



# Master Time/ Program Clock



## Overview

The Edwards Models 24A715 and 24A715M Master Time/Program Clocks are compact, microprocessor-controlled clocks capable of maintaining the correct time for Edwards analog and digital secondary clocks and for many third-party secondary clocks.

The basic clock consists of a display unit and power/relay unit that can be assembled in a surface, semi-flush, or rack mount configuration. The display unit has a digital display that shows the date and time and also provides programming menus to guide the user through programming and operating modes. A 12-button key pad is used to manually enter commands and programming instructions. The front panel LEDs indicate control relay status and, in master clocks with the modem option (24A715M), display the modem communications status.

All wiring to AC power and secondary equipment (such as clocks, bells, and zone controls) connects to terminal blocks within the power/relay unit backbox using quick connects supplied with the master clock.

Time base synchronization is derived from the AC line frequency. The clock automatically detects the selection of 50Hz or 60Hz. During power failures (or when AC power is shut off manually via an internal toggle switch), accurate time is maintained by a quartz crystal time base supported by lithium battery backup. When AC power is restored, the clock's microprocessor calculates the amount of time lost by the secondary clocks and re-synchronizes them.

In addition to hourly and periodic 12-hour synchronization of secondary clocks, the master clock can automatically adjust for daylight saving time (DST) with support for over 70 countries, as well as custom DST schedules.

## Standard Features

- User programmable
- Eight program schedules
- 64 time events per schedule
- Automatic adjustment for daylight savings time
- Four-digit time/event display
- 12-hour AM/PM indication
- 10-year battery backup
- Surface, semi-flush or rack mountable
- Model 24A715 is UL/cUL listed

## Application

The master clock has eight signal circuits, four of which can be designated for clock synchronization. Circuits not used for synchronization can be operated manually by key pad, or automatically, according to the active schedule. Each relay circuit can be wired to a separate wire path to control signal devices in specific areas of the facility.

The clock can be programmed with up to eight schedules, each containing up to 64 multi-functional events (e.g., On Wednesdays, Fridays, and holidays, activate control circuits #1, #3, and #4 at 2:45 PM for a duration of 7 seconds.) Schedules can be simultaneously active, providing up to 512 multi-functional events. Each of the 64 events (per schedule) includes the hour, minutes, days of the week, desired circuits, and duration of activation (or start/stop times). Each event can be set for 1 to 99 seconds or using start and stop times separated by up to 23 hours and 59 minutes. Each circuit can be independently enabled or disabled for program occurrence.

A table of up to 16 holidays can be created so that normal schedules can be easily modified and automatically restored at the end of each holiday. The clock also maintains a table of up to 16 schedule-change dates to accommodate the automatic activation of seasonal schedule changes.

The master clock's internal control program supports four modes of operation: clock mode, program mode, run mode, and sleep mode.

- Clock mode displays the time and date and scans the key pad for user input and the communication ports for external data.
- Program mode interacts with the user during manual programming procedures, presenting the menus and saving user instructions in protected memory.

- Run mode executes whenever AC power is applied to the master clock. In run mode, secondary clocks are synchronized and user-programmed bell/zone schedules are carried out.
- If AC power to the master clock is interrupted, the clock enters sleep mode, in which programmed instructions and setup parameters are preserved and only the internal real-time clock remains active to maintain the date and time.

The master clock can be programmed via the front panel key pad, or with computer assistance using optional MasterLink™ software purchased separately. Programmable parameters include:

- Security password
- System date and time
- Clock types (any two of 24 analog and digital types)
- Manual bell/control zone activation
- Bell zone schedules (with event durations up to 99 seconds)
- Control zone schedules for doors, HVAC, etc., with event durations up to 24 hours. Note: External latching relays are required for any events exceeding 99 seconds. These relays are not supplied by Edwards.
- Dates for automatic schedule changes to take effect
- Manual disabling of selected circuits
- Automatic daylight saving time features
- Daylight Saving Time support for 70 countries
- Manual (immediate) change of bell/zone schedules
- Manual (immediate) synchronization of clocks to the master clock
- Advance programming of dates for running on holiday schedules
- Communication parameters (baud rate, terminal ID)

## Specifications

Input Voltage	120 or 220/240Vac @ 50 Hz or 60 Hz
Input Power	50VA maximum (less than 0.5A @ 120V)
Memory/quartz Time Backup	10-year (nom.) lithium battery
Signal And Clock Circuit Relays	Eight electromechanical, 10A (plug-in) Note: Edwards digital clocks require one solid-state plug-in relay, purchased separately by ordering the Model 438-860 kit
Operating Temperature	32°–175° F (0°–80° C)
Weight	Approximately 12 Lb (5.4 Kg)
Dimensions	Rack Mount—5-1/4 in (13.3 cm) high x 19 in (48.3 cm) wide x 6 in (15.2 cm) deep Wall Mount—6-1/4 in (15.9 cm) high x 13 in (33 cm) wide x 4-1/2 in (11.4 cm) deep Backbox—12 in (30.5 cm) wide x 6 in (15.2 cm) high x 3-3/8 in (8.6 cm) deep Face Plate—13 in (32.5 cm) wide x 5-1/4 in (13.3 cm) high x 1 in (2.5 cm) deep
Mounting Options	Semi-flush, surface, 19 in (48.3 cm) rack, or remote
Secondary Clocks Supported	Supports most brands of traditional analog and digital clocks See Secondary Clocks Supported below
Bell/control Zones And Schedules	Up to eight zones (decreased to 6 zones with one clock output, or 4 zones with two clock outputs) Eight schedules, each with 64 multi-function events/schedule Daylight saving time—supports DST standards of over 70 countries
Remote Communications with Atomic Clock	Internal modem (option) dial in/dial out
Certifications/Registrations	Model 24A715 is UL/cUL Listed FCC Part 15, Class A/Industry Canada ICES-003, Class A

### Secondary Clocks Supported

**The master clock is supplied with a removable EPROM programmed and capable of operating and controlling the following types of secondary clocks:**

Edwards	24SS Series, 24ISC, 24F200, 24750, 24F750A, 24D20, 24D20A, 24D40, 24D40A, 240 Series, Synchronous Wired
Lathem	Type SS, ISC 2-Wire/3-Wire, SS Modified
Cincinnati	D1, D2, D3, D4, D6, D8, D10
Simplex	77 Series 91-9, 93-9, 941-9, 943-9, 75 Series 91-4, 93-4, 941-4, 943-4, Dual Motor 59th Minute, Dual Motor 45th Minute
IBM	75 Series, 77 Series
Standard Electric	D10, D12, Impulse, Synchronous, AR-2A, AR-2, AR-3
Stromberg	3000, Impulse, Synchronous 56th Minute
Edwards	Synchronous E-1, Impulse, Dual Motor
Faraday	Impulse, Synchronous
Rauland	2410 & 2422 Digital
Condor	2412 Digital
National	Synchronous Wired
Honeywell	ST402A
Others	Electronic Coded, Straight Frequency

## Ordering Information

Model	Description
24A715	Master Time/Program Clock
24A715M	Master Time/Program Clock with Modem Option
438-960	Solid State Relay Kit for Digital Clocks
LTR-GPS	Satellite Receiver & Sync( By Lathem)



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