

<http://waterheatertimer.org/Intermatic-timers-and-manuals.html#ET-series>

ET90000 Series 365-Day Astronomic Time Switches

The ET90000 Series 365-Day Astronomic Electronic Time Switches allow for independent programming for each day of the year to provide flexibility for applications where load switching differs frequently. These time switches provide dependable and uncomplicated performance, plus to-the-minute programming for accurate load control and reduced energy costs. Up to 4,000 setpoints or events can be preset to automatically repeat on an annual basis. Holiday or exception programming is available to allow temporary overrides of repeating schedules. The program can be disabled at any time per circuit by placing the circuit in the Disabled Operating Mode. Control buttons provide manual control of each circuit independently, regardless of the operating mode. Input voltage is automatically detected and adjusted between 120 and 277 VAC, 50 or 60 Hz. No settings or modifications are required for different voltages during installation. Circuit quantities can be increased after installation on 4-circuit and larger models by installing additional 4-circuit modules. All models come with a 100-hour supercapacitor to provide time keeping and automatic carryover without the need for a battery. The supercapacitor is automatically recharged within 30 minutes of power being restored. Each time switch is housed in a lockable enclosure to protect against vandalism and unauthorized tampering. External devices, such as wall switches and occupancy sensors, can be used as input signals to the time switch, allowing a manual ON, timed OFF capability. Programming is simplified by a USB port for easy copying and backups. Remote control and monitoring are available over Ethernet for ease of maintenance.

Features

- Program can be repeated on an annual basis
- Automatic input voltage selection from 120-277 VAC, 50/60 Hz
- To-the-minute programming for accurate load control and reduced energy costs
- Astronomic feature provides sunset ON and sunrise OFF settings to eliminate the need for separate photo control devices
- Astronomic programming can be combined with independent programs to provide a sunset ON and timed OFF program
- Up to 4,000 setpoints or events can be distributed throughout the year
- Easy programming, replication, and backup of schedules via USB port
- Remote control and monitoring via Ethernet connection
- Automatic Daylight Saving Time (DST) adjustment (factory enabled)
- Non-volatile memory protects programming indefinitely
- Temporary override or permanent manual override available via control buttons
- Future upgrading available through in-field firmware updates and relay module expansions

Project: _____

Location: _____

Product Type: _____

Contact/Phone: _____

Model #: _____



Ratings

Enclosure Options:	Standard – Type 1 Gray Painted Steel R-Option – Type 3R Gray Painted Steel
Accessory Options:	E-Option – Ethernet module for 1 and 2 circuit models ET9232 – Ethernet module for upgrade or replacement ET9250 – 4 circuit module for upgrade or replacement, for 4, 8, 12, and 16 circuit models ET9100 – Electronic door assembly for replacement, for 4, 8, 12, and 16 circuit models
1 & 2 Circuit Enclosure Knockouts:	Combination 1/2" & 3/4" knockouts Bottom: 2, Left: 1, Right: 1, Back: 1
4, 8, 12, & 16 Circuit Enclosure Knockouts:	Combination 1/2" & 3/4" knockouts Bottom: 6, Left: 1, Right: 1, Back: 0 Combination 3/4" & 1" knockouts Bottom: 4, Left: 1, Right: 1, Back: 0
Frequency:	50/60 Hz
Operating Temperature:	-40°F to 120°F (-40°C to 50°C)
Switch Rating:	General Purpose and Resistive: 30 Amps (NO Only) @ 12-240 VAC General Purpose and Resistive: 20 Amps (NO), 10 Amps (NC) @ 12-240 VAC General Purpose and Resistive: 20 Amps (NO), 10 Amps (NC) @ 28 VDC Ballast: 20 Amps (NO), 3 Amps (NC) @ 120-277 VAC Tungsten: 5 Amps (NO Only) @ 12-240 VAC Motor: 1 HP (NO); 1/4 HP (NC) @ 120 VAC Motor: 2 HP (NO) ; 1/2 HP (NC) @ 240 VAC Pilot Duty: 470 VA (NO), 275 VA (NC) @ 12-240 VAC
Maximum Panel Output:	1 and 2 circuit models - 60 Amps 4,8,12, and 16 circuit models - 350 Amps
Pulse Feature:	All models feature an adjustable pulse option for contactor and bell ringing applications. Pulse durations are configurable in one-second increments from 1 second to 24 hours.
Supercapacitor Backup:	Date and accurate time are maintained for up to 100 hours without power. Supercapacitor recharges automatically; no service or replacement required.
Wiring Terminals:	#20 to #6 AWG wire
Minimum ON/OFF Time:	1 second
Maximum ON/OFF Time:	Indefinite
Warranty:	Limited 3 year

Model Number	Circuits	Switch	Volts AC	Rating	Enclosure	Ethernet	Shipping Weight
ET90115C	1	SPDT	120-277	30 Amps	Type 1 Steel	Not Included	3.6 lbs (1.6kg)
ET90115CE	1	SPDT	120-277	30 Amps	Type 1 Steel	Included	3.6 lbs (1.6kg)
ET90115CR	1	SPDT	120-277	30 Amps	Type 3R Steel	Not Included	4.2 lbs (1.9kg)
ET90115CRE	1	SPDT	120-277	30 Amps	Type 3R Steel	Included	3.7 lbs (1.7kg)
ET90215C	2	SPDT	120-277	30 Amps	Type 1 Steel	Not Included	3.7 lbs (1.7kg)
ET90215CE	2	SPDT	120-277	30 Amps	Type 1 Steel	Included	3.7 lbs (1.7kg)
ET90215CR	2	SPDT	120-277	30 Amps	Type 3R Steel	Not Included	3.7 lbs (1.7kg)
ET90215CRE	2	SPDT	120-277	30 Amps	Type 3R Steel	Included	3.7 lbs (1.7kg)
ET90415CR	4	SPDT	120-277	30 Amps	Type 3R Steel	Included	20.2 lbs (9.2kg)
ET90815CR	8	SPDT	120-277	30 Amps	Type 3R Steel	Included	20.6 lbs (9.3kg)
ET91215CR	12	SPDT	120-277	30 Amps	Type 3R Steel	Included	21.0 lbs (9.5kg)
ET91615CR	16	SPDT	120-277	30 Amps	Type 3R Steel	Included	21.4 lbs (9.7kg)

Type 3R => indoor-outdoor
Type 1 => indoor

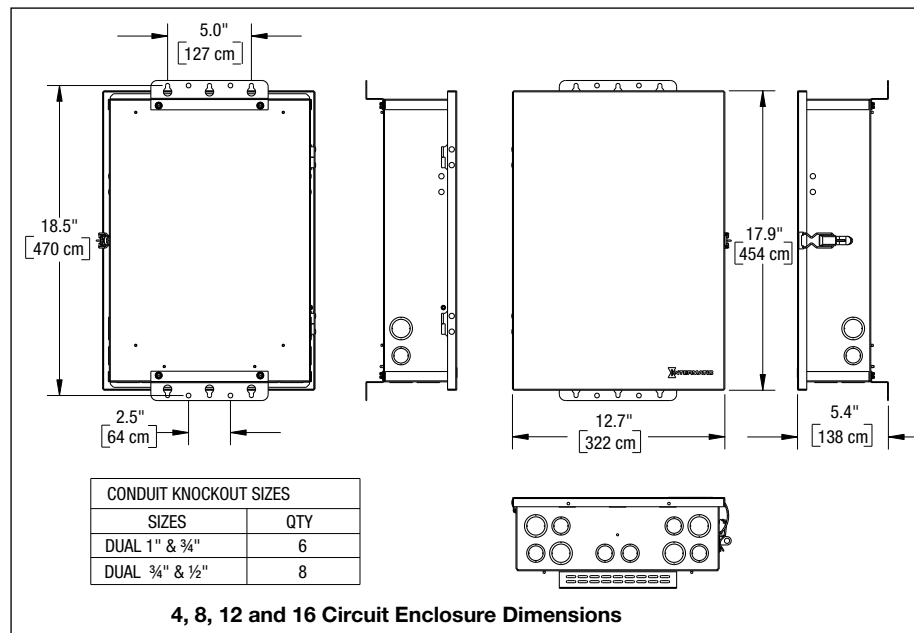
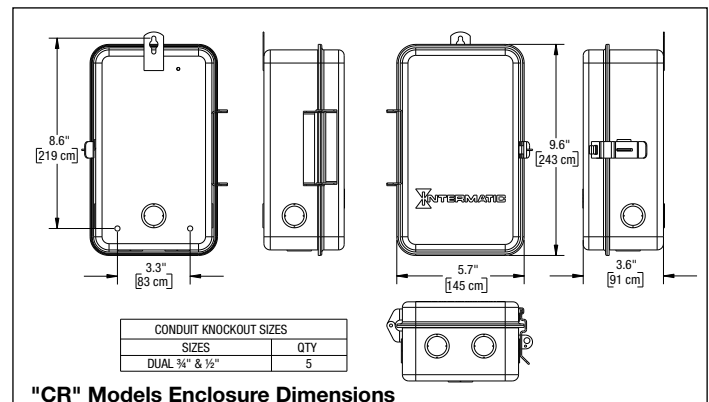
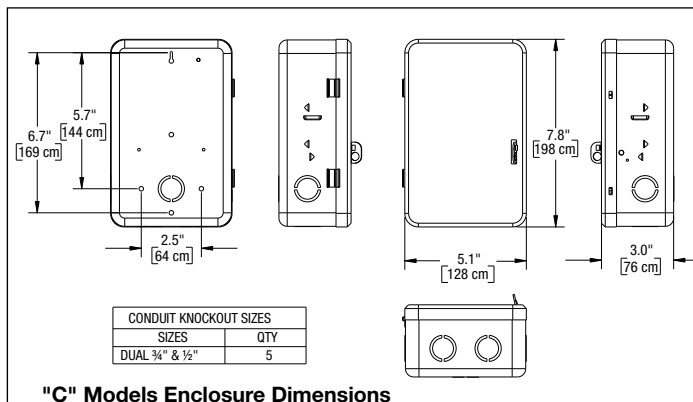
Specification

The time switch shall be of the 365-Day Astronomic electronic type capable of programming up to 4,000 scheduled ON/OFF operations. The time switch shall be able to turn ON at sunrise or sunset and OFF at sunrise or sunset without a photo control device. The time switch shall provide a minimum ON or OFF time of 1 second. The time switch shall be able to automatically adjust for and operate on 120-277 VAC at 50 or 60 Hz. The time switch shall be able to maintain time and date information without AC or battery power for at least 100 hours. The time switch shall be able to copy programming to other time switches or for backup purposes via USB. The time switch mechanism shall be a snap-in design to provide ease of mechanism removal for mounting the enclosure. The time switch enclosure shall be a lock-able _____(Type 1 Steel)(Type 3R Steel), enclosure that shall be painted with an electrostatic process to eliminate the potential for corrosion. The time switch shall provide clear circuit identification. A visual indicator shall be provided in the time switch for inspecting clock circuit operation. Terminal connections shall be capable of housing wire sizes up to #6 AWG. Switch configuration shall be SPDT with a UL or CSA listed switch rating of:

- General Purpose and Resistive: 30 Amps (NO Only) @ 12-240 VAC
- General Purpose and Resistive: 20 Amps (NO), 10 Amps (NC) @ 12-240 VAC
- General Purpose and Resistive: 20 Amps (NO), 10 Amps (NC) @ 28 VDC
- Ballast: 20 Amps (NO), 3 Amps (NC) @ 120-277 VAC
- Tungsten: 5 Amps (NO Only) @ 12-240 VAC
- Motor: 1 HP (NO), ¼ HP (NC) @ 120 VAC
- Motor: 2 HP (NO), ½ HP (NC) @ 240 VAC
- Pilot Duty: 470 VAC (NO), 275 VAC (NC) @ 12-240 VAC

The time switch shall be UL or CSA listed under UL category 916 Energy Management Equipment and shall be Intermatic model _____(See Model Numbers Listed).

Diagrams

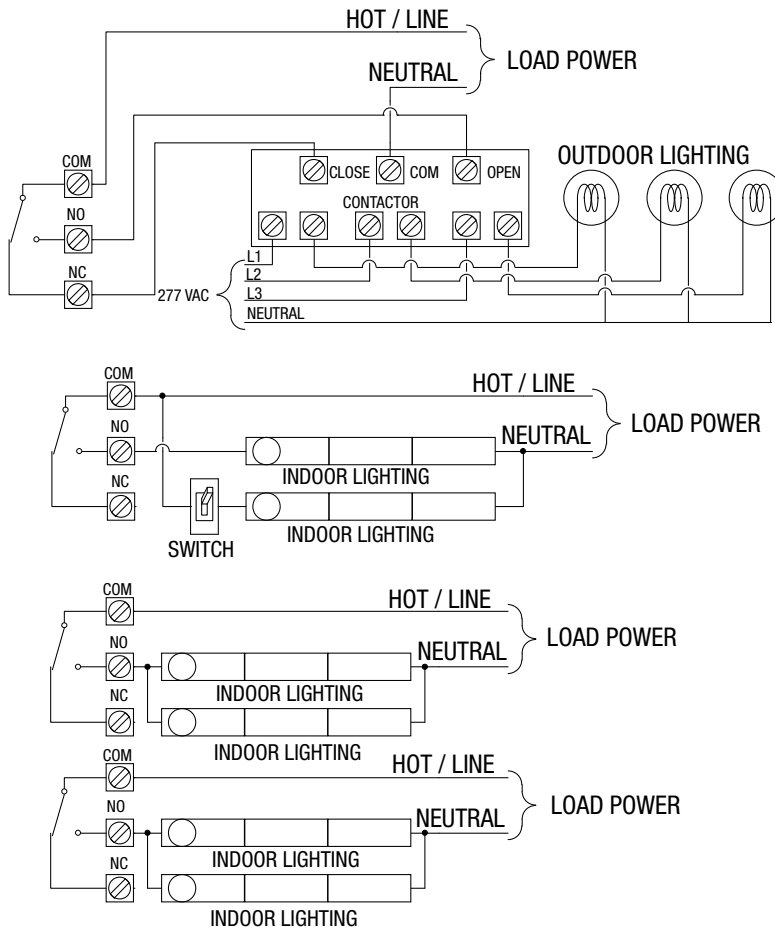
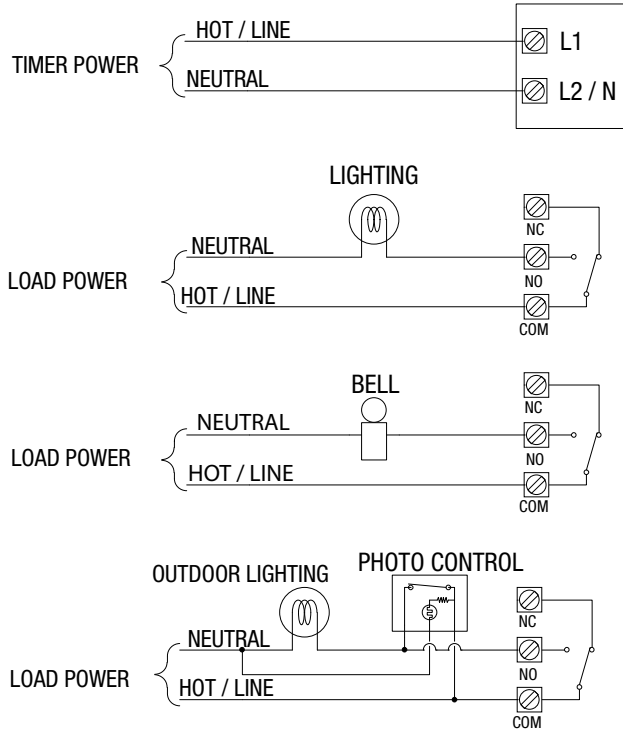


Input power terminals take any voltage from 120 to 277 VAC, 50/60 Hz. The transition is automatic.

Typical lighting installation. Multiple loads may be wired concurrently, within the maximum output ratings for the circuit.

Typical bell, buzzer, or ringing installation. Multiple loads may be wired concurrently, within the maximum output ratings for the circuit.

Photo control in parallel with the load. Either the time switch OR the photo control must be on to power the load. Ideal for improved safety. Loads will activate during the scheduled times or if the area is dark, from conditions such as a storm.



Typical electronically held contactor. The contactor is driven by a single circuit, using both the normally open and normally closed terminals. One input of the contactor will always be powered. More loads may be wired concurrently, within the maximum output ratings of the contactor.

Energy savings by 'dimming' output. Allows for ON/DIM instead of ON/OFF. Ideal for maintenance or security applications where some light is always required. The manual disconnect switch is recommended.

Bi-level lighting installation. Multiple loads may be split across different circuits to allow them to be controlled independently. Allows for ON/DIM/OFF instead of ON/OFF. Ideal for peak, off-peak, and closed business hours.