



NetClock®/NTP Network Time Provider

Model 9289



- Stratum 1 NTP v2, v3, v4 Time Server via GPS
- Stratum 2 (up to 15) via NTP servers
- High bandwidth performance NTP
- Synchronizes Security Systems, Computer Networks and other Digital or Analog Systems
- IPv6
- NTP capabilities – Peering, Stratum 2, Autokey
- Supports centralized user authentication (LDAP, RADIUS)
- Supports centralized logging – Syslog
- Meets regulatory compliance standards including Sarbanes-Oxley, HIPAA, Gramm-Leach-Bliley and OATS
- Supports internal audits, including: audit trails, time stamping records, log files and data archiving
- Ethernet 10/100 Base-T
- Web-based user interface
- Remote diagnostics, flash upgrades, configuration, and control
- Automatic adjustment for local time, daylight saving time and leap second
- Security Features: SSL, SNMP v3, SSH, SCP, SFTP
- Free software updates
- 5-Year Limited Warranty

The NetClock Model 9289 is based on Global Positioning System (GPS) technology – tracking up to twelve satellites simultaneously and synchronizing to the satellites' atomic clocks. This enables computer networks to synchronize all elements of network hardware and software (including system logs) to the millisecond over LANs or WANs – anywhere on the planet.



The Model 9289 uses an embedded Linux v2.6 operating system and a high-speed processor.

The NTP Network Time Provider offers multiple standard security features, including host restriction on SNMP to ensure operational integrity. Two front panel displays and additional ports can be purchased from the factory. An optional dial-out modem provides back-up to GPS or can function as the primary reference, such as for disaster recovery.

Time code outputs are included to meet the requirements of numerous systems, including a 10/100 Base-T LAN port, an RS-232 serial port, and an RS-485 data bus port. Alarm outputs and programmable timer outputs are also provided.



PERFORMANCE

TYPICAL ACCURACY:

Within 50 nanoseconds RMS of UTC time (with 3-D fix)

RS-232/RS-485: Time code ± 100 microseconds to ± 1 millisecond of UTC, format dependent

Ethernet NTP: Output jitter within ± 50 microseconds relative to UTC typical

OUTPUTS:

Type	Connector
Ethernet 10/100 Base-T	RJ45 (auto sensing)
RS-232 Serial Comm. ¹	DB9 female
RS-485 Once-per-Second ¹	3.81 mm Terminal Block
Alarm Outputs	3.81 mm Terminal Block
Programmable Timer Output	3.81 mm Terminal Block

¹ Serial time code formats: 0, 1, 2, 3, 4, 7, 8, 90, IBM Sysplex

NETWORK PROTOCOLS:

- NTP v2, v3, v4: Conforms with or exceeds RFC 1305 and 2030. Supports Unicast, Broadcast, MD5 encryption, Peering, Stratum 2, Autokey
- HTTP: Browser-based configuration and monitoring
- Telnet: Remote configuration
- FTP Server: Access to logs
- SNMP: Supports v1, v2, v2c, and v3 (no auth/auth/priv) with Enterprise MIB
- IPv4/IPv6: Dual stack
- DHCP/DHCP6: Automatic IP address assignment
- LDAP: Authentication
- RADIUS: Authentication
- Syslog: Logging
- Time (RFC868)
- Daytime (RFC867)

SECURITY FEATURES:

- Enable/block protocols
- Set SNMP community names and network access
- Password protected
- SSL Web Based Interface: Web UI uses SSL to allow the use of the secure HTTPS protocol to access configuration and status web pages.
- SSH: utilizes SSL and data compression technologies to provide a secure and efficient means to control, communicate with, and transfer data to or from the master clock remotely.
- SCP: is used to securely transfer files to and from the time server over an SSH session.
- SFTP: is an FTP replacement that operates over an encrypted SSH transport.
- SNMPv3 (no auth/auth/priv): allows remote configuration and management over an encrypted connection.

INPUTS:

Type	Connector
RS-232 Serial Set-up Interface ²	DB9 female
GPS Antenna	Coaxial N type
Power	2.5 mm male, center positive

² Serial set-up interface configures network settings. The port works at 9600 baud, 8N1, and can be accessed with a PC terminal emulator.

OPTIONAL DIAL-OUT MODEM (PRIMARY OR BACK-UP):

Serial set-up interface connects to an external modem that provides primary or back-up (in the event of a loss of GPS signal) connection to Legally Traceable Time[®] from NIST's ACTS or ITU-R services.

POWER:

90-240 VAC, 47-63 Hz from supplied external CE/UL/CSA approved power supply with IEC 320 universal power cord connector. Re-order number: PS06-OEOJ-DT03. North American power cord included. Alternate type line cords or adapters may be obtained locally. Unit operates from 12 VDC nominal (+9.5 – +30 VDC) @ 1.0 amps.

FRONT PANEL:

- Ethernet port
- Status Indicators: "Power" and "Sync" multi-color LED
- Optional selectable 12 or 24 hour display

PHYSICAL & ENVIRONMENTAL

SIZE/WEIGHT:

- EIA 19" rack mount W x 1.75" H x 11.0" D/4.8 lbs. (483 mm W x 44 mm H x 305 mm D/2.2 kg)
- Rack Mount hardware included (assembly required)

ENVIRONMENTAL:

Operating Range: 32°F to 122°F [0°C to 50°C]
Storage Range: -40°F to +185°F [-40°C to +85°C]
Relative Humidity: 10%–95%, non-condensing

AGENCY APPROVALS:

CE Mark: EN60950, EN55022, EN55024
FCC: Part 15
UL/CSA: listed power adapter

GPS ANTENNA

INDOOR OR OUTDOOR COAXIAL N TYPE:

Received Frequency: 1575.42 MHz
Satellites Tracked: One to twelve, GPS T-RAIM satellite error management. Single-satellite mode.
Acquisition Time: Cold start, 250 seconds typical

WARRANTY

FIVE-YEAR LIMITED WARRANTY

- Extended warranty is available.

ORDERING INFORMATION

1. NetClock
NetClock/NTP Network Time Provider, Model 9289
Option 02: Front Panel Display and two additional Serial Ports
Option 03: Modem

ADDITIONAL OPTIONS AND ACCESSORIES

2. Antenna
GPS Outdoor Antenna, Model 8225
GPS Indoor Window Mount Antenna, Model 8228
3. Antenna Accessories
Antenna Flat Roof Mount, Model 8213; Antenna Surge Protector, GPS, Model 8226; Antenna Surge Protector Grounding Kit, Model 8226-0002-0600; Antenna Preamplifier, Model 8227; Antenna Splitter, Model 8224; Antenna Cable, LMR-400 equivalent, CAL7xxx (xxx=feet) – Specify CALP7xxx for indoor plenum-rated cable.
4. Software
Contact the Sales department for more information. Presentense Server and Client, NTP Auditor, and Lan Time Analyzer NTP software are available.
5. Time Distribution
Ethernet Time Server, Model 9288, one per secure network; TimeTap[®] Adapter, Model 8179T, RS-485 to RS-232, one per device, includes 12 VDC power supply. TimeBurst, Model 8185, broadcasts time to wireless devices over existing radio systems.
6. Redundant Systems
TimeGuard[®] Monitor/Selector, Model 8145, protects against single time server failure.
7. Display Clocks
TimeView[®] digital and analog clocks
8. Service Options
Premium Support Package
Extended Warranty