



Analog, Digital and Wireless Clocks

TIME SYSTEMS

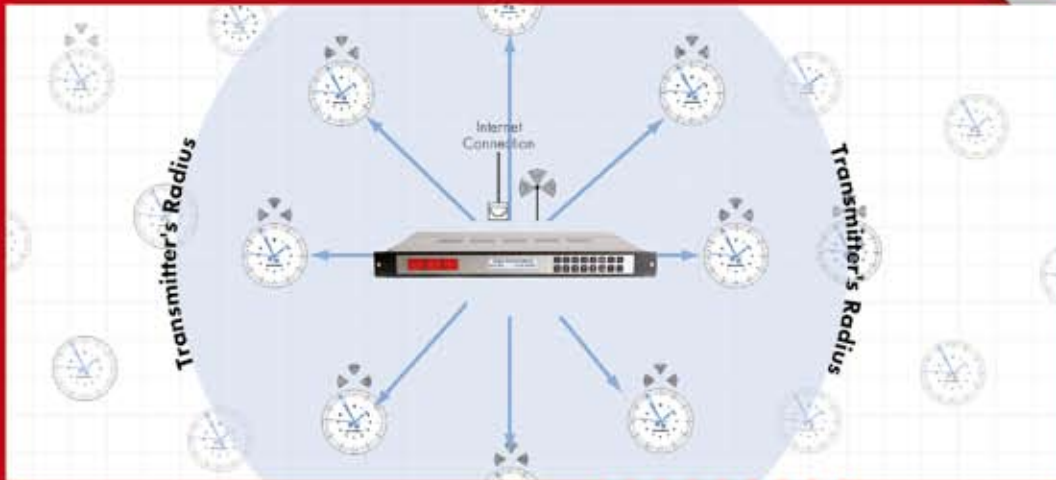
BOGEN
TIME SYSTEMS





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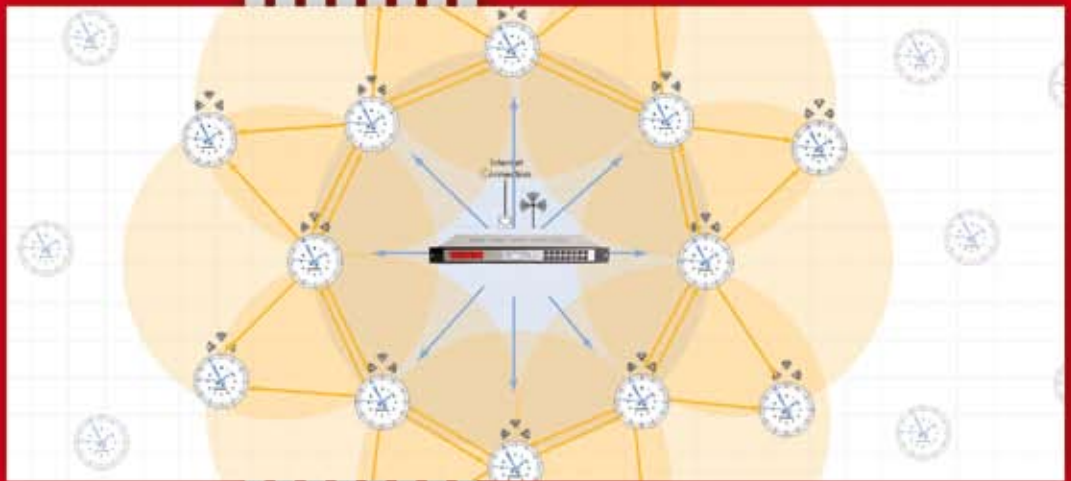
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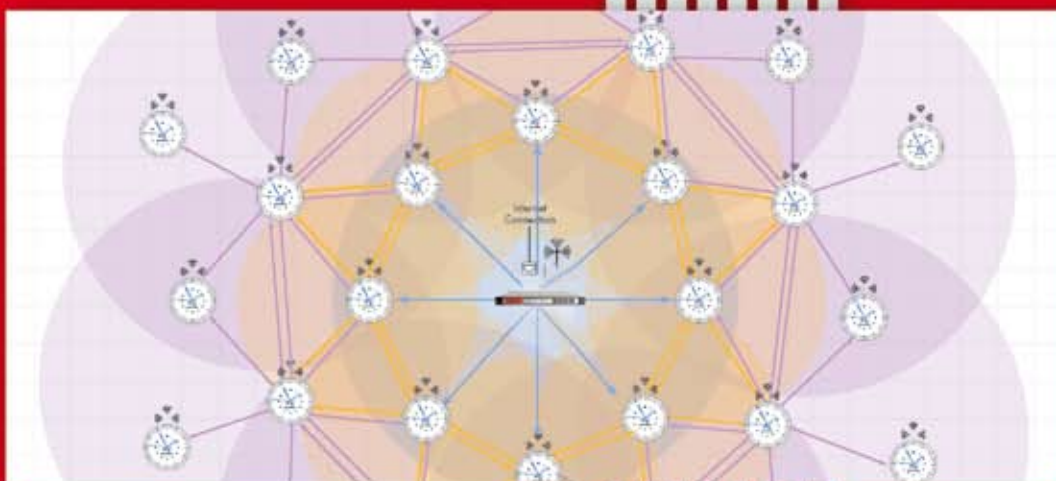
Transmitter transmits to surrounding clocks



Transmitter and surrounding clocks continue transmission



More clocks continue to receive and transmit



WIRELESS SYSTEMS

BCAL-2 Series Wireless Analog Clocks

HIGHLIGHTS

- Each clock acts as a repeater and transmitter
- 915-928 MHz frequency-hopping technology
- Frequent correction
 - Receiving and transmission rate every two hours (normal mode) or every four hours (economy mode) for battery operation
 - Receiving and transmission rate of once a minute for 24V, 110V or 220V
- Internal antenna
- Improved sensitivity over BCAL-1 Series (previous model)
- Enhanced diagnostic mode for informing the user of battery level, signal strength and complete testing of the movement
- Energy efficient
 - 5 year battery life (normal mode)**
 - 8 year battery life (economy mode)**
 - 20 mA @ 24VAC
 - 15 mA @ 110VAC
- Quick correction for time change
- Ideal for renovation projects using existing wiring or for new installations
- Smooth surface black ABS case and polycarbonate crystal
- Does not require a custom back box
- Automatic calibration
- FCC Compliant, part 15 Section 15,247

**with good reception



DESCRIPTION

Bogen's innovative BCAL-2 Series Wireless Clocks incorporate multi-function software as well as a microprocessor based movement. Every clock is a transceiver, meaning it both receives the signal and retransmits it to the surrounding clocks. Since every clock is a transceiver, the clocks can not only get the time from the main transmitter, but also from the surrounding clocks.

Bogen wireless clocks transmit a stream of data every two hours (standard) or four hours (economy) on the battery operated (2 D-Cells) model, and every minute on the 24V, 110V and 220V models. These clocks include automatic calibration, as well as enhanced diagnostic functionality that allows the user to view the quality of the signal, amount of time since the clock last received a signal, and a comprehensive analysis of the clock itself, as well as remaining battery life.

BCBL 1000 Series Wireless Digital Clocks

HIGHLIGHTS

- Receives and transmits the signal once a minute
- Each clock acts as a transceiver
- Counts down between classes or breaks with optional BCMA 3000 Series Master Clock software
- 915-928 MHz frequency-hopping technology
- Immediate correction for time change
- Available in different sizes
 - 2.5" display
 - 4" display
 - Four digit display
 - Six digit display
- 12 or 24 hour format
- Two levels of adjustable brightness
- Anti-glare display
- Compatible with BCAL Series Analog Clocks
- Dynamic range for input voltages
 - 12-30VDC (24 volt model)
 - 12-30VAC (24 volt model)
 - 78-130VAC (110 volt model)
- Loss of communication alert
- Bright LED display
- FCC Compliant, FCC part 15 Section 15,247



DESCRIPTION

Bogen's BCBL 1000 Series gives you the answer to your wireless digital clock needs. Working in conjunction with the Bogen BCMA Series Wireless Master Clock, the BCBL 1000 Series integrates seamlessly with the BCAL-2 Series Wireless Analog Clocks. Working on Bogen's 915-928 MHz frequency-hopping technology, the digital clocks will receive and transmit the signal once a minute.

The innovative 915-928 MHz frequency-hopping technology allows for a better and clearer signal even if there is interference in one of the frequencies. Not only can each clock receive the wireless signal, it also transmits the signal which eliminates the need for many repeaters. The digital clocks are offered in a wide array of models featuring 2.5" or 4" high characters, as well as four or six digit displays.

WIRELESS SYSTEMS

BCMA Series Wireless Master Clock

HIGHLIGHTS

- LED display for a clear, accurate readout
- Two line, backlit LCD display with 20 characters per line (3000 only)
- Improved 2x8 rubber pushbutton keyboard (3000 only)
- Crisp, bright LED display with two push buttons for programming (2000 only)
- (S)NTP Input Capability
 - Up to 10 server addresses can be pre-programmed into the unit for continuous, accurate synchronization (with web interface software upgrade)
- DHCP Capable
- Interfaces with other systems
 - Interfaces with 59 and 58 minute correction, National Time and Rauland, as well as Dukane digital
- 12 or 24 hour mode
- Automatic bi-annual daylight savings time changes (when used as a primary master clock)
- Bias seconds output
 - Adjust the time plus or minus a few seconds or minutes to fit your application, while still receiving an input from another source
- Microprocessor based
- RS485 input and output for time correction and synchronization
- Two (2) relays for simultaneous correction of two synchronous-wired clock systems
- Field programmable
- Ten (10) year battery backup for timekeeping
- Available in rack mount or wall mount



BCMA Series Options

- Four or eight configurable auxiliary relays (3000 only)
 - 800 event capability
 - 255 pre-programmed schedule changes
- GPS input
- SNTP/NTP Server *NEW*
 - With this software upgrade, the new BCMA Master Clock can be used as a SNTP server to interface with other devices
- Web Interface software upgrade *NEW*
 - Extremely intuitive graphical user interface that allows the user to configure all of the settings of the BCMA through a simple web browser
 - Easy programming of the master clock's four or eight auxiliary relays for scheduling. (3000 only)
 - Control of all of the IP settings
 - View complete lists of all the pre-programmed events and schedules (3000 only)
- Count down feature (3000 only)
 - Digital clocks will countdown a preset amount of time when the relay is activated

BCMA 1000 Series Wireless Repeater

HIGHLIGHTS

- Receives the signal from any Bogen wireless clock and re-transmits it
- Perfect for applications with extremely long distances
- Works on Bogen's 915-928 MHz frequency hopping technology
- Transmits up to 2000 meters in open space
- Powerful 30dBm transmission
- Extremely slim design makes the Wireless Repeater versatile for mounting
- No need for custom back box
- FCC compliant, part 15, section 15.247
- Made in the U.S.A.



DESCRIPTION

The repeater is an ideal choice for extending the Bogen wireless signal when longer distances between clocks are present. Upon receipt of the wireless signal from the main transmitter or any Bogen clock in the field, the repeater can transmit up to 1000 meters in open space which enables a broad transmission range to the subsequent slave clocks in the field. The signal is transmitted once a minute and is capable of sending it to the BCAL series analog wireless clocks and the BCBL series digital wireless clocks.

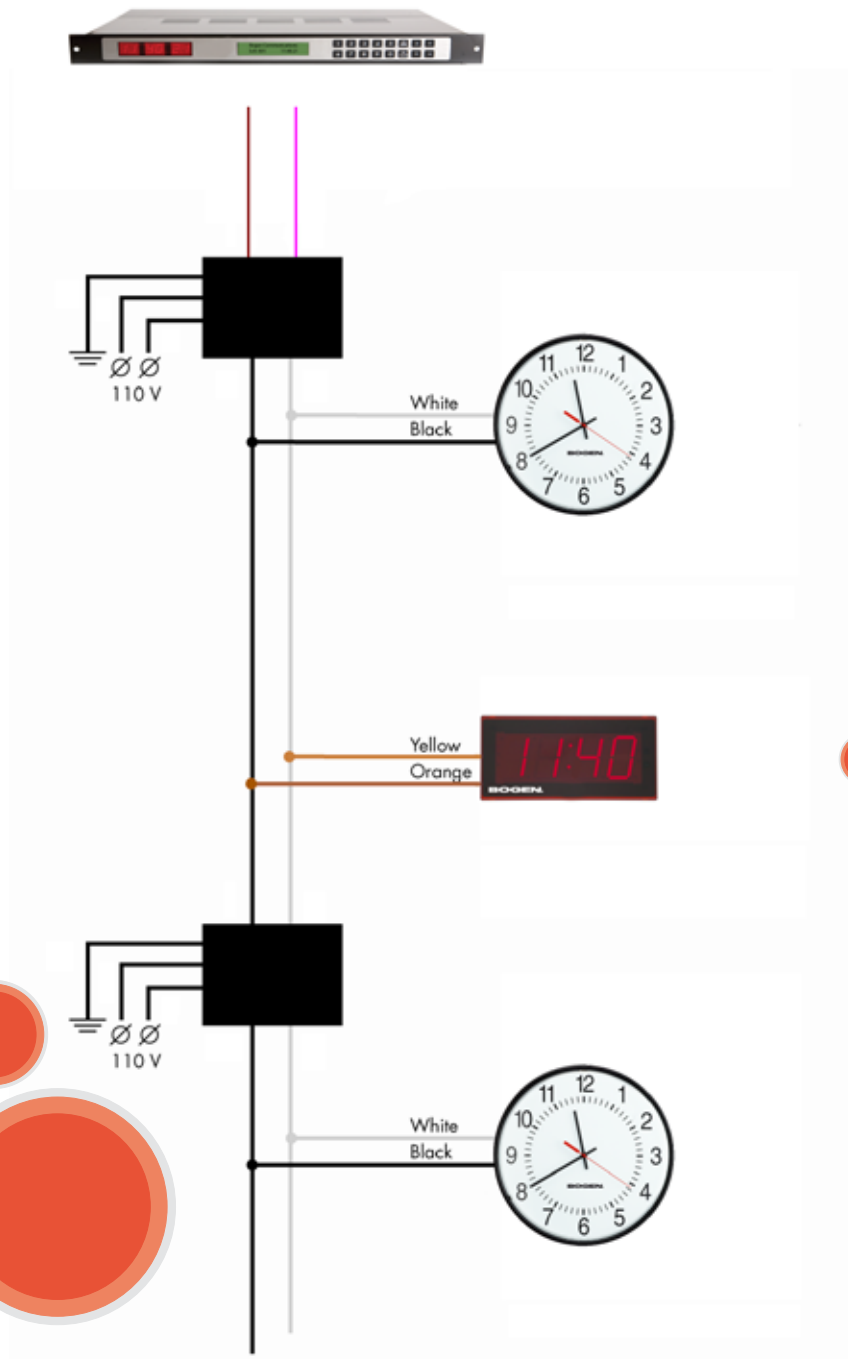
WIRED SYSTEMS

2-Wire Digital Communication

Bogen's 2-wire digital communication is one of the most advanced systems in the world. Its simple installation and accurate timekeeping illustrate why Bogen is the leader in this industry. The system utilizes only 2 wires for installation, one for data/power and the other as a reference.

Paired with Bogen's Converter Box for power distribution, the 2-wire system is capable of running many clocks off of only one converter box unit. Providing immediate correction for time change, the 2-wire system is also capable of running analog and digital clocks on the same 2 wires. This system is available only on 24V clock models.

This system works with Bogen's BCAM Analog Clocks and BCBD 1000 and 2000 Series Digital Clocks seamlessly, enabling complete flexibility for almost any application.

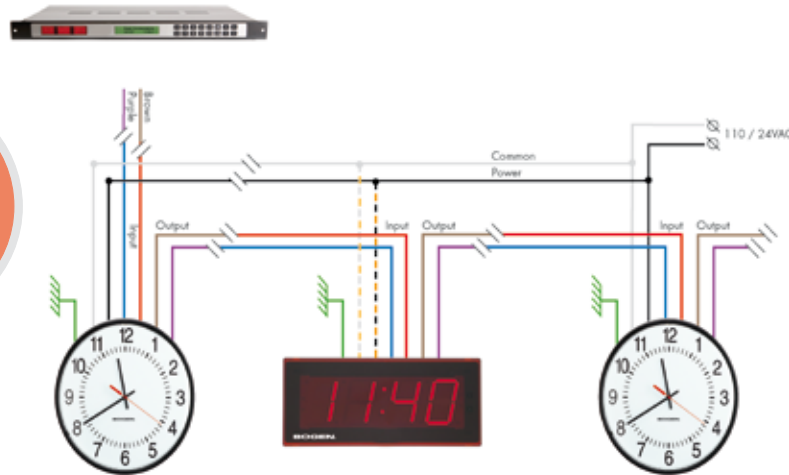


WIRED SYSTEMS

RS485 Communication

The RS485 system is one of the most advanced timing systems in the world. The Bogen RS485 system sends a string of data once a second to ensure that all clocks show the same time, all the time. In case of a discrepancy, the slave clocks shall begin correcting themselves within seconds. The Bogen RS485 system has no need for expensive master clocks because a BCBD 2000 series clock can act as a master clock and can drive an unlimited number of clocks using the daisy chain configuration. The RS485 system has two wires for power and two wires for communication.

This system works in conjunction with the BCRM Series Analog RS485 clock, as well as the BCBD 1000 and BCBD 2000. Series Digital Clock. The BCRM series clock has automatic frequency detection and is available in 24V and 110V models. The BCBD 1000 is an ideal choice for a consistent slave clock with its high visibility and immediate time change. The BCBD 2000 can receive the RS485 signal, and even act as a master clock to the RS485 slave clocks.

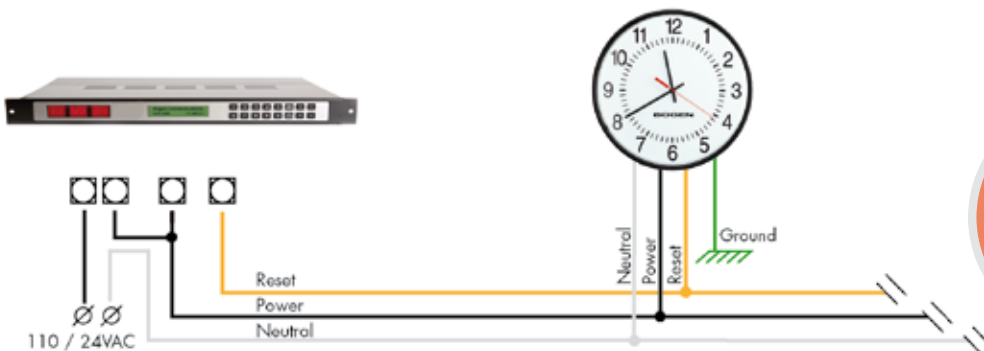


Synchronous (Sync-Wire) Communication

The Synchronous Wire System is the most popular system in the United States. The sync-wired clocks use the running power as a timebase. The clock receives an hourly correction to synchronize the minute hand and the seconds hand, and a 12 hour correction to synchronize the hour, minute and second hands. Bogen's BCAM Series clock line are microprocessor based movements which minimize moving parts and increase reliability. The Bogen BCBD 2000 Series Digital Clock is capable of receiving the sync-wire signal and can be run on either 24V or 110V.

Sync-Wire Protocols Supported:

- 59 Minute Correction
- 58 Minute Correction
- National Time or Rauland



WIRED ANALOG CLOCKS

BCAM Series Wired Analog Clock

HIGHLIGHTS

- Microprocessor based movement with automatic frequency detection
- Compatible with 2-Wire Digital Communication and Sync-Wire Communication
- Automatic communication protocol identification:
 - 2-Wire Digital Communication
 - 59 Minute Correction
 - 58 Minute Correction
 - National Time or Rauland Correction
- Diagnostic LEDs for ease of maintenance
- Fully automatic plug and play; No settings required
- Built-in self-test function
- Automatic polarity detection
- Quick correction for time change (max. 5 minutes, digital communication only)
- Clocks will not deviate from each other (Digital communication)
- Ideal for renovation projects using existing wiring or new installations
- Energy efficient:
 - 20 mA @ 24VAC
 - 15 mA @ 110VAC
 - 10 mA correction
- Smooth surface metal case and polycarbonate crystal
- Available in 24V, 110V and 220V
- UL, cUL and FCC approved



DESCRIPTION

Bogen's BCAM Series analog clocks incorporate multi-function software which allows the clock itself to identify communication protocols in the field. The clocks contain built-in test procedures for protocol type and last received communication time, as well as a comprehensive analysis of the clock. BCAM clocks are fully plug and play; there are no settings required. These clocks contain an automatic polarity detection feature which protects the system in case data is received with reverse polarity. These features provide significant flexibility and responsiveness. The clocks are available in 12" and 16" round cases. The shallow, low profile metal cases eliminate the need for custom back boxes. This clock has UL, cUL and FCC compliances.

BCRM Series RS485 Wired Analog Clock

HIGHLIGHTS

- Uses local power plus two (2) wires for communication
- Designed to work with the RS485 Communication system
- Comparable to the BCAR series
- Diagnostic LEDs for ease of maintenance
- Data LEDs for verifying the transmission and receipt of data
- Unlimited clocks can be run on the same communication line in a daisy chain configuration
- Doesn't require an expensive master clock; it can be run off the BCB2 2000, as well as the BCMA 2000 and 3000.
- Analog and digital clocks can be run on the same communication line
- Fully automatic plug and play; No settings required
- Built-in self-test function
- Quick correction for time change (max. 5 minutes)
- Clocks will not deviate from each other
- Ideal for renovation projects using existing wiring or new installations
- Energy efficient:
 - 20 mA @ 24VAC
 - 15 mA @ 110VAC
 - 10 mA correction
- Smooth surface metal case and polycarbonate crystal
- Available in 24V, 110V and 220V
- UL, cUL and FCC approved



DESCRIPTION

Bogen's BCRM Series analog clocks are an excellent, cost-effective way to have a stable, reliable system. The new RS485 clocks use optocoupler technology which isolates the communication preventing damaging lightning strikes and power surges. The clocks contain built-in test procedures for protocol type and last received communication time, as well as a comprehensive analysis of the clock. The clock movement has LEDs which shows the user if and when the communication is received and sent from the clock, making the clock easy to maintain. The BCRM Series incorporates Bogen's RS485 protocol which sends a digital data signal as often as once a second. The clocks are available in 12" and 16" round cases and come standard with a shatterproof, polycarbonate crystal. The clocks are UL, cUL and FCC compliant.

WIRED DIGITAL CLOCKS

BCBD 1000 Series Wired Digital Clock

HIGHLIGHTS

- Immediate correction for time change
- Clocks will not deviate from each other
- Available in 2.5" or 4" displays
- Available in 4 or 6 digit displays
- 12 or 24 hour format
- "BELL", "FirE" messaging capabilities
- Choice of using 2-Wire Digital Communication protocol or RS485 Communication
- Bright LED display
- Two (2) settings for brightness
- Loss of communication alert
- LEDs for visual representation of the receiving and transmitting of RS485 data
- Diagnostic LEDs for visual indication of the 2-Wire signal and power
- No battery backup required
- Unlimited number of clocks can be run off of the same communication line (RS485 only)
- Dynamic range for input voltages
 - 12 - 30VDC (24 volt model)
 - 12 - 30VAC (24 volt model)
 - 85 - 130VAC (110 volt model)
- Plug in Molex connectors
- Available in flush, surface and double mount housings
- UL, cUL listed and FCC approved



DESCRIPTION

BCBD 1000 Series Digital Clocks are available in either 2.5" or 4" high characters with a 4 or 6 digit display. The BCBD 1000 Series Digital Clocks are reliable slave clocks that run on Bogen's 2-Wire Digital Communication or RS485 Communication. The clock has many options such as 12 or 24 hour mode, "BELL" and "FirE" messaging, as well as two brightness settings. The BCBD 1000 can be mounted in either a flush, surface or double mount housings making it a perfect fit for your application. The 1000 Series also have LEDs that give the user visual notification of the sending and receiving of data. The unique, specially molded anti-glare bezel gives a smooth, clean look with no visible external screws. The BCBD 1000 is UL and cUL listed, as well as FCC approved.

BCBD 2000 Series Digital Master Clock

HIGHLIGHTS

- Microprocessor based
- Can interface with existing systems
- Available in 2.5" or 4" displays
- Available in 4 or 6 digit displays
- Master, slave and independent clock with chronograph capabilities
- 59 minute, 58 minute, other manufacturers' clocks, midnight reset input, RS485 input and output and 2-Wire Digital Communication input
- Interface capabilities to most other clock systems and intercoms
- Automatic Daylight Saving Time (when used as a primary master clock)
- 12 or 24 hour mode
- "BELL", "FirE" messaging capabilities
- Choice of using 2-Wire Digital Communication protocol or RS485 Communication
- Three (3) settings for brightness
- Loss of communication alert
- LEDs for visual representation of the receiving and transmitting of RS485 data
- Diagnostic LEDs for visual indication of the 2-Wire signal and power
- Ten (10) year battery backup
- Available in flush, surface and double mount housings
- UL, cUL listed and FCC approved



DESCRIPTION

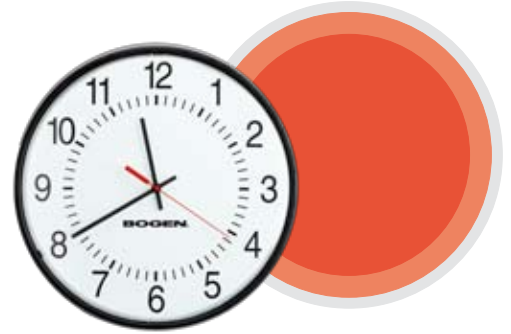
BCBD 2000 Series Digital Clocks are available in 2.5" or 4" high characters or 4 or 6 digit displays. This superior line of digital clocks features automatic Daylight Saving Time correction, PM indicator, master, slave or independent clock capabilities. The BCBD 2000 Series clocks have chronograph capabilities using the Bogen Control Box. The 2000 Series digital clock has high efficiency, bright LED display. Our specially molded, anti-glare front bezel gives a smooth surface which allows for excellent visibility. The BCBD 2000 can perform diagnostic capabilities to the BCAM and BCRM Series clocks. It also has alternating time and date display in both American and European formats, as well as "BELL", "FirE" and addressable messaging capabilities. The BCBD 2000 is capable of interfacing with many other systems such as sync-wire systems, once a day inputs and intercom systems. The clock is UL and cUL listed, as well as FCC approved.

IP ANALOG AND DIGITAL CLOCKS

BCAP Series Analog IP Clocks

HIGHLIGHTS

- Available in 4 different voltage models
 - Power over Ethernet (802.3af)
 - 24V
 - 110V
 - 220V
- Internal web interface built-in for adjusting and configuring settings and features
- Complete control of the entire clock system using Bogen's Monitor software
 - View the status of the clock system to ensure communication
 - Edit a specific clock's settings or apply features system-wide from one location
- Receives time from any NTP/SNTP server
- Automatic bi-annual Daylight Saving Time
- Microprocessor based movement
- Low profile - one (1) model for flush and surface mount
- No need for custom backbox
- Plug in molex connectors (voltage models only)
- Made in the U.S.A.
- Diagnostic mode allows the user to check the mechanical status and last received communication status
- Smooth surface case and polycarbonate crystal
- Available in PoE, 24V, 110V and 220V
- UL, cUL and CE pending



DESCRIPTION

Bogen's new BCAP Series IP clock is one of the most technologically advanced clocks in the industry. The clock is capable of running on the Power over Ethernet (802.3af) protocol, 24V, 110V or 220V for maximum versatility. Each clock has an internal web browser that contains the clock's settings and is configurable by the user. By simply using a Windows-based application, the entire system can be managed enabling administration to view and/or change existing configuration. The clock will receive its time from a (S)NTP time server for accurate timekeeping, thus eliminating the need of a master clock. The BCAP Series is available in 12" and 16" versions. Offering only the highest quality, Bogen's BCAP Series comes with a smooth surface case, as well as a shatterproof, polycarbonate crystal. The BCAP Series is manufactured in the U.S.A. and has UL, cUL and CE pending.

BCBP Series Digital IP Clocks

HIGHLIGHTS

- Available in three different voltage models
 - Power Over Ethernet (802.3af protocol)
 - 24V
 - 110V
 - 220V
- Extremely intuitive web interface built in
 - Control all of your settings from brightness to daylight savings time through an easy-to-use web interface
- Monitor your entire clock system!
 - View the status of your clock to ensure it's communicating
 - Edit a specific clock's settings or apply settings to the entire clock system through one location
- Available in different sizes
 - 2.5" (6.35 cm) display
 - 4" (10.16 cm) display
 - 4 digit display
 - 6 digit display
- Automatic bi-annual Daylight Saving Time
- 12 or 24 hour display
- Configurable alternating time/date in both American and European formats
- Two levels of adjustable brightness
- Made in the U.S.A.
- UL, cUL and CE pending



DESCRIPTION

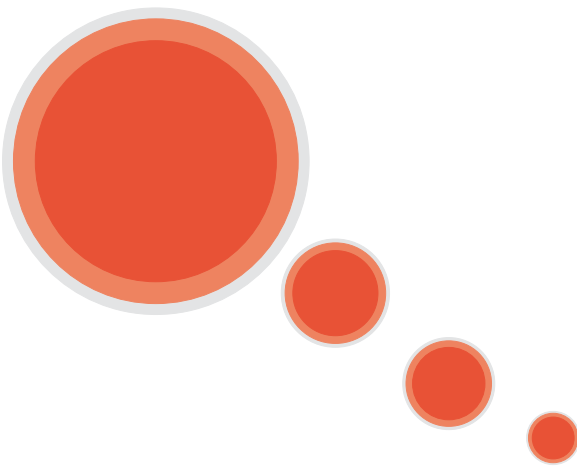
Bogen's BCBP Series IP digital clocks are available in 2.5" or 4.0" high characters with a 4 or 6 digit display. The BCBP series is capable of running off of the Power over Ethernet (PoE) protocol. Each clock has an internal web browser that contains the clock's settings and is easily configurable by the user. By simply using a Windows-based application, the entire system can be managed enabling administration to view and/or change existing configuration. The clock will receive its time from a SNTP time server for accurate timekeeping, thus eliminating the need of a master clock. The BCBP Series has a variety of features such as 12 or 24 hour mode, domestic and international Daylight Saving Time, alternating time/date display and adjustable brightness settings. This product is manufactured in the U.S.A. and is UL, cUL and CE pending.

IP WEB INTERFACE

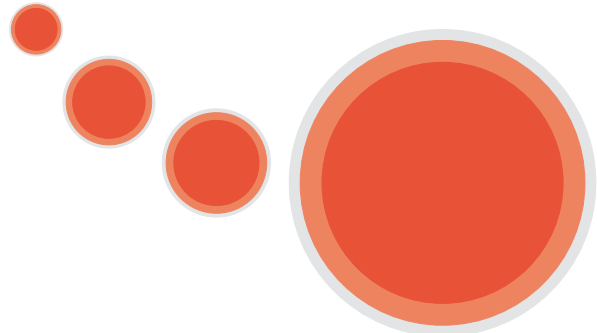
Domestic & International Daylight Saving Time



Set up to 10 Network Server Addresses



Check the Status of Any Clock



MASTER CLOCKS - ALL SYSTEMS

BCMA 2000 Series Master Clock

HIGHLIGHTS

- LED display for a clear, accurate readout
- (S)NTP Input Capability
 - Up to ten server addresses can be pre-programmed into the unit for continuous, accurate synchronization (with web interface software upgrade)
- DHCP Capable
- Interfaces with other systems
 - Interfaces with 59 and 58 minute correction, National Time and Rauland, as well as Dukane digital
- 12 or 24 hour mode
- Automatic bi-annual Daylight Saving Time changes including International and Domestic settings
- Bias seconds output
 - Adjust the time plus or minus a few seconds or minutes to fit your application, while still receiving an input from another source
- RS485 input and output for time correction and synchronization
- Two relays for simultaneous correction of two synchronous-wired clock systems
- Microprocessor based
- Ten year battery backup for timekeeping
- UL and cUL pending



BCMA 2000 Series Options

- GPS input
- Wireless Transmitter/Repeater for correction of the BCAL-2 series analog clocks or BCBL series digital clocks
- SNTP Server
 - With this software upgrade, the new BCMA Master Clock can be used as a SNTP server to interface with other devices
- Web interface software upgrade
 - Extremely intuitive graphical user interface that allows the user to configure all of the settings of the BCMA through a simple web interface
 - Control of all of the IP settings

BCMA 3000 Series Master Clock

HIGHLIGHTS

- LED display for a clear, accurate readout
- (S)NTP Input Capability
 - Up to ten server addresses can be pre-programmed into the unit for continuous, accurate synchronization (with web interface software upgrade)
- DHCP Capable
- Interfaces with other systems
 - Interfaces with 59 and 58 minute correction, National Time and Rauland, as well as Dukane digital
- 12 or 24 hour mode
- Automatic bi-annual Daylight Saving Time changes including International and Domestic settings
- Bias seconds output
 - Adjust the time plus or minus a few seconds or minutes to fit your application, while still receiving an input from another source
- RS485 input and output for time correction and synchronization
- Two relays for simultaneous correction of two synchronous-wired clock systems
- Microprocessor based
- Ten year battery backup for timekeeping
- UL and cUL pending



BCMA 3000 Series Options

- Four or eight configurable auxiliary relays (zones)
 - 800 event capability
 - 255 pre-programmed schedule changes
 - Two (2) programmable signal durations per circuit
- GPS input
- Wireless Transmitter/Repeater for correction of the BCAL series analog clocks or BCBL series digital clocks
- SNTP Server
 - With this software upgrade, the new BCMA Master Clock can be used as a SNTP server to interface with other devices
- Web Interface software upgrade
 - Extremely intuitive graphical user interface that allows the user to configure all of the settings of the BCMA through a simple web browser
- Countdown feature *NEW*
- Digital clocks will countdown a preset amount of time when the relay is activated

ACCESSORIES

BCMA 1000 Series Network Repeater



HIGHLIGHTS

- TCP/IP connection for integration with the main transmitter
- Powerful transmission range - transmits up to 2000 meters in open space!
- Works on Bogen's 915 – 928 MHz frequency hopping technology
- Transmits the Bogen wireless signal to the BCAL series analog wireless clocks and the BCBL series digital wireless clocks

DESCRIPTION

The Network Repeater is the perfect solution for wireless systems in campus or multiple building environments. The Network Repeater receives its time from the main transmitter in the system via a TCP/IP connection and transmits the signal out to the BCAL Series analog clocks and the BCBL Series digital clocks. This feature allows the repeater to not have to be within the wireless range of the main transmitter in the building. Boasting a slim profile design, the Network Repeater is capable of being mounted in a variety of different locations.

Converter Box



HIGHLIGHTS

- Converts RS485 signal to a 24 volt, 2-wire digital communication signal
- Ideal for renovation projects when a limited number of wires are available
- Protects against overloading and shorts, as well as high temperature damage
- Provides a powerful 5.5 amp, 24V output
- Can drive both analog and digital clocks on the same run

DESCRIPTION

The Bogen Converter Box takes the RS485 signal input and converts it to the 2-Wire Digital Communication protocol, making it ideal for renovation projects. The Converter Box has a 5.5 amp output which allows a large number of clocks to be run off of one single box. The Converter Box can also be used as a booster by accepting the 2-Wire Digital Communication protocol and providing the rest of the system with additional power. The Converter Box includes a 22 CFM fan that keeps the Converter Box cool, but also quiet.

Transformer



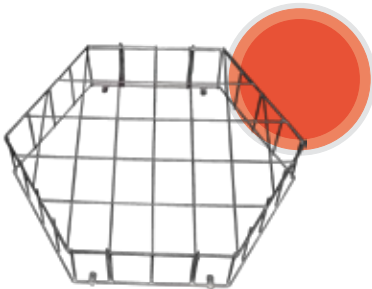
HIGHLIGHTS

- Available in 6.2, 10.4, 20.8 and 31.2 amp sizes
- Multiple knockouts for easily accessible entries
- Ground studs provided for bonding compatibility with both metallic and non-metallic conduit

DESCRIPTION

Transformers are used in master clock and time systems for reduction of 220VAC150 Hz or 120VAC160 Hz to 12 and 24 VAC. Bogen uses double wound, isolation type transformers which feature copper windings and copper lead wire terminations throughout. The transformer has a UL Class 105°C (221°F) insulation system with a 55°C (131°F) temperature rise at a maximum ambient of 40°C (104°F). This ensures a long life and cool operating temperatures. Multiple knockouts provide convenient conduit entry and exit locations.

Wire Guard



HIGHLIGHTS

- 6 and 9 gauge steel rods
- Available in 4", 12" and 16"
- Zinc plated, epoxy finish
- Fixed tabs for mounting to the wall or ceiling

DESCRIPTION

Wire guards are designed for use with Bogen 12" and 16" round analog clocks, and the 4" digital clock. Each guard is fabricated from 6 and 9 gauge steel rods which are welded together and hot dipped in a zinc coating to protect from corrosion. The wire guards are hinged for convenient access to the analog or digital clocks. The heavy duty wire guards come complete with fixed tabs welded to the guard for mounting directly to the wall or ceiling. They are hung independently of the clock for maximum protection.

Surface Mount Ring



HIGHLIGHTS

- Used for mounting to an existing speaker baffle
- Used for 12" clock
- Slim design

DESCRIPTION

The Surface Mount Ring is a perfect choice for renovations when wiring cannot be run through the walls. The Surface Mount Ring has a knockout in order to have conduit run right into the housing. This accessory is extremely easy to install, making it an ideal choice for any installation where conduit is utilized.

NOTES

NOTES



BOGEN[®]



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COMMUNICATIONS, INC.

50 Spring Street, Ramsey, NJ 07446, U.S.A.
Tel: 201-934-8500 • Fax: 201-934-9832
www.bogen.com

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