**35.04**
Q1T-00300-311	15 to 300	**35.04**
Q1T SERIES "ON" DELAY, 12 VAC/DC		
Q1T-00001-316	.05 to 1	**35.04**
Q1T-00005-316	.25 to 5	**35.04**
Q1T-00010-316	.5 to 10	**35.04**
Q1T-00060-316	3 to 60	**35.04**
Q1T-00300-316	15 to 300	**35.04**
Q1T-00600-316	30 to 600	**35.04**

NOTE: Other voltages and time ranges are available on special order.





NCC SOLID STATE TIMERS SERIES Q2T

These units are designed for "One-shot" operation. Power is applied to the timer at all times. Upon a momentary or maintained closure of a normally open isolated start switch, the output is energized and the time delay starts. At the end of the preset time delay, the output is de-energized and the unit is ready for a new cycle. **FEATURES:** Totally solid-state digital timing circuit. Time delays to 10 hours. 20.1 max. to min. timing ratio. Cost efficient. Trimpot on-board with sealed cermet element. Epoxy encapsulated. Compact size: Flame-retardant and solvent-resistant polyester thermoplastic housing. Adjustment: On-board potentiometer. Repeatability: ±0.5% +8 millisecond max. (0.25% typical) under constant conditions. Reset Time: .5 sec. max. by removal of the input voltage. Power consumption: During standby 1 VA, under full load 4.3 VA max. Operating temperature: –40˚C to 65˚C. **Input voltage:** 120 VAC ±10%. **Output:** Solid-state, normally open, 1 amp. resistive or inductive. Life: 100,000,000 operations. Plug type: Terminals. Mounting: Surface mount with one #8 screw.

Cat. No.	Time Range	Net Price
Q2T SERIES "ONE-SHOT" OPERATION, 120 VAC		
Q2T-00001-321	.05 to 1 sec.	**$40.89**
Q2T-00005-321	.25 to 5 sec.	**40.89**
Q2T-00060-321	3 to 60 sec.	**40.89**
Q2T-03600-321	3 to 60 min.	**40.89**

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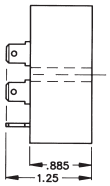
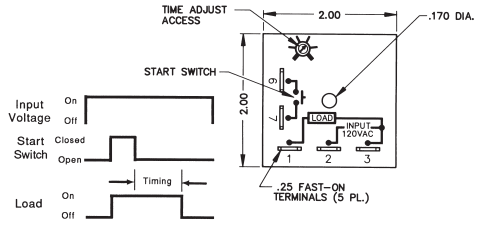
electro sonic

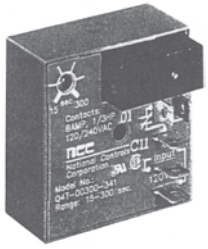




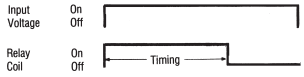
NCC SOLID STATE TIMERS SERIES Q3T

These units are designed for "OFF" operation. Power is applied to the timer at all times. Upon closure of a normally open isolated start switch, the load is energized and remains in this state as long as the switch is kept closed. When the control switch is opened, timing starts. At the end of the preset time delay, the output de-energizes and the unit is ready for a new cycle. **FEATURES:** Totally solid-state digital timing circuit. Time delays to 10 hours. 20.1 max. to min. timing ratio. Cost efficient. Trimpot on-board with sealed cermet element. Epoxy encapsulated. Compact size. Superior transient protection. Flame-retardant and solvent-resistant polyester thermoplastic housing. Adjustment: On-board potentiometer. Repeatability: ±0.5% +8 milliseconds max. (0.25% typical) under constant conditions. Reset time: .5 sec. max. by removal of the input voltage. Power consumption: During standby 1 VA, under full load 4.3 VA max. Operating temperature: –40˚C to 65˚C. **Input voltage:** 120 VAC ±10%. **Output:** Solid-state, normally open, 1 amp resistive or inductive. Life: 100,000,000 operations. Plug type: Terminals. Mounting: Surface mount with one #8 screw.

Cat. No.	Time Range	Net Price
Q3T SERIES "OFF" DELAY, 120 VAC		
Q3T-00005-321	.25 to 5 sec.	**$40.89**
Q3T-00010-321	.5 to 10 sec.	**40.89**
Q3T-00060-321	3 to 60 sec.	**40.89**
Q3T-00600-321	30 to 600 sec.	**40.89**
Q3T-03600-321	3 to 60 min.	**40.89**



Logic Function Diagram:

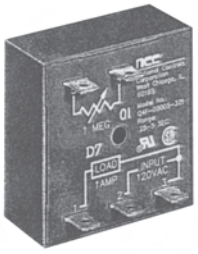


INTERVAL (RELAY OUTPUT) Q4T SERIES

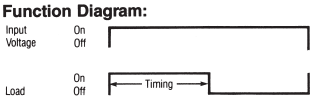
Operating Logic: Upon application of voltage to the input terminals L1, L2, the relay is energized and the contacts transfer and the timing cycle starts. At the end of the present time delay, the relay coil is de-energized and the contacts return to their original state. Reset is accomplished by removing voltage from the input terminals. **TIME DELAY: Adjustment:** On-board trimpot. **Range:** .05 seconds to 10 hours in 9 ranges. **Repeatability:** ±0.5% maximum (0.25% typical) at constant temperature. **Accuracy:** Maximum time +10%, –0%, Minimum time –30%, +0%. **Reset Time:** .25 seconds maximum, by removal of the input voltage. **INPUT: Operating Voltage:** 120 volts A.C. ±10%. **Power Consumption:** 3.5 VA maximum. **Frequency:** 50/60 Hz. **OUTPUT: Type:** Relay contacts, S.P.D.T. (1 form C) Silver Cad. Oxide material. **Rating:** 8 amp. max. resistive at 250 VAC & 30 VDC; 100 mA at 5 VDC minimum load current. **Life:** Mechanical - 10,000,000 cycles, Electrical - 100,000 minimum at full load. **PROTECTION: Transient Voltage:** 1000V P.I.V. components used. **Isolation Resistance:** 100 megohms minimum between terminals and case. **Dielectric Breakdown:** 3000 VAC, RMS, terminals to mounting; 1500 VAC, RMS, input to output. **MECHANICAL: Termination:** .25˝ x .032˝ male fast-on terminals. **Mounting:** Surface mount with one #8 screw. **ENVIRONMENTAL: Storage Temperature:** –40˚C to 70˚C. **Operating Temperature:** –40˚C to 70˚C. **Humidity:** 95% relative.

Q4T-341 SERIES

Cat. No.	Time Range	Net Price
120 VAC ±10%		
Q4T-00001-341	.05-1 Seconds	**$41.72**
Q4T-00005-341	.25-5 Seconds	**41.72**
Q4T-00010-341	.5-10 Seconds	**41.72**
Q4T-00060-341	3-60 Seconds	**41.72**
Q4T-00300-341	15-300 Seconds	**41.72**
Q4T-00600-341	30-600 Seconds	**41.72**
Q4T-03600-341	180-3600 Seconds	**41.72**
Q4T-18000-341	.25-5 Hours	**43.39**
Q4T-36000-341	.5-10 Hours	**43.39**



Logic Function Diagram:



INTERVAL Q4F SERIES

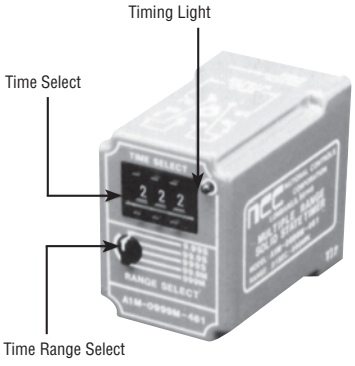
Operating Logic: Upon application of voltage, the load energizes and the timing cycle starts. At the completion of the preset time delay, the load is de-energized. Reset is accomplished by removal of input voltage. *Note: 1) Rt and terminals 4 and 5 are used for external time adjustment; 2) suggest 1/2 watt resistor.* **TIME DELAY: Adjustment:** External resistor, factory fixed on special order (Minimum order requirement). **Range:** 50 mS to 10 hours in 9 ranges. **Repeatability:** ±.5% +8 mS maximum (0.25% typ) at constant temperature. **Accuracy:** Maximum time +2% at Rt = 1 megohm; Minimum time +0%-30% at Rt = 0 ohm. **INPUT: Operating Voltage:** 120, 240 VAC; 12 VDC; 24 VAC/DC ±10% (D.C. models have reverse polarity protection. Unfiltered input voltage to them must be full-wave rectified). **Frequency:** 50/60 Hz. **OUTPUT: Type:** Solid-state, normally open. **Rating:** 1 amp. steady state. **Life:** 100,000,000 operations. **PROTECTION: Transient Voltage:** Metal oxide varistor, see ratings below. **Dielectric Breakdown:** 3000 VAC, RMS, terminals to mounting. **Isolation Resistance:** 100 megohms minimum between terminals and case. **MECHANICAL: Termination:** .25˝ x .032˝ male fast-on terminals. **Mounting:** Surface mount with one #8 screw. **ENVIRONMENTAL: Storage Temperature:** –40˚C to 85˚C. **Operating Temperature:** –40˚C to 65˚C. **Humidity:** 95% relative.

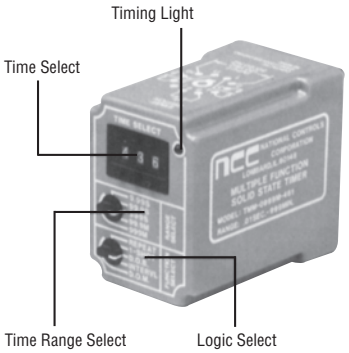
Q4F SERIES

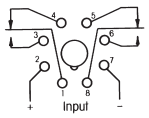
Cat. No.	Time Range	Net Price
120VAC ±10%		
Q4F-00001-321	.05-1 Second	**$31.71**
Q4F-00005-321	.25-5 Seconds	**31.71**
Q4F-00010-321	.5-10 Seconds	**31.71**
Q4F-00060-321	3-60 Seconds	**31.71**
Q4F-00300-321	15-300 Seconds	**31.71**
Q4F-00600-321	30-600 Seconds	**31.71**
Q4F-03600-321	180-3600 Seconds	**31.71**
Q4F-18000-321	.25-5 Hours	**33.38**
Q4F-36000-321	.5-10 Hours	**33.38**
12VDC ±10%		
Q4F-00001-326	.05-1 Second	**31.71**
Q4F-00005-326	.25-5 Seconds	**31.71**
Q4F-00010-326	.5-10 Seconds	**31.71**
Q4F-00060-326	3-60 Seconds	**31.71**
Q4F-00300-326	15-300 Seconds	**31.71**
Q4F-00600-326	30-600 Seconds	**31.71**
Q4F-03600-326	180-3600 Seconds	**31.71**
Q4F-18000-326	.25-5 Hours	**33.38**
Q4F-36000-326	.5-10 Hours	**33.38**

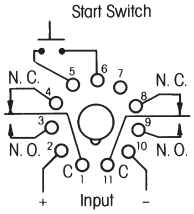
NOTE: Other voltages available on special order.

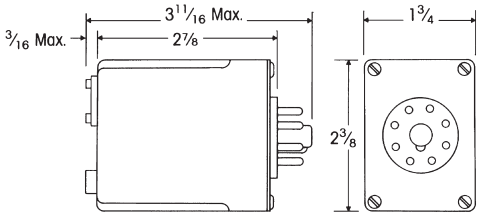
NCC Solid State Timers











NCC SOLID STATE TIMERS SERIES A1M

These units are designed for "ON" delay operations. User programmable Multi-time Range Time Delay Relay. Programming is accomplished by a 5-position rotary switch and a 3-digit push-button switch. The rotary switch is used to select one of five timing ranges. The 3-digit switch selects the amount of time to each timing cycle. **FEATURES:** Microprocessor controlled timing circuit. User programmable multi-time range. Time delays from 50ms to over 16 hours. ±.1% repeatability. Timing light. Digital time set. 8-pin plug-in base. Superior transient protection. No false contact transfer when reset during timing. Fiberglass reinforced circuit board supported by heavy duty chassis. Reinforced base locator pin. Polycarbonate flame retardant housing. Repeat accuracy is ±1% of set time, ±.01 seconds. Reset time: 50 milliseconds max. by power interrupt. Power consumption: 1.2 VA max. Operating temperature: –10˚F to 130˚F. **Input voltage:** 12, 24 VDC and 120 VAC. **Output:** DPDT Relay, 10 amp. contacts. Plug type: 8 Pin Plug.

Cat. No.	Time Range Field Programmable	Net Price
A1M SERIES "ON" DELAY, 120 VAC		
A1M-0999M-461	50 ms to 999 min.	**$91.78**
A1M SERIES "ON" DELAY, 12 VDC		
A1M-0999M-466	50 ms to 999 min.	**91.78**

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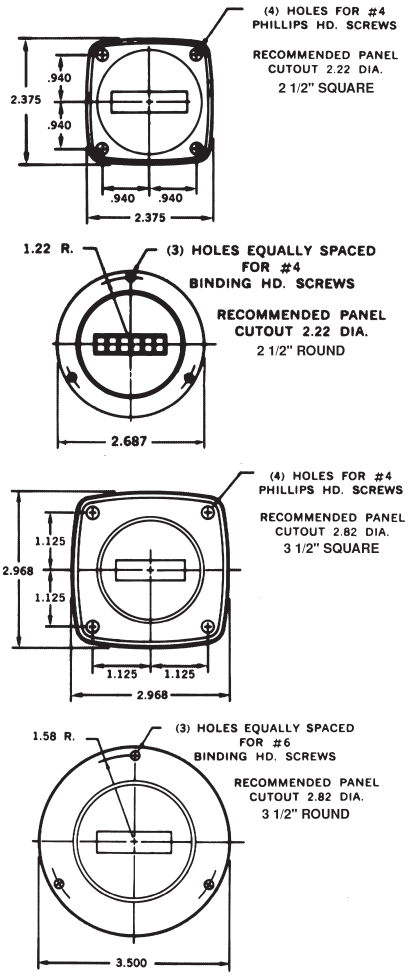
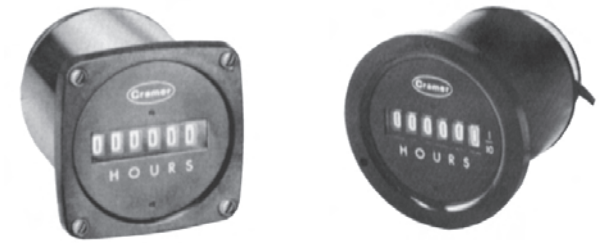
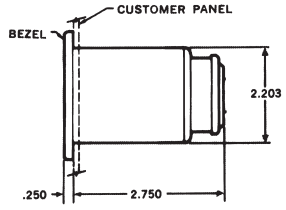
CRAMER



CRAMER ELAPSED TIME INDICATORS

Designed for use wherever elapsed time must be accurately measured and accumulated. Ideal devices for measuring down time, for equipment maintenance or performance evaluation. Figures are .200″ high × .100″ wide and are legible at a distance of 10 feet with no portion of the preceding digit or following digit to distract the eye. Available in round or square bezel styles. The utility models 635-G and 635-K are similar to models 636-X and 636-Y respectively. They differ only in the type of lens mask and sealing arrangement utilized. The bezels of the 635-G and 635-K are moulded integrally with the housing (not detachable as with other types in the 635 and 636 Series).





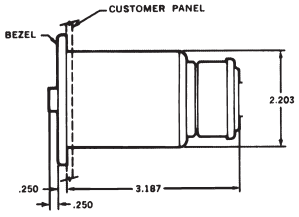
635 SERIES

CRAMER 635 SERIES NON-RESETTABLE 6-DIGIT INDICATORS—120 VAC, 60 Hz.

Available in round or square bezel styles, 2.50″ or 3.50″. Time ranges available are: 99999.9, Minutes; 99999.9, Hours. Over-all length (all Type 635 models): 2.65″. Barrel diameter: 2.187″. Weight: 12 oz. approx.

Cat. No.	Timing Range	Type No.	Description	Net Price
◊ **10055**	99999.9 Hrs.	635-E	3.50″ Round Bezel	**$106.00**
◊ **10069**	99999.9 Min.	635-G	2.50″ Round Utility Model	**86.00**
◊ **10071**	99999.9 Hrs.			**86.00**
◊ **10184**	99999.9 Min.	635-K	2.50″ Square Utility Model	**86.00**
◊ **10186**	99999.9 Hrs.			**86.00**
◊ **10061**	99999.9 Min.	635-S	3.50″ Square Bezel	**106.00**
10063	99999.9 Hrs.			**106.00**

*Bezel sizes are nominal and reflect industry case sizes. See drawings for actual dimensions.



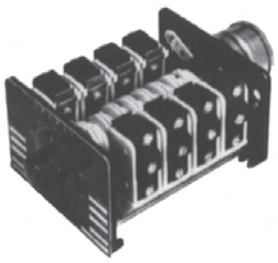
636 SERIES

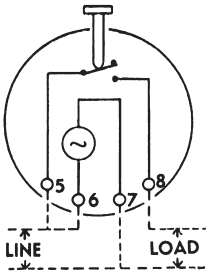
CRAMER 636 SERIES RESETTABLE 5-DIGIT INDICATORS—120 VAC, 60 Hz.

Similar to 635 Series indicators, but feature a unique pushbutton reset. Available in round or square bezel styles, 2.50″ or 3.50″. Time ranges available are: 9999.9 Seconds; 9999.9 Minutes; 9999.9 Hours. Dimensions are identical to comparable models in the 635 Series.

Cat. No.	Timing Range	Type No.	Description	Net Price
◊ **10076**	9999.9 Sec.	636-E	3.50″ Round Bezel	**$180.00**
◊ **10078**	9999.9 Min.			**180.00**
◊ **10079**	9999.9 Hrs.			**180.00**
◊ **10084**	9999.9 Sec.	636-S	3.50″ Square Bezel	**180.00**
◊ **10086**	9999.9 Min.			**180.00**
◊ **10087**	9999.9 Hrs.			**180.00**
10072	9999.9 Sec.	636-X	2.50″ Round Bezel	**180.00**
◊ **10074**	9999.9 Min.			**180.00**
◊ **10075**	9999.9 Hrs.			**180.00**
◊ **10080**	9999.9 Sec.	636-Y	2.50″ Square Bezel	**180.00**
◊ **10082**	9999.9 Min.			**180.00**
◊ **10083**	9999.9 Hrs.			**180.00**

* Bezel sizes are nominal and reflect industry case sizes. See drawings for actual dimensions.

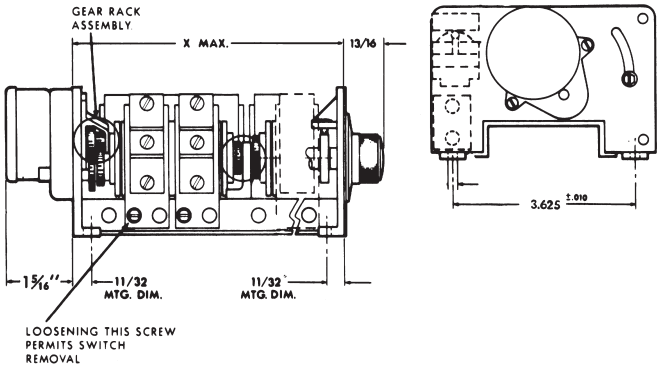




CRAMER 241 SERIES
AUTOMATIC RESET INTERVAL TIMERS—120 VAC, 60 Hz.

Highly accurate, motor-driven interval timers for panel mounting. Features include pushbutton operation, automatic reset and elapsed time indication. Timing cycle is initiated by pushing button built into centre of adjustment knob, instantly transferring contacts. A pointer on the dial face shows timing progression. Contacts drop out at end of the timing cycle, and timer resets within 0.5 Seconds. Contacts are SPDT, rated 15 amperes resistive @ 120 VAC. Nominal operating voltage: 120 VAC, 60 Hz. Dial and pointers are protected by a clear plastic dome. Repeat accuracy for units having a time range of 30 Seconds or longer is 0.25% of full scale; 0.5% of full scale for shorter ranges. Flange diameter: 3¾″; depth behind panel: 3⅛″. Mounts in a 3 1/16″ diameter hole with 3 #6-32 screws spaced 120° on a 1.687″ radius.

Cat. No.	Timing Range	Net Price
10000	60 Seconds	**$330.00**
10001	5 Minutes	**330.00**
10002	15 Minutes	**330.00**
20001	30 Minutes	**330.00**
10003	60 Minutes	**330.00**
10004	5 Hours	**330.00**
10005	24 Hours	**330.00**



MULTIPOLE CYCLE TIMERS MODEL 540 SERIES

Versatile multi-pole cycle timer controls 2 through 10 independent circuits. Cams are individually adjustable over approximately 2 to 98% of the total cycle and can provide any desired sequence or program. Complete timer consists of chassis, motor and gear rack. Chassis incorporates baseplate, cams and switches. SPDT switches rated at 15 amperes non-inductive at 115 volts AC. Repeat accuracy ±1.8°. For 115 volts 60 Hz. UL recognized. Order motor and gear rack separately from table below.

Cat. No.	No. of Circuits	Dimension "X"	Net Price
10136	2	2 7/16″	**$180.00**
10137	4	3 7/16″	**365.00**
10138	6	4 7/16″	**365.00**
10139	8	5 7/16″	**425.00**
10140	10	6 7/16″	**440.00**

HOW TO ORDER
MODEL 540 CYCLE TIMERS

Choose basic chassis Model 540 from description above. Then select time cycle desired from selection chart and order appropriate motor and gear rack from the chart.

Example: For a 6 pole Model 540 with 60 second time cycle, order Cramer No. 10138 6 pole chassis plus Cramer No. 10159 gear rack plus Cramer No. 10145 motor.

SELECTION CHART—MODEL 540 CYCLE TIMERS
ORDER BASIC CHASSIS PLUS MOTOR & GEAR RACK TO GIVE DESIRED CYCLE TIME

Motor Speed	40 RPM	20 RPM	10 RPM	8 RPM	4 RPM	1⅓ RPM	⅔ RPM	⅙ RPM	1/18 RPM	1/45 RPM	⅔ RPH	⅙ RPH
Motor Code for Mod. 540	**10141**	**10142**	**10143**	**10144**	**10145**	**10146**	**10147**	**10148**	**10149**	**10150**	**10151**	**10152**
Cycle Time	Sec.	Sec.	Sec.	Sec.	Sec.	Min.	Min.	Min.	Min.	Hrs.	Hrs.	Hrs.
Gear Racks, Model 540												
10153	3.0	6.0	12.0	15.0	30.0	1.5	3.0	12.0	36.0	1.5	3.0	12.0
10159	6.0	12.0	24.0	30.0	60.0	3.0	6.0	24.0	72.0	3.0	6.0	24.0
10163	8.0	16.0	32.0	40.0	80.0	4.0	8.0	32.0	96.0	4.0	8.0	32.0

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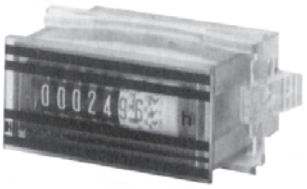
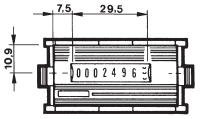
electro sonic

Danaher Controls

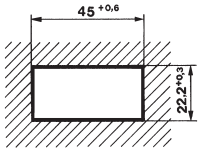
Hengstler Timers



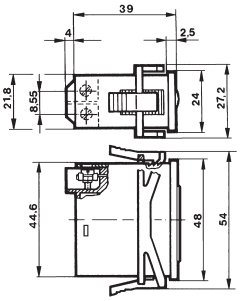
0891 TIME COUNTER
FRONT DIMENSIONS: 48MM × 24MM



DIMENSIONED DRAWING



DIMENSIONS IN MM
ENQUIRE FOR SEALS



TYPE 0891
LOW-COST TIME COUNTER WITH DIN DIMENSIONS

These new low priced series time counters can easily be mounted. By using six different frames (A, B, C, D, E, and F), ordered separately, these units can be mounted in virtually any instrument or control panel.

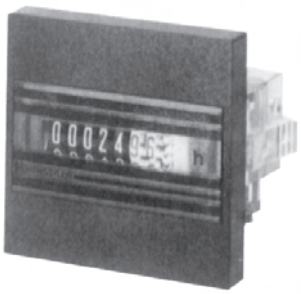
The 7-segment display indicates the elapsed hours with a resolution of 0.01h. The display is highly legible, can run continuously for more than eleven years, and then restarts again at zero. As a safeguard against tempering, a reset is not available.

TECHNICAL DATA:

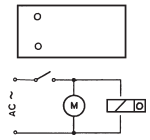
Drive:	Synchronous motor
Voltage Tolerance:	±10%
Power Consumption:	0.1VA at 24VAC 0.7VA at 230VAC
Line Frequency:	60Hz
Operating Temp.:	–10 to +50˚C
Storage Temp.:	–25 to +70˚C
Count Range:	0 to 99999.99h
Display:	Hours: white on black 1/100h: red on white
Digit Size:	5mm × 2mm, optical
Electrical Connection:	Screw terminals for max. 2.5mm²
Attachment:	Clamping frame
Protection:	front: IP60; rear: screw terms. IP20
General Design:	to DIN VDE0435
Weight:	Approx. 50g.

TYPE 0891

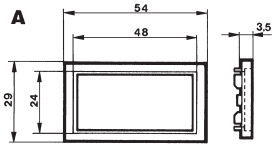
Cat. No.	Supply Voltage	Frequency	Net Price
TIME COUNTERS			
G0-891-202	24 VAC	60Hz	**$53.11**
G0-891-204	115 VAC	60Hz	**53.11**
G0-891-206	220 VAC	60Hz	**53.11**

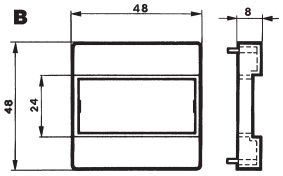


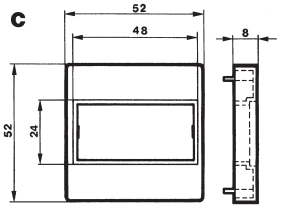
TIME COUNTER
WITH PANEL FRAME ADAPTER PLATES
48MM × 48MM

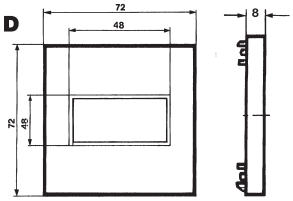


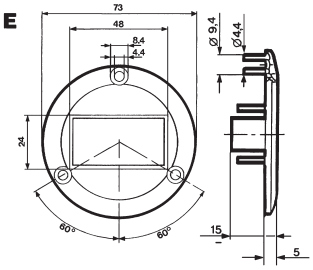
CONNECTION DIAGRAM



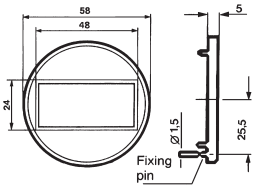








DIMENSIONS IN MM



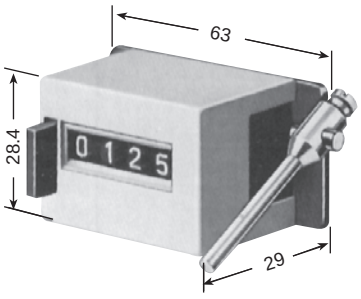
PANEL FRAME ADAPTER PLATES

0891 PANEL ADAPTER PLATES

Cat. No.	Fig.	Size	Cutout	Net Price
PANEL ADAPTER PLATES				
G2-405-218	A	54 × 29mm	50 × 25mm	**$4.19**
G2-405-219	B	48 × 48mm	45 × 45mm	**4.19**
G2-405-220	C	52 × 52mm	45 × 45mm or 50mm dia.	**4.19**
G1-405-672	D	72 × 72mm	68 × 68mm	**18.17**
G2-405-223	E	73mm dia.	50mm dia.	**4.19**
G2-405-224	F	58mm dia.	50mm dia.	**4.19**

TOTALIZING COUNTERS "PICCOLO"

Cat. No.	Reset	No. of Digits	Counts Per Second	Volts	Net Price
G0-872-106	No	4	20	12 VDC	**$.00**
G0-872-107				24 VDC	**55.90**
G0-872-112			10	24 VAC	**.00**
G0-872-113				110 VAC	**76.87**
G0-873-106	Manual Push Button	4	20	12 VDC	**88.05**
G0-873-107				24 VDC	**88.05**
G0-873-112			10	24 VAC	**83.85**
G0-873-113				110 VAC	**103.42**
G0-874-106	No	5	20	12 VDC	**74.07**
G0-874-107				24 VDC	**74.07**
G0-874-112			10	24 VAC	**00.00**
G0-874-113				110 VAC	**83.85**
G0-875-106	Manual Push Button	5	20	12 VDC	**92.24**
G0-875-107				24 VDC	**83.85**
G0-875-112			10	24 VAC	**111.81**
G0-875-113				110 VAC	**110.41**
G0-876-106	No	6	20	12 VDC	**.00**
G0-876-107				24 VDC	**.00**
G0-876-112			10	24 VAC	**.00**
G0-876-113				110 VAC	**00.00**
G0-877-106	No	7	20	12 VDC	**.00**
G0-877-107				24 VDC	**76.87**
G0-877-112			10	24 VAC	**101.77**
G0-877-113				110 VAC	**104.82**



TYPE 125

TYPE 125 MECHANICAL REVOLUTION COUNTERS, STROKE COUNTERS WITH BUTTON RESET

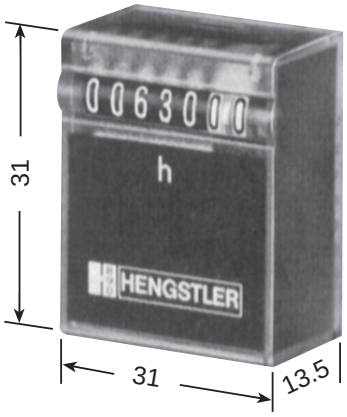
TECHNICAL DATA

	Revolution Counter	Stroke Counter
Counting Mode	+(–)	+
Speed (max.)	1:1 = 1500 rpm	500/min.
Digit Size (white on black)	4.0×1.8mm (5-digit)	4.0×2.6mm (4-digit)
Reset	Button	Button

TYPE 125 MECHANICAL REVOLUTION COUNTERS, STROKE COUNTERS WITH BUTTON RESET

Cat. No.	Ratio	Actuator	Direction of Rotation	Net Price
REVOLUTION COUNTER—5-DIGIT				
G0-125-105	1:1	right hand	Bz	**$88.05**
G0-125-106	1:1	right hand	Bw	**88.05**
G0-125-107	1:1	left hand	Bz	**81.06**
G0-125-108	1:1	left hand	Bw	**88.05**
STROKE COUNTER—5-DIGIT				
G0-125-305	1:1	right hand	Bz	**92.24**
G0-125-306	1:1	right hand	Bw	**92.24**
G0-125-307	1:1	left hand	Bz	**83.85**
G0-125-308	1:1	left hand	Bw	**86.65**

NOTE: Bz = Top coming; **Bw** = Top going



TYPE 633

TYPE 633 TIME COUNTERS "MINI-H"

These small elapsed-time meters are particularly suitable for integration into circuit boards with their encapsulated design. They can measure and indicate the useful life of electromechanical and electronic components and then store and indicate them for an unlimited period without any power consumption. They are notable for their high resistance to shock.

TECHNICAL DATA:

Current Consumption, Continuous:	2 mA
Pulse Duration every 36 sec.:	31 ms
Temperature Range:	–10˚C to +60˚C
Number of Digits:	7
General Design:	to DIN VDE 0435
Protection Class:	IP 66 .7 & .8 only front IP 00 terminals
Voltage Tolerance:	5V ±10%/12V ±20%

TYPE 633 TIME COUNTERS "MINI-H"

Cat. No.	Reset	Ohms	Pulse Current	Volts	Net Price
G0-633-031	No	140	36 mA	5 VDC	**$81.06**
G0-633-032		720	17 mA	12 VDC	**81.06**
G0-633-731	No	140	36 mA	5 VDC	**86.65**
G0-633-732		720	17 mA	12 VDC	**90.84**
G0-633-831	No	140	36 mA	5 VDC	**67.08**
G0-633-832		720	17 mA	12 VDC	**92.24**

1-800-56-SONIC
www.e-sonic.com

CK127/UK127

CK427/UK427

THERMOMETERS

CK127/UK127 DIGITAL THERMOMETER

This LED digital thermometer uses an LM35 National Semiconductor IC as its temperature sensor. It shows the temperature with an accuracy of 0.5˚C on its digital display. The thermometer will measure from 0 to 50˚C. Supply voltage: 5V DC @ 150mA (regulated). Recommended adapter: RP-0530R-P.

CK427/UK427 LARGE DISPLAY DIGITAL THERMOMETER

A digital thermometer with a large 2˝ high display that is visible from a distance. It includes two digits made up of 25 LEDs each plus a degree Celsius symbol. It is based on two integrated circuits: the 7107 voltmeter and the LM35Z temperature sensor. The circuit incorporates a built-in power supply with an AC/DC adapter jack. Supply voltage: 9V DC @ 200mA. Recommended adapter: RP-9200-P.

KIT—INCLUDES PCB AND PARTS

Cat. No.	Description	Net Price
CK127	Digital thermometer	**$35.49**
CK427	Large display digital thermometer	**51.65**

PREASSEMBLED AND TESTED

Cat. No.	Description	Net Price
UK127	Digital thermometer	**$43.03**
UK427	Large display digital thermometer	**64.57**

CK197/UK197 CK247/UK247 CK249/UK249

TIMERS

CK002/UK002 MINI ELECTRONIC TIMER

A timer built around the popular 555 integrated circuit. The timer enables the output when the power is applied to the circuit and disables it after the preset time interval. You can adjust the timer from a few seconds to the maximum of 10 minutes. Supply voltage: 9-12V DC @ 20mA. Includes 9V battery snap.

CK158/UK158 UNIVERSAL START/STOP TIMER

A timer with unlimited applications. It is adjustable from about 45 seconds to 60 minutes. It includes a relay which can handle loads of up to 3A @ 110V AC and Start/Stop push button switches. The time interval is set through a PC board mounted variable resistor. Supply voltage: 12V DC or 9V AC @ 100mA. Recommended adapter: RP-9200-P.

CK191/UK191 ADJUSTABLE ON/OFF CYCLIC TIMER

A cyclic timer with independently adjustable ON and OFF periods. The ON and OFF periods can be adjusted via two PC board mounted trimmer potentiometers from a few seconds to approximately 30 minutes. It includes a relay which can handle loads of up to 3A @ 110V AC. Supply voltage: 9V DC @ 100mA. Recommended adapter: RP-9200-P.

CK197/UK197 RESTART TIMER

This is a restartable timer which is activated when the push button switch is pressed. The timer will remain activated until the preset time duration. If the switch is pressed again, the timing cycle will restart again, regardless of the remaining time from the previous cycle. The circuit allows for two maximum timing durations: one from a few seconds to 5 minutes; and another from a few seconds to 50 minutes. Relay: 3A @ 110V AC. Supply voltage: 9-12V DC @ 100mA. Recommended adapter: RP-9200-P.

CK247/UK247 DIGITAL COUNTDOWN TIMER WITH LED DISPLAY

A countdown digital timer which can be set to any time interval from 1 minute to 1 hour and 59 minutes. Once it has been set, it starts counting down until it reaches zero at which time the relay will be activated to turn on or off any equipment. It features a PC board mounted 4-digit 7-segment LED display. Relay: 3A @ 110V AC. Supply voltage: 12V AC C.T. @ 300mA. Recommended transformer: 640-1203.

CK249/UK249M20 20 MINUTE DELAY TIMER

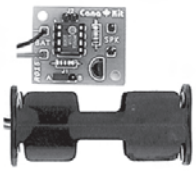
This circuit consists of 2 timers: a delay timer and an ON period timer, each individually adjustable from a few seconds to 20 minutes. As an example, using this timer will allow you to turn on a device after a certain preset delay time (Timer 1) and turn off the device after the preset ON period (Timer 2). Relay: 3A @ 110V AC. Supply voltage: 9VAC or 12VDC @ 100mA. Recommended adapter: RP-9200-P.

KIT—INCLUDES PCB AND PARTS

Cat. No.	Description	Net Price
CK002	Mini electronic timer	**$10.71**
CK158	Universal start/stop timer	**17.17**
CK191	Adjustable ON/OFF cyclic timer	**19.34**
CK197	Restart timer	**19.34**
CK247	Digital countdown timer with LED display, 2-hour	**36.57**

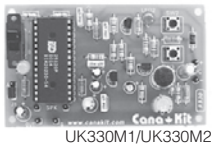
PREASSEMBLED AND TESTED

Cat. No.	Description	Net Price
UK002	Mini electronic timer	**$13.94**
UK158	Universal start/stop timer	**20.42**
UK191	Adjustable ON/OFF cyclic timer	**24.72**
UK197	Restart timer	**24.72**
UK247	Digital countdown timer with LED display, 2-hour	**45.18**
UK249	20 minute delay timer	**30.11**

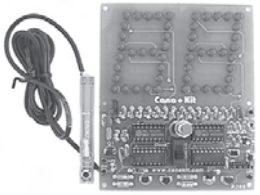


CK015/UK015

CK254/UK257



UK330M1/UK330M2



CK299/UK299

OTHER KITS

CK015/UK015 4-SOUND MINI SIREN

Provides police, fire engine and ambulance sirens, plus machine gun sounds. It can be used for security systems as well as in toys or any other applications. Supply voltage: 3V DC @ 50mA. Includes 2 × AA size battery holder.

CK257/UK257 SUPER SENSITIVE VOICE ACTIVATED SWITCHED (VOX)

The circuit is based around an IC that ensures very high sensitivity. Any sound will be captured by the microphone and will activate the output relay which will remain activated while there is sound. It has many applications such as controlling a tape recorder in seminars and classrooms (the recorder will start recording only when the speaker starts speaking). Relay: 3A @ 110V AC. Supply voltage: 12V DC @ 50mA. Recommended adapter: RP-9200-P.

CK299/UK299 QUEUING COUNTER DISPLAY

A digital customer turn display unit that is ideal for use in busy shops or offices in need of displaying next customer's turn. Each time the hand-held switch is pressed, the display will count up to show the next turn and a "Ding Dong" sound will be produced twice to notify the customers. The circuit includes a reset switch and an automatic count up switch. Supply voltage: 9V DC @ 200mA. Recommended adapter: RP-9200-P.

UK330M1/UK330M2 DIGITAL VOICE RECORDER WITH REPEAT FUNCTION

With this advanced digital audio recorder/player, you can record up to 60 or 120 seconds of speech or any other audio with the built-in microphone and later play it back anytime. Recordings are stored in a non-volatile memory cell and will not be lost if power is disconnected. The circuit also features a LOOPING mode of operation. Supply voltage: 6V DC @ 150mA. Includes 4 × AA size battery holder.

KIT—INCLUDES PCB AND PARTS

Cat. No.	Description	Net Price
CK015	4-sound mini siren	**$11.78**
CK257	Super sensitive voice activated switch (VOX)	**25.80**
CK299	Queuing counter display	**64.57**

PREASSEMBLED AND TESTED

Cat. No.	Description	Net Price
UK015	4-sound mini siren	**$15.02**
UK257	Super sensitive voice activated switch (VOX)	**34.42**
UK299	Queuing counter display	**81.78**
UK330M1	Digital voice recorder with repeat function—60 sec.	**64.57**
UK330M2	Digital voice recorder with repeat function—120 sec.	**64.57**