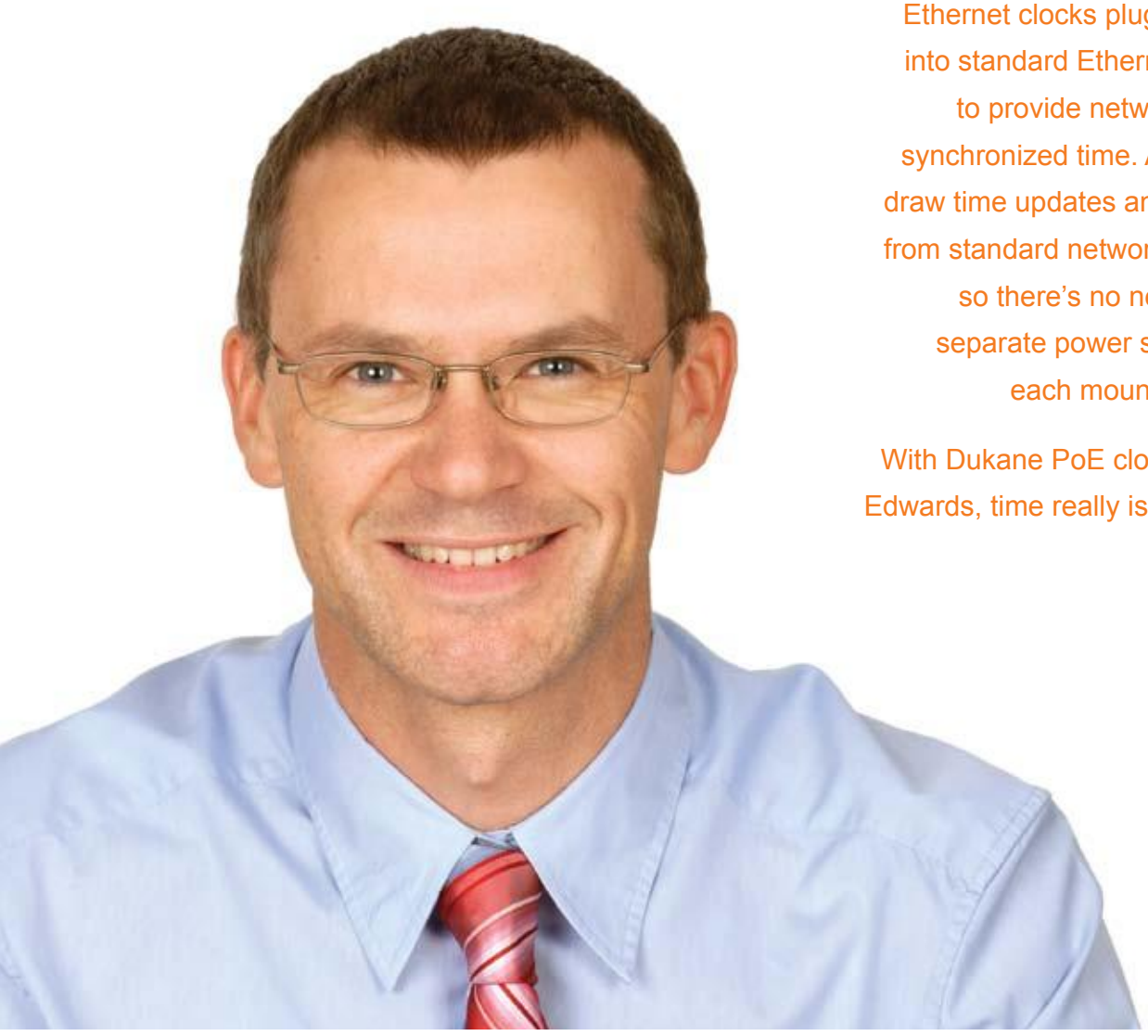
Time is Money

"Precise and on time is the way I like to see things run. The wide range of Dukane Timekeeping solutions from Edwards makes that possible.

Dukane Power-over-Ethernet clocks plug directly into standard Ethernet jacks to provide network-wide synchronized time. And they draw time updates and power from standard network cables so there's no need for a separate power source at each mounting site.

With Dukane PoE clocks from Edwards, time really is money."



Product Index

From the clock you patiently watched just before recess at school, to the synchronized time system displayed from the break room to the manufacturing floor, Edwards probably had a hand in putting it there. Edwards' clock systems deliver the accuracy, choices, convenience, styling, and unique features that your facility is looking for, all at a price you can afford.

Clocks and Time Systems

Clocks and Time Systems
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Clocks
Analog
1800 Series

Edwards analog clocks have large, easy to read numbers on a white background. The black hour and minute hands and blue second hand are attractive and visible from a great distance. To protect the clock from damage, order the 1888 Wire Guard.

Features and Specifications

- 12 hour dial with arabic numbers
- 12" face
- Surface mount
- Shatter-resistant polystyrene case
- 66" (168 cm) cord with plug

Ordering Information

Description	Cat. No.	Operating Voltage	Size (in.)	Case Color
Analog Clock	**1882A**	120V AC	12	Gray
	1882B	120V AC	12	Brown

Accessories

Description	Cat. No.
Protective Wire Guard	**1888**

Weights and Dimensions

Cat. No.	Approx. Shipping Weight (lb.)	Dimensions	
		Diameter (in.)	Depth (in.)
1882A	4.0	14	2 15/16
1882B	4.0	14	2 15/16
1888	2.5	16 1/2	6

AC

Clocks
Analog
1800 Series

Edwards analog clocks have large, easy to read numbers on a white background. The black hour and minute hands and blue second hand are attractive and visible from a great distance.

The clocks are available in either brown or gray cases. To protect the clocks from damage, order the 1888 Wire Guard.

Features and Specifications

- Surface mount
- 12 hour dial with arabic numbers
- 8" or 12" face
- Shatter-resistant polystyrene case
- 1.5V DC "C" size alkaline battery (purchased separately)

Ordering Information

Description	Cat. No.	Operating Voltage	Size (in.)	Case Color
Analog Clock, Battery Operated	**1886A**	1.5V DC	8	Gray
	1886B	1.5V DC	8	Brown
	1887A	1.5V DC	12	Gray
	1887B	1.5V DC	12	Brown

Accessories

Description	Cat. No.
Protective Wire Guard	**1888**

Weights and Dimensions

Cat. No.	Approx. Shipping Weight (lb.)	Dimensions	
		Diameter (in.)	Depth (in.)
1886A	1.6	10 3/8	2 15/16
1886B	1.6	10 3/8	2 15/16
1887A	3.9	14	2 15/16
1887B	3.9	14	2 15/16
1888	2.5	16 1/2	6

Clocks
Analog
1800 Series

Edwards analog clocks have large, easy to read numbers on a white background. The black hour and minute hands and blue second hand are attractive and visible from a great distance.

To protect the clock from damage, order the 1889 Wire Guard.

Features and Specifications

- 12 hour dial with arabic numbers
- Shatter-resistant polystyrene gray case
- 66" (168 cm) cord

Ordering Information

Description	Cat. No.	Operating Voltage[1]	Size (in.)	Case Color
Analog Clock	**1884A**	120V AC	15	Gray

[1]AC voltage frequency is 60 Hz.

Accessories

Description	Cat. No.
Protective Wire Guard	**1889**

Weights and Dimensions

Cat. No.	Approx. Shipping Weight (lb.)	Dimensions	
		Diameter (in.)	Depth (in.)
1884A	4.1	16 1/2	2 15/16
1889	3.5	20	6

AC

Clocks
Analog
1800 Series

Edwards analog clocks have large, easy to read numbers on a white background. The black hour and minute hands and blue second hand are attractive and visible from a great distance.

To protect the clock from damage, order the 1888 Wire Guard.

Features and Specifications

- 24 hour dial with arabic numerals
- Shatter-resistant polystyrene case
- 66" (168 cm) cord

Ordering Information

Description	Cat. No.	Operating Voltage[1]	Size (in.)	Case Color
Analog Clock	**1885A**	120V AC	12	Gray

[1]AC voltage frequency is 60 Hz.

Accessories

Description	Cat. No.
Protective Wire Guard	**1888**

Weights and Dimensions

Cat. No.	Approx. Shipping Weight (lb.)	Dimensions	
		Diameter (in.)	Depth (in.)
1885A	3.2	14	2 15/16
1888	2.5	16 1/2	6

AC

Clocks
Digital
1800 Series

Edwards LCD clocks may be programmed to display time or time and date. They feature impact-resistant plastic case.

Features and Specifications

- 2 1/2" (64mm) LCD display
- 60 foot (18.3 m) readability
- Wall or desk mount
- Flashing second colon
- 120° viewing angle
- Operates from one "AAA" battery
- Low current draw allows battery to last a minimum of 12 months

Ordering Information

Description	Cat. No.	Case Color
Desk/Wall Mounted Clock	**1893A**	Gray
Wall Mounted Clock	**1894B**	Black

Weights and Dimensions

Cat. No.	Approx. Shipping Weight (lb.)	Dimensions		
		Height (in.)	Width (in.)	Depth (in.)
1893A	1.4	5	7 1/4	7/8
1894B	1.4	8	10 3/4	7/8

Clocks
Digital
1900 Series

The Edwards 1900MS12-24 is an accurate long-life LED time display piece that can be operated in a synchronized clock system. It reports time in 12 hour or 24 hour formats with hour and minute that may be dimmed with a switch. An 18 foot cord is connected to a Class 2 transformer which plugs into a standard wall outlet. It is suitable for use in indoor applications.

Features and Specifications

- Built-in serial interface for networking and time synchronization in a clock system
- Field selectable 12 or 24 hour format
- Hour and minute display
- 100,000 hour LED lamp technology
- Two week memory retention
- Master/Satellite field selectable
- Two levels of brightness
- Suitable for use in indoor applications
- Operating temperature range: 32º to 120ºF (0ºC to 49ºC)

Ordering Information

Description	Cat. No.	Character Height (in.)	Max. Viewing Distance (ft.)
LED Wall Clock	**1900MS12-24**	4	200

Weights and Dimensions

Cat. No.	Approx. Shipping Weight (lb.)	Dimensions	
		Height (in.)	Width (in.)
1900MS12-24	3.4	7.10	13.50

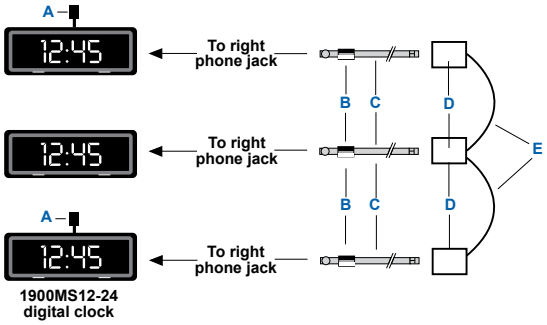
120°F
32°F
OP TEMP

*Transformer only

Clocks
Digital
1900 Series

Technical Information

Connecting Multiple Clocks without a PC



NOTE
When connecting multiple clocks, one clock must be set to Master and the rest to SATELLITE.

Accessories

Ref.	Description	Cat. No.
A	End-of-line (EOL) terminator. An EOL must be plugged into the RS232 or TTL plug on the last sign.	**MCN485EOLTCB**
B	Ferrite (ferrite end towards sign)	**(Included with Item C)**
C	8-foot, 4-conductor RS485 cable	**MCN485-RJ11-8**
	1-foot, 4-conductor RS485 cable	**MCN485-RJ11-1**
D	Modular Network Adapter	**MCNMNARJ11485**
E	RS485 cable, 100 foot spool	**MCN485-100**

Synchronized Wired Clock Systems
Master Time/Program Clock

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

Synchronized Wired Clock Systems
Master Time/Program Clock

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	
Description	**Model**
Master Time/Program Clock	**24A715**
Master Time/Program Clock with Modem Option	**24A715M**
Solid State Relay Kit for Digital Clocks	**438-860**
Satellite Receiver & Sync (By Lathem)	**LTR-GPS**

Synchronized Wired Clock Systems
Power-over-Ethernet (PoE) Clocks
24IP Series

EST brand 24IP Series PoE Clocks plug directly into standard Ethernet jacks to provide network-wide synchronized time. Power-over-Ethernet technology allows these clocks to draw both time updates and power from standard network cables. This eliminates the need for a separate power source at each mounting site. Time is automatically set by a time server via Simple Network Time Protocol (SNTP). No master clock or serial connection is required.

24IP Clocks are configurable by means of a standard Telnet session, which configures the SNTP server address, time zone and daylight saving time options, display format (12- or 24-hour), and clock status reporting.

Both digital and analog models are available. Digital clocks have four- or six-digit LED displays and are visible from 150 feet (50 meters). Analog clocks are visible from 100 feet (30 meters).

Standard Features

- Power over Ethernet (PoE) technology derives power and synchronized time updates from your existing network
- Highly visible at over 100 feet
- Energy-efficient design
- No master clock or serial connection required
- Analog and digital formats available
- Automatic adjustment for Daylight Saving Time

Synchronized Wired Clock Systems
Power-over-Ethernet (PoE) Clocks
24IP Series

Specifications

	 Analog	 Digital (hh:mm)	 Digital (hh:mm:ss)
Display Face	Analog Clock Dial: 12” (30 cm)	4-Digit: Red 7-segment LED	6-Digit: Red 7-segment LED
Viewing Distance	100 feet	150 feet	150 feet
Power Consumption	PoE, IEEE 802.3af compliant, 3W actual consumption	PoE, IEEE 802.3af compliant, 8W actual consumption	PoE, IEEE 802.3af compliant, 9.5W actual consumption
Dimensions	13.4” diameter x 2”D (35.3 cm x 5.1 cm)	12”L x 6”H x 2.2”D (30.5 cm x 15.2 cm x 5.6 cm)	17.5”L x 6”H x 2.2”D (44.5 cm x 15.2 cm x 5.6 cm)
Weight	2 lbs (0.9 kg)	Plastic Cabinet: 2 lbs (0.9 kg) Steel Cabinet: 3.8 lbs (1.7 kg)	Aluminum Cabinet: 2.5 lbs (1.1 kg) Steel Cabinet: 5 lbs (2.3 kg)
Time Display	12 hour format	12/24 hour format	
Optional Cabinet Colors	Not Available	Putty or Off-White	
Stainless Steel Cabinet	Not Available	Brushed Stainless Steel	
Accuracy	+/- 1 Second	+0/-200 milliseconds	
Standard Cabinet	Black Injection Molded Plastic		
Network Interface	10/100 BaseT		
Operating Humidity	95% maximum, non-condensing		
Certifications	UL/CSA 60950-1, ETL Listed, CE Marked, RoHS Compliant		
Operating Temperature	32º to 104º F (0º to 40º C)		
Warranty	Three (3) year		

Ordering Information

Model	Description
24IP12R-BK	OnTime POE Analog 12" clock
24IP12RD-BK	OnTime POE Analog, Double Sided, 12" Clock and mounting hardware
24IP4-BKP	OnTime Clock, 4 Digit, Black, Plastic Case
24IP4D-BKP	OnTime Clock, 4 Digit, Black Plastic Case, Double Sided and mounting hardware
24IP4F-BKP	Flush Mount 4 Digit Clock, Black Plastic
24IP4-SS	OnTime Clock, 4 Digit, Stainless Steel Case
24IP4D-SS	OnTime Clock, 4 Digit, Stainless Steel Case, Double Sided and mounting hardware
24IP6-BKA	On Time Clock, 6 Digit, Black Aluminum
24IP6D-BKA	On Time Clock, 6 Digit, Black Aluminum, Double Sided and mounting hardware
24IP6F-BKA	Flush Mount 6 Digit Clock, Black Aluminum
24IP6-SS	OnTime Clock, 6 Digit, Stainless Steel Case
24IP6D-SS	On Time Clock, 6 Digit, Stainless Steel Case, Double Sided and mounting hardware
24IP-POE	PoE injector

Synchronized Wired Clock Systems
Wired Clock Systems and Accessories

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

110-788
Dual-faced Clock/Speaker

24SC12R -SPL
Analog Clock

110-1674 &110-1675 Digital
Clocks with wall & ceiling mount housing

Accessories

- 110-3822 2-inch Digital Clock/Speaker Baffle
- 5A606 or 5A607 8-inch Speaker/Transformer
- 24SS Series Synchronous Secondary Analog Clock
- 24CC10 Clock Controller
- 110-3902 Dual 4-inch Digital Clock Housing
- 24ZB20 2-Inch Digital Secondary Clock
- 24ZB40 4-inch Digital Secondary Clock
- 24SC12R-SPL, 12SC15R-SPL Analog Secondary Clocks
- 9A1900 Elapsed Timer Start Button
- 110-3693 AC Clock Power Supply
- 110-788 Dual Faced Clock/Spk (110-3822) Mount Enclosure.
- 110-1674 2-inch Digital Clock Dual Wall Mount Enclosure.
- 110-1675 2-inch Digital Clock Dual Ceiling Mount Enclosure.

Dual-faced Digital Clock and Speaker Housing


110-788

- 110-788 Dual Faced Clock/Speaker Housing
- 110-3822 2-inch Clock/Speaker Baffle
- 8-inch Speaker/Transformer

The Edwards Dual Faced 2-inch Digital Clock/Speaker Baffle Housing, model 110-788, allows mounting of two 110-3822 Clock/Speaker Baffles and one or two 5A606 8-inch Speakers and makes a great assembly for Ceiling mount. The unit is designed for corridors and large rooms and is ceiling mounted from the top of housing to a 2-gang back box. The enclosure is 14-1/4" high, 14-1/4" wide, 6-3/4" deep made with 18-gauge cold rolled steel with baked-on, platinum white enamel finish.

Double Faced Digital Secondary Clock Housing


110-1674

- 110-1674 2-inch Digital Clock Dual Wall Mount Enclosure.
- 110-1675 2-inch Digital Clock Dual Ceiling Mount Enclosure.
- Mounts on 2-gang back box.

The Edwards Model 110-1674 Dual Wall Mount or 110-1675 Dual Ceiling Mount with two model 24ZB20 2-inch Digital Clocks makes a single compact unit. Designed for corridors or large rooms, the clocks are equipped with 2-inch high digital display. The clocks trimplates constructed of high impact,on-conductive, flame-retardant, charcoal colored material and a mounting frame finished in white, baked enamel.

Digital Clock/ Speaker Housing

- 110-3822 2-inch Digital Clock/ Speaker Baffle
- 8-inch Speaker/Transformer
- 145-192 Back-Box

The Edwards Model 110-3822 2-inch Digital Clock/Speaker Baffle is an attractive unit when mounted with a Edwards Model 5A606 Speaker/Transformer. The Clock/Speaker baffle assembly is black, perforated metal grille within a dark gray aluminum frame with overall dimensions 14-1/4" high. 14-1/4 wide, 3" deep including speaker. It can be flush mounted using the Edwards Model 145-192 backbox.

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

Specifications: 24SS Series 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.

24SS Series Secondary Analog Clock

Clock Type Face	Dimensions	Outside Dimensions (A)	Distance Protrude (B)	Backbox Above Clock Ctr (C)	Backbox Depth (D)	SC 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 backbox 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 24ZB20 Two-Inch Digital Secondary Clock or 24ZB40 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 lockout 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 Dukane StarCall or MCS350 communication system. 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 24ZB40 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

24ZB20 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
- Wireless Capable (24ZB20)

24ZB20
Digital Secondary Clock

The Edwards Model 24ZB20 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 24ZB20 can be flush-mounted into a standard four-gang backbox, and can be operated from a 24 Vac power supply.
- In retrofit installations, the 24ZB20 can be surface-mounted using the 8A225 Surface Backbox, and can be operated from 24 Vac.
- In repair situations, the 24ZB20 can directly replace the 24F750A digital clock. The 24ZB20 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 24ZB20 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 24ZB20 clock meets the requirements for installation in educational, institutional, and commercial sites. The installed clock is ESD-hardened to IEC 801-2 Standards.

Specifications: 24ZB20 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 24ZB20 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
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
The Model 24ZB20 Two-Inch Digital Secondary Clock can be controlled by any of the following master clock products: Edwards Models 24A715 or 24A715M Master Time/Program Clock. Note: Correction by a Dukane MCS350 system, or CPC-E based StarCall system may require use of Model 110-3836 Digital Clock Sync Module.	
24A715	Edwards Master Clock
24A715M	MCS350 Dukane Intercom System with Master Clock
SCR	Dukane StarCall Platform Integrated Communications Systems

24ZB40 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
- Wireless capable (24ZB40)

The Edwards Model 24ZB40 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 24ZB40 clock offers the following options:

- For new installations, the 24ZB40 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 24ZB40 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 24ZB40 clock can directly replace the Edwards Model 24F750A Digital Clock. The 24ZB40 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 24ZB40 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 24ZB40 clock meets the requirements for installation in educational, institutional, and commercial sites. The installed clock is ESD-hardened to IEC 801-2 Standards.

Specifications: 24ZB40 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 24ZB40 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 24ZB40 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 clock is ESD-hardened to IEC 801-2 requirements (+/– 8kV direct, +/– 15kV air discharge)
Terminations	Pigtail leads color-coded
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)
Mounting	Wall-mounted using two-gang masonry box Ceiling-mounted using conduit extensions
Finish	Charcoal gray
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
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 24ZB40 to be mounted on an existing wall surface.
110-3693	AC Clock Power Supply, 5 amps (rms), mounts in a 145-184-SC Power Supply Backbox with either a 110-2190-SC flush-mount door or a 110-2191-SC 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 24ZB40 Four-Inch Digital Secondary Clock can be controlled by any of the following master clock products: Edwards Models 24A715 or 24A715M Master Time/Program Clock. Note: Correction by a Dukane MCS350 system, or CPC-E based StarCall system may require use of Model 110-3836 Digital Clock Sync Module.	
24A715, 24A715M	Edwards Master Clock (rack-mount)
MCS350	Dukane Intercom System with Master Clock
SCR	Dukane StarCall Platform Integrated Communications Systems

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 15 inch 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 Model 24A715 or 24A715M master clocks, as well the Dukane StarCall and MCS350 communication systems. 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

110-3693 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
Two-inch Digital Clock Housing and Associated Equipment	
24ZB20	Two-inch Digital Secondary Clock (wireless optional)
110-1674	Wall Mount Dual Enclosure for 2" Clock
110-1675	Ceiling Mount Dual Enclosure for 2" Clock
8A225	Surface Mount back box for 2" Clock
24SS Series Secondary Analog Clock*	
24SS12RDAGA	Clock, 12" Round, Double Wall, 115Vac/60Hz
24SS12RDAGA-SPD	Clock, 12" Round, Double Face Wall, 115Vac/60Hz, Shatterproof Lens
24SS12RDAGC	Clock, 12" Round, Double Face Wall, 24Vac/60Hz
24SS12RDAGC-SPD	Clock, 12" Round, Double Wall Face, 24Vac/60Hz Shatterproof Lens
24SS12RFAGA	Clock, 12" Round, Semi-Flush, 115Vac/60Hz
24SS12RFAGA-SPS	Clock, 12" Round, Semi-Flush, 115Vac/60Hz, Shatterproof Lens
24SS12RFAGC	Clock, 12" Round, Semi-Flush, 24Vac/60Hz
24SS12RFAGC-SPS	Clock, 12" Round, Semi-Flush, 24Vac/60Hz, Shatterproof Lens
24SS12RSAGA	Clock, 12" Round, Surface, 115Vac/60Hz
24SS12RSAGA-SPS	Clock, 12" Round, Surface, 115Vac/60Hz, Shatterproof Lens
24SS12RSAGC	Clock, 12" Round, Surface, 24Vac/60Hz
24SS12RFAGC-SPS	Clock, 12" Round, Semi-Flush, 24Vac/60Hz, Shatterproof Lens
24SS12RSAGA	Clock, 12" Round, Surface, 115Vac/60Hz
24SS12RSAGA-SPS	Clock, 12" Round, Surface, 115Vac/60Hz, Shatterproof Lens

Ordering Information Continued

Model	Description
24SS Series Secondary Analog Clock* - Continued	
24SS12RSAGC	Clock, 12" Round, Surface, 24Vac/60Hz
24SS12RSAGC-SPS	Clock, 12" Round, Surface, 24Vac/60Hz, Shatterproof Lens
24SS15RDAGA	Clock, 15" Round, Double Wall, 115Vac/60Hz
24SS15RDAGC	Clock, 15" Round, Double Wall, 24Vac/60Hz
24SS15REAGC	Clock, 15" Round, Double Ceiling, 24Vac/60Hz
24SS15RFAGA	Clock, 15" Round, Semi Flush, 115Vac/60Hz
24SS15RFAGC	Clock, 15" Round, Semi Flush, 24Vac/60Hz
24SS15RSAGA	Clock, 15" Round, Surface, 115Vac/60Hz
24SS15RSAGC	Clock, 15" Round, Surface, 24Vac/60Hz
Wireguard	
23 WG 12S	For 12 in Surface/Semiflush Clock
23 WG 15S	For 15 in Surface/Semiflush Clock
23D	Dual Conversion Ring for 12" Round Clock
23S	Conversion Ring, Convert 12"Round Semi-Flush to Surface Mount
Associated Equipment	
24A715, 24A715M	Master Clock/Program Clock (M=Modem optional)
8-SAM0576	Backbox for Semi-Flush Analog SS Clock
110-3693	Power Supply (Class II)
145-184-SC	Backbox, Surface or Flush Mounted, holds up to three Model 110-3693 Power Supplies
110-2190-SC	Flush Mount Door for Model 145-184-SC Backbox
110-2191-SC	Surface Mount Door for Model 145-184-SC Backbox

*Can be used with Dukane StarCall System and Dukane MCS350 System

Synchronized Wired Clock Systems
Wired Clock Systems and Accessories

Ordering Information

Model	Description
24CC10 Clock Controller and Associated Equipment	
24CC10	Clock Controller
24A715M	Master Time/Program Clock (M= Modem optional) StarCall or MCS350 System
24ZB20	Two-Inch Digital Secondary Clock
24ZB40	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)
Four-inch Digital Clock Housing and Associated Equipment	
110-3902	Dual Four-inch Digital Clock Housing
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
24ZB40	Two-inch Digital Secondary Clock (wireless optional)
24ZBM2040	Wireless Module for 24ZB40
Digital Clock/Speaker and Associated Equipment	
110-3822	Digital Clock Speaker Housing 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
Analog Secondary Clock and Associated Equipment	
24SC15R-SPL	15" Smart Analog Clock
24SC12R-SPL	12" Smart Analog Clock
24A715	Master Program Clock
24A715M	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
145-184-SC	Flush Mount Door for Model 145-184 Backbox
110-2191-SC	Surface Mount Door for Model 145-184 Backbox
145-184-SC	Backbox, surface or flush mount (holds three Model 110-3693 Power Supplies)

Ordering Information Continued

Model	Description
AC Clock Power Supply and Associated Equipment	
110-3693	AC Clock Power Supply (1, 2, or 3 employed)
145-184-SC	Backbox (Up to three power supplies can be mounted in a single backbox)
110-2190-SC	Door (Flush Mount)
110-2191-SC	Door (Surface Mount)
Digital Clock Sync Module and Associated Equipment	
24ZB20	Two-Inch Digital Secondary Clock
24ZB40	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)

Synchronized Wireless Clock Systems
Wireless Timekeeping Equipment

Edwards wireless clock solutions comprise a reliable master/slave cascading network that synchronizes clocks from a central on-site master controller. The master clock receives highly accurate time signals from an NTP or GPS source and relays timecodes to local slave clocks via wireless signals.

Each clock in the system is capable of receiving and transmitting the wireless signal which allows it to be used as a repeater while boosting the data stream and sending along the system. With this dual capability there is no limit to the number of clocks that can be installed throughout highrises, sprawling facilities, and small buildings alike.

Because the signal fans out and is repeated by a cascading number of devices, a single clock will typically receive its data from a number of different angles. This dramatically reduces the effect of obstructions, noise sources, or long distances on the reliability of the system. Furthermore, if an individual clock looses its signal, it will link to a nearby clock and automatically synchronize with that new source.

The cascading network also reduces system setup and installation costs, thanks to the relatively low signal strength that is necessary for it to function efficiently. This eliminates the expense and time required to obtain an FCC license.

The Dukane Model 24ZB20 and 24ZB40 Secondary Clocks provide a highly visible, even-intensity, long-life display of time in selectable formats. They 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. These cost-effective digital clocks can be used in a wired timekeeping system or, with the addition of the optional ZigBee module 24ZBM2040, can be installed on a wireless system. See data sheet 85098-0003 for more product information and mounting options.

Standard Features

- ZigBee open protocol cascading wireless network
- Master clock supports GPS or NTP time source
- Slave clocks act as signal repeaters for enhanced reliability
- Easy to install: low voltage power and signaling; no wiring, no FCC radio license required
- Intuitive browser-based setup
- Digital clocks support count-up/count-down timers and message actuation via wall button (Edwards-24ZB266 and Edwards 24ZB456 only) or via remote, or event timing
- Date and time clocks support English, French and Spanish formatting
- Digital clocks are powered via plug-in 110 Vac transformer
- Analog clocks may be powered by plug-in 110 Vac transformer or by batteries.
- Master Clock V2.3 program digital secondary clocks to countdown class change or break times

110-3693 AC Clock Power Supply

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.

Standard Features

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

Synchronized Wireless Clock Systems
Wireless Timekeeping Equipment

Hardware Specifications	
Master Clock	
Operating Current	Powered by an AC Adapter from 120VAC to 19V 3A UL/CSA, CE approved AC cord with U.S. type 3 prong grounded plug, or directly from AC24V
Storage & Operating Environment	50 to 120° F (10 to 49° C); Humidity: 10% to 95% non-condensing
Agency Listings	UL /CSA, FCC
Construction and Finish	Black metal
Master Clock Mounting	Configured as a 19" Rack mount. “Computer Server Black” metal case, 435mm (W), x 295mm (D), x 45mm (H)
Transmitting power from master clock	Approximately 0.06W at 2.450~2.480Ghz.
Synchronization time from master to slave clock and slave-to-slave clock (one repeater jump)	Not to exceed 0.007 seconds (7mS), maximum jump time is 19; maximum delay 0.13 seconds (133mS)
Time Synchronization	NTP or GPS Master Clocks are synchronized every second; the system has an internal oscillator that maintains plus or minus one second per day between synchronizations so that clock accuracy does not exceed plus or minus 0.2 seconds.
Relay Contacts	4 relay dry contact O/P (NC, C, NO), 5A, Programmable timer for bell operation or lamp on/off control
Scheduling	Supports an interface for a software application to manage bell/tone schedules and count down time breaks of class changes
Master clock	Supports the synchronization of an unlimited number of slave clocks or digital displays.
GPS Antenna	Operating temperature: 50 to 104° F (10 to 40° C); Humidity: 0% to 95% non-condensing, Length of signal cable: 4.5 meters optional 50 meter extension cable, window or roof mounted
Regulatory information	North American standards: FCC Part 15, Subpart A, Subpart C; Canadian ICES-003; CSA C108.8; UL 863 Additional rules and guidelines: ZigBee Alliance (http://www.zigbee.org/en)
Digital Clocks	
Mounting	Wall mount and ceiling mount
Daylight Saving Rules	Factory set. Reconfigurable to any new rule without a hardware update.
Slave clocks	Act as repeaters. Maximum repeat time is 19; average transmission range should be 100 meters. Line of Sight (LOS) range (nothing blocking) will be 200 meters. It is expected that there will be one slave clock on each floor, within close proximity to each other, when supporting a multi-floor configuration. Synchronization time from master to slave clock and slave-to-slave clock (one repeater jump) shall not exceed 0.007 seconds (7mS), maximum jump time is 19; maximum delay should be 0.13 seconds (133mS). The slave digital clock colon stays lit when the clock is synchronized. If more than seven minutes elapse with no data received from the master clock, the slave clock will run on its time based (crystal) and the colon will flash.
Code Blue	Edwards 24ZB266 and Edwards 24ZB456 interface to Nurse Call systems that support relay pulse interface to start code blue count up. When invoked, a relay/pulse is sent to the timer, which triggers it to begin counting up. If a code blue status is in effect, it will take priority and the timer’s previous task will run in the background until the code blue function is stopped. A switch control allows the user to operate the timer in multiple modes. (3.0mA max. @ 5vac/dc–120vac/dc)
Analog Clocks: see list below for part numbers	
Self running accuracy	Within two seconds per day.
Adjustment	Sensors automatically position hands. No manual adjustment necessary.
ZigBee transmission frequency	2.475GHz
FCC & IC approval wireless module	FCC ID:RF2IPLINK12235142, IC ID:8576AIPLINK5142
Antenna	Internal
Working time on battery power	Four years or more. AC power and central power options also available.
Physical	12" (345mm) dia X 61mm depth 1.0 Kg or 15" (430mm) dia X 45mm depth 2.0 Kg
Frame	Plastic or metal with shatter proof plastic face
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

Synchronized Wireless Clock Systems
Wireless Timekeeping Equipment

Ordering Information

Model	Description						
Master Clock/Transmitters							
24ZBMC100	Master Clock, NTP/GPS time based, with ZigBee transmitter/receiver, UL Listed, AC Adapter, 650 x 400 x 200 mm / 5.0 kg						
24ZBM2040	Wireless transmitter/receiver module						
ZigBee Wireless Digital Clocks (Count down/up)	**Size (WxHxD)**	**Weight**	**LED Size**	**LED color**	**Power in**	**Current**	**Included**
24ZB20	11.9 x 4.5 x 1.75 in (303 x 114 x 44 mm)	0.8 lb (0.369 kg)	2 in	Red	24Vac (+/– 5Vac)	67mA - Normal 122mA - Bright	Count up functionality with optional wall controller
24ZB40	19.0 x 5.8 x 2.5 in (483 x 147 x 64 mm)	2.5 lb (1.1 kg)	4 in	Red	24Vac (+/– 5Vac)	250mA - Normal 350mA - Bright	Count up functionality with optional wall controller
24ZB266	13.8 × 6.7 × 2.6 in (350 × 170 × 65 mm)	3.5 lb (1.6 kg)	Hours: 2.66 in Minutes: 2.66 in Seconds: 2.0 in	Red	110 VAC	0.2 Amp	Code Blue wired input, mounting hardware, 110 VAC power cord.
24ZB266D	25.8 × 6.7 × 2.6 in (655 × 170 × 65 mm)	7 lb (3.2 kg)	Hours: 2.66 in Minutes: 2.66 in Seconds: 2.0 in Date: 1.2 in	Hours, minutes, seconds: Red Date: Amber	110 VAC	0.4 Amp	Mounting hardware, 110 VAC power cord.
24ZD266DW or 24ZB266W (Double-Faced)	13.8 × 6.7 × 5.1 in (350 × 170 × 130 mm)	10.5 lb (4.8 kg)[1]	Hours: 2.66 in Minutes: 2.66 in Seconds: 2.0 in	Hours, minutes, seconds: Red	19 VDC	12 to 30 VDC 21 Watts	Ceiling mount hardware, 110 VAC power adapter.
24ZB266DW (Double-Faced)	13.8 × 6.7 × 5.1 in (350 × 170 × 130 mm)	17 lb (7.8 kg)[1]	Hours: 2.66 in Minutes: 2.66 in Seconds: 2.0 in Date: 1.2 in	Hours, minutes, seconds: Red Date: Amber	19 VDC	12-30 VDC 33 Watts	Ceiling mount hardware, 110 VAC power adapter.
24ZB456	21.7 × 6.7 × 2.6 in (550 × 170 × 65 mm)	6.2 lb (2.8 kg)	Hours: 4.56 in Minutes: 4.56 in Seconds: 3.0 in	Red	110 VAC	0.2 Amp	Code Blue wired input, wall mount hardware, 110 VAC power cord.
24ZB456W (Double-Faced)	21.7 × 6.7 × 5.1 in (550 × 170 × 130 mm)	15.4 lb (7 kg)[1]	Hours: 4.56 in Minutes: 4.56 in Seconds: 3.0 in	Red	19 VDC	12-30 VDC 21 Watts	Ceiling mount hardware, 110 VAC power adapter.

[1]Stated net weight includes three-step ceiling mounting pole.

Notes:
1. Acceptable low DC voltage operating range
2. Maximum wattage (DC volts × DC amps) over the range of input voltages (worst case)

AC Clock Power Supply

110-3693	AC Clock Power Supply	7 lb, 1 oz (3.4 kg)
110-2190-SC	Flush Mount Door	3 lb, 13 oz (1.7 kg)
110-2191-SC	Surface Mount Door	3 lb, 7 oz (1.6 kg)
145-184-SC	Backbox	8 lb, 7 oz (3.8 kg)

Synchronized Wireless Clock Systems
Wireless Timekeeping Equipment

Ordering Information

Model	Format	Diameter	Depth	Weight	Power	Frame
ZigBee Wireless Analog Clocks						
24ZBP12R	12-hr face	12 in (305 mm)	2.4 in (6.1 cm)	2.2 lb. (1.0 kg)	Battery power or central 24V AC power supply. Can keep batteries in the clock as power loss backup.	Black Plastic with shatter proof lens
24ZBP212R	12/24-hr face					
24ZB12R	12-hr face	12 in (305 mm)	1.8 in (45 mm)	2.64 lb (1.2 Kg)	Central 24V or AC adapter power supply	black metal frame with shatter proof lens
24ZB212R	12/24-hr face	12 in (305 mm)	1.8 in (45 mm)	2.64 lb (1.2 Kg)		
24ZB15R	12-hr face	15 in (381 mm)	1.8 in (45 mm)	4.41 lb (2.0 Kg)		black metal frame
24ZB215R	12/24-hr face	15 in (381 mm)	1.8 in (45 mm)	4.1 lb (2.0 kg)		
12" Wireless Dual Face Metal Mounting Kit						
24ZBDCF12R		12 in (305 mm)	6.2 in (160 mm)	10.36 lb (4.7 Kg)	—	black metal frame with shatter proof lens
Supplemental Clock for Dual Face Kit - 12 hour face						
24ZB12RSC	12-hr face	12 in (305 mm)	1.8 in (45 mm)	2.64 lb (1.2 Kg)	—	black metal frame with shatter proof lens
Supplemental Clock for Dual Face Kit - 12/24 hour face						
24ZB212RSC	12/24-hr face	12 in (305 mm)	1.8 in (45 mm)	2.64 lb (1.2 Kg)	—	black metal frame with shatter proof lens

Accessories

Cat. No.	Description
24ZBIFR	IR Count Down Clock Actuator Infrared transmitter distance: max. 10 meters (face to the clock), Operating battery: 1.5V x 2 size AAA, Operating time: about 2 years (depends on how often it is used). Also used to adjust or set LED brightness and to set language displayed.
24ZBMCGPS	GPS Receiver with 4.5 m Antenna Cable (Includes Edwards-MC-040)
24ZBMCGPSEXT	50 Meter Extension cable for GPS antenna
24ZBDEMO1A	Demo carrying Kit, in aluminum carrying case with casters, containing each a 24ZBMC100, GPS receiver w/.4.5M ant. Cable & mount hardware, AC adaptor (KPA-060K), 24ZB266D w/AC adaptor, 24ZB456 w/AC adaptor & 4-tap AC receptacle, GE-IFR-2 clock actuator
24ZBDEMO1B	Demo carrying Kit with aluminum carrying case with casters for analog wireless clocks, containing a 24ZB12R and 24ZB212R with AC adaptors Requires 24WCD-01 (A) Demo Kit
24ZBDCELL-2	2 Alkaline D Cell batteries for 24ZBP12R and 24ZBP212R
24ZB2040 ADAPT	AC Power adapter for 24ZB20 and 24ZB40
24ZBPSCABLE-10	Central power cable for 24ZB15R, 24ZB12R, 24ZB212R, 24ZB20, and 24ZB40; Package of 10 cables
24ZB12VDC2A-10	Optional AC Adapter for 24ZBP12R, 24ZBP212R, 24ZB12R, 24ZB212R, 24ZB15R and 24ZB215R (10 Adapters per Package)
24ZBM2040	Optional Mini ZigBee Module for wireless transmitter and receiver on Models 24ZB20 and 24ZB40
24ZBWG1215R	Analog Clock Wire Guard for 24ZBP12R, 24ZBP212R, 24ZB12R, 24ZB212R and 24ZB15R
24ZBWG266	Metal Wire Guard for 24ZB266 digital clock
24ZBWG456	Metal Wire Guard for 24ZB456 digital clock
110-3900	2-gang analog clock hanger plate-optional

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