

# brandywine communications

## M210 Modular Time System Model 210



### Features

- **3-slot module output capacity**
- **Choice of clock synchronization options**
- **Choice of master clock accuracy**
- **Large range of output options**
- **1U high standard 19" rack mount**
- **5-segment front panel button for equipment configuration and control**
- **Large alphanumeric display of time, date and status**
- **Equipment configuration stored in non-volatile memory**

The M210 Modular Time System from Brandywine Communications is designed for use in applications where reliable time and frequency information is required and is ideal for synchronization of different output interfaces is required. Such applications may involve the display of time of day, the synchronization of computers, telemetry systems, scientific experiments or communications networks.

The M210 Modular Time System provides a Master Clock that is based upon a central microprocessor and a precision oscillator time base. The Master Clock provides all the time keeping functions of the M210. A front panel keypad is used in conjunction with an alphanumeric display for control and configuration of the unit. The keypad and display are used to program key features such as time entry and parameter setting as well as option configuration. The easy to read display also indicates time, date and status information. The modular construction of the M210 Modular Time System allows easy installation of up to three of the nearly fifty available option modules.

These options allow the output of time data in a wide range various formats and the capability to automatically synchronize the Master Clock to the various national and international time transmissions that are currently available. The inclusion of an optional Precision Oscillator ensures a high long-term stability for the Modular Time System.

The M210 Modular Time System offers the system designer the flexibility of a true COTS solution and the confidence of a proven design. The three module-slot construction offers a high degree of flexibility to the M210 while maintaining the compact 1U, 19-inch rack mount form factor.

A large variety of option cards are available, see the separately supplied sheet for an up to date list of option availability.

The M211 High Capacity Modular Time System supports applications that require more than three option slots. The M211 chassis easily supports up to nine option modules. A separate data sheet is available for the M211 model from our web site or your local Sales Office.

## Specifications

### Performance Specification at +20°C

Time Accuracy:	Standard crystal oscillator maintains free-run accuracy of 20 milliseconds over four hours at +20°C.
Display:	Two row by 24 character LCD. Character height: 5mm.
Keyboard:	5 button keypad for equipment configuration and control.
Power:	115/230V AC $\pm$ 10% 48-62Hz
Load:	40W (typical) subject to options and installed oscillator.
Connector:	3 pin IEC plug.
Mechanical:	19 inch rack mounting 1U high 305mm deep. The chassis has provisions for up to three option modules to be installed within the unit.

### Environment (Operation and Storage)

Temperature:	0°C to +40°C
Humidity:	Up to 95% RH (non-condensing)
EMC:	CE Compliant
MTBF:	121,654 Hours

### Options

Over 60 individual modules are available for the M210 Modular Time System. These options include serial data outputs (RS-232, RS-422, 20mA Current Loop), parallel BCD output, time code outputs (IRIG, etc) and analog clock impulse drivers. GPS and time code synchronization as well as precision oscillator options are also available. New options are continually becoming available. Consult your Local Sales office for additional information.

### Partial List of Available Options

Option 01	LF Receiver Module	Option 24	Speaking Clock Module
Option 04	Precision Oscillator Module	Option 25	Video Annotator Module
Option 05	Active LF Antenna Option	Option 26	AC Measurement Module
Option 06	Quad Serial Interface Module	Option 27	NTP Time Server Module
Option 07A	Time Code Generator Module	Option 28	Passive GPS Antenna Option
Option 07B	Time Code Reader Module	Option 29	Passive LF Antenna Option
Option 08	Combined Time Code & Serial Output Module	Option 30	Quad Time Code Module
Option 09	Parallel Output Module	Option 31	Combined Time Code & Analog Clock Driver Module
Option 10	Standard Frequency Output Module	Option 32	Octal Serial Interface with Precision Time Input Module
Option 13	Omni-directions LF Antenna Option	Option 33	Disciplined Oscillator for Telecom Module
Option 14	Quad 20ma Module	Option 34	T1/E1 Interface Module
Option 15	GPS Receiver Module	Option 35	High Gain GPS Antenna Option
Option 16	LF Simulator Module		
Option 17	Octal Serial Module		
Option 18	Analog Clock Driver Module		
Option 20	Four Channel Analog Clock Driver Module		
Option 21	Active GPS Antenna		
Option 22	Disciplined OCXO Module		
Option 23	SMPTE-EBU Time Code Module		