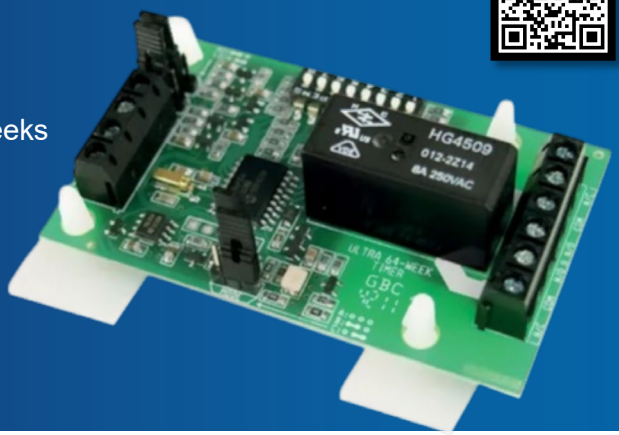
X10874

Variable AC Voltage Regulators

AT-372 Ultra Timer

Ultra Versatile Programmable Timer | 1 Second to 64 Weeks
4 Operational Modes | Dual Relay Output



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KEY FEATURES:

- ✓ **Wide Timing Range:** 1 second to 64 weeks, crystal-controlled
- ✓ **Four Operating Modes:** Including pulse, delay, latch, and monitoring functions
- ✓ **Flexible Input Voltage:** Auto-selecting between 9.5V and 30V DC
- ✓ **Double Pole Relay Output:** Switches mains power up to 8A
- ✓ **Selectable Input Polarity:** Jumper-configurable trigger and reset polarity
- ✓ **Pulse Activation Feature:** Optional 20-second auto-dropout
- ✓ Simple DIL Switch Setup: Time setting via lookup table
- ✓ **Compact Design:** 78 × 47 mm for easy installation
- ✓ **LED Status Indicators:** Confirms operating mode via flash pattern

APPLICATIONS:

- ➢ Fire door hold-open monitoring
- ➢ Access control and delayed response systems
- ➢ HVAC automation
- ➢ General industrial timed relay applications
- ➢ Lighting and alarm triggers

The AT-372 Ultra Timer is a highly versatile, crystal-controlled timing module offering a time period range from 1 second to 64 weeks. Featuring four selectable operating modes and automatic voltage detection (9.5-30V DC), it provides precise control for applications such as fire door monitoring, access control, HVAC automation, industrial timed relay functions, and various lighting and alarm triggers, all managed via easy-to-use DIL switch settings.

TECHNICAL SPECIFICATIONS

Input Levels for Trigger or Reset:	**LOW:** Less than 220 Ohms to ground OR input less than 0.8 Volts. **HIGH:** Greater than 4700 Ohms to ground OR input greater than 4 Volts. **Maximum Input Voltage:** 30V **Minimum Input Voltage:** 4V **Peak Current:** 5mA from either pin.
Output Levels (Double Pole Contacts):	**AC:** Maximum switching voltage 250V, maximum current 8 Amps (non-inductive load). **DC:** Maximum switching voltage 30V (some sources state 28V), maximum current 5 Amps (non-inductive load). **Minimum Switching Level:** 5V @ 10mA.
Environmental Operating Conditions:	**Temperature Range:** −10°C to +60°C. **Maximum Humidity:** 80% non-condensing.
Supply Voltage:	Between 9.5V and 30V, automatically selected.
Current Consumption:	34mA when energised, 3mA quiescent current.
Dimensions:	78L×47W×22H
Packing Weight:	80 grams.
Unit Supplied:	In a strong cardboard carton with 4 sticky fixers.

Operating Modes: The timer features four modes, selected by jumper links, and indicated by LED flash patterns upon power connection:

Mode A:	Relay activates after a delayed/expired time period. If the "auto link" is fitted, the relay drops out after approximately 20 seconds and waits for the next trigger. (1 flash on LED).
Mode B:	Trigger applied, relay activates for the set time period, then deactivates, ready for the next trigger. (2 flashes on LED).
Mode C:	The trigger must remain active for the entire duration of the time setting for the relay to activate. This mode requires a reset unless the "auto link" is fitted, in which case the relay drops out after approximately 20 seconds. Ideal for applications like fire door monitoring. (3 flashes on LED).
Mode D:	Similar to Mode C, but the relay does not require a reset and remains energised until the trigger is removed (e.g., a door closing). If the "auto link" is fitted, the relay drops out after 20 seconds. (4 flashes on LED).

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Installation Instructions

The AT-372 Ultra Timer is a versatile device offering four distinct modes of operation and a wide, selectable time period ranging from 1 second to 64 weeks. It is designed for straightforward installation, automatically adjusting to either a 12V or 24V DC power supply upon connection.

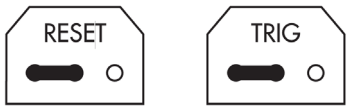
1. Power Connection & Initial Setup

- Connect the timer to a 12V or 24V DC power supply. The unit will automatically adjust internally.
- Upon power-up, observe the LED flash pattern to confirm the selected operating mode:
  - 1 flash: Mode A
  - 2 flashes: Mode B
  - 3 flashes: Mode C
  - 4 flashes: Mode D

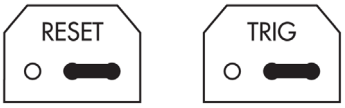
2. Setting Trigger and Reset Input Polarity

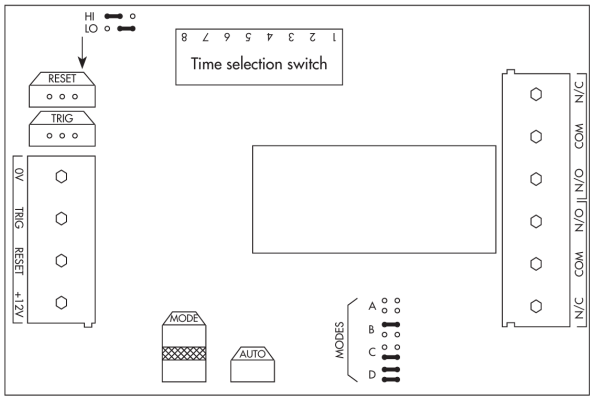
The input polarity for both the TRIG (trigger) and RESET functions can be set to either HIGH or LOW using jumper links. This allows the timer to be triggered or reset by connecting the input to either +12V (HIGH) or 0V (LOW).

For Positive (HI) Trigger/Reset: Set the corresponding jumper link to the 'HI' position.



For Negative (LO) Trigger/Reset: Set the corresponding jumper link to the 'LO' position.

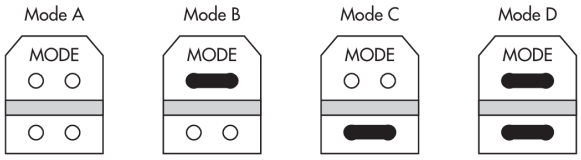




Important Note: Always leave the RESET jumper in the Positive (HI) position, even if the RESET function is not being utilised.

3. Selecting the Operating Mode

Choose one of the four operating modes by setting the appropriate jumper link (refer to the physical timer board for jumper locations, typically labelled A, B, C, D).



- **Mode A: Delayed Activation**
  - When a trigger is applied, the timer counts down the set time period.
  - After the time period expires, the relay activates.
  - **Auto Link Feature:** If the "AUTO" jumper link is fitted, the relay will de-energise after approximately 20 seconds, becoming ready for the next trigger.
  - **Reset Requirement:** A reset is required unless the "AUTO" link is fitted.

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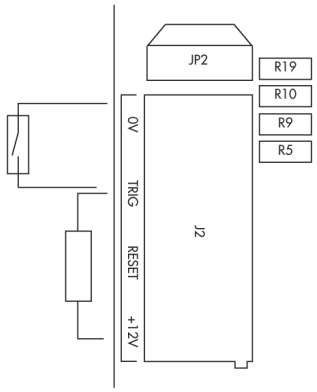
- **Mode B: Energised for Time Period**
    - When a trigger is applied, the relay immediately activates for the duration of the set time period.
    - After the time period expires, the relay deactivates and is ready for the next trigger.
- **Mode C: Trigger Must Remain Present**
    - The trigger must remain applied for the entire duration of the set time period for the relay to activate.
    - **Example (Fire Door Monitoring):** If set for 3 minutes, opening a door starts the timer. If the door closes before 3 minutes, nothing happens. If the door remains open after 3 minutes, the relay will activate.
    - **Reset Requirement:** This mode requires a reset unless the "AUTO" jumper link is fitted.
    - **Auto Link Feature:** If the "AUTO" jumper link is fitted, the relay will de-energise after approximately 20 seconds, becoming ready for the next trigger. This mode is ideal for door monitoring applications.
- **Mode D: Trigger Remains Energised Until Trigger Removed**
    - Similar to Mode C, the trigger must remain present for the duration of the time setting for the relay to activate.
    - However, the relay does not require a separate reset.
    - The relay will stay energised until the trigger input is removed (e.g., the door closes).
    - **Auto Link Feature:** If the "AUTO" jumper link is fitted, the relay will de-energise after approximately 20 seconds, becoming ready for the next trigger (as seen in Mode C).



4. Setting the Time Period

The time period (seconds, minutes, hours, days, or weeks) is set using the DIL switches. To set the desired time, refer to the "time table" provided in the product documentation and adjust the DIL switches accordingly. The timer is crystal-controlled for accurate timekeeping.

5. Door Monitoring Example

For a door monitoring application, select Mode C or Mode D and set the trigger input polarity to positive (+VE / HI).

- Connect a 1.8 k-Omega (1k8) resistor (supplied) between the TRIG input and +12V.
- Connect a door contact switch between the TRIG input and 0V (-VE).

This setup functions as follows: The resistor acts as a 'pull-up' resistor. When connected from +12V to the trigger input, it drives the trigger 'HIGH'. If the door contact is closed, it pulls the trigger input to 0V (LOW), preventing the timer from triggering. The timer will only trigger when the door switch is opened. The resistor also limits the current flowing to an acceptable low level when the door is closed.

RECOMMENDATIONS

FUSING

It is recommended to use semiconductor (fast acting) type fuses or circuit breakers (Semiconductor - MCB) for unit protection. On initial switch on some loads may need an increased Factor of Safety (F of S) for unit and/or device protection. See SRA datasheet for information.

DOCUMENTS

Other documents available on request, which may be appropriate for your application:

Code	Identity	Description
X10213	ITA	Interaction: Uses for phase angle and for burst fire control
X10255	SRA	Safety Requirements: Addressing the Low Voltage Directive (LVD) including, Thermal Data/Cooling, Live Parts Warning, Earthing Requirements and Fusing Recommendations

It is recommended that installation and maintenance of this equipment should be done with reference to the current edition of the I.E.T. regulations (BS7671) by suitably qualified/trained personnel. The regulations contain important requirements regarding the safety of electrical equipment. For International standards refer STANDARDS on D of C.

PRODUCT CODE AND RELATED PRODUCT CODE

Product Code	Product Description
A-AT-372	AT-372 Ultra Timer – Programmable Delay Timer (1s–64 Weeks)