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## Item # Skeleton & Silhouette Dial Clocks, Skeleton & Silhouette Dial Clocks

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### **Skeleton & Silhouette Dial Clocks**

*Skeleton* and *Silhouette* style exterior clocks (this type of clocks use the wall surface as the clock dial background). For *Skeleton* style clocks – the individual dial markers are affixed to the wall surface as shown in the photo. For *Silhouette* style clocks the dial markings are joined together to provide a one-piece full metal overlay dial assembly that mounts to the wall surface. Clock movements generally are mounted to the interior of the wall with the clock shaft or arbor going through the wall to the exterior. Front mounted clock movements are also available with recessed mounting enclosures and rosettes. *Skeleton* and *Silhouette* style clocks are usually front illuminated with standard exterior lighting. Reverse halo lighting is available for larger applications.

All *Skeleton* & *Silhouette* Dial Clocks are built to customer specifications including sizes, hand & dial marker styles, lighting, addition of optional items, etc. Contact Elderhorst Bells, Inc. for details.

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**EXTERIOR CLOCK SPECIFICATIONS - SKELETON or SILHOUETTE DIAL STYLE CLOCKS****PART 1 – GENERAL**

## 1.01 SUMMARY

A. Provide clock system consisting of \_\_\_\_\_ clock(s), \_\_\_\_\_ in diameter, as shown on drawings, as specified, and as needed for a complete and proper installation.

B. Coordinate clock system of this section with General Conditions and Supplementary Conditions.

## 1.02 SUBMITTALS

A. Submit shop drawings and wiring diagrams. Upon approval, General Contractor shall send to field or jobsite superintendent copy of final approved shop drawings and wiring diagrams.

B. Submit color sample – for exposed surfaces (if required)

## 1.03 QUALITY ASSURANCE

A. Use adequate number of skilled workmen who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

B. Use materials which shall be free from defects impairing strength, durability, and appearance; shall be of best commercial quality for purpose required; and shall comply with the approved drawings.

C. Use manufacturer who has had ten (10) years of experience in the manufacture of the specified product.

## 1.04 WARRANTY

A. Warrant the clock system for one year after the date of delivery of product installed by others. Warranty is not in effect as a result of lightning damages, vandalism, improper wiring, or improper servicing.

**PART 2 – PRODUCTS**

## 2.01 MANUFACTURER

A. Use the Skeleton (*or Silhouette*) style clock as manufactured by Elderhorst Bells, Inc. 875 Gravel Pike, Palm, PA 18070, Phone: 800-810-7892, Fax: 215-679-3692, Email: [info@elderhorstbells.com](mailto:info@elderhorstbells.com)

## 2.02 MATERIALS

A. One Minute Impulse Type Movement for each clock is to be provided. The movements are driven by a 120 Volt, 60 hz, high-torque motor (24vac available for certain clock diameters) which is activated by the impulse type clock controller at one minute intervals.

B. Skeleton Clock dial markings cut from 1/4" min. (.250") thick aluminum and will be provided with concealed mounting studs with standoffs and drilling/mounting template.

Skeleton Clock dial markings are to be type EB- \_\_\_\_\_ (with **optional** minute/hour ring EB-R \_\_\_\_\_)

**OR**

B. Silhouette Dial is to be cut from 1/4" min. (.250") thick aluminum and will be provided with concealed mounting studs with standoffs and drilling mounting template.

Silhouette Clock dial markings are to be type EB- \_\_\_\_\_.

C. Clock hands to be provided for each clock and are to be cut from 1/8" (.125") thick aluminum. The clock hand hub is to be machine bored for proper fit to the clock movement shaft. Balance rods or counterweights are to be affixed to the clock hands to properly balance the hands. All mounting hardware will be stainless steel.

Clock hands are to be type EB- \_\_\_\_\_.

## 2.03 ACCESSORIES

A. Provide an EB-200 series Clock Controller – this is a minute impulse type master-clock with a high degree of accuracy due to the quartz micro-processor time base. The unit incorporates a lithium battery backup for automatic time correction following power failure, and automatic daylight savings time correction. The controller is housed in a NEMA 6P surface wall mount enclosure. Field wiring diagrams are to be provided.

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**OPTIONAL ITEMS:**

B. TEMPORA-DIGITAL Clock/Chime system – quartz based with lithium battery backup for automatic time correction following power failure. Automatic daylight savings time correction. The TEMPORA-DIGITAL Chime system allows for user programmable play of 1-4 bell peals, funeral tolls, Westminster Chime (or other hourly melody), Hour-strike, and a limited selection of included melodies. System includes an amplifier. The DIGITAL-TEMPORA system is housed in a steel rack mount type enclosure. (requires loudspeakers – see below)  
\_\_\_\_ reflex sound projector loudspeaker horn(s) will be provided with 60 watt drivers, (4 recommended for uniform sound dispersion).

C. GPS- Global Positioning Satellite time synchronization system. Includes antenna and receiver for automatic time correction from the GPS time signal. The GPS receiver is housed in a NEMA 6P surface wall mount enclosure.

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**2.04 FABRICATION**

- A. Fabricate hands and dial markers proportional to diameter of clock noted above.
- B. Fabricate clock movement, and test for proper operation with Clock controller.

**2.05 FINISHES**

A. Finish all aluminum surfaces exposed to front viewing. Clock hands and dial markers shall be caustic etched, primed with two heavy coats of primer, and finished with two heavy coats of industrial enamel, (black standard). All concealed metal to be of mill finish aluminum.

**2.06 CAULKING**

- A. Clean and dry all surfaces to be caulked.
- B. Apply silicon caulking as required with caulking gun, using nozzle of proper size to fit joint width.

**PART 3 – EXECUTION**

**3.01 PROJECT SITE CONDITIONS**

- A. Verify that site conditions are suitable and accessible for delivery and installation.
- B. Confirm that all preparatory work is in place in accordance with approved shop drawings prior to installation.

**3.02 INSTALLATION**

- A. Use skilled and experienced installation craftsmen familiar with such work, and in accordance with manufacturer's instructions and approved shop drawings.
- B. Coordinate with other trades as required to assure proper and adequate installation
- C. Install clock controller in an accessible area.
- D. Provide and install separate electrical circuits 120 vac, 60 hz for clock system, in accordance with local building and electrical codes.

**3.03 CLEAN-UP**

- A. Clean all soiled and dirty areas, and touch up any scratches or abrasions.
- B. Clean up all debris caused by work of this section, keeping the premises clean and neat at all times.

END OF SECTION