DUKANE™
Commercial Sound Technology

Clock System Accessories


110-3693
AC Clock Power Supply


24D40A Four-inch Digital Secondary Clock


24DS250 Digital Clock/ Speaker


110-3836A Digital Clock Synch Module


24D20A Two-Inch Digital Secondary Clock


24DW750, 24DC750 Double Faced Digital Secondary Clock


24SC15R-SPL/ 24SC15R-SPL Series Synchronous Secondary Analog Clock


25D750 Dual-faced Digital Clock and Speaker Housing

9A1900 Elapsed Timer Start Button


24A716 Battery Operated Clock


24CC10 Clock Controller


110-3902 Dual Four-inch Digital Clock Housing

Overview

Edwards clocks and accessories are high-performance timekeeping devices that offer a wide range of options and features. In addiaiton to standalone battery-powered models, Edwards offers reliable clocks, controllers, and accessories compatible with centrally-controlled and self-correcting systems. Several of these work in combination with StarCall, and MCS350 systems to provide a total timekeeping and communications solution.

Accessories

- 24A716 Battery Operated Clock
- 25D750 Dual-faced Digital Clock and Speaker Housing
- 24DW750, 24DC750 Double Faced Digital Secondary Clock
- 24SS Series Synchronous Secondary Analog Clock
- 24CC10 Clock Controller
- 110-3902 Dual Four-inch Digital Clock Housing
- 24D20A Two-Inch Digital Secondary Clock
- 24D40A Four-inch Digital Secondary Clock
- 24DS250 Digital Clock/speaker housing
- 24SC12R, 24SC12R-SPL, 12SC15R-SPL Analog Secondary Clocks
- 9A1900 Elapsed Timer Start Button
- 110-3693 AC Clock Power Supply
- 110-3836A Digital Clock Sync Module

DATA SHEET 85098-0003
Not to be used for installation purposes. Issue 4

24A716 Battery Operated Clock

- Surface mounting
- Quartz movement
- Battery operation
- 12-Hour dial face numbers

The Edwards Model 24A716 Battery Operated Clock needs no wiring or external power for installation. A quartz movement powered by a single 1.5 volt AA cell battery (not included) provides accurate timekeeping. This lightweight clock is surface mounted for easy installation. The 24A716 is designer-styled, featuring easy-to-read dial face numbers and a sweep second hand housed in durable black plastic. A white plastic housing is also available.

Specifications: 24A716 Battery Operated Clock	
Diameter	Face - 12 in (30.5 cm) Housing - 13-3/8 in (34 cm)
Depth	2-3/4 in (7 cm)
Shape	Round
Face	Arabic numerals, 12-hour format (24-hour available [-24H])
Color	Black housing (white available [-W])
Shipping Weight	3 lb (1.4 kg)

25D750 Dual-faced Digital Clock and Speaker Housing

- Compact speaker/clock combination
- Two-inch (5.1 cm) high LED display
- Eight-inch (20.3 cm) speaker
- Dual voltage transformer

The Edwards Dual-Faced Digital Clock and Speaker Housing, Model 25D750, is a compact unit with two Edwards digital secondary clocks and two 8-inch (20.3 cm) loudspeaker mounting brackets. The unit includes one 5A606 speaker with a dual-voltage impedance matching transformer. Another speaker/transformer can be added, if required. The unit is designed for corridors and large rooms, and is ceiling mounted from the top housing mounting enclosure to a backbox. The clocks are equipped with 2-inch (5.1 cm) high digital displays with Arabic numerals. An external switch can be added for each clock to blank the numerals in the display, if required. The clocks are capable of displaying time in either 12- or 24-hour format. Each 14-1/4 inch (36.2 cm) square digital clock/speaker baffle assembly is finished in black, semi-rigid, preformed grille cloth within an aluminum frame. Both clock/speaker baffle assemblies are mounted on an 18-gauge steel housing with a baked-on, platinum white enamel finish.

Engineering Specification

The Dual-Faced Digital Clock and Speaker Housing shall be Edwards Model 25D750 or an approved equal, as indicated on the plans. The unit shall provide two Edwards digital secondary clocks compatible with the Edwards master clock and shall provide mounting facilities for two 8-inch (20.3 cm) loudspeakers with matching transformers. One loudspeaker/transformer shall be included, and it shall be possible to add an additional loudspeaker/transformer.

The loudspeaker shall be an 8-inch (20.3 cm) PM seamless cone type, Edwards Model 5A606 (including transformer), with a frequency range of 90Hz to 15,000Hz, a nominal wattage of 8 watts, a program rating of 12 watts, and axial sensitivity of 91dB at 1 meter (3.3 feet) for 1 watt input. The speakermatching transformer shall be dual voltage with 1/2, 1, and 2 watt taps for 25 volt operation and 1/2, 1, 2, and 4 watt taps for 70 volt operation. The speaker-matching transformer shall have pigtail leads.

The clock shall be capable of displaying time in either 12- or 24-hour format. The display shall be a 2-inch (5.1 cm) high LED unit with Arabic numerals and shall require 15 volts DC at 0.6 amperes, maximum power input. The terminations shall be pigtail leads. An external switch to blank the numerals shall be added, if required.

The clock/speaker baffle assembly shall be surface finished in black, semirigid, preformed grille cloth contained within an aluminum frame. The clock and speaker shall be fabricated from 18-gauge cold rolled steel, which shall be finished with baked-on, platinum white enamel. The unit shall be 14-1/4 in (36.2 cm) high, 14-1/4 in (36.2 cm) wide, and 6-3/4 in (17.1 cm) deep, and shall weigh 16-1/4 pounds (7.3 kg).

24DW750, 24DC750 Double Faced Digital Secondary Clock

24DW750

24DC750

- Two-inch (5.1 cm) high numerals
- High visibility display
- Completely solid-state
- 12- Or 24-hour time format
- Wall or ceiling mount
- P.M. LED indicator (12-hour format)

The Edwards Model 24DW750 or 24DC750 Double Faced Digital Clock has two Edwards digital secondary clocks contained in a single compact unit. Designed for corridors or large rooms, the clocks are equipped with 2-inch (5.1 cm) high digital displays designed for visibility at 100 feet (30.5 m) under normal ambient light. An external switch can be added to blank the display. The clocks can display time in either 12- (with P.M. LED) or 24-hour format. The unit is 4-1/2 in (11.4 cm) high, 11-15/16 in (30.3 cm) wide, and 5-1/8 in (13 cm) deep. It has clock trimplates constructed of high impact, non-conductive, flame-retardant, charcoal-colored material, and a mounting frame finished in white, baked enamel.

Engineering Specification

The Double Faced Digital Secondary Clock shall be Edwards Model (24DW750, 24DC750) or approved equal, and shall be furnished and installed as indicated on the plans. The unit shall provide two Edwards digital secondary clocks that are compatible with the Edwards Model 24A715/M Master Time-Program Clock. Each digital display shall be a 2-inch (5.1 cm) high unit with Arabic numerals, designed for visibility at 100 feet (30.5 m) under normal ambient light. The clock shall be capable of displaying time in either 12- (with P.M. LED) or 24-hour format, and of blanking the display numerals. The unit shall be 4-1/2 in (11.4 cm) high, 11-15/16 in (30.3 cm) wide, and 5-1/8 in (13 cm) deep, with clock trimplates constructed of high impact, non-conductive, flame-retardant, charcoal-colored material, and a mounting frame finished in white, baked enamel. Clock terminations shall be to a plug-in connector.

Specifications: 25D750 Dual-faced Digital Clock And Speaker Housing	
Edwards Model 5A606 Speaker/Transformer	
Speaker Type	8 in (20.3 cm) PM seamless cone speaker
Frequency Range	90Hz to 15,000Hz
Normal Wattage	8W
Program Rating	12W
Axial Sensitivity	91dB at 1 meter (3.3 feet) for 1 W input
Speaker-matching Transformer	Edwards Model 710-3092
Dual voltage	1/2W, 1W and 2W taps for 25V operation 1/2W, 1W, 2W and 4W taps for 70V operation 4 in (10.2 cm) pigtail leads
Clock	
Power Required	15Vdc at 0.6A, maximum
Display	2 inch (5.1 cm) high LED unit with Arabic numerals
Format	Displays time in either 12- or 24-hour format
Terminations	12 inch (30.5 cm) pigtail leads
Clock/speaker Baffle Assembly	Finished in black, semi-rigid, preformed grille cloth contained in an aluminum frame
Clock And Speaker Housing	18-gauge cold rolled steel with baked-on, platinum white enamel finish
Dimensions	14-1/4 in (36.2 cm) high, 14-1/4 in (36.2 cm) wide, 6- 3/4 in (17.1 cm) deep
Net Weight	16-1/4 pounds (7.3 kg)

24DS250 Digital Clock/ Speaker Housing

- Attractive digital clock/speaker
- Two-inch high LED display
- Eight-inch speaker
- Dual voltage transformer
- Metal grille

Engineering Specification: The Edwards Model 24DS250 Digital Clock/Speaker is an attractive unit with a Two-Inch Digital Secondary Clock and a Model 5A606 Speaker with a dual voltage impedance-matching transformer. The LED display is 2 inches (5.1 cm) high, and is highly visible.

The digital clock shows time in either 12- or 24-hour format. The baffle is 14-1/4 inches (36.2 cm) high, 14-1/4 inches (36.2 cm) wide, and 3 inches (7.6 cm) deep.

The grille is black perforated steel, and the frame is extruded aluminum with a dark gray finish. When flush mounted using the 145-192 backbox, the clock housing protrudes only 0.82 inches (2.1 cm) from the wall surface

The Digital Clock/Speaker shall be Edwards Model 24DS250 or an approved equal. The unit shall provide a two-Inch digital secondary clock compatible with the Edwards master clock and a Model 5A606 Speaker with an impedance-matching transformer. The clock shall be capable of displaying time in 12- or 24-hour format. The display shall be a 2-inch (5.1 cm) high LED unit with high intensity digits, and shall require 24Vac at 125mA for Bright illumination or 67mA for Normal illumination. The removable plug shall have pigtail leads.

The loudspeaker shall be an 8-inch (20.3 cm) PM seamless cone type with a frequency range of 90Hz to 15,000Hz, a nominal wattage of 8 watts, a program rating of 12 watts, and an axial sensitivity of 91dB at 3.3 feet (1 meter) for 1 watt input. The speaker-matching transformer shall be dual voltage with ½, 1, and 2 watt taps for 25-volt operation, and ½, 1, 2, and 4 watt taps for 70-volt operation. The transformer shall have pigtail leads.

The clock/baffle assembly shall have a black, perforated steel grille contained within a dark gray aluminum frame. The housing shall be 14-1/4 in (36.2 cm) high, 14-1/4 in (36.2 cm) wide, and 3 in (7.6 cm) deep including the speaker. The unit shall weigh 6 pounds (2.7 kg), and it shall be mounted to an Edwards backbox, part number 145-192.

Specifications: 24DS250 Digital Clock/Speaker	
Clock	
Power Required	24Vac (+/–5Vac)—NOT TO EXCEED 30Vac 125mA in Bright display mode (3W) @ 24Vac 67mA in Normal display mode (1.6W) @ 24Vac
Display	2 in (5.1 cm) high LED unit with Arabic numerals
Format	Displays time in 12- or 24-hour format
Terminations	Plug with pigtail leads
Viewing Distance	110 ft (33.5 m) in bright intensity mode with normal lighting 100 ft (30.5 m) in normal intensity mode with normal lighting
Lens	Anti-glare acrylic
Speaker/Transformer, Edwards Model 5A606	
Speaker Type	8-inch (20.3 cm) PM seamless cone speaker
Frequency Range	90 Hz to 15,000 Hz
Nominal Wattage	8W
Program Rating	12W
Axial Sensitivity	91dB at 1 meter (3.3ft) for 1W input
Speaker Matching Transformer	Edwards Model 710-3092 Dual voltage 1/2W, 1W, and 2W taps for 25V operation 1/2W, 1W, 2W, and 4W taps for 70V operation Pigtail leads
Clock/Speaker Baffle Assembly, Edwards Model 110-3822	
Finish	Black, perforated metal grille within a dark gray aluminum frame
Net Weight	6 lb (2.7 kg)
Dimensions	14-1/4 in (36.2 cm) high, 14-1/4 in (36.2 cm) wide, 3 in (7.6 cm) deep, including speaker

24SS Series Synchronous Secondary Analog Clock

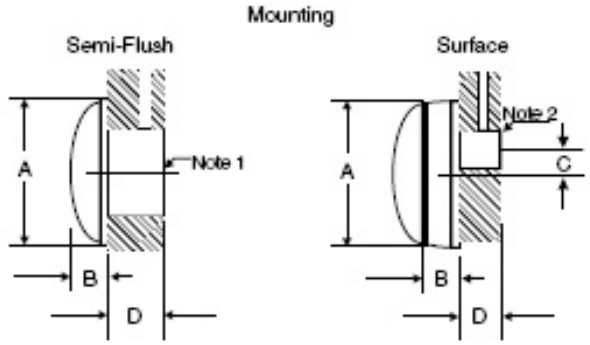
- Attractively finished
- Multiple sizes
- Controlled by master
- Easy installation
- Underwriters' Laboratories listed

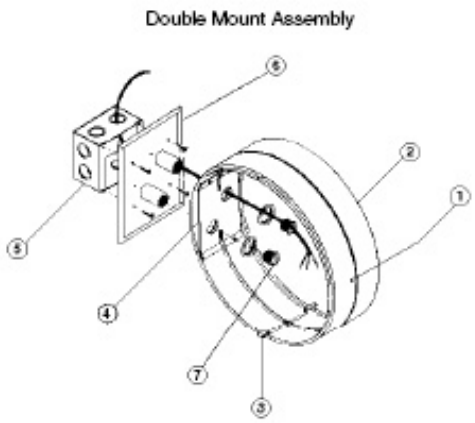
The Edwards Model 24SS Series Synchronous Secondary Analog Clocks are available in round 12-inch (30.5 cm) and 15-inch (38.1 cm) sizes. The dials and hands are protected by a convex glass lens. An optional shatterproof Lexan® lens is available for the 12-inch size only. The clocks are mounted semi-flush, surface, or double, with the double mounting from either wall or ceiling. The analog clocks display time in either 12- or 24-hour format.

The clock markings are in Arabic numerals displayed in Helvetica font. The synchronous-wired clocks are designed to work with the Edwards Model 24A715, 24A715M, MCS350, StarCall, master clocks. All clocks are mounted on a 22-gauge steel housing and finished in matte charcoal gray.

Specifications: 24SS Series Synchronous Secondary Analog Clock	
General Description	Round clock, 12 in (30.5 cm), or 15 in (38.1 cm) diameter Arabic (1-12 or 0-23 hour) clock face Matte charcoal-gray case
Connections	Each clock is furnished with a cable assembly 18 in (45.7 cm) long with a polarized plug and mating socket.
Wiring	Red (correction coil) Black (run motor) White (common return) Green/Shield (safety ground)
Frequency and Power Requirements	
Correction	Minute hand corrects hourly Hour hand corrects every 12 hours
Coil Input Voltage	115Vac, 24Vac, or 24Vdc
Motor Input Voltage	115Vac or 24Vac
Coil Input Frequency	60Hz or DC
Motor Input Frequency	60Hz
Coil Input Power	4 Watts
Motor Input Power	4W (8W for double faced)
Mounting	
Surface	Mount to RACO 695 single-gang backbox or equal (order separately).
Semiflush	24SS mounts to a 8-SAM0576 custom backbox. (Order backboxes separately.) Dimensions: 8 in (20.3 cm) high, 6 in (15.2 cm) wide, 3 in (7.6 cm) deep.
Double Faced	Mount to a 4-inch (10.16 cm) by 4-inch (10.16 cm) dual gang backbox (order separately). Adapter plates are furnished with each assembly for wall or ceiling mount. Specify wall or ceiling mount when ordering.

Mounting for 24SS Series Synchronous Secondary Analog Clock





Clock Type Face	**Dimensions**	**Outside Dimensions (A)**	**Distance Protrude (B)**	**Backbox Above Clock Ctr (C)**	**Backbox Depth (D)**	**SS Series Ship Weight**
12 RF RD-Semi Flush	12.12 in (30.79 cm)	13.12 in (33.32 cm)	1.62 in (4.11 cm)	Approximate Center	3 in (7.6 cm)	11.9 lb (5.36 kg)
15 RF RD-Semi Flush	15.75 in (40.0 cm)	16.75 in (42.55 cm)	1.75 in (4.45 cm)	Approximate Center	3 in (7.6 cm)	14.3 lb (6.44 kg)
12 RS RD Surface	12.12 in (30.79 cm)	14.5 in (36.83 cm)	3.87 in (9.83 cm)	4.62 in (11.73 cm)	3.5 in (8.89 cm)	9.5 lb (4.28 kg)
15 RS RD-Surface	15.75 in (40.0 cm)	18.25 in (46.36 cm)	4 in (10.16 cm)	6.5 in (16.51 cm)	3.5 in (8.89 cm)	11.6 lb (5.22 kg)

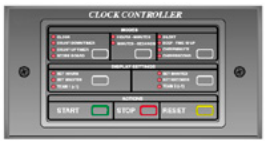
Notes:

1. Use Model 8-SAM0576 for 24SS clocks (order separately).
2. Use RACO #695 single-gang box or equivalent (order separately).

When mounting a double-faced clock, use the Edwards Model 23D Assembly Kit. Items with an * are included in the 23D.

*1. Two 12 RD/E or 15 RD/E Clock Assemblies
D = Wall Mount E = Ceiling Mount
*2. Outside Case Assembly
*3. Retaining Clips
*4. Case Adapter Plate
*5. 4 in x 4 in Wall Box or Ceiling Box
*6. Wall/Ceiling Adapter Plate
*7. Miscellaneous Mounting Hardware

24CC10 Clock Controller



User-friendly front panel controls

- Controls Edwards two-inch or four-inch digital clocks
- Operating modes: 12 or 24-hour clock; count down timer; elapsed timer; score board; code blue elapsed timer
- Operates independently or as slave to master clock
- Timer display settings: hours/minutes; minutes/seconds
- Operates from 15Vdc or 24Vac
- Mounts in standard three-gang backbox

The Edwards Model 24CC10 Clock Controller is a compact, microprocessor-controlled unit that enables an Edwards 24D20A Two-Inch Digital Secondary Clock or 24D40A Four-Inch Digital Secondary Clock to be used for count up timing, count down timing, score keeping and code blue timing. The digital clock serves as the time indicator and display for the clock controller in the room. The digital clock is mounted for optimum visibility, while the clock controller is mounted in a convenient location that allows access to its controls.

The Model 24CC10 Clock Controller is designed for ease of use, with logical button groupings, intuitive labeling, and LED function guidance. When a particular operating mode is selected, related LEDs illuminate to indicate the commands available in that mode. A lock-out feature allows the front panel controls to be disabled, preventing unauthorized use. The 24CC10 and its associated digital clock can operate as a stand-alone clock/timer or as a secondary clock under the corrective control of an Edwards Model 24A715 or 24A715M Master Time/Program Clock. The 24CC10 can also operate under the corrective control of a StarCall® or MCS350 master clock. The 24CC10 is powered by a separate 10 to 24Vac or 10 to 15Vdc power source. The 24CC10 has five operating modes:

Clock Mode displays the time on the Edwards digital clock in 12- or 24-hour format. In clock mode, the clock controller operates under the control of a master clock. In the absence of a master clock, the clock controller can operate in stand-alone mode, governing the time for its associated Edwards digital clock. Stand-alone mode does not provide battery backup for the clock display, therefore Edwards recommends that a master clock be used.

Count Down Timer Mode counts down to zero from a user-selected start time. The timer can count down by minutes and hours or by seconds and minutes. It can also be set to run silent, to beep when the timer runs down to zero, to chirp once per minute and beep at zero, or to chirp once per minute and once per second and beep at zero. During the count down sequence the timer can be stopped, restarted, and reset to its original target value.

Count Up Timer Mode measures the duration of an event. The timer can count up by hours and minutes or by minutes and seconds. It can also be set to run silent, to chirp once per minute, or to chirp once per minute and once per second. During the count up sequence the timer can be stopped, restarted, and reset to the initial timer value.

Score Board Mode uses the digital clock as a simple score board. The two left digits of the clock display the score of team 1 and the two right digits display the score of team 2.

Code Blue Timer Mode shows the elapsed time from when a code blue call is placed to when the STOP button is pressed on the clock controller. The code blue timer overrides anything currently displayed on the digital clock. This mode requires a contact closure from a separate device that initiates code blue calls.

Specifications: 24CC10 Clock Controller	
Operating Voltage	24Vac nominal—recommended (10Vac min. to 30Vac max.) —or— 15Vdc nominal (10Vdc min. to 30Vdc max.)
Current Consumption	91mA @ 10Vac, 50mA @ 24Vac —or— 110mA @ 10Vdc, 75mA @ 15Vdc
Terminations	Two pigtail connectors with 8 leads each (provided) One pigtail connector with 2 leads (for code blue; provided)
Operating Temperature	32°–90° F (0°–32° C)
Dimensions	4-1/8 in (10.5 cm) high x 8 in (20.3 cm) wide x 1-1/2 in (3.8 cm) deep
Weight	Approximately 9 ounces (252 g)
Mounting	Flush mounts into RACO 3-gang backbox, 2.5 in (6.4 cm) deep
Finish	Bezel—textured gray ABS Panel—textured gray polycarbonate

110-3902 Dual Four-inch Digital Clock Housing

- Designed for Edwards four-inch digital secondary clocks
- Adaptable for wall or ceiling mounting

The Edwards Model 110-3902 Dual Four-Inch Digital Clock Housing is designed for corridors or large rooms requiring a front and rear digital clock display. The enclosure houses two Edwards Model 24D40A Four-Inch Secondary Digital Clocks (purchased separately), and uses the trimplates that come with the digital clocks.

The dual digital clock housing can be wall or ceiling-mounted. For mounting to a cement or cinder block wall, the housing mounts to a standard RACO two-gang masonry box. Optionally, the housing can be flush-mounted to a ceiling or suspended below the ceiling using conduit extensions. Although not recommended, the housing can also be mounted to a stud wall if additional structural support is provided, or mounted to the ceiling after creating a support frame out of 2x4s.

Specifications: 110-3902 Dual Four-inch Digital Clock Housing	
Dimensions	7 in (17.8 cm) high, 19 in (48.3 cm) wide, 4-1/2 in (11.43 cm) deep
Weight	4.4 lbs (2 kg), less backbox and clocks
Mounting	Wall-mounted using two-gang masonry box Ceiling-mounted using conduit extensions
Finish	Charcoal gray

24D20A Two-Inch Digital Secondary Clock

- Highly visible two-inch LED
- 24 Vac operation
- Selectable LED display intensity
- 12- or 24-hour display

- High efficiency
- Can replace model 24F750A clocks for easy upgrades
- ESD-hardened

The Dukane Model 24D20A Two-Inch Digital Secondary Clock provides a highly visible, even-intensity, long-life display of time in selectable formats. It can be operated in either 12- or 24-hour format, and at either Bright or Normal intensity levels. The time display on the secondary clock updates to the master clock time at one-minute intervals. This ensures that all system clocks are in precise synchronization, and that every clock in the system is as accurate as the master clock. The high-efficiency 24 Vac design allows many clocks to be operated at great distances from low cost 24 Vac power supplies.

- For new installations, the 24D20A can be flush-mounted into a standard four-gang backbox, and can be operated from a 24 Vac power supply.
- In retrofit installations, the 24D20A can be surface-mounted using the 8A225 Surface Backbox, and can be operated from 24 Vac.
- In repair situations, the 24D20A can directly replace the 24F750A digital clock. The 24D20A fits into the 24F750A's existing six-gang backbox and operates from the existing 24F750A's 15Vdc power supply. The pigtail connector of the existing installation can be directly applied to the new 24D20A installation without rewiring. (Check power supply reserve capacity before upgrading.)

Compliance with FCC Part 15 Class A emissions rules has been verified. As a result, the Model 24D20A clock meets the requirements for installation in educational, institutional, and commercial sites. The installed clock is ESD-hardened to IEC 801-2 Standards.

Specifications: 24D20A Two-Inch Digital Secondary Clock	
Mounting	**New Installations (flush-mount):** RACO #693, 4-gang masonry backbox, 2-1/2" (6.4 cm) deep, or RACO #698, 3-1/2" (8.9 cm) deep, or approved equal. **Retrofit Installations (surface mount):** Dukane 8A225, Two-Inch Surface-Mount Backbox, 1-3/4" (4.4 cm) deep, or approved equal. **Repair Installations (to replace 24F750A clocks):** RACO #960, 6-gang masonry backbox, 3-1/2" deep (8.9 cm), or approved equal.
Power Requirements	24Vac (+/– 5 Vac)—NOT TO EXCEED 30 Vac 122 mA in Bright display mode. (3W) @ 24Vac 67mA in Normal display mode (1.6W) @ 24Vac
For replacement of 24F750A clocks:	15Vdc (+ 0/–2Vdc) 125mA in Bright display mode @ 15Vdc 60mA in Normal display mode @ 15Vdc
Note: When replacing a 24F750A clock, the pigtail plug from the previous clock can be directly connected to the 24D20A without rewiring. The rated current consumption of the 24F750A is 300mA, allowing direct replacement at either Bright or Normal intensity settings.	
Viewing Distance	110' (33.5 m) in Bright intensity mode with normal lighting 100' (30.5 m) in Normal intensity mode with normal lighting
Display Size	2" (5.1 cm)
Electrostatic Discharge	Installed clock is ESD-hardened to IEC 801-2 requirements (+/– 8kV direct, +/– 15kV air discharge)
Terminations	Pigtail leads color-coded to match Dukane clock cables 176-299 and 176-499
Lens	Anti-glare clear acrylic
Dimensions	4-1/2" (11.4 cm) high by 11-15/16" (30.3 cm) wide by 1-3/4" (4.4 cm) deep

24D40A Four-inch Digital Secondary Clock

- Highly visible four-inch LED
- 24Vac operation
- Selectable LED display intensity
- 12- or 24-hour display
- High efficiency
- Can replace Edwards model 24D20 and 24F750A clocks for easy upgrades
- ESD-hardened

The Edwards Model 24D40A Four-Inch Digital Secondary Clock provides a highly visible time display. It can be operated in either 12- or 24-hour format, and at either Bright or Normal intensity levels. Each minute the time display on the secondary clock updates to the master clock time. This ensures that all clocks in the system are in exact synchronization, and that every clock in the system is as accurate as the master clock. See the Associated Equipment list for the appropriate master clocks.

Installation of the Model 24D40A clock offers the following options:

- For new installations, the 24D40A can be mounted into either a standard 4-gang masonry backbox or an 8A425 Surface-Mount Backbox, and can be operated from a 24Vac power supply.
- For upgrade installations, the 24D40A can directly replace a Model 24D20A Two-Inch Digital Clock. Both units fit into a standard 4-gang backbox and share the same pigtail connector. (Check power supply reserve capacity before upgrading.)
- In existing installations, the 24D40A clock can directly replace the Edwards Model 24F750A Digital Clock. The 24D40A fits into the same six-gang backbox and operates from the existing 15Vdc power supply. The pigtail connector of the existing installation can be directly applied to the new 24D40A installation without rewiring. (Check power supply reserve capacity before upgrading.)

Compliance with FCC Part 15 Class A emissions rules has been verified. As a result, the Model 24D40A clock meets the requirements for installation in educational, institutional, and commercial sites. The installed clock is ESD-hardened to IEC 801-2 Standards.

Engineering Specification

The Four-Inch Digital Secondary Clock shall be Edwards Model 24D40A or an approved equal. The digital clock shall provide an even-intensity, long-life time display in selectable 12- or 24-hour format. Each minute, the secondary clock shall receive a time display update from the master clock.

The four-inch digital secondary clock shall fit into a standard four- or six-gang backbox and shall offer adequate backbox clearance to reduce the possibility of shorts. The clock shall operate from either a 24Vac or 15Vdc power supply. The clock shall offer two display modes, either Normal or Bright intensity. The Model 24D40A clock shall include pigtail plug-in lead connectors. The unit shall directly replace Edwards Model 24F750A and 24D20A digital clocks.

The clock shall comply with the FCC Part 15 Class A emissions rules, and shall meet requirements for installation in educational, institutional, and commercial sites. The installed clock shall also be ESD-hardened to the IEC 801-2 Standard.

Mounting	Wall-mounted using two-gang masonry box Ceiling-mounted using conduit extensions
Finish	Charcoal gray

Specifications: 24D40A Four-inch Digital Secondary Clock	
Mounting	New Installations (flush mount): RACO #693, 4-gang masonry backbox, 2-1/2 in (6.4 cm) deep, or RACO #698, 3-1/2 in (8.9 cm) deep, or approved equal Retrofit Installations (surface mount): Edwards 8A425, Four-Inch Digital Clock Surface-Mount Backbox, 1-1/2 in (3.8 cm) deep, or approved equal Upgrade Installations (to replace 24F750A clocks): RACO #960, 6-gang masonry backbox, 3-1/2 in deep (8.9 cm), or approved equal
Power Requirements	24Vac (+/– 5Vac) NOT TO EXCEED 30Vac 350mA in Bright display mode @ 24Vac 250mA in Normal display mode @ 24Vac For replacement of 24F750A: (see Note below) 15Vdc (+ 0/-2Vdc) 350mA in Bright display mode @ 15Vdc 250mA in Normal display mode @ 15Vdc
Note: When replacing 24F750A clocks, the pigtail plug from the previous clock can be directly connected to the 24D40A without rewiring. The rated current consumption of the 24F750A is 300mA, allowing direct replacement at the Normal intensity setting. If the Bright setting of the 24D40A is to be used, the existing loading on the power supply must be measured to see if there is sufficient supply capacity.	
Viewing Distance	160 ft (48.8 m) in the Bright intensity mode with normal lighting 150 ft (45.7 m) in the Normal intensity mode with normal lighting
Display Size	4 in (10.2 cm) high by 10 in (25.4 cm) wide
Electrostatic Discharge	Installed 24D40A is ESD-hardened to IEC 801-2 requirements (+/– 8kV direct, +/– 15kV air discharge)
Terminations	Pigtail leads color-coded to match Edwards Clock Cables 176-299 and 176-499
Lens	Anti-glare Acrylic
Dimensions	5.8 in (14.7 cm) high by 19.0 in (48.3 cm) wide by 2.5 in (6.4 cm) deep
Weight	2.5 lbs (1.1 kg) (without packaging)
Bezel	Charcoal gray ABS plastic, 5.8 in (14.7 cm) high by 19.0 in (48.3 cm) wide by 0.94 in (2.4 cm) deep
176-299 and 176-499	Edwards Clock Cable, 14-gauge, five-circuit, color-coded with designations on the jacket. Model 176-499 is a plenum rated version of Model 176-299.
8A425	Surface Mount Clock Backbox, 19 in (48.3 cm) long by 7 in (17.8 cm) high by 1.5 in (3.8 cm) deep, charcoal gray enamel finish. Low profile box allows the 24D40A to be mounted on an existing wall surface.
110-3693	AC Clock Power Supply, 5 amps (rms), mounts in a 145-184 Power Supply Backbox with either a 110-2190 flush-mount door or a 110-2191 surface-mount door (order separately according to your application's requirements). Three power supplies maximum per backbox.
110-3902	Four-inch Digital Clock Dual Enclosure, Wall or Ceiling Mount
The Model 24D40A Four-Inch Digital Secondary Clock can be controlled by any of the following master clock products: Note: Correction by MCS350 or selected StarCall may require use of Model 110-3836 Digital Clock Sync Module.	

24A715, 24A715M	Edwards Master Clock (rack-mount)
MCS350	Edwards Intercom System with Master Clock
SCR+	Edwards StarCall/StarCall Plus Platform Integrated Communications Systems with the Model 437-00125 Master Clock Feature Package 1

24SC12R-SPL and 24SC15R-SPL Analog Secondary Clock

The Edwards Model 24SC12/15R-SPL Secondary Analog Clock combines the advantages of a long-life quartz movement with microprocessor technology to provide a round 12- or 15inch analog clock with contemporary styling. The 24SC12/15R-SPL is a direct replacement for the Edwards 24SS Series synchronous secondary analog clock. It can also be directly connected to the wiring for Edwards Model 24D20A or 24D40A digital clocks. The 24SC12/15R-SPL allows the use of both analog and digital clocks on the same line and it can emulate the correction schemes of many popular analog secondary clocks from various manufacturers. The desired emulation mode is selected using a simple DIP switch setting. This allows the 24SC12/15R-SPL to be used as a replacement for failed clocks in many systems, regardless of their original manufacturer.

The 24SC12/15R-SPL is designed to be flush- or surface-mounted while requiring no special backboxes or mounting hardware. It can be mounted as a ceiling or wall double-face clock using third-party hardware. The Shatter Resistent 24SC12/15R-SPL is provided with a single piece black metal rim with a convex acrylic lens. Clock face time markings are Arabic numerals in a 12-hour format with black hour and minute hands and a red second hand. This clock works with the Edwards 24A715, 24A715M, MCS350 Master Clocks, as well as other brands of master clocks. The 24SC12/15R-SPL complies with FCC Part 15 Class A and meets the requirements for installation in educational, institutional, and commercial sites. The installed analog clock is ESD-hardened to IEC 801-2 standards.

Specifications: 24SC12/15R-SPL Analog Secondary Clock	
Diameter	12 in (30.5 cm) or 15 in (38.1 cm)
Shape	Round
Face	Black Arabic numerals (1-12) on a white background
Rim	Steel, single piece (no welds), matte black painted finish
Connections	Each clock is furnished with an analog and digital cable pigtail assembly, each 12 inches (30.5-cm) in length with a polarized plug Analog Wiring: Red (correction) Black (run motor) White (common, return) Green/shield (safety ground) Digital Wiring: Black (common) Brown (reset) Blue (24Vac) Blue/White (24Vac) Orange (clock)
Correction	Depends on DIP-switch selected master clock compatibility
Frequency And Power Requirements	Input Current: 50mA @ 24Vac Input Voltage: 24Vac/60 Hz 120Vac/60 Hz (requires Model 110-3950 120V Adapter Kit—sold separately)

Mounting	Flush: Mount to a RACO 696 two-gang masonry backbox or equal (sold separately) Surface: Clock provided with a wire mold knockout. Extend wire mold from a RACO two-gang masonry back box mounted above ceiling (wire mold and electrical box sold separately). Double Faced: Follow third-party manufacturers' mounting instructions.
Notes: New installations may require either a Model 110-3900 Mounting Plate or 110-3950 120Vac Adapter Kit. See Associated Equipment, below.For more detailed information, refer to the latest revision of document number 3100673, the Model 24SC12R Installation Manual.	

9A1900 Elapsed Timer Start Button

- Single switch operation
- Stainless steel wallplate
- Precious metal contacts
- Works with model 24CC10 clock controller

The Edwards Model 9A1900 Elapsed Timer Start Button is used with the Edwards Model 24CC10 Clock Controller. When the PRESS TO START TIMER pushbutton is pressed, it provides a momentary contact closure that automatically starts the clock controller's "Count Up Timer" function, overriding all other active clock controller functions.

Specifications: 9A1900 Elapsed Timer Start Button	
Switch Type	SPDT momentary pushbutton (spring-action return)
Designation	PRESS TO START TIMER
Dimensions	4-1/2 in (11.4 cm) high, 2-3/4 in (7 cm) wide, and 7/8 in (2.2 cm) deep
Terminations	Pigtail Leads
Net Weight	2 oz (56 grams)
Finish	Satin-finished stainless steel
Mounting	Standard flush-mounted single-gang backbox more than 2 in (5.1 cm) deep

110-3836A Digital Clock Sync Module

Digital Clock Sync Module

- Provides interface between master and digital secondary clocks
- Two high fan out outputs
- Supports up to 500 model 24D20A two-inch or model 24D40A four-inch digital secondary clocks

The Digital Clock Sync Module allows a master clock to increase its output drive capability in order to support multiple digital secondary clocks. The sync module supports up to 500 Edwards Model 24D20A two-inch or Model 24D40A four-inch digital secondary clocks. Both high fan out outputs are required to drive the two control signals common to each clock. The 110-3836A is only used for StarCall systems supplied with model 110-3521A CPC-E cards

Digital Clock Sync Module	
Power Requirements	+20 to +35Vdc 18mA, maximum
Capacity	500 Edwards Model 24D20A or 24D40A Digital Secondary Clocks
Input Electrical Specifications	Maximum open circuit voltage = +15.5 Vdc Maximum voltage to guarantee activation = +2 Vdc Minimum required sink capability of input contact = 1mA
Output Electrical Specifications	Open drain output Maximum allowable peak open circuit voltage = 24V Sink capability = 2A DC (Vout ≤ 0.3V)
Input/output Response Conditions:	Minimum input pulse low = 7 msec @ Vin low = 1.0V Minimum input pulse open circuit = 5 msec
Output:	Output load = 2A DC @ Vout < 0.3V Minimum output pulse ON time (sink) = 2 msec Minimum output pulse OFF time (open circuit) = 2 msec
Termination	Five pin and three pin terminal strips accepting stranded or solid wire, 26 to 16 AWG
Dimensions	4.7 in (11.9 cm) long by 2.7 in (6.9 cm) wide by 1.0 in (2.5 cm) deep

110-3693 AC Clock Power Supply

- Continuous duty operation
- Easily accessible fuses
- Screw terminal outputs
- Includes correction coil relay
- Outputs permit class 2 wiring

The AC Clock Power Supply provides a convenient 24Vac source for operating synchronous clocks and bells. The low voltage and current output of this power supply allows Class 2 wiring to be used. An onboard relay allows clock correction coils to be easily interfaced with Edwards master clocks. This supply mounts with the standard Edwards power supply backbox and doors.

110-3693 AC Clock Power Supply System	
Rated Outputs	24Vrms @ 5A unregulated total (two separate 2.5A outputs)
Rated Input	120Vac, 60 Hz, 1.4A
Relay Input/ output	Coil rated 24Vdc @ 40mA Contacts rated 10A resistive with 240Vac or 30Vdc maximum
Net Weight	AC Clock Power Supply: 7 lb, 1 oz (3.4 kg) 110-2190 Flush Mt Door: 3 lb, 13 oz (1.7 kg) 110-2191 Surface Mount Door: 3 lb, 7 oz (1.6 kg) 145-184 Backbox: 8 lb, 7 oz (3.8 kg)

Ordering Information

Model	Description
24A716	Battery Operated Clock
25D750	Dual-faced Digital Clock And Speaker Housing
24DW750	Double Faced Digital Secondary Clock (wall mounted)
24DC750	Double Faced Digital Secondary Clock (ceiling mounted)
24DS250	Digital Clock/speaker Housing
145-192	Flush Backbox for 24DS250 (110-3822) Overall dimensions: 13-3/4 in (35 cm) wide, 12-3/4 in (32.4 cm) high, 3-1/4 in (8.3 cm) deep Rear of box dimensions: 12-1/2 in (31.8 cm) wide, 12-3/4 in (32.4 cm) high
110-3822	2 in Digital Clock/Speaker Baffle
5A606	Speaker w/Transformer
110-1675	Dual Ceiling Mount for 2 in Clock Enclosure
110-1674	Dual Wall Mount for 2in Clock Enclosure
23D	Dual Conversion Ring for 12 in Round Clock
110-788	Surface or Dual Clock/Speaker Enclosure (25D750)

24SS Series Synchronous Secondary Analog Clock	
24SS	Synchronous Secondary Analog Clock
Wireguard	
23 WG 12S	For 12 in Surface/Semiflush Clock
23 WG 15S	For 15 in Surface/Semiflush Clock
Associated Equipment	
24A715, 24A715/M	Master Clock/Program Clock (M=Modem optional) StarCall or MCS350 System
8-SAM0576	Backboxes
110-3693	Power Supply (Class II)
145-184	Backbox, Surface or Flush Mounted, holds up to three Model 110-3693 Power Supplies
110-2190	Flush Mount Door for Model 145-184 Backbox
110-2191	Surface Mount Door for Model 145-184 Backbox

24CC10 Clock Controller and Associated Equipment	
24CC10	Clock Controller
24A715M	Master Time/Program Clock (M= Modem optional) StarCall or MCS350 System
24D20A	Two-Inch Digital Secondary Clock
24D40A	Four-Inch Digital Secondary Clock
9A1900	Digital Clock Controller Remote Start Button
110-3693	24Vac Clock Power Supply (for use with additional digital secondary clocks)
17A437	24Vdc Clock Power Supply (80mA, plug-in, low power supply for use with one 24CC10)

Dual Four-inch Digital Clock Housing and Associated Equipment	
110-3902	Dual Four-inch Digital Clock Housing
24D40A	Four-inch Secondary Digital Clock
8A425	4 inch Surface Mount backbox
RACO Model 696	Two-gang masonry box, 3-3/4 in (9.5 cm) high, 3-25/32 in (9.6 cm) wide, 3-1/2 in (9 cm) deep

Digital Clock/Speaker and Associated Equipment	
24DS250	Digital Clock/speaker
110-3822	Digital Clock Speaker Housing, identical to the Model 24DS250 except without the Model 5A606 speaker. This housing has the opening and capability for mounting a standard 8 in (20.3 cm) round speaker.
145-192	Backbox, flush mount. Overall dimensions: 13-3/4 in (35 cm) wide, 12-3/4 in (32.4 cm) high, 3-1/4 in (8.3 cm) deep. Rear of box dimensions: 12-1/2 in (31.8 cm) wide, 12-3/4 in (32.4 cm) high.
110-788	Surface or Double face Clock/Spk Enclosure
5A606	Speaker W/Transformer

9A1900	Elapsed Timer Start Button
24CC10	Clock Controller
24D20A	Two-Inch Digital Secondary Clock
24D40A	Four-Inch Digital Secondary Clock

Analog Secondary Clock and Associated Equipment	
24SC12R-SPL	Analog Secondary Clock
24SC15R-SPL	Analog Secondary Clock
24A715	Master Program Clock
24A715/M	24A715/M Master Time/Program Clock (M= Modem optional) StarCall or MCS350 System
	StarCall Master Program Clock
110-3900	Mounting Plate (required if 110-3950 is not used)
110-3950	120Vac Adapter Kit
110-3693	Power Supply (Class II), 24Vac
110-2190	Flush Mount Door for Model 145-184 Backbox
110-2191	Surface Mount Door for Model 145-184 Backbox
145-184	Backbox, surface or flush mount (holds three Model 110-3693 Power Supplies)

AC Clock Power Supply and Associated Equipment	
110-3693	AC Clock Power Supply (1, 2, or 3 employed)
145-184	Backbox (Up to three power supplies can be mounted in a single backbox)
110-2190	Door (Flush Mount)
110-2191	Door (Surface Mount)

Digital Clock Sync Module and Associated Equipment	
110-3836A	Digital Clock Sync Module
24D20A	Two-Inch Digital Secondary Clock
24D40A	Four-Inch Digital Secondary Clock
110-3693	24Vac Clock Power Supply Assembly
110-3521A	CPC-E Central Processor Card (StarCall)
110-3542	Power Supply Module (StarCall)

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