

# 舰船子母钟CZM-1 烟台达信-

产品名称	舰船子母钟CZM-1 烟台达信-
公司名称	烟台达信精密仪器有限责任公司
价格	22000.00/个
规格参数	加工定制:是 品牌:烟台达信 型号:czm-1
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## 产品详情

【做工精良】子母钟、船用子母钟、舰船子母钟

czm-1型船用子母钟，是我公司研制生产的专门用于船舶领域的时间服务系统。该系统由一台母钟和几十只子钟组成，通过信号电缆和电源电缆相互联接起来；它能同时提供当地时间、国际协调时utc时间和北京时间的显示。model czm-1marine master-slave is a time server system manufactured by our company and specially used in marine field. composed of one master clock and scores of slave clocks and connected with the signal cables and power cables, this system can simultaneously provide the local time, utc (coordinated universal time) and beijing time.

子母钟系统设备由母钟、子钟及通信线缆组成。其主要功能为：the master-slave system is composed of a master clock, slave clocks and communication cables with the main functions as follows:

- 2 显示统一的标准时间display the uniform standard time
- 2 向其它设备提供时间信号provide other equipments with time signals

## 各部分特点characteristics of each part

母钟作为整个时钟系统的基础主时钟，它能够接收来自gps的标准时间信号，将自身的时间精度校准，并分配精确时间信号给各个子钟和其他需要时间的设备，并且通过键盘操作对子钟进行点对点监控。as the basic master clock of the whole clock system, the master clock can receive the standard time signals from gps, calibrate the time precision of its own, distribute the precise time signals to each slave clock and other equipment requiring time, and carry out point-to-point monitoring on slave clocks through operating the keyboard.

母钟通过标准的rs422接口接收gps发送的标准时间信号。外部时间源正常工作时，该信号将作为母钟的时间基准；外部时间源出现故障时，母钟将采用自身的晶振作为时间基准。the master clock receives standard time signals sent by gps through standard rs422 interface. the signal will be regarded as the time base of the master

clock when external time sources are normal;the master clock will adopt self crystal oscillation as the time base when external time sources are broken down.

该系统由一台母钟和几十只至上百只子钟组成。通过信号电缆相互连接起来，所有子钟都由母钟控制运行，除标准时子钟指示gmt或某一特定时间外，其它子钟都保持同步（注：标准式子钟总是顺时针方向，以固定频率运行），所有子钟因其安装使用条件不同，在结构形式上有所不同。 the system is composed of a master clock and scores even hundreds of slave clocks. connected with signal cables, all slave clocks run under the control of the master clock, and otherslave clocks will synchronize except that the standard slave clock displays gmt or other certain time (note: the standard slave clock always runs clockwise with a fixed frequency). due to different installation and application conditions, all slave clocks are different in structure.

母钟部分以一微处理器和几块vlsic器件为核心，构成一控制单元，可以同时对所有子钟进行顺时针或逆时针快速调整。母钟采用lcd大屏幕液晶显示，通过键盘调整来实现各种功能。 with a microprocessor and several vlsic devices as the core forming a control unit, the master clock can make rapid clockwise or anticlockwise adjustment of all slave clocks simultaneously. adopting large-screen lcd, the master clock can achieve various functions through adjusting the keyboard.

母钟采用高稳定晶振，保证了设备的稳定性，可靠性，同时母钟具有记忆功能，内置实时时钟芯片，停电后可保持数据十年，来电后自动显示正确时间。 adopting high-stability crystal oscillator, the master clock has ensured the stability and reliability of the equipment, and with the clock chip inside, the master clock has memory functions, which can keep data ten years when powered off, and display the right time automatically when powered on.

母钟电源采用交直流并行供电形式，来实现系统的不间断工作。当交流断电时，自动切换成直流24v供电；当交流电恢复后，自动回到交流供电方式。 with ac/dc power supply, the power of the master clock will achieve the continually running of the system. it can change to dc 24v supply power automatically when ac powered off, and turn to ac supply power automatically when ac powered on.

## 主要技术指标main technical index

- 2 母钟走时精度：±0.1秒/天travel-time precision of master clock: ±0.1 second /day
- 2 工作时间：连续工作running time: running continually
- 2 母钟工作电压：ac220v ± 10% 50hz/60hz ± 5%, dc24v ± 5% running voltage of master clock: ac220v ± 10% 50hz/60hz ± 5%, dc24v ± 5%
- 2 工作温度范围：-10 ~+50 running temperature range:-10 ~+50
- 2 电磁兼容性：符合gjb151-97有关规定electromagnetic compatibility: conforming to relevant provisions of gjb 151-97
- 2 供电方式：主电源交流220v ± 10% 50/60hz；备用电源直流24v ± 10% power supply mode: main power supply ac220v ± 10% 50/60hz; emergency power supply dc 24v ± 10%
- 2 与gps接口：标准rs422接口，数据速率4800bps. gps数据输出采用标准nmea0183 ascii码接口协议，本套母钟使用【gprmc】指令进行校时操作。 interface with gps: standard rs422 interface, data rate 4800bps. gps data output adopts standard nmea0183 asc code interface protocol, and this set of master clock use 【gprmc】 instructions to carry out time-checking operation.

- <sup>2</sup> 输出接口：子钟脉冲信号，2路。可以根据所带负载设置（既有设备最多4路）；rs422接口1路output interface: pulse signals of slave clocks, circuit 2. it can be set according to the load (4 circuits for the present equipment at most) ; rs422 interface circuit 1.
- <sup>2</sup> 子钟所需信号：频率0.5hz幅度dc18v母钟一路驱动50个子钟signals required by the slave clock: frequency 0.5hz amplitude dc18v master clock of circuit 1 drives 50 slave clocks.
- <sup>2</sup> 子钟调整：子钟调整信号频率10hz 幅度dc18v ?slave clock adjustment: frequency of slave clock adjusting signals 10hz amplitude dc18v
- <sup>2</sup> 平均功耗：小于15w average power consumption: less than 15w
- <sup>2</sup> 母钟体积：350 × 280 × 100（mm × mm × mm）size of master clock: 350 × 280 × 100(mm × mm × mm)
- <sup>2</sup> 颜色：中绿灰color: medium green gray <sup>2</sup> 重量：5公斤weight: 5 kg

## 工作原理operating principle

母钟采用高性能单片机控制，进行数据存贮、译码运算，产生脉冲信号，在lcd液晶屏幕上显示时间信息，并通过rs422接口输出母钟时间信号。adopting the high-performance single chips control, the master clock proceeds data storage and coding calculation, produces pulse signals, displays the time on lcd screen, and outputs the time signals of the master clock through rs422 interface.

母钟接收标准时间接收单元输出的标准时间信号对自身精度进行校准。the master clock receives the standard time signals outputted by standard time receiving unit, and calibrates the precision of its own.

母钟输出子钟运转所需要的脉冲信号，驱动子钟运转。母钟可以提供正反转两路脉冲信号确保子钟在最短时间达到所指示的正确时间。the master clock outputs the pulse signals required by the running of the slave clocks to drive the running of the slave clocks. the master clock can provide clockwise and anticlockwise pulse signals of two circuits to ensure that the slave clocks indicate the correct time in the shortest time.

### 安装installation

- <sup>2</sup> 母钟为壁挂式或嵌入式。用m8螺丝钉4颗将钟体固定。the master clock is wall-mounted or embedded, and the clock body shall be fixed with four m8 screws.
- <sup>2</sup> 壁挂式子钟需要用3颗或4颗螺丝钉固定。安装时请参阅产品安装图。the wall-mounted slave clocks shall be fixed with three or four screws. for the installation, please see the product installation diagram.
- <sup>2</sup> 嵌入式子钟需要固定在一个有空间的平面上，安装请参阅图纸。the embedded salve clocks shall be fixed on a plane with some space. for the installation, please see the diagram.

### 与外部连接和方法external connection & methods

- <sup>2</sup> 母钟与子钟通过四线电缆连接。the master clock and the slave clock are connected by quad cables.
- <sup>2</sup> 母钟有多路输出，与子钟连接时尽量平均分配。as the master clock has multi output circuits, it is required to distribute as equal as possible when it is connected with the slave clocks.

<sup>2</sup> 要求严格按照标识正确连接。it is required to connect them correctly in accordance with the marks strictly.

本产品的加工定制是是，品牌是烟台达信，型号是czm-1，尺寸是460x300x120（mm），电源电压是交流220，直流24（V），用途是舰船时间系统