

# M-210



## Network Time Server

THE M-210 TIME SYSTEM IS A MASTER CLOCK DESIGNED FOR USE IN APPLICATIONS WHERE PRECISE, RELIABLE TIME INFORMATION IS A MUST. SUCH APPLICATIONS MAY INVOLVE:

- SYNCHRONIZING COMPUTER AND TELECOMMUNICATIONS NETWORKS, BROADCASTING STUDIOS, SOUND-RECORDING STUDIOS, TELEVISION STUDIOS, ETC.
- SYNCHRONIZING COMPUTERIZED POWER GENERATION PLANTS, WATER PLANTS, GAS AND OIL REFINERIES AND SCIENTIFIC EXPERIMENTATION.



TIME RECORDERS, TIME CONTROL AND TIME MEASUREMENT

# M-210

## Network Time Server

**THE M210 HAS** A CENTRALIZED CPU THAT CONTAINS ITS OWN OSCILLATOR TO MAINTAIN THE UNIT'S BASE TIMES, AN ALPHANUMERIC SCREEN, AND A KEYBOARD LOCATED ON THE FRONT PANNEL IN ORDER TO CONTROL AND CONFIGURE THE UNIT AND ITS MODULES. ALL CONTROLLING AND CONFIGURATION OF THE UNIT AND ITS INCORPORATED MODULES IS DONE USING THE KEYBOARD AND THE SCREEN BY MEANS OF A MENU SYSTEM. THE SCREEN ALSO INDICATES THE HOUR, THE DATE AND INFORMATION CONCERNING THE UNIT'S STATUS.

**THE M210 IS** DESIGNED TO INCORPORATE 3 INPUT-OUTPUT MODULES AS WELL AS DIFFERENT TYPES OF PRECISION OSCILLATORS. THIS ALLOWS FOR SOLUTIONS ADAPTED TO YOUR NECESSITIES WITH A COMPACT SIZE (HEIGHT OF 1U, FOR A 19-INCH RACK).

**THE M210 ALLOWS FOR** THE SYNCHRONOZATION OF NATIONAL AND INTERNATIONAL TIME SIGNALS WHENEVER THEY ARE AVAILABLE AS WELL AS THE OUTPUT OF TIME DATA IN A WIDE VARIETY OF FORMATS. DURING PERIODS IN WHICH EXTERNAL SIGNAL RECEPTION IS AVAILABLE (GPS, RADIO LF, TIME CODE, ETC.), OPERATION OF THE INTERNAL OSCILLATOR IS CONTROLLED CONTINUOUSLY, AND ITS DERIVATION AND AGING ARE CHARACTERIZED AND CORRECTED. THIS ENSURES THAT THE UNIT MAINTAINS ITS SPECIFICATIONS FOR THE DURATION OF ITS OPERATIVE LIFE WITHOUT THE NECESSITY OF EXTERNAL INTERVENTIONS, PERMITTING BETTER OSCILLATOR SERVICES THAN THE INITIAL PROGRAMMED ONES.

**THE M210 ACCEPTS** A WIDE VARIETY OF OPTIONAL CARDS. ASK US FOR AN UPDATED LIST BECAUSE IT MAY BE THAT THE SOLUTION TO YOUR PROBLEM OF TIME AND/OR FREQUENCY GENERATION, SYNCHRONIZATION, CONVERSION OR COMMUNICATION HAS RECENTLY APPEARED.

### Opciones:

The M210 Time System has over 50 different card options. These options include series outputs (RS232, RS422, power loop 20mA, etc.), parallel outputs (BCD, Centronics, opto-isolated, etc.), time code outputs (AFNOR, IRIG, XR3, NASA, VELA, SMPTE/EBU, etc.), 24V impulse outputs, TCP/IP Ethernet 10/100BaseT, audio output, video insertion, synthesized frequencies, etc. The input options include: GPS, radio (DCF, MSF, HBG, WWWB) and various time codes and ASCII messages. The optional oscillators come in various TXCO models and OCXO models with very low output noise and de Rubidium atomic oscillators.

### Specifications:

Time accuracy:

Standard quartz oscillator maintains autonomous accuracy level of 20 milliseconds per 4 hours at 20°C.

Optional Oscillator		Stability per °C	Average Time						Autonomous Stability per Day
Option	Description		1s	10s	100s	1000s	10000s	1dia	
04	TCXO	$1.7 \times 10^{-8}$	$2 \times 10^{-9}$	$5 \times 10^{-10}$	$5 \times 10^{-10}$	$5 \times 10^{-10}$	$6 \times 10^{-11}$	$1 \times 10^{-12}$	30ms
22A	OCXO	$2.5 \times 10^{-9}$	$3 \times 10^{-10}$	$3 \times 10^{-10}$	$4 \times 10^{-10}$	$4 \times 10^{-10}$	$5 \times 10^{-11}$	$1 \times 10^{-12}$	30µs
22B	OCXO Precision	$5 \times 10^{-11}$	$2 \times 10^{-12}$	$3 \times 10^{-12}$	$1 \times 10^{-11}$	$1 \times 10^{-11}$	$5 \times 10^{-12}$	$1 \times 10^{-12}$	8µs

**Screen:** 2 rows, each with 24 LCD characters. Character height: 5mm.

**Keyboard:** 5 buttons for configuring and controlling the unit.

The configuration is stored in a non-volatile memory system.

**Power:** 115/230V AC  $\pm$  10% 48-62Hz, 50W (typical) – subject to variation according to the type of oscillator and the incorporated modules. Connection via 3 pin IEC.

**Mechanism:** 19-inch rack, height 1U, depth 305mm. The chassis has the capacity to insert 3 modules.

**Temperature:** From 0°C to +40°C (operation and storage)

**Humidity:** Up to 95% RH (without condensation)

**EMC:** Conforms to EC.



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Travessera de Gràcia, 73-79 6ª pl. 08006 BARCELONA Tel +34 932 375 443 - Fax +34 932 173 930

e-mail: [pablohuc@phuc.es](mailto:pablohuc@phuc.es) [www.phuc.es](http://www.phuc.es)